

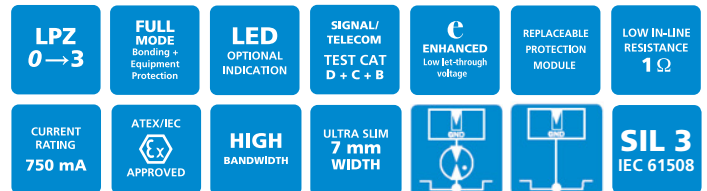
DATASHEET

Data & signal protection

OVR SLX Series



Combined Category D, C, B tested protector (to BS EN 61643) suitable for twisted pair signalling applications within hazardous environments (ATEX/IECEx approved). Available for working voltages of up to 15 and 30 Volts. For use at boundaries up to LPZ 0 to protect against flashover through to LPZ 3 to protect sensitive electronic equipment.



Features & benefits

- Approved for use in hazardous environments for the protection of Intrinsically Safe circuits (Classification: II 2(1)G, Ex ia (ia Ga) IIC T4 Gb)
- Very low let-through voltage (enhanced protection to IEC/BS EN 62305) between all lines - Full Mode protection
- Full Mode design capable of handling partial lightning currents as well as allowing continual operation of protected equipment
- Repeated protection in lightning intense environments
- Ultra slim 7 mm width ideal for compact protection of large numbers of lines (e.g. process control installations)
- Optional LED status indication versions available for low current DC power applications
- Negligible self-capacitance and self-inductance offering minimal interference when protecting Intrinsically Safe circuits
- Very low (1 Ω) in-line resistance allows resistance critical applications (e.g. alarm loops) to be protected
- High (750 mA) maximum running current
- High bandwidth enables higher frequency (high traffic or bit rate) data communications
- Screen terminal enables easy connection of cable screen to earth
- Suitable for earthed or isolated screen systems - add /I suffix to part number for versions that require isolated screens
- Built-in innovative DIN rail foot with locking feature for simple positioning and clip-on mounting to top hat DIN rails
- 4 mm² terminals allow for larger cross section wiring, stranded wires terminated with ferrules or fitting two wires into a single terminal
- Approval references for OVR SL X Series: IECEx SIR 10.0030X, Sira 10ATEX2063X
- Evaluated for SIL to IEC 61508

Application

Use these protectors in hazardous environments where installation space is at a premium and large numbers of lines require protection (e.g. process control, 4-20 mA loops, fire and gas detectors and shut-down systems). Suitable for high speed digital communication equipment or systems with long signal lines. See Application Note OVR AN013.

Accessories

Replacement modules:

OVR SL15X/M,
OVR SL30X/M

Standard module
replacement for 15 and 30
V protectors respectively

OVR SL15XL/M,
OVR SL30XL/M

LED module replacement
for 15 and 30 V protectors
respectively

OVR SLX/B Base

replacement (common for
standard and LED modules)

OVR SLX/I/B Base

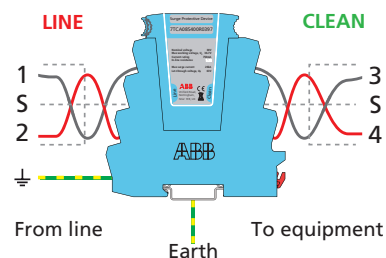
replacement with isolated
screen from earth

Weatherproof enclosure:

OVR WBX SLQ

Installation

Connect in series with the data communication or signal line either near where it enters or leaves the building or close to the equipment being protected (e.g. within its control panel). Either way, it must be very close to the system's earth star point. Install protectors either within an existing cabinet/cubicle or in a separate enclosure.



NOTE: Use the standard OVR SL 'Slim Line' Series for non-hazardous areas. The OVR SL Series is also available for protection of 3-wire, RS 485, RTD & telecommunication applications (OVR SL/3W, OVR SL RS485, OVR SL RTD & OVR SL TN).

OVR SL X Series - Technical specification

Electrical specification	OVR SL15X	OVR SL30X
ABB order code	7TCA085400R0386	7TCA085400R0387
Nominal voltage ⁽¹⁾	15 V	30 V
Maximum working voltage U_c (RMS/DC) ⁽²⁾	11 V / 16.7 V	25 V / 36.7 V
Current rating (signal)	750 mA	
In-line resistance (per line $\pm 10\%$)	1.0 Ω	
Bandwidth (-3 dB 50 Ω system)	45 MHz	
Intrinsically safe specification	OVR SL15X	OVR SL30X
Maximum voltage U_i	30 V	
Maximum power P_i : – Per $-40\text{ }^\circ\text{C} < T_a < 40\text{ }^\circ\text{C}$ – Per $-40\text{ }^\circ\text{C} < T_a < 60\text{ }^\circ\text{C}$ – Per $-40\text{ }^\circ\text{C} < T_a < 80\text{ }^\circ\text{C}$	1.3 W 1.2 W 1.0 W	
Capacitance C_i	0 μF	
Inductance L_i	0 μH	
Certificate number	IECEX SIR 10.0030X, Sira 10ATEX2063X	
Classification	Ex II 2 (1) G, Ex ia (ia Ga) IIC T4 Gb	
Transient specification	OVR SL15X	OVR SL30X
Let-through voltage (all conductors)⁽³⁾ U_p		
C2 test 4 kV 1.2/50 μs , 2 kA 8/20 μs to BS EN/EN/IEC 61643-21	38.4 V	63.0 V
C1 test 1 kV, 1.2/50 μs , 0.5 kA 8/20 μs to BS EN/EN/IEC 61643-21	29.4 V	51.3 V
B2 test 4 kV 10/700 μs to BS EN/EN/IEC 61643-21	26.8 V	45.4 V
5 kV, 10/700 μs ⁽⁴⁾	27.5 V	46.3 V
Maximum surge current		
D1 test 10/350 μs to BS EN/EN/IEC 61643-21: – Per signal wire – Per pair	1.25 kA 2.5 kA	
8/20 μs to ITU-T K.45:2003, IEEE C62.41.2:2002: – Per signal wire – Per pair	5 kA 10 kA	
Mechanical specification	OVR SL15X	OVR SL30X
Temperature range	-40 to +80 $^\circ\text{C}$	
Connection type	Screw terminal - maximum torque 0.8 Nm	
Conductor size (stranded)	4 mm ²	
Earth connection	Via DIN rail or 4 mm ² earth terminal - maximum torque 0.8 Nm	
Case material	FR Polymer UL-94 V-0	
Weight: – Unit	0.08 kg	
SIL (Safety Integrity Level) to IEC 61508	SIL 3 ⁽⁵⁾	
Dimensions	See diagram below	

⁽¹⁾ Nominal voltage (RMS/DC or AC peak) measured at $< 10\text{ }\mu\text{A}$

⁽²⁾ Maximum working voltage (RMS/DC or AC peak) measured at $< 1\text{ mA}$ leakage

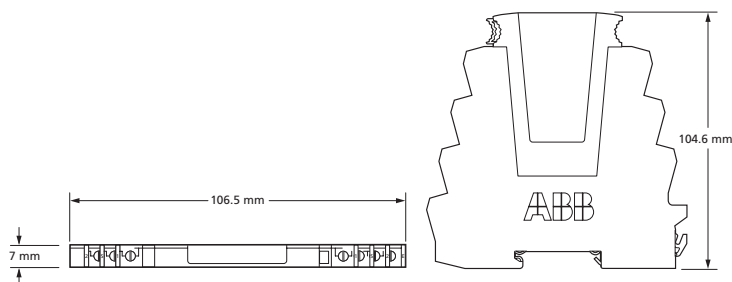
⁽³⁾ The maximum transient voltage let-through of the protector throughout the test ($\pm 10\%$), line to line & line to earth, both polarities. Response time $< 10\text{ ns}$

⁽⁴⁾ Test to IEC 61000-4-5:2006, ITU-T (formerly CCITT) K.20, K.21 and K.45, Telcordia GR-1089-CORE, Issue 2:2002, ANSI TIA/EIA/IS-968-A:2002 (formerly FCC Part 68)

⁽⁵⁾ Assessed as a Type A device, with HFT=1 (assumes line short-circuits and short-circuits to GND are detectable or do not have an effect).

SFF = 73%, to be used to determine the overall Safe Failure Fraction.

For HFT=0 (worst-case analysis), SIL 2 applies.

**ABB order codes**

Part	ABB order code	Part	ABB order code
OVR SL15X	7TCA085400R0386	OVR SL30X	7TCA085400R0387
OVR SL15X/I	7TCA085400R0388	OVR SL30X/I	7TCA085400R0392
OVR SL15XL	7TCA085400R0396	OVR SL30XL	7TCA085400R0397
OVR SL15XL/I	7TCA085400R0389	OVR SL30XL/I	7TCA085400R0398
OVR SL15X/M	7TCA085400R0380	OVR SL30X/M	7TCA085400R0381
OVR SL15XL/M	7TCA085400R0404	OVR SL30XL/M	7TCA085400R0403
OVR SLX/B	7TCA085400R0325	OVR WBX SLQ	7TCA085400R0326
OVR SLX/I/B	7TCA085400R0374	OVR WBX SLQ/G	7TCA085400R0327