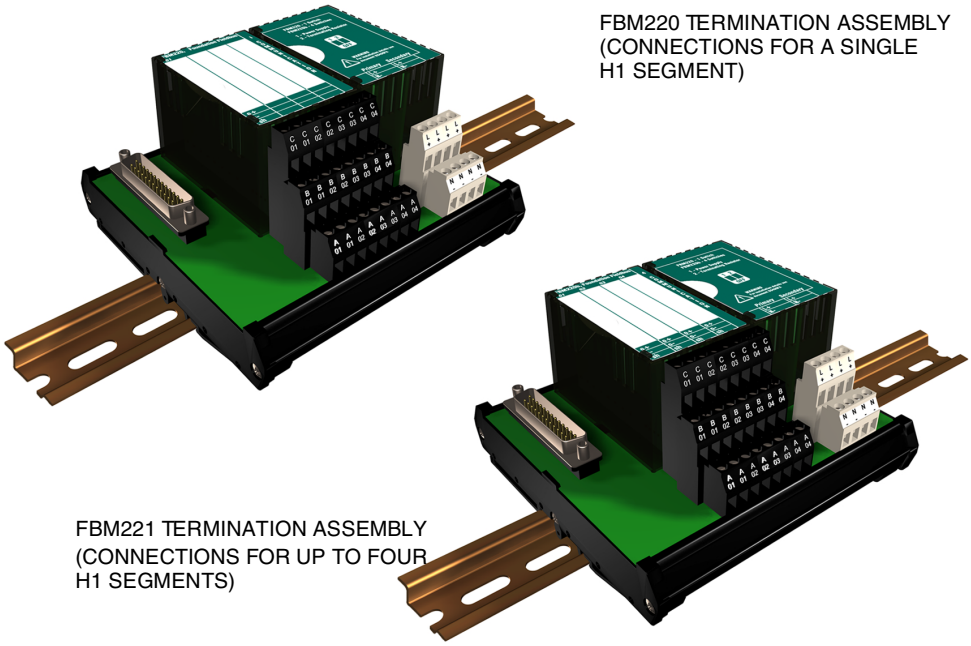
FOXBORO®

PSS 21H-2W5 B4

I/A Series® Hardware
FBM220/221 Termination Assembly – FOUNDATION™ fieldbus Communication



FBM220 TERMINATION ASSEMBLY (CONNECTIONS FOR A SINGLE H1 SEGMENT)

FBM221 TERMINATION ASSEMBLY (CONNECTIONS FOR UP TO FOUR H1 SEGMENTS)

The FBM220/221 Termination Assembly (TA) provides for making H1 FOUNDATION fieldbus cable connections to an FBM220 (single channel) or FBM221 (four channel) Fieldbus Module. It contains the necessary FOUNDATION fieldbus wire connection points, an isolated dc-to-dc converter, and bus terminator(s).

The FOUNDATION fieldbus wire connections (and power supply connections) are made with compression type screw terminals for quick, secure signal connection. The TA feeds the H1 communication signals directly to the FBM220/221.

The dc-to-dc converter in the TA receives 24 V dc power from an optionally redundant external power source. This power source can be one of the existing supplies which power the FBM baseplates, or a user supplied power supply. The 24 V dc power is converted to isolated 30 V dc power (at 300 mA) for powering the FOUNDATION fieldbus field devices. Individual switch(es) on the TA provide on/off control of the power to each of the H1 bus segment(s).

The bus terminator(s) in the TA are used when the FBM220/221 is located at the end point on the FOUNDATION fieldbus segment(s). Individual switch(es) on the TA provide for bus terminator selection (in or out) for each H1 segment.

The TA connects to the FBM subsystem baseplate by means of a dedicated cable, which is available in a variety of lengths from 0.5 m (1.65 ft) to 30 m (99 ft):

- 0.5 m – P0916DA
- 1.0 m – P0916DB
- 3.0 m – P0916DC
- 5.0 m – P0916DD
- 10.0 m – P0916DE
- 15.0 m – P0916DF
- 20.0 m – P0916DG
- 25.0 m – P0916DH
- 30.0 m – P0916DJ

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Product Specifications

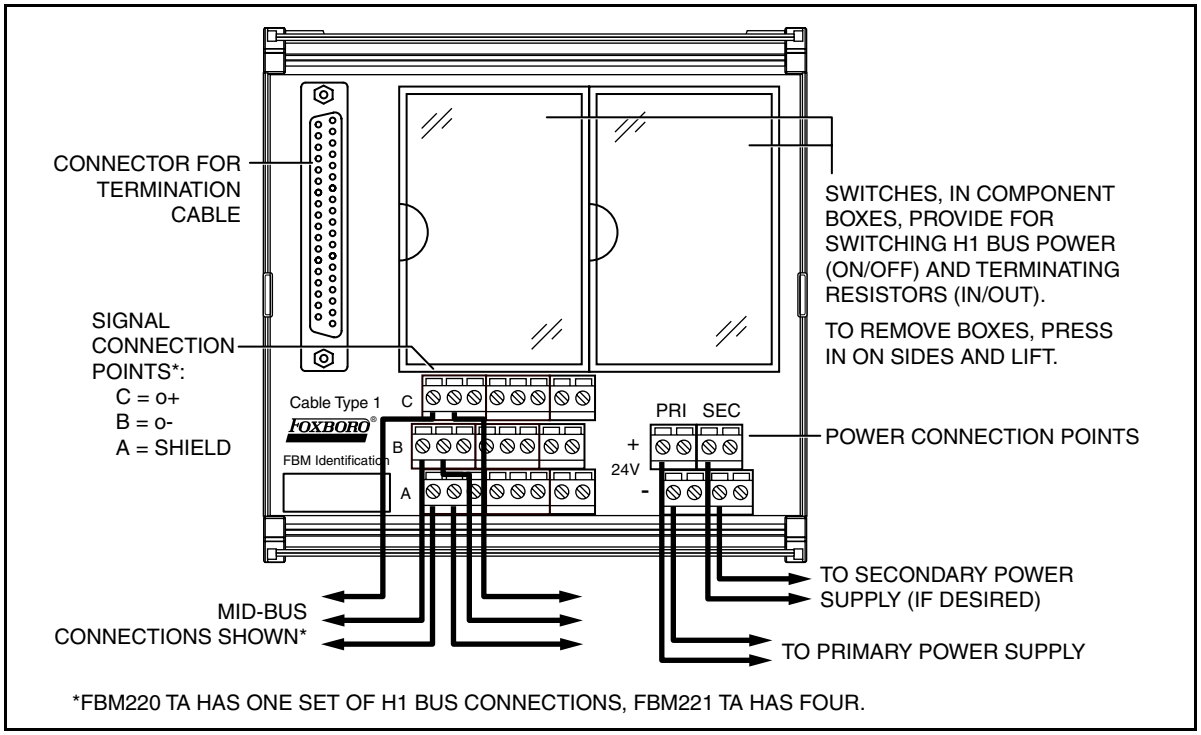

Figure 1. FBM220/221 Termination Assembly Details

SIGNAL CONNECTIONS

H1 FOUNDATION fieldbus signal connections are made to the TA as shown in Figure 1. Dual connection terminals are provided for each cable connection (that is, two **0+** points, two **0-** points, and two **sh** points) to allow for both mid-bus and end-bus cabling configurations. (Mid-bus cabling is shown in Figure 1.)

POWER CONNECTIONS

Power connections are also shown in Figure 1. Connections for redundant 24 V power sources are marked Primary and Secondary on the label. (Redundancy control is provided internal to the TA, by diode OR-ring of the two 24 V inputs.) Extra **L+** and **N-** connection terminals are provided to allow for possible daisy-chaining of power connections, or for the possibility of using additional power supplies for load sharing.

FUNCTIONAL SPECIFICATIONS
(APPLY TO BOTH FBM220 AND FBM221 TAs, EXCEPT AS NOTED)

Communication Channels

CHANNEL TYPE
H1 FOUNDATION fieldbus
NUMBER OF CHANNELS
FBM220 TA (Foxbor P/N P0917RF)
1 channel
FBM221 TA (Foxbor P/N P0917RG)
4 channels

Isolation

All channels are isolated from each other and earth (ground).The TA can withstand, without damage, a potential of 600 V ac applied for one minute between any channel and earth.

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.

Power Requirements

H1 BUS POWER SUPPLIED VIA DC-TO-DC CONVERTER(S) IN TA
30 V dc ± 6% at 300 mA, per channel
INPUT VOLTAGE TO TA (OPTIONALLY REDUNDANT)
24 V dc +5%, -10%
CONSUMPTION
11.5 W maximum per channel
DISSIPATION
2.5 W maximum per channel
OUTPUT POWER
9 W maximum per channel

Regulatory Compliance

The TA is tested for electromechanical compatibility as a component of Fieldbus Module 220/221. Refer to PSS 21H-2Z20 B4 for regulatory compliance information.

ENVIRONMENTAL SPECIFICATIONS(a)

Operating

TEMPERATURE
-20 to +50°C (-4 to +158°F)
RELATIVE HUMIDITY
5 to 95% (noncondensing)
ALTITUDE
-300 to +3,000 m (-1,000 to +10,000 ft)

Storage

TEMPERATURE
-40 to +80°C (-40 to +176°F)
RELATIVE HUMIDITY
5 to 95% (noncondensing)
ALTITUDE
-300 to +12,000 m (-1,000 to +40,000 ft)

Contamination

Class G1, as defined in ISA Standard S71.04.
Pollution degree 2 as defined in IEC 664-1.

(a) The environmental limits of the TA may be enhanced by the type of enclosure containing it. {Refer to the applicable Product Specification Sheet (PSS) which describes the specific type of enclosure that is to be used.}

PHYSICAL SPECIFICATIONS

DIN Rail Mounting

Mounts on multiple DIN rail styles, including 32 mm (1.26 in) and 35 mm (1.38 in)

Dimensions

HEIGHT
78.8 mm (3.1 in)
WIDTH
See Figure 2
DEPTH
See Figure 2

Mass

332 g (10.7 oz) approximate

Accepted Wire Sizes

SOLID/STRANDED/AWG
0.2 to 4 mm^2/0.2 to 2.5 mm^2/24 to 12 AWG
STRANDED WITH FERRULES
0.2 to 2.5 mm^2 with or without plastic collar

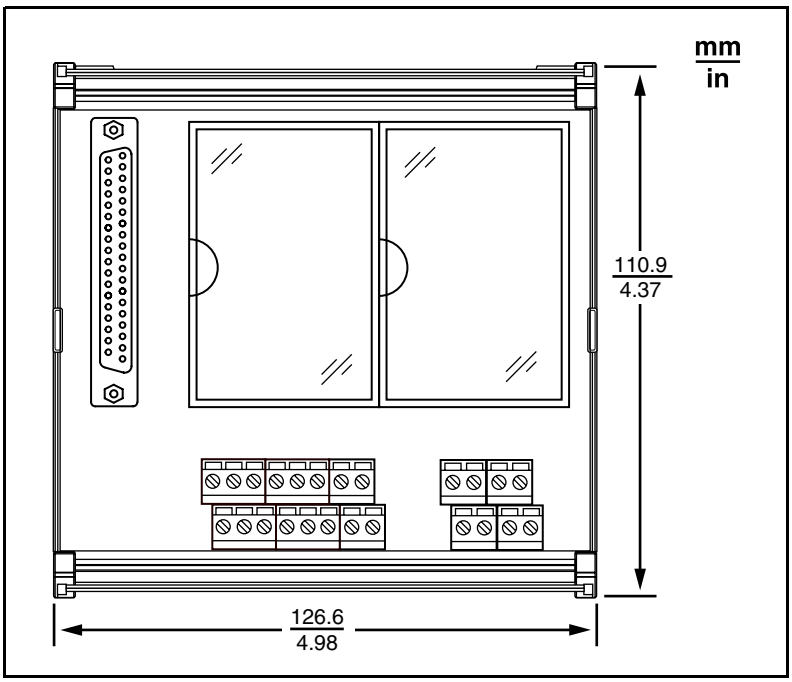

Figure 2. FBM220/221 Termination Assembly Dimensions

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