

# Installation Instructions

## USB Cable Extender Kit

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

#### Description

These instructions describe installation of the USB extension cable through the door of IP21/IP54 enclosures. The kit fits drives in enclosure sizes D, E, D1h–D8h, E1h–E4h, and F for the following products:

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

The kit is compatible only with drives manufactured after a certain date. See *Table 1.1*. Drives built before these dates are not configured to accommodate the kit.

Drive	Enclosure	Week (manufactured during or after)
D1	IP21/IP54	Week 3, 2010
D2	IP21	Week 11, 2010
D2	IP54	Week 10, 2010
E1	IP21/IP54	Week 11, 2010
F	IP21/IP54	Week 40, 2008
D1h–D8h	IP21/IP54	All
E1h–E4h	IP21/IP54	All

Table 1.1 Compatible Drives and Manufacture Date

#### Kit Part Numbers

Use these instructions with the following kits.

Kit number	Drive
130B1155	All IP21/IP54 D1–D4/D13 drives
130B1156	All IP21/IP54 E1–E2/E9 drives
176F1784	All D1h–D8h, E1h–E4h, and F-sized drives

Table 1.2 Part Numbers for Kits

#### Items Supplied

The USB cable extender kit contains the following items.

Item	Quantity
USB extension cable	1
Mini cable ties	10

Table 1.3 Items Supplied in USB Cable Extender Kit

#### Safety Information

#### **⚠ WARNING**

##### ELECTRICAL SHOCK HAZARD

VLT<sup>®</sup> FC 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.

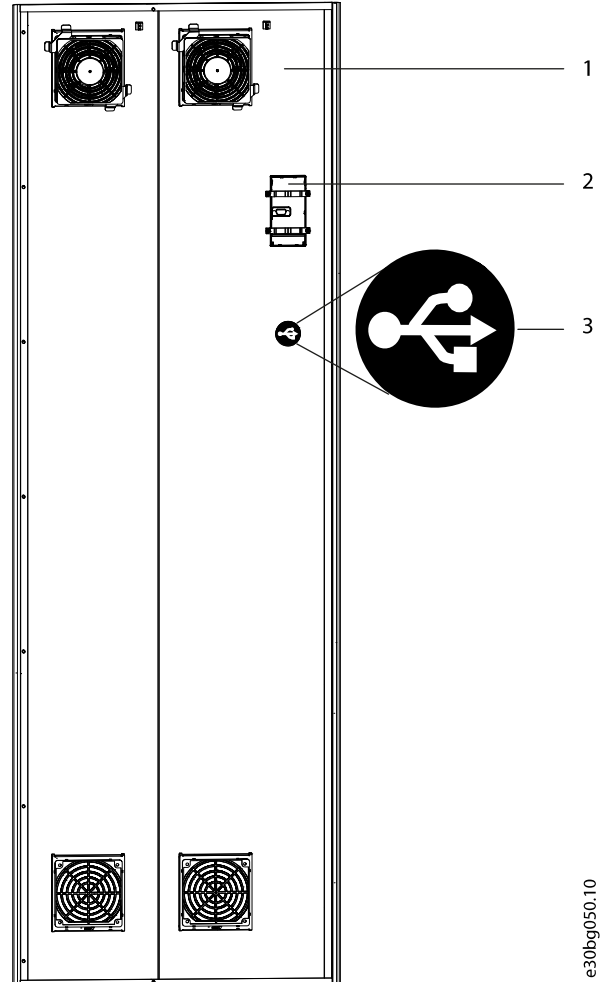
- Stop the motor.
- Disconnect AC mains and remote DC-link power supplies, including battery back-ups, UPS, and DC-link connections to other drives.
- Disconnect or lock PM motor.
- Wait 40 minutes for capacitors to discharge fully.
- Before performing any service or repair work, use an appropriate voltage measuring device to make sure that the capacitors are fully discharged.

## Installation Instructions

### Installing the USB Cable Extender Kit

The enclosure door is manufactured with a cable access hole for installing the USB extension cable. Typically, the hole is covered by a black strip on the enclosure exterior, and by a round USB label inside the enclosure door. In F-sized enclosures, the hole is inside the rectifier enclosure door near the upper right corner.

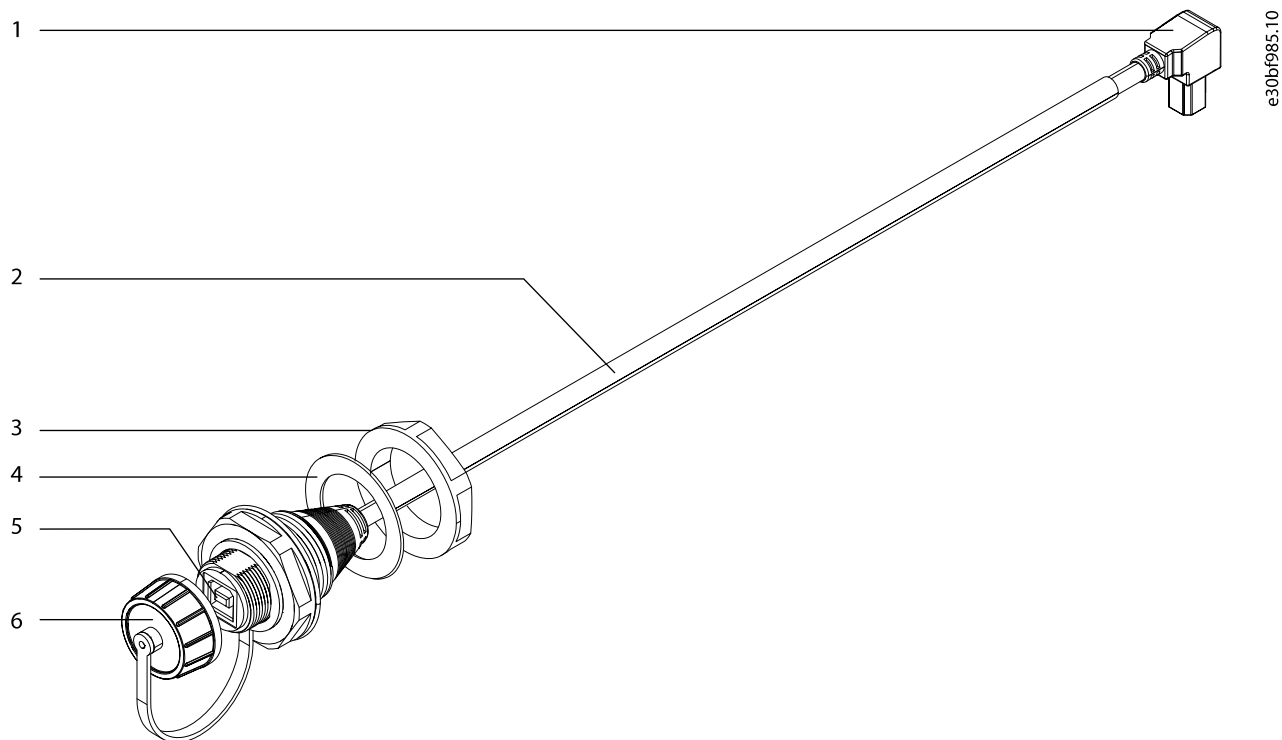
1. Open the drive enclosure door and locate the USB cable access hole. It is covered by a round label marked with a USB symbol. See *Illustration 1.1*.
2. To expose the USB cable access hole, remove the USB label from inside the enclosure door.
3. To create an opening for the USB cable, carefully cut through the black strip on the door exterior. To prevent the strip from separating from the door, cut through the strip from the front of the door.



e30bg050.10

1	Interior of enclosure door
2	Local control panel (LCP)
3	USB label over cable access hole

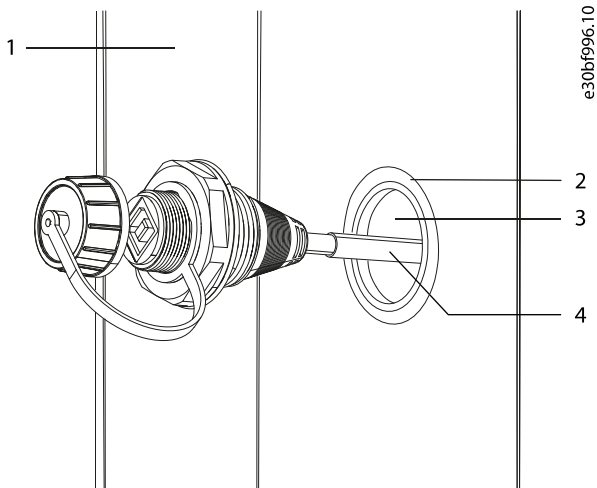
Illustration 1.1 Location of USB Cable Access Hole



e30bf985.10

1	Connector to control card	4	Gasket
2	Cable	5	USB connector
3	Retaining nut	6	Connector cover

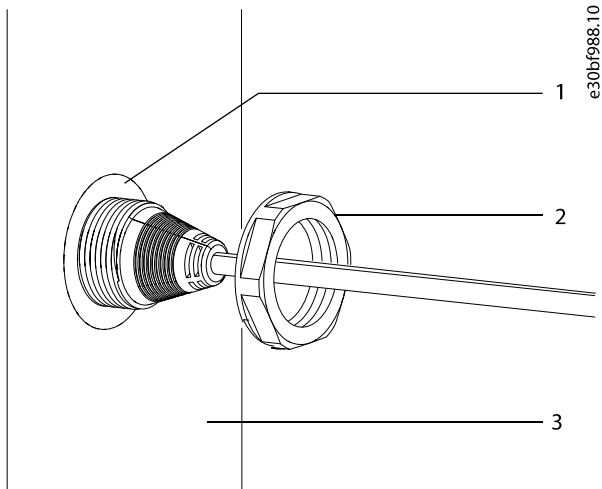
Illustration 1.2 USB Extension Cable



e30bf996.10

1	Front of enclosure door
2	Gasket
3	Cable access hole in door
4	USB extension cable

**Illustration 1.3 Front View of USB Extension Cable in Door**

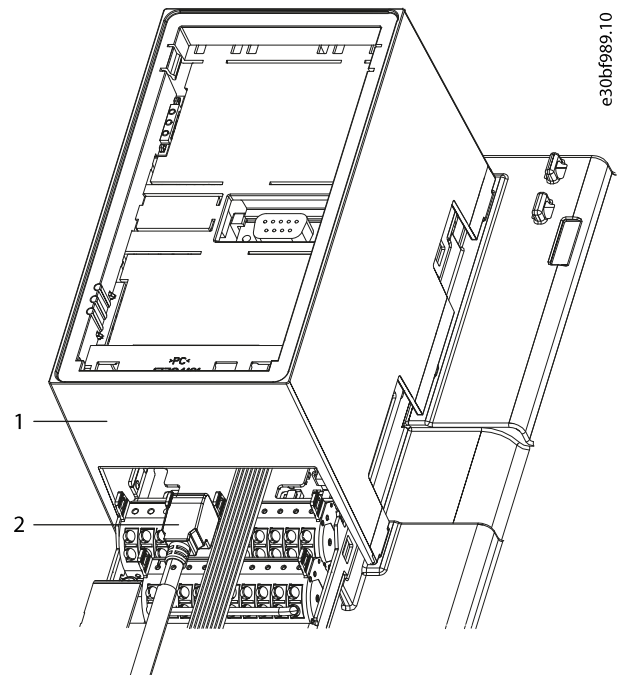


e30bf988.10

1	Cable access hole in door
2	Retaining nut
3	Enclosure door interior

**Illustration 1.4 View of USB Extension Cable Showing Door Interior**

- Remove the retaining nut from the USB extension cable. See *Illustration 1.2*.
- Insert the USB extension cable into the door. See *Illustration 1.3*. Check that the gasket is positioned on the outside of the door.
- Thread the retaining nut back onto the USB cable.
- To secure the USB connector onto the door, tighten the retaining nut against the door interior. See *Illustration 1.4*.
- Route the USB extension cable along the same path as the local control panel (LCP) cable. In F-sized drives, remove the cable channel cover to access the LCP cable. Use the cable ties from the kit to secure the USB extension cable to the LCP cable. Replace the cable channel cover, if present.
- Connect the USB extension cable to the control card. See *Illustration 1.5*.



e30bf989.10

1	LCP cradle
2	USB extension cable

**Illustration 1.5 USB Extension Cable Attached to Control Card**

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 consequential 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.

