

Fieldbus Surge Protector, Field Installation on Trunk

TCP-LBF-IA1.36.IE*



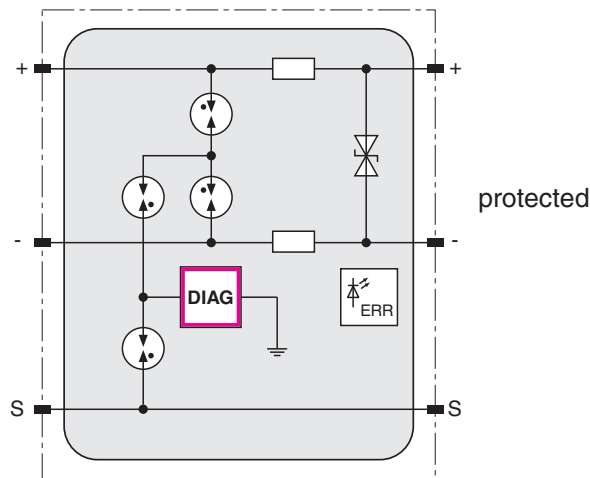
- Pluggable, mounts between device coupler and trunk cable
- Intrinsically safe (Ex ia), FISCO, Entity, DART Fieldbus, or general-purpose
- Optional diagnostics for wear
- Grounding of shield via gas-discharge tube
- For FOUNDATION Fieldbus H1 and PROFIBUS PA
- Indication via LED and Advanced Diagnostics



Function

This fieldbus surge protector is in accordance with IEC 61158-2 and mounts on the trunk connector of FieldConnex® device couplers, protecting them. It directs power surges to earth via gas discharge tubes. It is certified intrinsically safe for circuits in hazardous areas up to Zone 0/Div. 1 and DART fieldbus. The surge protector is installed in Zone 1 ... 2 or Div. 1 ... 2. Integrated diagnostics (option) continuously monitor wear caused by surges. The end of the useful life and thus the need for exchange is indicated in two ways: via an LED and in the control room via the FieldConnex® Advanced Diagnostics software. Installation on the trunk connector is without additional wiring even as retrofit.

Connection



Technical Data

General specifications

Design / Mounting Cabinet installation

Fieldbus interface

Self current consumption max. 6 mA (for version TCP-LBF-IA1.36.IE.1) , max. 0 mA (for version TCP-LBF-IA1.36.IE.0)

Indicators/operating means

LED ERR green flashing: status OK , red flashing: maintenance required , (for version TCP-LBF-IA1.36.IE.1)

Electrical specifications

Rated voltage	U_r	36 V
Rated current	I_r	600 mA

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Refer to "General Notes Relating to Pepperl+Fuchs Product Information".

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Technical Data

Voltage protection level		U_p
Line/Line		max. 50 V category B2 10/700 μ sec , 25 A max. 50 V category C1 8/20 μ sec , 300 A max. 55 V category C2 8/20 μ sec , 5 kA max. 46 V category C3 1kV/ μ sec , 10 A
Line/Earth		max. 1060 V category B2 10/700 μ sec , 50 A per line max. 800 V category C1 8/20 μ sec , 300 A per line max. 1.5 kV category C2 8/20 μ sec , 5 kA per line max. 1.3 kV category C3 1kV/ μ sec , 50 A per line max. 1080 V category D1 10/350 μ sec , 500 A per line
Screen/Shield indirectly grounded (via GDT)		max. 500 V category B2 10/700 μ sec , 100 A max. 600 V category C1 8/20 μ sec , 500 A max. 720 V category C2 8/20 μ sec , 10 kA max. 550 V category C3 1kV/ μ sec , 100 A max. 570 V category D1 10/350 μ sec , 1 kA
Reaction time		t_A
Line/Line		max. 1 ns
Line/Earth		max. 100 ns
Screen/Shield-Earth		max. 100 ns
Overstressed fault mode		acc. IEC 61643-21 line inoperable mode 3
Series resistance in line		2 Ω +/- 5 %
Impulse durability		
Per line		5 kA category C2 8/20 μ sec
Screen/Shield indirectly grounded (via GDT)		1 kA category D1 10/350 μ sec 10 kA category C2 8/20 μ sec
Directive conformity		
Electromagnetic compatibility		
Directive 2014/30/EU		EN 61326-1:2013
Standard conformity		
Electromagnetic compatibility		
		NAMUR NE 21
Degree of protection		IEC 60529
Fieldbus standard		IEC 61158-2
Climatic conditions		IEC 60721
Shock resistance		EN 60068-2-27
Vibration resistance		EN 60068-2-6
Surge protection		IEC 61643-21
Ambient conditions		
Ambient temperature		-40 ... 70 °C (-40 ... 158 °F)
Storage temperature		-40 ... 85 °C (-40 ... 185 °F)
Relative humidity		≤ 95 % non-condensing
Shock resistance		15 g 11 ms
Vibration resistance		1 g , 10 ... 150 Hz
Corrosion resistance		acc. to ISA-S71.04-1985, severity level G3
Mechanical specifications		
Connection type		screw terminals
Core cross-section		flexible wire 2.5 mm ² solid wire max. 4 mm ²
Housing material		Polyamide PA 6.6
Degree of protection		IP20
Mass		80 g
Grounding		M4 screw and external grounding rail
Data for application in connection with hazardous areas		
EU-Type Examination Certificate		SIRA 12 ATEX 2128X
Marking		Ⓔ II 1G Ex ia IIC T4
Voltage	U_i	24 V
Current	I_i	500 mA
Internal capacitance	C_i	2 nF

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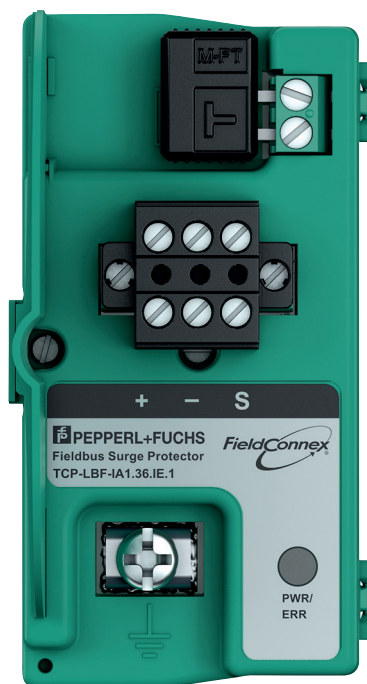
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Technical Data

Internal inductance	L_i	0.1 μ H
Certificate		SIRA 12 ATEX 4176X
Marking		Ⓜ II 3G Ex nAc IIC T4 , Ⓜ II 3G Ex ic IIC T4
Voltage U_i		33 V
Current I_i		600 mA
Internal capacitance C_i		2 nF
Directive conformity		
Directive 2014/34/EU		EN 60079-0:2012 , EN 60079-11:2012 , EN 60079-15:2010 , EN 60079-26:2007
Supplementary information		FISCO field device
International approvals		
CSA approval		CoC 2595441
Control drawing		116-0365
Approved for		Class I, Division 1, Groups A, B, C, D T4 Class I, Zone 0, Ex ia IIC T4 Class I, Zone 2, Ex ic IIC T4 Class I, Zone 0, AEx ia IIC T4 Class I, Zone 2, AEx ic IIC T4 Class I, Division 2, Groups A, B, C, D T4 Class I, Zone 2, Ex nL IIC T4 Class I, Zone 2, Ex na IIC T4 Class I, Zone 2, AEx nAc IIC T4
IECEx approval		IECEx SIR 12.0051X
Approved for		Ex ia IIC T4
Certificates and approvals		
Marine approval		DNV A-14038
General information		
Supplementary information		Statement of Conformity, Declaration of Conformity, Attestation of Conformity and instructions have to be observed where applicable. For information see www.pepperl-fuchs.com .

Assembly



Matching System Components



F.SP5.S**.B**.1.0.***.**
***0



F.SP5.P**.B**.1.0.***.**
***0

Accessories

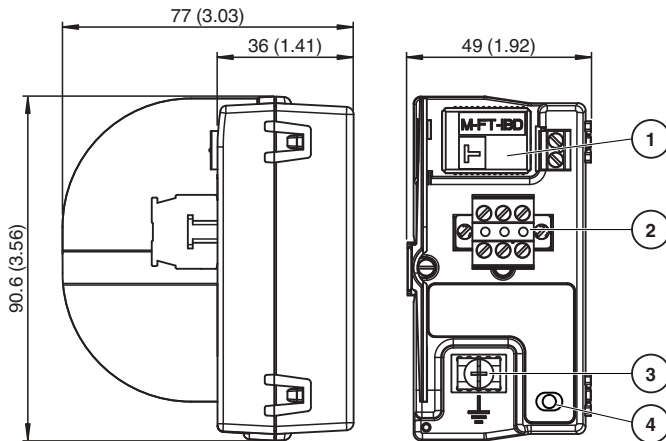
ACC-LBF-SW.3	Separation Wall for Installation on the Surge Protector TCP-LBF*, 3 pcs., Ex ic Applications
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Additional Information

Product Versions

Type	Description
TCP-LBF-IA1.36.IE.0	Fieldbus Surge Protector without diagnosis
TCP-LBF-IA1.36.IE.1	Fieldbus Surge Protector with diagnosis

Dimensions and Assembly



Dimensions in mm (in)

- 1 Terminator M-FT*
- 2 T-connector T-CON.3
- 3 Grounding terminal
- 4 LED red (only type TCP-LBF-IA1.36.IE.1)

Delivery

Scope of Delivery

- Fieldbus Surge Protector TCP-LBF-IA1.36.IE*
- Terminator M-FT* and T-connector T-CON.3 not included. Terminator and T-connector can be applied from installed fieldbus coupler.

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