MTL SURGE TECHNOLOGIES
A part of COOPER Crouse-Hinds

SLP Series

The SLP is an ultra-slim surge protection device for use in protecting electronic equipment and process systems connected to signal and I/O cabling. Models are available to protect a wide range of high-speed signal and I/O interface applications.

Features

- **Surge protection for two loops per SLP (or one 4-wire circuit)**
- **Range of ATEX Certified intrinsically safe surge protectors**
- **Space-saving design; easy installation**
- **Multi-stage hybrid protection circuitry — 20kA maximum surge current**
- **Range of voltage ratings — to suit all process I/O applications**
- **Designed for high bandwidth, low resistance applications**
- **10 year product warranty**

Specifications

Maximum surge current
20kA (8/20µs waveform) per line
Leakage current
<1mA @ working voltage
Maximum rated load current
1.50A
Loop resistance
2 Ohm
Capacitance
Line - Line - 60pF
Bandwidth
-0.1db @9kHz - 37MHz
-3dB @50MHz

Response time
<1ns
Ambient temperature
–40°C to +80°C (working)
–40°F to +176°F (working)
–40°C to +80°C (storage)
–40°F to +176°F (storage)
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 60950:1992
BS EN 61000-6-2:1999
BS EN 61010-1:1993
BS EN 61000-4-5:2006

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

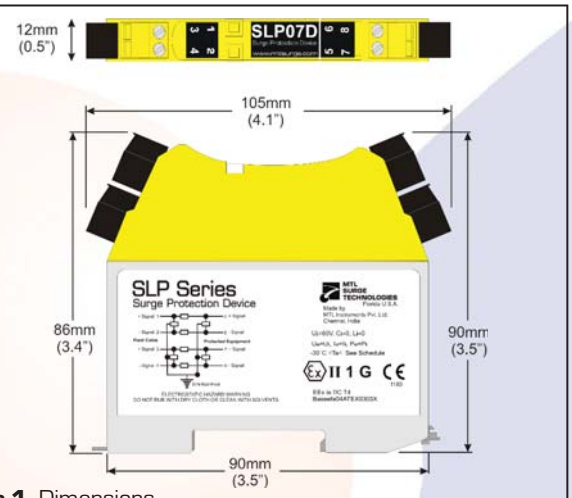

Figure 1 Dimensions

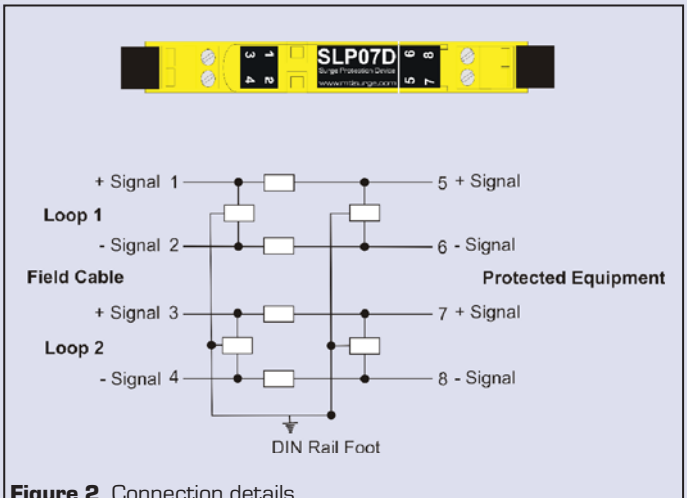

Figure 2 Connection details

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
Capitance	C	60pF	60pF	60pF
Series resistance	R	1.0	1.0	1.0
Operating Temperature Range		40°C to +80°C		
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		$1A_{rms}$, 5T		
Service conditions		80kPa - 160kPa 5% - 95% RH		

Tested in accordance to IEC 61643-21.

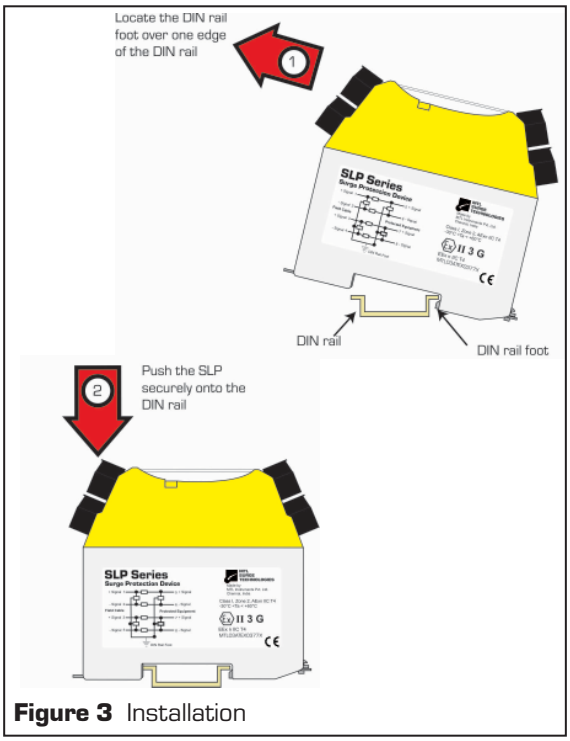

Figure 3 Installation

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 Series 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. A full table of failure rates in presented in the EXIDA report (section 4.4) along with all assumptions.

*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	Standard/Authority	Certificate/ File No.	Approved for	Product
ATEX	BS EN 60950:1992, BS EN 61000-6-2:1999 BS EN 61010-1:1993	ATEX0377X	EEx N IIC T4	SLP07D, SLP16D, SLP32D
EC (Baseefa)	EN50014:1997-A1 & A2, EN50020:2002 EN50284:1999	Baseefa 04 ATEX0303X	EEx ia IIC T4	SLP07D, SLP16D, SLP32D
USA (FM)	Class Nos. 3600 (1998), 3610 (1999), 3611 (1999), 3615 (1989), 3810 incl. Supp 1 (1995-07 (1989-03), ANSI/NEMA 250 (1991), ISA-S12.0.01 (1999)	3011208	Intrinsically Safe: I/1/A-D, I/0/II C Non incendive: I/2/A-D, I/2/II C	SLP07D, SLP16D, SLP32D
Canada (FM)	C22.2 No. 213, 142, 94, 157, 30 ANSI/NEMA 250 CAN/CSA-E79-0 CAN/CSA-E79-11	3025374	IS/I/1/ABCD I/0/Ex ia/IIC I/0/Ex ib/IIC NE/I/2/ABCD NE/I/2/IIC	SLP07D, SLP16D, SLP32D