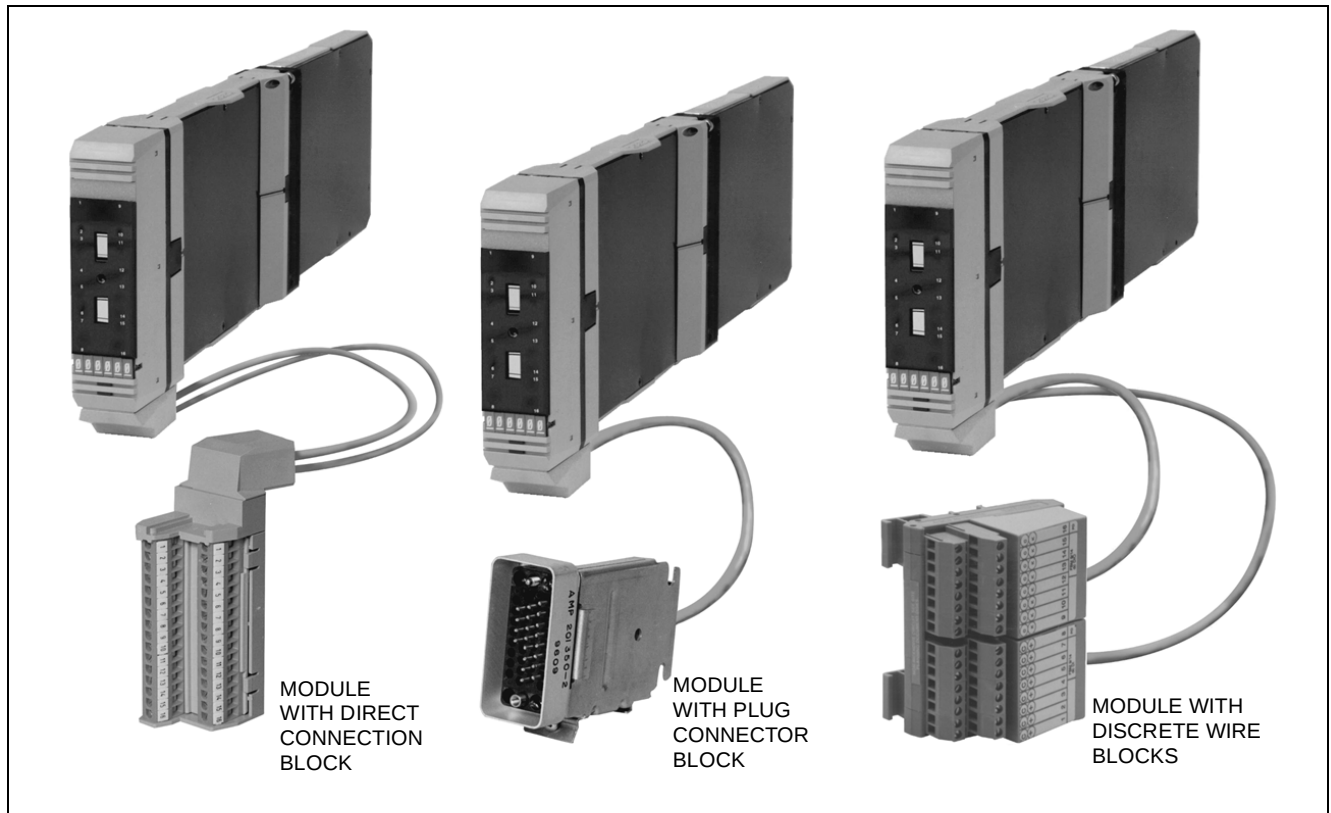


I/A Series® Hardware

240 V ac Input Interface Module (FBM20) and 240 V ac Expansion Input Interface Module (FBM21)



The 240 V ac Input Interface Module (an expandable main module) and its counterpart 240 V ac Expansion Input Interface Module individually function as a 16-channel 240 V ac monitor. Each module performs the signal conversion required to interface these digital (i.e., on/off state) electrical input signals from the field sensors to the redundant Fieldbus. The expandable main module independently connects to the Fieldbus and is capable of supporting a single expansion module. The expansion module connects to the Fieldbus via any expandable main module and is functionally dependent on the supporting main module.

The main module is capable of executing any one of the application programs identified in the following schedule:

- When used alone or in conjunction with an expansion module that interfaces field input signals only, the main module executes the Digital I/O, Sequence of Events Monitor, Pulse Count Inputs or Ladder Logic program. The configurable option for each program is input filter time.
- When used in conjunction with an expansion module that interfaces field input and output signals, the main module executes either the Digital I/O or Ladder Logic program. The configurable options for each program are Input Filter Time, Fail-safe Configuration, Fail-safe Fallback and Sustained or Momentary Outputs. If the Momentary Output configuration is selected, then Pulse Output Interval is also configurable.

Configurable options for inputs are exercised on a per module basis; those for outputs are exercised on a per channel basis.

The functional, environmental and physical specifications are applicable to both modules.

FUNCTIONAL SPECIFICATIONS

Input

CAPACITY

16 independent channels

ON-STATE VOLTAGE(A)

164 to 264 V ac

OFF-STATE VOLTAGE(A)

0 to 40 V ac

CURRENT

2.2 mA (typical) at 40 to 264 V ac

Source Resistance Limits

ON-STATE

1 k Ω (maximum) at 164 V ac

OFF-STATE

100 k Ω (minimum) at 264 V ac

Isolation(b)

The module can withstand, without damage, a potential of 1500 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.

Filter Time

Configurable (4, 8, 16, or 32 ms)

Power Requirements

INPUT VOLTAGE RANGE (REDUNDANT)

26 to 42 V dc

CONSUMPTION

Main Module only

5 W (maximum)

Main Module plus Expansion Module

7 W (maximum)

(a) OFF-ON and ON-OFF transitions occur between 40 and 164 V ac.

(b) To meet CSA Ordinary Location personnel safety standards, the channel-to-channel voltage must not exceed 300 V rms. This means that the I/O channels must be wired to the same branch voltage.

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

Heat Dissipation

MAIN MODULE ONLY

12 W (maximum)

MAIN MODULE PLUS EXPANSION MODULE

20 W (maximum)

Indicators (Mounted on Termination Assembly)

OPERATIONAL STATUS

2 light-emitting diodes (LEDs)(1 red and 1 green)

INPUT CHANNEL STATUS

16 LEDs (1 per channel)

Field Termination Connections(c)

DISCRETE WIRE BLOCKS

32 screw-clamp terminals (2 blocks using 16 terminals per block)

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

DIRECT CONNECTION BLOCK

32 screw-clamp terminals

Communication

Via a redundant Fieldbus (main module only)

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)

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

(a) The environmental ranges can be extended by the type of enclosure containing the module. [Refer to the Product Specification Sheet (PSS) applicable to the 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)

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