



Figure 2. FBM203/b/c/d and DIN Rail Mounted Termination Assembly Installation

## FUNCTIONAL SPECIFICATIONS

### Input Channels

8 resistance temperature detector (RTD) input channels. Each channel is isolated and independent.

### Input Range (Each Channel)

#### FBM203/203d

0 to 320 ohms. 320 ohms equals 64000 counts. Minimum overrange value is 327.675 ohms at a count of 65535.

#### FBM203b

0 to 640 ohms. 640 ohms equals 64000 counts. Minimum overrange value is 655.35 ohms at a count of 65535.

#### FBM203c

0 to 30 ohms. 30 ohms equals 64000 counts. Minimum overrange value is 30.72 ohms at a count of 65535.

### Sensor Current

#### FBM203/203d

0.19 mA dc nominal

#### FBM203b

0.10 mA dc nominal

#### FBM203c

0.54 mA dc nominal

### Lead Resistance

#### FBM203/203b

50 ohms maximum each lead. Any imbalance in extension leads will decrease accuracy.

## FUNCTIONAL SPECIFICATIONS (CONTINUED)

### **FBM203c**

10 ohms maximum each lead. Any imbalance in extension leads will decrease accuracy.

### **FBM203d**

50 ohms maximum. Any imbalance in extension leads will not affect accuracy.

### **Input Channels (8)**

#### **ANALOG ACCURACY (INCLUDES LINEARITY)**

*FBM203/d*

±0.03% of span

*FBM203b*

±0.03% of span

*FBM203c*

±0.1% of span

### **Input Channels (8) (Cont.)**

#### **ACCURACY TEMPERATURE COEFFICIENT**

±50 ppm/°C

#### **INPUT SIGNAL A/D CONVERSION**

Each channel performs its own A/D signal conversion, using an independent sigma-delta conversion technique.

#### **INTEGRATION PERIOD**

Software configurable.

#### **COMMON MODE REJECTION**

>125 db at 50 or 60 Hz

#### **NORMAL MODE REJECTION**

>95 db at 50 or 60 Hz

### **Typical Resistance Temperature Sensors**

Platinum (DIN), Platinum (SAMA), Platinum (IEC), or Nickel (SAMA)

#### **FBM203/d**

Platinum: 100 ohms nominal at 0°C

Nickel: 235 ohms nominal at 0°C

#### **FBM203b**

Platinum: 200 ohms nominal at 0°C

Nickel: 470 ohms nominal at 0°C

#### **FBM203c**

Copper: 10 ohms nominal at 25°C

### **Input Signal**

Supports 2-, 3- or 4-wire variable-resistance temperature sensors. For 2-wire inputs, there is no correction for lead resistance or lead resistance temperature changes.

### **Process I/O Communications**

Communicates with its associated FCM or FCP via the redundant 2 Mbps module fieldbus.

### **Input Channel Isolation**

Each channel is galvanically isolated from all other channels and earth (ground). The TA/module withstands, without damage, a potential of 600 V ac applied for one minute between any channel and ground, or between a given channel and any other channel.

### **CAUTION**

This does not imply that these channels are intended for permanent connection to voltages of these levels. Exceeding the limits for input voltages, as stated elsewhere in this specification, violates electrical safety codes and may expose users to electric shock.

### **Power Requirements**

#### **INPUT VOLTAGE RANGE (REDUNDANT)**

24 V dc +5%, -10%

#### **CONSUMPTION**

3 W (maximum)

#### **HEAT DISSIPATION**

3 W (maximum)

Table 3. Cable Types and Part Numbers

Cable Length m (ft)	Type 4 P/PVC <sup>(a)</sup>	Type 4 LSZH <sup>(b)</sup>	Type 4 H/XLPE <sup>(c)</sup>
0.5 (1.6)	P0916FG	P0928BA	P0916WD
1.0 (3.2)	P0916FH	P0928BB	P0916WE
2.0 (6.6)	P0931RQ	P0928BC	P0931RU
3.0 (9.8)	P0916FJ	P0928BD	P0916WF
5.0 (16.4)	P0916FK	P0928BE	P0916WG
10.0 (32.8)	P0916FL	P0928BF	P0916WH
15.0 (49.2)	P0916FM	P0928BG	P0916WJ
20.0 (65.6)	P0916FN	P0928BH	P0916WK
25.0 (82.0)	P0916FP	P0928BJ	P0916WL
30.0 (98.4)	P0916FQ	P0928BK	P0916WM

(a) P/PVC is polyurethane outer jacket and semi-rigid PVC primary conductor insulation. PVC is rated from -20 to +50°C (-4 to 122°F).

(b) Low smoke zero halogen or low smoke free of halogen (LSZH) is a material classification used for cable jacketing. LSZH is composed of thermoplastic or thermoset compounds that emit limited smoke and no halogen when exposed to high sources of heat. Temperature range; -40 to +105°C (-40 to +221°F)

(c) H/XLPE is Hypalon outer jacket and XLPE (cross-linked polyethylene) primary conductor insulation. H/XLPE is rated from -40 to +90°C (-40 to 194°F). Hypalon cables are no longer available for purchase.

### Use of Termination Assemblies in 100 Series Upgrade Subsystem

When an FBM203/c/d is used to replace a 100 Series FBM, it may use any of the appropriate termination assemblies listed above for the FBM's field I/O wiring. Alternatively, the FBM203/c/d can accept this field wiring through a Termination Assembly Adapter (TAA) instead of a termination assembly. This is discussed in *Termination Assembly Adapter Modules for 100 Series Upgrade* (PSS 31H-2W4).