

I/A Series® Hardware

1x12 FBM Configurable Mounting Structure Kit



The 1x12 Fieldbus Module Configurable Mounting Structure Kit provides power, communication, and mounting hardware for Fieldbus Modules and Fieldbus isolators within standard 483 mm (19 inch) racks. This kit is configurable to provide the necessary hardware for mounting varying quantities of Fieldbus Modules (FBMs), up to a total of 60 FBM slots.

This kit provides the following equipment:

- 1x12 Fieldbus Module Mounting Structures (up to five) to mount FBMs and Fieldbus isolators with optional power supply alarm circuits to monitor power levels
- Power supply (optionally redundant) to provide and maintain power for up to five 1x12 FBM Mounting Structures

- Fan assemblies (up to two) to circulate air in enclosures with three or more 1x12 FBM Mounting Structures
- Power Distribution Unit (optionally redundant) to direct factory power to power supplies and fan assemblies
- All necessary cables for the selected configuration.

As symbolized by the “CE” Logo marking, the 1x12 Fieldbus Module Configurable Mounting Structure Kit is in compliance with all applicable European Union directives when installed according to the instructions in the “1x12 Fieldbus Module Configurable Mounting Structure Kit Installation and Wiring Instructions”, Foxboro Part No. B0400PK.

All hardware in this kit (except cables) is mounted on standard 483 mm (19 inch) racks. This hardware can be mounted in a standard vented metal enclosure with front and rear access, or a marshalling cabinet with front access only.

Termination cabinets may be mounted next to the marshalling cabinet to provide space for the Termination Cable Assemblies (TCA). Reducing the number of 1x12 FBM mounting structures in marshalling cabinets provides additional space for mounting TCAs.

KIT CONFIGURATIONS

The 1x12 Fieldbus Module Configurable Mounting Structure Kit is available in a variety of configurations, depending on the number of 1x12 FBM Mounting Structures you order.

Each structure can support up to twelve FBMs, or up to eleven FBMs and one optionally redundant Fieldbus isolator. Optional power supply alarm circuits are available, which alert associated monitoring equipment if power levels drop below their normal limits.

The structures accept primary power only, or both primary and secondary power, depending on the configuration.

All kit configurations are determined based on the number of 1x12 FBM mounting structures required (up to five), if they include the optional power supply alarm circuits, and if the kit equipment uses single or redundant power. The hardware provided in each configuration is listed in Table 1.

Table 1. 1x12 FBM Configurable Mounting Structure Kit Contents

Type of Equipment	Number of Units									
	With Single Power					With Redundant Power				
1x12 FBM Mounting Structure	1	2	3	4	5	1	2	3	4	5(a)
Power Supply: 500 W	1	1	0	0	0	2	2	0	0	0
Power Supply: 1000 W	0	0	1	1	0	0	0	2	2	0
Power Supply: 1500 W	0	0	0	0	1	0	0	0	0	2
Fan Assembly(b)	0	0	1	1	2	2	2	2	2	2
Power Distribution Unit (PDU)	1	1	1	1	1	2	2	2	2	2
(a) The marshalling cabinet with front access only can provide space for a maximum of four 1x12 FBM Mounting Structures with redundant power.										
(b) At least one required if enclosure contains any equipment in addition to the hardware provided in this kit.										

HARDWARE DESCRIPTIONS

The hardware in the following sections comprises the 1x12 Fieldbus Module Configurable Mounting Structure Kit (refer to Table 1).

1x12 Fieldbus Module Mounting Structure

The 1x12 FBM Mounting Structure is a 19 inch wide rack-mounted assembly designed to house and distribute power to up to twelve FBMs, or eleven FBMs and one (optionally redundant) Fieldbus isolator. It contains three four-slot molded connector blocks (for a total of twelve slots) numbered one through twelve on the front of the structure. All twelve slots can be assigned to a single Fieldbus.

The first slot connector block can accept optional redundant Fieldbus Isolator modules (for Bus A and Bus B) to allow remote Fieldbus communication. With the isolator(s) located in the 1st slot position, up to eleven (11) FBMs in this structure can communicate with an I/A Series Control Processor.

A short telephone plug-style jumper cable can link two structures to support up to 24 FBMs on a single Fieldbus, the maximum number of FBMs that a single Fieldbus can maintain.

Each structure can contain optional power supply alarm circuits, which alert customer-supplied equipment when the incoming supply voltage for each structure drops below normal operative levels.

The 1x12 FBM Mounting Structure complies with the European Low Voltage Directive 73/23/ECC and Electro Magnetic Compatibility Directive 89/336/EEC when used according to Foxboro's installation instructions for European Applications.

The 1x12 Fieldbus Module Mounting Structure Kit can include a maximum of five 1x12 FBM Mounting Structures.

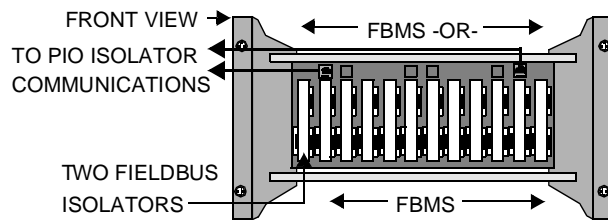


Figure 1. 1x12 FBM Mounting Structure Loading

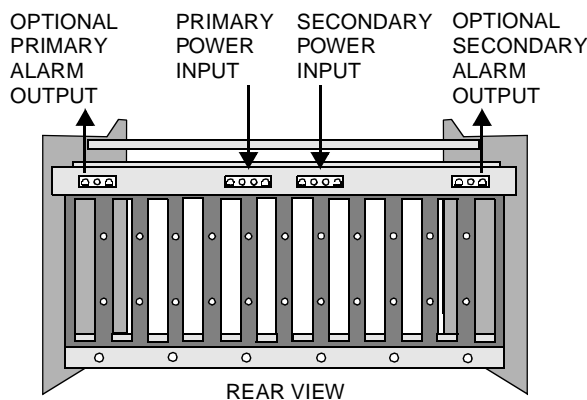


Figure 2. 1x12 FBM Mounting Structure Rear Connections

Power Supply

The power supplies distribute factory power to support the FBMs via the 1x12 FBM Mounting Structures. Power supplies are provided in three power levels: 500 W, 1000 W, and 1500 W. Each supports a specific number of structures (see Table 1).

These power supplies can support systems with 120 V ac, or 220 to 240 V ac power.

Each power supply includes a power supply tray to mount the supply on standard 483 mm (19 inch) racks. The tray provides universal mounting to support all three versions of the power supply.

A shroud on the tray covers the power supply input/output terminals.

Fan Assembly

The fan assembly contains three 100 mm (4 inch) fans which circulate air inside enclosures containing three to five 1x12 FBM Mounting Structures. It can be mounted on standard 483 mm (19 inch) racks.

Fan assemblies are available for systems with 120 V ac or 220 to 240 V ac power.

Power Distribution Unit (PDU)

Power Distribution Units (PDUs) accept customer power and directs it to the power supplies and fan assemblies.

PDUs are mounted on standard 483 mm (19 inch) racks with a PDU mounting bracket. One PDU is required for primary power, and a second PDU is required for secondary power, if applicable.

Over Temperature Sensor

Each 1x12 Fieldbus Module Mounting Structure Kit includes an over temperature sensor for installation in the enclosure. This sensor contains a normally open contact which closes if the internal enclosure temperature exceeds normal operating levels. Connections from the sensor can be made to an FBM (such as the FBM07) for monitoring and alarming within the I/A Series system or to an external alarm device.

FUNCTIONAL SPECIFICATIONS

The environmental specifications for the 1x12 FBM Mounting Structures are fully dependent upon the limits and constraints of the Fieldbus Modules and Fieldbus isolators residing within.	Power Supply Output Current (@ Ambient Temperature Around Supply)
1x12 FBM Mounting Structure Input Power	500 WATT SUPPLY
120, 220, 240 V ac +10, - 15%	25.0 A @ 40°C (104°F)
Alarm Relay Contacts - Form C	22.5 A @ 50°C (122°F)
3 W at 28 V dc (maximum) noninductive	20.0 A @ 60°C (140°F)
Power Supply Voltage	16.5 A @ 71°C (160°F)
INPUT VOLTAGE	1000 WATT SUPPLY
120, 220 to 240 V ac, 50/60 Hz (47-63 Hz)	50.0 A @ 40°C (104°F)
+10%, - 15%	48.0 A @ 50°C (122°F)
OUTPUT VOLTAGE	40.0 A @ 60°C (140°F)
28 V dc	30.0 A @ 71°C (160°F)
	1500 WATT SUPPLY
	75.0 A @ 40°C (104°F)
	67.5 A @ 50°C (122°F)
	60.0 A @ 60°C (140°F)
	45.5 A @ 71°C (160°F)

PHYSICAL SPECIFICATIONS

Mounting	Mass
1X12 FBM MOUNTING STRUCTURE	1X12 FBM MOUNTING STRUCTURE
483 mm (19 inch) Rack; I/A Series Metal Industrial Enclosures	<i>Empty</i>
POWER SUPPLY TRAY	4.95 kg (10.9 lb)
483 mm (19 inch) Rack; I/A Series Metal Industrial Enclosures	<i>Fully Loaded (12 FBMs)</i>
FAN ASSEMBLY	16.96 kg (37.3 lb)
483 mm (19 inch) Rack; I/A Series Metal Industrial Enclosures	POWER SUPPLY TRAY
Construction	1.80 kg (3.98 lb)
1X12 FBM MOUNTING STRUCTURE	FAN ASSEMBLY
(Case) Molded plastic and sheet metal	3.36 kg (7.41 lb)
POWER SUPPLY TRAY	POWER SUPPLY
Perforated sheet metal	10.2 kg (22.5 lb)
FAN ASSEMBLY	
Stamped sheet metal	

1X12 FBM CONFIGURABLE MOUNTING STRUCTURE ENVIRONMENTAL SPECIFICATIONS**Operating****TEMPERATURE**

0 to 60°C (32 to 140°F)

RELATIVE HUMIDITY

5 to 95% (noncondensing) at 30°C (86°F)

ALTITUDE

-300 to +3,000 m (-1,000 to +10,000 ft)

VIBRATION

5 to 200 Hz, 0.5 G peak amplitude

Storage (Temperature)

-40 to 85°C (-40 to 185°F)

Regulatory Compliance**EUROPEAN DIRECTIVES**

EMC Directive 89/336/EEC

Low Voltage Directive (LVD) 73/23/EEC

CE Marking 93/465/EEC

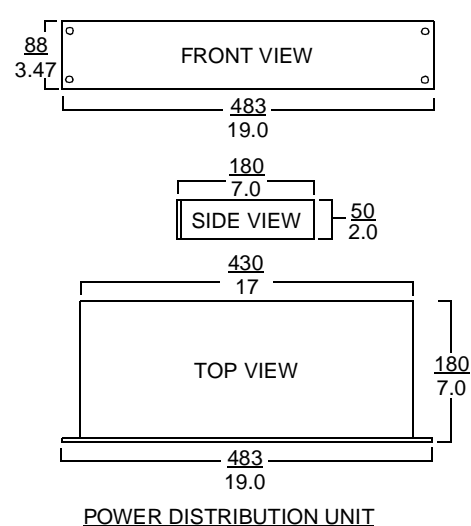
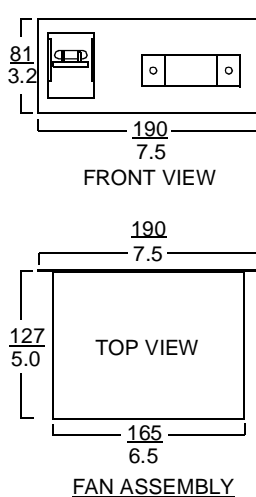
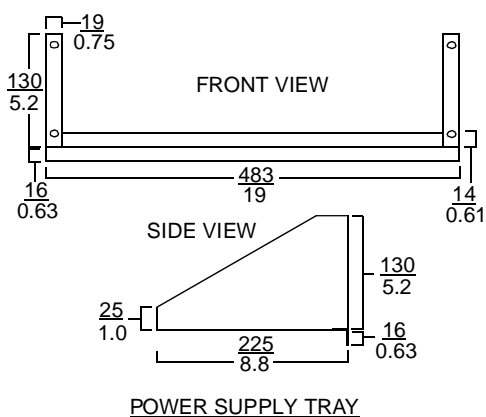
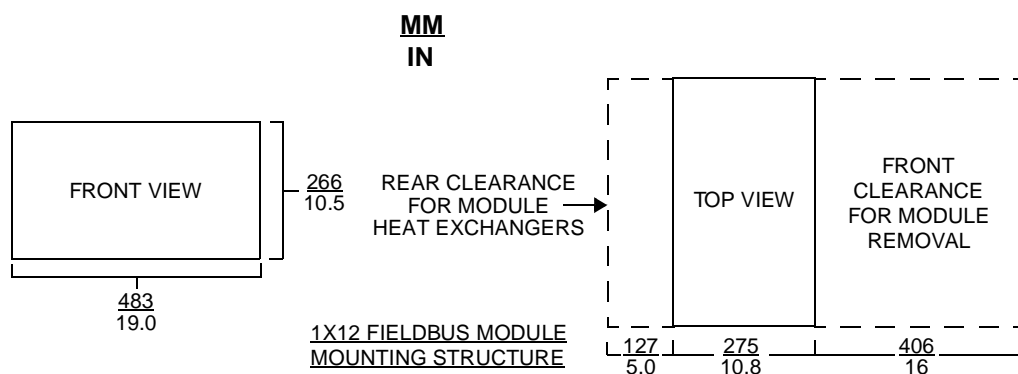
ADDITIONAL DIRECTIVES

Canadian Standards Association (CSA) C22.2

No. 142

Factory Mutual (FM) FM 3810

See PSS 21H-5E1 B3 for details on CSA and FM certification.

DIMENSIONS—NOMINAL

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