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Find the *Farnell N180P118/U* at our website: *Click HERE*

Farnell

March 1985

N180P open frame switch mode power supply



FEATURES

- Switched-mode for small size, high efficiency and low cost
- Quality construction
- Optional safety cover
- Dual range mains input
- Standard models have five outputs: ±5V, ±12V (or ±15V or +24V/−12V) and +24V d.c.
- Alternative outputs on power trading principle
- All units undergo 'burn-in' at full load
- Soft start limits in rush current
- Power fail and output monitor options
- Output will hold up for missing whole cycle from 220V mains
- Simple to mount in any plane, convection cooled
- Tailored versions and custom designs to order

APPLICATIONS

★ Computers, logic systems, memories, microprocessors, MOS, TTL

★ Peripherals, terminals, floppy disk drives, I/O devices

★ Business machines, medical, military and industrial OEM

★ Communications, telex, radio links, telephone exchanges, call loggers, etc.

★ CAD/CAE/CAM equipment

OPTIONS

Power failure signal

Power failure signal plus output level monitor

Safety cover

The Farnell N range of open frame, switch-mode power supplies provide the OEM with a reliable, high quality power source to build into equipment at minimum cost. There are 50, 55, 75, 90, 100, 180, 200, 300 and 350W multi-output, standard N range units available.

The N180P provides 5 d.c. output voltages and can deliver 180W total output power. The +5V output is fully regulated and the others are semi-regulated. The unit is convection cooled. Standard outputs are as shown in the table below.

Other combinations of voltage or current, on the power trading principle, can be supplied to order.

Operating from a field selectable 115/230V a.c. input and with optional safety covers being available, these units comply with all relevant safety requirements (see overleaf).

Units available

MODEL NO	OUTPUT 1		OUTPUT 2		OUTPUT 3		OUTPUT 4		OUTPUT 5	
	Voltage Vdc nom	Current Idc max	Voltage Vdc nom	Current Idc max	Voltage Vdc nom	Current Idc max	Voltage Vdc nom	Current Idc max	Voltage Vdc nom	Current Idc max
N180P	+5	20A	+12	5A	−12	5A	+24	2A	−5	1A
N180P129	+5	20A	+15	5A	−15	5A	+24	2A	−5	1A
N180P134	+5	20A	+24	5A	−12	5A	+12	2A	−5	1A

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DESIGNED TO MEET THE FOLLOWING SPECIFICATIONS WHEN USED INSIDE FINISHED PRODUCTS

VDE 0875N
FCC Rules, Part 15, Sub part J, Class A
VDE 0871 level A
BS6527 level A
BT Guides 2 and 26
BS800
BS6204
IEC 435
UL 478 recognition pending

PARAMETER	N180P	N
INPUT VOLTAGE	115/230V a.c. 92/176V a.c. 132/264V a.c.	11 9 13
INPUT FREQUENCY	50Hz 45Hz 440Hz	5 4 44
INPUT CURRENT (typical, at full load)	115V 220V 240V 3.2A 1.8A 1.68A 1.44A 750mA 690mA 9.6A 6.5A 5.8A	11 3. 1.4 9.
OUTPUT V1	+5V d.c. 20A	+5 20
OUTPUT V2	+12V d.c. 5A	+1 5A
OUTPUT V3	−12V d.c. 5A	−1 5A
OUTPUT V4	+24V d.c. 2A	+2 2A
OUTPUT V5	−5V d.c. 1A	−5 1A
OUTPUT POWER	180W	18
EFFICIENCY	80%	80
HOLD UP TIME	refer to graph	ref
OPERATING TEMPERATURE RANGE	0 to 50°C full load	0
DERATING	2.5% per °C over range 50-70°C	2.5
TEMPERATURE COEFFICIENT	±0.02% per °C	±
RIPPLE AND NOISE	< 2% Vout pk-pk < 0.5% Vout r.m.s.	< <
OUTPUT VOLTAGE ADJUSTMENT	±5% of nominal (Output 1)	±5

OUTPUT VOLTAGE REGULATION

Line regulation
Each output 0.2% maximum change for a line change of 176 to 264V or 92 to 132V.
Load regulation
Output 1 ±1% max. change
Output 2 ±3% max. change
Outputs 3 to 5 ±2.5% max. change for ±40% load change from 60% Imax. (i.e. from 60% to 20% or 100% max. rated load) on the measured output. All other outputs at 20% max. rated load.
Cross regulation
All outputs: ±0.5% max. change for a ±25% load change from 75% Imax. on any one of outputs 2 to 5. Other outputs set at 20% max. rated load.
Outputs 2 to 5: ±1.5% max. change for a ±25% load change from 75% Imax. on output 1. Other outputs set at the 20% max. rated load.

PROTECTION

Overload: Self resetting electronic current limit. Set to approximately 115% of rated output current on Output 1. Outputs 2 and 3 protected by power limit circuit. Outputs 4 and 5 protected by 20mm fuses. Overall power limit at approximately 120% of rated power.

Overvoltage: shuts down Output 1 only. Reset by interrupting mains input.

Overvoltage trigger: 5V outputs–operates at 5.8V min., 7V max.
12V outputs–operates at 13V min., 16V max.
15V outputs–operates at 16V min., 19V max.
24V outputs–operates at 26V min., 31V max.

Fuses: The mains input is fused (fuse type 20mm 6.3A THRC). Outputs 4 and 5 protected by 20mm fuses.

M.T.B.F. 75,000 hours calculated.

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180P129	N180P134	CONDITION
/230V a.c. /176V a.c. /264V a.c.	115/230V a.c. 92/176V a.c. 132/264V a.c.	nominal minimum maximum
Hz Hz Hz	50Hz 45Hz 440Hz	nominal minimum maximum (limits to 66Hz for UL recognition)
V 220V 240V A 1.8A 1.68A IA 750mA 690mA A 6.5A 5.8A	115V 220V 240V 3.2A 1.8A 1.68A 1.44A 750mA 690mA 9.6A 6.5A 5.8A	 r.m.s. mean repetitive peak
V d.c. \	+5V d.c. 20A	nominal maximum cont. (current limited at 23A approx.)
5V d.c.	+24V d.c. 5A	nominal maximum cont. (Peak surge to 120% PO max. permissible)
5V d.c.	−12V d.c. 5A	nominal maximum cont. (Peak surge to 120% PO max. permissible)
4V d.c.	+12V d.c. 2A	nominal maximum cont. (Peak surge to 120% PO max. permissible)
V d.c.	−5V d.c. 1A	nominal maximum cont. (Peak surge to 120% PO max. permissible)
IW	180W	maximum continuous 0-50°C
%	80%	typical at full load and nominal input
er to graph	refer to graph	–
o 50°C full load	0 to 50°C full load	storage temperature range is −25°C to +85°C
% per °C over range 50-70°C	2.5% per °C over range 50-70°C	maximum operating temperature 70°C
.02% per °C	±0.02% per °C	typical, output 1. ±0.05% per °C for other outputs
% Vout pk-pk .5% Vout r.m.s.	< 2% Vout pk-pk < 0.5% Vout r.m.s.	measured with unit delivering max. output power. Δ f = 30MHz
% of nominal (Output 1)	±5% of nominal (Output 1)	outputs 2, 3, 4 and 5 vary in proportion as output 1 is adjusted. With output 1 set to 5.00V and all outputs loaded at 50% of maximum rated current, the other outputs will be within 5% of stated nominal

INSULATION

Unit input to output isolation barriers including layout and wiring, are designed to meet a test of 4kV a.c. r.m.s. for one minute (i.e. 2kV r.m.s. input to earth, 2kV r.m.s. output to earth). Tests are applied to relevant components to ensure compliance with BS3535 clause 17b and CEEE15 clause 17c. The complete unit is tested at 1.5kV a.c. for one minute between a.c. input and d.c. outputs, with output terminals connected to earth. Tested at 500V d.c. for one minute between output and earth.

CONNECTIONS

Slotted screw terminals on barrier strip. Three way barrier strip for supply input. Separate barrier strip for outputs (see Mechanical Details).

RELIABILITY

All units undergo burn-in at full load after test. Wound components produced to DEF STAN 05-24 in special Farnell factory. All components operated well within vendor ratings.

OPTIONS

Power failure signal.
Power failure signal plus output level monitor.
Safety cover.

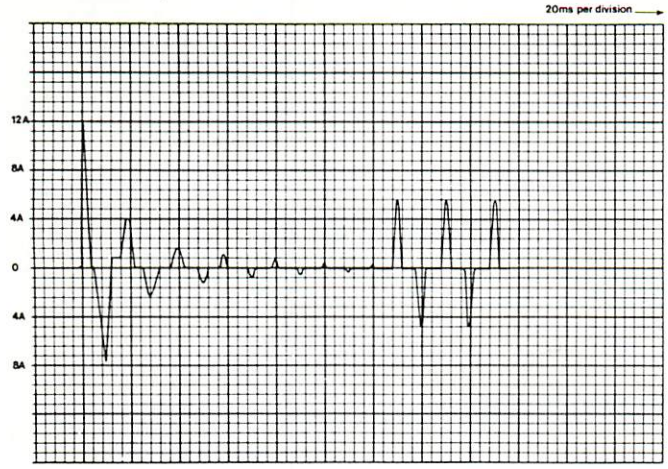
ORDER CODES	ITEM
13N180P	N180P
13N180P129	N180P129
13N180P134	N180P134
13FMC180	Cover
13N180PA	Mains failure alarm
13N180PB	Output level monitor

Note: Specification applies in an ambient temperature of 25°C unless otherwise stated.

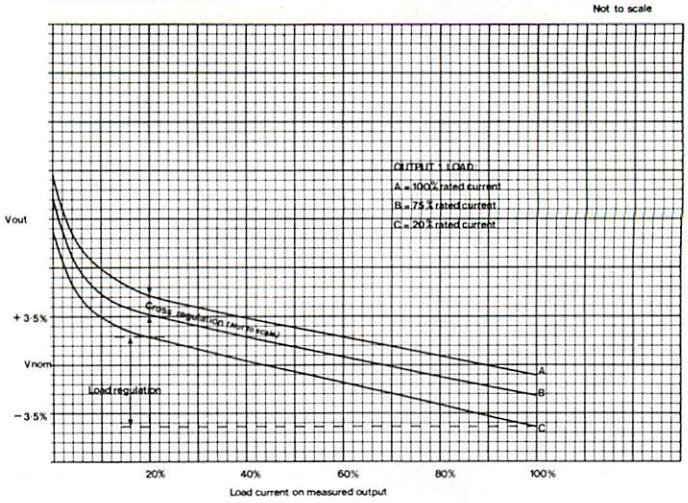
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N180 SWITCH ON SURGE AT 264V MAINS INPUT.

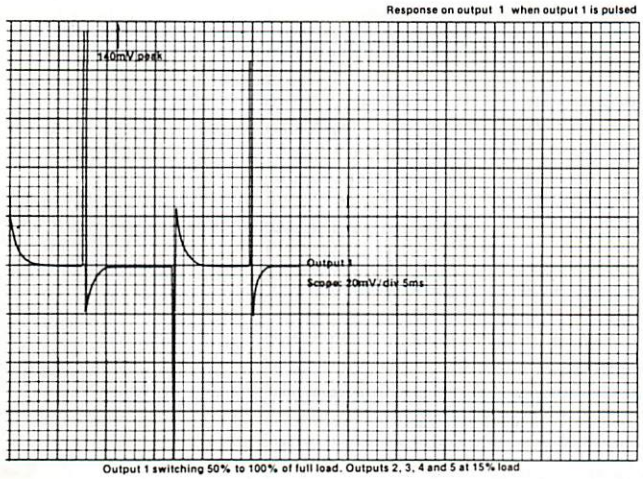
11A maximum peak current from cold start



N180 TYPICAL REGULATION CHARACTERISTICS FOR OUTPUTS 2, 3 & 5



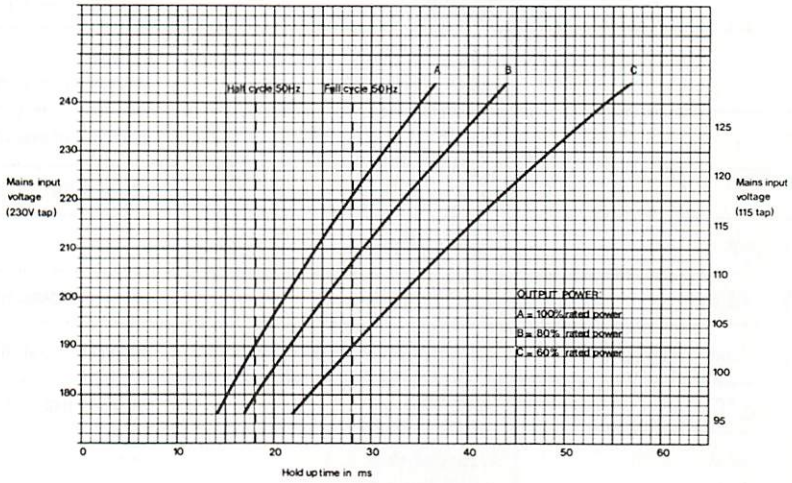
N180 TRANSIENT RESPONSE



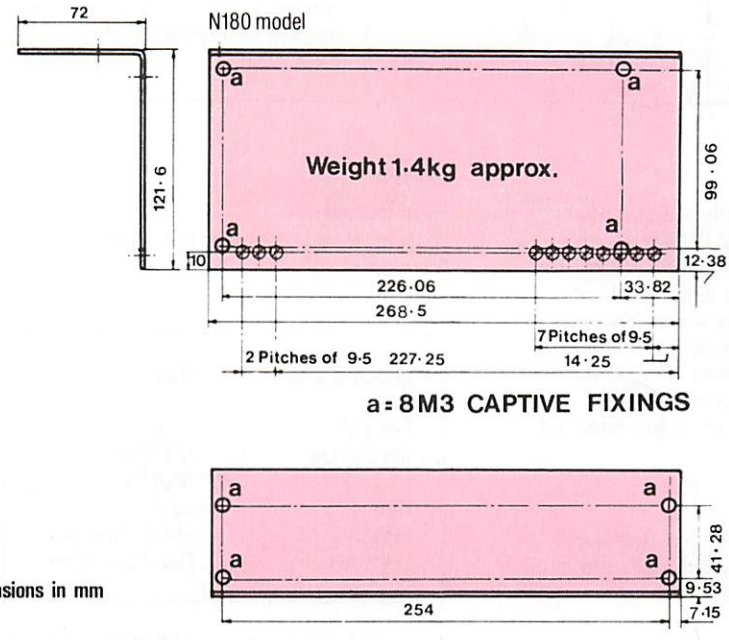
Output 1 switching 50% to 100% of full load. Outputs 2, 3, 4 and 5 at 15% load

N180 MINIMUM HOLD-UP TIME

115 and 230V mains and full load: > 0.5 missing cycle at 50Hz



N180P OUTLINE DRAWING



All dimensions in mm

Manufactured in England by:

We reserve the right to amend specifications without notification

Farnell

POWER SUPPLIES DIVISION · SANDBECK WAY · WETHERBY · WEST YORKSHIRE LS22 4DH · TEL 0937 61961 · TELEX 557294 FARIST G

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