

# 1000 Hz Control Card MK-I

## VLT® AutomationDrive FC 302 Series

### 1 Introduction

#### 1.1 Purpose of this Installation Guide

This installation guide provides information for quick installation of the control card in VLT® AutomationDrive FC 302 series.

Update to 1000 Hz output frequency. The drive is subject to export control, ECCN 3A225.

#### 1.2 Trademarks

VLT® is a registered trademark for Danfoss A/S.

#### 1.3 Item Supplied

- VLT® FC 302 1000 Hz Control Card MK-I (code number: 134B6628).

#### 1.4 Tools

- Torx 10 screwdriver.
- Flat-head screwdriver.

#### 1.5 Additional Items Required

- VLT® AutomationDrive FC 302.

## 2 Safety

### 2.1 Qualified Personnel

Correct and reliable transport, storage, installation, operation, and maintenance are required for the trouble-free and safe operation of the drive. Only qualified personnel are allowed to install and operate this equipment.

Qualified personnel are defined as trained staff, who are authorized to install, commission, and maintain equipment, systems, and circuits in accordance with pertinent laws and regulations. Also, the qualified personnel must be familiar with the instructions and safety measures described in this manual.

### 2.2 Safety Precautions

#### ⚠ 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 indicator lights are off.

Failure to wait the specified time after power has been removed before performing service or repair work could result in death or serious injury.

- Stop the motor.
- Disconnect AC mains, permanent magnet type motors, and remote DC-link supplies, including battery back-ups, UPS, and DC-link connections to other drives.
- Wait for the capacitors to discharge fully. The minimum waiting time is specified in the table *Discharge time* and is also visible on the nameplate on top of the drive.
- Before performing any service or repair work, use an appropriate voltage measuring device to make sure that the capacitors are fully discharged.

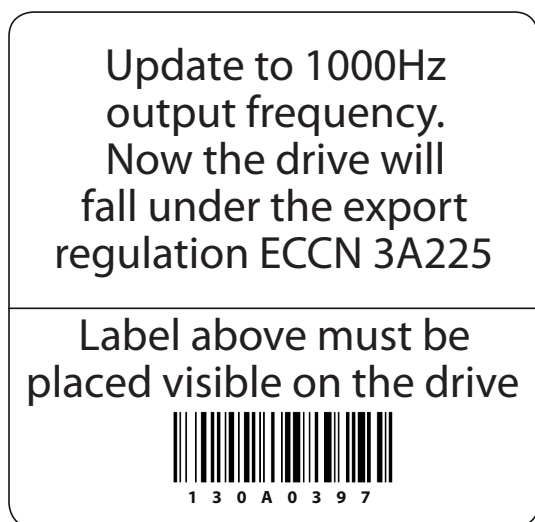
Table 1: Discharge Time

Minimum waiting time (minutes)	4	7	15	20	30	40
200–240 V	0.25–3.7 kW (0.34–5 hp)	–	5.5–37 kW (7.5–50 hp)	–	–	–
380–500 V	0.25–7.5 kW (0.34–10 hp)	–	11–75 kW (15–100 hp)	90–200 kW (150–350 hp)	250–500 kW (450–750 hp)	250–800 kW (450–1350 hp)  315–500 kW (500–750 hp)
400 V	–	–	–	90–315 kW (125–450 hp)	–	–
500 V	–	–	–	110–355 kW (150–450 hp)	–	–

Minimum waiting time (minutes)	4	7	15	20	30	40
525 V	–	–	–	55–315 kW (75–400 hp)	–	–
525–600 V	0.75–7.5 kW (1–10 hp)	–	11–75 kW (15–100 hp)	–	–	–
525–600 V	–	1.5–7.5 kW (2–10 hp)	11–75 kW (15–100 hp)	37–315 kW (50–450 hp)	355–1200 kW (450–1550 hp)	355–2000 kW (450–2050 hp)  355–710 kW (400–950 hp)
690 V	–	1.5–7.5 kW (2–10 hp)	11–75 kW (15–100 hp)	55–315 kW (75–400 hp)	–	–

**⚠ CAUTION ⚠**

When the new control card is installed in the drive by a local Danfoss company or a local Danfoss partner company, the extra 1000 Hz label, which is in the box, must be placed visible on the drive. The label indicates that the drive is updated to run with maximum 1000 Hz speed. Fill in the data to the confirmation letter, scan it, and then send it to: [ddsexportcontrol@danfoss.com](mailto:ddsexportcontrol@danfoss.com).



e30bg852.10

Illustration 1: 1000 Hz Label

## NOTICE

The control card is based on the MK-I control card (130B1109), and does not have all the new functions which are in the new MK-II control card. Furthermore, new software cannot be flashed into this control card.

### 3 Installation

#### 3.1 Replacing the Control Card

**Procedure**

1. Remove the LCP and the blind cover.

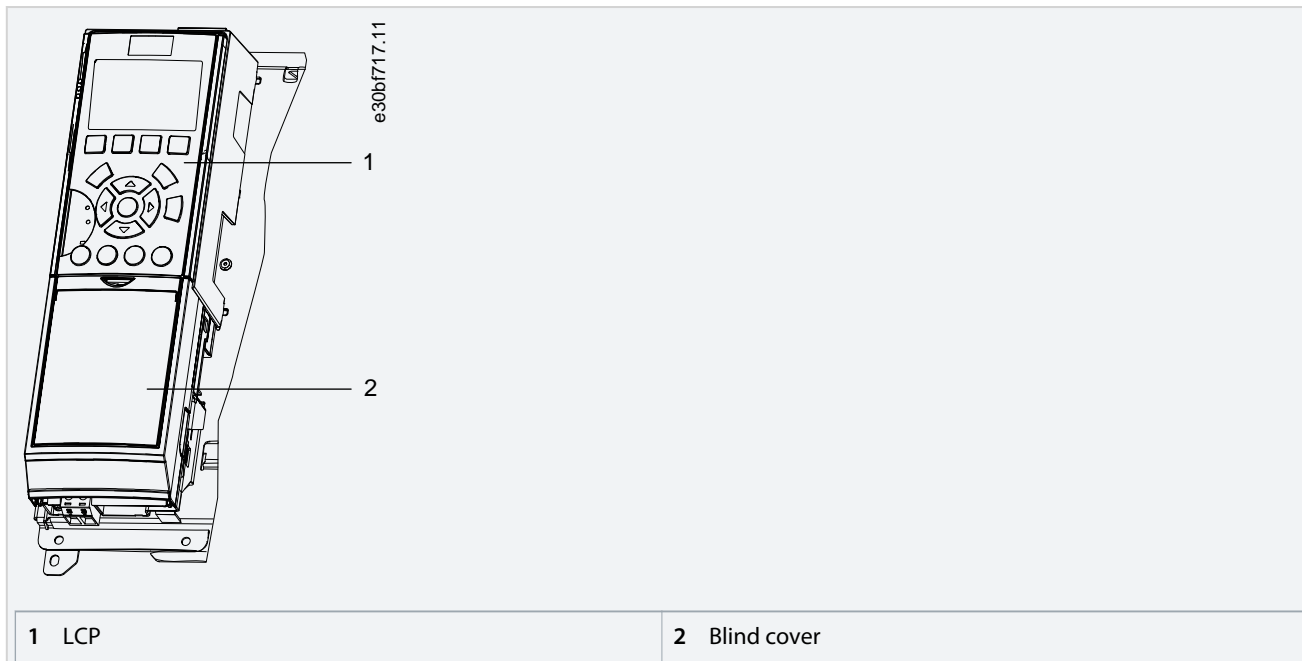


Illustration 2: LCP and Blind Cover

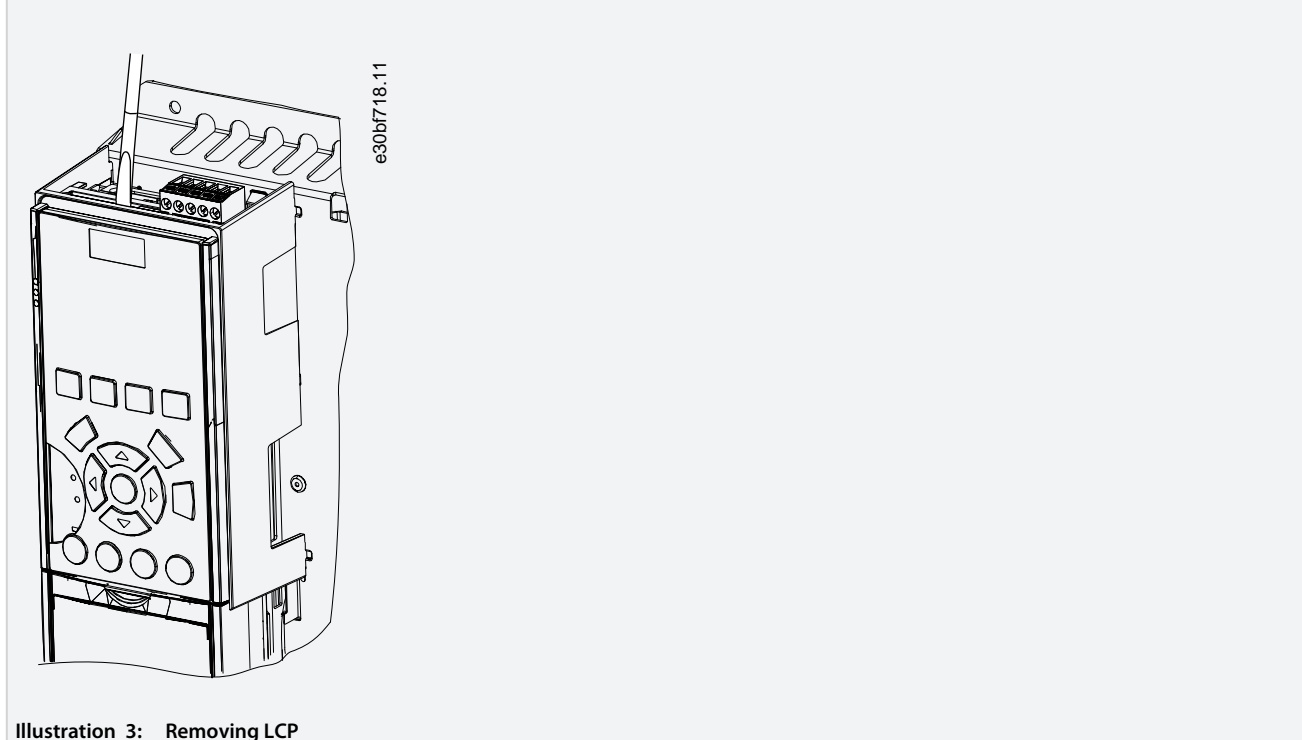


Illustration 3: Removing LCP

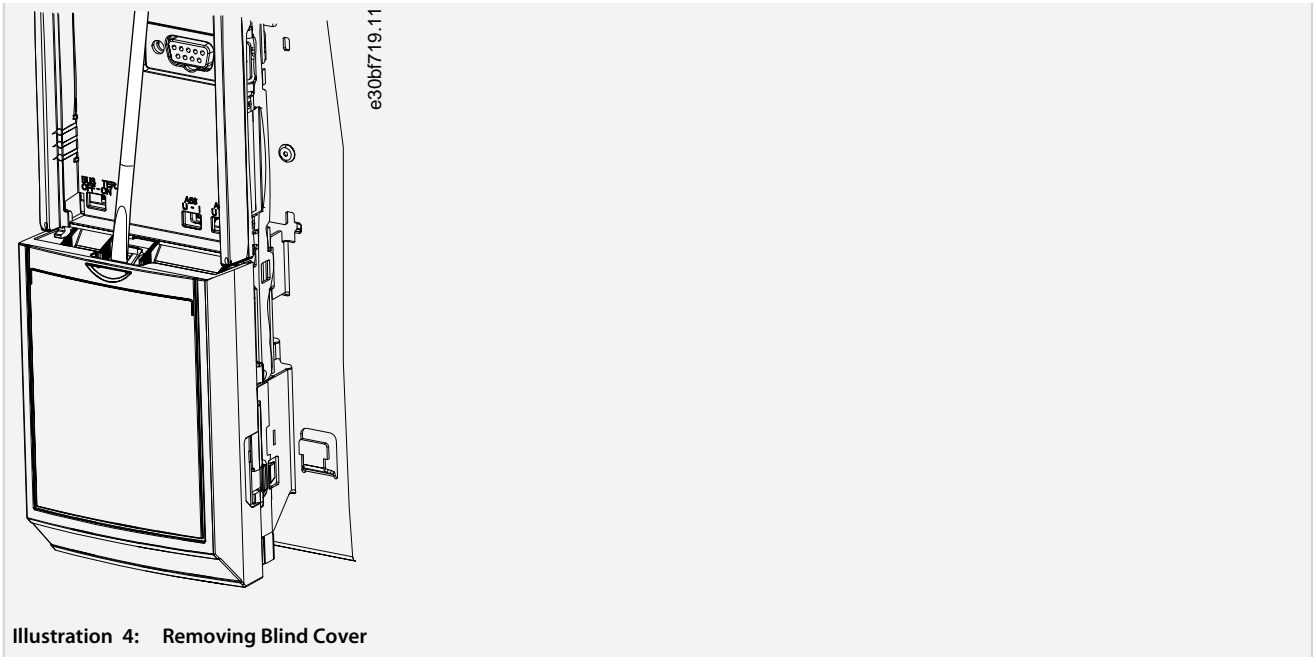


Illustration 4: Removing Blind Cover

2. Remove the LCP cradle.

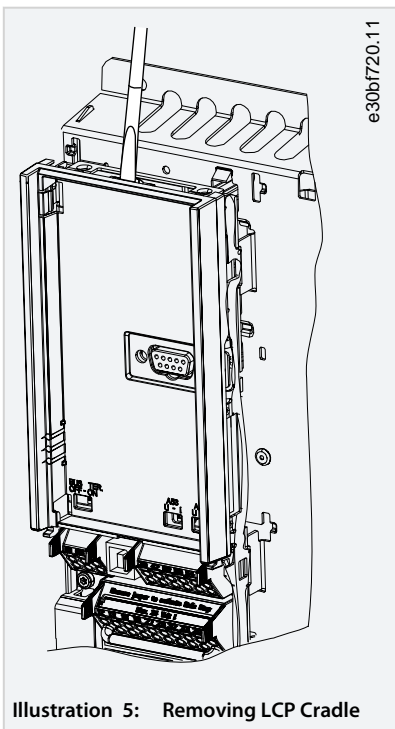


Illustration 5: Removing LCP Cradle

3. Remove all control cables from the metal bracket (spring-loaded).
4. Remove any A, B, or C options that may be installed.
5. Remove the I/O terminals.



Illustration 6: Location of Options and I/O Terminals

6. Unscrew the 3 T10 screws and remove the cable shield.
7. Remove the plastic cover underneath the cable shield.

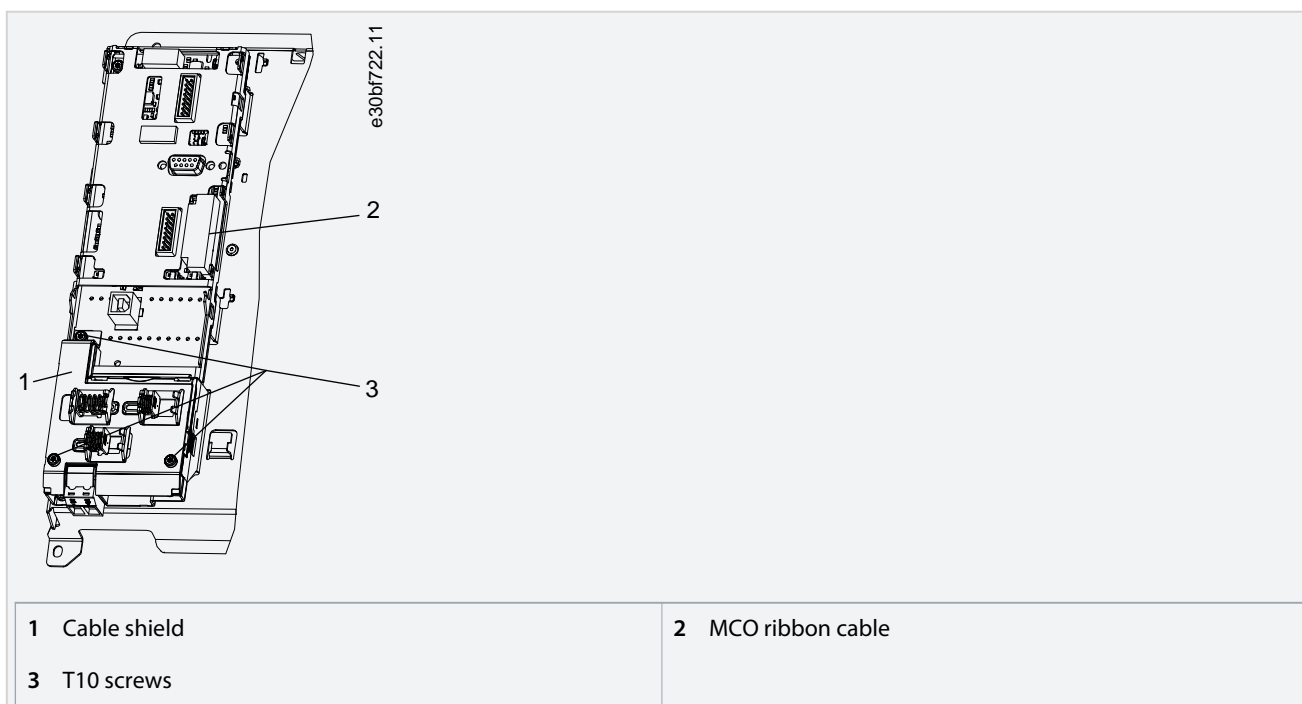


Illustration 7: Location of Cable Shield, Screws, and MCO Ribbon Cable

8. Unscrew the 2 T10 screws holding the control card EMC shield (4 screws if MCO is installed).
  - A If MCO is installed, remove the MCO ribbon cable.
9. Remove the control card EMC shield.

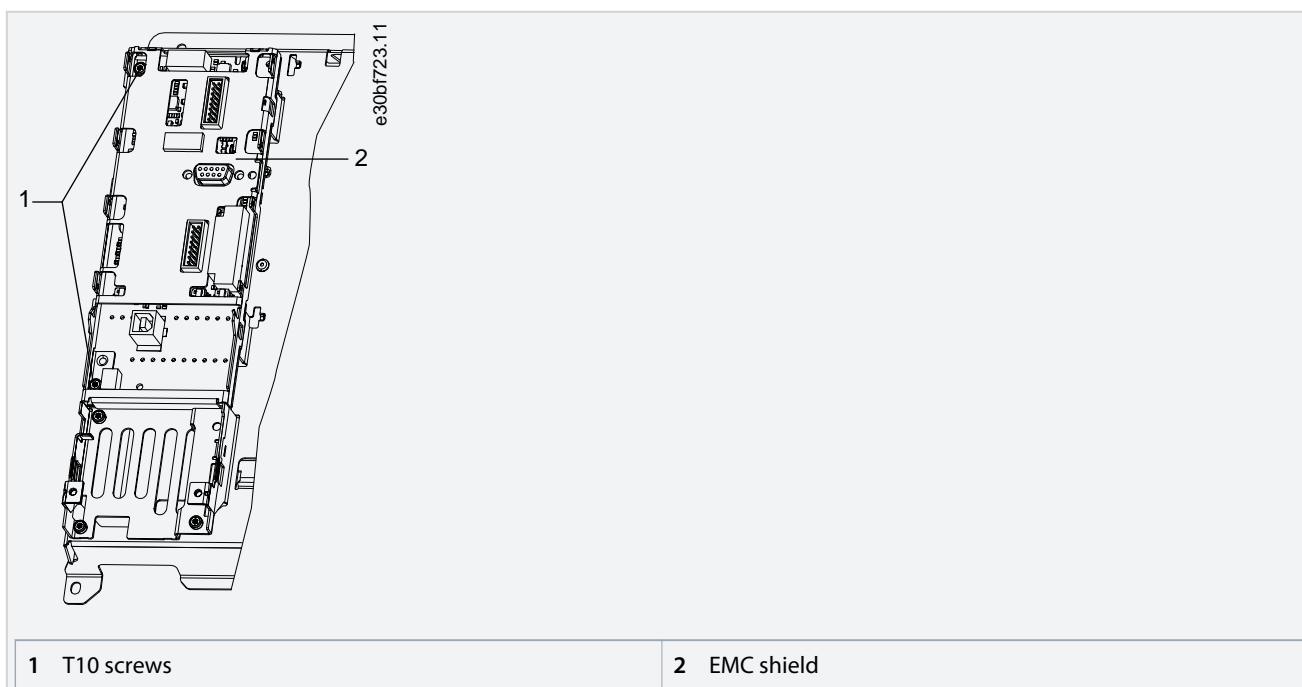


Illustration 8: Screws and EMC Shield

10. Unscrew the 3 T10 screws and remove them.

11. Gently remove the control card from the upper-right socket. Avoid overbending and contact with electronic components.

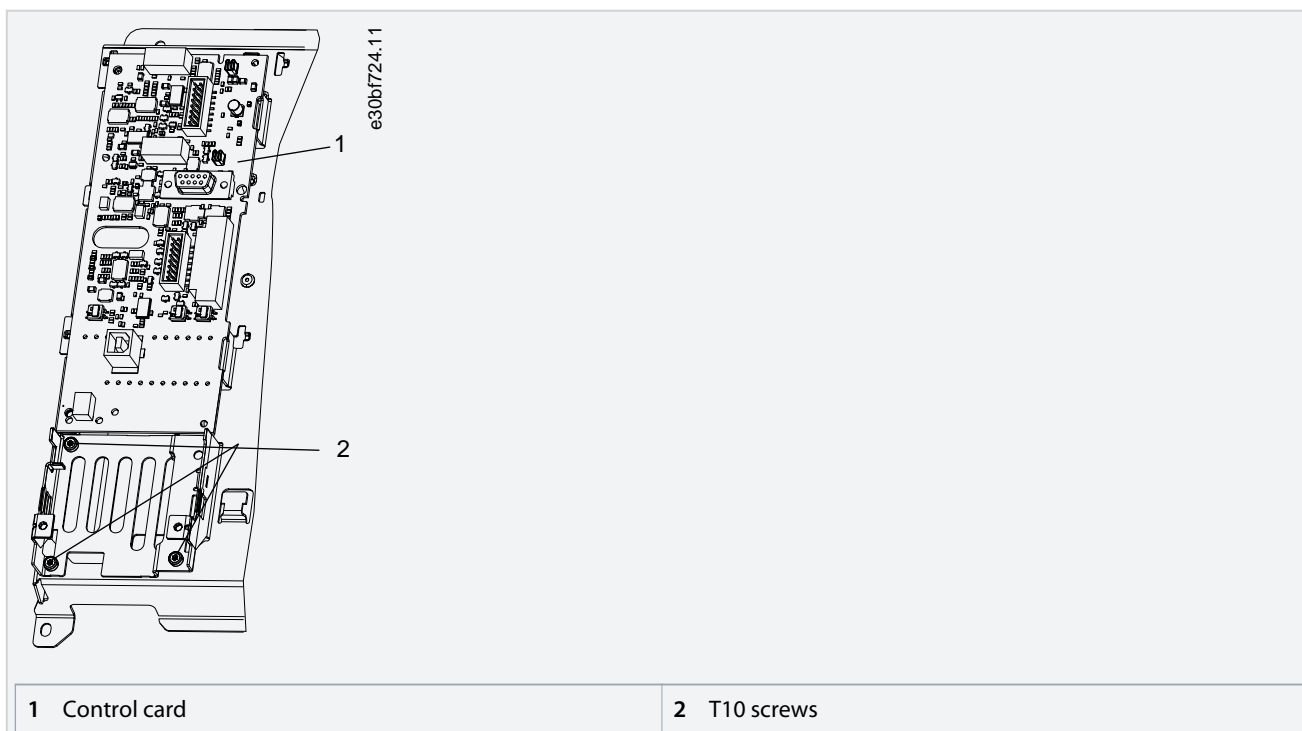


Illustration 9: Control Card and T10 Screws

12. Re-assemble the new control card in reverse order.





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