Danfoss

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-authorised, 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*.

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 b	e present even when the	warning LED indicator

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:

- 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.

Dantoss

Control Card VLT[®] HVAC Basic Drive FC 101

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.

Serial fieldbus configuration				-	2
General Protocol Advanced				346	ź
Line settings Port:				RDS	2000
COM5: I-756x USB-to-Series devia	e	•		-	-
Baud rate:	Parity:	Stop bits:			
9600	Even parity 👻	1 •			
Fieldbus scanning Start scanning from address: 1 Stop scanning at address: 12	6				
Reset to default			OK Car	ncel	

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.

Wintitled - MCT 10 Set-up Software			
File Edit View Insert Communication Tools C	Options Help		
🔁 😅 M X Pa M M Fa D: 🖽 🎹 🔮	₩ 🔒 = > 8 🖏		
Network	ID Software Vers	Option A Option B	Option C0/E0 Option C
C 2013 C 2013 SSKW 380-480V C 2015 SSKW 38	₩ 1; FC-101 5.50kW 38 02.40	No Option No Option	No Option No Opti

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*.

rive Software U	pgrader	
Bus: Serial, a	iddress: 1	Rescan drive
Drive ide	ntified as FC-101 version 02.40	
Please select firm	mare files for FC-101	
.OSE file fo	mat:	
5 B	A THE REPORT OF THE PARTY OF TH	(Brees
Permisare n	c: C:/Users/U267075/Desktop/13119867_v2_51.ose	browse
removare in	e: C:/Users/U287075/Desktop/131.9867_v2_31.66e	Drowse
	E. C(Aes(ABN7))(beate(13106)32,31.06	[Start upyrade]
istory log	 C(Aner(A)(3)(7)(A)(anting(1)(3)(8))3(2)(ane) 	(Start upgrade)
Istory log	 C(Arev)(JB)707(prestring(1)1)/89792_31.com Message 	(Briografi
Istory log	E C(Aeeu/UR/P(A)p(eating(1)):007_y2_31.com Message Message Message	(Start.uoyada)
Istory log Time 15:08:45 15:08:45	Message Sectoring dive Dave sideofind	(Bert segme)

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.

nive avrivate o	pgrader	
Bus: Serial, a	address: 1	
Upgradir	g software	Rescan drive
Do NOT interru	t the process by closing this program or disconnecting the drive.	
Upgrading can	ake several minutes.	
Sending firmwa	e 2 of 6: 81 of 232 kb	
Sending firmina	e 2 of 6: 81 of 232 kb	22%
Sending firmwa	e 2 of 6: 81 of 232 lb	22%
Sending firmwa	e 2 of 6: 81 of 233 lb	22%
Sending firmwa	e 2 of 6 81 of 22206	22%
Sending firmwa Istory log Time	2 of 6 81 of 2220	22%
Sending firmwa Istory log Time 15:10:21	e 2 of 6 81 of 22126 Message Sending command to the drive: "load -m JADODM-8 0x00000000"	22%
Sending firmina Istory log Time 15:10:21 15:10:23	* 2 of 6 81 of 22206	22%

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

3us: Serial,	address: 1	
Drive ide	entified as FC-101 version 02.40	Rescan drive
	Your drive's software has been successfully upgrad	edt
	Soundhive	
story log	Sandhe	
tory log	San dhe	
Time 15:12:40	San drive Message Sending commund to the drive 'reset'	Cear log

Danfoss

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.

🖞 🤪 🕼 X 🗞 🛝 M 🎋 🗁 🖽 🔳		K? 🔘	■ > ◎ 32				
	^	ID	Name	Setup 1	Setup 2	Unit	
- B DP-V1		1530.8	Alarm Log: Error Code	0	0		
😡 📱 Serial		1530.9	Alarm Log: Error Code	0	0		
B- ■ 1; FC-101 5.50kW 380-500V		1531	InternalFaultReason	0	0		
All Parameters		1540	FC Type	FC-101	FC-101		
(i)		1541	Power Section	P5K5: 5.50kW	P5K5: 5.50kW		
B- 1-** Load and Motor		1542	Voltage	T4-2-280-490VAC	T4: 2-290 490VAC	_	
	1	150	Software Version	2.51	2.51		
(i) Z J Reference / Ramps		1544	Ordered TypeCode	FC-101P5K5T4E20HL	FC-101P5K5T4E2011	_	
H 4-** Limits / Warnings H		1545	Actual Typecode Stri	FC-101P5K5T4E20H	FC-101P5KST4E20H		
Digital In/Out		1545	Drive Ordering No	131L9867	131L9857		
 Analog In/Out 		1548	LCP Id No	LCP 13250200 v07.00	LCP 13260200 v07.00		
B- 58-** Comm. and Options		1549	SW ID Control Card	A:2042 M:4086 D:01	A:2042 M:4086 D:01		
Image: Strain Logic		1550	SW ID Power Card	SW:4086 EE:0111	SW:4086 EE:0111		
(i) 4 14-** Special Functions		1551	Drive Serial Number	012300G99700	012300G99700		
B 15-*** Drive Information		1553	Power Card Serial Nu	13286557 01350L042	13286557 01350L042		
B- h 16-** Data Readouts		1559	CSIV Filename				

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

Danfoss

Danfoss A/S Ulsnaes 1 DK-6300 Graasten www.danfoss.com/drives

order provided that such alterations can be made without subsequential 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.

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

