MANUFACTURER DOCUMENT PACKAGE

Manufacturer's Manual

Reference package for procurement and maintenance review

FOXBORO

FBM219

FIELDBUS I/O MODULE

Used with the applicable Foxboro I/A Series DCS configuration.

REFERENCE PACKAGE

OFFICIAL DOCUMENT

Selected official manufacturer pages follow this cover.

Source: Schneider Electric / Foxboro official product specification

Foxboro™ DCS

FBM219 Discrete I/O Interface Module

PSS 41H-2S219

Product Specification

May 2025



https://www.se.com

Overview

The FBM219 Discrete I/O 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 VDC, 120 VAC/125 VDC, or 240 VAC.

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 VDC, 125 VDC, 120 VAC, or 240 VAC (voltage monitor or contact sense)	30 VDC at 0.25 A, or 30 VDC at 5 A, or 125 VDC at 0.6 A, or 120 VAC at 5 A, or 240 VAC 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 Fieldbus Module (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).

Features

- 24 discrete inputs
- 8 discrete outputs
- Supports discrete input/output signals at voltages of:
  - 15 to 60 VDC
  - 120 VAC/125 VDC
  - 240 VAC
- Each input/output is group isolated
- 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

Standard Design

The module has 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 FBM 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. If one path is unsuccessful or is 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 FBMs. 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, page 10.

Functional Specifications

Input/Output Channels	24 input and 8 output group isolated channels[a]
Filter/Debounce Time[b]	Configurable (No Filtering, 4, 8, 16, or 32 ms)
Voltage Monitor Function (FBM219)	Input: • On-State Voltage: 15 to 30 VDC • Off-State Voltage: 0 to 5 VDC • Current: 2.2 mA (typical) at 30 VDC Input Source Resistance Limits: • On-State: 1 kΩ (maximum) at 15 VDC • Off-State: 100 kΩ (minimum) at 30 VDC
Output Switch with External Source (FBM219)	• Applied Voltage: 60 VDC (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 Functional Specifications - Main Termination Assemblies, page 13), input and output groups are group isolated from earth (ground). For details, see *Standard and Compact 200 Series Subsystem User's Guide* (B0400FA). The module/TA withstands, without damage, a potential of 600 VAC applied for one minute between any channel and ground, or between any input channel and any output channel. For TAs RH917LL (supersedes P0917LL) and RH917LP (supersedes P0917LP) (which provide input channel isolation) and TA RH917LS (supersedes 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 VAC applied for one minute between any channel and ground, or between a given channel and any other channel. **⚠⚠DANGER** **HAZARD OF ELECTRIC SHOCK, EXPLOSION, OR ARC FLASH** Although the module can withstand a maximum of 600 VAC applied for one minute between any channel, DO NOT apply voltages beyond the published input ranges. The channels are NOT intended for permanent connection to hazardous voltage circuits. Understand that connection of these channels to voltages greater than 30 VAC or 60 VDC violates electrical safety code requirements and may expose users to electric shock. **Failure to follow these instructions will result in death or serious injury.**

Communication	Communicates with its associated FCM or FCP via the module Fieldbus.
Power Requirements	• Input Voltage Range (Redundant): 24 VDC +5%, -10% • Consumption: 6 W (maximum) at 24 VDC • Heat Dissipation: 5 W (maximum) at 24 VDC
Loop Power Supply Protection	Current limited to 2.5 mA for inputs.
Calibration Requirements	Calibration of the module and termination assembly is not required.
Regulatory Compliance: Electromagnetic Compatibility (EMC)	• *European EMC Directive 2014/30/EU*: EN 61326:2013 Class A Emissions and Industrial Immunity levels
Regulatory Compliance: Product Safety	• *Underwriters Laboratories (UL) for U.S. and Canada*: UL/UL-C listed as suitable for use in UL/UL-C listed Class I, Groups A-D; Division 2; temperature code T4 enclosure based systems when connected to specified Foxboro DCS processor modules. Communications circuits also meet the requirements for Class 2 as defined in Article 725 of the National Electrical Code (NFPA No.70) and Section 16 of the Canadian Electrical Code (CSA C22.1). For more information, see *Standard and Compact 200 Series Subsystem User's Guide* (B0400FA). • *European Low Voltage Directive 2014/35/EU and Explosive Atmospheres (ATEX) directive 2014/34/EU* DEMKO certified as Ex nA IIC T4 for use in certified Zone 2 enclosure when connected to specified processor modules as described in the *Standard and Compact 200 Series Subsystem User's Guide* (B0400FA).
RoHS Compliance	Complies with European RoHS Directive 2011/65/EU, including amending Directives 2015/863 and 2017/2102.
IECEx Certification	IECEx Certified
(a) Termination Assemblies RH917LL and RH917LP provide input channel isolation for this FBM and Termination Assembly RH917LS provides output channel isolation for this FBM. (b) Digital filtering available for 200 Series FBM or competitive migration modules with version 1.25H or later firmware.	