

Installation Instructions

Top-entry Ethernet Kit for D1h–D8h Enclosure Sizes

The top-entry Ethernet kit is designed for D1h–D8h enclosure sizes with the VLT® EtherNet/IP MCA 121 option for the following frequency converters:

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

This top-entry Ethernet kit provides strain relief for the Ethernet cord while maintaining existing IP54 protection.

The kit contains the following parts:

- Metal housing (1)
- Gaskets, gland conduit (2)
- Gasket, metal housing (1)
- Gland conduit (2)
- Gland insert with opening (2)
- Gland insert with no opening (2)
- Nut, M5 (2)

Kit Part Numbers

Part number	Kit description
176F3730	Top-entry Ethernet kit for D1h–D8h enclosure sizes with the VLT® EtherNet/IP MCA 121 option

Table 1.1 Part Numbers for the Top-entry Ethernet Kit

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

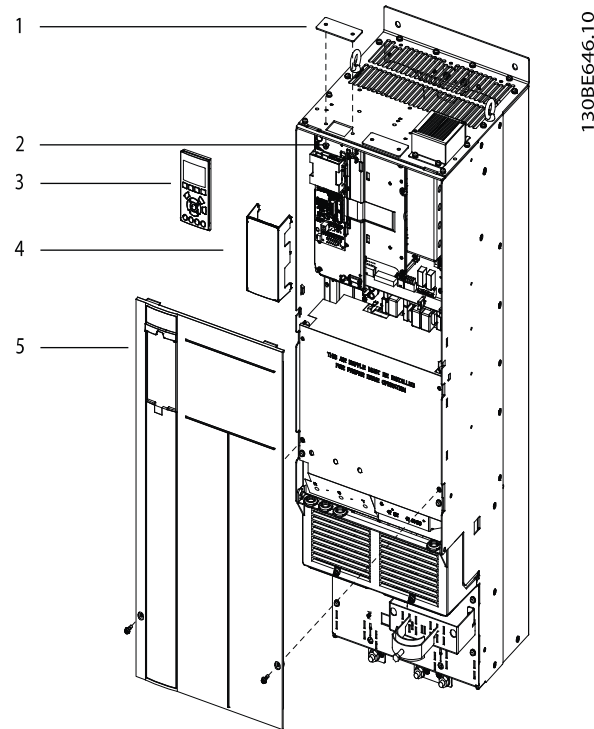
DISCHARGE TIME

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 for a minimum of 20 minutes after power has been removed before performing service or repair work can result in death or serious injury.

1. Stop the motor.
2. Disconnect AC mains and remote DC-link supplies, including battery back-ups, UPS, and DC-link connections to other frequency converters.
3. Disconnect or lock PM motor.
4. Wait 20 minutes for the capacitors to discharge.
5. Before performing any service or repair work, use an appropriate voltage measuring device to make sure that the capacitors are fully discharged.

Installation

1. Remove the front cover from the frequency converter.
2. Remove the LCP.
3. Pull the LCP cradle straight out. See *Illustration 1.1*.
4. Remove the 2 M5 nuts inside the enclosure that secure the left top cover and remove the cover.



1	Left top cover	4	LCP cradle
2	M5 nuts	5	Front cover
3	LCP		

Illustration 1.1 Removing the Top Cover, Front Cover, and LCP

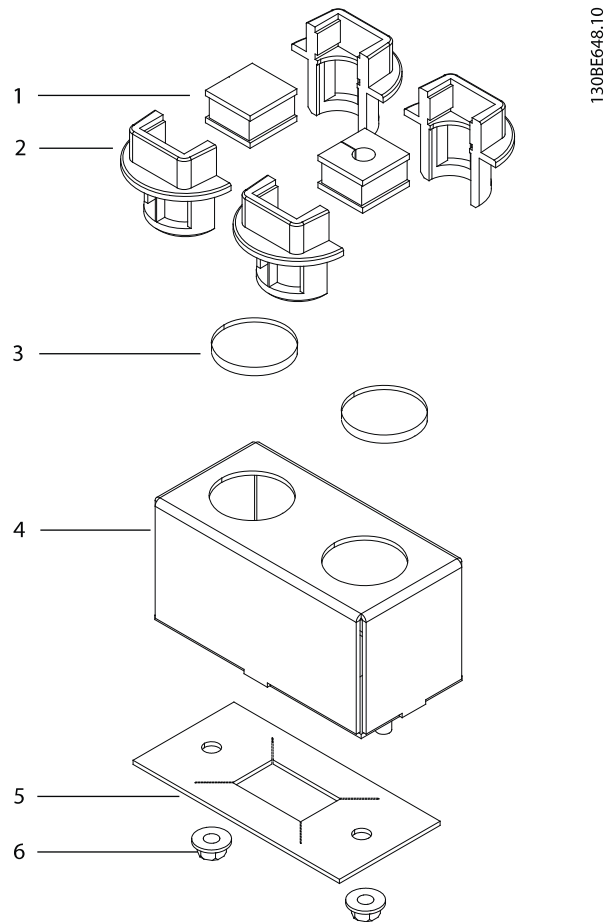
NOTICE

Always install 2 inserts. Otherwise, IP54 protection is not provided.

5. Assemble the gland conduits. See *Illustration 1.2*.
 - 5a Insert the Ethernet cable through the gland insert with an opening. Make sure that there is approximately 38.10 mm (1.5 in) of cable protruding from the bottom of the metal housing. This portion of the cable connects to the VLT® EtherNet/IP MCA 121 Option Card.

If no Ethernet wire is present, use the gland insert with no opening.

- 5b Push the gland insert into the top and bottom guiding grooves of the gland conduit. The top of the insert must be flush with the top of the gland conduit.
- 5c Push the 2 gland conduit pieces together until it clicks.
- 5d Slide the gland conduit gasket up the bottom of the gland conduit until it rests against the cap. See *Illustration 1.3*.



1	Gland insert	4	Metal housing
2	Gland conduit	5	Gasket, metal housing
3	Gasket, gland conduit	6	M5 nuts

Illustration 1.2 Exploded View of the Top-entry Ethernet Kit

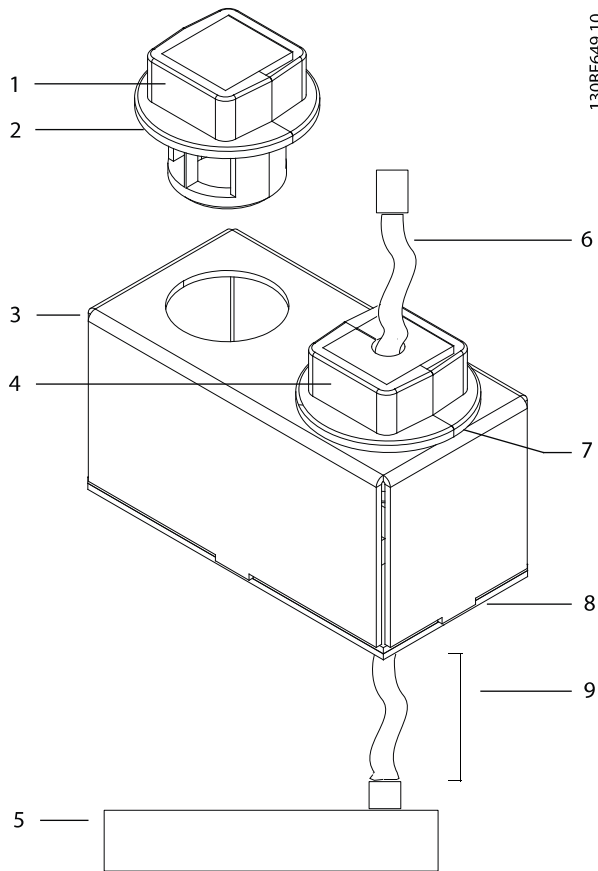
6. Slide the gland conduit into the metal housing. See *Illustration 1.3*.
7. Install the metal housing gasket onto the bottom of the metal housing.
8. Install the metal housing into the opening on top of the frequency converter.

9. Ensure proper sealing by checking the following:
 - 9a Gland conduits are seated firmly on top of the metal housing.
 - 9b Metal housing is seated firmly on the metal surface of the frequency converter.

NOTICE

Make sure that there is approximately 38.10 mm (1.5 in) of cable protruding from the bottom of the metal housing. This portion of the cable connects to the Ethernet card.

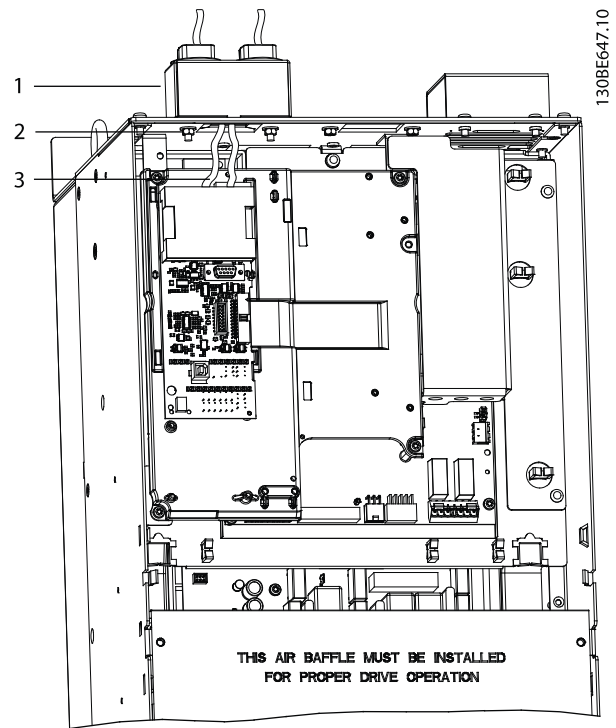
10. Secure the metal housing with the provided M5 nuts. Torque to 2.3 Nm (20 in-lb). See *Illustration 1.4*.



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1	Gland insert with no opening
2	Gasket, gland conduit
3	Metal housing
4	Gland insert with opening
5	VLT® EtherNet/IP MCA 121 Option Card
6	Ethernet cable
7	Gasket, gland conduit
8	Gasket, metal housing
9	Ethernet cable, 38.10 mm (1.5 in) from bottom of metal housing to module

Illustration 1.3 Installing the Gland Conduits with Inserts into the Metal Housing



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1	Metal housing
2	M5 nut
3	Ethernet cable

Illustration 1.4 Final Assembly Using 2 Gland Inserts with Openings

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