

MTL SLP range

January 2017

SPECIFICATION

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

Maximum surge current

20kA (8/20µs waveform) per line

Leakage current

<1µA @ working voltage

Maximum rated load current

1.50A

Loop resistance

2 ohm

Capacitance

Line to Line: 60pF

Attenuation

-0.1db @ 9kHz - 37MHz

-3dB @ 50MHz

Response time

<1ns

Ambient temperature

Working & Storage

-40 to +80°C/-40 to +176°F

(see also "Approvals" below right)

Humidity

5 to 95% RH (non-condensing)

Terminals

2.5mm² (12 AWG)

Electrical connections

Plug/header screw terminal strip

Mounting

T-section DIN-rail (35 x 15mm rail)

Weight

5oz (140g approximately)

Case flammability

UL94-V0

EMC compliance

BS EN 60950-1:2006+A12:2011

BS EN 61326-1:2006

BS EN 61010-1:2010

Electrical safety

See "Approvals" below right

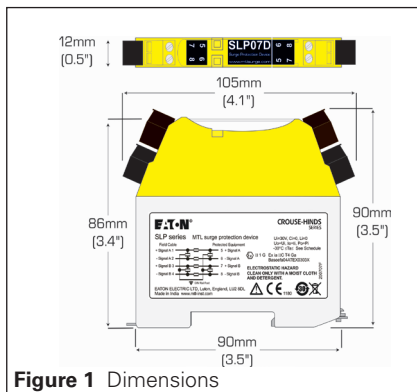


Figure 1 Dimensions

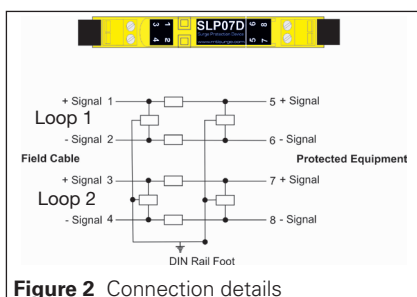


Figure 2 Connection details



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| Model | | SLP07D | SLP16D | SLP32D |
|--------------------------------------|-----------|--------------------------|--------|--------|
| Nominal voltage | U_n | 7V | 16V | 24V |
| Rated voltage (MCOV) | U_c | 8V | 18V | 32V |
| Nominal current | I_n | 1.50A | 1.50A | 1.50A |
| Nominal discharge current (8/20µs) | i_{sn} | 3kA | 3kA | 3kA |
| Max discharge current (8/20µs) | I_{max} | 20kA | 20kA | 20kA |
| Lightning impulse current (10/350µs) | I_{imp} | 2.5kA | 2.5kA | 2.5kA |
| Residual voltage @ i_{sn} | U_p | 10V | 23V | 40V |
| Voltage protection level @ 1kV/µs | U_p | <8V | <18V | <38V |
| Bandwidth | f_G | 50MHz | 50MHz | 50MHz |
| Capacitance | C | 60pF | 60pF | 60pF |
| Series resistance | R | 1.0Ω | 1.0Ω | 1.0Ω |
| Category tested | | A2, B2, C1, C2, C3, D1 | | |
| Overstressed fault mode $i_n=3kA$ | | 22kA | 22kA | 22kA |
| Impulse durability (8/20µs) | | 10kA | 10kA | 10kA |
| Degree of protection | | IP20 | | |
| AC durability | | 1Arms, 5T | | |
| Service conditions | | 80kPa- 160kPa 5%- 95% RH | | |

Tested in accordance with IEC 61643-21.

SIL INFORMATION

Failure rates according to IEC 61508

| | λ_{SD} | λ_{SU}^* | λ_{DD} | λ_{DU} |
|--------|----------------|------------------|----------------|----------------|
| SLP07D | 0 | 128 | 41 | 2 |
| SLP16D | 0 | 128 | 41 | 2 |
| SLP32D | 0 | 128 | 41 | 2 |

The user of the SLP range can utilize these failure rates in a probabilistic model of a safety instrumented function (SIF) to determine the suitability in part for safety instrumented system (SIS) usage in a particular safety integrity level.

*The Residual Effect failures are included in the Safe Undetected failure category according to IEC 61508. Note that these failures alone will not affect system reliability or safety and should therefore not be included in spurious trip calculations.

Safe Failure Fraction needs to be calculated on (sub)system level.

APPROVALS

| Country (Authority) | Standard | Certificate/ File No. | Approved for | Product |
|---------------------|---|-------------------------|--|------------------------------|
| Europe (Baseefa) | IEC 60079-0:2011 EN 60079-11:2012 | Baseefa04ATEX0303X /1,2 | Ex ia IIC T4 Ga Ta (see below) * | SLP07D, SLP16D, SLP32D |
| Europe (Eaton) | EN 60079-15:2005 EN 60079-14: 2003 | MTL03ATEX0377X | Ex nA IIC T4 | SLP07D, SLP16D, SLP32D |
| 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/A-D I/O/AEx ia IIC I/O/AEx ia IIB NI/1/2/A-D NI/1/2/IIC | SLP07D, SLP16D, SLP32D |
| 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 | SLP07D, SLP16D, SLP32D |

* $P_i = 1W$ (-30°C ≤ Ta ≤ 80°C); $P_i = 1.2W$ (-30°C ≤ Ta ≤ 60°C); $P_i = 1.3W$ (-30°C ≤ Ta ≤ 40°C)

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