

Устройства для полевой шины

Технические характеристики

По вопросам продаж и поддержки обращайтесь:

Алматы (727)345-47-04
Ангарск (3955)60-70-56
Архангельск (8182)63-90-72
Астрахань (8512)99-46-04
Барнаул (3852)73-04-60
Белгород (4722)40-23-64
Благовещенск (4162)22-76-07
Брянск (4832)59-03-52
Владивосток (423)249-28-31
Владикавказ (8672)28-90-48
Владимир (4922)49-43-18
Волгоград (844)278-03-48
Вологда (8172)26-41-59
Воронеж (473)204-51-73
Екатеринбург (343)384-55-89

Иваново (4932)77-34-06
Ижевск (3412)26-03-58
Иркутск (395)279-98-46
Казань (843)206-01-48
Калининград (4012)72-03-81
Калуга (4842)92-23-67
Кемерово (3842)65-04-62
Киров (8332)68-02-04
Коломна (4966)23-41-49
Кострома (4942)77-07-48
Краснодар (861)203-40-90
Красноярск (391)204-63-61
Курск (4712)77-13-04
Курган (3522)50-90-47
Липецк (4742)52-20-81

Магнитогорск (3519)55-03-13
Москва (495)268-04-70
Мурманск (8152)59-64-93
Набережные Челны (8552)20-53-41
Нижний Новгород (831)429-08-12
Новокузнецк (3843)20-46-81
Ноябрьск (3496)41-32-12
Новосибирск (383)227-86-73
Омск (3812)21-46-40
Орел (4862)44-53-42
Оренбург (3532)37-68-04
Пенза (8412)22-31-16
Петрозаводск (8142)55-98-37
Псков (8112)59-10-37
Пермь (342)205-81-47

Ростов-на-Дону (863)308-18-15
Рязань (4912)46-61-64
Самара (846)206-03-16
Санкт-Петербург (812)309-46-40
Саратов (845)249-38-78
Севастополь (8692)22-31-93
Саранск (8342)22-96-24
Симферополь (3652)67-13-56
Смоленск (4812)29-41-54
Сочи (862)225-72-31
Ставрополь (8652)20-65-13
Сургут (3462)77-98-35
Сыктывкар (8212)25-95-17
Тамбов (4752)50-40-97
Тверь (4822)63-31-35

Тольятти (8482)63-91-07
Томск (3822)98-41-53
Тула (4872)33-79-87
Тюмень (3452)66-21-18
Ульяновск (8422)24-23-59
Улан-Удэ (3012)59-97-51
Уфа (347)229-48-12
Хабаровск (4212)92-98-04
Чебоксары (8352)28-53-07
Челябинск (351)202-03-61
Череповец (8202)49-02-64
Чита (3022)38-34-83
Якутск (4112)23-90-97
Ярославль (4852)69-52-93

Россия +7(495)268-04-70

Казахстан +7(727) 345-47-04

Беларусь +(375) 257-127-884

Узбекистан +998(71)205-18-59

Киргизия +996(312)96-26-47

эл.почта: phb@nt-rt.ru || сайт: <https://pepperl-fuchs.nt-rt.ru/>



Surge Protector

FieldConnex® Fieldbus

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

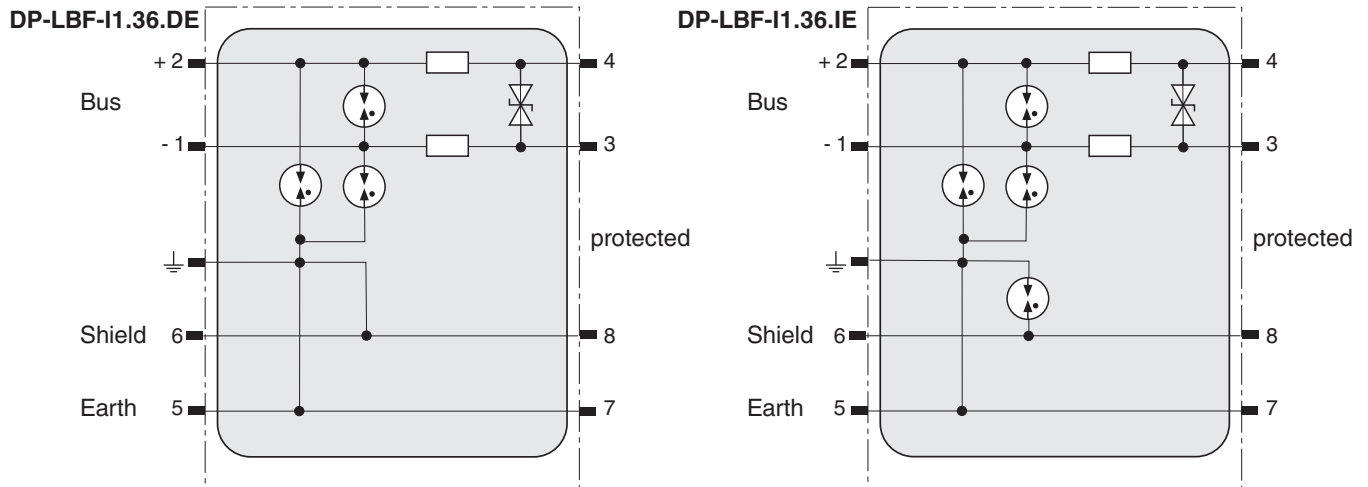
Surge protector, module for control cabinet installation (Ex ia)



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



Technical Data

General specifications		
Design / Mounting		Cabinet installation
Installation in hazardous area		Zone 1 / Div. 1
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

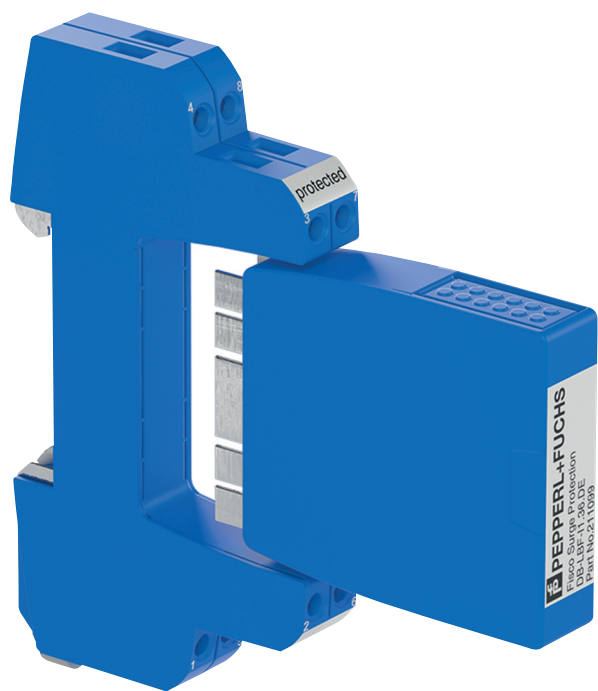
Technical Data

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		DIN rail mounting
Data for application in connection with hazardous areas		
EU-type examination certificate		KEMA 09 ATEX 0191 X
Marking		Ⓔ II 2(1)G Ex ia [ia Ga] IIC T6...T4 Gb

Technical Data

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		Ⓔ II 3G Ex ic IIC T6...T4 Gc , Ⓔ 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		

Assembly

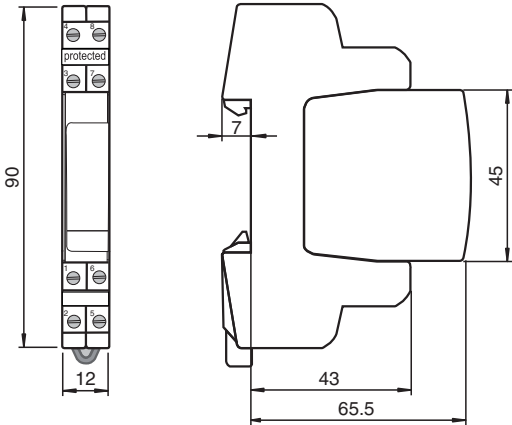


Additional Information

Components

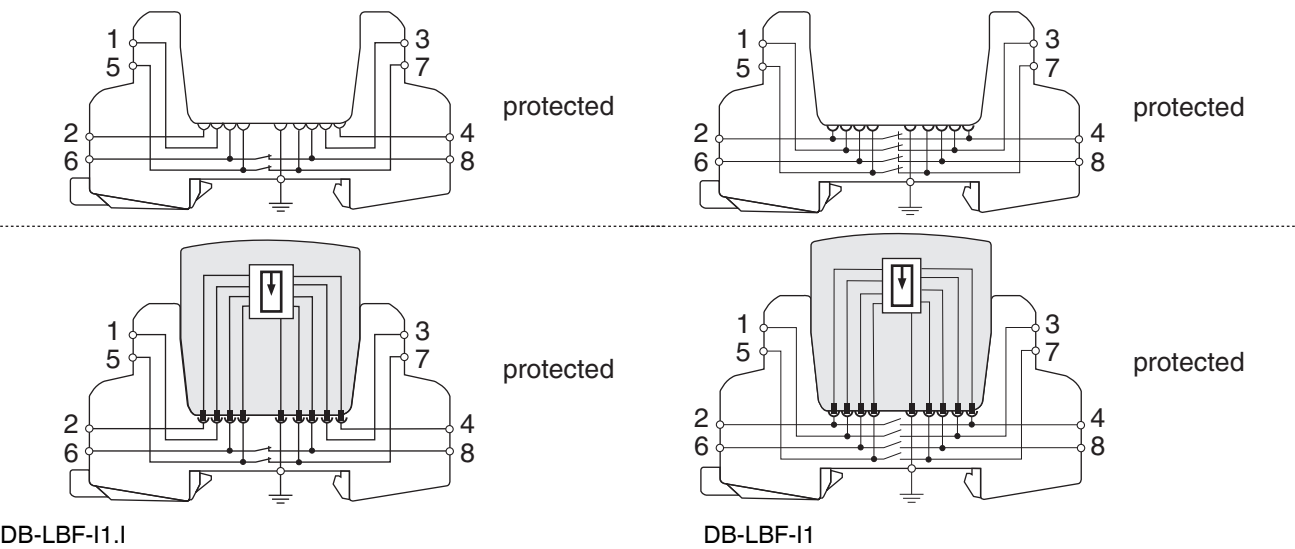
Type Code	Module Type	Comment	Application
		on removal of protection module ...	
DB-LBF-I1	base	... communication continues	replacement of the protection module during operation
DB-LBF-I1.I	base	... communication interrupts	replacement of the protection module only offline
		connection of shielded earth ...	
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

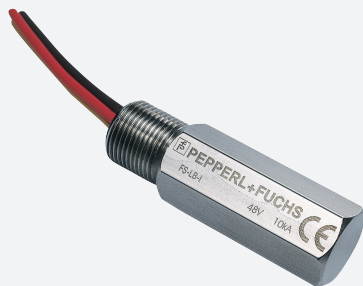
Dimensions



Dimensions in mm

Installation





Surge Protector

FieldConnex® Fieldbus

F*-LBF-I1.32

- Surge Protector in stainless steel housing
- Intrinsically safe, FISCO or Entity
- Surge protection for '+' and '-' fieldbus lead
- Choice of threads 20 mm or 1/2" NPT
- For FOUNDATION Fieldbus H1 and PROFIBUS PA

Surge protector, threaded, for installation via threaded inlet in field housing (Ex ia), IP67

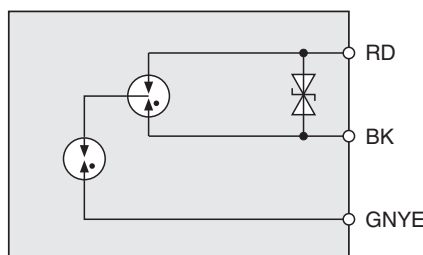


Function

F*-LBF-I1.32 are surge protection devices for fieldbus installations. They direct power surges to earth via gas discharge tubes, protecting field devices and control units from voltage surges and lightning strikes. They are in accordance with the fieldbus standard IEC 61158-2 and are certified intrinsically safe Ex ia for Zone 1, FISCO, and Entity.

FieldConnex® surge protectors for field installation enable the coordinated use in a lightning protection zone concept in accordance with IEC 61312-1. Housings are available with 20 mm ISO or 1/2" NPT connecting threads for easy installation on outdoor junction boxes.

Connection



Technical Data

General specifications

Design / Mounting	Outside installation
Installation in hazardous area	Zone 1

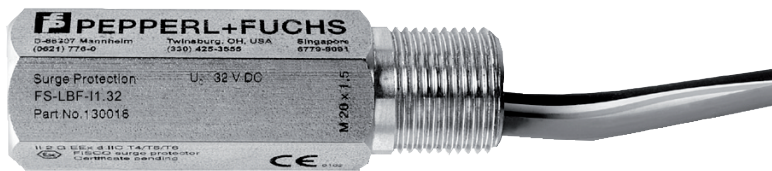
Electrical specifications

Rated voltage	U_r	32 V
Rated current	I_r	550 mA
Nominal discharge current (8/20 μ s)	I_n	
per line		10 kA
total		10 kA
Max. surge current (8/20 μ s)	I_{max}	10 kA
Voltage protection level at max. rated current		
Line/Line		58 V
Line/Earth		1700 V

Technical Data

Voltage protection level at 1 kV/μsec		
Line/Line		50 V
Line/Earth		1.2 kV
Reaction time	t_A	
Line/Line		max. 1 ns
Line/Earth		max. 100 ns
Capacitance		
Line/Line		25 pF
Line/Earth		15 pF
Directive conformity		
Electromagnetic compatibility		
Directive 2014/30/EU		EN 61326-1:2013
Standard conformity		
Electromagnetic compatibility		NE 21:2006
Degree of protection		IEC/EN 60529
Fieldbus standard		IEC 61158-2
Surge protection		IEC 61643-21
Ambient conditions		
Ambient temperature		-50 ... 80 °C (-58 ... 176 °F)
Storage temperature		-50 ... 85 °C (-58 ... 185 °F)
Mechanical specifications		
Core cross section		1.3 mm ²
Housing material		Stainless steel 1.4401/316
Degree of protection		IP00/IP67 if correctly installed
Mass		160 g
Mounting		screw mounting
Data for application in connection with hazardous areas		
EU-type examination certificate		KEMA 04 ATEX 1317 X
Marking		Ⓔ II 2(1)G Ex ia IIC T6...T4
Voltage	U_i	Entity 30 V , FISCO 17.5 V
Current	I_i	Entity 550 mA , FISCO 380 mA
Power	P_i	Entity 3 W , FISCO 5.32 W
Internal capacitance	C_i	negligible 0 nF
Internal inductance	L_i	negligible 0 μH
Directive conformity		
Directive 2014/34/EU		EN 60079-0:2018 , EN 60079-11:2012
International approvals		
IECEx approval		
IECEx certificate		IECEx KEM 09.0081X
IECEx marking		Ex ia [ia Ga] IIC T6...T4 Gb
General information		

Product Photo

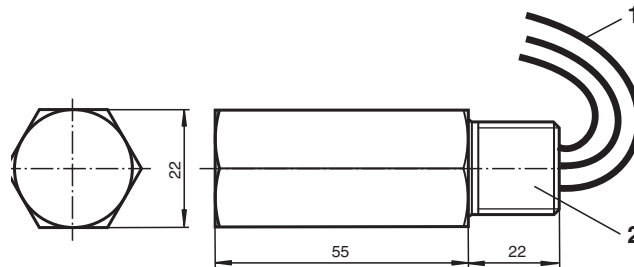


Additional Information

Note

Surge protectors must always be connected to a solid ground (large cross sections, short wiring). This is the basic requirement for an effective protection.

Dimensions and Assembly

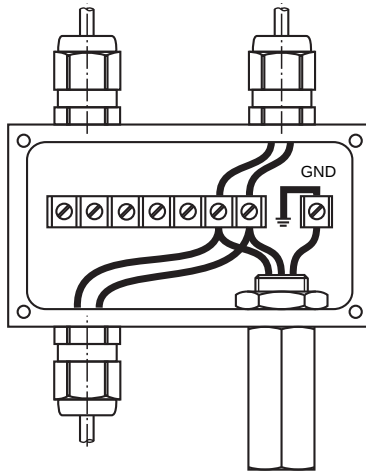


- 1 Cable cross sectional area 1.0 mm
Cable length 250 mm
- 2 FS*: M20 x 1.5 thread
FN*: 1/2"NPT thread

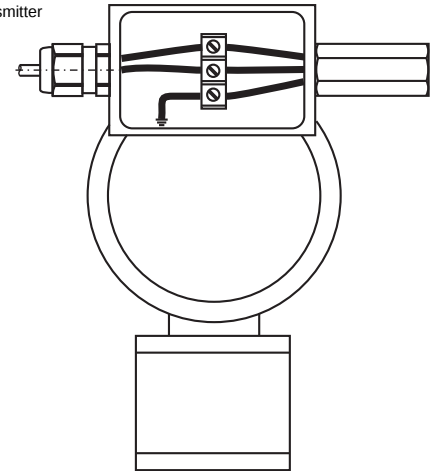
Mounting

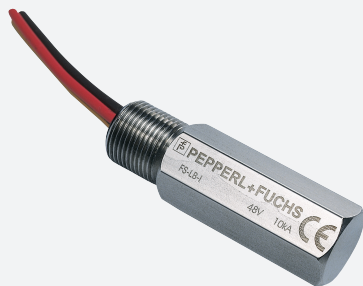
Examples:

Terminal box



Transmitter





Surge Protector

FieldConnex® Fieldbus

F*-LBF-D1.32

- Surge Protector in stainless steel housing
- Flameproof enclosure (Ex d) protection
- Surge protection for '+' and '-' fieldbus lead
- Choice of threads 20 mm or 1/2" NPT
- For FOUNDATION Fieldbus H1 and PROFIBUS PA

Surge protector, threaded, for installation via threaded inlet in field housing (Ex d), IP67

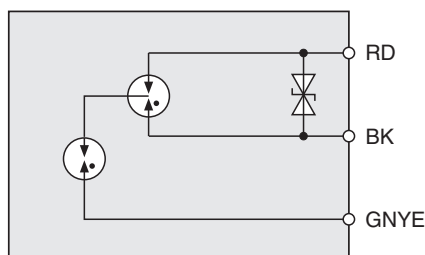


Function

F*-LBF-D1.32 are surge protection devices for fieldbus installations. They direct power surges to earth via gas discharge tubes, protecting field devices and control units from voltage surges and lightning strikes. They are in accordance with the fieldbus standard IEC 61158-2 and are certified Ex d (flameproof enclosure) for Zone 1.

FieldConnex® surge protectors for field installation enable the coordinated use in a lightning protection zone concept in accordance with IEC 61312-1. Housings are available with 20 mm ISO or 1/2" NPT connecting threads for easy installation on outdoor junction boxes.

Connection



Technical Data

General specifications

Design / Mounting	Outside installation
Installation in hazardous area	Zone 1

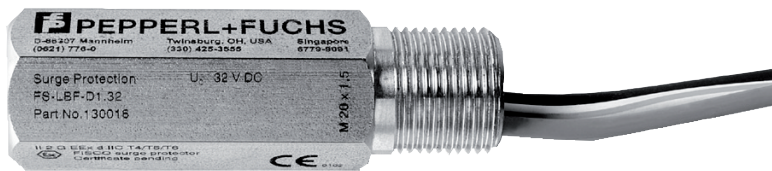
Electrical specifications

Rated voltage	U_r	32 V
Nominal discharge current (8/20 μ s)	I_n	
per line		10 kA
total		10 kA
Max. surge current (8/20 μ s)	I_{max}	10 kA
Voltage protection level at max. rated current		
Line/Line		58 V
Line/Earth		1700 V
Voltage protection level at 1 kV/ μ sec		

Technical Data

Line/Line		50 V
Line/Earth		1.2 kV
Reaction time	t_A	
Line/Line		max. 1 ns
Line/Earth		max. 100 ns
Capacitance		
Line/Line		25 pF
Line/Earth		15 pF
Directive conformity		
Electromagnetic compatibility		
Directive 2014/30/EU		EN 61326-1:2013
Standard conformity		
Electromagnetic compatibility		NE 21:2006
Degree of protection		IEC/EN 60529
Fieldbus standard		IEC 61158-2
Surge protection		IEC 61643-21
Ambient conditions		
Ambient temperature		-50 ... 80 °C (-58 ... 176 °F)
Storage temperature		-50 ... 85 °C (-58 ... 185 °F)
Mechanical specifications		
Core cross section		1.3 mm ²
Housing material		Stainless steel 1.4401/316
Degree of protection		IP00/IP67 if correctly installed
Mass		160 g
Mounting		screw mounting
Data for application in connection with hazardous areas		
EU-type examination certificate		KEMA 04 ATEX 2318 X
Marking		Ⓔ II 2G Ex d IIC T6...T5 Gb
Maximum values		
Rated voltage		32 V
Directive conformity		
Directive 2014/34/EU		EN 60079-0:2018 , EN 60079-1:2007
International approvals		
IECEx approval		
IECEx certificate		IECEx KEM 09.0067X
IECEx marking		Ex d IIC T6...T5 Gb
General information		

Product Photo

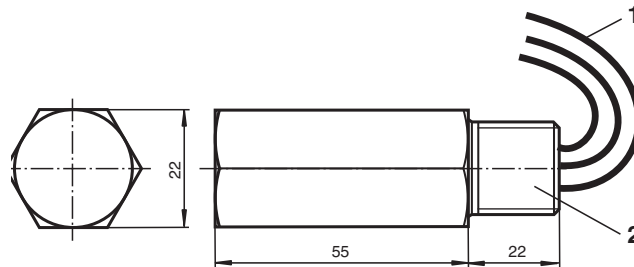


Additional Information

Note

Surge protectors must always be connected to a solid ground (large cross sections, short wiring). This is the basic requirement for an effective protection.

Dimensions and Assembly

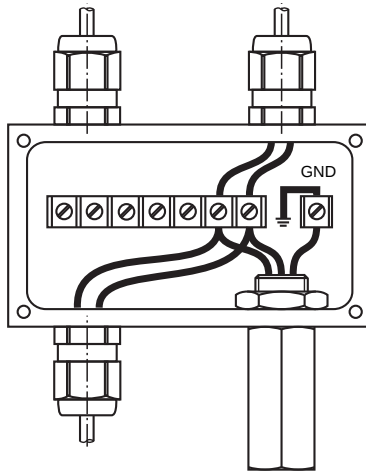


- 1 Cable cross sectional area 1.0 mm
Cable length 250 mm
- 2 FS*: M20 x 1.5 thread
FN*: 1/2"NPT thread

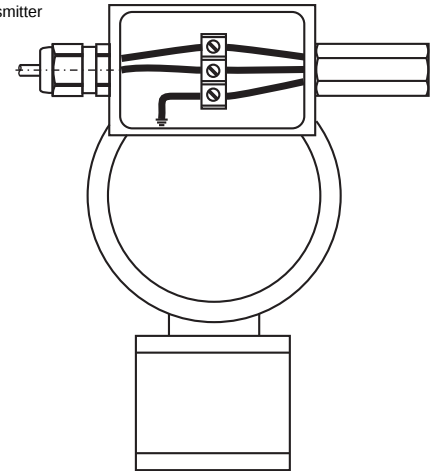
Mounting

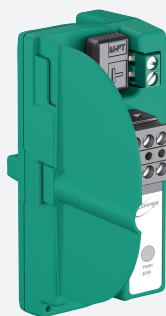
Examples:

Terminal box



Transmitter





Surge Protector

FieldConnex® Fieldbus

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

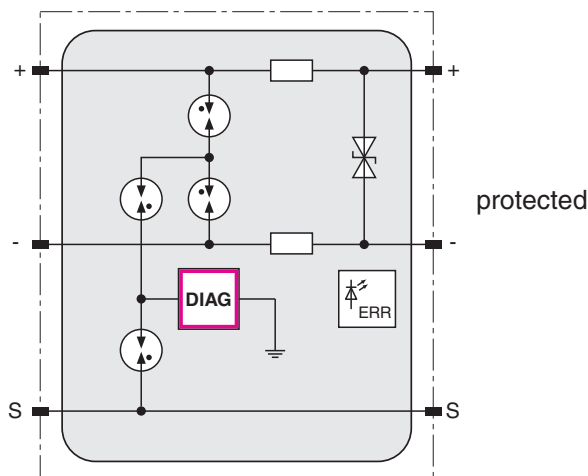
Surge protector, pluggable module for trunk installation on segment protector



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
Installation in hazardous area	Zone 1 / Div. 1

Fieldbus connection

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

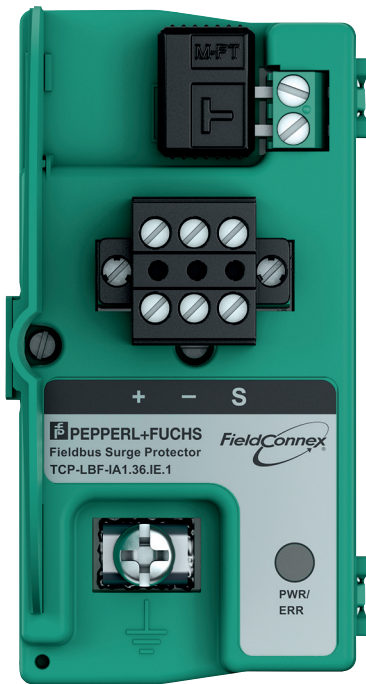
Technical Data

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 1 kV/ 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 1 kV/ 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 1 kV/ 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		according 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		$\leq$ 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

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 certificate		IECEX SIR 12.0051X
IECEX marking		Ex ia IIC T4
General information		
Supplementary information		Statement of Conformity, Declaration of Conformity, Attestation of Conformity and instructions have to be observed where applicable.

Assembly

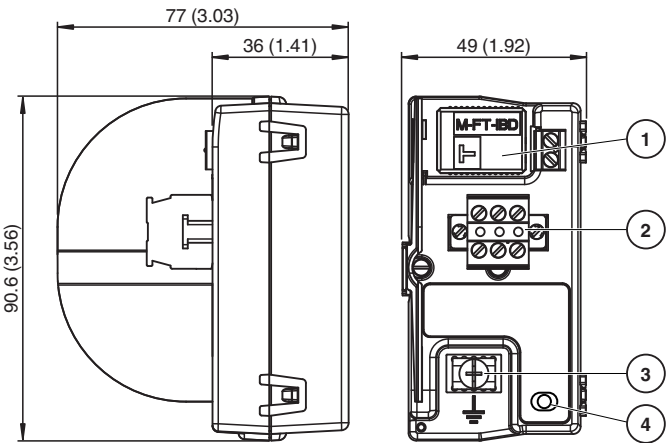


Additional Information

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.



Surge Protector

FieldConnex® Fieldbus

SCP-LBF-IA1.36.IE*

- Pluggable, mounts between device coupler and spur 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

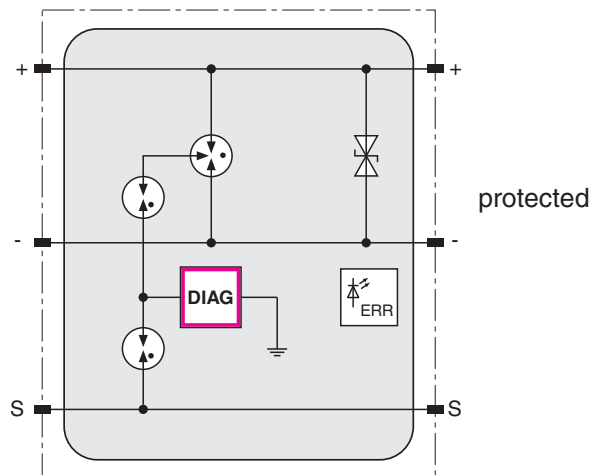
Surge protector, pluggable module for spur installation on segment protector



Function

This fieldbus surge protector is in accordance with IEC 61158-2 and mounts on the spur 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 for 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 spur connector is without additional wiring even as retrofit. A single grounding bar connects surge protectors mounted side by side to a common grounding point.

Connection



Technical Data

General specifications		
Design / Mounting		Cabinet installation
Installation in hazardous area		Zone 1 / Div. 1
Fieldbus connection		
Self current consumption		max. 6 mA (for version SCP-LBF-IA1.36.IE.1) , max. 0 mA (for version SCP-LBF-IA1.36.IE.0)
Indicators/operating means		
LED ERR		green flashing: status OK , red flashing: maintenance required (for version SCP-LBF-IA1.36.IE.1)
Electrical specifications		
Rated voltage	U _r	36 V

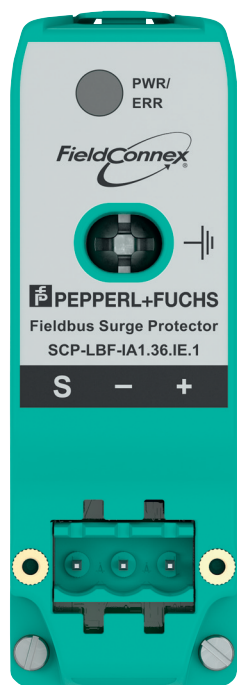
Technical Data

Rated current	I_r	250 mA
Voltage protection level	U_p	
Line/Line		max. 50 V category B2 10/700 μ sec , 25 A max. 53 V category C1 8/20 μ sec , 150 A max. 55 V category C2 8/20 μ sec , 150 A max. 46 V category C3 1 kV/ μ sec , 10 A
Line/Earth		max. 980 V category B2 10/700 μ sec , 50 A per line max. 800 V category C1 8/20 μ sec , 50 A per line max. 1450 V category C2 8/20 μ sec , 5 kA per line max. 1200 V category C3 1 kV/ μ sec , 50 A per line max. 980 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. 700 V category C2 8/20 μ sec , 10 kA max. 550 V category C3 1 kV/ 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		according IEC 61643-21 line inoperable mode 2
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		45 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

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 certificate		IECEX SIR 12.0051X
IECEX marking		Ex ia IIC T4
General information		
Supplementary information		Statement of Conformity, Declaration of Conformity, Attestation of Conformity and instructions have to be observed where applicable.

Assembly

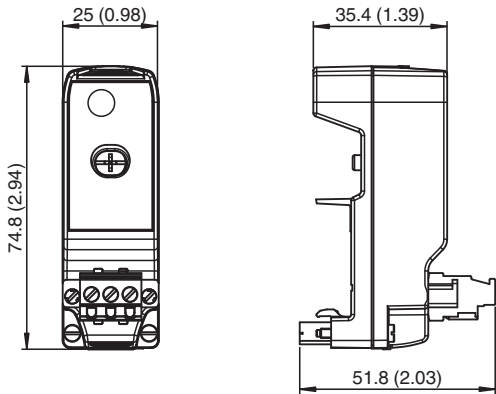


Additional Information

Product Versions

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

Dimensions



Dimensions in mm (in)



Surge Protector

FieldConnex® Fieldbus

TPH-LBF-IA1.36.DE*

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

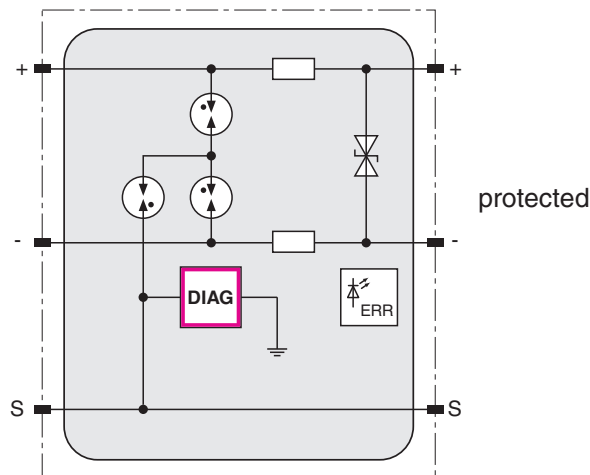
Surge protector, pluggable module for trunk installation on fieldbus power hub



Function

This fieldbus surge protector is in accordance with IEC 61158-2 and mounts on the trunk connector of FieldConnex® High-Density and Compact Power Hubs, 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. A single grounding bar connects surge protectors mounted side by side to a common grounding point.

Connection



Technical Data

General specifications

Design / Mounting	Cabinet installation
Installation in hazardous area	Zone 1 / Div. 1

Fieldbus connection

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

Indicators/operating means

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

Electrical specifications

Rated voltage	U _r	36 V
---------------	----------------	------

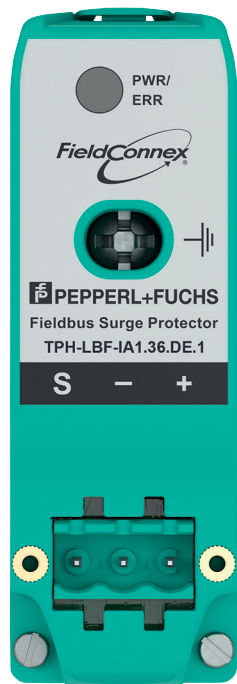
Technical Data

Rated current	I_r	600 mA
Voltage protection level	U_p	
Line/Line		max. 50 V category B2 10/700 μ sec , 25 A max. 52 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 1 kV/ 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. 1450 V category C2 8/20 μ sec , 5 kA per line max. 1300 V category C3 1 kV/ μ sec , 50 A per line max. 1080 V category D1 10/350 μ sec , 500 A per line
Reaction time	t_A	
Line/Line		max. 1 ns
Line/Earth		max. 100 ns
Overstressed fault mode		according 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
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		45 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
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 Class I and II, Division 1, Group C - G
Voltage	U_i	33 V
Current	I_i	600 mA

Technical Data

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 1, 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
General information		
Supplementary information		Statement of Conformity, Declaration of Conformity, Attestation of Conformity and instructions have to be observed where applicable.

Assembly

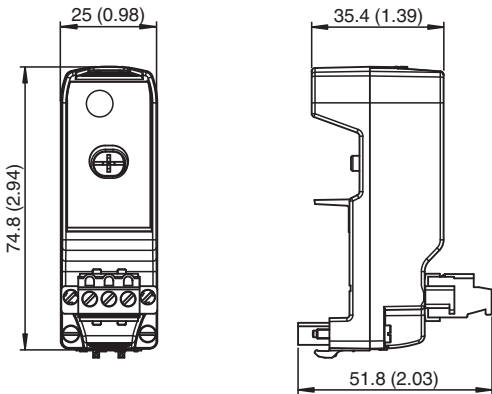


Additional Information

Product Versions

Type	Description
TPH-LBF-IA1.36.DE.0	Fieldbus Surge Protector without diagnosis
TPH-LBF-IA1.36.DE.1	Fieldbus Surge Protector with diagnosis

Dimensions



Dimensions in mm (in)

По вопросам продаж и поддержки обращайтесь:

Алматы (727)345-47-04
Ангарск (3955)60-70-56
Архангельск (8182)63-90-72
Астрахань (8512)99-46-04
Барнаул (3852)73-04-60
Белгород (4722)40-23-64
Благовещенск (4162)22-76-07
Брянск (4832)59-03-52
Владивосток (423)249-28-31
Владикавказ (8672)28-90-48
Владимир (4922)49-43-18
Волгоград (844)278-03-48
Вологда (8172)26-41-59
Воронеж (473)204-51-73
Екатеринбург (343)384-55-89

Иваново (4932)77-34-06
Ижевск (3412)26-03-58
Иркутск (395)279-98-46
Казань (843)206-01-48
Калининград (4012)72-03-81
Калуга (4842)92-23-67
Кемерово (3842)65-04-62
Киров (8332)68-02-04
Коломна (4966)23-41-49
Кострома (4942)77-07-48
Краснодар (861)203-40-90
Красноярск (391)204-63-61
Курск (4712)77-13-04
Курган (3522)50-90-47
Липецк (4742)52-20-81

Магнитогорск (3519)55-03-13
Москва (495)268-04-70
Мурманск (8152)59-64-93
Набережные Челны (8552)20-53-41
Нижегород (831)429-08-12
Новокузнецк (3843)20-46-81
Ноябрьск (3496)41-32-12
Новосибирск (383)227-86-73
Омск (3812)21-46-40
Орел (4862)44-53-42
Оренбург (3532)37-68-04
Пенза (8412)22-31-16
Петрозаводск (8142)55-98-37
Псков (8112)59-10-37
Пермь (342)205-81-47

Ростов-на-Дону (863)308-18-15
Рязань (4912)46-61-64
Самара (846)206-03-16
Санкт-Петербург (812)309-46-40
Саратов (845)249-38-78
Севастополь (8692)22-31-93
Саранск (8342)22-96-24
Симферополь (3652)67-13-56
Смоленск (4812)29-41-54
Сочи (862)225-72-31
Ставрополь (8652)20-65-13
Сургут (3462)77-98-35
Сыктывкар (8212)25-95-17
Тамбов (4752)50-40-97
Тверь (4822)63-31-35

Тольятти (8482)63-91-07
Томск (3822)98-41-53
Тула (4872)33-79-87
Тюмень (3452)66-21-18
Ульяновск (8422)24-23-59
Улан-Удэ (3012)59-97-51
Уфа (347)229-48-12
Хабаровск (4212)92-98-04
Чебоксары (8352)28-53-07
Челябинск (351)202-03-61
Череповец (8202)49-02-64
Чита (3022)38-34-83
Якутск (4112)23-90-97
Ярославль (4852)69-52-93

Россия +7(495)268-04-70

Казахстан +7(727) 345-47-04

Беларусь +(375) 257-127-884

Узбекистан +998(71)205-18-59

Киргизия +996(312)96-26-47

эл.почта: phb@nt-rt.ru || сайт: <https://pepperl-fuchs.nt-rt.ru/>