


# KIT SERVICE ELECTRONICS

110062,110109, & 110109-1.

 <b>Installation and servicing of Danfoss Turbocor® compressors by qualified and product trained personnel only. Follow these instructions and sound refrigeration/electrical/servicing practices relating to installation, commissioning, maintenance and service.</b>			
Consult the appropriate Danfoss Turbocor Compressors Inc. (DTC) Service Manual on <a href="http://turbocoroem.com">turbocoroem.com</a> for detailed service instructions.	<p><b>Never power compressor without covers in place and secured.</b></p> <p><b>Opening the drive panel will expose you to a voltage hazard of up to 575V AC and 900V DC. Ensure the mains input power is off and locked out before opening panel.</b></p> <p><b>Before opening the drive panel, wait at least 20 minutes after isolating AC power to allow the high voltage capacitors to discharge.</b></p>	Always wear appropriately rated safety equipment when working around equipment and/or components energized with high voltage.  This equipment contains hazardous voltages that can cause serious injury or death.	<p><b>Recover all refrigerant from compressor in accordance with local codes and ensure pressure is fully vented before the removal of refrigerant containing components.</b></p>

## 1 - Introduction

This kit contains the Service Electronics for the VTT/VTX Compressors. Please refer to our Service Manual for details regarding the replacement of this component assembly.

We have made the **VTT/VTX Service Manual** available to anyone. To access the manual, you may scan the applicable QR code below or you may go to our DTC website at [www.turbocoroem.com](http://www.turbocoroem.com). At the top of the page there is a pull-down menu called "Quick Links." Click this menu and select the appropriate service manual.

Refer to the applicable QR code below to download the VTT/VTX Service Manual.

**English**



**Chinese**



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## 2 - SERVICE ELECTRONICS Removal Instructions

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**NOTE:** As of the release of this instruction, there are two different ~~major~~ revisions for the Service Electronics Assembly (Revision ~~s~~ "A" & "B," and Revision "C." for the VTT Compressors one for all VTX Compressors. The Service Electronics Assembly is no longer available for the early VTT Compressors (Rev A & B). If the Service Electronics Assembly to be replaced is on a VTT Rev A or B Compressor, The Service Electronics Assembly for a Revision C VTT will work but it requires wiring to be updated. Please review the Wiring Cross Reference section below for details on how to retrofit the new Service Electronics Assembly on early compressors.  
~~Verify that the Service Electronics Assembly being replaced is the same revision as the new one. Some cable connectors are different between the two major revisions and are not interchangeable.~~

1. Isolate VTT/VTX power as described in Section "Electrical Isolation of the VFD" of the Service Manual (M-SV-VT-001).
2. Remove the Service Side Cover.
3. Remove all cables connected to the Service Electronics.
4. Remove the fasteners that secure the Service Electronics plastic frame to the main housing.

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## 3 - SERVICE ELECTRONICS Installation Instructions

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1. Clean and apply a thin layer of thermal paste to PWM heat sink surface of main housing.
2. Attach Service Electronics Assembly (CCM) to main housing using fasteners through the holes in the plastic frame.
  - o **Do not tighten.**
3. Install and tighten all other related fasteners.
4. Tighten the Service Electronics fasteners.
5. Connect all cables.
6. Install the Service Side Cover.
7. Use the SMT to perform a calibration and save to EEPROM.

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## 5-4- SERVICE ELECTRONICS Wiring Cross Reference for VTT Revisions A & B

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This section will detail the steps required to remove the Molex connections and the cables that connect to the CCM.

### General

Use the tables and diagrams below to determine the proper locations for the wire connections at the CCM terminals.

### General Wire Preparation

1. Cut the Molex connectors on the cables. Strip 7-8 mm (9/32" – 9/16") of insulation off the wire ends.
2. Tighten each connection with a flat-blade screwdriver.

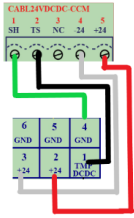
### DC-DC – CCM 24V Cable

CCM J16 — 24V DC-DC-CCM Revision A & B Cable	Wire Color	CCM Pinout – J16
Pin 1	Black	Pin 2 (TS)
Pin 2	Red	Pin 5 (+24)
Pin 3	White	Pin 4 (-24)
Pin 4	Green	Pin 1 (SH)
	Orange	
	Blue	

Shield replaced by ground wire in 2014.

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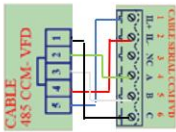
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Any Change to the J15 connector (EEV\_MOT)

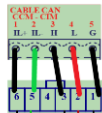
**CCM-VFD Cable**

CCM J4 — CCM-VFD Revision A & B Cable		
Pin	Wire Color	CCM Pinout – J4
Pin 1	Black	Pin 6 (C)
Pin 2	Green	Pin 4 (A)
Pin 3	White	Pin 5 (B)
Pin 4	Red	Pin 2 (IL-)
Pin 5	Blue	Pin 1 (IL+)
N/A	N/A	Pin 3 (H)



**CAN CM-CIM Cable (J17)**

CCM J17 — CAN CCM-CIM Revision A & B Cable		
Pin	Wire Color	CCM Pinout – J17
Pin 1	Black	Pin 5 (G)
Pin 2	Red	Pin 4 (L)
Pin 3	Black	Pin 3 (H)
Pin 4	N/C	N/C
Pin 5	Green	Pin 2 (IL-)
Pin 6	Black	Pin 1 (IL+)



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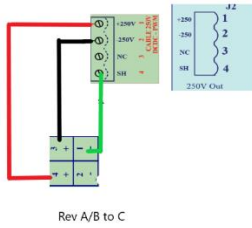
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**CCM-CIM 24V Cable (J7)**

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CCM J7 — CCM-CIM		
Revision A & B Cable	Wire Color	CCM Pinout - J7
Pin 1	N/C	N/C
Pin 2	Red	Pin 3 (+24)
Pin 3 or 2?	N/C	N/C
Pin 4	N/C	N/C
Pin 5 or 6?	Black	Pin 2 (-24)
Pin 6 or 5?	Green/Yellow	Pin 1 (SH)

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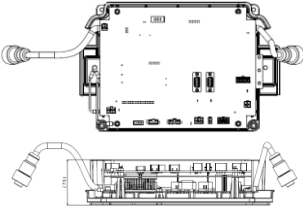




**24V DC-DC to CCM**

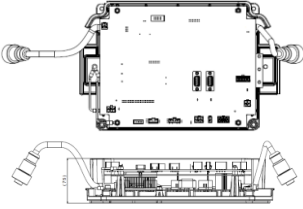




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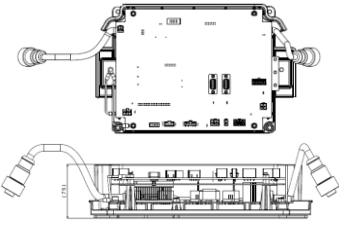




6-5 - Kit Contents

**Note:** Any part numbers included in the kit contents are internal part numbers only. Please refer to our Spare Parts Manuals for any kit part numbers.

Kit numbers	Compressor models	
110062	VTT (Revision A and B)	
QTY	Part(s) Description	Picture(s)
1	ASSEMBLY - SERVICE ELECTRONICS	
6	WASHER, M5 FLAT - 902487	
6	WASHER, M5 SPLIT - 902488	
4	SCREW, M5 - 902631	
2	SCREW, M5 - 902480	

Kit numbers	Compressor models	
110109	VTT Revision C	
QTY	Part(s) Description	Picture(s)
1	ASSEMBLY - SERVICE ELECTRONICS	
6	WASHER, M5 FLAT - 902487	
6	WASHER, M5 SPLIT - 902488	
4	SCREW, M5 - 902631	
2	SCREW, M5 - 902480	

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Kit numbers	Compressor models	
110109-1	VTX all revisions	
QTY	Part(s) Description	Picture(s)
1	ASSEMBLY - SERVICE ELECTRONICS	
6	WASHER, M5 FLAT - 902487	
6	WASHER, M5 SPLIT - 902488	
4	SCREW, M5 - 902631	
2	SCREW, M5 - 902480	

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