

## Important Changes—Please read

### 1. Scope

For wiring this Revision B TTDM 4–20 mA module to your current-loop monitoring equipment, refer to the instructions below, in lieu of those in the TTDM or TTDM-NMM and TTDM-SIM operation and maintenance manuals.

### 2. Installation and wiring

#### 2.1 Jumpers

Ensure that jumpers J11 and J12 “OPTION PCB INT PWR JMPRS” on the TTDM motherboard are *not* installed. (When installed, these jumpers power the TTDM 4–20 mA module using TTDM internal power instead of the external 24 Vdc power, but this can cause ground loops that interfere with proper leak detection and location.)

#### 2.2 Wiring new installations

Connect your current-monitoring equipment at the 4–20 mA OUT PORT connector J2 on the TTDM motherboard.

If your current-monitoring equipment (a) floats with respect to your 24 Vdc supply, or (b) is referenced to the negative of your 24 Vdc supply, connect your monitoring equipment so that the TTDM 4–20 mA module sources current, as shown in Figure 1.

If your current-monitoring equipment is referenced to the positive of your 24 Vdc supply, connect your equipment so that the the TTDM 4–20 mA module sinks current, as shown in Figure 2.

The new wiring in Figures 1 and 2 is different from that specified in the operations and maintenance manuals and from that indicated by the terminal labeling on the motherboard. The new wiring uses only two wires, an improvement over the original four wires.

Note: Typical current-monitoring equipment requires the TTDM 4–20 mA module to source current.

### 3. Operation

For TTDM units, refer to Appendix 4 in the TTDM Operation and Maintenance Manual (H55472 5/96) for the following 4–20 mA module details:

- Output signals
- Testing
- Adjusting the scale

For TTDM-NMM units, refer to Appendix 6 in the TTDM-NMM and TTDM-SIM Operation and Maintenance Manual (H56313 11/97) for the following 4–20 mA module details:

- Output signals
- Testing and calibration
- Adjusting
- Selecting the SIM channel

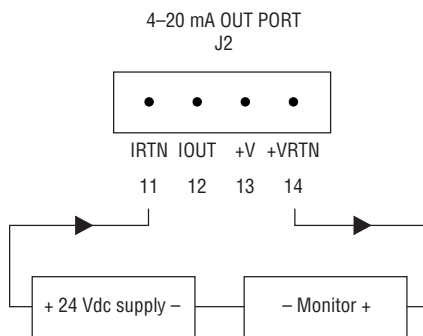


Figure 1

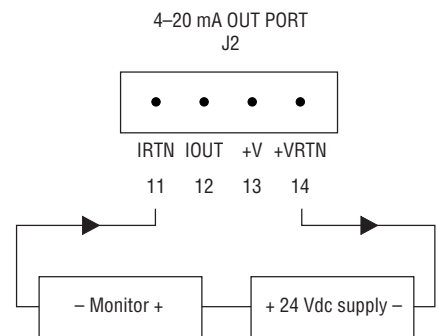


Figure 2

#### 4. Notes

##### 4.1 Maximum voltage of power supply

Your 24 Vdc power supply should apply no more than 26.4 V across the terminals labeled IRTN and +VRTN (where IRTN is positive with respect to +VRTN). If voltage greater than 26.4 V is applied across the terminals, the internal protection will clamp the voltage and cause spurious currents to flow.

##### 4.2 Maximum resistance in loop

The maximum resistance ( $R_{max}$ ) through which the TTDM 4–20 mA module can push 20 mA is determined by your power supply ( $V_{supply}$ ). The  $V_{supply}$  is nominally 24 Vdc. The sum of the resistance of your current-monitoring equipment plus the wiring in the loop should be less than  $R_{max}$ . The table at right lists values of  $R_{max}$  for selected voltages.

| $R_{max}$ vs. $V_{supply}$ |               |
|----------------------------|---------------|
| $V_{supply}$ (Vdc)         | $R_{max}$ (W) |
| 24                         | 900           |
| 18                         | 600           |
| 12                         | 300           |

**Important:** All information, including illustrations, is believed to be reliable. Users, however, should independently evaluate the suitability of each product for their application. Raychem makes no warranties as to the accuracy or completeness of the information, and disclaims any liability regarding its use. Raychem's only obligations are those in the Raychem Standard Terms and Conditions of Sale for this product, and in no case will Raychem or its distributors be liable for any incidental, indirect, or consequential damages arising from the sale, resale, use, or misuse of the product. Specifications are subject to change without notice. In addition, Raychem reserves the right to make changes—without notification to Buyer—to processing or materials that do not affect compliance with any applicable specification.

#### Telecommunications, Energy & Industrial Division

**Raychem Corporation**  
300 Constitution Drive  
Menlo Park, CA 94025  
Tel (800) 545-6258  
Fax (800) 611-2323  
ciinfo@raychem.com  
www.raychem.com

**Raychem N.V.**  
Diestsesteenweg 692  
B-3010 Kessel-Lo  
Belgium  
Tel (32) 16/351-231  
Fax (32) 16/351-694