

MANUFACTURER DOCUMENT PACKAGE

Manufacturer's Manual

Selected official pages for procurement and maintenance review

PRODUCT BRAND

Foxboro

PRODUCT MODEL

P0902BP

100 Series FBM Termination Component

OFFICIAL SOURCE

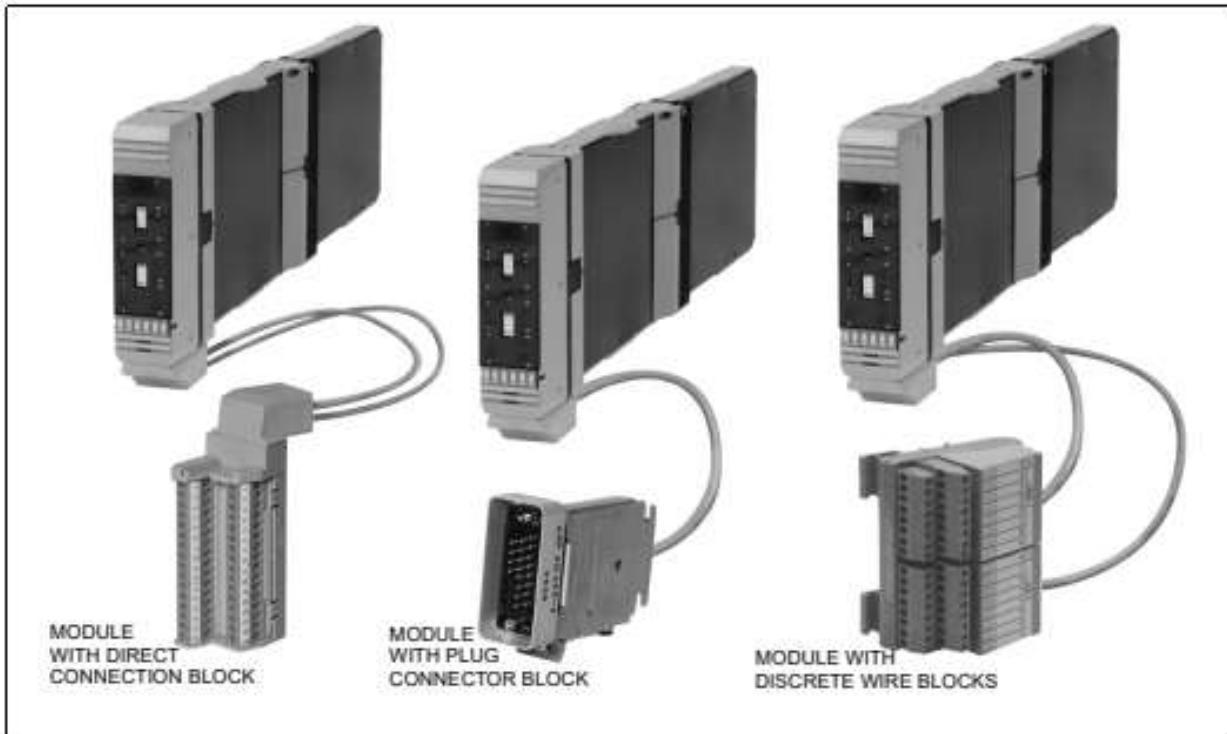
FBM24/FBM25 Product Specification and 100 Series Upgrade Overview

PSS 21H-2E4 B4 / PSS 31H-2W100

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I/A Series® Hardware

Contact/125 V dc Input Interface Module (FBM24) and Contact/125 V dc Expansion Input Interface Module (FBM25)



The Contact/dc Input Interface Module (an expandable main module) and its counterpart Contact/dc Expansion Input Interface Module individually function as a 15- or 16-channel contact sensor or 16-channel dc voltage monitor. Each module performs the signal conversion required to interface digital 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 with an expansion module that interfaces field input and output signals, the main module executes either the Digital I/O or Ladder Logic program. 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

Common Characteristics

ISOLATION(a)

The module can withstand, without damage, a potential of 1250 V ac applied for one minute between any channel and earth (ground). FBM24A and FBM25A will withstand, without damage, a potential of 1250 V ac applied for one minute between a given channel and any other channel(a).

NOTE

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.

FILTER TIME

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

POWER REQUIREMENTS

Input Voltage Range (Redundant)

26 to 42 V dc

Consumption

Main Module

8 W (maximum)

Expansion Module

5 W (maximum)

HEAT DISSIPATION

Main Module

15 W (maximum)

Expansion Module

12 W (maximum)

(a) FBM24B, FBM24C, FBM25B, and FBM25C inputs (i.e., input to input) are not isolated.

(b) 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.

INDICATORS (MOUNTED ON TERMINATION ASSEMBLY)

Operational Status

Two light-emitting diodes (LEDs) (one red and one green)

Input Channel Status

16 LEDs (1 per channel)

FIELD TERMINATION CONNECTIONS(b)

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 the 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)

Contamination

Class 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)

The Foxboro Company

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Table 2. Upgrade 200 Series FBMs for 100 Series Main FBMs (Continued)

100 Series Main FBM	& 100 Series Expansion FBM ^(a)	Upgrade with 200 Series FBM ^(b)	Function(s)	Upgrade TAA	Replacement TA	PSS Number
FBM20	FBM14, FBM15, FBM16, FBM27 or FBM42	FBM219	24-Channel Voltage Monitor, Plus 8-Channel Discrete Output, External Source, Group Isolated	TAA20 (P0923RU)	RH924HL/ P0924HL	PSS 31H-2S219
FBM24A	None, or FBM12, FBM13, FBM21 or FBM25	FBM217	32-Channel Discrete Input, Group Isolated	TAA24 (P0923RW)	RH924HN/ P0924HN	PSS 31H-2S217
FBM24B	None, or FBM12, FBM13, FBM21 or FBM25	FBM217	32-Channel Discrete Input, Group Isolated	TAA24 (P0923RW)	RH924HP/ P0924HP	PSS 31H-2S217
FBM24C	None, or FBM12, FBM13, FBM21 or FBM25	FBM217	32-Channel Discrete Input, Group Isolated	TAA24 (P0923RW)	RH924HQ/ P0924HQ	PSS 31H-2S217
FBM24A	FBM14, FBM15, FBM16, FBM27 or FBM42	FBM219	24-Channel Voltage Monitor, Plus 8-Channel Discrete Output, External Source, Group Isolated	TAA24 (P0923RW)	RH924HN/ P0924HN	PSS 31H-2S219
FBM24B	FBM14, FBM15, FBM16, FBM27 or FBM42	FBM219	24-Channel Voltage Monitor, Plus 8-Channel Discrete Output, External Source, Group Isolated	TAA24 (P0923RW)	RH924HP/ P0924HP	PSS 31H-2S219
FBM24C	FBM14, FBM15, FBM16, FBM27 or FBM42	FBM219	24-Channel Voltage Monitor, Plus 8-Channel Discrete Output, External Source, Group Isolated	TAA24 (P0923RW)	RH924HQ/ P0924HQ	PSS 31H-2S219

Table 3 lists the equipment which is used to upgrade 100 Series expansion FBMs associated with the main FBMs listed in Table 2.

Table 3. Upgrade 200 Series FBMs for Expansion FBMs

100 Series Expansion FBM	Upgrade with 200 Series FBM^(a)	Upgrade TAA	Replacement TA	PSS Number
FBM12A and FBM12B	FBM217 or FBM238	TAA12 (P0923RM)	RH924HB/P0924HB	PSS 31H-2S217 PSS 31H-2S238
FBM13	FBM217 or FBM238	TAA13 (P0923RN)	RH924HD/P0924HD	PSS 31H-2S217 PSS 31H-2S238
FBM14A, FBM14B, FBM14C and FBM14D	FBM219, or FBM239	TAA14 (P0923RP)	RH924HF/P0924HF	PSS 31H-2S219 PSS 31H-2S239
FBM15	FBM219, or FBM239	TAA15 (P0923RQ)	RH924HH/P0924HH	PSS 31H-2S219 PSS 31H-2S239
FBM16	FBM219, or FBM239	TAA16 (P0923RR)	RH924HK/P0924HK	PSS 31H-2S219 PSS 31H-2S239
FBM21	FBM217, or FBM238	TAA21 (P0923RV)	RH924HM/P0924HM	PSS 31H-2S217 PSS 31H-2S238
FBM25A	FBM217 or FBM238	TAA25 (P0923RX)	RH924HR/P0924HR	PSS 31H-2S217 PSS 31H-2S238
FBM25B	FBM217 or FBM238	TAA25 (P0923RX)	RH924HS/P0924HS	PSS 31H-2S217 PSS 31H-2S238
FBM25C	FBM217 or FBM238	TAA25 (P0923RX)	RH924HT/P0924HT	PSS 31H-2S217 PSS 31H-2S238
FBM27A	FBM219, or FBM239	TAA27 (P0923RZ)	RH924HX/P0924HX	PSS 31H-2S219 PSS 31H-2S239
FBM27B	FBM219, or FBM239	TAA27 (P0923RZ)	RH924HY/P0924HY	PSS 31H-2S219 PSS 31H-2S239
FBM27C	FBM219, or FBM239	TAA27 (P0923RZ)	RH924HZ/P0924HZ	PSS 31H-2S219 PSS 31H-2S239
FBM42A and FBM42C	FBM219, or FBM239	TAA42 (P0923SD)	RH924JB/P0924JB	PSS 31H-2S219 PSS 31H-2S239

(a) The 200 Series FBM type depends on the main FBM attached to this expansion FBM. See Table 2 above.