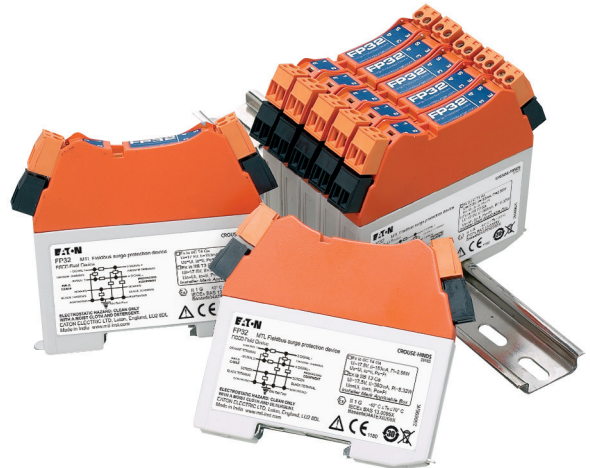


MTL FP32 range

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 up to 32 transmitters as specified by IEC 61158-2.

In operation the FP32 device does not adversely affect 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 voltage 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.



Powering Business Worldwide

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MTL FP32 range

January 2017

SPECIFICATION

All figures typical at 25°C (77°F) 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°C to +70°C
(-40°F to +158°F) (working)
-40°C to +80°C
(-40°F to +176°F) (storage)

Humidity

5% to 95% RH (non-condensing)

Electrical connections

Plug/header screw terminal strip

Weight

140g approx. (5.0 oz.)

Dimensions

See figure 1

EMC compliance

BS EN 61000-6-2:1999

Electrical Safety

BS EN 60950:1992
BS EN 61010-1:1993

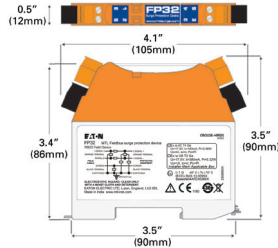


Figure 1 Dimensions

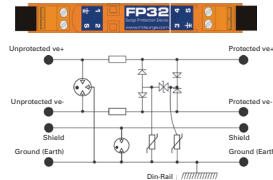


Figure 2 Connection details

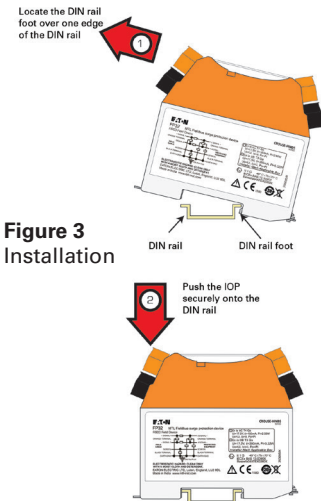


Figure 3 Installation

TO ORDER SPECIFY - Order by module, as listed in the specification table below.

| 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 $i_n=3kA$ | | 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 to IEC 61643-21

HAZARDOUS AREA APPROVALS

| Country (Authority) | Standard | Certificate/ File No. | Approved for | Product |
|--------------------------|---|-----------------------|--|---------|
| Europe (Baseefa) | EN 60079-0:2012 EN 60079-11:2012 | Baseefa04ATEX0260X | Ex ia IIB T3 Ga Ex ia IIC T4 Ga -40°C ≤ Ta ≤ +70°C | FP32 |
| Europe (Eaton) | EN 60079-14:2009 EN 60079-15:2010 | MTL02ATEX0032X | Ex n IIC T4 Ga -30°C ≤ Ta ≤ +70°C | FP32 |
| USA (FM) | Class 3600 (1998), Class 3611 (1999), Class 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) | | IS/1/A-D, I/O/AEx ia IIC, I/O/AEx ia IIB, NI/1/2/A-D, NI/1/2/IIC | FP32 |
| International (IECEx) | IEC 60079-0:2011 IEC 60079-11:2011 | IECEx BAS 13.0095X | Ex ia IIB T3 Ga Ex ia IIC T4 Ga -40°C ≤ Ta ≤ +70°C | 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/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 | | EEx ia IIB T3 | FP32 |
| Marine (Lloyds Register) | Test Specification No. 1, 2002 | 09/60014 | Environmental Category ENV3 | FP32 |



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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.