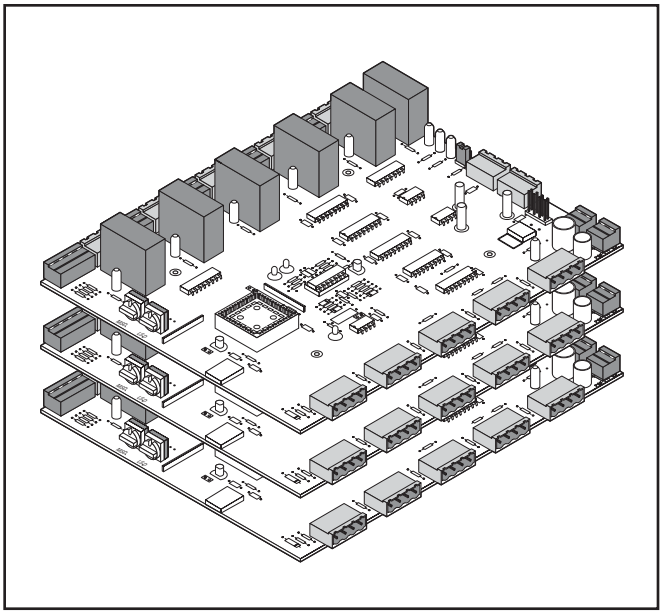
DigiTrace®

5GF-C

Heat-Tracing Module for Measuring Ground-Fault, Line Current, and Temperature with DigiTrace 200N System

Installation Instructions



Description

The 5GF-C provides ground-fault and line current sensing, alarming, switching and RTD input for five heat-tracing circuits when used with the DigiTrace 200N control and monitoring unit.

For technical support call Tyco Thermal Controls at (800) 545-6258.

Tools Required

- Screw driver small blade-standard
- Wire cutters
- Wire snipper

Additional Materials

- Power supply - 12 dc @ 400 mA/board

Approvals

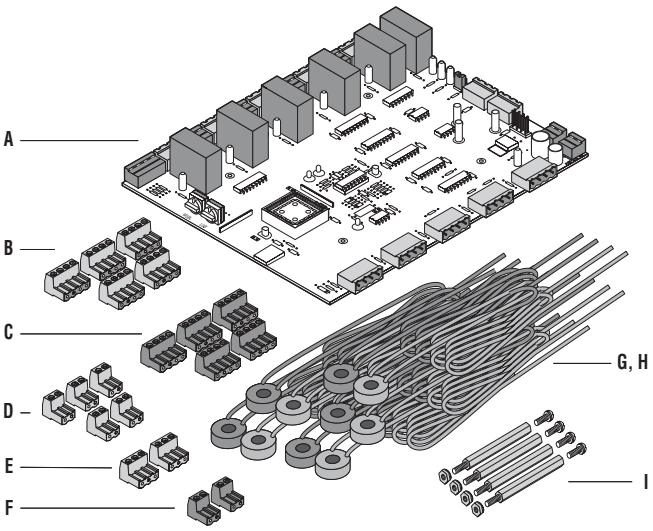
Nonhazardous locations

c UL us

UL Recognized Component Mark for Canada and the United States

Kit Contents

Item	Qty	Description
A	1	PC board
B	5	4 pin connectors (green) – RTD Inputs
C	5	4 pin connectors (black) – ground-fault/line current
D	5	2 pin connectors (green)– control contactor
E	2	3 pin connectors (green) – RS485
F	2	2 pin connectors (black) – 12 Vdc Pwr
G	5	Ground-fault sensor (red) with 10' pigtails
H	5	Current sensor (black) with 10' pigtails
I	4	#8 standoff–1 1/2" long/bored, #8-32 screws, washers, nuts



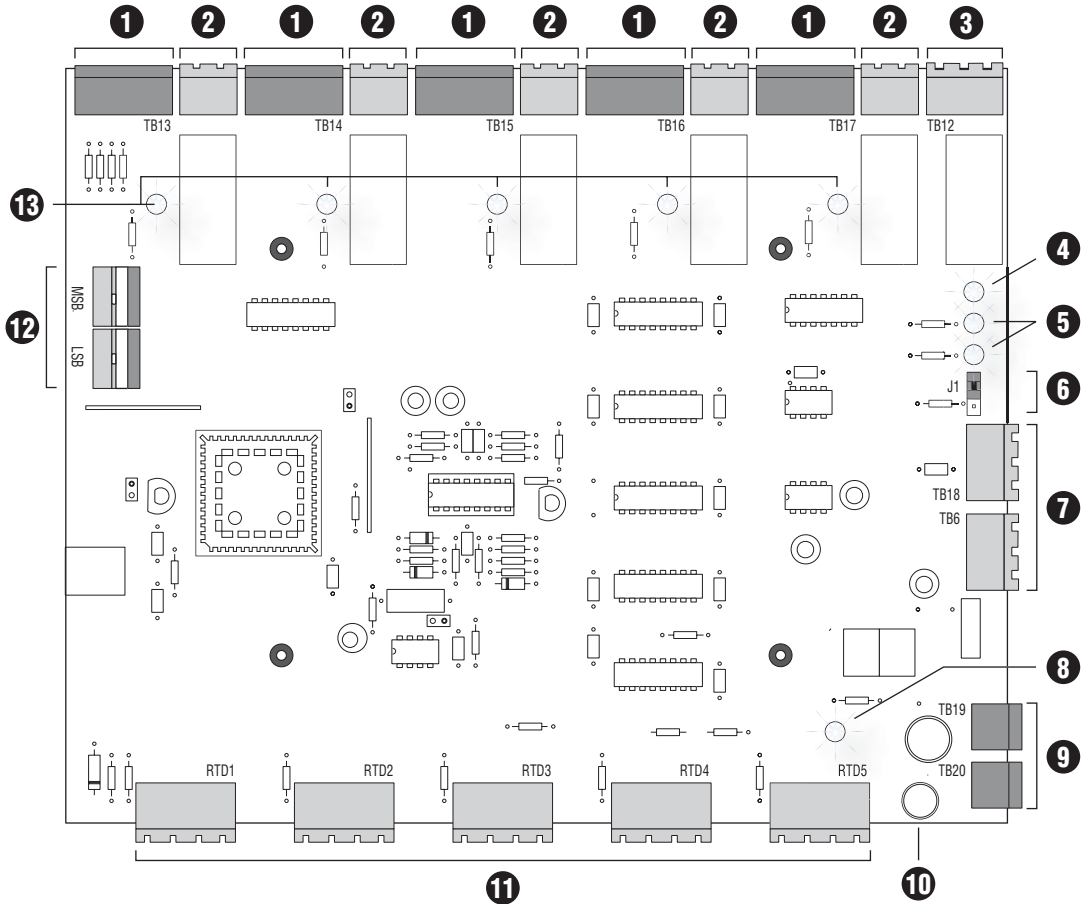
⚠ WARNING:

This component is an electrical device that must be installed correctly to ensure proper operation and to prevent shock or fire. Read these important warnings and carefully follow all of the installation instructions.

- Component approvals and performance are based on the use of Tyco Thermal Controls-specified parts only. Do not use substitute parts.
- Keep components dry before and during installation.
- Leave these instructions with the end user for reference and future use.

5GF-C Installation Instructions

Below is a complete 5GF-C layout for reference.



1. **Line current/ground fault connection (5x)**
2. **Contactor connection (5x)**
3. **Alarm output**
4. **Alarm LED**
5. **Receive/Transmit LED**
6. **End of Line (EOL) Jumper**
7. **RS485 Communication ports (5x)**
8. **Power On LED**
9. **12 Vdc Inputs (2x)**
10. **Fuse**
11. **RTD Inputs**
12. **Address Switches (2x)**
13. **Output LED Indicators (5x)**

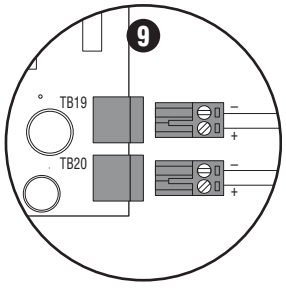
Mounting

(Reference mounting diameter drawing on page 4). Boards can be stacked horizontally or vertically with no more than 3 high. Leave enough room to access all terminal blocks for ease of connections.

Power Supply

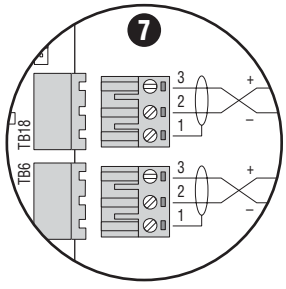
Power supply to be connected to TB19 (pin #1 (+), pin #2 (–)). TB20 is used to bus power to next 5GF-C.

Note: Power supply must be sized correctly.



RS-485 Communication

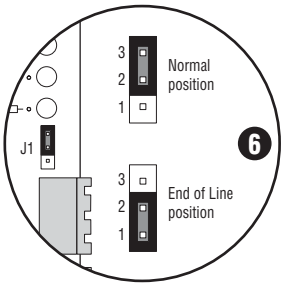
RS-485 to be connected to TB6 (pin #1 (shield), pin #2 (+), pin #3 (–)). TB18 is used to bus RS-485 to next device.



The 5GF-C must be installed per these instructions by a qualified person.

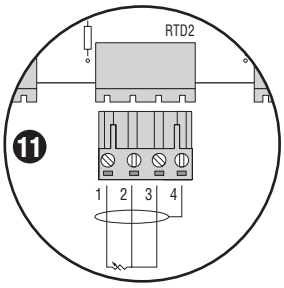
End of Line (EOL) Jumper

If this device (5GF-C) is the last device in the RS-485 network, the J1 jumper needs to be moved from terminals 2 & 3 to terminals 1 & 2.



RTD Inputs – Optional

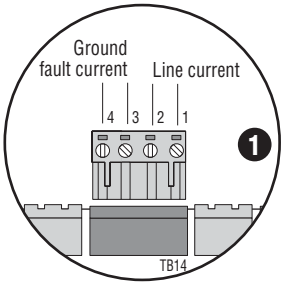
3 wire RTD with shield to be connected to RTD Ch1 thru Ch 5. The two common wires are connected to terminals 2 & 3, the source to terminal 1 and the braid to terminal 4 (not earth ground).



Note: RTD's are not required to be connected to this board if monitoring current/ground faults only or RTD's connected to RMM2.

Ground-Fault Sensors

The ground-fault sensors require both the phase wires or the phase and neutral wires to go through the center core. Verify that the ground wiring is NOT going through the center core. The ground-fault signal wires (two red wires) terminate to one of 5 terminal blocks on the 5GF-C board. (There is no requirement for polarity).

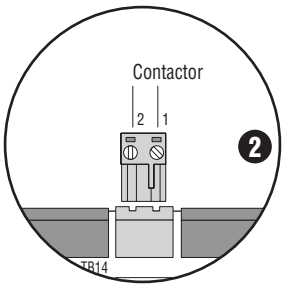


Current Sensors

The current sensors require the phase wire to go through the center core. The current sensor wire (two black wires) terminate to 1 of 5 terminal blocks on the 5GF-C board. (There is no requirement for polarity).

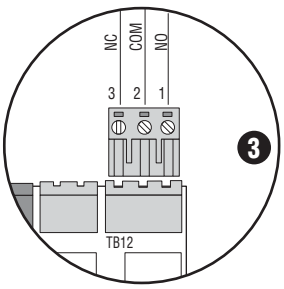
Interfacing Control Contactor's Coil to 5GF-C

There are 5 separate terminal blocks TB7 – TB11) that interface with the control contactors. The pilot relays can switch 120 V – 250 Vac. The voltage is dependent on the contactor's coil rating.
Connect phase wire to terminal 1. Connect terminal 2 to one side of the contactor's coil. The other side of the contactor's coil connects to phase or neutral.
The control power may be jumpered from terminal 1 of TB7 to the next contactor control input (TB8), terminal 1. This can be repeated for the remaining control contactor's inputs (TB9, TB10, & TB11).



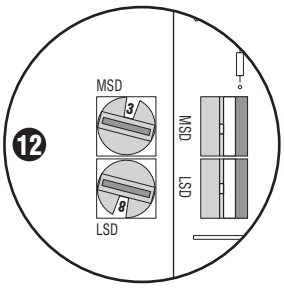
Common Alarm

The common alarm terminal block (TB12) is a form C dry contact, rated at 250 Vac max (5A). Connect to the NO (normally open) contact which is open during normal conditions and will close upon an alarm condition.
Connect to the NC (normally closed) contact which is closed during normal conditions and will open upon an alarm condition.



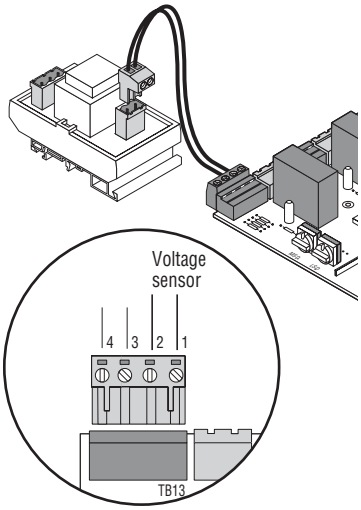
Address Switches (SW1 & SW2)

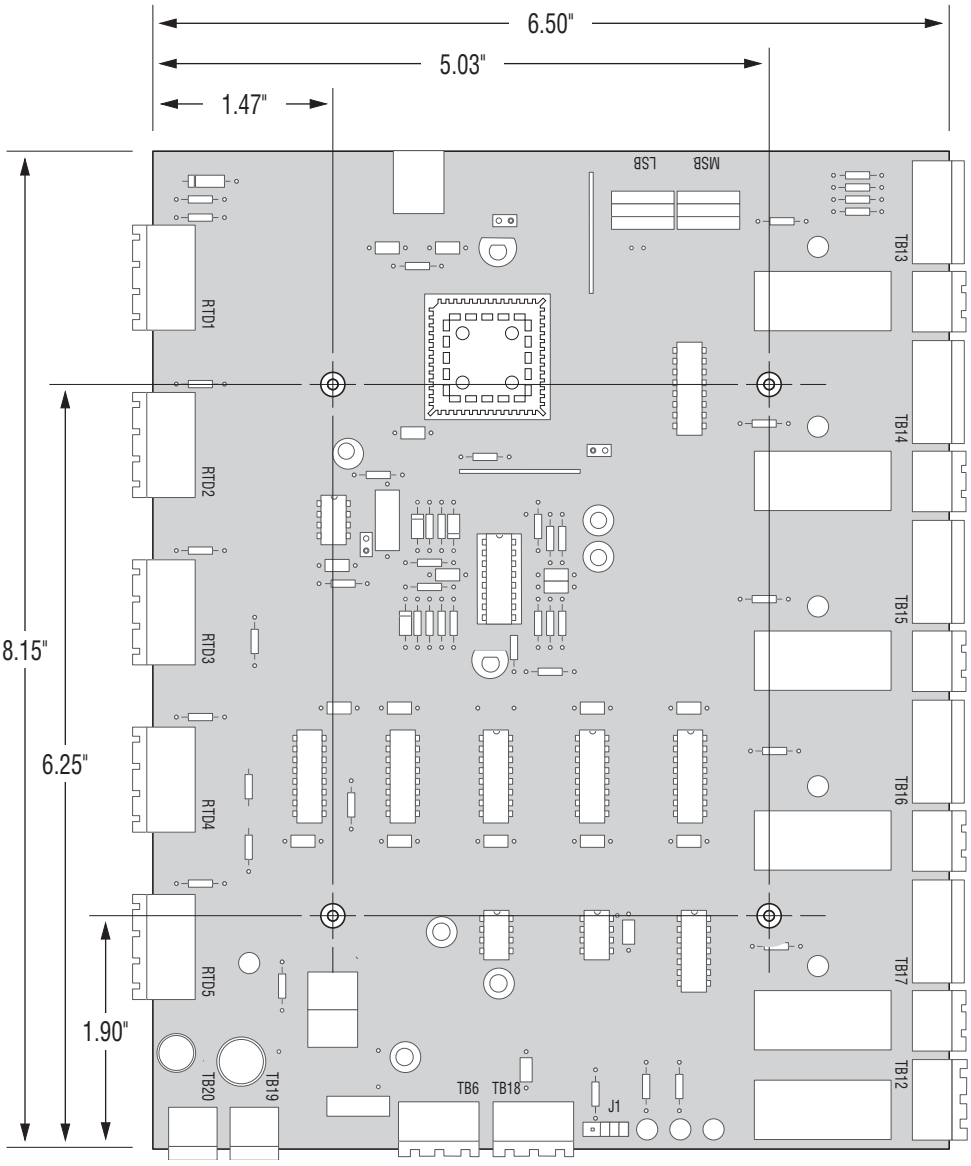
Each 5GF-C must have a unique address switch selected. The address switch range is 70-85. SW1 is the ones digit (0–9) and SW2 is the tens digit (7 or 8).
Note: When adding a 5GF-C to the system, you must perform a network update.



Optional Voltage Sensor

The optional voltage sensor can monitor 80-290 Vac. This voltage connects to J2 on the 5GF-C-VS. J1 from the 5GF-C-VS's interfaces to terminals 1 and 2 on any of five line current inputs (TB13 – TB17). By using the optional voltage sensor, you lose the ability to monitor the line current for that circuit.





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