

Fieldbus Terminators

DIN-rail mounted fieldbus terminators



The fieldbus standards require that buses must be terminated at both ends to prevent signal reflections. Usually one terminator is provided by the power conditioner in the control room. The MTL range of fieldbus terminators are ideally suited to provide the Terminator that is normally in a junction box in the field (along with a Megablock for interconnecting devices). A large "T" is placed on all terminator labels for easy identification of the Terminator location.

Additionally the F100 and FCS-MBT(-XE) provides some differential and common-mode (cable shield) over voltage protection.

The Ground connection on the F100 and FCS-MBT(-XE) are used to shunt any surge currents that may get on the cable shield to a local ground in the junction box. Under normal operating conditions, the cable shield remains DC isolated from this local ground. Although the normal practice is to ground the cable shield in the control room, this additional ground connection will not cause ground loops. However, in the event of an overvoltage on the cable shield, a gas discharge tube in the F100 or FCS-MBT(-XE) fires and shunts this unwanted current to ground.

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January 2017

SPECIFICATION

Physical network

IEC61158-2
FOUNDATION™ fieldbus H1
Profibus PA

Operational ambient temperature limits

F100, FCS-MBT(-XE): -45°C to +70°C

Voltage limits (F100, FCS-MBT(-XE) only)

Common mode: 39V
Transient mode: 75V

Electrical characteristics

Fully complies with the requirements of section 12.8.5 of the IEC61158-2 fieldbus standards.

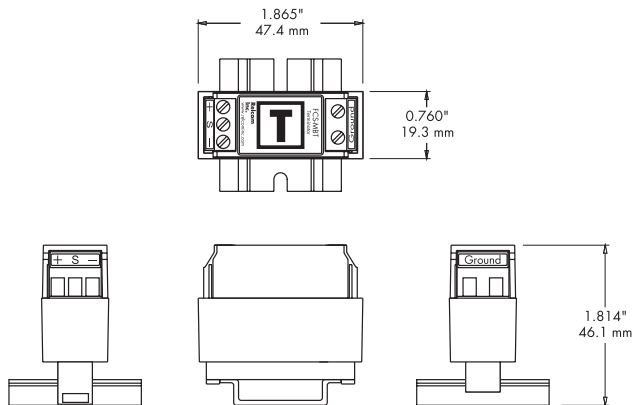
$R_{min} = 99\Omega$, $C_{max} = 1.1\mu F$

ORDERING INFORMATION

General Purpose Zone/Div 2	Zone 0/Div 1 Intrinsically Safe	Zone 1 Ex me
F100	FCS-MBT	FCS-MBT-XE

DIMENSIONS

F100, FCS-MBT, FCS-MBT-XE



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APPROVALS

For full certification information visit www.mtl-inst.com/certificates

MODEL - FCS-MBT

Country	Canada		Europe		USA			
Authority	CSA		LCIE	ATEX (Category 3)		FM	FM	
Standard	C22.2 No. 0- M1982 CAN/CSA-C22.2 No.1010.1-92 CAN/CSA-C22.2 No.1010.1B-97 T.I.L. No. I-29 C22.2 No. 157-92† C22.2 No. 213-M1987‡ CAN/CSA- E60079-0-02† CAN/CSA- E60079-11-02† CAN/CSA- E60079-15-02†		EN60079-0 : 2012+A11 : 2013* EN60079-11 : 2012*	EN 60079-0 : 2012+A11 : 2013 EN 60079-15 : 2010		3600 1998 3610 2010 3810 1989 inc. Supplement #1 1995 ANSI/ISA 60079-0 2009 ANSI/ISA 60079-11 2009	3600 1998 3611 1999 3810 1989	
Approved for	Class I, Division 1 Groups A, B, C and D, (Temp Code T4) Ex ia IIC T4		⊕ II 1 G Ex ia IIC T4	⊕ II 3 GD Ex nA IIC T4		IS//1/ABCD/T4 Ta=70°C I/O/AEx ia IIC T4 Ta=70°C	NI//2/ABCD/T4 Ta=70°C I / 2 / IIC / T4 Ta=70°C	
Certificate no.	1198909 (LR 108985)		LCIE02ATEX6212X	REL07ATEX1004X		3020445	3013269	
Trunk wiring parameters	ENTITY Intrinsically safe V _{max} U _i = 24V I _{max} I _i = 250mA C _i = 0 L _i = 0 P _i = 1.2W	FISCO Intrinsically safe V _{max} U _i = 175V I _{max} I _i = 380mA C _i = 0 L _i = 0 P _i = 5.32W	ENTITY Intrinsically safe V _{max} U _i = 24V I _{max} I _i = 250mA C _i = 0 L _i = 0 P _i = 1.2W	FISCO Intrinsically safe V _{max} U _i = 175V I _{max} I _i = 380mA C _i = 0 L _i = 0 P _i = 5.32W	Energy limited U _i = 32V I _i = 1.5A C _i = 0 L _i = 0	ENTITY Intrinsically safe V _{max} = 24V I _{max} = 250mA C _i = 0 L _i = 0 P _i = 1.2W	FISCO Intrinsically safe V _{max} = 175V I _{max} = 380mA C _i = 0 L _i = 0 P _i = 5.32W	V _{max} = 32V I _{max} = 1.5A

* the original LCIE Certificate used EN 50014:1997 + Amendments 1 & 2 and EN 50020:1994. We have determined that there are no technical differences (affecting the products) between these standards and the currently harmonized EN standards listed above.

† Reaffirmed 2006 ‡ Reaffirmed 1999

Note: The figures quoted apply to IIC gas group. See certificate for parameter relating to groups IIB and IIA

MODEL - F100

Country	Canada		Europe		USA	
Authority	CSA		FMc	ATEX (Category 3)		FM
Standard	C22.2 No. 0- M1982 CAN/CSA-C22.2 No.1010.1-92 CAN/CSA-C22.2 No.1010.1B-97 T.I.L. No. I-29 C22.2 No. 157-92† C22.2 No. 213-M1987 CAN/CSA- E60079-0-02† CAN/CSA- E60079-11-02† CAN/CSA- E60079-15-02†		CSA C22.2 No. 213 1987 CSA E60079-0 2002 CSA E60079-15 2002 CAN/CSA C22.2 No.1010.1 1992 inc. Amendment 2 1997	EN 60079-0 : 2012+A11 : 2013 EN 60079-15 : 2010		3600 1998 3611 1999 3810 1989
Approved for	Class I, Division 2 Groups A, B, C and D (Temp Code T4); Ex nA IIC T4		NI//2/ABCD/T4 Ta=70°C Ex nA IIC T4 Ta=70°C	⊕ II 3 GD Ex nA IIC T4		NI//2/ABCD/T4 Ta=70°C I / 2 / IIC / T4 Ta=70°C
Certificate no.	1198909 (LR 108985)		3039410C	REL07ATEX1004X		3013269
Trunk wiring parameters	Non-arcing V _{max} = 32V I _{max} = 1.5A		Non-arcing V _{max} = 32V I _{max} = 1.5A	Energy limited U _i = 32V I _i = 1.5A C _i = 0 L _i = 0		V _{max} = 32V I _{max} = 1.5A

† Reaffirmed 2006 ‡ Reaffirmed 1999

Note: The figures quoted apply to IIC gas group. See certificate for parameter relating to groups IIB and IIA

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APPROVALS

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MODEL - FCS-MBT-XE

Country	Europe
Authority	KEMA
Standard	EN 60079-0 : 2012+A11 : 2013 EN 60079-7 : 2007 EN 60079-18 : 2009
Approved for	Ⓜ II 2 G Ex em IIC T4
Certificate no.	KEMA05ATEX2006
Trunk wiring parameters	Rated voltage 30V DC Rated current 1.5A

We have determined that there are no technical differences (affecting the products) between these standards and the currently harmonized EN standards listed here.



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The given data is only intended as a product description and should not be regarded as a legal warranty of properties or guarantee. In the interest of further technical developments, we reserve the right to make design changes.