

Data & signal protection

OVR RS485, RS485Q & SL RS485 Series



Combined Category D, C, B tested protector (to BS EN 61643) specifically designed for RS 485 and Fieldbus applications, such as Profibus DP. For use at boundaries up to LPZ 0 to protect against flashover (typically the service entrance location) through to LPZ 3. Available as standard OVR RS485 format, or compact OVR RS485Q and Slim Line OVR SL RS485 versions for installations where a high number of lines require protection.

Features & benefits

- 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
- 45 MHz bandwidth greatly exceeds 12 Mbps maximum speeds
- Low in-line resistance minimizes reductions in signal strength
- Suitable for earthed or isolated screen systems
- Built-in DIN rail foot for simple mounting to top hat DIN rails
- Convenient earthing through DIN foot and/or earth terminal
- OVR RS485 can be flat mounted on base or side
- OVR RS485 and OVR RS485Q have colour coded terminals for quick and easy installation check
- OVR SL RS485 has ultra slim 7 mm width ideal for compact protection of large numbers of lines (e.g. process control installations)
- OVR SL RS485 includes two stage removable protection module with simple quick release mechanism allowing partial removal for easy line commissioning and maintenance as well as full removal for protection replacement
- OVR SL RS485 includes optional LED status indication
- Add L suffix to part number - i.e. OVR SL RS485L

Application

Connect in series with the signal line either near where it enters or leaves the building or close to the equipment being protected ensuring it is very close to the system's earth star point. Install protectors either within an existing cabinet/ cubicle or in a separate enclosure.

Accessories

Replacement module for OVR SL RS485:

- OVR SLRS485/M** Standard module replacement
- OVR SLRS485/B** Base replacement

If protectors cannot be incorporated within an existing panel or enclosure, OVR WBX enclosures are available for up to 4, 8, 16 or 32 protectors and their associated OVR CME kit.

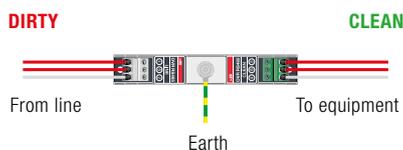
Combined Mounting/Earthing kits for OVR RS485:

- OVR CME 4** For up to 4 x OVR RS485
- OVR CME 8** For up to 8 x OVR RS485
- OVR CME 16** For up to 16 x OVR RS485
- OVR CME 32** For up to 32 x OVR RS485

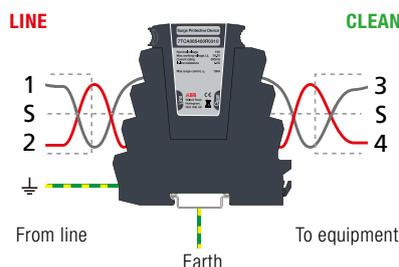
Weatherproof enclosure:

- OVR WBX SLQ (OVR SL RS485 and OVR RS485Q)**

OVR RS485 installed in series



OVR SL RS485 installed in series



OVR RS485Q installed in series (in-line)



NOTE: The OVR SL 'Slim Line' Series is also available for protection of 3-wire and RTD applications (OVR SL/3W & OVR SL RTD). The OVR SL X Series has approvals for use in hazardous areas.

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OVR RS485, RS485Q & SL RS485 Series - Technical specification

Electrical specification	OVR RS485	OVR SL RS485	OVR RS485Q	
ABB order code	7TCA085400R0311	7TCA085400R0310	7TCA085400R0312	
Nominal voltage ⁽¹⁾	15 V			
Maximum working voltage U_c (RMS/DC) ⁽²⁾	11 V / 16.7 V			
Current rating (signal)	300 mA			
In-line resistance (per line $\pm 10\%$)	1 Ω			
Bandwidth (-3 dB 50 Ω system)	45 MHz			
Transient specification	OVR RS485	OVR SL RS485	OVR RS485Q	
Let-through voltage (all conductors)⁽³⁾ Up				
C2 test 4 kV 1.2/50 μ s, 2 kA 8/20 μ s to BS EN/EN/IEC 61643-21	55.0 V			
C1 test 1 kV, 1.2/50 μ s, 0.5 kA 8/20 μ s to BS EN/EN/IEC 61643-21	42.0 V			
B2 test 4 kV 10/700 μ s to BS EN/EN/IEC 61643-21	27.2 V			
5 kV, 10/700 μ s ⁽⁴⁾	28.2 V			
Maximum surge current				
D1 test 10/350 μ s to BS EN/EN/IEC 61643-21:	- Per signal wire	2.5 kA	1.25 kA	2.5 kA
8/20 μ s to ITU-T K.45:2003, IEEE C62.41.2:2002:	- Per pair	5 kA	2.5 kA	5 kA
	- Per signal wire	10 kA		
	- Per pair	20 kA		
Mechanical specification	OVR RS485	OVR SL RS485	OVR RS485Q	
Temperature range	-40 to +80 $^{\circ}$ C			
Connection type	Screw terminal - max. torque 0.5 Nm	Screw terminal - max. torque 0.8 N	Pluggable 12 way screw terminal	
Conductor size (stranded)	2.5 mm ²	4 mm ²	2.5 mm ²	
Earth connection	M6 stud	Via DIN rail or 4 mm ² earth terminal max. torque 0.8 Nm	Via DIN rail or M5 threaded hole in base of unit	
Case Material	FR Polymer UL-94 V-0			
Weight: - Unit	0.08 kg		0.1 kg	
- Packaged (per 10)	0.85 kg		1.3 kg	
Dimensions	See diagram below			

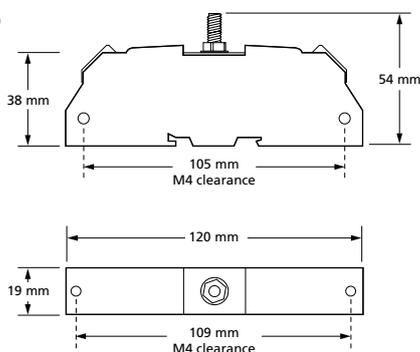
⁽¹⁾ Nominal voltage (RMS/DC or AC peak) measured at < 10 μ A

⁽²⁾ Maximum working voltage (RMS/DC or AC peak) measured at < 5 mA

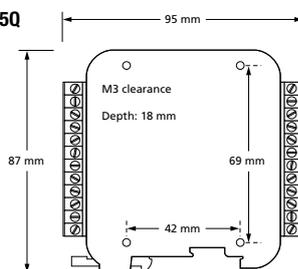
⁽³⁾ The maximum transient voltage let-through of the protector throughout the test ($\pm 10\%$), line to line & line to earth, both polarities. Response time < 10 ns

⁽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)

OVR RS485



OVR RS485Q



OVR SL RS485

