# 9376-SP

## Trunk Surge Protector

- **Designed for use with MTL9370-FB range of fieldbus barrier system for FOUNDATION™ fieldbus networks in hazardous areas**
- **Effective protection against adjacent lightning strikes and power-induced surges**
- **10kA surge protection level**
- **±32V operating voltage range**
- **Transparent to fieldbus signals**
- **Fast reaction time**
- **'Live pluggable' in Zone 1 hazardous areas without gas clearance**


**The 9376-SP Trunk surge protector** is designed for use in the MTL 9370-FB range of fieldbus barrier system. It prevents surges and transient over-voltages induced on the trunk of the fieldbus network from damaging the system's internal components such as the fieldbus barrier module and terminator. Designed specifically for installation on the trunk terminal assembly inside the system enclosure, its pluggable construction allows it to be installed either during initial installation or later in the life of the apparatus.

**The use of specially certified connectors** allows the 9376-SP module to be removed and replaced in the fieldbus barrier enclosure in a Zone 1 hazardous area while the fieldbus trunk remains energised and without gas clearance procedures.

**The 9376-SP's multi-stage hybrid surge protection** network uses a combination of solid state electronics and a gas-filled discharge tube (GDT) to provide surge protection up to 10kA. It is completely transparent to the operation of the fieldbus, and allows the signals to pass without attenuation while diverting surge currents safely to ground and clamping output voltages to safe levels.

**Fully automatic** in operation, the 9376-SP reacts immediately to make sure that the protected equipment is never exposed to damaging surges between the fieldbus lines or between the lines and ground. It resets automatically without manual intervention.

**When combined with a similar performance device** at the host end (e.g. MTL FP32 surge protector), there is effective protection for equipment at both ends of the fieldbus trunk.

**Devices are also available** to provide surge protection for the intrinsically safe spurs of MTL 9370-FB fieldbus barrier system - refer to product type FS32.

*The 9376-SP meets IEC 61158-2 for 31.25kb/s systems such as FOUNDATION™ fieldbus and PROFIBUS-PA.*

Powering Business Worldwide

**Eaton Electric Limited,**
Great Marlings, Butterfield, Luton
Beds, LU2 8DL, UK.
Tel: + 44 (0)1582 723633 Fax: + 44 (0)1582 422283
E-mail: mtlenquiry@eaton.com
www.mtl-inst.com


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## SPECIFICATION

**Maximum surge current**
10kA (8/20µs waveform) per line

**Leakage current**
<1mA @ working voltage

**Working voltage**
±32Vdc

**Maximum continuous operating voltage**
±32V peak normal mode
±225V peak common mode

**Limiting voltage**
62V @ 3kA 8/20µs

**Capacitance**
Line — Line — 40pF
Line — Earth (Ground) — 80pF

**Attenuation**
–1dB — 7kHz to 7.5MHz

**Electrical connections**
Ex de subminiature plugs, compatible with sockets of Trunk Terminal Assembly in 9370-FB range fieldbus barrier systems

## ENVIRONMENTAL

**Ambient temperature limits**
–40°C to +75°C — working
–40°C to +85°C — storage

**Relative humidity**
5% to 95% RH (non-condensing)

**Vibration**
BS EN 60068-2-6: 2008 Test Fc: 1g
BS EN 60068-2-64: 1995 Test Fh: 1g

**Shock**
BS EN 60068-2-27: 1993 Test Ea: 15g

**Ratings in accordance with IEC 61643-21**

| | | |
|---|---|---|
| **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)** | **$I_{max}$** | **10kA** |
| **Lightning impulse current (10/350µs)** | **$I_{imp}$** | **1.5kA** |
| **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** | **0.5Ω** |
| **Operating Temperature Range** | | **–40°C to +75°C** |
| **Category tested** | | **A2, B2, C1, C2, C3, D1** |
| **Overstressed fault mode ($I_n$ = 3kA)** | | **12kA** |
| **Impulse durability (8/20µs)** | | **5kA** |
| **Degree of protection (when installed)** | | **IP40** |
| **AC durability 1$A_{rms}$,** | | **5T** |
| **Service conditions 80kPa - 160kPa** | | **5% - 95% RH** |

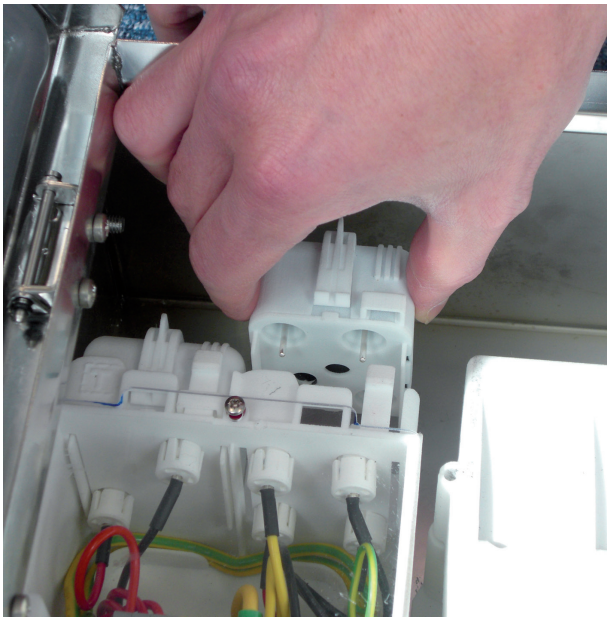


**Figure 1:** Fitting the 9376-SP module to the Trunk Termination Assembly (TTA) inside the system enclosure

## HAZARDOUS AREA APPROVALS

**Declaration of conformity**
MTL14AOC9376SP

**Certification code**
Baseefa 09ATEX0324U
Ⓔx II 2 G Ex d e mb IIC Gb (-40°C ≤ Ta ≤ 75°C)
IECEx BAS10.0005U
Ex d e mb IIC Gb (-40°C ≤ Ta ≤ 75°C)

## MECHANICAL

**Weight**
165g approx.

**Dimensions**
See diagram

## ORDERING INFORMATION

**Order code -** 9376-SP

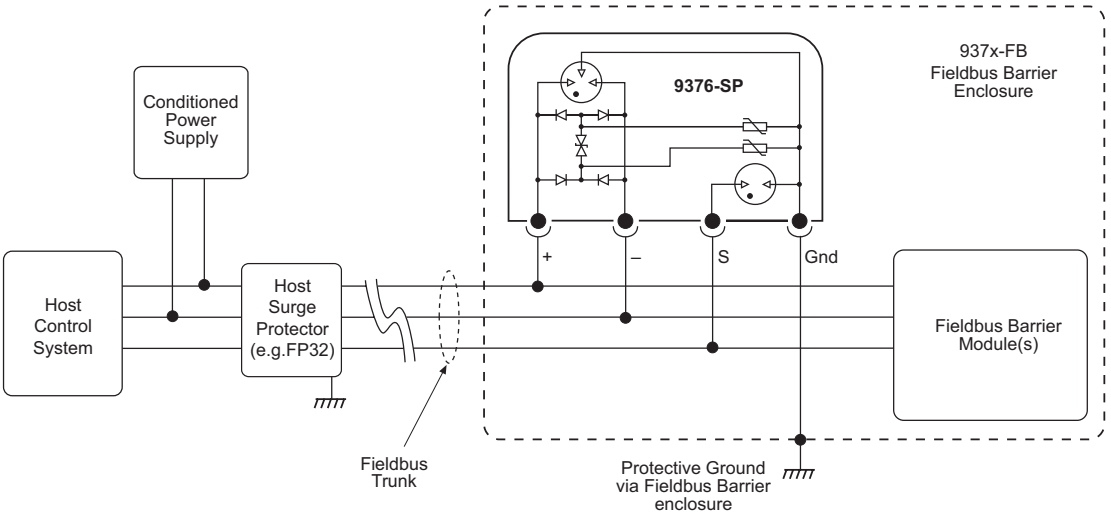
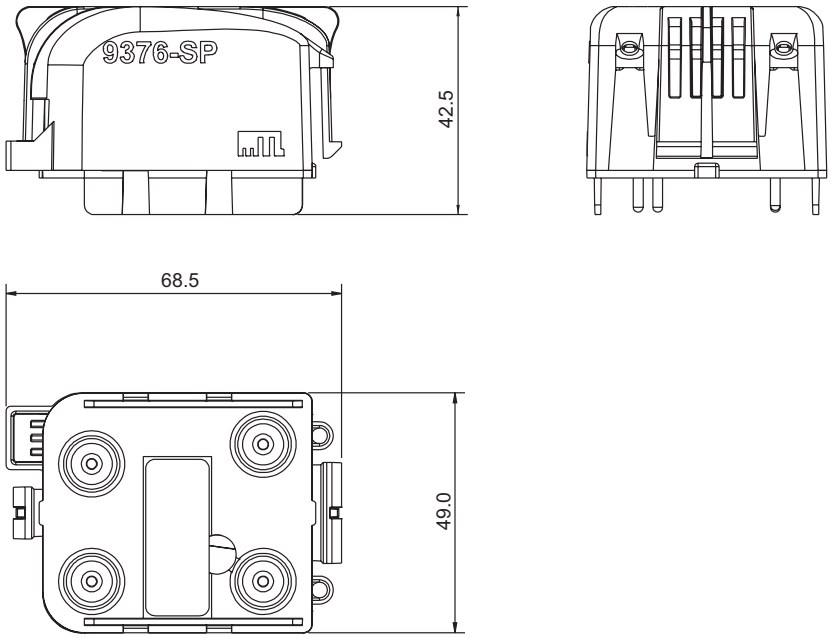



**Figure 2:** Application of the 9376-SP in the 937x-FB Fieldbus Barrier Enclosure

## DIMENSIONS (mm)




**Eaton Electric Limited,**
Great Marlings, Butterfield, Luton
Beds, LU2 8DL, UK.
Tel: + 44 (0)1582 723633 Fax: + 44 (0)1582 422283
E-mail: mtlenquiry@eaton.com
www.mtl-inst.com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**EUROPE (EMEA):**
+44 (0)1582 723633
mtlenquiry@eaton.com

**THE AMERICAS:**
+1 800 835 7075
mtl-us-info@eaton.com

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