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A Austria
Voltohm Christian Drott KG
Frutzstr. 4
6832 Sulz/Vorarlberg
Tel.: + 43 (0)5522 494 20
Fax.: + 43 (0)5522 421 41
info@voltohm.com
www.voltohm.com

AUS Australia
Mayer Krieg & Co.
50 Mary Street, Unley
5061 Adelaide
Tel.: + 61 (0)8 291 32 22
Fax.: + 61 (0)8 291 32 00
info@mayerkrieg.com.au
www.mayerkrieg.com.au

B Belgium
Geveke Industrial Multitechnic nv
Leuvensesteenweg 250A
1800 Vilvoorde
Tel.: + 32 (0)2 257 02 50
Fax.: + 32 (0)2 252 49 59
info@geveke.be

CDN Canada
Schroff Inc.
111 Grangeway Ave., Suite 504
Scarborough, Ontario M1H 3E9
Tel.: + 1 (416) 289 27 70
Fax.: + 1 (416) 289 28 83

CH Switzerland
Rotronic AG
Grindelstr. 6
8303 Bassersdorf
Tel.: + 41 (0)1 838 12 12
Fax.: + 41 (0)1 837 00 74
stadelmannl@rotronic.ch

CZ Czech Republic
ZTC electronic
P.O. Box 34
14900 Praha 415
Tel.: + 420 (0)2 67 91 00 82
Fax.: + 420 (0)2 67 91 06 41
ztc@ztc.cz
www.ztc.cz

D Germany
Schroff GmbH
Langenalber Str. 96 - 100
75334 Straubenhardt
Tel.: + 49 (0)7082 794 0
Fax.: + 49 (0)7082 794 200
info@schroff.de
www.schroff.de

DK Denmark
Knud Wexoe A/S
Skaettekaeret 11
2840 Holte
Tel.: + 45 (0)45 465 800
Fax.: + 45 (0)45 465 801
wexoe@wexoe.dk
www.wexoe.dk

E Spain
Cenval SA
Ulises, 104
28043 Madrid
Tel.: + 349 (0)1 721 60 10
Fax.: + 349 (0)1 300 08 79
sismecanic@cenval.es

EST Estonia
AS Scanditron
Laki 12
10621 Tallinn
Tel.: + 372 (0)2 656 27 33
Fax.: + 372 (0)2 656 27 31
scanditron@scanditron.com

F France
Schroff Sas
Z. I., 4 rue du Marais
67660 Betschdorf
Tel.: + 33 (0)3 88 90 64 90
Fax.: + 33 (0)3 88 90 64 88
www.schroff.fr

FIN Finland
Schroff Scandinavia AB
Peräsimentie 8
03100 Nummela
Tel.: + 358 (0)9 222 68 00
Fax.: + 358 (0)9 222 38 86
info_fin@schroff.de

GB Great Britain
Schroff UK Ltd.
Maylands Avenue
Hemel Hempstead,
Herts HP2 7DE
Tel.: + 44 (0)1442 240 471
Fax.: + 44 (0)1442 213 508
www.schroff.co.uk

H Hungary
NB Electronic Kft.
Kaszásdül u. 2.
1033 Budapest
Tel.: + 36 (0)1 387 14 55
Fax.: + 36 (0)1 250 00 20
nbelectronic@euroweb.hu

HK Hong Kong
Alberta Electronic Co. Ltd.
Blk. C, 10/F Eldex Ind. Bldg.,
21 Matauwai Rd.
Hung Hom, Kowloon
Tel.: + 852 2334 27 88
Fax.: + 852 2330 16 51

HR Croatia
Chronos Plus D. O. O.
Medvedgradska 35
1000 Zagreb
Tel.: + 385 (0)1 466 70 59
Fax.: + 385 (0)1 466 69 77
chronos@zg.tel.hr

I Italy
Schroff srl
Viale Milano, 119
21013 Gallarate (Varese)
Tel.: + 39 (0331) 794 003
Fax.: + 39 (0331) 793 450

IL Israel
Ram Nir Electronic Pack. & Services
4th, Ben-Gurion Str.
74030 Nes Ziona
Tel.: + 972 (0)8 940 96 19
Fax.: + 972 (0)8 940 12 86
ramdevelopment@ramdevelopment.com

IRL Ireland
New England Technical Sales Ltd.
The Diamond Malahide, Co.
Dublin
Tel.: + 353 (0)1 845 06 35
Fax.: + 353 (0)1 845 36 25

J Japan
Schroff K. K.
Nisso No.13 Bldg. 4F
2-5-1 Shinyokohama, Kohoku-ku,
Yokohama-shi
Kanagawa 222-0033
Tel.: + 81 (0)45 476 02 81
Fax.: + 81 (0)45 476 02 89

LT Lithuania
UAB Agava
Gedimino 47
3000 Kaunas
Tel.: + 370 (0)7 202 410
Fax.: + 370 (0)7 207 414
agava@kaunas.aiva.lt

LT Lithuania
SOMI Ltd.
31 Antakalnio st.
2055 Vilnius
Tel.: + 370 (0)2 709 000
Fax.: + 370 (0)2 709 066
info@somi.lt
www.somi.lt

N Norway
Schroff Scandinavia AB
Bjoernerudveien 24
1266 Oslo
Tel.: + 47 (0)22 763 360
Fax.: + 47 (0)22 763 369
info_nor@schroff.de

NL The Netherlands
Getronics Industrial Automation BV
Donauweg 10
1043 AJ Amsterdam
Tel.: + 31 (0)20 586 15 75
Fax.: + 31 (0)20 586 19 85
www.gia.nl.getronics.com

NZ New Zealand
Mayer Krieg New Zealand Limited
34 C, Hobill Avenue, Manukau City
Auckland
Tel.: + 64 (0)9 262 24 61
Fax.: + 64 (0)9 262 24 74
info@mayerkrieg.co.nz
www.mayerkrieg.com.au

P Portugal
Arestel - Componentes e
Equipamentos Electrónicos, S.A.
Pct. Proj. Av. Dr. Mário Moutinho, lote
1528-cave
1400-136 Lisboa
Tel.: + 351 (0)21 303 08 50
Fax.: + 351 (0)21 301 62 21
arestel@mail.telepac.pt

PL Poland
Schroff Representative Ryszard Platek
Koncertowa 6/49
02-784 Warszawa
Tel.: + 48 (0)22 641 96 69
Fax.: + 48 (0)22 641 96 69
schrofffinfo@schroff.pl
www.schroff.pl

RC Taiwan
Lumax International Corp., Ltd.
7th Fl., 52, Sec. 3,
Nan-Kang Rd.
Taipei
Tel.: + 886 (0)2 27 88 36 56
Fax.: + 886 (0)2 27 88 35 68
lumaxtc@ms12.hinet.net
www.lumax.com.tw

RI Indonesia
P. T. Kota Minyak Internusa
Jl. Bandengan Selatan 60A
Jakarta 14450
Tel.: + 62 (0)21 662 17 25
Fax.: + 62 (0)21 662 17 33
salim@indo.net.id

RI Indonesia
P. T. Nego Electrindo
Komplek Sentra Kramat, Blok A 18
Jl. Kramat Raya No.7-9
Jakarta 10450
Tel.: + 62 (0)21 315 62 18
Fax.: + 62 (0)21 315 62 19
negoel@rad.net.id

ROK Korea
Ara Electronics Co., Ltd.
501 Daeryung Techno-Town I
327-24 Kasan-dong, Kumchon-gu
Seoul 153-023
Tel.: + 82 (0)2 855 54 00
Fax.: + 82 (0)2 855 34 90
bskim@ara.co.kr
www.ara.co.kr

RUS Russia
Prosoft Ltd.
108, Profsouznaya Str.
117437 Moscow
Tel.: + 7 (095) 234 06 36
Fax.: + 7 (095) 234 06 40
root@prosoft.ru
www.prosoft.ru

S Sweden
Schroff Scandinavia AB
Box 2003, 12821 Skarpnäck
Tel.: + 46 (0)8 683 61 00
Fax.: + 46 (0)8 683 61 99
info_swe@schroff.de
www.schroff.se

SGP Singapore
Hoffman Schroff Singapore Pte. Ltd.
25 Int'l Business Park,
01-68/71 German Centre
Singapore 609916
Tel.: + 65 562 78 90
Fax.: + 65 562 78 99

SLO Slovenia
IC Elektronika D . O. O.
Vodovodna 100, PP 2514
1001 Ljubljana
Tel.: + 386 (0)61 1 65 31 50 25
Fax.: + 386 (0)61 1 65 31 70 20
marco@ic-elect.si

T Thailand
F. E. Zuelling (Bangkok) Ltd.
11/F Ploenchit Center
2 Sukhumvit Road
Kwaeng Klongtoey, Khet Klongtoey
Bangkok 10110
Tel.: + 66 (0)2 656 87 10
Fax.: + 66 (0)2 656 87 67

USA United States of America
Pentair Electronic Packaging
170 Commerce Drive
Warwick, RI 02886
Tel.: + 1 (401) 732 37 70
Fax.: + 1 (401) 738 79 88
info@pentair-ep.com
www.pentair-ep.com

ZA South Africa
Pascom Electronics (Pty.) Ltd.
12, Charles Crescent,
Eastgate Ext. 4, Sandton
2144 Wendywood
Tel.: + 27 (0)11 444 10 01
Fax.: + 27 (0)11 444 10 80
nat@pascom.co.za

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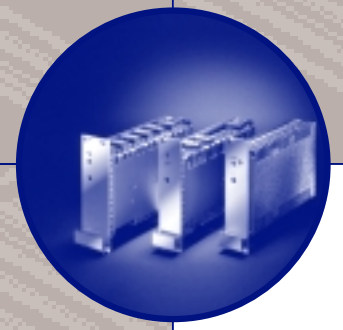
Verantwortlich für Inhalt und Druck:

Pentair Enclosures Group Europe, Marketing Abteilung, Schroff GmbH, 75334 Straubenhardt, Deutschland

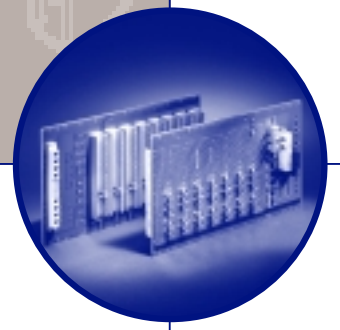
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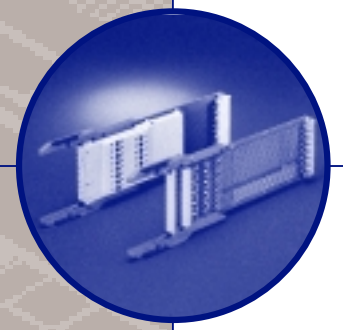
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Power Supplies, Backplanes / Test Adapters and Microcomputer Packaging Systems









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Catalogue overview



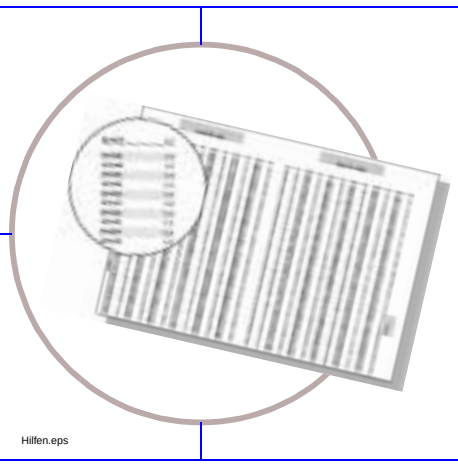
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Power supplies Overview



11700001

Application

Power supplies are used for supplying power in many applications, including control or regulating systems for machines, computer systems or telecommunications facilities such as, e.g. switches or base stations for mobile telephony. This catalogue contains a wide range of power supplies, which differ as regards function, performance and price. A suitable power supply can therefore be obtained for all applications. In addition, however, SCHROFF also provides support if you require a “tailormade” solution to suit your requirements.

Electrical/Electronics

Our range of products includes AC/DC switched mode power supplies, linear regulators and DC/DC converters. In the case of these power supplies, regulated direct voltage is generated from the supply voltage (alternating or direct voltage).

Power systems provide you with a power supply system which is adapted to your power requirements, and which may additionally contain redundancy, but also battery backup.

Uninterruptable power supplies (online and interactive) are intelligent AC/AC converters. They generate an alternating voltage from the mains voltage, maintaining this over a certain period of time with batteries in the event of mains failure.

Mechanical

The power supplies, power systems and UPSs are available in 19” standard and in open frame cases.

The 19” compatible power supplies are pluggable.

Open frame devices have non-standardized dimensions. The following table describes the significant differences between both types.

Power supplies types:

19"	Open frame
Pluggable	terminal block/ plug connections
Can be rapidly replaced	Undo terminal block connections
More compact design	Larger design
Higher performance	Lower performance
Protection against accidental touch via case	Protection against accidental touch depending on device

Standards

19” system (power systems, UPS) and the 19” compatible power supplies correspond to IEC 60297-3.

Further information regarding power supplies can be found on the Internet at www.schroff.de

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Power supplies Overview

19″ compatible power supplies

Compact power supplies as a 19″ plug-in unit

- **AC/DC switched mode power supplies, 50–350 W**
  ecopower, maxpower, maxpowerPRO
- **AC/DC linear control systems, 8–58 W**
- **AC/DC non-regulated, 84 and 240 W**
- **DC/DC converters, 20–120 W**
  maxpowerPRO

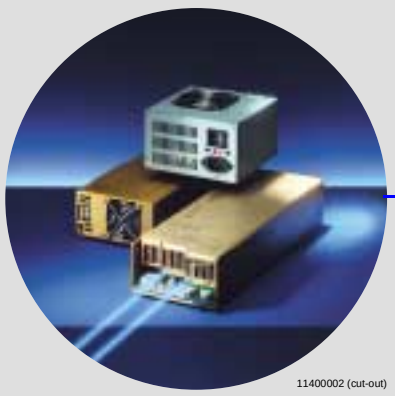


11300004 (cut-out)

Open frame power supplies

Compact power supplies with individual dimensions

- **AC/DC switched mode power supplies, 30–600 W**
- **AC/DC linear control systems, 15–116 W**



11400002 (cut-out)

Power systems

Capacity and redundancy for 99.9% telecommunications availability

- **Backup systems, 100–1000 W**



11300006

Uninterruptable power supplies (UPS)

Power failure protection against data loss

- **Online, 700–3000 VA**
- **Interactive, 700–2200 VA**
- **Software**



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Open frame 3.12.0

Power systems 3.13.0

Uninterruptable power supplies (UPS) 3.14.0

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19” compatible power supplies Overview



113-00-004

Application

19” compatible power supplies are used to supply controls and systems with the required direct voltage. They are pluggable power supplies with a compact design and high efficiency.

3.3, 5, 12, 15, 24, 48 and 60 volts are available as standard output voltages.

Other output voltages available on request.

Electrical design

The inputs and outputs are on the rear side using standardized male connectors to DIN 41612.

A primary fuse is mounted in the power supplies.

Operation is displayed at the front with LEDs.

Mechanical design

Power supplies are 3 or 6 units (U) and a printed board depth of 160 mm.

Depending on the output power, the power supplies have a width of 6 to 28 units (HP).

Heat dissipation

Power supply heat dissipation is achieved without fans, and is possible up to an ambient temperature of 70 °C. Output derating is from 40 °C to 50 °C.

Standards/approvals

The power supplies are CE-certified and UL- and VDE/LGA-approved. Approval to EN 60950 applies to AC mains operation.

The exterior dimensions of the systems correspond to the 19” standard DIN 41494, Part 1 and the mounting dimensions for the plug-in units to DIN 41494 Part 5.

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19″ compatible power supplies Overview

AC/DC-switched mode power supplies

ecopower – cost-optimized
maxpower – high performance
maxpowerPRO – extremely high performance, Compact PCI

- 1 ... 4 output voltages
- 50 to 350 W



11399014

AC/DC linear control systems

High control accuracy and low residual ripple

- 1 ... 3 output voltages
- 8 to 58 W



11300001

AC/DC non-regulated, screened

power supply with basic specification made on the output voltage

- 24 V output voltage
- 84 and 240 W



11300001

DC/DC converters

Controlled direct voltage converter

- 1 ... 4 output voltages
- 20 to 350 W

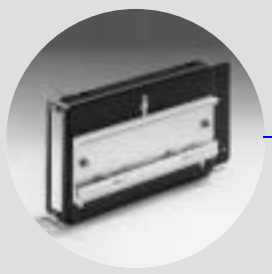
maxpowerPRO – extremely high performance, Compact PCI



11396005

Accessories for 19″-compatible power supplies

- Connector H 15 F
- Keying/coding
- EMC contact strips
- Wall/horizontal rail installation



11395007

AC/DC switched mode power supplies
Single, 50 W 3.11.2
Single, 80 W 3.11.4
Single, 100 W 3.11.6
Single, 130 W 3.11.8
Dual, 80 W 3.11.10
Dual, 100 W 3.11.12
Triple, 80 W 3.11.14
Triple, 100 W 3.11.16
Triple, 130 W 3.11.18
Triple, 150 / 224 W 3.11.20
Quad, 250 W 3.11.22
Quad, 350 W 3.11.24

AC/DC linear control systems
Single, 8 – 60 W ..3.11.26
Dual, 10 – 58 W ...3.11.28
Triple, 7 – 39 W ...3.11.30

AC/DC non-regulated
Single, 84 W 3.11.32
Single, 240 W 3.11.34

DC/DC converters
Single, 20 to 120 W 3.11.36
Dual, 55 to 72 W ..3.11.38
Triple, 64 to 70 W 3.11.40
Quad, 250 W 3.11.42
Quad, 350 W 3.11.44

Accessories
Mating connector female connector H 15 F 3.11.46
Keying/coding 3.11.47
Guide rails 3.11.47
Z-rails 3.11.47
EMC contact strips 3.11.48
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19" compatible AC/DC switched mode



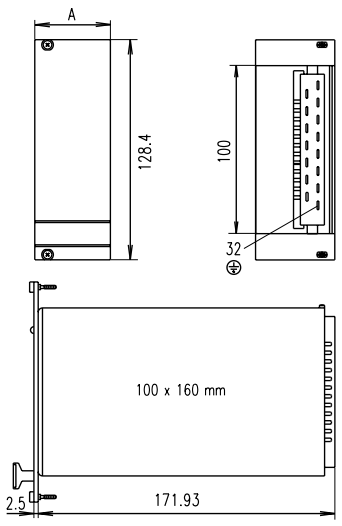
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Single, 50 W

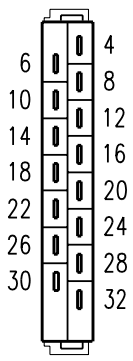
ecopower

- 19" compatible AC/DC switched mode power supplies, pluggable 3 U × 160 mm deep
- Wide range mains input voltage range (wide range from 90 – 264 V_{AC} and 130 – 340 V_{DC})
- 1 output voltage
- Redundancy operation with integrated decoupling diode
- Even current share in the event of parallel operation via current share bus (CSB)
- Signalling: Output voltage OK
- For industrial and telecommunications applications
- High reliability and long life
- Cost-optimized

ERG
EN 60950



DIJM0084



PSA46292

Pin	Connection
4	Output + V_1
6	
8	Sense + V_1
10	Sense 0V V_1
12	Output 0V V_1
14	
16	–
18	
20	
22	CSB
24	Output OK
26	–
28	L
30	N
32	PE ⏚

Note
The front panel is not included in delivery.

Output data with T_U = 0 ... 50 °C					Order No.[1]		
Voltage in V	Current in A	Power output in W	Height in U	Width A in HP	Power supply Type	Mains voltage 90 – 264 V_{AC}	Front panel[2] EMC
5	9.0	45	3	6	SEC 105	**13100-043**	**21006-943**
12	4,2	51			SEC 112	**13100-044**	
15	3,4				SEC 115	**13100-041**	
24	2,1				SEC 124	**13100-045**	
48	1,1	53			SEC 148	**13100-046**	

[1] Please order front panel separately

[2] Front anodised, rear side chromated, slotted on both sides for mounting EMC contact strips in the event of increased EMC requirements
(3 U EMC contact strips, 10 units, Order No. 21101-705)

Mating connector H15F with FASTON connection, Order No. 69001-733

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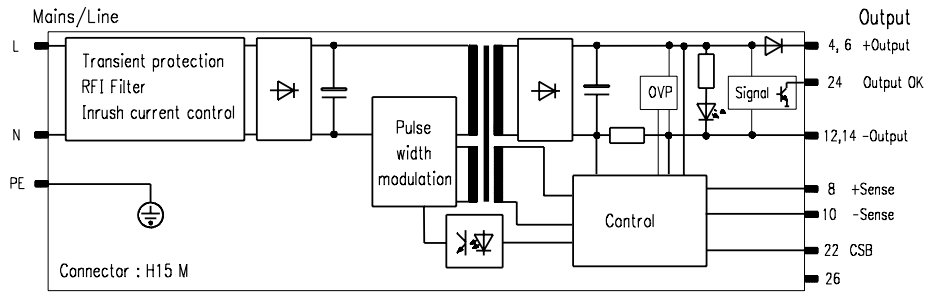
19″ compatible AC/DC switched mode

Technical data

Input parameters						
Mains voltage	Nominal values V_{AC}	100 – 240 V_{AC}				
	Operating-ranges	90 – 264 V_{AC} 128 – 370 V_{DC}				
Mains nominal current at 90 V_{AC}/187 V_{AC}		1.3/0.6 A				
Mains frequency range		Type 48 – 62 Hz				
Mains input current in accordance with		EN 61000-3-2 + A14				
Efficiency		Type 69 – 80 %				
Switch-on current I_P (with 230 V_{AC})		< 20 A				
Discharge current		≤ 500 µA				
Output parameters						
Output power [W]		45	51			53
Output voltage Δ V [V]	factory set	5	12	15	24	48
	Adjustment range	4.2–6	11–13.5	13.5–16.5	21–25.5	43–50
Output current (with 90 – 264 V_{AC}) [A]	0 ... 50 °C	9.0	4.2	3.4	2.1	1.1
	70 °C	6.0	2.9	2.4	1.5	0.8
Short-circuit current [A]		< 11	< 6	< 4.5	< 3	< 2
Over-voltage protection OVP (shuts power supply off), automatically resets		6 ± 0.3	14 ± 0.5	17 ± 0.5	26 ± 0.5	52 ± 2
Residual ripple with [mV_{PP}]	100 Hz	20	< 100	< 100	< 100	< 150
	Clock frequency (100 kHz)	< 40	< 50	< 50	< 50	< 60
Interference voltage (BW: 100 MHz) [mV_{PP}]		< 100	< 200	< 200	< 200	< 200
Load control, static (load change 0 – 100 %) [mV]		< 50	< 50	< 50	< 100	< 100
Mains control 90 – 264 V [mV]		< 10	< 25	< 25	< 100	< 100
Temperature coefficient		-0.015 %/K				
CSB and output decoupled via diode		Mounted				
Dynamic control deviations (load change: 50 ... 100 % with 100 Hz; dI/dt = 0,135 A/µs)						
Control time at 0.01 × $V_{1\ Nominal}$		< 1.5 ms				
Overshoot and undershoot amplitude [mV]		< 500	< 250		< 300	< 500

Protection and monitoring facilities		
Switch-on time		< 0.8 s
Mains fuse, high breaking sluggish		4 A/250 V_{AC}, 5 × 20 mm, DIN EN 60127-2/V
Power failurebridging at V_{AC} = 187 V_{AC} and 100 % load		> 30 ms
Remote sense compensated		Max. 0.5 V
Characteristic current-limiting curve		U/I
"Output voltage ok" signalling		Output OK, open collector signal, low active, max. 55 V/50 mA
Test and environmental conditions		
Climatic test to		IEC 68-2-38
Shock and vibration test in accordance with acceleration of 2 g		EN 60068-2-6
Height 3 U/ depth 160 mm		Width 6 HP
Weight (mass)		0.55 kg
CE	Interference emission	EN 50081-1, EN 55011 Class B, EN 55022 Class B
	Interference immunity, degree of severity 3	EN 50082-2, EN 61000-4-2, EN 61000-4-3, EN 61000-4-4, EN 61000-4-5, EN 61000-4-6
	Safety, class of protection 1	EN 60950 (ERG)
High voltage test to EN 60950	Input-output	4.3 kV_{DC}
	Input PE	2.2 kV_{DC}
	Output PE	0.7 kV_{DC}
UL 1950		No. E 153809
Power supply maintenance-free		Yes
Cooling		Convection
Operation/storage ambient temperature		0 ... 70 °C / -20 ... +85 °C
MTBF at full load, T_U = 40 °C		500,000 h

Schematic wiring diagram



AC/DC switched mode power supplies
Single, 50 W 3.11.2
Single, 80 W 3.11.4
Single, 100 W 3.11.6
Single, 130 W 3.11.8
Dual, 80 W 3.11.10
Dual, 100 W 3.11.12
Triple, 80 W 3.11.14
Triple, 100 W 3.11.16
Triple, 130 W 3.11.18
Triple, 150 / 224 W 3.11.20
Quad, 250 W 3.11.22
Quad, 350 W 3.11.24

AC/DC linear control systems
Single, 8 – 60 W ..3.11.26
Dual, 10 – 58 W ...3.11.28
Triple, 7 – 39 W ...3.11.30

AC/DC non-regulated
Single, 84 W 3.11.32
Single, 240 W 3.11.34

DC/DC converters
Single, 20 to 120 W 3.11.36
Dual, 55 to 72 W..3.11.38
Triple, 64 to 70 W 3.11.40
Quad, 250 W 3.11.42
Quad, 350 W 3.11.44

Accessories
Mating connector female connector H 15 F 3.11.46
Keying/coding 3.11.47
Guide rails 3.11.47
Z-rails 3.11.47
EMC contact strips 3.11.48
Wall/horizontal rail installation 3.11.49

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Power supply units..... 3.10.0
19" compatible.....3.11.0
Open frame.....3.12.0
Power systems.....3.13.0
Uninterruptable power supplies (UPS) 3.14.0

Backplanes/ test adapters .. 3.20.0

Microcomputer packaging systems (MPS) 3.30.0

Appendix..... 3.90.0

19" compatible AC/DC switched mode

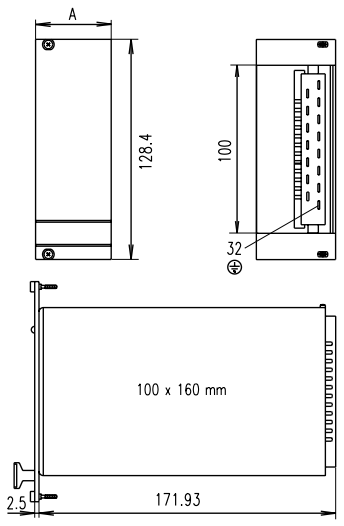


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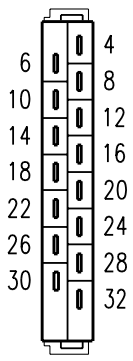
Single, 80 W

ecopower

- 19" compatible AC/DC switched mode power supplies, pluggable 3 U
- Wide range mains input voltage range (90 – 254 V_{AC} and 100 – 360 V_{DC})
- Power factor correction (PFC) to EN 61000-3-2
- 1 output voltage
- Redundancy operation with integrated decoupling diode
- Even current share in the event of parallel operation via current share bus (CSB)
- Signalling: Output voltage OK
- For industrial and telecommunications applications
- International approvals EN 60950, UL
- High reliability and long life
- Cost-optimized



DIJM0084



PSA46292

Pin	Connection
4	Output + V_1
6	
8	Sense + V_1
10	Sense 0V V_1
12	Output 0V V_1
14	
16	–
18	
20	
22	CSB
24	Output OK
26	–
28	L
30	N
32	PE ⏚

Note
The front panel is not included in delivery.

Output data at T_U = 0 ... 50 °C					Order No.[1]		
Voltage in V	Current (with 190 V) in A	Power output in W	Height in U	Width A in HP	Power supply Type	Mains voltage 90 – 254 V_{AC}	Front panel[2] EMC
3,3	14,0	46	3	6	SEM 103	**13100-054**	**21006-943**
5	14,0	70			SEM 105	**13100-055**	
12	6.5	78			SEM 112	**13100-056**	
15	5,2				SEM 115	**13100-057**	
24	3.4	82			SEM 124	**13100-058**	

[1] Please order front panel separately

[2] Front anodised, rear side chromated, slotted on both sides for mounting EMC contact strips in the event of increased EMC requirements
(3 U EMC contact strips, Order No. 21101-705, 10 pieces)

Mating connector H15F with FASTON connection, Order No. 69001-733

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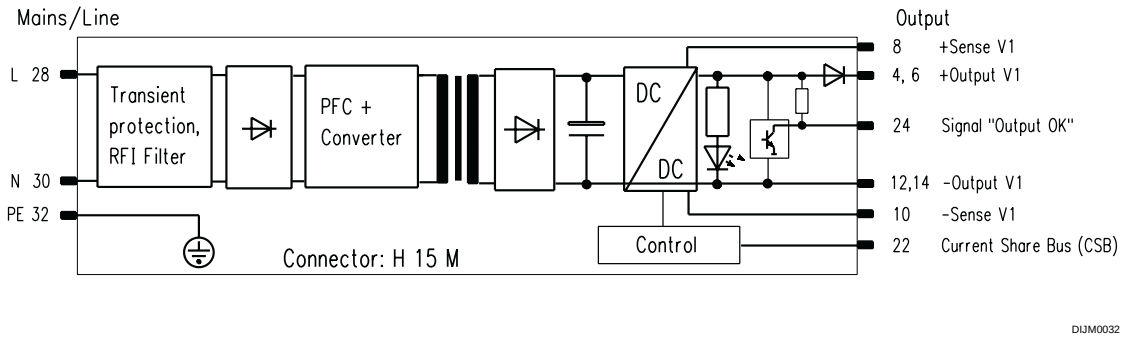
19″ compatible AC/DC switched mode

Technical data

Input parameters						
Mains-voltage	Nominal values V_{AC}	100 – 240 V_{AC}				
	Operating-ranges	90 – 254 V_{AC} 100 – 360 V_{DC}				
Mains nominal current at 90 V_{AC}		1.4 A				
Mains frequency range		50 – 60 Hz				
Power Factor Correction in accordance with		EN 61000-3-2				
Efficiency type		58 %	64 %	75 %		77 %
Switch-on current I_P (with 230 V_{AC})		< 15 A				
Output parameters at		**190/90 V_{AC}**				
Output power max. (50 °C) [W]		46/38	70/58	78/66		82/67
Output voltage [V]	factory set	3.3	5	12	15	24
	Adjustment range Δ V	2.7–3.5	5–5.5	11.5–15.7		21.8–25.3
Output current [A]	0 ... 50°C	14/11.5	14/11.5	6.5/5.5	5.2/4.4	3.4/2.8
	70°C	10.5/9	10.5/9	4.7/4.3	3.8/3.4	2.6/2.2
Current limitation shuts the output off after approx. 20 ms, automatically resets after approx. 2 s, shuts power supply off following longer overload		Permanently short-circuit resistant				
Residual ripple/ Interference voltage (BW: 30 MHz) [mV_{PP}]		< 80				< 150
Mains and load control, static (load change 0 – 100 %) [mV_{PP}]		< 25		< 120		
Temperature coefficient		-0.015 %/K				
CSB and output decoupled via diode		mounted				
Dynamic control deviations (load change: 10 ... 100 % with 100 Hz; dI/dt = 0.25 A/µs)						
Control time at 0.01 × $V_{1\ Nominal}$ [ms]		<0.5		<0.2	<0.25	<0.1
Overshoot and undershoot amplitude [mV]		< 250				

Protection and monitoring facilities						
Switch-on time		< 1.5 s				
Mains fuse		4 A/250 V_{AC}, 5 × 20 mm, EN 60127-2/V				
Power failurebridging at V_{AC} = 90 V_{AC} and 100 % load		> 20 ms				
Over-voltage protection OVP set to		7.2 V	8.2 V	19.3 V		34.2 V
Remote sense compensated		Max. 0.5 V				
"Output voltage ok" signalling		"Output OK" signal, active high				
	High level [V]	3.3	5	12	15	20
	Time delay	100 – 250 ms				
Test and environmental conditions						
Climatic test to		IEC 68-2-38				
Shock and vibration test in accordance with acceleration of 2 g		EN 60068-2-6				
Height 3 U/ depth 160 mm		Width 6 HP				
Weight (mass)		0.55 kg				
CE	Interference emission	EN 50081-1, EN 55011 Class B, EN 55022 Class B				
	Interference immunity, degree of severity 3	EN 50082-2, EN 61000-4-2, EN 61000-4-3, EN 61000-4-4, EN 61000-4-5, EN 61000-4-6				
	Safety, class of protection 1	EN 60950 (VDE)				
High voltage test to EN 60950	Input-output	4.3 kV_{DC}				
	Input PE	2.2 kV_{DC}				
	Output PE	0.7 kV_{DC}				
UL 1950		applied for				
Power supply maintenance-free		Yes				
Cooling		Convection				
Operation/storage ambient temperature		0 ... 70°C / -20 ... +85°C				
MTBF at full load, T_U = 40°C		410,000 h (5 V – 240.000 h)				

Schematic wiring diagram



AC/DC switched mode power supplies
Single, 50 W 3.11.2
Single, 80 W 3.11.4
Single, 100 W 3.11.6
Single, 130 W 3.11.8
Dual, 80 W 3.11.10
Dual, 100 W 3.11.12
Triple, 80 W 3.11.14
Triple, 100 W 3.11.16
Triple, 130 W 3.11.18
Triple, 150 / 224 W 3.11.20
Quad, 250 W 3.11.22
Quad, 350 W 3.11.24

AC/DC linear control systems
Single, 8 – 60 W ..3.11.26
Dual, 10 – 58 W ...3.11.28
Triple, 7 – 39 W ...3.11.30

AC/DC non-regulated
Single, 84 W 3.11.32
Single, 240 W 3.11.34

DC/DC converters
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Keying/coding 3.11.47
Guide rails 3.11.47
Z-rails 3.11.47
EMC contact strips 3.11.48
Wall/horizontal rail installation 3.11.49

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Power supply units..... 3.10.0
19" compatible.....3.11.0
Open frame.....3.12.0
Power systems.....3.13.0
Uninterruptable power supplies (UPS) 3.14.0

Backplanes/ test adapters .. 3.20.0

Microcomputer packaging systems (MPS) 3.30.0

Appendix..... 3.90.0

19" compatible AC/DC switched mode

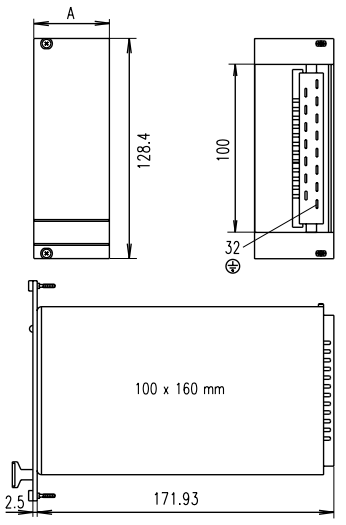


11399005

Single, 100 W

maxpower

- High performance
- 19" compatible AC/DC switched mode power supplies, pluggable 3 U
- Wide range mains input voltage (90 – 254 V_{AC} and 100 – 360 V_{DC})
- Power factor correction (PFC) to EN 61000-3-2
- 1 output voltage
- Redundancy operation with integrated decoupling diode
- Even current share in the event of parallel operation via current share bus (CSB)
- Signalling: Output voltage OK
- For industrial and telecommunications applications
- International approvals EN 60950, UL
- High reliability and long life
- Cost-optimized



DIJM0084

PSA46292

Pin	Connection
4	Output + V_1
6	
8	Sense + V_1
10	Sense 0V V_1
12	Output 0V V_1
14	
16	–
18	
20	
22	CSB
24	Output OK
26	–
28	L
30	N
32	PE ⏚

Note
The front panel is not included in delivery.

Output data at T_U = 0 ... 50 °C					Order No.[1]		
Voltage in V	Current (with 190 V_{AC}) in A	Power output in W	Height in U	Width A in HP	Power supply Type	Mains voltage 90 – 254 V_{AC}	Front panel[2] EMC
3.3	16,0	53	3	6	MAX 103	**13100-101**	**21006-943**
5	16,0	80			MAX 105	**13100-102**	
12	8.3	100			MAX 112	**13100-103**	
15	6.6	99			MAX 115	**13100-104**	
24	4.2	101			MAX 124	**13100-105**	

[1] Please order front panel separately

[2] Front anodised, rear side chromated, slotted on both sides for mounting EMC contact strips in the event of increased EMC requirements
(3 U EMC contact strips, Order No. 21101-705, 10 pieces)

Mating connector H15F with FASTON connection, Order No. 69001-733

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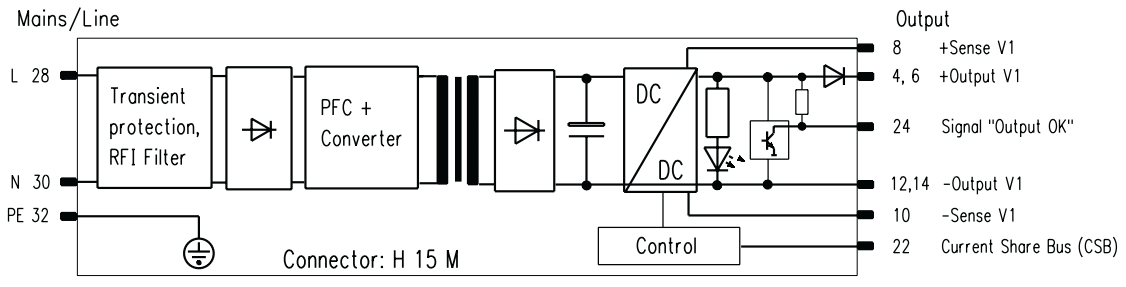
19″ compatible AC/DC switched mode

Technical data

Input parameters						
Mains-voltage	Nominal values V_{AC}	100 – 240 V_{AC}				
	Operating-ranges	90 – 254 V_{AC} 100 – 360 V_{DC}				
Mains nominal current at 90 V_{AC}		1.6 A				
Mains frequency range		50 – 60 Hz				
Power factor correction in accordance with		EN 61000-3-2				
Efficiency type		55 %	63 %	75 %		77 %
Switch-on current I_P (with 230 V_{AC})		< 20 A				
Output parameters at		**190/90 V_{AC}**				
Output power max. (50 °C) [W]		53/50	80/65	100/72		100/80
Output voltage [V]	factory set	3.3	5	12	15	24
	Adjustment range Δ V	2.7–3.5	4.95–5.5	11.5–15.7		21.8–25.3
Output current [A]	0 ... 50°C	16/15	16/13	8.3/6	6.6/4.8	4.2/3.2
	70°C	12/11	12/10.5	6/4.8	4.8/3.8	3.2/2.6
Current limitation shuts the output off after approx. 10 ms, automatically resets after approx. 2 s, shuts power supply off following longer overload.		Permanently short-circuit protected				
Residual ripple/ Interference voltage (BW: 30 MHz) [mV_{PP}]		< 100		< 100		< 100
Mains and load control, static (load change 0 – 100 %) [mV_{PP}]		< 25	< 60	< 80	< 100	< 120
Temperature coefficient		-0.015 %/K				
CSB and output decoupled via diode		mounted				
Dynamic control deviations (load change: 10 ... 100 % with 100 Hz; dI/dt = 0.25 A/µs)						
Control time at 0.01 × $V_{1\ Nominal}$ [ms]		<0.8		<0.2		<0.1
Overshoot and undershoot amplitude		< 300 mV				

Protection and monitoring facilities						
Switch-on time		< 0.8 s				
Mains fuse		4 A/250 V_{AC}, 5 × 20 mm, EN 60127-2/V				
Power failurebridging at V_{AC} = 90 V_{AC} and 100 % load		>20 ms	>14 ms	>14 ms	>10 ms	>16 ms
Over-voltage protection OVP limits UA to		<7.2 V	<8.2 V	<19 V		<34 V
Remote sense compensated		Max. 0.5 V				
"Output voltage ok" signalling		"Output OK" signal, active high				
	High level [V]	3.3	5	12	15	20
	Time delay	100 – 250 ms				
Test and environmental conditions						
Climatic test to		IEC 68-2-38				
Shock and vibration test in accordance with acceleration of 2 g		EN 60068-2-6				
Height 3 U/ depth 160 mm		Width 6 HP				
Weight (mass)		0.55 kg				
CE	Interference emission	EN 50081-1, EN 55011 Class B,				
	Interference immunity, degree of severity 3	EN 50082-2 EN 61000-4-2, EN 61000-4-3, EN 61000-4-4, EN 61000-4-5, EN 61000-4-6, EN 61000-4-11				
	Safety, class of protection 1	EN 60950				
High voltage test to EN 60950	Input-output	4.3 kV_{DC}				
	Input PE	2.2 kV_{DC}				
	Output PE	0.7 kV_{DC}				
UL 1950		applied for				
Power supply maintenance-free		Yes				
Cooling		Convection				
Operation/storage ambient temperature		0 ... 70°C / -20 ... +85°C				
MTBF at full load, T_U = 40°C		280,000 h (5 V – 220,000 h)				

Schematic wiring diagram



AC/DC switched mode power supplies
Single, 50 W 3.11.2
Single, 80 W 3.11.4
Single, 100 W 3.11.6
Single, 130 W 3.11.8
Dual, 80 W 3.11.10
Dual, 100 W 3.11.12
Triple, 80 W 3.11.14
Triple, 100 W 3.11.16
Triple, 130 W 3.11.18
Triple, 150 / 224 W 3.11.20
Quad, 250 W 3.11.22
Quad, 350 W 3.11.24

AC/DC linear control systems
Single, 8 – 60 W ..3.11.26
Dual, 10 – 58 W ...3.11.28
Triple, 7 – 39 W ...3.11.30

AC/DC non-regulated
Single, 84 W 3.11.32
Single, 240 W 3.11.34

DC/DC converters
Single, 20 to 120 W 3.11.36
Dual, 55 to 72 W ..3.11.38
Triple, 64 to 70 W 3.11.40
Quad, 250 W 3.11.42
Quad, 350 W 3.11.44

Accessories
Mating connector female connector H 15 F 3.11.46
Keying/coding 3.11.47
Guide rails 3.11.47
Z-rails 3.11.47
EMC contact strips 3.11.48
Wall/horizontal rail installation 3.11.49

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19" compatible AC/DC switched mode

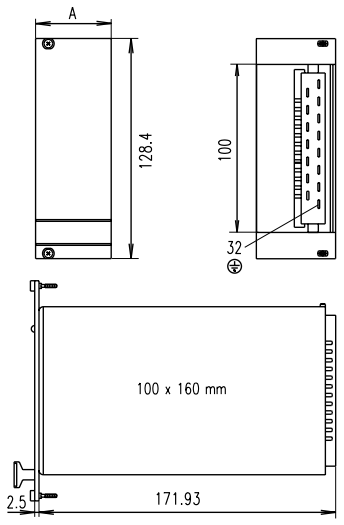


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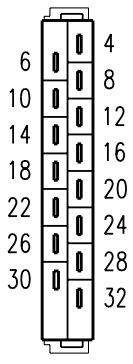
EN 60950

Single, 130 W *ecopower*

- 19" compatible AC/DC switched mode power supplies, pluggable 3 U
- Wide range mains input voltage (90 – 254 V_{AC} and 100 – 360 V_{DC})
- Power factor correction (PFC) to EN 61000-3-2
- 1 output voltage
- Redundancy operation with integrated decoupling diode
- Even current share in the event of parallel operation via current share bus (CSB)
- Signalling: Output voltage OK
- For industrial and telecommunications applications
- International approvals EN 60950, UL
- High reliability and long life
- Cost-optimized



DIJM0084



PSA46292

Pin	Connection
4	Output + V_1
6	
8	Sense + V_1
10	Sense 0V V_1
12	Output 0V V_1
14	
16	
18	
20	
22	CSB
24	Output OK
26	–
28	L
30	N
32	PE ⏚

Note
The front panel is not included in delivery.

Output data at T_U = 0 ... 50 °C					Order No.[1]		
Voltage in V	Current (with 190 V_{AC}) in A	Power output in W	Height in U	Width A in HP	Power supply Type	Mains voltage 90 – 254 V_{AC}	Front panel[2] EMC
3.3	22,0	72			SEG 103	**13100-090**	
5		110			SEG 105	**13100-091**	
12	11,0	132	3	12	SEG 112	**13100-092**	**21006-946**
15	8.8				SEG 115	**13100-093**	
24	5.5				SEG 124	**13100-094**	

[1] Please order front panel separately

[2] Front anodised, rear side chromated, slotted on both sides for mounting EMC contact strips in the event of increased EMC requirements
(3 U EMC contact strips, Order No. 21101-705, 10 pieces)

Mating connector H15F with FASTON connection, Order No. 69001-733

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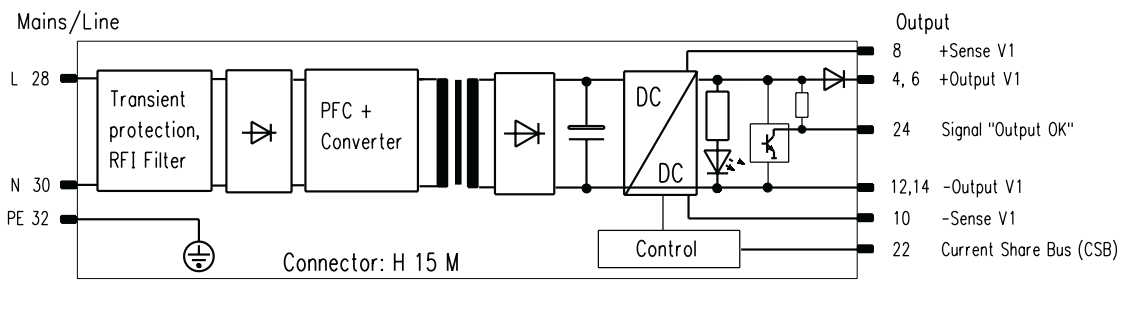
19″ compatible AC/DC switched mode

Technical data

Input parameters						
Mains-voltage	Nominal values V_{AC}	100 – 240 V_{AC}				
	Operating-ranges	90 – 254 V_{AC} 100 – 360 V_{DC}				
Mains nominal current at 90 V_{AC}		2 A				
Mains frequency range		50 – 60 Hz				
Power factor correction in accordance with		EN 61000-3-2				
Efficiency type		65 %	69 %	80 %		83 %
Switch-on current I_P (with 230 V_{AC})		< 20 A				
Output parameters at		**190/90 V_{AC}**				
Output power (50 °C) [W]		72/66	110/100	132/120		132/120
Output voltage [V]	factory set	3.3	5	12	15	24
	Adjustment range Δ V	2.6–3.5	4.6–5.3	10.6–15.4		21.8–26
Output current [A]	0 ... 50°C	22/20		11/10	8.8/8	5.5/5
Current limitation shuts the output off after approx. 5 ms, auto-matically resets after approx. 2 s, shuts power supply off following longer overload.		Permanently short-circuit resistant				
Residual ripple/ Interference voltage (BW: 30 MHz) [mV_{PP}]		< 200				
Mains and load control, static (load change 0 – 100 %) [mV_{PP}]		< 10		< 20		< 100
Temperature coefficient		-0.015 %/K				
CSB and output decoupled via diode		mounted				
Dynamic control deviations (load change: 10 ... 100 % with 100 Hz; dI/dt = 0.25 A/µs)						
Control time at 0.01 × $V_{1\ Nominal}$ [ms]		< 0.5				
Overshoot and undershoot amplitude [mV]		< 250				

Protection and monitoring facilities						
Switch-on time		< 1.5 s	< 0.8 s			
Mains fuse		4 A/250 V_{AC}, 5 × 20 mm, EN 60127-2/V				
Power failurebridging at 100 % load		SEG 103, -105, -124 > 20 ms SEG 112 > 10 ms SEG 115 > 5 ms				
Over-voltage protection OVP limits output voltage to		<7.2 V	<8.2 V	<19.5 V		<34.2V
Remote sense compensated		Max. 0.5 V				
"Output voltage ok" signalling		"Output OK" signal, active high				
	High level [V]	3.3	5	12	15	20
	Time delay	100 – 250 ms				
Test and environmental conditions						
Climatic test to		IEC 68-2-38				
Shock and vibration test in accordance with acceleration of 2 g		EN 60068-2-6				
Height 3 U/ depth 160 mm		Width 12 HP				
Weight (mass)		0.9 kg				
CE	Interference emission	EN 50081-1, EN 55011 Class B,				
	interference immunity,	EN 50082-2, EN 61000-4-2, EN 61000-4-3, EN 61000-4-4, EN 61000-4-5, EN 61000-4-6,				
	Safety, class of protection 1	EN 60950				
High voltage test to EN 60950	Input-output	4.3 kV_{DC}				
	Input PE	2.2 kV_{DC}				
	Output PE	0.7 kV_{DC}				
UL 1950		applied for				
Power supply maintenance-free		Yes				
Cooling		Convection				
Operation/storage ambient temperature		0 ... 70 °C / -20 ... +85 °C				
MTBF at full load, T_U = 40°C		310,000 h (5 V – 230,000 h)				

Schematic wiring diagram



AC/DC switched mode power supplies
Single, 50 W 3.11.2
Single, 80 W 3.11.4
Single, 100 W 3.11.6
Single, 130 W 3.11.8
Dual, 80 W 3.11.10
Dual, 100 W 3.11.12
Triple, 80 W 3.11.14
Triple, 100 W 3.11.16
Triple, 130 W 3.11.18
Triple, 150 / 224 W 3.11.20
Quad, 250 W 3.11.22
Quad, 350 W 3.11.24

AC/DC linear control systems
Single, 8 – 60 W ..3.11.26
Dual, 10 – 58 W ...3.11.28
Triple, 7 – 39 W ...3.11.30

AC/DC non-regulated
Single, 84 W 3.11.32
Single, 240 W 3.11.34

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Single, 20 to 120 W 3.11.36
Dual, 55 to 72 W ..3.11.38
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Wall/horizontal rail installation 3.11.49

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Power supply units..... 3.10.0
19" compatible.....3.11.0
Open frame.....3.12.0
Power systems.....3.13.0
Uninterruptable power supplies (UPS) 3.14.0

Backplanes/ test adapters .. 3.20.0

Microcomputer packaging systems (MPS) 3.30.0

Appendix..... 3.90.0

19" compatible AC/DC switched mode

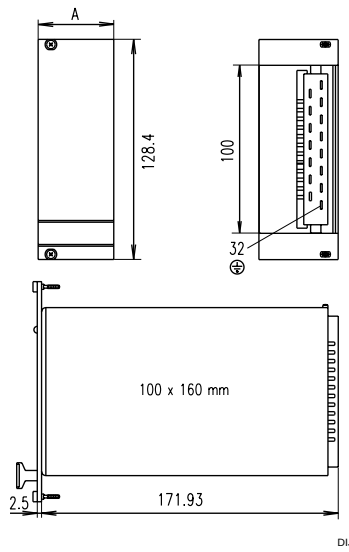


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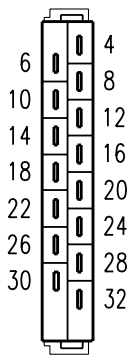
Dual, 80 W *ecopower*

- 19" compatible AC/DC switched mode power supplies, pluggable 3 U
- Wide range mains input voltage (90 – 254 V_{AC} and 100 – 360 V_{DC})
- Power factor correction (PFC) to EN 61000-3-2
- 2 output voltages
- For industrial applications
- International approvals EN 60950, UL
- High reliability and long life
- Cost-optimized

VDE EN 60950 CE



DIJM0084



PSA46292

Pin	Connection
4	–
6	
8	
10	
12	
14	
16	Output + V_1
18	Output 0V V_1
20	Output + V_2
22	Output 0V V_2
24	–
26	
28	L
30	N
32	PE ⏚

Note
The front panel is not included in delivery.

Output data at T_U = 0 ... 50 °C							Order No.[1]		
Voltage in V		Current (with 190 V_{AC}) in A		Power output	Height	Width A	Power supply	Mains voltage	Front panel[2] EMC
V_1	V_2	I_1	I_2	in W	in U	in HP	Type	90 – 254 V_{AC}	
+5	+12	7	3.5	75	3	8	SEM 2512	**13100-066**	**21006-945**
+5	+24	7	1,8	78			SEM 2524	**13100-067**	
+12	-12	3.5	3.5	84			SEM 212	**13100-064**	
+15	-15	2.8	2.8				SEM 215	**13100-068**	

[1] Please order front panel separately

[2] Front anodised, rear side chromated, slotted on both sides for mounting EMC contact strips in the event of increased EMC requirements
(3 U EMC contact strips, Order No. 21101-705, 10 pieces)

Mating connector H15F with FASTON connection, Order No. 69001-733

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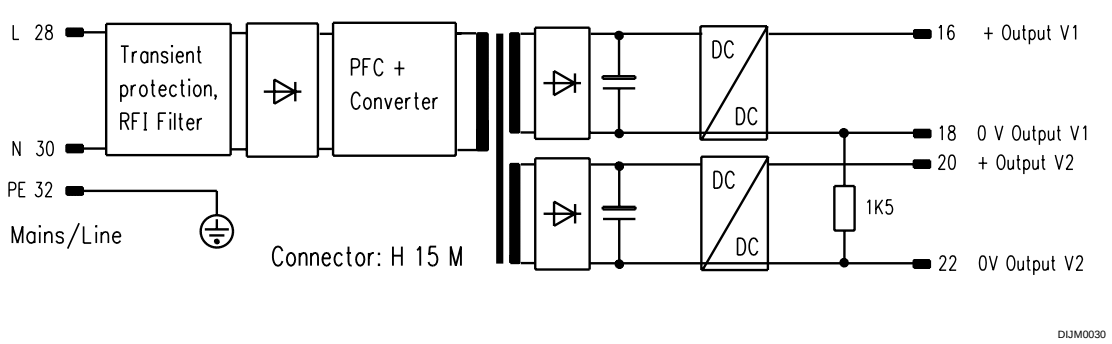
19″ compatible AC/DC switched mode

Technical data

Input parameters					
Mains-voltage	Nominal values V_{AC}	100 – 240 V_{AC}			
	Operating-ranges	90 – 254 V_{AC} 100 – 360 V_{DC}			
Mains nominal current at 90 V_{AC}		1.4 A			
Mains frequency range		50 – 60 Hz			
Power factor correction in accordance with		EN 61000-3-2			
Efficiency type		74 – 80 %			
Switch-on current I_P (with 230 V_{AC})		< 15 A			
Output parameters at		**190/90 V_{AC}**			
Output power max.		75 – 84 / 66 – 72 W			
Output voltage [V]		V_1, V_2			
	factory set	5	12	15	24
	Adjustment-range Δ V	4.95–5.5	11.5–15.7		24–25.2
Output current [A]	0 ... 50 °C V_1 V_2	7/6	3.5/3 3.5/3	2.8/2.4 2.8/2.4	1.8/1.3
	70 °C V_1 V_2	5/4	2.7/2.2 2.7/2.2	2.2/1.8 2.2/1.8	1/0.8
Current limitation shuts the output off after approx. 20 ms, automatically resets after approx. 2 s		Permanently short-circuit protected			
Residual ripple/ interferencevoltage (BW: 30 MHz) [mV_{PP}]		< 150			
Mains and load control, static (load change 0 – 100 %) [mV_{PP}]		< 100	< 120	< 150	< 100
Temperature coefficient		-0.015 %/K			
Dynamic control deviations (load change: 10 ... 100 % with 100 Hz; dI/dt = 0.25 A/µs)					
Control time at 0.01 × $V_{1\ Nominal}$ [ms]		< 0.3			
Overshoot and undershoot amplitude [mV]		< 200	< 250		< 100

Protection and monitoring facilities				
Switch-on time		< 1.5 s		
Mains fuse		4 A/250 V_{AC}, 5 × 20 mm, EN 60127-2/V		
Power failurebridging at V_{AC} = 90 V_{AC} and 100 % load		> 20 ms		
Over-voltage protection OVP		7.5 V	18 V	30 V
Test and environmental conditions				
Climatic test to		IEC 68-2-38		
Shock and vibration test in accordance with acceleration of 2 g		EN 60068-2-6		
Height 3 U/depth 160 mm		Width 8 HP		
Weight (mass)		0.55 kg		
CE	Interference emission	EN 50081-1, EN 55011 Class B,		
	interference-immunity, degree of severity 3	EN 50082-2, EN 61000-4-2, EN 61000-4-3, EN 61000-4-4, EN 61000-4-5, EN 61000-4-6,		
	Safety, class of protection 1	EN 60950		
High voltage test to EN 60950	Input-output	4.3 kV_{DC}		
	Input PE	2.2 kV_{DC}		
	Output PE	0.7 kV_{DC}		
UL 1950		applied for		
Power supply maintenance-free		Yes		
Cooling		Convection		
Operation/storage ambient temperature		0 ... 70 °C / -20 ... +85 °C		
MTBF at full load, T_U = 40 °C		350,000 h		

Schematic wiring diagram



AC/DC switched mode power supplies
Single, 50 W 3.11.2
Single, 80 W 3.11.4
Single, 100 W 3.11.6
Single, 130 W 3.11.8
Dual, 80 W 3.11.10
Dual, 100 W 3.11.12
Triple, 80 W 3.11.14
Triple, 100 W 3.11.16
Triple, 130 W 3.11.18
Triple, 150 / 224 W 3.11.20
Quad, 250 W 3.11.22
Quad, 350 W 3.11.24

AC/DC linear control systems
Single, 8 – 60 W ..3.11.26
Dual, 10 – 58 W ...3.11.28
Triple, 7 – 39 W ...3.11.30

AC/DC non-regulated
Single, 84 W 3.11.32
Single, 240 W 3.11.34

DC/DC converters
Single, 20 to 120 W 3.11.36
Dual, 55 to 72 W ..3.11.38
Triple, 64 to 70 W 3.11.40
Quad, 250 W 3.11.42
Quad, 350 W 3.11.44

Accessories
Mating connector female connector H 15 F 3.11.46
Keying/coding 3.11.47
Guide rails 3.11.47
Z-rails 3.11.47
EMC contact strips 3.11.48
Wall/horizontal rail installation 3.11.49

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Power supply units..... 3.10.0
19" compatible.....3.11.0
Open frame.....3.12.0
Power systems.....3.13.0
Uninterruptable power supplies (UPS) 3.14.0

Backplanes/ test adapters .. 3.20.0

Microcomputer packaging systems (MPS) 3.30.0

Appendix..... 3.90.0

19" compatible AC/DC switched mode

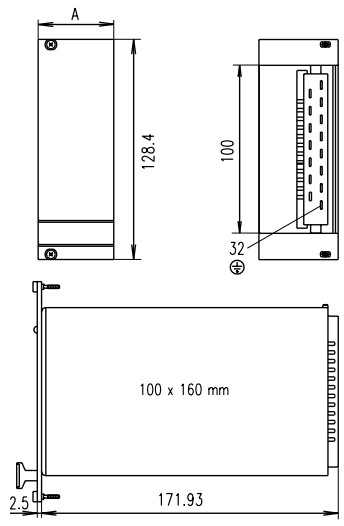


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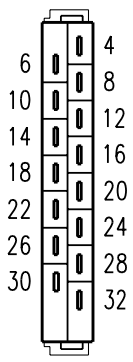
Dual, 100 W *maxpower*

- 19" compatible AC/DC switched mode power supplies, pluggable 3 U
- Wide range mains input voltage (90 – 254 V_{AC} and 100 – 360 V_{DC})
- Power factor correction (PFC) to EN 61000-3-2
- 2 output voltages
- For industrial applications
- International approvals EN 60950, UL
- High reliability and long life
- Cost-optimized

VDE EN 60950 CE UL



DIJM0084



PSA46292

Pin	Connection
4	–
6	
8	
10	
12	
14	
16	Output + V_1
18	Output 0V V_1
20	Output + V_2
22	Output 0V V_2
24	–
26	
28	L
30	N
32	PE ⏚

Note
The front panel is not included in delivery.

Output data at T_U = 0 ... 50 °C							Order No.[1]		
Voltage in V		Current (with 190 V) in A		Power output	Height	Width A	Power supply	Mains voltage	Front panel[2] EMC
V_1	V_2	I_1	I_2	in W	in U	in HP	Type	90 – 254 V_{AC}	
+5	+12	9	4	93	3	8	MAX 2512	**13100-112**	**21006-945**
+5	+24	9	2				MAX 2524	**13100-114**	
+12	-12	4.2	4.2	101			MAX 212	**13100-115**	
+15	-15	3.4	3.4	102			MAX 215	**13100-116**	

[1] Please order front panel separately

[2] Front anodised, rear side chromated, slotted on both sides for mounting EMC contact strips in the event of increased EMC requirements
(3 U EMC contact strips, Order No. 21101-705, 10 pieces)

Mating connector H15F with FASTON connection, Order No. 69001-733

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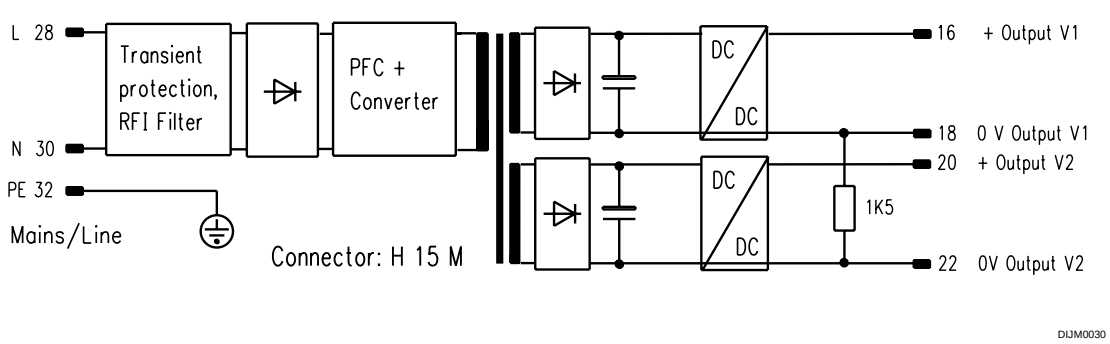
19″ compatible AC/DC switched mode

Technical data

Input parameters					
Mains-voltage	Nominal values V_{AC}	100 – 240 V_{AC}			
	Operating-ranges	90 – 254 V_{AC} 100 – 360 V_{DC}			
Mains nominal current at 90 V_{AC}		1.4 A			
Mains frequency range		50 – 60 Hz			
Power factor correction in accordance with		EN 61000-3-2			
Efficiency type		73 – 80 %			
Switch-on current I_P (with 230 V_{AC})		< 15 A			
Output parameters at		**190/90 V_{AC}**			
Output power max.		93 – 102 / 77 – 82 W			
Output voltage [V]		V_1, V_2			
	factory set	5	12	15	24
	Adjustment-range Δ V	4.95–5.5	11.5–15.7		24–25.2
Output current [A]	0 ... 50 °C V_1 V_2	9/7	4.2/3.4 4.2/3.4	3.4/2.7 3.4/2.7	2/1.6
	70 °C V_1 V_2	6/5	3.2/2.5 3.2/2.5	2.6/2 2.6/2	1.5/1.2
Current limitation shuts the output off after approx. 20 ms, automatically resets after approx. 2 s		Permanently short-circuit protected			
Residual ripple/ interferencevoltage (BW: 30 MHz) [mV_{PP}]		< 120	< 150	< 180	
Mains and load control, static (load change 0 – 100 %) [mV_{PP}]		< 180	< 130	< 180	< 180
Temperature coefficient		-0.015 %/K			
Dynamic control deviations (load change: 10 ... 100 % with 100 Hz; dI/dt = 0.25 A/µs)					
Control time at 0.01 × $V_{1\ Nominal}$		< 0.8 ms			
Overshoot and undershoot amplitude		< 250 mV			

Protection and monitoring facilities					
		5 V	12 V	15 V	24 V
Switch-on time		< 1.5 s			
Mains fuse		4 A/250 V_{AC}, 5 × 20 mm, EN 60127-2/V			
Power failurebridging at V_{AC} = 90 V_{AC} and 100 % load		> 10 ms	> 7 ms		> 20 ms
Over-voltage protection OVP (shuts power supply off)		7.5 V	18 V		30 V
Test and environmental conditions					
Climatic test to		IEC 68-2-38			
Shock and vibration test in accordance with acceleration of 2 g		EN 60068-2-6			
Height 3 U/depth 160 mm		Width 8 HP			
Weight (mass)		0.55 kg			
CE	Interference emission	EN 50081-1, EN 55011 Class B,			
	interference-immunity, degree of severity 3	EN 50082-2, EN 61000-4-2, EN 61000-4-3, EN 61000-4-4, EN 61000-4-5, EN 61000-4-6,			
	Safety, class of protection 1	EN 60950			
High voltage test to EN 60950	Input-output	4.3 kV_{DC}			
	Input PE	2.2 kV_{DC}			
	Output PE	0.7 kV_{DC}			
UL 1950		applied for			
Power supply maintenance-free		Yes			
Cooling		Convection			
Operation/storage ambient temperature		0 ... 70 °C / -20 ... +85 °C			
MTBF at full load, T_U = 40 °C		250,000 h			

Schematic wiring diagram



AC/DC switched mode power supplies
Single, 50 W 3.11.2
Single, 80 W 3.11.4
Single, 100 W 3.11.6
Single, 130 W 3.11.8
Dual, 80 W 3.11.10
Dual, 100 W 3.11.12
Triple, 80 W 3.11.14
Triple, 100 W 3.11.16
Triple, 130 W 3.11.18
Triple, 150 / 224 W 3.11.20
Quad, 250 W 3.11.22
Quad, 350 W 3.11.24

AC/DC linear control systems
Single, 8 – 60 W ..3.11.26
Dual, 10 – 58 W ...3.11.28
Triple, 7 – 39 W ...3.11.30

AC/DC non-regulated
Single, 84 W 3.11.32
Single, 240 W 3.11.34

DC/DC converters
Single, 20 to 120 W 3.11.36
Dual, 55 to 72 W..3.11.38
Triple, 64 to 70 W 3.11.40
Quad, 250 W 3.11.42
Quad, 350 W 3.11.44

Accessories
Mating connector female connector H 15 F 3.11.46
Keying/coding 3.11.47
Guide rails 3.11.47
Z-rails 3.11.47
EMC contact strips 3.11.48
Wall/horizontal rail installation 3.11.49

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Power supply units..... 3.10.0
19" compatible.....3.11.0
Open frame.....3.12.0
Power systems.....3.13.0
Uninterruptable power supplies (UPS) 3.14.0

Backplanes/ test adapters .. 3.20.0

Microcomputer packaging systems (MPS) 3.30.0

Appendix..... 3.90.0

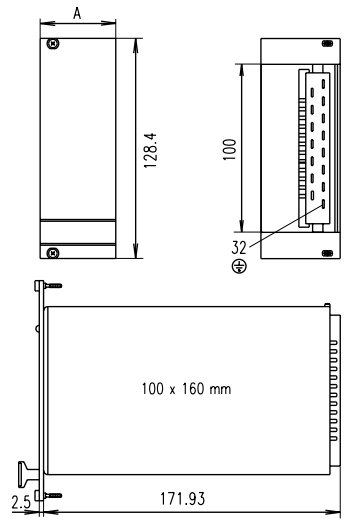
19" compatible AC/DC switched mode



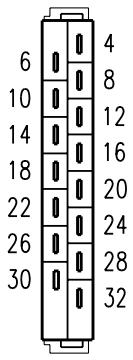
11399007

Triple, 80 W *ecopower*

- 19" compatible AC/DC switched mode power supplies, pluggable 3 U
- Wide range mains input voltage (90 – 254 V_{AC} and 100 – 360 V_{DC})
- Power factor correction (PFC) to EN 61000-3-2
- 3 output voltages
- Signalling: Output voltage OK
- For industrial applications
- International approvals EN 60950, UL
- High reliability and long life
- Cost-optimized



DIJM0084



PSA46292

Pin	Connection
4	Output + V_1
6	
8	Sense + V_1
10	Sense 0V V_1
12	Output 0V V_1 (V_2)
14	
16	Output + V_2
18	Output 0V V_2 (V_1)
20	Output 0V V_3
22	Output - V_3
24	Output OK
26	–
28	L
30	N
32	PE ⏚

Note
The front panel is not included in delivery.

Output data at T_U = 0 ... 50 °C									Order No.[1]		
Voltage in V			Current (with 190 V_{AC}) in A			Power output	Height	Width A	Power supply	Mains voltage	Front panel[2] EMC
V_1	V_2	V_3	I_1	I_2	I_3	in W	in U	in HP	Type	90 – 254 V_{AC}	
+5	+12	-12	7	1,9	1,9	81	3	8	SEM 312	**13100-069**	**21006-945**
+5	+15	-15	7	1.5	1.5	80			SEM 315	**13100-070**	

[1] Please order front panel separately

[2] Front anodised, rear side chromated, slotted on both sides for mounting EMC contact strips in the event of increased EMC requirements
(3 U EMC contact strips, Order No. 21101-705, 10 pieces)

Mating connector H15F with FASTON connection, Order No. 69001-733

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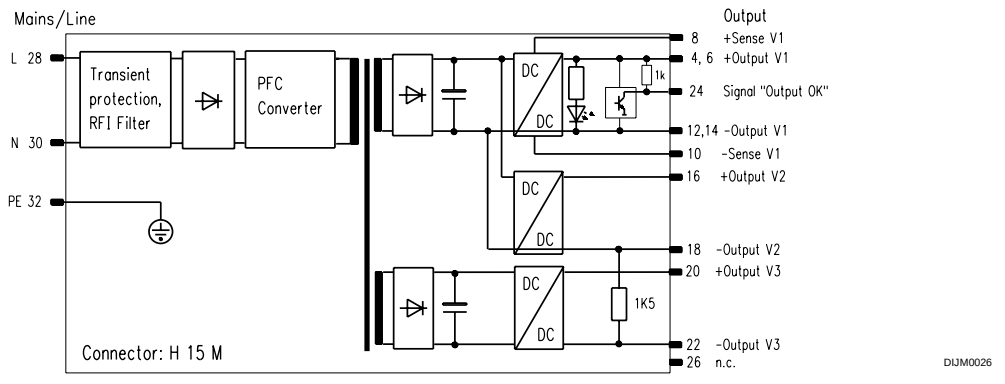
19″ compatible AC/DC switched mode

Technical data

Input parameters				
Mains-voltage	Nominal values V_{AC}	100 – 240 V_{AC}		
	Operating-ranges	90 – 254 V_{AC} 100 – 360 V_{DC}		
Mains nominal current at 90 V_{AC}		1.4 A		
Mains frequency range		50 – 60 Hz		
Power factor correction in accordance with		EN 61000-3-2		
Efficiency type		> 74 %		
Switch-on current I_P (with 230 V_{AC})		< 15 A		
Output parameters at		**190/90 V_{AC}**		
Output power max. (50°C) [W]		35/25	45/31	
Output voltage [V]		V_1	V_2, V_3	
	factory set	5 V	±12 V	±15 V
	Adjustment-range Δ V	4.95–5.5	11.5–15.7	11.5–15.7
Output current [A]	0 ... 50°C	7/6.5	1.9/1.4	1.5/1.1
	70°C	5/5	1.3/1	1.0/0.8
Current limitation shuts the output off after approx. 20 ms, automatically resets after approx. 0.5 s		Permanently short-circuit protected		
Residual ripple/ interferencevoltage (BW: 30 MHz) [mV_{PP}]		< 120	< 300	
Mains and load control, static (load change 0 – 100 %) [mV_{PP}]		< 50	< 120	
Temperature coefficient		-0.015 %/K		
Dynamic control deviations (load change: 10 ... 100 % with 100 Hz; dI/dt = 0.25 A/µs)				
Control time at 0.01 × $V_{1\ Nominal}$ [ms]		< 0.8		
Overshoot and undershoot amplitude [mV]		< 250		

Protection and monitoring facilities		
Switch-on time		< 1.5 s
Mains fuse		4 A/250 V_{AC}, 5 × 20 mm, EN 60127-2/V
Power failurebridging at V_{AC} = 90 V_{AC} and 100 % load		> 20 ms
Over-voltage protection OVP (shuts power supply off)		V_1: 7.5 V
"Output voltage ok" signalling		"Output OK" signal, active high
Test and environmental conditions		
Climatic test to		IEC 68-2-38
Shock and vibration test in accordance with acceleration of 2 g		EN 60068-2-6
Height 3 U/depth 160 mm		Width 8 HP
Weight (mass)		0.55 kg
CE	Interference emission	EN 50081-1, EN 55011 Class B,
	interference-immunity, degree of severity 3	EN 50082-2, EN 61000-4-2, EN 61000-4-3, EN 61000-4-4, EN 61000-4-5, EN 61000-4-6,
	Safety, class of protection 1	EN 60950 (VDE)
High voltage test to EN 60950	Input-output	4.3 kV_{DC}
	Input PE	2.2 kV_{DC}
	Output PE	0.7 kV_{DC}
UL 1950		E 153809
Power supply maintenance-free		Yes
Cooling		Convection
Operation/storage ambient temperature		0 ... 70°C / -20 ... +85°C
MTBF at full load, T_U = 40°C		300,000 h

Schematic wiring diagram



AC/DC switched mode power supplies
Single, 50 W 3.11.2
Single, 80 W 3.11.4
Single, 100 W 3.11.6
Single, 130 W 3.11.8
Dual, 80 W 3.11.10
Dual, 100 W 3.11.12
Triple, 80 W 3.11.14
Triple, 100 W 3.11.16
Triple, 130 W 3.11.18
Triple, 150 / 224 W 3.11.20
Quad, 250 W 3.11.22
Quad, 350 W 3.11.24

AC/DC linear control systems
Single, 8 – 60 W ..3.11.26
Dual, 10 – 58 W ...3.11.28
Triple, 7 – 39 W ...3.11.30

AC/DC non-regulated
Single, 84 W 3.11.32
Single, 240 W 3.11.34

DC/DC converters
Single, 20 to 120 W 3.11.36
Dual, 55 to 72 W..3.11.38
Triple, 64 to 70 W 3.11.40
Quad, 250 W 3.11.42
Quad, 350 W 3.11.44

Accessories
Mating connector female connector H 15 F 3.11.46
Keying/coding 3.11.47
Guide rails 3.11.47
Z-rails 3.11.47
EMC contact strips 3.11.48
Wall/horizontal rail installation 3.11.49

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Power supply units..... 3.10.0
19" compatible.....3.11.0
Open frame.....3.12.0
Power systems.....3.13.0
Uninterruptable power supplies (UPS) 3.14.0

Backplanes/ test adapters .. 3.20.0

Microcomputer packaging systems (MPS) 3.30.0

Appendix..... 3.90.0

19" compatible AC/DC switched mode



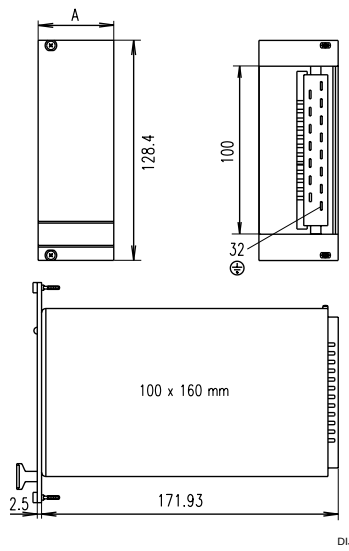
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Triple, 100 W

maxpower

- 19" compatible AC/DC switched mode power supplies, pluggable 3 U
- Wide range mains input voltage (90 – 254 V_{AC} and 100 – 360 V_{DC})
- Power factor correction (PFC) to EN 61000-3-2
- 3 output voltages
- Signalling: Output voltage OK
- For industrial applications
- International approvals EN 60950, UL
- High reliability and long life
- Cost-optimized

EN 60950



DIJM0084

PSA46292

Pin	Connection
4	Output + V_1
6	
8	Sense + V_1
10	Sense 0V V_1
12	Output 0V V_1(V_2)
14	
16	Output + V_2
18	Output 0V V_2 (V_1)
20	Output 0V V_3
22	Output - V_3
24	Output OK
26	–
28	L
30	N
32	PE ⏚

Note
The front panel is not included in delivery.

Output data at T_U = 0 ... 50 °C									Order No.[1]		
Voltage in V			Current (with 190 V_{AC}) in A			Power output	Height	Width A	Power supply	Mains voltage	Front panel[2] EMC
V_1	V_2	V_3	I_1	I_2	I_3	in W	in U	in HP	Type	90 – 254 V_{AC}	
+5	+12	-12	8	2.5	2.5	100	3	8	MAX 312	**13100-122**	**21006-945**
+5	+15	-15	8	2,0	2,0				MAX 315	**13100-123**	

[1] Please order front panel separately

[2] Front anodised, rear side chromated, slotted on both sides for mounting EMC contact strips in the event of increased EMC requirements
3 U EMC contact strips, Order No. 21101-705, 10 pieces

Mating connector H15F with FASTON connection, Order No. 69001-733

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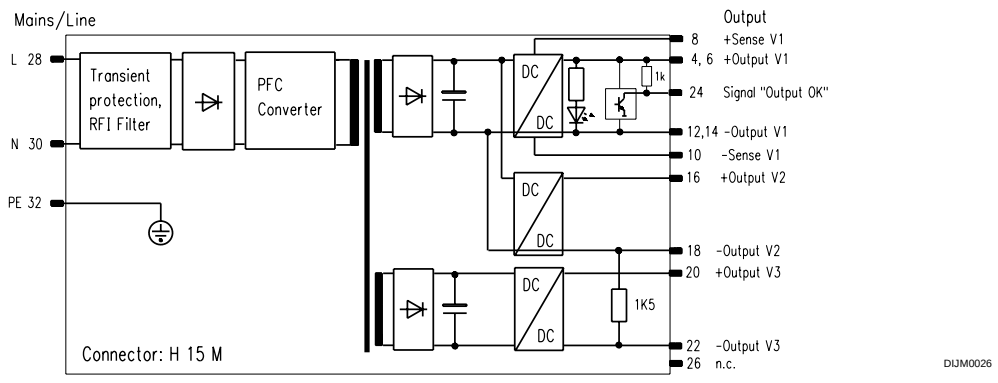
19″ compatible AC/DC switched mode

Technical data

Input parameters				
Mains-voltage	Nominal values V_{AC}	100 – 240 V_{AC}		
	Operating-ranges	90 – 254 V_{AC} 100 – 360 V_{DC}		
Mains nominal current at 90 V_{AC}		1.4 A		
Mains frequency range		50 – 60 Hz		
Power factor correction in accordance with		EN 61000-3-2		
Efficiency type		> 73 %		
Switch-on current I_P (with 230 V_{AC})		< 15 A		
Output parameters at		**190/90 V_{AC}**		
Output power max. (50°C) [W]		40/35	60/38.4	
Output voltage [V]		V_1	V_2, V_3	
	factory set	5 V	± 12 V	± 15 V
	Adjustment-range Δ V	4.95–5.5	11.5–15.7	11.5–15.7
Output current [A]	0 ... 50°C	8/7	2.5/1.6	2/1.3
	70°C	6/5.5	1.5/1.2	1.2/1
Current limitation shuts the output off after approx. 20 ms, automatically resets after approx. 0.5 s		Permanently short-circuit protected		
Residual ripple/ interferencevoltage (BW: 30 MHz) [mV_{PP}]		< 120	< 300	
Mains and load control, static (load change 0 – 100 %) [mV_{PP}]		< 50	< 120	
Temperature coefficient		-0.015 %/K		
Dynamic control deviations (load change: 10 ... 100 % with 100 Hz; dI/dt = 0.25 A/µs)				
Control time at 0.01 × $V_{1\ Nominal}$ [ms]		< 0.8		
Overshoot and undershoot amplitude [mV]		< 250		

Protection and monitoring facilities			
Switch-on time		< 1.5 s	
Mains fuse, high breaking sluggish		4 A/250 V_{AC}, 5 × 20 mm, DIN EN 60127-2/V	
Power failurebridging at V_{AC} = 90 V_{AC} and 100 % load $V_1/V_{2,3}$		> 16 ms/5 ms	
Over-voltage protection OVP (shuts power supply off, diode alloyed through) set to		< 7.2 V	–
Remote sense compensated		Max. 0.5 V	
"Output voltage ok" signalling		"Output OK" signal, active high	
Test and environmental conditions			
Climatic test to		IEC 68-2-38	
Shock and vibration test in accordance with acceleration of 2 g		EN 60068-2-6	
Height 3 U/depth 160 mm		Width 8 HP	
Weight (mass)		0.55 kg	
CE	Interference emission	EN 50081-1, EN 55011 Class B,	
	interference-immunity, degree of severity 3	EN 50082-2, EN 61000-4-2, EN 61000-4-3, EN 61000-4-4, EN 61000-4-5, EN 61000-4-6,	
	Safety, class of protection 1	EN 60950	
High voltage test to EN 60950	Input-output	4.3 kV_{DC}	
	Input PE	2.2 kV_{DC}	
	Output PE	0.7 kV_{DC}	
UL 1950		applied for	
Power supply maintenance-free		Yes	
Cooling		Convection	
Operation/storage ambient temperature		0 ... 70°C / -20 ... +85°C	
MTBF at full load, T_U = 40°C		220,000 h	

Schematic wiring diagram



AC/DC switched mode power supplies
Single, 50 W 3.11.2
Single, 80 W 3.11.4
Single, 100 W 3.11.6
Single, 130 W 3.11.8
Dual, 80 W 3.11.10
Dual, 100 W 3.11.12
Triple, 80 W 3.11.14
Triple, 100 W 3.11.16
Triple, 130 W 3.11.18
Triple, 150 / 224 W 3.11.20
Quad, 250 W 3.11.22
Quad, 350 W 3.11.24

AC/DC linear control systems
Single, 8 – 60 W ..3.11.26
Dual, 10 – 58 W ...3.11.28
Triple, 7 – 39 W ...3.11.30

AC/DC non-regulated
Single, 84 W 3.11.32
Single, 240 W 3.11.34

DC/DC converters
Single, 20 to 120 W 3.11.36
Dual, 55 to 72 W ..3.11.38
Triple, 64 to 70 W 3.11.40
Quad, 250 W 3.11.42
Quad, 350 W 3.11.44

Accessories
Mating connector female connector H 15 F 3.11.46
Keying/coding 3.11.47
Guide rails 3.11.47
Z-rails 3.11.47
EMC contact strips 3.11.48
Wall/horizontal rail installation 3.11.49

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Power supply units..... 3.10.0
19" compatible.....3.11.0
Open frame.....3.12.0
Power systems.....3.13.0
Uninterruptable power supplies (UPS) 3.14.0

Backplanes/ test adapters .. 3.20.0

Microcomputer packaging systems (MPS) 3.30.0

Appendix..... 3.90.0

19" compatible AC/DC switched mode



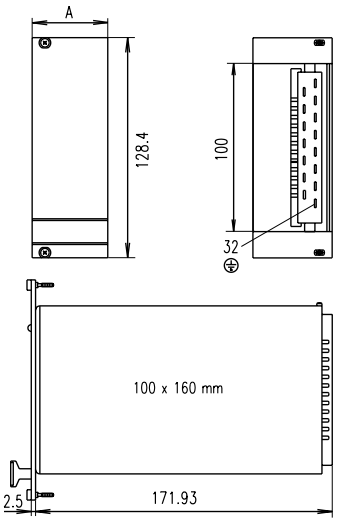
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Triple, 130 W

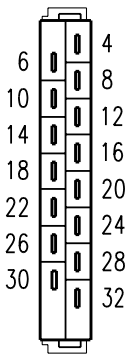
ecopower

- 19" compatible AC/DC switched mode power supplies, pluggable 3 U
- Wide range mains input voltage (90 – 254 V_{AC} and 100 – 360 V_{DC})
- Power factor correction (PFC) to EN 61000-3-2
- 3 output voltages
- Signalling: Output voltage OK
- For industrial applications
- International approvals EN 60950, UL
- High reliability and long life
- Cost-optimized

VDE EN 60950



DIJM0084



PSA46292

Pin	Connection
4	Output + V_1
6	
8	Sense + V_1
10	Sense 0V V_1
12	Output 0V V_1 ($V_{2.3}$)
14	
16	Output + V_2
18	Output 0V $V_{2.3}$ (V_1)
20	
22	Output - V_3
24	Output OK
26	–
28	L
30	N
32	PE ⏚

Note
The front panel is not included in delivery.

Output data at mains voltage 190 V, T_U = 0 ... 50 °C									Order No.[1]		
Voltage in V			Current (with 190 V_{AC}) in A			Power output	Height	Width A	Power supply	Mains voltage	Front panel[2] EMC
V_1	V_2	V_3	I_1	I_2	I_3	in W	in U	in HP	Type	90 – 254 V_{AC}	
+5	+12	-12	16	2.8	1.4	132	3	12	SEG 312	**13100-078**	**21006-946**
+5	+15	-15	16	2.2	1.1	132			SEG 315	**13100-079**	

[1] Please order front panel separately

[2] Front anodised, rear side chromated, slotted on both sides for mounting EMC contact strips in the event of increased EMC requirements
(3 U EMC contact strips, Order No. 21101-705, 10 pieces)

Mating connector H15F with FASTON connection, Order No. 69001-733

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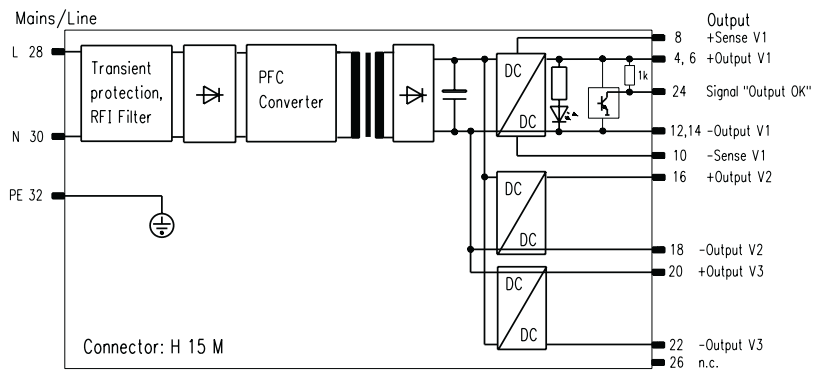
19″ compatible AC/DC switched mode

Technical data

Input parameters				
Mains-voltage (wide range input)	Nominal values V_{AC}	100 – 240 V_{AC}		
	Operating-ranges	90 – 254 V_{AC} 100 – 360 V_{DC}		
Mains nominal current at 90 V_{AC}		2 A		
Mains frequency range		50 – 60 Hz		
Power factor correction in accordance with		EN 61000-3-2		
Efficiency type		75 %		
Switch-on current I_P (with 230 V_{AC})		< 15 A		
Output parameters at		**190/90 V_{AC}**		
Output power max. (50°C) [W]		80/65	67/33	
Output voltage [V]		V_1	V_2, V_3	
	factory set	5 V	± 12 V	± 15 V
	Adjustment-range Δ V	4.6–5.3	11.1–15.8	
Output current [A]	0 ... 50°C	16/13	2.8/1.4	2.2/1.1
	70°C	11/8	2/1	1.6/0.67
Current limitation shuts the output off after approx. 14 ms, automatically resets after approx. 0.2 s		Permanently short-circuit protected		
Residual ripple/ interferencevoltage (BW: 30 MHz) [mV_{PP}]		< 250		< 350
Mains and load control, static (load change 0 – 100 %) [mV_{PP}]		< 30	< 90	
Temperature coefficient		-0.015 %/K		
Dynamic control deviations (load change: 10 ... 100 % with 100 Hz; U_3: 20 ... 100 %; dI/dt = 0.25 A/µs)				
Control time at 0.01 × $V_{1\ Nominal}$ [ms]		< 0.5		
Overshoot and undershoot amplitude [mV]		< 250	<250/ 550	< 300

Protection and monitoring facilities				
Switch-on time		< 2 s		
Mains fuse		4 A/250 V_{AC}, 5 × 20 mm, EN 60127-2/V		
Power failurebridging at 100 % load		> 5 ms		
Over-voltage protection OVP typically limits output voltage to		6.3 V	13 V	16.2 V
Remote sense compensated per line		Max. 0.25 V		
"Output voltage ok" signalling		active high		
	High level	5 V		
	Time delay	100 – 250 ms		
Test and environmental conditions				
Climatic test to		IEC 68-2-38		
Shock and vibration test in accordance with acceleration of 2 g		EN 60068-2-6		
Height 3 U/depth 160 mm		Width 12 HP		
Weight (mass)		0.8 kg		
CE	Interference-emission	EN 50081-1, EN 55011 Class B,		
	interference-immunity, degree of severity 3	EN 50082-2, EN 61000-4-2, EN 61000-4-3, EN 61000-4-4, EN 61000-4-5, EN 61000-4-6		
	Safety, class of protection 1	EN 60950		
High voltage test to EN 60950	Input-output	4.3 kV_{DC}		
	Input PE	2.2 kV_{DC}		
	Output PE	0.7 kV_{DC}		
	Output-output	0.7 kV_{DC}		
UL 1950		applied for		
Power supply maintenance-free		Yes		
Cooling		Convection		
Operation/storage ambient temperature		0 ... 70°C / -20 ... +85°C		
MTBF at full load, T_U = 40°C		200,000 h		

Schematic wiring diagram



AC/DC switched mode power supplies
Single, 50 W 3.11.2
Single, 80 W 3.11.4
Single, 100 W 3.11.6
Single, 130 W 3.11.8
Dual, 80 W 3.11.10
Dual, 100 W 3.11.12
Triple, 80 W 3.11.14
Triple, 100 W 3.11.16
Triple, 130 W 3.11.18
Triple, 150 / 224 W 3.11.20
Quad, 250 W 3.11.22
Quad, 350 W 3.11.24

AC/DC linear control systems
Single, 8 – 60 W ..3.11.26
Dual, 10 – 58 W ...3.11.28
Triple, 7 – 39 W ...3.11.30

AC/DC non-regulated
Single, 84 W 3.11.32
Single, 240 W 3.11.34

DC/DC converters
Single, 20 to 120 W 3.11.36
Dual, 55 to 72 W ..3.11.38
Triple, 64 to 70 W 3.11.40
Quad, 250 W 3.11.42
Quad, 350 W 3.11.44

Accessories
Mating connector female connector H 15 F 3.11.46
Keying/coding 3.11.47
Guide rails 3.11.47
Z-rails 3.11.47
EMC contact strips 3.11.48
Wall/horizontal rail installation 3.11.49

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Power supply units..... 3.10.0
19" compatible.....3.11.0
Open frame.....3.12.0
Power systems.....3.13.0
Uninterruptable power supplies (UPS) 3.14.0

Backplanes/ test adapters .. 3.20.0

Microcomputer packaging systems (MPS) 3.30.0

Appendix..... 3.90.0

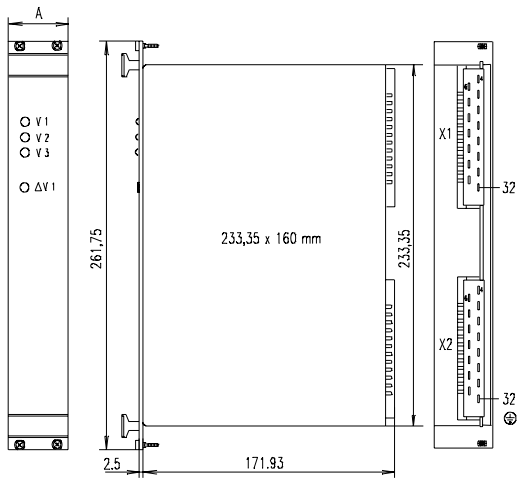
19" compatible AC/DC switched mode



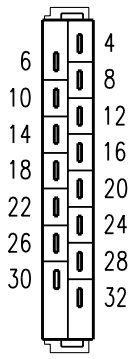
11396012

Triple, 150 / 224 W

- MPS series
- 19" compatible AC/DC switched mode power supplies, pluggable 6 U, for VME bus and other applications
- Wide range input voltage (90 – 264 V_{AC} and 130 – 350 V_{DC})
- Power factor correction (PFC) to EN 61000-3-2
- 3 output voltages
- VME bus signalling
- For industrial applications
- International approvals EN 60950, UL
- High reliability and long life



PSA44726



PSA46292

Pin	Connection	
	X1 (at top)	X2 (at bottom)
4	Output + V_1	ACFAIL*
6		SYSRESET*
8		–
10		Current Share Bus
12		Shut down 4 ... 28 V
14	Sense + V_1	GND Shutdown
16	Output - V_3	–
18	Output 0V $V_{1,2,3}$	
20		
22		
24		
26		
28	Output + V_2	L
30		N
32	Sense 0V V_1	PE ⏚

Output data at T_U = 0 ... 40 °C									Order No. incl. mounted EMC Front panel[1]	
Voltage in V			Current in A			Power output in W total	Height	Width A	Power supply	Mains voltage
V_1	V_2	V_3	I_1	I_2	I_3	(V_2+V_3)	in U	in HP	Type	90 – 264 V_{AC}
+5	+12	-12	20	4,0	3,0	150 (60)	6	8	MPS 015	**13100-205**
+5	+12	-12	28	7,0	3,0	224 (84)		12	MPS 022	**13100-203**
+5	+15	-15	28	5,6	2.4	224 (84)		12	MPS 022/15	**13100-204**

[1] Front panel: Front anodised, rear side chromated, slotted on both sides for mounting EMC contact strips in the event of increased EMC requirements
(6 U EMC contact strips, Order No. 21101-707, 10 pieces)

Mating connector H15F (2× necessary) with FASTON connection, Order No. 69001-733

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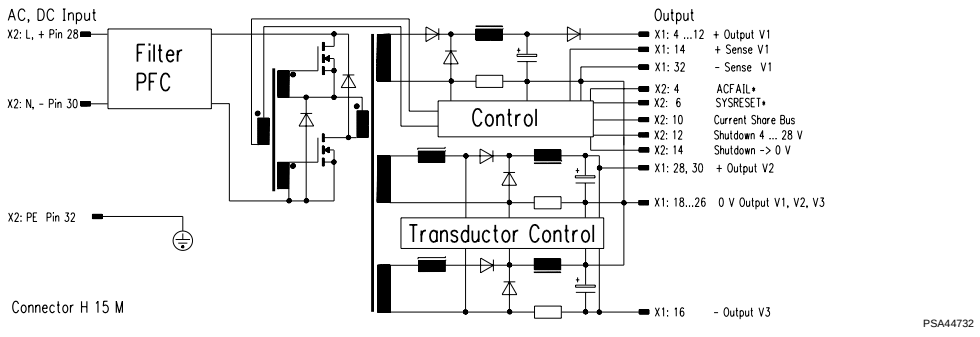
19″ compatible AC/DC switched mode

Technical data

Input parameters							
Mainsvoltage (wide range input)		90 – 264 V_{AC}, 130 – 350 V_{AC}					
Mains nominal current at 90 V_{AC}/187 V_{AC}		MPS 015: 1.4 / 0.8 A, MPS 022: 1.9 / 1.2 A, MPS 022/15: 1.9/1.2 A					
Mains frequency range		47 – 63 Hz					
Power Factor Correction (PFC)		EN 61000-3-2					
Efficiency 115 V_{AC}/230 V_{AC}		70 % / 75 %					
Switch-on current at 230 V_{AC}		< 20 A					
Leakage current		≤ 500 µA					
Output parameters							
Output power at 40 °C total unit/ auxilary voltages $V_{2.3}$		MPS 015: 150 W / max. 60 W MPS 022: 224 W / max. 84 W					
Output voltage	metalically separated	V_1	V_2, V_3				
	factory set	5	+12	-12	+15	-15	
	Adjustment range in V	4.5 ... 5.5	11.5 ... 13		13 ... 16		
			MPS 015: 11.5 ... 16 V				
Output current 0 ... 40 °C	MPS 015 (UL values) in A	20 (18)	4 (3)	3 (2)	3.2 (2.4)	2.4 (1.6)	
	MPS 022 (UL values) in A	28 (23)	7 (3.5)	3 (2)	5.6 (2.8)	2.4 (1.6)	
Basic load		10 % × $I_{1Nominal}$	–				
Current limitation		U/I curve					
Over-load protection		Permanently short-circuit protected					
Over-voltage protection shuts unit off, automatically resets		OVP, 6.25 V ± 10 %					
Remote sense compensated (+ V_1)		< 0.5 V	–				
Residual ripple at	100 Hz	< 10 mV_{PP}					
	Clock-frequency	< 50 mV_{PP}					
Interference voltage (BW: 100 MHz)		< 100 mV_{PP}					
Load control, static (load change 0 – 100 %)		< 0.1 %	+12, +15 V: < ±1 % -12, -15 V: < ± 1 %				
Mains control at ± 15 % change in mains voltage		5 mV					
External OFF with 4–28 V_{DC} or switch		Connectors X2					
Output decoupled via diode		V_1					

Dynamic control deviations (load change: 10 ... 100 % with 100 Hz; dI/dt = 0.135 A/µs)		
Overall control time		< 0.5 ms
Cross-control		< 0.1 % (V_1), < 0.5 % ($V_{2.3}$)
Overshoot and undershoot amplitude		< 400 mV (V_1), < 300 mV ($V_{2.3}$)
Other characteristics		
Mains fuse 115/230 V_{AC}		4 A/250 V, 5 × 20 mm, EN 60127-2/V
Power failurebridging at V_{IN} = 93 V_{AC} and 100 % load		> 16 ms
SYSRESET*, ACFAIL* signal		Active low, open collector, 48 mA/5 V
Climatic test to		IEC 68-2-38
Shock and vibration in accordance with acceleration of 2 g		EN 60068-2-6
Weight (mass) MPS 015/ MPS 022		1.3 kg/2.4 kg
Dimensions: Height 3 U/ width [HP]		MPS 015 – 8 HP MPS 022 – 12 HP
CE (during the EMC measure-ments, the power supply was mounted in a case)	EMC interference-emission	EN 50081-1, EN 55011 Class B, EN 55022 Class B
	EMC interference-immunity, degree of severity 3	EN 50082-2, EN 61000-4-2, EN 61000-4-3, EN 61000-4-4, EN 61000-4-5, EN 61000-4-6,
	Safety, class of protection 1	EN 60950 (LGA)
Test voltage to EN 60950	Input-output	4.3 kV_{DC}
	Input PE	2.2 kV_{DC}
	Output PE	0.7 kV_{DC}
Safety		UL 1950
Cooling		Convection
Operation/storage ambient temperature		0 ... 70 °C / -20 ... +85 °C
MTBF at full load, T_U = 40 °C		330,000 h (UL value)

Schematic wiring diagram



AC/DC switched mode power supplies
Single, 50 W 3.11.2
Single, 80 W 3.11.4
Single, 100 W 3.11.6
Single, 130 W 3.11.8
Dual, 80 W 3.11.10
Dual, 100 W 3.11.12
Triple, 80 W 3.11.14
Triple, 100 W 3.11.16
Triple, 130 W 3.11.18
Triple, 150 / 224 W 3.11.20
Quad, 250 W 3.11.22
Quad, 350 W 3.11.24

AC/DC linear control systems
Single, 8 – 60 W ..3.11.26
Dual, 10 – 58 W ...3.11.28
Triple, 7 – 39 W ...3.11.30

AC/DC non-regulated
Single, 84 W 3.11.32
Single, 240 W 3.11.34

DC/DC converters
Single, 20 to 120 W 3.11.36
Dual, 55 to 72 W ..3.11.38
Triple, 64 to 70 W 3.11.40
Quad, 250 W 3.11.42
Quad, 350 W 3.11.44

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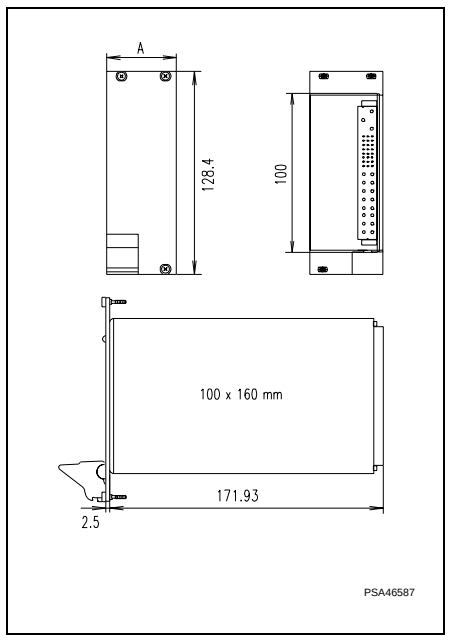
19" compatible AC/DC switched mode



11300003

Quad, 250 W *maxpowerPRO*

- 19" compatible AC/DC switched mode power supplies, pluggable 3 U, for compact PCI and other applications
- Wide range input voltage (90 – 264 V_{AC}, 48 V_{DC} see under DC/DC converters)
- Power factor correction (PFC) to EN 61000-3-2
- 4 output voltages
- Connectors P 47
- Outputs redundant with current share bus
- Hot swap
- Compact PCI signalling
- For industrial and telecommunications applications
- International approvals EN 60950, UL, cUL
- High reliability and long life



Output data at T_U = 0 ... 50 °C											Order No. (1 unit)	
Voltage in V				Current[1] in A				Power output in W total	Height	Width A	Power supply incl. mounted EMC Front panel[2]	Mains voltage
V_1	V_2	V_3	V_4	I_1	I_2	I_3	I_4	(V_1 + V_2)	in U	in HP	Type	90 – 254 V_{AC}
5	3.3	+12	-12	25	25	5	1.5	250 (150)	3	8	CPCI 250	**13100-131**

[1] with forced cooling in the system from 2 m/s

[2] Front panel: Front anodised, rear side chromated, slotted on both sides for mounting EMC contact strips in the event of increased EMC requirements, IEL handle (3 U EMC contact strips, Order No. 21101-853, 10 pieces)

Accessories

Mating connector/intermediate plate 3 U,
Order No. 23098-104

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19″ compatible AC/DC switched mode

Technical data

Input parameters					
Mains-voltage (wide range input)	Nominal values V_{AC}	100 – 240 V_{AC}			
	Operating-ranges	90 – 254 V_{AC}			
Mains nominal current 115 V_{AC}/220 V_{AC}		3.2 A/1.6 A			
Mains frequency range		50 – 60 Hz			
Power factor correction in accordance with		EN 61000-3-2			
Efficiency type		> 70 %			
Switch-on current I_P (with 230 V_{AC})		< 20 A			
Output parameters					
Output power max.: Convection/forced cooling with 2 m/s		75 W/150 W		48 W/78 W	
Output voltage [V]		V_1	V_2	V_3	V_4
	factory set	5 V	3.3 V	12 V	-12 V
	Tolerance	± 50 mV			
Output current [A] 0 ... 50 °C	Convection	15	15	3	1
	Cooling 2 m/s	25	25	5	1.5
	Derating 50 – 70 °C	2 %/K			
Overcurrent protection		all outputs at 120 %			
Residual ripple/ interferencevoltage (bandwidth = BW)		50 mV_{PP} (BW: 20 MHz)		< 100 mV (BW: 20 MHz)	
Load control		+5 % -3 %		± 5 %	
Mains control, static		1 %			
Cross-control		1 %			
Temperature coefficient		-0.02 %/K (0 – 50 °C)			
Connectors, offset 2.54 mm		Positronic P47			
Dynamic control deviations (load change: 50 ... 100 % with 100 Hz; dl/dt = 0.25 A/µs)					
Control time at 0.01 × $V_{1\ Nominal}$		< 1.5 ms			
Overshoot and undershoot amplitude		< 5 %			

Protection and monitoring facilities		
Switch-on time		< 4 s
Mains fuse internal		6.3 A/250 V_{AC}, 5 × 20 mm, DIN 41571
Power failurebridging at 90 V_{AC} and 100 % load		20 ms
Switch power supply on/off externally		"INH" = Inhibit ("EN" = Enable) normal high, drive low (high) to turn off (on) (max. 15 V/150 µA)
Over-voltage protection OVP shuts power supply off, restart		120 – 130 % at $V_{1.2}$
Remote sense compensated per line		Max. 0.25 V
Current share with one cable connection		V_1, V_2, V_3, "ISH" signal, tolerance ± 10 %
Power failure signalling		TTL signal, active high
"DEG" signal if temperature outside of range (option)		"HIGH" < 50 °C; "LOW" > 50 °C, tolerance ± 5 %
Power down "FAIL" signal at 70 °C, automatic restart (option)		"HIGH" < 70 °C; "LOW" > 70 °C, tolerance ± 5 %
Two-color LED, fault/OK status		red/green
Test and environmental conditions		
Climatic test to		IEC 68-2-38
Shock and vibration in accordance with acceleration of 2 g		EN 60068-2-6
Height 3 U/depth 160 mm		Width 8 HP
Weight (mass)		2 kg
CE	Interference emission	CISPR22 Class B, EN 50081-1, EN 55011 Class B,
	Interferencei mmunity, degree of severity 3	EN 50082-2, EN 61000-4-2, EN 61000-4-3, EN 61000-4-4, EN 61000-4-5, EN 61000-4-6,
	Safety, class of protection 1	EN 60950
High voltage test to EN 60950	Input-output	4.3 kV_{DC}
	Input PE	2.2 kV_{DC}
Safety		UL 1950, cUL, TÜV & CE (applied for)
Power supply maintenance-free		Yes
Necessary cooling for the power supply		2 m/s
Operation/storage ambient temperature		10 ... 70°C / -40 ... +85°C
Relative humidity, non-condensing		20 °C – 95 °C
MTBF		200,000 h (50 °C)

AC/DC switched mode power supplies
Single, 50 W 3.11.2
Single, 80 W 3.11.4
Single, 100 W 3.11.6
Single, 130 W 3.11.8
Dual, 80 W 3.11.10
Dual, 100 W 3.11.12
Triple, 80 W 3.11.14
Triple, 100 W 3.11.16
Triple, 130 W 3.11.18
Triple, 150 / 224 W 3.11.20
Quad, 250 W 3.11.22
Quad, 350 W 3.11.24

AC/DC linear control systems
Single, 8 – 60 W ..3.11.26
Dual, 10 – 58 W ...3.11.28
Triple, 7 – 39 W ...3.11.30

AC/DC non-regulated
Single, 84 W 3.11.32
Single, 240 W 3.11.34

DC/DC converters
Single, 20 to 120 W 3.11.36
Dual, 55 to 72 W..3.11.38
Triple, 64 to 70 W 3.11.40
Quad, 250 W 3.11.42
Quad, 350 W 3.11.44

Accessories
Mating connector female connector H 15 F 3.11.46
Keying/coding 3.11.47
Guide rails.....3.11.47
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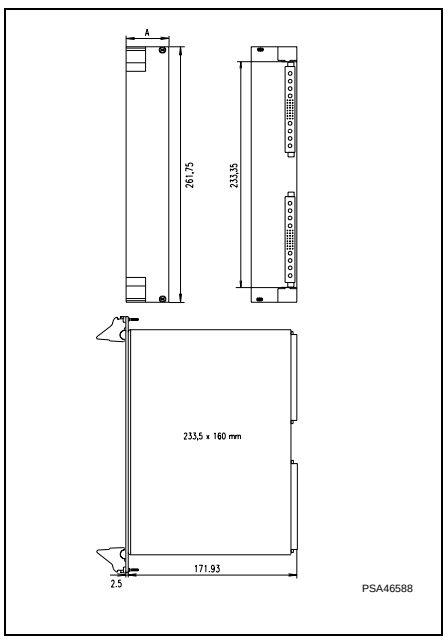
19" compatible AC/DC switched mode



11300009

Quad, 350 W *maxpowerPRO*

- 19" compatible AC/DC switched mode power supplies, pluggable 6 U, for compact PCI and other applications
- Wide rangemains input voltage (90 – 264 V_{AC})
- Power factor correction (PFC) to EN 61000-3-2
- 4 output voltages
- Connectors M24/8 (P 47 available on request)
- Redundancy operation with current share bus
- Hot swap
- Compact PCI signalling
- For industrial applications
- International approvals EN 60950, UL
- High reliability and long life



Output data at T_U = 0 ... 40 °C											Order No. incl. mounted EMC front panel[1]	
Voltage in V				Current in A				Power output in W total[2]	Height	Width A	Power supply	Mains voltage
V_1	V_2	V_3	V_4	I_1	I_2	I_3	I_4		in U	in HP	Type	90 – 254 V_{AC}
5	3.3	+12	-12	45	30	12	3	350	6	8	PCI 3-4	**11098-093**

1) Front anodised, rear side chromated, slotted on both sides for mounting EMC contact strips in the event of increased EMC requirements, two IEL handles
(6 U EMC contact strips, Order No. 21101-856, 10 pieces)

2) Total capacity $V_1 + V_2$ = 200 W

Accessories

Mating connector/intermediate plate 6 U,
for description see backplanes – power bus, **Order No. 23207-006**

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19″ compatible AC/DC switched mode

Technical data

Input parameters		
Mains-voltage (wide range input)	Nominal values	100 – 240 V_{AC}
	Operating-ranges	90 – 264 V_{AC}
Mains frequency range		47 – 63 Hz
Power factor correction in accordance with		EN 61000-3-2
Efficiency type		74 %
Switch-on current I_P 115/ 230 V		18/36 A

Output parameters				
Output power max.	350 W			
Output voltages [V]	V_1	V_2	V_3	V_4
	5 V	3.3 V	12 V	-12 V
Output currents 0 ... 50 °C [A]	45	30	12/15	3
Residual ripple/ interference voltage	1 % or 100 mV			
Load control with/without sense	0.5 % /2 %			
Overshoot	1 % switch on/switch off 3 % load change 50 – 100 %			
Mains control, static	0.1 %			
Power failurebridging at 100 % load	20 ms			
Temperature coefficient	0.02 %/K			
Connection connectors	DIN M24/8			
Basic load	not necessary			

Protection and monitoring facilities		
Switch-on time		< 4 s
Mains fuse internal		10 A/250 V_{AC}
Switch power supply on/off externally		Inhibit (enable) normal high, drive low (high) to turn off (on)
Over-voltage protection (OVP)		all outputs 125 % of the mains voltage; reset via off/on or inhibit/enable
Over-temperature protection		Automatic shut-off with automatic return
Overcurrent protection		All outputs 105 – 125 % auto recovery
Remote sense compensated per line		V_1, V_2, max. 0.5 V
Current share		V_1, V_2, V_3
Power failure signal		TTL signal, active high
Temperature outside of range signal		TTL signal, active high
Two-color LED, fault/OK status		red/green
Test and environmental conditions		
Climatic test to		IEC 68-2-38
Shock and vibration in accordance with		EN 60068-2-6
Height 6 U/depth 160 mm		Width 8 HP
Weight (mass)		2.3 kg
CE	Interference emission	FCC Part 15, EN 55022
	Interferencei mmunity	EN 50082-1, EN 61000-4-2, EN 61000-4-4, EN 61000-4-5, EN 61000-3-2, EN 61000-3-3
	Safety, class of protection 1	EN 60950
High voltage test to EN 60950	Input-output	4.3 kV_{DC}
	Input PE	2.2 kV_{DC}
Safety		UL, cUL, TÜV & CE
Power supply maintenance-free		Yes
Necessary cooling via the power supply		400 lfm, forced
Operation/storage ambient temperature		0 ... 50°C / -40 ... +85°C
Relative humidity, non-condensing		95 %
MTBF at 25 °C		250,000 h (Bellcore STD.)

AC/DC switched mode power supplies
Single, 50 W 3.11.2
Single, 80 W 3.11.4
Single, 100 W 3.11.6
Single, 130 W 3.11.8
Dual, 80 W 3.11.10
Dual, 100 W 3.11.12
Triple, 80 W 3.11.14
Triple, 100 W 3.11.16
Triple, 130 W 3.11.18
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Quad, 350 W 3.11.24

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Single, 8 – 60 W ..3.11.26
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Triple, 7 – 39 W ...3.11.30

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Backplanes/ test adapters .. 3.20.0

Microcomputer packaging systems (MPS) 3.30.0

Appendix..... 3.90.0

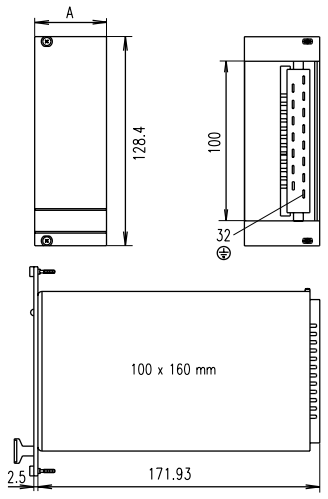
19" compatible AC/DC linear control systems

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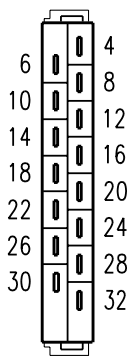
CE

Single, 8 – 60 W

- 19" compatible AC/DC power supply, pluggable 3 U
- Mains input voltage 230 V_{AC} (can be converted to 115 V_{AC} with conversion kit, see Accessories)
- 1 output voltage
- High control accuracy
- Low residual ripple and very low-interference
- Suitable for medical applications (8 mm safety clearances)
- High reliability and long life
- PSM, PSG
  - Output voltage can be externally remote controlled (1 ... 10 V)
  - Conversion of the control curve for sensitive loads (U/I - Fold Back)
  - Current measurement via shunt



DIJM0084



PSA46292

Pin	PSK single	PSM, PSG single
4	Sense + V_1	Sense + V_1
6	Output + V_1	Output + V_1
8	Output 0V V_1	Output 0V V_1
10	Sense 0V V_1	Sense 0V V_1
12	–	Optional: Redundancy diode
14		External on/off
16		GND
18		V remote input + V_C
20		V-shunt + V_S
22		V-shunt - V_S
24		–
26		
28	L	L
30	N	N
32	PE ⏚	PE ⏚

Note
The front panel is not included in delivery.

Output data at T_U = 0 ... 50 °C				Order No. (1 unit)[1]		
Voltage in V	Current in A	Power output in W	Width A in HP	Power supply Type	Mains voltage[4] 230 V_{AC}	Front panel[2] EMC anodised
5	1.5	8	6	PSK 105[3]	**13105-001**	**21005-475**
	4,0	20	10	PSM 105	**13105-006**	**21005-473**
	6,0	30	14	PSG 105	**13105-011**	**21005-474**
12	1.1	13	6	PSK 112[3]	**13105-002**	**21005-475**
	2.8	31	10	PSM 112	**13105-007**	**21005-473**
	4.2	50	14	PSG 112	**13105-012**	**21005-474**
15	1,0	15	6	PSK 115[3]	**13105-003**	**21005-475**
	2.2	33	10	PSM 115	**13105-008**	**21005-473**
	3.5	53	14	PSG 115	**13105-013**	**21005-474**
24	0.6	16	6	PSK 124[3]	**13105-004**	**21005-475**
	1.5	36	10	PSM 124	**13105-009**	**21005-473**
	2.5	60	14	PSG 124	**13105-014**	**21005-474**

[1] Please order front panel and other accessories separately

[2] Front anodised, rear side chromated, slotted on both sides for mounting EMC contact strips in the event of increased EMC requirements
(3 U EMC contact strips, Order No. 21101-705, 10 pieces)

[3] Without case

[4] Mains voltage conversion kit 230 V to 115 V (Order No. 43105-999)

Mating connector H15F with FASTON connection, Order No. 69001-733

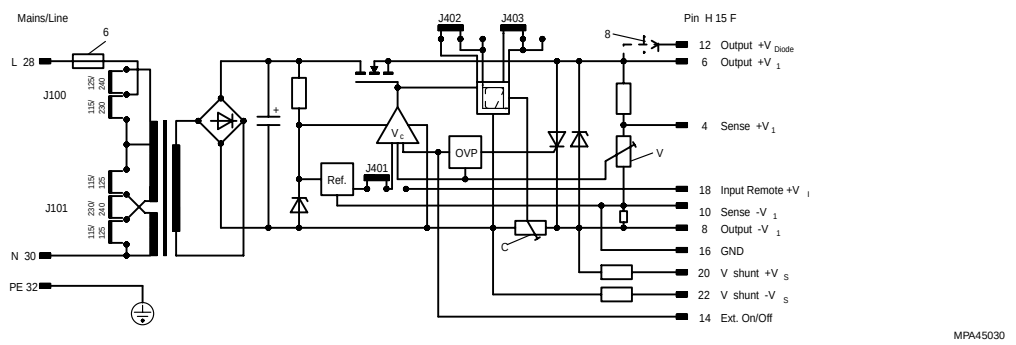
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Technical data

Input parameters					
Mainsvoltage (with con-version kit)	Nominal values V_{IN} (operating ranges)	115 (103.5 ... 126.5) V_{AC} 230 (207 ... 253) V_{AC}			
Mains nominal current at 230 V_{AC}		PSK 0.16 A, PSM 0.36 A, PSG 0.45 A			
Mains frequency range		48 – 62 Hz			
Mains input current in accordance with		EN 61000-3-2 + A14			
Efficiency type		40 ... 65 %			
Current at switch-on		< 15 A (PSK < 3 A)			
Discharge current		< 50 µA			
Output parameters					
Output voltage (potentiometer V at front)	factory set	5	12	15	24
	Adjust-ment range [V]	4.75 ... 5.25	11.5 ... 12.5	13.5 ... 15.5	23 ... 25.0
Output current at 50 °C (70 °C), max. current can be adjusted with front potentio-meter C (50 ... 150 %)	PSK [A]	1.5 (0.9)	1.1 (0.7)	1.0 (0.6)	0.6 (0.4)
	PSM [A]	4.0 (2.4)	2.8 (1.7)	2.2 (1.3)	1.5 (0.9)
	PSG [A]	6.0 (3.7)	4.2 (2.5)	3.5 (2.0)	2.5 (1.5)
Derating from 50 to 70 °C		2 %/K			
Residual ripple		≤ 2 mV			
Load control, static (I_1 = 0 ... $I_{1Nominal}$)		< 0.01 %			
Mains control at ± 10 % change in mains voltage		< 0.01 %			
Overall control time, tolerance 0.1 % × $V_{1Nominal}$, load change 0 ... 100 % di/dt = 0.135 A/µs		≤ 50 µs			
Temperature coefficient		0.01 %/K			
Output can be externally shut off with voltage		4 ... 24 V_{DC} -> GND			
Output can be switched in series and in parallel (optionally with diode for redundancy operation)		Yes (PSM, PSG)			
Output can be remote controlled		1 ... 10 V ~ 0.1 ... 1 × $V_{Nominal}$ (PSM, PSG)			
Measurement resistance (shunt) corresponds to		~ 10 mV/A (PSM, PSG)			

Protection and monitoring facilities		
Power failurebridging at 100 % load		V_{IN} = 207 V, PSK > 10 ms, PSM > 7 ms, PSG > 6 ms V_{IN} = 230 V, PSK > 16 ms, PSM > 10 ms, PSG > 8 ms
Current limitation		Yes
Over-load protection, short-circuit current controlled max.		$I_{1\ Nom.}$ + 15 %
Over-voltage protection OVP (shuts power supply off), automatic response value approx.		V_1 + 20 %
Over-temperature protection of the series pass transistor		Yes
Remote sense compens-ated per line (with $V_{1Nominal}$)		Max. 0.5 V
Air and creepage distance Primary-secondary side/ Primary PE		≥ 8 mm / ≥ 4 mm
Output voltage present, LED green		LED POWER
Other characteristics		
Climatic test to		IEC 68-2-38
Shock and vibration		EN 60068-2-6
Dimensions: Height 3 U		Width: PSK 6 HP, PSM 10 HP, PSG 14 HP
Weight (mass)		PSK 0.8 kg, PSM 1.6 kg, PSG 1.9 kg
CE	EMC interference-emission	EN 50081-1, EN 55011 Class B, EN 55022 Class B
	EMC interference-immunity, degree of severity 3	EN 50082-2, EN 61000-4-2, EN 61000-4-3, EN 61000-4-4, EN 61000-4-5
	Safety, class of protection 1	EN 60950 (LGA for PSK, PSM, PSG) EN 60601-1 (PSK)
Test voltage to EN 60950	Input-output	4.3 kV_{DC}
	Input PE	2.2 kV_{DC}
	Output PE	0.7 kV_{DC}
Toroidal transformer (low emission)		EN 60742
Power supply maintenance-free		Yes
Cooling		Convection
Operation/storage ambient temperature		0 ... 70 °C / -20 ... +85 °C
Relative humidity, non-condensing (operation/storage)		30 ... 80 % / 10 ... 95 %
MTBF at full load, T_U = 40 °C		PSK 1,100,000 h PSM/PSG 730,000 h

Schematic wiring diagram



AC/DC switched mode power supplies
Single, 50 W 3.11.2
Single, 80 W 3.11.4
Single, 100 W 3.11.6
Single, 130 W 3.11.8
Dual, 80 W 3.11.10
Dual, 100 W 3.11.12
Triple, 80 W 3.11.14
Triple, 100 W 3.11.16
Triple, 130 W 3.11.18
Triple, 150 / 224 W 3.11.20
Quad, 250 W 3.11.22
Quad, 350 W 3.11.24

AC/DC linear control systems
Single, 8 – 60 W ..3.11.26
Dual, 10 – 58 W ...3.11.28
Triple, 7 – 39 W ...3.11.30

AC/DC non-regulated
Single, 84 W 3.11.32
Single, 240 W 3.11.34

DC/DC converters
Single, 20 to 120 W 3.11.36
Dual, 55 to 72 W..3.11.38
Triple, 64 to 70 W 3.11.40
Quad, 250 W 3.11.42
Quad, 350 W 3.11.44

Accessories
Mating connector female connector H 15 F 3.11.46
Keying/coding 3.11.47
Guide rails 3.11.47
Z-rails 3.11.47
EMC contact strips 3.11.48
Wall/horizontal rail installation 3.11.49

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Power supply units..... 3.10.0
19" compatible.....3.11.0
Open frame.....3.12.0
Power systems.....3.13.0
Uninterruptable power supplies (UPS) 3.14.0

Backplanes/ test adapters .. 3.20.0

Microcomputer packaging systems (MPS) 3.30.0

Appendix..... 3.90.0

19" compatible AC/DC linear control systems

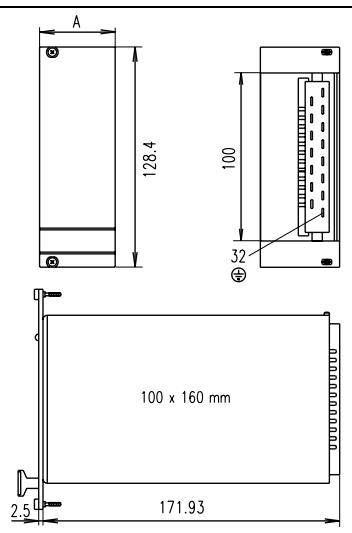


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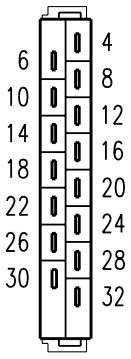
Dual, 10 – 58 W

- 19" compatible AC/DC power supply, pluggable 3 U
- Mains input voltage 230 V_{AC} (can be converted to 115 V_{AC} with conversion kit, see Accessories)
- 2 output voltages (galvanically separated)
- High control accuracy
- Low residual ripple and very low-interference
- Suitable for medical applications (8 mm safety clearances)
- High reliability and long life

CE



DIJM0084



PSA46292

Pin	Male connector H15
4	Sense + V_1
6	Output + V_1
8	Output 0V V_1
10	Sense 0V V_1
12	Sense + V_2
14	Output + V_2
16	Output 0V V_2
18	Sense 0V V_2
20	–
22	
24	
26	
28	L
30	N
32	PE ⏚

Note

Outputs metalically separated. The front panel is not included in delivery.

Output data at T_U = 0 ... 50 °C						Order No.[1]		
Voltage in V		Current in A		Power output	Width A	Power supply	Mains voltage[4]	Front panel[2] EMC
V_1	V_2	I_1	I_2	in W	in HP	Type	230 V_{AC}	
5	5	1.4	1.4	14	10	PSM 205	**13105-021**	**21005-477**
12	12	0.4	0.4	10	6	PSK 212[3]	**13105-017**	**21005-476**
		1.0	1.0	24	10	PSM 212	**13105-022**	**21005-477**
		1.5	1.5	36	14	PSG 212	**13105-027**	**21005-478**
15	15	0.4	0.4	12	6	PSK 215[3]	**13105-018**	**21005-476**
		1.0	1.0	30	10	PSM 215	**13105-023**	**21005-477**
		1.5	1.5	45	14	PSG 215	**13105-028**	**21005-478**
24	24	1.2	1.2	58	14	PSG 224	**13105-029**	**21005-478**

[1] Please order front panel and other accessories separately

[2] Front anodised, rear side chromated, slotted on both sides for mounting EMC contact strips in the event of increased EMC requirements
(3 U EMC contact strips, Order No. 21101-705, 10 pieces)

[3] Without case

[4] Mains voltage conversion kit 230 V to 115 V (Order No. 43105-999)

Mating connector H15F with FASTON connection, Order No. 69001-733

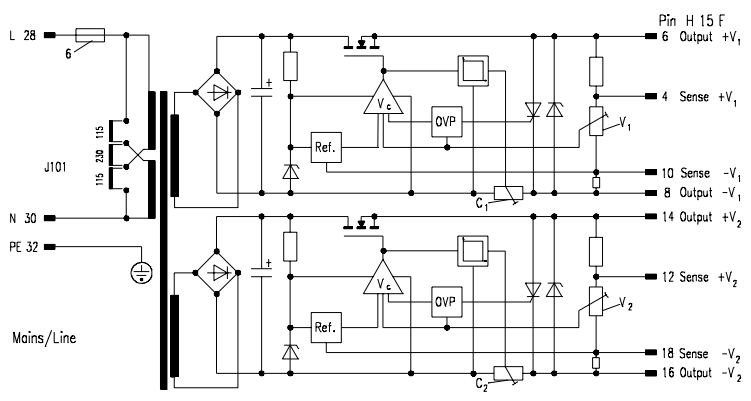
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Technical data

Input parameters				
Mainsvoltage (with conversion kit)	Nominal values V_{IN} (operating ranges)	115 (103.5 ... 126.5) V_{AC} 230 (207 ... 253) V_{AC}		
Mains nominal current at 230 V_{AC}		PSK 0.16 A, PSM 0.35 A, PSG 0.45 A		
Mains frequency range		48 – 62 Hz		
Mains input current in accordance with		EN 61000-3-2 + A14		
Efficiency type		40 ... 60 %		
Current at switch-on		< 15 A (PSK < 3 A)		
Discharge current		< 50 µA		
Output parameters		$V_{1.2}$		
Output voltage (potentiometer $V_{1.2}$ at front)	factory set	12	15	24
	Adjustment range [V]	11.5 ... 12.5	13.5 ... 15.5	23 ...25.0
Output current at 50 °C (70 °C), max. current can be adjusted with front potentiometer $C_{1.2}$ (50 ... 150 %)	PSK [A]	0.4 (0.2)	0.4 (0.2)	0.3 (0.15)
	PSM [A]	1.0 (0.6)	1.0 (0.6)	0.6 (0.4)
	PSG [A]	1.5 (0.9)	1.5 (0.9)	1.2 (0.8)
Derating from 50 to 70 °C approx.		2 %/K		
Residual ripple		≤ 2 mV		
Load control, static ($I_{1.2}$ = 0 ... $I_{1.2\ Nominal}$)		< 0.01 %		
Mains control at ± 10 % change in mains voltage		< 0.01 %		
Overall control time, tolerance 0.1 % × $V_{1/2\ Nominal}$, load change 0 ... 100 % di/dt = 0.135 A/µs		≤ 50 µs		
Temperature coefficient		0.01 %/K		
Output can be switched in series and in parallel		Yes		

Protection and monitoring facilities			
Power failurebridging at 100 % load		V_{IN} = 207 V, PSK > 10 ms, PSM > 7 ms, PSG > 6 ms V_{IN} = 230 V, PSK > 16 ms, PSM > 10 ms, PSG > 8 ms	
Current limitation		Constant current	
Over-load protection, short-circuit current controlled max.		$I_{1/2\ Nominal}$ + 15 %	
Over-voltage protection OVP (shuts power supply off), automatic response value approx.		$V_{1/2}$ + 20 %	–
Over-temperature protection of the series pass transistors		Yes	
Remote sense compensated per line (with $V_{1/2\ Nominal}$)		Max. 0.5 V	
Air and creepage distance Primary-secondary side/ Primary PE		≥ 8 mm / ≥ 4 mm	
Output voltage present, LED green		LED POWER	
Test and environmental conditions			
Test voltage to EN 60950	Input-output	4.3 kV_{DC}	
	Input PE	2.2 kV_{DC}	
	Output PE	0.7 kV_{DC}	
Climatic test to		IEC 68-2-38	
Shock and vibration in accordance with (acceleration of 2 g)		EN 60068-2-6	
Dimensions: Height 3 U		Width: PSK 6 HP, PSM 10 HP, PSG 14 HP	
Weight (mass)		PSK 0.8 kg, PSM 1.6 kg, PSG 1.9 kg	
Electro-magnetic compatibility CE	Interference-emission	EN 50081-1, EN 55011 Class B, EN 55022 Class B	
	Interference-immunity, degree of severity 3	EN 50082-2, EN 61000-4-2, EN 61000-4-3, EN 61000-4-4, EN 61000-4-5	
	Safety, class of protection 1	EN 60950 (PSM, PSG) EN 60601-1 (PSM, PSG)	
Toroidal transformer (low emission) to		EN 60742	
Power supply maintenance-free		Yes	
Cooling		Convection	
Operation/storage ambient temperature		0 ... 70°C / -20 ... +85°C	
Relative humidity, non-condensing (operation/storage)		30 ... 80 % / 10 ... 95 %	
MTBF at full load, T_U = 40 °C		PSK 960.000 h PSM / PSG 580.000 h	

Schematic wiring diagram



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Power supply units..... 3.10.0
19" compatible.....3.11.0
Open frame.....3.12.0
Power systems.....3.13.0
Uninterruptable power supplies (UPS) 3.14.0

Backplanes/ test adapters .. 3.20.0

Microcomputer packaging systems (MPS) 3.30.0

Appendix..... 3.90.0

19" compatible AC/DC linear control systems

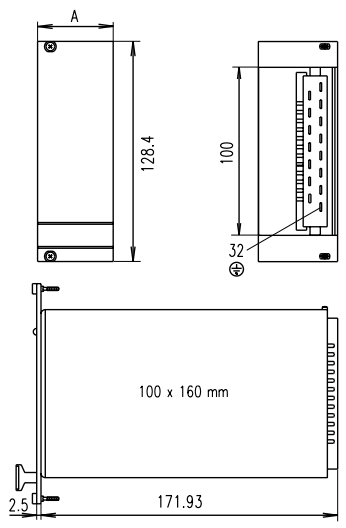


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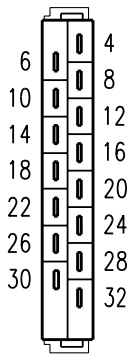
Triple, 7 – 39 W

- 19" compatible AC/DC power supply, pluggable 3 U
- Mains input voltage 230 V_{AC} (can be converted to 115 V_{AC} with conversion kit, see Accessories)
- 3 output voltages (galvanically separated)
- High control accuracy
- Low residual ripple and very low-interference
- Suitable for medical applications (8 mm safety clearances)
- High reliability and long life

CE



DIJM0084



PSA46292

Pin	Connection
4	Sense + V_1 (PSM, PSG)
6	Output + V_1
8	Output 0V V_1
10	Sense 0V V_1 (PSM, PSG)
12	Output + V_2
14	Output - V_2
16	Output + V_3
18	Output - V_3
20	Data save
22	Power failure
24	0 V for pin 20, 22
26	–
28	L
30	N
32	PE ⏚

Note
The front panel is not included in delivery.

Output data at T_U = 0 ... 50 °C								Order No. (1 unit)[1]		
Voltage in V			Current in A			Power output	Width	Power supply	Mains voltage[4]	Front panel[2] EMC
V_1	V_2	V_3	I_1	I_2	I_3	in W	in HP	Type	230 V_{AC}	anodised
5	12	12	0.5	0.2	0.2	8	6	PSK 312[3]	**13105-051**	**21005-470**
			1.5	0.5	0.5	20	10	PSM 312	**13105-052**	**21005-451**
			3,0	1.0	1.0	39	14	PSG 312	**13105-053**	**21005-439**

[1] Please order front panel and other accessories separately

[2] Front anodised, rear side chromated, slotted on both sides for mounting EMC contact strips in the event of increased EMC requirements
(3 U EMC contact strips, Order No. 21101-705, 10 pieces)

[3] Without case

[4] Mains voltage conversion kit 230 V to 115 V (Order No. 43105-999)

Mating connector H15F with FASTON connection, Order No. 69001-733

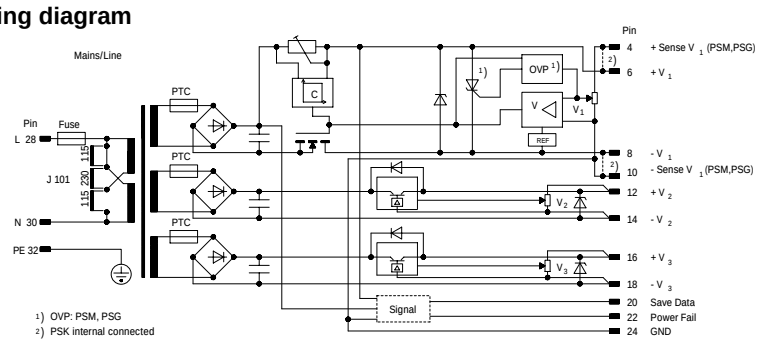
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Technical data

Input parameters			
Mainsvoltage (with con-version kit)	Nominal values V_{IN} (operating-ranges)	115 V_{AC} (103.5 ... 126.5) 230 V_{AC} (207 ... 253)	
Mains nominal current at 230 V_{AC}		PSK 0.11 A, PSM 0.3 A, PSG 0.4 A	
Mains frequency range		48 – 62 Hz	
Mains input current in accordance with		EN 61000-3-2 + A14	
Efficiency type		PSK 40 ... 46 %, PSM, PSG 45 ... 52 %	
Current at switch-on		< 15 A (PSK < 2 A)	
Discharge current		< 50 µA	
Output parameters		V_1	$V_{2.3}$
Output voltage (potentiometer $V_{1.2.3}$ at front)	factory set	5 V	12 V, 15 V
	Adjustment-range	4.755.25 ...V	12 ...15.5 V
Output current at 50 °C (70 °C)	PSK	0.5 (0.3) A	0.2 (0.1) A
	PSM	1.5 (0.8) A	0.5 (0.3) A
	PSG	3 (1.5) A	1 (0.6) A
Load control, static (I_1=0…$I_{1\ Nominal}$)	PSK	≤ 0.2 %	≤ 0.3 %
	PSM	≤ 0.01 %	≤ 1 %
	PSG	≤ 0.01 %	≤ 2 %
Residual ripple		≤ 2 mV	
Mains control at ± 10 % change in mains voltage		< 0.01 %	< 0.2 %
Overall control time, tolerance 0.1 % × $V_{1/2\ Nominal}$, load change 0 ... 100 % di/dt = 0.135 A/µs		≤ 50 µs	
Temperature coefficient		0.05 %/K	
Remote sense (PSM, PSG) compensated		Max. 0.5 V	–

Protection and monitoring facilities		
Power failurebridging at 100 % load		V_{IN} = 207 V, PSK, PSM>10 ms, PSG > 7 ms, V_{IN} = 230 V, PSK, PSM>15 ms, PSG > 12 ms
Over-voltage protection OVP for 5 V in the case of PSM and PSG		$V_{Nominal}$ + 20 %
Current limitation		Constant current
Over-load protection, short-circuit current controlled max.		I_1 type: PSK: $I_{nom.}$ + 20 %, PSM/PSG: $I_{nom.}$ + 50 %, $I_{2.3}$ type: 2 A
Over-temperature protection of the series pass transistor		Yes
Air and creepage dist-ance Primary-secondary side/ Primary PE		≥ 8 mm / ≥ 4 mm
Power failure signals		Power failure, save data: Active low, open collector
Output voltage present, LED green		LED POWER V_1, V_2, V_3
Test and environmental conditions		
Climatic test to		IEC 68-2-38
Shock and vibration in accordance with (acceleration of 2 g)		EN 60068-2-6
Dimensions: Height 3 U		Width: PSK 6 HP, PSM 10 HP, PSG 14 HP
Weight (mass)		PSK 0.8 kg, PSM 1.6 kg, PSG 1.9 kg
CE	EMC interference-emission	EN 50081-1, EN 55011 Class B, EN 55022 Class B
	EMC interference-immunity, degree of severity 3	EN 50082-2, EN 61000-4-2, EN 61000-4-3, EN 61000-4-4, EN 61000-4-5
	Safety, class of protection 1	EN 60950
Test voltage to EN 60950	Input-output	4.3 kV_{DC}
	Input PE	2.2 kV_{DC}
	Output PE	0.7 kV_{DC}
	Output-output	0.7 kV_{DC}
Toroidal transformer (low emission) to		EN 60742
Power supply maintenance-free		Yes
Cooling		Convection
Operation/storage ambient temperature		0 ... 70 °C / -20 ... +85 °C
Relative humidity, non-condensing (operation/storage)		30 ... 80 % / 10 ... 95 %
MTBF at full load, T_U = 40 °C		PSK 850,000 h PSM/PSG 470,000 h

Schematic wiring diagram



AC/DC switched mode power supplies
Single, 50 W 3.11.2
Single, 80 W 3.11.4
Single, 100 W 3.11.6
Single, 130 W 3.11.8
Dual, 80 W 3.11.10
Dual, 100 W 3.11.12
Triple, 80 W 3.11.14
Triple, 100 W 3.11.16
Triple, 130 W 3.11.18
Triple, 150 / 224 W 3.11.20
Quad, 250 W 3.11.22
Quad, 350 W 3.11.24

AC/DC linear control systems
Single, 8 – 60 W ..3.11.26
Dual, 10 – 58 W ...3.11.28
Triple, 7 – 39 W ...3.11.30

AC/DC non-regulated
Single, 84 W 3.11.32
Single, 240 W 3.11.34

DC/DC converters
Single, 20 to 120 W 3.11.36
Dual, 55 to 72 W..3.11.38
Triple, 64 to 70 W 3.11.40
Quad, 250 W 3.11.42
Quad, 350 W 3.11.44

Accessories
Mating connector female connector H 15 F 3.11.46
Keying/coding 3.11.47
Guide rails 3.11.47
Z-rails 3.11.47
EMC contact strips 3.11.48
Wall/horizontal rail installation 3.11.49

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Power supply units..... 3.10.0
19" compatible.....3.11.0
Open frame.....3.12.0
Power systems.....3.13.0
Uninterruptable power supplies (UPS) 3.14.0

Backplanes/ test adapters .. 3.20.0

Microcomputer packaging systems (MPS) 3.30.0

Appendix..... 3.90.0

19" compatible AC/DC non-regulated

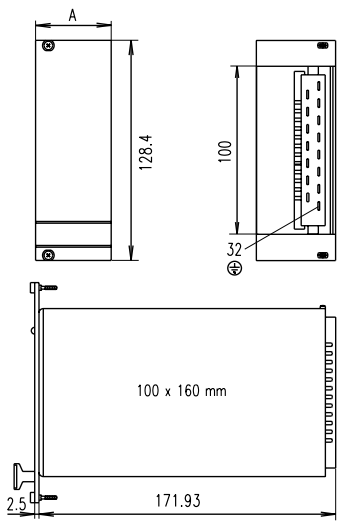


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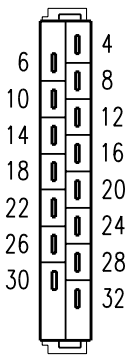
Single, 84 W

- 19" compatible AC/DC power supply, pluggable 3 U
- Mains input voltage 230 V_{AC} (can be converted to 115 V_{AC})
- 1 output voltage
- High reliability and long life

CE



DIJM0084



PSA46292

Pin	Connection
4	Output + V_1
6	
8	Output 0V V_1
10	
12	–
14	
16	
18	
20	
22	
24	
26	
28	L
30	N
32	PE ⏚

Note
The front panel is not included in delivery.

Output data at T_U = 0 ... 50 °C				Order No.[1]		
Voltage	Current	Power output	Width	Power supply	Mains voltage	Front panel[2] EMC
in V	in A	in W	in HP	Type	230 V_{AC}	
24	3.5	84	14	PGG 124	**11005-190**	**21005-472**

1) Please order front panel and other accessories separately

2) Front anodised, rear side chromated, slotted on both sides for mounting EMC contact strips in the event of increased EMC requirements
(3 U EMC contact strips, Order No. 21101-705, 10 pieces)

Mating connector H15F with FASTON connection, Order No. 69001-733
Other output voltages available on request

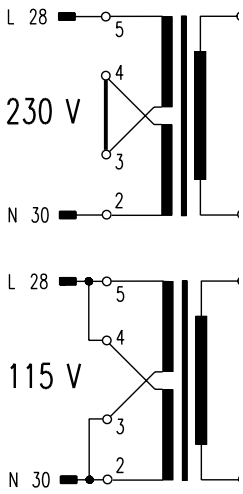
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19″ compatible AC/DC non-regulated

Technical data

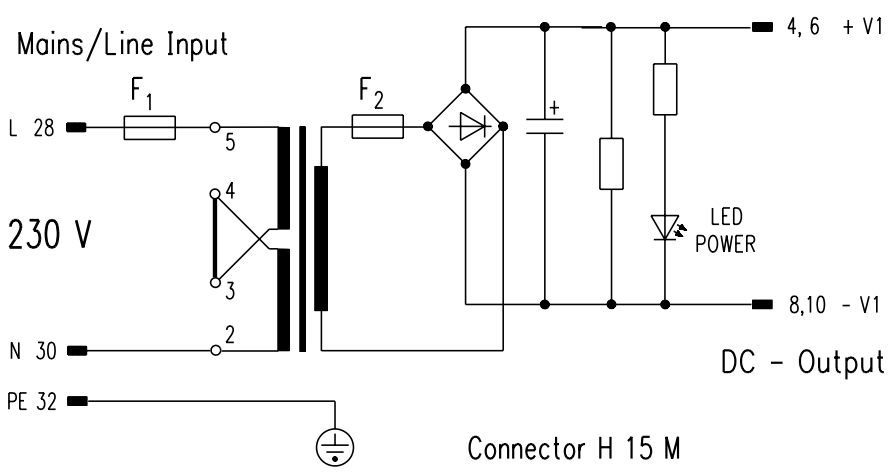
Input parameters		
Mainsvoltage (can be converted)		115/230 V_{AC} ± 10 %
Mains frequency range		48 – 62 Hz
Mains input current in accordance with		EN 61000-3-2 + A14
Output parameters		
Output voltage ($U_{max.}$)		24 V ± 10 %
Output current ($I_{max.}$)		3 A
Residual ripple		See diagram
Power failure bridging	$U_{E\ Nominal}$	Type 20 ms
	$U_{E\ Nominal}$ - 10 %	Type 12 ms
Derating from 50 – 70 °C		2 %/K
Other data		
Test voltage to EN 60950	Input-output	4.3 kV_{DC}
	Input PE	2.2 kV_{DC}
	Output PE	0.7 kV_{DC}
Climatic test to		IEC 68-2-38
Shock and vibration in accordance with acceleration of 2 g		EN 60068-2-6
Suppression		VDE 0871 curve K
Class of protection (VDE 0100)		Class 1
Power supply maintenance-free		Yes
Cooling		Convection
Ambient temperature T_U	Operation	0 ... 70°C
	Storage	-40 ... +85°C

Mains voltage switch-over



from DIJM0047

Schematic wiring diagram



PSA46589

AC/DC switched mode power supplies
Single, 50 W 3.11.2
Single, 80 W 3.11.4
Single, 100 W 3.11.6
Single, 130 W 3.11.8
Dual, 80 W 3.11.10
Dual, 100 W 3.11.12
Triple, 80 W 3.11.14
Triple, 100 W 3.11.16
Triple, 130 W 3.11.18
Triple, 150 / 224 W 3.11.20
Quad, 250 W 3.11.22
Quad, 350 W 3.11.24

AC/DC linear control systems
Single, 8 – 60 W ..3.11.26
Dual, 10 – 58 W ...3.11.28
Triple, 7 – 39 W ...3.11.30

AC/DC non-regulated
Single, 84 W 3.11.32
Single, 240 W 3.11.34

DC/DC converters
Single, 20 to 120 W 3.11.36
Dual, 55 to 72 W ..3.11.38
Triple, 64 to 70 W 3.11.40
Quad, 250 W 3.11.42
Quad, 350 W 3.11.44

Accessories
Mating connector female connector H 15 F 3.11.46
Keying/coding 3.11.47
Guide rails 3.11.47
Z-rails 3.11.47
EMC contact strips 3.11.48
Wall/horizontal rail installation 3.11.49

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Power supply units..... 3.10.0
19" compatible.....3.11.0
Open frame.....3.12.0
Power systems.....3.13.0
Uninterruptable power supplies (UPS) 3.14.0

Backplanes/ test adapters .. 3.20.0

Microcomputer packaging systems (MPS) 3.30.0

Appendix..... 3.90.0

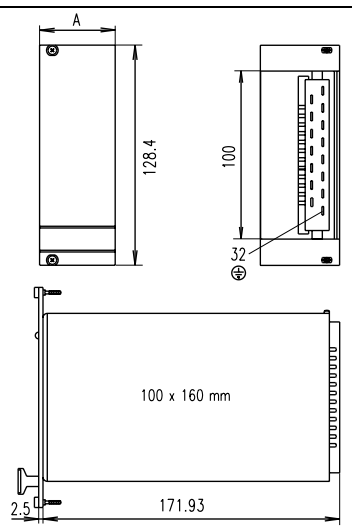
19" compatible AC/DC non-regulated

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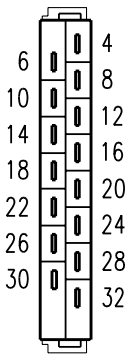
Single, 240 W

- 19" compatible AC/DC power supply, pluggable 3 U
- Mains input voltage 230 V_{AC} (can be converted to 115 V_{AC})
- 1 output voltage
- Can be connected in series, parallel and redundancy operation
- Auxiliary voltage output (24 V/0.1 A) short-circuit protected, without galvanic separation
- Reset function (external on/off)
- High reliability and long life

CE



DIJM0084



PSA46292

Pin	Connection
4	Output + V_1
6	
8	Output 0V V_1
10	
12	–
14	Reset, external on/off
16	–
18	Auxiliary voltage +V_2
20	Auxiliary voltage -V_2
22	–
24	
26	
28	L
30	N
32	PE ⏚

Note
The front panel is not included in delivery.

Output data at T_U = 0 ... 50 °C				Order No. (1 unit)[1]		
Voltage	Current	Capacity	Width:	Power supply	Mains voltage	Front panel[2] EMC
in V	in A	in W	in HP	Type	230 V_{AC}	
24	10	240	28	PUG 124	**11005-262**	**21005-479**

[1] Please order front panel and other accessories separately

[2] Front anodised, rear side chromated, slotted on both sides for mounting EMC contact strips in the event of increased EMC requirements
(3 U EMC contact strips, Order No. 21101-705, 10 pieces)

Mating connector H15F with FASTON connection, Order No. 69001-733
Other output voltages available on request

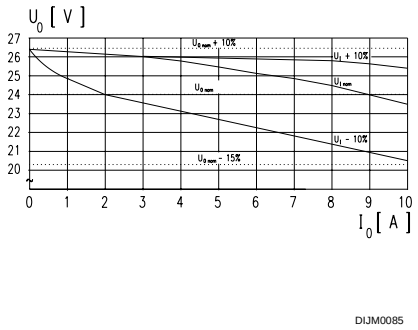
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19″ compatible AC/DC non-regulated

Technical data

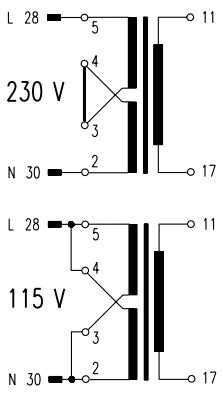
Input parameters		
Mainsvoltage (can be converted)		115/230 V_{AC} ± 10 %
Mains frequency range		48 – 62 Hz
Mains input current in accordance with		EN 61000-3-2 + A14
Efficiency		78 %
Mains nominal current at 230 V_{AC}		1.62 A
Output parameters		
Output voltage		24 V ± 3 %
Output current (I_1/I_2)		10/0.1 A
Residual ripple		< 2.4 V
Auxiliary voltage		24 V, 0.1 A
Power failure bridging		Type 9 ms, 12 ms at 0.8 × I_{nom}
Other data		
Current limitation		Type 25 A
Voltage clamping adjustable in idling mode		24 V, 0.1 A
Over-temperature protection		Yes
Test voltage to EN 60950	Input-output	4.3 kV_{DC}
	Input PE	2.2 kV_{DC}
	Output PE	0.7 kV_{DC}
Climatic test to		IEC 68-2-38
Shock and vibration in accordance with acceleration of 2 g		EN 60068-2-6
Safety to EN 60950		VDE No. 1641
Suppression		VDE 0875, Part 3
Class of protection (VDE 0100)		Class 1
Power supply maintenance-free		Yes
Cooling		Convection
Ambient temperature T_U	Operation	0 ... 70 °C
	Storage	-40 ... +85 °C

Load behaviour



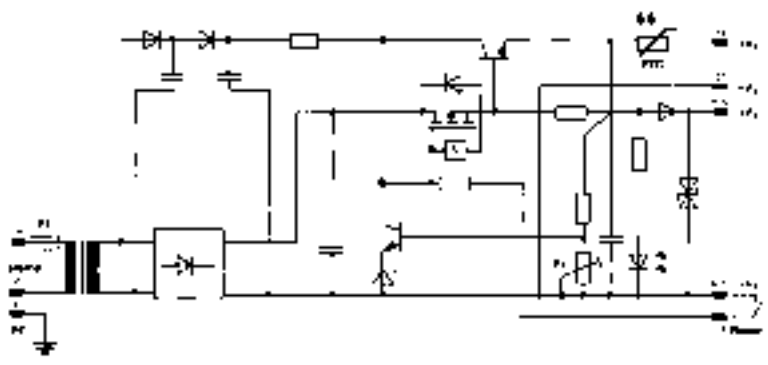
DIJM0085

Mains voltage switch-over



from DIJM0047

Schematic wiring diagram



A4/783

AC/DC switched mode power supplies
Single, 50 W 3.11.2
Single, 80 W 3.11.4
Single, 100 W 3.11.6
Single, 130 W 3.11.8
Dual, 80 W 3.11.10
Dual, 100 W 3.11.12
Triple, 80 W 3.11.14
Triple, 100 W 3.11.16
Triple, 130 W 3.11.18
Triple, 150 / 224 W 3.11.20
Quad, 250 W 3.11.22
Quad, 350 W 3.11.24

AC/DC linear control systems
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Dual, 10 – 58 W ... 3.11.28
Triple, 7 – 39 W ... 3.11.30

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Single, 20 to 120 W 3.11.36
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Triple, 64 to 70 W 3.11.40
Quad, 250 W 3.11.42
Quad, 350 W 3.11.44

Accessories
Mating connector female connector H 15 F 3.11.46
Keying/coding 3.11.47
Guide rails 3.11.47
Z-rails 3.11.47
EMC contact strips 3.11.48
Wall/horizontal rail installation 3.11.49

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Power supply units..... 3.10.0
19" compatible.....3.11.0
Open frame.....3.12.0
Power systems.....3.13.0
Uninterruptable power supplies (UPS) 3.14.0

Backplanes/ test adapters .. 3.20.0

Microcomputer packaging systems (MPS) 3.30.0

Appendix..... 3.90.0

19" compatible DC/DC converters

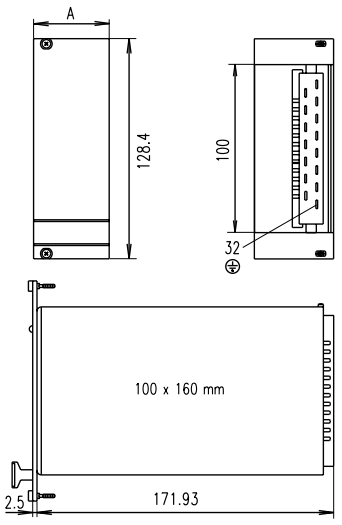


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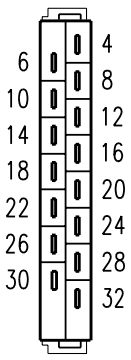
Single, 20 to 120 W

- DC series
- Input voltage from 9 to 160 V_{DC} (4 ranges)
- 19" compatible DC/DC switched mode power supplies (3 U)
- 1 output voltage
- Galvanic separation between primary and secondary circuit
- International approvals EN 60950, CE
- High reliability and long life

CE



DIJM0084



PSA46292

Pin	Connection
4	Ext. on/of (DCM, DCG)
6	Current share (DCM, DCG)
8	Sense 0V V_1
10	Sense + V_1
12	Output + V_1
14	
16	Output 0V V_1
18	
20	–
22	
24	
26	+ U_E (DCM, DCG)
28	+ U_E
30	0V U_E
32	PE ⏚

Note
The front panel is not included in delivery.

Output data at T_U = 0 ... 50 °C						DC input voltage – Order No. (1 unit)[1]				
Voltage in V	Current in A	Power output in W	Height in U	Width in HP	Power supply Type	A 8.5 –18 V_{DC}	W 18 – 40 V_{DC}	C 40 – 80 V_{DC}	D 80 – 160 V_{AC}	Front panel anodised
5	4	20	3	4	DCK 105	**13103-800**[3]	**13103-801**	**13103-802**	**13103-803**	**21008-154**
	10	50		8	DCM 105	**13103-820**	**13103-821**	**13103-822**	**13103-823**	**21008-151**
	20	100		10	DCG 105	**13103-840**[4]	**13103-841**	**13103-842**	**13103-843**	**21008-150**
12	2	24		4	DCK 112	**13103-804**[3]	**13103-805**	**13103-806**	**13103-807**	**21008-154**
	5	60		8	DCM 112	**13103-824**	**13103-825**	**13103-826**	**13103-827**	**21008-151**
	9	108		10	DCG 112	**13103-844**[4]	**13103-845**	**13103-846**	**13103-847**	**21008-150**
15	1.5	24		4	DCK 115	**13103-808**[3]	**13103-809**	**13103-810**	**13103-811**	**21008-154**
	4	60		8	DCM 115	**13103-828**	**13103-829**	**13103-830**	**13103-831**	**21008-151**
	7	105		10	DCG 115	**13103-848**[4]	**13103-849**	**13103-850**	**13103-851**	**21008-150**
24	1	24		4	DCK 124	**13103-812**[3]	**13103-813**	**13103-814**	**13103-815**	**21008-154**
	2.5	60		8	DCM 124	**13103-832**	**13103-833**	**13103-834**	**13103-835**	**21008-151**
	5	120		10	DCG 124	**13103-852**[4]	**13103-853**	**13103-854**	**13103-855**	**21008-150**

[1] Please order front panel and other accessories separately, EMC front panel available on request

[3] DCK U_{EDC} = 10.8 – 18 V, open design, case available on request

[4] In the case of input voltages from 8.5 ... 10.8 volts (longer than 3 minutes), the output power must be reduced by 10 %/volts.

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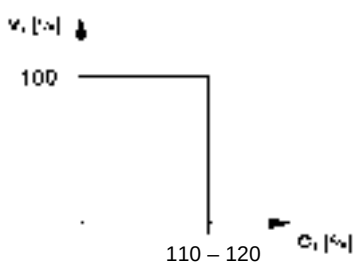
19″ compatible DC/DC converters

Technical data

Input parameters					
Input voltages (range)		8.5 – 18 V (A)	18 – 40 V (B)	40 – 80 V (C)	80 – 160 V (D)
Fuse DCM, DCG, (DCK)		25 A (6.3 A)	10 A (4 A)	6.3 A (1.6 A)	3.15 A (0.8 A)
Efficiency		70 – 85 %			
Output parameters					
Output voltages (adjustment range ± 5 %)		5 V	12 V	15 V	24 V
Residual ripple		< 15 mVss DCK, < 20 mVss DCM, DCG			
Interference voltage (total of all interference parts)		Type < 50 mV			
Mains control (with V_{IN})		< 0.1 %			
Load control (I_{OUT} = 0 ... 100 %)		< 0.2 %			
Control time		< 1 ms at I_{OUT} = 20 ... 80 %			
Temperature coefficient		± 0.025 %/K			
Power reduction, derating		from +50 °C 3 %/K			
Current limitation		110 % $I_{Nominal}$			
SD external switching on/off		DCM, DCG, TTL compatible			
Remote sense compensated		Max. 0.25 V/line			
DCM, DCG parallel switching		Load sharing, connect all pins 6 with short lines, connect sense directly to load line at connector			
Other data					
Over-voltage protection		Input > 100 % of U_E max., output 125 % ± 10 % U_{NOM}			
Weight (mass)		DCK 0.3 kg, DCM 0.7 kg, DCG 1 kg			
Electromagnetic compatibility, CE	Interference emission	EN 50081-1, EN 55011 Class B, EN 55022 Class B			
	Interference immunity (degree of severity)	EN 50082-2, EN 61000-4-2 (4), EN 61000-4-3 (10 V/m), EN 61000-4-4 (4), EN 61000-4-5 (3), EN 61000-4-11			
	Safety	EN 60950			
Operating display		Green LED for V_1			
Cooling		Convection			
Ambient temperature T_U operation		0 ... 70 °C			

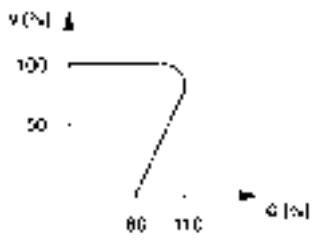
Current limitation

DCM, DCG



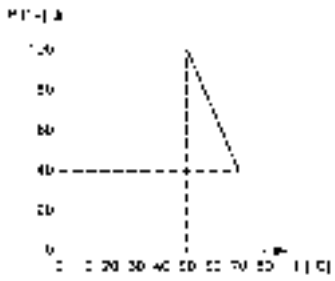
ELKC3878

DCK



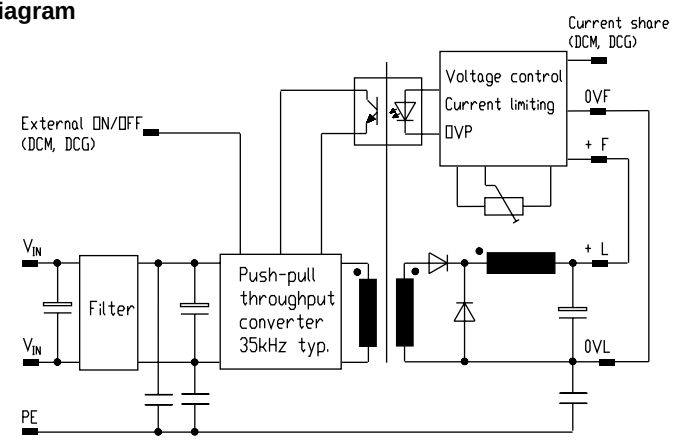
ELKC3877

Temperature-dependent output limitation



61_34_1

Schematic wiring diagram



ELKC3873

AC/DC switched mode power supplies
Single, 50 W 3.11.2
Single, 80 W 3.11.4
Single, 100 W 3.11.6
Single, 130 W 3.11.8
Dual, 80 W 3.11.10
Dual, 100 W 3.11.12
Triple, 80 W 3.11.14
Triple, 100 W 3.11.16
Triple, 130 W 3.11.18
Triple, 150 / 224 W 3.11.20
Quad, 250 W 3.11.22
Quad, 350 W 3.11.24

AC/DC linear control systems
Single, 8 – 60 W ..3.11.26
Dual, 10 – 58 W ...3.11.28
Triple, 7 – 39 W ...3.11.30

AC/DC non-regulated
Single, 84 W 3.11.32
Single, 240 W 3.11.34

DC/DC converters
Single, 20 to 120 W 3.11.36
Dual, 55 to 72 W ..3.11.38
Triple, 64 to 70 W 3.11.40
Quad, 250 W 3.11.42
Quad, 350 W 3.11.44

Accessories
Mating connector female connector H 15 F 3.11.46
Keying/coding 3.11.47
Guide rails 3.11.47
Z-rails 3.11.47
EMC contact strips 3.11.48
Wall/horizontal rail installation 3.11.49

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Power supply units..... 3.10.0
19" compatible.....3.11.0
Open frame.....3.12.0
Power systems.....3.13.0
Uninterruptable power supplies (UPS) 3.14.0

Backplanes/ test adapters .. 3.20.0

Microcomputer packaging systems (MPS) 3.30.0

Appendix..... 3.90.0

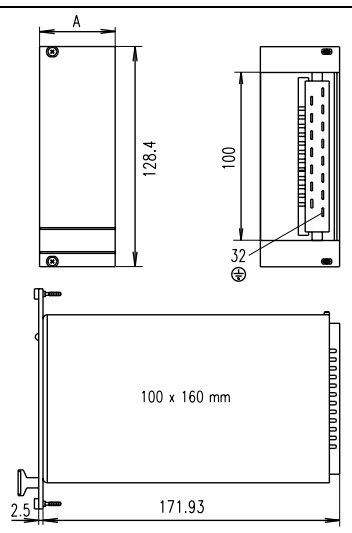
19" compatible DC/DC converters



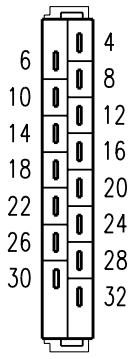
11396008

Dual, 55 to 72 W

- DC series
- Input voltage from 9 to 160 V_{DC} (4 ranges)
- 19" compatible DC/DC switched mode power supplies (3 U)
- 2 output voltages
- Galvanic separation between primary and secondary circuit
- International approvals EN 60950, CE
- High reliability and long life



DIJM0084



PSA46292

Pin	Connection
4	–
6	
8	Sense GND
10	–
12	
14	Output + V_1
16	GND – $V_{1.2}$
18	
20	–
22	Output + V_2
24	Sense + V_2
26	Sense + V_1
28	+ U_E
30	- U_E
32	PE ⏚

Note
The front panel is not included in delivery.

Output data at T_U = 0 ... 50 °C						DC input voltage – Order No.[1]				
Voltage in V	Current in A	Power output	Height	Width	Power supply	A	W	C	D	Front panel
V_1/V_2	I_1/I_2	in W	in U	in HP	Type	8.5–18 V_{DC}	18–40 V_{DC}	40–80 V_{DC}	80–160 V_{AC}	anodised
+5/+12	5/3	61	3	8	DCM 2512	**13103-860**	**13103-861**	**13103-862**	**13103-863**	**21008-153**
+5/+15	5/2	55			DCM 2515	**13103-864**	**13103-865**	**13103-866**	**13103-867**	
+12/-12	3/3	72			DCM 212	**13103-868**	**13103-869**	**13103-870**	**13103-871**	
+15/-15	2/2	60			DCM 215	**13103-872**	**13103-873**	**13103-874**	**13103-875**	

[1] Please order front panel and other accessories separately, EMC front panel available on request

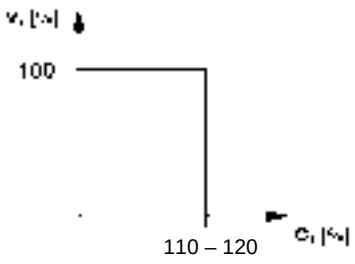
Mating connector H15F with FASTON connection, Order No. 69001-733

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Technical data

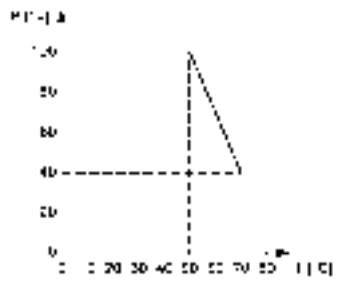
Input parameters					
Input voltages (range)		8.5 – 18 V (A)	18 – 40 V (B)	40 – 80 V (C)	80 – 160 V (D)
Fuse		25 A	10 A	6.3 A	3,15 A
Efficiency		70 – 85 %			
Output parameters					
Output voltages (adjustment range ± 5 %)		5 V	12 V	15 V	24 V
Residual ripple		< 25 mVss			
Interference voltage (total of all interference parts)		Type < 80 mV			
Mains control (with V_{IN})		< 0.2 %			
Load control (I_{OUT} = 0 ... 100 %)		< 0.2 %			
Control time		< 1 ms at I_{OUT} = 20 ... 80 %			
Temperature coefficient		± 0.025 %/K			
Power reduction, derating		from +50 °C 3 %/K			
Current limitation		110 % $I_{Nominal}$			
Remote sense compensated		Max. 0.25 V/line			
Other data					
Over-voltage protection, automatically resetting		Input > 100 % of U_E max., output 125 % ± 10 % U_{NOM}			
Weight (mass)		0.45 kg			
Electromagnetic compatibility, CE	Interference emission, depending on installation	EN 50081-1, EN 55011 Class B, EN 55022 Class B			
	Interference immunity (degree of severity)	EN 50082-2, EN 61000-4-2 (4), EN 61000-4-3 (10 V/m), EN 61000-4-4 (4), EN 61000-4-5 (3), EN 61000-4-6 (10 V), EN 61000-4-11			
	Safety	EN 60950, IEC 950			
Operating display		Green LED for $V_{1.2}$			
Cooling		Convection			
Ambient temperature T_U operation		0 ... 70 °C			

Current limitation



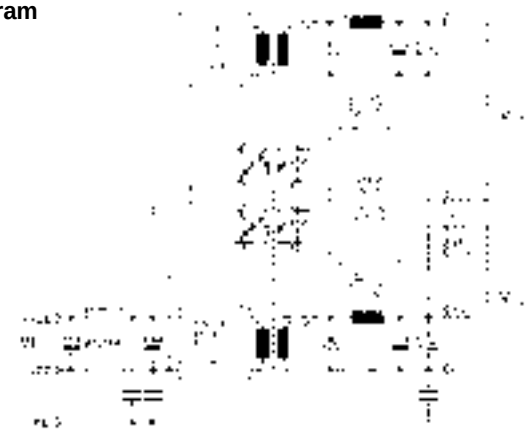
ELKC3878

Temperature-dependent output limitation



61_34_1

Schematic wiring diagram



ELKC3874

AC/DC switched mode power supplies
Single, 50 W 3.11.2
Single, 80 W 3.11.4
Single, 100 W 3.11.6
Single, 130 W 3.11.8
Dual, 80 W 3.11.10
Dual, 100 W 3.11.12
Triple, 80 W 3.11.14
Triple, 100 W 3.11.16
Triple, 130 W 3.11.18
Triple, 150 / 224 W 3.11.20
Quad, 250 W 3.11.22
Quad, 350 W 3.11.24

AC/DC linear control systems
Single, 8 – 60 W ..3.11.26
Dual, 10 – 58 W ...3.11.28
Triple, 7 – 39 W ...3.11.30

AC/DC non-regulated
Single, 84 W 3.11.32
Single, 240 W 3.11.34

DC/DC converters
Single, 20 to 120 W 3.11.36
Dual, 55 to 72 W..3.11.38
Triple, 64 to 70 W 3.11.40
Quad, 250 W 3.11.42
Quad, 350 W 3.11.44

Accessories
Mating connector female connector H 15 F 3.11.46
Keying/coding 3.11.47
Guide rails 3.11.47
Z-rails 3.11.47
EMC contact strips 3.11.48
Wall/horizontal rail installation 3.11.49

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Power supply units..... 3.10.0
19" compatible.....3.11.0
Open frame.....3.12.0
Power systems.....3.13.0
Uninterruptable power supplies (UPS) 3.14.0

Backplanes/ test adapters .. 3.20.0

Microcomputer packaging systems (MPS) 3.30.0

Appendix..... 3.90.0

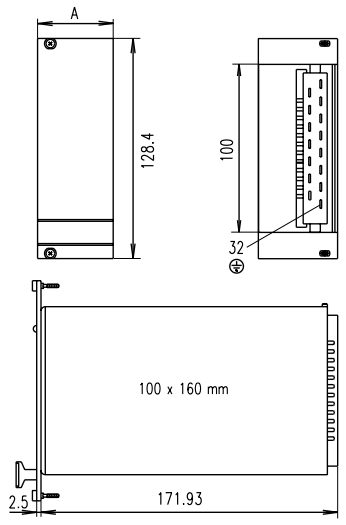
19" compatible DC/DC converters



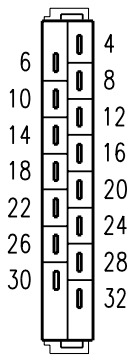
11396008

Triple, 64 to 70 W

- DC series
- Input voltage from 8.5 to 160 V_{DC} (4 ranges)
- 19" compatible DC/DC switched mode power supplies (3 U)
- 3 output voltages
- Galvanic separation between primary and secondary circuit
- International approvals EN 60950, CE
- High reliability and long life



DIJM0084



PSA46292

Pin	Connection
4	internally assigned
6	
8	+ 5 V
10	0V
12	+ 5 V
14	0V
16	internally assigned
18	0V
20	Output V_2
22	Output V_3
24	internally assigned
26	SD
28	+ U_E
30	- U_E
32	PE ⏚

Note
The front panel is not included in delivery.

Output data at T_U = 0 ... 50 °C						DC input voltage – Order No. (1 unit)[1]				
Voltage in V	Current in A	Power output	Height	Width	Power supply	A	W	C	D	Front panel
$V_1/V_2/V_3$	$I_1/I_2/I_3$	in W	in U	in HP	Type	8.5–18 V_{DC}	18–40 V_{DC}	40–80 V_{DC}	80–160 V_{AC}	anodised
+5/+12/-12	8/3/1	88	3	8	DCM 312 eco	**13103-888**	**13103-889**	**13103-890**	**13103-891**	**21096-195**
+5/+15/-15	8/1/1	70			DCM 315 eco	**13103-892**	**13103-893**	**13103-894**	**13103-895**	

[1] Please order front panel and other accessories separately, EMC front panel available on request

Mating connector H15F with FASTON connection, Order No. 69001-733

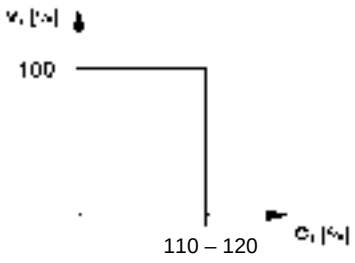
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19″ compatible DC/DC converters

Technical data

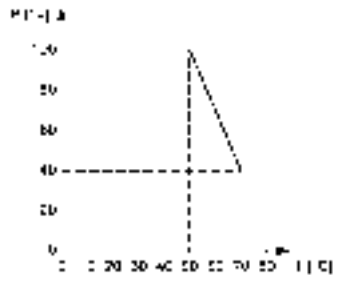
Input parameters					
Input voltages (range)		8.5 – 18 V (A)	18 – 40 V (B)	40 – 80 V (C)	80 – 160 V (D)
Fuse		25 AT	10AT	6.3 AT	6.3 AT
Efficiency		80 – 85 %			
Output parameters					
Adjustment range V_1		5 V ± 5 %			
Residual ripple		< 50 mV_{ss} , < 10 mV_{ss} at ± 15 V			
Interference voltage (total of all interference parts)		Type < 100 mV_{ss}			
Mains control (with $V_{IN\ min.}$)		V_1 < 0.2 %, $V_{2.3}$ < 0.5 %			
Load control (I_{OUT} = 0 ... 100 %)		See diagram			
Control time		< 1 ms at I_{OUT} = 20 ... 80 %			
Temperature coefficient		≤ 0.025 %/K			
Power reduction, derating		from +50 °C 3 %/K			
Current limitation		110 % $I_{Nominal}$			
SD external switching on/off		TTL compatible			
Other data					
Over-voltage protection, automatically recurring		Input > 100 % of U_E max., output 125 % ± 5 % for V_1, $V_{2.3}$ transzorb diode			
Weight (mass)		0.5 kg			
Electromagnetic compatibility, CE	Interference emission, depending on installation	EN 50081-1, EN 55011 / EN 55022 Class 2			
	Interference immunity (degree of severity)	EN 50082-2, EN 61000-4-2, EN 61000-4-3, EN 61000-4-4, EN 61000-4-5, EN 61000-4-6, EN 61000-4-11			
	Safety	EN 60950, IEC 950, VDE 0805			
Operating display		Green LED for V_1			
Cooling		Convection			
Ambient temperature T_U operation		0 ... 70 °C			

Current limitation



ELKC3878

Temperature-dependent output limitation



61_34_1

Schematic wiring diagram



ELKC3875

AC/DC switched mode power supplies
Single, 50 W 3.11.2
Single, 80 W 3.11.4
Single, 100 W 3.11.6
Single, 130 W 3.11.8
Dual, 80 W 3.11.10
Dual, 100 W 3.11.12
Triple, 80 W 3.11.14
Triple, 100 W 3.11.16
Triple, 130 W 3.11.18
Triple, 150 / 224 W 3.11.20
Quad, 250 W 3.11.22
Quad, 350 W 3.11.24

AC/DC linear control systems
Single, 8 – 60 W ..3.11.26
Dual, 10 – 58 W ...3.11.28
Triple, 7 – 39 W ...3.11.30

AC/DC non-regulated
Single, 84 W 3.11.32
Single, 240 W 3.11.34

DC/DC converters
Single, 20 to 120 W 3.11.36
Dual, 55 to 72 W ..3.11.38
Triple, 64 to 70 W 3.11.40
Quad, 250 W 3.11.42
Quad, 350 W 3.11.44

Accessories
Mating connector female connector H 15 F 3.11.46
Keying/coding 3.11.47
Guide rails 3.11.47
Z-rails 3.11.47
EMC contact strips 3.11.48
Wall/horizontal rail installation 3.11.49

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Power supply units..... 3.10.0
19" compatible.....3.11.0
Open frame.....3.12.0
Power systems.....3.13.0
Uninterruptable power supplies (UPS) 3.14.0

Backplanes/ test adapters .. 3.20.0

Microcomputer packaging systems (MPS) 3.30.0

Appendix..... 3.90.0

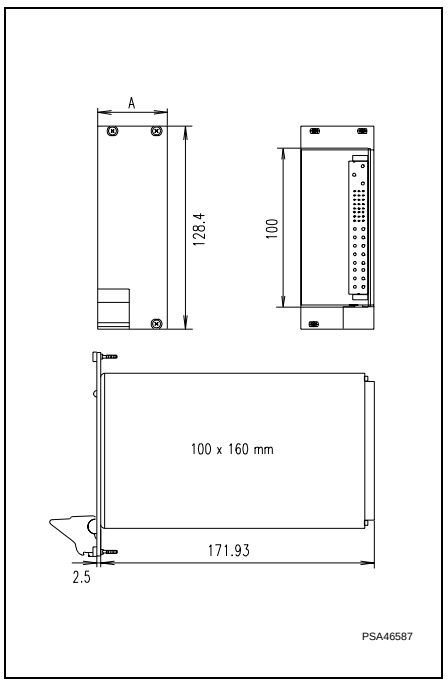
19" compatible DC/DC converters



11300003

Quad, 250 W *maxpowerPRO*

- 19" compatible DC/DC switched mode power supplies, pluggable 3 U, for compact PCI and other applications
- Input voltage 48 V_{DC}
- 4 output voltages
- Connectors P 47
- Outputs redundant with current share bus
- Hot swap
- Compact PCI signalling
- For industrial and telecommunications applications
- International approvals EN 60950, UL, TÜV, cUL
- High reliability and long life



Output data at T_U = 0 ... 50 °C											Order No. (1 unit)	
Voltage in V				Current[1] in A				Capacity in W	Height	Width A	Power supply incl. mounted EMC front panel[2]	Mains voltage
V_1	V_2	V_3	V_4	I_1	I_2	I_3	I_4	Total (V_1 + V_2)	in U	in HP	Type	36 – 72 V_{DC}
5	3.3	+12	-12	25	25	5	1.5	250 (150)	3	8	CPCI 250 DC	**13100-132**

[1] With forced cooling in the system from 2 m/s

[2] Front panel: Front panel anodised, rear side chromated, slotted on both sides for mounting EMC contact strips in the event of increased EMC requirements, IEL handle
(3 U EMC contact strips, Order No. 21101-853, 10 pieces)

Accessories

Mating connector/intermediate plate 3 U,
Order No. 23098-104

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19″ compatible DC/DC converters

Technical data

Input parameters					
Input voltage	Nominal value	48 VDC			
	Operating-ranges	36 – 72 V_{DC}			
Input current		9.4 A			
Efficiency type-dependent, typical		> 70 %			
Output parameters					
Output power max.: Convection/forced cooling with 2 m/s		75/150 W		48/78 W	
Output voltage [V]		V_1	V_2	V_3	V_4
	factory set	5 V	3.3 V	12 V	-12 V
	Tolerance	± 50 mV			
Output current [A] 0 ... 50 °C	Convection	15	15	3	1
	Cooling 2 m/s	25	25	5	1.5
	Derating 50 – 70 °C	2 %/K			
Overcurrent protection		all outputs at 120 %			
Residual ripple/ interference voltage (bandwidth = BW)		50 mV_{PP} (BW: 20 MHz)		< 100 mV (BW: 20 MHz)	
Load control		+5 % -3 %		± 5 %	
Cross-control		1 %			
Temperature coefficient		-0.02 %/K (0 – 50 °C)			
Connection two connectors, offset 2.54 mm		(DIN M-8+24), Positronic P47			
Dynamic control deviations (load change: 50 ... 100 % with 100 Hz; dI/dt = 0.25 A/µs)					
Overall control time, tolerance 1 % × $V_{Nominal}$		< 1.5 ms			
Overshoot and undershoot amplitude		< 5 %			

Protection and monitoring facilities		
Switch-on time		< 4 s
Mains fuse internal		10 A/250 V_{AC}, 5 × 20 mm, DIN 41571
Switch power supply on/off externally		"INH" = Inhibit ("EN" = Enable) normal high, drive low (high) to turn off (on) (max. 15 V/ 150 µA)
Over-voltage protection OVP shuts power supply off, restart		120 – 130 % at $V_{1.2}$
Remote sense compensated per line		Max. 0.25 V
Current share with one cable connection		V_1, V_2, V_3, "ISH" signal, tolerance ± 10 %
Power failure signalling		TTL signal, active high
"DEG" signal if temperature outside of range (option)		"HIGH" < 50 °C; "LOW" > 50 °C, tolerance ± 5 %
Power down "FAIL" signal at 70 °C, automatic restart (option)		"HIGH" < 70 °C; "LOW" > 70 °C, tolerance ± 5 %
Two-color LED, fault/OK status		red/green
Test and environmental conditions		
Climatic test to		IEC 68-2-38
Shock and vibration in accordance with		EN 60068-2-6, acceleration of 2 g
Height 3 U/depth 160 mm		Width 8 HP
Weight (mass)		2 kg
CE	Interference emission	CISPR22 Class B, EN 50081-1, EN 55011 Class B
	Interferencei mmunity, degree of severity 3	EN 50082-2, EN 61000-4-2, EN 61000-4-3, EN 61000-4-4, EN 61000-4-5, EN 61000-4-6
	Safety, class of protection 1	EN 60950
High voltage test to EN 60950	Input-output	4.3 kV_{DC}
	Input PE	2.2 kV_{DC}
Safety		UL 1950, cUL, TÜV & CE (applied for)
Power supply maintenance-free		Yes
Necessary cooling for the power supply		2 m/s
Operation/storage ambient temperature		10 ... 70 °C / -40 ... +85 °C
Relative humidity, non-condensing		20 °C – 95 °C
MTBF		200,000 h (50 °C)

AC/DC switched mode power supplies
Single, 50 W 3.11.2
Single, 80 W 3.11.4
Single, 100 W 3.11.6
Single, 130 W 3.11.8
Dual, 80 W 3.11.10
Dual, 100 W 3.11.12
Triple, 80 W 3.11.14
Triple, 100 W 3.11.16
Triple, 130 W 3.11.18
Triple, 150 / 224 W 3.11.20
Quad, 250 W 3.11.22
Quad, 350 W 3.11.24

AC/DC linear control systems
Single, 8 – 60 W ..3.11.26
Dual, 10 – 58 W ...3.11.28
Triple, 7 – 39 W ...3.11.30

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Single, 240 W 3.11.34

DC/DC converters
Single, 20 to 120 W 3.11.36
Dual, 55 to 72 W ..3.11.38
Triple, 64 to 70 W 3.11.40
Quad, 250 W 3.11.42
Quad, 350 W 3.11.44

Accessories
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Guide rails 3.11.47
Z-rails 3.11.47
EMC contact strips 3.11.48
Wall/horizontal rail installation 3.11.49

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Power supply units..... 3.10.0
19" compatible.....3.11.0
Open frame.....3.12.0
Power systems.....3.13.0
Uninterruptable power supplies (UPS) 3.14.0

Backplanes/ test adapters .. 3.20.0

Microcomputer packaging systems (MPS) 3.30.0

Appendix..... 3.90.0

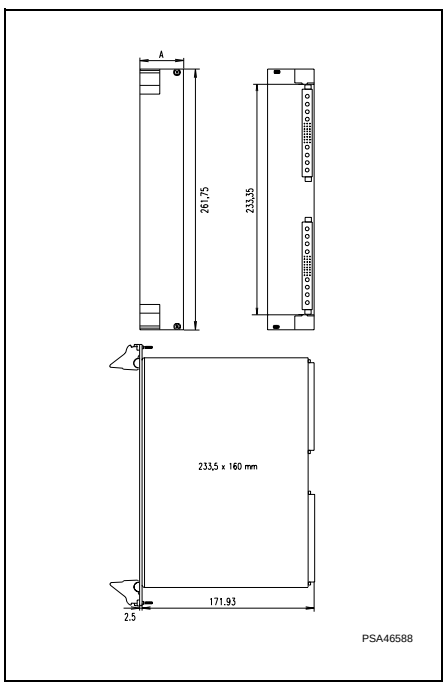
19" compatible DC/DC converters



11300009

Quad, 350 W *maxpowerPRO*

- 19" compatible DC/DC switched mode power supplies, pluggable 6 U, for compact PCI and other applications
- Input voltage 48 V_{DC}
- 4 output voltages
- Connectors M24/8 (P 47 available on request)
- Redundancy operation with current share bus
- Hot swap
- Compact PCI signalling
- For industrial applications
- International approvals EN 60950, UL
- High reliability and long life



Output data at T_U = 0 ... 40 °C											Order No. incl. mounted EMC front panel[1]	
Voltage in V				Current in A				Power output[2] in W	Height	Width A	Power supply	Mains voltage
V_1	V_2	V_3	V_4	I_1	I_2	I_3	I_4	Total	in U	in HP	Type	36 – 72 V_{DC}
5	3.3	+12	-12	45	30	12	3	350	6	8	PCI-3-4DC	**11098-133**

1) Front panel anodised, rear side chromated, slotted on both sides for mounting EMC contact strips in the event of increased EMC requirements, two IEL handles
(6 U EMC contact strips, Order No. 21101-855, 10 pieces)
2) Total output power V_1 + V_2 = 200 W

Accessories

Mating connector/intermediate plate 6 U,
for description see backplane power bus, **Order No. 23207-006**

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19" compatible DC/DC converters

Technical data

Input parameters		
Input voltage	Nominal value	48 VDC
	Operating-range	40 – 72 V_{DC}
Efficiency, typical		75 %

Output parameters					
Output power max.		350 W			
Output voltages		V_1	V_2	V_3	V_4
		3.3 V	5 V	12 V	-12 V
Output current 0 ... 50 °C		45 A	30 A	12 A	43 A
Residual ripple/ interference voltage		1 % or 100 mV_{SS},			
Load control with/without sense		0.5 %/2 %			
Overshoot		1 % switch on/switch off 3 % load change 50 – 100 %			
Mains control, static		0.1 %			
Power failurebridging at 100 % load		20 ms			
Temperature coefficient		-0.02 %/K			
Connection connectors		DIN M24/8			
Basic load		not necessary			

Protection and monitoring facilities		
Switch-on time		< 4 s
Mains fuse internal		10 A/250 V_{AC}
Switch power supply on/off externally		Inhibit (enable) normal high, drive low (high) to turn off (on)
Over-voltage protection (OVP)		all outputs 125 % of the mains voltage; reset via off/on or inhibit/enable
Over-temperature protection		Automatic shut-off with automatic return
Overcurrent protection		all outputs
Remote sense compensated per line		V_1, V_2, max. 0.5 V
Current share		V_1, V_2, V_3,
Signal: Power failure		TTL signal, active high
Signal: Temperature outside of range		TTL signal, active high
Two-color LED, fault/OK status		red/green
Test and environmental conditions		
Climatic test to		IEC 68-2-38
Shock and vibration in accordance with		EN 60068-2-6
Height 3 U/depth 160 mm		Width 8 HP
Weight (mass)		2.3 kg
CE	Interference emission	CISPR22 Class B, FCC Part 15, EN 55022
	Interferencei mmunity	EN 50082-1, EN 61000-4-2, EN 61000-4-4, EN 61000-4-5, EN 61000-3-2, EN 61000-3-3
	Safety, class of protection 1	EN 60950
High voltage test to EN 60950	Input-output	4.3 kV_{DC}
	Input PE	2.2 kV_{DC}
Safety		UL, cUL, TÜV & CE
Power supply maintenance-free		Yes
Necessary cooling via the power supply		400 lfm, forced
Operation/storage ambient temperature		0 ... 50 °C / -40 ... +85 °C
Relative humidity, non-condensing		95 %
MTBF at 25 °C		250,000 h (Bellcore STD.)

AC/DC switched mode power supplies
Single, 50 W 3.11.2
Single, 80 W 3.11.4
Single, 100 W 3.11.6
Single, 130 W 3.11.8
Dual, 80 W 3.11.10
Dual, 100 W 3.11.12
Triple, 80 W 3.11.14
Triple, 100 W 3.11.16
Triple, 130 W 3.11.18
Triple, 150 / 224 W 3.11.20
Quad, 250 W 3.11.22
Quad, 350 W 3.11.24

AC/DC linear control systems
Single, 8 – 60 W ..3.11.26
Dual, 10 – 58 W ...3.11.28
Triple, 7 – 39 W ...3.11.30

AC/DC non-regulated
Single, 84 W 3.11.32
Single, 240 W 3.11.34

DC/DC converters
Single, 20 to 120 W 3.11.36
Dual, 55 to 72 W ..3.11.38
Triple, 64 to 70 W 3.11.40
Quad, 250 W 3.11.42
Quad, 350 W 3.11.44

Accessories
Mating connector female connector H 15 F 3.11.46
Keying/coding 3.11.47
Guide rails 3.11.47
Z-rails 3.11.47
EMC contact strips 3.11.48
Wall/horizontal rail installation 3.11.49

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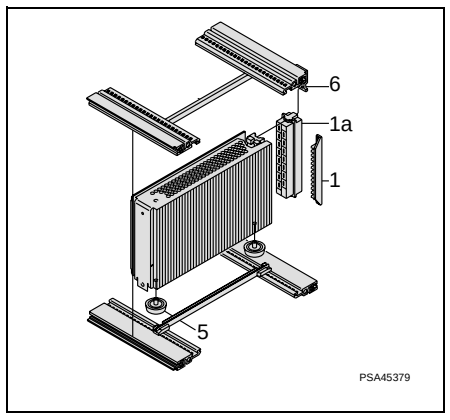
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19" compatible.....3.11.0
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Power systems.....3.13.0
Uninterruptable power supplies (UPS) 3.14.0

Backplanes/ test adapters .. 3.20.0

Microcomputer packaging systems (MPS) 3.30.0

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19" compatible accessories



Accessories

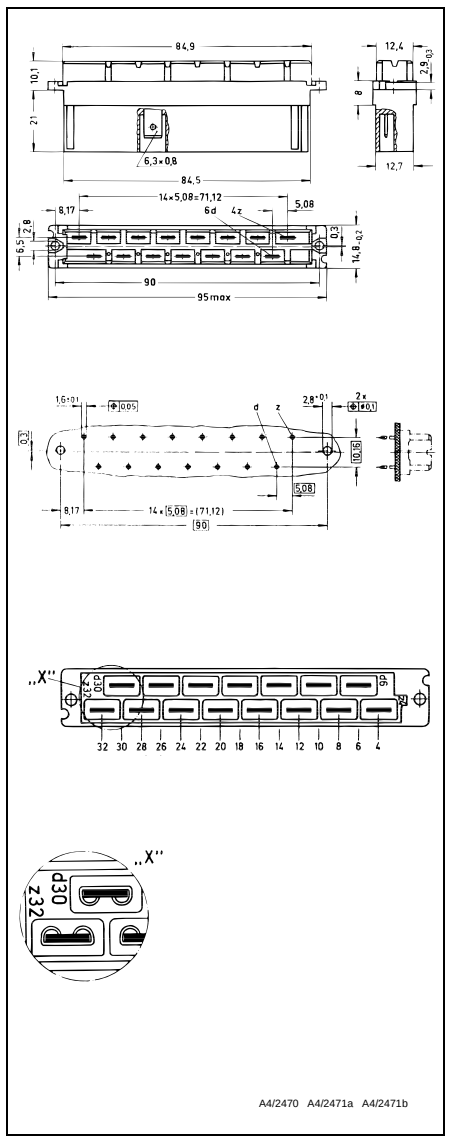
- Mating connector, female connector, H 15 F (Item 1a)
- Keying/coding (Item 1)
- Guide rails (Item 5)
- Z-rails (Item 6)
- EMC contact strips for front panel
- Wall/horizontal rail installation
- Voltage adapter boards for compact PCI power supplies, see Chapter entitled Backplanes – power bus



Mating connector, female connector, H 15 F

- Mating connector for wiring the inputs/outputs (6.3 mm FASTON)
- In all 19" power supplies, the male connector(s) is (are) pin 32 with advanced earthing contact

Item	Qty	Description	Description	Order No.
1a	1	Mating connector female connector H 15 F	Wiring with Faston connector 6.3 × 0.8 mm	**69001-733**



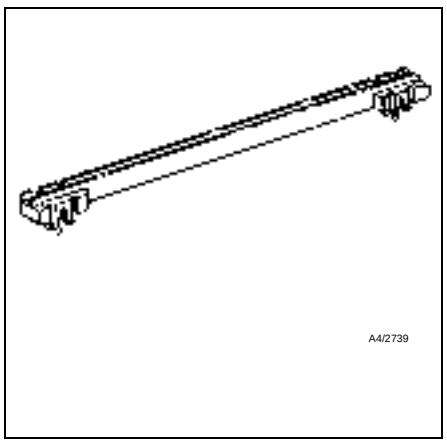
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Keying/coding

- Mechanical keying/coding prevents the insertion of a power supply in the incorrect position
- Connector keying/coding with with a comb strip (Item 2, fixed to power supply – except for MPS and DC series) and contact strip (assembly to the horizontal rail)
- Space requirement 4 HP
- With 2 keying/coding pins 66, and with 6 keying/coding pins, 924 keying/coding possibilities

Item	Qty	Description	Description	Order No.
1	1	Contact strip	Crastin (UL 94-V-0)	**60800-123**
3	2	Keying/coding pin		

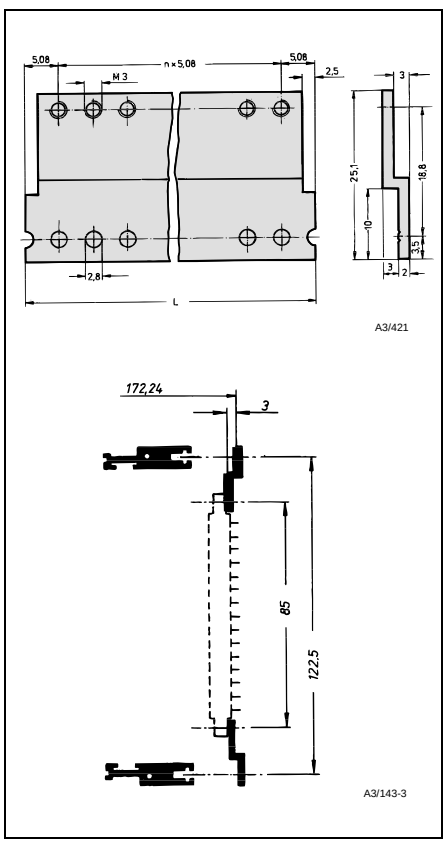
Note
Item 2 is mounted at the power supply as standard



Guide rails

- For engaging into horizontal rails, see Item 5
- Groove width 2 mm
- 2 versions for light and heavy power supplies

Description	Description	Board length mm	Order No.
Guide rail	Standard version for light power supplies < 1.2 kg	160	**60817-103**
		220	**60817-149**
	Reinforced version for heavy power supplies > 1.2 kg	160	**60817-102**
		220	**60817-085**



Z-rails

- For fixing the mating connector onto the rear horizontal rail (Item 6)
- Serves to create the standard mounting depth of the power supplies
- Short Z-rails 4 HP width

Qty	Description	Description	Order No.
1	Z-rails	4 HP (20.32 mm)	**30822-166**

AC/DC switched mode power supplies
Single, 50 W 3.11.2
Single, 80 W 3.11.4
Single, 100 W 3.11.6
Single, 130 W 3.11.8
Dual, 80 W 3.11.10
Dual, 100 W 3.11.12
Triple, 80 W 3.11.14
Triple, 100 W 3.11.16
Triple, 130 W 3.11.18
Triple, 150 / 224 W 3.11.20
Quad, 250 W 3.11.22
Quad, 350 W 3.11.24

AC/DC linear control systems
Single, 8 – 60 W ..3.11.26
Dual, 10 – 58 W ...3.11.28
Triple, 7 – 39 W ...3.11.30

AC/DC non-regulated
Single, 84 W 3.11.32
Single, 240 W 3.11.34

DC/DC converters
Single, 20 to 120 W 3.11.36
Dual, 55 to 72 W..3.11.38
Triple, 64 to 70 W 3.11.40
Quad, 250 W 3.11.42
Quad, 350 W 3.11.44

Accessories
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Z-rails 3.11.47

EMC
contact strips 3.11.48
Wall/horizontal rail installation 3.11.49

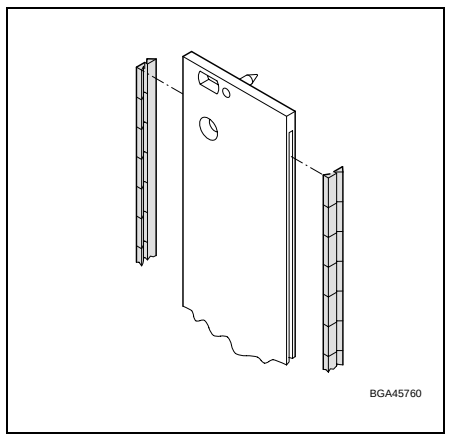
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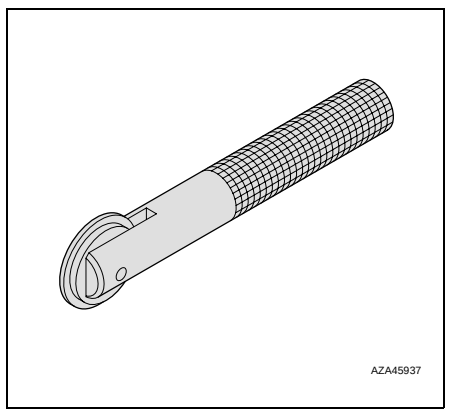
Appendix..... 3.90.0



EMC contact strips

For shielded front panels with slots.
Material: Stainless steel

Height U	Length mm	Qty	Order No.
3	97	10	**21101-705**
		100	**21101-706**
4	142	10	**21101-713**
		100	**21101-714**
6	232	10	**21101-707**
		100	**21101-708**



Assembly tool for EMC contact strips

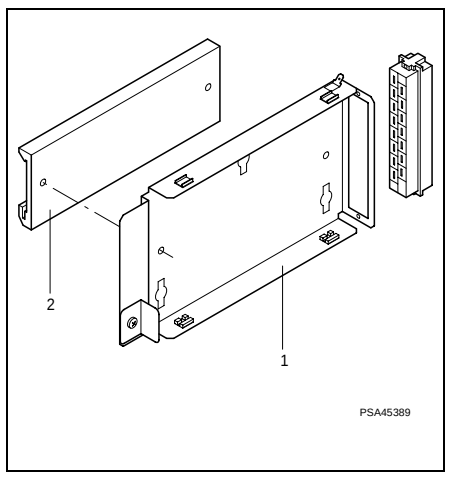
Material: Aluminium

1	Order No.	**24560-270**

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11395007



Wall/horizontal rail installation

- Suitable for 19" compatible power supplies with 3 U
- Wall-mounting bracket can be mounted in any position using screws, power supply is pushed in.
- Horizontal rail bracket is screwed onto the wall-mounting bracket – the 19” power supply can therefore be clipped onto the horizontal rail with lip.

Item	Qty	Description	Description	Order No.
1	1	Wall-mounting bracket	Steel	**11000-001**
2	1	Horizontal rail bracket	Al	**11000-002**

Note

Female connector H 15 F is also required.

AC/DC switched mode power supplies
Single, 50 W 3.11.2
Single, 80 W 3.11.4
Single, 100 W 3.11.6
Single, 130 W 3.11.8
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Dual, 100 W 3.11.12
Triple, 80 W 3.11.14
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Open frame power supplies Overview



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Application

Open frame power supplies are used in order to supply controls and systems with the required direct voltage. These are power supplies with non-standardized dimensions with a compact design and high efficiency.

3.3, 5, 12, 15 and 24 V are available as standard output voltages.

Depending on the application, AC/DC switched or linear control systems are used.

Electrical design

Mains connection and the output voltages are carried out via connectors or terminal blocks. A primary fuse is mounted in the power supplies.

Depending on the power supply, signalling (TTL signal) in accordance with VME bus specifications are provided.

Mechanical structure

Various case versions are available. Depending on the type, the power supplies have an open design or a protective case.

Heat dissipation

The operation of the power supplies is possible up to 70°C. A fan is mounted in the case of switched mode power supplies for industrial applications and PC power supplies.

With convection cooling only the power output is reduced.

Standards/approvals

The power supplies are CE-certified and partly UL- and VDE/ LGA-approved.

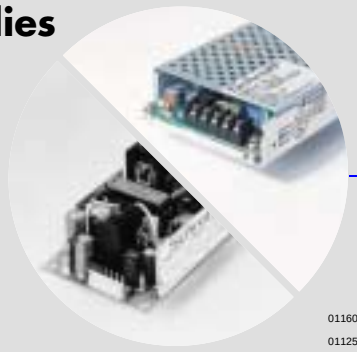
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Open frame power supplies Overview

AC/DC switched mode power supplies

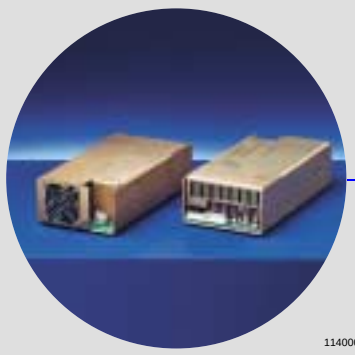
Individual dimensions for individual components

- **Cost-optimized**
  - **30 to 50 W**
  - **1 ... 4 output voltages**



011602-3
011256-1

- **Robust for industrial applications**
  - **200 to 600 W**
  - **3 and 4 output voltages**



11400001

- **PC power supplies (also redundant)**
  - **235 to 500 W**
  - **ATX**



12398011

AC/DC linear control systems

High control accuracy and low residual ripple

- **15 to 116 W**
- **1 ... 3 output voltages**



97/724

AC/DC switched mode power supplies
30 – 50 W, single dual, triple..3.12.2

200 W, triple, quad 3.12.4
450 W, triple, quad 3.12.6
600 W, triple.....3.12.8

235 – 500 W, PC power supplies3.12.10

AC/DC linear control systems
Single, 15 – 116 W 3.12.12
Dual, 24 – 90 W 3.12.14
Triple, 20 – 55 W 3.12.16

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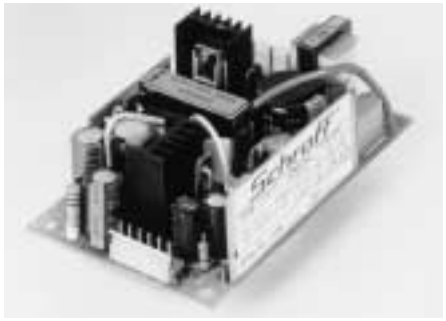
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Open Frame AC/DC switched mode power supplies



VI-30 – 33 011256-1

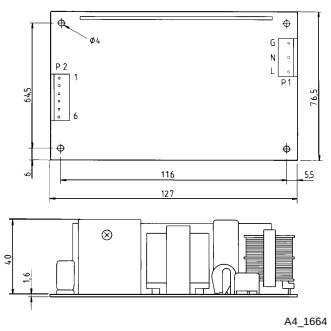


VI-50 011602-3

30 – 50 W, single dual, triple

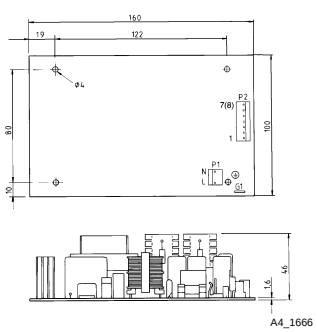
- VI series
- 1 – 3 output voltages (5, 12, 15, 24 V)
- Broad range input
- Cost-optimized
- International approvals CE, for VI-50 also EN, UL, CSA
- High reliability and long life
- Other output voltages and output powers on request

VI-30



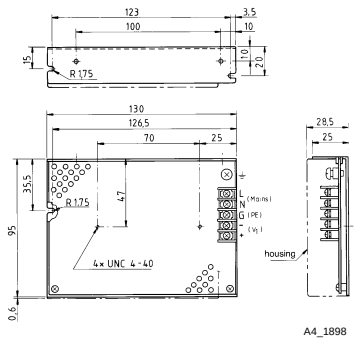
A4_1664

VI-40



A4_1666

VI-50



A4_1898

Output data at T_U = 0 ... 50 °C								Order No.		
Voltage in V			Current I_0(I_0max.)[1] in A			Capacity	Dimensions W × L × H	Power supply	Mains voltage	Connector set[3]
V_1	V_2	V_3	I_1	I_2	I_3	in W	in mm	Type	90 – 264 V_{AC}	
5			6 (6)			30	77 × 127 × 42	VI 30-10	**11008-570**	**21008-133**
			8 (11)			50	96 × 130 × 29	VI 50-10	**11008-732**	[4]
12			2.5 (3)			30	77 × 127 × 42	VI 30-11	**11008-571**	**21008-133**
			4.2 (4.5)			48	96 × 130 × 29	VI 50-11	**11008-733**	[4]
15			2 (2)			30	77 × 127 × 42	VI 30-12	**11008-572**	**21008-133**
			3.4 (4)			45	96 × 130 × 29	VI 50-12	**11008-734**	[4]
24			1.3 (2)			31	77 × 127 × 42	VI 30-13	**11008-573**	**21008-133**
			2,1 (2.2)			48	96 × 130 × 29	VI 50-13	**11008-735**	[4]
5	12		4 (5)	1 (1)		30	77 × 127 × 42	VI 30-21	**11008-575**	**21008-133**
5	24		4 (5)	0.5 (1)		30	77 × 127 × 42	VI 30-23	**11008-577**	**21008-133**
+5	+12	12	2.5 (3)	1 (1.5)	0.5 (1)	30	77 × 127 × 42	VI 30-30	**11008-578**	**21008-133**
+5	+12	12	3 (4)	1.5 (2)	0.5 (1)	40	100 × 160 × 46	VI 40-30	**11008-590**	**21008-134**
+5	+15	15	3 (4)	1.4 (2)	0.4 (1)	40	100 × 160 × 46	VI 40-33	**11008-593**	**21008-134**

[1] Maximum current for approx. 5 min.

[2] With case

[3] Connector set with all input and output connectors for complete connection

[4] Terminal blocks

UL 1950 approval

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Technical data

Input parameters		VI-30	VI-40	VI-50
Mainsvoltage	Nominal values	110 – 240 V_{AC}		
	Operating range	90 – 264 V_{AC}		
Mains frequency range		47 – 63 Hz		
Mains input current in accordance with		EN 61000-3-2 + A14		
Efficiency		70 – 80 %		
Output power		30 W	40 W	50 W
UL 1950		no	no	yes
TÜV EN 60950		no	no	yes

Output parameters	V1	V2	V3
Output voltage, adjustment range	V_1 -10 % to OVP		
Over-voltage protection OVP	5 V: 6.2 ± 0.4, 12, 15, 24 V: V_1 × 1.24±8%	–	
Residual ripple	< 1 % V_{SS}		
Mains control 90 – 264 V	< 0.1 %		
Temperature coefficient	0.03 %/K		
Derating (+50 °C to +70 °C)	2.5 %/K		
Dynamic control deviations			
Overall control time (50 % load change)	< 3 ms		
Load control	2 % type	5 % type	1.5 % type
Cross-control, load change 50 – 100 % at any other output, typical	0.2 %	< 1 % (5 % at load change at V_1)	
Protection and monitoring facilities			
Power failurebridging at 100 % load	> 20 ms		
Over-load protection	125 – 150 % of the output power, short-circuit resistant		

Test and environmental conditions		
CE	Interference emission	EN 50081-1, EN 55022 Class B
	Interference immunity, degree of severity 3	IEC 801-2, Level 3, A IEC 801-3, Level 2, A IEC 801-4, Level 3, A
	Safety, class of protection 1	EN 60950
Power supply maintenance-free		Yes
Cooling		Convection
Operation/storage ambient temperature		0 ... 70°C / -20 ... +85°C
MTFB at full load, T_U = 25°C		> 48 000 h

Connector pin-out P2

Pin **Type**	1	2	3	4	5	6	7	8
VI 30-1 ...	⊥	⊥	⊥	V_1	V_1	V_1	–	–
VI 30-2 ...	⊥	⊥	+V_1	+V_2	–	–	–	–
VI 30-3 ...	⊥	⊥	+V_1	+V_2	$_3$V–	V_3 +	–	–
VI 40-3 ...	+V_1	⊥	+V_1	⊥	+V_2	$_3$V–	V_3 +	–

AC/DC switched mode power supplies
30 – 50 W, single dual, triple..3.12.2
200 W, triple, quad 3.12.4
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600 W, triple.....3.12.8
235 – 500 W, PC power supplies3.12.10

AC/DC linear control systems
Single, 15 – 116 W 3.12.12
Dual, 24 – 90 W 3.12.14
Triple, 20 – 55 W 3.12.16

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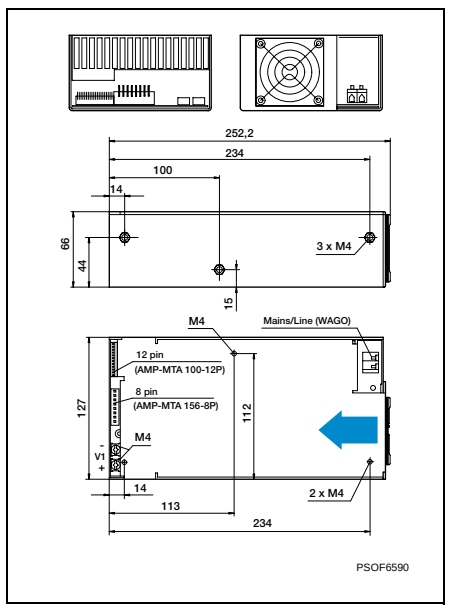
Open Frame AC/DC switched mode power supplies



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200 W, triple, quad

- 3 and 4 output voltage
- Automatic mains voltage switch-over
- For industrial use for VME and compact PCI bus applications
- VME bus signalling
- Fan monitoring



Output data at T_U = 0 ... 50 °C										Order No.		
Voltage in V[3]				Current in A				Capacity	Dimensions H × W × D	Power supply		Connector set[1]
V_1	V_2	V_3	V_4	I_1[2]	I_2	I_3	I_4	in W	in mm	Type	Mains voltage 100/240 V_{AC}	
5	12	12		35	7,5	5		200	66 ×127 × 253	PE 3237/03	**11009-323**	**21009-036**
5	12	12	12	30	7,5	4	3.5			PE 3238/00	**11009-330**	
5	12	12	24	30	7,5	4	2.0			PE 3238/01	**11009-331**	
5	24	12	12	30	4.0	4	3.5			PE 3238/02	**11009-339**	
24	12	12	12	6	7,5	4	3.5			PE 3238/07	**11009-332**	

[1] Connector set with all input and output connectors

[2] Basic load I_1 = 2 A, at PE 3238/07 I_1 = 1 A, additional fan output 24 V/200 mA

[3] Large voltage adjustment range at $V_{2, 3, 4}$

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Technical data

Input parameters			
Mains-voltage	Nominal values	100 – 240 V_{AC}	
	Operating ranges	90 – 130 V_{AC} (start-up at 85 V) 180 – 264 V_{AC}	
Mains nominal current at 90 V_{AC}, full load		4 A	
Mains frequency range		47 – 63 Hz	
Power factor in accordance with		EN 61000-3-2	
Efficiency type-dependent		> 73 %	
Switch-on current on warm and cold-starting		< 20 A	
Discharge current (264 V_{AC}/50 Hz)		0.5 mA	
Output parameters		**Triple**	**Quad**
Output power		200 W	
Derating (+50 °C to +70 °C)		-2.5 %/K	
Output voltage, adjust-ment range	V_1	5 V, 4.5 – 5.5 V	5 V, 4.5 – 5.5 V; 24 V, 23 – 25 V
	V_2	5 V, 4.8 – 15.2 V	5 V, 4.8 – 15.2 V 24 V, 23.5 – 28.5 V_i
	V_3	4.8 – 15.2 V	4.8 – 15.2 V
	V_4	–	12 V, 2 – 15 V; 24 V, 15 – 28 V
Fan output non-regulated		12 V / 200 mA	
Basic load		V_1 = 2 A, PE 3238/07 V_1 = 1 A	
Residual ripple + interference voltage (BW: 15 MHz)		$V_{1,2,3}$ = 1 %	$V_{1,2,3}$ = < 1 % V_4 = < 2 %
Load control, static (load change 40 %, min. load 20 %)		± 0.2 %	
Cross-control, load change 20 – 100 %		V_1 ± 0.1 %, other 0.2 %	
Mains control ± 10 %		± 0.1 %	
Temperature coefficient		0.05 %/K	
Dynamic control deviations			
Overall control time, (50 % load change, min. load 20 %		0.5 ms	1 ms
Overshoot and undershoot amplitude [mV]		V_1 ± 6 %, V_2 ± 10 %, V_3 ± 8 %	V_1 ± 6 %, $V_{2,4}$ ± 10 %, V_3 ± 8 %

Protection and monitoring facilities		
Switch-on time		800 ms
Mains fuse		4 A (6.25 × 32 mm)
Power failure bridging 100 % load, 230 V_{AC}		Type > 30 ms
Remote sense (sense) compensated per line		V_1 0.5 V
Switch on/off externally		Bridge open/bridge after 0 V
Over-temperature protection		Switches outputs off, automatically recurring
Fan mounted		Fan unit
Over-voltage protection OVP at the output		Triple: V_1 = 6.25 V; Quad: V_1 = 6.25 V/30 V, V_2 = 34 V, V_4 = 34 V
Over-load protection, all outputs		U/I characteristic curve
Signal	ACFAIL	in accordance with VME bus specifications
	SYSRESET	
	FAN FAIL	at fault "0"
Test and environmental conditions		
Vibration 10 – 150 Hz/ 3 axes		2 g / 0.15 mm
Shock 3 axes		10 g / 6 ms
Dimensions: Height × width × depth		66 × 127 × 252.2 mm
Weight (mass)		1.77 kg
CE	Interference emission	EN 61000-3-2, EN 55011 Class B, EN 55022 Class B
	Interference immunity, degree of severity 3	EN 61000-4-2 Class B, EN 61000-4-3 Class A, EN 61000-4-4 Class B, EN 61000-4-5 Class B, EN 61000-4-6 Class A, EN 61000-4-11 Class B
	Safety, class of protection 1	EN 60950
Approvals		EN 60950 (fulfils EN 60601-1), UL 1950, CSA 22.2, 234
High voltage test to EN 60950	Input-output	4.0 kV_{AC} or 5.6 kV_{DC}
	Input PE	2.0 kV_{AC} or 2.9 kV_{DC}
	Output PE	0.5 kV_{AC}
Power supply maintenance-free		Yes
Cooling		Forced
Operation/storage ambient temperature		0 ... 70 °C / -40 ... +85 °C
Relative humidity operation/storage		30 – 80 % / 10 – 95 %
MTFB at full load, T_U = 30 °C		>130 000 h

Pin	12-pin connector	8-pin connector
1	Sense + V_1	Output + V_2
2	Sense 0V V_1	
3	ACFAIL	Output 0V V_2
4	External on/off	
5	ACFAIL	Output + V_3
6	SYSRESET	Output 0V V_3
7	0 V	Output + V_4
8	FAN Fail	Output 0V V_4
9	0 V	
10	–	
11	+ FAN	
12	0V FAN	

AC/DC switched mode power supplies
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235 – 500 W, PC power supplies3.12.10
AC/DC linear control systems
Single, 15 – 116 W 3.12.12
Dual, 24 – 90 W 3.12.14
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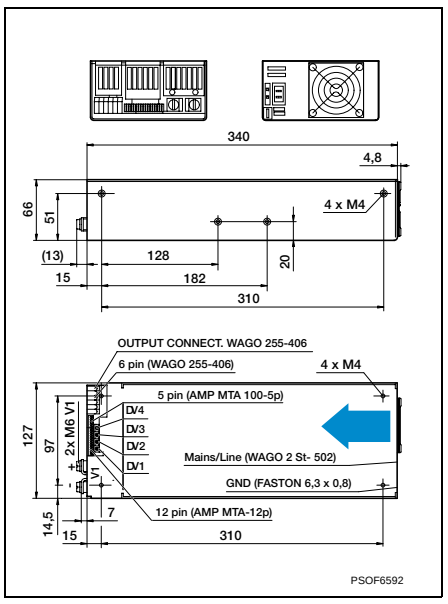
Open Frame AC/DC switched mode power supplies



11400003

450 W, triple, quad

- 3 and 4 output voltage
- Broad range input
- For industrial use for VME and compact PCI bus applications
- VME bus signalling
- Fan monitoring



Output data at T_U = 0 ... 50 °C										Order No.		
Voltage in V[3]				Current in A				Capacity	Dimensions H × W × D	Power supply		Connector set[1]
V_1	V_2	V_3	V_4	I_1[2]	I_2	I_3	I_4	in W	in mm	Type	Mains voltage 90 – 264 V_{AC}	
5	12	12		70	10	8		450	66 ×127 × 340	PE 3257/03	**11009-365**	**21009-037**
5	12	12	24	60	10	8	2.0			PE 3258/00	**11009-367**	
5	12	12	12	60	10	8	4.2			PE 3258/01	**11009-368**	
24	12	12	12	12	10	8	4.2			PE 3258/07	**11009-369**	

[1] Connector set with all input and output connectors

[2] Basic load an V_1 = 10 % × I_1, additional fan output 24 V/100 mA

[3] Large voltage adjustment range at $V_{2, 3, 4}$

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Technical data

Input parameters			
Mains-voltage Broad-range	Nominal values	100 – 240 V_{AC}	
	Operating range	90 – 264 V_{AC} (start-up at 85 V)	
Mains nominal current at 90 V_{AC} full load		8 A	
Mains frequency range		47 – 63 Hz	
Power factor in accordance with		EN 61000-3-2	
Efficiency type-dependent		70 %	
Switch-on current on warm and cold-starting		< 25 A	
Discharge current (264 V_{AC}/50 Hz)		0.5 mA	
Output parameters		**Triple**	**Quad**
Output power 0 – 50 °C		450 W	
Derating (+50 °C to +70 °C)		-3 %/K	
Output voltage, adjustment range	V_1	3 – 5.5 V	3 – 5.5 V, 24 – 28 V
	V_2	3 – 15 V	3 – 15 V
	V_3		
	V_4	–	5 – 28 V, 3 – 15 V
Fan output non-regulated		24 V / 100 mA	
Basic load		10 % from I_1	
Residual ripple + Interference voltage (BW: 15 MHz, min. load 10 %)		< 1 %	
Load control, static (load change 40 %, min. load 20 %)		V_1 = ± 0.1 % $V_{2,3,4}$ = ± 0.5 %	
Cross-control, load change 20 – 100 %		V1 ± 0.1 %, $V_{2,3,4}$ = ± 0.2 %	
Mains control Δ 10 %		± 0.1 %	
Power failure bridging (100 % load, 90 V_{AC})		> 20 ms	
Temperature coefficient		0.02 %/K	
Dynamic control deviations dI/dt = 0.5 A/µs			
Overall control time, (50 % load change, min. load 20 %)		V_1 = 1 ms, $V_{2,3,4}$ = 3 ms	
Overshoot and undershoot amplitude [mV]		V_1 = 0.2 V, $V_{2,3,4}$ = 0.4 V	

Protection and monitoring facilities		
Switch-on time		500 ms
Mains fuse		10 AT (6.25 × 32 mm)
Remote sense compensated per line (sense)		0.5 V
Switch on/off externally		"Off" with bridge to 0 V, "On" by shutting the mains voltage off
Over-voltage protection OVP, switch on again following event via mains off/on		Triple: V_1 = 6.45 V; $V_{2.3}$ = 18 V Quad: V1 = 6.25 V/30 V, $V_{2.3}$ = 18 V, V_4 = 18/32 V
Over-temperature protection		Switches outputs off, automatically recurring
Fan mounted		Fan unit
Over-load protection, all outputs		U/I characteristic curve
Signal	ACFAIL	in accordance with VME bus specifications
	SYSRESET	
	FAN FAIL	at fan fail "0"
	PWF (Quad)	TTL signal, "1" if AC ok
Test and environmental conditions		
Vibration 10 – 60 Hz/ 60 – 150 Hz 3 axes		2 g / 0.15 ms
Shock 3 axes		6 g, 10 g 6 ms
Dimensions: Height × width × depth		66 × 127 × 345 mm
Weight (mass)		2.6 kg
CE	Interference emission	EN 61000-3-2, EN 55011 Class B, EN 55022 Class B
	Interference immunity, degree of severity 3	EN 61000-4-2 Class B, EN 61000-4-3 Class A, EN 61000-4-4 Class B, EN 61000-4-5 Class B, EN 61000-4-6 Class A, EN 61000-4-11 Class B
	Safety, class of protection 1	EN 60950
Approvals		EN 60950 (fulfils EN 60601-1), UL 1950, CSA 22.2, 234
High voltage test to EN 60950	Input-output	4.0 kV_{AC} or 5.6 kV_{DC}
	Input PE	2.0 kV_{AC} or 2.9 kV_{DC}
	Output PE	0.5 kV_{AC}
Power supply maintenance-free		Yes
Cooling		Forced
Operation/storage ambient temperature		0 ... 70 °C / -40 ... +85 °C
Relative humidity operation/storage		30 – 80 % / 10 – 95 %
MTFB at full load,		>130 000 h, T_U = 30 °C

Pin	12 pin connector Triple	12 pin connector Quad	5 pin connector	6-pin snap-in terminal
1	Sense + V_1	Sense + V_1	Sense 0V V_2	Output + V_2
2	Sense - V_1	Sense - V_1	Sense + V_3	Output 0V V_2
3	–	PWF	Sense 0V V_3	Output + V_3
4	External on/off	External on/off	Sense + V_4	Output 0V V_3
5	ACFAIL	–	Sense 0V V_4	Output + V_4
6	SYSRESET	–		Output 0V V_4
7	0 V	0 V		
8	FAN FAIL	FAN FAIL		
9	0 V V_2	0 V V_2		
10	Sense + V_2	Sense + V_2		
11	FAN +	FAN +		
12	FAN -	FAN -		

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Triple, 20 – 55 W 3.12.16

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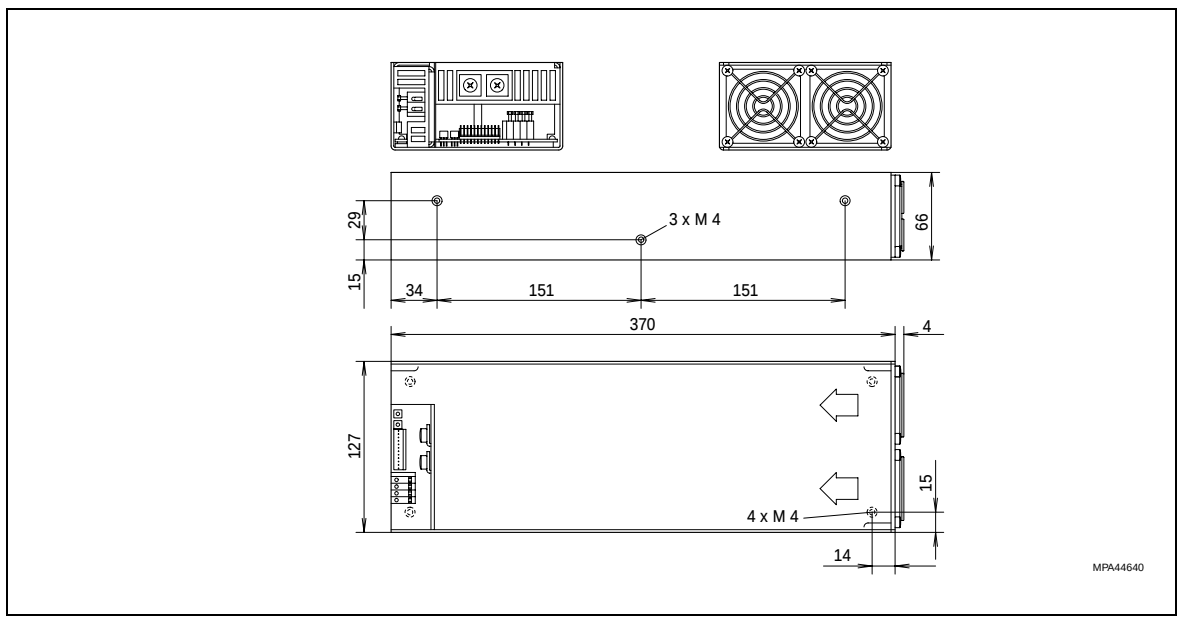
Open Frame AC/DC switched mode power supplies



11400004

600 W, triple

- 3 output voltage (5, +12, -12 V)
- Broad range input
- With VME bus signalling
- Cooling with 2 fan units
- Fan monitoring
- For industrial use in the case of bus-applications



Output data at T_U = 0 ... 50 °C								Order No. Power supply		Connector kit [1]
Voltage in V[3]			Current in A			Capacity	Dimensions H × W × D			
V_1	V_2	V_3	I_1[2]	I_2	I_3	in W	in mm	Type	Mains voltage 90 – 264 V_{AC}	
5	+12	-12	100	8	6	600	66 ×127 × 374	PE 3267/23	**11009-381**	**21009-035**

[1] Connector set with all input and output connectors

[2] Basic load at V_1 = 3 A, additional fan output 24 V/300 mA

Wiring harness (length 80 cm) with all input and output connectors **Order No. 21009-034**

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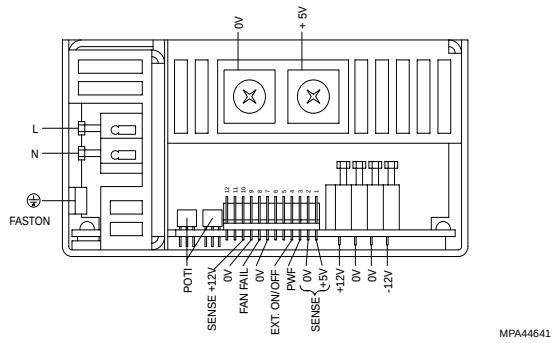
Technical data

Input parameters				
Mains-voltage Broad range input	Nominal values	100 – 240 V_{AC}		
	Operating range	90 – 264 V_{AC} (start-up at 85 V)		
Mains nominal current at 90 V_{AC}, full load		10 A		
Mains frequency range		47 – 63 Hz		
Power factor in accordance with		EN 61000-3-2		
Efficiency type-dependent		70 %		
Switch-on current on warm and cold-starting		< 25 A		
Discharge current (264 V_{AC}/50 Hz)		0.8 mA		
Output parameters		**V_1**	**V_2**	**V_3**
Output power 0 – 50 °C		600 W		
Derating (+50 °C to +70 °C)		-3 %/K		
Output voltage		5 V	12 V	12 V
Adjustmentrange		4.75 – 6 V	12 – 15 V	12 – 15 V
Fan output non-regulated		24 V / 300 mA		
Basic load		3 A	–	
Residual ripple + interference voltage (BW: 15 MHz)		50 mV		
Load control, static (load change 20 % – 100 %		± 0.1%	± 0.2 %	± 0.2 %
Cross-control, load change 20 – 100 %		± 0.1 %,		
Mains control ± 10 %		± 0.1 %		
Temperature coefficient		0.02 %/K		
Dynamic control deviations dI/dt = 0.5 A/µs				
Overall control time (50 % load change)		0.75 ms	3 ms	
Overshoot and undershoot amplitude		0.2 V	0.4 V	

Protection and monitoring facilities		
Switch-on time		500 ms
Mains fuse		15 AT (6.25 × 32 mm)
Power failure bridging (100 % load, 90 V_{AC}		> 20 ms
Remote sense compensated per line		$V_{1.2}$ 0.5 V
Switch on/off externally		"High" on, "LOW" off
Over-voltage protection OVP, switch on again via mains off/on		V_1 5.5 – 6.5 V
Over-temperature protection		Switches outputs off, automatically recurring
Fan mounted		Two fan units
Current limitation		V_1 = 125 A, V_2 = 13 A, V_3 = 8 A
Over-load protection, all outputs		U/I characteristic curve automatically recurring
Signal	ACFAIL	in accordance with VME bus specifications
	SYSRESET	
	FAN FAIL	at fan fail "0", open collector max. 80 V/0.5 A
Test and environmental conditions		
Vibration 60 – 150 Hz/ 60 – 60 Hz 3 axes		2 g / 0.15 ms
Shock 3 axes		10 g, 6 ms
Dimensions: Height × width × depth		66 × 127 × 375 mm
Weight (mass)		3 kg
CE	Interference emission	EN 61000-3-2, EN 55011 Class B, EN 55022 Class B
	Interference immunity, degree of severity 3	EN 61000-4-2 Class B, EN 61000-4-3 Class A, EN 61000-4-4 Class B, EN 61000-4-5 Class B, EN 61000-4-6 Class A, EN 61000-4-11 Class B
	Safety, class of protection 1	EN 60950
Approvals		EN 60950 (fulfils EN 60601-1), UL 1950, CSA 22.2, 234
High voltage test to EN 60950	Input-output	4.0 kV_{AC}
	Input PE	2.0 kV_{AC}
	Output PE	0.5 kV_{AC}
Power supply maintenance-free		Yes
Cooling		Forced, 2 fans (12 V_{DC})
Operation/storage ambient temperature		0 ... 70 °C / -40 ... +85 °C
Relative humidity operation/storage		30 – 80 % / 10 – 95 %
MTFB at full load, T_U = 30°C		>130 000 h

Pin	Signal 12 pin
1	Sense + V_1
2	Sense - V_1
3	PWF
4	Remote On/Off
5	ACFAIL
6	SYSRESET
7	0 V
8	FAN FAIL
9	0 V
10	Sense + V_2
11	FAN +
12	FAN -

Connector pin-out



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AC/DC linear control systems
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Backplanes/ test adapters .. 3.20.0

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Open Frame AC/DC switched mode power supplies



12398010



12398011

235 – 500 W, PC power supplies

Power supplies for ATX and for compact PCI applications

- Mains input voltage reversible 115/230 V_{AC}
- International approvals to EN, UL and CE
- High reliability and long life

Output data at T_U = 0 ... 40 °C								Order No. power supply		
Currents in A ()[1]						Capacity	Dimensions			with
V_1 +3.3 V	V_2 +5 V	V_3 +12 V	V_4 -5 V	V_5 -12 V	V_6 +5 V Stb.	in W	H × W × D in mm	Type		Front panel 3 U/30 HP
14 (0.2)	22 (1.5)	8	0.3	0.8	0.8	235 (125)[2]	86 × 150 × 175	ATX 235	**11098-068**	**24579-207**
14 (0.2)	22 (1.5)	8	0.3	1.0	0.85	300 (150)[2]		ATX 300	**11098-090**	–
28 (1)	30 (3)	14	1	1	1	400 (215)[2]		ATX 400	**11098-088**	–
20	30 (3)	14 (1)	0.5	0.5	0.1	2×230[3] (210)		ATX 2×250	**11098-089**	**24579-206**

[1] Values in brackets = basic load

[2] Max. output power of +3.3 V and +5 V

[3] 2 power supplies operate in a redundant manner, redundancy operation max. 250 W per chassis, on parallel connection max. outputpower 500 W

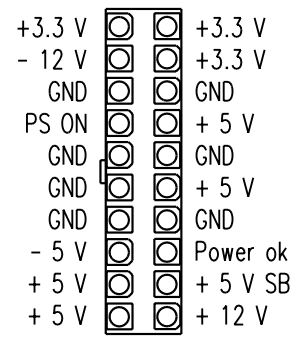
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Technical data

Input parameters		ATX 235	ATX 300	ATX 400	ATX 2×250
Mains voltage, chargeable		115/230 V_{AC}, 90 – 132 V_{AC}, 180 – 264 V_{AC}			
Mains nominal current at	230 V_{AC}	4 A	5 A	6 A	3 A
	115 V_{AC}	7 A	9 A	10 A	6 A
Mains frequency range		48 – 63 Hz	48 – 63 Hz	47 – 63 Hz	47 – 63 Hz
Efficiency typically		70 %	70 %	70 %	> 75 %
Switch-on current, cold starting		< 80 A	< 80 A	< 100 A	
Output power		235 W	300 W	400 W	2 × 250 W
Output parameters					
Output voltage Load tolerance/ ripple & noise	+3.3 V	± 4 %/50 mV_{PP}		± 5 %/50 mV_{PP}	± 5 %/ ±1 %
	+5 V	± 5 %/50 mV_{PP}		± 5 %/50 mV_{PP}	± 5 %/± 1 %
	+12 V	± 5 %/120 mV_{PP}		± 5 %/120 mV_{PP}	± 5 %/± 1 %
	-12 V	± 10 %/150 mV_{PP}		± 5 %/150 mV_{PP}	± 10 %/± 1 %
	-5 V	± 5 %/150 mV_{PP}		± 5 %/100 mV_{PP}	± 10 %/± 1 %
	5 V standby	± 5 %/50 mV_{PP}		± 5 %/50 mV_{PP}	–
Over-load protection		< 150 %		< 150 %	110 – 130 %
Short-circuit-resistant		yes		yes	yes
Protection and monitoring facilities					
Power failure bridging at 100 % load		> 16 ms		> 16 ms	20 ms
Switch power supply on/off externally		yes		yes	
Over-voltage protection OVP (max. voltage)	+3.3 V	4.5 V	4 V	4.5 V	–
	+5 V	6.5 V	6 V	6.5 V	6.5 V
	+12 V	15 V	–	15.5 V	15.6 V
Power good signal		yes	yes	yes	yes
Power supply maintenance-free		yes			
Cooling via power supply		Forced with mounted fan			
Ambient temperature	Operation	0 ... 50 °C	0 ... 40 °C	0 ... 50 °C	0 ... 50 °C
	Storage	-20 ... +65 °C		-20 ... +80 °C	-40 ... +70 °C
Relative humidity	Operation	90 – 95 %		5 – 95 %	10 – 90 %
	Storage	–		–	5 – 95 %
MTFB at full load, T_U = 45 °C		> 50 000 h	> 100 000 h	> 100 000 h [1)]	>176 000 h

[1)] at 25 °C

Pin-out 20-pin



AC/DC switched mode power supplies
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AC/DC linear control systems
Single, 15 – 116 W 3.12.12
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Open Frame AC/DC linear control systems

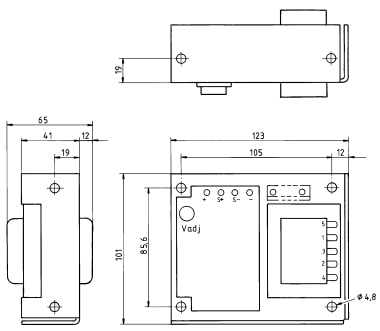


LS5-6/OVP 87_654

Single, 15 – 116 W

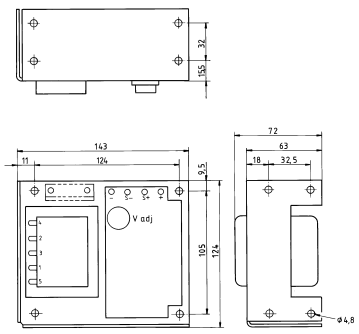
- LS series
- 1 output voltage (5, 12, 15, 24 V)
- Mains voltages 110/120/220/230 – 240 V_{AC} reversible
- Low residual ripple
- High control quality
- Over-temperature protection of the series pass transistor
- Over-voltage protection (OVP) for 5 V
- Over-load protection
- Remote sense operation
- Outputs short-circuit resistant

Case type A



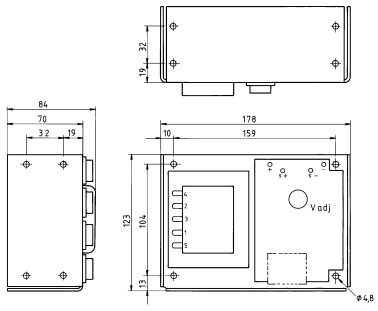
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Case type B



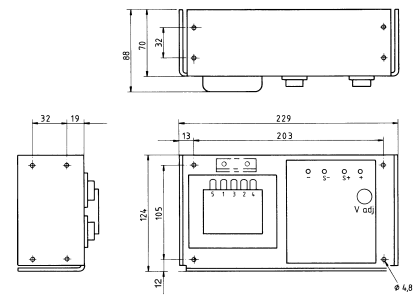
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Case type C



A4_1366

Case type I



A4_1367

Output data at T_U = 0 ... 50 °C				Order No.		
Voltage in V	Current in A	Capacity in W	Approvals	Case type	Power supply Type	Mains voltage 230 – 240 V
5	3	15	UL	A	LS 5-3/OVP	**11008-600**
	6	30	UL	W	LS 5-6/OVP	**11008-601**
	9	45	–	C	LS 5-9/OVP	**11008-602**[1)]
	12	60	–	I	LS 5-12/OVP	**11008-603**
12	1.7	21	UL	A	LS 12-1.7	**11008-604**
	3.4	41	UL	W	LS 12-3.4	**11008-606**
	5.1	62	–	C	LS 12-5.1	**11008-607**
	6.8	82	UL	I	LS 12-6.8	**11008-608**
15	1.5	23	–	A	LS 15-1.5	**11008-609**
	3.0	45	–	W	LS 15-3.0	**11008-610**
	4.5	68	UL	C	LS 15-4.5	**11008-611**[1)]
24	1.2	29	UL	A	LS 24-1.2	**11008-613**
	2.4	58	UL	W	LS 24-2.4	**11008-614**
	3.6	87	–	C	LS 24-3.6	**11008-615**
	4.8	116	UL	I	LS 24-4.8	**11008-616**

[1)] Available on request

Downloaded from Arrow.com.

Technical data

Input parameters		
Mains voltage (can be resoldered)		110/120/220/230 – 240 V_{AC}
Mains frequency range		47 – 63 Hz
Mains input current in accordance with		EN 61000-3-2 + A14
Mains control ΔU_E = 10 %		0.05 %
Output parameters		
Output voltages	at the factory	5, 12, 15, 24
	Adjustment range	± 5 %
Residual ripple		≤ 3 mV_{SS}
Temperature coefficient		0.01 %/K
Dynamic output parameters (load change 50 % – 100 %)		
Overall control time		50 µs
Load control		< 0.05 U_{ANom}
Derating from 50 °C – 70 °C		3 %/°K
Over-voltage protection OVP, shuts power supply off (factory setting)		for 5 V (6.2 V)
Other characteristics		
Test voltage	Input-output	3.75 kV_{AC}
	Input PE	1.25 kV_{AC}
	Output PE	0.5 kV_{AC}
Suppression		VDE 0871 curve K
Remote sense operation		for V_1
Dual-chamber mains transformer		to VDE 0551
Class of protection (VDE 0100)		Class 1
Cooling		Convection
Weight, case type	A	1.1 kg
	W	1.8 kg
	C	3.3 kg
	I	3.4 kg
Ambient temperature T_U	Operation	0 ... 70 °C
	Storage	-20 ... +85 °C

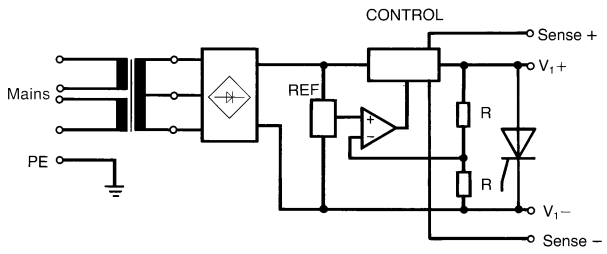
Mains voltage switch-over

The desired mains voltage is adjusted by resoldering bridges at the transformer. The device is set to 230 – 240 V as standard.

The mains fuse must be provided by the user outside of the device.

Mains voltage U_{EAC}	Bridge between	mains connection to
100 V	1 – 3; 2 – 4	1.5
120 V	1 – 3; 2 – 4	1.4
220 V	2 – 3	1.5
230 – 240 V	2 – 3	1.4

Block circuit diagram



AC/DC switched mode power supplies
30 – 50 W, single dual, triple..3.12.2
200 W, triple, quad 3.12.4
450 W, triple, quad 3.12.6
600 W, triple.....3.12.8
235 – 500 W, PC power supplies3.12.10

AC/DC linear control systems
Single, 15 – 116 W 3.12.12
Dual, 24 – 90 W 3.12.14
Triple, 20 – 55 W 3.12.16

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Power supply units..... 3.10.0
19" compatible.....3.11.0
Open frame.....3.12.0
Power systems.....3.13.0
Uninterruptable power supplies (UPS) 3.14.0

Backplanes/ test adapters .. 3.20.0

Microcomputer packaging systems (MPS) 3.30.0

Appendix..... 3.90.0

Open Frame AC/DC linear control systems

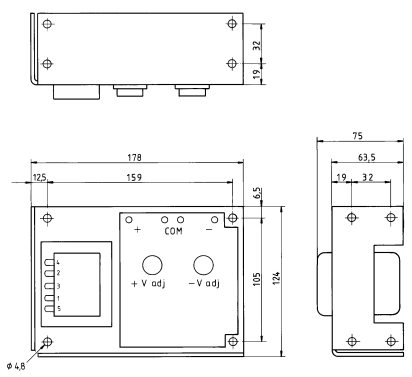


IE 12-3.4 87_725

Dual, 24 – 90 W

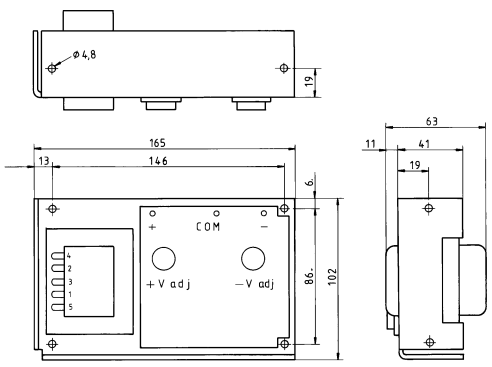
- IE series
- 2 output voltages (± 12, ± 15 V)
- Mains voltages 110/120/220/230 – 240 V_{AC} reversible
- Low residual ripple
- High control quality
- Over-load protection
- Remote sense operation
- Outputs short-circuit resistant

Case type D



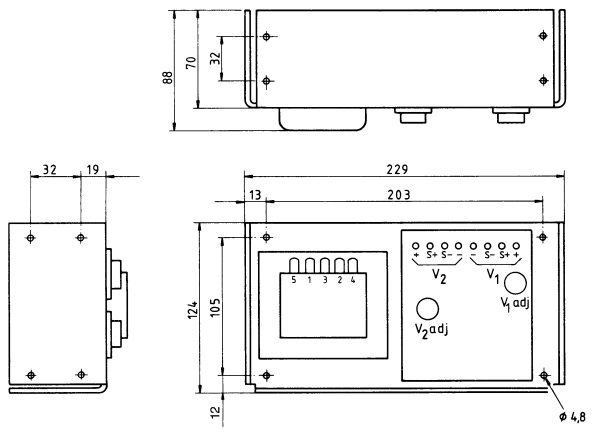
A4_1368

Case type H



A4_1369

Case type I



A4_1370

Output data at T_U = 0 ... 50 °C						Order No.		
Voltage in V		Current in A		Capacity	Approvals	Case design	Power supply	Mains voltage
V_1	V_2	I_1	I_2	in W			Type	230 – 240 V
12	12	+1	-1	24	–	H	IE 12-1.0	**11008-617**
		3.4[1)]	3.4[1)]	82	UL	I	IE 12-3.4	**11008-621**
15	15	+0.8	-0.8	24	–	H	IE 15-0.8	**11008-618**
		+1.5	-1.5	45	–	D	IE 15-1.5	**11008-620**
		3.0[1)]	3.0[1)]	90	UL	I	IE 15-3.0	**11008-622**

[1)] With sense and metalically separated output voltages

Downloaded from Arrow.com.

Technical data

Input parameters		
Mains voltage (can be resoldered)		110 / 120 / 220 / 230 – 240 V_{AC}
Mains frequency range		47 – 63 Hz
Mains input current in accordance with		EN 61000-3-2 + A14
Mains control ΔU_E = 10 %		0.05 %
Output parameters		
Output voltages	at the factory	12, 15 V
	Adjustment range	± 5 %
Residual ripple		≤ 3 mV_{SS}
Temperature coefficient		0.01 %/K
Dynamic output parameters (load change 50 % – 100 %)		
Overall control time		50 µs
Load control		< 0.05 U_{ANom}
Derating from 50 °C – 70 °C		3 %/°K
Other characteristics		
Test voltage	Input-output	3.75 kV_{AC}
	Input PE	1.25 kV_{AC}
	Output PE	0.5 kV_{AC}
Suppression		VDE 0871 curve K
Remote sense operation		for V_1 IE 12 – 3.4 and IE 15 – 3.0
Dual-chamber mains transformer		to VDE 0551
Class of protection (VDE 0100)		Class 1
Cooling		Convection
Weight, case type	D	2.0 kg
	H	1.0 kg
	I	3.4 kg
Ambient temperature T_U	Operation	0 ... 70 °C
	Storage	-20 ... +85 °C

Mains voltage switch-over

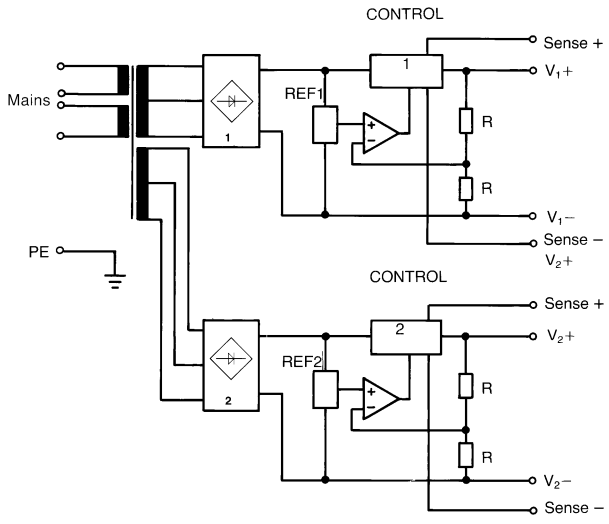
The desired mains voltage is adjusted by resoldering bridges at the transformer.
The device is set to 230 – 240 V as standard.

The mains fuse must be provided by the user outside of the device.

Mains voltage U_{EAC}	Bridge between	mains connection to
100 V	1 – 3; 2 – 4	1.5
120 V	1 – 3; 2 – 4	1.4
220 V	2 – 3	1.5
230 – 240 V	2 – 3	1.4

Block circuit diagram

LD 12-3.4, LD 15-3.0



AC/DC switched mode power supplies
30 – 50 W, single dual, triple..3.12.2
200 W, triple, quad 3.12.4
450 W, triple, quad 3.12.6
600 W, triple.....3.12.8
235 – 500 W, PC power supplies3.12.10

AC/DC linear control systems
Single, 15 – 116 W 3.12.12
Dual, 24 – 90 W 3.12.14
Triple, 20 – 55 W 3.12.16

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Power supply units..... 3.10.0
19" compatible.....3.11.0
Open frame.....3.12.0
Power systems.....3.13.0
Uninterruptable power supplies (UPS) 3.14.0

Backplanes/ test adapters .. 3.20.0

Microcomputer packaging systems (MPS) 3.30.0

Appendix..... 3.90.0

Open Frame AC/DC linear control systems



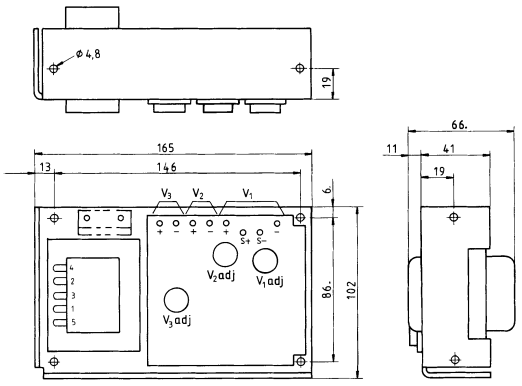
LT 60 W

87_723

Triple, 20 – 55 W

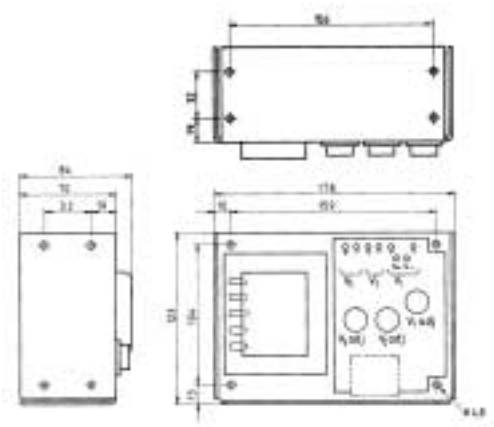
- LT series
- 3 output voltages (5 V, ± 12 V)
- Mains voltages 110/120/220/230 – 240 V_{AC} reversible
- Low residual ripple
- High control quality
- Remote sense operation
- Outputs short-circuit resistant
- Over-voltage protection (OVP) at 5 V

Case type H



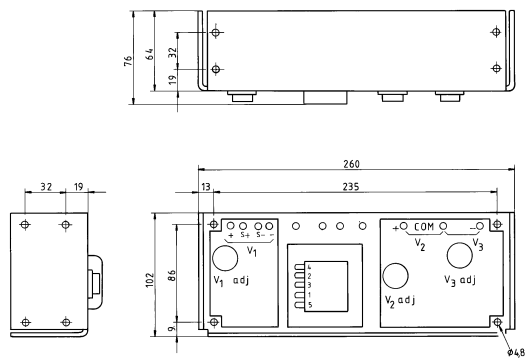
A4_1373

Case type C



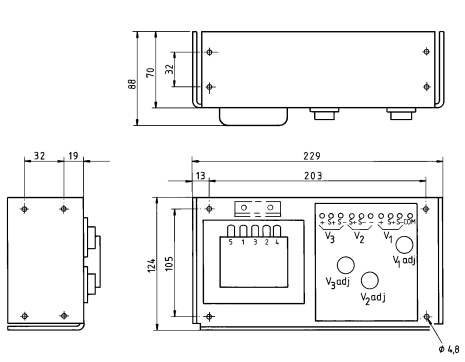
A4_1371

Case type F



A4_1372

Case type I



A4_1374

Output data at T_U = 0 ... 50 °C							Order No.		
Voltage in V			Current in A			Capacity P	Case design	Power supply	Mains voltage
V_1	V_2	V_3	I_1	I_2	I_3	in W		Type	230 – 240 V
5	12	12	2	0.4	0.4	20	H	LT 20 W[1)]	**11008-623**
			3	0.5	0.5	25	C	LT 30 W[1)]	**11008-624**
			3[1)]	+1	-1	40	F	LT 40 W	**11008-625**
			+6	+1	-1	55	I	LT 60 W	**11008-626**

[1)] Metalically separated output voltages.

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Technical data

Input parameters		
Mains voltage (can be resoldered)		110 / 120 / 220 / 230 – 240 V_{AC}
Mains frequency range		47 – 63 Hz
Mains input current in accordance with		EN 61000-3-2 + A14
Mains control ΔU_E = 10 %		0.05 %
Output parameters		
Output voltages	at the factory	5, 12, 12 V
	Adjustment range	± 5 %
Residual ripple		≤ 3 mV_{SS}
Temperature coefficient		0.01 %/K
Dynamic output parameters (load change 50 % – 100 %)		
Overall control time		50 µs
Load control		< 0.05 U_{ANom}
Derating from 50 °C – 70 °C		3 %/°K
Other characteristics		
Test voltage	Input-output	3.75 kV_{AC}
	Input PE	1.25 kV_{AC}
	Output PE	0.5 kV_{AC}
Suppression		VDE 0871 curve K
Over-voltage operation OVP		set
Remote sense operation		for V_1
Dual-chamber mains transformer		to VDE 0551
Class of protection (VDE 0100)		Class 1
Cooling		Convection
Weight, case type	C/I	3.3 kg
	F	2.0 kg
	H	1.0 kg
Ambient temperature T_U	Operation	0 ... 70 °C
	Storage	-20 ... +85 °C

Mains voltage switch-over

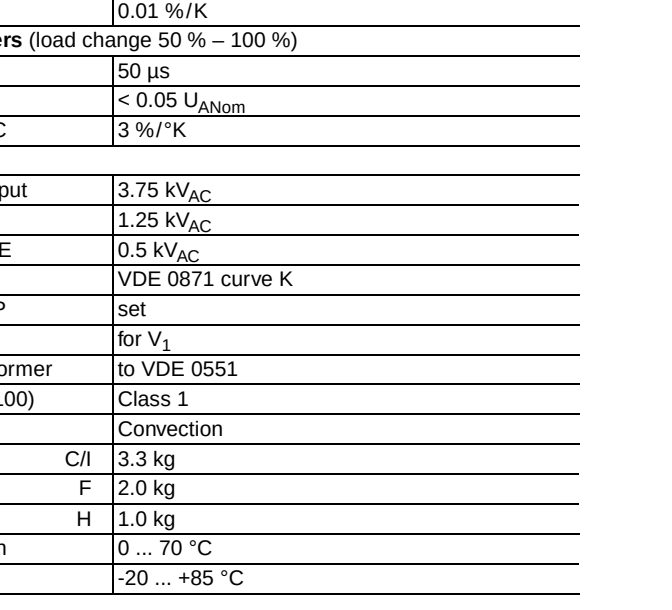
The desired mains voltage is adjusted by resoldering bridges at the transformer.
The device is set to 230 – 240 as standard.

The mains fuse must be provided by the user outside of the device.

Mains voltage U_{EAC}	Bridge between	mains connection to
100 V	1 – 3; 2 – 4	1.5
120 V	1 – 3; 2 – 4	1.4
220 V	2 – 3	1.5
230 – 240 V	2 – 3	1.4

Block circuit diagram

LT 20 W, LT 30 W



AC/DC switched mode power supplies
30 – 50 W, single dual, triple..3.12.2
200 W, triple, quad 3.12.4
450 W, triple, quad 3.12.6
600 W, triple.....3.12.8
235 – 500 W, PC power supplies3.12.10

AC/DC linear control systems
Single, 15 – 116 W 3.12.12
Dual, 24 – 90 W 3.12.14
Triple, 20 – 55 W 3.12.16

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Power supply units..... 3.10.0
19” compatible.....3.11.0
Open frame.....3.12.0
Power systems.....3.13.0
Uninterruptable power supplies (UPS) 3.14.0

Backplanes/ test adapters .. 3.20.0

Microcomputer packaging systems (MPS) 3.30.0

Appendix..... 3.90.0

Power systems Overview



11300008

Application

Power systems are used in telecommunications systems which demand extremely high voltage supply availability (99.9 %).

Description

The SCHROFF power systems are variable 48 V_{DC} power supply subracks.

The output power of the power systems can be increased in a modular manner. In order to achieve this, a corresponding number of 19” compatible power supplies are mounted. Redundancy (n+1) is achieved by mounting an additional power supply. The power supplies can be retrofitted or replaced whilst operation is ongoing.

The power systems support mains and battery redundancy with an external or integrated battery.

Power system monitoring is carried out with a microcontroller (battery and fault management).

Electrical/electronic design

The power supplies and the monitoring system are plugged in at the front.

Wiring is carried out with the power bus backplane.

The AC and DC lines are connected on the rear side.

2 battery units can be connected. These are electrically uncoupled from one another.

Mechanical structure

The power system is a 19” subrack (3 U/275 mm deep). The cover plate and the base plate are perforated.

Heat dissipation

Heat dissipation is via convection but output power is reduced, with forced cooling in the system, the full output power can be maintained.

Standards/approvals

The power systems are constructed and tested in accordance with electrical safety IEC 950 and EN 60950.

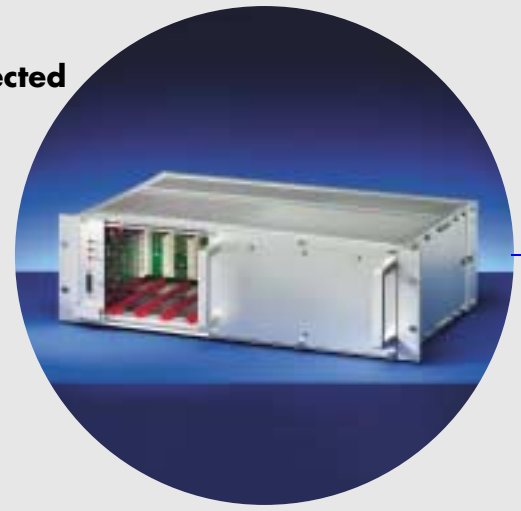
The systems fulfil the standard for interference emission EN 55022 and interference immunity EN 50082 (IEC 1000-4 Part 2, 3, 4, 5).

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Power systems Overview

Power system 300

- Up to 300 W output power
- (n +1) redundancy
- Battery incorporated, others can be externally connected
- Height 3 U, width 84 HP, 275 mm deep
- Supply voltage 230 V_{AC}
- Output voltage 56 V_{DC}



11300006

Power system 1000

- Up to 1000 W output power
- (n +1) redundancy
- Connections for external battery packs
- Height 3 U, width 84 HP, 275 mm deep
- Supply voltage 230 V_{AC}
- Output voltage 56 V_{DC}



11399001

Power systems 3 U

Power system 300 .....3.13.2

Power system 1000 .....3.13.4

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Power supply units..... 3.10.0
19" compatible.....3.11.0
Open frame.....3.12.0
Power systems.....3.13.0
Uninterruptable power supplies (UPS) 3.14.0

Backplanes/ test adapters .. 3.20.0

Microcomputer packaging systems (MPS) 3.30.0

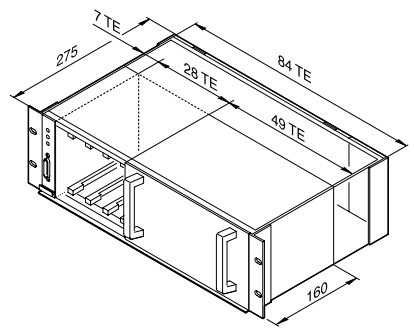
Appendix..... 3.90.0

Power systems 3 U

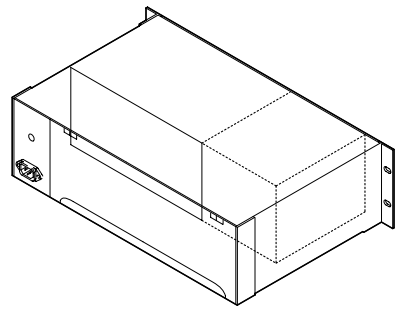


11300006

CE



PS196593



PS196594

TE = HP
HE = U

Power system 300

- Redundant and uninterruptable DC power supply
- Supply voltage 230 V_{AC}
- Output voltage 56 V_{DC}
- Output power can be built up in modular form from 100 to 400 W (300 W redundant) (1 to 4 ecopower power supply units, type SEM 148C)
- Battery mounted (buffer time approx. 20 min. at max. loading)
- Connection of external battery set possible
- Signalling via LED display and potential-free relay contacts

Description	Material	Order No. (1 unit)
Power system 300	Subrack 3 U, 84 HP, 275 mm deep incl. control unit and battery chassis	**24491-420**

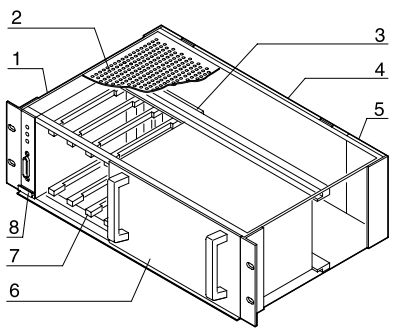
Please order power supplies and battery pack separately.

Accessories:

Qty	Description	Material	Order No.
1	Power supply SEM 148C (incl. front panel)	3 U, 7 HP, 160 mm deep, output power 100 W, output voltage 56 V_{DC}	**13190-022**
1	3 U, 7 HP front panel	for covering unused slot	**30838-046**
1	Service connector	Connector for battery test	**23098-080**
1	Connection lead	for connecting the external battery pack, 3 m	**61197-063**
50	Output connector	for connecting the battery and the DC outputs for cable cross-section 4 mm^2	**21101-803**
1	Front connection-panel 1 U, 84 HP	for connecting all DC inputs/ outputs at the front	**23147-005**

For equipment cable, see microcomputer packaging systems – accessories.

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Delivery comprises:

Item	Qty	Description	Material
1	1	Subrack	W × H × D = 84 HP × 3 U × 275 mm
2	1	Cover and base plate	perforated for heat dissipation
3	1	Power bus backplane	connects all power supplies and logic signals
4	1	Rear panel	3 U/72 HP can be hinged
5	1	Mains input with fuse	3 U/12 HP
6	1	Battery chassis	3 U/49 HP, 48 V/7 Ah
7	1	Board 3 U/35 HP with guide rails	for 1 ... 4 power supplies (7 HP, connector H 15) and control unit (7 HP)
8	1	Control unit 3 U/7 HP	undertakes battery and fault management (connectors C64)

Heat dissipation

Heat dissipation is carried out passively via convection. 300 W Redundant system output power is achieved with forced cooling.

Description

- Redundant, uninterruptable power supply with battery backup
- Input voltage U_E = 230 V_{AC} (195 – 256 V_{AC})
- Output voltage U_A = 56 V_{DC}
- Output power P_A = 100 to 300 W redundant, selectable via the number of mounted power supplies SEM 148C (1 to 4 unit)
- One battery set (48 V/7 Ah) mounted in the battery chassis
- Battery redundancy is achieved via the connection of an external battery set (battery sets are decoupled with redundancy diodes)
- Capacity test on both batteries
- Monitoring and signalling (LED, potential-free contacts)
  - Total discharge
  - Battery defective
  - Battery fuse defective
  - Battery operation (power failure)
  - Failure of one or more power supplies
  - External signal (e. g. door has been opened)
- Mounted power supply SEM 148C
  - Cost-optimized and compact (3 U, 7 HP, 160 mm deep)
  - CE and active power factor correction to EN 61000-3-2
  - Output voltage 56 V_{DC}
  - Output power 100 W
  - Redundant with integrated decoupling diode
  - Even load current share for high MTBF
  - Characteristic output curve for battery charging to Telecom guidelines
  - Signalling
- Other output voltages available on request

Power systems 3 U
Power system 300 .....3.13.2
Power system 1000 .....3.13.4

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Power supply units..... 3.10.0
19" compatible.....3.11.0
Open frame.....3.12.0
Power systems.....3.13.0
Uninterruptable power supplies (UPS) 3.14.0

Backplanes/ test adapters .. 3.20.0

Microcomputer packaging systems (MPS) 3.30.0

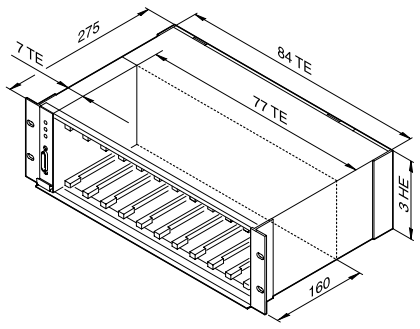
Appendix..... 3.90.0

Power systems 3 U

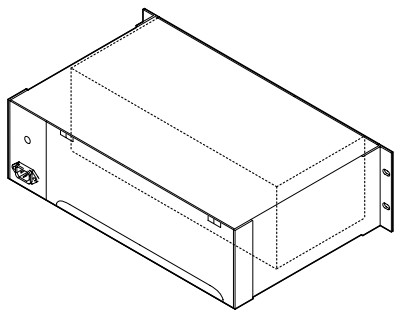


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CE



PS196596



PS196597

TE = HP
HE = U

Power system 1000

- Redundant and uninterruptable DC power supply
- Supply voltage 230 V_{AC}
- Output voltage 56 V_{DC}
- output power can be built up in modular form from 100 to 1000 W[1)] (1 to 11 ecopower power supply units, type SEM 148C)
- Buffer time depending on battery capacity > 2 h
- Connection of two external battery packs possible
- Signalling via LED display and potential-free relay contacts

Description	Material	Order No.
Power system 1000	Subrack 3 U, 84 HP, 275 mm deep incl. control unit	**20835-995**

Please order power supplies and battery pack separately.

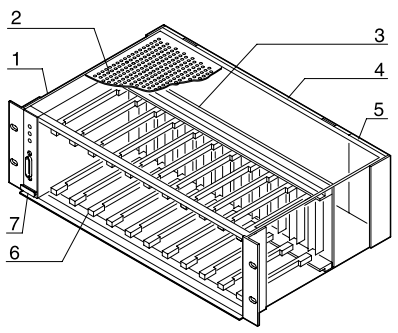
Accessories:

Qty	Description	Material	Order No.
1	Power supply SEM 148C (incl. front panel)	3 U, 7 HP, 160 mm deep, output power 100 W, 56 V output voltage	**13190-022**
1	3 U, 7 HP front panel	for covering unused slots	**30838-046**
4	Battery type A 12 V/26 Ah	Connection cables for the 4 batteries are enclosed	**20118-707**
4	Battery type B 12 V/48 Ah	Connection cables for the 4 batteries are enclosed, can be mounted in 19" battery shelf	**20118-709**
1	Battery shelf 19"	Chassis for mounting 4 type B batteries	**21197-153**
1	Service connector	Connector for battery test	**23098-080**
1	Connection lead	for connecting the external battery pack, 3 m	**61197-063**
50	Output connector	for connecting the battery and the DC outputs for cable cross-section 4 mm^2	**21101-803**
1	Front connection panel 1 U, 84 HP	for connecting all DC inputs/ outputs at the front	**23147-005**

For equipment cable, see microcomputer packaging systems – accessories.

1) Output power 1000 W with forced cooling

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PS196598

Delivery comprises:

Item	Qty	Description	Material
1	1	Subrack	W × H × D = 84 HP × 3 U × 275 mm
2	1	Cover and base plate	perforated for heat dissipation
3	1	Power bus backplane	connects all power supplies and logic signals
4	1	Rear panel	3 U/72 HP can be hinged
5	1	Mains input with fuse	3 U/12 HP
6	1	Board area 3 U/77 HP with guide rails	for 1 ... 11 power supplies (7 HP, connectors H 15) and control unit (7 HP)
7	1	Control unit 3 U/7 HP	undertakes battery and fault management (connectors C64)

Heat dissipation

Heat dissipation is carried out passively via convection.
1000 W system output power is achieved with forced cooling.

Description

- Redundant, uninterruptable power supply with battery backup
- Input voltage U_E = 230 V_{AC} (195 – 256 V_{AC})
- Output voltage U_A = 56 V_{DC}
- Output power P_A = 100 to 1000 W redundant, selectable via the number of mounted power supplies SEM 148C (1 to 11 units)
- Two battery sets (48 V/25 or 48 Ah) can be externally connected
- Battery redundancy is achieved via the connection of two external battery sets (battery sets are decoupled with redundancy diodes)
- Capacity test on both batteries
- Monitoring and signalling (LED, potential-free contacts)
  - Total discharge
  - Battery defective
  - Battery fuse defective
  - Battery operation (power failure)
  - Failure of one or more power supplies
  - External signal e. g. door has been opened
- Mounted power supply SEM 148C
  - Cost-optimized and compact (3 U, 7 HP, 160 mm deep)
  - CE and active power factor correction to EN 61000-3-2
  - Output voltage 56 V_{DC}
  - Output power 100 W
  - Redundant with integrated decoupling diode
  - Even load current share for high MTBF
  - Characteristic output curve for battery charging to Telecom guidelines
  - Signalling
- Other output voltages available on request

Power systems 3 U
Power system 300 .....3.13.2
Power system 1000 .....3.13.4

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Microcomputer packaging systems (MPS) 3.30.0

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Uninterruptable power supplies



11600003

Application

Uninterruptable power supplies (UPS) are used wherever mains interruptions and power failure lead to data loss in computers.

Typical applications

- Network servers and critical nodes in the office environment
- Workstation and PC
- Telecommunications systems, e.g. billing records
- Larger network periphery
- Test and diagnostic units
- Measurement stations
- Network routers
- Hubs and bridges

SCHROFF supplies online and interactive UPSs. Both are equipped with a bidirectional interface, with which extensive UPS management is simple to implement. In the case of full SNMP capability, this enables the remote-controlled shutdown of a connected consumer.

Online UPS

If you use your data network or telecommunications system for important corporate tasks, then the acquisition of a genuine online UPS in order to protect these IT facilities is vital as regards the performance of your company. Whatever the available input mains voltage – the output voltage fulfils the most stringent requirements. In contrast to the interactive UPS, the online UPS eradicates potential power supply problems.

Interactive UPS

The interactive UPS filters the mains alternating voltage to a high degree. It suppresses voltage peaks and high frequency interferences, before these are able to reach sensitive electronics.

Electrical/electronic design

The UPS is connected to the mains at the rear side via a socket. The mains switch is located at the front. The output voltage (230 V_{AC}) is available via several sockets.

An LED bar indicator, an interface output (SubD) and an acoustic signal are available for operating status signalling.

The batteries are mounted in the UPS. In order to connect the external battery pack, the online UPS is equipped with a DC input socket.

Mechanical structure

The metal case provides a high level of protection against electromagnetic interference. The online version is supplied as a tower version, and is very simple to convert into a 19” chassis.

Heat dissipation

The cooling air intake is at the front. The heated air is blown out with the fan mounted on the rear panel.

Standards/approvals

The UPS is constructed and tested in accordance with electrical safety EN 60950. The systems fulfil the standard for interference emission EN 55022 and interference immunity EN 50082 (IEC 801 Part 2,3,4,5).

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Uninterruptable power supplies

Online UPS

Continuous generation of mains voltage

- 1000, 1500, 2000 and 3000 VA
- External battery pack can be connected



11600001

Interactive UPS

Voltage generation in the event of power failure

- 700, 1000, 1400 and 2200 VA
- Cost-optimized



11600002

Accessories for UPS

- Slide rail
- Network board
- Software for automatic shutdown



On-line UPS
1000 to 3000 VA....3.14.2

Interactive UPS
700 to 2200 VA.....3.14.4

Accessories
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Uninterruptable power supplies on-line



11600001

CE

1000 to 3000 VA

- Wide power output range from 1000 to 3000 VA
- Genuine IGBT continuous converter technology to VDE 0558 (online)
- Flexibility via use as a tower, table-top and 19” device
- High fault tolerance via filtered, static bypass; also in mains switch-back operation
- Complete server management via software
- Internal SNMP agent via the ethernet interface
- Perfect standby and high battery life expectancy via the integrated Intelligent Battery Management System (IBMS)
- RS 232 COM interface and signal outputs
- Maintenance-free batteries, can be replaced at front
- Connection for battery packs in order to increase buffer time

Delivery comprises

Qty	Description	Comments
1	UPS (tower version)	can be upgraded to 19" chassis with the enclosed conversion set
2	Pedestals	for tower version
1	Conversion set	Tower version to 19” chassis
1	Mains input cable	Length 1.5 m
2	Mains output cable	Inlet length 1.5 m
2	Interference suppression set	Ferrites for network and data line interference suppression
1	Multilink cable	Cable for connection to the computer COM interface
1	Operating instructions	

Uninterruptable power supply

Uninterruptable power supply	Buffer time in minutes at	Dimensions	Weight	Order No.	
Output	100 / 70 / 50 / 30 % load	Height × width × depth	in kg	UPS type	Mains voltage 230 V_{AC}
1000 VA / 700 W	7 / 12 / 18 / 33	Tower: 430 × 178 × 530 mm 19” chassis: 4 U × 84 HP × 495 mm	24	GXT 1000 RT	**13107-011**
	17 / 28 / 49 / 94		33	GXT 1000 RTX	**13107-015**
1500 VA / 1050 W	6 / 10 / 15 / 27		28	GXT 1500 RT	**13107-012**
2000 VA / 1500 W	11 / 18 / 27 / 47		37	GXT 2000 RT	**13107-013**
3000 VA / 2100 W	7 / 10 / 15 / 28		39	GXT 3000 RT	**13107-014**

Battery pack

For UPS online	Battery voltage	Buffer time UPS and one battery pack in minutes at	Dimensions	Weight	Order No.	
VA	V	100 / 70 / 50 / 30 % load	Height × width × depth	in kg	Battery pack	
1000	36	35 / 56 / 85 / 150 (45 / 72 / 115 / 210)[1)]	Tower: 430 × 177 × 522 mm 19” chassis: 4 U × 84 HP × 492 mm	30	Battery pack GXT 1000 RT	**13107-055**
1500	48	29 / 48 / 75 / 126		35	Battery pack GXT 1500 RT	**13107-056**
2000	96	31 / 50 / 77 / 133		40	Battery pack GXT 2000 RT	**13107-057**
3000		18 / 30 / 44 / 78				

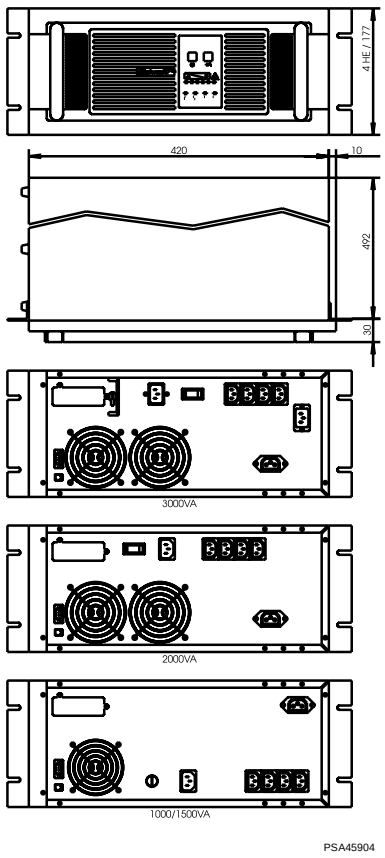
[1)] RTX version buffer time
A maximum of 2 battery packs can be connected.
The UPS buffer time with 2 battery packs is approximately twice that of a UPS with one battery pack.

Accessories

– Slide rails
– Network board (SNMP adapter)
– Software

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Uninterruptable power supplies on-line

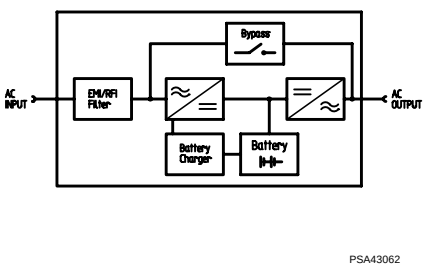


TE = HP
HE = U

Technical data

Input parameters		GXT 1000 RT	GXT 1500 RT	GXT 2000 RT	GXT 3000 RT
Mainsvoltage (operating range)		230 V_{AC} (from 120 V at 30 % load, from 160 V at 90 % load)			
Mains frequency range		50 or 60 Hz			
Connectors		Inlet CEE 22			CEE 19
Mains/rechargeable battery efficiency		> 90 %			
Output parameters					
Output voltage		230 V_{AC} ± 3 % adjustable to 208, 220, 230, 240 V_{AC}			
Frequency		50 or 60 Hz			
Capacity		1000 VA/ 700 W	1500 VA/ 1050 W	2000 VA/ 1400 W	3000 VA/ 2100 W
Curve		Sin wave			
Overload capacity		200 % for 8 cycles, 130 % for 10 s with bypass			
Bypass with filtering		Manually reversible, automatic in the event of overload or internal malfunction			
Output connector		4 CEE 22			4 × CEE 22 1 × CEE 19
Battery					
Buffer times		see order table			
Battery type		Leak-proof lead battery			
Battery voltage		36 VDC	48 VDC	96 VDC	96 VDC
Number of batteries (12 V / 7 Ah)		3	4	8	8
Re-charge time		Max. 8 h (in the event of complete discharge)			
Switch-over time, mains to battery		None			
Battery test		Automatically every 2 weeks			
Battery pack					
Buffer times		see order table			
Connection to UPS		With cable via connector			
Max. buffer time		With max. 2 battery packs			
Other characteristics					
Operation/storage temperature range		0 to +40 °C / -15 to +50 °C			
Noise level		< 45 dBA	< 50 dBA		
Relative humidity		0 to 95 % (non-condensing)			
Weight		30 kg	35 kg	40 kg	
Altitude		Up to 3000 m at nominal output			
Electro-magnetic compatibility, CE	Interference-emission	EN 55022 Class B			
	Interference immunity	IEC 801 Part 2, 3, 4, 5			
	Safety	EN 50091-1, LVD			
Munti-functional display	LED bar indicator for	Battery capacity load display			
	LED for	Normal operation, battery operation, error function, bypass			
DB9 interface		RS 232, contacts			
Warranty		24 months replacement service			

Block circuit diagram: Online



Connector pin-out SUB D9 bushing

Pin	Function
1	Battery discharged, collector output
2	RS-232 data receipt (UPS T×D)
3	RS-232 data transmission (UPS R×D)
4	UPS remote switch-off (5 – 12 V) during battery operation
5	Reference line for pin 4 and 6, ground for pin 2 and 3
6	UPS remote switch-off (emergency OFF, bridging with pin 5), all operating modes
7	Battery discharged, emitter output
8	Power failure, emitter output
9	Power failure, collector output

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1000 to 3000 VA....3.14.2

Interactive UPS
700 to 2200 VA.....3.14.4

Accessories
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Uninterruptable power supplies interactive

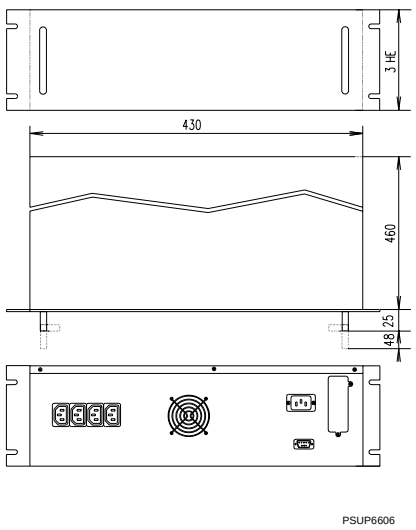


11600002

700 to 2200 VA

- 19" interactive uninterruptable power supply
- Switch-over time 2 / 4 ms
- RS 232 COM interface and signal outputs
- LED display for charge status, battery capacity and fault /alarm LEDs
- Maintenance-free batteries, can be replaced at front
- Internal SNMP agent via the ethernet interface
- Perfect standby and high battery life expectancy via the integrated Intelligent Battery Management System (IBMS)
- International approvals EN, CE

Dimensions



PSUP6606

HE = U

Delivery comprises

Qty	Description	Material
1	UPS interactive	19"-chassis
1	Mains input cable	Length 1.5 m
2	Mains output cable	Length 1.5 m
2	Interference suppression	Ferrites for network and data line interference suppression
1	Multilink cable	Cable for connection to the computer COM interface
1	Operating instructions	

Capacity	Buffer time in minutes at 100 / 70 / 50 / 30 % load	Dimensions of 19" chassis width = 460 mm depth = 460 mm Height	Weight kg	Order No. Type	Mains voltage 230 V
700 VA / 450 W	7 / 14 / 19 / 42	3 U	19	PSI 700 RM	**13107-016**
1000 VA / 670 W	7 / 14 / 19 / 43		23	PSI 1000 RM	**13107-017**
1400 VA / 950 W	7 / 10 / 16 / 40		26	PSI 1400 RM	**13107-018**
2200 VA / 1600 W	5 / 13 / 12 / 38	4 U	39	PSI 2200 RM	**13107-019**

Accessories

– Network board (SNMP adapter)
– Software

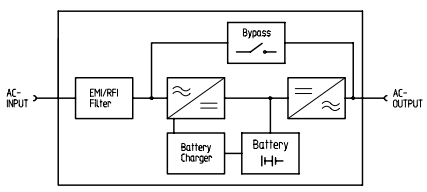
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Uninterruptable power supplies interactive

PSI series technical data

Input parameters		PSI 700 RM	PSI 1000 RM	PSI 1400 RM	PSI 2200 RM
Mains voltage (operating range)		230 V_{AC} (166 – 272 V_{AC})			
Mains frequency range		50 / 60 Hz			
Efficiency		> 94 %			
Mains input connection on the rear side		CEE 22			CEE 11
Output parameters					
Output voltage		230 V_{AC} + 8 % -19 % normal operation			
Frequency range		50 Hz ± 10 % normal operation			
Capacity VA / W		700 VA / 450 W	1000 VA / 670 W	1400 VA / 950 W	2200 VA / 1600 W
Curve		Sinusoidal in mains and battery operation			
Rise rate (on synchronisation)		1 Hz / sec.			
Distortion with non-linear load, TDH (Total Harmonic Distortion)		< 3 %			
Non-linear loads (crest factor)		3 : 1			
Overload capacity at full load via mains		110 % – 5 minutes, 200 % 2 cycles = 40 ms			
Overload capacity at full load via battery		110 % – 30 s, 120 % – 100 ms, 150 % – 200 ms			
Buffer time in minutes	at full load	7	7	7	5
	at half load	19	19	16	12
Battery type maintenance free, valve-controlled		12 V / 7 Ah			8 × 6 V /7 Ah
Re-charge time		Max. 8 h (90 % capacity)			
Switch-over time	Mains to battery	4 ms			
	Battery to mains	2 ms			
Mains output connection, on the rear side		4 × CEE 22			4 × CEE 22, 1 × CEE 19
Other characteristics					
Temperature range	Operation	0 to +40 °C			
	Storage	-15 to +50 °C			
Noise level (100 % load)		< 45 dBA (1 m distance)			< 50 dBA
Relative humidity		0 to 95 % (non-condensing)			
Weight		19 kg	23 kg	26 kg	39 kg
Dimensions: 19” chassis, width 84 HP, depth 460 mm, height		3 U			4 U
Design / colour		Metal case / pantone 432 C			
Derating depending on the altitude	Operation	up to 3000 m, 35 °C without restriction			
	Storage	up to 10000 m			
Safety		EN 60950, designed in accordance with EN 50091 Part 1			
Electromagnetic compatibility, CE	Interferenceemission	EN 55022 Class B			
	Interference immunity	IEC 801 Part 2, 3, 4, 5			
Communication interface RS 232		mounted			
Operating controls, front		2 switches, on/off; acoustic alarm / battery test shut-off; switch on in the event of power failure, status displays; battery LED bar indicator; load bar indicator			
Warranty		24 months replacement service			

Block circuit diagram: Interactive



Connector pin-out SUB D9 bushing

Pin	Function
1	Low battery capacity, collector output
2	RS-232 data receipt (UPS T×D)
3	RS-232 data transmission (UPS R×D)
4	UPS remote switch-off (5 – 12 V) during battery operation
5	Reference line
6	–
7	Low battery capacity, emitter output
8	Power failure, emitter output
9	Power failure, collector output

On-line UPS
1000 to 3000 VA....3.14.2

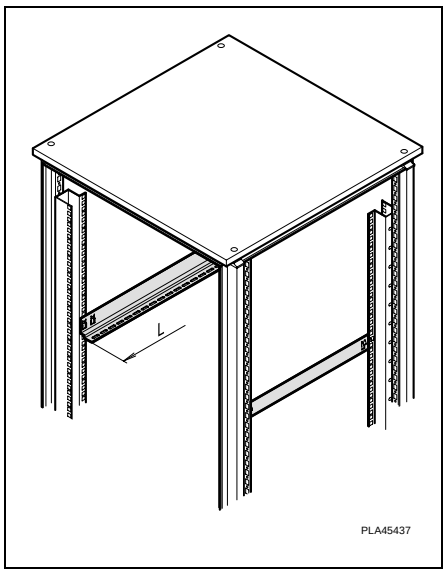
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Uninterruptable power supplies accessories



Slide rails

■ For online UPS (GXT series)

Due to the high weight, mounting the uninterruptable power supplies and the battery pack on slide rails or mounting shelves is a requirement.

Cabinet depth mm	Cabinet Type	Order No.
600	eurorack, proline, minirack	**20835-925**
780[1)]	minirack	**20835-926**
800[1)]	eurorack VNT, proline VNT*	**20835-925**
	eurorack, proline	**20835-926**
	comrack	**20835-927**

[1)] Suitable for online UPS
* Version as eurorack VNT

Network board (SNMP adapter)

■ For ethernet network

With the SNMP interface board, the UPS is connected to the LAN or WAN (Local or Wide Area Networks) networks. The Network Management Standard SNMP (Simple Network Management Protocol) is manufacturer-independent, and can be connected to several conventional Network Management Systems. As a result of this, all computers in the network are informed of the status of the UPS.

The SNMP interface board is simply mounted into the UPS.

System requirements

- Available connection to the network (SNMP Network Management System (NMS) is supported by HP Open View, IBM NetView, SunNet Manager Novell NMS and other SNMP-compatible NMSs)
- A computer with a free RS 232 COM interface for configuration

Delivery comprises

Qty	Description	Material
1	Ethernet interface board	10 base T connection, with diskette in DOS and TAR format
1	Interface cable	
1	Operating instructions	

Order No. (1 unit)	**43147-012**

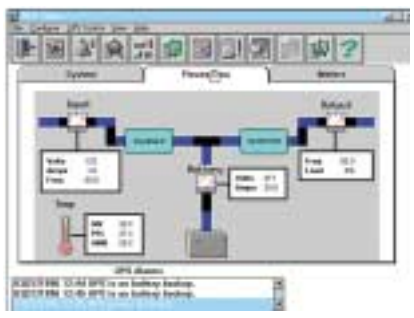
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Software

Software allows the UPS is able to automatically run computer systems down, and reports a fault to the connected computers and to the network. In the event of power failure for long periods of time, the data are backed up before the batteries are discharged.

- Monitoring and shutdown software, available for the following operating systems:
  - Windows 95, 98, NT
  - Novell Netware
  - HP-UX
  - Sun Solaris
  - Red Hat Linux
  - AIX
  - SCO Open Server







UPSMeter UPSPower UPSList

Monitoring and shutdown software

- Prevents data loss
  - Backs up data before the batteries are discharged
  - Runs the computer down in a controlled manner
- Continuous UPS monitoring
- Simple connection via the computer's serial interface (RS 232, COM)
- User management
- UPS enquiry frequency adjustment
- Adjustment of event timing for
  - Switching the battery on (power failure)
  - Battery discharged
  - Return to normal operation
- Generation of Log files
- Status display on the screen
- Message display on the screen
- Switching the battery on (power failure)
- Battery discharged
- Return to normal operation
- Low battery charge

The current shutdown software, including comprehensive documentation, is available for free download in the Internet.

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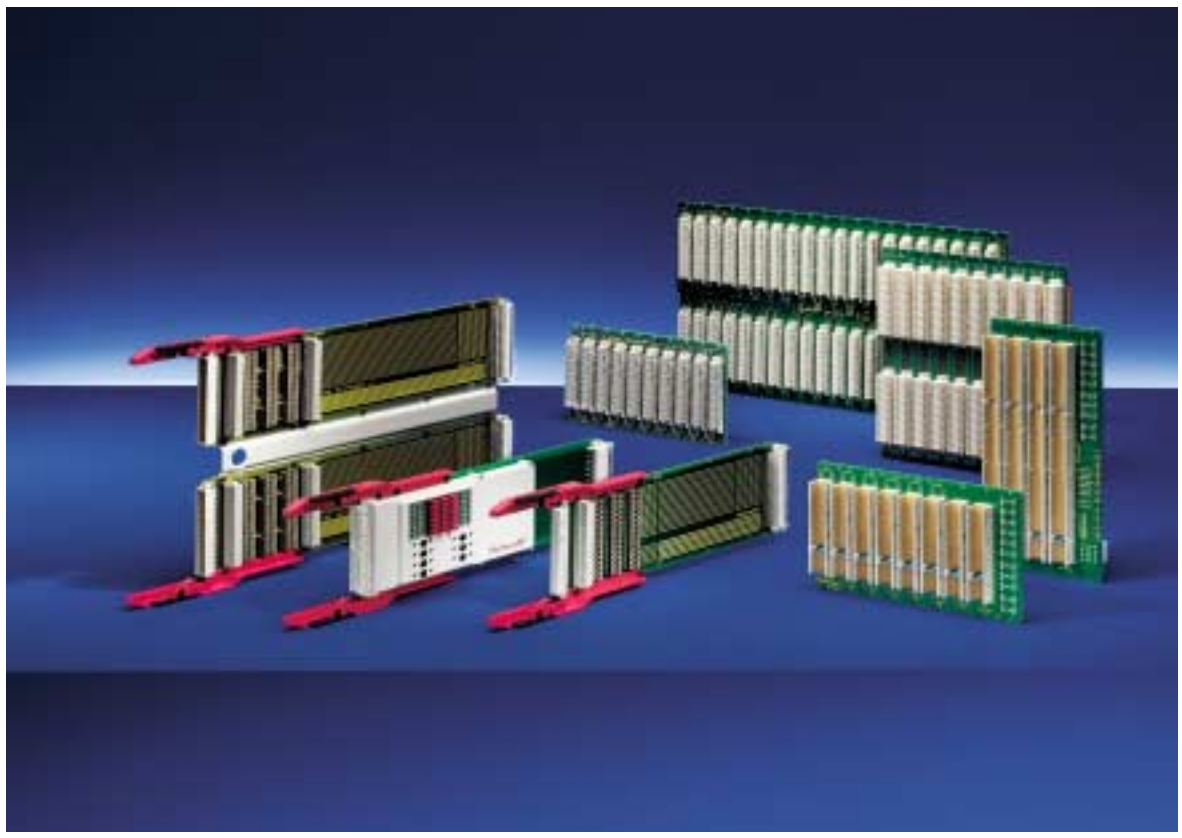
Power supply units..... 3.10.0

Backplanes/ test adapters .. 3.20.0
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VME64x bus.....3.22.0
CompactPCI bus....3.23.0
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Power bus 3.27.0
Test adapters 3.28.0
Accessories.....3.29.0

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Backplanes/test adapters overview



10900002

Application

Backplanes are used to install computer-controlled systems. They provide simple and safe power and signal distribution for plug-in boards and modules.

Backplanes are suitable for mounting in subracks or system casings.

The power bus backplanes are used especially for connecting 19"-compatible power supply units with standardized connectors and for simple connection.

The test adapters are used for testing the boards in systems.

Know-how

Schroff has decades of experience in the development and manufacture of backplanes and test adapters.

We offer top quality at competitive market prices.

We use a powerful CAD system to create layouts.

For customer-specific backplanes, it is generally the case that

- signal integrity
- crosstalk and
- DC current distribution with static voltage drops

are tested using simulation.

Production

The backplanes that we produce are subjected to a 100% test.

Process controls are conducted on a regular basis. The backplane layer structure and hole geometry are monitored regularly with the aid of micrographs.

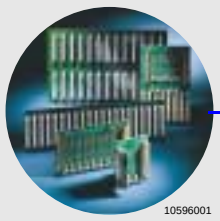
Parts such as SMD components as well as connectors are automatically printed. In this way, the backplanes and test adapters show a maximum degree of reproducibility and freedom from defects. The connectors are pressed in with a monitored and documented press-in force.

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Backplanes/test adapters overview

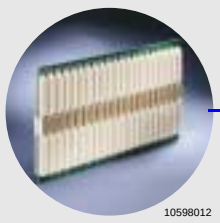
VMEbus backplanes

- Monolithic 6 U (J1+J2), 3 U J1 and J2
- 2 to 21 slots
- Terminator IN, ON and OFF-board


10596001

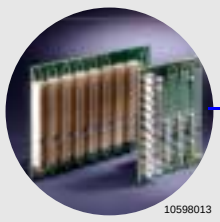
VME64x backplanes

- Monolithic 6 U (J1+J2)
- 5 to 21 slots
- Terminator ON-board
- With or without P0 connector


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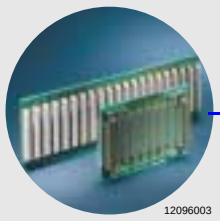
CompactPCI backplanes

- 3 U, 6 U and 7 U, 64 bits
- 4 to 8 slots
- Voltage connections with screw-type plug connections, M connector or ATX connector
- Adapter PCI – CompactPCI


10598013

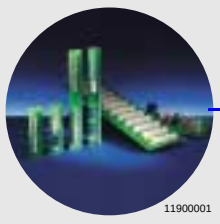
Universal backplanes

- 3 U
- 2 to 21 slots


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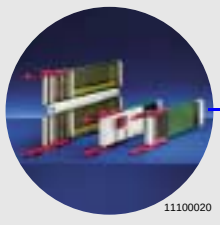
Power bus backplanes

- For connecting 19"-compatible power supply units to backplanes
- Simple parallel connection of power supply units
- Structure of redundant power systems


11900001

Test adapters

- For testing boards
- For many popular connectors
- For 3, 6 and 9 U high boards
- Special solution for VMEbus


11100020

Accessories

- Connectors
- Connections


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VMEbus 3.21.0
VME64x bus 3.22.0
CompactPCI bus....3.23.0
Universal bus 3.24.0
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Microcomputer packaging systems (MPS) 3.30.0

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VMEbus backplanes overview



10596001

Application

We supply a comprehensive range of backplanes for the VMEbus.

The range includes J1, J2 and J1/ J2 backplanes.

For the J2 I/O bus, there are supplements such as the VSB and ribbon cable buses.

Electrical

In the design of the multi-layer backplane and component placement, the utmost care has been taken to ensure uniform signal line impedance.

The termination resistors are either **ON-board** (outside the connector field), **IN-board** (inside the connector field) or **OFF-board** (external). The termination can be switched over via jumpers from active to passive.

The daisy chain signals can be routed either manually via jumpers (MDC manual daisy chaining) or automatically via a special switch connector (ADC automatic daisy chaining). For the advantages of ADC, refer to the Appendix "Explanation of backplane terminology".

Screw-type connections are used for the power supply while busbars are used for higher power requirements.

Mechanical design

Assembly holes (in compliance with ANSI/VITA 1-1994 and IEEE 1101) are provided for the purpose of fitting the backplanes to the subrack horizontal rail. The backplanes have through-plated holes with which the PE connection is achieved simply by means of screws.

The ON-board backplane is wider than the IN-/OFF-board back-planes because the termination is outside the connector field. For this reason, the ON-board backplanes only have a maximum of 20 slots compared with IN-/OFF-board backplanes with 21 slots. Due to their narrower design, IN-/OFF-board backplanes can be mounted side by side without the loss of slots.

The backplanes are multi-layer boards with optimized layout and shielded planes. The shielded planes reduce crosstalk between the signal paths and can provide for maximum shielding.

The power is supplied by means of screw-type and FASTON connections.

Standards

The backplanes comply with the VMEbus specification ANSI/VITA 1-1994. The VME64 Extended complies with the specification ANSI/VITA 1.1-1997.

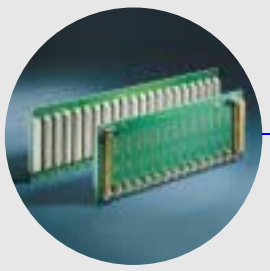
The specifications are available from Vita (www.vita.com). Schroff has been a member of Vita for many years.

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VMEbus backplanes overview

J1 system bus

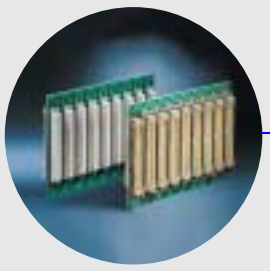
- 3 U backplane
- Termination in ON-/IN-/OFF-board



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J2 I/O bus

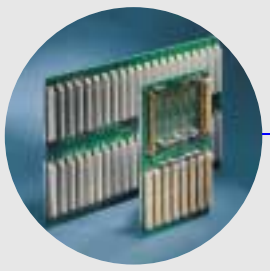
- 3 U backplane
- Expands the J1 system backplane to 32 bits
- Serves as input/output (I/O) bus
- Passive termination



10596010

J1/J2 monolithic

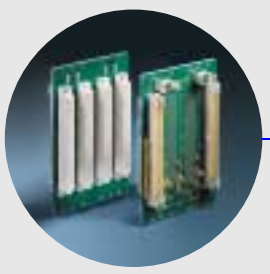
- 6 U backplane with 32-bit data bus width (combination of J1 and J2 planes)
- Termination in IN-/OFF-board 64-bit data/address bus width with MBTL protocol



10596005

J2 VSB (VME Subsystem Bus)

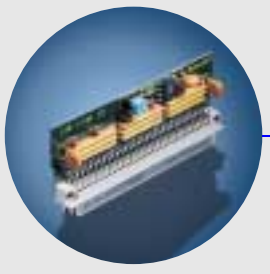
- 3 U backplane, mountable side by side or pluggable on J2 backplanes
- Expands the J1 system backplane to 32 bits
- Serves as system bus expansion



10596015

Accessories

- J1 terminator
- Ribbon cable bus
- Busbar
- Threaded pin
- Power jumpers
- Test adapters, see Test adapters for VMEbus



10596023

Backplanes
J1 system bus.....3.21.2
J2 I/O bus.....3.21.4
J1/J2 monolithic ...3.21.6
J2 VSBbus.....3.21.8

Accessories
J1 terminator 3.21.10
Ribbon cable bus 3.21.10
Busbar.....3.21.11
Threaded pin.....3.21.11
Power jumpers....3.21.12

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Power supply units..... 3.10.0

Backplanes/ test adapters .. 3.20.0
VMEbus 3.21.0
VME64x bus.....3.22.0
CompactPCI bus....3.23.0
Universal bus 3.24.0
Power bus 3.27.0
Test adapters 3.28.0
Accessories.....3.29.0

Microcomputer packaging systems (MPS) 3.30.0

Appendix..... 3.90.0

VMEbus backplanes J1 system bus



10596025

J1 system bus

- 3 U backplane with 16-bit data bus width
- Termination:
  Versions in IN-, ON- and OFF-board available
  Can be switched over, ON-/IN-board, active/passive
- Versions with (ADC) and without automatic daisy chaining (MDC) available
- Several IN-/OFF-board backplanes can be mounted next to each other without the loss of slots
- Particular features of IN-board backplane:
  – Through-connected PE mounting holes
  – Better shielding (on the backplane, shielded planes are on the outside, signal lines on the inside)

Delivery comprises

Qty	Description	Material
1	Backplane	Fully equipped
10	Daisy chain jumper	
4	Locking lever	For safe securing of external terminator board on OFF-board

Slot	Width mm	Order No. ON-board [3] ADC [7]	ON-board [3] MDC	IN-board [3] ADC [7]	IN-board [3] MDC	OFF-board ADC	OFF-board MDC [5]	Slot	Width mm
1		–	–	–	–	–	**23000-101**[6]	1[1]	16.3
2		–	–	**23000-062**[4]	–	**23000-102**	**60800-369**[2]	2	38
3	71	**23000-003**	**23000-603**	**23000-063**[4]	–	**23000-103**	–	3	58
4		–	–	**23000-034**	**23000-634**	**23000-104**	–	4	78
5	112	**23000-005**	**23000-605**	**23000-035**	**23000-635**	**23000-105**	**23000-705**	5	98
6	133	–	**23000-606**	**23000-036**	**23000-636**	**23000-136**	**23000-706**	6	118
7	153	**23000-007**	**23000-607**	**23000-037**	**23000-637**	**23000-107**	**23000-707**	7	138
8		–	–	**23000-038**	**23000-638**	**23000-108**	**23000-708**	8	159
9	194	**23000-009**	**23000-609**	**23000-039**	**23000-639**	**23000-109**	**23000-709**	9	179
10	214	**23000-010**	**23000-610**	**23000-040**	**23000-640**	**23000-110**	**23000-710**	10	199
11		–	–	**23000-041**	**23000-641**	**23000-111**	**23000-711**	11	219
12	255	**23000-012**	**23000-612**	**23000-042**	**23000-642**	**23000-112**	**23000-712**	12	240
13		–	–	**23000-043**	**23000-643**	**23000-113**	**23000-713**	13	260
14		–	–	**23000-044**	**23000-644**	**23000-114**	**23000-714**	14	281
15	316	**23000-015**	**23000-615**	**23000-045**	**23000-645**	**23000-115**	**23000-715**	15	301
16	338	**23000-016**	**23000-616**	**23000-046**	**23000-646**	**23000-126**	**23000-726**	16	321
17		–	–	**23000-047**	**23000-647**	**23000-117**	**23000-717**	17	341
18		–	–	**23000-048**	**23000-648**	**23000-118**	**23000-718**	18	362
20	417	**23000-020**	**23000-620**	**23000-050**	**23000-650**	**23000-120**	**23000-720**	20	403
				23000-051	**23000-651**	**23000-121**	**23000-721**	21	423

[1] For power supply
[2] Connecting board for side-by-side mounting
[3] Termination can be switched over between active/passive
[4] Termination passive
[5] Cannot be mounted side by side
[6] 4-layer
[7] 1st slot, MDC connector
ADC = **A**utomatic **D**aisy **C**haining
MDC = **M**anual **D**aisy **C**haining

Note
Further dimensions available on request.

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VMEbus backplanes J1 system bus

Technical data:

- "High-speed" VME system bus, ON-/IN-board backplanes – particularly suitable for data transmission with fast drivers (ABT, FCT)
- Complying with Specification ANSI/VITA 1-1994
- Uniform impedance of all signal lines
- Optimized layout for minimal crosstalk
- Current distribution via busbars and connections via screw/plug connectors
- Suppression capacitors for conducted interference
- Interference suppression to PE ground also possible with plated-through PE mounting holes
- Safe interference suppression of transient and dynamic currents

Item	Description
1	Connector either with or without switch connector
2	Wire-wrap pins for daisy chain jumper for manual daisy chain (MDC)
3	Utility connector (5 wire-wrap pins, accessible on both sides)
4	Termination changeover between active/passive for ≥ 4 slots
5	Multi-layer backplane
6	Assembly holes
7	Terminators (for ON-, IN-board)
8a	Connector slot 1, prepared for locking lever
b8	On OFF-board, even last slot equipped with connector
9	Suppression capacitors for filtering conducted interference on the power supply lines
10	PE connection (FASTON) and for IN-/OFF-board also through-plated mounting holes
11	Power connections
12	Decoupling capacitors between each slot

		ON-board	IN-board	OFF-board[1)]
Description		VME system bus, 16-bit, J1, 3 U		
Bit rate		20 Mbyte/s		
Base material		Epoxy resin fibreglass EP GC 02 as per DIN 40 802 (FR4), flame-resistant as per UL 94 V-0		
Design		4-layer: signal – V_{cc} – GND – signal	6-layer: GND – signal – GND – V_{cc} – signal – GND	
Characteristic impedance Z / Ohmic resistance R of all signal lines		Z = 60 ± 5 Ω / R <1.5 Ω	Z = 55 ± 5 Ω / R <1.5 Ω	
Termination location		ON-board	IN-board	OFF-board
Termination type		Can be switched over between active/passive	2 – 3 slot, passive, ≥ 4 slot, can be switched over between active/passive	External
Basic current consumption		< 0.5 A (active termination), < 1.5 A (passive termination)		External
Connections	Power supply	FASTON (2.8/6.3 mm × 0.8 mm), screw terminals (M4)		
	PE	FASTON 6.3 × 0.8 mm	FASTON 6.3 × 0.8 mm, through-plated mounting holes	
	ACFAIL	FASTON 6.3 × 0.8 mm	–	
	Utility signals	Wire-wrap pins (GND, + 5 V, ACFAIL*, SYSFAIL*, SYSRESET*)		
	Connectors	C 96, press-in version, quality class 2 (400 plug-in cycles), ADC and MDC; for ADC first and last slot MDC connector, 1st slot cannot be jumpered, MDC cannot be mounted side by side		
Temperature range	Operation	Termination active 0 °C ... 50 °C, termination passive -40 °C ... +85 °C		
	Storage	Termination active -40 °C ... +85 °C, termination passive -40 °C ... +85 °C		
Dimensions	Height	3 U, 130 mm; 2 slot connecting board 100 mm		
	PCB thickness	approx. 3.2 mm		
	Slot pitch	4 HP = 20.32 mm		

[1)] Suitable with limitations for fast drivers, * Low active

Backplanes

J1 system bus.....3.21.2
J2 I/O bus.....3.21.4
J1/J2 monolithic...3.21.6
J2 VSBbus.....3.21.8

Accessories

J1 terminator.....3.21.10
Ribbon cable bus 3.21.10
Busbar.....3.21.11
Threaded pin.....3.21.11
Power jumpers....3.21.12

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Power supply units..... 3.10.0

Backplanes/ test adapters .. 3.20.0
VMEbus 3.21.0
VME64x bus.....3.22.0
CompactPCI bus....3.23.0
Universal bus 3.24.0
Power bus 3.27.0
Test adapters 3.28.0
Accessories.....3.29.0

Microcomputer packaging systems (MPS) 3.30.0

Appendix..... 3.90.0

VMEbus backplanes J2 I/O bus



10596010

J2 I/O bus

- 3 U backplane
- J2 input/output bus (I/O)
- Expands the J1 system bus to 32-bit data bus width
- Termination ON-/IN-board integrated, passive
- Versions:
  - Type 1 with rear-side connectors for VSB/ribbon cable bus
  - Type 2 for shielded ribbon cable

Delivery: Backplane, fully equipped

Slot	Width in mm	Order No.		
		ON-board	IN-board	
		Type 1 2 layers	Type 1 4 layers	Type 2 for shielded I/O ribbon cable 4 layers
1	16	**23000-301** [1)]	–	–
2	35	**23000-202**	–	–
3	61	**23000-203**	–	–
4	81	**23000-204**	–	–
5	101	**23000-205**	**23000-265**	**23000-335**
7	142	**23000-207**	–	–
8	162	**23000-208**	–	–
9	182	**23000-209**	**23000-269**	**23000-339**
10	203	**23000-210**	–	–
11	223	**60800-421**	–	–
12	243	**23000-212**	**23000-272**	**23000-342**
13	264	**23000-213**	–	–
14	284	**23000-214**	–	–
16	325	**23000-216**	–	–
17	345	**23000-217**	–	–
20	406	**23000-220**	–	–
21	426	–	**23000-281**	**23000-351**

[1)] For power supply

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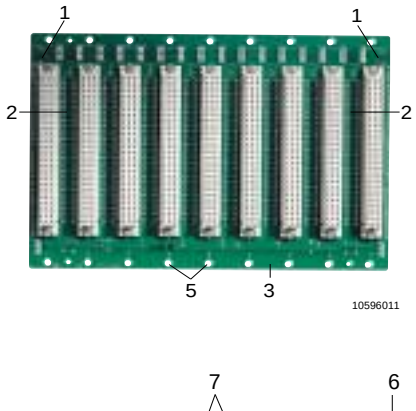
VMEbus backplanes J2 I/O bus

Type 1

10596011

10596014

Type 2



10596013

10596012

Technical data:

- "High-speed" VME system bus expansion to 32 bits
- Complying with Specification ANSI/VITA 1-1994
- Uniform impedance of all signal lines
- Termination integrated, passive
- Stable power supply
- I/O, V_{cc} and GND with wire-wrap pins

Type I

Long pins equipped with connector bodies on rear side, thus use of system bus expansion VSB or I/O ribbon cable is possible.

Type II

Except for slot 1, two connectors per slot, on rear side pin row b shortened, GND-a and c-GND, for use of shielded ribbon cables.

Item	Description
1	Terminators for Reserved or Retry ("b3")
2	Terminators (row "b")
3	Multi-layer backplane, 2-/4-layer
4	Connector prepared for locking lever
5	Assembly holes
6	PE connection
7	Power connections
8	GND pins (row "a" on left, row "c" on right) for shielded ribbon cable bus

Description		I/O bus J2 with system bus expansion to 32 bits
Bit rate		40 Mbyte/s (J1 + J2); 80 Mbyte/s (MBLT)
Base material		Epoxy resin fibreglass EP GC 02 as per DIN 40 802 (FR 4); flame-resistant as per UL 94 V-0
Design		Through-plated on both sides or 4-layer
Characteristic impedance Z of all signal lines		75 ± 7.5 Ω (2-layer version); 55 ± 5 Ω (4-layer version)
Ohmic impedance R of all signal lines		≤ 1 Ω/slot
Termination location		ON-board/IN-board
Termination type		passive
Basic current consumption		0.3 A
Connections	Power supply	FASTON (2.8/6.3 mm × 0.8 mm); screw terminals (M 4)
	Connectors	C 96, press-in version, quality class 2 (400 plug-in cycles), for type 2 double number
Temperature range	Operation	- 40 °C ... 85 °C
	Storage	- 40 °C ... 85 °C
Dimensions	Height	3 U, 130 mm
	PCB thickness	approx. 3.2 mm
	Number of slots	1 to 21
	Width:	= number of slots × 20.32 mm – 2.23 mm
	Slot	Pitch between 2 connectors = 4 HP = 20.32 mm

Backplanes

J1 system bus.....3.21.2
J2 I/O bus.....3.21.4
J1/J2 monolithic...3.21.6
J2 VSBbus.....3.21.8

Accessories

J1 terminator.....3.21.10
Ribbon cable bus 3.21.10
Busbar.....3.21.11
Threaded pin.....3.21.11
Power jumpers....3.21.12

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Power supply units..... 3.10.0

Backplanes/ test adapters .. 3.20.0
VMEbus 3.21.0
VME64x bus.....3.22.0
CompactPCI bus....3.23.0
Universal bus 3.24.0
Power bus 3.27.0
Test adapters 3.28.0
Accessories.....3.29.0

Microcomputer packaging systems (MPS) 3.30.0

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VMEbus backplanes J1/J2 monolithic



10595005

J1/J2 monolithic

- 6 U backplane with 32-bit data bus width (combination of J1 and J2 levels)
- Termination:
  Versions in IN- and ON-board available
  Can be switched over between active/passive
- Versions with and without automatic daisy chaining available
- Several backplanes can be mounted next to each other without the loss of slots

Delivery comprises

Qty	Description	Comments
1	Backplane	Fully equipped
10	Daisy chain jumper	
4	Locking lever	Also for safe securing of external terminator board on OFF-board

Slot	Width in mm	Order No. IN-board ADC[1)]	IN-board MDC	OFF-board ADC
3	57	**23000-463**	**–**	**23000-503**
4	77	**23000-464**	**23000-864**	**23000-504**
5	98	**23000-465**	**23000-865**	**23000-505**
6	118	**23000-466**	**23000-866**	**23000-506**
7	138	**23000-467**	**23000-867**	**23000-507**
8	159	**23000-468**	**23000-868**	**23000-508**
9	179	**23000-469**	**23000-869**	**23000-509**
10	199	**23000-470**	**23000-870**	**23000-510**
12	240	**23000-472**	**23000-872**	**23000-512**
13	260	**23000-473**	**23000-873**	**23000-513**
14	280	**23000-474**	**23000-874**	**23000-514**
15	301	**23000-475**	**23000-875**	**23000-515**
16	321	**23000-476**	**23000-876**	**23000-516**
20	403	**23000-480**	**23000-880**	**23000-520**
21	423	**23000-481**	**23000-881**	**23000-521**

[1)] 1st slot, MDC connector
ADC = **A**utomatic **D**aisy **C**haining
MDC = **M**anual **D**aisy **C**haining

Note
Further dimensions available on request.

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VMEbus backplanes J1/J2 monolithic

Example: IN-board

Technical data:

- "High-speed" VME system bus, particularly suitable for data transmission with fast drivers (ABT, FCT)
- Complying with specification ANSI/VITA 1-1994 and VME64
- Uniform impedance of all signal lines
- Optimized layout for minimal crosstalk
- Current distribution via busbars and connections via screw/plug connectors
- Suppression capacitors for conducted interference
- Interference suppression to PE ground also possible
- Safe interference suppression of transient and dynamic currents

Item	Description
1	Connector either with or without switch connector
2	Wire-wrap pins for daisy chain jumper for manual daisy chain (MDC)
3	Utility connector – (5 wire-wrap pins, accessible on both sides)
4	Termination changeover between active/passive (for IN-board)
5	Multi-layer backplane
6	Assembly holes
7a	Terminators (J1 for IN-board)
b7	Terminators (J2)
8a	Connector J1/slot 1, prepared for locking lever
b8	For OFF-board only: Connector J1, last slot, prepared for locking lever
9	Suppression capacitors for filtering conducted interference on the power supply lines
10	PE connection (FASTON 6.3 × 0.8 mm)
11	Power connections
12	Decoupling capacitors between each slot
13	Connector J2, connector body prepared for locking lever, row b partially equipped, voltage supply pins fitted

		IN-board	OFF-board[1)]
Description		6 U monolithic VME system bus, 32-bit, J1 + J2	
Bit rate		80 Mbyte/s with MBLT protocol	
Base material		Epoxy resin fibreglass EP GC 02 as per DIN 40 802 (FR 4); flame-resistant as per UL 94 V-0	
Design		6-layer multi-layer: signal – signal/V_{CC} – V_{CC} – GND – GND/signal – signal	
Characteristic impedance Z / Ohmic resistance R of all signal lines		Z = 55 ± 5 Ω / R ≤ 1.5 Ω	R ≤ 1.5 Ω
Termination location		IN-board	OFF-board[1)]
Termination type	J1	Can be switched over between active/ passive	External
	J2	passive	
Basic current consumption (termination)	J1	< 0.5 A (active)	External
	J1	< 1.5 A (passive)	
	J2	< 0.3 A (passive)	
Connections	Power supply	FASTON (2.8/6.3 mm × 0.8 mm); screw terminals (M 4)	
	Power supply	via special busbars e.g. at 5 V, max. 9 A per slot	
	PE	FASTON 6.3 × 0.8 mm	
	Utility signals	Wire-wrap pins (GND, +5 V, ACFAIL*, SYSFAIL*, SYSRESET*)	
	Connector	C 96, press-in version, quality class 2 (400 plug-in cycles)	
Temperature range	Operation	Termination active 0 °C ... 50 °C, Termination passive - 40 °C ... 85 °C	
	Storage	Termination active - 40 °C ... 85 °C, Termination passive - 40 °C ... 85 °C	
Dimensions	Height	6 U, 263.3 mm	
	PCB thickness	approx. 3.2 mm	
	Number of slots	3 to 21	
	Width:	= number of slots × 20.32 mm – 4.013 mm	
	Slot	Pitch between 2 connectors = 4 HP = 20.32 mm	

[1)] Termination with external J1 termination board, see J1 terminator, further boards can be mounted side by side, suitable with limitations for fast drivers

* Low active

Backplanes

J1 system bus.....3.21.2
J2 I/O bus.....3.21.4
J1/J2 monolithic...3.21.6
J2 VSBbus.....3.21.8

Accessories

J1 terminator.....3.21.10
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Power supply units..... 3.10.0

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Universal bus 3.24.0
Power bus 3.27.0
Test adapters 3.28.0
Accessories.....3.29.0

Microcomputer packaging systems (MPS) 3.30.0

Appendix..... 3.90.0

VMEbus backplanes J2 VSBbus

"mountable side by side" 10596015

"pluggable" 10596016



Example:
VSB butt-mounted
to J2 backplane 10596017



Example:
VSB plugged
to J2 backplane 10596018

J2 VSBbus

- 3 U backplane
- J2 VSBbus (**V**ME **S**ubsystem **B**us)
- Expands the J1 system bus to 32-bit data bus width
- Enables high-speed data interchange between the boards
- Termination ON-board, passive
- Versions:
  Mountable side by side to J2 I/O backplanes
  Pluggable on J2 I/O backplanes

Particular features:

"mountable side by side"
- Daisy chain jumper pluggable on connector side and on rear side
- Screw/plug connections for power supply
- Integrated termination

"pluggable"
- Daisy chain jumper pluggable on rear side
- Pin row "b" only with connector contacts for power supply:
  b1, b13, b32, (+5 V) and b2, b12, b22, b31 (GND) equipped
- Integrated termination

Example: VSB mountable side by side, pluggable

Item	Description	
1	J2 (I/O bus) backplane	10 slots
2	J2, connecting board	2 slots
3	J2, VSB, mountable side by side	4 Slot
4	J2, VSB, pluggable	6 slots

Delivery comprises

Qty	Description	Comments
1	Backplane	Fully equipped
10	Daisy chain jumper	

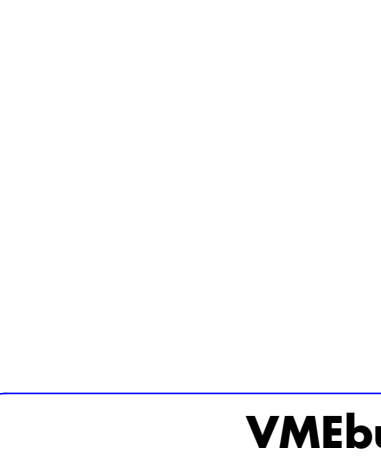
Slot	ON-board termination			
	"mountable side by side"		"pluggable"	
	Dimensions H × W × 3.2 mm mm	Order No.	Dimensions H × W × 3.2 mm mm	Order No.
2	100 × 35	**60800-436**[1)]	95 × 39	**20800-332**
3	–	**–**	95 × 60	**20800-333**
4	130 × 81	**60800-478**	95 × 80	**20800-334**
6	–	**–**	95 × 121	**20800-336**

[1)] Connecting board for side-by-side mounting

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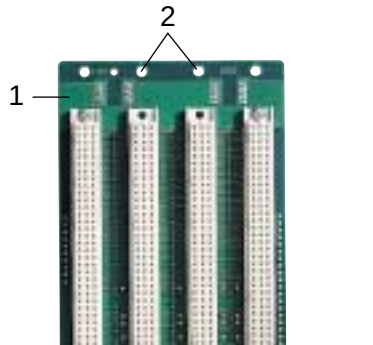
"mountable side by side"

10596019

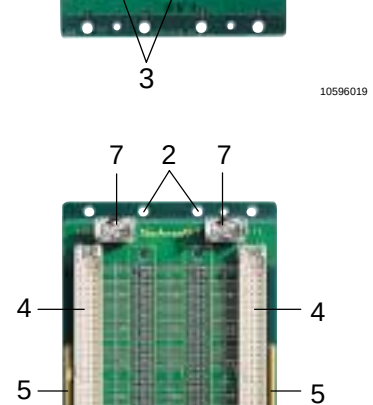


10596020

"pluggable"



10596021



10596022

Technical data:

VSB backplanes comply with the VSB Specification Version C (mountable version B). The VME sub system bus (VSB) enables high-speed data interchange between the boards – without loading the system bus. The R/C combinations required for geographical addressing of the slots are already located on the backplanes.

- VSB with system-bus-independent, multiplexed address/data bus AD 32
- Uniform impedance of all signal lines
- Safe decoupling of all bus lines
- Stable power supply
- Termination, passive, integrated on the backplane
- 2 versions: mountable side by side with I/O backplanes and VSB or pluggable on I/O backplanes

Item	Description
1	Multi-layer backplane, 4-layer
2	Assembly holes
3	Daisy chain jumper for BG IN-BG OUT
4	Connector prepared for locking lever
5	Terminators
6	Terminators for Reserved ("b3")
7	Power connections for power supply
8	Decoupling capacitors

Description		VSB backplane J2 with system bus expansion to 32 bits	
Version		Mountable side by side to J2	Pluggable on J2
Base material		Epoxy resin fibreglass EP GC 02 as per DIN 40 802 (FR 4); flame-resistant as per UL 94 V-0	
Design		4-layer multi-layer: signal – V_{cc} – GND – signal	
Characteristic impedance Z of all signal lines		60 ± 5 Ω	
Ohmic impedance R of all signal lines		≤ 1 Ω	
Termination location		ON-board	
Termination type		passive	
Basic current consumption		< 0.15 A	
Connections	Power supply	FASTON (2.8/6.3 mm × 0.8 mm), screw terminals (M4)	via I/O bus backplane
	Connectors	C 96, press-in version, quality class 2 (400 plug-in cycles)	
Temperature range	Operation	- 40 °C ... 85 °C	
	Storage	- 40 °C ... 85 °C	
Dimensions	Height	3 U, 130 mm, 2 slots 100 mm	95 mm
	PCB thickness	approx. 3.2 mm	
	Number of slots	2 to 4	2 to 6
	Width:	= number of slots × 20.32 mm – 0.23 mm	
	Slot	Pitch between 2 connectors = 4 HP = 20.32 mm	

Backplanes
J1 system bus.....3.21.2
J2 I/O bus.....3.21.4
J1/J2 monolithic...3.21.6
J2 VSBbus.....3.21.8

Accessories
J1 terminator.....3.21.10
Ribbon cable bus 3.21.10
Busbar.....3.21.11
Threaded pin.....3.21.11
Power jumpers....3.21.12

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Power supply units..... 3.10.0

Backplanes/ test adapters .. 3.20.0
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VME64x bus.....3.22.0
CompactPCI bus....3.23.0
Universal bus 3.24.0
Power bus 3.27.0
Test adapters 3.28.0
Accessories.....3.29.0

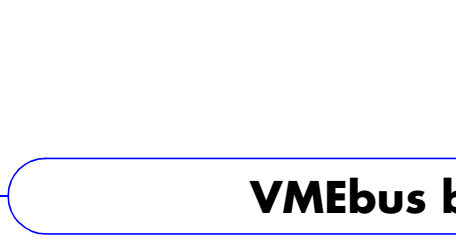
Microcomputer packaging systems (MPS) 3.30.0

Appendix..... 3.90.0

VMEbus backplane accessories

"at right angles" 10596023

"parallel on right" 10596024



10596026

J1 terminator

- For termination of OFF-board backplanes
- Termination can be switched over between active/passive
- Different mechanical versions (at right angles/parallel to backplane)
  - – at right angles: 2 terminators required
  - – parallel: One terminator required in each case on left and right

Item	Description
1	Backplane, 4-layer
2	Terminators
3	Termination changeover between active/passive
4	Connector C 96 / R 96

Technical data

Termination		can be switched over between active/passive
Basic current consumption		active: < 0.5 A passive: < 1.5 A
Temperature range	Operation	active: 0 °C ... + 50 °C passive: - 40 °C ... + 85 °C
	Storage	- 40 °C ... + 85 °C
Mechanical version, dimensions	at right angles	A = 38 mm, B = 10 mm, C = 98 mm
	parallel on left	A = 30 mm, B = 13 mm, C = 98 mm
	parallel on right	

Delivery: Terminator board, fully equipped

Qty	Description	Comments	Order No.
1	J1 terminator	at right angles to backplane	**23011-004**
		parallel to backplane on left	**23011-005**
		parallel to backplane on right	**23011-006**



05592007

Ribbon cable bus

- Fitted with 64-pin connectors of type C
  - – Connection of the two outer rows a + c on the I/O backplane
- Application: In expanded VMEbus systems for data interchange, independent of the VME system bus
  - – Plug on of the VMX ribbon cable bus on the wire-wrap connections of the I/O connector

Qty	Description	Slot (4 HP/20.32 mm per slot)	Dimensions mm	Order No.
1	Ribbon cable bus, row "a" and "c", C 64 as per DIN 41612	2	20.3 × 94	**20800-239**
		3	40.6 × 94	**20800-241**
		4	61,0 × 94	**20800-240**
		5	81,3 × 94	**20800-280**
		6	101.6 × 94	**20800-218**

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Table of dimensions

Length mm	Order No.
173	**20800-309**
254	**20800-311**
295	**20800-307**
335	**20800-308**
386	**20800-387**

Busbar

- Busbar with threaded studs for monolithic backplanes
- For a higher power supply, the busbar with threaded studs is replaced by the standard busbars fitted on the monolithic VMEbus backplanes
- The two threaded studs enable further cables with ring tags to be connected
  Two versions:
  – + 5 V
  – Ground (GND)

Delivery comprises

Item	Qty	Description	Material
1	1	Busbar with 2 threaded studs $^1/_4$"	Brass, nickel-plated, 2 mm thick, dependent on slot number
2	2	Washer	Steel, ∅ 7.4 mm DIN 125
3	2	Nut (hexagon)	Steel, $^1/_4$" – 20
4		Screw M4 × 8 with strain washer	

Delivery: In kit form

Slot	Order No. IN-board + 5 V	Order No. IN-board GND	Order No. OFF-board + 5 V	Order No. OFF-board GND	Slot[1)]
12	**20800-309**	–	–	–	12
13			**20800-309**	–	13
14					14
15					15
16	**20800-311**	–	**20800-311**	–	16
17					17
18					18
19					19
20	**20800-308**	**20800-387**	**20800-308**	**20800-387**	20
21	**20800-307**		**20800-307**		21

[1)] 1 slot = pitch = 4 HP = 20.32 mm

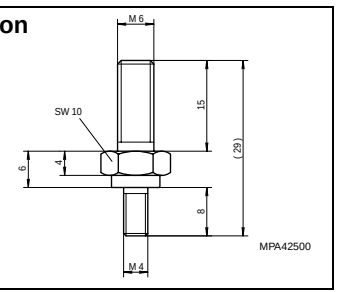

12296001

Threaded stud

For connecting supply lines of larger cable cross-section.
For replacing with the M 4 screws fitted as standard on the backplanes.

Qty	Description	Material	Order No.
1	Threaded stud	St, nickel-plated	**60800-553**

Dimension



Backplanes
J1 system bus.....3.21.2
J2 I/O bus.....3.21.4
J1/J2 monolithic...3.21.6
J2 VSBbus.....3.21.8
Accessories
J1 terminator.....3.21.10
Ribbon cable bus 3.21.10
Busbar.....3.21.11
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Power supply units..... 3.10.0

Backplanes/ test adapters .. 3.20.0
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VMEbus backplane accessories

Power jumpers

Serve to electrically connect VMEbus J1 to J2 backplane.

- Cable with screw connections at both ends
- Metal bracket for M4 screw connections (with same number of slots)



12296002

Cable

Qty	Description	Length mm	Order No.
2	Cable with screw connections at both ends (M4)	50	**20835-326**
		100	
		150	



12296003

Metal bracket

With matching number of slots for J1 and J2

Qty	Description	Order No.
10	Metal bracket for M 4 screw connections	**20800-232**

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Backplanes

J1 system bus.....3.21.2
J2 I/O bus.....3.21.4
J1/J2 monolithic ...3.21.6
J2 VSBbus.....3.21.8

Accessories

J1 terminator.....3.21.10
Ribbon cable bus 3.21.10
Busbar.....3.21.11
Threaded pin.....3.21.11
Power jumpers....3.21.12

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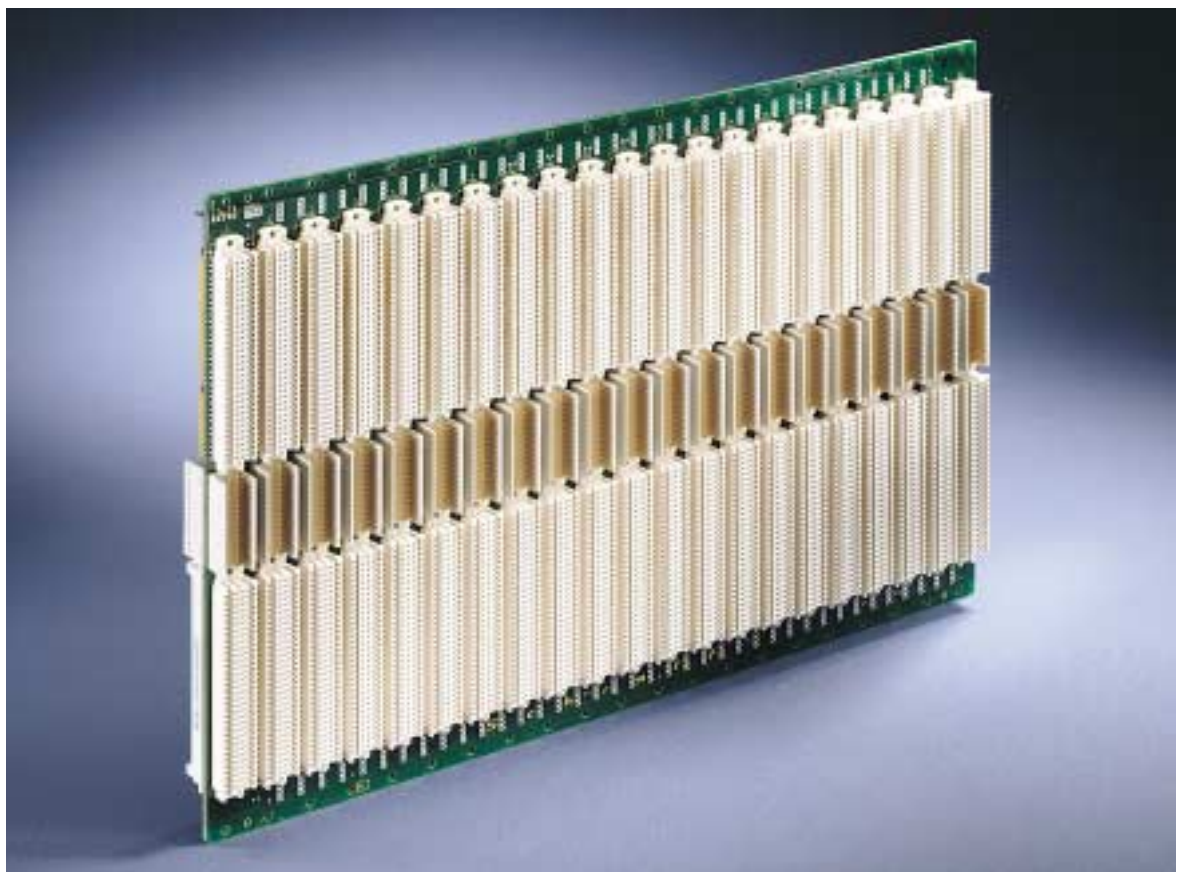
Power supply units..... 3.10.0

Backplanes/ test adapters .. 3.20.0
VMEbus 3.21.0
VME64x bus.....3.22.0
CompactPCI bus....3.23.0
Universal bus 3.24.0
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VME64x backplanes overview



10598012

Application

Schroff supplies backplanes with and without P0 connectors for the VME64x bus. For live insertion, Schroff has developed a special module which is simply connected to the reverse side of the back-plane.

Electrical

In the design of the multi-layer backplane and component layout, the utmost care has been taken to ensure uniform signal line impedance.

The termination resistors are on the backplane (ON-board).

The daisy chain signals can be routed either manually via jumpers or in the case of live insertion automatically via a special module.

Screw-type plug connections are used for the power supply.

Mechanical design

Assembly holes (in compliance with ANSI/VITA 1-1994 and IEEE 1101) are provided for the purpose of fitting the backplanes to the subrack horizontal rail. The backplanes have through-plated mounting holes with which the PE connection to chassis ground is established simply by screws.

The backplanes are multi-layer boards with optimized layout and shielded planes. The shielded planes reduce crosstalk between the signal paths and can provide for maximum shielding.

Standards

The backplanes VME64x comply with the specifications ANSI/VITA 1-1994 and ANSI/VITA 1.1-1997.

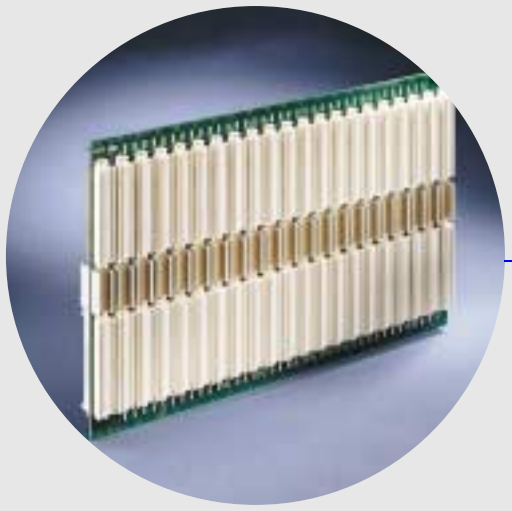
The specifications are available from Vita (www.vita.com). Schroff has been a member of Vita for many years.

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VME64x backplanes overview

J1/J2 monolithic

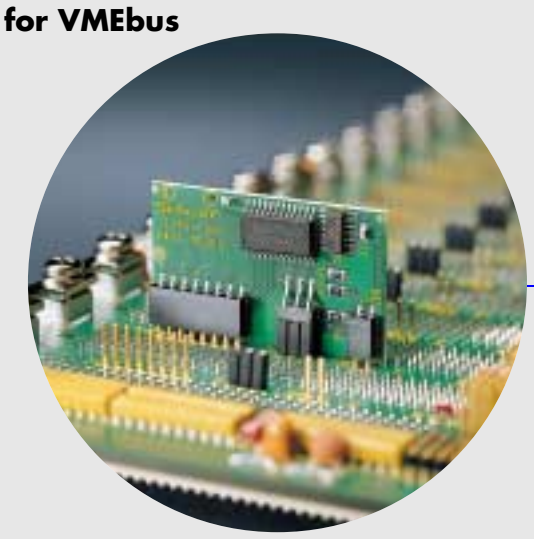
- 6 U backplane with 64-bit data bus width (combination of J1 and J2 planes)
- Termination ON-board, passive



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Accessories for VME64x backplane

- Live insertion and electronic automatic daisy chaining (EDAC)
- Test adapters, see Test adapters for VMEbus



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Power supply units..... 3.10.0

Backplanes/ test adapters .. 3.20.0
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VME64x bus.....3.22.0
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VME64x backplanes



105-98-012

J1/J2 monolithic

- 6 U backplane with 64-bit data bus width (combination of J1 and J2 levels)
- 5-row connector, compatible with C 96 connector as per DIN 41612
- Termination ON-board, passive
- Available with or without P0 connector
- Optional live insertion and electronic automatic daisy chaining (EDAC) as per VITA 1.4-199x

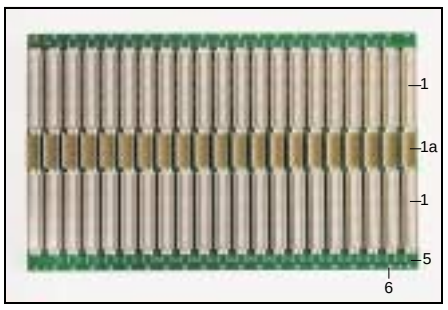
Delivery comprises

Qty	Description	Material
1	Backplane	Fully equipped
10	Daisy chain jumper	

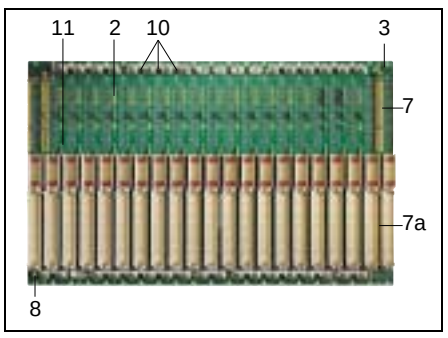
Slot	Dimensions Height = 263.3 mm Thickness = 3.7 mm Width in mm	Order No. without P0	Order No. with P0
5	100,3	**23001-405**	**23001-455**
7	140,9	**23001-407**	**23001-457**
8	161,3	**23001-408**	**23001-458**
10	201,9	**23001-410**	**23001-460**
12	242,6	**23001-412**	**23001-462**
16	323.85	**23001-416**	**23001-466**
21	425.45	**23001-421**	**23001-471**

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VME64x backplanes



10598004



10598005

Technical data

- "High-speed" VME system bus, particularly suitable for data transmission with fast drivers (ABT, FCT)
- Complying with Specification ANSI/VITA 1.1-1997
- Compatible with VME64 Standard ANSI/VITA 1-1994
- Uniform impedance of all signal lines
- Optimized layout for minimal crosstalk
- ON-board termination, J1 passive, J2 passive
- Current distribution via busbars
- Suppression capacitors for conducted interference
- Interference suppression to PE ground also possible
- Safe interference suppression of transient and dynamic currents

Item	Description
1	5-row connector (J1/J2), 160-pin, IEC 61076-4-113
1a	P0 connector, metric, 5-row
2	Wire-wrap pins for daisy chain jumper or EADC module
3	Utility connector (5 wire-wrap pins, accessible on both sides)
5	Multi-layer backplane
6	Assembly holes
7	Terminators (J1)
7a	Terminators (J2)
8	Suppression capacitors for filtering conducted interference on the power supply lines
9	PE connection with mounting holes
10	Power connections
11	Decoupling capacitors between each slot

Technical data

Description		VME64x J1/J2, 6 U monolithic
Bit rate		80 Mbytes/s (J1 + J2) with protocol Multiplexed Block Transfer (MBLT)
Base material		Epoxy resin fibreglass EPGC02 as per DIN 40802 (FR4), flame-resistant as per UL 94 V-0
Design		8-layer, 4 separate signal levels
Characteristic impedance Z of all signal lines		60 Ω ± 5 Ω
Ohmic impedance R of all signal lines		< 1 Ω
Termination location		ON-board
Termination type		passive
Basic current consumption		< 1.5 A
Connections	Power supply	Screw terminals (M4) with FASTON (6.3/2.8 ∅ 0.8 mm)
	Current distribution	via special busbars
	PE	via M2.5 in horizontal rail
	Utility signals	Wire-wrap pins (GND, +5 V, ACFAIL*, SYSFAIL*, SYSRESET*)
	Connector, special	5-row connector, compatible with C96 connector as per DIN 41612, 160-pin, press-in version, quality class 2 (400 plug-in cycles)
Temperature range	Operation	Termination passive -40 °C ... +85 °C
	Storage	Termination passive -40 °C ... +85 °C
Dimensions	Height	263,3
	Width:	Number of slots × 20.32 mm + 16.307 mm
	PCB thickness	3.7 mm
	Slot pitch	4 HP = 30.32 mm
	Max. number of slots	21

Backplanes
J1/J2 monolithic ... 3.22.2

Accessories
VME64x
EADC module 3.22.4

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VME64x backplane accessories



105-97-001

VME64x EADC module

EADC – electronic automatic daisy chaining module

- Simple retrofitting by connection on the rear side of the backplane
- With live insertion, facilitates electronic automatic daisy chaining on SCHROFF VME64x backplanes

Delivery: Backplane, fully equipped

Description	Dimensions Height / Width	Order No.
VME64x EADC module	58.8 × 38.1 mm	**23030-098**

Downloaded from Arrow.com.

Technical data:

All the features required for live insertion are defined in the specification for VME64x and the High Availability VME Draft. With the exception of daisy chaining, all the features needed for live insertion are already integrated on the VME boards. The electronic daisy chain module from SCHROFF has been developed to enable live insertion for VME boards in addition to the automatic daisy chaining of IACK and BusGrant signals.

As required, for each slot (max. N-2), an electronic daisy chain module is simply connected on the rear side of the J1 level of the backplane (see drawing).

Preconditions on the VME64x backplane

On VME64x backplanes, the BGNT and IACK signals must be connected to wire-wrap pins. The wire-wrap pins should be 17 mm long and arranged as shown in the illustration on the left. A socket connector serves to accommodate the +5 V, LI/O* and GND connections which are arranged as wire-wrap pins on the live insertion/EADC module.

Mode of operation of live insertion/EADC module

The LI/O* pin serves to control the function of the daisy chain module. When the level of the LI/O* signal for a specific VME slot is at logic HIGH, the daisy chain signals are through-connected for this slot via the corresponding daisy chain module. When the LI/O* level is identified as LOW, the daisy chain signals may not be looped by the daisy chain module through the associated slot of the VME backplane (see ANSI/VITA 1-1994, Regulation 3.2 and 4.1).

In the case of VME64x boards which do not support live insertion, the LI/O* pin can be connected to GND potential. The daisy chain module is thus deactivated and control over the daisy chain signals of this slot is passed over to the relevant VME64x board. The daisy chain module complies with the electrical specifications detailed in Chapter 4 of VITA 1.1-199x.

Connector assignment

Signal	Pin no.
BG0OUT*	1
BG0IN*	2
BG1OUT*	3
BG1IN*	4
BG2OUT*	5
BG2IN*	6
BG3OUT*	7
BG3IN*	8
+5 V	9
LI/O*	10
GND	11
IACKIN*	12
IACKOUT*	13

Technical data

Base material	EP GC 02 epoxy resin fibreglass as per DIN 40802 (FR4); flame-resistant as per UL 94 V-0
Design	2-layer
Basic current consumption	0,2 A
Connections: Power supply and LI/O*	Socket connector (for accommodating wire-wrap pins)

Backplanes
J1/J2 monolithic ...3.22.2
Accessories
VME64x
EADC module 3.22.4

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Test adapters 3.28.0
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CompactPCI backplanes overview



12398021



12398021



12400002



12398015

Application

CompactPCI backplanes are used for robust industrial applications. Their dimensions are standardized. We supply a comprehensive range of backplanes for the ***CompactPCI***. The range includes 3, 6 and 7 U high versions with widths of up to 8 slots.

Electrical

In the design of the multi-layer backplane and component placement, the utmost care has been taken to ensure that the clock signal propagation times are optimized to minimal skew.

Various solutions are available for the power supply:

- via screw terminals
- via ATX power supply unit connectors
- via type M connectors for pluggable 19" power supply units

Mechanical design

Assembly holes in compliance with PICMG 2.0 R 3.0 and IEEE 1101 are provided for the purpose of fitting the backplanes to the subrack horizontal rail.
The backplanes have through-plated holes with which the PE connection is achieved simply by means of screws. The 6 U backplanes have a reinforcing rail which reduces bending during pulling and connection. The backplanes are multi-layer boards with optimized layout and shielded planes. The shielded planes reduce crosstalk between the signal paths and can provide for maximum shielding.

The metric press-in connectors (2 mm grid) are shielded and can be coded for 3.3/5 V.

Standards

CompactPCI is an adaptation of the Peripheral Component Interconnect (PCI) specification, version 2.1.

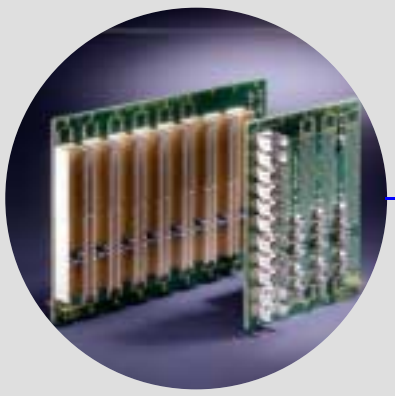
The specifications of ***CompactPCI*** are available from PICMG. Schroff is a member of this association. Further information on ***CompactPCI*** can be found on the PICMG homepage at: www.picmg.com

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CompactPCI backplanes overview

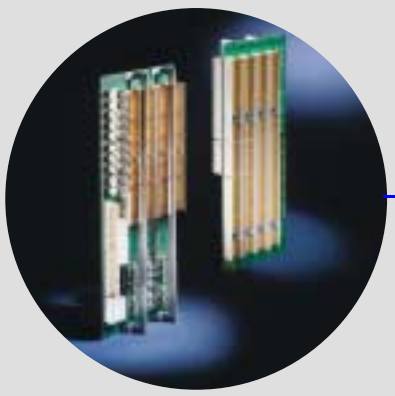
CompactPCI 3 U

- P1/P2 connectors
- System slot on left or right
- Types of supply voltage connection:
  - screw terminal
  - "M" connector
  - ATX connector



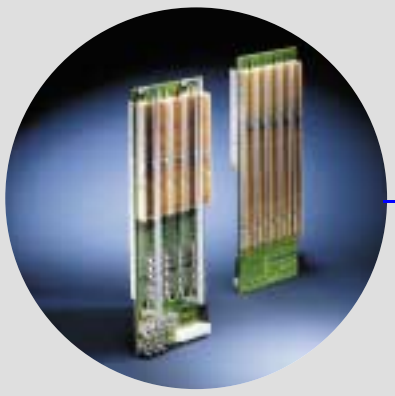
CompactPCI 6 U

- P1 to P5 connectors
- Types of supply voltage connection:
  - via screw terminals
  - ATX connectors
- Reinforcing rail



CompactPCI 7 U

- P1 to P5 connectors, 1 U supply point
- for 6 U boards
- with P3 connector
- Voltage connection at bottom via screw terminals and ATX connector
- Reinforcing rail



Accessories for CompactPCI backplanes

- Adapter PCI for CompactPCI



Backplanes

3 U backplane 3.23.2

6 U backplane 3.23.4

7 U backplane 3.23.6

Accessoires

Adapter PCI – CompactPCI 3.23.8

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CompactPCI backplanes

Voltage supply via screw terminals



105-98-013

Voltage supply via M connector



123-98-022

3 U backplane

- System slot on left or right
- Types of voltage connection via:
  – screw terminals
  – M connector
  – ATX connector

Delivery: Backplane, fully equipped

Description	Voltage supply Connections	Number of slots	Order No. System slot left	 right
Backplane, 3 U	Screw	4	**23006-544**	**23006-564**
	Screw	6	**23006-546**	**23006-566**
	Screw	8	**23006-548**	**23006-568**
	M connector		–	**23090-698**
	ATX connector		–	**23090-708**

Note
Other variations, dimensions or special designs on request.

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CompactPCI backplanes

Technical data

- Complies with PICMG *CompactPCI* Spec. 2.0 R3.0
- 64-bit version
- V (I/O) +5 V standard (retrofittable to 3.3 V)
- 10-layer optimized design with minimum clock skew (< 50 ps)
- Metric (2 mm) connectors, hot-swap-compatible
- Voltage supply: screw terminal, M connector or ATX connector

Bit rate		132/264 Mbytes for 32/64 bits
Base material		249-2-12-FVO-IEC-EP-GC-CU
Design		10-layer, 4 signal levels
Specific resistance of all bussed signal lines (equipped backplane)		65 Ω ± 5 Ω
Connections	Current connection	Screw terminal M connector ATX connector
	Connectors	Metric press-in connectors, shielded, codable, for 64-bit PCI bus expansion, 32-bit PCI bus and I/O bus expansion; connector pitch 2 mm
Temperature range	Operation	-30 °C ... +70 °C
	Storage	-55 °C ... +125 °C
Dimensions	Height	as per PICMG 2.0 R 3.0
	PCB thickness	3.2 mm
	Slot pitch	4 HP = 20.32 mm
	Number of slots	2 – 8, system slot on left or right

Backplanes

3 U backplane 3.23.2
6 U backplane 3.23.4
7 U backplane 3.23.6

Accessoires

Adapter PCI – CompactPCI 3.23.8

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Power supply units..... 3.10.0

Backplanes/ test adapters .. 3.20.0
VMEbus 3.21.0
VME64x bus.....3.22.0
CompactPCI bus....3.23.0
Universal bus 3.24.0
Power bus 3.27.0
Test adapters 3.28.0
Accessories.....3.29.0

Microcomputer packaging systems (MPS) 3.30.0

Appendix..... 3.90.0

CompactPCI backplanes



123-98-021

6 U backplane

- With P3 connector
- Types of voltage connection via:
  – screw terminals and ATX connector
- Reinforcing rail
- System slot on right

Delivery: Backplane, fully equipped

Description	Number of slots	Order No. System slot on right
Backplane, 6 U, screw terminal and ATX connector, system slot on right	4	**23091-603**
	8	**23091-604**

Note
Other variations, dimensions or special designs on request.

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CompactPCI backplanes

Technical data

- Complies with PICMG *CompactPCI* Spec. 2.0 R3.0
- 64-bit version
- V (I/O) +5 V standard (retrofittable to 3.3 V)
- 10-layer optimized design with minimum clock skew (< 50 ps)
- Metric (2 mm) connectors, hot-swap-compatible
- Voltage supply: screw terminal and ATX connector
- Backplane is additionally stabilized with reinforcing rails in order to prevent bending when the board is inserted or withdrawn.

Bit rate		132/264 Mbytes for 32/64 bits
Base material		249-2-12-FVO-IEC-EP-GC-CU
Design		10-layer, 4 signal levels
Specific resistance of all bussed signal lines (equipped backplane)		65 Ω ± 5 Ω
Connections	Current connection	Screw terminal 5 V ATX connector
	Connectors	Metric press-in connectors, shielded, codable, for 64-bit PCI bus expansion, 32-bit PCI bus and I/O bus expansion; connector pitch 2 mm
	Voltage output	Screw terminal, 12 V for drives
Temperature range	Operation	-30 °C ... +70 °C
	Storage	-55 °C ... +125 °C
Dimensions	Height	as per PICMG 2.0 R 3.0
	PCB thickness	3.2 mm
	Slot pitch	4 HP = 20.32 mm
	Number of slots	2 – 8, system slot on left or right

Backplanes

3 U backplane 3.23.2
6 U backplane 3.23.4
7 U backplane 3.23.6

Accessoires

Adapter PCI – CompactPCI 3.23.8

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Power supply units..... 3.10.0

Backplanes/ test adapters .. 3.20.0
VMEbus 3.21.0
VME64x bus.....3.22.0
CompactPCI bus....3.23.0
Universal bus 3.24.0
Power bus 3.27.0
Test adapters 3.28.0
Accessories.....3.29.0

Microcomputer packaging systems (MPS) 3.30.0

Appendix..... 3.90.0

CompactPCI backplanes



123-98-015

7 U backplane

- With P3 connector
- Voltage connection at bottom via screw terminal and ATX connector
- Reinforcing rail

Delivery: Backplane, fully equipped

Description	Number of slots	Order No. System slot on left
Backplane, 7 U, screw terminal and ATX connector	4	**23091-602**

Note
Other variations, dimensions or special designs on request.

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Technical data

- Complies with PICMG *CompactPCI* Spec. 2.0 R3.0
- 64-bit version
- V (I/O) +5 V standard (retrofittable to 3.3 V)
- 10-layer optimized design with minimum clock skew (< 50 ps)
- Metric (2 mm) connectors, hot-swap-compatible
- Voltage supply: screw terminal or ATX connector
- Backplane is additionally stabilized with reinforcing rails in order to prevent bending when the board is inserted or withdrawn.

Bit rate		132/264 Mbytes for 32/64 bits
Base material		249-2-12-FVO-IEC-EP-GC-CU
Design		10-layer, 4 signal levels
Specific resistance of all bussed signal lines (equipped backplane)		65 Ω ± 5 Ω
Connections	Power supply	Voltage V (I/O) configurable for +3.3 V or +5 V
	Current connection	Screw terminal 5 V or ATX connector
	Connectors	Metric press-in connectors, shielded, codable, for 64-bit PCI bus expansion, 32-bit PCI bus and I/O bus expansion; connector pitch 2 mm
	Voltage output	Screw terminal, 12 V for drives
Temperature range	Operation	-30 °C ... +70 °C
	Storage	-55 °C ... +125 °C
Dimensions	Height	as per PICMG 2.0 R 3.0
	PCB thickness	3.2 mm
	Slot pitch	4 HP = 20.32 mm
	Number of slots	2 – 8, system slot on left or right

Backplanes
3 U backplane 3.23.2
6 U backplane 3.23.4
7 U backplane 3.23.6

Accessoires
Adapter PCI – CompactPCI 3.23.8

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Power supply units..... 3.10.0

Backplanes/ test adapters .. 3.20.0
VMEbus 3.21.0
VME64x bus.....3.22.0
CompactPCI bus....3.23.0
Universal bus 3.24.0
Power bus 3.27.0
Test adapters 3.28.0
Accessories.....3.29.0

Microcomputer packaging systems (MPS) 3.30.0

Appendix..... 3.90.0

CompactPCI backplane accessories



124-00-002

Adapter PCI – CompactPCI

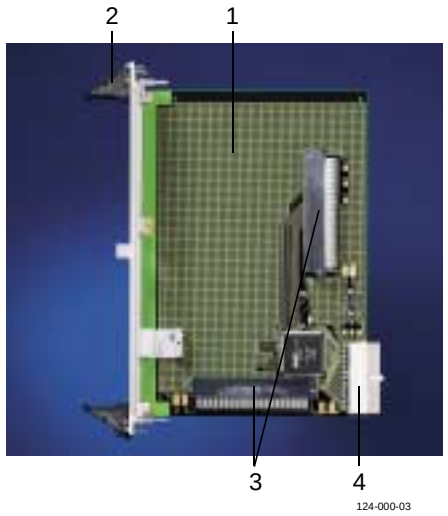
- Conventional PC (PCI) boards can be installed in a *CompactPCI* system with the 6 U adapter.
- Width 8 HP
- Integrated 32-bit PCI bridge

Delivery: Adapter, complete

Description	Order No.
Adapter PCI – CompactPCI	**23006-900**

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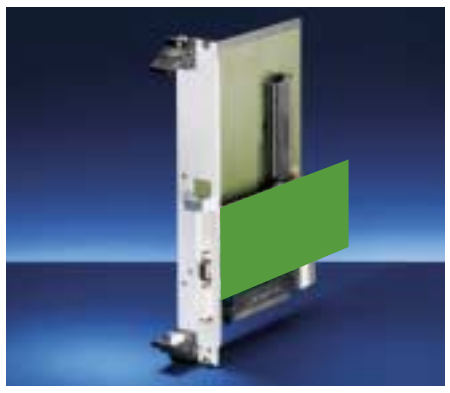
CompactPCI backplane accessories



124-000-03

Installation variations of PCI boards


124-000-01


124-000-01_hinten


124-000-01_oben

Technical data:

- Complies with PICMG *CompactPCI* Spec. 2.0 R3.0
- 64-bit version
- V (I/O) +5 V standard
- Metric (2 mm) connectors

Item	Description
1	AdapterPCI – CompactPCI
2	Front panel with extractor handle (as per IEEE 1101.10)
3	PCI direct (card edge) connector
4	CompactPCI – metric connector

Bit rate	CompactPCI	32 bits, 33 MHz (132 MB/S), 3.3 or 5 V
	PCI Internal	32 bits, 33 MHz (132 MB/S), 3.3 V on request
Power supply, P1		+5 V ± 5 % (for PCI board) +3.3 V ± 0.3 V max. 0.2 A $V_{I/O}$ +5 or 3.3 V depending on bus type, max. 0.1 A +12 V ± 5 % (for PCI board) –12 V ± 5 % (for PCI board) Power consumption of inserted PCI boards not taken into account
Connectors	PCI	Card edge connector
	CompactPCI	Metric press-in connector, shielded, codable, as per IEC 61076-4-101, connector pitch 2 mm
Temperature range, operation		0 °C – 70 °C
Humidity, operation		5 – 90 %
Dimensions: CompactPCI adapter Height × width × depth		6 U × 8 HP × 160 mm
Dimensions: PCI board Height × depth		Short cards 106.68 × 160 mm and long cards

Backplanes

3 U backplane 3.23.2
6 U backplane 3.23.4
7 U backplane 3.23.6

Accessoires

Adapter PCI – CompactPCI 3.23.8

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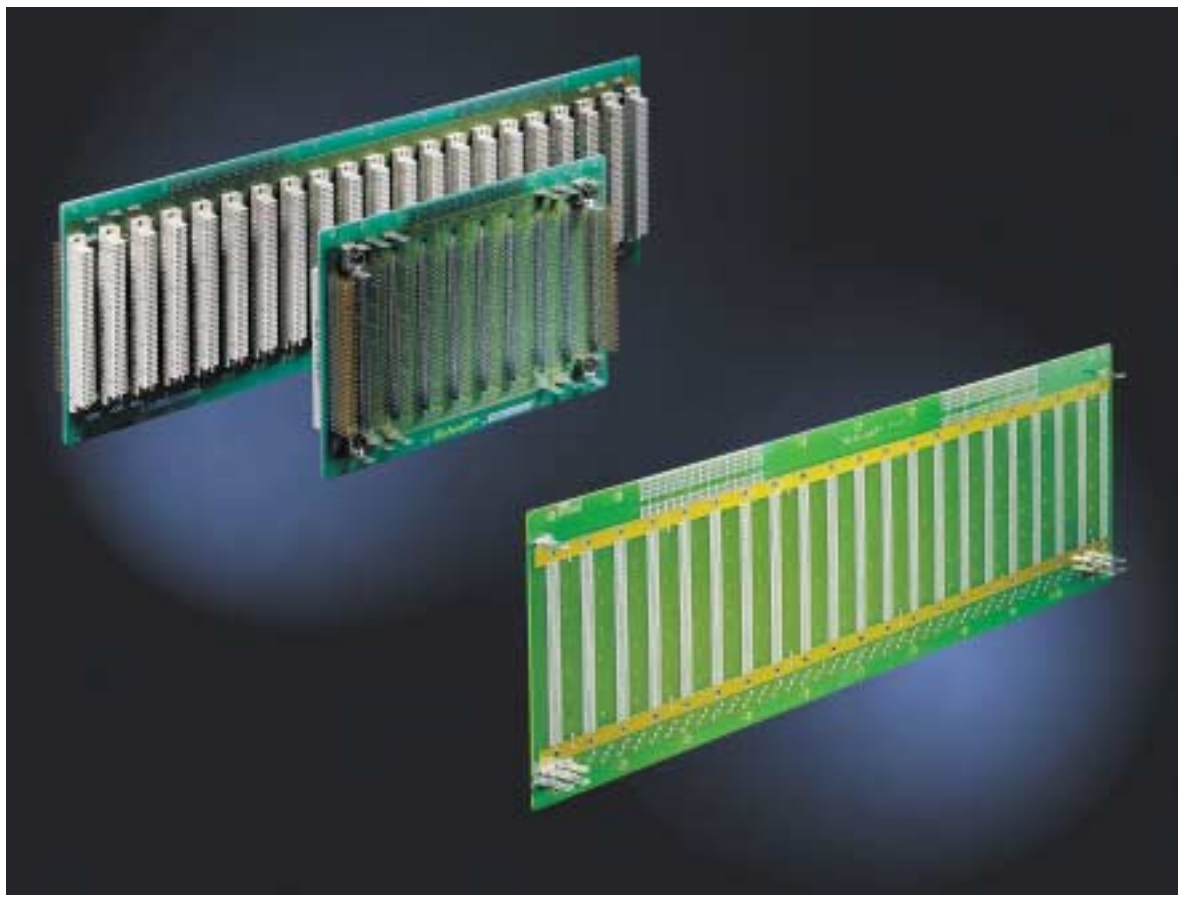
Power supply units..... 3.10.0

Backplanes/ test adapters .. 3.20.0
VMEbus 3.21.0
VME64x bus.....3.22.0
CompactPCI bus....3.23.0
Universal bus 3.24.0
Power bus 3.27.0
Test adapters 3.28.0
Accessories.....3.29.0

Microcomputer packaging systems (MPS) 3.30.0

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Universal backplanes overview



12096003 12095001

Application

The universal backplanes are used to install computer-controlled systems. They provide simple and safe power and signal distribution for plug-in boards and modules (3 U).
The universal backplanes are suitable for mounting to subracks or system casings.

With the mounting board, type C and R connectors in compliance with DIN 41612 can be attached to a subrack, individually wired (wire wrap) and connected to other units.

Mechanical design

The universal backplanes are double-sided or of 4-layer design with optimized layout and shielded planes. The shielded planes reduce crosstalk between the signal paths and can be connected (for maximum shielding) to GND or V_{CC}.

The power is supplied by means of screw-type and FASTON connections. Connection of voltages (1 to 6) is freely selectable.

Assembly holes in compliance with IEEE 1101 are provided for the purpose of fitting the backplanes to the subrack horizontal rail.



120-96-001

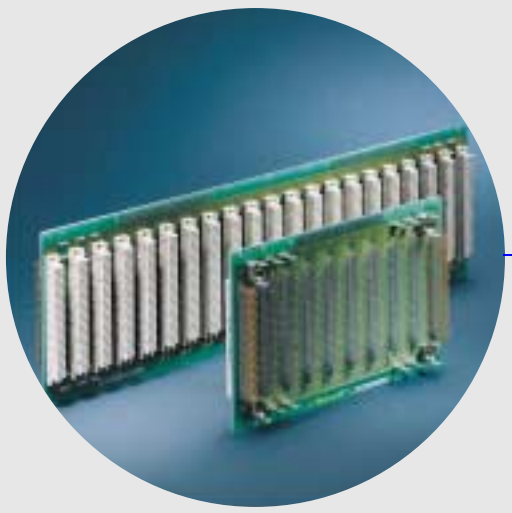
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Universal backplanes overview

Signal lines through-connected

from connector to connector

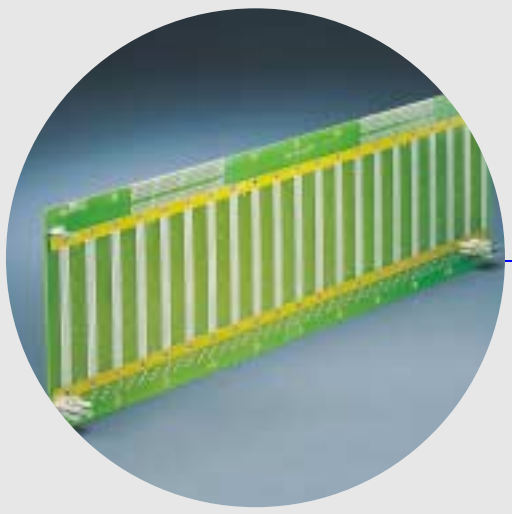
- Slot pitch 3 or 4 HP
- 42 and 84 HP width



Signal lines not through-connected

(individual wiring of the connector connections is therefore possible)

- Slot pitch 4 HP
- 84 HP width



Backplane with through-connected signal lines 3.24.2

Backplane without through-connected signal lines 3.24.4

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Power supply units..... 3.10.0

Backplanes/ test adapters .. 3.20.0
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VME64x bus.....3.22.0
CompactPCI bus....3.23.0
Universal bus 3.24.0
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Accessories.....3.29.0

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Universal backplanes



12096003

Backplane with through-connected signal lines

- Height 3 U
- Slot pitch 3 or 4 HP
- 42 and 84 HP width
- Power supply at each slot
- Adapter fields for connections
- Two versions:
  - 60 signal lines through-connected from connector to connector (C64), row "b" can be freely wired with C96 connectors (2-layer)
  - 90 signal lines through-connected from connector to connector (4-layer)

Delivery comprises

Qty	Description	Material
1	Backplane	Fully equipped
10	Current bridges	
3	Bridges	
1	10-pin plug connector	

Number of layers	Equipment spacing HP	Number of slots	Width HP	Connector	Order No.
2	4	10	42	C 64 F	**23007-010**
				C 96 F	**23007-040**
		21	84	C 64 F	**23007-021**
				C 96 F	**23007-051**
				–[1)]	**23007-081**
	3	14	42	C 64 F	**23007-114**
				C 96 F	**23007-144**
		28	84	C 96 F	**23007-158**
				C 64 F	**23007-128**
				–[1)]	**23007-188**
4	4	10	42	C 96 F	**23007-410**
		21	84		**23007-421**

[1)] Unequipped (96 solder points)

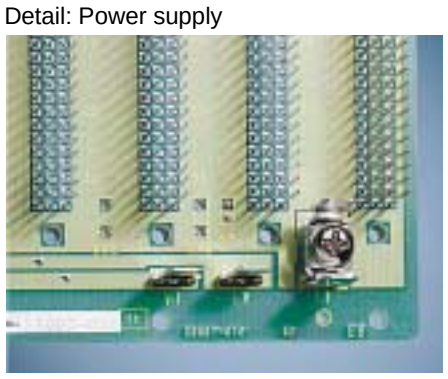
Note

Further dimensions available on request.

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Universal backplanes

Detail: Power supply



Technical data

- Shielded version
- Bus lines through-connected from connector to connector
- 6 current paths
- Adapter fields outside connector layout (1 × for 42 HP, 2 × for 84 HP)
- Equipment pitch 3 or 4 HP
- 3 equipment variations with C 64 F-, C 96 F- and without connectors
- Two versions:
  - 2-layer, 60 bus lines through-connected (row 2 "a, c" to 31 "a, c"), row "b" can be freely wired with C96 connectors
  - 4-layer, 90 bus lines through-connected (row 2 "a, b, c" to 31 "a, b, c")

Item	Description
1	Connector (2-layer, either C96, C64 or without, 4-layer C96), connector (1st and last slot) prepared for connector body, connections gold-plated
2	Adapter field (for 84 HP 2 × present)
3	Screw/plug-in supply terminals (for 3 HP spacing FASTON)
4	Backplane, 2-layer or 4-layer
5	Bridge for connecting GND or V_{CC} to shielded plane
6	On 2-layer PCB, connection option for suppression capacitor to shielded plane
7	Holes for pins for connecting voltages (III to VI) to terminal posts of connectors
8	Assembly holes

Technical data

		2-layer	4-layer
Description		Universal backplane, signal lines through-connected	
Base material		Epoxy resin fibreglass EP GC 02 as per DIN 40802 (FR4), flame-resistant as per UL 94 V-0	
Shielded plane		1 (GND or V_{CC})	2 (GND and V_{CC})
Design/layers		Signal-GND/V_{CC}	Signal-GND/V_{CC}-GND/V_{CC} signal
Signal lines		60	90
Ohmic resistance	Pin 2 a, b, c to 31 a, b, c	< 460 mΩ	
	Pin 1 a, b, c	< 7.8 mΩ	
	Pin 32 a, b, c	< 4.8 mΩ	
Current load with power loss of 2 W / voltage loss of 0.1 V	Pin 2 a, b, c to 31 a, b, c	2.1 A / 0.22 A	
	Pin 1 a, b, c	16 A / 12.9 A	
	Pin 32 a, b, c	20.4 A / 20.8 A	
Current carrying capacity of 6 current paths	Path I, II	16 A	
	Path III, IV	12 A	
	Path V, VI	8 A	
Connections	Power supply	Screw-type locking connection for 4 HP (M4 + FASTON 2.8/6.3 mm × 0.8 mm) for 3 HP FASTON, wire-wrap pins of connectors and through-plated holes	
	Adapter field	1 field for 42 HP, 2 fields for 84 HP, 96 through-plated holes	
	Wire-wrap	Free pin length 15 mm	
	Connector	C64/96 F, press-in version, quality class 2 (400 plug-in cycles)	
Temperature range	Operation	-40 °C ... +85 °C	
	Storage	-40 °C ... +85 °C	
Dimensions	Height	3 U, 130 mm	
	PCB thickness	approx. 2.4 mm	
	Width:	42 or 84 HP	
	Slot pitch	3 HP (max. 28 slots) or 4 HP (max. 21 slots)	

Backplane with through-connected signal lines 3.24.2

Backplane without through-connected signal lines 3.24.4

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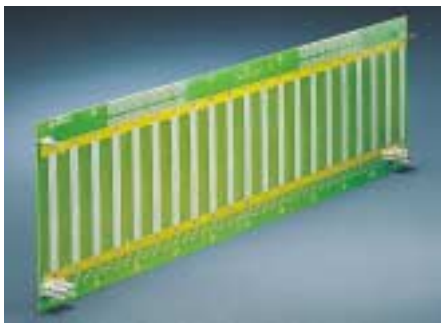
Power supply units..... 3.10.0

Backplanes/ test adapters .. 3.20.0
VMEbus 3.21.0
VME64x bus.....3.22.0
CompactPCI bus....3.23.0
Universal bus 3.24.0
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Test adapters 3.28.0
Accessories.....3.29.0

Microcomputer packaging systems (MPS) 3.30.0

Appendix..... 3.90.0

Universal backplanes



120-95-001

Backplane without through-connected signal lines

- Signal lines not through-connected (individual wiring of the connector connections is thus possible)
- Slot pitch 4 HP
- Width 84 HP
- Power supply at each slot
- Adapter fields for connections

Delivery comprises

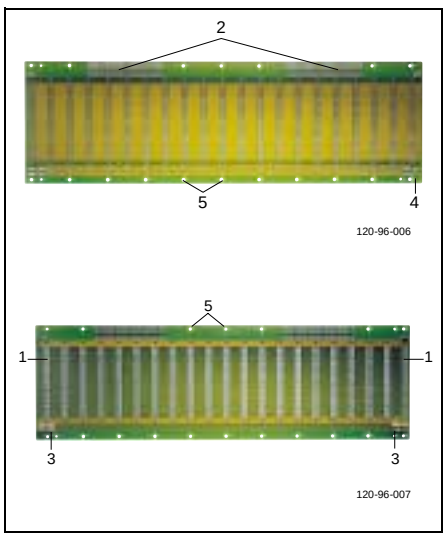
Qty	Description	Material
1	Backplane	Fully equipped
10	Current bridges	
3	Bridges	
1	10-pin plug connector	

Number of layers	Equipment spacing	Number of slots	Width	Order No.
2	4 HP	21	84 HP	**23007-221**

Note
Other variations, dimensions or special designs on request.

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Universal backplanes



Technical data

- Individual wiring of lines (connector connections not through-connected)
- 6 current paths
- 2 adapter fields outside connector layout
- Equipment pitch 4 HP

The adapter field can be used for further connections (wire-wrap pins).

Pin 1 "a, b, c" and pin 32 "a, b, c" serve as the voltage supply for the modules.

Item	Description
1	Solder points for connector C96 or C64
2	Adapter field
3	FASTON power connections
4	Backplane, 2-layer
5	Assembly holes

Description		Individual wiring board, wrap or solder lines
Base material		Epoxy resin fibreglass EP GC 02 as per DIN 40802 (FR4), flame-resistant as per UL 94 V-0
Design		2-layer, not through-plated
Current carrying capacity of 6 current paths	Path I, II	16 A
	Path III, IV	12 A
	Path V, VI	8 A
Connections	Power supply	FASTON 2.8/6.3 mm × 0.8 mm
	Adapter field	96 solder points, not equipped
	Connectors	96 solder points, not equipped
Temperature range	Operation	-40 °C ... +85 °C
	Storage	-40 °C ... +85 °C
Dimensions	Height	3 U, 130 mm
	PCB thickness	approx. 1.6 mm
	Width	42 or 84 HP
	Slot pitch	4 HP

Backplane with through-connected signal lines 3.24.2

Backplane without through-connected signal lines 3.24.4

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Power supply units..... 3.10.0

Backplanes/ test adapters .. 3.20.0
VMEbus 3.21.0
VME64x bus.....3.22.0
CompactPCI bus....3.23.0
Universal bus 3.24.0
Power bus 3.27.0
Test adapters 3.28.0
Accessories.....3.29.0

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Appendix..... 3.90.0

Power backplanes overview



11900004

Application

Power bus backplanes are used to connect 19"-compatible power supply units to the backplane. It is useful for prototypes and small batches to execute the power supply separately.

The power bus backplane serves to easilyconnect the AC, DC and signal lines of the power supply units. The power bus backplanes also make it easier to wire up several power supply units.

Redundant high-power power systems can be fitted (for examples, see Chapter Power supply units – power systems).

Electrical design

The power supply unit with the standardized connector is connected to one side of the power bus backplane. The supply voltage, output voltages and signals can be connected to the backplanes with the accompanying wiring harness.

Further connectors are provided on the backplane for connecting drives.

Mechanical design

The backplanes are suitable for installation in a subrack or system casing.

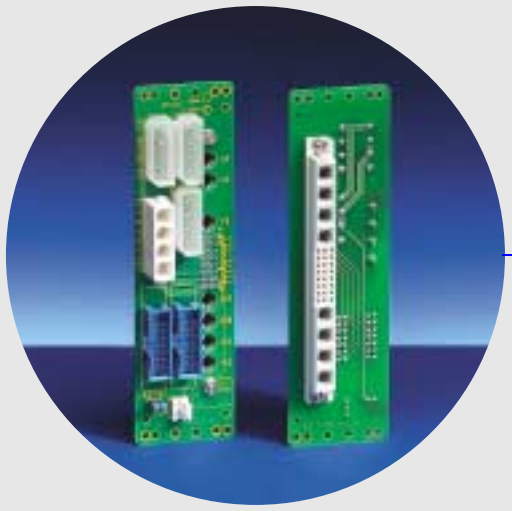
For installation, the power bus backplanes have mounting holes which compensate for any possible offset of the power supply unit connector of 0, 1.55 mm and 2.54 mm.

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Power backplanes overview

3 U backplane

■ for power supply unit (3 U)
with M 24/8 connector (CompactPCI)



11900002

6 U backplane

■ for power supply unit (6 U)
with M 24/8 connector (CompactPCI)



11900003

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Power supply units..... 3.10.0

Backplanes/ test adapters .. 3.20.0
VMEbus 3.21.0
VME64x bus.....3.22.0
CompactPCI bus....3.23.0
Universal bus 3.24.0
Power bus 3.27.0
Test adapters 3.28.0
Accessories.....3.29.0

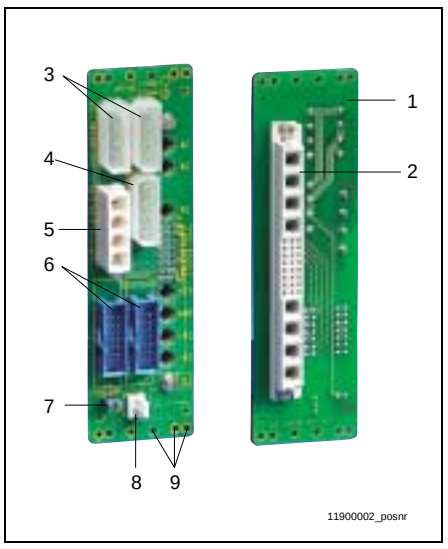
Microcomputer packaging systems (MPS) 3.30.0

Appendix..... 3.90.0

Power bus backplanes



11900002



3 U backplanes for M 24/8 connectors

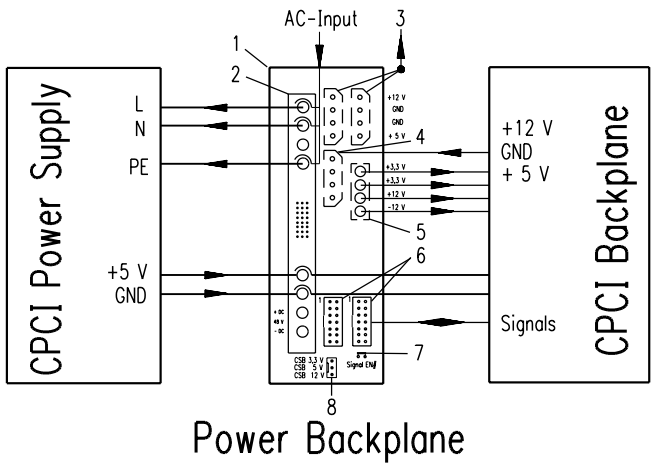
Serves to connect 19"-compatible power supply units to backplanes.

- Height 3 U
- For connecting 19"-compatible power supply units (3 U) with M 24/8 or P 47 (“Positronic”, according to PICMG 2.11) connector (***CompactPCI***) to backplane
- Simple connection of input and output voltages with wiring harnesses
- Simple parallel connection of 19" power supply units
- Further connectors are provided on the backplane for connecting drives.
- For installation, the backplanes have mounting holes which compensate for any possible offset of the power supply unit connector of 0, 1.55 mm and 2.54 mm.

Description	Order No.
3 U power bus for M 24/8 connector incl. wiring harness	**23207-005**
3 U power bus for P 47 connector	**23098-104**

Other variations, dimensions or special designs on request.

Block circuit diagram



DIJM0078

Item	Description
1	Power bus backplane
2	Connector M 24/8 / P 47
3	Output connector for 2 drives
4	Input connector for drives
5	Output connector for 3.3 V, +12 V, -12 V
6	Signalling
7	Bridge signal EN# – GND
8	Current share connection for 3.3 V, 5 V and +12 V
9	Assembly holes with 0, 1.55, 2.64 mm offset

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Power bus backplanes

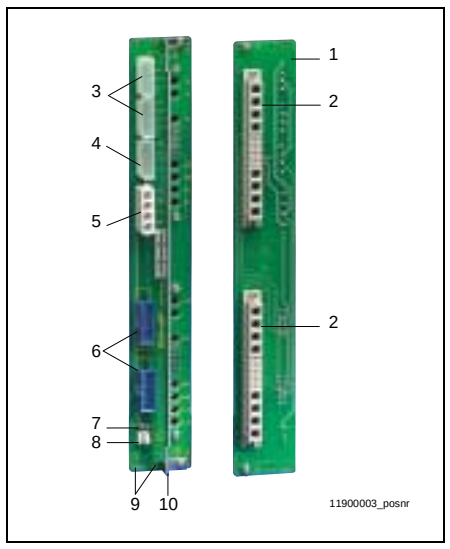


11900003

6 U backplanes for two M 24/8 connectors

Serves to connect 19"-compatible power supply units to backplanes.

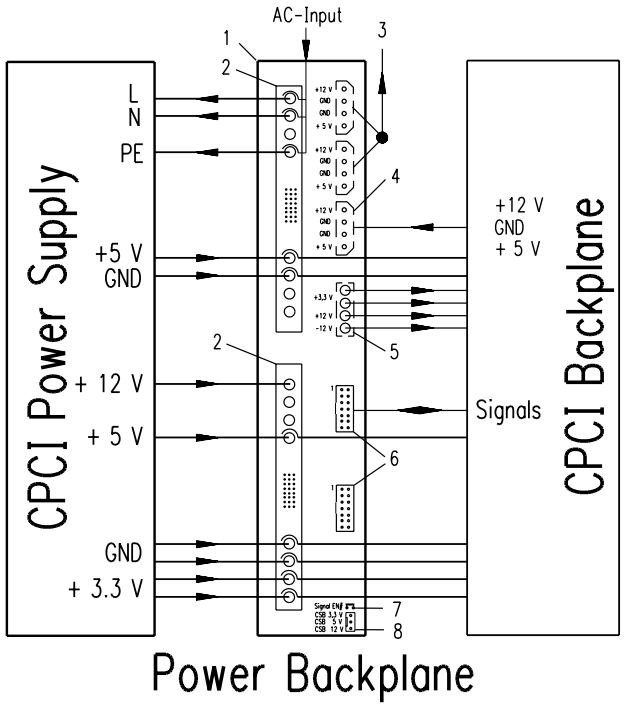
- Height 6 U
- For connecting 19"-compatible power supply units (6 U) with M 24/8 connector (***CompactPCI***) to backplane
- Simple connection of input and output voltages with wiring harnesses
- Simple parallel connection of 19" power supply units
- Further connectors are provided on the backplane for connecting drives.
- For installation, the backplanes have mounting holes which compensate for any possible offset of the power supply unit connector of 0, 1.55 mm and 2.54 mm.



Description	Order No.
6 U power bus for two M 24/8 connectors incl. wiring harness	**23207-006**

Other variations, dimensions or special designs on request.

Block circuit diagram



Item	Designation
1	Power bus backplane
2	Connector M 24/8
3	Output connector for 2 drives
4	Input connector for drives
5	Output connector for 3.3 V, +12 V, -12 V
6	Signalling
7	Bridge signal EN# – GND
8	Current share connection for 3.3 V, 5 V and +12 V
9	Assembly holes with 0, 1.55, 2.64 mm offset
10	Reinforcing rail

Backplanes

3 U backplanes for M 24/8 connectors 3.27.2

6 U backplanes for two M 24/8 connectors 3.27.3

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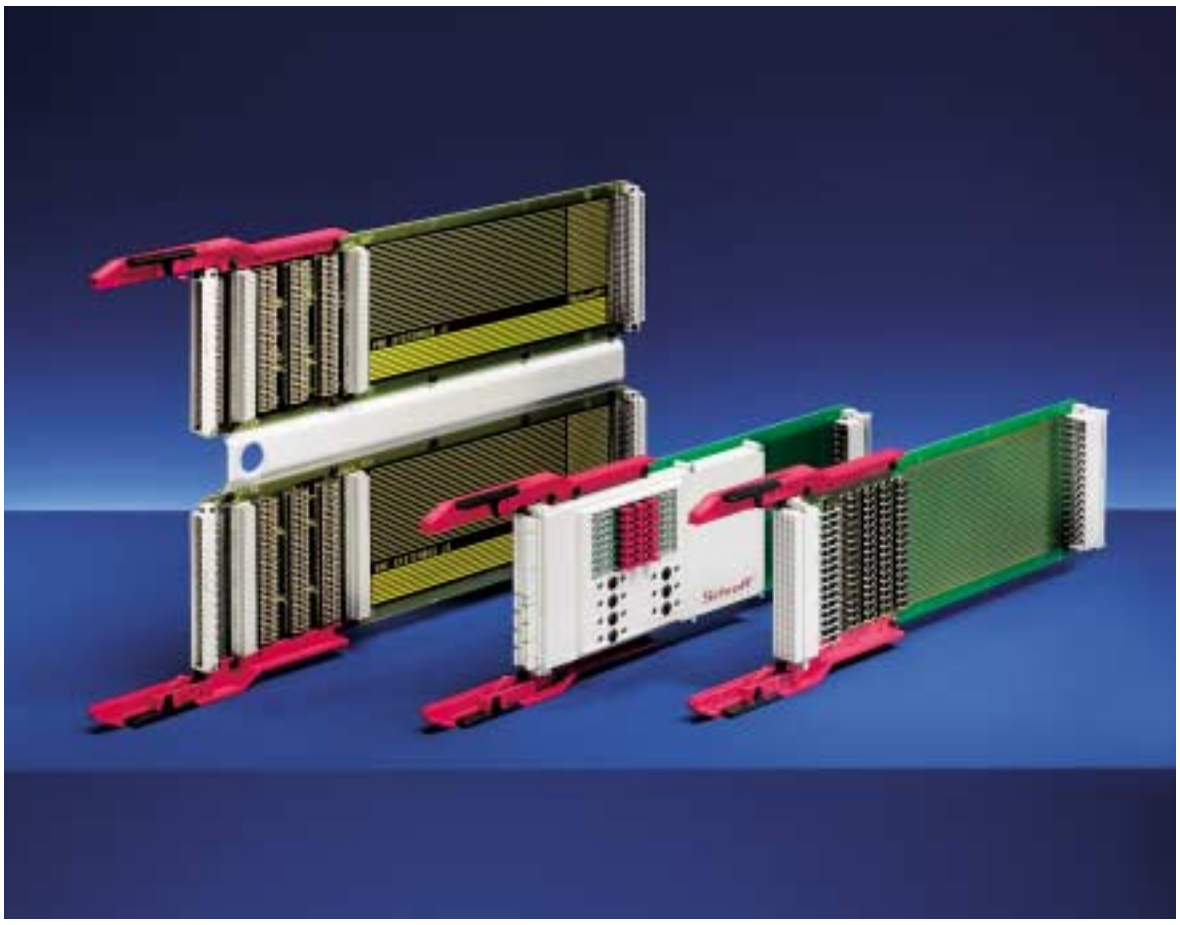
Power supply units..... 3.10.0

Backplanes/ test adapters .. 3.20.0
VMEbus 3.21.0
VME64x bus.....3.22.0
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Microcomputer packaging systems (MPS) 3.30.0

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Test adapters overview

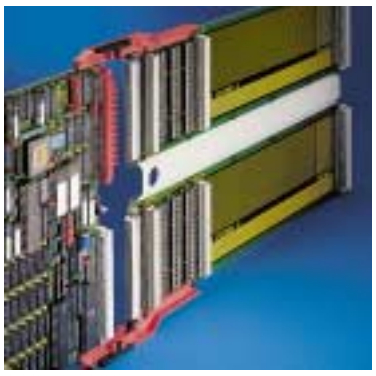


11100020

Application

Test adapters are used so that boards can be tested during ongoing operation. The individual signals between backplane and board can be measured. A measuring section is provided on the test adapter for this purpose.

The test adapter is connected to the system backplane and on the other end the board to be tested is secured to the guide rail. The board to be tested is brought out of the system by the length of the test adapter (290, 350, 410, 470 mm) and is thus accessible from both sides.



11192002

Versions

The test adapters can be used to test boards with connectors in compliance with IEC 60603-2/ DIN 41612 and DIN 41617 of types B, C, D, E, F, G, M, R and H.

There are versions with high-current contacts, coaxial plug-in contacts and a special version for VMEbus boards.

The test adapters are 3 U high as standard. 6 and 9 U high test adapters can be fitted with intermediate adapters.

If however e.g. only one layer is tested with a 6 U test adapter, a very cost-effective 6 U test adapter can be fitted with the aid of the guide board.

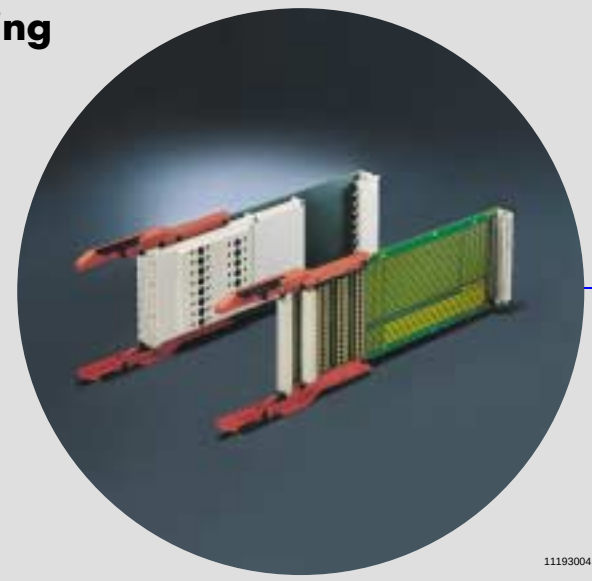
Other variations, dimensions or special solutions on request.

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Test adapters overview

Test adapters for following connectors

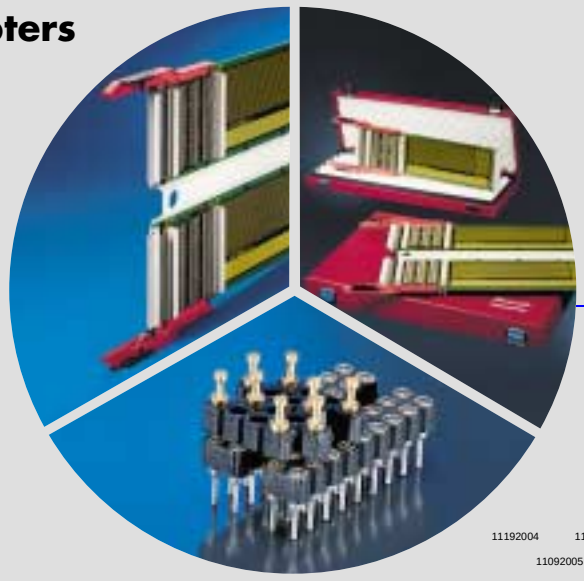
- 31-pin
- Type B
- Type C
- Type D
- Type E
- Type F
- Type G
- Type H
- Type M
- Type R
- for VMEbus



11193004

Accessories for test adapters

- Intermediate adapter 6, 9 U
- Guide board
- Guide rails
- Protective case
- Jumpers
- Test clips



11192004 11192001

11092005

Technical data

- Printed circuit board versions
- Measuring panel versions
- Dimension drawing test adapters

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Type C 3.28.3
Type D 3.28.3
Type E 3.28.4
Type F 3.28.4
Type G 3.28.5
Type H 3.28.5
Type M 3.28.6
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Plug-in jumpers ..3.28.11
Test clip 3.28.11

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Backplanes/ test adapters .. 3.20.0
VMEbus 3.21.0
VME64x bus.....3.22.0
CompactPCI bus....3.23.0
Universal bus 3.24.0
Power bus 3.27.0
Test adapters 3.28.0
Accessories.....3.29.0

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Appendix..... 3.90.0

Test adapter for connectors

11100001

Test adapter, 31-pin

- 3 U test adapter as per DIN 41617
- Measuring panel version for current and voltage measurement: Measuring bridges in 2 of 4 sockets (∅ = 0.5 mm)

Delivery comprises

– Test adapter, mounted, incl. guide rails

– 10 plug-in jumpers

Connector	Board depth[1)]	Type[1)]	Measuring section for	Order No. 3 U
31-pin	160mm	1L	Current and voltage	**23021-606**

[1)] Dimensions in detail, types, see "Technical data"

Accessories

6/9 U test adapter, see Accessories

Measuring panel



11100002



11100018

Test adapter, type B

- Test adapters, 3 and 6 U, as per DIN 41612
- Measuring section version for current and voltage measurement: wire wrap posts □ 0.6 mm and measuring bridges in 2 of 4 sockets (∅ = 0.5 mm)

Delivery comprises

– Test adapter, mounted, incl. guide rails

– 10 plug-in jumpers

Measuring panel



11100019

Connector	Board depth[1)]	Type[1)]	Measuring section for	Order No. 3 U	Order No. 6 U
W 64	160 mm	1L	Current and voltage	**23021-607**	**23021-605**
	220 mm			**23021-651**	**with[2)]**

[1)] Dimensions in detail, types, see "Technical data"

[2)] Intermediate adapter for connecting 2 3 U test adapters of same length

Accessories

6/9 U test adapter, see Accessories

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Test adapter for connectors



11100003

Measuring panel



11100004

Test adapter, type C

- Test adapters, 3 U and 6 U, as per DIN 41612
- Measuring panel version for
  - Voltage: wrap posts □ 0.6 mm and soldered measuring bridges
  - Current/voltage: wire wrap posts □ 0.6 mm and measuring bridges in 2 of 4 sockets (∅ = 0.5 mm)
    C 96 has connectors and measuring bridges in 2 of 4 sockets.

Delivery comprises

– Test adapter, mounted, incl. guide rails
– 10 plug-in jumpers

Connectors	Board depth[1]	Type[1]	Measuring section for	Order No. 3 U	Order No. 6 U
C 64	160 mm	1L	Current and voltage	**23021-608**	**23022-601**
	220 mm			**23021-652**	**with [2]**
C 96	160mm	2L	Voltage	**23021-603**	**with [2]**
			Current and voltage	**23021-609**	**23022-602**
		4L		**23021-610**	**23022-603**
	220 mm	2L		**23021-653**	**23022-652**
		4L		**23021-654**	**with [2]**
	280 mm	2L		**23021-700**	**23022-700**
		4L		**23021-701**	**with [2]**
	340 mm	4L		**23021-750**	**with [2]**

[1] Dimensions in detail, types, see "Technical data"
[2] Intermediate adapter for connecting 2 3 U test adapters of same length

Accessories

6/9 U test adapter, see Accessories



11100005

Measuring panel



11100006

Test adapter, type D

- 3 U test adapter as per DIN 41612
- Measuring section version for
  - Voltage: wrap posts □ 0.6 mm and soldered measuring bridges
  - Current/voltage measurement: wrap posts □ 0.6 mm and measuring bridges in 2 of 4 sockets (∅ = 0.5 mm)

Delivery comprises

– Test adapter, mounted, incl. guide rails
– 10 plug-in jumpers

Connector	Board depth[1]	Type[1]	Measuring section for	Order No. 3 U
D 32	160 mm	1L	Voltage	**23021-604**
			Current and voltage	**23021-611**
	220 mm			**23021-655**

[1] Dimensions in detail, types, see "Technical data"

Accessories

6/9 U test adapter, see Accessories

Test adapters for connectors
31-pin 3.28.2
Type B 3.28.2
Type C 3.28.3
Type D 3.28.3
Type E 3.28.4
Type F 3.28.4
Type G 3.28.5
Type H 3.28.5
Type M 3.28.6
Type R 3.28.6
for VMEbus 3.28.7

Accessories
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9 U test adapter 3.28.9
Guide rails 3.28.10
Protective cases . 3.28.11
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Test clip 3.28.11

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CompactPCI bus....3.23.0
Universal bus 3.24.0
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Test adapters 3.28.0
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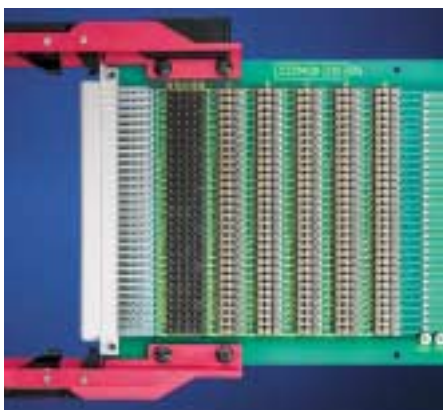
Microcomputer packaging systems (MPS) 3.30.0

Appendix..... 3.90.0

Test adapter for connectors

11100017

Measuring panel



11100007

Test adapter, type E

- 3 U test adapter as per DIN 41612
- Measuring panel version for current/voltage measurement:
  - E 48: wire wrap posts □ 0.6 mm and measuring bridges in 2 of 4 sockets (∅ = 0.5 mm)
  - E 160: wire wrap pins □ 0.6 mm, measurement lugs, measuring bridges in 2 of 4 sockets (∅ = 0.5 mm)

Delivery comprises

– Test adapter, mounted, incl. guide rails

– 10 plug-in jumpers

Connector	Board depth[1]	Type[1]	Measuring section for	Order No. 3 U
E 48	220 mm	2L	Current and voltage	**23021-656**
E 160		9L		**23021-659**[2]

[1] Dimensions in detail, types, see "Technical data"

[2] With short guide rail

Accessories

6/9 U test adapter, see Accessories



11100008

Measuring panel



11100009

Test adapter, type F

- Test adapters, 3 and 6 U, as per DIN 41612
- Measuring section version for
  - Voltage: wire wrap posts □ 0.6 mm and soldered measuring bridges
  - Current/voltage measurement: wire wrap posts □ 0.6 mm and measuring bridges in 2 of 4 sockets (∅ = 0.5 mm)

Delivery comprises

– Test adapter, mounted, incl. guide rails

– 10 plug-in jumpers

Connector	Board depth[1]	Type[1]	Measuring section for	Order No. 3 U	Order No. 6 U
F 48	160 mm	2L	Voltage	**23021-605**	**with** [2]
			Current and voltage	**23021-613**	**23022-604**
	220 mm			**23021-657**	**with** [2]

[1] Dimensions in detail, types, see "Technical data"

[2] Intermediate adapter for connecting 2 3 U test adapters of same length

Accessories

6/9 U test adapter, see Accessories

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11100010

Test adapter, type G

- 3 U test adapter as per DIN 41612
- Measuring section version:
  Measuring bridges in 2 sockets (∅ = 0.5 mm)

Delivery comprises

– Test adapter, mounted, incl. guide rails
– 10 plug-in jumpers

Connector	Board depth[1)]	Type[1)]	Measuring section for	Order No. 3 U
G 64	160 mm	2L	Current and voltage	**23021-614**[2)]

[1)] Dimensions in detail, types, see "Technical data"
[2)] With short guide rail

Accessories

6/9 U test adapter, see Accessories

Measuring panel



11100011



11193001

Test adapter, type H

- 3 U test adapter with high-current contacts as per DIN 41612
- Measuring section version:
  – Voltage: test sockets (∅ = 4 mm)
  – Current/voltage measurement: measuring bridges in 2 of 3 sockets (∅ = 4 mm)

Delivery comprises

– Test adapter, mounted, incl. guide rails
– 15 plug-in jumpers

Connector	Board depth[1)]	Type[1)]	Measuring section for	Order No. 3 U
H 15	160 mm	1L	Voltage	**23021-621**
			Current and voltage	**23021-615**
	220 mm			**23021-658**

[1)] Dimensions in detail, types, see "Technical data"

Accessories

6/9 U test adapter, see Accessories

Measuring panel



11100012

Test adapters for connectors
31-pin 3.28.2
Type B 3.28.2
Type C 3.28.3
Type D 3.28.3
Type E 3.28.4
Type F 3.28.4
Type G 3.28.5
Type H 3.28.5
Type M 3.28.6
Type R 3.28.6
for VMEbus 3.28.7

Accessories
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9 U test adapter 3.28.9
Guide rails 3.28.10
Protective cases . 3.28.11
Plug-in jumpers .. 3.28.11
Test clip 3.28.11

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Measuring panel versions 3.28.12
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Backplanes/ test adapters .. 3.20.0
VMEbus 3.21.0
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CompactPCI bus....3.23.0
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Test adapter for connectors

11100013

Measuring panel: M(F24/H7)



11100014

Test adapter, type M

- 3 U test adapter as per DIN 41612
- Version with high-current contacts and coax
- Measuring section version for current/voltage measurement:
  - M (F/H): F: measurement lugs, measurement pins with jumper H: measuring bridges in 2 of 3 sockets (∅ = 4 mm)
  - M (C/coax): wire wrap posts □ 0.6 mm and measuring bridges in 2 of 4 sockets (∅ = 0.5 mm), characteristic impedance Z = 50 Ω, coax connections are looped through

Delivery comprises

– Test adapter, mounted, incl. guide rails

– Coax version additionally with measuring bridges, 10 extra measuring bridges, 10 power links for layer connection with V_{cc}, GND

Connector	Board depth[1)]	Type[1)]	Measuring section for	Order No. 3 U
M (F24/H7)	160 mm	2L	Current and voltage	**23021-616**
	220 mm			**23021-660**
M (C24/8 coax)	160 mm	4L		**23021-617**
	220 mm			**23021-662**
M (C42/6 coax)	160 mm			**23021-618**
	220 mm			**23021-663**
M (C60/4 coax)	160 mm			**23021-619**
	220 mm			**23021-664**
M (C78/2 coax)	160 mm			**23021-620**
	220 mm			**23021-665**

[1)] Dimensions in detail, types, see "Technical data"

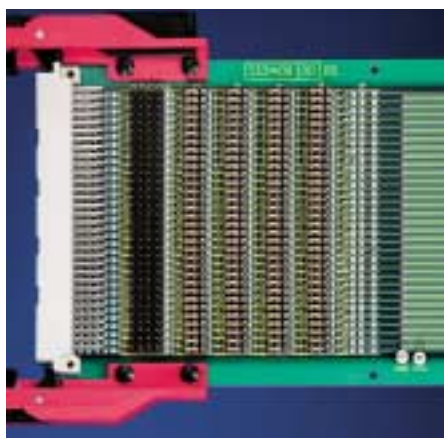
Accessories

6/9 U test adapter, see Accessories



11100015

Measuring panel



11100016

Test adapter, type R

- 3 U test adapter as per DIN 41612
- Measuring section version for current/voltage measurement: wire wrap posts □ 0.6 mm, measurement lugs, measuring bridges in 2 of 4 sockets (∅ = 0.5 mm)

Delivery comprises

– Test adapter, mounted, incl. guide rails

– 10 plug-in jumpers

Connector	Board depth[1)]	Type[1)]	Measuring section for	Order No. 3 U
R128	220 mm	9L	Current and voltage	**23021-661**[2)]

[1)] Dimensions in detail, types, see "Technical data"

[2)] With short guide rail

Accessories

6/9 U test adapter, see Accessories

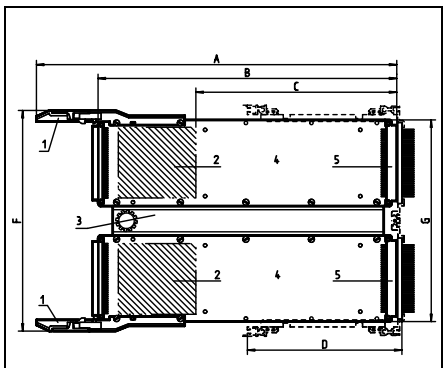
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Test adapter for VMEbus

11192004

Measuring panel

11196001



TAA43143

1) Guide rail with lock
2) Measuring panel
3) Intermediate adapter with extraction aid
4) Multi-layer PCB
5) Connector (male)

Test adapters

- Test adapters, 3 and 6 U
- Measuring panel version for current/voltage measurement: wrap posts □ 0.6 mm, measurement lugs, measuring bridges in 2 of 4 sockets (∅ = 0.5 mm)
- Additional GND pins and pins, e.g. for test prod/oscilloscope
- Slot for second test specimen and terminator board

Delivery comprises

– Test adapter, mounted, incl. guide rails
– 10 plug-in jumpers for contact distance 7.62 mm

Height	Board depth	Connectors		Order No.
		System bus P1	I/O bus P2	
3 U	160 mm	C96	–	**23021-001**
		–	C96	**23021-100**
		–	C64	**23021-102**
	220 mm	C96	–	**23021-002**
		–	C96	**23021-101**
		–	C64	**23021-103**
	280 mm	C96	–	**23021-010**
		–	C96	**23021-110**
6 U	160 mm	C96	C96	**23022-002**
		C96	C64	**23022-001**
	220 mm	C96	C96	**23022-004**
		C96	C64	**23022-003**
	280 mm	C96	C96	**23022-010**

Accessories

9 U test adapter, see Accessories

Item	Description	Material
1	Guide rail	Polyester reinforced with 30 % fibreglass, self-extinguishing as per UL 94 V-0, for PCBs of max. 2 mm thickness
2	Measuring panel	for current and voltage
3	Intermediate adapter	St, with extraction aid
4	PCB, multi-layer	Epoxy resin fibreglass EP GC 02 as per DIN 40802 (FR4), flame-resistant as per UL 94 V-0, 1.6 mm thick, C96 6 layers: shielding–signal–V_{cc}–GND–signal–shielding C64 2 layers
5	Connector C96 or C64	as per DIN 41612, quality class 2

Table of dimensions

Board height	F (mm)	G (mm)
3 U	123.65	100
6 U	257	233,35

A = Overall length
B = Extension

For board depth	A (mm)	B (mm)	C (mm)	D (mm)
160 mm	423	350	237	175,24
220 mm	483	410	297	235,24
280 mm	543	470	417	355,24

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Type B 3.28.2
Type C 3.28.3
Type D 3.28.3
Type E 3.28.4
Type F 3.28.4
Type G 3.28.5
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Type M 3.28.6
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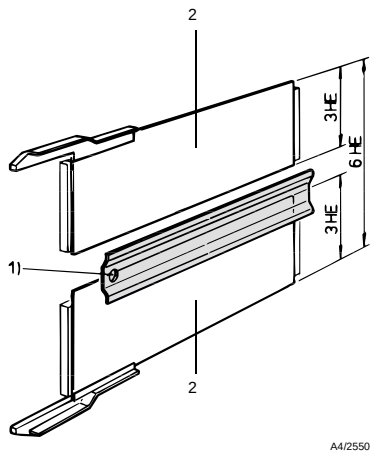
Power supply units..... 3.10.0

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VMEbus 3.21.0
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Test adapter accessories



TE = HP
HE = U

6 U test adapter

6 U test adapter can be fitted with:
– 2 × 3 U test adapters of same length (item 2)
– 1 × intermediate adapter, 6 U (item 1)
or
– 1 × 3 U test adapter (item 2)
– 1 × unequipped board (item 2 without connector)
– 1 × intermediate adapter, 6 U (item 1)

Note
Test adapters, see preceding pages

Intermediate adapter, 6 U

Item	Description	For		Order No.
		Board depth (mm)	Test adapter depth (mm)	
1	Intermediate adapter, St 1.5 mm, grey, incl. assembly parts	160	290	**20800-224**
		220	350	**20800-168**
		280	410	**20800-278**
		340	470	**20800-279**

Unequipped board

Item	Description	Board depth (mm)	Material	Order No.
2	Unequipped board, 3 U	160	Epoxy resin fibreglass EP GC 02, DIN 40802 (FR4), without connector	**23040-006**
		220		**23040-007**

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TE = HP
HE = U

9 U test adapter

9 U test adapter can be fitted with:
– 3 × 3 U test adapters of same length (item 2)
– 1 × intermediate adapter, 9 U (item 1)
or
– 2 × 3 U test adapters (item 2)
– 1 × unequipped board (item 2 without connector)
– 1 × intermediate adapter, 9 U (item 1)
or other combinations

Note
Test adapters, see preceding pages. Board stiffener (item 3) serves to stabilize the test adapter

Intermediate adapter, 9 U

Item	Qty	Description	For		Order No.
			Board depth (mm)	Test adapter depth (mm)	
1	2	Intermediate adapter, St 1.5 mm, grey, incl. board stiffener and assembly parts	220	350	**23040-001**
			280	410	**23040-002**
			340	470	**23040-003**

Unequipped board

Item	Description	Board depth (mm)	Material	Order No.
2	Unequipped board, 3 U	160	Epoxy resin fibreglass EP GC 02, DIN 40802 (FR4), without connector	**23040-006**
		220		**23040-007**

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Type B 3.28.2
Type C 3.28.3
Type D 3.28.3
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Type F 3.28.4
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Type H 3.28.5
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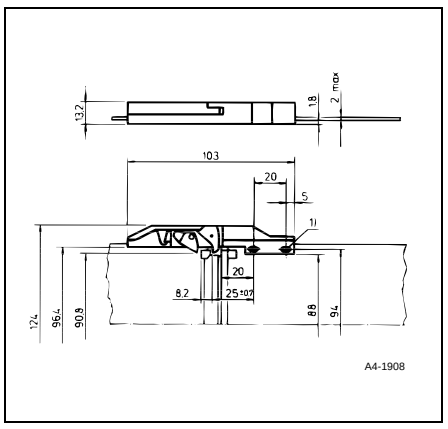
Test adapter accessories



11192009

Guide rails

- For accommodating and locking modules to be tested (for replacement purposes only, guide rails are included in the scope of delivery for all test adapters)
- 3 versions
  - Short version
  - Long version
  - Short version without lock



A4-1908

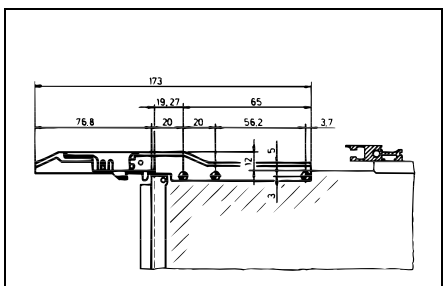
Short guide rail

- Short guide rail with locking lever
- Can be fitted to all SCHROFF test adapters
- In this way, test adapters for 160 mm plug-in depth (with partially covered measuring panel) can also be used for 220 mm board depth.

Delivery comprises

2 guide rails with assembly parts in each case

Order No.	**60800-834**



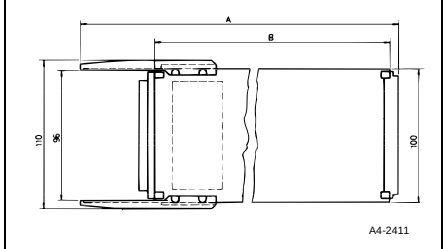
A4-2551

Long guide rail

Delivery comprises

2 guide rails with assembly parts in each case

Long guide rail	Order No.
With locking lever	**20800-212**
Without locking lever	**20800-213**



A4-2411

A, B, see "Technical data"

Short guide rail without locking lever

Delivery comprises

1 guide rail (without assembly parts)

Order No.	**60800-032**

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11192006

Protective cases for test adapters

■ For safe storage of the test adapters and for protection against damage during transportation and service

Dimensions of test adapters		Order No.
Height U	Dimension A max. mm	
3	425	**60800-431**
6	425	**60800-432**
	543	**60800-438**



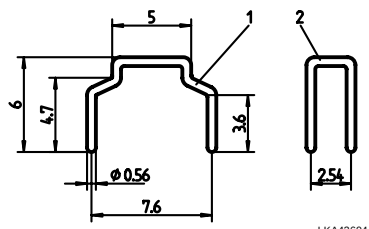
11092004

Plug-in jumpers

For
- ■ Wire-wrap boards with socket contacts
- ■ IC base
- ■ Test adapter with bare short-circuiting links

Item	Description	Contact distance mm	Order No.	
			10 pieces	100 pieces
1	Plug-in jumpers, gold-plated	7.62	**69006-200**	**69006-255**
2		2.54	**69006-201**	**69006-256**

Plug-in jumpers



LKA42604



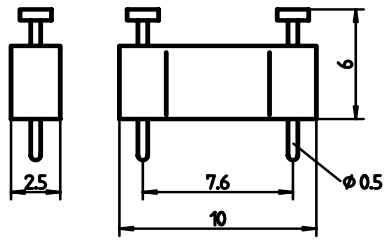
11092005

Test clip

For
- ■ Wire-wrap boards with socket contacts
- ■ IC base
- ■ Test adapter with bare short-circuiting links

Qty	Description	Order No.
10	Test clips, gold-plated	**69006-202**

Test clip



LKA40265

Test adapters for connectors
31-pin 3.28.2
Type B 3.28.2
Type C 3.28.3
Type D 3.28.3
Type E 3.28.4
Type F 3.28.4
Type G 3.28.5
Type H 3.28.5
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Test adapters 3.28.0
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Test adapter technical data

PCB versions

Epoxy resin fibreglass EP-GC02 as per DIN 40802 (FR4).

External connections (e.g. pins 1a, b, c and pins 32a, b, c), each with wider printed conductor or large-size printed conductors on inner layers – e.g. for shielding V_{CC}, GND.

Layer structure

Type 1L	PCB coated on one side (suitable up to 2 MHz)
Type 2L	PCB coated on both sides and through-plated (suitable up to approx. 8 MHz)
Type 4L	Multi-layer, 4-layer (suitable from 8 MHz) Mult-layer technology with large-size inner layers (signal–surface–surface–signal). In the coax version, the large-size inner layers can be soldered using power links to any pins.
Type 9L	Multi-layer, 9-layer (suitable from 8 MHz) Multi-layer technology with extensive inner layers (signal–surface–signal–surface–signal–surface–signal–surface–signal) and shielded lines between the printed conductors.

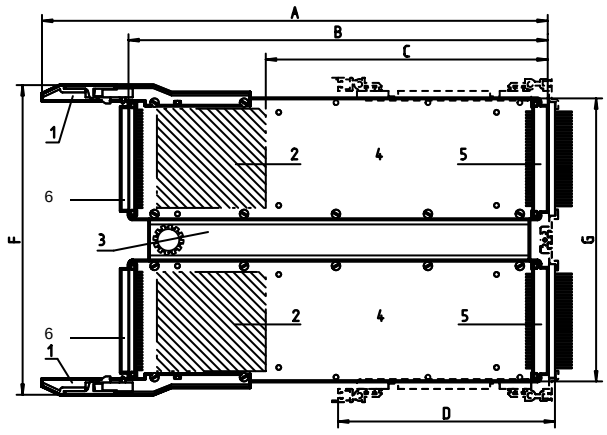
Measuring panel versions

For the assorted measuring tasks and currents, the measuring panels are each composed of the following:

– wrap posts, □ 0.6 mm
– measurement lugs
– test sockets, ∅ 4 mm
– measuring bridges in two of three test sockets, ∅ 4 mm
– measuring bridges with jumpers
– measuring bridges with links in two test sockets, ∅ 0.5 mm
– measuring bridges with links in two of four test sockets, ∅ 0.5 mm
– test bridges, soldered
– connector C 96 F; rear side C 96 M (with connector body)

Downloaded from Arrow.com.

Dimension drawings, test adapters



Board height	Fmm	G mm
3 U	123.65	100.00
6 U	257.00	233.35

Board height	A mm	W mm	Cmm	D mm
160 mm	363	290	190	175.24
220 mm	423	350	250	235.24
	408	350	250	295.24
280 mm	483	410	310	355.24
340 mm	543	470	370	415.24

TAA43143

1) Guide rail
2) Measuring panel
3) Extraction aid
4) Test adapter
5) Connector (male)
6) Connector (female)

Test adapters for connectors
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Type B 3.28.2
Type C 3.28.3
Type D 3.28.3
Type E 3.28.4
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Accessories backplanes/test adapters


05596004


05592007


05596001


05596002


12296005

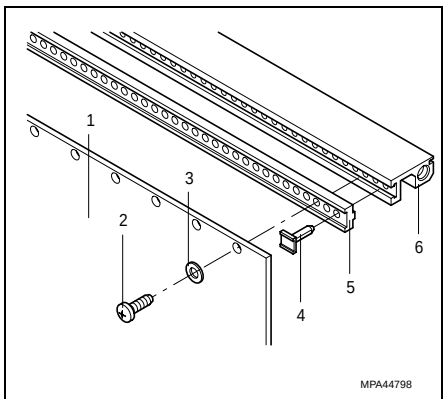

12296006

Overview

We offer a wide range of accessory parts for our backplanes.

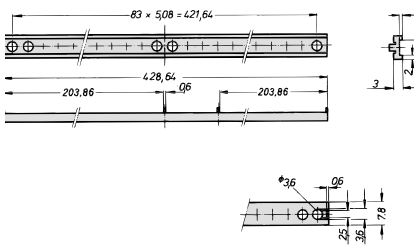
These accessory parts satisfy the stringent requirements of modern electronics.

- Backplane mounting 3.29.0
- Connections for signal lines
  - Connector, type C (soldering and press-in technology) 3.29.1
  - Connector housing 3.29.3
  - Coding 3.29.4
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- Connections for power supply
  - Screw-type/ plug-in connection 3.29.7
  - Threaded pin 3.29.8
  - Power jumpers 3.29.8



MPA44798

Item 5



A3/163

Backplane mounting

The backplane is screwed to the horizontal rail. The standardized plug-in depth for the plug-in modules and the insulation between casing and backplane are achieved by the installation of an insulation strip.

Clips can be used during mounting to secure the insulation strip in the threaded strip.

Delivery comprises

Item	Qty	Description	Material	Dimension	Order No.
1	100	Backplane			
2	100	Cheese-head screw	Nickel-plated	M 2.5 × 12	**21100-777**
3		Washer	Polyamide 6, white	Dia. 6.3 mm	
4		Clips	Noryl (UL 94 V-1), red		**21100-824**
5	1	Insulation strip	Crastin, self-extinguishing (UL 94 V-0)	84 HP 428.6 mm	**60817-061**
				42 HP 210.2 mm	**60817-118**
6		Horizontal rail	Aluminium extrusion		

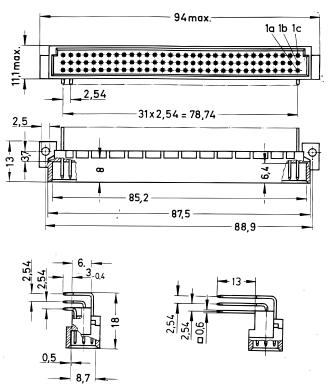
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05596004

Connector, type C

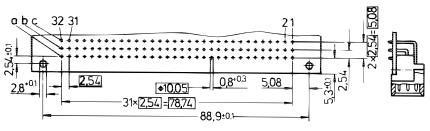
- Soldering/wire wrap 3.29.1
- Press-in technology 3.29.2

Male connector



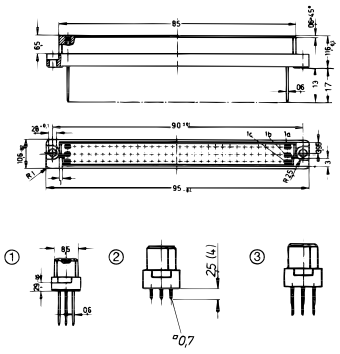
A4/2434

View of component side
Mounting holes for male solder connector



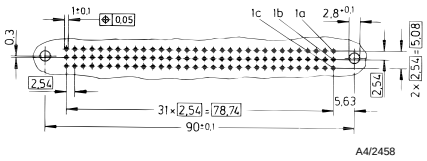
Female connector

A4/1132



View of component side
Mounting holes for female solder connector

A4/2434b



A4/2458

Connector, soldering/wire wrap

- Type C as per DIN IEC 60603-2 / DIN 41612 32-/64-/96-pin
- Male connector with angled solder pins or wrap posts
- Female connector with wrap posts, solder/press-in pins or solder eyes

Male connector

Number of contacts		32	64	96
Rows		Pin 2, 4, 6 ... a c	Pin 1, 2, 3 ... a c	Pin 1, 2, 3 ... a b c
Type		C 32 M	C 64 M	C 96 M
Item	Male connector with			
1	angled solder pins	**69001-826**	**69001-821**	**69001-816**

Female connector

Number of contacts		32	64	96
Rows		Pin 2, 4, 6 ... a c	Pin 1, 2, 3 ... a c	Pin 1, 2, 3 ... a b c
Type		C 32 F	C 64 F	C 96 F
Item	Female connector with			
1	Wrap posts, tin-plated 0.6 × 0.6 × 13 mm	**69001-691**	**69001-685**	**69001-679**
2	solder pins 2.5 mm	**69001-102**	**69001-693**	**69001-696**
	solder pins 4 mm	**–**	**69001-678**	**69001-677**

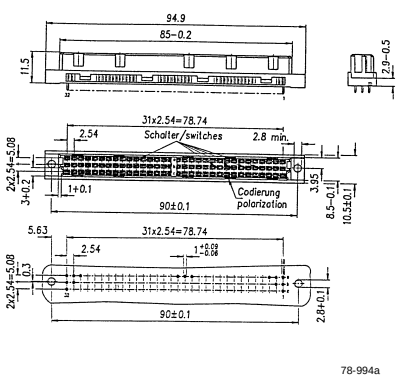
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Accessories backplanes/test adapters

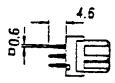
055-95-001



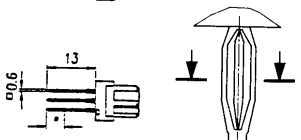
78-994a

Press-fit hole

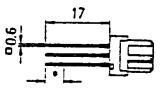
Item 1



Item 2



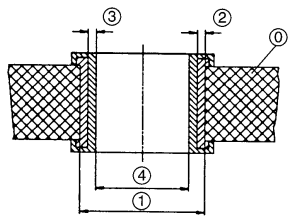
Item 3



78-994b

78-994c

Hole design



78-993

Connector, press-in technology

Type C 96-pin as per DIN IEC 60603-2 / DIN 41612

- Female connector with automatic switching contacts (ADC), wrap posts or press-in pins
- Female connector without switching contacts

Item	Female connector C 96 F with	Order No. Switching contact without[1)]	with
1	Press-in pins 0.6 × 0.6 × 4.6 mm	**69001-167**	**69001-369**
2	Press-in wrap posts 0.6 × 0.6 × 12.5 mm	**69001-165**	**69001-371**
3	Press-in wrap posts 0.6 × 0.6 × 17 mm	**69001-392**	**69001-372**

1) For PCB thickness from 2.4 mm

Technical data

Female connector C 96, versions with/without switching contacts

Contacts	Copper alloy CuSn 6 or 8, surface selectively Au 2 μm Ni (see quality stage)
Connections	Cu Ni 9 Sn 2, nickel-plated, selectively tin-plated, connector areas selectively Au over Ni 0.6 × 0.6 mm^2, 4.6 mm, 13 mm or 17 mm long
Test class	55 / 125 / 56 (as per DIN 40045)
Temperature range	–55 °C ... +125 °C
Total insertion force	≤ 90 N
Single withdrawal force	≥ 0.15 N with tester 0.56 mm
Press-in force	80 N (max. 150 N)
Pin holding force	min. 30 N
Press area	4 symmetrical, rounded contact shoulders

Additional data, only female connector with switching contacts

Position of switch bridges	Between row/pin no. a 21 – a 22 b 4 – b 5 b 6 – b 7 b 8 – b 9 b 10 – b 11	VMEbus signals J1 IACK IN – IACK OUT BG 0 IN – BG 0 OUT BG 1 IN – BG 1 OUT BG 2 IN – BG 2 OUT BG 3 IN – BG 3 OUT
Function	Male connector plugged in: Switch open Male connector not plugged in: short circuit	
Current carrying capacity	max. 1 A at 30 °C	
Switching under load	5 V / 100 mA min. 500 switching cycles	
Switching rate	min. 500 switching cycles	

Requirements of PCBs for press-in technology

Item	Description	Material/dimensions
0	Base material	Epoxy fibreglass, e.g. DIN 40802, type EP GC 01 or NEMA-LI-1, type FR 4; min. 1.6 mm thick
1	Hole diameter	1.15 mm – 0.03 mm
2	Through-plating	Cu, 25 ... 50 μm
3	Through-plating	Sn, 5 ... 15 μm
4	Tolerance (diameter)	0.94 mm ... 1.09 mm

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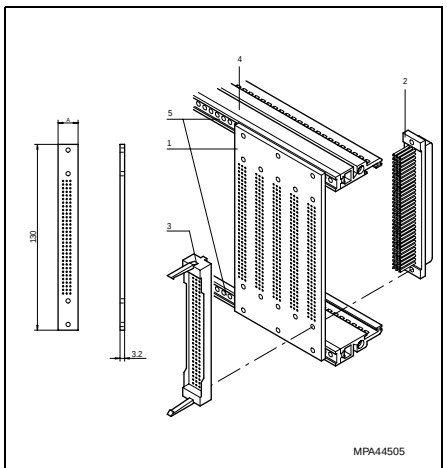
Connector housing/locking lever

■ Connector housing and locking lever for type C or R

The connector housing is pushed over wrap posts (e.g. on the rear side of backplanes), thereby creating a male connector.

Locking levers can be used e.g. to lock in position terminator boards or I/O connectors.

Item	Qty	Description	Material	Order No.
1	1	Housing for post 0.6 × 0.6 × 13 mm Backplane thickness 3.2 mm	without nuts	**69001-814**
			with nuts M 2.5	**29001-016**
2	1	Housing for post 0.6 × 0.6 × 17 mm Backplane thickness 3.2 mm	without nuts	**69001-210**
			with nuts M 2.5	**29001-015**
	1	Housing for post 0.6 × 0.6 × 13 mm Backplane thickness 1.6 mm	without nuts	**69001-311**
			with nuts M 2.5	**29001-019**
	100	Hexagon nuts for blank housing	BM 2.5 DIN 439-11 H	**21100-884**
4	1	Locking lever for type R (item 5)	Colour: grey	**69001-995**
4	1	Locking lever for type C (item 6)	Colour: black	**69001-106**



Mounting board for connectors

■ For types C and R as per DIN IEC 60603-2 / DIN 41612
Height 130 mm, thickness 3.2 mm

With the mounting board (item 1), type C or R connectors (item 2) can be fitted directly to the horizontal rail (item 4) of a subrack. A Z-rail is not needed.

On the opposite side, a connector housing (item 3) can be pushed over the wrap posts, thereby creating a connector for accommodating e.g. ribbon cables and terminator boards.

The standardized plug-in dimension is achieved with insulation strips (item 5) or an "extended" horizontal rail (+ 3 mm).

Item	Qty	Description	Material	Number of slots	Order No.
1	1	Mounting board for type C and R connectors	Epoxy glass fibre EP GC 02 as per DIN 40802 (FR4) UL 94 V-0	1	**23040-010**
				5	**23040-015**
				10	**23040-012**

Accessoires
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Power jumpers.....3.29.8

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Accessories backplanes/test adapters

A4/2424

Coding for connectors

- Use with plug-in modules for protection against mixing up
- Space requirement for connectors with coding pegs:
  – 4 HP for type C, DIN IEC 60603-2 / DIN 41612
- 66 coding options if 2 coding pins are used
- 924 coding options if 6 coding pins are used

Mechanical coding is suitable for distinguishing between plug-in modules. The female strip (item 2) is screwed to the male connector of the plug-in module. On the opposite side, the contact strip (item 1) is secured to the subrack next to the female connector. Coding pins (item 3) are inserted into the contact strip. In this way, 66 and 924 combinations are possible with 2 and 6 coding pins respectively.

Item	Qty	Description	Material	Order No.
1	10	Contact strip	Crastin, red, UL 94 V-0	**20800-042**
2	10	Female strip		
3	20	Coding pins	Macrolon, blue	

Accessories

Installation material for female strip

Qty	Description	Material	Order No.
100	Cylinder head screws M 2.5 × 18	Steel	**21100-404**
100	Shakeproof washers	Sprung steel	
100	Hexagon nut	Steel	

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A3/223

A3/457



A4/3117

Ribbon cable female connector

For type C64
- Female connector, type C, as per IEC 60603-2 / IEC 41612
- 64-pin
- Cut and clamp technique

Delivery comprises

Item	Qty	Designation
1	1	Female connector
2	1	Cover

Delivery: in kit form, items 1 and 2

Number of contacts		64
Rows	Pin	1, 2, 3, ...
	Row	a c
Order No.		**69005-596**



055-92-007

Ribbon cable bus

Connector C64 with cable
- Fitted with 64-pin connectors of type C
  - Connection of the two outer rows a+c on the I/O backplane
- Application: In expanded VMEbus systems for data interchange, independent of the VME system bus
  - Plug on of the VMX ribbon cable bus on the wire-wrap connections of the I/O connector

Qty	Description	Slot (4 HP/20.32 mm per slot)	Dimensions mm	Order No.
1	Ribbon cable bus, row "a" and "c", C64 as per DIN 41612	2	20.3 / 94	**20800-239**
		3	40.6 / 94	**20800-241**
		4	61,0 ∅ 94	**20800-240**
		5	81,3 ∅ 94	**20800-280**
		6	101.6 ∅ 94	**20800-218**

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Accessories backplanes/test adapters

011-035-5

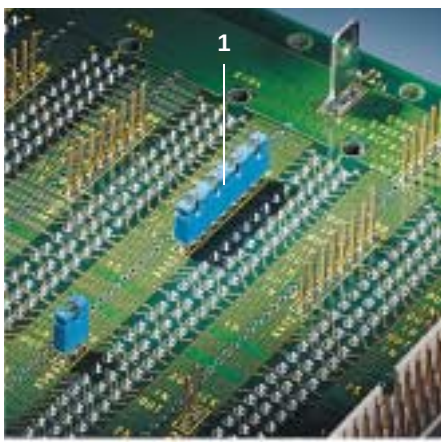
Connecting cable for utility signals

Connecting cable for the backplane utility signals
Connects the 5-pin connector of the VMEbus J1 backplane (SYSFAIL*, ACFAIL*) to:

- Power failure module
- Reset board
- Customer applications
- Active low

Item	Qty	Description	Order No.
1	1	Cable, 5-core, 450 mm	**20800-304**
2	1	Connector, 5-pin	

Delivery: Item 2 fitted to item 1



122-96-004

Daisy chain jumper

- For system backplanes with pluggable daisy chain jumpers (in case of additional requirements).
- 5 jumpers are needed to jumper an unused slot.

Item	Qty	Description	Order No.
1	10	Daisy chain jumper	**60800-330**

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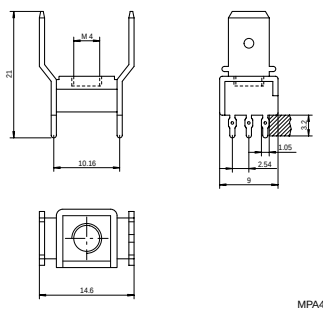


Solder version 122-96-005



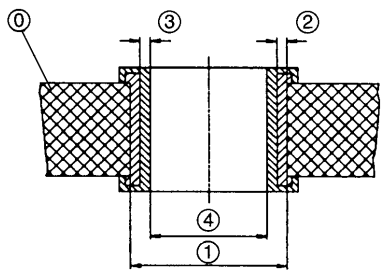
Press-fit version 122-96-006

(item 4)



MPA44779

Hole design



78-998

Screw-type/plug-in connection

■ For mounting on PCBs

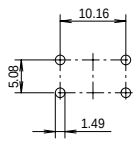
Technical data (items 4, 5)

Number of pins	6
Material	CuSn 6 brass
Bright finish	2 – 4 μm SNPB 60/40-90/10
Press-in force 6 pins	max. 1300 N (200 N/Pin)
Holding force 6 pins	min. 375 N (60 N/pin)
Operating current	50°C: 30 A
Screws, tightening torque	< 1.3 Nm
FASTON withdrawal forces (item 4)	2.8 mm – max. 50 Nm 6.3 mm – max. 80 Nm

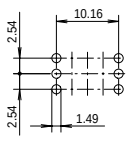
Requirements of PCBs for press-in technology

Item	Description	Material
0	Base material	Epoxy fibreglass, e.g. DIN 40802, type EP GC 01 or NEMA-LI-1, type FR 4; min. 1.6 mm thick
1	Hole diameter	1.6 mm ± 0.025 mm
2	Through-plating	Cu, 25 ... 50 μm
3	Through-plating	Sn/Pb > 5 μm
4	Tolerance end diameter	1.49 + 0.05 mm/–0.1 mm

Item	Description	Order No.		
		Solder version	Press-fit version	
1	1 × FASTON 6.3 × 0.8 mm	**60800-476**	–	**60800-848**
2	2 × FASTON 6.3 × 0.8 mm and 1 × screw connection M 4 nut	**60800-572**	–	–
3	1 × M 4 nut	**60800-493**		
4	1 × FASTON 6.3 × 0.8 mm and 1 × FASTON 6.3 (2 × 2.8) × 0.8 mm and 1 × screw connection M 4 thread	–	**60800-498**	**60800-576**
5	1 × M 4 thread	–	**60800-532**	**60800-578**
	Mounting hole pattern	Grid: 5.08 mm		Grid: 2.54 mm



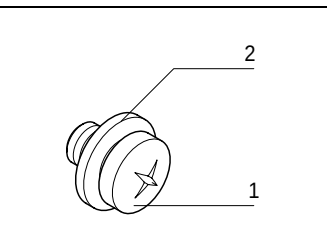
MPA43504



MPA43503

Note

Please order screw separately (see below).
Press-in tool available on request.



MPA44801

Screw for screw-type/plug-in connection

■ Suitable for items 2, 3, 4 and 5

Delivery: Screw with integrated washer

Item	Qty	Description	Order No.
1	100	Screws M 4 × 6	**21101-142**
2		Washer	

Accessoires
Overview 3.29.0
Backplane mounting.....3.29.0
Connector, type C.....3.29.1
Connector housing/ locking lever 3.29.3
Mounting board for connectors 3.29.3
Coding for connectors 3.29.4
Ribbon cable female connector..3.29.5
Ribbon cable bus ..3.29.5
Connecting cable for utility signals 3.29.6
Daisy chain jumper.....3.29.6
Screw-type/plug-in connection 3.29.7
Threaded pin 3.29.8
Power jumpers.....3.29.8

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Power supply units..... 3.10.0

Backplanes/ test adapters .. 3.20.0
VMEbus 3.21.0
VME64x bus.....3.22.0
CompactPCI bus....3.23.0
Universal bus 3.24.0
Power bus 3.27.0
Test adapters 3.28.0
Accessories.....3.29.0

Microcomputer packaging systems (MPS) 3.30.0

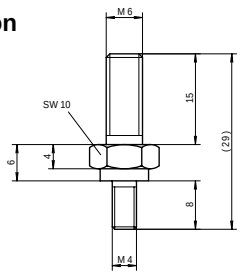
Appendix..... 3.90.0

Accessories backplanes/test adapters



122-96-001

Dimension



Threaded pin

- For connecting supply lines of larger cable cross-section
- For replacing with the M 4 screws fitted as standard on the backplanes

Qty	Description	Material	Order No.
1	Threaded pin	St, nickel-plated	**60800-553**

Power jumpers

Serve to electrically connect VMEbus J1 to J2 backplane.

- Cable with screw connections at both ends
- Metal bracket for M 4 screw connections (with same number of slots)



122-96-002

Cable

Qty	Description	Length mm	Order No.
2	Cable with screw connections at both ends (M 4)	50	**20835-326**
		100	
		150	



122-96-003

Metal bracket

- With matching number of slots for J1 and J2

Qty	Description	Order No.
10	Metal bracket for M 4 screw connections	**20800-232**

Downloaded from Arrow.com.



Accessoires

Overview 3.29.0
Backplane mounting.....3.29.0
Connector, type C.....3.29.1
Connector housing/ locking lever 3.29.3
Mounting board for connectors 3.29.3
Coding for connectors 3.29.4
Ribbon cable female connector..3.29.5
Ribbon cable bus ..3.29.5
Connecting cable for utility signals 3.29.6
Daisy chain jumper.....3.29.6
Screw-type/plug-in connection 3.29.7
Threaded pin.....3.29.8
Power jumpers.....3.29.8

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Power supply units..... 3.10.0

Backplanes/ test adapters .. 3.20.0

Microcomputer packaging systems (MPS) 3.30.0
VMEbus 3.31.0
CompactPCI.....3.32.0
Industrial PC 3.33.0
Accessories.....3.39.0

Appendix..... 3.90.0

Microcomputer packaging systems overview



20200002

Application

Microcomputer packaging systems (MPS) from Schroff are the basis for the computer systems. We supply systems for:

- VMEbus,
- CompactPCI and
- industrial PCs.

These are used in research, development, production and in control systems. Our micro-computer packaging systems relieve you of the work involved in building the mechanical and electrical components of a computer yourselves. You can concentrate fully on your own areas of competence and leave the MPS to bring your components, CPU and the corresponding I/O boards to life. We also have solutions for VXIBus, Futurebus, Multibus, G96 Bus and Universal Bus.

Design

MPS consist of the following mechanical and electrical components:

- Cases or subrack with accommodation of boards
- Thermal management
- Backplanes
- Power supply units
- Mains filter

The mechanical components are pre-assembled and the electrical components are wired to each other. Each system is functionally tested. If you fail to find a suitable system in the standard range, you can configure your MPS system yourselves. We will be pleased to help you.

Accessories

We offer a wide range of selected accessory parts which are matched to the requirements of the bus systems.

There are three separate areas in which accessories are offered:

- Mechanic (drive units, front panels)
- Electronic (mains supply, modules, monitoring equipment)
- Heat dissipation (fans, ventilators)

Electronic packaging tasks are solved completely with the accessories offered.

Further information

The appendix contains further information on special solutions, standards and the interaction of the electronic components in microcomputer construction systems.

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Microcomputer packaging systems overview

VMEbus systems

- Case systems (2 U to 4 U, desk, tower and portable version)
- Subrack systems (4 U to 9 U)
- Subrack kits (6 U)



CompactPCI systems

- Subrack systems (3 U to 8 U)
- Case systems (3 U to 8 U) comprise subrack systems and an attractive casing



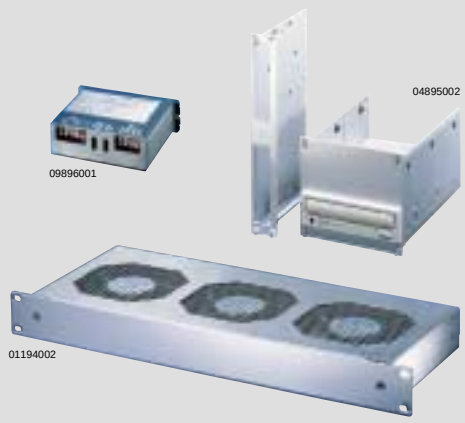
Industrial PC systems

- Subrack system (4 U)
- Case system (4 U)



Accessories for MPS

- Mechanic (drive units, front panels, guide rails)
- Electronic (mains/line components, monitoring units)
- Heat dissipation (fans, ventilators)



VME bus 3.31.0
CompactPCI 3.32.0
Industrial PC 3.33.0
Accessories 3.39.0

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Power supply units..... 3.10.0

Backplanes/ test adapters .. 3.20.0

Microcomputer packaging systems (MPS) 3.30.0

VMEbus 3.31.0

CompactPCI.....3.32.0

Industrial PC 3.33.0

Accessories.....3.39.0

Appendix..... 3.90.0

VMEbus systems overview



Extract from S7006_1

Application

Microcomputer packaging systems serve to build VMEbus computer systems which are used in process automation, test bays and laboratories. Attractive casing systems such as desk, tower and portable versions are available. There are in additional subrack systems, which can be fitted in a 19” cabinet or in a case.

The packaging systems are fully built and prepared for computer and I/O boards and for the installation of drive units. The systems comprise backplane, drive unit, fans and power supply including full AC and DC wiring.

Electrical design

The power supply unit (mains connection at rear, mains switch at front) generates the DC voltages required for the VMEbus. Indications are by LEDs on the front side.

The relevant LED lights up green when the voltages are within the specified tolerances. The LED changes to red if the voltage deviates from the tolerance band.

The fans are supplied with 24 V_{DC} direct voltage. A fan malfunction is indicated by an LED (FAN) and an Open Collector Signal.

Mechanical design

The stable case systems consist of two diecast aluminium frames and aluminium side panels with cover plate, base plate and rear panel.

The subrack systems consist of two aluminium side panels, and horizontal aluminium rails with cover plate, base plate and rear panel. The board area and the installation area for drives are located at the front.

Heat dissipation

The specific airflow permits the installation of boards of high component density. There are systems with heat dissipation from bottom to top and those with heat dissipation from front to rear.

Standards/certifications

VMEbus systems comply with the VMEbus specification IEEE 1014 and IEC 821. They satisfy VDE 0871 (curve B) and overvoltage protection class 2. The components such as mains plug, filter, switch, power supply unit and fan are VDE-, UL- and CSA-approved.

The protective earth connections are in compliance with VDE.

The systems satisfy the standard for interference emissions EN 50081-1 (EN 55011, VDE 0875 Part 11 Class) and EN 55022, VDE 0878 Part 3 Class B) and interference immunity EN 50082-2 (IEC 801 Part 2 to 4, degree of severity 3).

The mounting dimensions of the case and subrack systems comply with IEC 60297-3 and IEC 60297-4 and can be installed in 19” cabinets (IEC 60297-1 and -2).

The specifications for the VMEbus are available from VITA (www.vita.com). Schroff has been a member of VITA for many years.

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VMEbus systems overview

Case systems

- Desk versions from 2 U to 4 U and individual configurations
- Tower version 4 U and individual configurations
- Portable version, 3 U



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Subrack systems

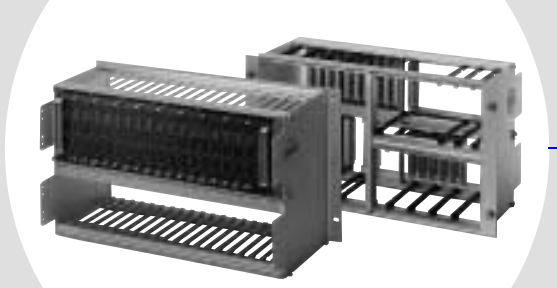
- 4U to 9U
- With 3 or 6 U backplane
- Individual configuration
- Casing for subrack systems



10094006

Subrack kits

- Height 6U
- For 6 U backplane
- Universal kits
- Different expansion spaces



03492002

Case systems

Desktop version
2 U.....3.31.2
Desktop version
3 U.....3.31.4
Desktop version
4 U.....3.31.8
Tower version
4 U.....3.31.12
Portable version
3 U.....3.31.16

Subrack systems

Subrack system
4 U.....3.31.18
Subrack system
5 U.....3.31.22
Subrack system
7 U.....3.31.26
Subrack system
8 U.....3.31.36
Subrack system
9 U.....3.31.46
19” cases for subrack systems.....3.31.51

Subrack kits

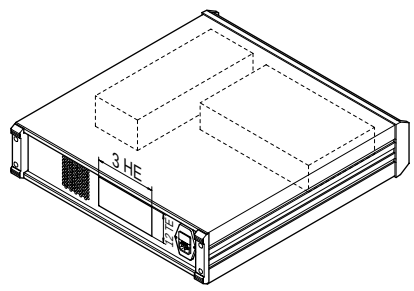
Subrack kits 6 U .3.31.52
Desk-top enclosure
for subrack kits ..3.31.55

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VME bus housing systems

100-96-008

MPA45622



MPA45623

TE = HP
HE = U

Desktop version 2 U

Robust 2 U case system (propac) with integrated ventilation

- Shielded version
- 160 mm deep cards (6 U horizontal)
- System backplane J1, 3 slot
- Drive mounting height 2 U, 20 HP front, mounting height for hard disk
- Forced air ventilation with a temperature-controlled DC-fan
- Power supply 100 W

CE

Delivery: Mechanical and electrical/electronic components assembled and wired

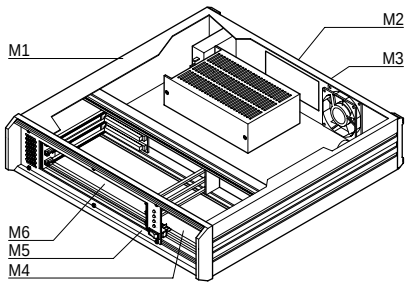
Input voltage V_{AC}	Order No. VME bus desktop case system 2 U, J1 3 slot Power supply 100 W
230	**10835-155**
115	**10835-156**

Accessories:
For drive space

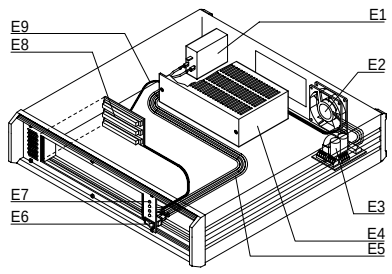
Qty	Description	Order no.
1	Partial width front panel 2 U/22 HP[1)]	**20836-037**
1	Hard disk cassette 2 U/22 HP[1)]	**20836-039**
1	Drive unit 2 U/22 HP, Front panel cut-out 31 × 102 mm[1)]	**20836-038**

[1)] Free mounting height 20 HP

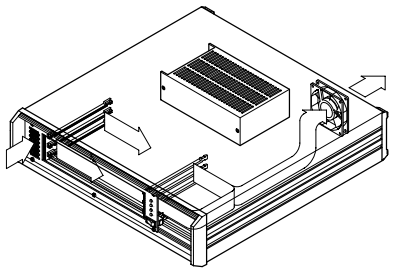
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MPA45625



MPA45626



MPA45624

Delivery comprises: Mechanical

Item	Qty	Description	Material/Finish
M1	1	Desk-top enclosure W × H × D = 470.3 × 111 × 496 mm (propac)	Al, 2.5 mm, painted, RAL 7030 dark grey RAL 7035 light grey, with case feet
M2	1	Cover plate 3 U/12 HP horizontal	Al 2.5 mm, painted, RAL 7030 dark grey for connector cut-outs with EMC-shielding
M3	1	Rear panel	Al 2.5 mm, painted, RAL 7030 dark grey with vent slots
M4	1	Space for drive	front, 2 U/20 HP and interior
M5	1	Partial width front panel	Al 2.5 mm, painted, RAL 7030 dark grey with vent slots
M6	1	6 U/12 HP with card guide	for 3 pluggable cards (6 U), Installation horizontal

Delivery comprises: Electrical/Electronics

Item	Qty	Description	Material/Finish
E1	1	Power supply module with connector / plug/ filter	4 A (VDE, UL)
E2	1	DC-fan	27-54 m^3/h, temperature dependent speed control (NTC) with signalling (VDE, UL, CSA)
E3	1	Fan monitoring unit	Signalling with LED/open collector
E4	1	Power supply PE 1927/23B	100 W, 5 V/8 A, +12 V/3 A, -12 V/0.8 A (VDE, UL, CSA)
E5	1	AC cable loom	Connection of power supply module – power switch – power supply
E6	1	Power switch	16 A (VDE, UL, CSA)
E7	1	LED	LED-display for +5 V, ±12 V, Fan (FAN)
E8	1	Backplane	J1, 3 Slot, IN-Board, ADC
E9	1	DC cable loom	Connection of power supply – backplane

Electrical characteristics

The systems satisfy the standard on producing interference emissions EN 50081-1 (EN 55011, VDE 0875 part 11 class B and EN 55022, VDE 0878 part 3 class B) and on interference immunity EN 50082-2.

The EMC shielding is obtained through conducting surfaces at the points of contact with EMC seals. To obtain the required front shielding, the free spaces between the board front panels have to be sealed.

Thermal management

Air is sucked from the front through vent slots. A temperature controlled DC-fan exhausts air through the rear panel.

Casing systems

Desktop version 2 U.....3.31.2
Desktop version 3 U.....3.31.4
Desktop version 4 U.....3.31.8
Tower version 4 U.....3.31.12
Portable version 3 U.....3.31.16

Subrack systems

Subrack system 4 U.....3.31.18
Subrack system 5 U.....3.31.22
Subrack system 7 U.....3.31.26
Subrack system 8 U.....3.31.36
Subrack system 9 U.....3.31.46
19” cases for subrack systems.....3.31.51

Subrack kits

Subrack kits 6 U .3.31.52
Desk-top enclosure for subrack kits ..3.31.55

Downloaded from Arrow.com.

Power supply units..... 3.10.0

Backplanes/ test adapters .. 3.20.0

Microcomputer packaging systems (MPS) 3.30.0

VMEbus 3.31.0

CompactPCI.....3.32.0

Industrial PC 3.33.0

Accessories.....3.39.0

Appendix..... 3.90.0

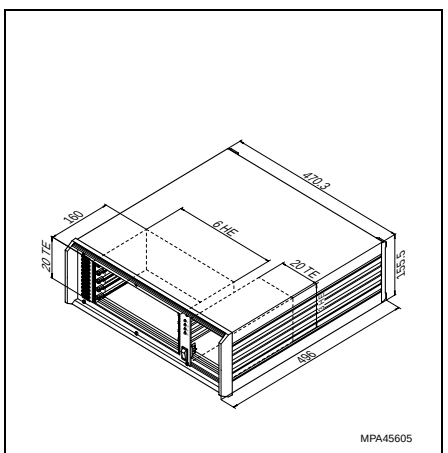
VME bus housing systems

Desktop version 3 U

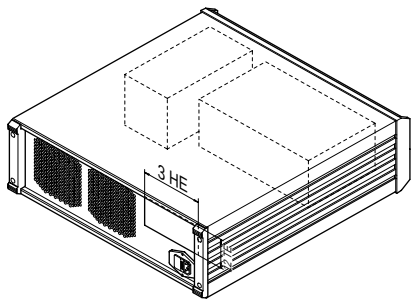
- Standard desktop version 3 U
  - for board depth 160 mm
  - Backplane J1 3 U, 5 Slot
  - Power supply 220 W
- individual configuration for desktop version 3 U
  - for board depth 220 mm or 160 mm (recessed)
  - Backplane 3 or 6 U up to 5 Slot as required
  - Power supply 220 or 300 W



100-96-005



MPA45605



MPA45606

TE = HP
HE = U

Standard desktop version 3 U

Robust 3 U desktop enclosure system (propac) with integrated ventilation

- Shielded version
- 160 mm deep cards (6 U horizontal)
- System backplane J1, 5 slot
- Drive space 3 U, 20 HP
- Forced air ventilation with two temperature-controlled DC-fans

- Power supply 220 W

CE

Delivery: Mechanical and electrical/electronic components assembled and wired complete

Input voltage V_{AC}	Order No. VME bus desktop enclosure system 3 U, J1 5 slot Power supply 220 W
230	**10835-166**
115	**10835-167**

Accessories:

For the drive installation space (M4)

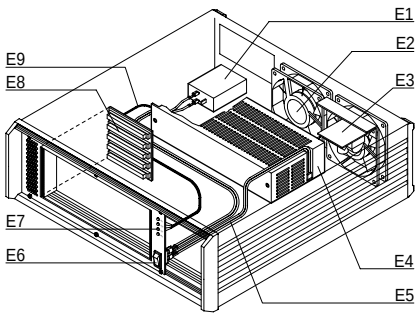
Qty	Description	Order no.
1	Partial width front panel 3 U/ 22 HP (free mounting width 20 HP	**20836-043**
1	Hard disk cassette 3 U/10 HP[1)]	**20836-045**
1	Drive unit 3 U/10 HP, Front panel cut-out 26 × 102 mm[1)]	**20836-044**
1	Lateral cover / panel on the right 3 U/2 HP	**20836-049**

[1)] cover / panel is necessary for closing the drive space on the right

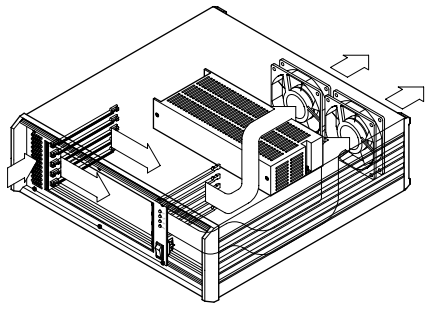
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VME bus housing systems

MPA45608



MPA45609



MPA45607

Delivery comprises: Mechanical

Item	Qty	Description	Material/Finish
M1	1	Desk-top enclosure W × H × D = 470.3 × 155.5 × 496 mm (propac)	Al, 2.5 mm, painted, RAL 7030 dark grey RAL 7035 light grey, with case feet
M2	1	Cover plate 3 U/12 HP horizontal	Al 2.5 mm, painted, RAL 7030 dark grey for connector cut-outs with EMC-shielding
M3	1	Rear panel	Al 2.5 mm, painted, RAL 7030 dark grey with vent slots
M4	1	Space for drive	3 U/20 HP
M5	1	Partial width front panel	Al 2.5 mm, painted, RAL 7030 dark grey with vent slots
M6	1	6 U/20 HP with card guides	for 5 pluggable cards (6 U), Installation horizontal

Delivery comprises: Electrical/Electronics

Item	Qty	Description	Material/Finish
E1	1	Power supply module with connector / plug/ filter combi-element	4 A (VDE, UL)
E2	2	DC-fan	85–170 m^3/h per fan, temperature dependent speed control (NTC) with signalling (VDE, UL, CSA)
E3	1	Fan monitoring unit	Signalling with LED/open collector
E4	1	Power supply PE 1937/23B	220 W, 5 V/30 A, +12 V/4 A, -12 V/4 A (VDE, UL, CSA)
E5	1	AC cable loom	Connection of power supply module – power switch – power supply
E6	1	Power switch	16 A (VDE, UL, CSA)
E7	1	LED	LED-display for +5 V, ±12 V, Fan (FAN)
E8	1	Backplane	J1, 5 Slot, IN-Board, ADC
E9	1	DC cable loom	Connection of power supply – backplane

Electrical characteristics

The systems satisfy the standard on producing interference emissions EN 50081-1 (EN 55011, VDE 0875 part 11 class B and EN 55022, VDE 0878 part 3 class B) and on interference immunity EN 50082-2.

The EMC shielding is obtained through conducting surfaces at the points of contact with EMC seal. With standard systems to obtain the required front shielding of the boards, the free spaces between the board front panels have to be sealed. With individual configurations the shielding can be obtained with an HF-hinged front panel (with 60 mm recessed installation).

Thermal management

Air is sucked from the front through vent slots. Two temperature controlled DC-fans exhaust air through the rear panel.

Casing systems

Desktop version 2 U 3.31.2
Desktop version 3 U 3.31.4
Desktop version 4 U 3.31.8
Tower version 4 U 3.31.12
Portable version 3 U 3.31.16

Subrack systems

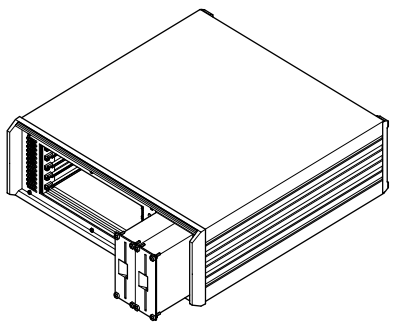
Subrack system 4 U 3.31.18
Subrack system 5 U 3.31.22
Subrack system 7 U 3.31.26
Subrack system 8 U 3.31.36
Subrack system 9 U 3.31.46
19” cases for subrack systems 3.31.51

Subrack kits

Subrack kits 6 U . 3.31.52
Desk-top enclosure for subrack kits .. 3.31.55

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VME bus housing systems



MPA45615

Individual configuration for desktop version 3 U

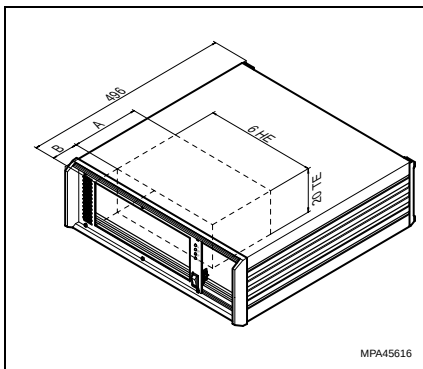
You take delivery of your individual 3 U VME bus desktop enclosure system:

- According to your specifications.
- Mounted ready for connection
- Quick delivery

Out of the following sections (1 to 5) choose each of your required components. The scope of delivery of the configured systems consists of the basic unit of the standard enclosure systems (mechanical and electronics, see previous page) with the following additional accessories. The configured system will be mounted and wired complete.

Available options:

1 Desk-top enclosure 3 U
2 Backplane
3 DC-cable loom
4 Power supply
5 Accessories



MPA45616

TE = HP
HE = U

1 Desk-top enclosure 3 U

- Case dimension

H × W × D = 155.5 × 470.3 × 496 mm

- 6 U boards
- 6 U/20 HP for 5 boards
- Drive space 3 U/20 HP

Selection criteria:

- A – Board depth
- B – deepened installation
- Line voltage

A mm	W mm	Line voltage	Order no.
160	0	115 V	**20836-015**
		230 V	**20836-016**
	60[1)]	115 V	**20836-017**
		230 V	**20836-018**
220	0	115 V	**20836-019**
		230 V	**20836-020**

[1)] Suitable for HF-hinged front panel

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MPA45617

2 Backplane

The ordering number of the backplane can be found in Chapter Backplanes/Test adapters, VME bus.

The backplane (Item 1) is delivered mounted if you add the suffix / 05 after the order No.

Board mounting height	Suitable backplanes		
	Monolithic (6 U)	J1 + J2 (3 U)	
Slot	J1/J2 Slot	J1/J2 Slot	J2 Slot
up to 5	3 – 5	3 – 5	2 – 5

3 DC-cable loom

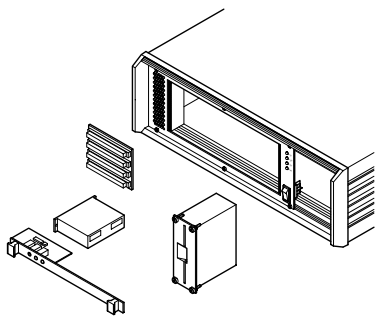
DC-cable loom (Item 2) connects the power supply with the backplane.

No. of sockets	Order No. for DC-cable loom			
	220 W power supply		300 W power supply	
	J1/J2 (6 U) Monolithic	J1 (J2)	J1/J2 (6 U) Monolithic	J1/J2
2 – 5	**23204-068/05**	**23204-066/05**	**23204-072/05**	**23204-070/05**

4 Power supply

Power supply (Item 3) with AC-cable loom

Output (power), Type	Order no.
220 W, PE 1937/23 B	**20835-619/05**
300 W, PE 1947/23 B	**20835-618/05**



MPA45618

5 Accessories

For 60 mm recessed installation

Qty	Description	Order no.
1	Hard disk cassette 3 U/11 HP[1)]	**20835-698**
1	Drive unit 3 U/11 HP,Front panel cut-out 26 × 102 mm[1)]	**20835-772**
1	HF-hinged front panel 3 U/80 HP[1) 2)]	**20836-021**

[1)] only suitable for 60 mm recessed installation

[2)] for EMC-shielding of the front

For further accessories see Chapter “Accessories”

Ordering example

Available Items	Description	Order no.
1	Desk-top enclosure system 3 U, 160 mm boards, 60 mm recessed, 230 V	**20836-018 A1xxx[0)]**
2	J1 backplane 5 Slot	**23000-005/05**
	J2 backplane 3 Slot	**23000-203/05**
3	DC-cable loom for 5 slot J1 backplane	**23204-066/05**
4	Power supply 220 W	**20835-619/05**
5	Accessories: Drive unit, ventilation cover, equipment cables, etc.	

[0)] xxx = individual number is provided by Schroff

Casing systems
Desktop version 2 U 3.31.2
Desktop version 3 U 3.31.4
Desktop version 4 U 3.31.8
Tower version 4 U 3.31.12
Portable version 3 U 3.31.16

Subrack systems
Subrack system 4 U 3.31.18
Subrack system 5 U 3.31.22
Subrack system 7 U 3.31.26
Subrack system 8 U 3.31.36
Subrack system 9 U 3.31.46
19” cases for subrack systems 3.31.51

Subrack kits
Subrack kits 6 U . 3.31.52
Desk-top enclosure for subrack kits .. 3.31.55

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Power supply units..... 3.10.0

Backplanes/ test adapters .. 3.20.0

Microcomputer packaging systems (MPS) 3.30.0

VMEbus 3.31.0

CompactPCI.....3.32.0

Industrial PC 3.33.0

Accessories.....3.39.0

Appendix..... 3.90.0

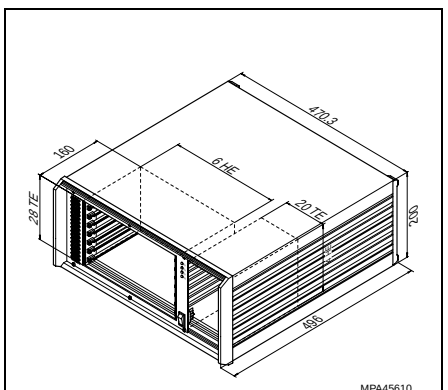
VME bus housing systems

Desktop version 4 U

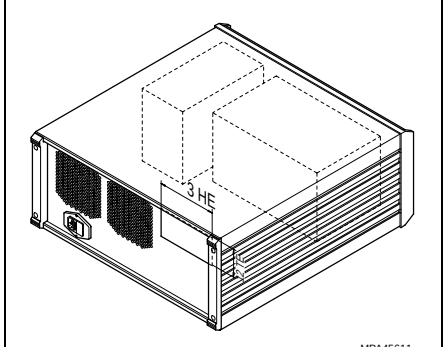
- Standard desktop version 4 U
  - for board depth 160 mm
  - Backplane J1 3 U, 7 Slot
  - Power supply 300 W
- individual configuration for desktop version 4 U
  - for board depth 220 mm or 160 mm (recessed)
  - Backplane 3 or 6 U up to 7 Slot as required
  - Power supply 220 or 300 W



058-96-008



MPA45610



MPA45611

TE = HP
HE = U

Standard desktop version 4 U

Robust 4 U desk-top enclosure system (propac) with integrated ventilation

- Shielded version
- 160 mm deep cards (6 U horizontal)
- System backplane J1, 7 slot
- Drive space 4 U, 20 HP
- Forced air ventilation with two temperature-controlled DC-fans
- Power supply 300 W

CE

Delivery: Mechanical and electrical/electronic components assembled and wired complete

Input voltage V_{AC}	Order No. VME bus desk-top enclosure system 4 U, J1 7 slot Power supply 300 W
230	**10835-168**
115	**10835-169**

Accessories:

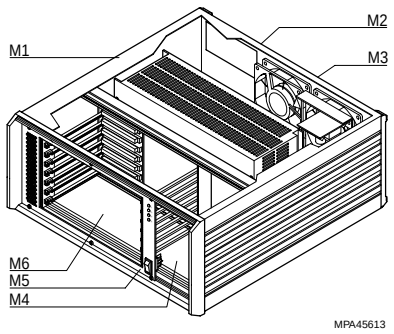
For the drive installation space (M4)

Qty	Description	Order no.
1	Partial width front panel 4 U/22 HP (free mounting height 20 HP)	**20836-046**
1	Hard disk cassette 4 U/10 HP[1)]	**20836-048**
1	Drive unit 4 U/10 HP, Front panel cut-out 26 × 102 mm[1)]	**20836-047**
1	Cover / panel on the right 4 U/2 HP	**20836-050**

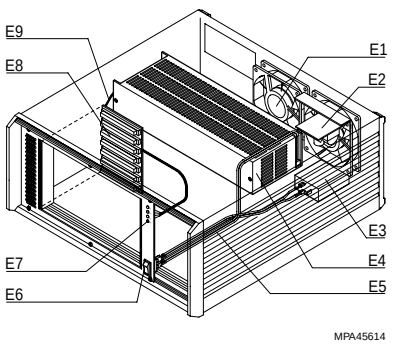
[1)] Cover / panel is necessary for closing the drive space on the right

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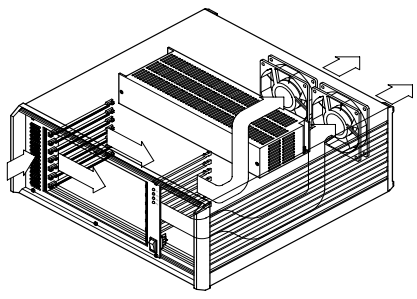
VME bus housing systems



MPA45613



MPA45614


MPA45612

Delivery comprises: Mechanical

Item	Qty	Description	Material/Finish
M1	1	Desk-top enclosure W × H × D = 470.3 × 200 × 496 mm (propac)	Al, 2.5 mm, painted, RAL 7030 dark grey RAL 7035 light grey, with feet
M2	1	Cover plate 3 U/12 HP horizontal	Al 2.5 mm, painted, RAL 7030 dark grey for connector cut-outs with EMC-shielding
M3	1	Rear panel	Al 2.5 mm, painted, RAL 7030 dark grey with vent slots
M4	1	Space for drive	4 U/20 HP
M5	1	Partial width front panel	Al 2.5 mm, painted, RAL 7030 dark grey with vent slots
M6	1	6 U/28 HP with card guides	for 7 pluggable cards (6 U), Installation horizontal

Delivery comprises: Electrical/Electronics

Item	Qty	Description	Material/Finish
E1	2	DC-fan	85–170 m^3/h per fan, temperature dependent speed control (NTC) with signalling (VDE, UL, CSA)
E2	1	Fan monitoring unit	Signalling with LED/open collector
E3	1	Power supply module with connector / plug/ filter combi-element	4 A (VDE, UL)
E4	1	Power supply PE 1947/23B	300 W, 5 V/36 A, +12 V/ 8 A, -12 V/4 A (VDE, UL, CSA)
E5	1	AC cable loom	Connection of power supply module – power switch – power supply
E6	1	Power switch	16 A (VDE, UL, CSA)
E7	1	LED	LED-display for +5 V, ±12 V, Fan (FAN)
E8	1	Backplane	J1, 7 Slot, IN-Board, ADC
E9	1	DC cable loom	Connection of power supply – backplane

Electrical characteristics

The systems satisfy the standard on producing interference emissions EN 50081-1 (EN 55011, VDE 0875 part 11 class B and EN 55022, VDE 0878 part 3 class B) and on interference immunity EN 50082-2.

The EMC shielding is obtained through conducting surfaces at the points of contact with EMC seal. With standard systems to obtain the required front shielding of the boards, the free spaces between the board front panels have to be sealed. With individual configurations the shielding can be obtained with an HF-hinged front panel (with 60 mm recessed installation).

Thermal management

Air is sucked from the front through vent slots. Two temperature controlled DC-fans exhaust air through the rear panel.

Casing systems

Desktop version 2 U 3.31.2
Desktop version 3 U 3.31.4
Desktop version 4 U 3.31.8
Tower version 4 U 3.31.12
Portable version 3 U 3.31.16

Subrack systems

Subrack system 4 U 3.31.18
Subrack system 5 U 3.31.22
Subrack system 7 U 3.31.26
Subrack system 8 U 3.31.36
Subrack system 9 U 3.31.46
19” cases for subrack systems 3.31.51

Subrack kits

Subrack kits 6 U . 3.31.52
Desk-top enclosure for subrack kits .. 3.31.55

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Power supply units..... 3.10.0

Backplanes/ test adapters .. 3.20.0

Microcomputer packaging systems (MPS) 3.30.0

VMEbus 3.31.0

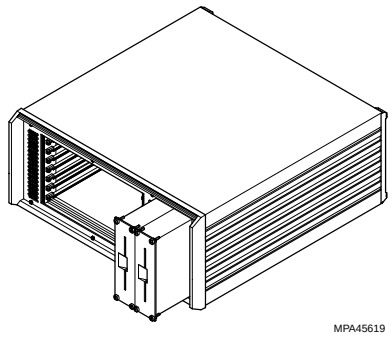
CompactPCI.....3.32.0

Industrial PC 3.33.0

Accessories.....3.39.0

Appendix..... 3.90.0

VME bus housing systems



MPA45619

Individual configuration for desktop version 4 U

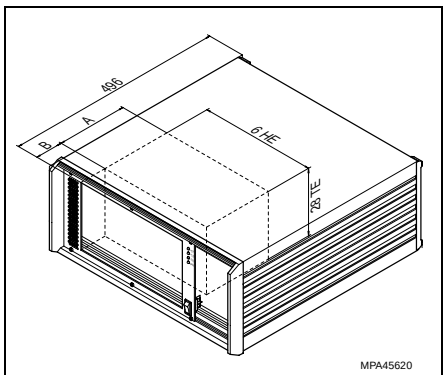
You take delivery of your individual 4 U VME bus desktop enclosure system:

- According to your specifications.
- Mounted ready for connection
- Quick delivery

Out of the following sections (1 to 5) choose each of your required components. The scope of delivery of the configured systems consists of the basic unit of the standard enclosure systems (mechanical and electronics) with the following accessories. The configured system will be mounted and cabled complete.

Available options:

1. Desk-top enclosure 4 U
2. Backplane
3. DC-cable loom
4. Power supply
5. Accessories



MPA45620

TE = HP
HE = U

1 Desk-top enclosure 4 U

Case dimension
H × W × D = 4 U × 470.3 mm × 496 mm

- 6 U/28 HP
- Drive space 4 U, 20 HP

Selection criteria:

- A – Board depth
- B – deepened installation
- Line voltage

A mm	W mm	Line voltage	Order no.
160	0	115 V	**20836-022**
		230 V	**20836-023**
	60[1)]	115 V	**20836-024**
		230 V	**20836-025**
220	0	115 V	**20836-026**
		230 V	**20836-027**

[1)] Suitable for HF-hinged front panel

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2 Backplane

The ordering number of the backplane can be found in Chapter Backplanes/Test adapters, VME bus.

The backplane (Item 1) is delivered mounted if you add the suffix / 05 after the order No.

Board mounting height	Suitable backplanes		
	Monolithic (6 U)	J1 + J2 (3 U)	
Slot	J1/J2 Slot	J1/J2 Slot	J2 Slot
up to 7	3 – 7	3 – 7	2 – 7

3 DC-cable loom

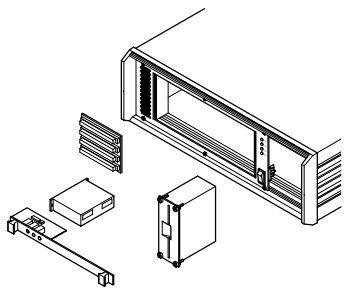
DC-cable loom (Item 2) connects the power supply with the backplane.

No. of sockets	Order No. for DC-cable loom			
	220 W Power supply		300 W power supply	
	J1/J2 (6 U) Monolithic	J1 (J2)	J1/J2 (6 U) Monolithic	J1 (J2)
3 – 5	**23204-068/05**	**23204-066/05**	**23204-072/05**	**23204-070/05**
7	**23204-068/05**	**23204-067/05**	**23204-072/05**	**23204-071/05**

4 Power supply

Power supply (Item 3) with AC-cable loom

Output (power), Type	Order no.
220 W, PE 1937/23B	**20835-619/05**
300 W, PE 1947/23 B	**20835-618/05**



5 Accessories

For 60 mm recessed installation

Qty	Description	Order no.
1	Hard disk cassette 4 U/11 HP[1)]	**20835-699**
1	Drive unit 4 U/11 HP,Front panel cut-out 26 × 102 mm[1)]	**20835-773**
1	HF-hinged front panel 4 U/80 HP[1) 2)]	**20836-028**

[1)] only suitable for 60 mm recessed installation

[2)] for EMC-shielding of the front

For further accessories see Chapter “Accessories”

Ordering example

Available Items	Description	Order no.
1	Desk-top enclosure system 4 U, 160 mm boards, 60 mm recessed, 230 V	**20836-025 A1xxx[0)]**
2	J1 backplane 7 Slot	**23000-007/05**
	J2 backplane 5 Slot	**23000-205/05**
3	DC-cable loom for 7 slot J1 backplane	**23204-070/05**
4	Power supply 300 W	**20835-618/05**
5	Accessories: Drive unit, ventilation cover, equipment cables, etc.	

[0)] xxx = individual number is provided by Schroff

Casing systems
Desktop version 2 U 3.31.2
Desktop version 3 U 3.31.4
Desktop version 4 U 3.31.8
Tower version 4 U 3.31.12
Portable version 3 U 3.31.16

Subrack systems
Subrack system 4 U 3.31.18
Subrack system 5 U 3.31.22
Subrack system 7 U 3.31.26
Subrack system 8 U 3.31.36
Subrack system 9 U 3.31.46
19” cases for subrack systems 3.31.51

Subrack kits
Subrack kits 6 U . 3.31.52
Desk-top enclosure for subrack kits .. 3.31.55

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Power supply units..... 3.10.0

Backplanes/ test adapters .. 3.20.0

Microcomputer packaging systems (MPS) 3.30.0

VMEbus 3.31.0

CompactPCI.....3.32.0

Industrial PC 3.33.0

Accessories.....3.39.0

Appendix..... 3.90.0

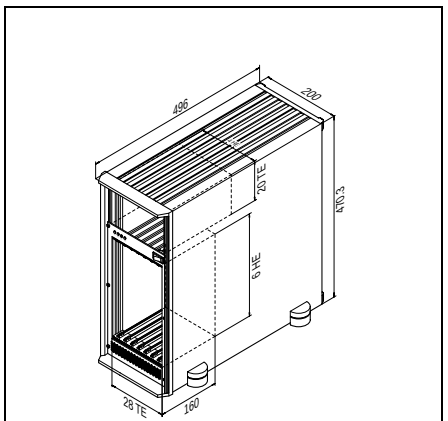
VME bus housing systems

Tower version 4 U

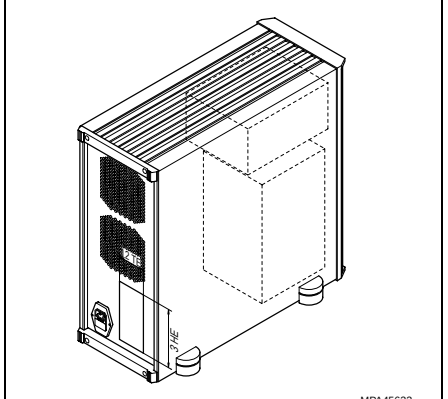
- Standard Tower version 4 U
  - for board depth 160 mm
  - Backplane J1 3 U, 7 Slot
  - Power supply 300 W
- individual configuration for tower version 4 U
  - for board depth 220 mm or 160 mm (recessed)
  - Backplane 3 or 6 U up to 7 Slot as required
  - Power supply 220 or 300 W



058-96-009



MPA45632



MPA45633

TE = HP
HE = U

Standard Tower version 4 U

Robust 4 U tower housing system (propac) with integrated ventilation

- Shielded version
- 160 mm deep cards (6 U horizontal)
- System backplane J1, 7 slot
- Drive space 4 U, 20 HP
- Forced air ventilation with two temperature-controlled DC-fans
- Power supply 300 W

CE

Delivery: Mechanical and electrical/electronic components assembled and wired complete

Input voltage V_{AC}	Order No. VME bus desk-top enclosure system 4 U, J1 7 slot Power supply 300 W
230	**10835-164**
115	**10835-165**

Accessories:

For the drive installation space (Item M6)

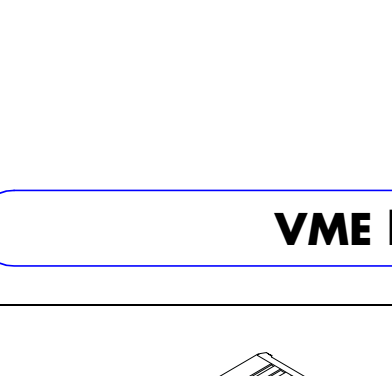
Qty	Description	Order no.
1	Partial width front panel 4 U/22 HP (free mounting height 20 HP)	**20836-046**
1	Hard disk cassette 4 U/10 HP[1)]	**20836-048**
1	Drive unit 4 U/10 HP, Front panel cut-out 26 × 102 mm[1)]	**20836-047**
1	Lateral cover / panel on the right 4 U/2 HP	**20836-050**

[1)] Lateral cover / panel is necessary for closing the drive space on the top

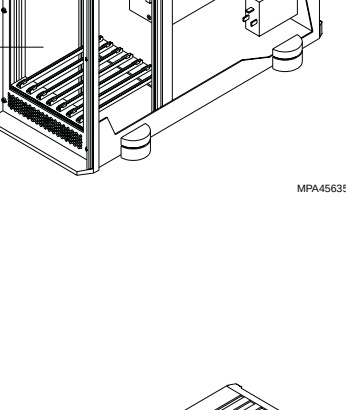
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VME bus housing systems

MPA45635



MPA45635



MPA45634

Delivery comprises: Mechanical

Item	Qty	Description	Material/Finish
M1	1	Tower housing W × H × D = 200 × 470.3 × 496 mm (propac)	Al, 2.5 mm, painted, RAL 7030 dark grey RAL 7035 light grey, with feet
M2	1	Rear panel	Al 2.5 mm, painted, RAL 7030 dark grey with vent slots
M3	1	Cover plate 3 U/12 HP	Al 2.5 mm, painted, RAL 7030 dark grey for connector cut-outs with EMC-shielding
M4	1	6 U/28 HP with card guides	for 7 pluggable cards (6 U), Installation vertical
M5	1	Partial width front panel	Al 2.5 mm, painted, RAL 7030 dark grey with vent slots
M6	1	Space for drive	4 U/20 HP

Delivery comprises: Electrical/Electronics

Item	Qty	Description	Material/Finish
E1	1	DC cable loom	Connection of power supply – backplane
E2	2	DC-fan	85–170 m^3/h per fan, temperature dependent speed control (NTC) with signalling (VDE, UL, CSA)
E3	1	Fan monitoring unit	Signalling with LED/open collector
E4	1	Power supply PE 1947/23B	300 W, 5 V/36 A, +12 V/ 8 A, -12 V/4 A (VDE, UL, CSA)
E5	1	Power supply module with connector / plug/ filter combi-element	4 A (VDE, UL)
E6	1	AC cable loom	Connection of power supply module – power switch – power supply
E7	1	Backplane	J1, 7 Slot, IN-Board, ADC
E8	1	Power switch	16 A (VDE, UL, CSA)
E9	1	LED	LED-display for +5 V, ±12 V, Fan (FAN)

Electrical characteristics

The systems satisfy the standard on producing interference emissions EN 50081-1 (EN 55011, VDE 0875 part 11 class B and EN 55022, VDE 878 part 3 class B) and on interference immunity EN 50082-2.

The EMC shielding is obtained through conducting surfaces at the points of contact with EMC seal. With standard systems to obtain the required front shielding of the boards, the free spaces between the board front panels have to be sealed. With individual configurations the shielding can be obtained with an HF-hinged front panel (with 60 mm recessed installation).

Thermal management

Air is sucked from the front through vent slots. Two temperature controlled DC-fans exhaust air through the rear panel.

Casing systems

Desktop version 2 U 3.31.2
Desktop version 3 U 3.31.4
Desktop version 4 U 3.31.8
Tower version 4 U 3.31.12
Portable version 3 U 3.31.16

Subrack systems

Subrack system 4 U 3.31.18
Subrack system 5 U 3.31.22
Subrack system 7 U 3.31.26
Subrack system 8 U 3.31.36
Subrack system 9 U 3.31.46
19” cases for subrack systems 3.31.51

Subrack kits

Subrack kits 6 U . 3.31.52
Desk-top enclosure for subrack kits .. 3.31.55

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Power supply units..... 3.10.0

Backplanes/ test adapters .. 3.20.0

Microcomputer packaging systems (MPS) 3.30.0

VMEbus 3.31.0

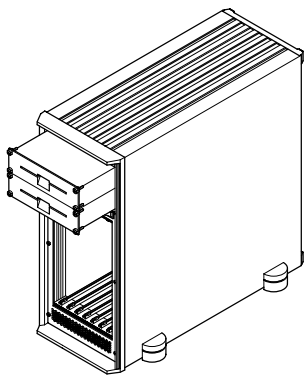
CompactPCI.....3.32.0

Industrial PC 3.33.0

Accessories.....3.39.0

Appendix..... 3.90.0

VME bus housing systems



MPA45637

Individual configuration for tower version 4 U

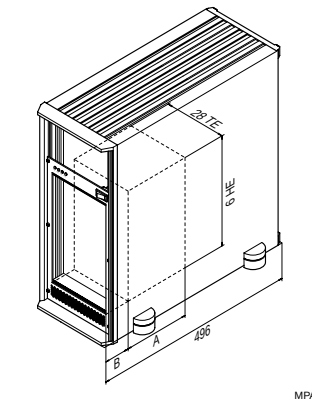
You take delivery of your individual 4 U VME bus tower housing system:

- According to your specifications.
- Mounted ready for connection
- Quick delivery

Out of the following sections (1 to 5) choose each of your required components. The scope of delivery of the configured systems consists of the basic unit of the standard enclosure systems (mechanical and electronics) with the following accessories. The configured system will be mounted and cabled complete.

Selection criteria:

1 Tower housing 4 U
2 Backplane
3 DC-cable loom
4 Power supply
5 Accessories



MPA45638

TE = HP
HE = U

1 Tower housing 4 U

Case dimension
W × H × D = 470.3 × 200 × 496 mm

- 6 U/28 HP
- Drive space 4 U, 20 HP

Selection criteria:

- A – Board depth
- B – deepened installation
- Line voltage

A mm	W mm	Line voltage	Order no.
160	0	115 V	**20836-029**
		230 V	**20836-030**
	60[1)]	115 V	**20836-033**
		230 V	**20836-034**
220	0	115 V	**20836-035**
		230 V	**20836-036**

[1)] Suitable for HF-hinged front panel

Downloaded from Arrow.com.

2 Backplane

The ordering number of the backplane can be found in Chapter Backplanes/Test adapters, VME bus.

The backplane (Item 1) is delivered mounted if you add the suffix / 05 after the order No.

Board mounting height	Suitable backplanes		
	Monolithic (6 U)	J1 + J2 (3 U)	
Slot	J1/J2 Slot	J1/J2 Slot	J2 Slot
up to 7	3 – 7	3 – 7	2 – 7

3 DC-cable loom

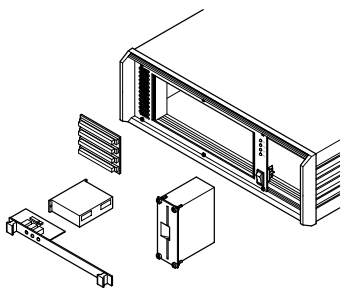
DC-cable loom (Item 2) connects the power supply with the backplane.

No. of sockets	Order No. for DC-cable loom			
	220 W Power supply		300 W power supply	
	J1/J2 (6 U) Monolithic	J1 (J2)	J1/J2 (6 U) Monolithic	J1 (J2)
3 – 5	**23204-068/05**	**23204-066/05**	**23204-072/05**	**23204-070/05**
7	**23204-068/05**	**23204-067/05**	**23204-072/05**	**23204-071/05**

4 Power supply

Power supply (Item 3) with AC-cable loom

Output (power), Type	Order no.
220 W, PE 1937/23B	**20835-619/05**
300 W, PE 1947/23 B	**20835-618/05**



5 Accessories

For 60 mm recessed installation

Qty	Description	Order no.
1	Hard disk cassette 4 U/11 HP[1)]	**20835-699**
1	Drive unit 4 U/11 HP,Front panel cut-out 26 × 102 mm[1)]	**20835-773**
1	HF-hinged front panel 4 U/80 HP[1) 2)]	**20836-028**

[1)] only suitable for 60 mm recessed installation

[2)] for EMC-shielding of the front

For further accessories see Chapter “Accessories”

Ordering example

Available Items	Description	Order no.
1	Tower housing system 4 U, 160 mm boards, 60 mm recessed, 230 V	**20836-034 A1xxx[0)]**
2	J1 backplane 7 Slot	**23000-007/05**
	J2 backplane 5 Slot	**23000-205/05**
3	DC-cable loom for 7 slot J1 backplane	**23204-070/05**
4	Power supply 300 W	**20835-618/05**
5	Accessories: Drive unit, etc.	

[0)] xxx = individual number is provided by Schroff

Casing systems
Desktop version 2 U 3.31.2
Desktop version 3 U 3.31.4
Desktop version 4 U 3.31.8
Tower version 4 U 3.31.12
Portable version 3 U 3.31.16

Subrack systems
Subrack system 4 U 3.31.18
Subrack system 5 U 3.31.22
Subrack system 7 U 3.31.26
Subrack system 8 U 3.31.36
Subrack system 9 U 3.31.46
19” cases for subrack systems 3.31.51

Subrack kits
Subrack kits 6 U . 3.31.52
Desk-top enclosure for subrack kits .. 3.31.55

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Power supply units..... 3.10.0

Backplanes/ test adapters .. 3.20.0

Microcomputer packaging systems (MPS) 3.30.0

VMEbus 3.31.0

CompactPCI.....3.32.0

Industrial PC 3.33.0

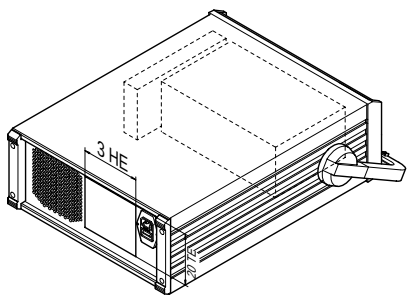
Accessories.....3.39.0

Appendix..... 3.90.0

VME bus housing systems

100-96-007

MPA45627



MPA45628

TE = HP
HE = U

Portable version 3 U

Robust, portable desk-top enclosure system (propac) with carry-handles and integrated ventilation

- Height 3 U, width 63 HP
- Shielded version
- 160 mm deep cards (6 U horizontal)
- System bus card J1, 5 slot
- Drive space 3 U/6 HP
- Forced air ventilation with a DC-fan
- Power supply 220 W

CE

Delivery: Mechanical and electrical/electronic components assembled and wired complete

Input voltage V_{AC}	Order No. Portable VME bus enclosure system 3 U, 63 HP J1 5 Slot, Power supply 220 W
230	**10835-157**
115	**10835-158**

Accessories:

For the drive installation space (M4)

Qty	Description	Order no.
1	Partial width front panel 3 U/ 8 HP (free mounting height 6 HP	**20836-040**
1	Hard disk cassette 3 U/6 HP[1)]	**20836-042**
1	Drive unit 3 U/6 HP, Front panel cut-out 20 × 102 mm[1)]	**20836-041**
1	Cover / panel on the right 3 U/2 HP	**20836-049**

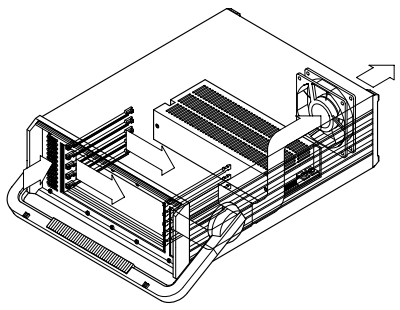
[1)] Cover / panel is necessary for closing the drive space on the right

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VME bus housing systems

MPA45630

MPA45631



MPA45629

Delivery comprises: Mechanical

Item	Qty	Description	Material/Finish
M1	1	Desk-top enclosure W × H × D = 364 × 155.5 × 496 mm (propac)	Al, 2.5 mm, painted RAL 7030 dark grey, RAL 7035 light grey, with feet and tip-up carrying handle
M2	1	Cover plate 3 U/20 HP horizontal	Al 2.5 mm, painted, RAL 7030 dark grey for connector cut-outs with EMC-shielding
M3	1	Rear panel	Al 2.5 mm, painted, RAL 7030 dark grey with vent slots
M4	1	Space for drive	Front 3 U/6 HP
M5	1	Partial width front panel	Al 2.5 mm, painted, RAL 7030 dark grey with vent slots
M6	1	Card holder 6 U/20 HP with guide block	for 5 pluggable cards (6 U), Installation horizontal

Delivery comprises: Electrical/Electronics

Item	Qty	Description	Material/Finish
E1	1	Power supply module with connector / plug, power switch and filter	4 A (VDE, UL)
E2	1	DC-fan	140 m^3/h (VDE, UL, CSA)
E3	1	Power supply PE 1937/23B	220 W, 5 V/30 A, +12 V/4 A, -12 V/4 A (VDE, UL, CSA)
E4	1	DC cable loom	Connection of power supply – backplane
E5	1	Backplane	J1, 5 Slot, IN-Board, ADC
E6	1	AC cable loom	Connection of power supply module – power switch – power supply

Electrical characteristics

The systems satisfy the standard on producing interference emissions EN 50081-1 (EN 55011, VDE 0875 part 11 class B and EN 55022, VDE 0878 part 3 class B) and on interference immunity EN 50082-2.

The EMC shielding is obtained through conducting surfaces at the points of contact with EMC seal. To obtain the required front shielding, the free spaces between the board front panels have to be sealed.

Thermal management

Air is sucked from the front through vent slots A DC-fan exhausts air through the rear panel.

Casing systems

Desktop version 2 U 3.31.2
Desktop version 3 U 3.31.4
Desktop version 4 U 3.31.8
Tower version 4 U 3.31.12
Portable version 3 U 3.31.16

Subrack systems

Subrack system 4 U 3.31.18
Subrack system 5 U 3.31.22
Subrack system 7 U 3.31.26
Subrack system 8 U 3.31.36
Subrack system 9 U 3.31.46
19” cases for subrack systems 3.31.51

Subrack kits

Subrack kits 6 U . 3.31.52
Desk-top enclosure for subrack kits .. 3.31.55

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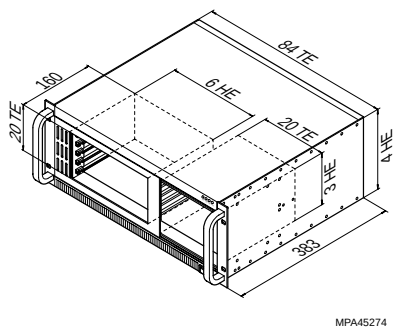
VME bus subrack systems

Subrack system 4 U

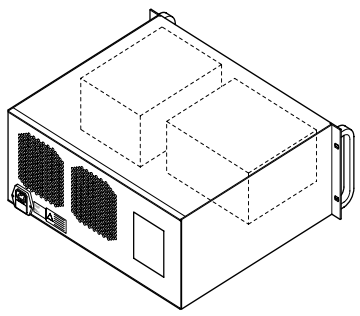
- Standard sub rack system 4 U
  - for board depth 160 mm
  - Backplane J1 3 U, 5 Slot
  - Power supply 220 W
- individual configuration for sub rack system 4 U
  - for board depth 220 mm or 160 mm (recessed)
  - Backplane 3 or 6 U up to 5 Slot as required
  - Power supply 220 or 300 W



100-00-118



MPA45274



MPA45275

TE = HP
HE = U

Standard sub rack system 4 U

Subrack with integrated ventilation for installation in 19”-cases or 19”-cabinets

- Ventilation from the front to the rear
- Shielded version
- 160 mm deep cards (6 U)
- System backplane J1, 5 slot
- Space for drive 3 U/20 HP horizontal
- Forced air ventilation with two DC-fans, temperature dependent speed control
- Power supply 220 W
- Cases see 19” cases for sub rack systems

CE

Delivery: Mechanical and electrical/electronic components assembled and wired complete

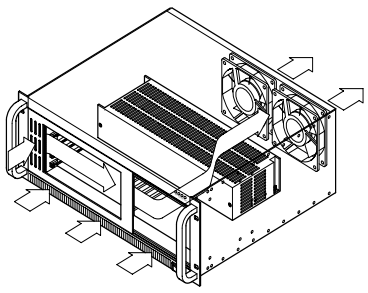
Input voltage V_{AC}	Order No. VME bus sub rack system 4 U/84 HP/383 mm deep, J1 5 Slot, Power supply 220 W
230	**20835-607**
115	**20835-608**

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VME bus subrack systems

MPA45276

MPA45277



MPA45283

Delivery comprises: Mechanical

Item	Qty	Description	Material/Finish
M1	1	Plug-in unit (side panels, horizontal rails, cover plate and base plate, air baffle, etc.)	Al, painted, RAL 7030 dark grey, chromated, Contact points paint-free
M2	1	Cover plate 3 U/24 HP horizontal	Al 2.5 mm, painted, RAL 7030 dark grey for connector cut-outs with EMC-shielding
M3	1	6 U/20 HP	For 5 pluggable boards, with EMC-shielding
M4	1	Front handle	Aluminium extrusion, painted, RAL 7030 dark grey, Load-carrying capacity 30 kg

Delivery comprises: Electrical/Electronics

Item	Qty	Description	Material/Finish
E1	2	DC-fan	85–170 m^3/h per fan, temperature independent speed control with NTC (VDE, UL, CSA)
E2	1	Fan monitoring unit	Signalling (LED and open collector)
E3	1	Power input plug, fuse and A/C line filter	10 A (VDE, UL, CSA)
E4	1	AC cable loom	
E5	1	Power switch	16 A (VDE, UL, CSA)
E6		LED-Display	for +5 V, ±12 V, Fan (FAN)
E7	1	Backplane	J1, 5 Slot, IN-Board, ADC
E8		DC cable loom	
E9	1	Power supply PE 1937/23B	220 W, 5 V/30 A, +12 V/4 A, -12 V/4 A (VDE, UL, CSA)

Electrical characteristics

The systems satisfy the standard on producing interference emissions EN 50081-1 (EN 55011, VDE 0875 part 11 class B and EN 55022, VDE 0878 part 3 class B) and on interference immunity EN 50082-2.

The EMC shielding is obtained through conducting surfaces at the points of contact with EMC seal. With standard systems to obtain the required front shielding of the boards, the free spaces between the board front panels have to be sealed.
With an individually configured system with 60 mm recessed installation an EMC front panel can be used for this.

Thermal management

Air is fed in through openings on the front.
Two temperature controlled DC-fans exhaust air through the rear panel.

Casing systems

Desktop version 2 U 3.31.2
Desktop version 3 U 3.31.4
Desktop version 4 U 3.31.8
Tower version 4 U 3.31.12
Portable version 3 U 3.31.16

Subrack systems

Subrack system 4 U 3.31.18
Subrack system 5 U 3.31.22
Subrack system 7 U 3.31.26
Subrack system 8 U 3.31.36
Subrack system 9 U 3.31.46
19” cases for subrack systems 3.31.51

Subrack kits

Subrack kits 6 U . 3.31.52
Desk-top enclosure for subrack kits .. 3.31.55

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Power supply units..... 3.10.0

Backplanes/ test adapters .. 3.20.0

Microcomputer packaging systems (MPS) 3.30.0

VMEbus 3.31.0

CompactPCI.....3.32.0

Industrial PC 3.33.0

Accessories.....3.39.0

Appendix..... 3.90.0

VME bus subrack systems

MPA45278

Individual configuration for subrack system 4 U

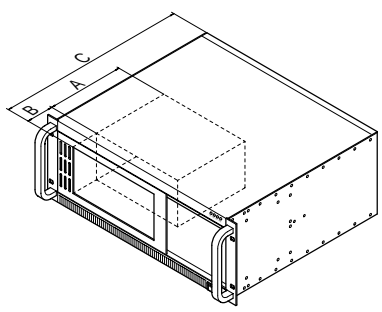
You take delivery of your individual VME bus subrack system:

- According to your specifications.
- Mounted ready for connection
- Quick delivery

Out of the following sections (1 to 6) choose each of your required components. The scope of delivery of the configured systems consists of the basic unit of the standard enclosure systems (mechanical and electronics, see previous page) with the following accessories. The configured system will be mounted and wired complete.

Available options:

1 Subrack 4 U
2 Rear panel extension
3 Backplane
4 DC-cable loom
5 Power supply
6 Accessories



MPA45279

1 Bottom subrack 4 U

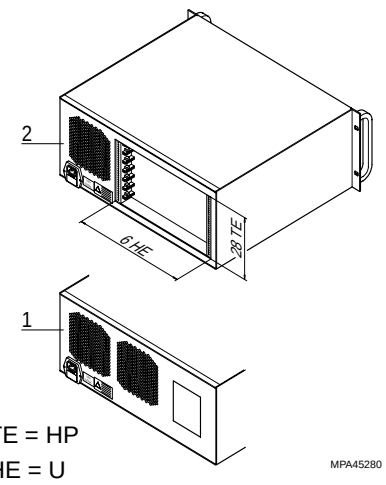
- 6 U/20 HP
- Drive space 4 U, 20 HP

Selection criteria:

- A – Board depth
- B – deepened installation
- C – Subrack depth
- Line voltage

A mm	W mm	C mm	Line voltage	Order no.
160	0	383	115 V	**20835-948**
			230 V	**20835-949**
		483	115 V	**20835-764**
			230 V	**20835-762**
	60[1)]	483	115 V	**20835-768**
			230 V	**20835-766**
220	0	483	115 V	**20835-950**
			230 V	**20835-951**

[1)] Suitable for HF-hinged front panel



MPA45280

2 Rear panel

Selection criteria for the rear panel

- With two DC-fans and cover plate (3 U/24 HP horizontal) for connector cut-outs
- Only for subrack depth of C = 483 mm, 160 mm board depth, a DC-fan and card holder for 1 to 7 I/O-modules.

Item	Rear panel extension	Order no.
1	Two DC-fans and cover plate (3 U/24 HP horizontal) for connector cut-outs	**20835-741/05**
2	Only for subrack depth of C = 483 mm, 160 mm board depth, a DC-fan and card holder for 1 to 7 I/O-modules 220 W	**20835-743/05**

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3 Backplane

The ordering number of the backplane can be found in Chapter Backplanes/Test adapters, VME bus.

The backplane (Item 1) is delivered mounted if you add the suffix / 05 after the order No.

Board mounting height	Suitable backplanes		
	Monolithic (6 U)	J1 + J2 (3 U)	
Slot	J1/J2 Slot	J1/J2 Slot	J2 Slot
5	3 – 5	3 – 5	2 – 5

4 DC-cable loom

DC-cable loom (Item 2) connects the power supply with the backplane.

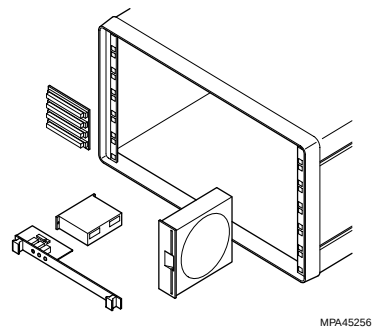
No. of sockets	Order No. for cable loom for			
	220 W Power supply		300 W Power supply[1)]	
	J1/J2 (6 U) Monolithic	J1 (J2)	J1/J2 (6 U) Monolithic	J1 (J2)
3 – 5	**23204-068/05**	**23204-066/05**	**23204-072/05**	**23204-070/05**

[1)] Power limit where the rear is extended with a fan

5 Power supply

With 383 mm subrack systems the power supply (Item 3) is turned by 90°.

Output (power), Type	Order no.
220 W, PE 1937/23B	**20835-619/05**
300 W, PE 1947/23B (applicable only to 483 mm deep subrack systems)	**20835-618/05**



6 Accessories

For 60 mm recessed installation

Qty	Description	Order no.
1	Hard disk drive unit for 60 mm recessed installation, 3 U/11 HP	**20835-698**
1	Drive unit for 60 mm recessed installation 3 U/11 HP, front panel cut-out 26 × 102 mm	**20835-772**
1	HF-Hinged front panel 3 U/84 HP (only with 60 mm recessed board installation)	**20835-770**

For further accessories see Chapter “Accessories”

Ordering example

Available Items	Description	Order no.
1	Subrack 4 U, 160 mm boards, 60 mm recessed, 230 V	**20835-766 A1xxx[0)]**
2	Rear extension for 1-7 I/O-Transition-Modules	**20835-743/05**
3	J1 Backplane, 5 Slot, IN-Board	**23000-035/05**
	J2 backplane 3 Slot	**23000-203/05**
4	DC-cable loom for 5 slot J1 backplane	**23204-070/05**
5	Power supply 300 W	**20835-618/05**
6	Accessories: Case, Drive unit, etc.	

[0)] xxx = individual number is provided by Schroff

Casing systems
Desktop version 2 U 3.31.2
Desktop version 3 U 3.31.4
Desktop version 4 U 3.31.8
Tower version 4 U 3.31.12
Portable version 3 U 3.31.16

Subrack systems
Subrack system 4 U 3.31.18
Subrack system 5 U 3.31.22
Subrack system 7 U 3.31.26
Subrack system 8 U 3.31.36
Subrack system 9 U 3.31.46
19” cases for subrack systems 3.31.51

Subrack kits
Subrack kits 6 U . 3.31.52
Desk-top enclosure for subrack kits .. 3.31.55

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Power supply units..... 3.10.0

Backplanes/ test adapters .. 3.20.0

Microcomputer packaging systems (MPS) 3.30.0

VMEbus 3.31.0

CompactPCI.....3.32.0

Industrial PC 3.33.0

Accessories.....3.39.0

Appendix..... 3.90.0

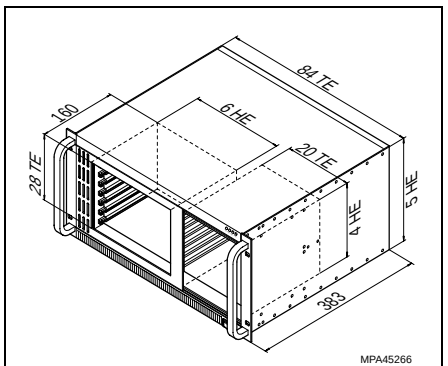
VME bus subrack systems

Subrack system 5 U

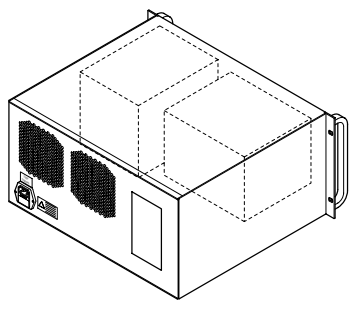
- Standard sub rack system 5 U
  - for board depth 160 mm
  - Backplane J1 3 U, 7 Slot
  - Power supply 300 W
- individual configuration subrack system 5 U
  - for a board depth of 220 mm or 160 mm (recessed)
  - Backplane 3 or 6 U up to 7 Slot as required
  - Extension on the rear side for 1 to 9 I/O modules
  - Power supply 220 or 300 W



100-00-119



MPA45266



MPA45267

TE = HP
HE = U

Standard sub rack system 5 U

Subrack with integrated ventilation
for installation in 19”-cases or 19”-cabinets

- Ventilation from the front to the rear
- Shielded version
- 160 mm deep cards (6 U)
- System backplane J1, 7 slot
- Space for drive 4 U/20 HP horizontal
- Forced air ventilation with two DC-fans, temperature dependent speed control
- Power supply 300 W
- Cases see 19” cases for sub rack systems

CE

Delivery: Mechanical and electrical/electronic components assembled and wired complete

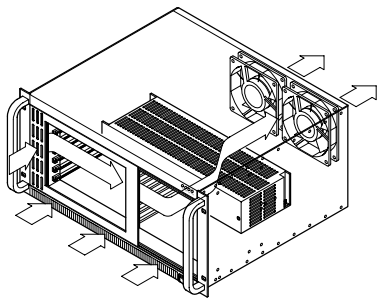
Input voltage V_{AC}	Order No. VME bus sub rack system 5 U/84 HP/383 mm deep, J1 7 Slot, Power supply 300 W
230	**20835-613**
115	**20835-614**

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VME bus subrack systems

MPA45268

MPA45269


MPA45282

Delivery comprises: Mechanical

Item	Qty	Description	Material/Finish
M1	1	Subrack (side panels, horizontal rails, cover plate and base plate, air baffle, etc.)	Al, painted, RAL 7030 dark grey, chromated, Contact points paint-free
M2	1	Cover plate 3 U/24 HP horizontal	Al 2.5 mm, painted, RAL 7030 dark grey for connector cut-outs with EMC-shielding
M3	1	6 U/28 HP	7 pluggable boards, with EMC-shielding
M4	2	Front handle	Aluminium extrusion, painted, RAL 7030 dark grey, Load-carrying capacity 30 kg
M5	1	Drive space 4 U, 20 HP	

Delivery comprises: Electrical/Electronics

Item	Qty	Description	Material/Finish
E1	2	DC-fan	85–170 m^3/h per fan, temperature independent speed control with NTC (VDE, UL, CSA)
E2	1	Fan monitoring unit	Signalling (LED and open collector)
E3	1	Power input plug and A/C line filter	10 A (VDE, UL, CSA)
E4	1	AC cable loom	
E5	1	Power switch	16 A (VDE, UL, CSA)
E6	1	LED-Display	for +5 V, ±12 V, Fan (FAN)
E7	1	Backplane	J1, 7 Slot, IN-Board, ADC
E8		DC cable loom	
E9	1	Power supply PE 1947/23	300 W, 5 V/36 A, +12 V/ 8 A, -12 V/4 A (VDE, UL, CSA)

Electrical characteristics

The systems satisfy the standard on producing interference emissions EN 50081-1 (EN 55011, VDE 0875 part 11 class B and EN 55022, VDE 0878 part 3 class B) and on interference immunity EN 50082-2.

The EMC shielding is obtained through conducting surfaces at the points of contact with EMC seal. With standard systems to obtain the required front shielding of the boards, the free spaces between the board front panels have to be sealed.
With an individually configured system with 60 mm recessed installation an EMC front panel can be used for this.

Thermal management

Air is fed in through openings on the front. Two temperature controlled DC-fans exhaust air through the rear panel.

Casing systems

Desktop version 2 U 3.31.2
Desktop version 3 U 3.31.4
Desktop version 4 U 3.31.8
Tower version 4 U 3.31.12
Portable version 3 U 3.31.16

Subrack systems

Subrack system 4 U 3.31.18
Subrack system 5 U 3.31.22
Subrack system 7 U 3.31.26
Subrack system 8 U 3.31.36
Subrack system 9 U 3.31.46
19” cases for subrack systems 3.31.51

Subrack kits

Subrack kits 6 U . 3.31.52
Desk-top enclosure for subrack kits .. 3.31.55

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Power supply units..... 3.10.0

Backplanes/ test adapters .. 3.20.0

Microcomputer packaging systems (MPS) 3.30.0

VMEbus 3.31.0

CompactPCI.....3.32.0

Industrial PC 3.33.0

Accessories.....3.39.0

Appendix..... 3.90.0

VME bus subrack systems

MPA45270

Individual configuration for subrack system 5 U

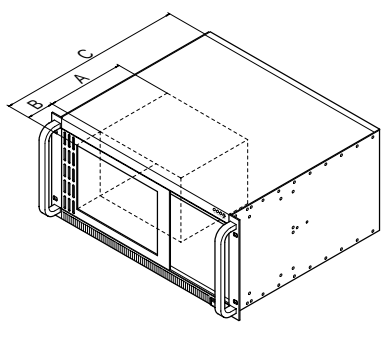
You take delivery of your individual VME bus subrack system:

- According to your specifications.
- Mounted ready for connection
- Quick delivery

Out of the following section (1 to 6) choose each of your required components. The scope of delivery of the configured systems consists of the basic unit of the standard enclosure systems (mechanical and electronics) with the following accessories. The configured system will be mounted and wired complete.

Available options:

1 Subrack 5 U
2 Rear panel extension
3 Backplane
4 DC-cable loom
5 Power supply
6 Accessories



MPA45271

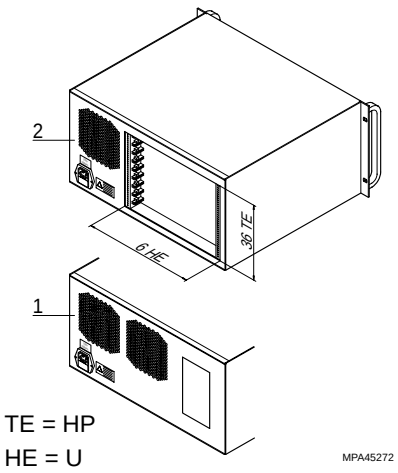
1 Bottom subrack 5 U

- 6 U/28 HP
- Drive space 4 U, 20 HP

Selection criteria:

- A – Board depth
- B – deepened installation
- C – Subrack depth
- Line voltage

A mm	W mm	C mm	Line voltage	Order no.
160	0	383	115 V	**20835-954**
			230 V	**20835-955**
		483	115 V	**20835-765**
			230 V	**20835-763**
	60	483	115 V	**20835-769**
			230 V	**20835-767**
220	0	483	115 V	**20835-956**
			230 V	**20835-957**



MPA45272

2 Rear panel extension

Selection criteria for the rear panel

- With two DC-fans and cover plate (3 U/24 HP horizontal) for connector cut-outs
- Only for subrack depth of C = 483 mm, 160 mm board depth, a DC-fan and card holder for 1 to 9 I/O-modules.

Qty	Rear panel extension	Order no.
1	Two DC-fans and cover plate (3 U/24 HP horizontal) for connector cut-outs	**20835-751/05**
1	Only for subrack depth of C = 483 mm, 160 mm board depth, a DC-fan and card holder for 1 to 9 I/O-modules. PSU max. 220 W	**20835-753/05**

Downloaded from Arrow.com.

3 Backplane

The ordering number of the backplane can be found in Chapter Backplanes/Test adapters, VME bus.

The backplane (Item 1) is delivered mounted if you add the suffix / 05 after the order No.

Board mounting height	Suitable backplanes		
	Monolithic (6 U)	J1 + J2 (3 U)	
Slot	J1/J2 Slot	J1/J2 Slot	J2 Slot
7	3 – 7	3 – 7	2 – 7

4 DC-cable loom

DC-cable loom (Item 2) connects the power supply with the backplane.

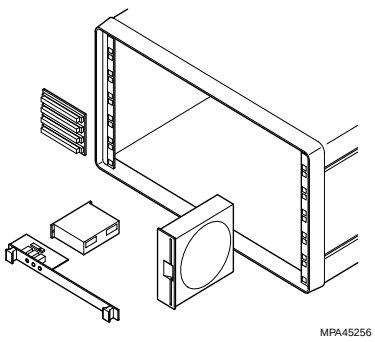
No. of sockets	Order No. for cable loom for			
	220 W Power supply		300 W Power supply[1)]	
	J1/J2 (6 U) Monolithic	J1 (J2)	J1/J2 (6 U) Monolithic	J1 (J2)
3 – 5	**23204-068/05**	**23204-066/05**	**23204-072/05**	**23204-070/05**
7	**23204-068/05**	**23204-067/05**	**23204-072/05**	**23204-071/05**

[1)] Power limit where the rear panel is extended with a fan

5 Power supply

With 383 mm subrack systems the power supply (Item 3) is turned by 90°.

Output (power), Type	Order no.
220 W, PE 1937/23B	**20835-619/05**
300 W, PE 1947/23B	**20835-618/05**



6 Accessories

For 60 mm recessed installation

Qty	Description	Order no.
1	Hard disk drive unit for 60 mm recessed installation, 4 U/11 HP	**20835-699**
1	Drive unit for 60 mm recessed installation 4 U/11 HP, front panel cut-out 26 × 102 mm	**20835-773**
1	HF-Hinged front panel 4 U/84 HP (only with 60 mm recessed board installation)	**20835-771**

For further accessories see Chapter “Accessories”

Ordering example

Available Items	Description	Order no.
1	Subrack 5 U, 160 mm boards, 60 mm recessed, 230 V	**20835-767 A1xxx[0)]**
2	Rear extension for 9 I/O-Transition-Modules	**20835-753/05**
3	J1 Backplane, 7 Slot, IN-Board	**23000-037/05**
	J2 Backplane, 5 Slot	**23000-205/05**
4	DC-cable loom for 7 slot J1 backplane	**23204-071/05**
5	Power supply 300 W	**20835-618/05**
6	Accessories: Case, Drive unit, etc.	

[0)] xxx = individual number is provided by Schroff

Casing systems
Desktop version 2 U 3.31.2
Desktop version 3 U 3.31.4
Desktop version 4 U 3.31.8
Tower version 4 U 3.31.12
Portable version 3 U 3.31.16

Subrack systems
Subrack system 4 U 3.31.18
Subrack system 5 U 3.31.22
Subrack system 7 U 3.31.26
Subrack system 8 U 3.31.36
Subrack system 9 U 3.31.46
19” cases for subrack systems 3.31.51

Subrack kits
Subrack kits 6 U . 3.31.52
Desk-top enclosure for subrack kits .. 3.31.55

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Power supply units..... 3.10.0

Backplanes/ test adapters .. 3.20.0

Microcomputer packaging systems (MPS) 3.30.0

VMEbus 3.31.0

CompactPCI.....3.32.0

Industrial PC 3.33.0

Accessories.....3.39.0

Appendix..... 3.90.0

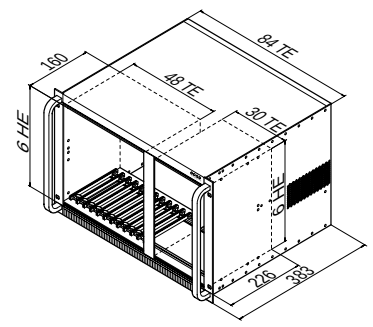
VME bus subrack systems

Subrack system 7 U

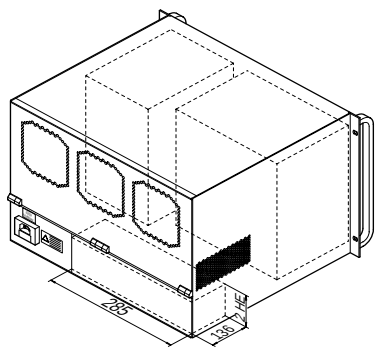
- Subrack system 7 U, heat dissipation towards the rear
  - Standard
  - Individual configuration
- Subrack system 7 U, heat dissipation upwards
  - Standard
  - Individual configuration



100-00-120



MPA44133



MPA44134

TE = HP
HE = U

Standard subrack system 7 U, Heat dissipation towards the rear

Subrack with integrated ventilation
for installation in 19”-cases or 19”-cabinets

- Heat dissipation from the front to the rear
- Shielded version
- 160 mm boards (6 U)
- System backplane J1, 12 slot
- Drive space 6 U/30 HP
- Forced air ventilation with 3 DC-fans, temperature controlled and fan speed monitoring
- Power supply 450 W (reversible 115/230 V_{AC})
- Cases see 19” cases for sub rack systems

CE

Delivery: Mechanical and electrical/electronic components assembled and wired complete

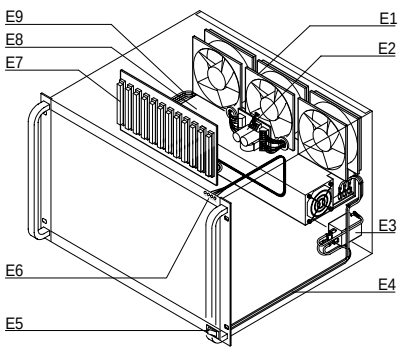
Input voltage[1] V_{AC}	Order No. VME bus sub rack system 7 U/84 HP/383 mm deep, J1 12 Slot, Power supply 450 W
230	**20835-800**
115	**20835-801**

[1] Mains/line voltage reversible

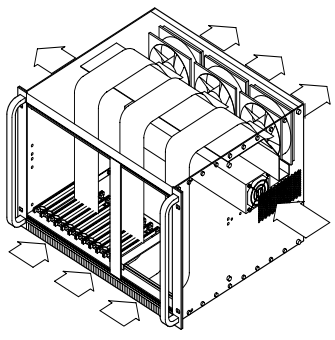
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VME bus subrack systems

MPA44136



MPA44137



MPA44135

Delivery comprises: Mechanical

Item	Qty	Description	Material/Finish
M1	1	Subrack (side panels, horizontal rails, cover plate and base plate, etc.)	Al, painted, RAL 7030 dark grey, chromated, Contact points paint-free
M2	1	Rear panel hinged with ventilation holes 5 U, 84 HP	Al 2.5 mm, painted, RAL 7030 dark grey with EMC-shielding
M3	1	Partial rear panel 2 U/59 HP	Al 2.5 mm, painted, RAL 7030 dark grey with EMC-shielding
M4	1	Partial width front panel 6 U/6 HP	AL, 2.5 mm, anodised
M5	2	6 U/84 HP	for 12 Plug-in boards with guide block
M6	2	Front handle	Aluminium extrusion, RAL 7030 dark grey, Load-carrying capacity 30 kg

Delivery comprises: Electrical/Electronics

Item	Qty	Description	Material/Finish
E1	3	DC-fan	85–170 m^3/h per fan, temperature dependent speed control (NTC) with signalling (VDE, UL, CSA)
E2	1	Fan monitoring unit	Signalling (LED and open collector)
E3	1	Power supply module with connector / plug/ filter combi-element	10 A (VDE, UL, CSA)
E4	1	AC cable loom	
E5	1	Power switch	16 A (VDE, UL, CSA)
E6	4	LED	Display for +5 V, ±12 V, Fan (FAN)
E7	1	Backplane	J1, 12 Slot, IN-Board, ADC
E8	1	Power supply PE 1957/26	450 Watt, 5 V/70 A, +12 V/8 A, -12 V/6 A, fan mounted (VDE, UL, CSA)
E9	1	DC cable loom	

Electrical characteristics

The systems satisfy the standard on producing interference emissions EN 50081-1 (EN 55011, VDE 0875 part 11 class B and EN 55022, VDE 0878 part 3 class B) and on interference immunity EN 50082-2.

The EMC shielding is obtained through conducting surfaces at the points of contact with EMC seal. With standard systems to obtain the required front shielding of the boards, the free spaces between the board front panels have to be sealed. With an individually configured system with 60 mm recessed installation a hinged front panel can be used for this.

Heat dissipation

Air is fed in through vent slots on the front. Three temperature controlled DC-fans exhaust air through the rear panel. The power supply is cooled by the mounted fan.

Casing systems

Desktop version 2 U 3.31.2
Desktop version 3 U 3.31.4
Desktop version 4 U 3.31.8
Tower version 4 U 3.31.12
Portable version 3 U 3.31.16

Subrack systems

Subrack system 4 U 3.31.18
Subrack system 5 U 3.31.22
Subrack system 7 U 3.31.26
Subrack system 8 U 3.31.36
Subrack system 9 U 3.31.46
19” cases for subrack systems 3.31.51

Subrack kits

Subrack kits 6 U . 3.31.52
Desk-top enclosure for subrack kits .. 3.31.55

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Power supply units..... 3.10.0

Backplanes/ test adapters .. 3.20.0

Microcomputer packaging systems (MPS) 3.30.0

VMEbus 3.31.0

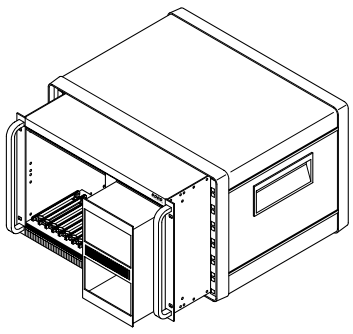
CompactPCI.....3.32.0

Industrial PC 3.33.0

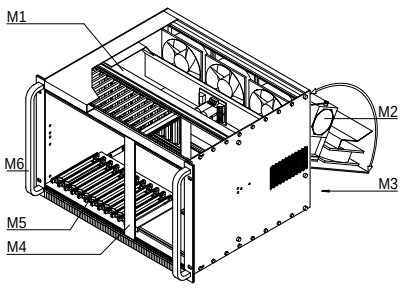
Accessories.....3.39.0

Appendix..... 3.90.0

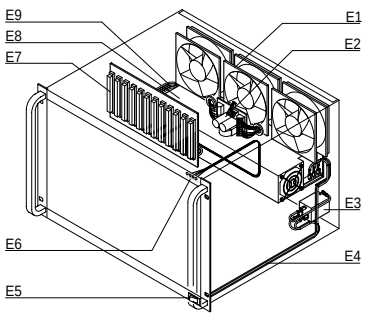
VME bus subrack systems



MPA44416



MPA44136



MPA44137

Individual configuration for subrack system 7 U, heat dissipation toward the rear

You take delivery of your individual VME bus chassis system:

- According to your specifications.
- Mounted ready for connection
- Quick delivery

Out of the following sections (1 to 7) choose each of your required components. The scope of delivery of the configured systems consists of the basic unit of the standard enclosure systems (mechanical and electronics) with the following accessories. The configured system will be mounted and cabled complete.

Available options:

1 Subrack 7 U
2 Mounting height for boards/drives
3 Rear extension
4 Backplane
5 Cable loom
6 Power supply
7 Accessories

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VME bus subrack systems

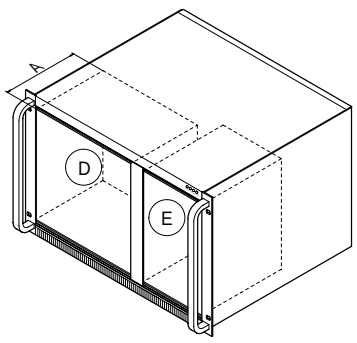
MPA44196

1 Bottom subrack 7 U

Selection criteria:

- A – Board depth
- B – Recessed installation
- C – Subrack depth
- Line voltage

A mm	W mm	C mm	Line voltage	Order no.
160	0	383	115 V	**20835-575**
			230 V	**20835-574**
		483	115 V	**20835-601**
			230 V	**20835-600**
	60	483	115 V	**20835-577**
			230 V	**20835-576**
220	0	483	115 V	**20835-579**
			230 V	**20835-578**



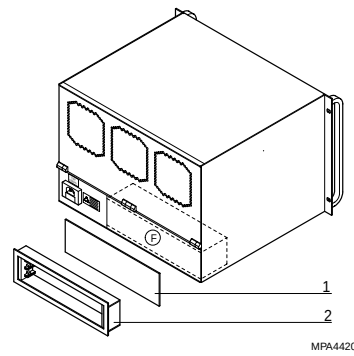
MPA44197

2 Mounting height for boards/drives

Select mounting height

- D – Mounting height for 1 to 12 or 1 to 21 slots
- E – Drive space (not included with 21 slots)

A mm	D	E	Order no.
160	up to 12 Slots	6 U/30 HP	**20835-830/05**
	up to 21 Slots	–	**20835-831/05**
220	up to 12 Slots	6 U/30 HP	**20835-832/05**
	up to 21 Slots	–	**20835-833/05**



MPA44200

3 Rear extension

Extension space F

- Partial width front panel for closing the rear panel opening
- Card holder for 1 to 3 I/O-modules

Item	Extension space F	Order no.
1	Partial width front panel 2 U/59 HP, horizontal	**20835-826/05**
2	1 to 3 I/O-Modules, 6 U/12 HP/80 mm deep, horizontal	**20835-827/05**

Casing systems

Desktop version 2 U 3.31.2
Desktop version 3 U 3.31.4
Desktop version 4 U 3.31.8
Tower version 4 U 3.31.12
Portable version 3 U 3.31.16

Subrack systems

Subrack system 4 U 3.31.18
Subrack system 5 U 3.31.22
Subrack system 7 U 3.31.26
Subrack system 8 U 3.31.36
Subrack system 9 U 3.31.46
19" cases for subrack systems 3.31.51

Subrack kits

Subrack kits 6 U . 3.31.52
Desk-top enclosure for subrack kits .. 3.31.55

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Power supply units..... 3.10.0

Backplanes/ test adapters .. 3.20.0

Microcomputer packaging systems (MPS) 3.30.0

VMEbus 3.31.0

CompactPCI.....3.32.0

Industrial PC 3.33.0

Accessories.....3.39.0

Appendix..... 3.90.0

MPA44198

4 Backplane

The ordering number of the backplane can be found in Chapter Backplanes/Test adapters, VME bus.

The backplane (Item 1) is delivered mounted if you add the suffix /05 after the order No.

Board mounting height	Suitable backplanes		
	Monolithic (6 U)	J1 + J2 (3 U)	
D Slot	J1/J2 Slot	J1/J2 Slot	J2 Slot
up to 12	8, 9, 10, 12	8, 12	2 – 12
up to 21	13,15,16, 20, 21	20, 21	2 – 21

5 DC-cable loom

DC-cable loom (Item 2) connects the power supply with the backplane.
Additional cable looms are available on request.

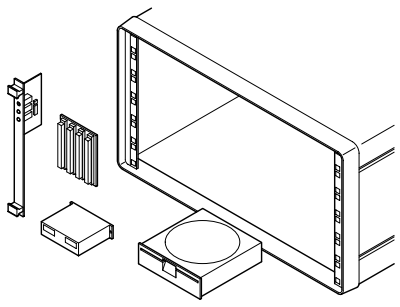
No. of sockets	Order No. for cable loom for			
	450 W Power supply		600 W power supply	
	J1/J2 (6 U) Monolithic	J1 (J2)	J1/J2 (6 U) Monolithic	J1 (J2)
8	**23204-022/05**	**–**	**23204-058/05**	**–**
9		**23204-021/05**		**23204-061/05**
10	**23204-023/05**	**–**	**23204-059/05**	**–**
12		**23204-018/05**		**23204-062/05**
13	**23204-023/05**		**23204-059/05**	
15		**–**		–
16	**23204-024/05**		**23204-060/05**	
20		**23204-020/05**		**23204-063/05**
21		**23204-024/05**		**–**

6 Power supply

Power supply (Item 3) with AC-cable loom

Output (power), Type	Order no.
450 W, PE 1957/26	**20835-840/05**
600 W, PE 3267/23	**20835-885/05**

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MPA44417

7 Accessory HF-hinged front panel

Shielded hinged front panel for subrack system with 60 mm recessed board installation. Remaining mounting height 6 U/ 80 HP.

Delivery comprises:
Hinged front panel with shielding and assembly kit.

Delivery: partly mounted

Identification	Height of front panel	Order No.
HF-hinged front panel	6 U	**20835-815**

For further accessories see Chapter “Accessories”

Ordering example

Available Items	Description	Order no.
1	Subrack 7 U, 160 mm boards, 60 mm recessed, 230 V	**20835-576 A1xxx**[0)]
2	12 slots with drive mounting height	**20835-830/05**
3	Rear extension for I/O-Modules	**20835-827/05**
4	J1 Backplane, 12 Slot, IN-Board	**23000-042/05**
	J2 backplane 10 Slot	**23000-210/05**
5	DC-cable loom for 12 slot J1 backplane	**23204-018/05**
6	Power supply 450 W	**20835-840/05**
7	Accessories: Case,Drive unit, etc.	

0) xxx = individual number is provided by Schroff

Casing systems
Desktop version 2 U 3.31.2
Desktop version 3 U 3.31.4
Desktop version 4 U 3.31.8
Tower version 4 U 3.31.12
Portable version 3 U 3.31.16

Subrack systems
Subrack system 4 U 3.31.18
Subrack system 5 U 3.31.22
Subrack system 7 U 3.31.26
Subrack system 8 U 3.31.36
Subrack system 9 U 3.31.46
19” cases for subrack systems 3.31.51

Subrack kits
Subrack kits 6 U . 3.31.52
Desk-top enclosure for subrack kits .. 3.31.55

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Power supply units..... 3.10.0

Backplanes/ test adapters .. 3.20.0

Microcomputer packaging systems (MPS) 3.30.0

VMEbus 3.31.0

CompactPCI.....3.32.0

Industrial PC 3.33.0

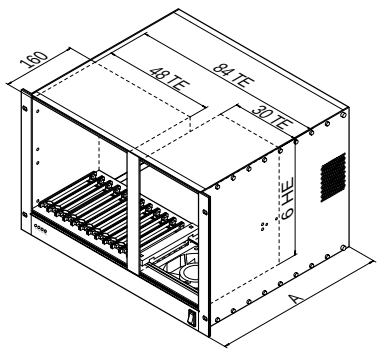
Accessories.....3.39.0

Appendix..... 3.90.0

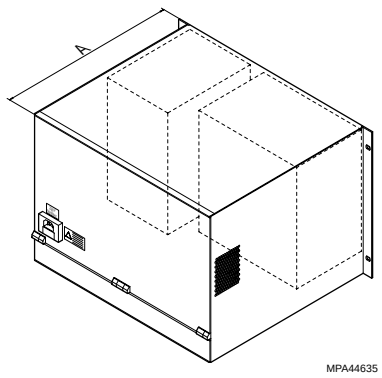
VME bus subrack systems



100-00-121



MPA44634



MPA44635

TE = HP
HE = U

Standard subrack system 7 U, Heat dissipation upwards

Subrack with integrated ventilation for installation in 19”-cases or 19”-cabinets

- Heat dissipation from the bottom to the top
- Shielded version
- 160 mm deep cards (6 U)
- System backplane J1, 12 slot
- Drive space 6 U/30 HP
- Forced air ventilation with 3 DC-fans
- Power supply 450 W open frame or optional 19”-compatible power supply
- Rear panel 6 U hinged

CE

Delivery: Mechanical and electrical/electronic components assembled and wired complete

Input voltage[1] V_{AC}	Power supply	Depth of subrack A mm	Order No. VME bus sub rack system 7 U/84 HP/J1 12 Slot
–	– [2]	240	**20835-653**
230	PE 1957/23 450 W	310	**20835-652**
		340	**20835-650**
115		310	**20835-647**
		340	**20835-648**

[1] Mains/line voltage changeable

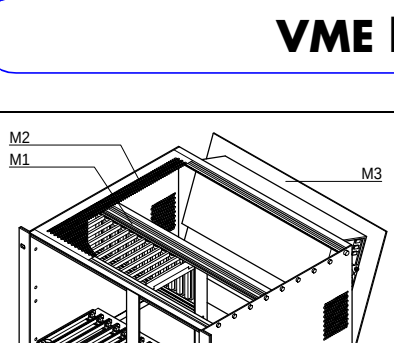
[2] 19”-power supply MPS 022 not in the scope of delivery, see Chapter Power supplies, 19”-compatible

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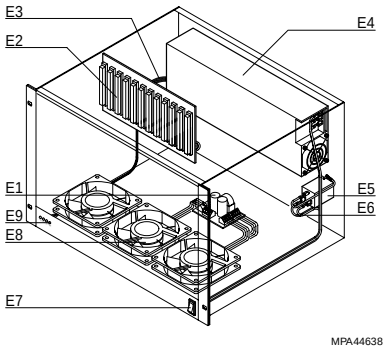
VME bus subrack systems

MPA44637

MPA44638



MPA45145



MPA44636

Delivery comprises: Mechanical

Item	Qty	Description	Material/Finish
M1	1	Subrack (side panels, horizontal rails, cover plate and base plate)	Al, contact points paint-free
M2	1	Top cover with hole	Al 1.5 mm
M3	1	Rear panel hinged 6 U/84 HP	Al 2.5 mm, anodised with EMC-shielding
M4	1	Base plate with vent slots and 1 U rear panel	Al 1.5 mm
M5	1	Front panel 1 U/84 HP	Al 2.5 mm
M6	1	Partial width front panel 6 U/6 HP	AL, 2.5 mm, anodised
M7	1	Card holder 6 U/48 HP with card guides	Al, PPO, UL 94 V-1, grey, for 12 plug-in cards

Delivery comprises: Electrical/Electronics

Item	Qty	Description	Material/Finish
E1	1	Fan monitoring unit	Signalling (LED and open collector)
E2	1	Backplane	J1, 12 Slot, IN-Board, ADC
E3		DC cable loom	
E4	1	Power supply PE 1957/26 with a case depth of A = 310 and 340 mm	450 Watt, 5 V/70 A, +12 V/8 A, -12 V/6 A, fan mounted (VDE, UL, CSA)
E5	1	Power supply module connector / plug/filter combi-element	3/6 A (230/115 V, VDE, UL, CSA)
E6	1	AC cable loom	
E7	1	Power switch	16 A (VDE, UL, CSA)
E8	3	DC-fan	85–170 m^3/h per fan, signalling (VDE, UL, CSA)
E9	1	LED-Display	Display for +5 V, ±12 V, Fan (FAN)
E10	2	H 15 connector	for power supply MPS 022, 224 W, 12 HP

Electrical characteristics

The systems satisfy the standard on producing interference emissions EN 50081-1 (EN 55011, VDE 0875 part 11 class B and EN 55022, VDE 0878 part 3 class B) and on interference immunity EN 50082-2.

The EMC shielding is obtained through conducting surfaces at the points of contact with EMC seal. To obtain the required front shielding, the free spaces between the board front panels have to be sealed.

Heat dissipation

The air is fed from the bottom by three DC-fans.
The air exits through the holes in the top cover.
The power supply is cooled by the mounted fan.

Casing systems

Desktop version 2 U 3.31.2
Desktop version 3 U 3.31.4
Desktop version 4 U 3.31.8
Tower version 4 U 3.31.12
Portable version 3 U 3.31.16

Subrack systems

Subrack system 4 U 3.31.18
Subrack system 5 U 3.31.22
Subrack system 7 U 3.31.26
Subrack system 8 U 3.31.36
Subrack system 9 U 3.31.46
19" cases for subrack systems 3.31.51

Subrack kits

Subrack kits 6 U . 3.31.52
Desk-top enclosure for subrack kits .. 3.31.55

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Power supply units..... 3.10.0

Backplanes/ test adapters .. 3.20.0

Microcomputer packaging systems (MPS) 3.30.0

VMEbus 3.31.0

CompactPCI.....3.32.0

Industrial PC 3.33.0

Accessories.....3.39.0

Appendix..... 3.90.0

VME bus subrack systems

MPA45252

Individual configuration for subrack system 7 U, heat dissipation upwards

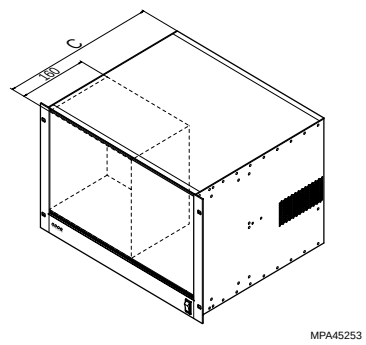
You take delivery of your individual VME bus subrack system:

- According to your specifications.
- Mounted ready for connection
- Quick delivery

Out of the following sections (1 to 6) choose each of your required components. The scope of delivery of the configured systems consists of the basic unit of the standard enclosure systems (mechanical and electronics) with the following accessories. The configured system will be mounted and cabled complete.

Available options:

1 Subrack 7 U
2 Rear panel extension
3 Backplane
4 DC-cable loom
5 Power supply
6 Accessories



MPA45253

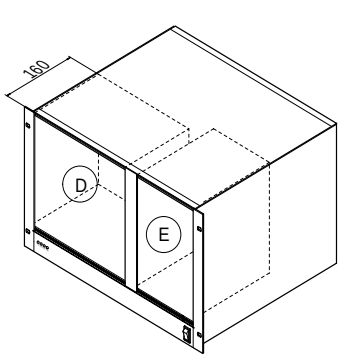
1 Bottom subrack 7 U

Selection criteria:

- C – Subrack depth
- Line voltage

C mm	Line voltage	Order no.
340	115 V	**20835-910**
	230 V	**20835-911**
310	115 V	**20835-912**
	230 V	**20835-913**
240[1)]	115 V	**20835-914**
	230 V	**20835-915**

1) 19"-power supply with mounting height for I/O modules available on request



MPA45254

2 Mounting height for boards/drives

Select mounting height

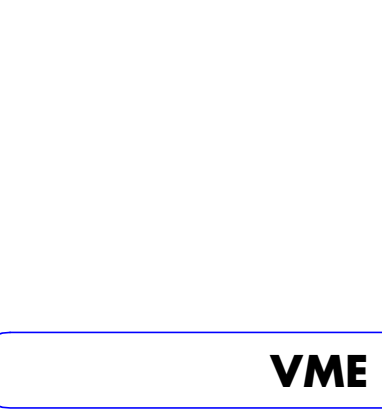
- D – Mounting height for 1 to 12 or 1 to 21 18[1]slots
- E – Drive space (not included with 21 slots)

D	E	Order no.
up to 12 Slots	6 U/30 HP	**20835-830/05**
up to 21 (18[1)]) slots	–	**20835-831/05**

[1)] prepared for 19"-chassis power supply, max. 18 slots backplane possible

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MPA44198



MPA45265

3 Backplane

The ordering number of the backplane can be found in Chapter Backplanes/Test adapters, VME bus.

The backplane (Item 1) is delivered mounted if you add the suffix / 05 after the order No.

Board mounting height	Suitable backplanes		
	Monolithic (6 U)	J1 + J2 (3 U)	
Slot	J1/J2 Slot	J1/J2 Slot	J2 Slot
up to 12	8, 9, 10, 12	8, 12	2 – 12
up to 21 (1)	13,15,16, 20, 21	20, 21	2 – 21

1) Max. 18 slots with 19”-chassis power supply

4 DC-cable loom

The DC-cable loom (Item 2) connects the power supply with the backplane.

Additional cable looms for 220 W and 300 W power supply available on request

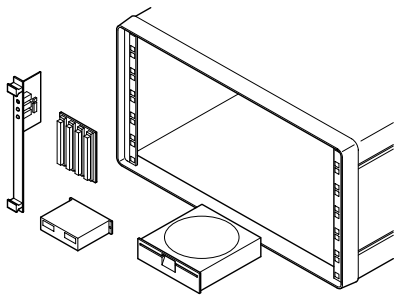
No. of sockets	Order No. DC-cable loom for power supply			
	450 W open frame		220 W, 19”-compatible, MPS 022	
	J1/J2 (6 U) Monolithic	J1 (J2)	J1/J2 (6 U) Monolithic	J1 (J2)
8	**23204-022/05**	–	**23204-073/05**	–
9	**23204-023/05**	**23204-021/05**	**23204-074/05**	**23204-075/05**
10		–		–
12		**23204-018/05**		**23204-076/05**
13	**23204-023/05**	–	–	
15	**23204-024/05**			
16				
20 1)		**23204-020/05**		
21 1)		**23204-024/05**		

1) Max. 18 slots with 19”-chassis power supply

5 Power supply

With 383 mm subrack systems the PE 1957/56 power supply (Item 3) is turned by 90°.

Output (power), Type	Order no.
450 W, PE 1957/26	**20835-918/05**
224 W, MPS 022 19”-power supply	**13100-203/05**



MPA44417

6 Accessories

For further accessories see Chapter “Accessories”

Casing systems
Desktop version 2 U 3.31.2
Desktop version 3 U 3.31.4
Desktop version 4 U 3.31.8
Tower version 4 U 3.31.12
Portable version 3 U 3.31.16

Subrack systems
Subrack system 4 U 3.31.18
Subrack system 5 U 3.31.22
Subrack system 7 U 3.31.26
Subrack system 8 U 3.31.36
Subrack system 9 U 3.31.46
19” cases for subrack systems 3.31.51

Subrack kits
Subrack kits 6 U . 3.31.52
Desk-top enclosure for subrack kits .. 3.31.55

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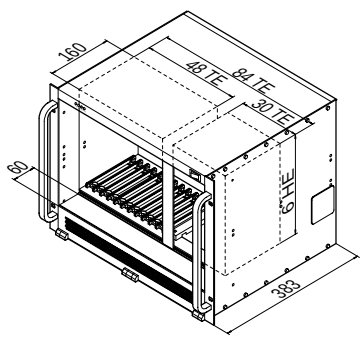
VME bus subrack systems

Subrack system 8 U

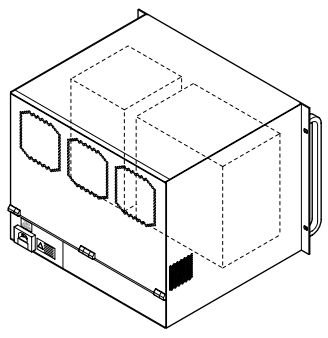
- Subrack system 8 U, heat dissipation towards the rear
- Subrack system 8 U heat dissipation upwards, on the rear side 17 I/O-modules
- Subrack system 8 U, heat dissipation towards the top
  – Standard
  – Individual configuration



100-00-122



MPA44649



MPA44764

TE = HP
HE = U

Subrack system 8 U, heat dissipation towards the rear

Subrack with integrated ventilation for installation in 19”-cases or 19”-cabinets

- Ventilation from the front to the rear
- Subrack system 383 mm deep
- Shielded version
- 160 mm deep cards (6 U horizontal) 60 mm recessed
- System backplane J1, 12 slot
- Drive space, front 6 U/30 HP/max. 160 mm deep
- Forced air ventilation with 3 DC-fans, temperature dependent speed control
- Power supply 450 W (reversible 115/230 V_{AC})
- Changeable air filter

CE

Delivery: Mechanical and electrical/electronic components assembled and wired complete

Input voltage[1)] V_{AC}	Order No. VME bus chassis 8 U/84 HP/383 mm deep, J1 12 Slot, Power supply 450 W
230	**20835-845**
115	**20835-846**

1) Mains/line voltage reversible

Accessories

HF-hinged front panel

Shielded hinged front panel for subrack system with 60 mm recessed board installation. Remaining mounting height 6 U/ 80 HP.

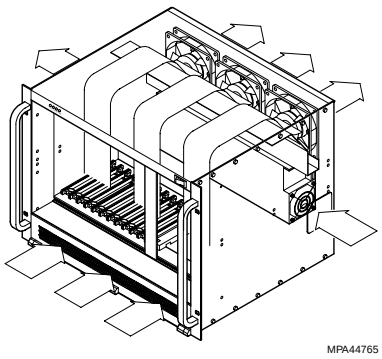
Description	Comments	Order No.
HF-hinged front panel	6 U, partly mounted with assembly kit	**20835-435**

Spare air filter

Description	Order No.
for the system	**60713-203**
for the power supply	**60713-278**

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VME bus subrack systems



Delivery comprises: Mechanical

Item	Qty	Description	Material/Finish
M1	1	Subrack (side panels, horizontal rails, cover plate and base plate, etc.)	Al, painted, RAL 7035 dark grey, chromated, Contact points paint-free
M2	1	Rear panel hinged with ventilation holes 6 U, 84 HP	Al 2.5 mm, painted, RAL 7030 dark grey with EMC-shielding
M3	1	Filter mat	
M4	3	Partial width rear panel 2 U/59 HP	Al 2.5 mm, painted, RAL 7030 dark grey with EMC-shielding
M5	1	Front panel folding / hinged, 1.5 U/84 HP with vent slots	Al 2.5 mm, painted RAL 7030 dark grey, air filter for the system
M6	1	Partial width front panel 6 U/6 HP	AL, 2.5 mm, anodised
M7	1	6 U/48 HP with card guides	Al, PPO, UL 94 V-O, grey, for 12 plug-in cards
M8	2	Front handle	Aluminium extrusion, painted, RAL 7030 dark grey, Load-carrying capacity 30 kg

Delivery comprises: Electrical/Electronics

Item	Qty	Description	Description
E1	3	DC-fan	85–170 m^3/h per fan, temperature dependent speed control (NTC) with signalling (VDE, UL, CSA)
E2	1	Fan monitoring unit	Signalling (LED and open collector)
E3	1	Power supply module with connector / plug/ filter combi-element	10/ A (230/115 V, VDE, UL, CSA)
E4	1	AC cable loom	
E5	1	Power switch	16 A (VDE, UL, CSA)
E6	1	Power supply PE 1957/26	450 Watt, 5 V/70 A, +12 V/8 A, -12 V/6 A, fan mounted (VDE, UL, CSA)
E7	1	DC cable loom	
E8	1	LED-Display	for +5 V, ±12 V, Fan (FAN)
E9	1	Backplane	J1, 12 Slot, IN-Board, ADC

Electrical characteristics

The systems satisfy the standard on producing interference emissions EN 50081-1 (EN 55011, VDE 0875 part 11 class B and EN 55022, VDE 0878 part 3 class B) and on interference immunity EN 50082-2.

The EMC shielding is obtained through conducting surfaces at the points of contact with EMC seal. To obtain the required front shielding of the boards, the free spaces between the board front panels have to be sealed or an HF-hinged front panel installed.

Heat dissipation

The air is drawn in through vent slots and an air filter from the front. 3 Two temperature controlled DC-fans exhaust air through the rear panel. The power supply is cooled by the mounted fan.

Casing systems

Desktop version 2 U 3.31.2
Desktop version 3 U 3.31.4
Desktop version 4 U 3.31.8
Tower version 4 U 3.31.12
Portable version 3 U 3.31.16

Subrack systems

Subrack system 4 U 3.31.18
Subrack system 5 U 3.31.22
Subrack system 7 U 3.31.26
Subrack system 8 U 3.31.36
Subrack system 9 U 3.31.46
19” cases for subrack systems 3.31.51

Subrack kits

Subrack kits 6 U . 3.31.52
Desk-top enclosure for subrack kits .. 3.31.55

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Power supply units..... 3.10.0

Backplanes/ test adapters .. 3.20.0

Microcomputer packaging systems (MPS) 3.30.0

VMEbus 3.31.0

CompactPCI.....3.32.0

Industrial PC 3.33.0

Accessories.....3.39.0

Appendix..... 3.90.0

VME bus subrack systems

100-00-123

MPA44643



MPA44644

TE = HP
HE = U

Subrack system 8 U heat dissipation vertical, on the rear side 17 I/O-modules

Subrack with integrated ventilation for installation in 19”-cases or 19”-cabinets

- Ventilation from the bottom to the top
- Mounting height for 1 to 17 I/O-transition-modules on the rear side
- Subrack system 383 mm deep
- Power supply 450 W, limit max. energy loss 350 W at ΔT_U = 10 °K (mains/line voltage changeable 115/230 V_{AC})
- Shielded version
- 160 mm deep cards (6 U horizontal) 40mm recessed
- System backplane J1, 12 slot
- Drive space, front 6 U/30 HP/
- Forced air ventilation with 3 DC-fans (at bottom)
- Changeable air filter

CE

Delivery: Mechanical and electrical/electronic components assembled and wired complete

Input voltage[1)]	Order No. VME bus chassis 8 U/84 HP/383 mm deep, J1 12 Slot, Power supply 450 W
230	**20835-605**
115	**20835-606**

[1)] Mains/line voltage changeable

Accessories

HF-hinged front panel

Shielded hinged front panel for subrack system with 60 mm recessed board installation. Remaining mounting height 6 U/ 80 HP.

Description	Comments	Order No.
HF-hinged front panel	6 U, partly mounted with assembly kit	**20835-435**

Spare air filter

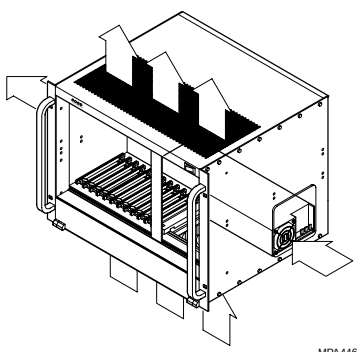
Description	Order No.
for the system	**60713-203**

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VME bus subrack systems

MPA44646

MPA44647


MPA44645

Delivery comprises: Mechanical

Item	Qty	Description	Material/Finish
M1	1	Subrack (side panels, horizontal rails, cover plate and base plate, etc.)	Al, painted, RAL 7030 dark grey, chromated, Contact points paint-free
M2	1	6 U/68 HP/80 mm deep	for 1 to 17 I/O-modules
M3	1	Partial width rear panel, 85.7 mm/ 85 HP	Al 2.5 mm, painted, RAL 7030 dark grey, shielded
M4	1	Filter mat	
M5	1	Front panel hinged, 1.5 U/84 HP	Al 2.5 mm,painted RAL 7030 dark grey, air filter for the system
M6	1	Partial width front panel 6 U/6 HP	AL, 2.5 mm, anodised
M7	1	6 U/48 HP with card guides	Al, PPO, UL94 V-0, grey,-0 for 12 plug-in cards
M8	2	Front handle	Aluminium extrusion, painted, RAL 7030 dark grey, Load-carrying capacity 30 kg
M9	1	Space for drive	6 U/30 HP/max. 160mm deep

Delivery comprises: Electrical/Electronics

Item	Qty	Description	Comments
E1	1	Fan monitoring unit	Signalling (LED and open collector)
E2	1	Power supply module with connector / plug/ filter combi-element	10/ A (230/115 V, VDE, UL, CSA)
E3	1	AC cable loom	
E4	1	Power supply PE 1957/26, max. loading 350 W	450 Watt, 5 V/70 A, +12 V/8 A, -12 V/6 A, fan mounted (VDE, UL, CSA)
E5	1	Power switch	16 A (VDE, UL, CSA)
E6	3	DC-fan	85–170 m^3/h per fan, signalling (VDE, UL, CSA)
E7	1	LED-Display	for +5 V, ±12 V, Fan (FAN)
E8	1	DC cable loom	
E9	1	Backplane	J1, 12 Slot, IN-Board, ADC

Electrical characteristics

The systems satisfy the standard on producing interference emissions EN 50081-1 (EN 55011, VDE 0875 part 11 class B and EN 55022, VDE 0878 part 3 class B) and on interference immunity EN 50082-2.

The EMC shielding is obtained through conducting surfaces at the points of contact with EMC seals. To obtain the required front and on the rear side shielding of the boards, the free spaces between the board front panels have to be sealed or an HF-hinged front panel installed on the front.

Heat dissipation

The air is drawn in through vent slots, air filter and DC-fans from the bottom to the top. The power supply is cooled by the mounted fan.

Casing systems

Desktop version 2 U 3.31.2
Desktop version 3 U 3.31.4
Desktop version 4 U 3.31.8
Tower version 4 U 3.31.12
Portable version 3 U 3.31.16

Subrack systems

Subrack system 4 U 3.31.18
Subrack system 5 U 3.31.22
Subrack system 7 U 3.31.26
Subrack system 8 U 3.31.36
Subrack system 9 U 3.31.46
19” cases for subrack systems 3.31.51

Subrack kits

Subrack kits 6 U . 3.31.52
Desk-top enclosure for subrack kits .. 3.31.55

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Power supply units..... 3.10.0

Backplanes/ test adapters .. 3.20.0

Microcomputer packaging systems (MPS) 3.30.0

VMEbus 3.31.0

CompactPCI.....3.32.0

Industrial PC 3.33.0

Accessories.....3.39.0

Appendix..... 3.90.0

VME bus subrack systems

100-00-124

MPA44350



MPA44351

TE = HP
HE = U

Standard subrack system 8 U, heat dissipation towards the top

Subrack with integrated ventilation for installation in 19”-cases or 19”-cabinets

- Heat dissipation from the bottom to the top
- Mounting height for 1 to 8 I/O-transition-modules on the rear side
- Subrack system 483 mm deep
- Shielded version
- 160 mm deep cards (3/6 U horizontal) 60 mm recessed
- System backplanes J1, 12 slot
- Drive space, front, 6 U/30 HP, on the rear side 3 U/27.5 HP
- Changeable air filter
- Forced air ventilation with 3 DC-fans
- Power supply 450 W mains/line voltage, changeable 115/230 V_{AC}

CE

Delivery: Mechanical and electrical/electronic components assembled and wired complete

Input voltage[1] V_{AC}	Order No. VME bus chassis 8 U/84 HP/483 mm deep, J1 12 Slot, Power supply 450 W
230	**20835-590**
115	**20835-591**

[1] Mains/line voltage reversible

Accessories

HF-hinged front panel

Shielded hinged front panel for subrack system with 60 mm recessed board installation. Remaining mounting height 6 U/ 80 HP.

Description	Comments	Order No.
HF-hinged front panel	7 U, partly mounted with assembly kit	**20835-592**

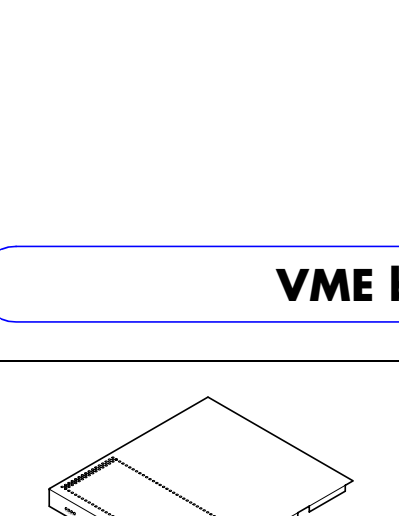
Spare air filter

Description	Order No.
for the system	**60713-203**
for the power supply	**60713-278**

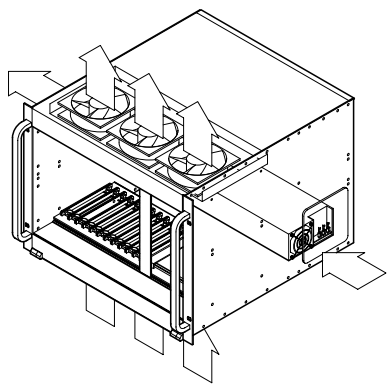
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VME bus subrack systems

MPA44353



MPA44354



MPA44352

Delivery comprises: Mechanical

Item	Qty	Description	Material/Finish
M1	1	Subrack (side panels, horizontal rails, cover plate and base plate, etc.)	Al, painted, RAL 7030 dark grey, Contact points paint-free
M2	1	6 U/32 HP, 80 mm deep	for 1 to 8 I/O-modules
M3	1	Power supply Chassis, 3 U/84 HP	Al 1 mm, painted RAL 7030 dark grey, air filter for the power supply
M4	3	Partial width rear panel	Al 2.5 mm, painted RAL 7030 dark grey,
M5	1	Front panel hinged, 1 U/84 HP	Al 2.5 mm,painted RAL 7030 dark grey, air filter for the system
M6	1	Partial width front panel 6 U/6 HP	AL, 2.5 mm, anodised
M7	1	6 U/48 HP with card guides	for 12 Plug-in boards
M8	2	Front handle	Aluminium extrusion, RAL 7030 dark grey,Load-carrying capacity 30 kg

Delivery comprises: Electrical/Electronics

Item	Qty	Description	Comments
E1	1	Fan monitoring unit	Signalling (LED and open collector)
E2	1	Power supply module with connector / plug/ filter combi-element	10 A (VDE, UL, CSA)
E3	1	AC cable loom	
E4	1	Power switch	16 A (VDE, UL, CSA)
E5	4	LED-Display	for +5 V, ±12 V, Fan (FAN)
E6	3	DC-fan	85–170 m^3/h per fan, signalling (VDE, UL, CSA)
E7	1	Backplane	J1, 12 Slot, IN-Board, ADC
E8	1	Power supply PE 1957/26	450 Watt, 5 V/70 A, +12 V/8 A, -12 V/6 A, fan mounted (VDE, UL, CSA)
E9	1	DC cable loom	

Electrical characteristics

The systems satisfy the standard on producing interference emissions EN 50081-1 (EN 55011, VDE 0875 part 11 class B and EN 55022, VDE 0878 part 3 class B) and on interference immunity EN 50082-2.

The EMC shielding is obtained through conducting surfaces at the points of contact with EMC seal. With the standard systems and individual configurations, to achieve the shielding on the front the free spaces of the front panels have to be sealed or an HF-hinged front panel (with 60 mm recessed installation) installed.

Heat dissipation

The air is drawn in through vent slots and an air filter from the bottom. Three DC-fans draw the air towards the top.

The power supply is cooled by the mounted fan.

Casing systems

Desktop version 2 U 3.31.2
Desktop version 3 U 3.31.4
Desktop version 4 U 3.31.8
Tower version 4 U 3.31.12
Portable version 3 U 3.31.16

Subrack systems

Subrack system 4 U 3.31.18
Subrack system 5 U 3.31.22
Subrack system 7 U 3.31.26
Subrack system 8 U 3.31.36
Subrack system 9 U 3.31.46
19” cases for subrack systems 3.31.51

Subrack kits

Subrack kits 6 U . 3.31.52
Desk-top enclosure for subrack kits .. 3.31.55

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Power supply units..... 3.10.0

Backplanes/ test adapters .. 3.20.0

Microcomputer packaging systems (MPS) 3.30.0

VMEbus 3.31.0

CompactPCI.....3.32.0

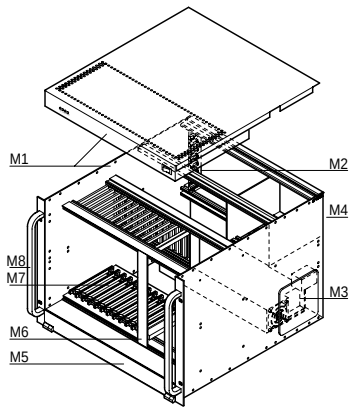
Industrial PC 3.33.0

Accessories.....3.39.0

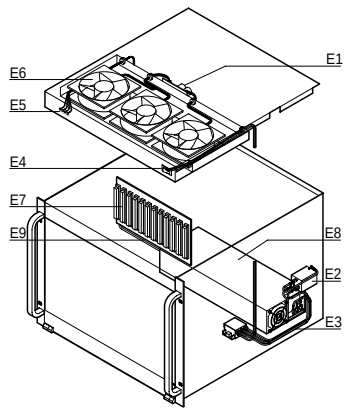
Appendix..... 3.90.0

VME bus subrack systems

MPA44631



MPA44353



MPA44354

Individual configuration for subrack system 8 U, heat dissipation upwards

You take delivery of your individual VME bus subrack system:

- According to your specifications.
- Mounted ready for connection
- Quick delivery

Out of the following sections (1 to 6) choose each of your required components. The scope of delivery of the configured systems consists of the basic unit of the standard enclosure systems (mechanical and electronics) with the following additional accessories. The configured system will be mounted and cabled complete.

Available options:

1 Subrack 8 U
2 Mounting height for boards/drives
3 Backplane
4 Cable loom
5 Power supply
6 Accessories

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VME bus subrack systems

1 Bottom subrack 8 U

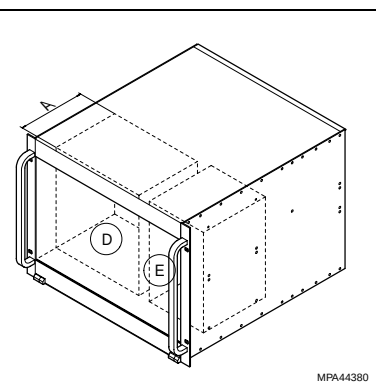
Rear extension space for 1 to 8 I/O-transition-modules available.

Selection criteria:

- A – Board depth
- B – Recessed installation
- C – Subrack depth
- Line voltage

A mm	W mm	C mm	Line voltage	Order no.
160	60	483	115 V	**20835-680**
			230 V	**20835-681**
	0		115 V	**20835-682**[1)]
			230 V	**20835-683**[1)]
220			115 V	**20835-684**
			230 V	**20835-685**

[1)] Available on request



2 Mounting height for boards/drives

Select mounting height

- D – For 1 to 12 or 1 to 21 slots
- E – Drive space (not included with 13 to 21 slots)

A mm	D	E	Order no.
160	1 to 12 slots	6 U/30 HP	**20835-830/05**
	13 to 21 slots	–	**20835-831/05**
220	1 to 12 slots	6 U/30 HP	**20835-832/05**
	13 to 21 slots	–	**20835-833/05**

Casing systems

Desktop version 2 U 3.31.2
Desktop version 3 U 3.31.4
Desktop version 4 U 3.31.8
Tower version 4 U 3.31.12
Portable version 3 U 3.31.16

Subrack systems

Subrack system 4 U 3.31.18
Subrack system 5 U 3.31.22
Subrack system 7 U 3.31.26
Subrack system 8 U 3.31.36
Subrack system 9 U 3.31.46
19" cases for subrack systems 3.31.51

Subrack kits

Subrack kits 6 U . 3.31.52
Desk-top enclosure for subrack kits .. 3.31.55

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Power supply units..... 3.10.0

Backplanes/ test adapters .. 3.20.0

Microcomputer packaging systems (MPS) 3.30.0

VMEbus 3.31.0

CompactPCI.....3.32.0

Industrial PC 3.33.0

Accessories.....3.39.0

Appendix..... 3.90.0

MPA44381

3 Backplane

The ordering number of the backplane can be found in Chapter Backplanes/Test adapters, VME bus.

The backplane (Item 1) is delivered mounted if you add the suffix / 05 after the order No.

Board mounting height	Suitable backplanes		
	Monolithic (6 U)	J1 + J2 (3 U)	
D Slot	J1/J2 Slot	J1/J2 Slot	J2 Slot
1 to 12	8, 9, 10, 12	8, 12	2 – 12
13 to 21	13, 15, 16, 20, 21	20, 21	2 – 21

4 DC-cable loom

DC-cable loom (Item 2) connects power supply and backplane. Additional cable looms are available on request.

No. of sockets	Order No. for cable loom for			
	450 W Power supply		600 W power supply	
	J1/J2 (6 U) Monolithic	J1 (J2)	J1/J2 (6 U) Monolithic	J1 (J2)
8	**23204-022/05**	**–**	**23204-058/05**	**–**
9		**23204-021/05**		**23204-061/05**
10	**23204-023/05**	**–**	**23204-059/05**	**–**
12		**23204-018/05**		**23204-062/05**
13	**23204-023/05**		**23204-059/05**	
15		**–**		–
16	**23204-024/05**		**23204-060/05**	
20		**23204-020/05**		**23204-063/05**
21		**23204-024/05**		**–**

5 Power supply

Item 3

Output (power), Type	Order no.
450 W, PE 1957/26	**20835-665/05**
600 W, PE 3267/23	**20835-886/05**

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MPA44417

6 Accessories

Partial width front panel

Partial width front panel for closing the mounting area on the rear side (3 U/27.5 HP) after installation of the drive unit	Order no.
3 U/3.5 HP with assembly kit	**30835-488**
3 U/7.5 HP with assembly kit	**30835-489**

HF-hinged front panel

Shielded hinged front panel for subrack system with 60 mm recessed board installation.
Remaining mounting height 6 U/80 HP.

Description	Comments	Order No.
HF-hinged front panel	7 U, partly mounted with assembly kit	**20835-592**

Spare air filter

Description	Order No.
for the system	**60713-203**
for the power supply	**60713-278**

For further accessories see Chapter “Accessories”

Ordering example

Available Items	Description	Order no.
1	Bottom subrack 8 U, 160 mm boards, 60 mm recessed, 230 V	**20835-681 A1xxx**[0)]
2	For 12 slots with drive mounting area	**20835-830/05**
3	J1 Backplane, 12 slot, IN-Board	**23000-042/05**
	J2 backplane 10 slot	**23000-210/05**
4	DC-cable loom for 12 slot J1 backplane	**23204-018/05**
5	Power supply 450 W	**20835-665/05**
6	Accessories: Case,Drive unit, etc.	

[0)] xxx = individual number is provided by Schroff

Casing systems
Desktop version 2 U 3.31.2
Desktop version 3 U 3.31.4
Desktop version 4 U 3.31.8
Tower version 4 U 3.31.12
Portable version 3 U 3.31.16

Subrack systems
Subrack system 4 U 3.31.18
Subrack system 5 U 3.31.22
Subrack system 7 U 3.31.26
Subrack system 8 U 3.31.36
Subrack system 9 U 3.31.46
19” cases for subrack systems 3.31.51

Subrack kits
Subrack kits 6 U . 3.31.52
Desk-top enclosure for subrack kits .. 3.31.55

Downloaded from Arrow.com.

Power supply units..... 3.10.0

Backplanes/ test adapters .. 3.20.0

Microcomputer packaging systems (MPS) 3.30.0

VMEbus 3.31.0

CompactPCI.....3.32.0

Industrial PC 3.33.0

Accessories.....3.39.0

Appendix..... 3.90.0

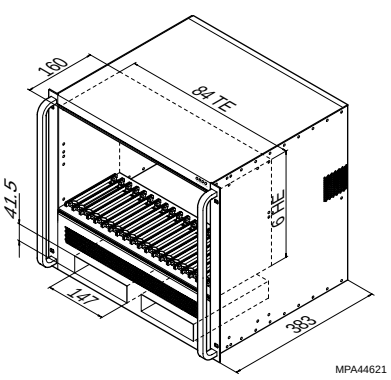
VME bus subrack systems

Subrack system 9 U

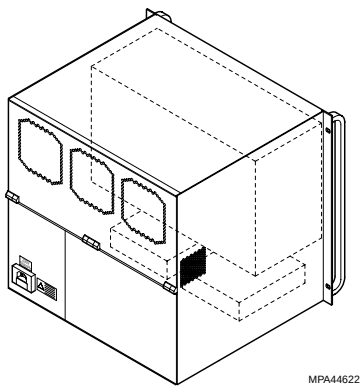
- Standard sub rack system 9 U
  - for board depth 160 mm
  - Backplane J1 3 U, 21 Slot
  - Power supply 450 W
- Individual configuration for sub rack system 9 U
  - for board depth 220 mm or 160 mm (recessed)
  - Backplane 3 or 6 U as required
  - Rear extension for 1 to 7 I/O-Transition-Modules
  - Power supply 600 W



100-00-125



MPA44621



MPA44622

TE = HP
HE = U

Standard sub rack system 9 U

Subrack with integrated ventilation
for installation in 19”-cases or 19”-cabinets

- 160 mm deep cards
- System backplane J1, 21 slot
- Drive space 2 × 146 mm × 41.5 mm
- Forced air ventilation with 3 DC-fans, temperature dependent speed control from the front to the rear
- Power supply 450 W (115/230 V_{AC})
- Rear panel 5 U hinged

CE

Delivery: Mechanical and electrical/electronic components assembled and wired complete

Input voltage[1)] V_{AC}	Order No. VME bus sub rack system 9 U/84 HP/383 mm deep, J1 21 Slot, Power supply 450 W
230	**20835-850**
115	**20835-851**

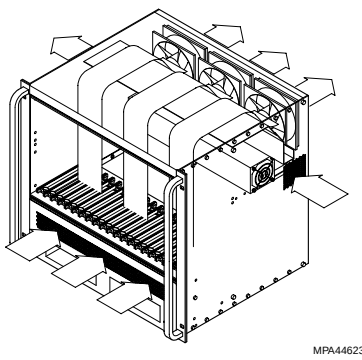
1) Mains/line voltage reversible

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VME bus subrack systems

MPA44630

MPA44629


MPA44623

Delivery comprises: Mechanical

Item	Qty	Description	Description
M1	1	Subrack (side panels, horizontal rails, cover plate and base plate, air baffle, etc.)	Al, painted, RAL 7030 dark grey, chromated, Contact points paint-free
M2	1	Rear panel hinged 5 U/84 HP	Al 2.5 mm, painted, RAL 7030 dark grey with connector cut-outs with EMC-shielding
M3	1	Rear panel, 4 U/84 HP	Al 2.5 mm, painted RAL 7030 dark grey
M4	1	Front panel 2.5 U/84 HP Drive unit openings 2 × 147 × 41.5 mm	Al 2.5 mm, painted, RAL 7030 dark grey with vent slots
M5	1	6 U/84 HP with card guides	for 21 Plug-in boards
M6	2	Front handle	Aluminium extrusion, painted, RAL 7030 dark grey, Load-carrying capacity 30 kg

Delivery comprises: Electrical/Electronics

Item	Qty	Description	Comments
E1	3	DC-fan	85–170 m^3/h per fan, temperature dependent speed control with NTC with (VDE, UL, CSA)
E2	1	Fan monitoring unit	Signalling (LED and open collector)
E3	1	Power supply module with connector / plug/ filter combi-element	10 A (VDE, UL, CSA)
E4	1	AC cable loom	
E5	1	Power switch	16 A (VDE, UL, CSA)
E6	1	LED-Display	for +5 V, ±12 V, Fan (FAN)
E7	1	Cable for drive unit	for 2 × $5^1/_2$"-Drive (large connector/ plug)
E8	1	Backplane	J1, 21 Slot, IN-Board, ADC
E9	1	Power supply PE 1957/26	450 Watt, 5 V/70 A, +12 V/8 A, -12 V/6 A, fan mounted (VDE, UL, CSA)
E10	1	DC cable loom	

Electrical characteristics

The systems satisfy the standard on producing interference emissions EN 50081-1 (EN 55011, VDE 0875 part 11 class B and EN 55022, VDE 0878 part 3 class B) and on interference immunity EN 50082-2.

The EMC shielding is obtained through conducting surfaces at the points of contact with EMC seal. With standard systems to obtain the required front shielding of the boards, the free spaces between the board front panels have to be sealed.
With an individually configured system with 60 mm recessed installation an EMC front panel can be used for this.
The drive unit openings on the front can be closed off with a front panel (without cut-outs) or a hinged front panel.

Thermal management

Air is fed in through openings on the front.
Three temperature controlled DC-fans exhaust air through the rear panel. The power supply is cooled by the mounted fan.

Casing systems
Desktop version 2 U 3.31.2
Desktop version 3 U 3.31.4
Desktop version 4 U 3.31.8
Tower version 4 U 3.31.12
Portable version 3 U 3.31.16

Subrack systems
Subrack system 4 U 3.31.18
Subrack system 5 U 3.31.22
Subrack system 7 U 3.31.26
Subrack system 8 U 3.31.36
Subrack system 9 U 3.31.46
19" cases for subrack systems 3.31.51

Subrack kits
Subrack kits 6 U . 3.31.52
Desk-top enclosure for subrack kits .. 3.31.55

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Power supply units..... 3.10.0

Backplanes/ test adapters .. 3.20.0

Microcomputer packaging systems (MPS) 3.30.0

VMEbus 3.31.0

CompactPCI.....3.32.0

Industrial PC 3.33.0

Accessories.....3.39.0

Appendix..... 3.90.0

VME bus subrack systems

MPA44628

Individual configuration for subrack system 9 U

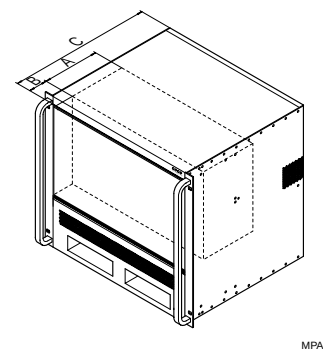
You take delivery of your individual VME bus subrack system:

- According to your specifications.
- Mounted ready for connection
- Quick delivery

Out of the following sections (1 to 8) choose each of your required components. The scope of delivery of the configured systems consists of the basic unit of the standard enclosure systems (mechanical and electronics, see previous page) with the following additional accessories. The configured system will be mounted and cabled complete.

Available options:

1 Subrack 9 U
2 Mounting height for boards/drives
3 Front extension
3 Rear extension
5 Backplane
6 DC-cable loom
7 Power supply
8 Accessories



MPA44625

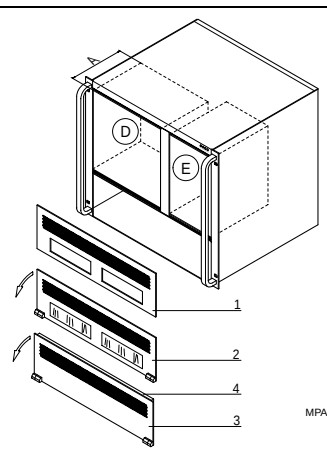
1 Bottom subrack 9 U

Selection criteria:

- A – Board depth
- B – deepened installation
- C – Subrack depth
- Line voltage

A mm	W mm	C mm	Line voltage	Order no.
160	0	383	115 V	**20835-901**
			230 V	**20835-900**
		483	115 V	**20835-903**[1)]
			230 V	**20835-902**[1)]
	60	483	115 V	**20835-905**
			230 V	**20835-904**
220	0	483	115 V	**20835-907**
			230 V	**20835-906**

1) Available on request



MPA44626

2 Mounting height for boards/drives

Select mounting height

- D – Card mounting height for 1 to 12 or 1 to 21 slots
- E – Drive space (not included with 21 slots)

A mm	D	E	Order no.
160	1 to 12 slots	6 U/30 HP	**20835-830/05**
	13 to 21 slots	–	**20835-831/05**
220	1 to 12 slots	6 U/30 HP	**20835-832/05**
	13 to 21 slots	–	**20835-833/05**

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MPA44626

3 Front extension

5 versions of partial width front panel with and without cut-outs for the drive unit.

Item	Description	Order no.
1	Partial width front panel with 2 × 5$^1/_4$"-cut-outs	**20835-872/05**
	Partial width front panel with 2 × 3$^1/_2$"-cut-outs	**20835-874/05**
	Partial width front panel with 3$^1/_2$"-(26 × 102 mm) and 5$^1/_4$"- (41.5 × 147 mm) cut-outs	**20835-873/05**
2	Partial width front panel folding / hinged with 2 × 5$^1/_4$"- cut-outs	**20835-875/05**
3	Front panel, folding / hinged, without cut-outs, prepared for filter mat.	**20835-876/05**
4	Filter mat (3 units)	**60713-182**

MPA44627

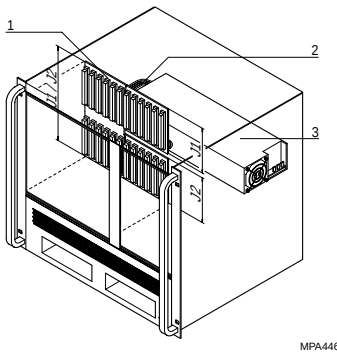
HE = U

4 Extension on the rear side

Extension space F

- Partial width front panel for closing the rear panel
- For 1 to 7 I/O-modules (hard disk not included)

Item	Extension space F	Order no.
1	Partial width front panel 4 U/57 HP	**20835-859/05**
2	For 1 to 7 I/O-Modules, 6 U/28 HP/80 mm deep, horizontal	**20835-858/05**



MPA44624

5 Backplane

The ordering number of the backplane can be found in Chapter Backplanes/Test adapters, VME bus.

The backplane (Item 1) is delivered mounted if you add the suffix / 05 after the order No.

Board-mounting height D	Suitable backplanes		
	Monolithic (6 U)	J1 + J2 (3 U)	
Slot	J1/J2 Slot	J1/J2 Slot	J2 Slot
1 to 12	8, 9, 10, 12	8, 12	2 – 12
13 to 21	13, 15, 16, 20, 21	20, 21	2 – 21

Casing systems
Desktop version 2 U 3.31.2
Desktop version 3 U 3.31.4
Desktop version 4 U 3.31.8
Tower version 4 U 3.31.12
Portable version 3 U 3.31.16

Subrack systems
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Subrack system 5 U 3.31.22
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Subrack system 9 U 3.31.46
19" cases for subrack systems 3.31.51

Subrack kits
Subrack kits 6 U . 3.31.52
Desk-top enclosure for subrack kits .. 3.31.55

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Power supply units..... 3.10.0

Backplanes/ test adapters .. 3.20.0

Microcomputer packaging systems (MPS) 3.30.0

VMEbus 3.31.0

CompactPCI.....3.32.0

Industrial PC 3.33.0

Accessories.....3.39.0

Appendix..... 3.90.0

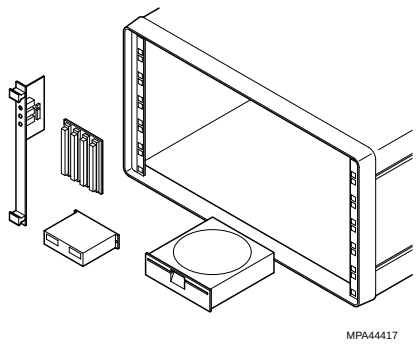
6 DC-cable loom

DC-cable loom (Item 2) connects the power supply with the backplane. Additional cable looms are available on request.

No. of sockets	Order No. for cable loom for			
	450 W Power supply		600 W power supply	
	J1/J2 (6 U) Monolithic	J1 (J2)	J1/J2 (6 U) Monolithic	J1 (J2)
8	**23204-022/05**	–	**23204-058/05**	–
9	**23204-023/05**	**23204-021/05**	**23204-059/05**	**23204-061/05**
10		–		–
12		**23204-018/05**		**23204-062/05**
13	**23204-023/05**	–	**23204-059/05**	–
15	**23204-024/05**		**23204-060/05**	
16				
20		**23204-020/05**		**23204-063/05**
21		**23204-024/05**		–

7 Power supply

Output (power), Type	Order no.
450 W, PE 1957/23	**20835-840/05**
600 W, PE 3267/23	**20835-885/05**



8 Accessories

HF-hinged front panel

Shielded hinged front panel for subrack system with 60 mm recessed board installation. Remaining mounting height 6 U/ 80 HP.

Description	Description	Order No.
HF-hinged front panel	6 U, partly mounted with assembly kit	**20835-835**

For further accessories see Chapter “Accessories”

Ordering example

Available Items	Description	Order no.
1	Bottom subrack 9 U, 160 mm boards, 60 mm recessed, 230 V	**20835-904 A1xxx**[0)]
2	Card holder for 12 slots with drive mounting height	**20835-830/05**
3	Front extension, partial width front panel, folding / hinged, with 2 × 5 1/4“ cut-outs	**20835-875/05**
4	Extension on the rear side, card holder for 7 I/O	**20835-858/05**
5	Backplane J1 12 slots, IN-board	**23000-042/05**
	Backplane J2 10 slots	**23000-210/05**
6	DC-cable loom for 12 slot J1 backplane	**23204-018/05**
7	450 W PSU	**20835-840/05**
8	Accessories: Case,Drive unit, etc.	

[0)] xxx = individual number, provided by Schroff

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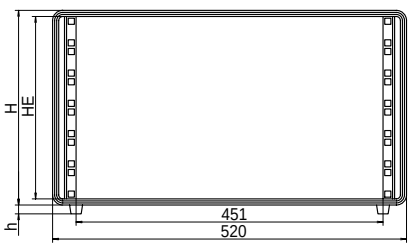
VME bus subrack systems

100-00-126

MPCD4418

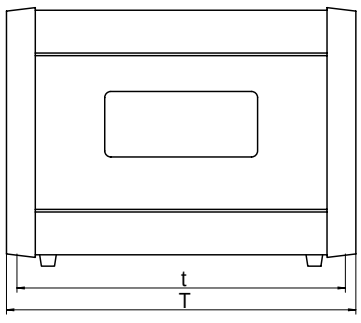
HE = U

Front view



MPA44419

Side view



MPA44420

19" cases for subrack systems

- Faster and more economic assembly of a system with the 19" comptec case and its VME bus system
- If approvals are available for your completed subrack system then additional testing and approval costs are not included.
- 4 U to 9 U

Delivery comprises:

Item	Qty	Description	Description
1	1	Front frame	Al, RAL 7030
2	1	Rear frame	Al, RAL 7030
3	2	Side panel	Steel 1.5 mm, RAL 7035
4	2	Handle shell	PC, RAL 7030; UL 94 V-0
5	1	Cover plate	Steel 1 mm, RAL 7035
6	1	Base plate	Steel 1 mm, RAL 7035
7	1	Rear panel	Al, RAL 7030 dark grey, only with 8 U
8	4	Case foot	PC, black, UL 94 V-0
9	1	Blanking plate 1 U	Al 2,5 mm, RAL 7030 dark grey, only with 8 U

Delivery: Item 1 to 8 mounted, with 8-U-subrack height Item 1 to 9 mounted

Case height U	Subrack height U	Order No. Case-depth (subrack depth)	
		400 (383) mm	500 (483) mm
4	4	**20835-952**	**20835-050**
5	5	**20835-953**	**20835-051**
7	7	**20835-022**	**20835-305**
9	8	**–**	**20835-677**
	9	**20835-024**	**20835-021**

By adding the suffix /05 after the order No. the subrack system will be installed into the case.

Table of Dimensions

Mounting depth d = D–24

Height	H mm	h mm	D mm
4 U	210	13	400, 500
5 U	255		
6 U	299		
7 U	344		
9 U	433		

Weights

Height	Depth mm	
	400	500
4 U	–	10.0 kg
5 U	–	10.5 kg
6 U	9.7 kg	11.5 kg
7 U	10.5 kg	12.4 kg
9 U	12.1 kg	14.1 kg

Casing systems

Desktop version 2 U 3.31.2
Desktop version 3 U 3.31.4
Desktop version 4 U 3.31.8
Tower version 4 U 3.31.12
Portable version 3 U 3.31.16

Subrack systems

Subrack system 4 U 3.31.18
Subrack system 5 U 3.31.22
Subrack system 7 U 3.31.26
Subrack system 8 U 3.31.36
Subrack system 9 U 3.31.46
19" cases for subrack systems 3.31.51

Subrack kits

Subrack kits 6 U . 3.31.52
Desk-top enclosure for subrack kits .. 3.31.55

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Power supply units..... 3.10.0

Backplanes/ test adapters .. 3.20.0

Microcomputer packaging systems (MPS) 3.30.0

VMEbus 3.31.0

CompactPCI.....3.32.0

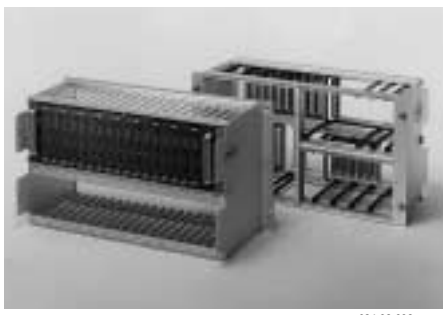
Industrial PC 3.33.0

Accessories.....3.39.0

Appendix..... 3.90.0

VME bus-subrack kits

VMEB 46 PG



034-92-002

Subrack kits 6 U

With the components subrack-kit, backplane, power supply, drive unit and case a complete plug-in unit carrier system can be constructed.

Subrack kit

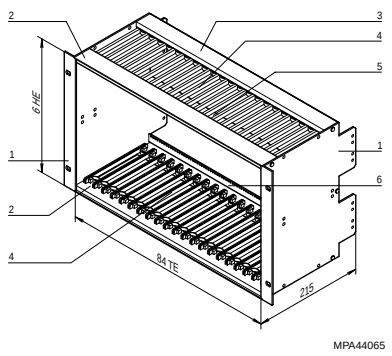
- for 160 mm deep cards
- for installation into 19” cabinets or into 19” cases
- 4 different kits for different number of slots and installation spaces for drive units.

Subrack-kit 6 U/84 HP	Slot number max.	Space for drive
Type A	21	–
Type B	10	2 × 3 U/42 HP
Type C	12	2 × 3 U/30 HP
Type D	10	6 U/40 HP

The power supply can be screwed on an assembly plate in the subrack.
For heat dissipation from the front towards the rear the plug-in unit can be mounted in the desk-top enclosure (two AC fans mounted).
For heat dissipation from the bottom to the top a 19” fan can be mounted under the subrack.

Note

Backplane, power supply and mounting bracket, cable looms please order separately



MPA44065

TE = HP
HE = U

Subrack-kit, Type A

- 21 slot (Double-height euroboard)

Delivery comprises

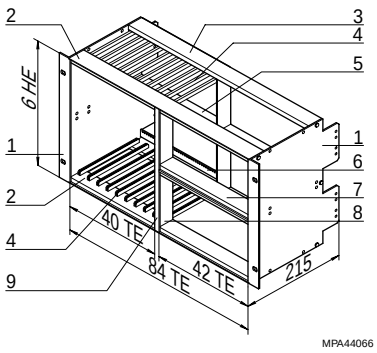
Item	Qty	Description	Material/Finish
1	2	Side panel	Al 1 mm, anodised, contact points paint-free
2	2	Horizontal rail with top cover, 84 HP	Aluminium extrusion, anodised, with threaded insert
3	2	Horizontal rail, rear, 84 HP	Aluminium extrusion, anodised, with threaded insert
4	2	Guide block	PPO, UL 94 V-0
5	1	Central rail	Aluminium extrusion, with threaded insert
6	2	Z-rails	Aluminium extrusion

Delivery: In kit form.

Order No.	**20819-088**

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VME bus-subrack kits



TE = HP
HE = U

Subrack-kit, Type B

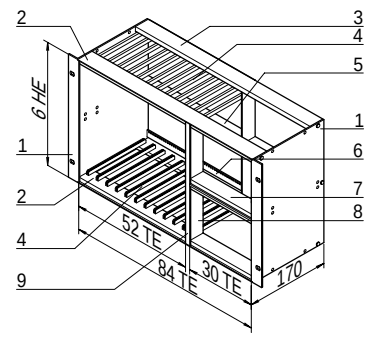
- 10 slot (Double-height euroboard)
- Drive unit space 2 × 3 U/42 HP or for simple-euroboards

Delivery comprises:

Item	Qty	Description	Material/Finish
1	2	Side panel	Al 1 mm, anodised, contact points paint-free
2	2	Horizontal rail with lip, 84 HP	Aluminium extrusion, anodised, with threaded insert
3	2	Horizontal rail, rear, 84 HP	Aluminium extrusion, anodised, with threaded insert
4	20	Guide rail	PPO, UL 94 V-0
5	1	Central rail	Aluminium extrusion, with threaded insert
6	2	Z-rails	Aluminium extrusion
7	2	Double rail	Aluminium extrusion
8	2	Splitter bar	Aluminium extrusion
9	2	Partial width front panel 2 U/6 U	Al 2.5 mm

Delivery: In kit form.

Order No. **20819-089**



TE = HP
HE = U

Subrack-kit, Type C

- 12 slot (double-height euroboard)
- Drive unit space 2 × 3 U/30 HP or for simple-euroboards

Delivery comprises:

Item	Qty	Description	Material/Finish
1	2	Side panel	Al 1 mm, anodised, contact points paint-free
2	2	Horizontal rail with lip, 84 HP	Aluminium extrusion, anodised, with threaded insert
3	2	Horizontal rail, rear, 84 HP	Aluminium extrusion, anodised, with threaded insert
4	24	Guide rail	PPO, UL 94 V-0
5	1	Central rail	Aluminium extrusion, with threaded insert
6	2	Z-rails	Aluminium extrusion
7	2	Double module rail	Aluminium extrusion
8	2	Splitter bar	Aluminium extrusion
9	2	Partial width front panel 6 U/6 HP	Al 2.5 mm

Delivery: In kit form.

Order No. **20819-095**

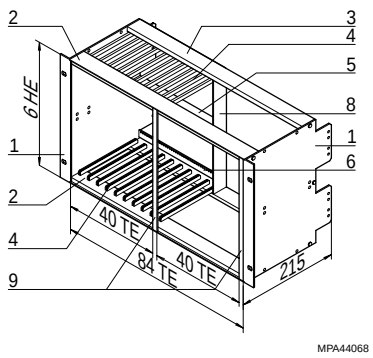
Casing systems
Desktop version 2 U 3.31.2
Desktop version 3 U 3.31.4
Desktop version 4 U 3.31.8
Tower version 4 U 3.31.12
Portable version 3 U 3.31.16

Subrack systems
Subrack system 4 U 3.31.18
Subrack system 5 U 3.31.22
Subrack system 7 U 3.31.26
Subrack system 8 U 3.31.36
Subrack system 9 U 3.31.46
19" cases for subrack systems 3.31.51

Subrack kits
Subrack kits 6 U . 3.31.52
Desk-top enclosure for subrack kits .. 3.31.55

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VME bus-subrack kits



TE = HP
HE = U

Subrack-kit, Type D

- 10 slot (Double-height euroboard)
- Drive space 6 U/30 HP

Delivery comprises:

Item	Qty	Description	Material/Finish
1	2	Side panel	Al 1 mm, anodised, contact points paint-free
2	2	Horizontal rail with top cover, 84 HP	Aluminium extrusion, anodised, with threaded insert
3	2	Horizontal rail, rear, 84 HP	Aluminium extrusion, anodised, with threaded insert
4	20	Guide rail	PPO, UL 94 V-0
5	1	Central rail	Aluminium extrusion, with threaded insert
6	2	Z-rails	Aluminium extrusion
8	1	Splitter bar	Aluminium extrusion
9	2	Partial width front panel 2 U/6 U	Al 2.5 mm

Delivery: In kit form.

Order No. **20819-096**

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VME bus-subrack kits

VMEB 41 EP

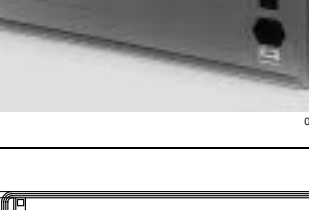
011029-2



MPA44419



MPA44420



A3-507

HE = U

Desk-top enclosure for subrack kits

Robust desk-top enclosure with 19”-rack mounting for VME bus-subracks

- 6 U/84 HP
- Mains connection wired complete
- GND/earthing class of protection 1 complying to VDE 0100
- Two AC-fans
- Ventilation from the front to the rear
- 400/500 mm deep

Delivery comprises:

Item	Qty	Description	Material/Finish
1	1	Desk-top enclosure 6 U	Colour combination RAL 7030 dark grey RAL 7035 light grey
2	1	Socket with fuse	10 A/250 V_{AC}
3	1	Power switch	2-pole, 10 A/250 V
4	1	A/C line filter	3 A/250 V, 6 A/115 V
5	1	AC cable loom	
6	1	Rear panel with 2 fans	10 W, 100 m^3/h free blowing, 30 dB
7	1	Cover plate, 60 × 180 mm	For installation of connectors

Delivery: Completely assembled and wired

Depth D mm	Weight kg	Order No. 230 V_{AC}	Order No. 115 V_{AC}
400	10,51	**10225-180**	**10225-178**
500	12,5	**10225-181**	**10225-179**

Table of Dimensions

Height mm	Width mm	t
299	520	D – 25 mm

Casing systems

Desktop version 2 U 3.31.2
Desktop version 3 U 3.31.4
Desktop version 4 U 3.31.8
Tower version 4 U 3.31.12
Portable version 3 U 3.31.16

Subrack systems

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Subrack system 5 U 3.31.22
Subrack system 7 U 3.31.26
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Subrack system 9 U 3.31.46
19” cases for subrack systems 3.31.51

Subrack kits

Subrack kits 6 U . 3.31.52
Desk-top enclosure for subrack kits .. 3.31.55

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Power supply units..... 3.10.0

Backplanes/ test adapters .. 3.20.0

Microcomputer packaging systems (MPS) 3.30.0
VMEbus 3.31.0
CompactPCI.....3.32.0
Industrial PC 3.33.0
Accessories.....3.39.0

Appendix..... 3.90.0

CompactPCI systems overview



12398013

Application

CompactPCI combines the varied and low-cost hardware and software options of the PC world with robust 19" technology.

Due to the high data transfer rates, the systems are especially suited for use in telecommunications and automation engineering.

The microcomputer construction systems comprise board area, backplane, drive unit, fans and power supply including full wiring.

For their application, there are subrack units available which can be mounted into a cabinet or into a casing. All systems are designed as standard to accommodate ambient temperatures from 0 °C to +40 °C.

Design

The systems are based on the europacPRO subrack system. All the components such as power supply units, backplanes, drive units, guide rails etc. are already included in the basic version.

The systems are fully constructed and optimally prepared for the insertion of boards and installation of drive units.

Depending on the application, the systems are also prepared for the rear-side installation (rear I/O, 80 mm) of boards.

Electrical design

The mains/line voltage can be switched from 230 to 115 V_{AC}.

Depending on the design, the mains supply connection with fuse and mains switch is configured on the front or rear side. The power supply units generate the required DC voltages.

The fans are supplied with DC voltage.

Heat dissipation

The specific airflow permits the installation of boards of high component density. There are systems with heat dissipation from bottom to top and those with heat dissipation from front to rear.

Standards

General:
CompactPCI Spec. 2.0 Rev. 3.0

The specifications of CompactPCI are available from PICMG. Schroff is a member of this association. Further information on CompactPCI can be found on the PICMG homepage at: www.picmg.com

Subrack:
IEC 60 297-3 and 60 297-4
IEEE 1101.10

Subrack with rear I/O:
for 80 mm rear I/O boards in accordance with IEEE 1101.11

Connector:
IEC 61 076-4-101

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CompactPCI systems overview

CompactPCI subrack systems

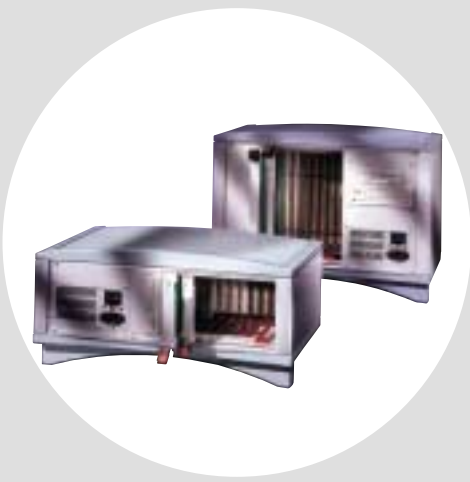
- 3 U to 8 U
- 8 slot (system slot on right)
- With 3 and 6 U backplanes
- With/without rear I/O
- Shielded versions
- Optimised heat dissipation



12398002

CompactPCI casing systems with the projet casing

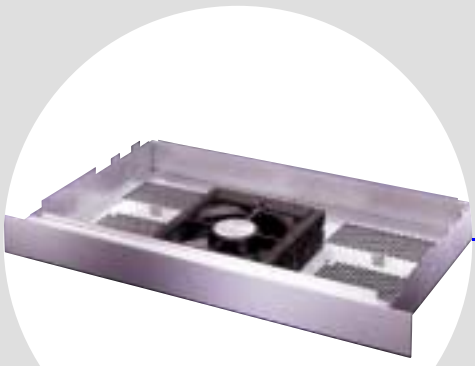
- From subracks, it is simple, quick and cost-effective to create a casing system
- No extra inspection costs or certifications are required



12398018

Accessories for CompactPCI systems

- Mechanical parts: side panel, cover plate, horizontal rail
- Heat dissipation components



12398006

Subrack systems

3U subrack system for 3U boards 3.32.2
3, 4, 5U subrack system for 3U boards with rear I/O.....3.32.4
4U subrack system for 6U boards with rear I/O.....3.32.6
6U subrack system for 6U boards 3.32.8
6, 7, 8U subrack system for 6U boards with rear I/O.....3.32.10

Case systems

projet case 3.32.12
Rear panel and side panel 3.32.13
Air flow barriers 3.32.13

Accessories

Recessed side panel 3.32.14
Cover plate.....3.32.14
WS-type horizontal rail with notch.....3.32.14
Heat dissipation..3.32.15

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Power supply units..... 3.10.0

Backplanes/ test adapters .. 3.20.0

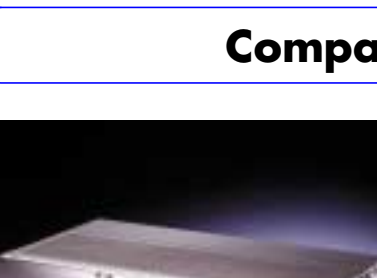
Microcomputer packaging systems (MPS) 3.30.0
VMEbus 3.31.0
CompactPCI.....3.32.0
Industrial PC 3.33.0
Accessories.....3.39.0

Appendix..... 3.90.0

CompactPCI subrack systems

12398002

CPCI6223



CPCI6224

TE = HP
HE = U

3 U subrack system for 3 U boards

- For 3 U plug-in boards, 160 mm deep, installation from the front
- 8-slot backplane, system slot on the right (width of the CPU 8 HP, max. 12 HP)
- Drive unit for hard disk and floppy disk
- 235 W ATX-PSU (mains voltage 115/230 V, changeable at the front)
- With EMC shielding
- Completely assembled and wired

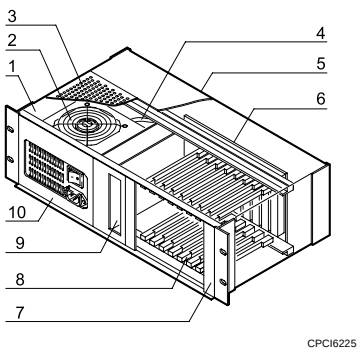
Delivery: Mechanical and electrical/electronic elements completely assembled and wired

Description	Order No. (1 piece)
CompactPCI subrack system, 3 U for 3 U boards, drive unit for HD and FD, power supply unit 235 W ATX	**24579-002**

Note

The system shown here is only one of many possibilities. Solutions tailored to your individual requirements can always be provided quickly and cost-effectively.

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Delivery comprises:

Item	Qty	Description	Description
1	1	Subrack (side panels, horizontal rails), W × H × D=84 HP × 3 U × 214.5 mm	Al, 2.5 mm, anodised, chromated, contact surfaces
2	1	ATX power supply, Type FSP 235-60GI 235 W (VDE, UL)	Mains switch, mains input, 115/230 V mains voltage change-over using slider switch
3	1	Perforated cover plate and base plate	Al 1.0 mm, chromated
4	1	DC wiring harness	Power supply – power supply unit for the backplane and for the drives
5	1	Rear panel	Al 1.0 mm, anodised on the outside, yellow chromated on the inside
6	1	CompactPCI backplane	3 U, 8-slot, 32HP, system slot on the right, max. CPU width 12HP
7	1	Partial width front panel 3 U/4 HP	Al 2.5 mm, anodised on the outside, yellow chromated on the inside, can be removed if CPU is wider than 8 HP
8	1	3 U/40 HP board carrier with guide rail	for 8 plug-in boards, CPU slot on the right, CPU width 8 HP, max. 12HP
9	1	3 U/14 HP drive unit	Al, 1 × 3.5” HD, 1 × 3.5” FD
10	1	3 U/30 HP partial width front panel	Al 2.5 mm, anodised on the outside, yellow chromated on the inside, for ATX-PSU

Electrical properties

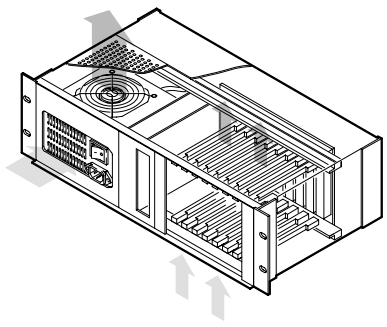
The systems comply with the standards for interference emission, EN 50081-1 (EN 55011, VDE 0875 part 11 Class B and EN 55022, VDE 0878 Part 3 Class B) and for interference immunity, EN 50082-2.

EMC shielding is provided by conductive surfaces on the contact surfaces and all-round EMC seals.

Thermal management

Heat dissipation is provided by the integral fan in the power supply unit taking air in through ventilation holes at the front and then exhausting it at the top.

Heat is dissipated from the board carrier by convection from bottom to top.



Subrack systems

3U subrack system for 3U boards 3.32.2
3, 4, 5U subrack system for 3U boards with rear I/O.....3.32.4
4U subrack system for 6U boards with rear I/O.....3.32.6
6U subrack system for 6U boards 3.32.8
6, 7, 8U subrack system for 6U boards with rear I/O.....3.32.10

Case systems

projet case 3.32.12
Rear panel and side panel 3.32.13
Air flow barriers 3.32.13

Accessories

Side panel 3.32.14
Cover plate.....3.32.14
WS-type horizontal rail with notch.....3.32.14
Heat dissipation..3.32.15

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Power supply units..... 3.10.0

Backplanes/ test adapters .. 3.20.0

Microcomputer packaging systems (MPS) 3.30.0
VMEbus 3.31.0
CompactPCI.....3.32.0
Industrial PC 3.33.0
Accessories.....3.39.0

Appendix..... 3.90.0

CompactPCI subrack systems

12398014

Front view of the base system

CPCI6227

Rear view of the base system



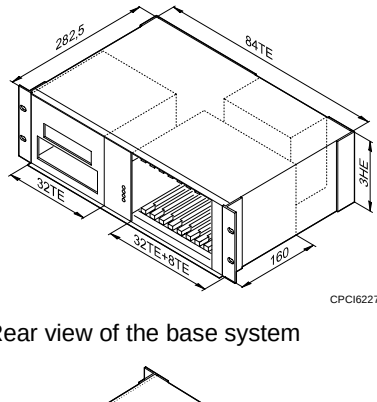
CPCI6228

Front view of the 4U



CPCI6229

Front view of the 5U



CPCI6230

TE = HP
HE = U

3, 4, 5 U subrack system for 3 U boards with rear I/O

- For 3 U board format, 160 mm deep, installation from the front
- 8-slot backplane, CPU slot on the right CPU width 8 HP, max. 12 HP), M-connector for PSU
- 8 rear I/O for 80 mm deep boards from the rear
- Drive unit for HD, FD and CD-ROM drive
- 19” PSU, 12 HP, 180 W (broad range input)
- With EMC shielding
- Completely assembled and wired

Various versions

- 3 U base system
- 4 U with 1 U fan unit under the 3 U base system, airflow from bottom to top
- 5 U with 1 U air intake/outlet module at the bottom, 3 U base system, 1 U air outlet at the top with radial fan module

Delivery: Mechanical and electrical/electronic elements completely assembled and wired

CompactPCI subrack system, 3 U base system for 3 U cards with rear I/O, drive unit (2 × 3 1/4”, 1 × 5 1/4”, 19” power supply unit 180 W		Order No.
3 U	3 U base system (convection)	**24579-016**
4 U	3 U base system with 1U fan unit mounted at the bottom, 1 fan mounted centrally (see Fans in MPS Accessories for additional fans)	**24579-017**
5 U	3 U base system with 1 U air intake/outlet module mounted at the bottom and 1 U radial fan module, 1 mounted radial fan (additional fan not in the scope of delivery; see Fans in MPS Accessories)	**24579-018**

Note

The system shown here is only one of many possibilities. Solutions tailored to your individual requirements can always be provided quickly and cost-effectively.

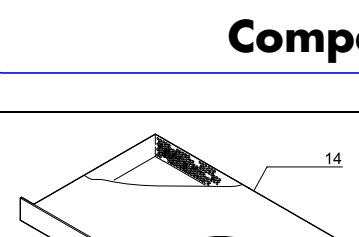
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CompactPCI subrack systems

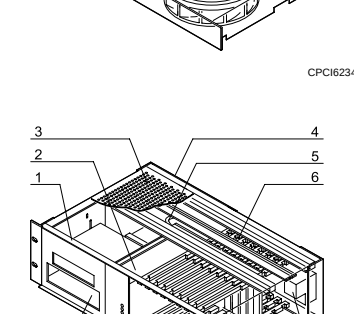
CPCI6234

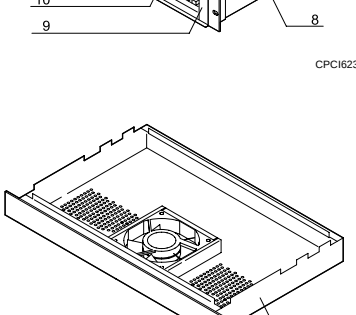
CPCI6231

CPCI6232



CPCI6233


CPCI6235


CPCI6236

Delivery comprises:

Item	Qty	Description	Description
1	1	Subrack (side panels, horizontal rails), W × H × D = 84 HP × 3/4/5 U × 282.5 mm	Al, 2.5 mm, anodised, chromated, contact surfaces, completely shielded
2	1	19” power supply, P4180-type	3 U/12 HP, 180 W
3	1	Perforated cover plate and base plate	Al 1.0 mm, chromated
4	1	3 U/44 HP rear panel	Al 2.5 mm, anodised on the outside, yellow chromated on the inside
5	1	AC and DC wiring harness	AC power supply and DC power supply unit connection
6	1	Board carrier for rear I/O mounting	3 U, 80 mm deep, 8-slot
7	1	3 U/8 HP mains input module	Mains switch with fuse
8	1	CompactPCI backplane	3 U, 8-slot, 32HP, system slot on the right, max. CPU width 12-slot
9	1	Partial width front panel 3 U/4 HP	Al 2.5 mm, anodised on the outside, yellow chromated on the inside, can be removed if CPU is wider than 8 HP
10	1	Board carrier 3 U/40 HP with guide rail	CPU slot on the right, max. CPU width 8 HP
11	1	3 U/32 HP drive unit	Al, 1 × 3.5” HD, 1 × 3.5” FD and 1 × 5.25” CD-ROM drive
12	1	Fan unit at the bottom, 1 × DC fan (12 V)	1 U (4 U MPS only)
13	1	Air intake/outlet module at the bottom	1 U (5 U MPS only)
14	1	Radial fan module, 1 × DC radial fan 12 V	1 U (5 U MPS only)

Electrical properties

The systems comply with the standards for interference emission, EN 50081-1 (EN 55011, VDE 0875 part 11 Class B and EN 55022, VDE 0878 Part 3 Class B) and for interference immunity, EN 50082-2.

EMC-shielding is provided by conductive surfaces on the contact surfaces and all-round EMC seals.

Thermal management

- Heat is dissipated from the 3 U base unit by convection from bottom to top (not shown)
- 4 U, base unit with fan unit (at bottom), forced heat dissipation from bottom to top
- 5 U, air intake/outlet module at the bottom, base unit and with radial fan at the top, forced heat dissipation from front to back

Subrack systems

3U subrack system for 3U boards 3.32.2
3, 4, 5U subrack system for 3U boards with rear I/O.....3.32.4
4U subrack system for 6U boards with rear I/O.....3.32.6
6U subrack system for 6U boards 3.32.8
6, 7, 8U subrack system for 6U boards with rear I/O.....3.32.10

Case systems

projet case 3.32.12
Rear panel and side panel 3.32.13
Air flow barriers 3.32.13

Accessories

Side panel 3.32.14
Cover plate.....3.32.14
WS-type horizontal rail with notch.....3.32.14
Heat dissipation..3.32.15

Downloaded from Arrow.com.

Power supply units..... 3.10.0

Backplanes/ test adapters .. 3.20.0

Microcomputer packaging systems (MPS) 3.30.0
VMEbus 3.31.0
CompactPCI.....3.32.0
Industrial PC 3.33.0
Accessories.....3.39.0

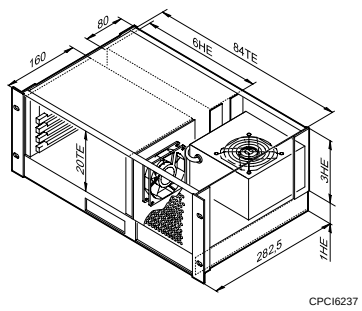
Appendix..... 3.90.0

CompactPCI subrack systems



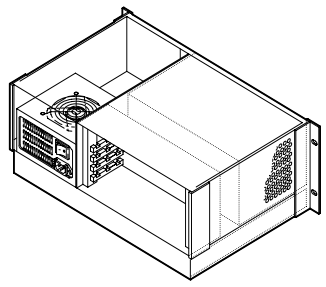
12398001

Front view



CPCI6237

Rear view



CPCI6238

TE = HP
HE = U

4 U subrack system for 6 U boards with rear I/O

- For 6 U board format, 160 mm deep, installation from the front
- 4-slot backplane, CPU slot at the top, incl. P3 connector (max. CPU width 8HP), horizontal installation
- Rear I/O for 80 mm deep boards from the rear
- Drive unit for hard disk and floppy disk and CD-ROM drive
- 235 W ATX-PSU (mains voltage 115/230 V)
- Forced cooling of the board area from front to left
- With EMC shielding
- Completely assembled and wired

Delivery: Mechanical and electrical/electronic elements completely assembled and wired

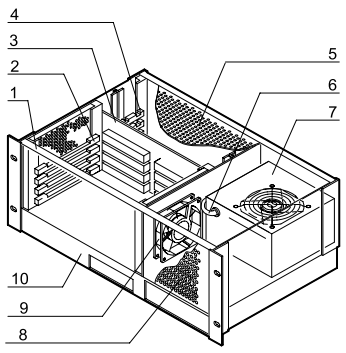
Description	Order No.
CompactPCI subrack system, 4 U for 6 U boards, drive mounting bay for HD, FD and CD-ROM drive, 235 W ATX power supply unit	**24579-019**

Note

The system shown here is only one of many possibilities. Solutions tailored to your individual requirements can always be provided quickly and cost-effectively.

Downloaded from Arrow.com.

CompactPCI subrack systems



CPCI6239

Delivery comprises:

Item	Qty	Description	Description
1	1	Subrack (side panels, horizontal rails, cover plate, base plate and left-hand side panel partially perforated), W × H × D = 84 HP × 4 U × 282.5 mm	Al, 2.5 mm, anodised, chromated, contact surfaces, completely shielded
2	1	Board area 6 U/20 HP with guide block	CPU slot on the right, max. CPU width 8 HP, horizontal installation
3	1	CompactPCI backplane	6 U, 4-slot, 16 HP, system slot at the top, max. CPU width 8 HP
4	1	Board area for rear I/O mounting	6 U, 80 mm deep, 4-slot, horizontal installation
5	1	Perforated cover plate and base plate	Al 1.0 mm, chromated
6	1	DC wiring harness	Power supply – power supply unit for the backplane and for the drives
7	1	ATX power supply, Type FSP 235-60GI 235 W (VDE, UL)	Mains switch, mains input, 115/230 V mains voltage change-over using slider switch
8	1	3 U, 30 HP front panel	perforated
9	1	DC fan	12 volt
10	1	1 U/84 HP drive unit, 285 mm	Al, 1 × 3.5” HD, 1 × 3.5” FD and 1 × 5.25” CD-ROM drive

Electrical properties

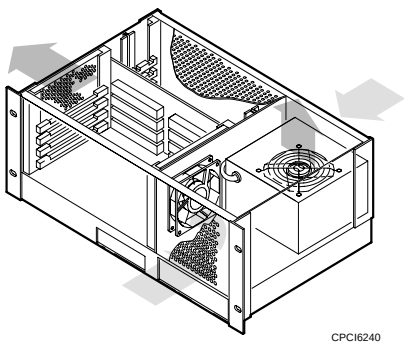
The systems comply with the standards for interference emission, EN 50081-1 (EN 55011, VDE 0875 part 11 Class B and EN 55022, VDE 0878 Part 3 Class B) and for interference immunity, EN 50082-2.

EMC-shielding is provided by conductive surfaces on the contact surfaces and all-round EMC seals.

Thermal management

Airflow for the power supply unit is provided by the integral fan through ventilation holes at the rear and then exhausted at the top.

Forced heat dissipation of the board is provided through ventilation holes at the front, air is drawn though the boards by the fan then and exhausted to the left.



CPCI6240

Subrack systems

3U subrack system for 3U boards 3.32.2
3, 4, 5U subrack system for 3U boards with rear I/O.....3.32.4
4U subrack system for 6U boards with rear I/O.....3.32.6
6U subrack system for 6U boards 3.32.8
6, 7, 8U subrack system for 6U boards with rear I/O.....3.32.10

Case systems

projet case 3.32.12
Rear panel and side panel 3.32.13
Air flow barriers 3.32.13

Accessories

Side panel 3.32.14
Cover plate.....3.32.14
WS-type horizontal rail with notch.....3.32.14
Heat dissipation..3.32.15

Downloaded from Arrow.com.

Power supply units..... 3.10.0

Backplanes/ test adapters .. 3.20.0

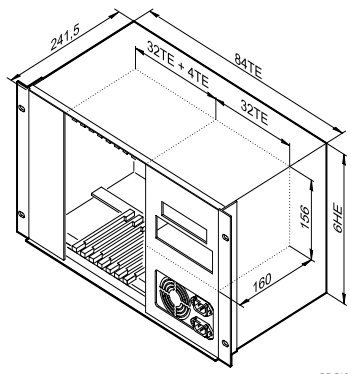
Microcomputer packaging systems (MPS) 3.30.0
VMEbus 3.31.0
CompactPCI.....3.32.0
Industrial PC 3.33.0
Accessories.....3.39.0

Appendix..... 3.90.0

CompactPCI subrack systems

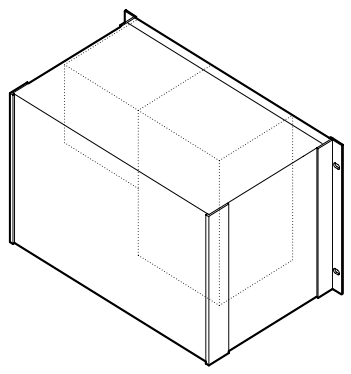
12398004

Front view



CPCI6241

Rear view



CPCI6242

TE = HP
HE = U

6 U subrack system for 6 U boards

- For 6 U board format, 160 mm deep, installation from the front
- 8-slot backplane, CPU slot on the right (max. CPU width 8 HP)
- Drive mounting bay for hard disk and floppy disk and CD-ROM drive
- 235 W ATX-PSU (mains voltage 115/230 V
- With EMC shielding
- Completely assembled and wired

Delivery: Mechanical and electrical/electronic elements completely assembled and wired

Description	Order No.
CompactPCI subrack system, 6 U for 6 U boards, drive unit for HD, FD and CD-ROM drive, 235 W ATX power supply unit	**24579-007**

Note

The system shown here is only one of many possibilities. Solutions tailored to your individual requirements can always be provided quickly and cost-effectively.

Downloaded from Arrow.com.

Delivery comprises:

Item	Qty	Description	Description
1	1	Subrack (side panels, horizontal rails), W × H × D=84 HP × 6 U × 241.5 mm	Al, 2.5 mm, anodised, chromated, contact surfaces
2	1	Perforated cover plate and base plate	Al 1.0 mm, chromated
3	1	Rear panel	Al 1.0 mm, anodised on the outside, yellow chromated on the inside
4	1	CompactPCI backplane	6 U, 8-slot, 32 HP, system slot on the right, max. CPU width 8 HP
5	1	DC wiring harness	Power supply – power supply unit for the backplane and for the drives
6	1	Drive unit with ATX power supply, 6 U/32 HP, type FSP 235-60GI, 235 W (VDE, UL)	Drive unit for 1 × 3.5" HD, 1 × 3.5" FD and 1 × $5^1/_2$" CD, power supply unit with mains switch, mains input, 115/230 V mains voltage slider switch, power supply for backplane and for the drives
7	1	Board carrier 6 U/32 HP + 4 HP with guide block	for 8 plug-in boards, vertical installation, CPU slot on the right, max. CPU width 8 HP
8	1	6 U/16 HP partial width front panel	Al 2.5 mm, anodised on the outside, yellow chromated on the inside

Electrical properties

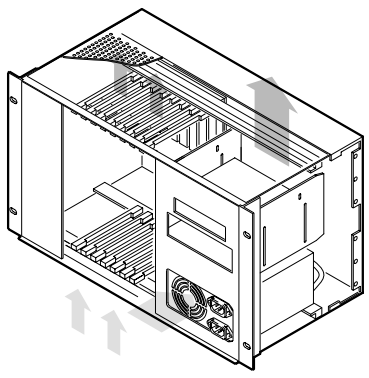
The systems comply with the standards for interference emission, EN 50081-1 (EN 55011, VDE 0875 part 11 Class B and EN 55022, VDE 0878 Part 3 Class B) and for interference immunity, EN 50082-2.

EMC-shielding is provided by conductive surfaces on the contact surfaces and all-round EMC seals.

Thermal management

Heat dissipation is provided by the integral fan in the power supply unit through ventilation holes at the front and then exhausted at the top.

Heat is dissipated from the board carrier by convection from bottom to top.


CPCI6244

Subrack systems
3U subrack system for 3U boards 3.32.2
3, 4, 5U subrack system for 3U boards with rear I/O.....3.32.4
4U subrack system for 6U boards with rear I/O.....3.32.6
6U subrack system for 6U boards 3.32.8
6, 7, 8U subrack system for 6U boards with rear I/O.....3.32.10

Case systems
projet case 3.32.12
Rear panel and side panel 3.32.13
Air flow barriers 3.32.13

Accessories
Side panel 3.32.14
Cover plate.....3.32.14
WS-type horizontal rail with notch.....3.32.14
Heat dissipation..3.32.15

Downloaded from Arrow.com.

Power supply units..... 3.10.0

Backplanes/ test adapters .. 3.20.0

Microcomputer packaging systems (MPS) 3.30.0
VMEbus 3.31.0
CompactPCI.....3.32.0
Industrial PC 3.33.0
Accessories.....3.39.0

Appendix..... 3.90.0

CompactPCI subrack systems

12398003

Front view of the base system

CPCI6245

Rear view of the base system



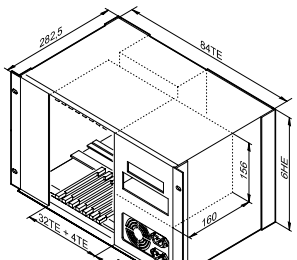
CPCI6246

Front view of the 7U



CPCI6247

Front view of the 8U



CPCI6248

TE = HP
HE = U

6, 7, 8 U subrack system for 6 U boards with rear I/O

- For 6 U board format, 160 mm deep, installation from the front
- 8-slot backplane, CPU slot on the right, M-connector for PSU (max. CPU width 8 HP)
- Rear I/O for 80 mm deep boards from the rear
- Drive mounting bay for hard disk, floppy disk and CD-ROM drive
- 235 W ATX-PSU (mains voltage 115/230 V
- With EMC shielding
- Completely assembled and wired

Various versions

- 6 U base system
- 7 U with 1 U fan unit under the 6 U base system, airflow from bottom to top
- 8 U with 1 U air intake/outlet module at the bottom, 6 U base system, 1 U air outlet at the top with radial fan module

Delivery: Mechanical and electrical/electronic elements completely assembled and wired

CompactPCI subrack system, 6U base system for 6U boards with rear I/O, drive unit for 1 × $3^1/_2$" HD, 1 × $3^1/_2$" FD, 1 / $5^1/_4$" CD-ROM drive, 19" power supply unit 235 W		Order No.
6 U	6 U base system (convection)	**24579-020**
7 U	6 U base system with 1 U fan unit mounted at the bottom, 1 fan is mounted (please order additional fans separately; see Fans in MPS Accessories)	**24579-021**
8 U	3 U base system with integral 1 U air intake/ outlet module at the bottom and 1 U radial fan module, 1 radial fan mounted on the left (please order additional fans separately; see Fans in MPS Accessories)	**24579-022**

Note

The system shown here is only one of many possibilities. Solutions tailored to your individual requirements can always be provided quickly and cost-effectively.

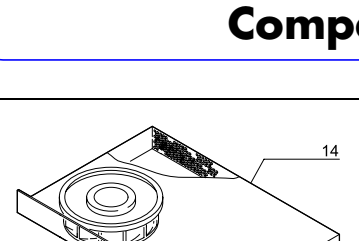
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CompactPCI subrack systems

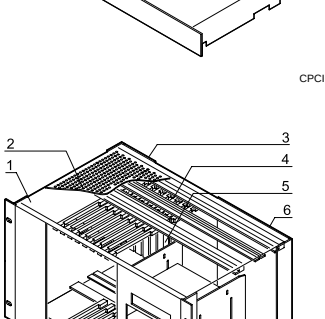
CPCI6249

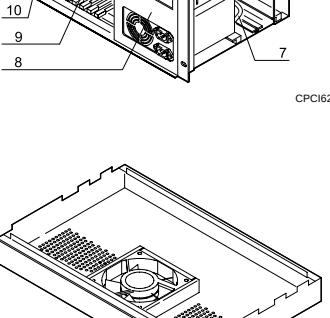
CPCI6250

CPCI6232



CPCI6233


CPCI6251


CPCI6252

Delivery comprises:

Item	Qty	Description	Description
1	1	Subrack (side panels, horizontal rails), W × H × D=84 HP × 6 U × 282.5 mm	Al, 2.5 mm, anodised, chromated, contact surfaces, completely shielded
2	1	Perforated cover plate and base plate	Al 1.0 mm, chromated
3	1	6 U/16 HP rear panel	Al 2.5 mm, anodised on the outside, yellow chromated on the inside
4	1	Board carrier for rear I/O mounting	6 U, 80 mm deep, 8-slot, vertical installation
5	1	CompactPCI backplane	6 U, 8-slot, 32 HP, system slot on the right, max. CPU width 8 slot
6	1	6 U/36 HP rear panel	Al 2.5 mm, anodised on the outside, yellow chromated on the inside
7	1	DC wiring harness	DC power supply unit connection – backplane and drives
8	1	Drive unit with ATX power supply, 6 U/32 HP, type FSP 235-60GI, 235 W (VDE, UL)	Drive unit for 1 × 3.5” HD, 1 × 3.5” FD and 1 × $5^1/_2$” CD, power supply unit with mains switch, mains input, 115/230 V main voltage slider switch
9	1	Board guide 3 U/40 HP with guide block	CPU slot on the right, max. CPU width 8 HP
10	1	Partial width front panel 6 U/16 HP	Al 2.5 mm, anodised on the outside, yellow chromated on the inside
12	1	Fan unit at the bottom, 1 × DC fan 12 V	1 U (7 U MPS only)
13	1	Air intake/outlet module at the bottom	1 U (8 U MPS only)
14	1	Radial fan module, 1 × DC radial fan 12 V	1 U (8 U MPS only)

Electrical properties

The systems comply with the standards for interference emission, EN 50081-1 (EN 55011, VDE 0875 part 11 Class B and EN 55022, VDE 0878 Part 3 Class B) and for interference immunity, EN 50082-2.

EMC-shielding is provided by conductive surfaces on the contact surfaces and all-round EMC seals.

Thermal management

- The 6 U base unit is ventilated by convection from bottom to top (not shown)
- 7 U, base unit with fan unit (at bottom), forced ventilation from bottom to top
- 8 U, air intake/outlet module at the bottom, base unit and with radial fan at the top, forced ventilation from front to back

Subrack systems

3U subrack system for 3U boards 3.32.2
3, 4, 5U subrack system for 3U boards with rear I/O.....3.32.4
4U subrack system for 6U boards with rear I/O.....3.32.6
6U subrack system for 6U boards 3.32.8
6, 7, 8U subrack system for 6U boards with rear I/O.....3.32.10

Case systems

projet case 3.32.12
Rear panel and side panel 3.32.13
Air flow barriers 3.32.13

Accessories

Side panel 3.32.14
Cover plate.....3.32.14
WS-type horizontal rail with notch.....3.32.14
Heat dissipation..3.32.15

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Power supply units..... 3.10.0

Backplanes/ test adapters .. 3.20.0

Microcomputer packaging systems (MPS) 3.30.0
VMEbus 3.31.0
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Accessories.....3.39.0

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CompactPCI case systems

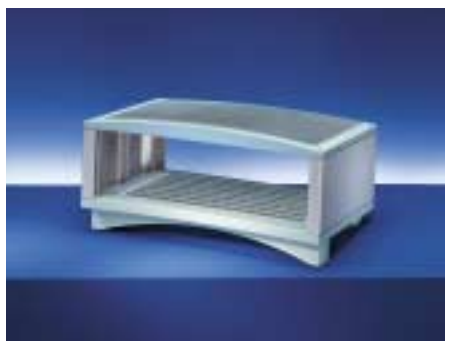
12398018

Case systems

CompactPCI case systems can be assembled using a subrack system and the attractive case (projet).

– Case systems that use a subrack system are quick and cost-effective to assemble

– Additional testing and certification costs are eliminated if you already have approval for your finished case system



12399002

projet case

- Attractive case (projet) for housing CompactPCI subrack systems
- Sizes:
  Height 2 U to 12 U
- Width 84 HP, depth 288 mm

Delivery:

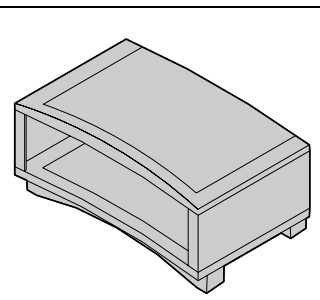
Item	Qty	Description	Description
1	2	Side panel[1)]	Aluminium extrusion, powder-coated, RAL 9006
2	1	Cover part	ABS, UL 94 V-0, IP 20
3	1	Base part	ABS, UL 94 V-0, IP 20
4	4	Foot	PU, black
5	1 set	Mounting parts	

[1)] Max. thickness of the 19” mounting bracket 3.2 mm

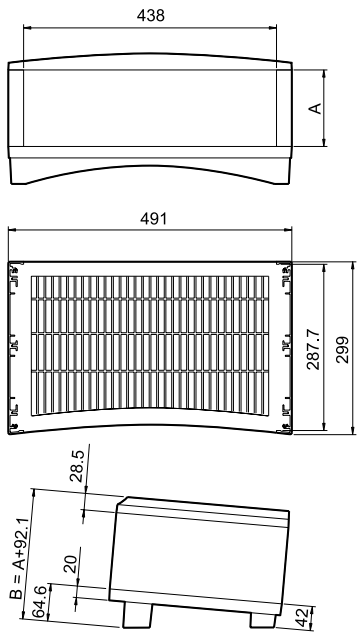
Delivery comprises: (kit)

Height U	A mm	W mm	Order No.
2	88.1	180.2	**24570-002**
3	132.5	224.6	**24570-003**
4	177.0	269.1	**24570-004**
5	221.5	313.6	**24570-005**
6	265.9	358.0	**24570-006**
7	310.4	402.5	**24570-007**
8	354.8	446.9	**24570-008**
9	399.3	491.4	**24570-009**
10	443.7	535.8	**24570-010**
12	532.6	624.7	**24570-012**

Note
Wall mounting or tower design available on request



Proj6267



Proj6141

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Rear panel

Proj6268

Proj6142

Side panel

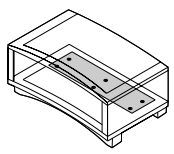
Proj6274

Proj6145

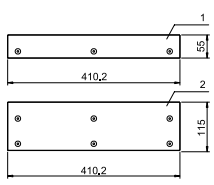
Rear panel and side panel

- Rear panel (Al 3 mm, front anodised, rear chromated)
- Side panel: attractive finish. Can be used if the subrack system is shorter than the case (Al 1.5 mm, anodised, with mounting parts)

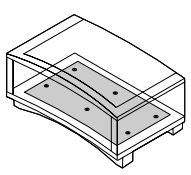
Height	Rear panel A	Side panel A	Order No.	
U	mm	mm	Rear panel	Side panel
2	88.1	87.0	**34570-014**	**24570-016**
3	132.6	131.4	**34570-015**	**24570-017**
4	177.0	175.9	**34570-016**	**24570-018**
5	221.5	220.3	**34570-017**	**24570-019**
6	265.9	264.8	**34570-018**	**24570-020**
7	310.4	309.2	**34570-019**	**24570-021**
8	354.8	353.7	**34570-020**	**24570-022**
9	399.3	398.1	**34570-021**	**24570-023**
10	443.7	442.6	**34570-022**	**24570-024**
12	532.6	531.5	**34570-024**	**24570-026**



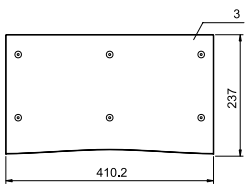
Proj6270



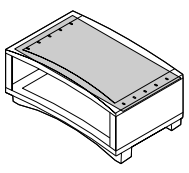
Proj6271



Proj6272



Proj6273



Proj6269



Proj6143

Air flow barriers

- At the bottom in the base part (Al 1 mm, anodised, with mounting parts)
- At the top in the cover part (Al 1.5 mm, anodised)

Item	Version	Cover	Order No.
1	Cover plate, depth 55 mm	At the bottom rear	**24570-027**
2	Cover plate, depth 115 mm	At the bottom rear	**24570-028**
3	Full cover at the bottom	At the bottom	**24570-029**
4	Full cover at the top	At the top	**24570-013**

Subrack systems
3U subrack system for 3U boards 3.32.2
3, 4, 5U subrack system for 3U boards with rear I/O.....3.32.4
4U subrack system for 6U boards with rear I/O.....3.32.6
6U subrack system for 6U boards 3.32.8
6, 7, 8U subrack system for 6U boards with rear I/O.....3.32.10

Case systems
projet case 3.32.12
Rear panel and side panel 3.32.13
Air flow barriers 3.32.13

Accessories
Side panel 3.32.14
Cover plate.....3.32.14
WS-type horizontal rail with notch.....3.32.14
Heat dissipation..3.32.15

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Power supply units..... 3.10.0

Backplanes/ test adapters .. 3.20.0

Microcomputer packaging systems (MPS) 3.30.0
VMEbus 3.31.0
CompactPCI.....3.32.0
Industrial PC 3.33.0
Accessories.....3.39.0

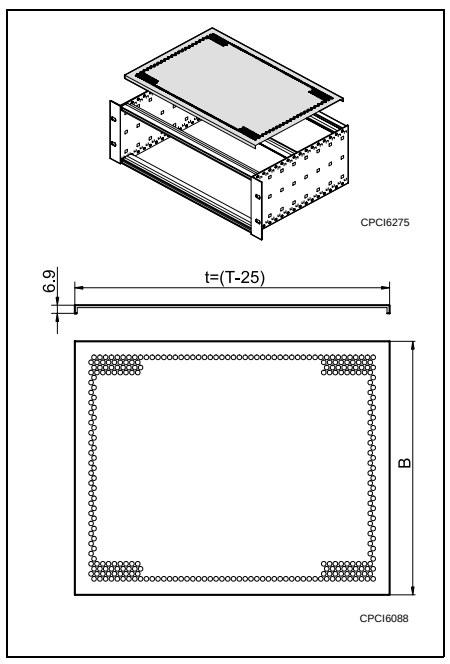
Appendix..... 3.90.0

CompactPCI accessories

Side panel

- For CompactPCI systems with mounting space for 160 mm deep boards and 80 mm deep boards from the rear
- In accordance with IEEE 1101.11

Qty	Description	Description	Order No.
1	3 U side panel	Depth 275 mm, Al 2 mm, clear chromated	**34579-025**
1	6 U side panel		**34579-031**



Cover plate

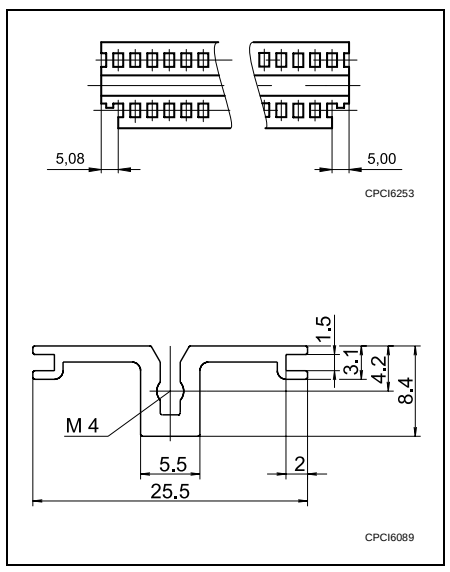
For CompactPCI systems with mounting space for 160 mm deep boards and 80 mm deep boards from the rear

- Cover plates for top and bottom
- Perforated
- Suitable horizontal rails for EMC assembly of the cover plate

Qty	Description	Description	Order No.
1	Cover plate Width W = 42 HP	Depth 275 mm, Al 2 mm, clear chromated	**34579-161**
1	Cover plate Width B = 84 HP		**34579-160**
100	Mounting parts	M4 × 6 TORX screws	**24560-135**

Note

The WS-type horizontal rail with notch is required at the rear to mount the fan unit. Please order separately.



WS-type horizontal rail with notch

- For CompactPCI systems with mounting space for 160 mm deep boards and 80 mm deep boards from the rear

Qty	Description	Description	Order No.
1	84 HP horizontal rail, WS-type with notch	Aluminium extrusion, anodised, conductive contact surfaces	**34579-040**
100	Mounting parts	M4 × 14 TORX screws	**24560-130**

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CompactPCI accessories

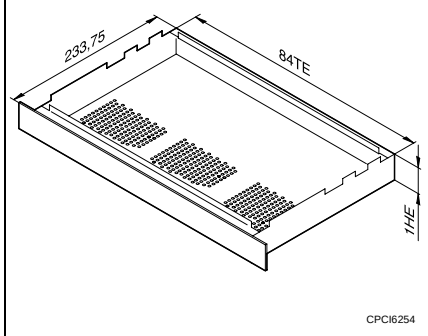
12398006

Heat dissipation

For CompactPCI systems with mounting space for 160 mm deep boards and 80 mm deep boards from the rear.

There are three heat dissipation components:

- Fan unit (1 U at the bottom)
- Air intake/outlet module (1 U, at the bottom or top)
- Radial fan module (1 U at the top)



CPCI6254

TE = HP
HE = U

Fan tray

Ventilation is from bottom to top. The 1 U fan tray is installed under the subrack system.

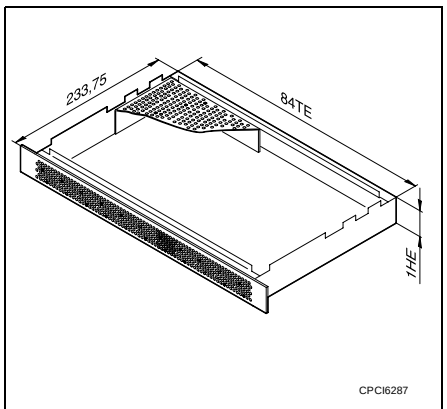
1 to 3 axial fans can be installed in the fan tray.

Qty	Description	Description	Order No.
1	1 U fan tray	without fans	**24579-132**
100	Mounting parts	M4 × 6 TORX screws	**24560-135**

Note:

The WS-type horizontal rail with notch is required at the rear to mount the fan unit – see previous page.

Accessories: Axial fans – refer to the “Accessories” section



CPCI6287

TE = HP
HE = U

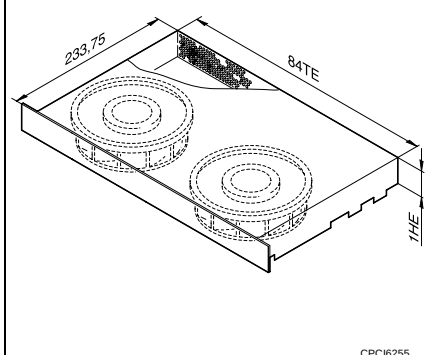
Air intake/outlet module

The air intake/outlet module can be installed on or under the chassis. The air holes are at the front

Qty	Description	Description	Order No.
1	1 U air intake/outlet module		**24579-131**
100	Mounting parts	M4 × 6 TORX screws	**24560-135**

Note:

The WS-type horizontal rail with notch is required at the rear to mount the fan unit. Please order separately.



CPCI6255

TE = HP
HE = U

Radial fan module

The radial fan module can be installed over the chassis.
Air is exhausted to the rear.

Qty	Description	Description	Order No.
1	1 U radial fan module	without fan	**24579-130**
100	Mounting parts	M4 × 6 TORX screws	**24560-135**

Note

The WS-type horizontal rail with notch is required at the rear to mount the fan unit. Please order separately.

Accessories: Axial fans – refer to the “Accessories” section.

Subrack systems

3U subrack system for 3U boards 3.32.2
3, 4, 5U subrack system for 3U boards with rear I/O.....3.32.4
4U subrack system for 6U boards with rear I/O.....3.32.6
6U subrack system for 6U boards 3.32.8
6, 7, 8U subrack system for 6U boards with rear I/O.....3.32.10

Case systems

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Rear panel and side panel 3.32.13
Air flow barriers 3.32.13

Accessories

Side panel 3.32.14
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WS-type horizontal rail with notch.....3.32.14
Heat dissipation..3.32.15

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Power supply units..... 3.10.0

Backplanes/ test adapters .. 3.20.0

Microcomputer packaging systems (MPS) 3.30.0
VMEbus 3.31.0
CompactPCI.....3.32.0
Industrial PC 3.33.0
Accessories.....3.39.0

Appendix..... 3.90.0

Industrial PC systems overview













Application

Industrial PC cases and subrack systems are available for building PC bus applications. These systems are fully built and wired with power supply unit, fans and optionally with backplane.

In order to be able to operate the industrial PCs, it is only necessary to install the boards and drives.

MPS systems are suitable for increased industrial requirements and for ambient temperatures from 0 °C to +40 °C.

Options for installation of passive AT backplanes, AT and baby AT motherboards, ATX and mini ATX motherboards.

Electrical design

The mains system connection is established on the rear side. The mains switch is located on the front side. The PC power supply unit generates the required direct voltages.

The fans are supplied with direct voltage.

Switches, pushbuttons and LEDs are fitted and the system is fully wired.

Heat dissipation

Heat is dissipated by means of a fan (front side) from front to rear. An additional fan is installed in the PC power supply unit.

The filter mat (ATX power supply unit, front ventilator) can be changed during operation.

If increased heat dissipation is required, it is possible to install an additional fan in the middle.

Mechanical design

The industrial PCs are 4 U high and have 19" mounting brackets.

Increased EMC shielding is achieved with contact springs on the front and rear panels.

Passive AT backplanes, AT and baby AT motherboards, ATX and mini ATX motherboards can be installed.

The board holder is suitable for ISA and PCI boards and can be fitted at various points. Each securing element is infinitely height-adjustable; this enables boards of different heights to be securely fixed in position.

There is sufficient space available to install drives.

The pivoted front panel protects the drives against contamination and unauthorised access but nevertheless offers rapid access to the drives.

The recessed rear panel offers protection for the connectors.

Standards/certifications

The industrial PCs satisfy the standard for interference emissions EN 50081-1 (EN 55011, VDE 0875 Part 11 Class B and EN 55022, VDE 0878 Part 3 Class B) and interference immunity EN 50082-2 (IEC 801 Parts 2 to 4, degree of severity 3).

All the components such as mains plug, filter, switch, power supply unit and fan are VDE-, UL- and CSA-approved.

The protective conductor connections are earthed in compliance with VDE.

The outside dimensions of the systems conform to the 19” standard DIN 41494, Part 1 and the mounting dimensions for the ISA96/AT96 plug-in units to DIN 41494 Part 5.

Subrack:
IEC 60 297-3 and 60 297-4
IEEE 1101.10

Connector:
IEC 61 076-4-101

Other options

We can supply special solutions on request.

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Industrial PC systems overview

Industrial PC case systems

- 4 U
- 8/14 slot
- Shielded versions
- Optimised heat dissipation with filter mats



05797002

Industrial PC subrack systems

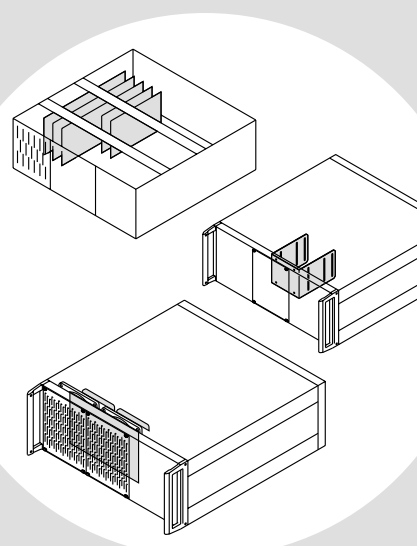
- 4 U
- 8/14 slot
- Shielded versions
- Optimised heat dissipation with filter mats



05797001

Accessories for industrial PC systems

- Passive ISA board
- Air filter
- Front handle/trim
- Board holder
- Fan
- Parts for extension of drive



MPPC6278
MPPC6284
MPPC6282

Case System

Cabinet System
4 U.....3.33.2

Subrack System

Subrack system
4 U.....3.33.4

Accessories

Passive ISA-board.....3.33.6
Air filter.....3.33.6
Front Handle/ Trim.....3.33.6
Board holder 3.33.6
Fan Kit.....3.33.7
Drive accessories .3.33.7
I/O trims for ATX computers.....3.33.7

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Power supply units..... 3.10.0

Backplanes/ test adapters .. 3.20.0

Microcomputer packaging systems (MPS) 3.30.0
VMEbus 3.31.0
CompactPCI.....3.32.0
Industrial PC 3.33.0
Accessories.....3.39.0

Appendix..... 3.90.0

Industrial PC System

05797002

Front View of ATX

MPPC6256

Rear View of ATX



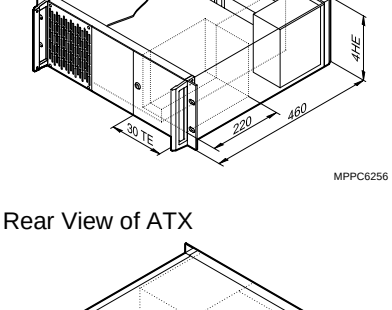
MPPC6257

Rear View of AT – 14 Slot



MPPC6258

AT – 8 Slot



MPPC6259

TE = HP
HE = U

System chassis 4 U

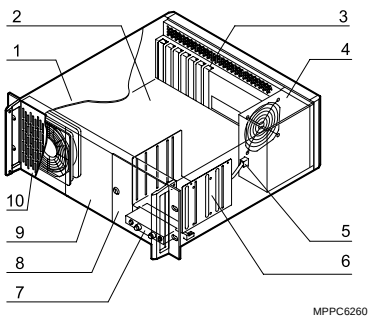
System case (ratiopac) with integrated ventilation for the installation of PC-Boards. Possibilities for the installation of passive AT backplanes, AT- and Baby-AT-Motherboards, ATX- and Mini-ATX-Motherboards.

- Version for 8-, 14-AT-Slot- or ATX-Version
- With EMC-Shielding
- Space for 3 × $5^1/_4$" drives mounted (further space for drives is available)
- Frame adjustable for different board heights
- Ventilation with fans
- Completely assembled and wired

Delivery: Mechanical and electrical/electronic components assembled and wired complete

Description	Order No.		
	AT Power supply 250 W		ATX Power supply 235 W
	8 Slot	14 Slot	7 Slot
Industrial PC case system, shielded, 4 U with 19"-bracket and handle, front fan	**10836-007**	**10836-005**	**10836-003**

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Delivery comprises:

Item	Qty	Description	Description
1	1	19”-ratiopac-case 4 U/84 HP, 460 mm deep, with 19”-mounting bracket and front handle	Al, cover pieces RAL 7035 light grey, front-/rear frames RAL 7030 dark grey, versions with and without EMC-shielding
2	1	Board area	for AT and ATX, slots for standard backplanes available
3	1	Rear panel, 50 mm recessed	Steel AlZn, depending on version with AT (8, 14 Slot) or ATX I/O-openings and ventilation holes
4	1	Power supply	with in/output and built-in fan, ATX with air filter
5	1	DC cable loom	Power supply for backplane, fan and drives
6	1	Drive unit	Al, for 3 × $5^1/_4$”-drives, adapter bracket for reduced width for $3^1/_2$” see Accessories for Drive Components
7	1	Power and display module	Power switch/pushbutton, reset pushbutton, hard disk display yellow LED, power display green LED
8	1	Hinged door 4 U/30 HP	Al 2.5 mm
9	1	Partial width front panel 4 U/27 HP	Access to other drive installation space
10	1	Partial width front panel 4 U/27 HP with ventilation holes, air filter and DC fan 12 V	Fan performance 85 – 170 m^3/h

Electrical characteristics

The industrial PC's with EMC-shielding satisfy the standard on producing interference emissions EN 50081-1 (EN 55011, VDE 0875 part 11 class B and EN 55022, VDE 0878 part 3 class B) and on interference immunity EN 50082-2.

The EMC-compliant shielding is obtained through conducting surfaces at the points of contact and with an EMC seal.

Thermal management

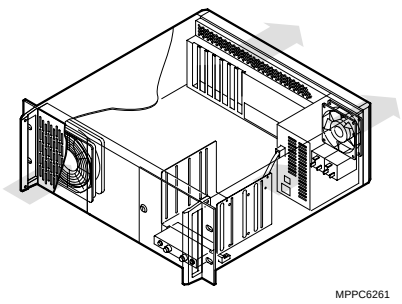
There are two fans mounted for dissipating the heat from the board area.One fan blows the air through an air filter on the front side and through the boards.

The second fan is mounted in the power supply.

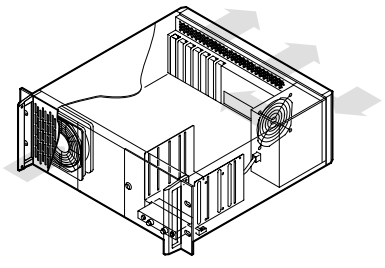
With the AT-industrial-PC the heat is dissipated towards the rear.

With the ATX the air is sucked through an air filter on the rear side and blown onto the boards.The heat is dissipated through holes in the rear panel.

AT



ATX



System cases
System chassis 4 U 3.33.2

Subrack System
Subrack system 4 U 3.33.4

Accessories
Passive ISA-board 3.33.6
Air filter 3.33.6
Front Handle/ Trim 3.33.6
Board holder 3.33.6
Fan Kit 3.33.7
Drive accessories . 3.33.7
I/O trims for ATX computers 3.33.7

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Power supply units..... 3.10.0

Backplanes/ test adapters .. 3.20.0

Microcomputer packaging systems (MPS) 3.30.0
VMEbus 3.31.0
CompactPCI.....3.32.0
Industrial PC 3.33.0
Accessories.....3.39.0

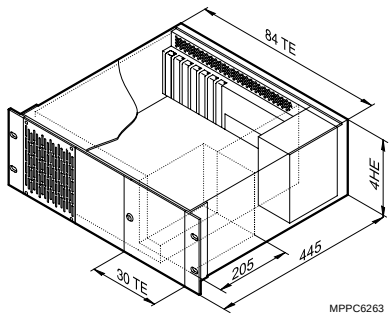
Appendix..... 3.90.0

Industrial PC Subrack System



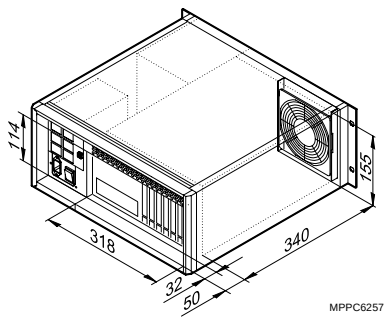
05797001

Front View of ATX



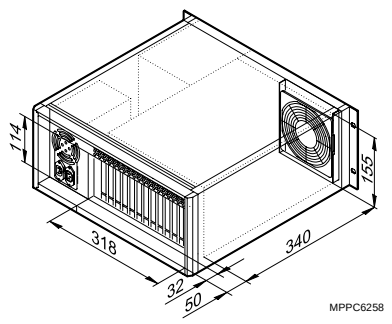
MPPC6263

Rear View of ATX



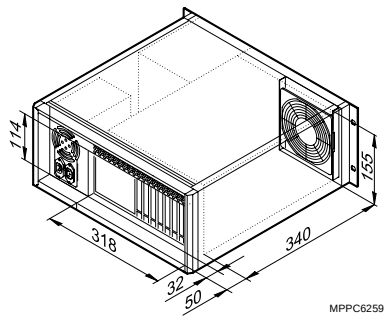
MPPC6257

Rear View of AT – 14 Slot



MPPC6258

AT – 8 Slot



MPPC6259

TE = HP
HE = U

Subrack system 4 U

Subrack system with integrated ventilation for the installation of PC-Boards.
Possibilities for the mounting of passive AT backplanes, AT- and Baby-AT-Motherboards, ATX- and Mini-ATX-Motherboards.

- Version for 8-, 14-AT-Slot- or ATX-Version
- With EMC-Shielding
- Space for 3 × $5^1/_4$" drives mounted (further space for drives is available)
- Frame adjustable for different board heights
- Ventilation with fans
- Assembled and wired complete

Delivery: Mechanical and electrical/electronic components assembled and wired complete

Description	Order No.		
	AT Power supply 250 W		ATX Power supply 235 W
	8 Slot	14 Slot	7 Slot
Industrial PC chassis system, shielded, 4 U with 19"-bracket and handle, front ventilator	**20836-167**	**20836-165**	**20836-155**

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Industrial PC Subrack System

MPPC6260

Delivery comprises:

Item	Qty	Description	Description
1	1	19”-rack 4 U/84 HP/ 455 mm deep, with 19”-mounting bracket	Al, anodised on the front side, chromated contact areas, versions with and without EMC-shielding, unshielded without base plate
2	1	Board area	for AT and ATX, holes for standard backplanes available
3	1	Rear panel, 50 mm recessed	Steel AlZn, depending on version with AT (8, 14 Slot) or ATX I/O-openings and ventilation holes
4	1	Power supply	with in/output mounted fan, ATX with air filter
5	1	DC cable loom	Power supply for backplane, fan and drives
6	1	Drive unit	St AlZn, for 3 × $5^1/_4$”-drives, adapter bracket for reduced width for $3^1/_2$” see Accessories for Drive Components
7	1	Power and display module	Power switch/pushbutton, reset pushbutton, hard disk display yellow LED, power display green LED
8	1	Hinged doors 4 U/30 HP	Al 2.5 mm
9	1	Partial width front panel 4 U/27 HP	Access to other drive installation space
10	1	Partial width front panel 4 U/27 HP with ventilation holes, air filter and DC fan 12 V	Fan performance 85 – 170 m^3/h

Electrical characteristics

The industrial PC's with EMC-shielding satisfy the standard on producing interference emissions EN 50081-1 (EN 55011, VDE 0875 part 11 class B and EN 55022, VDE 0878 part 3 class B) and on interference immunity EN 50082-2.

The EMC-compliant shielding is obtained through conducting surfaces at the points of contact and with EMC seal.

Thermal management

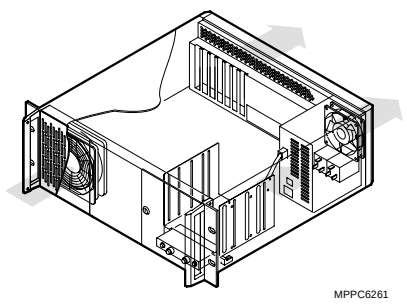
There are two fans mounted for dissipating the heat from the board area. One fan blows the air through an air filter on the front side and through the boards.

The second fan is mounted in the power supply.

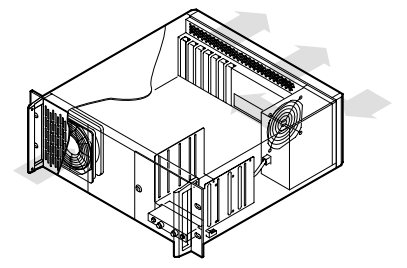
With the AT-industrial-PC the heat is dissipated towards the rear.

With the ATX the air is sucked through an air filter on the rear side and blown onto the boards. The heat is dissipated through holes in the rear panel.

AT


MPPC6261

ATX


MPPC6262

System cases

System chassis 4 U 3.33.2

Subrack System

Subrack system 4 U 3.33.4

Accessories

Passive ISA-board 3.33.6
Air filter 3.33.6
Front Handle/ Trim 3.33.6
Board holder 3.33.6
Fan Kit 3.33.7
Drive accessories . 3.33.7
I/O trims for ATX computers 3.33.7

Downloaded from Arrow.com.

Industrial PC accessories

Passive ISA-board

Passive ISA backplane with termimation.

Delivery comprises: Passive ISA backplane in protective packaging.

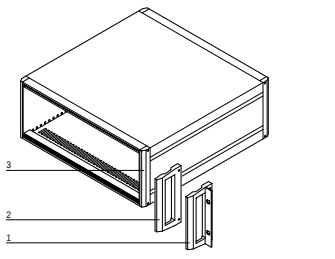
Slot number	Order No.
8 AT	**23093-022**

Air filter

Spare air filter ready for changing.

Delivery comprises:

Spare filter mat for	Order No.
Fan (AT and ATX)	**60836-003**
ATX power supply (on the rear side)	**60836-009**



Front Handle/Trim

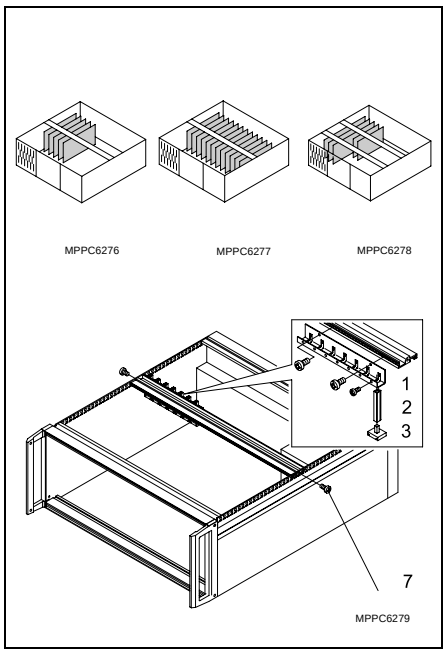
For changing the standard mounting (Item 1).

Casing System:

Item	Qty	Description	Order no.
2	2	Front handle 4 U with assembly kit, diecast aluminium, RAL 7030 dark grey	**20842-061**
3	2	Trim 4 U with assembly kit	**20842-060**

Subrack system(Item 4a, 4b are 2 × required):

Item	Qty	Description	Order no.
4a	1	Front handle 4 U with assembly kit, Aluminium extrusion	**10501-018**
4b	1	19"-support bracket with holes for handle	**34560-298**
	100	Countersink screws M5 × 12	**21100-234**



Board holder

The board holder comprises one horizontal rail and one board securing kit.

The horizontal rail can be mounted at different positions and is fixed whereever the board is fixed.

With the board holder kit up to 7 different heights of board can be securely fixed (max. height of 125 mm). For more than 7 boards 2 holder kits are required.

Delivery comprises: with assembly kit

Item	Qty	Description	Order no.
6 + 7	1	Horizontal rail for chassis system	**20836-158**
	1	Horizontal rail for subrack system	**20836-174**
1 – 5	1 Kit	Securing kit for 7 Slots	**20836-157**

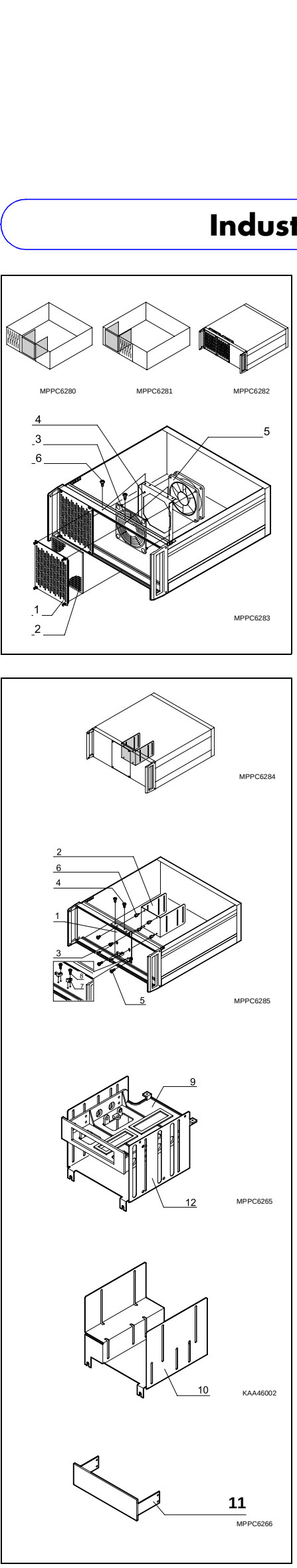
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Fan Kit

In order to increase the cooling performance an extra fan can be mounted in the centre section.

Delivery comprises:

Item	Description	Order No.
1 – 6	Fan with front panel, fan, filter mat and assembly kit	**20836-163**



Drive accessories

Accessories for the mounted drive unit Item 12 ($3 \times 5^1/_4$", behind the hinged door), additional drive brackets ($3 \times 3^1/_2$", can be mounted on the left or in the centre) and drive covers.

Delivery comprises: With assembly kit

Item	Qty	Description	Order no.
1 – 8	1	Drive frame kit $3 \times 3^1/_2$" for extra drives	**20836-162**
9	1	Drive adapter for conversion of $1 \times 5^1/_4$" to 3 1/2"	**60836-017**
10	1	Drive frame kit $1 \times 3^1/_2$", $2 \times 5^1/_4$"	**30836-095**
11	1	Drive cover for $3^1/_2$" (25 mm high)	**20836-172**
		Drive cover for $5^1/_4$" (25 mm high)	**20836-173**
		Drive cover for $5^1/_4$" (44 mm high)	**20836-171**

I/O trims for ATX computers

I/O trims for ATX computers is normally delivered along with the ATX-main boards. Given your exact main board type we can offer I/O trims or name suitable sources for these.

System cases
System chassis 4 U 3.33.2

Subrack System
Subrack system 4 U 3.33.4

Accessories
Passive ISA-board 3.33.6
Air filter 3.33.6
Front Handle/ Trim 3.33.6
Board holder 3.33.6
Fan Kit 3.33.7
Drive accessories . 3.33.7
I/O trims for ATX computers 3.33.7

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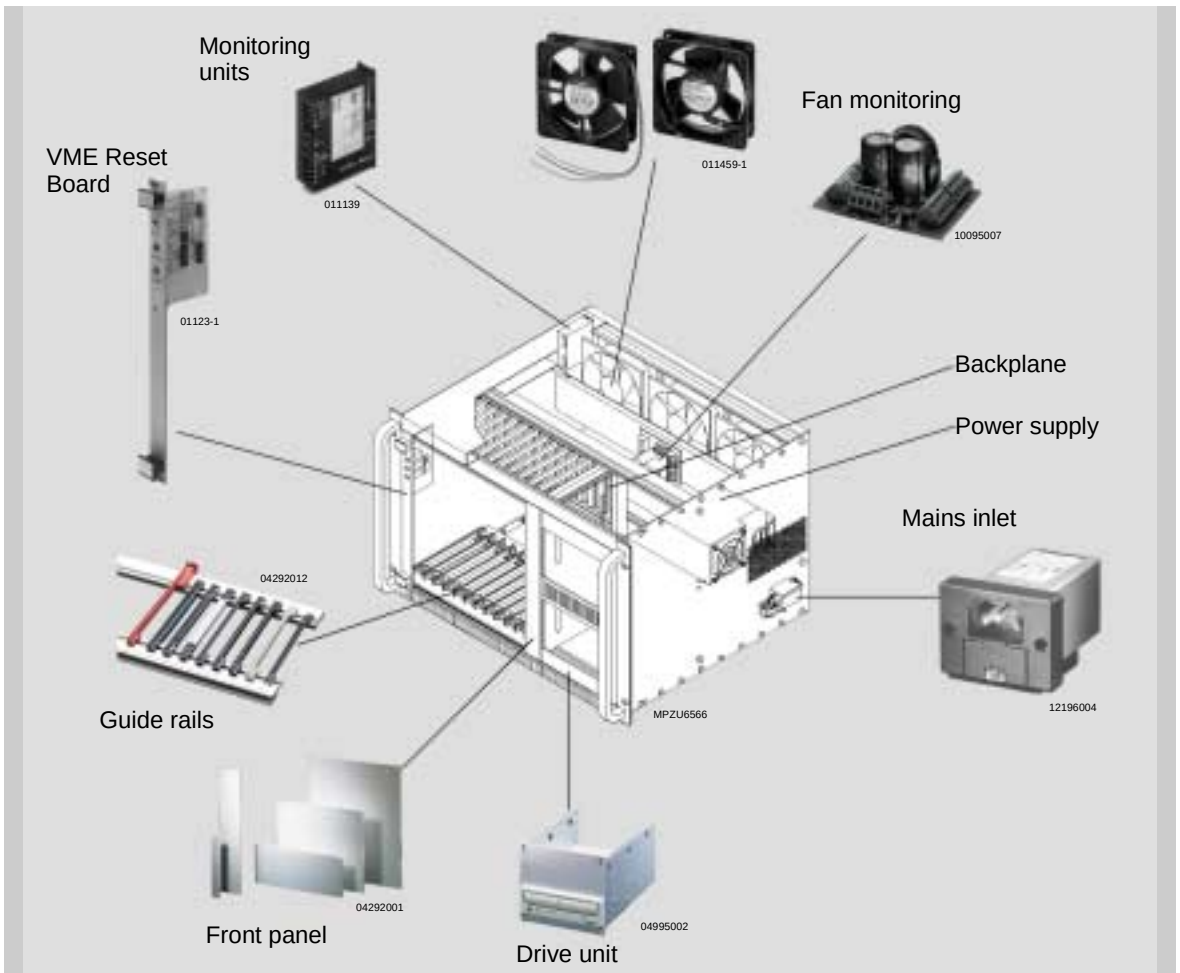
Power supply units..... 3.10.0

Backplanes/ test adapters .. 3.20.0

Microcomputer packaging systems (MPS) 3.30.0
VMEbus 3.31.0
CompactPCI.....3.32.0
Industrial PC 3.33.0
Accessories.....3.39.0

Appendix..... 3.90.0

Accessory systems overview



Overview

We offer a wide range of selected accessory parts which are matched to the requirements of the bus systems.
There are 3 separate areas in which accessories are offered:

- Mechanical
- Electronic
- Heat dissipation

Electronic packaging tasks are solved completely with the accessories offered. Further accessories for backplanes/ test adapters can be found in Chapter 3.29.0

An explanation of the interaction of all the power supply components can be found in the Appendix.

Mechanical

Mechanical accessories for the complete construction of MPS systems are: drive units with connection leads, partial width front panels (with/without handles) for covering non-required openings and guide rails for the boards.

Electronic

Electronic accessories are: components for power supply with mains cable, mains switch, mains/ line socket, mains filter and voltage display. Monitoring units such as power failure, current limiting and voltage monitoring modules complete the range. The cabinet control system monitors the ambient temperature, air humidity, mains/line voltage, unauthorised access, smoke, etc.

Heat dissipation

Our MPS systems are fitted as standard with the necessary ventilation equipment. However, if you have more stringent requirements regarding heat dissipation capacity, we offer the necessary AC and DC fan units.

Standards/certifications

Mechanical:
IEC 60 297-3 and 60 297-4
IEEE 1101.10

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Accessory systems overview

Mechanical

- Drive units
- Front panels
- Guide rails



Electronic

- Mains/line voltage components
- Monitoring units



Heat dissipation

- Fans
- 19″ fan



Mechanical:

Drive units

Drive units 3.39.2
Accessories for drive units 3.39.7

Front panels

Partial front panels 3.39.10
PMC front panels 3.39.12
PC-MIP front panels 3.39.14
Front panel with handle 3.39.16
IEEE front panels 3.39.17
Assembly parts.....3.39.22

Guide rails

Guide rails.....3.39.24
Coding.....3.39.27
Colours.....3.39.27

Electronic:

Mains/line voltage components

Mains/line components 3.39.28
Power supply cable 3.39.33
FASTON connector.....3.39.34

Monitoring units

Inrush current limiting module ...3.39.35
Power failure module 3.39.36
Voltage monitoring 3.39.38
Monitoring system CCS10 .....3.39.42
VME Reset board.....3.39.44
Daisy-Chain jumper board.....3.39.45

Heat dissipation:

Fans 3.39.46
19" fan 3.39.51

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Power supply units..... 3.10.0

Backplanes/ test adapters .. 3.20.0

Microcomputer packaging systems (MPS) 3.30.0
VMEbus 3.31.0
CompactPCI.....3.32.0
Industrial PC 3.33.0
Accessories.....3.39.0

Appendix..... 3.90.0

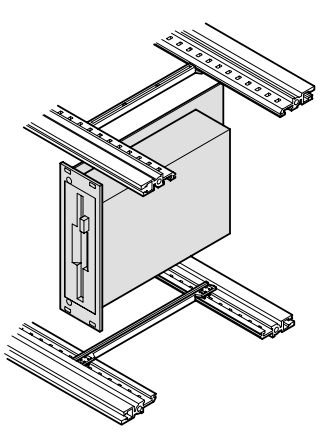
Accessories drive units

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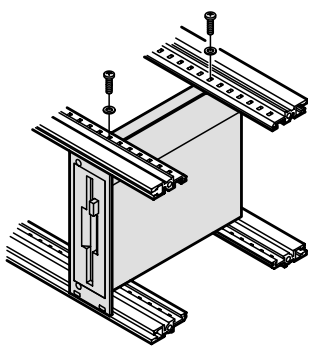
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Plug-in version



KAA44870

Screwed version



KAA44871

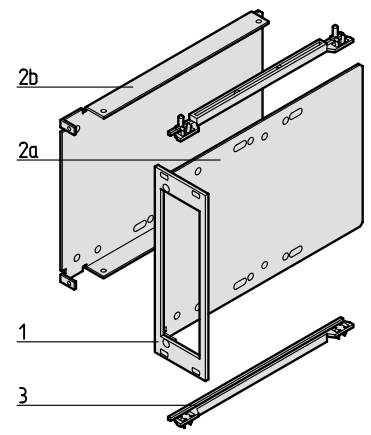
Drive units

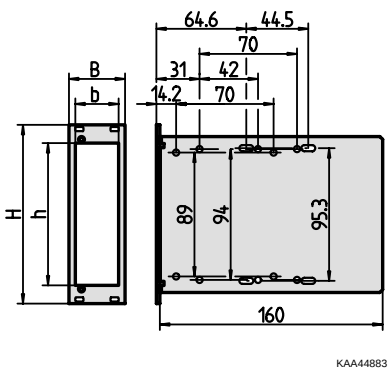
- For accommodation of drives (diskettes, CD, hard disks) and controller boards in 19" systems
- For 3 ½" and 5 ¼" drives
- 2 installation variants:
  – Plug-in version: Inserted like printed boards into guide rails and secured in place with the front panel.
  – Screwed version: Screwed directly onto horizontal rails and additionally secured in place with the front panel

Drive units

- 1 × 3 ½" 3.39.3
- 2 × 3 ½" 3.39.5
- 2 × 3 ½", 1 × 5 ¼" 3.39.5
- 1 × 5 ¼" 3.39.6
- 2 × 5 ¼" 3.39.6

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Drive unit 1 × 3 ½"

■ 3 U and 4 U

Delivery comprises

Item	Qty	Description	Material/Finish
1	1	Front panel with or without front panel cut-out	Al 2.5 mm, front anodised, rear side yellow chromated
2a	1	Side panel, plug-in version	Al 1.5 mm, clear chromated
2b	1	Side panel, screwed version	Al 2.0 mm, clear chromated
3	2	Guide rail (for plug-in version only)	PPE UL 94 V-1, black, for europacPRO BGT
4	1 set	Mounting parts	

Delivery: In kit form

Note

Mounting parts for drives, see Installation material

Front panel dimensions		Front panel cut-out	Order No.	
Height H U	Width W HP	w × h mm	Plug-in version	Screwed version
3	6	20.1 × 102.2	**20810-590**[2)]	**20810-586**
	6	20.1 × 102.2	**20810-617**[1)]	–
	6	without	**24579-200**[1)]	–
	8	26.1 × 102.2	**20810-326**[2)]	**20810-168**
	8	without	**20810-611**[2)]	**20810-605**
	10	41.6 × 102.2	**20809-444**[2)]	**20809-415**
	10	without	**20810-612**[2)]	**20810-606**
4	6	20.1 × 102.2	*	*
	8	26.1 × 102.2	*	*
	8	without	**20810-613**[2)]	**20810-607**
	10	41.6 × 102.2	*	*
	10	without	**20810-614**[2)]	**20810-608**

[1)] For CompactPCI (europacPRO), EMC version, slotted on both sides, EMC contact strips, see Front panels – EMC contact strips

[2)] Guide rails for VMEbus systems (europac) in scope of delivery. For CompactPCI systems (europacPRO), please order separately. See Guide rails for europacPRO.

* On request

Mechanical:

Drive units
Drive units 3.39.2
Accessories for drive units 3.39.7

Front panels
Partial front panels 3.39.10
PMC front panels 3.39.12
PC-MIP front panels 3.39.14
Front panel with handle 3.39.16
IEEE front panels 3.39.17
Assembly parts.....3.39.22

Guide rails
Guide rails.....3.39.24
Coding.....3.39.27
Colours.....3.39.27

Electronic:

Mains/line voltage components
Mains/line components 3.39.28
Power supply cable 3.39.33
FASTON connector 3.39.34

Monitoring units
Inrush current limiting module ...3.39.35
Power failure module 3.39.36
Voltage monitoring 3.39.38
Monitoring system CCS10 .....3.39.42
VME Reset board.....3.39.44
Daisy-Chain jumper board.....3.39.45

Heat dissipation:
Fans 3.39.46
19" fan 3.39.51

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Power supply units..... 3.10.0

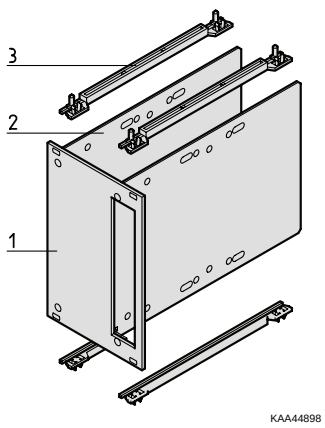
Backplanes/ test adapters .. 3.20.0

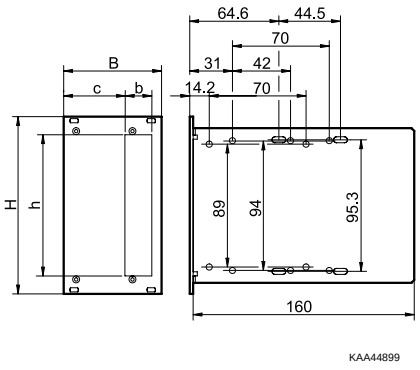
Microcomputer packaging systems (MPS) 3.30.0
VMEbus 3.31.0
CompactPCI.....3.32.0
Industrial PC 3.33.0
Accessories.....3.39.0

Appendix..... 3.90.0

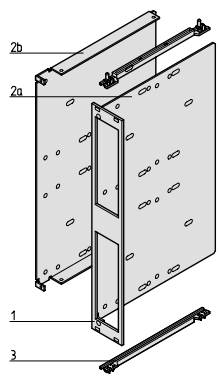
Accessories drive units

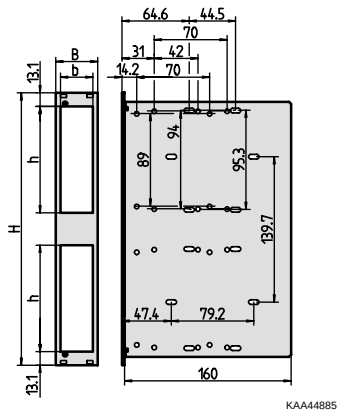
3 U





6 U





Drive unit 2 × 3 ½"

■ 3 U and 6 U

Delivery comprises

Item	Qty	Description	Material/Finish
1	1	Front panel	Al 2.5 mm, front anodised, rear side yellow chromated
2, 2a	1	Side panel, plug-in version	Al 1.5 mm, clear chromated
2b	1	Side panel, screwed version	Al 2.0 mm, clear chromated
3	4	Guide rail for europac or europacPRO	PPE UL 94V-1, black
4	1 set	Mounting parts	

Delivery: In kit form

Note
Mounting parts for drives, see Installation material

Front panel dimensions		Front panel cut-out	Order No.	
Height H U	Width W HP	w × h mm	Plug-in version	Screwed version
3	14	26.1 × 102.2	**24579-201**[1]	–
6	6	20.1 × 102.2	*	*
	8	26.1 × 102.2	**20810-599**[2]	**20810-169**
	10	41.6 × 102.2	–	**20809-414**

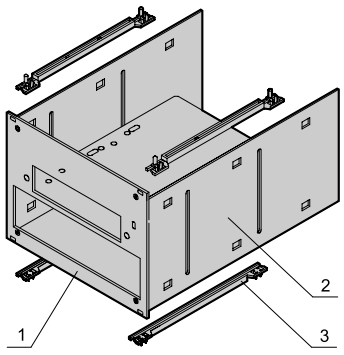
[1] For CompactPCI (europacPRO), EMC version, slotted on both sides, EMC contact strips, see Front panels – EMC contact strips

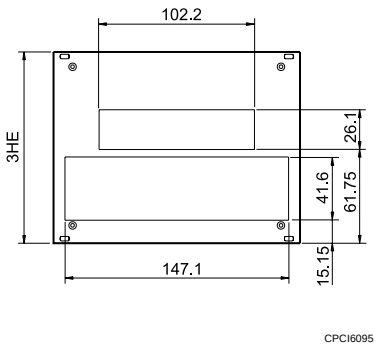
[2] Guide rails for VMEbus systems (europac) in scope of delivery. For CompactPCI systems (europacPRO), please order separately. See Guide rails for europacPRO.

* On request

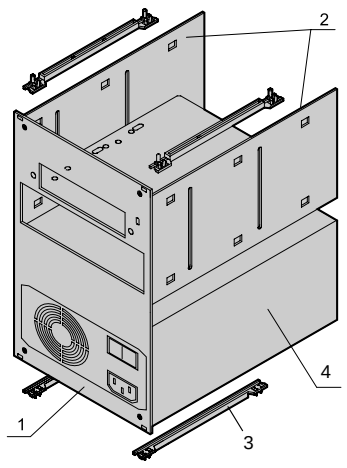
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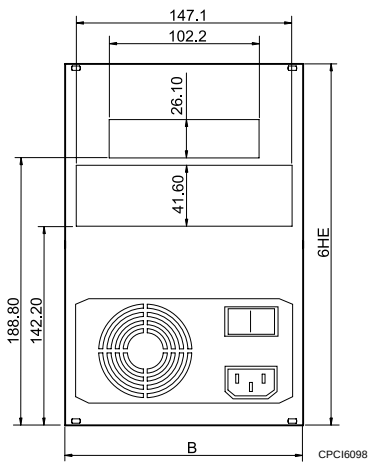
3 U





6 U





TE = HP
HE = U

Drive unit 2 × 3 ½", 1 × 5 ¼"

- 3 U or 6 U with installed ATX power supply unit
- Plug-in version for 3 ½" hard disk, 3 ½" drive and 5 ¼" CD drive

Delivery comprises

Item	Qty	Description	Material/Finish
1	1	Front panel	Al 2.5 mm, front anodised, rear side yellow chromated
2	2	Side panel, plug-in version	Al 1.5 mm, clear chromated, 228 mm deep
3	4	Guide rail for europacPRO	PPE UL 94V-1, black
4	1	ATX-PSU	Technical data, see Chapter Power supply units – Open Frame
5	1 set	Mounting parts	

Delivery: In kit form

Note
Mounting parts for drives, see Installation material

Height H U	Width W HP	ATX-PSU	Order No.[1)]
3	32	–	**24579-202**
6	32	235 W	**24579-204**
	34	2 × 230 W redundant	**24579-210**

[1)] For Compact PCI (europacPRO). EMC version, slotted on both sides, EMC springs, see Front panels – EMC springs

Mechanical:

Drive units
Drive units 3.39.2
Accessories for drive units 3.39.7

Front panels
Partial front panels 3.39.10
PMC front panels 3.39.12
PC-MIP front panels 3.39.14
Front panel with handle 3.39.16
IEEE front panels 3.39.17
Assembly parts.....3.39.22

Guide rails
Guide rails.....3.39.24
Coding.....3.39.27
Colours.....3.39.27

Electronic:

Mains/line voltage components
Mains/line components 3.39.28
Power supply cable 3.39.33
FASTON connector.....3.39.34

Monitoring units
Inrush current limiting module...3.39.35
Power failure module 3.39.36
Voltage monitoring 3.39.38
Monitoring system CCS10 .....3.39.42
VME Reset board.....3.39.44
Daisy-Chain jumper board.....3.39.45

Heat dissipation:
Fans 3.39.46
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Power supply units..... 3.10.0

Backplanes/ test adapters .. 3.20.0

Microcomputer packaging systems (MPS) 3.30.0
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Accessories drive units

Drive unit 1 × 5 ¼"

■ Plug-in version in 3 U for VMEbus systems (europac)

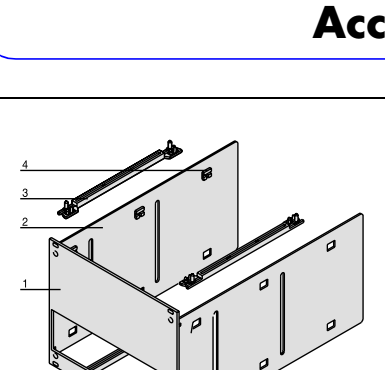
Delivery comprises

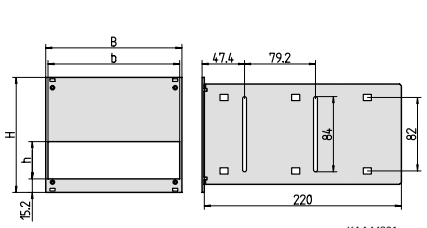
Item	Qty	Description	Material/Finish
1	1	Front panel	Al 2.5 mm, front anodised, rear side yellow chromated
2	2	Side panel, plug-in version	Al 1.5 mm, clear chromated
3	4	Guide rail for europac	PPE UL 94V-1, black
4	6	Guide clip for controller board	PPE UL 94V-0, black
5	1 set	Mounting parts	

Delivery: In kit form

Note
Mounting parts for drives, see Installation material.

Front panel dimensions		Front panel cut-out	Order No.
Height H U	Width W HP	h × w mm	
3	30	41.6 × 147.1	**20810-327**





Drive units 2 × 5 ¼"

■ Plug-in and screwed versions in 3 U for VMEbus systems (europac)

Delivery comprises

Item	Qty	Description	Material/Finish
1	1	Front panel	Al 2.5 mm, front anodised, rear side yellow chromated
2a	2	Side panel, plug-in version	Al 1.5 mm, clear chromated
b2	2	Side panel, screwed version	Al 1.5 mm, clear chromated
3	4	Guide rail for europac, for plug-in version only	PPE UL 94V-1, black
4	6	Guide clip for controller board	PPE UL 94V-0, black
5	1 set	Mounting parts	

Delivery: In kit form

Note
Mounting parts for drives, see Installation material

Front panel dimensions		Front panel cut-out	Order No.	
Height H U	Width W HP	h × w mm	Plug-in version	Screwed version
3	30	84.6 × 147.1	**20809-398**	*
		86.0 × 147.1	–	*

* On request

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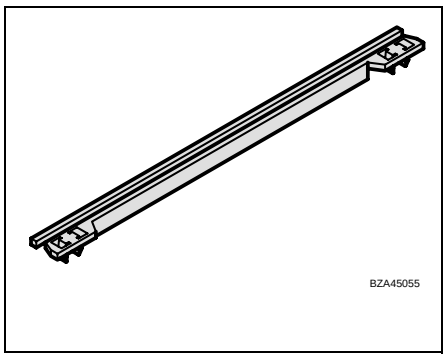
Accessories drive units

Accessories for drive units

- Guide rails
- Covers
- Installation material
- Cable for drive unit

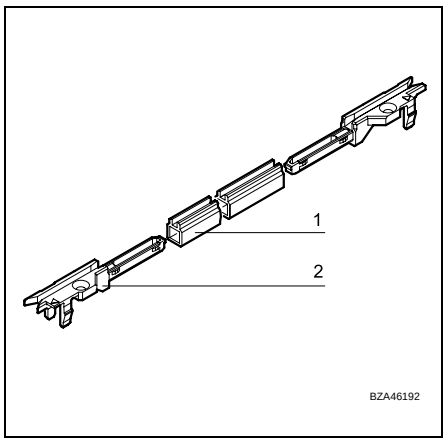
Guide rails

- Replacement/alternative guide rails for drive units
- For 4.4" high side panels (117.4 mm)
- Versions for:
  - VMEbus MPS (europac)
  - CompactPCI MPS (europacPRO)



Guide rail for VMEbus MPS (europac)

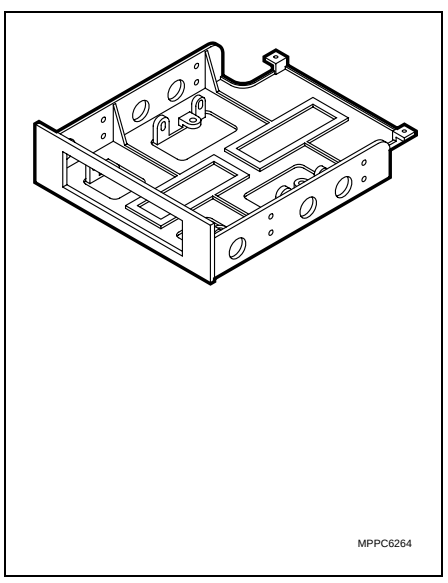
Board length mm	Groove width mm	Description	Order No.
160	2	PPO, UL 94 V-0, black	**60817-038**



Guide rail for CompactPCI MPS (europacPRO)

- Consists of a profile section and 1 pair of end pieces

Item	Qty	Description	Material/Finish	Order No.
1	1	Profile section	for 160 mm deep boards, Al, anodised	**34560-891**
2	1 pair	End piece	PPO, UL 94 V-0, red	**64560-057**



Adapter

- For installing a 3 ½" drive in a 5 ¼" drive unit

Qty	Description	Order No.
1	Adapter with assembly kit	**60836-017**

Mechanical:

Drive units

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Accessories for drive units 3.39.7

Front panels

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Front panel with handle 3.39.16
IEEE front panels 3.39.17
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Guide rails

Guide rails.....3.39.24
Coding.....3.39.27
Colours.....3.39.27

Electronic:

Mains/line voltage components

Mains/line components 3.39.28
Power supply cable 3.39.33
FASTON connector.....3.39.34

Monitoring units

Inrush current limiting module...3.39.35
Power failure module 3.39.36
Voltage monitoring 3.39.38
Monitoring system CCS10 .....3.39.42
VME Reset board.....3.39.44
Daisy-Chain jumper board.....3.39.45

Heat dissipation:

Fans 3.39.46
19" fan 3.39.51

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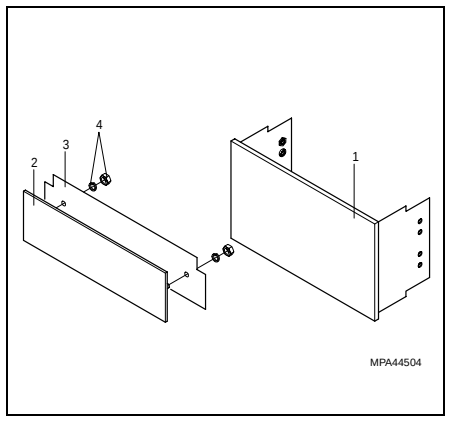
Power supply units..... 3.10.0

Backplanes/ test adapters .. 3.20.0

Microcomputer packaging systems (MPS) 3.30.0
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Industrial PC 3.33.0
Accessories.....3.39.0

Appendix..... 3.90.0

Accessories drive units



Cover

■ For covering empty drive spaces in VMEbus systems

Item	Qty	Description	Material/Finish	Order No.
1	1	Drive cover for 86 × 147 mm openings	Al, black	**20810-274**
2	1	Drive cover for 41.5 × 147 mm openings	Al, 2 mm, black	**20835-451**
3	1	Support plate	Al, 2 mm, anodised	
4	1 set	Mounting parts		

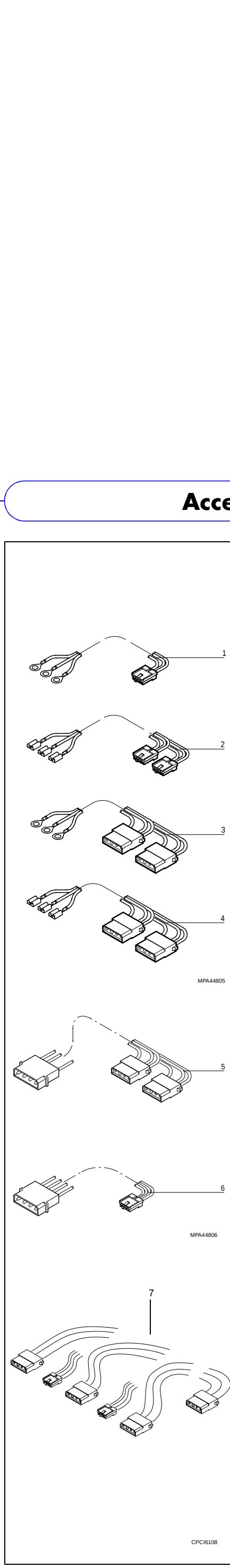
Installation material

■ For screwing drives into drive units

Qty	Description	Dimensions	Order No.
100	Flathead screws with slot (M 4 × 6 cross recess)	M 3 × 6	**21100-711**
		M 4 × 6	**21100-574**
		6–32 UNC × 6	**21100-712**

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Accessories drive units



Cable for drive unit

The cables connect standard drives to the voltage supply.

The standard large or small 4-pin connectors are located on the drive side.

The voltage supply is plugged in or screwed on on the other side. This is done with FASTON plug-in connections to the DC distribution strip or to the SCHROFF J1 backplane.
Only the ring tag version can be used in conjunction with SCHROFF monolithic backplanes (J1/J2).

Longer cables should be used for plug-in drive units.

for drive	Connectors	Comments
3 ½"	AMP 1-480424-0	Pin 1 = + 5 V
5 ¼"	AMP 171822-4	Pin 1 = + 12 V

Item	Qty	Description	Comments	Order No.
1	1	Drive cable for 1 × 3 ½"	Ring tag × M 4, Length 560 mm	**20835-189**
2	1	Drive cable for 2 × 3 ½"	FASTON 6.3 × 0.8 mm Length 300 mm	**20835-066**
	1		FASTON 6.3 × 0.8 mm Length 500 mm	**20835-138**
3	1	Drive cable for 2 × 5 ¼"	Ring tag ∅ M 4, Length 560 mm	**20835-188**
4	1	Drive cable for 2 × 5 ¼"	FASTON 6.3 × 0.8 mm Length 300 mm	**20835-029**
	1		FASTON 6.3 × 0.8 mm Length 500 mm	**20835-137**
5	1	Drive connection doubling	Input 1 × 5 ¼", output 2 × 5 ¼", length 280 mm	**20835-140**
6	1	Drive connection changer	Input 1 × 5 ¼", output 1 × 3 ½", length 80 mm	**20835-139**
7	1	Drive cable for 2 × 3 ½" and 3 × 5 ¼"	Input 1 × 5 ¼", output 2 × 3 ½" and 3 × 5 ¼" Length approx. 400 mm	**43204-094**

Mechanical:

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Accessories for drive units 3.39.7

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Guide rails
Guide rails.....3.39.24
Coding.....3.39.27
Colours.....3.39.27

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Mains/line components 3.39.28
Power supply cable 3.39.33
FASTON connector.....3.39.34

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Inrush current limiting module...3.39.35
Power failure module 3.39.36
Voltage monitoring 3.39.38
Monitoring system CCS10 .....3.39.42
VME Reset board.....3.39.44
Daisy-Chain jumper board.....3.39.45

Heat dissipation:
Fans 3.39.46
19" fan 3.39.51

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Power supply units..... 3.10.0

Backplanes/ test adapters .. 3.20.0

Microcomputer packaging systems (MPS) 3.30.0
VMEbus 3.31.0
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Industrial PC 3.33.0
Accessories.....3.39.0

Appendix..... 3.90.0

Accessories front panels

Front panels

Front panel earthing is achieved with a grub screw and metal sleeve and chromated front panels. The grub screw establishes the conductive connection between threaded insert and subrack. The metal sleeve allows low-ohmic contact between the screws and the front panel.

- Partial front panels
- EMC contact strips
- EMC front panel kit for VMEbus subrack systems

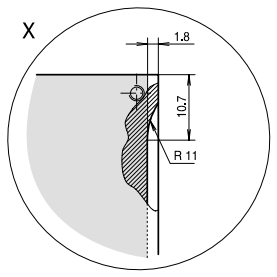


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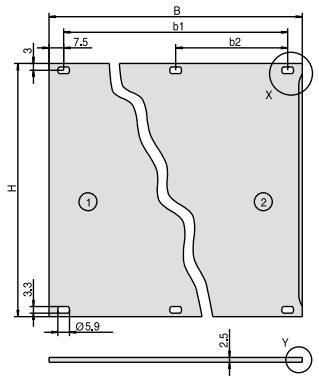
Partial front panels

- For covering plug-in locations not in use
- From 2 to 30 HP
- For 3 and 6 U
- Material Al 2.5 mm
- 3 versions
  - Anodised on both sides
  - Unshielded, front side anodised, rear side conducting
  - Shielded, front side anodised, rear side conducting, slotted on both sides for EMC contact strips

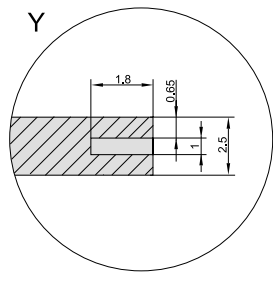
① Unshielded
② Shielded



BGA45818



BZA45815



BGA46016

Height unit mm	Pitch HP	Dimension B mm	Dimension b_1 mm	Order No. Anodised on both sides, cut edges plain	Front anodised, rear side yellow chromated: Unshielded	Front anodised, rear side yellow chromated: Shielded
3 U H = 128.4	4	20.0	–	**30818-273**	**30838-043**	**20846-426**
	6	30.1	–	**30818-275**	**30838-045**	**20846-428**
	8	40.3	–	**30818-277**	**30838-047**	**20846-430**
	12	60.6	45.7	**30818-281**	**30838-051**	**20846-432**
	28	141.9	127.0	**30818-296**	**30838-067**	**20846-436**
	30	151.5	136.6	**30818-298**	–	–
6 U H = 261.8	2[1)]	9.8	–	**30818-747**	**30847-472**	**30846-865**
	4	20.0	–	**30818-518**	**30838-124**	**20846-443**
	6	30.3	–	**30818-520**	–	**20846-445**
	8	40.3	–	**30818-522**	**30838-128**	**20846-447**
	12	60.6	45.7	**30818-526**	**30838-132**	**20846-449**
	16	80.9	66.0	**30818-530**	**30838-136**	**20846-456**
	20	101,3	86.4	**30818-534**	–	–

[1)] Washer 2.7 × 5 × 1 mm is required for mounting.

Washer 2.7 × 5 × 1 mm (100 pieces)	Order No. **21101-121**

Accessories: EMC contact strips

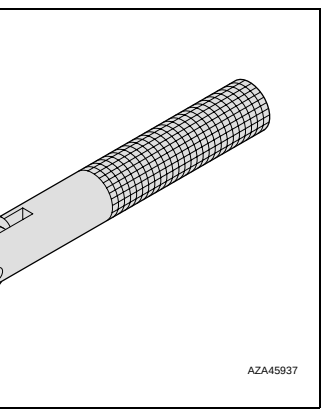
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Accessories front panels

EMC contact strips

For shielded front panels with slots.
Material: Stainless steel

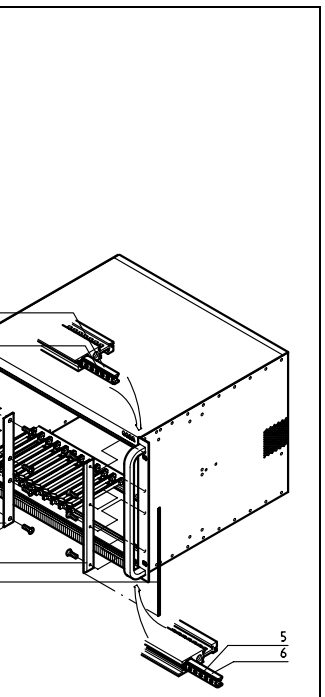
Height U	Length mm	Qty	Order No.
3	97	10	**21101-705**
		100	**21101-706**
4	142	10	**21101-713**
		100	**21101-714**
6	232	10	**21101-707**
		100	**21101-708**



Assembly tool for EMC contact strips

Material: Aluminium

1 piece — Order No. **24560-270**



EMC front panel kit for VMEbus subrack systems

As standard, the subrack systems are not intended for EMC front panels or EMC plug-in boards. The EMC front panel kit (6 U) is needed in order to establish the EMC connection to the side panels.

■ Suitable for subrack systems 7, 8, 9 and 10 U

Delivery comprises

Item	Qty	Description	Material/Finish
1	1	Contact strip 6 U	Aluminium extrusion, clear chromated
2	1	Contact strip	Stainless steel
3	1	Contact band 6 U	Aluminium extrusion, clear chromated
4	1	Contact strip	Stainless steel
5	2	Perforated strips	
6	2	Threaded insert 85 HP	
7	1 set	Mounting parts	

1 Kit — Order No. **20835-816**

Mechanical:

Drive units
Drive units 3.39.2
Accessories for drive units 3.39.7

Front panels
Partial front panels 3.39.10
PMC front panels 3.39.12
PC-MIP front panels 3.39.14
Front panel with handle 3.39.16
IEEE front panels 3.39.17
Assembly parts.....3.39.22

Guide rails
Guide rails.....3.39.24
Coding.....3.39.27
Colours.....3.39.27

Electronic:

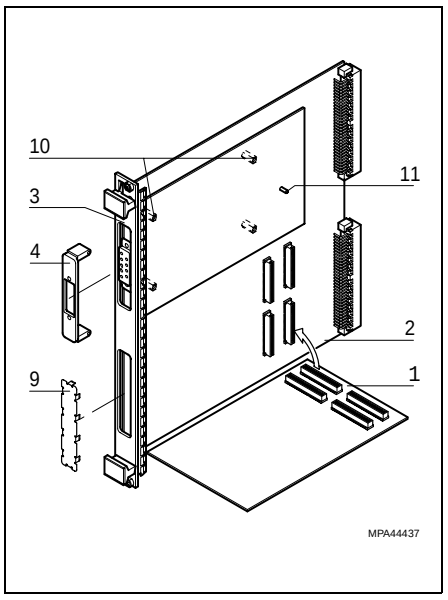
Mains/line voltage components
Mains/line components 3.39.28
Power supply cable 3.39.33
FASTON connector.....3.39.34

Monitoring units
Inrush current limiting module...3.39.35
Power failure module 3.39.36
Voltage monitoring 3.39.38
Monitoring system CCS10 .....3.39.42
VME Reset board.....3.39.44
Daisy-Chain jumper board.....3.39.45

Heat dissipation:
Fans 3.39.46
19" fan 3.39.51

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Accessories front panels

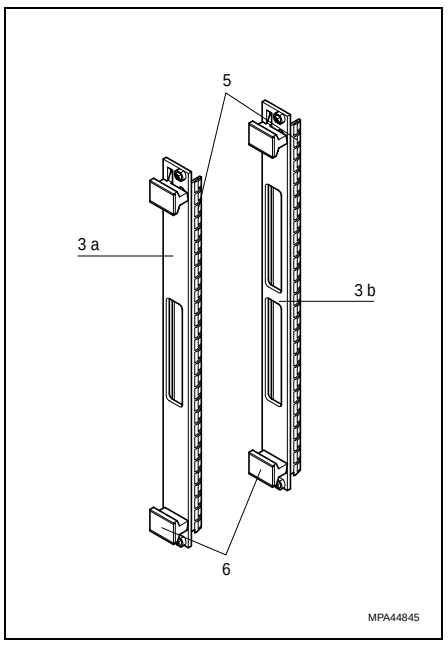


PMC front panels

The definition of the mechanical properties of modular plug-in boards facilitates the integration of electrical and logic functions (PCI = **P**eripheral **C**omponent **I**nterface) in VMEbus, Futurebus, Multibus® II and other computer systems. PCI is a local high-speed bus system supported by many microprocessor types.

The PMCs (**P**CI **M**ezzanine **C**ard, item 1, tilted 90°) are connected e.g. to VMEbus boards (item 2). Here the PMC cards are parallel to the board as on a mezzanine. With a defined EMC front panel (item 3) and small mezzanine front panels (item 4), I/O connectors can be installed.

- EMC front panel with mezzanine cut-outs (item 3)
- Shielded cover for mezzanine cut-outs (item 9)
- Mezzanine front panel (item 4)
- Spacer for fitting mezzanine cards (item 10)
- Voltage coding pin for mezzanine cards (item 11)



EMC front panel with mezzanine cut-outs

The front panels comply with the specification P1386 (CMC = **C**ommon **M**ezzanine **C**ard).

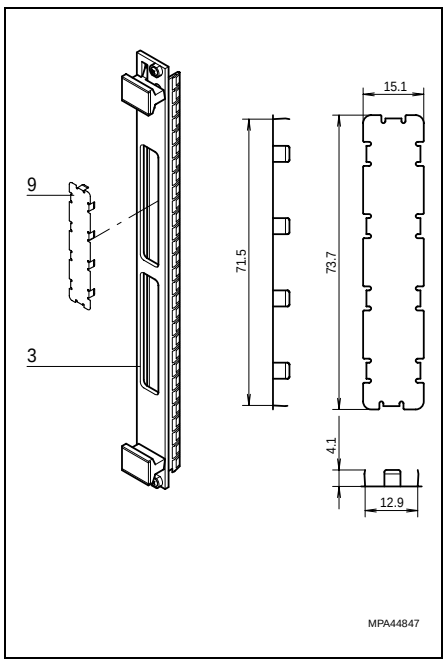
- 6 U/4 HP front panel with EMC seal and front handles
- With 1 or 2 cut-outs

Delivery comprises

Item	Qty	Description	Material/Finish
3	1	EMC front panel	Al, clear chromated
5	2	EMC seal	
6	2	Front handle	

Delivery: Items 3, 5 and 6 assembled

Item	Qty	Description	Material/Finish	Order No.
3a	1	EMC front panel complete	1 Cut-out	**20897-951**
3b			2 Cut-outs	**20897-950**



Shielded cover for mezzanine cut-outs

For covering front panel cut-outs not in use (mezzanine). The cover is clipped into the front panel cut-outs.

Item	Qty	Description	Material/Finish	Order No.
9	1	Shielded cover for mezzanine cut-outs	St, 0.2 mm, black	**60835-024**
			St, 0.2 mm, bright	**60835-022**

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Accessories front panels

Mezzanine front panel

- Mezzanine front panels with/without EMC seal (O-ring)
- Materials: Zinc diecasting, raw, chrome-plated or black chrome-plated or Al profile section anodised

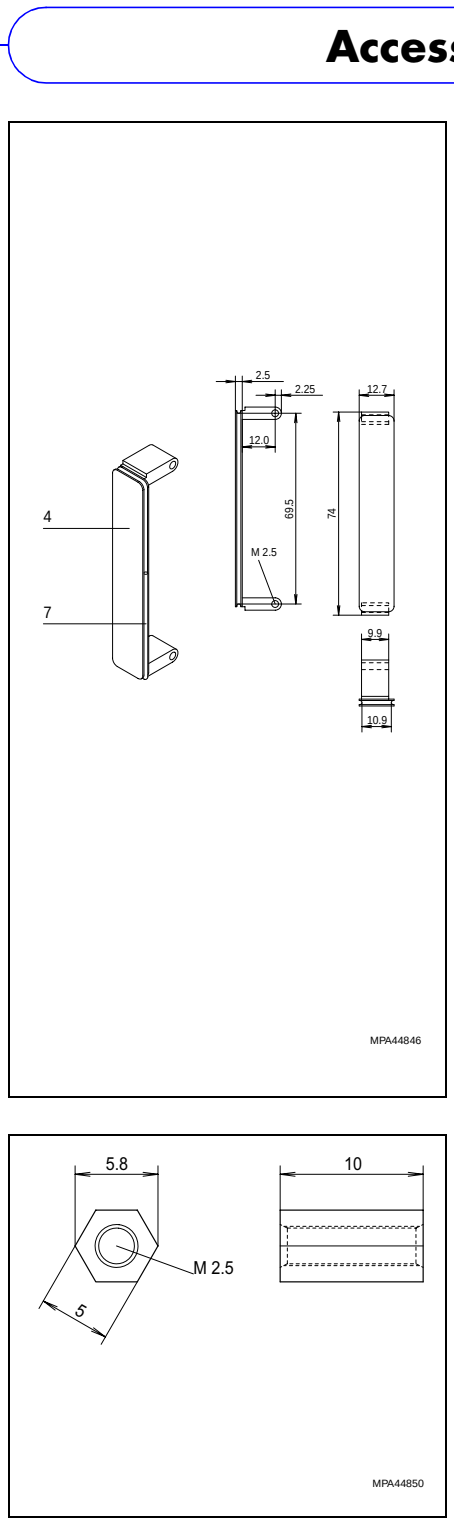
Item	Qty	Description	Material/Finish
4	1	Mezzanine front panel	Zinc diecasting or Al profile section
7	1	EMC seal (O-ring)	Cho seal
8	1 set	Mounting parts	

Item	Qty	Description	Order No. with EMC seal	Order No. without EMC seal
4+7	1	Mezzanine front panels Zinc diecasting, raw	**20835-890**	–
	10		**20835-893**	**20835-896**
	1	Mezzanine front panels Zinc diecasting chrome-plated, matt	**20835-892**	–
	10		**20835-895**	**20835-897**
	1	Mezzanine front panels Zinc diecasting black chrome-plated	**20835-891**	–
	10		**20835-894**	**20835-898**
	1	Mezzanine front panels Al profile section, anodised	**20835-598**	–
	10		**20835-889**	**20835-899**
7	1	EMC seal (O-ring)	**60835-021**	
8	100	Screws M 2.5 × 5 mm	**21100-624**	

Note

2 screws are needed to secure the front panel.

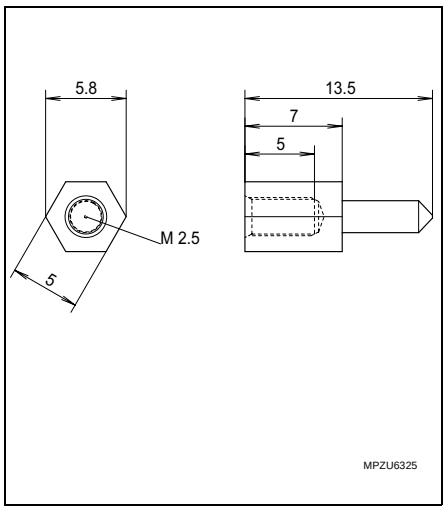
The raw zinc diecasting version is suitable for further processing and the Al profile section is suitable for cut-outs just up to the edge.



Spacer for fitting mezzanine cards

- Spacer (item 10): For fitting mezzanine card

Item	Qty	Description	Material/Finish	Order No.
10	1	Spacer	St	**60897-278**



Voltage coding pin for mezzanine cards

- Coding pin (item 11): For purposes of clarity during installation of mezzanine cards, coding pins are screwed onto the VMEbus boards for 3.3 V or power supply operation. The mezzanine cards have a hole in the appropriate position. The coding pin thus ensures that only mezzanine cards with the same voltage can be plugged in.

Item	Qty	Description	Material/Finish	Order No.
11	1	Coding pin 5 V/3.3 V (2 items required for double Europa board)	St	**60827-026**

Mechanical:

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Accessories for drive units 3.39.7

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Guide rails.....3.39.24
Coding.....3.39.27
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FASTON connector 3.39.34

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VME Reset board.....3.39.44
Daisy-Chain jumper board.....3.39.45

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19" fan 3.39.51

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Backplanes/ test adapters .. 3.20.0

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VMEbus 3.31.0
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Accessories front panels

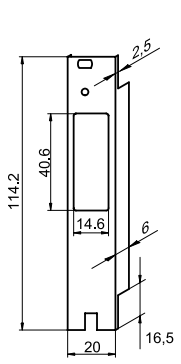
PC-MIP front panels

Mezzanine modules are narrow cards (item 2) which are fitted in parallel on the board (item 1). Typical functions of such modules are functions such as serial communication, memory, video and LCD display controller etc.

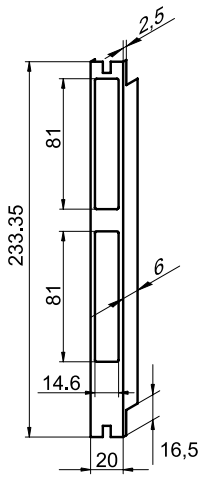
The PCI modules are connected via the front panel by PC-MIP covers. Open front panel cut-outs can be closed with the covers and the PCB holder.

- Front panel with PC-MIP cut-outs (item 3)
- Covers for PC-MIP cut-outs
  With the PCB holder (item 5) the PC-MIP cover (item 4) is secured and with the screw (item 6) the PCB holder and thus also the cover is located in place by a hole in the board (item 1).

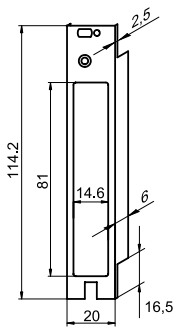
3 U single



6 U dual



3 U dual



Front panel for PC-MIP

- Front panel (item 3) of 3 and 6 U height and 4 HP width
- With either single or dual high cut-outs
- For HL handle

Delivery comprises

Height U	Qty	Description	Comments	Order No.
3	1	Front panel PC-MIP	single with single cut-out	**30847-995**
			dual with dual cut-out	**30847-996**
6			dual with two dual cut-outs	**30847-997**

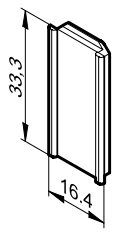
Note

Front panel handle, see HL handle

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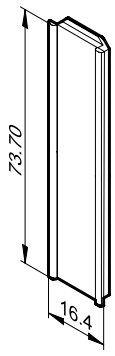
PC-MIP
cover

single



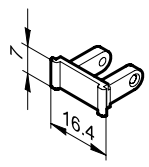
CPCI6186

dual



CPCI6187

PCB holder



CPCI6188

Covers for PC-MIP cut-outs

PC-MIP front panel covers for I/O openings and
for closing single and dual high front panel cut-outs.
The covers are made from aluminium and can thus simply be provided with the required cut-outs.

- Single and dual high covers
- PCB holder

Item	Qty	Description	Comments	Order No.
4	1	Cover PC-MIP	single, single height	**30847-792**
	1		dual, dual height	**30847-793**
5	1	PCB holder	for securing cover	**30847-794**

Note

Screw (item 6) for securing the PCB holder is not included in the scope of delivery.

A single cover and a PCB holder are required to close a single cut-out.
For a dual cut-out, either a dual cover and a PCB holder or two single covers and two PCB holders are required.

Mechanical:

Drive units
Drive units 3.39.2
Accessories for drive units 3.39.7

Front panels
Partial front panels 3.39.10
PMC front panels 3.39.12
PC-MIP front panels 3.39.14
Front panel with handle 3.39.16
IEEE front panels 3.39.17
Assembly parts.....3.39.22

Guide rails
Guide rails.....3.39.24
Coding.....3.39.27
Colours.....3.39.27

Electronic:

Mains/line voltage components
Mains/line components 3.39.28
Power supply cable 3.39.33
FASTON connector.....3.39.34

Monitoring units
Inrush current limiting module ...3.39.35
Power failure module 3.39.36
Voltage monitoring 3.39.38
Monitoring system CCS10 .....3.39.42
VME Reset board.....3.39.44
Daisy-Chain jumper board.....3.39.45

Heat dissipation:
Fans 3.39.46
19" fan 3.39.51

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Power supply units..... 3.10.0

Backplanes/ test adapters .. 3.20.0

Microcomputer packaging systems (MPS) 3.30.0
VMEbus 3.31.0
CompactPCI.....3.32.0
Industrial PC 3.33.0
Accessories.....3.39.0

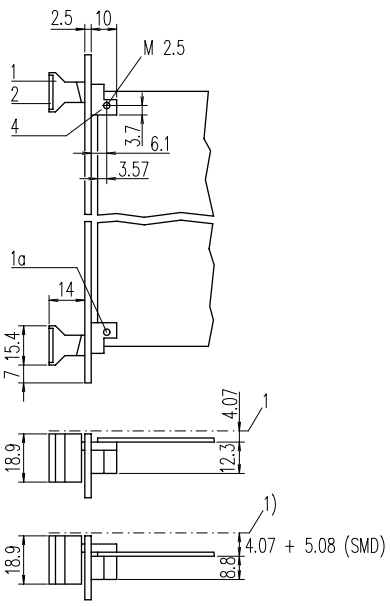
Appendix..... 3.90.0

Accessories front panels

Front panel with handle

The extractor handle makes it easier to handle plug-in boards with multi-pin connectors.

- Front panel with extractor handle, mounted
- Extractor handle
- Front panel



Front panel with extractor handle, mounted

- For VMEbus boards

Qty	Description	Order No.
1	Front panel with extractor handle, black, 6 U/4 HP	**20817-331**

Extractor handle

- With extraction function
- Suitable for VMEbus

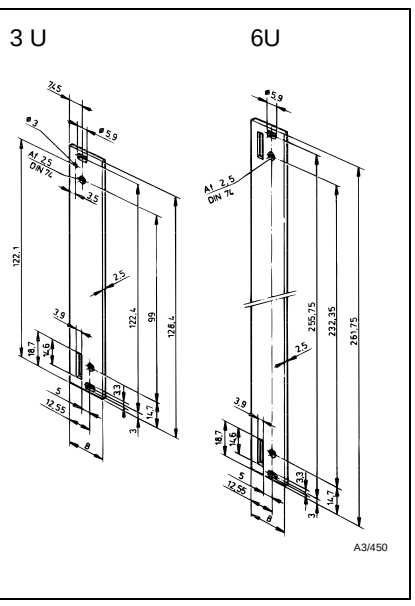
Delivery comprises

Item	Qty	Description	Material/Finish
1	1	Extractor handle	PPO UL 94 V-0, see Ordering Table
1a	1	Pivot bush	Ms
2	1	Identification plate	Al 1.5 mm anodised, cut edges plain
4	1	Euroboard bracket	Diecast zinc

Delivery: In kit form

Height Front panel	Qty	Item	Order No. grey	Order No. black
3 U	1	At the bottom	**20817-327**	**20817-329**
6 U	1	At the bottom		
		At the top	**20817-328**	**20817-330**

Note
In the case of 6 U, handles at the bottom and top are required.



Front panel

- With cut-outs suitable for extractor handle
- Suitable for VMEbus

Delivery comprises

Item	Qty	Description	Material/Finish
3	1	Front panel for extractor handle	Al 2.5 mm anodised, cut edges plain

Width W HP	Width W mm	Order No. 3 U	Order No. 6 U
4	19.98	**30809-977**	**30809-982**
5	25.06	**30809-978**	**30809-983**
6	30.14	**30809-979**	**30809-984**
7	35.22	**30809-980**	**30809-985**
8	40.30	**30809-981**	**30809-986**

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Accessories front panels

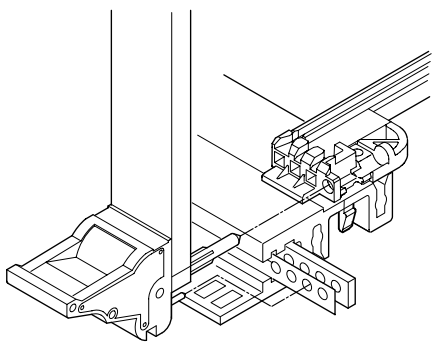
IEEE front panels

- Installation and extraction function as per IEEE 1101.10, IEC 48 D/119/CD, IEL 60297-5
- All handles with coding option
  - Front panel
  - Front panel for IE handles
  - EMC contact strips
  - IE handles
  - Microswitch
  - Coding
  - Label strips
  - Side-by-side kit for handles
  - Installation material

Horizontal rail installation conditions

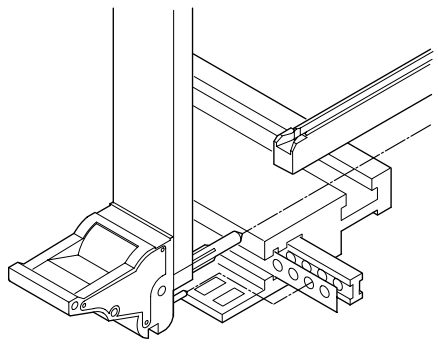
europacPRO

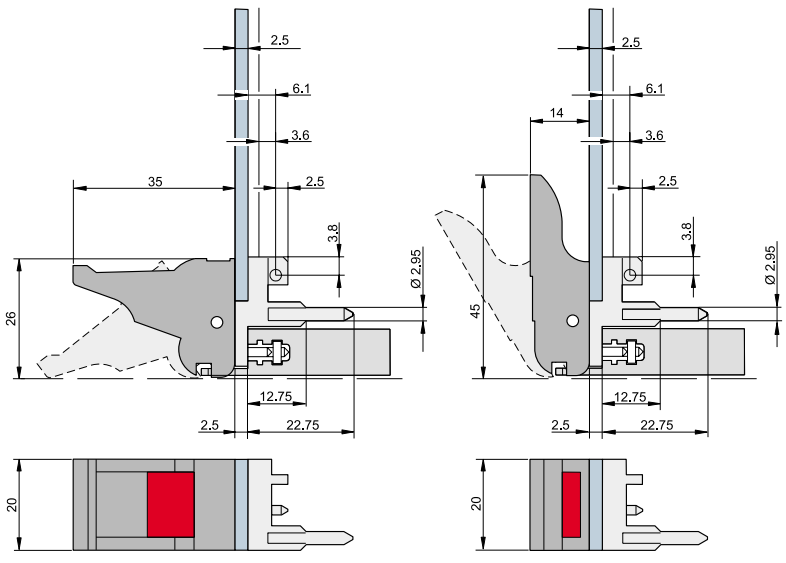
①



europac

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Mechanical:

Drive units

Drive units 3.39.2
Accessories for drive units 3.39.7

Front panels

Partial front panels 3.39.10
PMC front panels 3.39.12
PC-MIP front panels 3.39.14
Front panel with handle 3.39.16
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Assembly parts 3.39.22

Guide rails

Guide rails 3.39.24
Coding 3.39.27
Colours 3.39.27

Electronic:

Mains/line voltage components

Mains/line components 3.39.28
Power supply cable 3.39.33
FASTON connector 3.39.34

Monitoring units

Inrush current limiting module ... 3.39.35
Power failure module 3.39.36
Voltage monitoring 3.39.38
Monitoring system CCS10 ..... 3.39.42
VME Reset board 3.39.44
Daisy-Chain jumper board 3.39.45

Heat dissipation:

Fans 3.39.46
19" fan 3.39.51

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Accessories front panels

Front panel

- For closing open installation spaces
- 3/6 U shielded
- Without cut-outs and holes for handle mounting

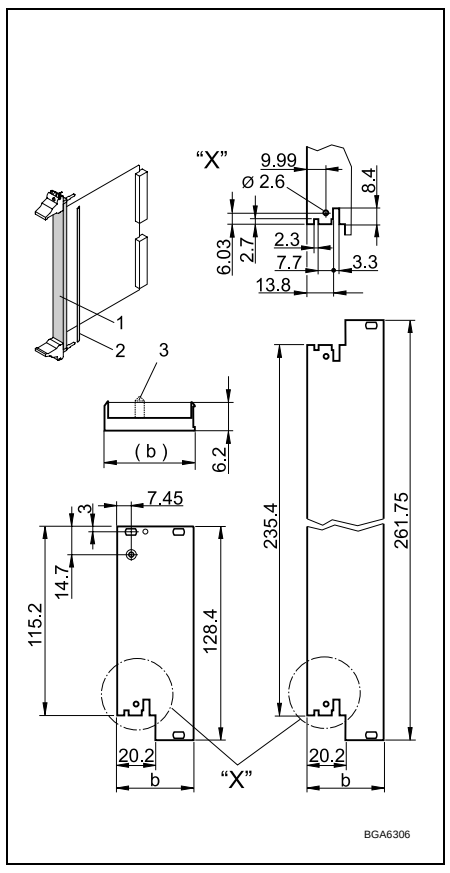
Delivery comprises

Item	Qty	Description	Material/Finish
1	1	Front panel	Al U-profile section, front side anodised, rear side chromated, without holes for handle mounting
3	2	Alignment pin, pressed in	Stainless steel, centering using perforated strip

Item	Front panel width		Order No.	
	b mm	HP[1)]	3 U	6 U
1 (3)	20.32	4	**30848-354**	**30848-355**
	40.64	8	**30848-356**	**30848-357**
	60.96	12	**30848-358**	**30848-359**

[1)] 1 HP = 5.08 mm

Accessories: EMC contact strips, see below



Front panel for IE handles

- 3/6 U
- Shielded and unshielded

Delivery comprises

Item	Qty	Description	Material/Finish
1	1	Front panel	Al U-profile section, front side anodised, rear side: chromated (shielded) yellow chromated (unshielded)
3	1	Alignment pin, pressed in (for 3 U shielded only)	Stainless steel, centering using perforated strip

Item	Front panel width		Order No.	
	b mm	HP[1)]	3 U	6 U
1 (3) shielded	20.32	4	**30848-312**	**30848-317**
	40.64	8	**30848-314**	**30848-319**
	60.96	12	**30848-316**	**30848-321**
1 unshielded	20.32	4	**30848-327**	**30848-336**
	25.40	5	**30848-328**	**30848-337**
	30.48	6	**30848-329**	**30848-338**
	35.56	7	**30848-330**	**30848-339**
	40.64	8	**30848-331**	**30848-340**
	50.80	10	**30848-333**	**30848-342**
	60.96	12	**30848-335**	**30848-344**

[1)] 1 HP = 5.08 mm

EMC contact strips

- Textile seal (is stuck on)

Item	Height of front panel	Order No.	
	U	10 pieces	100 pieces
2	3	**21101-853**	**21101-854**
	6	**21101-855**	**21101-856**

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Accessories front panels

IE handles

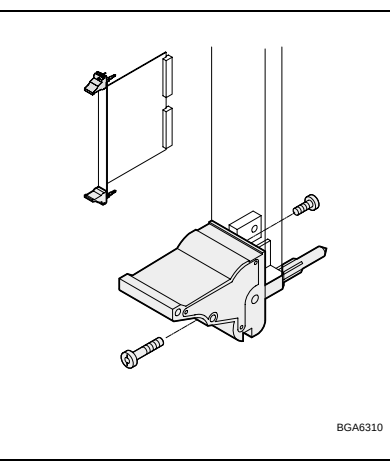
- With installation and extraction function
- 3 versions:
  – IES handle (item 1)
  – IEL handle (item 2)
  – IET handle (item 3)

Delivery comprises IES, IEL and IET handle

Qty	Description	Material/Finish
1	Mounting block	Zn diecast with integrated alignment pin for perforated strip and IEEE.1101.10-guide rail
1	Lever	Plastic PC
1	Key	Plastic PC
1	Collar screw with pozidrive	M 2.5 × 12.3
1	Pan head screw with torx	M 2.5 × 7

Note

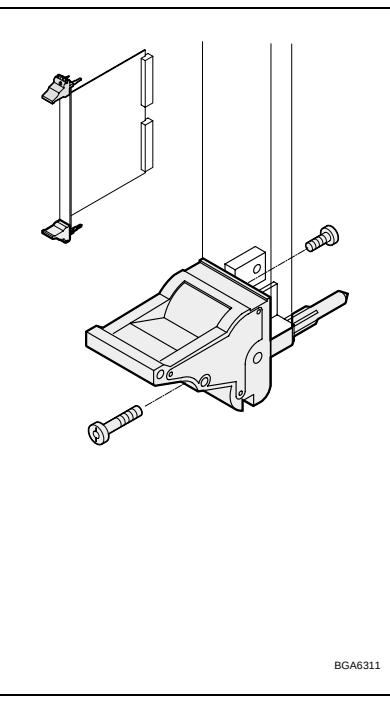
A handle at the bottom is required for 3 U front panels while handles at the bottom and top are required for 6 U front panels.



IES handle

- Without lock mechanism

Qty	Description	Order No.	
		At the bottom	At the top
10	Light grey, RAL7035	**20817-636**	**20817-638**
100	Light grey, RAL7035	**20817-637**	**20817-639**
10	black, RAL 9005	**20817-632**	**20817-634**
100	black, RAL 9005	**20817-633**	**20817-635**



IEL handle

- With lock mechanism for "hot-swap" application
- Suitable for installation of microswitches

Qty	Description	Order No.	
		At the bottom	At the top
10	Lever: light grey, RAL 7035 Key: black, RAL 9005	**20817-620**	**20817-622**
100	Lever: light grey, RAL 7035 Key: black, RAL 9005	**20817-621**	**20817-623**
10	Lever: black, RAL 9005 Key: light grey, RAL 7035	**20817-612**	**20817-614**
100	Lever: black, RAL 9005 Key: light grey, RAL 7035	**20817-613**	**20817-615**

Mechanical:

Drive units
Drive units 3.39.2
Accessories for drive units 3.39.7

Front panels
Partial front panels 3.39.10
PMC front panels 3.39.12
PC-MIP front panels 3.39.14
Front panel with handle 3.39.16
IEEE front panels 3.39.17
Assembly parts.....3.39.22

Guide rails
Guide rails.....3.39.24
Coding.....3.39.27
Colours.....3.39.27

Electronic:

Mains/line voltage components
Mains/line components 3.39.28
Power supply cable 3.39.33
FASTON connector.....3.39.34

Monitoring units
Inrush current limiting module...3.39.35
Power failure module 3.39.36
Voltage monitoring 3.39.38
Monitoring system CCS10 .....3.39.42
VME Reset board.....3.39.44
Daisy-Chain jumper board.....3.39.45

Heat dissipation:
Fans 3.39.46
19" fan 3.39.51

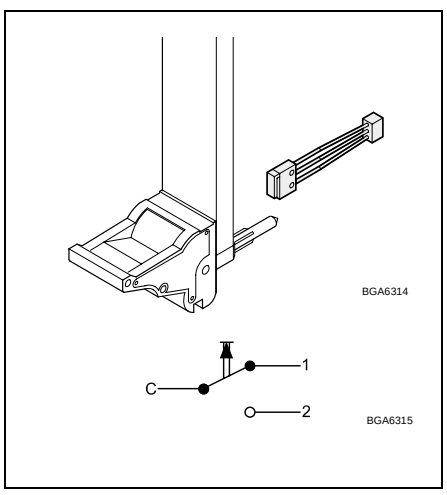
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Accessories front panels

IET handle

- With lock mechanism
- For Telecom applications
- Suitable for installation of microswitches

Qty	Finish	Order No.	
		At the bottom	At the top
10	Lever: light grey, RAL 7035 Key: black, RAL 9005	**20817-660**	**20817-662**
100	Lever: light grey, RAL 7035 Key: black, RAL 9005	**20817-661**	**20817-663**
10	Lever: black, RAL 9005 Key: light grey, RAL 7035	**20817-652**	**20817-654**
100	Lever: black, RAL 9005 Key: light grey, RAL 7035	**20817-653**	**20817-655**



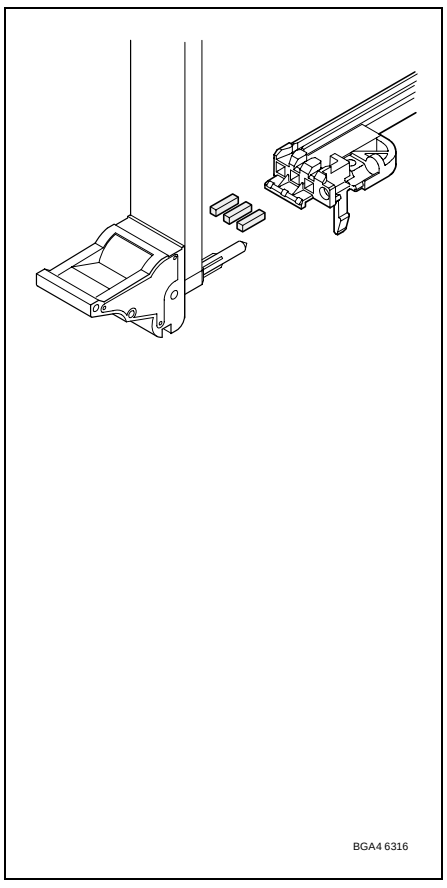
Microswitch

- For IEL and IET handles
- Microswitch for “live insertion”

Technical data

Max. switched current	≥ 50 mA
Operating temperature	–25 °C to +70 °C
Mechanical life	≥ 50,000 switching cycles
Electrical life	≥ 20,000 switching cycles

Qty	Description	Order No.
10	Microswitch with cable	**20817-606**



Coding

- Prevents plug-in units being used on non-permissible pin positions

Qty	Description	Material/Finish	Order No.
100	Coding peg	PBT, UL 94 V-0, grey	**20817-499**

Guide rails for coding: Available on request

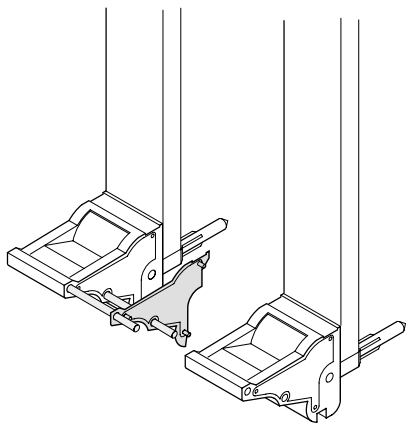
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Accessories front panels

Label strips

Material
Polyester film self-adhesive, white

Item	Description	Order No.
1	1 sheet (210 pieces, 19 × 9.5 mm)	**60817-340**
2	1 sheet (320 pieces, 19 × 4.8 mm)	**60817-341**



Side-by-side kit for handles

■ Enables side-by-side placing of IES and IEL handles as one unit (max. 4 handles)

Qty	Order No. Side-by-side kit for		
	2 Handles	3 Handles	4 Handles
10	**20817-672**	**20817-673**	**20817-674**

Description	Material/Finish
Side-by-side mounting kit	Plastic (PC), pin: steel, RAL 7035, light grey

Mechanical:

Drive units
Drive units 3.39.2
Accessories for drive units 3.39.7

Front panels
Partial front panels 3.39.10
PMC front panels 3.39.12
PC-MIP front panels 3.39.14
Front panel with handle 3.39.16
IEEE front panels 3.39.17
Assembly parts.....3.39.22

Guide rails
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Mains/line components 3.39.28
Power supply cable 3.39.33
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VME Reset board.....3.39.44
Daisy-Chain jumper board.....3.39.45

Heat dissipation:
Fans 3.39.46
19" fan 3.39.51

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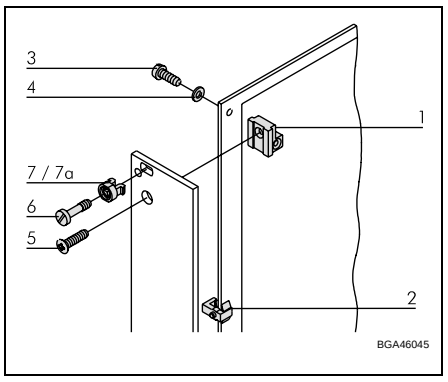
Power supply units..... 3.10.0

Backplanes/ test adapters .. 3.20.0

Microcomputer packaging systems (MPS) 3.30.0
VMEbus 3.31.0
CompactPCI.....3.32.0
Industrial PC 3.33.0
Accessories.....3.39.0

Appendix..... 3.90.0

Accessories front panels



Assembly parts

Note

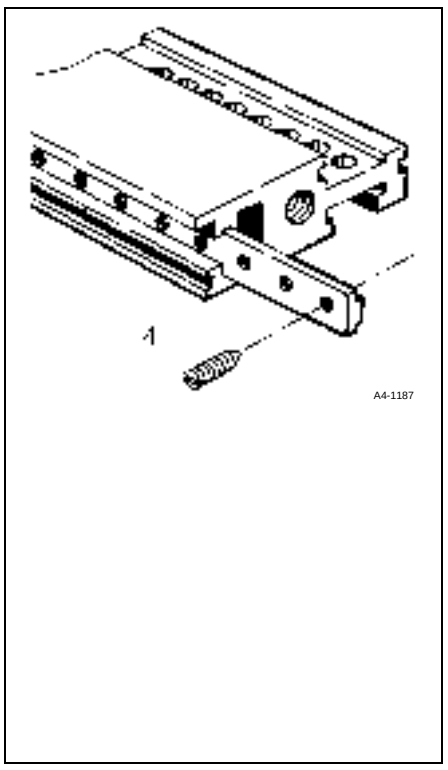
Front panel earthing is achieved with a grub screw and metal sleeve and chromated front panels.

The grub screw establishes the conductive connection between threaded insert and subrack.

The metal sleeve allows low-ohmic contact between the screws and the front panel.

Item	Description	Material/Finish	Qty	Order No.
1	Euroboard bracket	Diecast zinc	1	**60807-181**
2	Central holder	PPO, UL 94 V-0 black, stabilises printed board on front panel	100	**21101-751**
3	Raised pozidrive c/sk screw	M 2.5 × 6, St, nickel-plated	100	**21101-219**
	Pan head screw with torx	M 2.5 × 6 Self-locking thread	100	**24560-159**
4	Washer	St, A 2.7 DIN 125 St nickel-plated	100	**21100-721**
5	Pan head pozidrive c/sk screw	M 2.5 × 8 St nickel-plated	100	**21100-429**
	Pan head screw with torx	M 2.5 × 5 Self-locking thread	100	**24560-146**
6	Collar screw	Length dependent on threaded insert, see Threaded insert		
7	Sleeve, plastic[1)]	plastic POM, grey, for unshielded front panels	100	**21100-464**
		plastic POM, black, for unshielded front panels	100	**21100-591**
7a	Sleeve, metal[1)]	Ms, nickel-plated, for shielded front panels	10	**21100-659**
			100	**21100-660**
		Stainless steel, for shielded front panels	10	**21100-661**
			100	**21100-662**

[1)] Plastic nipples (item 7) can be pressed in by hand. Metal sleeves (item 7a) must be pressed in with a tool (e.g. lever press). They serve the purpose of front panel earthing (with grub screw).



Grub screw

- Grub screw (item 4) secures the threaded insert in place
- Establishes the conductive connection between threaded insert and horizontal rail/subrack

Description	Order No.	
	20	100
Grub screw	**21100-275**	**21100-276**

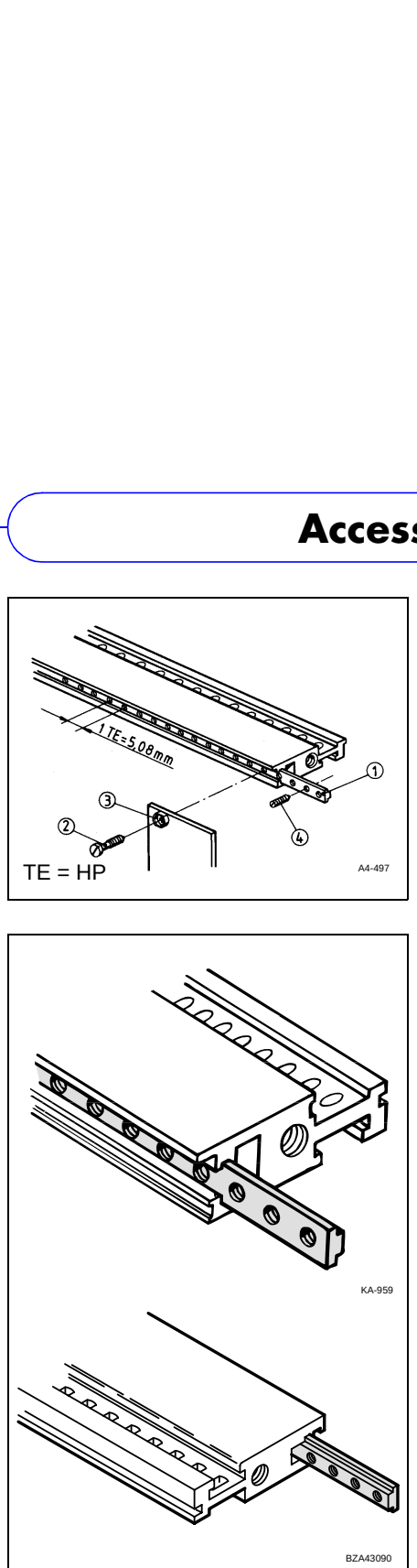
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Accessories front panels

Threaded strip

The threaded insert is pushed into the horizontal rail and serves to secure front panels.

- 2 versions for M 2.5 screws:
  - Standard
  - Double T



Threaded insert, standard, M2.5

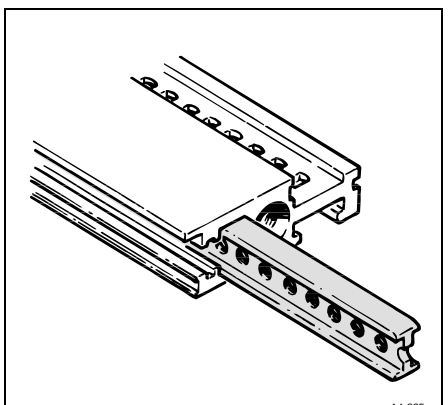
Delivery comprises

Item	Qty	Description	Material/Finish
1	1	Threaded insert	Steel profile section, zinc-plated

Usable HP	Length mm	Order No.	Usable HP	Length mm	Order No.
9	50.3	**30819-669**	60	309.4	**30819-618**
20	106.2	**30819-658**	63	324.6	**30819-615**
28	146.8	**30819-650**	74	380.5	**30819-604**
40	207.8	**30819-638**	81	416.1	**30819-597**
42	217.9	**30819-636**	84	431.3	**30819-594**

Assembly kit for front panel

Item	Description	Material/Finish		Order No. (100 pieces)
2	Collar screw with slot	M 2.5 × 11	nickel-plated	**21100-379**
			black	**21100-590**
	Collar screw with pozidrive		nickel-plated	**21100-748**
			black	**21100-749**



Threaded insert, double T, M 2.5

Delivery comprises

Item	Qty	Description	Material/Finish
1	1	Threaded strip	Steel profile section, zinc-plated

Usable HP	Length mm	Order No.	Usable HP	Length mm	Order No.
28	146.8	**30829-035**	63	324.6	**30829-070**
42	217.9	**30829-049**	84	431.3	**30829-091**

Assembly kit for front panel

Item	Description	Material/Finish	Order No. (100 pieces)
2	Collar screw with slot	M 2.5 × 12.3, nickel-plated	**21100-758**
	Collar screw with pozidrive		**21101-101**

Mechanical:

Drive units
Drive units 3.39.2
Accessories for drive units 3.39.7

Front panels
Partial front panels 3.39.10
PMC front panels 3.39.12
PC-MIP front panels 3.39.14
Front panel with handle 3.39.16
IEEE front panels 3.39.17
Assembly parts.....3.39.22

Guide rails
Guide rails.....3.39.24
Coding.....3.39.27
Colours.....3.39.27

Electronic:

Mains/line voltage components
Mains/line components 3.39.28
Power supply cable 3.39.33
FASTON connector.....3.39.34

Monitoring units
Inrush current limiting module ...3.39.35
Power failure module 3.39.36
Voltage monitoring 3.39.38
Monitoring system CCS10 .....3.39.42
VME Reset board.....3.39.44
Daisy-Chain jumper board.....3.39.45

Heat dissipation:
Fans 3.39.46
19" fan 3.39.51

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Power supply units..... 3.10.0

Backplanes/ test adapters .. 3.20.0

Microcomputer packaging systems (MPS) 3.30.0
VMEbus 3.31.0
CompactPCI.....3.32.0
Industrial PC 3.33.0
Accessories.....3.39.0

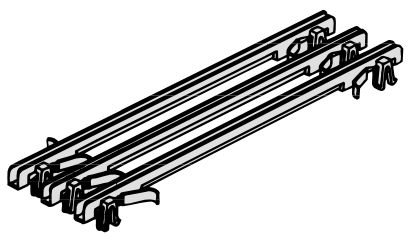
Appendix..... 3.90.0

Accessories guide rails

04292012

Guide rails

Our microcomputer packaging systems are fitted as standard with guide rails. For further requirements, we offer guide rails and accessories for VMEbus MPS (europac BGT), CompactPCI and VME64x MPS (europacPRO BGT).

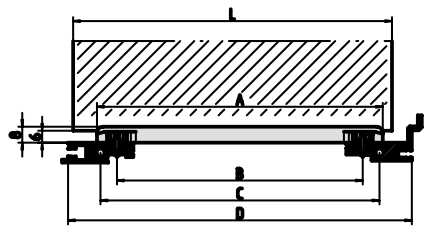


A4_175

Guide block

- for engaging in horizontal rails
- For europac subrack (VMEbus)
- Width 84 HP (21 slots)

Grid (pin positions)	Board length mm	Description	Order No.
4 HP (21)	160	PPO, UL 94 V-0, grey	**60817-043**
	220	PBTP, UL94V-0	**60817-105**



BZA42737

Table of Dimensions

Board length L mm	Dimensions mm			
	A	W	C	D
160	143.4	123.4	140	172.24
220	203.4	183.4	200	232.24

Downloaded from Arrow.com.

Accessories guide rails

Guide rails

- for engaging in horizontal rails
- In 2 versions:
  - For europac subracks (VMEbus)
  - For europacPRO subracks (CompactPCI, VME64x)

Item

Guide rail for europac (VMEbus)

Item	Board length mm	Groove width mm	Description	Order No.
1	160	2	PBTP, UL 94 V-0, grey	**60817-103**
		2.5	PPO, UL 94 V-0, black	**60817-076**
	220	2	PBTP, UL 94 V-0, grey	**60817-149**

Item

Guide rail for europacPRO (CompactPCI, VME64x)

Item	Board length mm	Groove width mm	Description	Order No.
2	160	2.0	PBT UL94V-0, red	**64560-005**
	220			**64560-006**
3	80[1)]			**64560-040**

[1)] With integrated coding block

Item

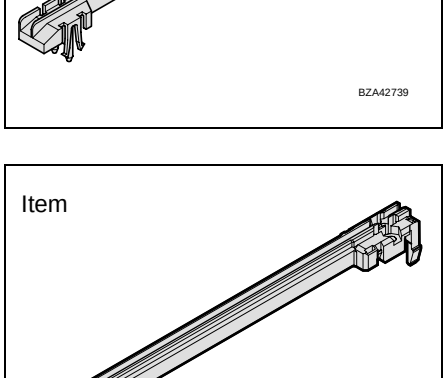


Table of dimensions

Board length L mm	Dimensions mm				
	A	A*	W	C	D
160	161.5	138	135	120	150
220	221.5	198	195	180	210

Mechanical:

Drive units
Drive units 3.39.2
Accessories for drive units 3.39.7

Front panels
Partial front panels 3.39.10
PMC front panels 3.39.12
PC-MIP front panels 3.39.14
Front panel with handle 3.39.16
IEEE front panels 3.39.17
Assembly parts.....3.39.22

Guide rails
Guide rails.....3.39.24
Coding.....3.39.27
Colours.....3.39.27

Electronic:

Mains/line voltage components
Mains/line components 3.39.28
Power supply cable 3.39.33
FASTON connector.....3.39.34

Monitoring units
Inrush current limiting module...3.39.35
Power failure module 3.39.36
Voltage monitoring 3.39.38
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VME Reset board.....3.39.44
Daisy-Chain jumper board.....3.39.45

Heat dissipation:
Fans 3.39.46
19" fan 3.39.51

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Power supply units..... 3.10.0

Backplanes/ test adapters .. 3.20.0

Microcomputer packaging systems (MPS) 3.30.0
VMEbus 3.31.0
CompactPCI.....3.32.0
Industrial PC 3.33.0
Accessories.....3.39.0

Appendix..... 3.90.0

Accessories guide rails

1) Printed circuit board

BZA45858 BGA45859

ESD clip

For guide rail europacPRO subrack
(CompactPCI and VME64x MPS)

- Can be inserted into the guide rail at the front and rear
- Ensures conductive contacting between printed board and horizontal rail on the solder and component side

Note

Horizontal rails with a conductive surface must be used.

Delivery comprises

Qty	Description	Material/Finish
50	ESD clip	St, zinc-plated

Order No. **24560-255**

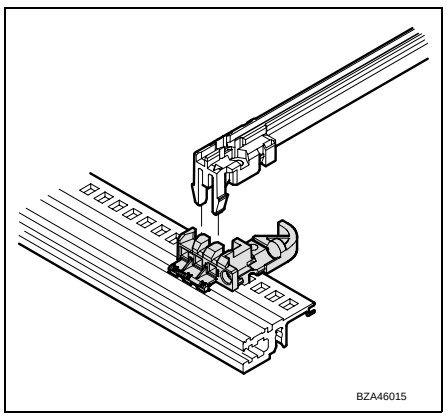
Downloaded from Arrow.com.

Accessories guide rails

Coding

For purposes of identification during installation of boards.
The recesses for the coding pegs are located on the handle and on the coding block of the guide rail.
3 coding pegs can be connected (4 different plug-in positions for each coding peg). 64 different boards can thus be defined.

- Coding block
- Coding peg



Coding block

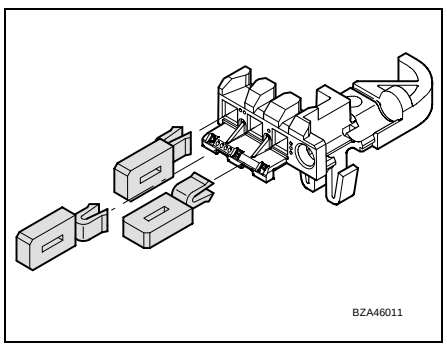
For guide rail europacPRO subrack

Qty	Description	Comments	Order No.
1 pair	Coding block	for top and bottom PBT, UL 94 V-0, red	**64560-040**

Note

Can be used together with HL handle.

Minimum spacing of guide rail: 4 HP



Coding peg

For CompactPCI and VME64x MPS

The coding pegs (3 items) are inserted in the coding block and the HL handle (3 items in each case).

Qty	Description	Comments	Order No.
100	Coding peg	PBT, UL 94 V-0, grey, RAL 7030	**20817-499**

Colours

Our construction systems are available from the factory in the standard casing colours (dark/light grey). We will be pleased to supply other colours. Damage to paintwork can be touched up with original paints.

Dark grey RAL 7030 Spray can contents 150 cm^3	Order No.	**89003-905**
Light grey RAL 7035 Spray can contents 150 cm^3	Order No.	**89003-912**

Mechanical:

Drive units

Drive units 3.39.2
Accessories for drive units 3.39.7

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PMC front panels 3.39.12
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Guide rails

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Coding.....3.39.27
Colours.....3.39.27

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Heat dissipation:

Fans 3.39.46
19" fan 3.39.51

Downloaded from Arrow.com.

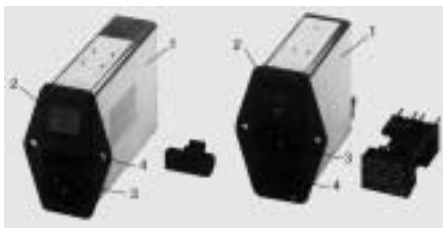
Accessories mains/line voltage components

Mains/line components

- Mains/line module
- Mains/line socket
- Power switch
- Mains suppression filter

Mains/line modules

- Mains/line module
- Mains/line module with front panel



0110165W 0110165A



121 96 004

Mains/line module

- Metal casing for screw mounting
- Mains inlet via IEC socket, mains outlet via 3 FASTON contacts (L, N, PE, 6.3 × 0.8 mm)
- Fuse holder
- Mains suppression filter
- Two-pin mains switch for type A and type B
- VDE, UL certification

Technical data

Version	Type A	Type B	Type C
Mains/line voltage max.	230 V_{AC}	230 V_{AC}	230 V_{AC}
Max. current (40 °C)	4 A	6 A	10 A
Leakage current 230 V/50 Hz	0.5 mA	2 ∅ 0.45 mA	< 0.5 mA
High-voltage strength, 2 secs. L, N, PE	1500 V_{AC}	2000 V_{AC}	2700 V_{AC}
Mains switched installed	Yes		No
Fuse, number	1	2	
Weight	260 g	220 g	110 g

Delivery comprises

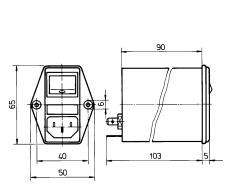
Item	Description
1	Metal casing
2	Mains rocker switch (for version A, B)
3	IEC socket
4	Fuse holder with fuse(s), 5 × 20 mm

Delivery: Item 1 to 4 mounted

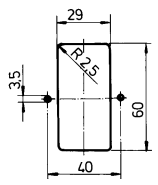
Type	Qty	Description	Order No.
A	1	Mains/line module with mains switch 4 A	**20892-304**
W	1	Mains/line module with mains switch 6 A	**20892-110**
C	1	Mains/line module 10 A	**20892-194**

Dimensions **Mounting hole pattern**

A

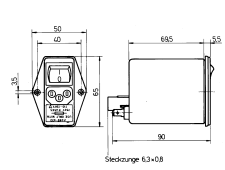


A4/1060a

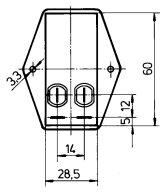


A4/1059b

B

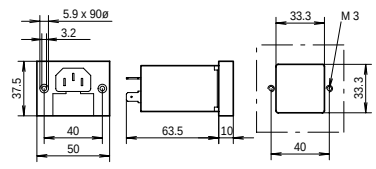


A4/1059a



A4/1060b

C



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Accessories mains/line voltage components

CPCI6096

TE = HP
HE = U

Mains/line module with front panel

- Shielded front panel
  (front side anodised, rear side yellow chromated)
- Voltage 110 V–250 V, 50 Hz–60 Hz
- Max. current 8.8 A

Height H U	Width W HP	Order No. (1 piece)
3	8	**24579-208**
6	8	**24579-209**

Note

EMC contract strips are required for shielding the front panel. See Front panels – EMC contact strips.

Mechanical:

Drive units

Drive units 3.39.2
Accessories for drive units 3.39.7

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Coding.....3.39.27
Colours.....3.39.27

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VME Reset board.....3.39.44
Daisy-Chain jumper board.....3.39.45

Heat dissipation:

Fans 3.39.46
19" fan 3.39.51

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Accessories mains/line voltage components

121 96 002

121 96 003

Mains/line socket

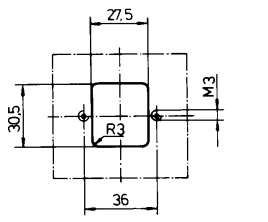
IEC socket
- VDE-, UL- and CSA-approved
- 250 V~/10 A
- FASTON connections 6.3 × 0.8 mm
- 2 versions: with and without fuse holder

Type	Qty	Description	Order No.
A	1	Socket with fuse holder	**61002-077**
W	1	Socket without fuse holder	**61002-069**

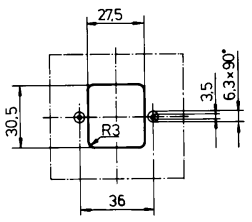
Mounting hole pattern

from front | from rear | Mounting

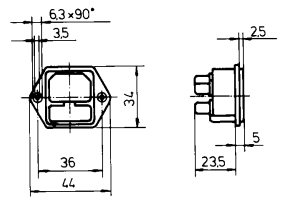
A



A4-992a

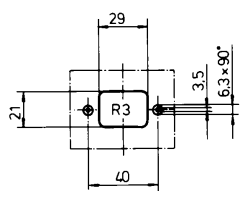


A4-992b

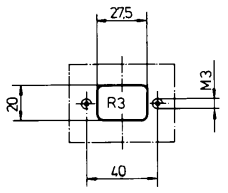


A4-992c

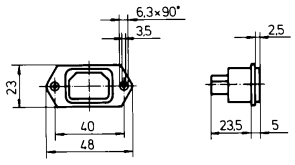
B



A4-993a



A4-993b



A4-993c

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Accessories mains/line voltage components



12100001

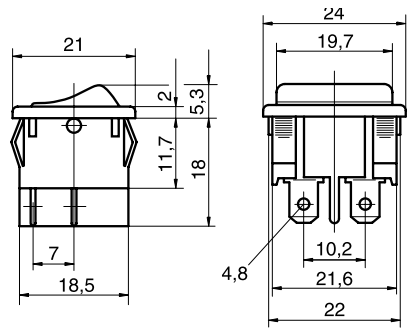
Power switch

- VDE-, UL- and CSA-approved
- Rocker switch, 6 A/250 V~, 2-pin, FASTON connections 4.8 × 0.8 mm
- Rocker switch, 16 A/250 V~, 2-pin, FASTON connections 6.3 × 0.8 mm

Type	Qty	Description	Max. current	Order No.
A	1	Rocker switch for material thickness 0.8–5.0 mm	6 A	**61091-004**
W	1	Rocker switch for material thickness 0.8–5.0 mm	A 16	**61091-070**
C	1	Rocker switch for material thickness up to 8 mm	A 16	**61091-108**

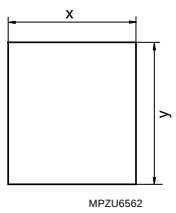
Dimensions

A



MPZU6563

Mounting hole pattern

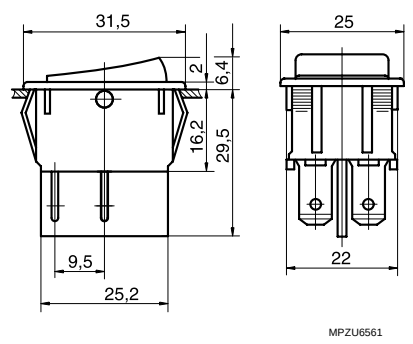


MPZU6562

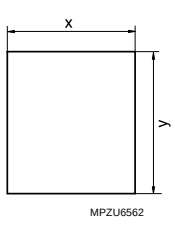
x: with external dimension 21 mm
y: with external dimension 24 mm

Material thickness front panel mm	x mm	y mm
0.75 – 1.25	19.2 – 0.1	21.9 + 0.2
1.25 – 2.00	19.4 – 0.1	21.9 + 0.2
2.00 – 3.00	19.8 – 0.1	21.9 + 0.2

W



MPZU6561

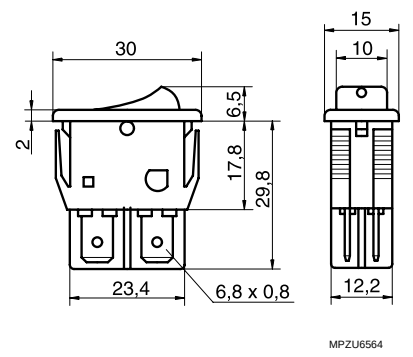


MPZU6562

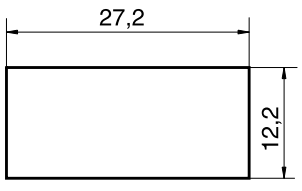
x: with external dimension 31.5 mm
y: with external dimension 25 mm

Material thickness front panel mm	x mm	y mm
0.75 – 1.25	30.0 – 0.1	22 + 0.2
1.25 – 2.00	30.2 – 0.1	22 + 0.2
2.00 – 3.00	30.6 – 0.1	22 + 0.2

C



MPZU6564



MPZU6565

Mechanical:

Drive units
Drive units 3.39.2
Accessories for drive units 3.39.7

Front panels
Partial front panels 3.39.10
PMC front panels 3.39.12
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Front panel with handle 3.39.16
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Guide rails
Guide rails.....3.39.24
Coding.....3.39.27
Colours.....3.39.27

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Mains/line components 3.39.28
Power supply cable 3.39.33
FASTON connector 3.39.34

Monitoring units
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Voltage monitoring 3.39.38
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VME Reset board.....3.39.44
Daisy-Chain jumper board.....3.39.45

Heat dissipation:
Fans 3.39.46
19" fan 3.39.51

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Power supply units..... 3.10.0

Backplanes/ test adapters .. 3.20.0

Microcomputer packaging systems (MPS) 3.30.0
VMEbus 3.31.0
CompactPCI.....3.32.0
Industrial PC 3.33.0
Accessories.....3.39.0

Appendix..... 3.90.0

Accessories mains/line voltage components



011482-2

Mains suppression filter

All mains suppression filters are accommodated in compact metal casings.

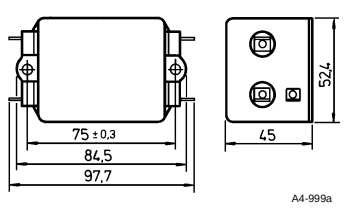
The connection is made by means of FASTON contacts 6.3 × 0.8 mm.

Choosing the appropriate mains filter depends on the max. current.

Type		A	W	C	D
Mains suppression filter for max. continuous current (at 25 °C), 115 V/230 V_{AC}		3 A	A 5.2	6 A	10 A
Certifications		VDE, UL, CSA	VDE, UL, CSA	VDE, UL, CSA	VDE, UL, CSA
Operating current max.	220 V/50 Hz	2 × 0.5 mA	2 × 0.2 mA	2 × 0.5 mA	2 × 0.2 mA
	120 V/50 Hz	2 × 0.25 mA	–	2 × 0.3 mA	–
High-voltage strength	Conductor/PE	2250 V	2000 V	2250 V	2000 V
	Line/line	1450 V	2000 V	1450 V	2000 V
Operating frequency		50...60 Hz	50...60 Hz	50...60 Hz	50...60 Hz
Order No. (1 piece)		**60892-094**	**60892-164**	**60892-095**	**60892-136**

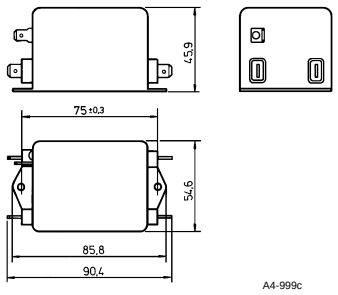
Dimensions

A



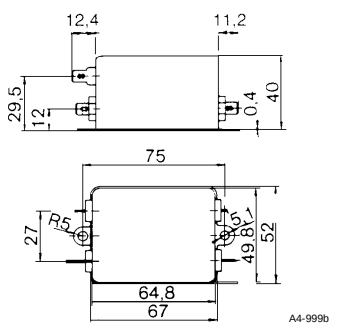
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C



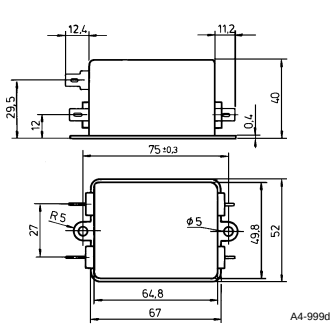
A4-999c

C



A4-999b

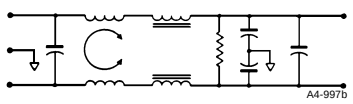
D



A4-999d

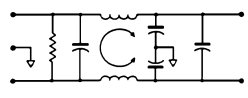
Circuit

A



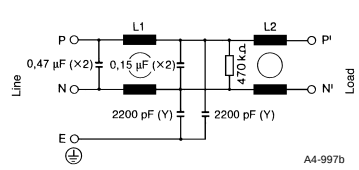
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C



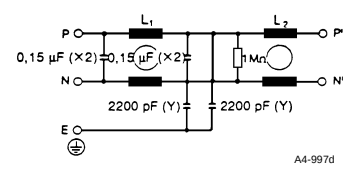
A4-997c

C



A4-997b

D



A4-997d

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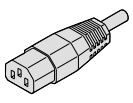
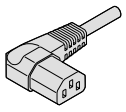
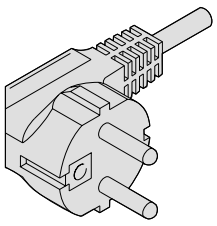
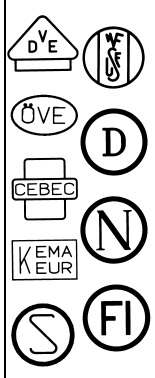
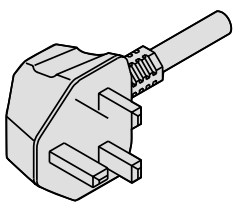
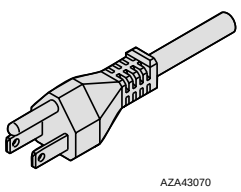
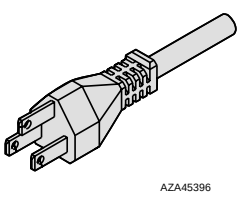
Accessories mains/line voltage components

Power supply cable

Application for
- Fan racks/mains supply
- Industrial PC connections/mains supply
- Uninterruptable power supply/mains supply
- MPS systems
- Cabinet control system CCS10

Delivery comprises

Qty	Description	Comments
1	Power supply cable	PVC max. 250 V~, max. 10 A

Mains plug type / Unit device side / Mains/line side	Order No. (1 piece) Device socket type: straight	Order No. (1 piece) Device socket type: at an angle	Use in ...	Approvals/ Certifications	Surface	Cable length
	 AZA43071	 AZA43072				
SCHUKO/UTE  AZA43068	**60103-131**	**60704-020**	Germany France Austria Norway The Netherlands Sweden Finland Spain Portugal Turkey Greece Belgium Luxembourg		grey (as per DIN 47 732)	2.5 m
BS  AZA43069	**60103-137**	–	Great Britain Ireland		black	2.5 m
USA  AZA43070	**60103-141**	–	USA Canada		black	2.0 m
IEC32  AZA45396	**60197-053**	–	World-wide	IEC	black	2.5 m

Mechanical:

Drive units
Drive units 3.39.2
Accessories for drive units 3.39.7

Front panels
Partial front panels 3.39.10
PMC front panels 3.39.12
PC-MIP front panels 3.39.14
Front panel with handle 3.39.16
IEEE front panels 3.39.17
Assembly parts.....3.39.22

Guide rails
Guide rails.....3.39.24
Coding.....3.39.27
Colours.....3.39.27

Electronic:

Mains/line voltage components
Mains/line components 3.39.28
Power supply cable 3.39.33
FASTON connector 3.39.34

Monitoring units
Inrush current limiting module ...3.39.35
Power failure module 3.39.36
Voltage monitoring 3.39.38
Monitoring system CCS10 .....3.39.42
VME Reset board.....3.39.44
Daisy-Chain jumper board.....3.39.45

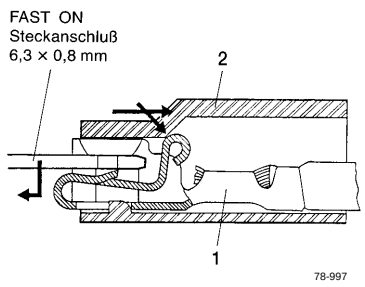
Heat dissipation:
Fans 3.39.46
19" fan 3.39.51

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Accessories mains/line voltage components

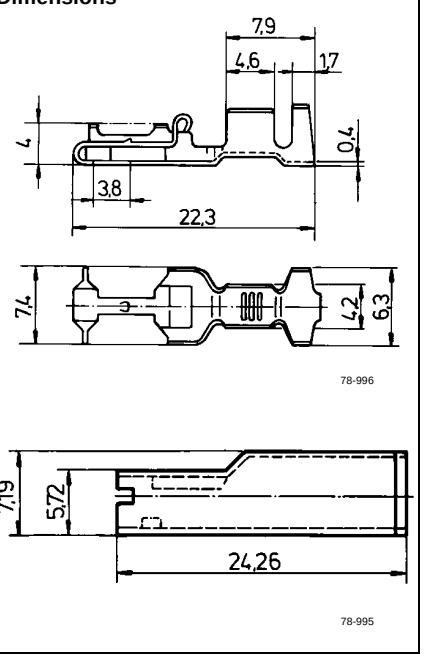
ELA43819

Principle of operation



78-997

Dimensions



FASTON connector

The connector locks automatically when pushed onto the connector connection (6.3 × 0.8 mm).

It unlocks when you pull on the insulating cover – not on the cable.

Item	Qty	Description	Crimp connection for line cross-section	Order No.
1	100	FASTON connector (6.3 × 0.8 mm)	0.5 – 1.5 mm²	**60800-525**
			1.0 – 2.5 mm²	**60800-530**
			2.5 – 4.0 mm²	**60800-531**
2		Insulating cover		**60800-526**


121-96-001

FASTON distributor

The distribution strip is used to connect 3-core cables. 6 FASTON connectors can be connected to each of the 3 connections.

Delivery comprises

Item	Qty	Description	Comments
1	1	Distribution strip for three cables W × H × D = 152 × 22 × 36 mm	6 FASTON connections 6.3 × 0.8 mm (load capability 25 A) per connection (UL, CSA)
2	1	Cover plate with plastic pin	for protection against accidental contact
3	2	Screw M 4 × 16 mm, nut and spring washer	

1 Kit

Order No. **21100-937**

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DB 011412-1

Dimension drawings/connector assignment

A4/1896



A4/1902

Inrush current limiting module

(Inrush Current Limiter)

The device briefly limits high switch-on currents (e.g. from power supply units).

- Switch-on current typ. 10 A
- 115/230 V~
- Permissible continuous current max. 12 A

For connecting the power cables and the loads, FASTON plug-in connections (L and N in each case) are attached with protection against accidental contact.

Function

An NTC thermistor (NTC, 14 Ω at 25 °C) limits the current in the switch-on phase to approx. 10 A at 230 V~ mains/line voltage. The power loss of more than 1 kW heats up the NTC rapidly with the result that it reduces its inherent resistance.

A relay contact jumpers the NTC thermistor after a delay of approx. 0.4 s. The power loss of the "holding circuit" is negligible.

Technical data

Line voltage	230 V~	173 ... 264 V~
	115 V~	98 ... 143 V~
Mains/line frequency		48...62 Hz
Current at switch-on		typ. 10 A
Limitation time		0.4 ± 0.15 s
Permissible continuous current		max. 12 A (230/115 V~)
Connections as per VDE 0110		FASTON
Iso. Gr. B		6.3 × 0.8 mm
Class of protection 2		⧈

Type	Mains/line voltage	Switch-on current [A]	Continuous current [A]	Order No.
ICL 20812	230 V~	10	12	**11008-525**
ICL 20510	230 V~	5	10	**11008-528**

Mechanical:

Drive units
Drive units 3.39.2
Accessories for drive units 3.39.7

Front panels
Partial front panels 3.39.10
PMC front panels 3.39.12
PC-MIP front panels 3.39.14
Front panel with handle 3.39.16
IEEE front panels 3.39.17
Assembly parts.....3.39.22

Guide rails
Guide rails.....3.39.24
Coding.....3.39.27
Colours.....3.39.27

Electronic:

Mains/line voltage components
Mains/line components 3.39.28
Power supply cable 3.39.33
FASTON connector.....3.39.34

Monitoring units
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Power failure module 3.39.36
Voltage monitoring 3.39.38
Monitoring system CCS10 .....3.39.42
VME Reset board.....3.39.44
Daisy-Chain jumper board.....3.39.45

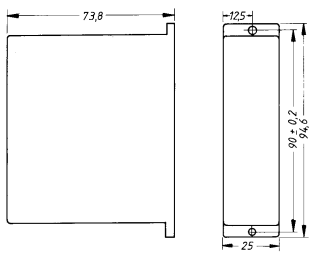
Heat dissipation:
Fans 3.39.46
19" fan 3.39.51

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Accessories monitoring units

09896001

Dimension



78-64-1

Power failure module

- For VME-/VXIbus
- Monitored mains/line voltage 100/110/120/130/220/230/240 V_{AC}, 24 V_{DC}
- Monitored direct voltage 4 ... 30 V
- Power failure bridging
- ACFAIL*, SYSRESET* signal
- Suitable for fitting to 19" subrack

Application

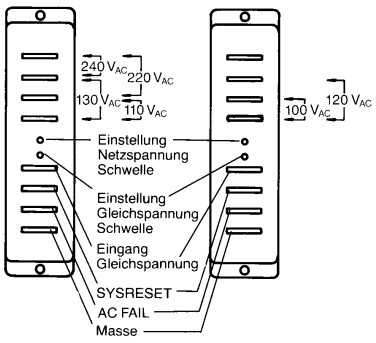
The PFM VME monitors the status of the mains system for undervoltage or failure. Regardless of this, a direct voltage can also be monitored.
The ACFAIL* and SYSRESET* output signals are made available in accordance with the VME specifications.
The module is fitted like a connector in the subrack however it can be mounted in any position in the device.

Monitored voltage			Type	Order No.
Input	Adjustment range V_I	Output V_{IDC} [V]		
110 V_{AC}	85.8 – 132	4 – 30	PFM VME	**11005-201**
130 V_{AC}	101.4 – 156			
220 V_{AC}	171.6 – 264			
100 V_{AC}	78.0 – 120			**11005-202**
120 V_{AC}	93.6 – 144			
24 VDC	20.4 – 27		PFM DC 24	**23015-013**

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Accessories monitoring units

Pin assignment



A4/1074

Technical data

Input variables		PFM VME	PFM DC 24
Line voltage		100/120 V~ 110/130/ 220/240 V~ +10 % ... -15 %	24 V_{DC} (any connection polarity) +10 % ... -15 %
Mains/line frequency		48 ... 62 Hz	DC
Measured input variables (adjustable response threshold)			
Line voltage		-22 % ... +20 % U_E~	-22 % ... +20 % U_{EDC}
Factory setting (Level Mains)		110/220 V~ -15 %	24 V_{DC} -15 %
Direct voltage V_{IDC} (Level DC)		4 ... 30 V	
Factory setting V_{IDC}		V4.85	
Output variables			
ACFAIL*, DCFAIL* signal		Open collector max. 50 mA/30 V	
SYSRESET*			
MAINS SYSTEM ON SYSRESET* is HIGH when: – DC back in tolerance band – ACFAIL* HIGH again		 ≥ 250 ms ≥ 250 ms	
MAINS SYSTEM OFF SYSRESET* is LOW after ACFAIL* LOW		3 ms ± 0.5 ms	
Power failure bridging		≥ 400 ms (100 V~ ≥ 300 ms)	≥ 400 ms
Threshold accuracy at T_U = 0 – 60 °C	Line voltage	± 2 V U_E~	± 0.5 V U_{EDC}
	Direct voltage U_E	± 20 mV	± 50 mV
VDE-approved as per test voltage	Input – Output	EN 60950, VDE Reg. No.: 4387 4.3 kV_{DC}	–
Overvoltage endurance as per		VDE 0160	–
Interference suppression as per		VDE 0875	–
Transformer short-circuit-proof as per		VDE 0551	–
Class of protection (VDE 0100)		Class 1 and 2	
Connections as per VDE 0110, ISO Gr. B		FASTON 6.3 × 0.8 mm^2/2.8 × 0.8 mm^2	
Ambient temperature T_U	Operation	0 °C ... +70 °C	
	Bearing	-40 °C ... +85 °C	
Switching hysteresis	100/120 V	6 V	24 V_{DC}, 1 V
	110/130 V	V7	
	220/240 V	13 V	
Weight		138 g	104 g

Mechanical:

Drive units
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PMC front panels 3.39.12
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Guide rails.....3.39.24
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Colours.....3.39.27

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Mains/line components 3.39.28
Power supply cable 3.39.33
FASTON connector.....3.39.34

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Inrush current limiting module ...3.39.35
Power failure module 3.39.36
Voltage monitoring 3.39.38
Monitoring system CCS10 .....3.39.42
VME Reset board.....3.39.44
Daisy-Chain jumper board.....3.39.45

Heat dissipation:
Fans 3.39.46
19" fan 3.39.51

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Power supply units..... 3.10.0

Backplanes/ test adapters .. 3.20.0

Microcomputer packaging systems (MPS) 3.30.0
VMEbus 3.31.0
CompactPCI.....3.32.0
Industrial PC 3.33.0
Accessories.....3.39.0

Appendix..... 3.90.0

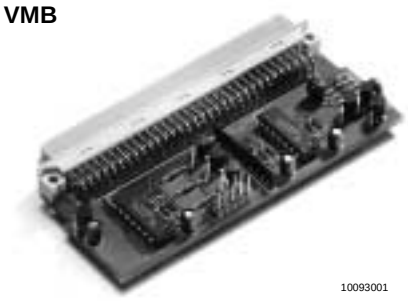
Accessories monitoring units

VMM



011139

VMB



10093001

Voltage monitoring

The voltage monitoring units monitor three direct voltages to ascertain whether they adhere to a tolerance band stipulated by the VMEbus specification. A signal is issued in the event of a tolerance band violation (open collector and via external LED display).

Type/installation location

The voltage monitoring module (VMM) is fitted in any position in the system and the voltage monitoring board (VMB) is connected directly to the reverse side of the VME backplane (slot 1).

Functions

	VMM	VMB
LED activation	x	x
FAIL* signal	x	–
SYSRESET* signal	–	x
SYSFAIL* signal	–	LED
ACFAIL* signal	–	x

*active low, open collector, max. 50 mA/30 V

- Voltage monitoring module (VMM)
- Voltage monitoring board (VMB)
- Display module

Tolerance band and switching hysteresis VMM/VMB



9999-10

Tolerance band	inside	outside
LED	Green	Red
FAIL signal (VMM), SYSRESET*, SYSFAIL signal (VMB)	"High signal"	"Low signal"
FAIL signal (VMM), SYSRESET*, SYSFAIL signal (VMB)	"High signal"	"Low signal"

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Accessories monitoring units

011139

Voltage monitoring module (VMM)

General data, see preceding page.

- Monitors the three VMEbus voltages in accordance with the VMEbus specifications
- Screw mounting to any position in system
- 2 output signals per voltage (OK/FAIL) LED activation and FAIL* signal

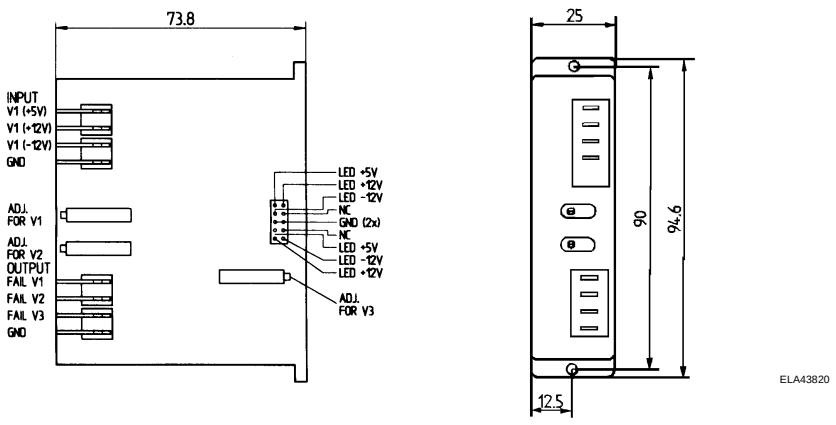
Item	Qty	Description	Comments	Order No.
1	1	Voltage monitoring module (VMM)	for screw mounting	**20835-076**

Accessories

Indication of signals with display module.

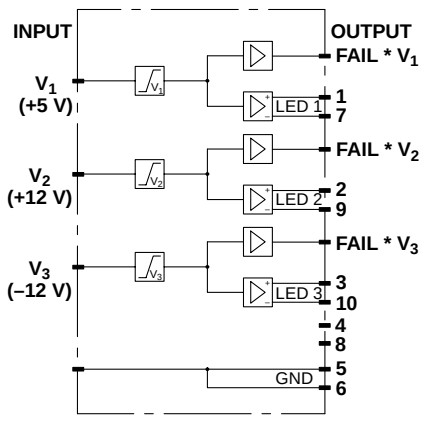
See next page but one.

Dimensions/pin assignment



ELA43820

Block circuit diagram



ELKC3607

Mechanical:

Drive units
Drive units 3.39.2
Accessories for drive units 3.39.7

Front panels
Partial front panels 3.39.10
PMC front panels 3.39.12
PC-MIP front panels 3.39.14
Front panel with handle 3.39.16
IEEE front panels 3.39.17
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Guide rails
Guide rails.....3.39.24
Coding.....3.39.27
Colours.....3.39.27

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Mains/line voltage components
Mains/line components 3.39.28
Power supply cable 3.39.33
FASTON connector.....3.39.34

Monitoring units
Inrush current limiting module...3.39.35
Power failure module 3.39.36
Voltage monitoring 3.39.38
Monitoring system CCS10 .....3.39.42
VME Reset board.....3.39.44
Daisy-Chain jumper board.....3.39.45

Heat dissipation:
Fans 3.39.46
19" fan 3.39.51

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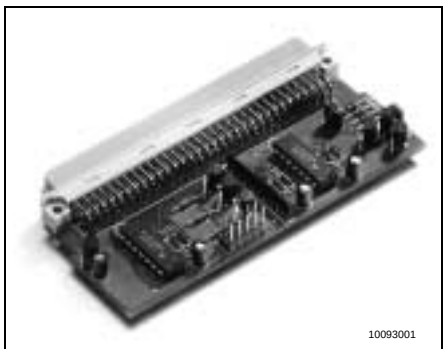
Power supply units..... 3.10.0

Backplanes/ test adapters .. 3.20.0

Microcomputer packaging systems (MPS) 3.30.0
VMEbus 3.31.0
CompactPCI.....3.32.0
Industrial PC 3.33.0
Accessories.....3.39.0

Appendix..... 3.90.0

Accessories monitoring units



10093001

Voltage monitoring board (VMB)

General data, see preceding page.

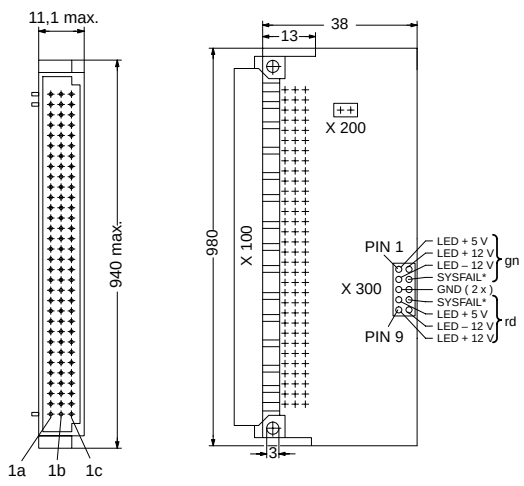
- Monitors the three VMEbus voltages in accordance with the VMEbus specification
- Is connected to reverse side of VME backplane slot 1 (for IN- and ON-board backplanes)
- LED activation signals (OK/FAIL) for display module
- Generates SYSRESET* signal in accordance with VME specification if one of the three voltages deviates from the tolerance band or if the ACFAIL* signal is applied to the backplane. SYSRESET signal can be disconnected from the bus via jumper X2000.
- SYSFAIL* signal can be displayed by way of the display module.

Item	Qty	Description	Comments	Order No.
1	1	Voltage monitoring board (VMB)	Connector C 96 F (DIN 41612)	**23015-005**

Accessories

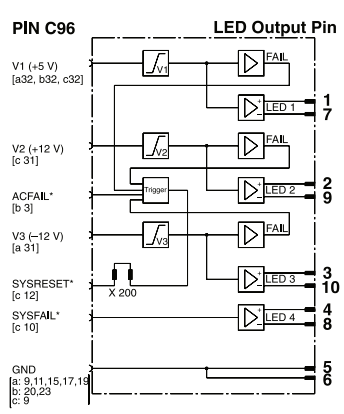
Indication of signals with display module. See next page.

Pin assignment



ELKC3609

Block circuit diagram

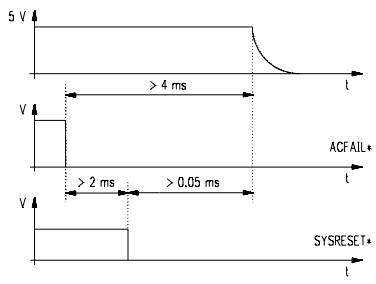


ELKC3610

ELKC3606

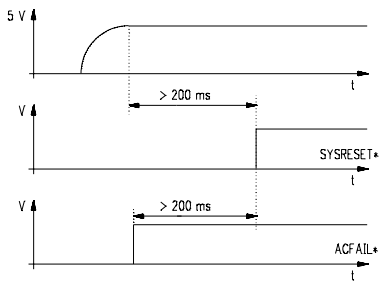
VMEbus signals

Power failure



ELKC4953

Power restoration



ELKC3629

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Accessories monitoring units

098 95 001

Display module

The display module is an LED display board of universal application (3 × two-colour LEDs, 1 × yellow LED) with connecting leads. Three two-colour LEDs indicate whether the voltages are within (green) or outside (red) the tolerance band. The fourth LED can be used to indicate the SYSFAIL* signal or another failure signal (e.g. fan). The display board is installed with the aluminium bracket provided (spot welding or screw mounting).

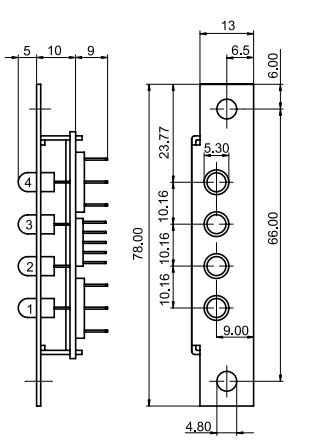
Delivery comprises

Item	Qty	Description	Comments
1	1	LED display board	3 × LED red/green, 1 × LED yellow
2	1	10-core ribbon cable with 10-pin connectors at both ends, 650 mm long	Connection display module with VMM/VMB for LED display (for VMB additionally SYSFAIL* display)
3	2	Cable, 0.75 mm^2, 1700 mm long with tab receptacles F 2.8 at one end	For activation of 4th LED yellow by external e.g. FANFAIL* display
4	1	Mounting bracket	Al

1 Kit

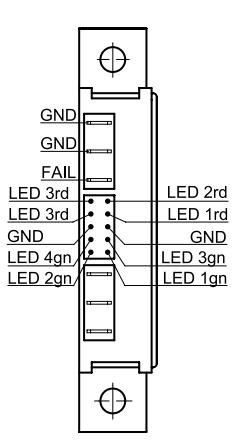
Order No. **23207-002**

Dimensions



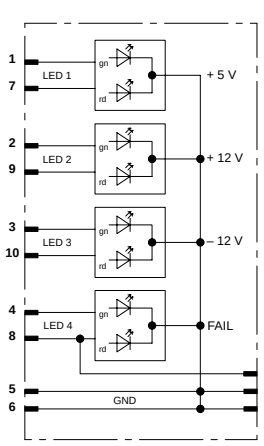
MPA45057

Pin assignment



MPZU6293

Block circuit diagram



ELKC3606

Mechanical:

Drive units

Drive units 3.39.2
Accessories for drive units 3.39.7

Front panels

Partial front panels 3.39.10
PMC front panels 3.39.12
PC-MIP front panels 3.39.14
Front panel with handle 3.39.16
IEEE front panels 3.39.17
Assembly parts.....3.39.22

Guide rails

Guide rails.....3.39.24
Coding.....3.39.27
Colours.....3.39.27

Electronic:

Mains/line voltage components

Mains/line components 3.39.28
Power supply cable 3.39.33
FASTON connector 3.39.34

Monitoring units

Inrush current limiting module ...3.39.35
Power failure module 3.39.36
Voltage monitoring 3.39.38
Monitoring system CCS10 .....3.39.42
VME Reset board.....3.39.44
Daisy-Chain jumper board.....3.39.45

Heat dissipation:

Fans 3.39.46
19" fan 3.39.51

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Power supply units..... 3.10.0

Backplanes/ test adapters .. 3.20.0

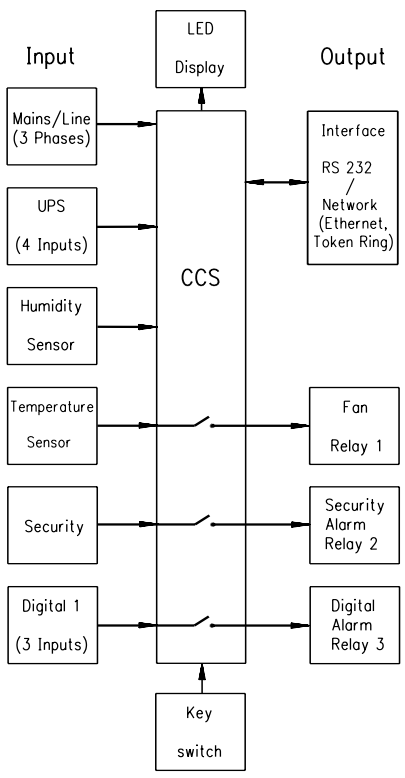
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Accessories monitoring units

0051003

Block circuit diagram



MPA44735

Monitoring system CCS10

The MPS systems are frequently used in tough industrial environments. Here the monitoring system from Schroff offers the opportunity of identifying malfunctions in good time in order to avoid e.g. losses of production. The CCS10 uses sensors to monitor the climate (temperature, humidity), the mains/line voltage and other signals. In the event of a fault, the device signals locally using its LEDs and activates its relay outputs. Alarm messages are issued to the control room via the RS 232 interface or via the network (Ethernet or Token Ring).

The monitoring system is of compact design (84 HP/1 U/220 mm deep) and adapts itself automatically to the connected mains/line voltage (115/230 V_{AC}).

Monitoring function:

- **Temperature**
  - Selectable temperature (25, 30, 35, 40 °C) at which the fan is switched
  - Selectable alarm temperature (35, 40, 45, 50 °C), at which the signalling (see below) is activated
- **Humidity**
  - Selectable relative humidity (90, 95 %), above which the signalling (see below) is activated
- **Door/alarm contacts** (4 alarm inputs e.g. for monitoring the safety area with photoelectric barrier, door contacts or motion sensor). Access for authorised persons can be made possible with a switch with key.
- **3 freely selectable digital inputs** (TTL signal, relay contact, switch), e.g. smoke detector, vibration detector etc., alarm on input 1 switches relay 3 (e. g. connected audible alarm device)
- **Mains/line voltage** (1 to 3 phase), is directly connected and produces an alarm if the mains/line voltage drops to 15 % below the nominal line voltage.
- **Uninterruptable power supply** (the connected signals of 1 or 2 UPSs, mains/line voltage failed and weak battery, are signalled).

The **signalling** of operating data and alarm messages is effected by

- LEDs at the device
- Relay contacts
- Series RS-232 interface or Ethernet-/Token-Ring-Network with SNMP log.

The operating parameters can be set at the device or remotely.

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Accessories monitoring units

Network board

01699004

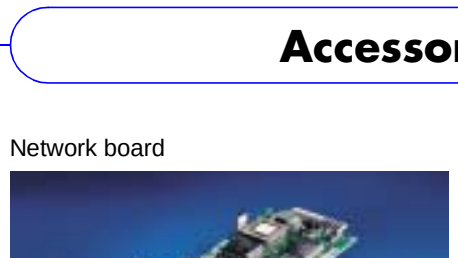
Temperature/humidity sensor

00599005

Door switch

00599001

Vibration sensor



00599002

Smoke detector



00599003

Software



00599020

Qty	Description	Order No.
1	Cabinet control system CCS10 with Token Ring interface (4/16 Mbits, 1 U/84 HP/220 mm deep, RAL 7035)	**10836-009**
1	Cabinet control system CCS10 with RS 232 interface (1 U/84 HP/220 mm deep, RAL 7035)	**10836-001**
1	Network board Ethernet with (SNMP log)	**23040-017**
1	Temperature sensor (cable length 1.5 m)	**23040-020**
1	Humidity sensor (cable length 2.5 m)	**23040-022**
1	Combined humidity/temperature sensor (cable length 2.5 m)	**23040-021**
1	Door contact (reed-switch)	**23040-028**
1	Door contact (reed switch) with installation material for Comrack and Outdoor cabinets	**23040-026**
1	Smoke detector with installation material	**23040-025**
1	Vibration sensor (electronic) with installation material	**23040-027**

Note

Operating software for assorted operating systems (Windows, UNIX, ...) for the RS232 interface and Ethernet/Token Ring network on the Schroff homepage www.schroff.de.

Mechanical:

Drive units

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Accessories for drive units 3.39.7

Front panels

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Front panel with handle 3.39.16
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Assembly parts.....3.39.22

Guide rails

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Coding.....3.39.27
Colours.....3.39.27

Electronic:

Mains/line voltage components

Mains/line components 3.39.28
Power supply cable 3.39.33
FASTON connector 3.39.34

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Heat dissipation:

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19" fan 3.39.51

Downloaded from Arrow.com.

Accessories monitoring units

011023-1

VME Reset board

The Reset board enables "resetting" of the VMEbus system and indicates SYSFAIL* and operational readiness (V_{CC}).

A pushbutton can be pressed to reset the VMEbus system accordingly (SYSRESET*).

In addition, a red LED indicates whether a board on the VMEbus has triggered the SYSFAIL* signal.

A green LED lights up when V_{CC} is applied at the VMEbus Reset board and thus at the VMEbus system. The amount of voltage is not monitored here.

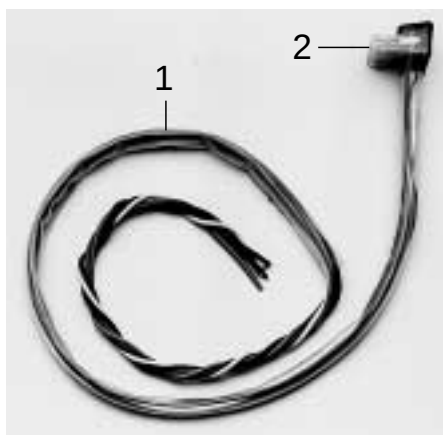
The VMEbus Reset board is connected to a standard ribbon cable and a 5-pin connector. All SCHROFF VMEbus backplanes are likewise prepared for the 5-pin connector.

Delivery comprises

Item	Qty	Description	Material/Finish
1	1	VME Reset board	Epoxy resin glass fibre EP GC 02 as per DIN 40802 (FR 4); flame-retardant as per UL 94 V-0
2	1	Partial width front panel 4 HP	Al, pre-anodised, reset button, LED (SYSFAIL, Power)
3	2	Front panel handle, trapezoidal shape, 4 HP	

Delivery: Item 1 to item 3 assembled

Height U	Order No.
3	**20800-236**
6	**20800-302**



011035-5

Accessories

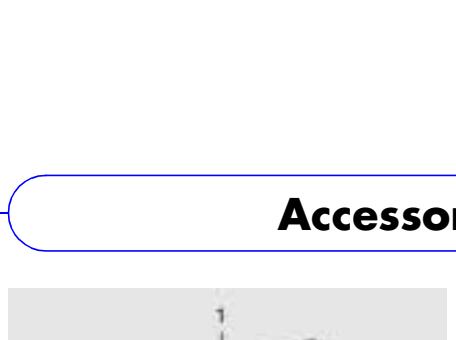
Connecting cable for utility signals

Item	Qty	Description	Order No.
1	1	Cable 5-core, 450 mm	**20800-304**
2	1	Connector 5-pin	

* Active low

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011023-2



A4-1075

Daisy-Chain jumper board

■ For VMEbus

The VMEbus specification requires options for jumpering unused plug-in stations (Bus-Grant, I_{ACK} signals) if further boards are to be connected after the empty station. This is normally achieved with 2-pin jumpers, so-called Daisy-Chain jumpers, which in the case of high-performance backplanes can be connected from both sides to corresponding pins or to the ADC connectors on the backplane.

A very comfortable solution is the Daisy-Chain jumper board, a double-height euroboard with front panel and a C 96/10-pin special connector. The board is connected directly to the corresponding slot and establishes the necessary connections. At the same time, with regard to front panel design and airflow and HF requirements, the function of a dummy for the board to be retrofitted is satisfied.

An air baffle can be fitted at the top and bottom for the uniform heat dissipation of all boards.

Delivery comprises

Item	Qty	Description	Comments
1	1	Double-height euroboard with installation holes for air baffle 6 U (233.35 mm), thickness approx. 1.6 mm	Epoxy resin EP GC 02 as per DIN 40802 (FR 4, NEMA Li 1); flame-retardant as per UL 94 V-0
2	1	Connector type C as per DIN 41612, pins a21/a22, b4/b5, b6/b7, b8/b9, b10/b11 connected	
3	1	Partial width front panel 6 U/ 4 HP	Al, pre-anodised
4	2	Front panel handle, trapezoidal shape, 4 HP	black

Delivery: Item 1 to 4 pre-assembled,

For board format mm	Order No.	
	Daisy-Chain jumper board	Air baffle[1)]
160	**20800-235**	**20800-306**
220	**20800-274**	**20800-361**

[1)] Please order air baffle (item 5) separately. Delivery complete with assembly part kit

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Guide rails
Guide rails.....3.39.24
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Colours.....3.39.27

Electronic:

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Mains/line components 3.39.28
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FASTON connector.....3.39.34

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Voltage monitoring 3.39.38
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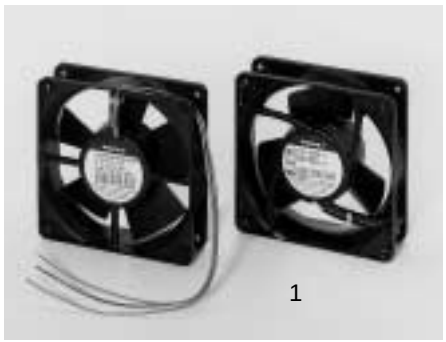
Heat dissipation:
Fans 3.39.46
19" fan 3.39.51

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Accessories heat dissipation

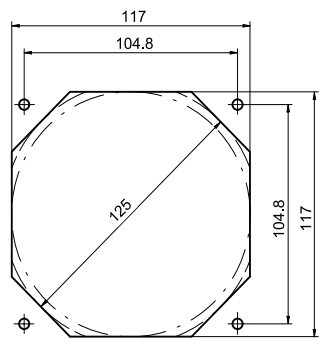
Fans

- AC fans
- DC fans



01192006

Mounting hole pattern for fans



MPZU0988

AC fans

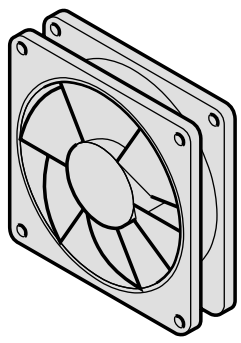
AC fan	Unit	Roller bearing	
Dimensions H × W × D	mm	119 × 119 × 38	119 × 119 × 38
Air volume, unrestricted	m^3/h	100	160
Sound level	dB (A)	30	42
Max. stat. pressure	PA	27	75
Max. ambient temperature	°C	70	60
Power consumption	W	16	18
Certifications		VDE, UL, CSA	

AC fan	Order No.	
230 V_{AC}	**60700-018**	**60713-322**
115 V_{AC}	**60791-042**	**60713-324**

DC fans

Various versions:

- Axial without speed control
- Axial with speed control
- Radial without speed control



KTA44844

DC fan axial without speed control

Nominal voltage 12 V, ball bearing,
Dimension 119 × 119 × 32 mm,
max. ambient temperature +70 °C

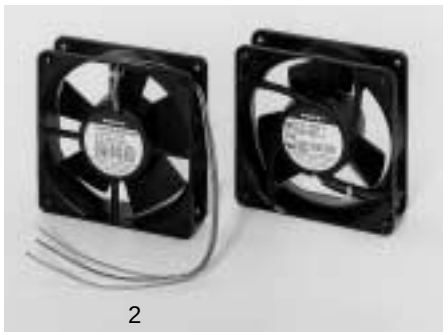
Description	Air capacity m^3/h	Noise dB(A)	Power consumption W	Order No.
DC fan	95	30	1.2	**60791-062**
	140	40	2.6	**60713-600**
	170	45	5.0	**60713-289**
Assembly part kit, Torx screw M 4 × 6				**24560-135** (100 pieces)

Note

A fan mount is required for installation in a CompacPCI fan tray.
See Installation material.

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Accessories heat dissipation



2

011459-1

DC fan axial with speed control

For VMEbus and CompactPCI MPS.

DC fan	Unit	Ball bearing	
Dimensions H × W × D	mm	119 × 119 × 32	119 × 119 × 32
Air volume, unrestricted	m^3/h	85 ... 170	74 ... 140
Sound pressure level	dB (A)	45	22 ... 40
Max. stat. pressure	PA	70	47
Max. ambient temperature	°C	75	65
Power consumption	W	5	4
Temperature-controlled (NTC)	kΩ	100	100
Control range	°C	30 ... 50	
Fixed resistor	kΩ	35 ... 100	
Speed min. ... max.	rpm	1400 ... 2800	1150 ...2300
Alarm output n< open collector, low	rpm	1150	900
Power break n =	rpm	2800	1150
Certifications		VDE, UL, CSA	

DC fans (voltage)	21 ... 28 V	8 ... 12.6 V
Order No.	**60713-709**	**60791-065**

Accessories

Qty	Description	Order No.
1	Temperature sensor NTC 100 kΩ	**65002-161**

Connection diagrams

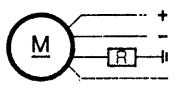
Temperature-controlled speed control with NTC



Supply voltage
0 V reference potential
Temperature sensor
Alarm signal

998C

Speed set by fixed or regulating resistor



Supply voltage
0 V reference potential
Resistor
Alarm signal

998D

Temperature sensor (NTC)



998B



12199001

DC fan radial without speed control

Suitable for installation in a CompacPCI radial fan module.

Nominal voltage 12 V, ball bearing, dimension dia. 138 × 35 mm, volumetric flow 110 m^3/h, power consumption 4.5 W, max. ambient temperature +70°C.

Order No.	**69713-050**

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Accessories for drive units 3.39.7

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PMC front panels 3.39.12
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Front panel with handle 3.39.16
IEEE front panels 3.39.17
Assembly parts.....3.39.22

Guide rails
Guide rails.....3.39.24
Coding.....3.39.27
Colours.....3.39.27

Electronic:

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Mains/line components 3.39.28
Power supply cable 3.39.33
FASTON connector 3.39.34

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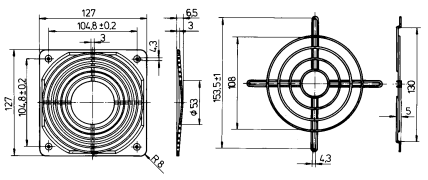
Heat dissipation:
Fans 3.39.46
19" fan 3.39.51

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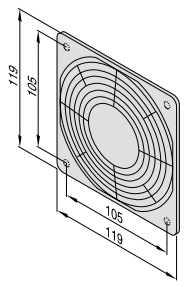
Accessories heat dissipation

Dimension

1 2



A4/1003



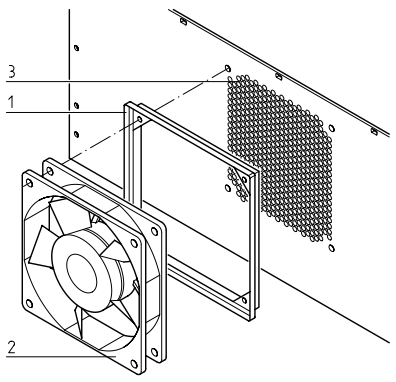
KT A4 5223

Installation material

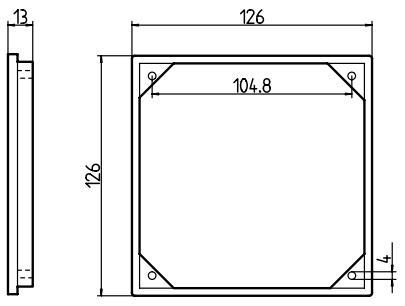
- Fan/protective grille
- Fan frame
- Fan mount

Fan/protective grille

Item	Description		Order No.
1	Fan grille	LZ 30 P	**60225-053**
2	Protective grille	LZ 20	**60197-019**
3	Connecting lead	l=440 mm	**60713-517**
4	Connecting lead	l=295 mm	**60713-516**



MPA44506



MPA44507

Fan frame

In order for a system to satisfy the EMC properties, it is essential to drill ventilation holes of a defined diameter and spacing directly into the casing wall (item 3).

For an optimum air flow rate, the fan (item 2) must not be bolted directly onto the casing wall. It must have a little spacing in order to be able to build up the required pressure.
The spacing between the fan and the casing is created by the fan frame (item 1).

Item	Qty	Description	Comments	Order No.
1	1	Fan frame, black	for 120 mm fans	**60835-027**

Downloaded from Arrow.com.

Accessories heat dissipation



12398008

Fan mount

- Installation-/service-friendly
- Noise-reducing
- Impact- and vibration-resistant
- Integrated cable ducting

Necessary for installing fans in the CompactPCI fan tray.
Suitable for fan dimensions 119 × 119 × 25 mm or 32 mm

Qty	Description	Material/Finish	Order No.
1	Fan mount	Fan not included in scope of delivery	**24579-212**
100	Mounting parts	Torx screw M 4 × 6	**24560-135**

Mechanical:

Drive units

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Guide rails.....3.39.24
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Colours.....3.39.27

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Accessories heat dissipation

100-95-007

MP A44724

Block circuit diagram

DI A4 4723

Fan monitoring

The fan monitoring unit is suitable for 24 V_{DC} fans which are supplied with ±12 volt voltage by the power supply unit. Regulated and non-regulated DC fans with and without alarm outputs can be connected.

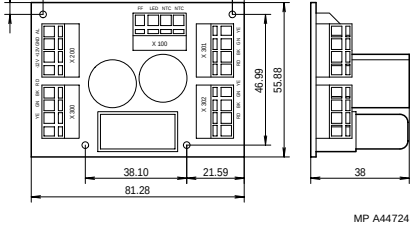
Fan monitoring fulfils the following functions:

- Filtering of interference on the ±12 V voltage supply
- Connections for
  - 1 to 3 24 V_{DC} fans via 5 × 4-pin terminal connections
  - Central fan failure signalling (LED and open collector signal for fans supplying a signal)
  - Fan failure signal from power supply unit
- Temperature-related speed control of 1 to 3 DC fans (for fans with speed control) with NTC or constant speed for fixed resistor

Qty	Description	Order No.
1	Fan monitoring	**20835-961**



011033-1



A4-1530

Air flow barrier

- For VMEbus

A barrier is used to isolate an unused plug-in station (4 HP) from the air flow. This prevents leakage losses.

The barrier is placed between the guide rails and snapped into the horizontal rails.

Item	Qty	Description	Comments	For board depth	Order No.
1	1	Air flow barrier 4 HP	ABS, UL 94 V-0	160 mm	**60835-007**
				220 mm	**60835-011**

Downloaded from Arrow.com.

Accessories heat dissipation

011-97-002 011-94-002

19" fan

- High air capacity
- Contact protection in compliance with EN 292, T1 and T2.
- Adaptation to subracks possible
- Mechanical pull protection for mains cable

Delivery comprises

Item	Qty	Description	Material/Finish
1	1	Front panel	Al 3 mm, anodised
2	1	Case	St 1 mm, Al Zn
3	1	Grille	
4	Depends on version	Fans	see Technical Data
5	1	Non-heating appliance socket	black
6	1	Safety device	St, zinc-plated, mechanical safety device for mains cable

Delivery: Items 1–5 mounted

Technical data

Fans	Unit					
Voltage	V	230		115		24
Frequency	Hz	50	60	50	60	DC
Air capacity	m^3/h	162	192	162	192	184
Sound pressure level	dB (A)	37	41	37	41	42
Max. stat. pressure	PA	73	88	73	88	68
Max. ambient temperature	°C	+70		+70		+70
Power consumption	W	15	14	15	14	8

Designation	Operating voltage	Order No. Fan unit with 3 Fans (KTA44857)	Order No. Fan unit with 6 Fans (KTA44858)
19" fan 1 U	230 V 50...60 Hz	**10713-100**	**10713-104**
	115 V 50...60 Hz	**10713-102**	**10713-106**
	DC 24 V[1)]	**10713-103**	**10713-107**
Adapter brackets for subracks/fans		**21101-104**	

[1)] At operating voltage of 24 V DC, the connecting lead (1.5 m) is included in the scope of delivery.

Accessories

Power supply cable, see Mains/line voltage components – power supply cable

Mechanical:

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Product index.....3.96.0

General: Quality – Environment – Safety



304-00-001

TÜV PRODUCT SERVICE QM System certified to DIN EN ISO 9001

TÜV PRODUCT SERVICE Umwelt-Management-System DIN EN ISO 14001 Environmental Management System

Quality-Environment-Safety-Management system

Ensuring and continuously improving absolute quality whilst relieving strain on the environment – that is the task of the SCHROFF quality-safety management system.

In order to achieve this, a strategy which encompasses all areas of the company has been developed.

This integral quality-environment-safety management system is documented in this manual, and is additionally validated via audits and systematically coordinated inspections. However, it is predominantly based on the motivation of the entire workforce, which is promoted via exemplary working conditions and efficient training measures.

For you, the totality of all of these measures means: maximum quality and reliability – throughout the world.

All Schroff and Pentair Enclosures locations are certified to DIN EN ISO 9001.

With its environmental management system, SCHROFF GMBH is additionally certified to DIN EN ISO 14001.



203-98-001

Dynamic processes in all batch sizes

This necessitates an ingenious production system. In this case, SCHROFF consciously places its trust in personal commitment.

"Cellular" production is integrated into the SCHROFF production process. Our highly-competent and responsible employees work in small, clear production cells.

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Certifications

Underwriters Laboratories
- Self-extinguishing plastics
- Type of protection NEMA 12

European Atomic Research Association
- europac lab subracks approved to CERN-Spec's No. 385

Deutsche Bahn AG
- europac mobile subrack approved for electronic equipment in rail-mounted vehicles (BN 411003)

TÜV Product Service
- 19" fan unit
- 19" fan

Institute of German Electronics Engineers
- Approved protective GND connections

British Standard Institution
- Certificate Number FM 1091 Relating to Quality Assessment Schedule 3289/87

European Union EMC guideline
- VMEbus subrack systems
- Power supply

Experience – to the benefit of the customer!

There are many levels to SCHROFF's commitment, and which then lead to this "additional" benefit. For example, continuous dialogue with customers and suppliers throughout the world is also integrated into design and production. Our involvement in international standardisation committees also ensures the up-to-date nature of the product standard or influences this in advance.

Added to this is the experience of SCHROFF's "Electronics" division. This is where power supply, backplane and modular microcomputer construction systems are produced. We know what installing electronics means. We make use of this experience throughout the entire company. This is why all of the necessary tests are genuinely carried out under practical conditions.

For you, the customer, this means:
Safety, reduced test times and therefore lower costs.

Quality also means dialogue!

Dialogue with you, because our responsibility for quality is comprehensive, and does not stop at the loading ramp.

You measure the value of our products. So please let us know if you are not satisfied with our services or products. . . Of course, we would also be pleased to hear from you if you are satisfied.

An excerpt from the "Quality-environment-safety management system" manual:

The SCHROFF team's goal is to contribute towards the success of its customers with top products and service. All SCHROFF employees are responsible for the continuous improvement of the products and services.

National and international standardisation institutions

ANSI/EIA	USA	American National Standard Institute/ Electronic Industry Association
BSI	GB	British Standard Association
CENELEC	EU	European Committee for Electrotechnical Standardization
CSA	CAN	Canadian Standard Association
DIN	D	Deutsches Institut für Normung e.V.
DKE	D	German Electrical Engineering Committee in DIN and VDE
ECL	GB	British Standard Institution technical sub-committee
EEMAC	CAN	Electrical/Electronic Manufacturers Association of Canada
ETSI	EU	European Telecommunications Standardisations Institute
IEC	Int.	International Electrotechnical Commission
IEEE	USA	Institute for Electrical and Electronics Engineers
NEMA	USA	National Electrical Manufacturers Association
NFPA	CAN	Electrical/Electronic Manufacturers Association of Canada
UL	USA	Underwriters Laboratories Inc.
VDE	D	Institute of German Electronics Engineers
VDI	D	Association of German Engineers

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General: Standards

Standards summary



Short, precise and clear

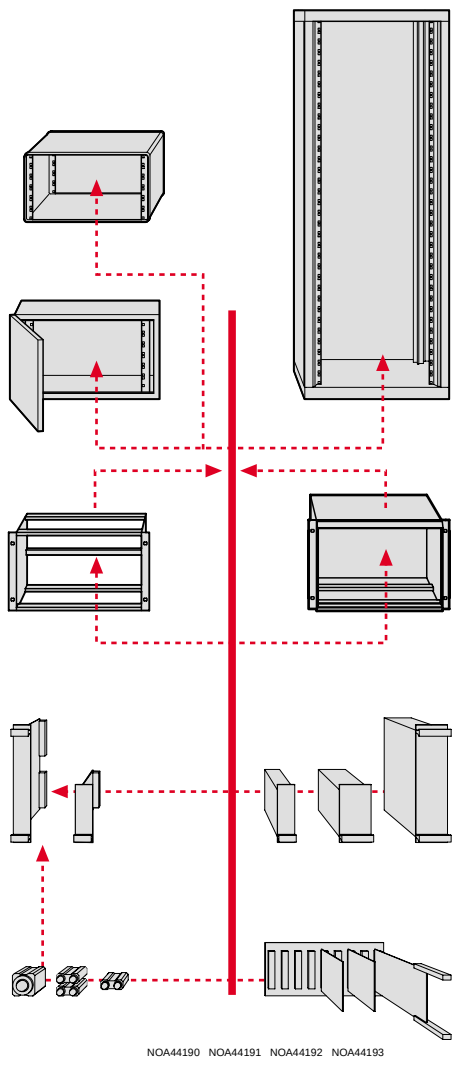
In order to render everyday work as simple as possible, the content of standards is only reproduced insofar as is required to gain an understanding of the interactions between individual mechanical elements. Reference is made to the full standard.

Contents

- The 19” construction system, from the euroboard to the cabinet, to IEC 60297 (482.6 mm design)
- The "metric" construction system (mep), from the euroboard to the cabinet, to IEC 60917 (25 mm design)
- Protective measures for electrics/electronics
- As a reference work or initial reading

Order No. 39600-205

Mechanical design



	19” construction system	mep "metrical" construction system
Cabinets Case	IEC 60279-1 DIN 41494 Part 1/7 EIA RS 310-D	IEC 60917-2-1
Subrack System case	IEC 60297-3 DIN 41494 IEEE 1101.10/.11	IEC 60917-2-2
Plug-in units Plug-in units	IEC 60297-3 DIN 41494 IEEE 1101.10	IEC 60917-2-2
Printed circuit boards	IEC 60097	IEC 60097
Connector	IEC 60603-2	IEC 61076-4-100
Front elements	DIN 41494 Part 8 IEC 60297-3	–
Backplanes	IEC 60297-3	IEC 60917-2-2

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Shock and vibration test

- **DIN EN 60068-2-6 (vibration, sinusoidal)**
- **DIN EN 60068-2-27 (shock)**

These tests simulate conditions which devices must fulfil as minimum requirements during operation and transportation.

Tests with 3, 6 and 9-U dummies provide valuable experience which has been integrated into the design of the SCHROFF subracks.

For extreme strain – such as, e. g. during mobile use in rail-mounted vehicles, – as separate product family, "europac mobile" has been developed and confirmed via approval testing according to Federal railway standard BN 411 002 and BN 411 003.



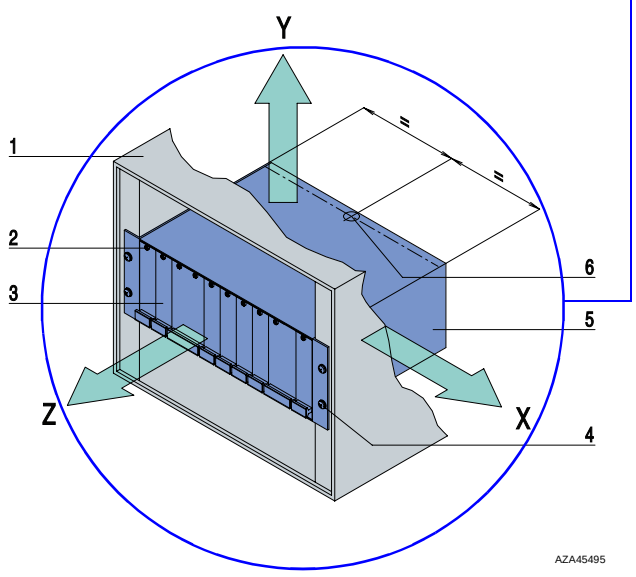
S8003_2



061-97-029

Similar test conditions and degrees of severity for vibration and shock stability are contained in IEC 61587-1 (draft).

For a definition of the test object and the test device, see graphic.



Description

1) Test device
2) Retention screws for plug-in units
3) Plug-in units
4) Retention screws (M 6) for subrack
5) Test object: Subrack
6) Measurement point

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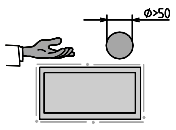
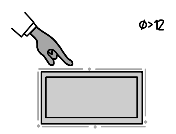
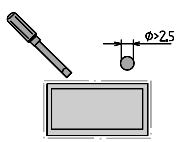
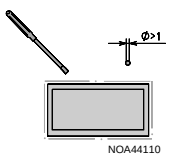
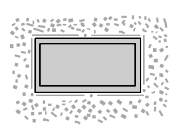
IP degree of protection

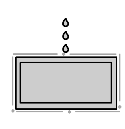
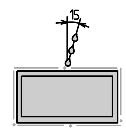
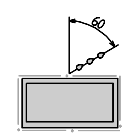
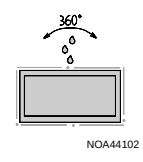
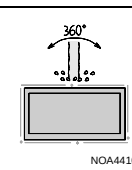
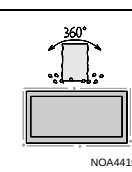
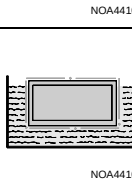
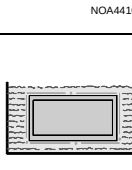
Types of protection via case (IP code)

IEC 529
EN 60529
DIN VDE 0470 Part 1

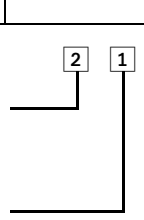
The degrees of protection of this standard define

- protection of persons from dangers in the case
- protection against the penetration of foreign bodies
- protection against the penetration of water

protection against contact and foreign bodies			
IP 1. Numbers	Contact	Foreign body	
0	No protection	No protection	
1	with large parts of the body (back of the hands)	large foreign bodies, diametergreater than or equal to 50 mm	 NOA44107
2	with the finger	medium-size foreign bodies, diametergreater than or equal to 12 mm	 NOA44108
3	with tools and wires, diameter greater than or equal to 2.5 mm	small foreign bodies, diameter greater than or equal to 2.5 mm	 NOA44109
4	with tools and wires, diameter greater than or equal to 1 mm	grain-shaped foreign bodies, diameter greater than or equal to 1 mm	 NOA44110
5	complete protection	Dust deposit	 NOA44111
6	complete protection	Ingress of dust	

protection against water		
IP 2. Numbers		
0	No protection	
1	vertically falling drops of water	 NOA44099
2	obliquely falling drops of water up to 15° towards vertical	 NOA44100
3	Spray water up to 60° towards vertical	 NOA44101
4	Splash water from all sides	 NOA44102
5	Jets of water	 NOA44103
6	powerful jets of water	 NOA44104
7	partial immersion	 NOA44105
8	Immersion	 NOA44106

Example entry: IP 21



The first number means
Contact protection with the finger and foreign bodies, which are greater than 12.5 mm in diameter.

The second number means
The device is protected against vertical drops of water.

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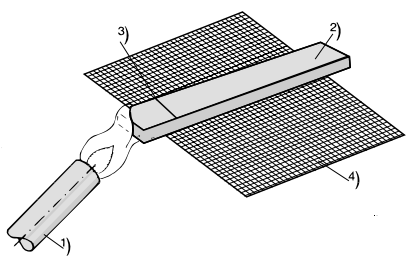
Flammability of plastics

- Standardised test process
- Classification to UL 94

Note

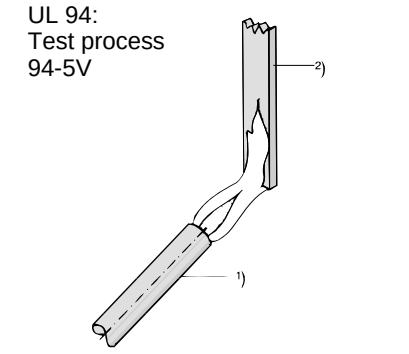
The specification of the UL listing of plastics on the order pages refers to the material which is used, and not to the product!

ASTM D 635



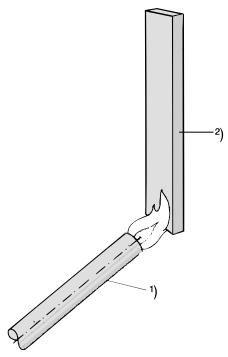
Criteria	Test structure
UL 94 HB	
■ Burn distance < 102 mm ■ Flame spread rate ≤ 38.1 mm with 3.2 mm thick sample body ≤ 76.2 mm with 1.6 mm thick sample body	■ Sample body horizontal ■ Bunsen burner flame at the free end ■ Flame height 25 mm ■ Ignition flame 30 s, partially FPCS burner position ■ 3 Sample body 127 × 12.7 × 3.2 (1.6) mm

UL 94:
Test process
94-5V



Criteria	Test structure
UL 94-5 V	
■ Afterburning duration ≤ 60 s ■ No drips	■ Sample body vertical ■ Bunsen burner flame at lower edge/corner ■ Flame height 127 mm ■ Inner flame cone 38 mm, touches lower edge/corner ■ 5 × 5 s flame application, pause every 5 s ■ 2 kits each containing 5 sample bodies 127 × 12.7 × (application thickness) mm

DIN VDE 0304 Part 3 Process FV



Criteria	Test structure
UL 94 V-0	
■ Burning time ≤10 s ■ Total burning time ≤50 s ■ No drips of burning material	■ Sample body vertical ■ Bunsen burner flame at the free end ■ Flame height 20 ± 2 mm ■ Ignition flame 10 s after extinguishing the sample, a further 10 s ■ 10 sample bodies 125 × 13 × 3[1] mm [1] If necessary, also 0.8, 1.6, 6.0 and 6.4 mm
UL 94 V-1	
■ Burning time ≤30 s ■ Total burning time ≤ 250 s ■ No drips of burning material	
UL 94 V-2	
■ Burning time ≤ 30 s ■ Total burning time ≤ 250 s ■ Drips of burning material	

[1] Bunsen burner
[2] Sample body
[3] Measurement mark
[4] Wire screen

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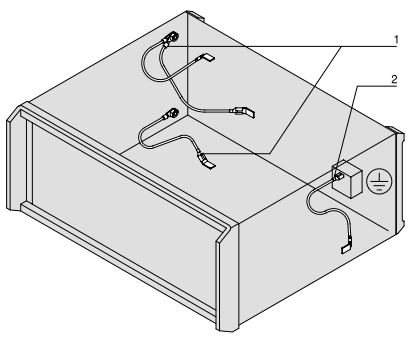
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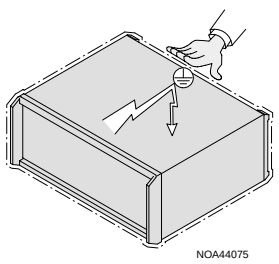
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① Protective GND connection from the frame to the covers
② Central connection socket

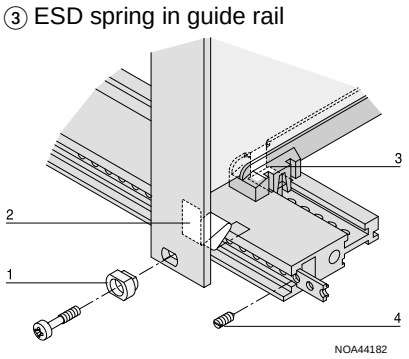


Protective GND/earth connection (GND/earthing)

Measures for protecting persons against contact with dangerous voltage.

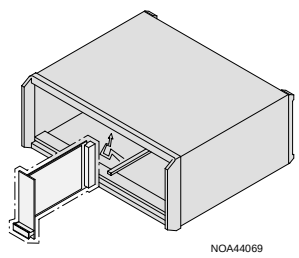


② Front panel on the rear side chromated for surface contact to the case
③ ESD spring in guide rail



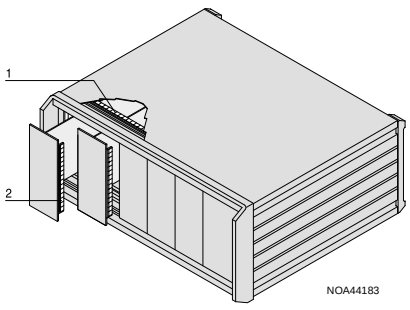
ESD

Electro**s**tatic **D**ischarge – Measures for conducting electrostatic discharge away in order to protect electronics against interference impulses and against the destruction of components.



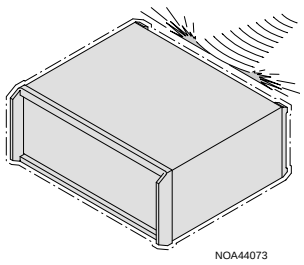
ESD or **e**lectro**s**tatic **d**ischarge are used to describe the appearance form of the discharge of static electricity. In this case, man is electrically discharged onto an earthed point. Under unfavourable conditions, man may carry a charge of up to a voltage of 20 kV. This voltage is discharged with a very rapid impulse.

① Contact strip between frame and top cover
② Contact strip between plug-in units



EMV/EMC

The abbreviation of the definitions **EMV/EMC** stands for **E**lektro-**m**agnetische **V**erträglichkeit or **e**lectro**m**agnetic **c**ompatibility.



In accordance with the DIN standard, DIN VDE 870, Part 1, these definitions are defined as follows:

Electromagnetic compatibility is the ability of a piece of electrical equipment to function in a satisfactory manner in its electromagnetic environment, without influencing this environment, to which other pieces of equipment may also belong, more than is permissible.

EMP

The generic term **EMP** or **e**lectro**m**agnetic **p**ulse incorporates three different forms of electromagnetic pulse.

These include:

- **LEMP: l**ightning **e**lectro**m**agnetic **p**ulse (e. g. lightning strike)
- **SEMP: s**witching **e**lectro**m**agnetic **p**ulse (e. g. switching processes in electrical energy systems)
- **NEMP: n**uclear **e**lectro**m**agnetic **p**ulse (nuclear explosion)

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The CE symbol

All electrical and electronic devices or systems marketed after 01.01.1996 in the EU must display the CE symbol.

However, the CE symbol is not a form of special EMC certification. It encompasses different standards for various products.

With the CE symbol, the manufacturer or importer confirms the conformity of his products to the EU standard.

However, responsibility for the declaration of conformity is borne by the manufacturer or importer, unlike, for example, in the case of the TÜV or GS symbol, in which conformity is tested by a responsible body. The owner must therefore ensure that his device displays the CE symbol, and must only use this device in the specified environment, e.g. in industrial or domestic applications.

Important

The affixation of the CE symbol is the personal responsibility of each manufacturer. It is not assigned by an official body. The CE symbol only provides the consumer with indirect protection; it is predominantly affixed to the product for the official body which monitors the market.

Liability and responsibility

In the field of electromagnetic compatibility, the manufacturer certifies that his product conforms to the European EMC standard via the affixation of the CE symbol.

The guidelines are monitored by the Federal Office of Postal and Telecommunication Services (BAPT). Adherence to the protection requirements is checked via random sampling.

In the event of non-adherence, the product may be withdrawn from the market and a high fine imposed. In addition to the EMC standard, the product liability legislation also applies in this case.

Shielded products (EMC)

Systems and devices which are used in Europe must adhere to the EMC standard regarding interference emission and interference immunity.

In the event that the pre-specified limit values are exceeded, a remedy may be provided by a shielded case. In this case, various measures are available for reducing interference emission or for improving interference immunity.

However, attention must also be paid to the special insertion of the cables and lines into the case. Otherwise,the suppression characteristics of the case cannot be guaranteed.

When testing a device or system with regard to electromagnetic compatibility, the link between the various standards must be taken into consideration. The basis of the EMC measurement is the product's product standard. If this does not exist, then the valid generic standard must be applied.

During the execution of EMC measurement, the basic standard, to which reference is made in the individual product and generic standards, must also be taken into consideration.

Shielded case

Basically, no EMC standards apply to "empty" electronic construction systems, because only when corresponding electrical devices have been installed can the overall system emit electromagnetic interference or be influenced by external influences.

SCHROFF system solutions

SCHROFF construction systems are manufactured entirely from metal, and therefore have good EMC characteristics in theory. In the case of EMC-shielded construction systems, the conductivity of the case surfaces is additionally ensured via a galvanic coating.

The individual components are contacted via EMC gasketing such as, for example, stainless steel springs, and via the large-surface conductive connection of the individual components.

When designing shielded cases, special requirements are additionally made on cable ducting and ventilation. An overall shielded system can only be assessed if these two parameters are taken into consideration.

Shielding and measurement process

Shielding specifies the dimension by which the intensity of electromagnetic radiation is reduced on passage through a case. This is specified in the logarithmic dimension dB. Shielding measurements for SCHROFF construction systems are carried out by an independent institute.

Shielding is measured according to the VG 95373, Part 15 (German defence standard) measurement process. This measurement process is currently being transformed into a civilian standard.

An additional measurement process according to MIL-STD 285 (American military standard) also exists. This measurement process was principally developed for measuring material shielding, which is why it is only suitable to a limited degree for measuring electronic construction systems such as cabinets, cases and subracks.

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EMC guidelines/directives

EMC interference emission

"Interference emission"	**EN 55022** (regulation for information technology equipment, ITM devices)	**Disturbance/ interference**	**Degree of severity**
EN 50081-1		Conducted radio interference voltages at mains/system connection	Class A Class B[2)]
	EN 55011 Limit values and measurement procedures for radio interference of industrial, scientific and medical high-frequency devices	Electromagnetic interference field strength (30 MHz – 1GHz)	Class A Class B[2)]
	EN 61000-3-2 + A14 Limit values for harmonic currents	Harmonic currents	Class A Class D[10)]

EMC interference immunity

		Disturbance/interference	Degree of severity	Test conditions
"Interference immunity" **EN 50082-2**	EN 61000-4-2 + A1	Electrostatic discharge (ESD)	1 2 3[2)] 4	2 kV[3)]/ 2 kV[4)] 4 kV[3)]/ 4 kV[4)] 6 kV[3)]/ 8 kV[4)] 8 kV[3)]/15 kV[4)]
	EN 61000-4-3 + A1	High-frequency electromagnetic fields	1 2 3[2)] x	1 V/m 3 V/m 10 V/m [1)]
EN 61000-6-2 (from 04/2002)	EN 61000-4-4	Bursts	1 2 3[2)] 4 x	0.5 kV[6)] 0.25 kV[7)] 1.0 kV[6)] 0.5 kV[7)] 2.0 kV[6)] 1.0 kV[7)] 4.0 kV[6)] 2.0 kV[7)] [1)] [1)]
	EN 61000-4-5	Surge voltages	1 2 3[2)] 4 x	–[8)] 0.5 kV[9)] 0.5 kV[8)] 1.0 kV[9)] 1.0 kV[8)] 2.0 kV[9)] 2.0 kV[8)] 4.0 kV[9)] [1)] [1)]
	EN 61000-4-6	Conducted interference, induced by high-frequency fields	1 2 3[2)] 4	1 V 3 V 10 V [1)]
	EN 61000-4-11	Voltage dips, short-term interruptions and voltage fluctuations	–	30 % red., 0.5 periods 60 % red., 5/50 periods > 95 % red., 250 periods

[1)] After agreement
[2)] Fulfilled by SCHROFF
[3)] Contact discharge
[4)] Air discharge
[5)] Devices with no impaired functions after test
[6)] Voltage on supply line
[7)] Voltage on other lines
[8)] Mains cable to mains cable
[9)] Mains cable to GND
[10)] Satisfied by SCHROFF power supply units with active power factor correction

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30695008

VME-/VXIbus Backplane Manual

Technical user information with a detailed summary of SCHROFF backplanes. Mechanical and electronic data, terminal assignment, daisy chain, etc.

(Three languages: German, English, French)

Order No. (1 piece)	**60800-341**



30695012

User information

Provides users with help in the installation of backplanes, boards, drives and in the testing of plug-in systems.

(Three languages: German, English, French)

		Order No.
VME bus	7 U	**73972-004**
VME bus	8 U	**73972-016**
VME bus	9 U	**73972-026**
VXIbus	9 U	**73972-005**



30695013

Installation instructions for backplanes

Instructions for installing backplanes. These instructions are included with each backplane.

(Four languages: German, English, French, Japanese)

Order No. (1 piece)	**60800-574**



30695019

Standards summary

19" mounting dimensions, check dimensions for plug-in depth as per DIN 41494 and IEC 60297.

	Order No.
German	**39600-205**
English	**39600-350**
French	**39600-415**

Cabinets, 19" and air conditioning



Catalogue 1	Order No.
German	**39601-201**
English	**39601-211**
French	**39601-221**

Subracks, casings, plug-in unit technology

Catalogue 2	Order No.
German	**39601-202**
English	**39601-212**
French	**39601-222**

Catalogue for networking technology

Catalogue 4	Order No.
German	**39600-110**
English	**39600-505**
French	**39600-426**

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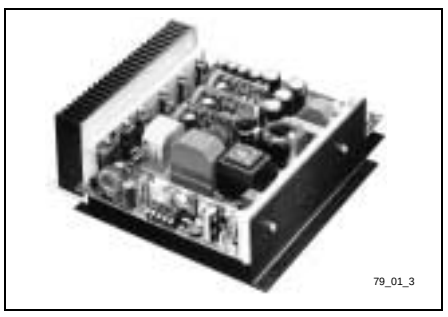
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Appendix Power supply units



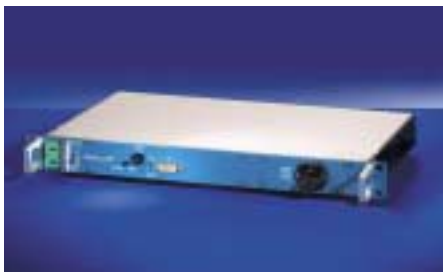
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Special versions

Power supply unit service extends from modified standard power supply units through to complete new development. A high-capacity development laboratory and 30 years of experience will help you to realize your power supply unit. The following stages are necessary for special versions:

1. Performance specifications
2. Development and building of a laboratory specimen and series of tests with computer support, temperature test, radiated noise test, VDE-, CE tests, continuous operation.
3. Approval is followed by production of the pilot run with subsequent checking of data and optimization.
4. Batch approval follows only after the pilot run check reveals a positive result.

All the components used are subjected to an incoming-goods inspection. After production order placement and preassembly of the components from the warehouse, actual production begins with semi-automatic component insertion.

The equipped backplanes are transported by a fully automatic feed system to the soldering stations. After being soldered, cut and washed, the PCBs are inspected and if necessary resoldered and then subjected to a two-part test:

1. In-circuit test
2. Function test

The subsequent final assembly completes the module with casing, heat sink and earth/ground connections. In the VDE safety test in compliance with EN 60950, shock protection and high-voltage tests are carried out on the inputs and outputs.

With a burn-in of at least 8 hours, each power supply unit is commissioned under alternating load conditions and maximum mains/line voltage. Each and every unit undergoes this test procedure prior to delivery; that's why SCHROFF power supply units represent quality and reliability.

CE
EN 60950

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Mechanical design

Differences: 19"-compatible/open frame power supply units

	19"-compatible		Open frame (no standardized dimensions)
Mechanical	(submodules 3/6 U, IEC 297-3, DIN 41494, Part 5)	Mounting on DIN rail (top-hat rails as per DIN EN 50022-35∓15	Mounting on assembly plate
	 11396010	 11498001	 11400001
Installation	in 19" subrack/ 19" casing	in any casing or cabinet	in any casing or cabinet
Mounting	by pushing in (guide rail) and with or without front panel, recessed installation behind other front panels possible	by pushing in	are screw-mounted
Power connections	during pushing in via mating connector H15F		are screwed-mounted and connected
Size	small		large
Power density	large		small
Changing	quickly replaceable because it is pluggable		Connections and unit must be screwed off
Shock-hazard protection	Units are sealed		available with or without cover
Wall mounting	via wall-mounting bracket		via screws
Top-hat rail mounting	via wall-mounting bracket and top-hat rail bracket	with snap-on mechanism	–
Redundancy operation	can be used because pluggable during operation, integrated decoupling diode and current share bus (CSB)		can be used with limitations because mains/line voltage/ connections must be unscrewed

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Appendix Power supply units

Switching principle

Differences: Switched-mode regulator, linear regulator, and non-stabilized (application/mains/line voltage/switching principle)

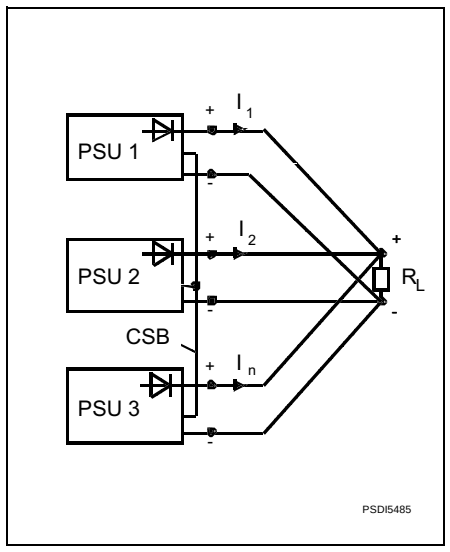
	Switched-mode regulator	Linear regulator	Non-stabilized
Size	small	large	large
Weight/watts	light	heavy	heavy
Power loss	small	large	large
Input voltage range	large	small	small
Residual ripple	medium	small	large
Radio interference level	Curve B	Curve K	Curve K
Control speed	medium	fast	none

Application	Switched-mode regulators are used wherever a small design with high efficiency is required. They have a stable output voltage.	Linear regulators or linear power supply units are used in systems which require high control precision with low disturbance/interference (e.g. metrology). They have a stable output voltage and a low residual ripple (< 2 mV).	Non-stabilized power supply units are used whenever a stabilized output voltage is not needed. These include e.g. contactors, valves, relays, etc. The output voltage changes as a function of the load.
Mains/line voltage	The mains/line voltage can vary to a large extent without having any influence on the output voltage. The power supply units have a wide-range input of 90 to 254 $V_{AC.}$	Linear power supply units are dependent on a constant mains/line voltage. If the supply voltage gets too high, more voltage must drop via the series pass transistor (high development of heat). If the voltage is too low, the output voltage can no longer be safe-guarded. For this reason, the input voltage ranges can be adjusted in a small range and must be adapted as required.	Non-stabilized power supply units are dependent on a constant mains/line voltage. As there is no control, the output voltage rises when the mains/line voltage increases and vice versa.
Switching principle	In the case of the primary switched-mode regulator, the rectified and filtered alternating voltage is switched by a switching transistor operating at high frequency to the primary side of a transformer. The power supply units are so small because the transformer is small at high frequencies. The alternating voltage is rectified on the secondary side. The residual ripple is smoothed with the inductor and the backup capacitor. A regulator creates the feedback of the output voltage to the switched-mode pulse width of the switching transistor. The load capacitor stores the energy and in the event of a power failure makes available the output voltage for a brief period still.	Linear power supply units use a mains transistor which generates the low voltage and at the same time implements electrical isolation. With the subsequent rectification, a filtered high voltage is created from the alternating voltage via the filter and load capacitor. The high voltage is regulated down by the series pass transistor to the desired direct voltage. The load capacitor stores the energy and in the event of a power failure makes available the output voltage for a brief period still.	Non-stabilized power supply units consist of a mains transistor which generates the low voltage and at the same time implements electrical isolation. With the subsequent rectification, a direct voltage is created from the alternating voltage via the filter and load capacitor. The output voltage is not stable and varies as a function of the load from U_A ± 3 ... ± 10 %.

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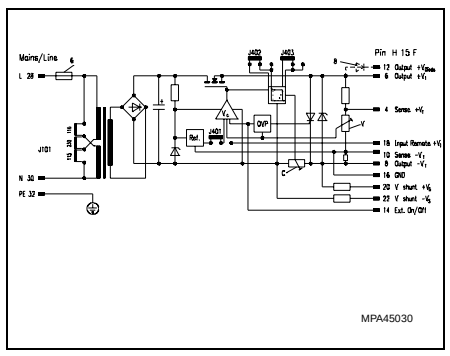
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Switching principle



Redundant power supply units

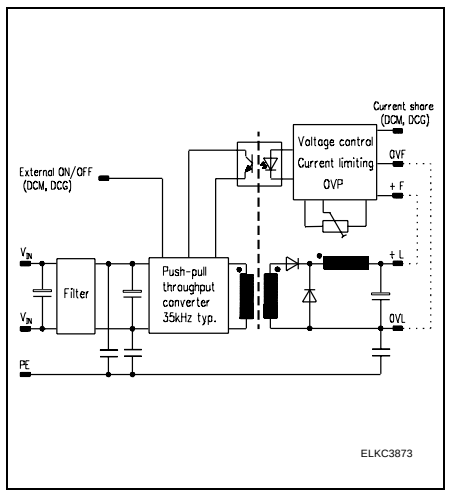
In redundant operation (n + 1), an additional power supply unit is connected in parallel. This extra power supply unit does not serve to increase power but rather runs during normal operation and takes on the full load without interruption in the event of a fault. Redundant power supply units must be pluggable under load so that they can be replaced safely during operation. All 19" power supply units, whether AC/DC or DC/DC, can thus be used. It is important for a decoupling of the output voltage to take place with a diode and issuing of a signal (in the event of a fault). For this purpose, the decoupling diode is installed in the power supply units. They deliver the same current in the case of parallel connection. This is implemented with the current share bus line (CSB).



Remote control power supply units

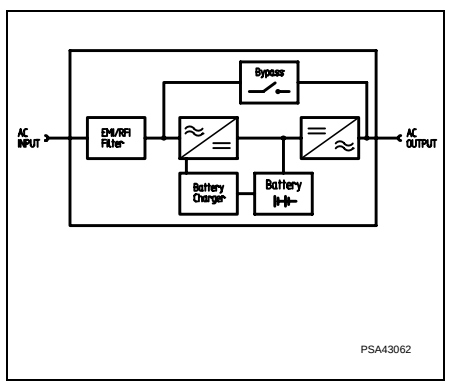
Because they can be operated under remote control, these units are used in automation, metrology and test engineering. They are used wherever controllable voltages and currents are needed (quality assurance, laboratories).

The linear regulators PSM and PSG with an output voltage can be remote-controlled. With a control voltage of 1 to 10 V, the output voltage can be adjusted from 10 ... 100 %.



DC/DC converters

DC/DC converters are switched-mode regulators and thus have a small design. They are used wherever there is a DC voltage from which a required stabilized direct output voltage(s) (5, 12, 15, 24 V) is/are to be generated. The input voltage range stretches from 9 to 160 V_{DC} in 4 ranges.



Uninterruptible power supply (UPS)

The 19" uninterruptible power supply offers optimum protection against mains interruptions and power failures for computers and computer-controlled systems. In the event of mains interruptions, the UPS assumes without (online) or with negligible (interactive, 4 ms) interruption the AC supply to the connected loads. For automatic operation, we offer shutdown software or for networks an SNMP interface.

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Appendix Power supply units

Terminology definitions

Term	Example	Explanation	
U_A, $V_{1,2,3}$	5 V 12 V 12 V	**Output voltage, electrically isolated**	Output voltages which are electrically isolated from each other are written without a plus/minus sign (+, –).
	+5 V +12 V -12 V	**Output voltage with reference potential**	Output voltages with a common connection to earth/ground (⊥, COM) are written as potentials with plus/minus signs (+, –).
U_E~, Mains, V~	187 ... 264 V~	**Mains/line voltage range, input voltage range**	Voltage or range between the lowest and highest voltage at which operation of the unit is guaranteed.
	230 V~ 48 ... 62 Hz	**System nominal voltage frequency range**	Range between the lowest and highest frequency of the input voltage at which operation of the unit is guaranteed.
Sense, S, F	max. 0.5 V	**Sensor line operation**	Voltage drops which cannot be ignored occur in longer load lines or insufficient line cross-sections. The power supply unit control loop is connected via the sensor line directly to the load and compensates by upward regulation of the output for the voltage drop on the load lines.
	≤ 1 ms	**Total correction time**	Transition time of controlled output voltage in the event of a sudden load variation from the start of the voltage change through to permanent return to the tolerance band. The tolerance band is the deviation defined under Load correction of U_A.
T_U	0 ... +70 °C	**Ambient temperature: operation**	Temperature range in which operation of the unit is permitted.
	-40 ... +85 °C	**Ambient temperature: storage**	Temperature range in which the unit can safely be stored.
MTBF	H80 000	**Meantime between failures**	Meantime between two unit faults, given in hours, at a specified load and ambient temperature.
I_A	35 A	**Nominal current**	Output current at an ambient temperature of T_U = 50 °C.
	2.5 kV	**Test voltage**	The voltage at which the unit is tested for adherence to the insulating properties. The test voltage is applied between input and earth/ground, output and earth/ground, input and output and between the outputs.
	100 mV_{SS}	**Residual ripple, ripple, noise**	The ripple content of the output voltage referred to system/ line frequency, switching frequency and HF content. It is measured with the specified bandwidth and given in mV_{SS}.
Soft start	500 ms	**Soft start**	Special protective circuits for avoiding excessive switch-on currents and for defined running up of the output voltage.
	± 0.1 %	**Load correction**	Maximum deviation of output voltage from the nominal value in per cent in the event of a min. load change. – max. or max. – min. of nominal load. Input voltage and temperature are kept constant here.
	1.2 $I_{A\ max.}$	**Current limitation**	Limitation of the output current in the event of overload to a preset value and automatic resetting to normal operation after termination of overload.
T_K	0.02 %/K	**Temperature coefficient**	Deviation of output voltage from the nominal voltage per degree of ambient temperature change. Expressed in %/K.

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Appendix Power supply units

Term	Example	Explanation	
OVP	**6 V**	**Overvoltage protection**	Protection of connected loads against the occurrence impermissibly high voltages or voltage peaks and protection of the power supply output against excessive voltages and voltage peaks caused externally. This is achieved by deactivation of the output voltage when the preset response threshold is exceeded and rapid short-circuiting of the output. In order to avoid malfunctions, it is essential that the OVP deactivation threshold be set permanently higher than the required output voltage.
	> 70 %	**Efficiency**	Ratio of output to input power, expressed in per cent.
CSB		**Current share bus**	Signal line between the power supply units in the event of parallel connection. Ensures that each power supply unit delivers the same current.
Decoupling diode			No feedback can take place in the event of a power supply unit fault. Isolates the output voltage of the power supply units.
PFC		**Power factor correction**	

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Appendix Backplanes

Special versions

In addition to our comprehensive range of standard versions, we can also offer you your own special solution.

We will make special backplanes tailor-made to your wishes, irrespective of whether they be for VME-, CompactPCI or customer-specific.

In this way, you can profit from our know-how.

We can also fulfil unusual requirements (compared with standard bus systems).

We provide service for:

1. Development and creation of designs
2. Component procurement
3. Process control/inspection
4. Equipping
5. Testing (electric, optical, safety)
6. Delivery



32195001

1. Development and creation of designs

We create the layout on high-power CAD systems according to your specifications and with our know-how.

Naturally you can also provide your layout in digitized form in order to achieve your desired backplane.



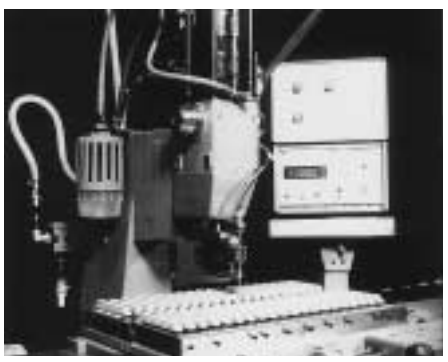
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2. Component procurement

Components are procured throughout the world.

3. Process control/inspection

The backplane layer structure and hole geometry are monitored regularly with the aid of micrographs.



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4. Equipping service

Both SMD components and press-in connectors are fitted on fully automatic pick & place machines.

Press-in connectors are pressed in with a monitored and documented press-in force.

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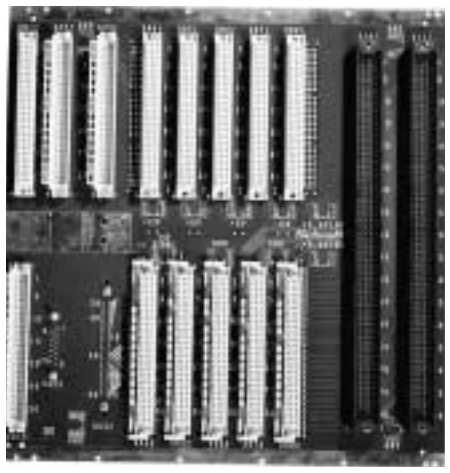
Appendix Backplanes



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10900001



79-01-2



79-03-4

5. Testing

All backplanes are fully tested in a comprehensive test programme. With the special SCHROFF test system, all the test steps take place automatically in a single test run.

The test specimen is contacted by means of pneumatic contacting modules. These modules make it possible to test all standard and special backplanes. The function test comprises insulation, connection and component tests.

- The terminators are tested for correct values and operation (active/passive termination).
- All the connectors are contacted simultaneously and tested for safe operation of the bus lines and for short or open circuits.
- Testing of automatic daisy chaining function.

A computer record including serial number is printed for each backplane. This establishes clear and unequivocal identification – a stamp also confirms that the quality inspection and testing has been passed.

6. Delivery

The backplanes are placed in environmentally friendly and secure packaging. We guarantee prompt and punctual delivery.

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Appendix Backplanes

Explanation of VME-/VXIbus terminology



10596005

J1/J2

VME system bus, 32-bit/64-bit
Monolithic – 6 U backplane (combination of J1 + J2)



10596025

J1

VME system bus, 16-bit
"Upper" VMEbus backplane (3 U)



10596010

J2 I/O bus

VME system bus expansion to 32 bits (I/O bus)
"Lower" VMEbus backplane (3 U)



10596015 10596016

VSB

VME system bus expansion to 32 bits and VSB (VME subsystem bus)
Mountable side by side or pluggable on J2 backplanes.



10594003

Connecting board

2 slots for side-by-side mounting of J1 or J2 backplanes



10594004

Power supply

1 slot backplane for power supply of J1 or J2

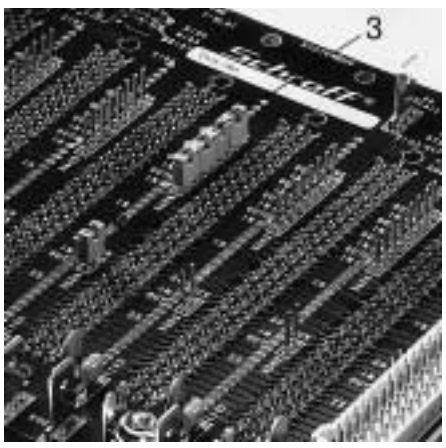
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Daisy chaining

Daisy chaining involves looping through signal lines (J1 level) via plugged-in electronic modules in order to select the bus requests.

Signal lines

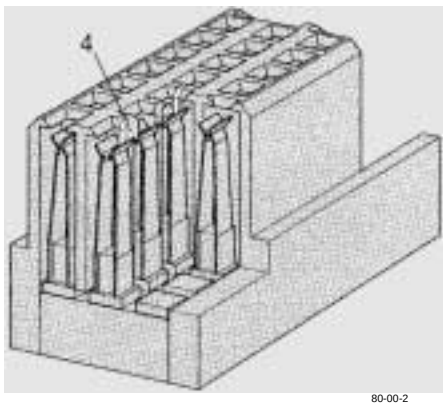
– BG0IN* and BG0OUT* (pin b 4 and b 5)
– BG1IN* and BG1OUT* (pin b 6 and b 7)
– BG2IN* and BG2OUT* (pin b 8 and b 9)
– BG3IN* and BG3OUT* (pin b 10 and b 11)
– IACKIN* and IACKOUT* (pin a 10 and a 11)



1059407A

MDC

In the case of MDC (manual daisy chaining), jumpers must be connected in order to route the daisy chain signals to pins if a slot is not equipped (item 3).



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Switch function

Wide contact surfaces ensure a safe electrical connection with closed switches. The spring contacts open when the male connector is plugged in.

ADC

In the case of ADC (automatic daisy chaining), the daisy chain signals are automatically routed by the connector if a slot is not equipped.

This is done with a special connector (C 96, J1 level) in which the switching function (item 4) is incorporated.

These switches automatically execute the "jumpering" of the daisy chain signals.

The switches in the connector open automatically when a board is inserted in a slot. The signals on the daisy chain lines can be evaluated on the board and switched accordingly. This offers considerable advantages over backplanes with conventional connectors.

- External jumpering of the daisy chain contacts is no longer required.
- Malfunctions in the bus system caused by missing or incorrectly connected jumpers are eliminated.
- Rapid expansion and reconfiguration of existing systems is possible through the free selection of slots.

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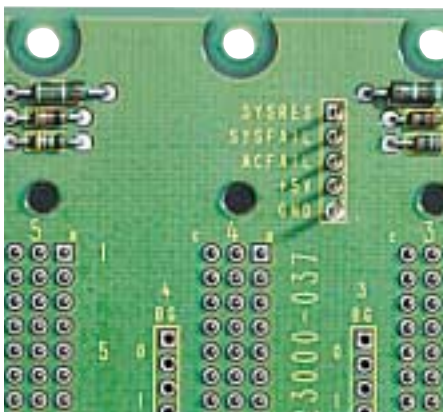
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from 10596009

VMEbus utility signals

The VMEbus signals are available for the J1 and J1+J2 backplanes.

The wire-wrap connections are prepared for connection to the power failure module or reset board via a 5-pole connecting cable.

Description	Function/signalling
GND	Reference potential
+5 V	e.g. operating voltage for "RESET board"
ACFAIL*	"Power failure"
SYSFAIL*	"System fault"
SYSRESET*	"System reset"

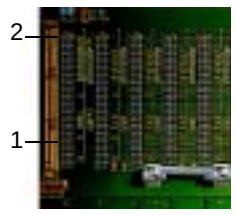
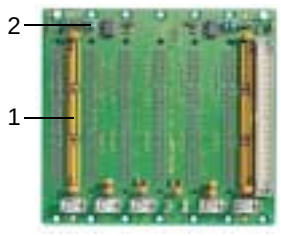
* Active low

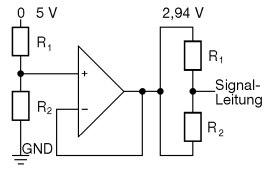
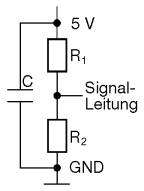
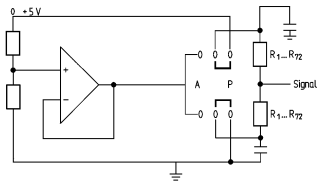
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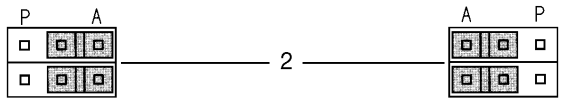
Termination

Termination of the signal line with resistors for
– a defined "HIGH" potential for open collector output stages,
– no floating inputs,
– slight damping of reflections

Differentiation according to location (ON-, IN-, OFF-board) and switching (active/passive).

		Termination location	Remarks
ON-board	 10596007	On the backplane on right and left Item 1 Terminators	max. 20 slots
IN-board	 10596009	On the backplane between the first, second, penultimate and last slot Item 1 Terminators	max. 21 slots, backplanes can be fitted next to each other without the loss of slots
OFF-board	 10596024	Outside the backplane with termination board (active/passive)	max. 21 slots, can be mounted side by side without the loss of slots, service-friendly, suitable with limitations for fast bus drivers (e.g. FCT, AS, FCTT...)

		Termination type	Remarks
Active termination	 80-01-1 R_1 = 330 Ω R_2 = 470 Ω	Termination with active and passive components	J1 level for ON-/IN-board backplanes, lower power consumption in idle state
Passive termination	 80-01-2 R_1 = 330 Ω R_2 = 470 Ω	Termination with passive components	Suitable for higher ambient temperatures, J2 level always passively terminated (only 32 bus lines)
Active/passive changeover	 80-01-3	Changeover, active/passive termination	Changeover from active to passive termination of the J1 level by rearrangement of jumpers item 2 at the bus ends (ON-/IN-board backplanes)



Active termination — Passive termination

80-01-4

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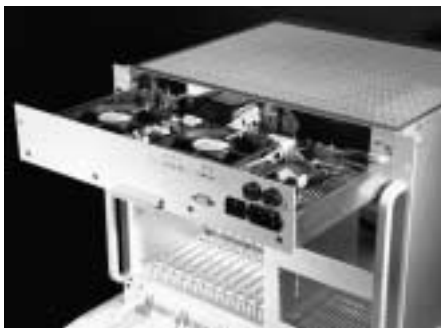
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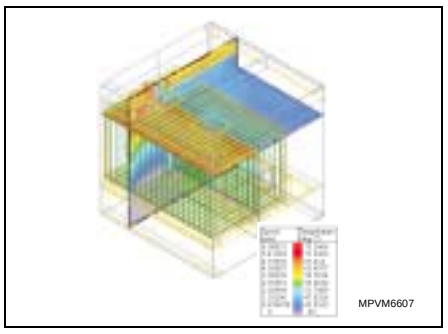
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10000101



10000003



MPVM6607

Special versions

In 1982, Schroff began to develop and produce VMEbus, Multibus® II and other microcomputer construction systems based on the Euro-card format. Since then, Schroff has become one of the world-wide leaders in this field.

Schroff offers the manufacture and testing of customer-specific systems as modifications from its wide range of standard products as well as the development of complete special solutions in line with customer specifications. Here, Schroff views the development of special solutions as a dialogue with the customer. 3D CAD stations, EMC and air conditioning laboratories and software (flowterm) for simulating system heat dissipation are on hand for development purposes.

The development stages for a system comprise:

1. Drawing up of performance specifications
2. Design and development
3. Manufacture of specimen
4. Testing of specimen device such as function, heat, EMC, noise emission tests
5. Optimization and approval of system
6. Serial production

We provide service for:

1. Development and design
2. Configuration
3. Assembly/installation
4. Tests (heat dissipation, EMC)

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Mechanical design CompactPCI

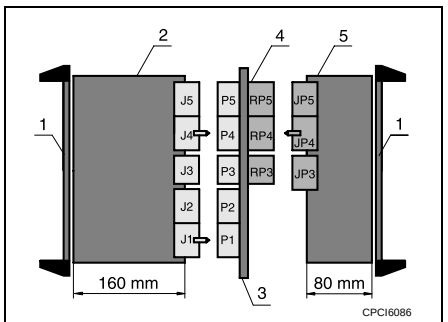
Rear-side installation of modules (rear I/O)

In CompactPCI systems, modules are increasingly being connected from the rear into the subracks (rear I/O modules).

For this purpose, the connectors of the front boards with long pins are pressed into the backplane. A connector body is attached from the rear to these pins. This creates an additional male connector for the accommodation of rear-side modules.

The standard requirements are the same for both front- and rear-side installation of modules.

Schroff has developed as standard subrack dimensions for the installation of 80 mm deep boards from the rear.



1 Front panel
2 Board, front
3 Backplane (midplane)
4 Connector for rear I/O
5 Board, rear
(rear I/O transition module)

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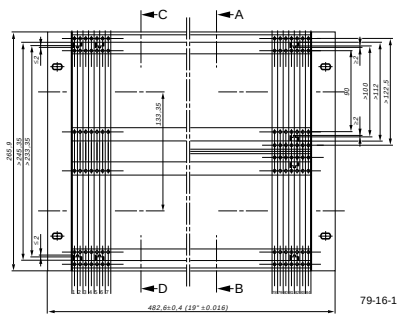
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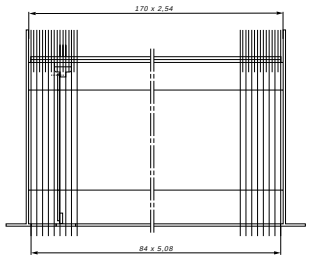
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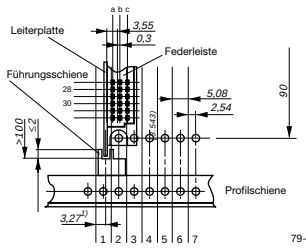
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Mounting dimensions for PCB, socket connector and guide rail



[1] Distance of front plate datum line to centre of PCB

Mechanical design VME-/VXIbus

The appendix for the mechanical design of the VMEbus system is based on DIN 41494, Part 5 and ICE 60297-3 in order to ensure geometric compatibility between modules and subracks. The PCB formats 100 × 160 mm (Euro-card) and 233.35 × 160 mm (double-height Euro-card) are specified in the VMEbus system. 100 × 160 mm PCBs are always fitted with type C 96-pin connectors in accordance with DIN 41612 and assigned to connector level P1. If I/O signals (input/output) are to be contacted, it is necessary to use front-side connectors whose design is left to the individual manufacturer.

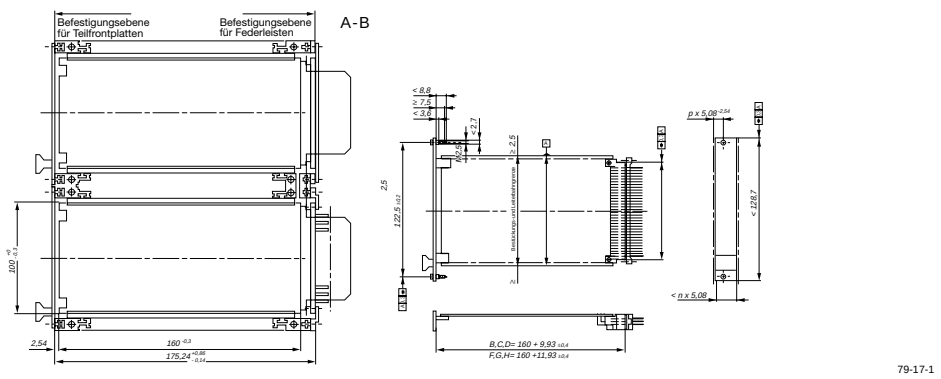
It is typical for 2 connectors to be used on double-height Euro-cards. These connectors are assigned to connector levels P1 (in the upper section of the subrack) or P2 underneath. The P1 connector is also always 96-pin here whereas P2 can be 64-pin or in fact any other DIN 41612 design.

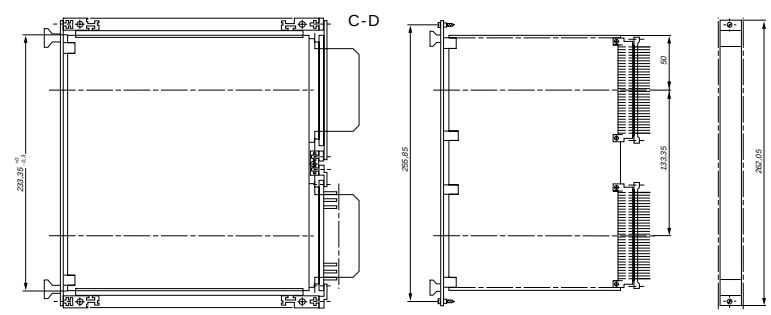
The exception to the rule is in the case of expansion to 32-bit applications where the P2 connector also has to be 96-pin.

Dimensions of subrack for 100 × 160 mm Euro-cards and 233.35 × 160 mm double-height Euro-cards

The illustrations show the mounting dimensions of the subrack and the reference dimensions of the PCBs with connectors as per DIN 41612.

The standardized dimensions of the subrack can be taken from DIN 41494, Parts 1 and 5, IEC publications 60297-2 and IEC 60297-3 contain the same standardization details.





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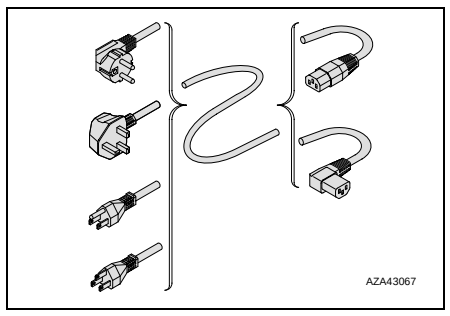
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Electrical

Interplay of electronic components

We offer a wide range of supplementary components for building VMEbus systems. These help to shape your requirements to your system to optimum effect. The individual components can be seen in the block circuit diagram. These include:

1. Power supply cable
2. Mains modules, mains filter, mains switch
3. Switch-on current limiting module (ICL)
4. Power failure module (PFM)
5. Power supply unit
   a) 19" rack-mounting unit
   b) Open frame
6. Backplane
7. Fans
8. Speed monitoring and regulation of DC fans
9. VMEbus voltage monitoring units
   a) Wall mounting (VMM)
   b) Mounting direct on rear side of backplane (VMB)
10. Voltage indicator (LED display)
    a) Standard
    b) Tolerance band display (VMEbus)
11. Test adapter
12. VMEbus daisy chain jumper board
13. VMEbus reset board



1. Power supply cable

Establishes the connection between socket-outlet and system. Earthing contact/UTE, BS and I.E.C. are available as mains plugs. A straight or angled inlet connector is available for the system connection.





2. Mains modules, mains suppression filter, mains switch

These units assume the incoming mains supply with socket, mains switch, fuse and mains suppression filter. In this way, the incoming mains supply can be switched off, has a fuse to protect against overloading and filters the input voltage.



3. Switch-on current limiting module (ICL)

Prevents excessive switch-on currents. During the switch-on procedure, the module limits the switch-on current to 5 or 10 A for approx. 0.4 s.

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4. Power failure module

The module monitors the input voltage (AC or 24 volts DC) and also a direct voltage (4–30 V) for undervoltage. A signal (open collector) is issued in the event of a fault.



from 20200001

5. Power supply units

The power supply units for the systems are available in the 19" (pluggable) or open frame types. The 19" power supply units deliver the SYSRESET and ACFAIL and the OPEN FRAME units provide the power failure signal.



from S7006_1

6. Backplane

A wide range of VME backplanes is available.
The following bus systems are also available on request:
VXI, FutureBus+, G96Bus, Multibus etc.



011459-1

7. Fans

DC and AC fans are available for cooling the systems. The rotational speed of the DC fans is regulated as function of the temperature (NTC). A signal is issued in the event of a fault.



10095007

8. Speed monitoring and regulation of DC fans

The circuit filters the disturbances of the DC fans on the ±12 supply line (24 V fans). Furthermore, the monitoring unit offers the option of connecting 1 to 3 DC fans and regulating the fan speeds via a sensor. A central signal (LED and open collector) is also issued in the event of a fan malfunction.

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VMM

0011139

VMB

10039001

9. VMEbus voltage monitoring units

The three direct voltages +5, ±12 V are monitored to ascertain whether they adhere to the VMEbus tolerance. In the event of deviation, a signal is issued via a two-colour LED (item 10b) and TTL signal.

There are two versions:

a) The voltage monitoring module (VMM) is fitted in any desired position.

b) The voltage monitoring board (VMB) is connected on the rear side of the backplane.



09895001

10. Voltage indicator (LEDs)

a) Standard systems: the LEDs are supplied directly with the direct voltages. The LEDs remain lit as long as the direct voltages are applied.
b) Tolerance band display in conjunction with voltage monitoring units (item 9): Two-colour LEDs indicate whether the voltages are within the tolerances of the VMEbus specification (green = voltage O.K., red = voltage outside tolerance). The LED FAN lights up if a fan issues a fault signal.



11100020

11. Test adapter

The test adapter enables your PCB to be easily accessed from both sides and thus tested. Measuring panels offer comfortable access to the connecting leads. The test adapters are available for VME- and universal bus standard systems.



011023-2

12. VMEbus daisy chain jumper board

On VME backplanes without automatic daisy chaining, this board can be used to route the daisy chain lines of an unused slot.
It establishes the connections needed for the daisy chain.



011023-1

13. VMEbus reset board

The reset board is connected via a cable to the backplane.
The VMEbus system can be reset (SYSRESET) by pressing a pushbutton. This board indicates whether a board SYSFAIL has been triggered and whether the supply voltage is applied.

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Abbreviations

A	Ampere, current strength
ABS	Acrylonitrile-butadiene styrene
AC	Alternating current (single phase (current))
Acrylic (glass)	Plastic (glass)
AD	Address/data bus
ADC	Automatic Daisy Chaining
Al	Aluminium
AlZn	Aluminium zinc alloy for finishes
ANSI	American National Standard Institute
AT	PC backplane AT standard
Be	Beryllium
BGT	Subrack
Br	Brass
BS(I)	British Standard (Institution)
C 15	Steel
CE	Conformité Européenne, corresponds to EU Guidelines
CERN	European Atomic Research Association
CFM	Cubic Feet per Minute (Air capacity)
Ck 75	Steel
CSA	Canadian Standard Association
CTI	Comparative figure for creepage formation in insulating materials
Cu	Copper
CuBe	Copper-beryllium
CuSn	Bronze
CuZn	Brass
D, d	Depth
DB	Deutsche Bahn AG
dB(A)	Decibels, volume level
DC	Direct Current
DIL	Dual-in-line
DIN	Deutsche Industrie Norm (German Industry Standard)
E-Cu	Electrolytic copper
Earthing contact	Socket/connector / plug with protectioncontact; standard in D, NL, S, P, A, N, SF, E, TR, GR, L
EIA	Electronic Industry Association
EMC (EMV)	Electromagnetic compatibility
EMP	Electromagnetic pulse
EMI	Electromagnetic Interference
EN	European Standard
EPGC	Fibreglass reinforced epoxy
Epgl.	Epoxy-fibreglass mat
ESD	Electrostatic Discharge
ETS(I)	European Telecommunication Standard (Institute)
EU	Filter classes to DIN 24 185, Part 100
°F	Fahrenheit
FI	Fault current
FKD	Lower, upper limit temperature and moisture to DIN 40 040
FPCS	Front panel component system
FR	Flammability Rating (to NEMA)
G10Fr4	Fibreglass, fire-resistant
GD-Zn	Zinc die-cast
GND	Ground, earth
GS	Approved Safety
h	Hour
H, h	Height
H_2S	Hydrogen sulphide
HF	HF / high-frequency
HP	Unit of division (1 HP = 5.08 mm)
HPL	High pressure laminate (Melamine resin-coated laminated sheet)
HSF	Tab>Lower, upper limit temperature and moisture to DIN 40 037
Hz	Hertz, frequency of the alternating voltage
IC	Integrated Circuit
IEC	international Electrotechnical Commission
IEEE	Institute of Electrical and Electronic Engineers
Inch	Length dimension, 1” = 25.4 mm
IP	International Protection
ISA	Industrial Standard Architecture (Industrial standard for PCs)
ISO	International Standard Organisation
Item	Item
J1	VME system bus, 3 U, top
J1/J2	VME system bus, 6 U, Monolithic
J2	VME system bus, 6 U at bottom
°K	Kelvin
LBX	Local Bus Extension for Multibus® II
LED	Light emitting diode
LGA	Bavarian Regional Trade Office
M	Metrical thread
m^3/h	Air capacity
MBLT	Multiplexed Block Transfer in the VMEbus for increasing the transmission rate
mcd	Millicandela
MDC	Manual Daisy Chaining with jumper for VME/VXIbus
mep	Metric equipment practice
MHz	Megahertz (frequency)
mm	Millimeter
Monolithic	J1/J2 backplane, 6 U
mp1, mp2, mp3	Measuring units in metric system, 1 mp1 = 25 mm, 1 mp2 = 5 mm, 1 mp3 = 2.5 mm
MPS	Microcomputer packaging systems
ms	Millisecond
MTBF	Mean time between failure

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Abbreviations



n	Speed (rpm)
N	Newton
NEMA	National Electrical Manufacturers Association
NF	Norme Française (French Standard)
NTC	Negative Temperature Coefficient
OVP	Over-voltage protection
PA	Polyamide
PA	Pascal
Pb	Lead
PC	Personal computer or polycarbonate
PCI	Periphery Component Interface
PE	Polyethylene
PG	Armoured conduit steel thread
Philips	Screw head – Type ISO 475-7-H
Pin	Connection, contact
PMC	PCI Mezzanine Card
PMMA	Polymethylmethacrylat
POM	Polyoxymethylene
PP	Polypropylene
PPE	Polyphenylene ether
ppm	parts per million
PPO	Polyphenyl oxide, corresponds to PPE
Process control keyboard(P)	Polybuteneterephthalate
PS	Polystyrene
PSB	Parallel system bus for Multibus® II
PTC resistance	positive Temperature Coefficient
PU(R)	Polyurethane
Pv	Installed energy loss
PVC	Polyvinyl chloride
RAL	Colour standard
RAL 1013	Pearl white
RAL 1018	Zinc yellow
RAL 2000	Orange
RAL 3000	Fire red
RAL 3027	Raspberry red
RAL 5007	Brilliant blue
RAL 5021	Water blue
RAL 7021	Stone grey
RAL 7030	Dark grey
RAL 7032	Pebble grey
RAL 7035	Light grey
RAL 9005	Black

Sekurit (glass)	Safety glass
Service PLUS+	SCHROFF rapid installation service
SEV	Association of Swiss Electrical Engineers
SI	Overcurrent
SIPS	Standard Industrial PC System
Slot	Pin position for board
SMD	Surface Mounted Device
SNMP	Simple Network Management Protocol
Sn	Tin
SO_2	Sulphur dioxide
St	Steel
SU	System Unit (1 SU = 25 mm)
SW	Wrench size across flats
Ta/Tu	Ambient temperature
TSG-PS	Thermoplastic cast foam polystyrene
TTL	Transistor-Transistor Logic
TÜV	German Technical Supervisory Association
U	Height unit (1 U = 44.45 mm)
UL	Underwriters Laboratories Inc. (USA safety regulations)
UL 94...	Flammability of plastics
UL 1950	Safety of information technology equipment, including electrical office equipment
UNC	Unified National Coarse (inch thread)
UTE	Union technique de l'électricité, in this case: Socket/Socket strip type for France and Belgium
V	Volt, electrical voltage
VA	Volt-ampere, power consumption, (apparent power)
VDE	Institute of German Electronics Engineers
VG Standard	Defence equipment (standard)
VITA	VMEbus international Trade Association
VMEbus	Versa Module Europe, system bus
VSB	VME subsystem bus
Vss	Peak-Peak-Voltage
VXI	VMEbus Extension for Instrumentation
W	Watt, electrical power output
W, w	Width
Zincor	Pre-galvanised steel plate with special surface treatment
Zn	Zinc
ZnPb	Zinc-leaded alloy

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