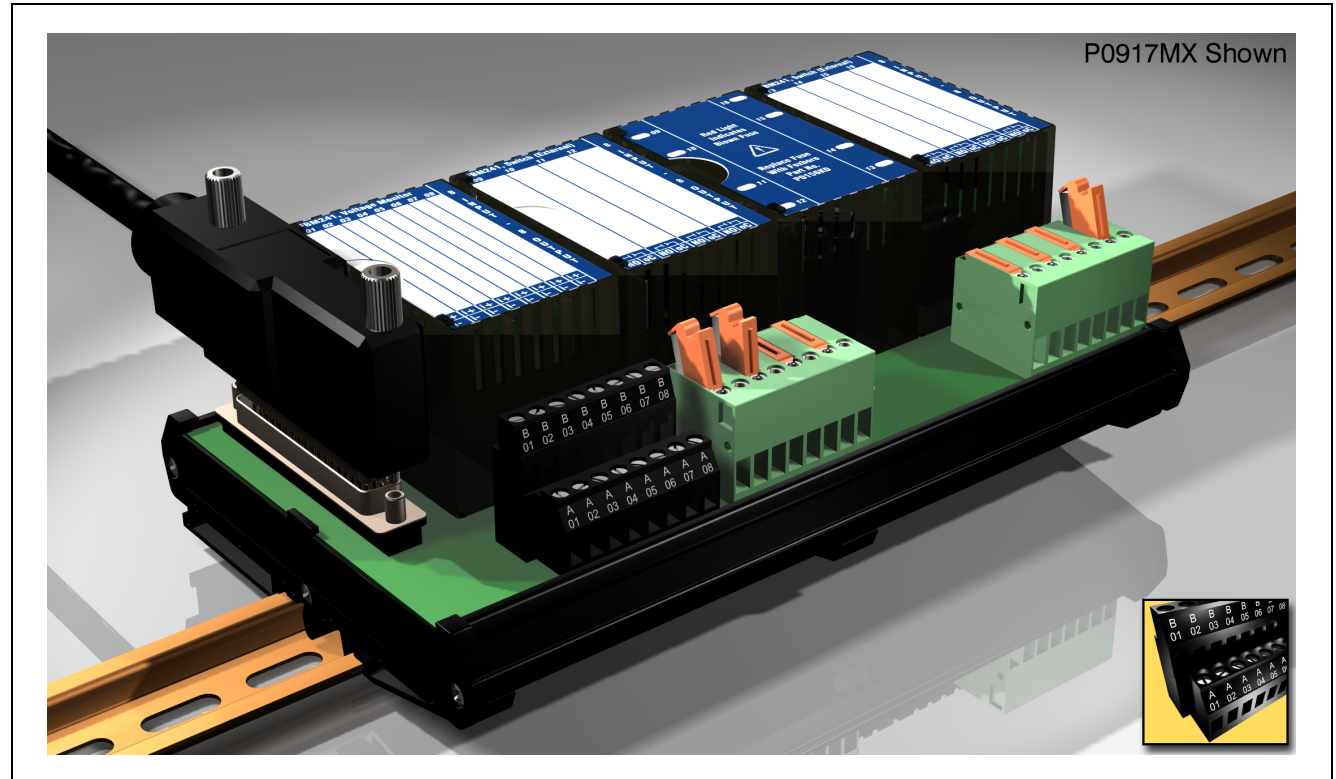


I/A Series® Hardware

FBM241 Termination Assembly

8 Input, 120 V ac or 125 V dc Voltage Monitor

8 Output, Solid-State Relay Switch (External Source)



INTRODUCTION

The FBM241 Termination Assembly is part of the I/A Series DIN Rail Mounted FBM subsystem field wiring termination family.

Each FBM241 Termination Assembly and its associated termination cable provide active signal interfacing and interconnection between eight voltage monitor inputs, eight switched solid-state relay outputs (externally sourced) and the FBM241 Channel Isolated Discrete I/O Interface Module.

The Termination Assembly's inputs support 2-wire voltage monitoring using external voltage sources of either 120 V ac or 125 V dc.

The Termination Assembly's output switching supports externally sourced 120 V ac or 125 V dc.

Per channel fuses limit output current to a maximum of 2 A.

FEATURES

Key features include:

- Combination foot that supports 32 or 35 mm DIN rail mounting
- Multiple, integrated marking systems
- Distinct family group color
- High voltage attenuation and optical isolation inputs
- Normally open, solid-state relay outputs
- Per channel output fuse protection with bi-directional blown fuse indication (dc polarity independent)
- Per channel output knife disconnect and test sockets.

FUNCTIONAL SPECIFICATIONS

Signal Input

8 channel voltage monitor, with channel isolation provided by Termination Assembly
INPUT THRESHOLD, 120 V ac
Logic Zero 0 to 20 V ac
Logic One 0 to 132 V ac
INPUT THRESHOLD, 125 V dc
Logic Zero 0 to 20 V dc
Logic One 65 to 150 V dc
INPUT CURRENT FOR LOGIC ONE
1.6 mA maximum

Signal Output

8 channel, switch (externally sourced) solid-state relays, with channel isolation provided by Termination Assembly
RATING(a)
132 V ac at 2 A maximum with resistive load or 20 mH maximum inductive load without snubber metal oxide varistor (MOV)
150 V dc at 2 A maximum with resistive load or 50 mH maximum inductive load without snubber diode
INRUSH CURRENT
20 A peak for 16 ms maximum
LEAKAGE CURRENT
<1 mA

- (a) Output inductive load limits based on current of 2 A. Inductance limit increases by a factor of 4, for each factor of 2 reduction in current. For an inductive load above stated limits, a snubber diode is required for a dc inductive load or a MOV (metal oxide varistor) is required for an ac inductive load. Diode current rating must be equal to the maximum load current and voltage rating equal to 1.3X maximum supply voltage. MOV must be rated for 120 V ac use and current rating must be equal to maximum load current.
(b) Refer to FBM200 Series Termination Cables, Product Specification Sheet PSS 21H-2W4 B4, for complete information.

Signal Output (Cont.)

ON RESISTANCE
<100 m Ω at 20°C
HEAT DISSIPATION
7.0 W maximum
FUSE
Type
5 x 20 mm
Rating
3.15 A (temperature derated for 2 A maximum)
Part Number
P0156KD

Simplified Schematic

Refer to FBM200 Series Termination Assembly Overview, Product Specification Sheet PSS 21H-2W4 B3.

Termination Cable Connection

37-pin male D-subminiature

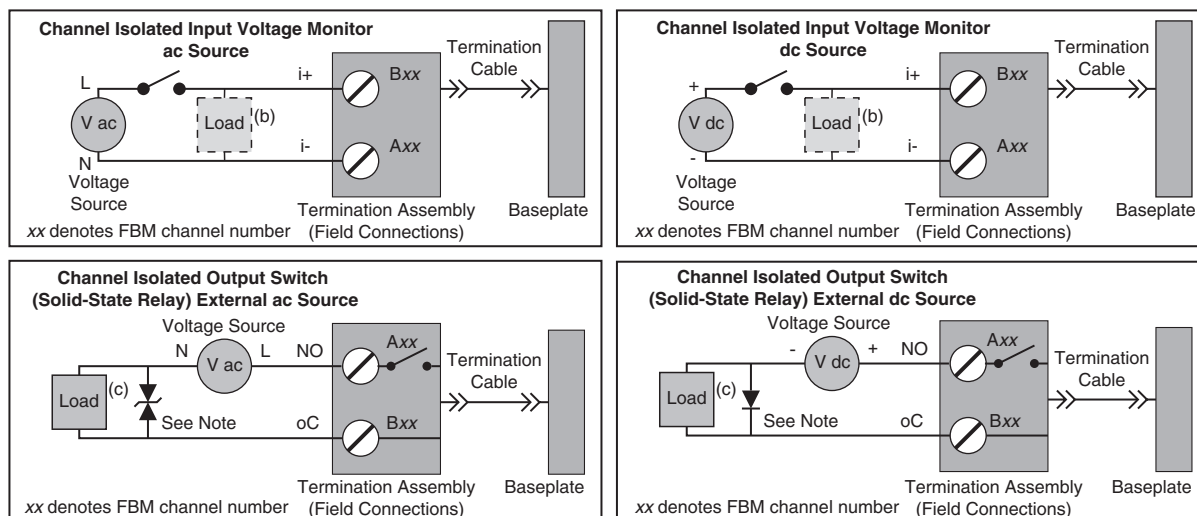
Termination Cable Type(b)

Type 4

Family Group Color

Dark Blue - Discrete

WIRING DIAGRAMS(a, b, c)



- (a) This assembly is capable of providing mixed signal types between input and output. It is the responsibility of the end user to maintain field wiring segregation.
- (b) Input load is not required for proper operation of the input channels.
- (c) Output inductive load limits based on current of 2 A. Inductance limit increases by a factor of 4, for each factor of 2 reduction in current. For an inductive load above stated limits, a snubber diode is required for a dc inductive load or a MOV (metal oxide varistor) is required for an ac inductive load. Diode current rating must be equal to the maximum load current and voltage rating equal to 1.3X maximum supply voltage. MOV must be rated for 120 V ac use and current rating must be equal to maximum load current.

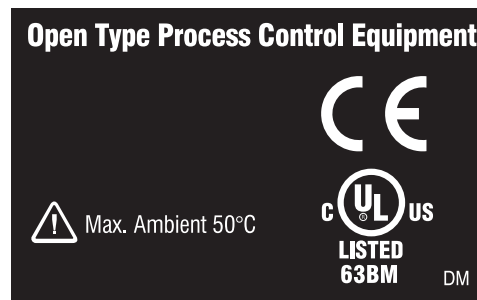
ENVIRONMENTAL SPECIFICATIONS

Temperature(a)

-20 to +50°C (-4 to +122°F)

Certification(b)

Classification Type 5



- (a) Refer to FBM200 Series Termination Assembly Overview, Product Specification Sheet PSS 21H-2W4 B3, for complete information.
- (b) Refer to DIN Rail Mounted FBM Equipment, Agency Certification, Product Specification Sheet PSS 21H-2W2 B3, for complete product certification information.

PHYSICAL SPECIFICATIONS

Construction(a)

P0917MX – PVC, compression

Mass

658 g (1.45 lb)

Output Indicators

Per channel light-emitting diodes (LEDs) indicate
blown fuse status (off = good, on = bad)

Field Terminations(a)

INPUTS

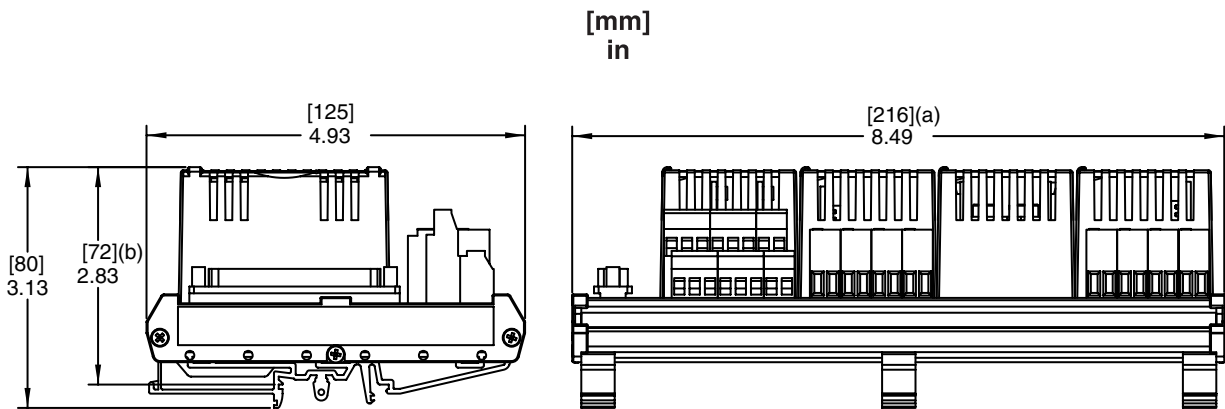
2 tiers, 8 positions

OUTPUTS

1 tier, 16 positions

(a) Refer to FBM200 Series Termination Assembly Overview, Product Specification Sheet PSS 21H-2W4 B3, for additional information.

DIMENSIONS – NOMINAL



(a) Overall width – for determining DIN rail loading.

(b) Height above DIN rail (add to DIN rail height for total).

RELATED PRODUCT SPECIFICATION SHEETS (PSS)

PSS Number	Description
PSS 21H-2W4 B3	FBM200 Series Termination Assembly Overview
PSS 21H-2W4 B4	FBM200 Series Termination Cables
PSS 21H-2W1 B3	DIN Rail Mounted FBM Subsystem Overview
PSS 21H-2W2 B3	DIN Rail Mounted FBM Equipment, Agency Certification
PSS 21H-2Z41 B4	Channel Isolated Discrete I/O Interface Module (FBM241)

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