

Installation Instructions

IP21/Type 1 Conversion Kit

VLT[®] Midi Drive FC 280

The instructions provide information about installing the IP21/Type 1 conversion kit in VLT[®] Midi Drive FC 280.

Only Danfoss authorized, qualified personnel is allowed to repair this equipment. The personnel must be familiar with the instructions and safety measures described in the *VLT[®] Midi Drive FC 280 Service Guide*.

Items Supplied

- IP21 top cover.
- NEMA bracket plate.
- NEMA base cover.
- Screws (4) for K1/K2/K3, M4x20.
- Screws (4) for K4/K5, M4x30.
- Screws, M4x12 (5 for K1/K2/K3, 8 for K4/K5).
- U-terminals (2) for K1/K2/K3.
- Cable clamps (2 for K1/K2/K3, 4 for K4/K5).
- Rubber grommets (5 for K1/K2/K3, 6 for K4/K5).

Ordering numbers

Description	Ordering number
IP21/Type 1 conversion kit, K1	132B0335
IP21/Type 1 conversion kit, K2	132B0336
IP21/Type 1 conversion kit, K3	132B0337
IP21/Type 1 conversion kit, K4	132B0338
IP21/Type 1 conversion kit, K5	132B0339

Table 1.1 Ordering Numbers

Tools Required

- Torx 20 or slot screwdriver

Safety Instructions

⚠ WARNING

DISCHARGE TIME

The frequency converter contains DC-link capacitors, which can remain charged even when the frequency converter is not powered. High voltage can be present even when the warning LED indicator lights are off. Failure to wait the specified time after power has been removed before performing service or repair work can result in death or serious injury.

- Stop the motor.
- Disconnect AC mains and remote DC-link supplies, including battery back-ups, UPS, and DC-link connections to other frequency converters.
- Disconnect or lock PM motor.
- Wait for the capacitors to discharge fully. The minimum waiting time is specified in *Table 1.2*.
- Before performing any service or repair work, use an appropriate voltage measuring device to make sure that the capacitors are fully discharged.

Voltage [V]	Power range [kW (hp)]	Minimum waiting time (minutes)
200–240	0.37–3.7 (0.5–5)	4
380–480	0.37–7.5 (0.5–10)	4
	11–22 (15–30)	15

Table 1.2 Discharge Time

Installation

1. Mount the top cover on the top of the frequency converter.

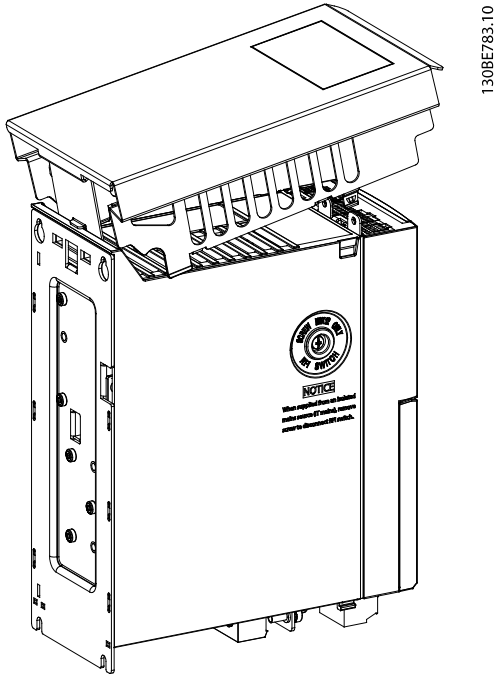
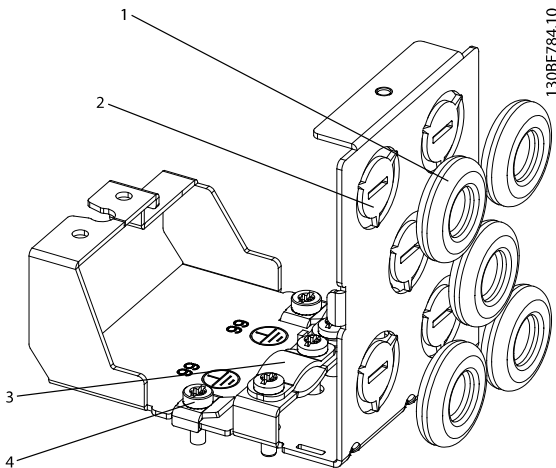


Illustration 1.1 Mounting the Top Cover

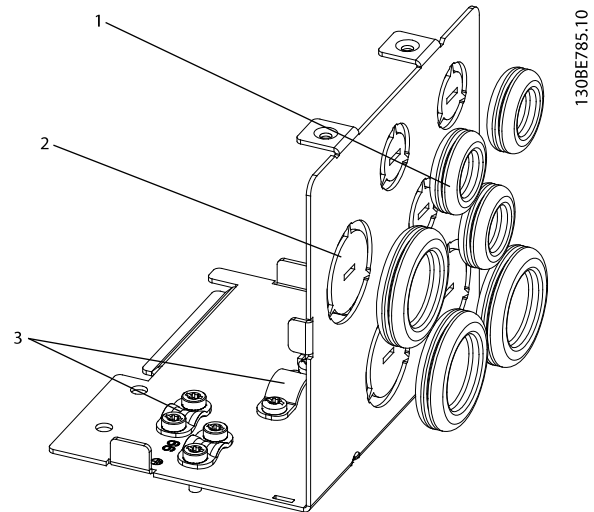
2. Remove the knockouts on the NEMA bracket plate and fit the rubber grommets.
3. Mount the cable clamps and the u-terminals for K1/K2/K3.



1	Rubber grommet
2	Knockout
3	Cable clamp
4	U-terminal

Illustration 1.2 Mounting the Cable Clamps and the U-Terminals, K1/K2/K3

4. Mount the cable clamps for K4/K5.



1	Rubber grommet
2	Knockout
3	Cable clamps

Illustration 1.3 Mounting the Cable Clamps, K4/K5

5. Mount the NEMA bracket plate on the frequency converter.
6. Fasten with 2 M4x12 screws.
7. Tighten the screws to 1.5–2.0 Nm (13.3–17.7 in-lb).

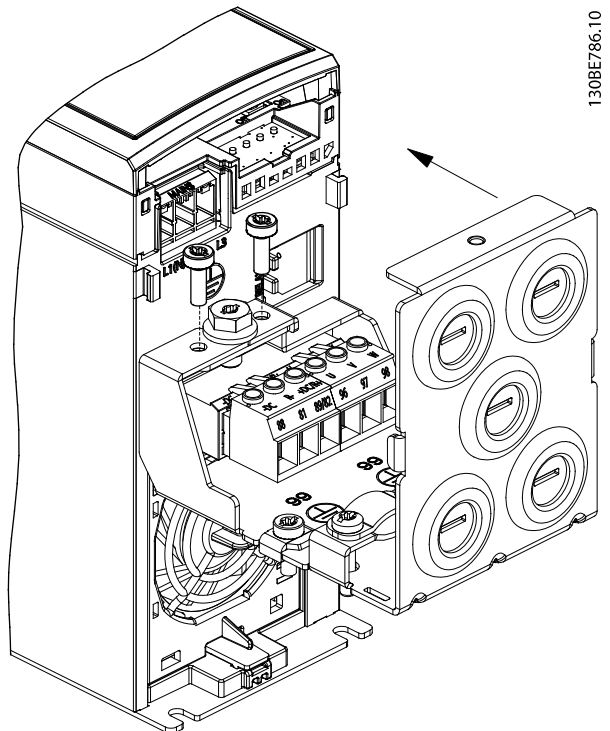


Illustration 1.4 Mounting the NEMA Bracket Plate, K1/K2/K3

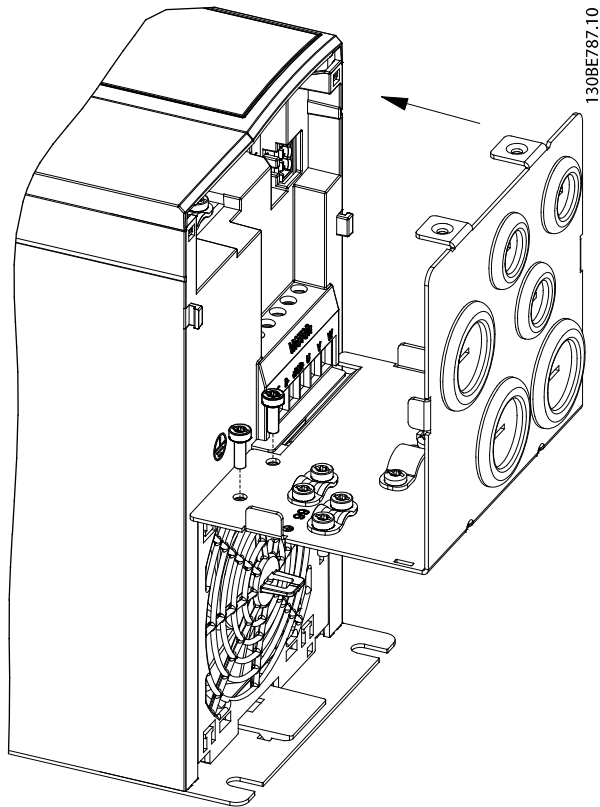
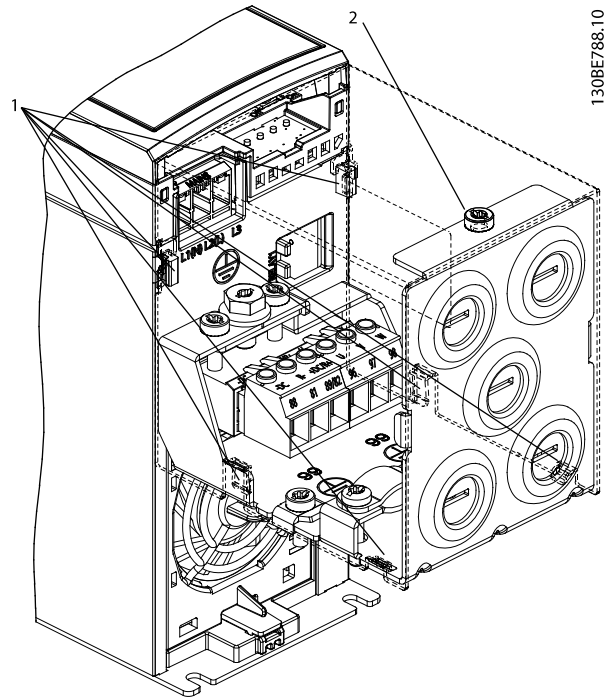


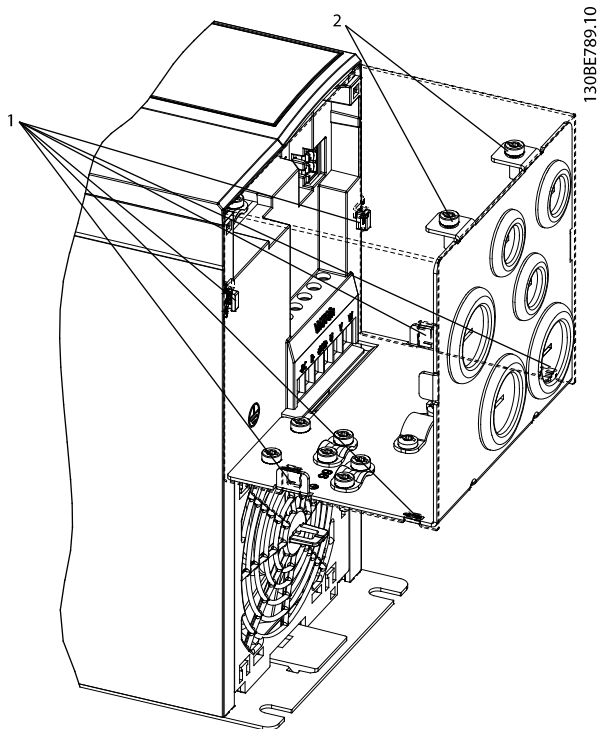
Illustration 1.5 Mounting the NEMA Bracket Plate, K4/K5



1	Inner snaps
2	M4x12 screw

Illustration 1.6 Mounting the Base Cover, K1/K2/K3

8. Mount the base cover on the bottom of the frequency converter and make sure that 6 inner snaps are engaged firmly.
9. Fasten with 1 M4x12 screw for K1/K2/K3, 2 M4x12 screws for K4/K5.
10. Tighten the screws to 1.5–2.0 Nm (13.3–17.7 in-lb).



1	Inner snaps
2	M4x12 screws

Illustration 1.7 Mounting the Base Cover, K4/K5

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