Foxboro FBM219 P0916RH

Official Technical Reference Excerpt

Foxboro FBM219 P0916RH combines twenty-four discrete inputs with eight discrete outputs for voltage-monitor, contact-sense and switching applications.

VERIFIED PRODUCT ROLE

Characteristic 1

Provides twenty-four inputs plus eight outputs for its discrete i/o interface module function.

Characteristic 2

Handles mixed discrete sensing and controlled switching through the documented Foxboro system path.

Characteristic 3

Works with the signal-specific termination assembly and module Fieldbus.

Characteristic 4

Input and output groups are isolated according to the selected termination assembly.

MANUFACTURER DOCUMENT

Manufacturer source	Invensys, I/A Series FBM219 Discrete I/O Interface Module, PSS 21H-2Z19 B4.
Evidence boundary	Technical statements are limited to the identified product or applicable manufacturer family.
Selection control	Use the complete ordering string and verify the installed system before purchase or installation.

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FBM219 Discrete I/O Interface Module



The FBM219 Discrete I/O Interface Module has 24 discrete input channels and 8 discrete output channels.

FEATURES

Key features of the FBM219 are:

- Twenty-Four (24) discrete inputs
- Eight (8) discrete outputs
- Supports discrete input/output signals at voltages of:
  - 15 to 60 V dc
  - 120 V ac/125 V dc
  - 240V ac
- Each input/output is group isolated
- Compact, rugged design suitable for enclosure in Class G3 (harsh) environments
- Executes the Discrete I/O or Ladder Logic program, with the following configurable options: Input Filter Time, Fail Safe Configuration, Fail-Safe Fall-Back, and Sustained or Momentary Outputs
- Various Termination Assemblies (TAs) that contain high voltage attenuation and optical isolation for inputs

OVERVIEW

The FBM219 Discrete I/O Interface Module has 24 discrete input channels and 8 discrete output channels. Associated termination assemblies (TAs) support discrete input or output signals at voltages of under 30 V dc, 120 V ac/125 V dc, or 240 V ac.

Depending on the type of I/O signal required, the TAs contain current limiting devices, fuses, relays, or relay outputs with internal or external power source and fusing.

The module with its associated TA supports the following discrete inputs and outputs:

FBM	Inputs	Outputs
FBM219	30 V dc, 125 V dc, 120 V ac, or 240 V ac (voltage monitor or contact sense)	30 V dc at 0.25 A, or 30 V dc at 5 A, or 125 V dc at 0.6 A, or 120 V ac at 5 A, or 240 V ac at 5 A Switch (external or internal power source)

When connected to the appropriate TAs, the FBM219 module provides functionality formerly provided by the 100 Series FBM I/O subsystem. TAs are available which support the functionality of the 100 Series main FBM07A/B, FBM08, FBM20, and FBM24A/B/C (16 input main FBMs), when these main FBMs are used with expansion FBM14, FBM15, FBM16, FBM27 or FBM42 (8 input/8/output expansion FBMs).

COMPACT DESIGN

The module has a compact design, with a rugged extruded aluminum exterior for physical protection of the circuits. Enclosures specially designed for mounting the FBMs provide various levels of environmental protection, up to harsh environments, per ISA Standard S71.04.

VISUAL INDICATORS

Light-emitting diodes (LEDs) incorporated into the front of the module provide visual indication of the Fieldbus Module operational status, as well as the discrete states of the individual input and output points.

EASY REMOVAL/REPLACEMENT

The module can be removed/replaced without removing field device termination cabling, power, or communication cabling.

FIELDBUS COMMUNICATION

A Fieldbus Communications Module or a Control Processor interfaces to the redundant 2 Mbps module Fieldbus used by the FBMs. The FBM219 accepts communication from either path (A or B) of the 2 Mbps Fieldbus - should one path fail or be switched at the system level, the module continues communication over the active path.

MODULAR BASEPLATE MOUNTING

The module mounts on a DIN rail mounted baseplate, which accommodates up to four or up to eight Fieldbus Modules. The Modular Baseplate is either DIN rail mounted or rack mounted, and includes signal connectors for redundant Module Fieldbus, redundant independent dc power, and termination cables.

SECURITY

Field power for contacts or solid state switches is current limited.

TERMINATION ASSEMBLIES

Field I/O signals connect to the FBM subsystem via DIN rail mounted TAs. The TAs used with the FBM219 are described in “TERMINATION ASSEMBLIES AND CABLES” on page 7.

FUNCTIONAL SPECIFICATIONS

Input/Output Channels
24 input and 8 output group isolated channels(1)

Filter/Debounce Time(2)
Configurable (No Filtering, 4, 8, 16, or 32 ms)

Voltage Monitor Function (FBM219)

INPUT

On-State Voltage
15 to 30 V dc
Off-State Voltage
0 to 5 V dc
Current
2.2 mA (typical) at 30 V dc Input

SOURCE RESISTANCE LIMITS

On-State
1 k Ω (maximum) at 15 V dc
Off-State
100 k Ω (minimum) at 30 V dc

Output Switch with External Source (FBM219)

APPLIED VOLTAGE
60 V dc (maximum)

LOAD CURRENT
0.25 A (maximum)

OFF-STATE LEAKAGE CURRENT
0.25 mA (maximum)

Inductive Loads
Module output may require a protective diode or metal oxide varistor (MOV) connected across the inductive load.

Isolation
For TAs which provide input and output group isolation (listed in the table on page 9), input and output groups are group isolated from earth (ground). For details, refer to the *I/A Series DIN Rail Mounted Subsystem User's Guide* (B0400FA). The module/TA withstands, without damage, a potential of 600 V ac applied for one minute between any channel and ground, or between any input channel and any output channel.

Isolation (Cont.)
For TAs P0917LL and P0917LP (which provide input channel isolation) and TA P0917LS (which provides output channel isolation), each channel is galvanically isolated from all other channels and earth (ground). The module/TA 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.

Communication
Communicates with its associated FCM or FCP via the module Fieldbus.

Power Requirements

INPUT VOLTAGE RANGE (REDUNDANT)
24 V dc +5%, -10%

CONSUMPTION
5 W (maximum) at 24 V dc

HEAT DISSIPATION
6 W (maximum) at 24 V dc

Loop Power Supply Protection
Current limited to 2.5 mA for inputs.

Calibration Requirements
Calibration of the module and termination assembly is not required.

(1) As well, Termination Assemblies P0917LL and P0917LP provide input channel isolation for this FBM and Termination Assembly P0917LS provides output channel isolation for this FBM.
(2) Digital filtering available for 200 Series FBM or competitive migration modules with version 1.25H or later firmware.

Related models and source control

Use these live ApterPower pages for comparison. Verify each complete ordering string independently.

RELATED PRODUCT REFERENCES

Honeywell 51401594-200	Technical-reference companion. Review the complete ordering string before selection.
Honeywell 8C-TDIL51-51306969-175	Technical-reference companion. Compare the required interface and system position.
Honeywell CC-PDOB11-51308373-175	Technical-reference companion. Confirm the execution independently for the intended task.

EXACT-SELECTION CONTROLS

Product identity	Confirm the complete FBM219 P0916RH marking.
System interface	the signal-specific termination assembly and module Fieldbus
Technical boundary	Use FBM219 P0916RH only with the signal-specific termination assembly and module Fieldbus; verify every interface and the controlled project configuration before energizing or pressurizing the subsystem.
Source	Invensys, I/A Series FBM219 Discrete I/O Interface Module, PSS 21H-2Z19 B4.

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