

# Installation Instructions

## Mains Shield Kit for E1h/E2h Drives

### VLT<sup>®</sup> Series FC 102, FC 103, FC 202, and FC 302

#### Description

The mains shield kit fits the following drives in E1h/E2h enclosures:

- VLT<sup>®</sup> HVAC Drive FC 102
- VLT<sup>®</sup> Refrigeration Drive FC 103
- VLT<sup>®</sup> AQUA Drive FC 202
- VLT<sup>®</sup> AutomationDrive FC 302

The kit adds a Lexan shield over the mains terminals and busbars to provide protection against accidental touch of the power terminals, according to BGV A2, VBG 4.

#### Kit Part Numbers

Use these instructions with the following kits.

Kit number	Kit description
176F6619	Mains shield assembly for E1h drive
176F6620	Mains shield assembly for E2h drive

Table 1.1 Part Numbers for Kits

#### Items Supplied

The mains shield kit contains the following items.

Item	Quantity
Upper shield	1
Lower shield	1
Brackets	14
M5x12 screw/washer assembly	28

Table 1.2 Items Supplied in Mains Shield Kit

#### Safety Information

#### **⚠ WARNING**

##### ELECTRICAL SHOCK HAZARD

VLT<sup>®</sup> series drives 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 drive from all power sources before installation or service.
- Treat the drive as live whenever the mains voltage is connected.
- Follow the guidelines in these instructions and local electrical safety codes.

#### **⚠ WARNING**

##### DISCHARGE TIME

The drive contains DC-link capacitors, which can remain charged even when the drive is not powered. High voltage can be present even when the warning LED indicator lights are off. Failure to wait 40 minutes 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 power supplies, including battery back-ups, UPS, and DC-link connections to other drives.
- Disconnect or lock PM motor.
- Wait 40 minutes for capacitors to discharge fully.
- Before performing any service or repair work, use an appropriate voltage measuring device to make sure that the capacitors are fully discharged.

**⚠ WARNING**

**INTERNAL FAILURE HAZARD**

Under certain circumstances, an internal failure can cause a component to explode. Failure to keep the drive enclosure closed and properly secured can cause death or serious injury.

- Do not operate the drive with the door open or panels off, even when the mains shield is installed.
- Ensure that the enclosure is properly closed and secured during operation of the drive.

Installation Instructions

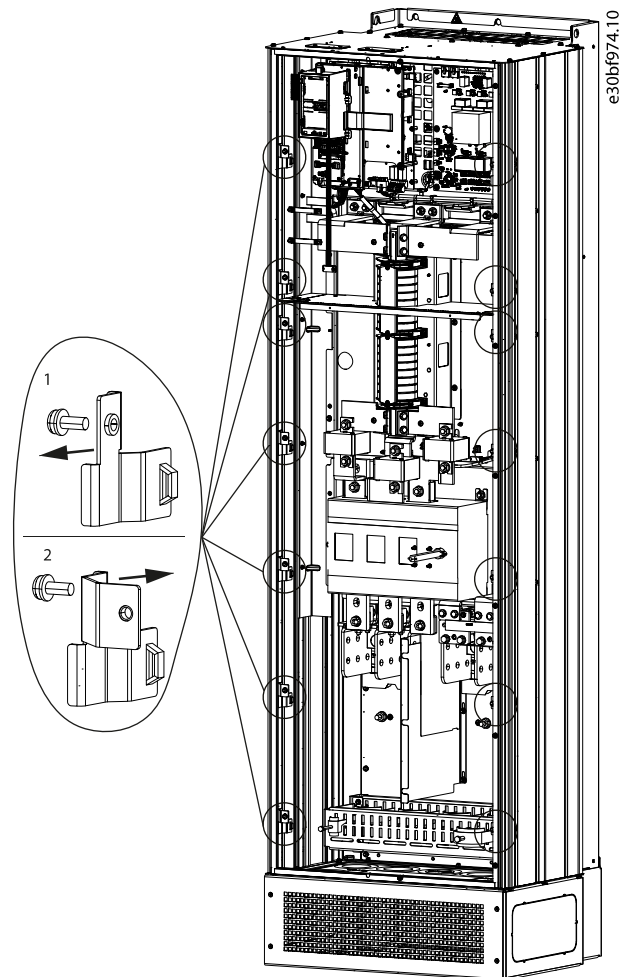
Assembling Mains Shield

The mains shield for E1h and E2h drives is a 2-part shield. The upper shield is installed above the air baffle, and the lower shield is installed just below the air baffle. To install the mains shield, use the following steps. Refer to *Illustration 1.1* and *Illustration 1.2*.

1. Remove the protective plastic film from the front and back of the upper mains shield and lower mains shield.
2. Remove 14 brackets from the front edges of the drive enclosure by removing 1 screw from each bracket. See *Illustration 1.1*.
3. Install 14 new brackets from the mains shield kit. Secure the new brackets to the drive enclosure using 14 M5x12mm screws (T25) from the kit. Tighten to 2.3 Nm (20 in-lb).
4. Feed the LCP (local control panel) cable through the cable access hole in the upper shield. Refer to *Illustration 1.2*.
5. Position the upper shield over the screw holes on the brackets above the air baffle.
6. Using 4 M5x12mm screws (T25) from the kit, loosely tighten the upper mains shield to the brackets.
7. If present, feed the optional USB cable through the cable access hole in the lower shield. Position the

lower shield over the screw holes in the brackets below the air baffle.

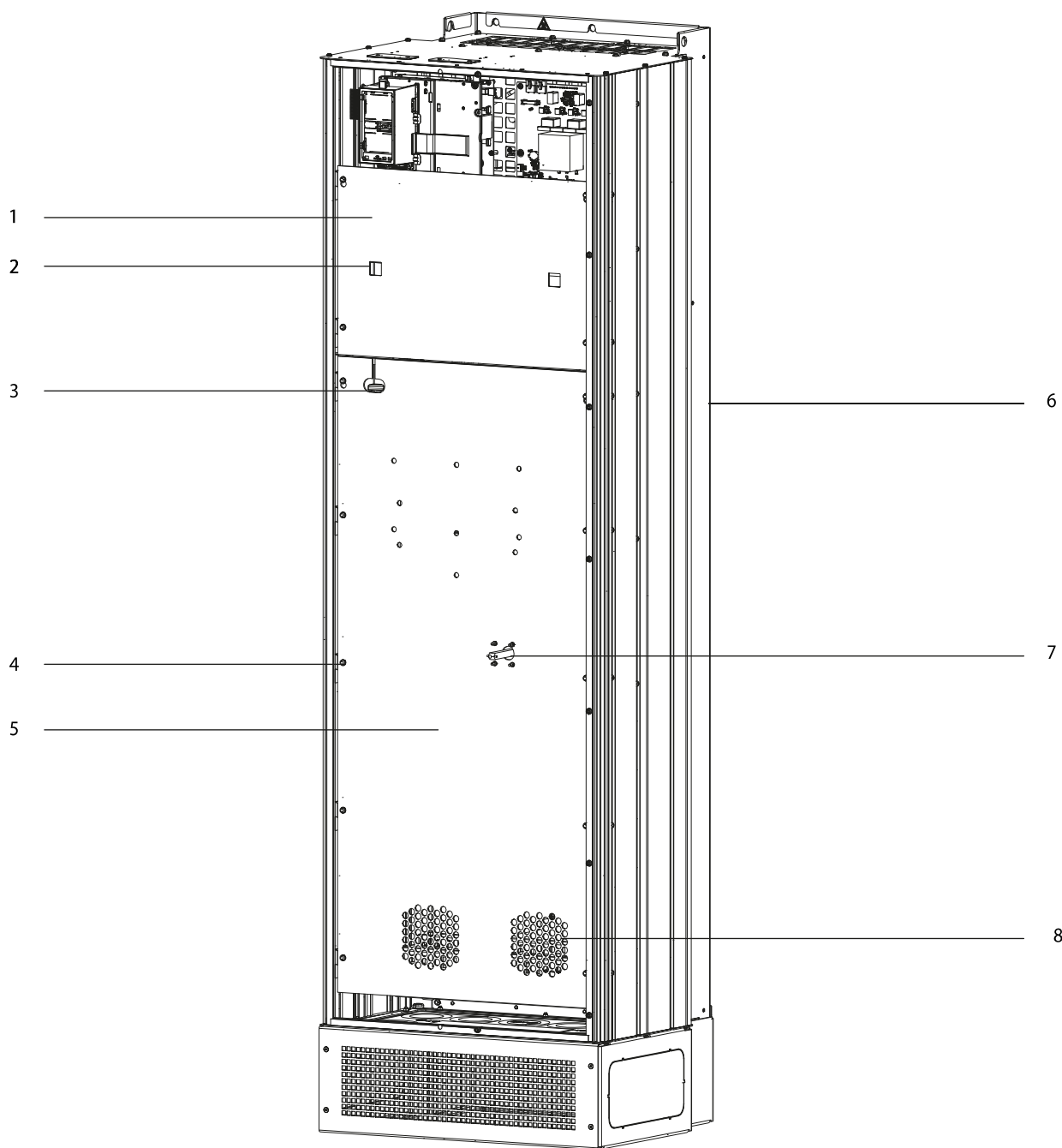
8. Using 10 M5x12mm screws (T25) from the kit, loosely tighten the lower mains shield to the brackets.
9. Torque all mains shield fasteners to 2.3 Nm (20 in-lb).



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1	Old brackets
2	New brackets from mains shield kit

Illustration 1.1 Mains Shield Bracket Locations



1	Upper shield	5	Lower shield
2	LCP cable access hole	6	Drive enclosure
3	USB cable access hole	7	Disconnect access hole
4	M5x12mm screw	8	Air vent

Illustration 1.2 Mains Shield Installed

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