FS32-XE

MTL Trunk & Spur Surge Protection Device

- **Protects Zone 1 trunk on 937x-FB3 MTL compact fieldbus barrier**
- **20kA Total surge current**
- **Plug connectors for quick and easy connection or rewiring**
- **Compatible to Foundation™ fieldbus requirements of IEC61158-2:2014 and IEC6143-21**
- **Protects trunk and spurs of F200-XE Megablock wiring hubs**
- **10 year product warranty**

The FS32-XE 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 Eaton's latest 937x-FB3 MTL fieldbus barrier to protect the fieldbus trunk the FS32-XE can also be used to protect trunk and spurs on Megablock wiring hubs. Certification to the IEC 60079-7 standard for increased safety (Ex eb) and encapsulation (Ex mb), allows the FS32-XE to be installed in a Zone 1, IIC T4 (Gas) hazardous area in a suitably certified Ex e enclosure and within equipment with an equipment protection level of Gb. The product is IECEx and ATEX certified with marking of Ex eb mb IIC (-40°C ≤ Ta ≤ +80°C). 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-XE 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 design to exhibit exceptionally low line resistance and has negligible voltage drop to the spurs and trunks.

In operation the FS32-XE 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-XE 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-XE redirects surges safely to earth (ground) and then resets automatically.

The FS32-XE represents the next generation of surge protection to be fitted on FOUNDATION™ fieldbus systems protection for the zone 1 application. The space saving form factor allows the FS32-XE to be connected directly to the trunk of the 937x-FB3 fieldbus barrier. The earth (ground) is connected through the mounting screw in one simple operation. The trunk cable termination connector plugs directly into the FS32-XE allowing fast and effective retro fitting if desired with no additional hardware being required.

For Zone 1 F200-XE Megablock wiring hubs the FS32-XE represents a simple solution for the fitting of surge protection with the addition of the FS32-BAR earthing (grounding) arrangement.

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

Powering Business Worldwide

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FS32-XE MTL Trunk & Spur Surge Protection Device

June 2021

SPECIFICATION

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

Total surge current
20kA (8/20µs waveform)

Leakage current
0.1µA @ working voltage

Working voltage
±32Vdc

Maximum continuous operating voltage
±36V

Limiting voltage
<110V @ 3kA /6kV

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 to +75°C
(-40°F to +167°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

Weight
45g

Dimensions
See figure 1

EMC compliance
BS EN 61326-1

Electrical Safety
BS EN 61643-21

INSTALLATION

Directly plugs into trunk of 937x-FB3 and trunk and spurs of F200-XE Megablocks

ORDERING INFORMATION

FS32-XE
FS32-BAR

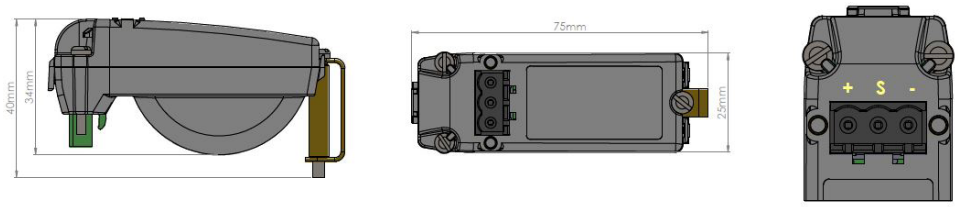


Figure 1 Dimensions (as supplied)

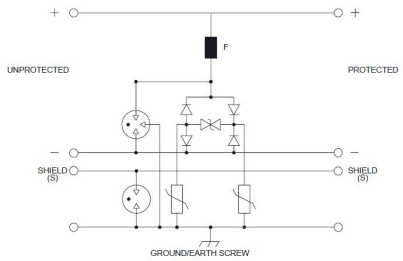
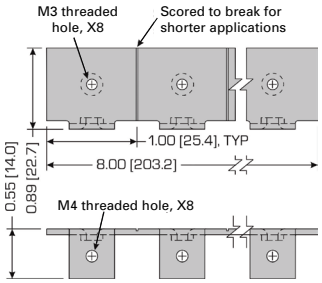


Figure 2 AC and DC connections



Part No. FS32-BAR
Ground bar for Megablocks

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

Model		FS32-XE
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
Total discharge current (8/20µs)	I_{total}	20kA
Lightning impulse current (10/350µs)	I_{imp}	2.5kA
Residual voltage @ i_{sn} (3kA/6kV)	U_p	<110V
Voltage protection level @ 1kV/µs	U_p	<90V
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		9kA
Impulse durability (8/20µs)		3kA/6kV
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

Standard/Authority	Certificate/File No.	Approved for	Product
ATEX Directive 2014/34/EU (Baseefa)	SGS20ATEX0120U	Ex eb mb IIC (-40°C < Ta <+80°C)	FS32-XE
IECEx	IECEx BAS 20.0079U	Ex eb mb IIC (-40°C < Ta <+80°C)	FS32-XE

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