BFM-B Series

BACnet MS/TP Binary Input/Output Field Modules

Features

- Native BACnet MS/TP device supporting communication on an RS-485 BACnet MS/TP network
- Field selectable communication baud rate of 9600, 19200, 38400 or 76,800 bps
- Removable screw-on terminals for communication port, input/output and power connections make installation easy
- LEDs indicate power status, communications status and input/output status
- Easy-to-mount housing for rack mount or direct mounting. Optional bare module without housing for panel mounting.

General

The BFM-B Series binary input/output field modules provide remote binary inputs/outputs to any native BACnet MS/TP controllers. Each BFM-B field module communicates on a RS-485 network at its communication port using the BACnet MS/TP protocol technique.

The BFM-B Series field modules fit a diverse range application needs where additional binary inputs and outputs are required or where a small number of points are remotely located and are most suitable for monitoring and control applications for HVAC, electrical and lighting equipment. Two types of modules are available, one with 12 binary inputs and the other with 6 binary inputs and 2 binary outputs.

All binary inputs are protected with optical isolation devices from external interference and all binary outputs are volt-free dry contacts provided by relays.

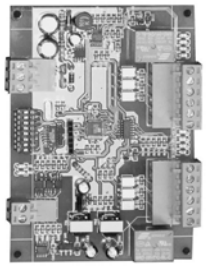
A maximum of 32 nodes (a mix of BFM-B Series field modules and other BACnet MS/TP devices) can be connected to one RS-485 network segment within a maximum distance of 1,000 m. With a repeater, the number of nodes can be extended to a total of 63 devices and a total distance of 2,000 m. If more than 63 devices are required in the system, a second BACnet MS/TP network must be installed. The MAC address of the BFM-B module is set via DIP switches in the unit from 1 to 63. The device ID address range is set as per the BACnet standard through the software.

Mounting

The bare field modules without housing can be mounted directly inside a panel with 2 or 4 screws. With the housing, the modules can be rack-mounted in DIN rail or mounted directly on a surface with 2 or 4 screws.

Ordering

To order, specify complete model number.



Specifications

Product Model Number	BFM-1200B BFM-0602B	Module with 12 binary Inputs Module with 6 binary Inputs and 2 binary Outputs
Power Requirements	Voltage Current Indicator	24 V 50/60 Hz ±15% Maximum 200 mA Red LED
Communication Port	Physical Baud Rate Protocol Indicators MAC Address Number of devices Service Supported Objects Supported	RS-485 Field selectable 9,600, 19,200, 38,400 or 76,800 bps (Factory set 38,400 bps) BACnet MS/TP Red LEDs Set via DIP switches 63 Maximum (with repeater) in one network trunk Who Is, Read Property, Read Property Multiple, Write Property Device, Digital Input, Digital Value, Digital Output, Multi-state Input, Multi-state Value, Multi-state Output
Binary Inputs	Voltage-free contacts or DC voltage inputs, maximum 24 VDC	
Binary Outputs	Voltage-free relay contacts: 250 V, 6 A resistive, 3 A inductive, 50/60 Hz	
Ambient/Storage Temperature Limits	0 to 55 ^{o}C / -30 to 50 ^{o}C, 10 to 90% RH non-condensing	
Wiring Class	Class II for 24 VAC power supply	
Power Wire & Connections	Removable terminal blocks, wire size 1 mm^2 or 18 AWG solid copper recommended	
Communication Wire & Connections	Removable terminal blocks, balanced 100 to 120 Ω nominal impedance twisted shielded pair (TSP) cable	
Input/Output Wire and Connections	Removable terminal blocks, twisted shielded pair (TSP) cable	
Agency Approval	CE Mark compliant to EMC and Low Voltage Directives and BTL certification pending	
Shipping Weights	0.15 kg, including optional housing	
Dimensions	87 x 123 x 20 mm (W x L x D)	

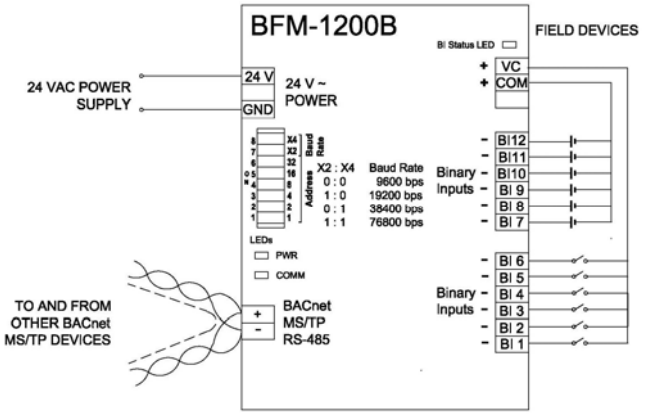
The performance specifications above are nominal and subject to tolerances and application variables of generally acceptable industry standards. The manufacturer shall not be liable for damages resulting from misapplication or misuse of its products.

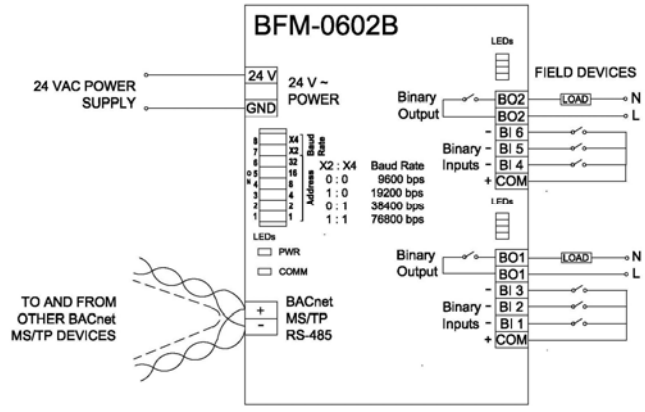
Network & Cabling Requirements

To ensure network stability and reliable communications, particularly at high speeds on a BACnet MS/TP network for a number of devices, it is imperative that the following network and cabling requirements are adhered to:

Item	Description
Cabling	For BACnet MS/TP networks, it is recommended to use networking cabling that matches the following specifications: • Balanced 100 to 120 ohms nominal impedance, 22 or 24 AWG Twisted Shielded Pair (TSP) Cable • Nominal capacitance of 52 pF/m or lower • Nominal velocity of propagation of 66% or higher • Terminating the shield to ground at one end only for each isolated segment will prevent ground loops in the shield and drain RF energy to ground. Grounding at the BACnet router or controller is preferred.
Topology	Ensure the MS/TP or FClink network cable is installed as a daisy chain from one device to the next.
Maximum Nodes	The maximum number of devices per MS/TP network without any repeaters is 32.
Terminator	A terminator of 120-ohm impedance must be installed at each end of each MS/TP network segment, or two per MS/TP or network. Ensure that this requirement is not overlooked in laying out the network architecture and ordering product.
Repeater	A repeater is not necessary unless MS/TP network has more than 32 devices or is extended beyond 1,000 m.

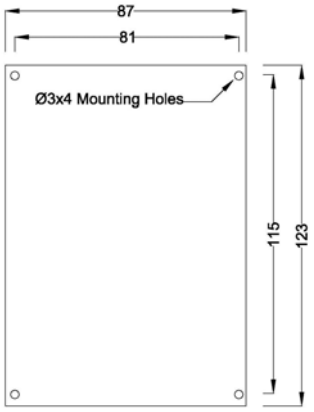
Termination and Wiring Diagrams



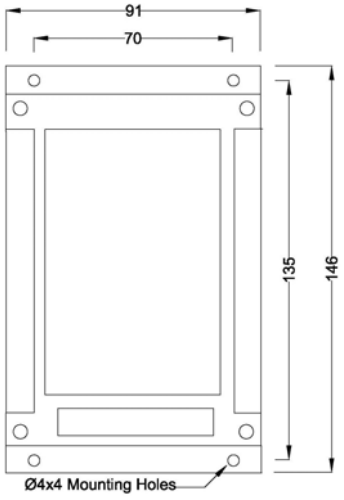


Dimensions in mm

Without Housing



With Housing



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