

Installation Instructions

Mains Shield Kit for D1h-D8h Enclosures

FC Series FC 102, FC 103, FC 202, and FC 302

1.1 Description

The mains shield kit is designed for D1h–D8h enclosure sizes for the following frequency converters:

- VLT® HVAC Drive FC 102
- VLT® Refrigeration Drive FC 103
- VLT® AQUA Drive FC 202
- VLT® AutomationDrive FC 302

The kit adds a Lexan shield over the mains terminals and bus bars to provide protection against touching the mains supply.

The kit contains the following parts:

D1h–D2h enclosures

- Shield (1)
- Brackets (2)
- Screws (2)

D5h enclosures

- Shield (1)
- Brackets (3)
- Screws (4)
- Nuts (4)

D6h–D8h enclosures

- Shield (1)
- Brackets (6)
- Screws (6)
- Nuts (6)

1.2 Kit Part Numbers

Part number	Kit description
176F6339	Mains shield kit for D1h enclosures
176F6340	Mains shield kit for D2h enclosures
176F6341	Mains shield kit for D5h enclosures
176F6342	Mains shield kit for D6h enclosures
176F6343	Mains shield kit for D7h enclosures
176F6344	Mains shield kit for D8h enclosures

Table 1.1 Part Numbers for the Mains Shield Kit

1.3 Safety Instructions

Only qualified personnel are allowed to install the parts described in these installation instructions. Make sure to read and save these instructions.

⚠ WARNING

ELECTRICAL SHOCK HAZARD

VLT® frequency converters contain dangerous voltages when connected to mains voltage. Improper installation, and installing or servicing with power connected, can cause death, serious injury, or equipment failure.

To avoid death, serious injury, or equipment failure:

- Only use qualified electricians for the installation.
- Disconnect the frequency converter from all power sources before installation or service.
- Treat the frequency converter as live whenever the mains voltage is connected (including when the frequency converter is tripped or waiting for a command).
- Follow the guidelines in these instructions and local electrical safety codes.

⚠ 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 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 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 duration of 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]	Frequency converter model	Minimum waiting time (minutes)
3 x 400	N110-N315	20
	N90K-N250	20
3 x 690	N75K-N400	20
	N55K-N315	20

Table 1.2 Discharge Time

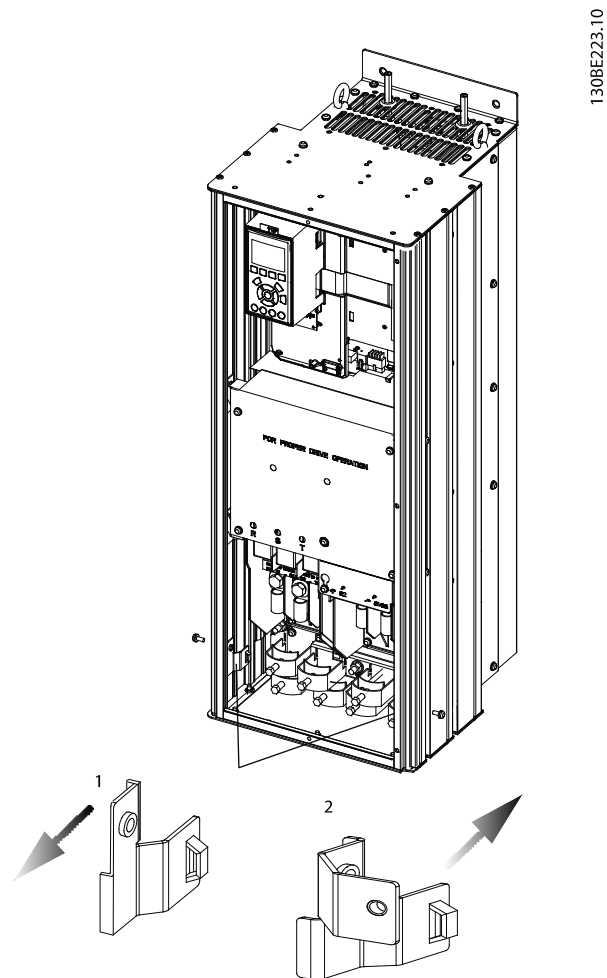
1.4 Installation

1.4.1 Assembling Mains Shield

Mains shield assembly for D1h-D2h enclosures

1. Remove the protective plastic from the front and back of the mains shield.
2. Remove the lower wire tie brackets by removing 1 exterior screw from each side of the unit. See *Illustration 1.1*.
3. Install the new brackets from the kit. See *Illustration 1.1*. Secure the new brackets to the side of the unit using the existing fasteners. Tighten to 2.3 Nm (20 in-lb).
4. Loosen, but do not remove the 2 screws from the top of the air baffle. Next, remove the 2 screws from the bottom of the air baffle.
5. Slip the top holes of the mains shield over the top 2 screws on the air baffle. Align the remaining screw holes of the air baffle with the holes in the mains shield. Secure by loosely tightening the 4 fasteners.
6. Using the 2 fasteners from the kit, loosely tighten the mains shield to the top of the brackets.

7. Tighten all mains shield fasteners to 1.2 Nm (10 in-lb).



1	Old brackets
2	New brackets from the mains shield kit

Illustration 1.1 Mains Shield Bracket Positions in the D1h Enclosure. Similar for D2h Enclosure.

Mains shield assembly for D5h enclosures

1. Assemble the mains shield in the frequency converter enclosure according to the instructions for the D1h-D2h enclosures.
2. In the options enclosure, attach the 4 brackets to the interior of the options cabinet. See *Illustration 1.2*. Secure the brackets with 4 nuts. Tighten to 2.3 Nm (20 in-lb).
3. Place the mains shield on top of the 4 brackets and align the bolt holes. Secure with 4 screws. Tighten to 1.2 Nm (10 in-lb).

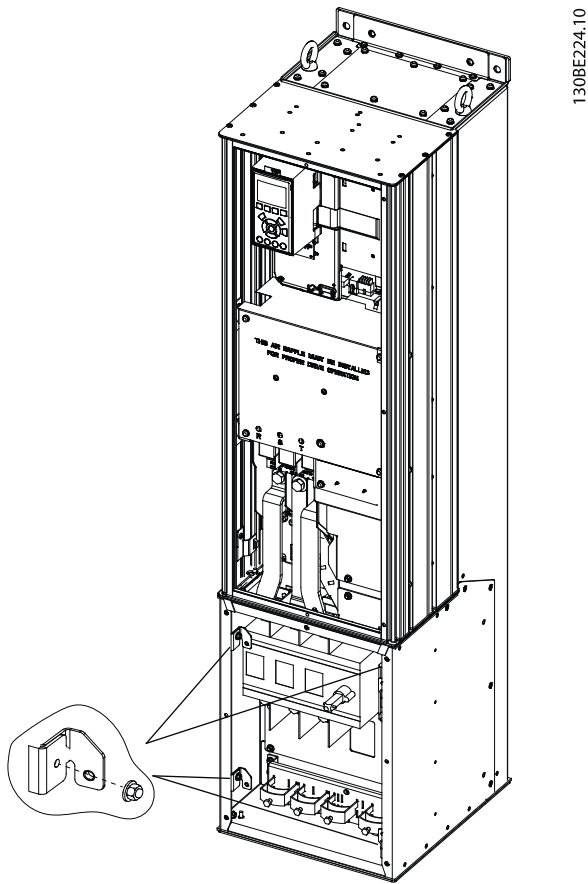


Illustration 1.2 Mains Shield Bracket Positions in the D5h Options Enclosure

Mains shield assembly for D6h-D8h enclosures

1. Assemble the mains shield in the frequency converter enclosure according to the instructions for the D1h-D2h enclosures.
2. In the options enclosure, attach the 6 brackets to the interior of the options cabinet. See *Illustration 1.3*. Secure the brackets with 6 nuts. Tighten to 2.3 Nm (20 in-lb).
3. Place the mains shield on top of the 6 brackets and align the bolt holes. Secure with 6 screws. Tighten to 1.2 Nm (10 in-lb).

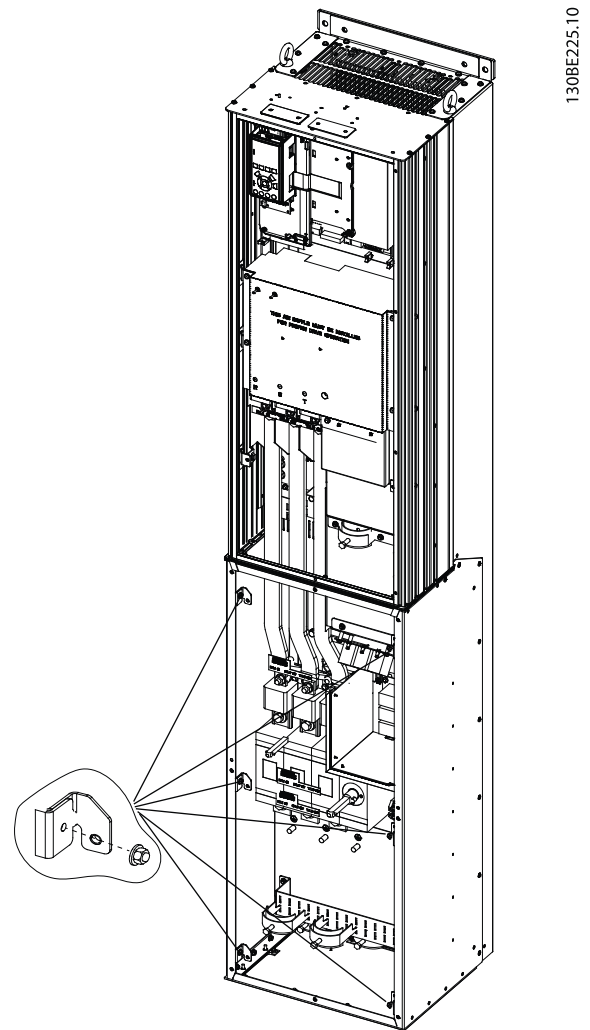


Illustration 1.3 Mains Shield Bracket Positions in the D8h Options Enclosure. Similar for D6h and D7h Enclosures.

.....
Danfoss can accept no responsibility for possible errors in catalogues, brochures and other printed material. Danfoss reserves the right to alter its products without notice. This also applies to products already on order provided that such alterations can be made without subsequential changes being necessary in specifications already agreed. All trademarks in this material are property of the respective companies. Danfoss and the Danfoss logotype are trademarks of Danfoss A/S. All rights reserved.
.....

Danfoss A/S
Ulsnaes 1
DK-6300 Graasten
vlt-drives.danfoss.com

