SIEMENS

Operating Instructions

SINAMICS

SINAMICS DCP

DC/DC Power Converter

Edition 09/2019

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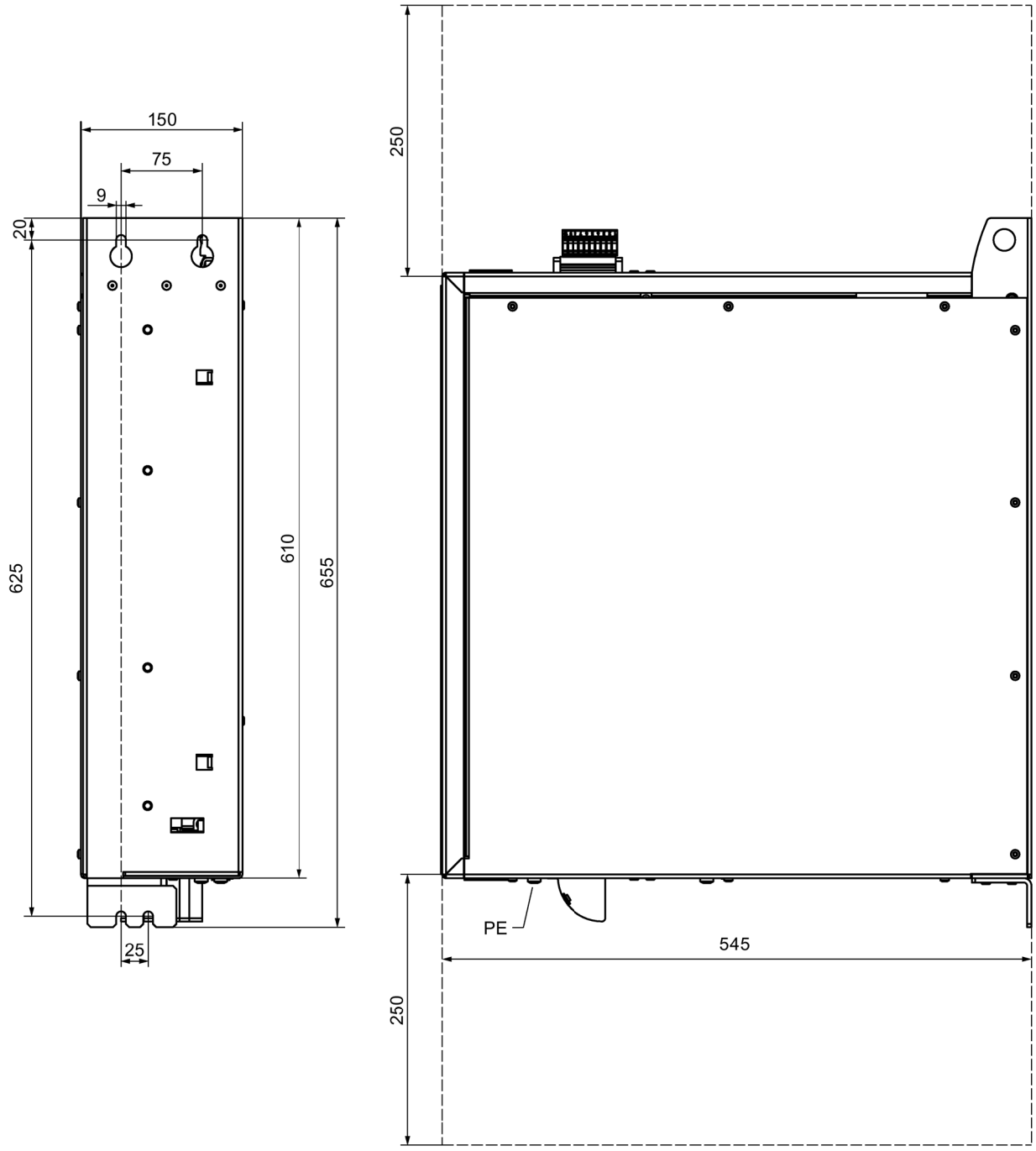

Figure 4-1 Dimensions and mounting positions for 30 kW devices; from product version 02. (dimensions in mm)

5.2 Block diagram with connection suggestion

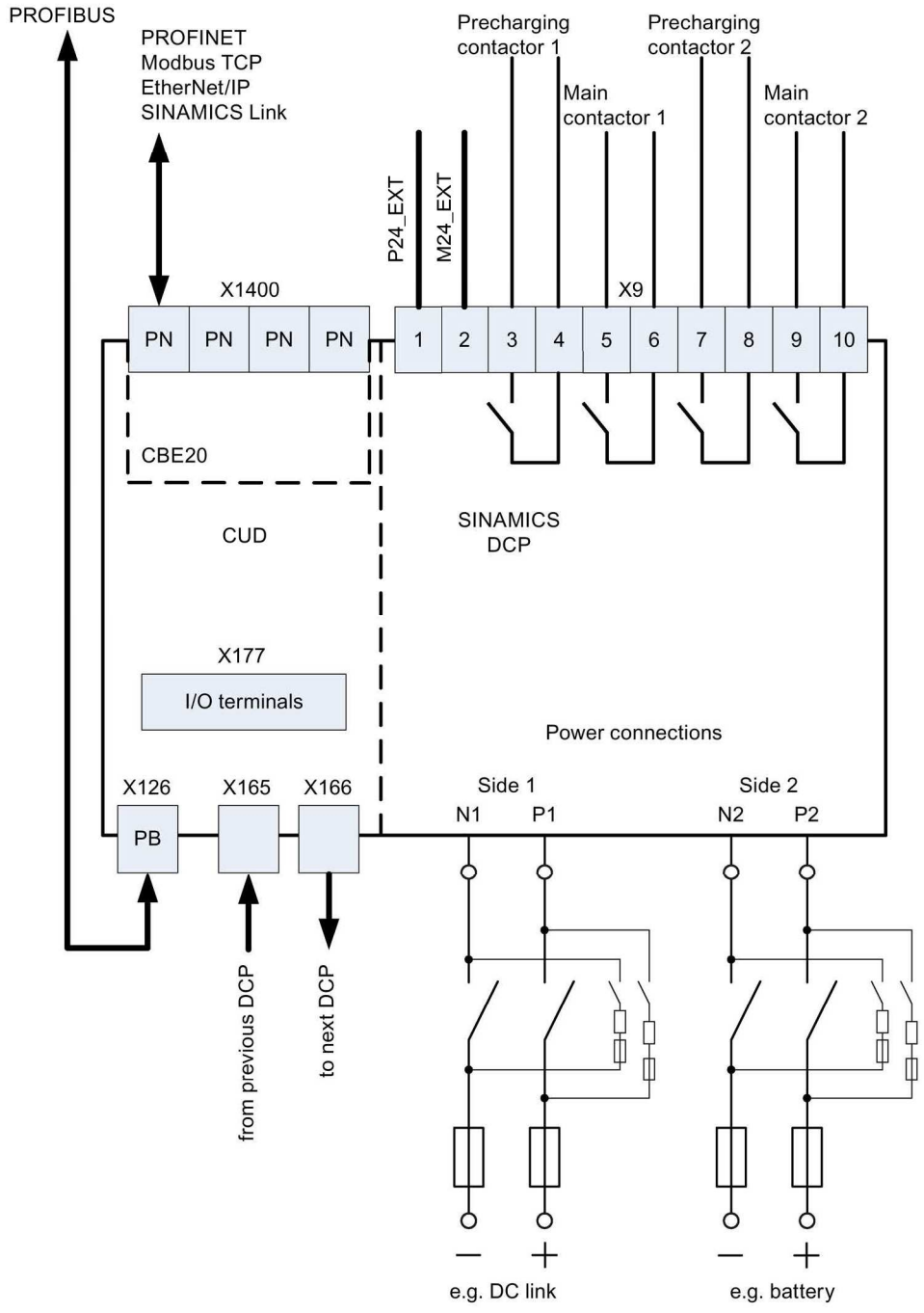

Figure 5-5 Block diagram with connection suggestion

5.4 Terminals and connectors

Connection overview for the 30 kW device

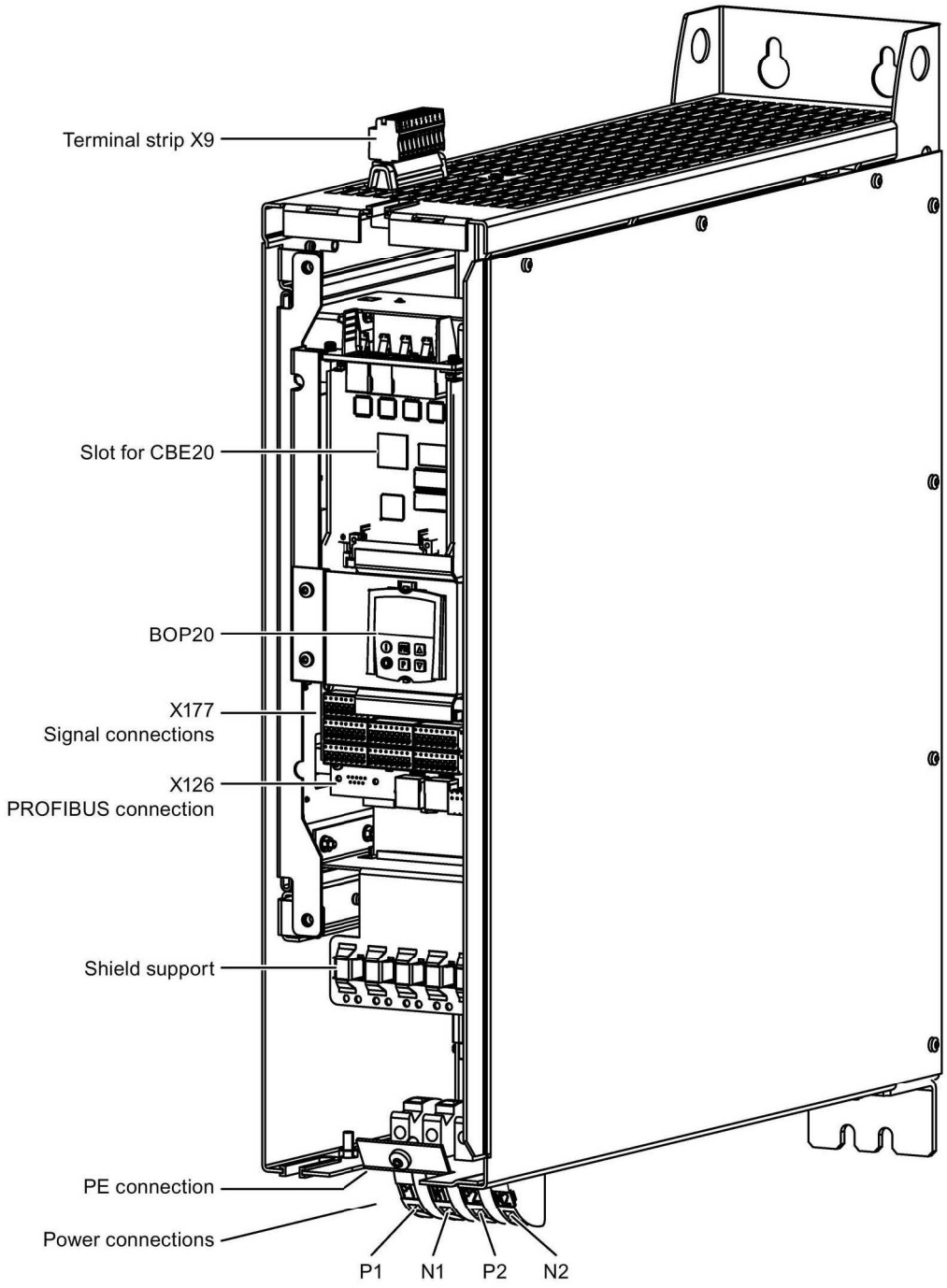

Figure 5-6 Connection overview for the 30 kW device

Technical specifications

10

10.1 Ambient conditions

Environmental classes according to EN 60721-3

Table 10- 1 Environmental classes

Usage	Environmental condition	Environmental class	Remark
Operation	Mechanical stability	See Remark	• Vibration test according to EN 61800-5-1 (Table 27) – Test: Fc test according to IEC 60068-2-6 – Motion: Sinusoidal – 10 to 57 Hz: Amplitude = 0.075 mm – 57 to 150 Hz: Acceleration = 1 g – Duration of vibration: 10 cycles per axis
	Climatic influences	3K3	• in accordance with EN 60721-3-3 • Maximum surrounding air temperature: 0°C to +40°C (up to + 55 °C with "Derating (Page 357)") • No condensation, splash water or icing permitted.
	Biological influences	3B1	-
	Chemical influences	3C1	-
Transportation	Mechanical stability	2M1	• Vibration test: – 2 to 9 Hz: Amplitude = 3.5 mm – 9 to 200 Hz: Acceleration = 10 m/s^2
	Climatic influences	2K3	• in accordance with EN 60721-3-2 • Surrounding air temperature: – -25° C to +70° C (briefly to -40° C for max. 24 h)
	Biological influences	2B1	-
	Chemical influences	2C1	-
Storage	Mechanical stability	1M2	
	Climatic influences	1K4	• in accordance with EN 60721-3-1 • Surrounding air temperature: – -25° C to +55° C (temperature fluctuations ≤ 20 K / h) Before commissioning, make sure that any condensation has dried out.
	Biological influences	1B1	-
	Chemical influences	1C1	-

Installation altitude above sea level

≤ 2000 m	rated DC current
> 2000 m	With derating, see Chapter "Derating (Page 357)".

Additional properties

For a standard application, **side 1** (terminals P1/N1) of the device is connected to a DC link.

- The DC link does **not** have to be grounded. (for a 30 kW device, only from product version 02).
- Side 1 of the device must be connected (precharging circuit, fuse) as described in Chapter "EMC-compliant installation of SINAMICS DCP (installation instructions) (Page 37)".

For a standard application, **side 2** (terminals P2/N2) of the device is connected to a battery.

- Side 2 of the device must be connected (precharging circuit, fuse) as described in Chapter "Electrical connection (Page 33)".

Parallel configuration

Several devices can be connected in parallel simultaneously at side 1, side 2 or at both sides.

For more details, see Chapter "Connecting several SINAMICS DCPs in parallel (Page 404)".

10.2 Device data

Table 10- 2 Technical specifications of the 30 kW device

Variable		Value	Remark
Rated DC voltage	V	600	
Rated DC current	A	50	
Rated power	kW	30	
Maximum power loss	W	800	
Operating voltage range	V	0 ... 1000	Applicable for side 1 and side 2
Overvoltage range	V	800 ... 1000	Applies for side 1 and side 2: after switching on and off, voltages are only permissible in this range for 30 s. Operation is possible with a reduced current (5 A at 1000 V).
DC system voltage	V	1000	According to IEC 62109-1 (PV and battery circuits) overvoltage category II
AC system voltage	V	600	According to IEC 61800-5-1 overvoltage category III
Recurring peak voltage	V	940	between the DC line connections (P1, N1, P2, N2) and housing / ground (according to EN 60664-1:2007)
Protection class		I	
Max. input current	A	50	In the voltage range 0 V … 600 V
Max. input power	kW	30	In the voltage range 600 V … 800 V
Input capacitance	µF	40	per side
Inductance of the energy storage reactor	µH	700	per power unit a total of 2 power units
Monitoring			The device shuts down by means of hardware monitoring for voltages greater than 1000 V and for currents greater than 60 A. The device can generate a maximum short-circuit current of 60 A.
DC electronics power supply	V	24	Permissible voltage range: 18 … 30 V Current consumption: 5 A at 24 V
Degree of protection		IP20	The following applies to applications in Australia: **Fire enclosure** The enclosure of the device does not meet the requirements of a fire enclosure. Therefore, the device must be installed in a suitable enclosure to meet the application and site requirements.
Use			Exclusively for cabinet installation Pollution degree 2
Cooling method		Forced ventilation	Forced air cooling with integrated fans
Fan air flow	m^3/h	300	
Fan noise level	dB(A)	73	

Variable		Value	Remark
Power connections - P1, N1, P2, N2 - PE		1.5 ... 16 mm²	Plug-in terminals M6 screw, 6 Nm
Dimensions (W x H x D)	mm	150 x 655 x 545	
Weight (approx.)	kg	38	
MTBF: Expected operating time between two consecutive failures: 20 years			