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Datasheet

VLT® 2800

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VLT 2800


Danfoss
QUICK MENU
CHANGE DATA
ALARM
WARNING
ON
STOP RESET
START
VLT® 2800
Danfoss
QUICK MENU
CHANGE DATA
ALARM
WARNING
ON
STOP RESET
START
VLT® 2800

■ Order form

This section makes it easier for you to specify and order a VLT 2800.

Choice of frequency converter

The frequency converter must be chosen on the basis of the present motor current at maximum loading of the unit. The frequency converter's rated output current $I_{INV.}$ must be equal to or greater than the required motor current.

Mains voltage

VLT 2800 is available for two mains voltage ranges: 200-240 V and 380-480 V.

Select whether the frequency converter is connected to a mains voltage of:

- 1 x 220 - 240 V single-phase AC voltage
- 3 x 200 - 240 V three-phase AC voltage
- 3 x 380 - 480 V three-phase AC voltage

1 x 220 - 240 Volt mains voltage

Typical shaft output $P_{INV.}$			Max. constant output current $I_{INV.}$	Max. constant output power at 230 V $S_{INV.}$
Type	[kW]	[HP]	[A]	[kVA]
2803	0.37	0.5	2.2	0.9
2805	0.55	0.75	3.2	1.3
2807	0.75	1.0	4.2	1.7
2811	1.1	1.5	6.0	2.4
2815	1.5	2.0	6.8	2.7
2822	2.2	3.0	9.6	3.8
2840	3.7	5.0	16	6.4

3 x 200 - 240 Volt mains voltage

Typical shaft output $P_{INV.}$			Max. constant output current $I_{INV.}$	Max. constant output power at 230 V $S_{INV.}$
Type	[kW]	[HP]	[A]	[kVA]
2803	0.37	0.5	2.2	0.9
2805	0.55	0.75	3.2	1.3
2807	0.75	1.0	4.2	1.7
2811	1.1	1.5	6.0	2.4
2815	1.5	2.0	6.8	2.7
2822	2.2	3.0	9.6	3.8
2840	3.7	5.0	16.0	6.4

3 x 380 - 480 Volt mains voltage

Typical shaft output $P_{INV.}$			Max. constant output current $I_{INV.}$	Max. constant output power at 400 V $S_{INV.}$
Type	[kW]	[HP]	[A]	[kVA]
2805	0.55	0.75	1.7	1.1
2807	0.75	1.0	2.1	1.7
2811	1.1	1.5	3.0	2.0
2815	1.5	2.0	3.7	2.6
2822	2.2	3.0	5.2	3.6
2830	3.0	4.0	7.0	4.8
2840	4.0	5.0	9.1	6.3
2855	5.5	7.5	12.0	8.3
2875	7.5	10.0	16.0	11.1
2880	11	15	24	16.6
2881	15	20	32	22.2
2882	18.5	25	37.5	26.0

Enclosure

All VLT 2800 units are supplied with IP 20 enclosure as standard.

This enclosure level is ideal for panel mounting in areas where a high degree of protection is required; at the same time IP 20 enclosures allow side-by-side installation without any need for extra cooling equipment.

IP 20 units can be upgraded with IP 21 / top cover and/or NEMA 1 by fitting a terminal cover. See ordering number for terminal cover under *Accessories for VLT 2800* .

In addition, VLT 2880-82 and 2840 PD2 units are supplied with Nema 1 enclosure as standard.

Brake

VLT 2800 is available with or without an integral brake module. See also the section entitled *Brake resistors* for ordering a Brake resistor.

RFI filter

VLT 2800 is available with or without an integral 1A RFI-filter. The integral 1A RFI filter complies with EMC standards EN 55011-1A.

With an integral RFI filter there is compliance with EN 55011-1B with a max. 15-metre screened/armoured motor cable on VLT 2803-2815 1 x 220-240 Volt.

VLT 2880-82 with integral 1B filter comply with EMC standard EN 50011 - 1B

Harmonic filter

The harmonic currents do not affect power consumption directly, but they increase the heat losses in the installation (transformer, cables). That is why, in a system with a relatively high percentage of rectifier load, it is important to keep the harmonic currents at a low level so as to avoid a transformer overload and high cable temperature. For the purpose of ensuring low harmonic currents, VLT 2822-2840 3 x 200-240 V and VLT 2805-2882 380-480 V are fitted with coils in their intermediate circuit as standard. This reduces the input current I_{RMS} by typically 40 %.

Please note that 1 x 220-240 V units up to 1.5 kW are not supplied with coils in their intermediate circuit.

Control unit

The frequency converter is always supplied with an integral control unit.
All displays are in the form of a six-digit LED display capable of showing one item of operating data continuously during normal operation. As a supplement to the display, there are three indicator lamps for voltage (ON), warning (WARNING) and alarm (ALARM). Most of the frequency converter's parameter Setups can be changed immediately via the integral control panel.

An LCP 2 control panel to be connected via a plug to the front of the frequency converter is available as an option. The LCP 2 control panel can be installed up to 3 metres away from the frequency converter, e.g. on a front panel, by means of the accompanying mounting kit.
All displays of data are via a 4-line alpha-numerical display, which in normal operation is able to show 4 operating data items and 3 operation modes continuously. During programming, all the information required for quick, efficient parameter Setup of the frequency converter is displayed. As a supplement to the display, there are three indicator lamps for voltage (ON), warning (WARNING) and alarm (ALARM). Most of the frequency converter's parameter Setups can be changed immediately via the LCP 2 control panel. See also the section entitled *The LCP 2 control unit* in the Design Guide.

FC protocol

Danfoss frequency converters are able to fulfill many different functions in a monitoring SYSTEM. The frequency converter can be integrated directly in an overall surveillance SYSTEM, which will allow detailed process data to be transferred via serial communication.
The protocol standard is based on an RS 485 bus SYSTEM with a maximum transmission speed of 9600 baud. The following Drive profiles are supported as standard:

- FC Drive, which is a profile adapted to Danfoss.
- Profidrive, which supports the profidrive profile.

See *Serial communication* for further details of telegram structure and Drive profile.

Fieldbus option

The increasing information requirements in industry make it necessary to collect or visualize many different process data. Important process data help the system technician with the daily monitoring of the system. The large amounts of data involved in major systems make a higher transmission speed than 9600 baud desirable.
Fieldbus option

Profibus
Profibus is a fieldbus system, which can be used for linking automation devices such as sensors and actuators with the controls by means of a two-conductor cable. Profibus DP is a very fast communication protocol, made specially for communication between the automation system and various types of equipment.
Profibus is a registered trade mark.

DeviceNet
DeviceNet fieldbus systems can be used for linking automation devices such as sensors and actuators with the controls by means of a four-wire conductor cable.
DeviceNet is a medium speed communication protocol, made specially for communication between the automation system and various types of equipment.
Units with DeviceNet protocol cannot be controlled by FC protocol and Profidrive protocol.

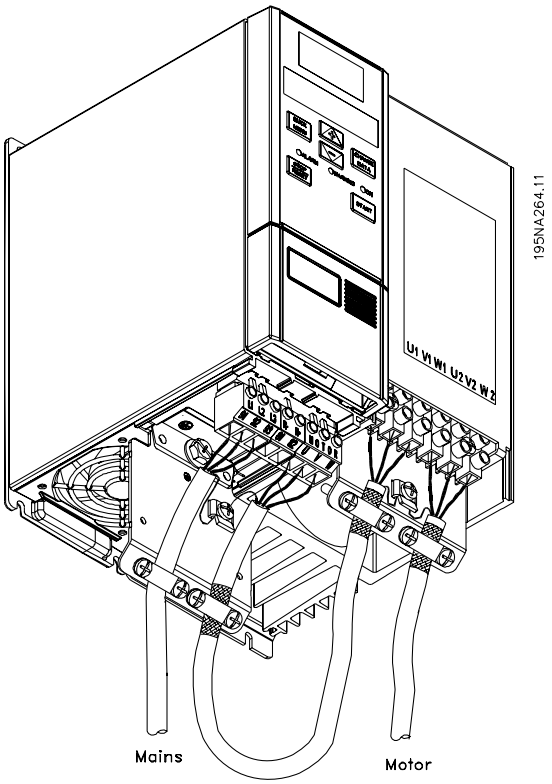
VLT Software Dialog can be used on the Sub D plug.

Motor coils

By fitting the motor coil module between the frequency converter and the motor it is possible to use up to 200 metres of unscreened/unarmoured motor cable or 100 metres of screened/armoured motor cable. The motor coil module has an enclosure of IP 20 and can be installed side-by-side.

NB!
To have long motor cables and still comply with EN55011-1A, motor coil and *EMC filter for long motor cables* are needed.

NB!
To comply with EN55011-1A *the EMC filter for long motor cables* can only be fitted to a VLT 2800 with integral 1A filter (R1 option).
See also the section EMC Emission.



Technical data for VLT 2803-2875 Motor coils	
Max. cable length (unscreened/unarmoured) [1]	200 m
Max. cable length (screened/armoured) [1]	100 m
Enclosure	IP 20
Max. rated current [1]	16 A
Max. voltage[1]	480 V AC
Min. distance between VLT and motor coil	Side-by-side
Min. distance above and below motor coil	100 mm
Mounting	Vertical mounting only
Dimensions H x W x D (mm)[2]	200 x 90 x 152
Weight	3.8 kg

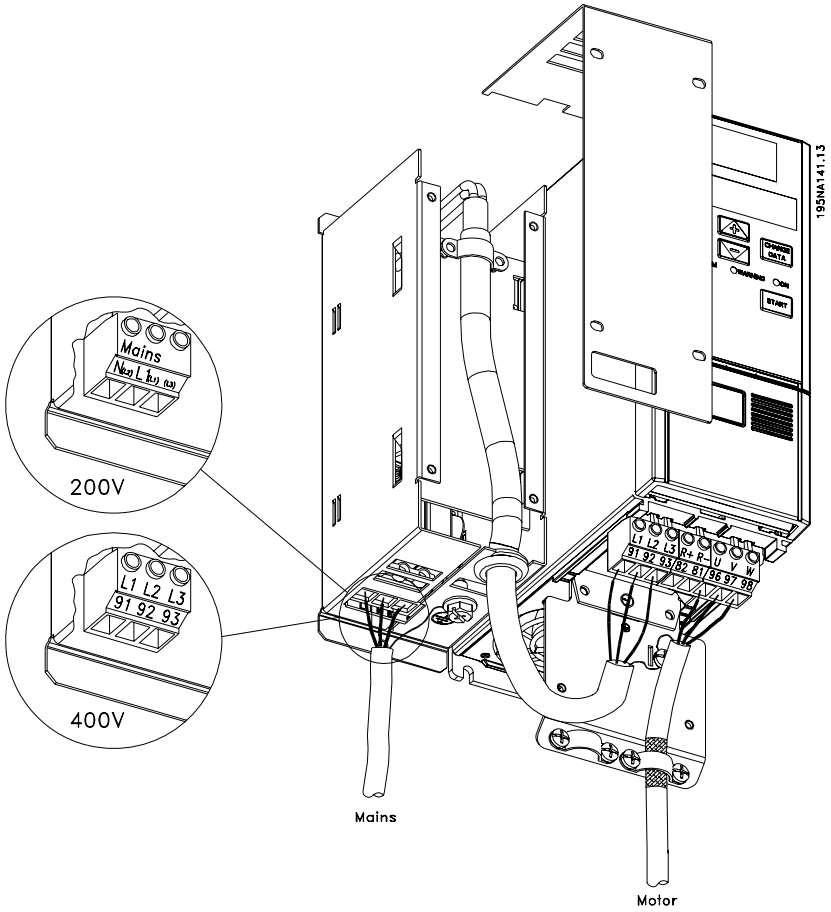
[1] Parameter 411 *Switching frequency* = 4500 Hz. [2] For mechanical dimensions see under *Mechanical dimensions*.
See ordering number for motor coil module under *Accessories for VLT 2800*.

RFI 1B filter

All frequency converters will cause electromagnetic noise in the mains supply when they are operating. An RFI (Radio Frequency Interference) filter will reduce the electromagnetic noise in the mains supply.
Without an RFI filter there is a risk that a frequency converter will disrupt other electrical components that are connected to the mains and might thus cause operating disruption.

By fitting an RFI 1B filter module between the mains supply and the VLT 2800, the VLT 2800 complies with the EMC norm EN 55011-1B.

NB!
To comply with EN 55011-1B the RFI 1B filter module must be fitted together with a VLT 2800 with integral 1A RFI filter.



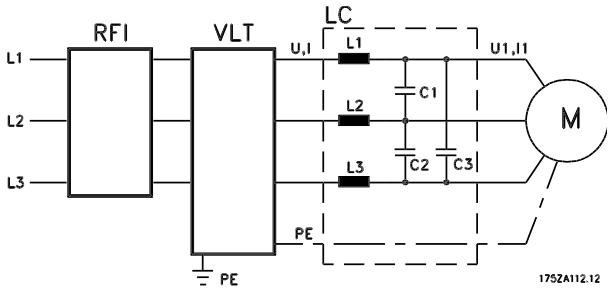
Technical data for VLT 2803–2875 RFI 1B filter	
Max. cable length (screened/armoured) 200-240 V	100 m (At 1A: 100 m)
Max. cable length (screened/armoured) 380-480 V	25 m (At 1A: 50 m)
Enclosure	IP 20
Max. rated current	16 A
Max. Voltage	480 V AC
Max. voltage to earth	300 V AC
Min. distance between VLT and RFI 1B filter	Side-by-Side
Min. distance above and below RFI 1B filter	100 mm
Mounting	Vertical mounting only
Dimensions H x W x D (mm)	200 x 60 x 87
Weight	0.9 kg

See ordering number for RFI 1B filter module under *Accessories for VLT 2800*.

■ RFI 1B/LC filter

The RFI 1B/LC filter contains both an RFI module that complies with EN 55011-1B and an LC filter that reduces the acoustic noise.

LC filter



When a motor is controlled by a frequency converter, at times you will be able to hear the acoustic noise from the motor. The noise, which is caused by the design of the motor, is generated every time one of the inverter contacts in the frequency converter is activated. The frequency of the acoustic noise therefore corresponds to the frequency converter's connection frequency.

The filter reduces the voltage's du/dt, the peak voltage U_{peak} and ripple current ΔI to the motor, so that the current and voltage are almost sine-shaped. The acoustic motor noise is thus reduced to a minimum.

Because of the ripple current in the coils some noise will be emitted by the coils. This problem can be solved completely by fitting the filter inside a cabinet or equivalent.

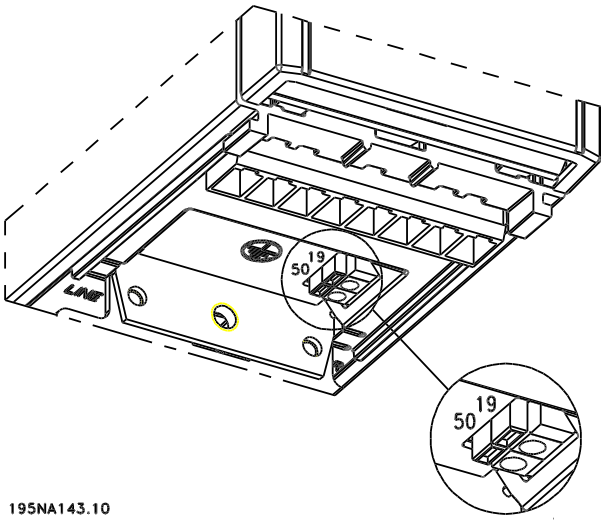
Danfoss can supply an LC filter for the VLT series 2800, which muffles the acoustic motor noise . Before the filters are put into use you must ensure that:

- rated current is observed
- mains voltage is 200-480 V
- parameter 412 *Variable switching frequency* is set to *LC filter attached* [3]
- output frequency is max. 120 Hz

See drawing on the next page.

Installation of thermistor (PTC)

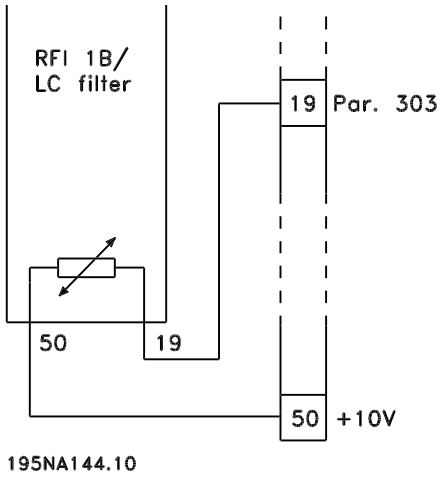
The RFI 1B/LC filter has an integral thermistor (PTC), which is activated if an overtemperature arises. The frequency converter can be programmed to stop the motor and activatee an alarm via a relay output or a digital output if the thermistor is activated.



The thermistor must be connected between terminal 50 (+10V) and one of the digital inputs 18, 19, 27 and 29.

In parameter 128 *Motor thermal protection*, *Thermistor warning* [1] or *Thermistor trip* [2] are selected

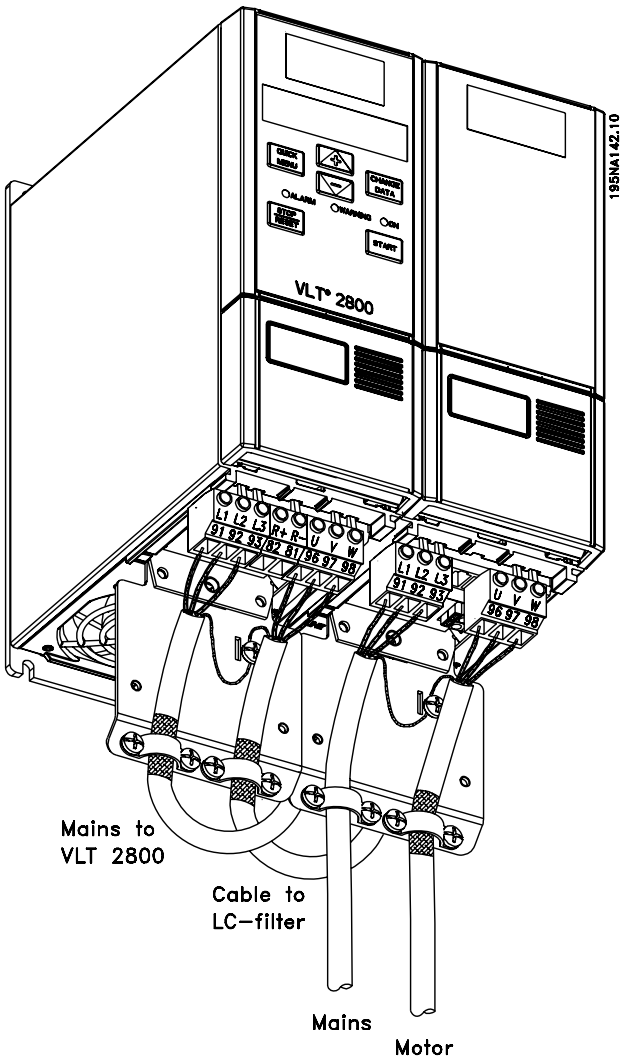
The thermistor is connected as follows:



■ RFI 1B/LC filter

NB!
To comply with EN 55011-1B the RFI 1B filter module must be fitted to a VLT 2800 with integral 1A RFI filter.

NB!
The 1B/LC filter is not suitable for 200 V devices due to the high 1Ø input current.



Technical data for VLT 2803–2875 RFI 1B/LC filter	
Max. cable length (screened/armoured) 380-480 V	25 m (At 1A: 50 m)
Enclosure	IP 20
Max. rated current	4.0 (Order no.: 195N3100); 9.1 (Order no.: 195N3101)
Max. voltage	480 V AC
Max. voltage to earth	300 V AC
Min. distance between VLT and RFI 1B/LC filter	Side-by-Side
Min. distance above and below RFI 1B/LC filter	100 mm
Mounting	Vertical mounting only
Dimensions 195N3100 4.0 A H x W x D (mm)	200 x 75 x 168
Dimensions 195N3101 9.1 A H x W x D (mm)	267.5 x 90 x 168
Weight 195N3100 4.0 A	2.4 kg
Weight 195N3101 9.1 A	4.0 kg

■ Ordering numbers for VLT 2800 200-240 V

0,37 kW		VLT 2803 1 x 220-240 V / 3 x 200-240 V		
RFI	Unit	Profibus DP[1)] 3 MBits/s	DeviceNet	Ordering no.
-	ST	-	-	195N0001
-	SB	-	-	195N0002
R1	ST	-	-	195N0003
R1	SB	-	-	195N0004
-	ST	✓	-	195N0005
-	SB	✓	-	195N0006
R1	ST	✓	-	195N0007
R1	SB	✓	-	195N0008
-	ST	-	✓	195N0009
-	SB	-	✓	195N0010
R1	ST	-	✓	195N0011
R1	SB	-	✓	195N0012

0,55 kW		VLT 2805 1 x 220-240 V / 3 x 200-240 V		
RFI	Unit	Profibus DP[1)] 3 MBits/s	DeviceNet	Ordering no.
-	ST	-	-	195N0013
-	SB	-	-	195N0014
R1	ST	-	-	195N0015
R1	SB	-	-	195N0016
-	ST	✓	-	195N0017
-	SB	✓	-	195N0018
R1	ST	✓	-	195N0019
R1	SB	✓	-	195N0020
-	ST	-	✓	195N0021
-	SB	-	✓	195N0022
R1	ST	-	✓	195N0023
R1	SB	-	✓	195N0024

0,75 kW		VLT 2807 1 x 220-240 V / 3 x 200-240 V		
RFI	Unit	Profibus DP[1)] 3 MBits/s	DeviceNet	Ordering no.
-	ST	-	-	195N0025
-	SB	-	-	195N0026
R1	ST	-	-	195N0027
R1	SB	-	-	195N0028
-	ST	✓	-	195N0029
-	SB	✓	-	195N0030
R1	ST	✓	-	195N0031
R1	SB	✓	-	195N0032
-	ST	-	✓	195N0033
-	SB	-	✓	195N0034
R1	ST	-	✓	195N0035
R1	SB	-	✓	195N0036

1,1 kW		VLT 2811 1 x 220-240 V / 3 x 200-240 V		
RFI	Unit	Profibus DP[1)] 3 MBits/s	DeviceNet	Ordering no.
-	ST	-	-	195N0037
-	SB	-	-	195N0038
R1	ST	-	-	195N0039
R1	SB	-	-	195N0040
-	ST	✓	-	195N0041
-	SB	✓	-	195N0042
R1	ST	✓	-	195N0043
R1	SB	✓	-	195N0044
-	ST	-	✓	195N0045
-	SB	-	✓	195N0046
R1	ST	-	✓	195N0047
R1	SB	-	✓	195N0048

1,5 kW		VLT 2815 1 x 220-240 V / 3 x 200-240 V		
RFI	Unit	Profibus DP[1)] 3 MBits/s	DeviceNet	Ordering no.
-	ST	-	-	195N0049
-	SB	-	-	195N0050
R1	ST	-	-	195N0051
R1	SB	-	-	195N0052
-	ST	✓	-	195N0053
-	SB	✓	-	195N0054
R1	ST	✓	-	195N0055
R1	SB	✓	-	195N0056
-	ST	-	✓	195N0057
-	SB	-	✓	195N0058
R1	ST	-	✓	195N0059
R1	SB	-	✓	195N0060

2,2 kW		VLT 2822 PD2 1 x 220-240 V / 3 x 200-240 V		
RFI	Unit	Profibus DP[1)] 3 MBits/s	DeviceNet	Ordering no.
-	ST	-	-	178F5167
-	ST	✓	-	178F5168
-	ST	-	✓	178F5169

2,2 kW		VLT 2822 3 x 200-240 V		
RFI	Unit	Profibus DP[1)] 3 MBits/s	DeviceNet	Ordering no.
-	ST	-	-	195N0061
-	SB	-	-	195N0062
R1	ST	-	-	195N0063
R1	SB	-	-	195N0064
-	ST	✓	-	195N0065
-	SB	✓	-	195N0066
R1	ST	✓	-	195N0067
R1	SB	✓	-	195N0068
-	ST	-	✓	195N0069
-	SB	-	✓	195N0070
R1	ST	-	✓	195N0071
R1	SB	-	✓	195N0072

3,7 kW		VLT 2840 PD2 1 x 220-240 V / 3 x 200-240 V		
RFI	Unit	Profibus DP[1] 3 MBits/s	DeviceNet	Ordering no.
-	ST	-	-	178F5170
-	ST	✓	-	178F5171
-	ST	-	✓	178F5172

3,7 kW		VLT 2840 3 x 200-240 V		
RFI	Unit	Profibus DP[1] 3 MBits/s	DeviceNet	Ordering no.
-	ST	-	-	195N0073
-	SB	-	-	195N0074
R1	ST	-	-	195N0075
R1	SB	-	-	195N0076
-	ST	✓	-	195N0077
-	SB	✓	-	195N0078
R1	ST	✓	-	195N0079
R1	SB	✓	-	195N0080
-	ST	-	✓	195N0081
-	SB	-	✓	195N0082
R1	ST	-	✓	195N0083
R1	SB	-	✓	195N0084

ST: Standard unit.

SB: Standard unit with integral brake.

R1: With RFI filter that complies with EN 55011-1A.



NB!

For VLT 2803-2815 with an R1 filter it is only possible to connect single-phase mains voltage 1 x 220 - 240 Volt.

1) Also available in 12 MBit/s version.

■ Ordering numbers for VLT 2800 380-480V

0,55 kW		VLT 2805 3 x 380-480 V		
RFI	Unit	Profibus DP[1)] 3 MBit/s	DeviceNet	Ordering no.
-	ST	-	-	195N1001
-	SB	-	-	195N1002
R1	ST	-	-	195N1003
R1	SB	-	-	195N1004
-	ST	✓	-	195N1005
-	SB	✓	-	195N1006
R1	ST	✓	-	195N1007
R1	SB	✓	-	195N1008
-	ST	-	✓	195N1009
-	SB	-	✓	195N1010
R1	ST	-	✓	195N1011
R1	SB	-	✓	195N1012

0,75 kW		VLT 2807 3 x 380-480 V		
RFI	Unit	Profibus DP[1)] 3 MBit/s	DeviceNet	Ordering no.
-	ST	-	-	195N1013
-	SB	-	-	195N1014
R1	ST	-	-	195N1015
R1	SB	-	-	195N1016
-	ST	✓	-	195N1017
-	SB	✓	-	195N1018
R1	ST	✓	-	195N1019
R1	SB	✓	-	195N1020
-	ST	-	✓	195N1021
-	SB	-	✓	195N1022
R1	ST	-	✓	195N1023
R1	SB	-	✓	195N1024

1,1 kW		VLT 2811 3 x 380-480 V		
RFI	Unit	Profibus DP[1)] 3 MBit/s	DeviceNet	Ordering no.
-	ST	-	-	195N1025
-	SB	-	-	195N1026
R1	ST	-	-	195N1027
R1	SB	-	-	195N1028
-	ST	✓	-	195N1029
-	SB	✓	-	195N1030
R1	ST	✓	-	195N1031
R1	SB	✓	-	195N1032
-	ST	-	✓	195N1033
-	SB	-	✓	195N1034
R1	ST	-	✓	195N1035
R1	SB	-	✓	195N1036

1,5 kW		VLT 2815 3 x 380-480 V		
RFI	Unit	Profibus DP[1)] 3 MBit/s	DeviceNet	Ordering no.
-	ST	-	-	195N1037
-	SB	-	-	195N1038
R1	ST	-	-	195N1039
R1	SB	-	-	195N1040
-	ST	✓	-	195N1041
-	SB	✓	-	195N1042
R1	ST	✓	-	195N1043
R1	SB	✓	-	195N1044
-	ST	-	✓	195N1045
-	SB	-	✓	195N1046
R1	ST	-	✓	195N1047
R1	SB	-	✓	195N1048

2,2 kW		VLT 2822 3 x 380-480 V		
RFI	Unit	Profibus DP[1)] 3 MBit/s	DeviceNet	Ordering no.
-	ST	-	-	195N1049
-	SB	-	-	195N1050
R1	ST	-	-	195N1051
R1	SB	-	-	195N1052
-	ST	✓	-	195N1053
-	SB	✓	-	195N1054
R1	ST	✓	-	195N1055
R1	SB	✓	-	195N1056
-	ST	-	✓	195N1057
-	SB	-	✓	195N1058
R1	ST	-	✓	195N1059
R1	SB	-	✓	195N1060

3,0 kW		VLT 2830 3 x 380-480 V		
RFI	Unit	Profibus DP[1)] 3 MBit/s	DeviceNet	Ordering no.
-	ST	-	-	195N1061
-	SB	-	-	195N1062
R1	ST	-	-	195N1063
R1	SB	-	-	195N1064
-	ST	✓	-	195N1065
-	SB	✓	-	195N1066
R1	ST	✓	-	195N1067
R1	SB	✓	-	195N1068
-	ST	-	✓	195N1069
-	SB	-	✓	195N1070
R1	ST	-	✓	195N1071
R1	SB	-	✓	195N1072

4,0 kW		VLT 2840 3 x 380-480 V		
RFI	Unit	Profibus DP[1)] 3 MBit/s	DeviceNet	Ordering no.
-	ST	-	-	195N1073
-	SB	-	-	195N1074
R1	ST	-	-	195N1075
R1	SB	-	-	195N1076
-	ST	✓	-	195N1077
-	SB	✓	-	195N1078
R1	ST	✓	-	195N1079
R1	SB	✓	-	195N1080
-	ST	-	✓	195N1081
-	SB	-	✓	195N1082
R1	ST	-	✓	195N1083
R1	SB	-	✓	195N1084

5,5 kW		VLT 2855 3 x 380-480 V		
RFI	Unit	Profibus DP[1)] 3 MBit/s	DeviceNet	Ordering no.
-	ST	-	-	195N1085
-	SB	-	-	195N1086
R1	ST	-	-	195N1087
R1	SB	-	-	195N1088
-	ST	✓	-	195N1089
-	SB	✓	-	195N1090
R1	ST	✓	-	195N1091
R1	SB	✓	-	195N1092
-	ST	-	✓	195N1093
-	SB	-	✓	195N1094
R1	ST	-	✓	195N1095
R1	SB	-	✓	195N1096

7,5 kW		VLT 2875 3 x 380-480 V		
RFI	Unit	Profibus DP[1] 3 MBit/s	DeviceNet	Ordering no.
-	ST	-	-	195N1097
-	SB	-	-	195N1098
R1	ST	-	-	195N1099
R1	SB	-	-	195N1100
-	ST	✓	-	195N1101
-	SB	✓	-	195N1102
R1	ST	✓	-	195N1103
R1	SB	✓	-	195N1104
-	ST	-	✓	195N1105
-	SB	-	✓	195N1106
R1	ST	-	✓	195N1107
R1	SB	-	✓	195N1108
11 kW		**VLT 2880 3 x 380-480 V**		
RFI	Unit	Profibus DP[1] 3 MBit/s	DeviceNet	Ordering no.
-	ST	-	-	195N1109
-	SB	-	-	195N1110
R3	ST	-	-	195N1111
R3	SB	-	-	195N1112
-	ST	✓	-	195N1113
-	SB	✓	-	195N1114
R3	ST	✓	-	195N1115
R3	SB	✓	-	195N1116
-	ST	-	✓	195N1117
-	SB	-	✓	195N1118
R3	ST	-	✓	195N1119
R3	SB	-	✓	195N1120
15 kW		**VLT 2881 3 x 380-480 V**		
RFI	Unit	Profibus DP[1] 3 MBit/s	DeviceNet	Ordering no.
-	ST	-	-	195N1121
-	SB	-	-	195N1122
R3	ST	-	-	195N1123
R3	SB	-	-	195N1124
-	ST	✓	-	195N1125
-	SB	✓	-	195N1126
R3	ST	✓	-	195N1127
R3	SB	✓	-	195N1128
-	ST	-	✓	195N1129
-	SB	-	✓	195N1130
R3	ST	-	✓	195N1131
R3	SB	-	✓	195N1132

18.5 kW		VLT 2882 3 x 380-480 V		
RFI	Unit	Profibus DP[1] 3 MBit/s	DeviceNet	Ordering no.
-	ST	-	-	195N1133
-	SB	-	-	195N1134
R3	ST	-	-	195N1135
R3	SB	-	-	195N1136
-	ST	✓	-	195N1137
-	SB	✓	-	195N1138
R3	ST	✓	-	195N1139
R3	SB	✓	-	195N1140
-	ST	-	✓	195N1141
-	SB	-	✓	195N1142
R3	ST	-	✓	195N1143
R3	SB	-	✓	195N1144

ST: Standard unit.

SB: Standard unit with integral brake.

R1: With RFI filter that complies with EN 55011-1A.

R3: With RFI filter that complies with EN 55011-1B.

1) Also available in 12 MBit/s.

■ Brake resistors

Flatpack brake resistors IP 65

Type	P_{motor} [kW]	R_{MIN} [Ω]	Size [Ω] / [W] per item	Duty cycle %	Order no. 175Uxxxx
2803 (200 V)	0.37	297	330 Ω / 100 W	30	1003
2805 (200 V)	0.55	198	220 Ω / 100 W	20	1004
2807 (200 V)	0.75	135	150 Ω / 100 W	14	1005
2811 (200 V)	1.10	99	100 Ω / 100 W	8	1006
2815 (200 V)	1.50	69	72 Ω / 200 W	16	0992
2822 (200 V)	2.20	43	50 Ω / 200 W	9	0993
2840 (200 V)	3.70	21	50 Ω / 200 W	11	2x0993[1]
2805 (400 V)	0.55	747	830 Ω / 100 W	20	1000
2807 (400 V)	0.75	558	620 Ω / 100 W	14	1001
2811 (400 V)	1.10	387	430 Ω / 100 W	8	1002
2815 (400 V)	1.50	297	310 Ω / 200 W	16	0984
2822 (400 V)	2.20	198	210 Ω / 200 W	9	0987
2830 (400 V)	3.00	135	150 Ω / 200 W	5.5	0989
2830 (400 V)	3.00	135	300 Ω / 200 W	11	2x0985[1]
2840 (400 V)	4.00	99	240 Ω / 200 W	11	2x0986[1]

[1]These two resistors must be connected in parallel. Order two pieces.
See dimensions of Flatpack brake resistors on the next page.

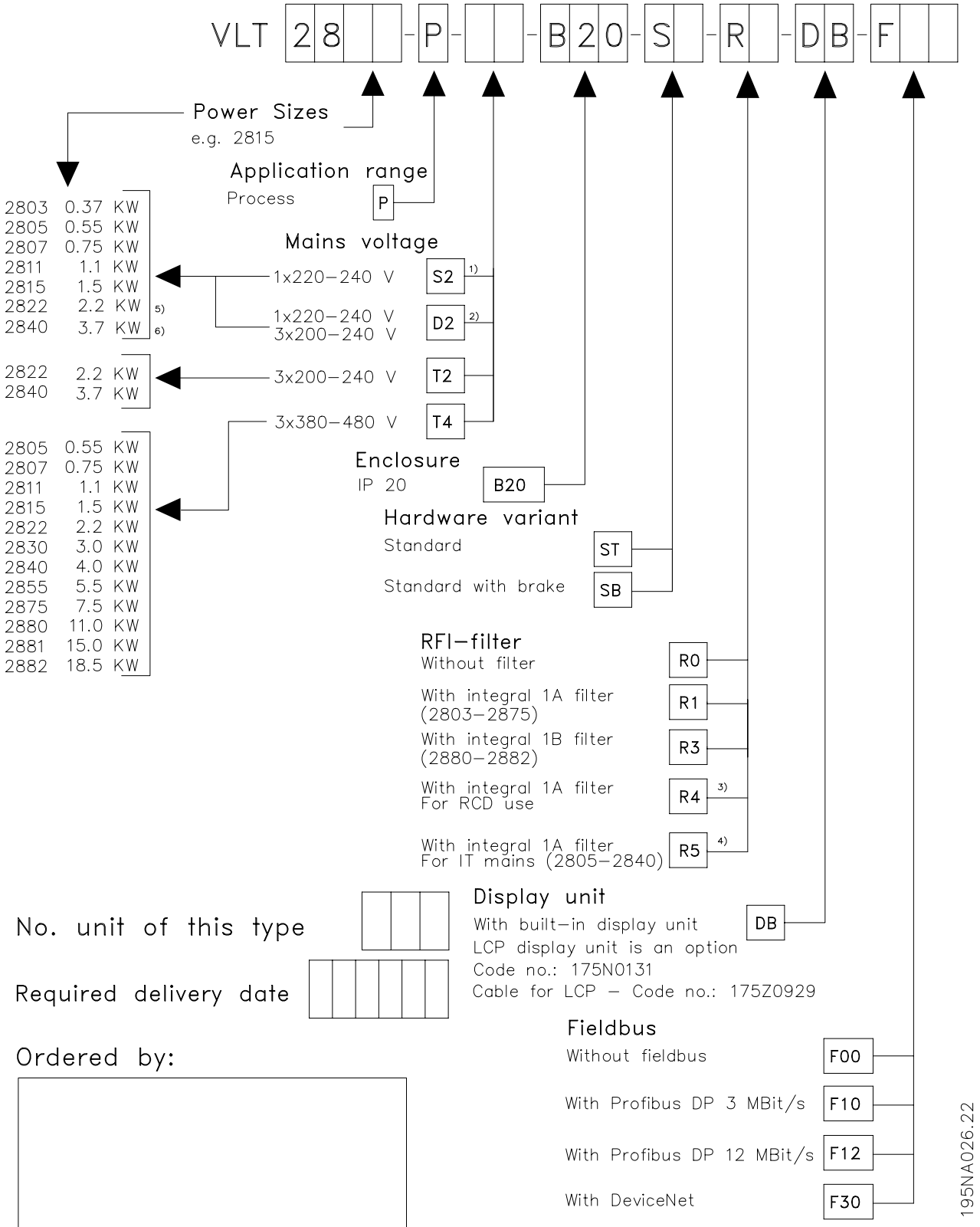
Brake resistor for VLT 2803-2882 duty-cycle 40% data and codenumber

VLT type	Intermittent braking period time [seconds]	P_{motor} [kW]	R_{min} [Ω]	R_{rec} [Ω]	$P_{b,\ max}$ [kW]	Therm.relay [Amp]	Code number 175Uxxxx	Cable cross section [mm²]
2803 (200 V)	120	0,37	297	330	0,16	0,7	1900*	1,5**
2805 (200 V)	120	0,55	198	220	0,25	1,1	1901*	1,5**
2807 (200 V)	120	0,75	135	150	0,32	1,5	1902*	1,5**
2811 (200 V)	120	1,1	99	110	0,45	2,0	1975*	1,5**
2815 (200 V)	120	1,5	74	82	0,85	3,2	1903*	1,5**
2822 (200 V)	120	2,2	50	56	1,00	4,2	1904*	1,5**
2840 (200 V)	120	3,7	22	25	3,00	11,0	1925	1,5**
2805 (400 V)	120	0,55	747	830	0,45	0,7	1976*	1,5**
2807 (400 V)	120	0,75	558	620	0,32	0,7	1910*	1,5**
2811 (400 V)	120	1,1	387	430	0,85	1,4	1911*	1,5**
2815 (400 V)	120	1,5	297	330	0,85	1,6	1912*	1,5**
2822 (400 V)	120	2,2	198	220	1,00	2,1	1913*	1,5**
2830 (400 V)	120	3,0	135	150	1,35	3,0	1914*	1,5**
2840 (400 V)	120	4,0	99	110	1,60	3,8	1979*	1,5**
2855 (400 V)	120	5,5	80	80	2,00	5,0	1977*	1,5**
2875 (400 V)	120	7,5	56	56	3,00	6,8	1978*	1,5**
2880 (400 V)	120	11	40	40	5,00	11,2	1997*	1,5**
2881 (400 V)	120	15	30	30	10,0	18,3	1998	2,5**
2882 (400 V)	120	18,5	25	25	13,0	22,8	1999	4**

*With KLIXON switch
**Always observe national and local regulations

P_{motor}	: Rated motor size for VLT type
R_{min}	: Minimum permissible brake resistor
R_{rec}	: Recommended brake resistor (Danfoss)
$P_{b,\ max}$	: Brake resistor rated power as stated by supplier
Therm. relay	: Brake current setting of thermal relay
Code number	: Order numbers for Danfoss brake resistors
Cable cross section	: Recommended minimum value based upon PVC insulated copper cable, 30 degree Celsius ambient temperature with normal heat dissipation

See dimensions of brake resistor for VLT 2803-2882 duty cycle 40% in instruction MI.90.FX.YY.



1) S2 = Unit can only be ordered with RFI filter
2) D2 = Unit cannot be ordered with RFI filter
3) = Unit can only be ordered with S2
4) = Unit can only be ordered with T4
5) = Only available in 2822PD2 STR0 version
6) = Only available in 2840PD2 STR0 version

■ PC Software tools

PC Software - MCT 10

All drives are equipped with a serial communication port. We provide a PC tool for communication between PC and frequency converter, VLT Motion Control Tool MCT 10 Set-up Software.

MCT 10 Set-up Software

MCT 10 has been designed as an easy to use interactive tool for setting parameters in our frequency converters.

The MCT 10 Set-up Software will be useful for:

- Planning a communication network off-line. MCT 10 contains a complete frequency converter database
- Commissioning frequency converters on line
- Saving settings for all frequency converters
- Replacing a drive in a network
- Expanding an existing network
- Future developed drives will be supported

MCT 10 Set-up Software support Profibus DP-V1 via a Master class 2 connection. It makes it possible to on line read/write parameters in a frequency converter via the Profibus network. This will eliminate the need for an extra communication network.

The MCT 10 Set-up Software Modules

The following modules are included in the software package:



MCT 10 Set-up Software
Setting parameters
Copy to and from frequency converters
Documentation and print out of parameter settings incl. diagrams

SyncPos
Creating SyncPos programme

Ordering number:

Please order your CD containing MCT 10 Set-up Software using code number 130B1000.

MCT 31

The MCT 31 harmonic calculation PC tool enables easy estimation of the harmonic distortion in a given application. Both the harmonic distortion of Danfoss frequency converters as well as non-Danfoss frequency converters with different additional harmonic reduction measurements, such as Danfoss AHF filters and 12-18-pulse rectifiers, can be calculated.

Ordering number:

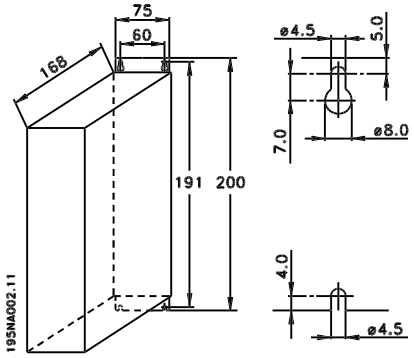
Please order your CD containing the MCT 31 PC tool using code number 130B1031.

Mechanical dimensions

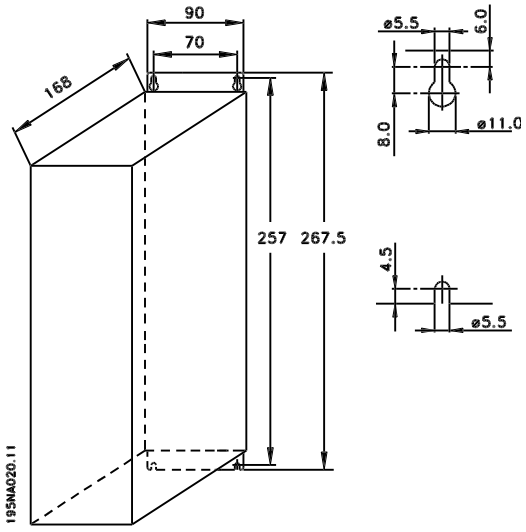
The drawings below describe the mechanical dimensions. All dimensions are in mm.

NB!
Please note that all filter options must be vertically mounted.

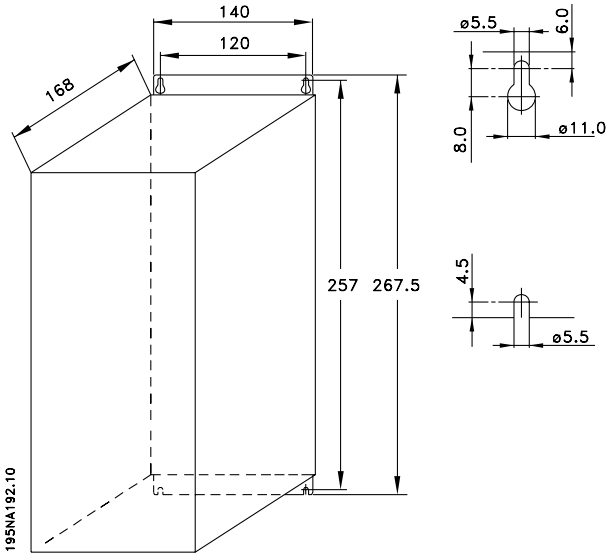
VLT 2803-2815 200-240 Volt
VLT 2805-2815 380-480 Volt



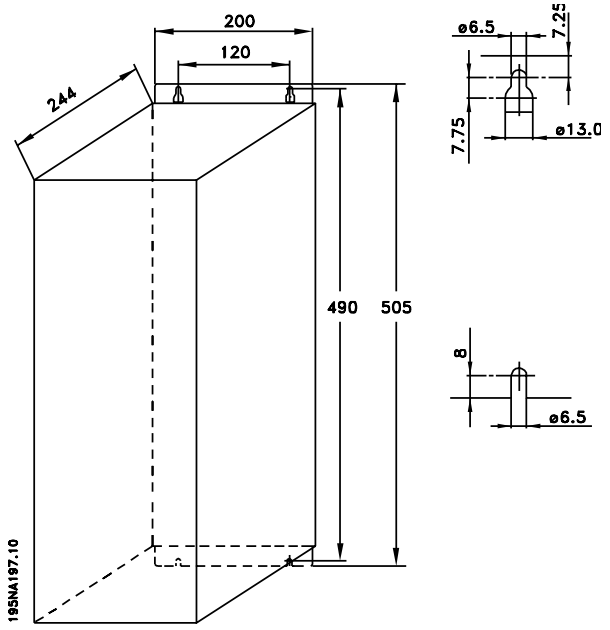
VLT 2822 200-240 Volt
VLT 2822-2840 380-480 Volt



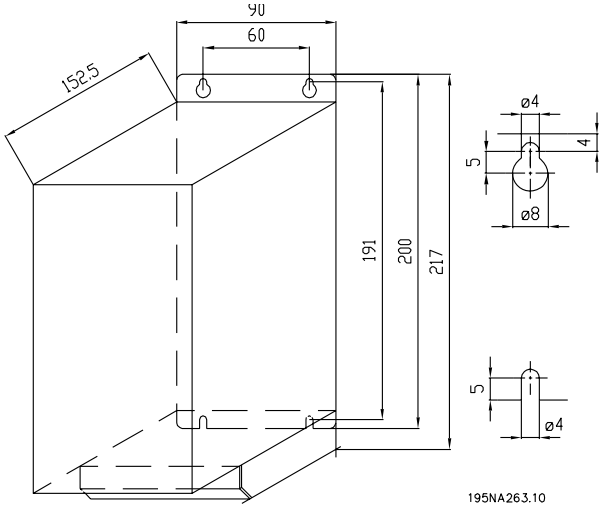
VLT 2822 220 - 240 V, PD2
VLT 2840 200-240 Volt
VLT 2855-2875 380-480 Volt



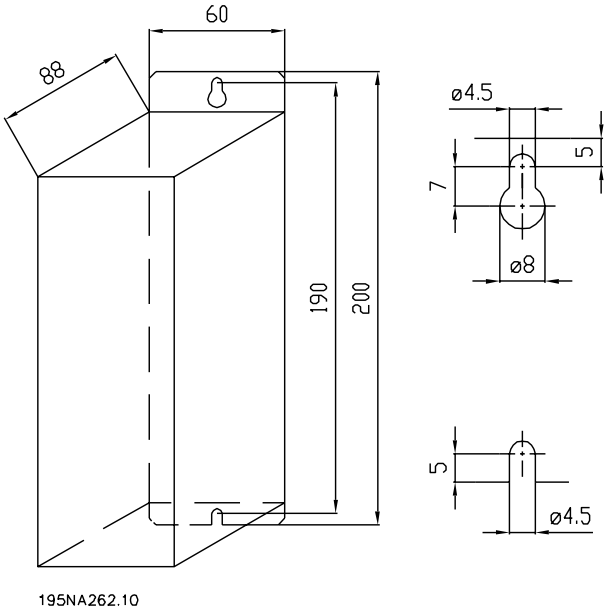
VLT 2840 220-240 V, PD2
VLT 2880-82 380-480V



■ Motor coils (195N3110)

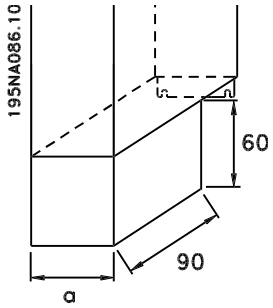


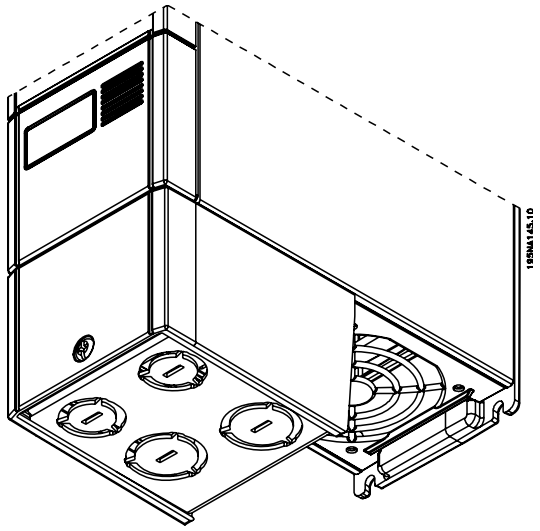
■ RFI 1B filter (195N3103)



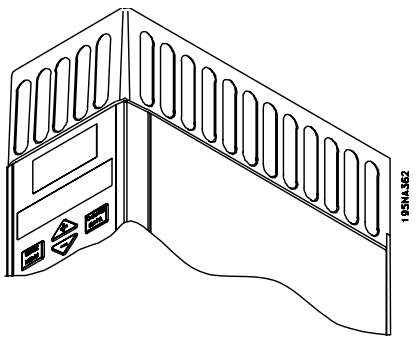
■ Terminal cover

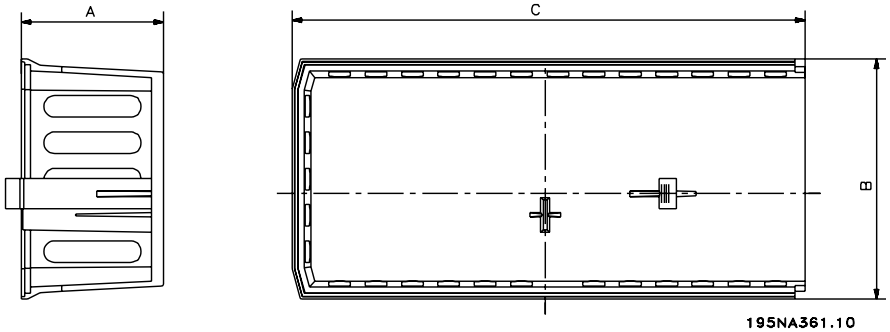
The drawing below gives the dimensions for NEMA 1 terminal covers for VLT 2803-2875.
Dimension 'a' depends on the unit type.





■ IP 21 solution

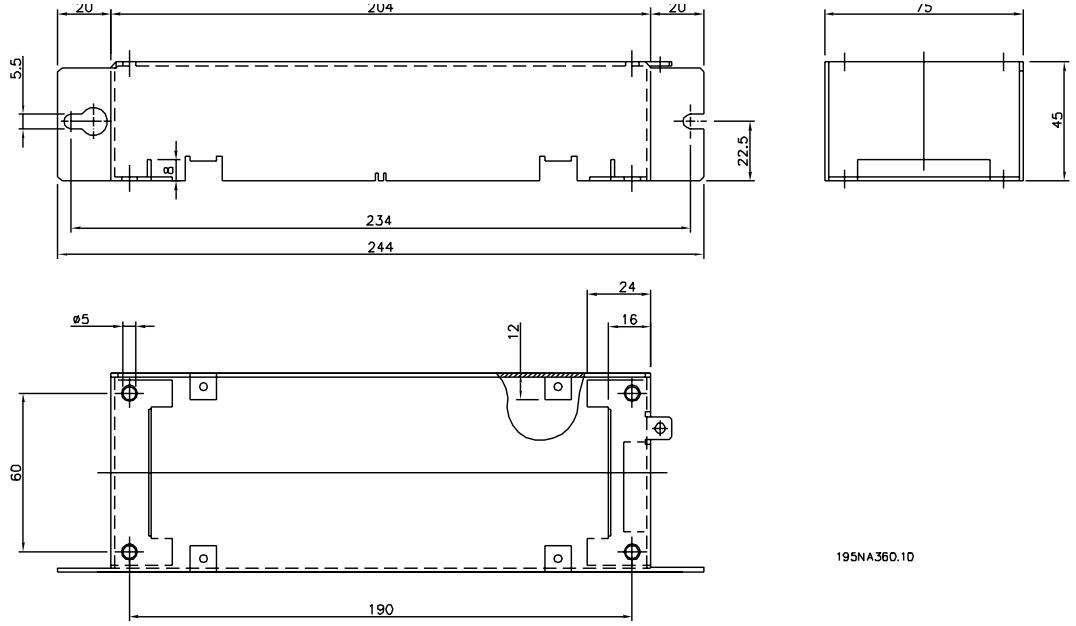




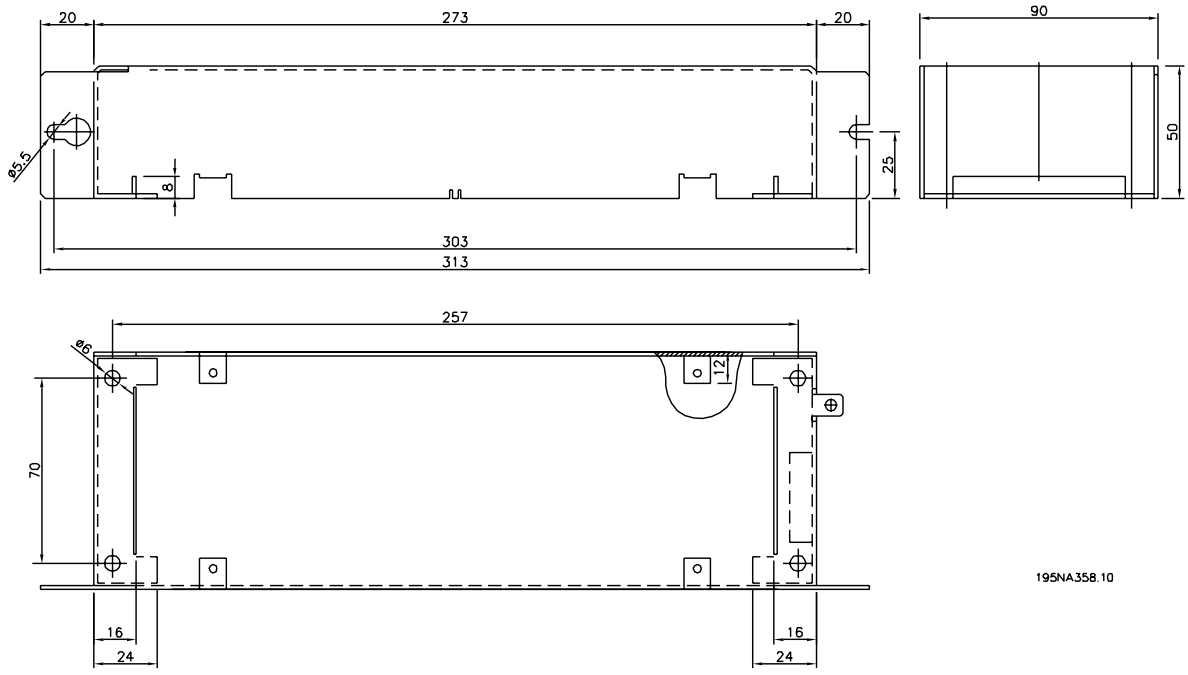
Dimensions

Type	Code number	A	B	C
VLT 2803-2815 200-240 V, VLT 2805-2815 380-480 V	195N2118	47	80	170
VLT 2822 200-240 V, VLT 2822-2840 380-480 V	195N2119	47	95	170
VLT 2840 200-240 V, VLT 2822 PD2, TR1 2855-2875 380-480 V	195N2120	47	145	170
TR1 2880-2882 380-480 V, VLT 2840 PD2	195N2126	47	205	245

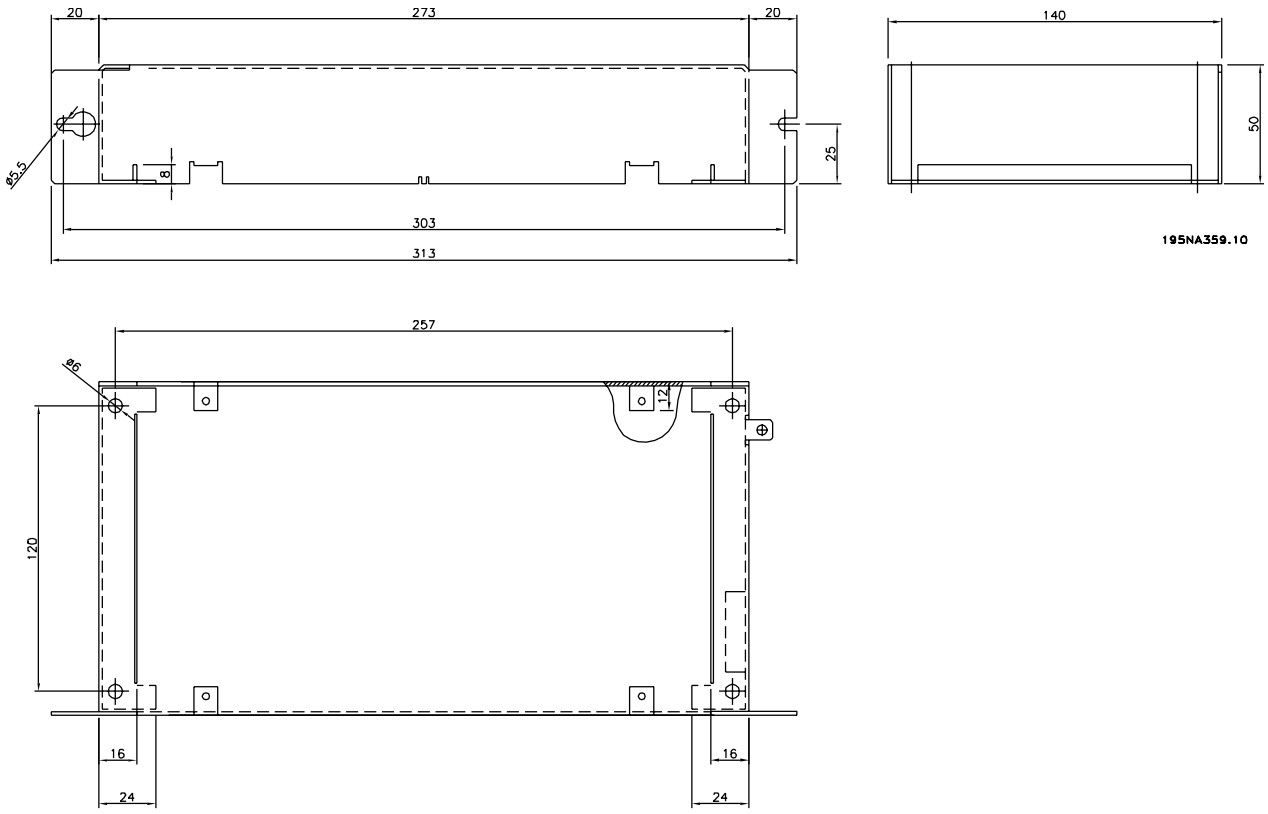
■ **EMC filter for long motor cables**



192H4719

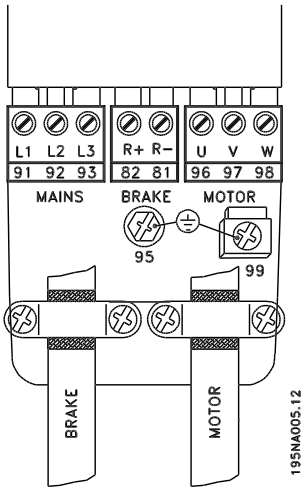


192H4720

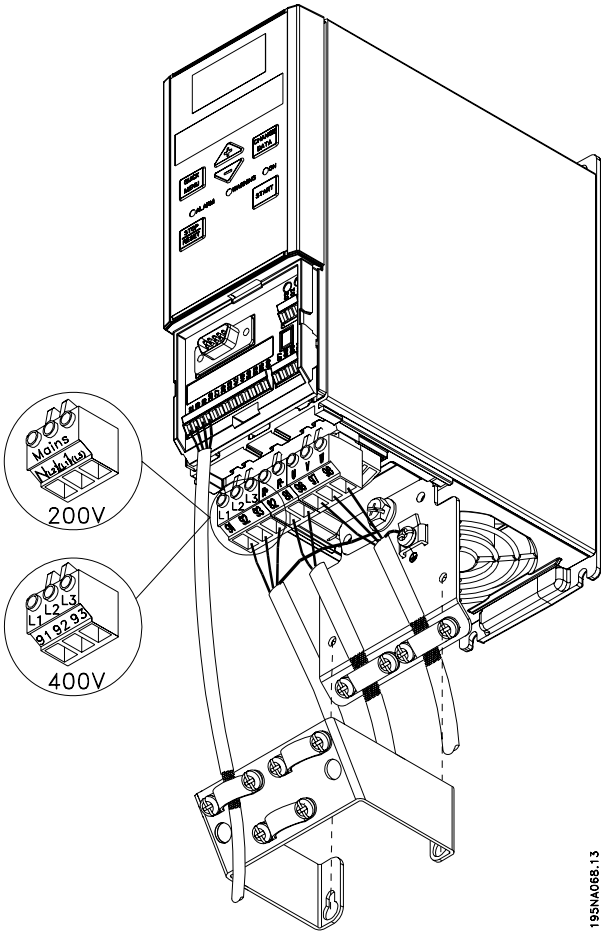

20
273
20
140
Ø5.5
8
25
50
303
313
195NA359.10
257
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12
120
16
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16
24

192H4893

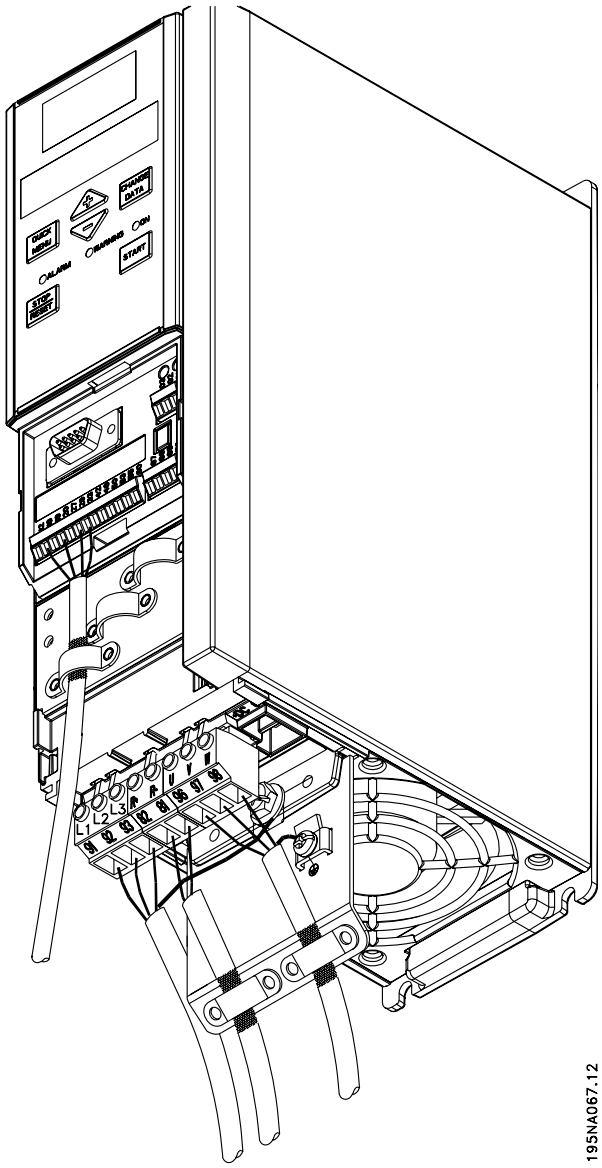
Electrical installation



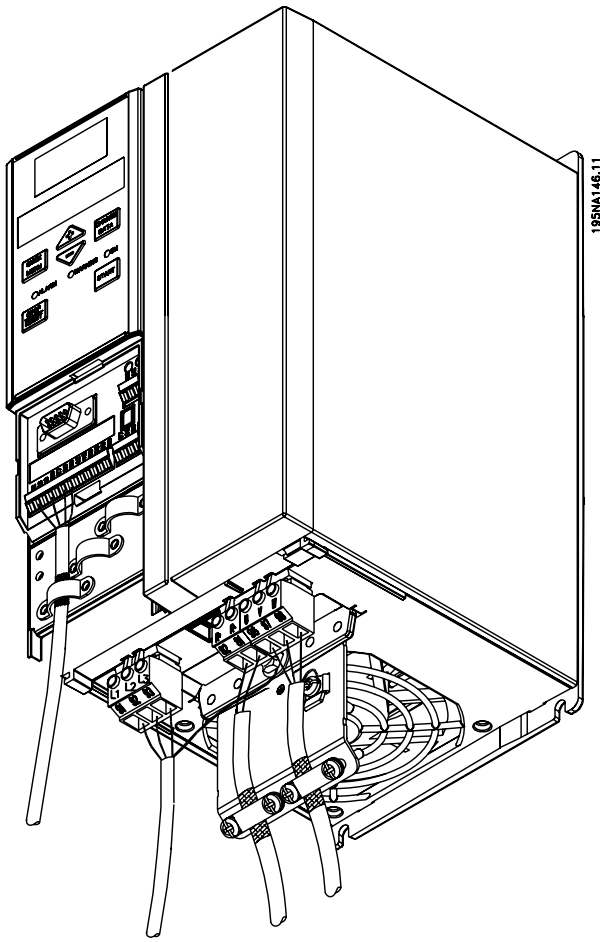
See also the section Brake Connection.



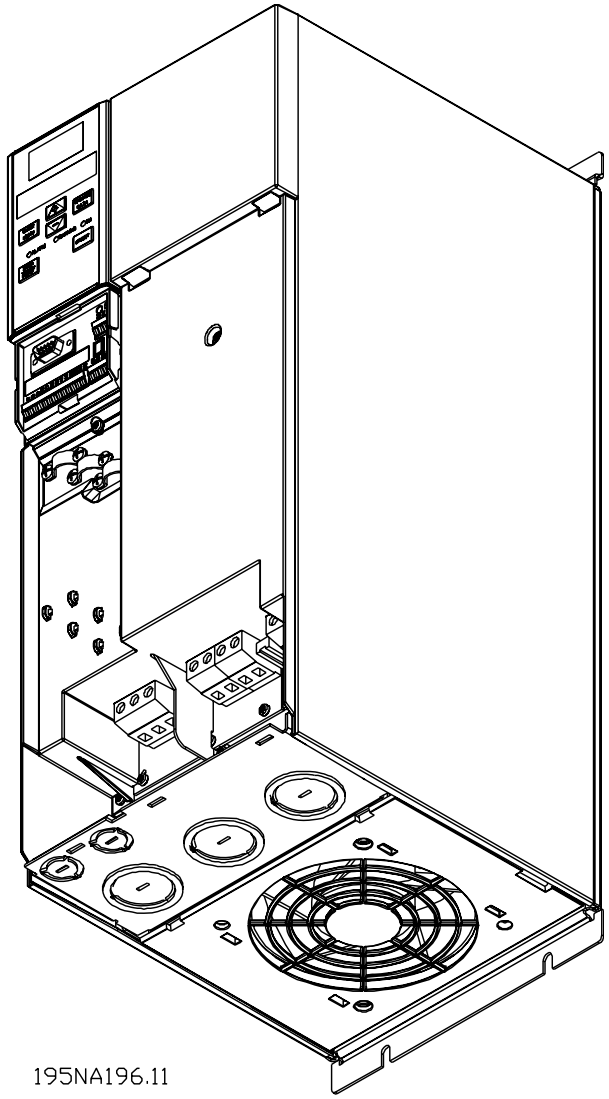
VLT 2803-2815 200-240 V, 2805-2815 380-480 V



VLT 2822 200-240 V, 2822-2840 380-480 V

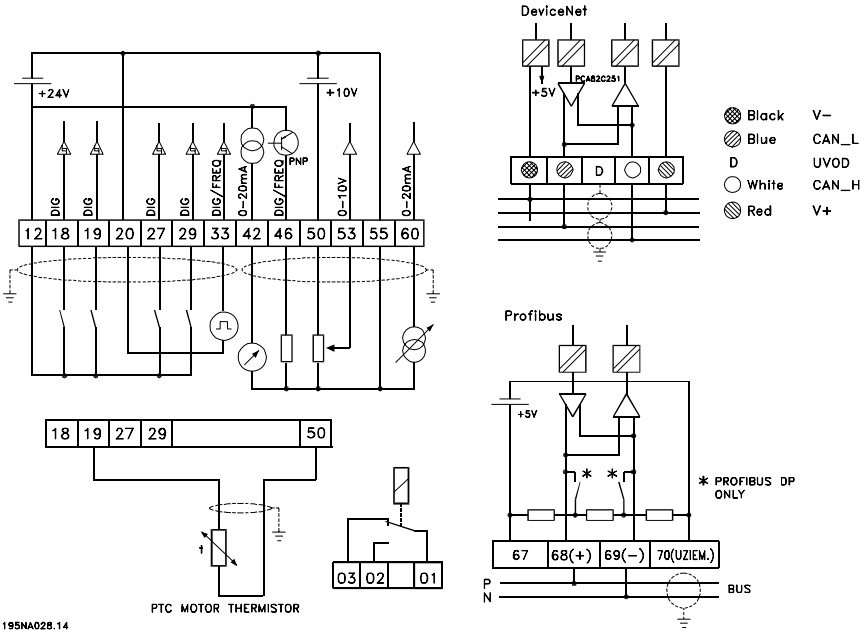


VLT 2840 200-240 V, VLT 2822 PD2, 2855-2875 380-480 V



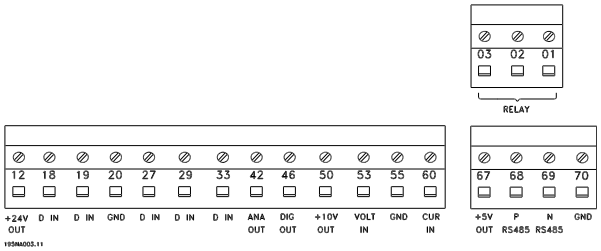
VLT 2880-2882 380-480 V, VLT 2840 PD2

Please note that the units will be supplied with two bottom plates; one for metric glands and one for conduits.



■ Electrical installation, control terminals

See section entitled *Earthing of screened/armoured control cables* in the VLT 2800 Design Guide for the correct termination of control cables.



No.	Function
01-03	Relay outputs 01-03 can be used for indicating status and alarms/warnings.
12	24 V DC voltage supply.
18-33	Digital inputs.
20, 55	Common frame for input and output terminals.
42	Analog output for displaying frequency, reference, current or torque.
46_1	Digital output for displaying status, warnings or alarms, as well as frequency output.
50	+10 V DC supply voltage for potentiometer or thermistor.
53	Analogue voltage input 0 - 10 V DC.
60	Analogue current input 0/4 - 20 mA.
67_1	+ 5 V DC supply voltage to Profibus.
68, 69_1	RS 485, Serial communication.
70_1	Frame for terminals 67, 68 and 69. Normally this terminal is not to be used.

1. The terminals are not valid for DeviceNet/CANopen. See also the DeviceNet manual, MG.90.BX.YY for further details.

General technical data

Mains supply (L1, L2, L3):	
Supply voltage VLT 2803-2840 220-240 V (N, L1)	1 x 220/230/240 V ±10%
Supply voltage VLT 2803-2840 200-240 V	3 x 200/208/220/230/240 V ±10%
Supply voltage VLT 2805-2882 380-480 V	3 x 380/400/415/440/480 V ±10%
Supply voltage VLT 2805-2840 (R5)	380 / 400 V + 10 %
Supply frequency	50/60 Hz ± 3 Hz
Max. imbalance on supply voltage	± 2.0% of rated supply voltage
True Power Factor (λ)	0.90 nominal at rated load
Displacement Power Factor (cos φ)	near unity (> 0.98)
Number of connections at supply input L1, L2, L3	2 times/min.
Max. short-circuit value	100,000 A

See Special Conditions section in the Design Guide

Output data (U, V, W):	
Output voltage	0 - 100% of supply voltage
Output frequency	0.2 - 132 Hz, 1 - 1000 Hz
Rated motor voltage, 200-240 V units	200/208/220/230/240 V
Rated motor voltage, 380-480 V units	380/400/415/440/460/480 V
Rated motor frequency	50/60 Hz
Switching on output	Unlimited
Ramp times	0.02 - 3600 sec.

Torque characteristics:	
Starting torque (parameter 101 Torque characteristic = Constant torque)	160% in 1 min.*
Starting torque (parameter 101 Torque characteristics = Variable torque)	160% in 1 min.*
Starting torque (parameter 119 *High starting torque*)	180% for 0.5 sec.
Overload torque (parameter 101 Torque characteristic = Constant torque)	160%*
Overload torque (parameter 101 Torque characteristic = Variable torque)	160%*

Percentage relates to frequency converter's nominal current.
** VLT 2822 PD2 / 2840 PD2 1 x 220 V only 110% in 1 min.*

Control card, digital inputs:	
Number of programmable digital inputs	5
Terminal number	18, 19, 27, 29, 33
Voltage level	0 - 24 V DC (PNP positive logic)
Voltage level, logic '0'	< 5 V DC
Voltage level, logic '1'	> 10 V DC
Maximum voltage on input	28 V DC
Input resistance, R_i (terminals 18, 19, 27, 29)	approx. 4 kΩ
Input resistance, R_i (terminal 33)	approx. 2 kΩ

All digital inputs are galvanically isolated from the supply voltage (PELV) and other high-voltage terminals. See section entitled Galvanic Isolation.

Control card, analog inputs:	
Number of analog voltage inputs	1 pcs.
Terminal number	53
Voltage level	0 - 10 V DC (scaleable)
Input resistance, R_i	approx. 10 kΩ
Max. voltage	20 V
Number of analog current inputs	1 pcs.
Terminal number	60
Current level	0/4 - 20 mA (scaleable)
Input resistance, R_i	approx. 300 Ω
Max. current	30 mA
Resolution for analog inputs	10 bit
Accuracy of analog inputs	Max. error 1% of full scale
Scan interval	13.3 msec

The analog inputs are galvanically isolated from the supply voltage (PELV) and other high-voltage terminals. See section entitled Galvanic Isolation.

Control card, pulse inputs:	
Number of programmable pulse inputs	1
Terminal number	33
Max. frequency at terminal 33	67.6 kHz (Push-pull)
Max. frequency at terminal 33	5 kHz (open collector)
Min. frequency at terminal 33	4 Hz
Voltage level	0 - 24 V DC (PNP positive logic)
Voltage level, logic '0'	< 5 V DC
Voltage level, logic '1'	> 10 V DC
Maximum voltage on input	28 V DC
Input resistance, R_i	approx. 2 kΩ
Scan interval	13.3 msec
Resolution	10 bit
Accuracy (100 Hz- 1 kHz) terminal 33	Max. error: 0.5% of full scale
Accuracy (1 kHz - 67.6 kHz) terminal 33	Max. error: 0.1% of full scale

The pulse input (terminal 33) is galvanically isolated from the supply voltage (PELV) and other high-voltage terminals. See section entitled Galvanic Isolation.

Control card, digital/frequency output:	
Number of programmable digital/pulse outputs	1 pcs.
Terminal number	46
Voltage level at digital/frequency output	0 - 24 V DC (O.C PNP)
Max. output current at digital/frequency output	25 mA.
Max. load at digital/frequency output	1 kΩ
Max. capacity at frequency output	10 nF
Minimum output frequency at frequency output	16 Hz
Maximum output frequency at frequency output	10 kHz
Accuracy on frequency output	Max. error: 0.2 % of full scale
Resolution on frequency output	10 bit

The digital output is galvanically isolated from the supply voltage (PELV) and other high-voltage terminals. See section entitled Galvanic Isolation.

Control card, analog output:	
Number of programmable analog outputs	1
Terminal number	42
Current range at analog output	0/4 - 20 mA
Max. load to common at analog output	500 Ω
Accuracy on analog output	Max. error: 1.5 % of full scale
Resolution on analog output	10 bit

The analog output is galvanically isolated from the supply voltage (PELV) and other high-voltage terminals. See section entitled Galvanic Isolation.

Control card, 24 V DC output:	
Terminal number	12
Max. load	130 mA

The 24 V DC supply is galvanically isolated from the supply voltage (PELV) , but has the same potential as the analogue and digital inputs and outputs. See section entitled Galvanic Isolation.

Control card, 10 V DC output:	
Terminal number	50
Output voltage	10.5 V ±0.5 V
Max. load	15 mA

The 10 V DC supply is galvanically isolated from the supply voltage (PELV) and other high-voltage terminals. See section entitled Galvanic Isolation.

Control card, RS 485 serial communication:	
Terminal number	68 (TX+, RX+), 69 (TX-, RX-)
Terminal number 67	+ 5 V
Terminal number 70	Common for terminals 67, 68 and 69

Full galvanic isolation. See section entitled Galvanic Isolation.
For CANopen/DeviceNet units, see VLT 2800 DeviceNet manual, MG.90.BX.YY.

Relay outputs:[1)]	
Number of programmable relay outputs	1
Terminal number, control card (resisitvie and inductive load)	1-3 (break), 1-2 (make)
Max. terminal load (AC1) on 1-3, 1-2, control card	250 V AC, 2 A, 500 VA
Max. terminal load (DC1 (IEC 947)) on 1-3, 1-2, control card	25 V DC, 2 A /50 V DC, 1A, 50W
Min. terminal load (AC/DC) on 1-3, 1-2, control card	24 V DC 10 mA, 24 V AC 100 mA

The relay contact is separated from the rest of the circuit by strengthened isolation.

Note: Rated values resistive load - cosphi >0.8 for up to 300,000 operations.
Inductive loads at cosphi 0.25 approximately 50% load or 50% life time.

Cable lengths and cross sections:	
Max. motor cable length, screened/armoured cable	40 m
Max. motor cable length, unscreened/unarmoured cable	75 m
Max. motor cable length, screened/armoured cable and motor coil	100 m
Max. motor cable length, unscreened/unarmoured cable and motor coil	200 m
Max. motor cable length, screened/armoured cable and RFI/1B filter	200 V, 100 m
Max. motor cable length, screened/armoured cable and RFI/1B filter	400 V, 25 m
Max. motor cable length, screened/armoured cable and RFI 1B/LC filter	400 V, 25 m

Max. cross section to motor, see next section.

Max. cross section to control wires, rigid wire	1.5 mm^2/16 AWG (2 x 0.75 mm^2)
Max. cross section to control cables, flexible cable	1 mm^2/18 AWG
Max. cross section to control cables, cable with enclosed core	0.5 mm^2/20 AWG

When complying with EN 55011 1A and EN 55011 1B the motor cable must in certain instances be reduced. See EMC emission.

Control characteristics:	
Frequency range	0.2 - 132 Hz, 1 - 1000 Hz
Resolution of output frequency	0.013 Hz, 0.2 - 1000 Hz
Repeat accuracy of *Precise start/stop*(terminals 18, 19)	± 0.5 msec
System response time (terminals 18, 19, 27, 29, 33)	26.6 msec
Speed control range (open loop)	1:10 of synchronous speed
Speed control range (closed loop)	1:120 of synchronous speed
Speed accuracy (open loop)	150 - 3600 rpm: Max. error of ±23 rpm
Speed accuracy (closed loop)	30 - 3600 rpm: Max. error of ±7.5 rpm

All control characteristics are based on a 4-pole asynchronous motor

Surroundings:	
Enclosure	IP 20
Enclosure with options	NEMA 1
Vibration test	0.7 g
Max. relative humidity	5% - 93% during operation
Ambient temperature	Max. 45 °C (24-hour average max. 40 °C)

Derating for high ambient temperature, see special conditions in the Design Guide

Min. ambient temperature during full-scale operation	0 °C
Min. ambient temperature at reduced performance	- 10 °C
Temperature during storage/transport	-25 - +65/70 °C
Max. altitude above sea level	1000 m

Derating for high air pressure, see special conditions in the Design Guide

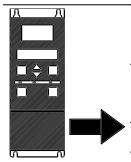
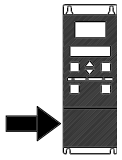
EMC standards, Emission	EN 61081-2, EN 61800-3, EN 55011
	EN 50082-1/2, EN 61000-4-2, EN 61000-4-3, EN 61000-4-4, EN 61000-4-5, EN
EMC standards, Immunity	61000-4-6, EN 61800-3

See section on special conditions in the Design Guide

Safeguards:

- Electronic thermal motor protection against overload.
- Temperature monitoring of the power module ensures that the frequency converter cuts out if the temperature reaches 100 °C. An overload temperature cannot be reset until the temperature of the power module is below 70 °C.
- The frequency converter is protected against short-circuits on motor terminals U, V, W.
- If a mains phase is missing, the frequency converter will cut out.
- Monitoring of the intermediate circuit voltage ensures that the frequency converter cuts out if the intermediate circuit voltage is too low or too high.
- The frequency converter is protected against earth fault on motor terminals U, V, W.

■ Technical data, mains supply 1 x 220 - 240 V/3 x 200-240V

According to . international standards	Type	2803	2805	2807	2811	2815	2822	2822 PD2	2840	2840 PD2
 Output current (3 x 200-240V)	$I_{INV.}$ [A]	2.2	3.2	4.2	6.0	6.8	9.6	9.6	16	16
	I_{MAX} (60s) [A]	3.5	5.1	6.7	9.6	10.8	15.3	10.6	25.6	17.6
Output power (230 V)	$S_{INV.}$ [KVA]	0.9	1.3	1.7	2.4	2.7	3.8	3.8	6.4	6.4
Typical shaft output	$P_{M,N}$ [kW]	0.37	0.55	0.75	1.1	1.5	2.2	2.2	3.7	3.7
Typical shaft output	$P_{M,N}$ [HP]	0.5	0.75	1.0	1.5	2.0	3.0	3.0	5.0	5.0
Max. cable cross section, motor	[mm^2/AWG] [1)]	4/10	4/10	4/10	4/10	4/10	4/10	4/10	4/10	16/6
 Input current (1 x 220-240 V)	$I_{L,N}$ [A]	5.9	8.3	10.6	14.5	15.2	-	22.0	-	31.0
	$I_{L,MAX}$ (60s) [A]	9.4	13.3	16.7	23.2	24.3	-	24.3	-	34.5
Input current (3 x 200-240 V)	$I_{L,N}$ [A]	2.9	4.0	5.1	7.0	7.6	8.8	8.8	14.7	14.7
	$I_{L,MAX}$ (60s) [A]	4.6	6.4	8.2	11.2	12.2	14.1	9.7	23.5	16.2
Max. cable cross section, power	[mm^2/AWG] [1)]	4/10	4/10	4/10	4/10	4/10	4/10	4/10	4/10	16/6
Max. pre-fuses	IEC/UL[2)] [A]	20/20	20/20	20/20	20/20	20/20	20/20	35/35	25/25	50/50
Efficiency[3)]	[%]	95	95	95	95	95	95	95	95	95
Power loss at 100% load	[W]	24	35	48	69	94	125	125	231	231
Weight	[kg]	2.0	2.0	2.0	2.0	2.0	3,7	6.0	6.0	18.50
Enclosure[4]	type	IP 20	IP 20	IP 20	IP 20	IP 20	IP 20	IP 20	IP 20	IP 20/ NEMA 1

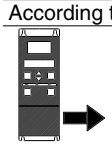
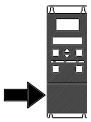
1. American Wire Gauge. Max. cable cross section is the largest cable cross section that can be attached to the terminals. Always observe national and local regulations.

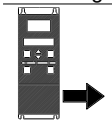
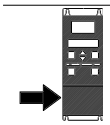
2. Type gG pre-fuses must be used for installation according to IEC rules. If you want to maintain UL/cUL you must use pre-fuses of the type Bussmann KTN-R 200 V, KTS-R 500 V or Ferraz Shawmut, type ATMR (max. 30A). The fuses must be placed for protection in a circuit that is capable of supplying a maximum of 100,000 amps RMS (symmetrical), 500 V maximum.

3. Measured using a 25 m screened/armoured motor cable with a rated load and rated frequency.

4. IP20 is standard for VLT 2805-2875, whereas NEMA 1 is an option.

■ Technical data, mains supply 3 x 380 - 480 V

According to international standards	Type	2805	2807	2811	2815	2822	2830
 Output current	$I_{INV.}$ [A]	1.7	2.1	3.0	3.7	5.2	7.0
(3 x 380-480V)	I_{MAX} (60s) [A]	2.7	3.3	4.8	5.9	8.3	11.2
Output power (400 V)	$S_{INV.}$ [KVA]	1.1	1.7	2.0	2.6	3.6	4.8
Typical shaft output	$P_{M,N}$ [kW]	0.55	0.75	1.1	1.5	2.2	3.0
Typical shaft output	$P_{M,N}$ [HP]	0.75	1.0	1.5	2.0	3.0	4.0
Max. cable cross section, motor	[mm²/AWG] 1)	4/10	4/10	4/10	4/10	4/10	4/10
 Input current	$I_{L,N}$ [A]	1.6	1.9	2.6	3.2	4.7	6.1
(3 x 380-480 V)	$I_{L,MAX}$(60s)[A]	2.6	3.0	4.2	5.1	7.5	9.8
Max. cable cross section, power	[mm²/AWG] 1)	4/10	4/10	4/10	4/10	4/10	4/10
Max. pre-fuses	IEC/UL 2) [A]	20/20	20/20	20/20	20/20	20/20	20/20
Efficiency 3)	[%]	96	96	96	96	96	96
Power loss at 100% load	[W]	28	38	55	75	110	150
Weight	[kg]	2.1	2.1	2.1	2.1	3.7	3.7
Enclosure 4	type	IP 20	IP 20	IP 20	IP 20	IP 20	IP 20

According to international standards	Type	2840	2855	2875	2880	2881	2882
 Output current	$I_{INV.}$ [A]	9.1	12	16	24	32.0	37.5
(3 x 380-480V)	I_{MAX} (60s) [A]	14.5	19.2	25.6	38.4	51.2	60.0
Output power (400 V)	$S_{INV.}$ [KVA]	6.3	8.3	11.1	16.6	22.2	26.0
Typical shaft output	$P_{M,N}$ [kW]	4.0	5.5	7.5	11.0	15.0	18.5
Typical shaft output	$P_{M,N}$ [HP]	5.0	7.5	10.0	15.0	20.0	25.0
Max. cable cross section, motor	[mm²/AWG] 1)	4/10	4/10	4/10	16/6	16/6	16/6
 Input current	$I_{L,N}$ [A]	8.1	10.6	14.9	24.0	32.0	37.5
(3 x 380-480 V)	$I_{L,MAX}$(60s)[A]	13.0	17.0	23.8	38.4	51.2	60
Max. cable cross section, power	[mm²/AWG] 1)	4/10	4/10	4/10	16/6	16/6	16/6
Max. pre-fuses	IEC/UL 2) [A]	20/20	25/25	25/25	50/50	50/50	50/50
Efficiency 3)	[%]	96	96	96	97	97	97
Power loss at 100% load	[W]	200	275	372	412	562	693
Weight	[kg]	3.7	6.0	6.0	18.5	18.5	18.5
Enclosure 4	type	IP20	IP20	IP20	IP20/ NEMA 1	IP20/ NEMA 1	IP20/ NEMA 1

1. American Wire Gauge. Max. cable cross section is the largest cable cross section that can be attached to the terminals. Always observe national and local regulations.

2. Type gG pre-fuses must be used for installation according to IEC rules. If you want to maintain UL/cUL you must use pre-fuses of the type Bussmann KTN-R 200 V, KTS-R 500 V or Ferraz Shawmut, type ATMR (max. 30A). The fuses must be placed for protection in a circuit that is capable of supplying a maximum of 100,000 amps RMS (symmetrical), 500 V maximum. See table under *Pre-fuses*.

3. Measured using a 25 m screened/armoured motor cable with a rated load and rated frequency.

4. IP20 is standard for VLT 2805-2875, whereas NEMA 1 is an option.

Accessories for the VLT 2800

Type	Description	Ordering no.
Motor coil	The motor coil module can be used for VLT 2803-2875	195N3110
RFI 1B filter	The RFI 1B filter module can be used for VLT 2803-2875	195N3103
RFI 1B/LC filter 4 A	The RFI 1B/LC filter 4 A can be used for VLT 2803-2805 200-240 V and VLT 2805-2815 380-400 V	195N3100
RFI 1B/LC filter 9.1 A	RFI 1B/LC filter 9.1 A can be used for VLT 2807-2815 200-240 V and VLT 2822-2840 380-400 V	195N3101
EMC filter	EMC filter for long motor cables can be used for VLT 2805-2815 380-480 V	192H4719
EMC filter	EMC filter for long motor cables can be used for VLT 2822-2840 380-480 V	192H4720
EMC filter	EMC filter for long motor cables can be used for VLT 2855-2875 380-480 V	192H4893
NEMA 1 terminal cover	VLT 2803-2815 200-240 V, VLT 2805-2815 380-480 V	195N1900
NEMA 1 terminal cover	VLT 2822 200-240 V, VLT 2822-2840 380-480 V	195N1901
NEMA 1 terminal cover	VLT 2840, VLT 2840 PD2 200-240 V, VLT 2855-2875 380-480 V	195N1902
IP 21 top cover	VLT 2803-2815 200-240 V, VLT 2805-2815 380-480 V	195N2179
IP 21 top cover	VLT 2822 200-240 V, VLT 2822-2840 380-480 V	195N2180
IP 21 top cover	VLT 2840 200-240 V, VLT 2822 PD2, VLT 2855-2875 380-480 V	195N2181
IP 21 top cover	VLT 2880-2882 380-480 V, VLT 2840 PD2	195N2182
LCP 2 control unit	LCP 2 for programming the frequency converter	175N0131
Cable for LCP 2 control unit	Cable from LCP 2 to frequency converter	175Z0929
DeviceNet cable	Cable for DeviceNet connection	195N3113
LCP 2 remote-mounting kit	Kit for remote-mounting of LCP 2 (incl. 3 m cable, excl. LCP 2)	175Z0850
LOP (Local Operation Pad)	LOP can be used for setting the reference and start/stop via the control terminals.	175N0128
VLT Software Dialog	CD-ROM version[1]	175Z0967
MCT 10	Set-up Software	130B1000
External heat sink, small[2]	W x H x D = 222 x 450 x 65mm[3]	195N3111
External heat sink, large[2]	W x H x D = 288 x 450 x 71mm[3]	195N3112

[1)] Incl. the modules Basis, Logging, Template, Guided Tour in 6 languages (Danish, English, German, Italian, Spanish and French). [2)] For further information see VLT 2800 Cold Plate Instruction MI.28.DX.02.

Available literature

Supplied with the unit

Below is a list of the literature available for VLT 2800.
It must be noted that there may be deviations from one country to the next.

Supplied with the unit:	
Operating instructions	MG.27.AX.YY

Various literature for VLT 2800:	
Design Guide	MG.27.EX.YY
Data sheet	MD.27.AX.YY

Instructions for VLT 2800:	
LCP remote-mounting kit	MI.56.AX.51
Filter instruction	MI.28.B1.02
VLT 2800 DeviceNet cable	MI.28.F1.02
Cold plate	MI.28.D1.02
Precise stop	MI.28.C1.02

Communication with VLT 2800:	
Profibus manual	MG.90.AX.YY
VLT 2800 DeviceNet manual	MG.90.BX.YY

X = version numberYY = language version



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