

# Installation Instructions

## Control Card

### VLT® HVAC Basic Drive FC 101

These instructions describe the replacement and the software update for the control card in VLT® HVAC Basic Drive FC 101.

#### Safety Instructions

Only Danfoss-authorized, qualified personnel is allowed to repair this equipment. The personnel must be familiar with the instructions and safety measures described in the *VLT® HVAC Basic Drive FC 101 Service Manual*.

#### **⚠ WARNING**

##### DISCHARGE TIME

The frequency converter contains DC-link capacitors, which can remain charged even when the frequency converter is not powered. 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 power 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, before performing any service or repair work. The duration of waiting time is specified in *Table 1.1*.

| Voltage [V]                                                                     | Power Range [kW] | Minimum waiting time (min) |
|---------------------------------------------------------------------------------|------------------|----------------------------|
| 3x200                                                                           | 0.25–3.7         | 4                          |
| 3x200                                                                           | 5.5–11           | 15                         |
| 3x400                                                                           | 0.37–7.5         | 4                          |
| 3x400                                                                           | 11–90            | 15                         |
| 3x600                                                                           | 2.2–7.5          | 4                          |
| 3x600                                                                           | 11–90            | 15                         |
| High voltage can be present even when the warning LED indicator lights are off. |                  |                            |

Table 1.1 Discharge Time

#### Item Supplied

The following item is supplied:

- Control Card

#### Additional Items Required

- FC 101 frequency converter
- MCT 10 Set-up Software. The software must be activated to support the *Drive Software Upgrader* feature. For information about activating the software, contact the Danfoss sales office.
- USB to RS-232 Converter
- The OSE file containing the appropriate control card software.

##### Obtaining the OSE file

Download the appropriate OSE file from the Danfoss Intranet site or get it from a Danfoss sales office. When contacting the Danfoss sales office, provide the frequency converter order number, listed as "P/N" on the frequency converter nameplate.

##### To download the OSE file from the Danfoss Intranet site:

1. On the *Danfoss Intranet* home page, select *Danfoss Power Electronics > Marketing & Segments > Product Management > VLT® HVAC Basic Drive FC 101*.
2. In the *Software updates* section, select the appropriate file:
  - 2a P618 platform: select the ZIP file with the following name: FC-101\_vX\_XX\_OSE\_P618. X\_XX stands for the latest software version number. In the ZIP file, select the OSE file that matches the order number of the frequency converter, listed as "P/N" on the frequency converter nameplate.
  - 2b P619 platform: select the FC-101\_P619\_vX\_XX\_OSE.ose file.

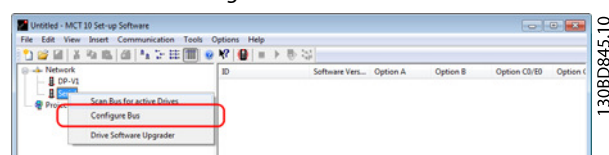
#### Replacing the Control Card

Follow the instructions in the *VLT® HVAC Basic Drive FC 101 Service Manual* to disassemble the frequency converter and replace the control card.

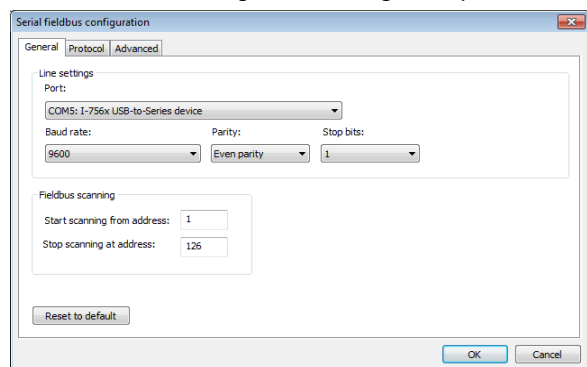
## Upload the Software

To upload the new software to the control card:

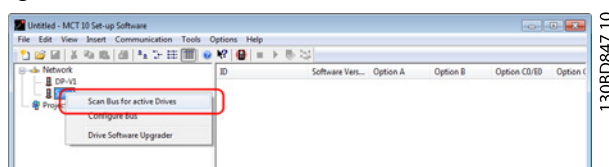
1. Connect the frequency converter to the computer where the MCT 10 Set-up Software is installed. For wiring instructions, see *MCT 10 Set-up Software Operating Instructions, chapter Set-up of Communication*.
2. Power up the frequency converter with the new control card installed. The LCP may show the alarm *AL 038 Internal Fault*. This is normal operation.
3. Start MCT 10 Set-up Software.
4. Configure the bus. In the *Network* group, right-click *Serial* and select *Configure Bus*.



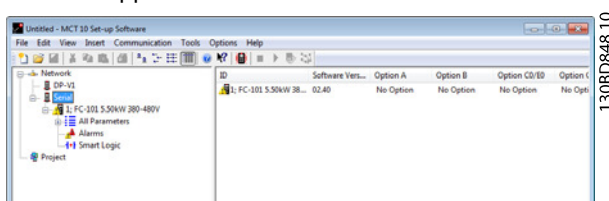
The *Serial fieldbus configuration* dialog box opens.



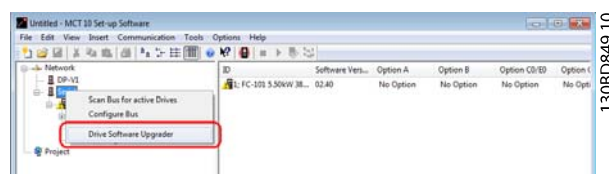
5. Scan the bus for active drives. In the *Network* group, right-click *Serial* and select *Scan Bus for Active Drives*.



6. The MCT 10 Set-up Software shows the *Scanning for Drives* dialog box.
7. When the scanning is complete, the frequency converter appears under *Serial* item.



8. Right-click *Serial* and select *Drive Software Upgrader*.

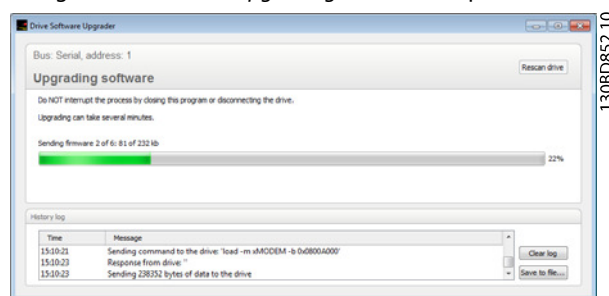


9. In the *Drive Software Upgrader* dialog box, click *Browse*. In the prompt dialog box, select the appropriate OSE file and click *OK*.

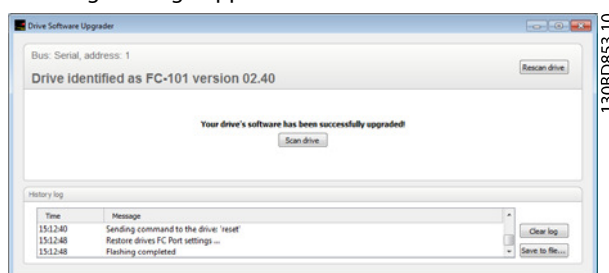


When an OSE file is selected in the *Firmware* file field, the *Drive Software Upgrader* dialog box shows the *Start upgrade* button.

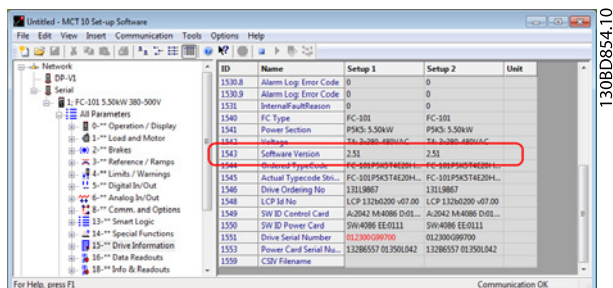
10. Click *Start upgrade*. The *Drive Software Upgrader* dialog box shows the *Upgrading Software* step.



11. When the software upgrade process is finished, the following message appears:



12. To confirm successful software upgrade, open parameter 15-43 *Software Version* and check that the software version in the frequency converter is the same as the version in the OSE file.



Now the control card contains the appropriate software and the frequency converter is ready for operation.



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Rev. 2014-03-25