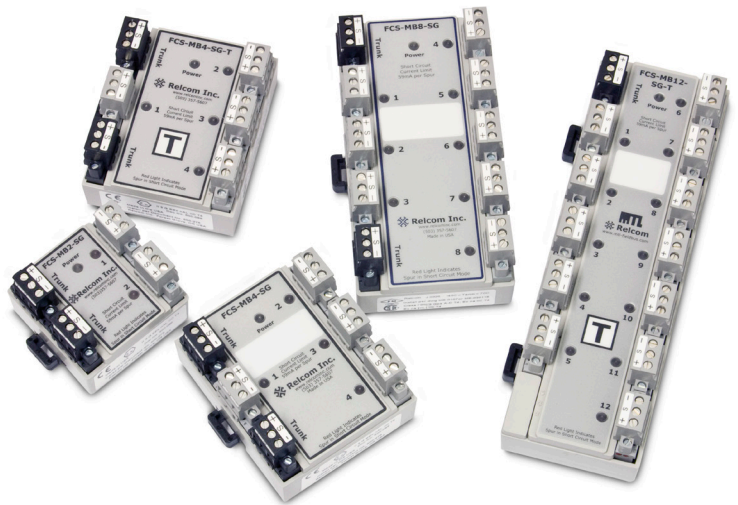


FCS-MBx-SG Megablock range*

Passive hubs for
general purpose,
Zone 2 & Division 2
fieldbus networks



Megablocks are DIN-rail mounted passive hubs for FOUNDATION™ fieldbus networks. They connect several field devices to the network trunk cable and provide short circuit protection to the segment. Megablocks minimize hand wiring and allow individual devices to be added to and removed from the segment without disrupting network communication.

A green power LED on each unit indicates whether at least 9V dc is present. Megablocks are available in four, eight, ten and twelve drop versions. Multiple Megablocks are easily wired to one another to allow larger segments to be constructed.

Megablocks are available with an integral terminator making them ideal for a star or "chickenfoot" topology, where several devices are connected at a single field junction box. Separate Megablock Terminators are also available, which may be wired easily to any Megablock. Megablocks having a built-in terminator are clearly marked ('T') for easy identification by field personnel.

Connections to the Megablock are made using pluggable, screw-terminal type connectors. This allows wire terminations to be made to the individual connectors which are then plugged into the Megablock. Devices can then be connected and disconnected easily during commissioning. After commissioning, retaining screws are tightened to secure each connector to the Megablock.

Trunk connections for the fieldbus home-run/trunk cable are easily identified by their black connectors. Separate numbered connections are provided for each spur drop.

SpurGuard™ is a device-port, short circuit protection technique that minimizes susceptibility to single points of failure. The FCS-MBx-SG Megablocks range has built-in SpurGuard™ protectors that prevent a short circuit in any of the individual transmitters or spur cable runs, from bringing down the entire fieldbus segment. A red LED near each spur connection indicates when a spur is shorted and hence in "over-current" mode.

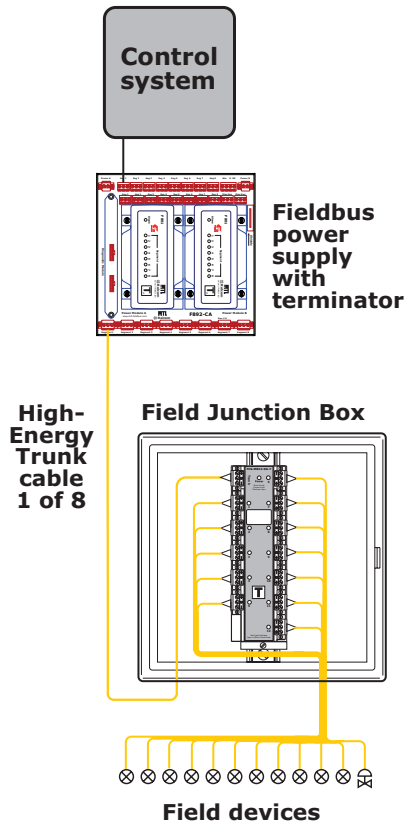
MTL FCS-MBx-SG

July 2021

INSTALLATION

Megablocks can be mounted vertically or horizontally using 35 mm DIN rail within a suitable enclosure, such as a field junction box. Megablocks are removed from the DIN rail using a flat blade screwdriver to release the mounting platform. Use of DIN rail end stops is recommended to prevent sliding in vertical installations. FCS-MBx range Megablocks have labeling areas so that segments can be easily identified according to plant standards.

MTL have a wide range of standard junction box designs for use with Megablocks. See the data sheet for the range of Process JB's.



Shown above is an example of a common Fieldbus segment topology. Twelve field devices are connected to a twelve-drop Megablock, which is mounted in a field junction box. The trunk connector on the Megablock is wired to the segment trunk cable that leads to the control room or marshalling panel where the power supply and second terminator are located.

GROUNDING

To prevent ground loops, a fieldbus segment should only be grounded at one point. This is usually done by grounding the cable shield at the control room end of the segment. If a permanent segment ground connection in the field is desired, this can be achieved by wiring the shield terminal on one of the Megablock trunk connectors to a suitable earth ground instead of wiring it to the shield terminal on the Megablock Terminator.

Fieldbus Connection System (FCS) wiring blocks are protected by U.S. Patents 6,366,437, 6,369,997 and 6,519,125.

SPECIFICATIONS

Mounting requirements

35mm DIN rail

Wire capacity

0.14 to 2.5mm²

Case material

Lexan polycarbonate

Temperature range

Operating -45° to +70°C

Storage -50° to +85°C

Voltage required to activate power LED

9.2V dc minimum

Minimum input voltage

10.5V (See Note 1 below)

Maximum input voltage

see certification ratings

Maximum input current

see certification ratings

Trunk-to-trunk voltage drop

0.1V maximum

FCS-MBx-SG, F118 & F215 Megablock with SpurGuard™

Unloaded current consumption

No. of Ports	4	8	10	12
mA	4.1	4.3	4.4	4.5

Spur device current

46mA maximum (recommend one device per spur)

Spur short-circuit current

60mA maximum

Trunk-to-trunk voltage drop

0.1V maximum

Trunk-to-spur voltage drop

1.1V maximum

PHYSICAL NETWORK

IEC 61158-2

Foundation™ fieldbus H1

Profibus PA

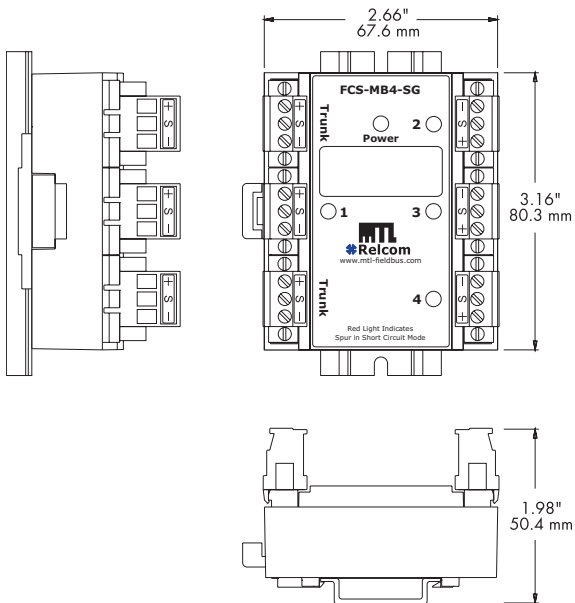
Note 1: The minimum input voltage guarantees that the spur output under full load will be at least 9.3V so that the device will see at least 9.0V.

MTL FCS-MBx-SG

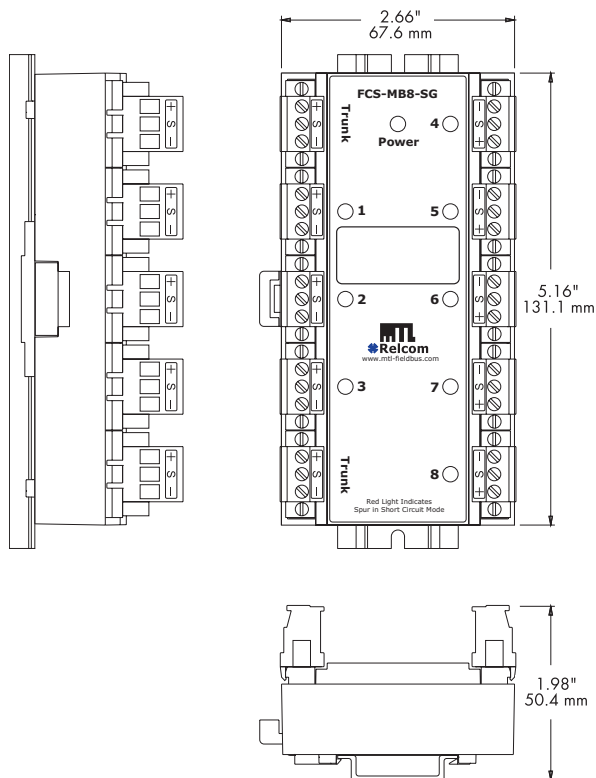
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CASE DIMENSIONS

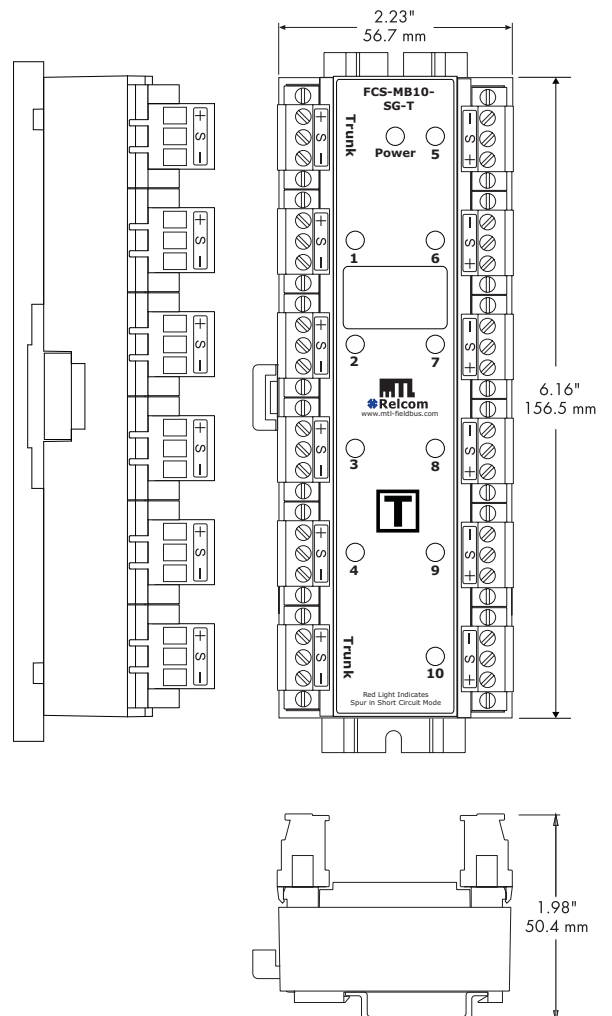
4-WAY - FCS-MB4-SG(-T)



8-WAY - FCS-MB8-SG(-T)



10-WAY - F118, FCS-MB10-SG(-T)

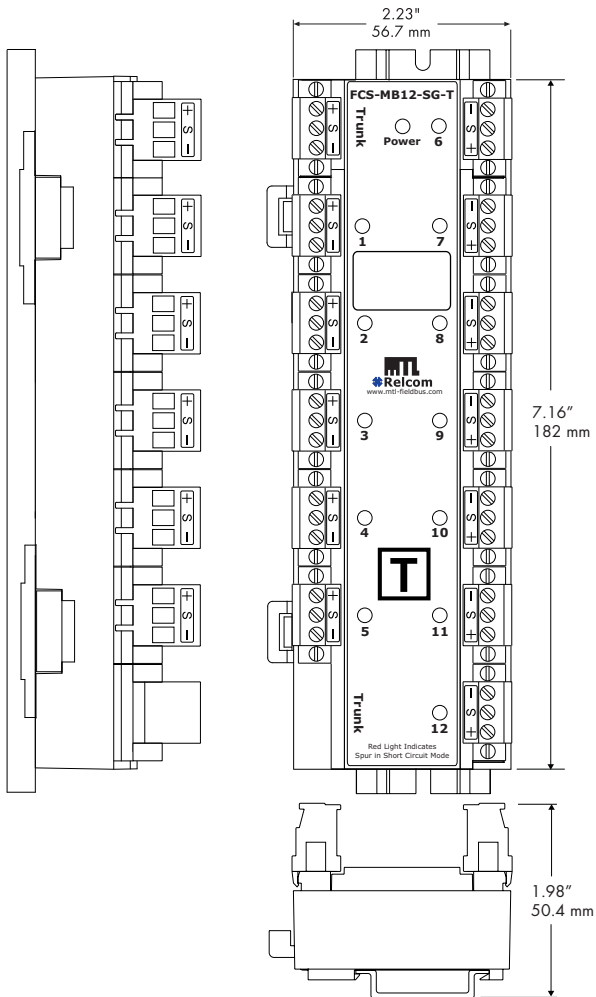


Note: Different Megablock versions have minor variations in labelling.

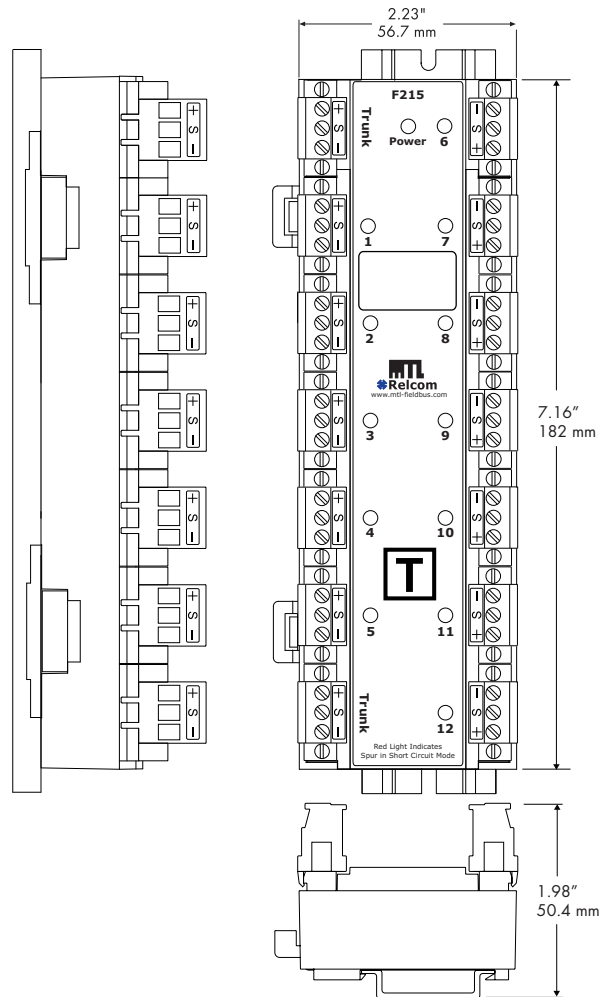
CASE DIMENSIONS (cont)

12-WAY MEGABLOCKS

FCS-MB12-SG(-T)



F215



APPROVALS - for full certification information visit www.mtl-inst.com/support/certificates/

MODELS - F118, F215, FCS-MB4-SG-[T], FCS-MB8-SG-[T], FCS-MB10-SG-[T], FCS-MB12-SG-[T]

Country	Europe	USA		Canada			
Authority	ATEX (Category 3)	FM	FM	FMc	FMc		
Standard	EN 60079-0 EN 60079-15	3600 3611 3810	1998 1999 1989	3600 3611 3810	1998 1999 1989	CSA C22.2 No. 213 :1987 CSA E60079-0: 2002 CSA E60079-15: 2002 CSA C22.2 No.1010.1:1992 + Amendment 2 1997	CSA C22.2 No. 213 :1987 CSA E60079-0: 2002 CSA E60079-15: 2002 CSA C22.2 No.1010.1:1992 + Amendment 2 1997
Approved for	⊕ II 3 G Ex nA IIC T4 Gc	NI/II/ABCD/T4 Ta=70°C I / 2 / IIC / T4 Ta=70°C	NI-ANI/II/2/ABCD/T4 Ta=70°C NI-ANI/II/2/IIC/T4 Ta=70°C	NI-ANI/II/2/ABCD/T4 Ta=70°C NI-ANI/II/2/IIC/T4 Ta=70°C	NI-ANI/II/2/ABCD/T4 Ta=70°C Ex nA [nL] IIC T4 Ta=70°C	NI/II/ABCD/T4 Ta=70°C Ex nA IIC T4 Ta=70°C	
Certificate no.	RELC07A- TEX1001X	3013269	3013852	3039092C	3039410C		
Apparatus parameters (Trunk)	Non-arcing	Non-arcing	Non-arcing	Non-arcing	Non-arcing		
Cable parameters (Spur)	Non-arcing	Non-arcing	Non-incendive V _{oc} = 32V I _{sc} = 60mA C _a = 85nF L _a = 0.26mH	Non-incendive V _{oc} = 32V I _{sc} = 60mA C _a = 85nF L _a = 0.26mH	Non-arcing		

ORDERING INFORMATION

	With SpurGuard™ short-circuit protection General Purpose and Zone/Division 2
Megablocks	
4 way	FCS-MB4-SG
4 way with internal Terminator	FCS-MB4-SG-T
8 way	FCS-MB8-SG
8 way with internal Terminator	FCS-MB8-SG-T
10 way	FCS-MB10-SG
10 way with internal Terminator	FCS-MB10-SG-T
10 way with switched Terminator	F118
12 way	FCS-MB12-SG
12 way with internal terminator	FCS-MB12-SG-T
12 way with switched Terminator	F215

See Fieldbus Terminators datasheet for details of separate, DIN-rail mounted terminators

ACCESSORIES

Description	Part Number
Heavy Duty DIN rail end stop	ETL7000
35mm DIN Rail, 1 metre length	THR7000
Process JB stainless steel†	FCS-96XX

† See Process JB data sheets for further details



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