GENESIS EVO™

(TC1818a/TCM18 Retrofit Panel Kit)

INSTALLATION GUIDE

TEP0272_0725_v1.1

GENESIS EVO™ INSTALLATION GUIDE

It is recommended that a quick check of the current revision status be done at www.thermon.com prior to proceeding.

GENESIS EVO™ INSTALLATION GUIDE

PRODUCT WARRANTY INFORMATION

The seller warrants all equipment manufactured by it to be free from defects in workmanship or material under normal use and service. If any part of the equipment proves to be defective in workmanship or material and if such part is, within 12 months of the date of shipment from the seller's factory, and if the same is found by the seller to be defective in workmanship or material, it will be replaced or repaired, free of charge, F.O.B., the seller's factory. The seller assumes no liability for the use or misuse by the buyer, his employees, or others. A defect within the meaning of this warranty in any part of any piece of equipment shall not, when such part is capable of being renewed, repaired, or replaced, operated to condemn such piece of equipment. This warranty is in lieu of all other warranties (including without limiting the generality of the foregoing warranties for merchantability and fitness for a particular purpose), guarantees, obligations, or liabilities expressed or implied by the seller or its representatives and by statute or rule of the law.

GENESIS EVO™ INSTALLATION GUIDE

Table of Contents

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Version History

Version	Comments	Document Number
V1.0	Base version of the Genesis Evo™ Installation Guide	TEP0272-1124
V1.1	Added installation steps for scenarios for different placements of Evo sub-panel and the HMI	TEP0272-0725

GENESIS EVO™ INSTALLATION GUIDE

I. Introduction

This manual provides a detailed step by step installation procedure for Genesis Evo™. For translations other than English, please contact Thermon. The English language installation guide shall govern.

II. Audience

The information in this manual is for engineers and technicians qualified for the installation and programming of heat trace controllers. The technician must have the background:

- To carry out electrical system installations.
- Have a basic understanding of electrical and electronic systems.
- Experience in installing Heat Trace Systems (preferable).
- Basic understanding of the working of heat trace controller and configuration settings.
- Experience using mechanical tools.

III. Installation Precautions

- To minimize the potential for arcing and fire caused by product damage or improper installation use ground-fault protection. The National Electrical Code (NEC) and Canadian Electrical Code (CEC) require ground-fault protection of equipment for each branch circuit supplying electric heat tracing.
- Installation must comply with Thermon requirements and be installed in accordance with the NEC, CEC, or any other applicable national and local codes.
- Component approvals and performance ratings are based on the use of Thermon specified parts only. User supplied power connection fittings must be listed or certified for intended use.
- De-energize all power sources before opening the enclosure.
- Keep ends of heating cable and kit components dry before and during installation.
- Individuals installing these products are responsible for complying with all applicable safety and health guidelines. Proper personal protective equipment, or PPE, should be utilized during installation. Contact Thermon if you have any additional questions.

IV. Product Description

Genesis EvoTM is Thermon's offering to convert the existing TC1818a/TCM18 controller-based panels into a Genesis Controller like panel with same functional capabilities. This solution consists of a retrofit kit which is on a sub-panel which replaces the TC1818a/TCM18 controllers.

Genesis EvoTM retrofit kit consists of all certified components used in the Genesis panel. However, since this retrofit kit will be installed into an existing panel, it is the responsibility of the customer to ensure that it meets all the certification requirements after integration. This exercise must be done post installation at the place of installation.

V. Product Models

Part #	Model Description
17134	TC-1818a/TCM18 Retrofit Kit to Genesis 36-CKT
17135	TC-1818a/TCM18 Retrofit Kit to Genesis 72-CKT
17136	HMI Conversion Kit (optional)

Note – Please ensure that a Thermon representative has evaluated the fitment of the Genesis Evo™ retrofit panel for the one you intend to upgrade before ordering.

VI. Kit Inspection

a. Please ensure that you have received the following items as part of your Genesis Evo™ retrofit panel kit.

   - Genesis Evo™ retrofit panel
   - DTM modules (6 or 12 depending on your panel configuration)
   - CAN Bus cable
   - HMI Conversion Kit (if ordered)

b. If any of the items are missing or damaged, please contact your local sales representative for a replacement order.

Note: You will need to return all the items in the received package against a replacement order. Please discuss the logistics details with your local Thermon sales representative.

VII. Installation Procedure

1. Panel Configuration

1.1. Save the existing panel configuration.
1.2. Generate the new configuration file using TraceNet Sync v1.7 or above.

2. Power Off the Mains to the Panel

2.1. The power to the panel MUST be turned OFF before proceeding with the installation.
2.2. Switch off the upstream breaker and not the mains inside the panel or you will have live conductors on the line side of the mains inside the tub and will still be exposed to arc flash potential.
2.3. Also, switch off the Mains breaker.

3. Remove the old TC1818a/TCM18 sub-panel

3.1. If the controllers are mounted on a sub-panel

3.1.1. Open the older TC1818a/TCM18 sub-panel.

3.1.2. Remove all the cable connections to the TC1818a/TCM18 controllers and to the old sub-panel.

3.1.3. Remove the hinges to take off the old sub-panel.

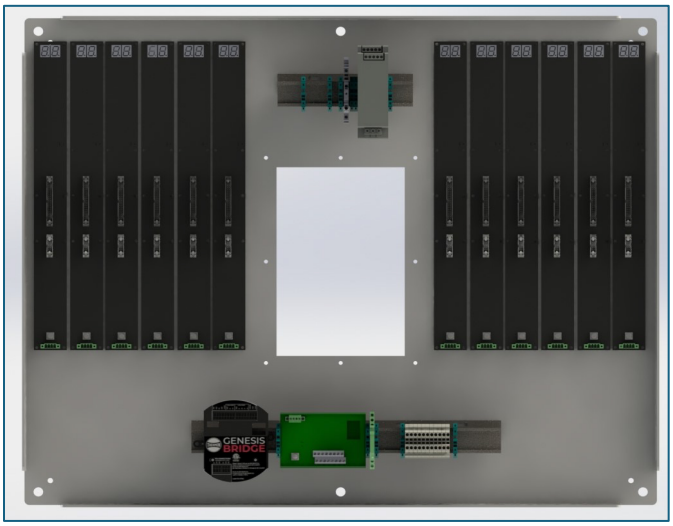
3.2. If the controller is mounted directly on the main panel door

3.2.1. Remove all the cable connections to the TC1818a/TCM18 controllers.

3.2.2. Remove the controllers from the main panel door.

3.2.3. Create a rectangular cut out for the cover plate for the HMI conversion kit using a Nibbler or a similar tool appropriate for the panel door thickness.

3.2.4. Remove the HMI from the Evo retrofit sub-panel.



3.2.5. Mount the HMI on the main panel door over the rectangular cut out using the HMI conversion kit.

3.3. If the controller(s) are mounted on a double door panel

3.3.1. Remove all the cable connections to the TC1818a/TCM18 controllers.

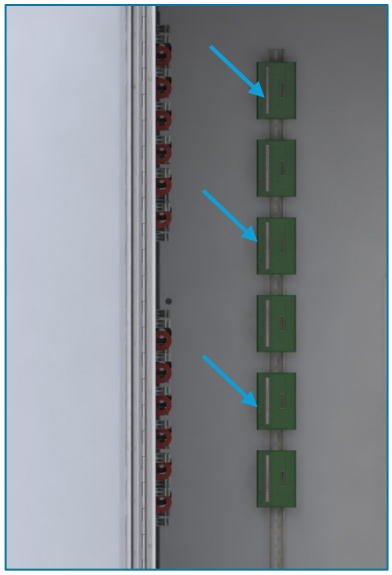
3.3.2. Remove the controllers from the main panel doors.

3.3.3. Create a rectangular cut out for the cover plate for the HMI conversion kit using a Nibbler or a similar tool appropriate for the panel door thickness. Do this on the door where the HMI can be installed with minimum complexity in wiring inside the panel. Follow steps 3.2.4 & 3.2.5 to install the HMI.

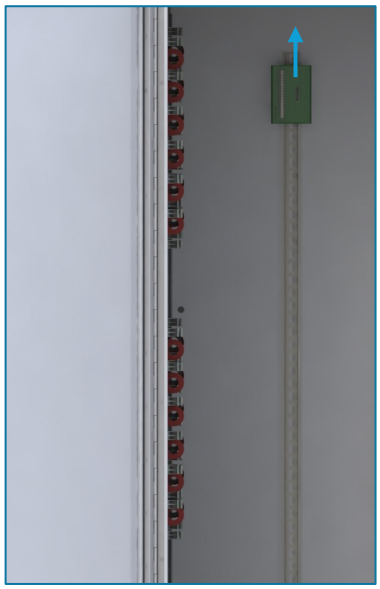
3.3.4. Install a metal sheet to cover the cutouts on the other door which will not be used for HMI.

4. Remove the old RTD boards

4.1. Disconnect the RTD wiring to the old RTD boards inside the panel.



4.2. Remove the old RTD boards from the slots in the panel as shown below.



5. Install the new DTM modules

5.1. Insert the new DTMs into the old RTD board slots in the panel.

5.2. Wire the RTDs to the DTM boards. Please refer to PN50881-Genesis-Controller-Installation.pdf for details on DTM module.

6. Install the new Genesis EVO retrofit kit

Mount the Genesis Evo™ retrofit panel.

6.1. As a Swing Out sub-panel

6.1.1. Check if the holes on the retrofit panel align with the existing holes on the main panel for mounting and securing using hinges.

6.1.2. If they do not match, then make provision by drilling the holes at the right places on the retrofit panel (avoid making holes on the main panel which may result in certification issues). One must ensure that there is no sealing issue post installation.

6.2. As a Swing Out sub-panel but with HMI on the main door

6.2.1. The position of the Evo sub-panel should be chosen such that the HMI does not hit against the sub-panel when the door is closed.

6.3. Installed on the back side of the main panel door with HMI installed using an HMI conversion kit

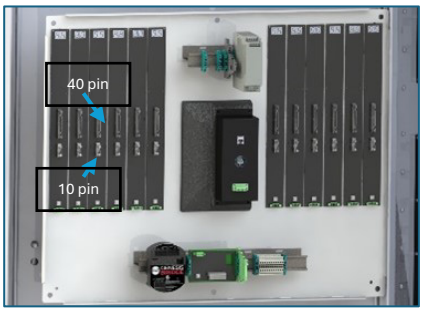
6.4. Installed on the double door panel using an HMI conversion kit

7. Wiring Connections

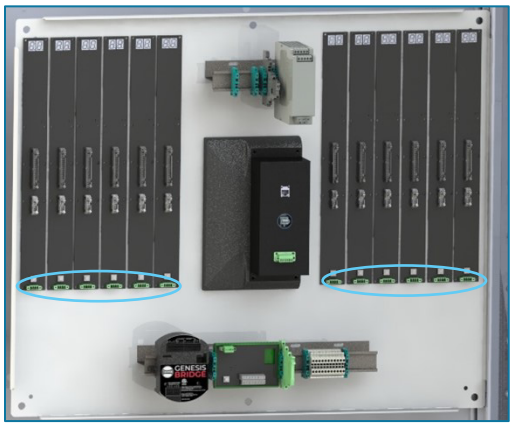
7.1. Connecting PM6 (CT boards) to DCM boards on the retrofit panel.

7.1.1. Connect the 40-pin connector from PM6 in case of TC1818a controller and both 40 pin and 10 pin connectors in case of TCM18 controller.

7.1.2. Ensure there is enough slack on the ribbon cables so that they do not strain the connectors. It is recommended to use cable tie mounts with sticky backs for strain relief.



7.2. Connect power and CAN cables to the DCM boards on the EVO retrofit panel.



7.3. Establish communication channel

7.3.1. **For panels acting as a slave using Modbus RTU on RS-485 loop**

7.3.1.1. Establish connectivity between the HMI and the Digi -RS 485 converter using the ethernet port.

7.3.2. **For panels configured as a part of Genesis Network using Modbus TCP over a hard-wired connection**

7.3.2.1. Establish connectivity between the ethernet port on the HMI and the network switch to establish the communication chain.

7.3.3. **For panels configured as a part of Genesis Network using Modbus TCP over a wireless mesh connection**

7.3.3.1. No action is needed as the bridge is already connected over CAN bus.

Note: Refer PN50881-Genesis-Controller-Installation.pdf for details.

7.4. Wiring the IOM board

7.4.1. Establish the alarm wiring to the IOM board based on your preferred configuration.

Note: Refer PN50881-Genesis-Controller-Installation.pdf for connection details.

7.4.2. Forced ON/OFF Configuration

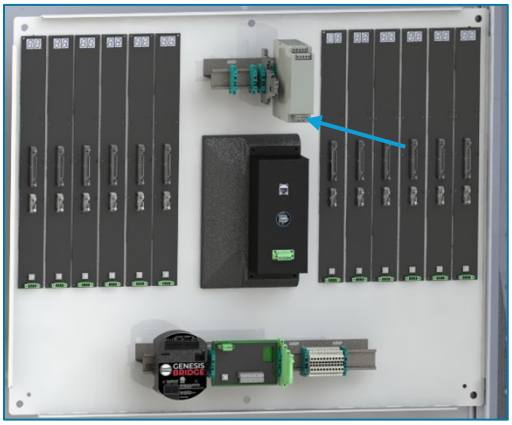
7.4.2.1. Use the connections available on the IOM board to connect Forced ON/Forced OFF signals based on your panel configuration.

Note: Please refer to PN50881-Genesis-Controller-Installation.pdf for connection details.

7.5. Connecting power to the EVO retrofit panel

7.5.1. Confirm the voltage on the main panel and that the available input voltage to the power supply module on the Genesis Evo retrofit panel meets the requirements.

7.5.2. Connect the power cable from the main panel to the EVO retrofit sub-panel.



Note: The 24Vdc output is already wired on the EVO retrofit panel.

Congratulations! Your Genesis Evo installation is now complete.

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