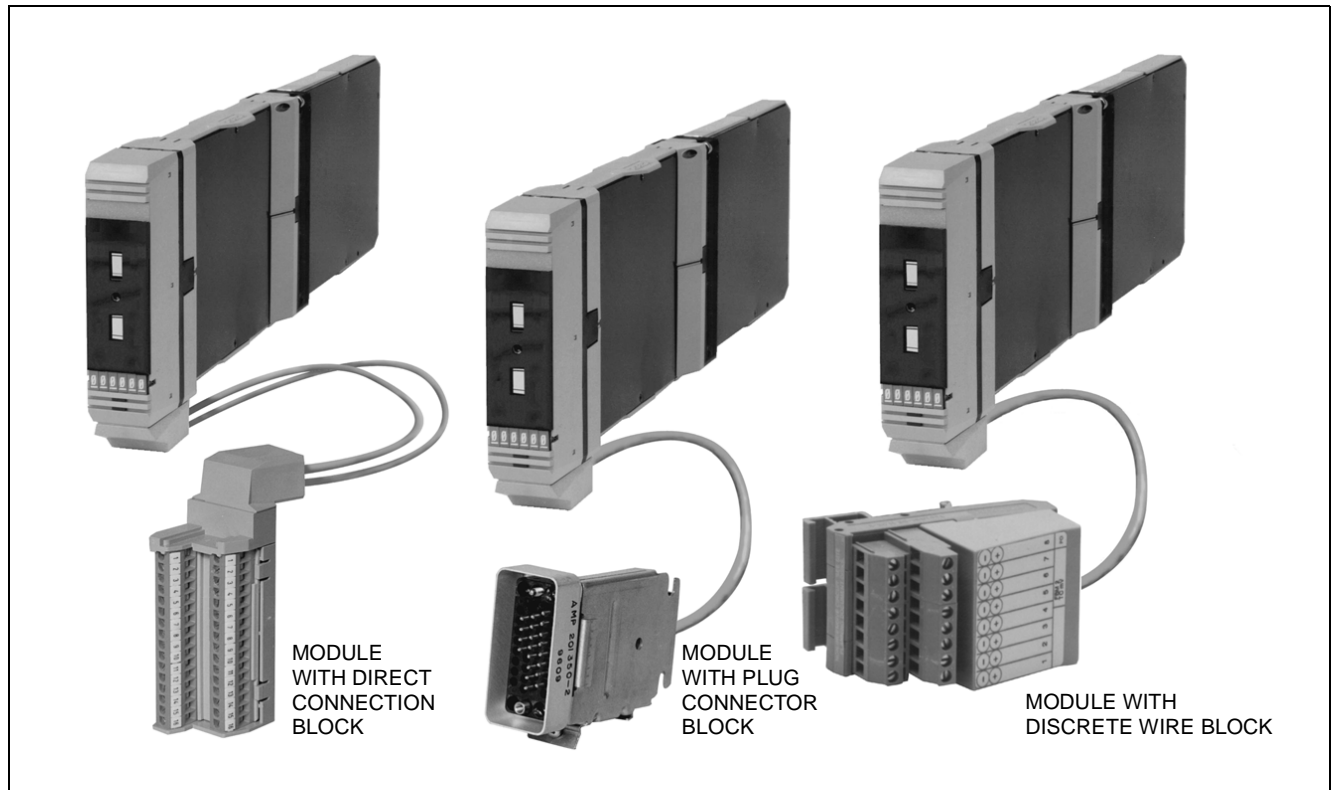


I/A Series® Hardware

Copper RTD Input Interface Module (FBM33)



The Copper RTD Input Interface Module (FBM33) contains eight Resistance Temperature Detector (RTD) input channels. Each channel accepts a 2- and 4-wire RTD, or 3-wire RTD sensor input within a 0 to 30 ohm resistance range. Within the same module, 3-wire RTDs may not be mixed with 2- or 4-wire RTDs. The module performs the signal conversion required to interface the electrical input signals from the RTD to the redundant Fieldbus. The module is a main type, and independently connects to the redundant Fieldbus.

This module executes the Analog Input application program. The configurable options for this program are Analog Input Resolution (on a per module basis), Fieldbus Switching Enable, and Fieldbus Switching Time.

FUNCTIONAL SPECIFICATIONS

Input

8 isolated and independent channels

Input Range (each channel)

0 to 30 ohms

Sensor Current

0.75 mA dc

Rated Mean Accuracy(a)

$\pm 0.125\%$ of span (± 0.04 ohms)

CONFORMITY

$\pm 0.25^{\circ}\text{C}$

ACCURACY TEMPERATURE COEFFICIENT

± 25 ppm/ $^{\circ}\text{C}$

Communication

Via a redundant Fieldbus

Input Connections

Supports 2-, 3- and 4-wire variable-resistance temperature sensors (see Figure 1).

Conversion Time (software configurable)

See Table 1 (Input Specifications)

(a) Represents the accuracy of the FBM only.

Typical Resistance Temperature Sensors

Copper

Power Requirements

INPUT VOLTAGE RANGE (REDUNDANT)

26 to 42 V dc

CONSUMPTION

9 W (maximum)

HEAT DISSIPATION

9 W (maximum)

Isolation

The module can withstand, without damage, a potential of 600 V ac applied for one minute between any channel and earth (ground), or between a given channel and any other channel.

NOTE

This does not imply that these channels are intended for permanent connection to hazardous voltage circuits. Connection of these channels to voltages greater than 30 V ac or 60 V dc violates electrical safety code requirements and may expose users to electric shock.

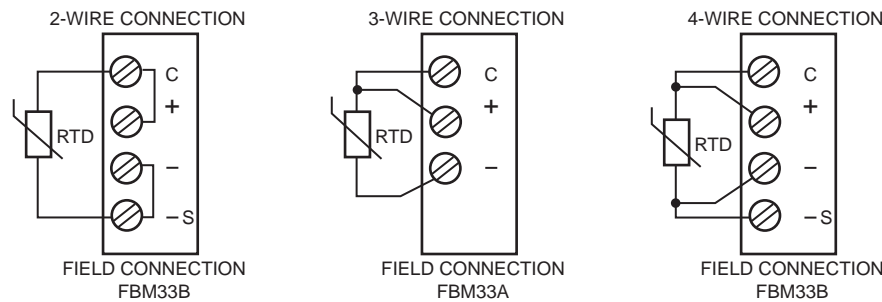


Figure 1. Input Connections

Table 1. Input Specifications

Conversion Time (Seconds)	Setting Time (Seconds)(a)	Linearity Error (% of Range)(b)	Resolution (Bits)
0.1	0.4	0.0625	12
0.2	0.6	0.0375	13
0.5	1.2	0.025	14
1.0	2.4	0.025	15

(a) Value settles within a 1% band of steady state for an input step change of 3 to 30 ohms.

(b) Monotonic; assures that the signal for Fieldbus communications either increases or remains the same for increasing analog input signals.

ENVIRONMENTAL SPECIFICATIONS(A)

Operating

TEMPERATURE

0 to 60°C (32 to 140°F)

RELATIVE HUMIDITY

5 to 95% (Noncondensing)

ALTITUDE

-300 to +3,000 m (-1,000 to +10,000 ft)

Storage

TEMPERATURE

-40 to +70°C (-40 to +158°F)

RELATIVE HUMIDITY

5 to 95% (Noncondensing)

ALTITUDE

-300 to +12,000 m (-1,000 to +40,000 ft)

Contamination

Class G3 (Harsh) as defined in ISA Standard, S71.04

(a) The environmental limits of this module may be enhanced by the type of enclosure containing the module. {Refer to the applicable Product Specification Sheet (PSS) which describes the specific type of enclosure that is to be used.}

PHYSICAL SPECIFICATIONS

Mounting

WITH Y-ADAPTER

Installable in the 1x8 Mounting Structure,
I/A Series Industrial Enclosures and Field
Enclosure 8

WITHOUT Y-ADAPTER

Installable in I/A Series Field Enclosure 4 and the
1x8 FBM Mounting Structure

Mass

1 kg (2.2 lb)

Indicators (mounted on termination connector)

OPERATIONAL STATUS

Red and green light-emitting diodes (LEDs)

Field Termination Connections(a)

DISCRETE WIRE BLOCK

3-Wire RTD

24 screw-clamp terminals

2- and 4-Wire RTD

32 screw-clamp terminals, (2 blocks, each using
16 terminals)

DIRECT CONNECTION BLOCK

32 screw-clamp terminals

PLUG CONNECTOR BLOCK

34-pin connector. Mates with:

- Burndy MSD 34 PM 118
(plug with bar-type cable clamp)
- Burndy MSD 34 PM 124
(plug with clamshell hood)
- Burndy MSD 34 PM 824
(plug with suitcase hood)
- or equivalent

(a) The discrete wire or plug connector block is available on termination cable assemblies for all enclosures excluding the Field Enclosure 4, and Multiple (Bridged) Industrial Enclosure 32. The direct connection block is available only on the termination cable assembly for the Field Enclosure 4. Multiple (Bridged) Industrial Enclosure 32s use plug connector block only.

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