



FP32

DIN-rail mounting, 20kA surge protection for fieldbus systems

- DIN-rail mounting for easy installation and automatic earthing (grounding)
- 20kA maximum surge current per line
- Plug connectors for quick and easy connection or rewiring
- Meets the requirements of IEC61158-2:2004 for FOUNDATION™ fieldbus
- 10 year product warranty



The FP32 surge protection device prevents surges and transient over-voltages conducted along the Trunk or Spurs of fieldbus systems from damaging the associated electronics such as terminators, spur blocks and the bus control equipment. The FP32 is designed to be used at both ends of the Trunk where a Spur is connected to safely divert any surges to earth.

The multi-stage hybrid surge protection network at the heart of the FP32 uses a combination of solid state electronics and a gas filled discharge tube (GDT) to provide surge protection up to 20kA. This impressive surge protection circuit is designed to exhibit exceptionally low line resistance and adds only a tiny voltage drop to the bus. As a result, no matter how many FP32 devices are connected to a Trunk or Spur the system will still be able to support its full 32 transmitters as specified by IEC 61158-2.

In operation the FP32 device does not adversely effect the performance or operation of the fieldbus or connected equipment, it allows signals to pass with very little attenuation while diverting surge currents safely to earth (ground) and clamping output voltages to safe levels.

Fully automatic in operation, FP32 devices react immediately to make sure that equipment is never exposed to damaging surges between lines or the lines and earth (ground). Reacting instantaneously the FP32 redirects surges safely to earth and then resets automatically.

DIN-rail mounting and a small footprint allow the FP32 to be conveniently located near terminators and spur blocks while plug connectors for Trunk / spur cables and the earth (ground) & shield of the cable make removing a device or re-patching a simple operation.

A 10 Year 'No Fuss' warranty is available as standard for the FP32, so if a correctly connected device should fail for any reason, simply return it for a free replacement.

The FP32 meets IEC 61158-2:2000 for 31.25kB/s systems such as FOUNDATION™ fieldbus, PROFIBUS-PA and WorldFIP.

SPECIFICATION

All figures typical at 77°F (25°C) unless otherwise stated

Maximum surge current

20kA (8/20µs waveform) per line

Leakage current

<1mA @ working voltage

Working voltage

±32Vdc

Maximum continuous operating voltage

±36V peak normal mode
±225V peak common mode

Limiting voltage

62V @ 3kA 8/20µs

Line resistance

0.5ohm per line

Capacitance

Line to Line: 40pF
Line to Earth (Ground): 80pF

Attenuation

-1dB — (7kHz-7.5MHz)

Ambient temperature limits

-40°F — +158°F
(-40°C — +70°C) — working
-40°F — +176°F
(-40°C — +80°C) — storage

Humidity

5% to 95% RH (non-condensing)

Electrical connections

Plug/header screw terminal strip

Weight

5.0 oz (140g approx)

Dimensions

See figure 1

EMC compliance

BS EN 60950:1992
BS EN 61000-6-2:1999
BS EN 61010-1:1993

Electrical safety

See approvals below right

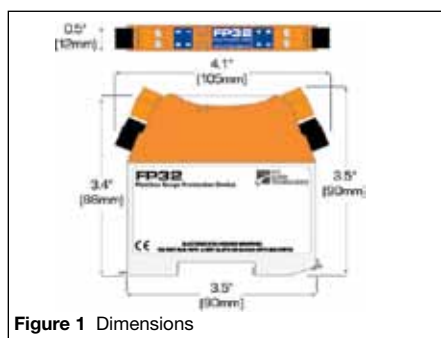


Figure 1 Dimensions

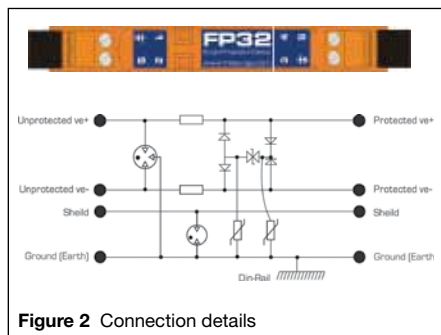


Figure 2 Connection details

Model		FP32
Nominal voltage	U_n	32V
Rated voltage (MCOV)	U_c	36V
Nominal current	I_n	1.6A
Nominal discharge current (8/20µs)	i_{sn}	3kA
Max discharge current (8/20µs)	I_{max}	20kA
Lightning impulse current (10/350µs)	I_{imp}	2.5kA
Residual voltage @ i_{sn}	U_p	62V
Voltage protection level @ 1kV/µs	U_p	<45V
Bandwidth	f_G	73MHz
Capacitance	C	40pF
Series resistance	R	0.5ohm
Operating Temperature Range		-40°C to +70°C
Category tested		A2, B2, C1, C2, C3, D1
Overstressed fault mode $i_{n1}=3kA$		22kA
Impulse durability (8/20µs)		10kA
Degree of protection		IP20
AC durability		1A _{rms} , 5T
Service conditions		80kPa - 160kPa 5% - 95% RH

Tested in accordance with IEC 61643-21.

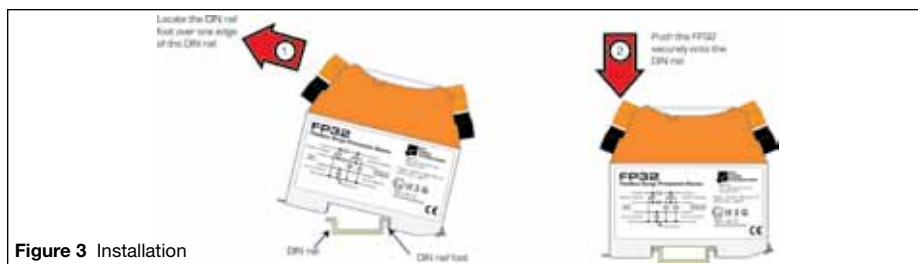


Figure 3 Installation

APPROVALS

Country (Authority)	Standard	Certificate/ File No.	Approved for	Product
Europe (Baseefa)	EN50014:1997-A1 & A2, EN50020:2002, EN50284:1999	Baseefa04ATEX0260X	EEEx ia IIC T4 EEEx ia IIB T3 (-40°C ≤ T _a ≤ 70°C)	FP32
Europe (MTL)	BS EN 50014:1998 BS EN 50021:1999 EN 60079-15:2003	MTL02ATEX0032X	EEEx n IIC T4	FP32
USA (FM)	Class Nos. 3600 (1998), 3610 (2010), 3611 (1999), 3615 (1989), 3810 incl. Supp 1 (1995-07 (1989-03), ANSI/NEMA 250 (1991) ANSI/ISA 60079-0 (2009) ANSI/ISA 60079-11 (2009) ISA-S12.0.01 (1999)	3011208	IS/1/1/A-D I/O/AEx ia IIC I/O/AEx ia IIB NI/1/2/A-D NI/1/2/IIC	FP32
Canada (FM)	C22.2 No. 213, 142, 94, 157, 30 ANSI/NEMA 250 CAN/CSA-E79-0 CAN/CSA-E79-11	3025374C	IS/1/1/A-D I/O/AEx ia IIC I/O/AEx ia IIB NI/1/2/A-D NI/1/2/IIC	FP32
India (PESO)	Petroleum & Explosives Safety Organisation		EEEx ia IIB T3	FP32
Marine (Lloyds Register)	Test Specification No. 1, 2002	09/60014	Environmental Category ENV3	FP32

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.



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