Fieldbus Surge Protector for Cabinet Installation, Ex ia

DP-LBF-I1.36.*

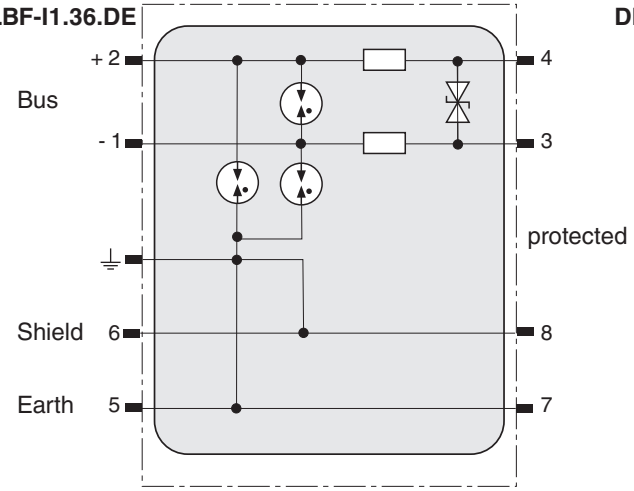
- Modular: protection module easy to replace
- Intrinsically safe (Ex ia), FISCO, Entity, DART Fieldbus, or general-purpose
- Protection module replaceable, interrupting or non-interrupting
- Grounding of shield direct or via gas-discharge tube
- For FOUNDATION Fieldbus H1 and PROFIBUS PA
- Compact and space-saving design
- Installation on DIN rail in cabinet or field junction box

Function

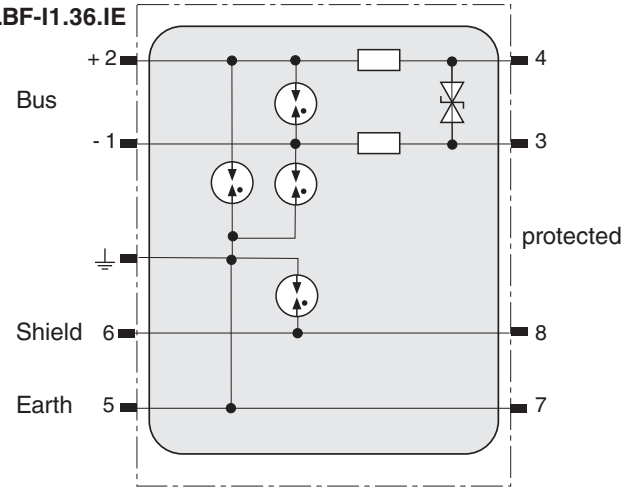
The modular surge protector for fieldbus consists of a base (DB …), and a plug-in module (DP-LBF-I1.36*) and is in accordance with IEC 61158-2. It directs power surges to earth via gas discharge tubes, protecting field devices. The device is certified intrinsically safe for circuits in hazardous area Zone 0 … 2/Div. 1 … 2, and for DART fieldbus. The surge protector is installed in Zone 1 … 2 or Div. 1 … 2.
Choices support all concepts: interrupting/non-interrupting module exchange and direct/indirect grounding of the shield. The plug-in module can be exchanged without tools.
The surge protectors support coordinated use in a lightning protection zone concept in accordance with IEC 61312-1. Installation in cabinets or junction boxes requires a minimum amount of wiring.

Connection

DP-LBF-I1.36.DE



DP-LBF-I1.36.IE



Technical Data

General specifications		
Design / Mounting		Cabinet installation
Electrical specifications		
Rated voltage	U_r	33 V
Rated current	I_r	500 mA
Voltage protection level	U_p	
Line/Line		max. 58 V category C1/C2 8/20 µsec max. 50 V category C3 1 kV/µsec max. 51 V category B2 10/700 µsec max. 55 V category D1 10/350 µsec

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Line/Earth		max. 1400 V category C1/C2 8/20 µsec max. 1100 V category C1/C2 1 kV/µsec max. 1000 V category B2 10/700 µsec max. 1300 V category D1 10/350 µsec
Screen/Shield directly grounded		max. 25 V category C1/C2 8/20 µsec max. 20 V category D1 10/350 µsec
Screen/Shield indirectly grounded (via GDT)		max. 700 V category C1/C2 8/20 µsec max. 600 V category C3 1 kV/µsec max. 500 V category B2 10/700 µsec max. 600 V category D1 10/350 µsec
Reaction time	t_A	
Line/Line		max. 1 ns
Line/Earth		max. 100 ns
Screen/Shield-Earth		max. 100 ns
Overstressed fault mode		according IEC 61643-21 line inoperable mode 3 lines 1 and 2 at 15,5kA (8/20µsec) lines 3 and 4 at 30kA (8/20µsec)
Series resistance in line		1 Ω +/- 5 %
Impulse durability		
Per line		1 kA category D1 10/350 µsec , 5 kA category C1/C2 8/20 µsec
Screen/Shield directly grounded		5 kA category D1 10/350 µsec
Screen/Shield indirectly grounded (via GDT)		4 kA category D1 10/350 µsec , 10 kA category C1/C2 8/20 µsec
Capacitance		
Line/Line		800 pF
Line/Earth		16 pF
Directive conformity		
Electromagnetic compatibility		
Directive 2014/30/EU		EN 61326-1:2013
Standard conformity		
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		-50 ... 80 °C (-58 ... 176 °F)
Storage temperature		-50 ... 85 °C (-58 ... 185 °F)
Relative humidity		≤ 95 % non-condensing
Shock resistance		15 g 11 ms
Vibration resistance		1 g , 10 ... 150 Hz
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		Protection Module 20 g , base module 40 g
Mounting		35 mm DIN mounting rail
Data for application in connection with hazardous areas		
EU-type examination certificate		KEMA 09 ATEX 0191 X
Marking		Ⓔx II 2(1)G Ex ia [ia Ga] IIC T6...T4 Gb

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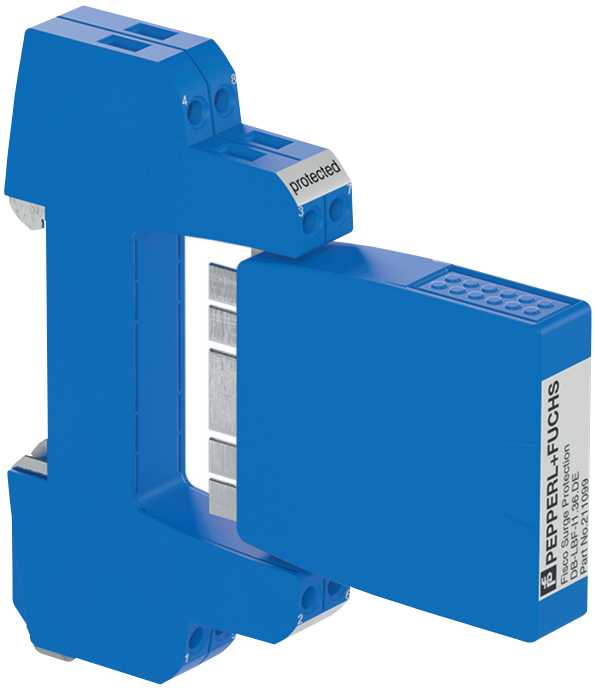
Voltage	U_i	30 V
Current	I_i	500 mA
Internal capacitance	C_i	negligible 0 nF
Internal inductance	L_i	negligible 0 µH
Certificate		KEMA 09 ATEX 0190 X
Marking		Ⓔx II 3G Ex ic IIC T6...T4 Gc , Ⓔx II 3G Ex nA IIC T6...T4 Gc
Voltage	U_i	33 V
Current	I_i	500 mA
Internal capacitance	C_i	negligible 0 nF
Directive conformity		
Directive 2014/34/EU		EN 60079-0:2018 , EN 60079-11:2012 , EN 60079-15:2015 + A1:2018
International approvals		
CSA approval		CSA 2437472
Control drawing		116-0361
Approved for		Class I, Zone 1, AEx/Ex ia IIC T4...T6, Class I, Zone 2, AEx nC IIC T4...T6, Class I, Zone 2, Ex nL IIC T4...T6, Class I, Zone 2, AEx/Ex nA IIC T4...T6 Class I Div. 1, GP A, B, C, D T4...T6, Class I Div. 2, GP A, B, C, D T4...T6, Class I Div. 2, GP A, B, C, D T4...T6
IECEx approval		IECEx KEM 09.0088X
Approved for		Ex ia [ia Ga] IIC T6...T4 Gb , Ex ic IIC T6...T4 Gc , Ex nA IIC T4/T5/T6 Gc
Certificates and approvals		
Marine approval		pending
General information		
Supplementary information		EC-Type Examination Certificate, 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



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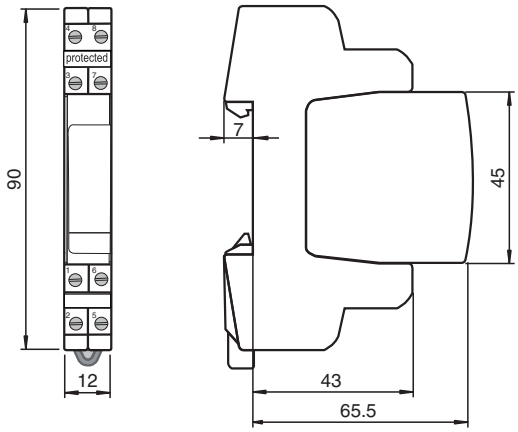
Additional Information

Components

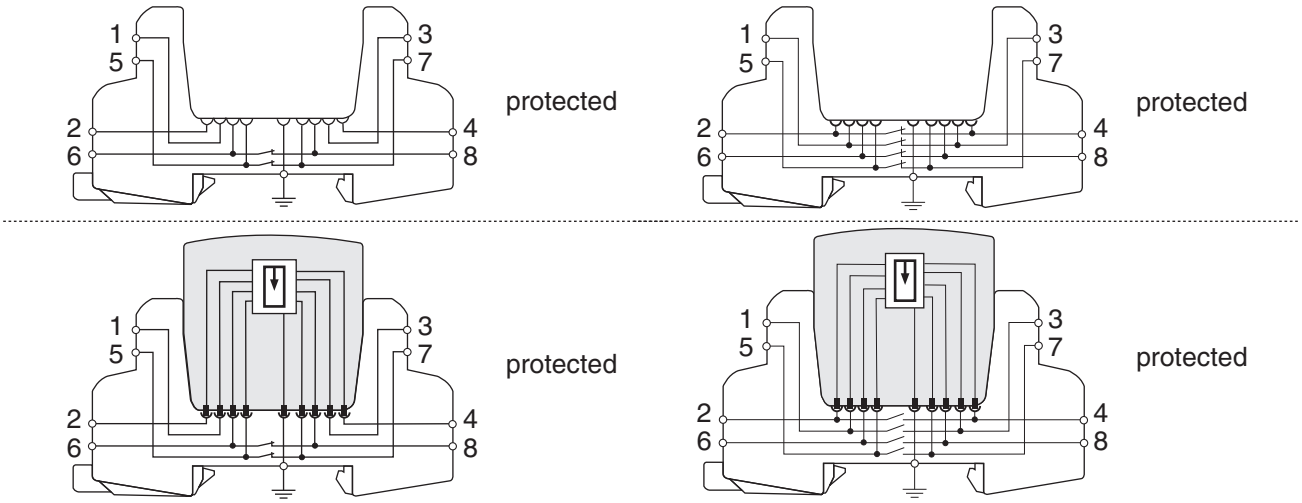
Type Code	Module Type	Comment	Application
		on removal of protection module ...	
DB-LBF-I1	base	... communication continues	replacement of the protection module during operation
DB-LBF-I1.I	base	... communication interrupts	replacement of the protection module only offline
		connection of shielded earth ...	
DP-LBF-I1.36.DE	protection module	... direct	for double-sided grounding
DP-LBF-I1.36.IE	protection module	... via gas discharge tube	for single-point grounding

Dimensions



Dimensions in mm

Installation



DB-LBF-I1.I DB-LBF-I1

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