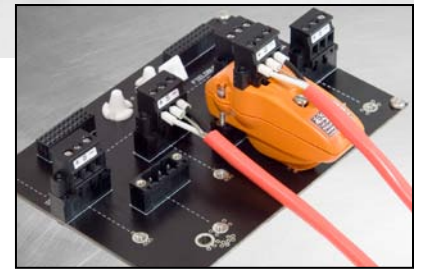




FS32 Series

Surge protection for fieldbus components

- Protects intrinsically safe spurs on MTL 937x-FB Series fieldbus
- 20kA maximum surge current per line
- Plug connectors for quick and easy connection or rewiring
- Meets the requirements of IEC61158-2:2004
- Can be used on MTL-Relcom Megablocks or other fieldbus equipment
- 10 year product warranty



The FS32 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. Designed to fit MTL's latest fieldbus barrier product to protect spurs the FS32 can also be used to protect spurs on Megablock wiring hubs. This space saving design helps to reduce the size of junction boxes and ease installation.

The multi-stage hybrid surge protection network at the heart of the FS32 uses a combination of solid state electronics and a gas filled discharge tube to provide surge protection up to 20kA. This impressive surge protection circuit is design to exhibit exceptionally low line resistance and has negligible voltage drop to the spurs.

In operation the FS32 does not adversely affect the performance or operation of the fieldbus or connected equipment, it allows signals to pass with little attenuation while diverting surge currents safely to earth (ground) and clamping output voltages to safe levels.

Fully automatic in operation the FS32 devices react immediately to make sure that the equipment is never exposed to damaging surges between lines or the lines to earth (ground). Reacting instantaneously the FS32 redirects surges safely to earth (ground) and then resets automatically.

The FS32 represents the next generation of surge protection to be fitted on FOUNDATION™ fieldbus Systems. The space saving form factor allows the FS32 to be connected directly to the terminal receptacle on the module carrier of the 9370 fieldbus barrier. The earth (ground) is connected through the mounting screw in one simple operation. The field spur cable termination block plugs directly into the FS32 allowing fast and effective retro fitting if desired with no additional hardware being required.

For general purpose Megablock wiring hubs FCS-MBx, FCS-MBx-SG, FCS-MBx-SG-T, F300 Series and Intrinsically Safe Megablock wiring hubs F240 - F273 the FS32 represents a simple solution for the fitting of surge protection with the addition of the FS32-BAR earthing (grounding) arrangement. Furthermore the FS32 can also be used on fieldbus power supplies such as the F800 to protect the trunk.

A 10 year no fuss warranty is available as standard for the FS32, so if a correctly connected device should fail for any reason simply return it for a free replacement.

SPECIFICATION

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

Maximum surge current

20kA (8/20µs waveform) per line

Leakage current

0.1µA @ 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

0.1 Ohm per line

Capacitance

Line – Line – 40pF
Line – Earth (Ground) – 80pF

Attenuation

-1dB – 7kHz to 7.5MHz

Ambient temperature limits

-40°C – +75°C – working
-40°C – +80°C – storage

Humidity

5% to 95% RH (non-condensing)

Electrical connections

Plug/header screw terminal

Weight

40g

Dimensions

See figure 1

EMC compliance

BS EN 60950:2002
BS EN 61000-6-2:2005
BS EN 61010-1:2003

Electrical Safety

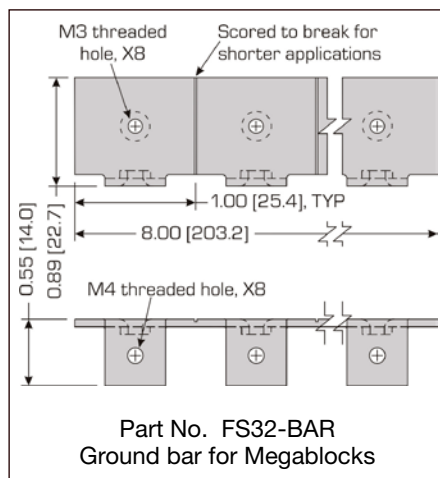
ATEX II 1
DOC #MTL09ATEX0FS32

INSTALLATION

Directly plugs into MTL 934x-FB and Relcom mega-blocks.

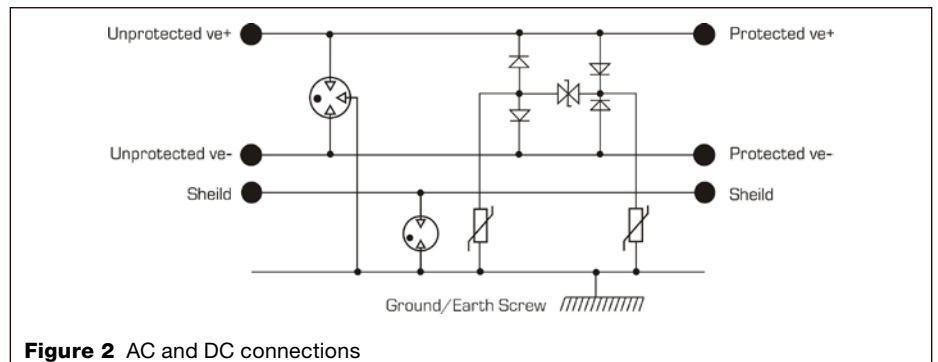
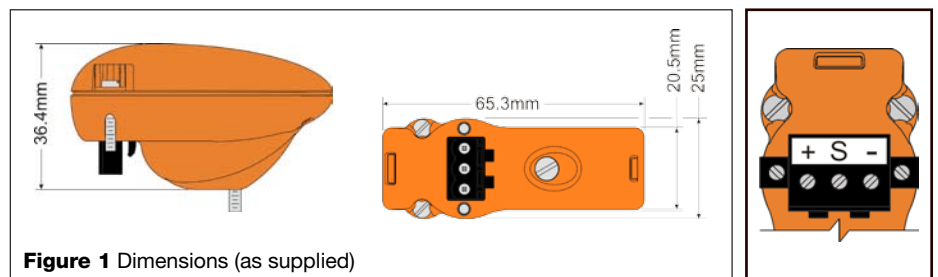
ORDERING INFORMATION

FS32
FS32-BAR



| Model | | FS32 |
|--------------------------------------|-----------|----------------------------|
| 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 | 0.1 |
| Operating Temperature Range | | -40°C to +75°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



APPROVALS

| Standard/Authority | Certificate/File No. | Approved for | Product |
|---|----------------------|--|---------|
| ATEX Directive 94/9/EC FISCO (Baseefa) | Baseefa09ATEX0180X | Ex ia IIC T4 Ex ia IIB T3 (-40°C<Ta<75°C) see schedule | All |
| IECEX | IECEX BAS 09.0083X | Ex ia IIB T3 Ex ia IIC T4 (-40°C<Ta<75°C) see schedule | All |

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.



EUROPE (EMEA): +44 (0)1582 723633
enquiry@mtl-inst.com

THE AMERICAS: +1 800 835 7075
csinfo@mtl-inst.com

ASIA-PACIFIC: +65 6 645 9888
sales.mtlsing@cooperindustries.com

901-169 Rev A - 190110