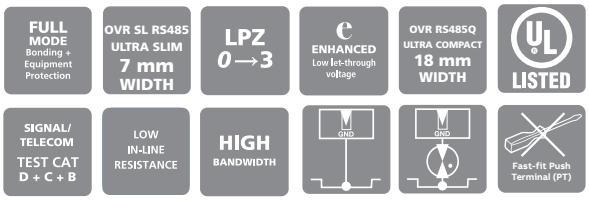
TECHNICAL DATA SHEET

Data & signal protection

OVR RS485, RS485Q & SL RS485 Series

Combined Category D, C, B tested (to IEC/EN 61643) Surge Protection Device (SPD) specifically designed for RS 485 and Fieldbus applications, such as Profibus DP. For use at boundaries up to LPZ 0 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
- Connect screen connection 'S' as the 0V ground on RS485 systems
- 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
- OVR RS485Q and OVR RS485Q/PT have UL497B approval under file E240341

Application

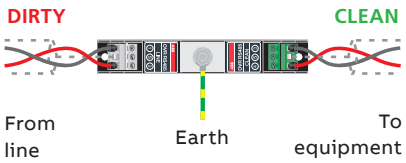
Connect in series with the signal line either near where it enters or leaves the building or close to the equipment being protected ensuring it is very close to the system's earth star point. Install SPDs either within an existing cabinet/cubicle or in a separate enclosure.

Accessories

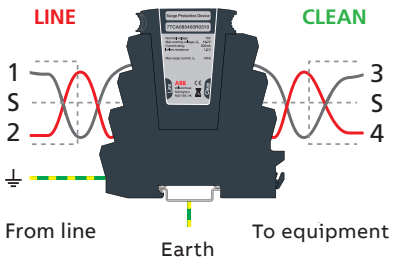
For replacement SPD modules (/M), spare base units (/B), weatherproof enclosures (WBX) and combined mounting and earthing kits (CME) see ABB order code table overleaf.

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

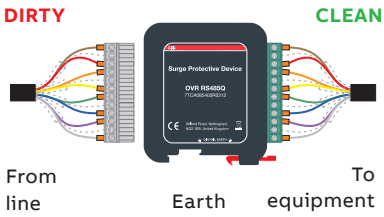
OVR RS485 installed in series



OVR SL RS485 installed in series



OVR RS485Q installed in series (in-line)

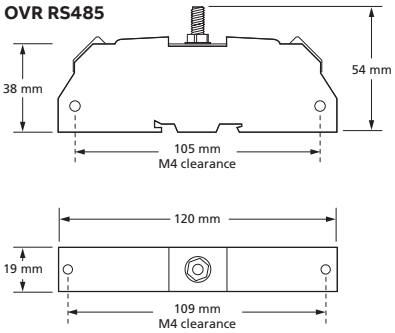


NOTE: The OVR SL 'Slim Line' Series is also available for protection of 3-wire and RTD applications (OVR SL/3W & OVR SL RTD). The OVR SL X Series has approvals for use in hazardous areas.

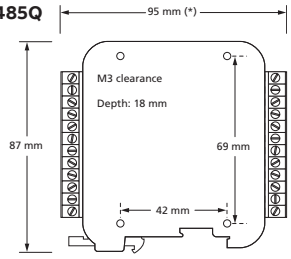
Electrical specification		OVR RS485 Series	OVR SL RS485 Series	OVR RS485Q Series
Nominal voltage[1]		15 V		
Maximum working voltage *U*c (RMS/DC)[2]		11 V / 16.7 V		
Current rating (signal)		300 mA		
In-line resistance (per line ±10%)		1 Ω		
Bandwidth (-3 dB 50 Ω system)		45 MHz		
Transient specification				
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		55.0 V		
C1 test 1 kV, 1.2/50 µs, 0.5 kA 8/20 µs to BS EN/EN/IEC 61643-21		42.0 V		
B2 test 4 kV 10/700 µs to BS EN/EN/IEC 61643-21		27.2 V		
5 kV, 10/700 µs[4]		28.2 V		
Maximum surge current				
D1 test 10/350 µs to BS EN/EN/IEC 61643-21:	– Per signal wire 2.5 kA – Per pair	2.5 kA 5 kA	1.25 kA 2.5 kA	2.5 kA 5 kA
8/20 µs to ITU-T K.45:2003, IEEE C62.41.2:2002:	– Per signal wire – Per pair	10 kA 20 kA		
Mechanical specification				
Temperature range		-40 to +80 ºC		
Connection type		Screw terminal - max. torque 0.5 Nm	Screw terminal - max. torque 0.8 N	Pluggable 12 way screw terminal /PT version: Pluggable 12 way screwless Push Terminal
Conductor size (stranded)		2.5 mm²	4 mm²	2.5 mm²
Earth connection		M6 stud	Via DIN rail or 4 mm² 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	0.08 kg	0.1 kg
Dimensions		See diagrams below		

[1] Nominal voltage (RMS/DC or AC peak) measured at < 10 µA
[2] Maximum working voltage (RMS/DC or AC peak) measured at < 5 mA
[3] The maximum transient voltage let-through of the protectorthroughout the test (±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



* Q/PT width is 106 mm

OVR SL RS485

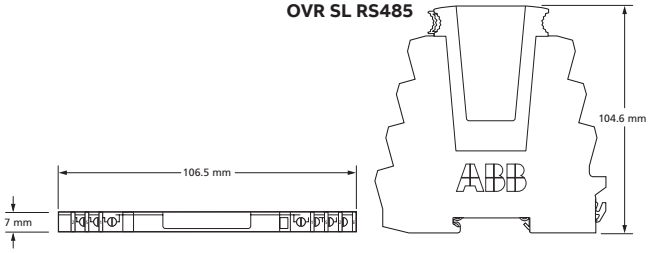


ABB order codes

Part	ABB order code	Part	ABB order code	Part	ABB order code
OVR RS485	7TCA085400R0311	**OVR RS485Q(UL)**	7TCA085400R0572	**OVR CME8**	7TCA085400R0415
OVR SLRS485/B	7TCA085400R0316	**OVR RS485Q/PT(UL)**	7TCA085400R0579	**OVR CME32**	7TCA085410R0046
OVR SLRS485	7TCA085400R0310	**OVR SLRS485/M**	7TCA085400R0317	**OVR WBXSLQ**	7TCA085400R0326
OVR SLRS485L	7TCA085400R0417	**OVR SLRS485L/M**	7TCA085400R0470	**OVR WBXSLQ/G**	7TCA085400R0327
OVR SLRS485(UL)	7TCA085400R0551	**OVR SLRS485L/M(UL)**	7TCA085400R0600	**WBX 4**	7TCA085410R0027
OVR SLRS485L(UL)	7TCA085400R0552	**OVR CME4**	7TCA085400R0414	**WBX 8**	7TCA085410R0030
OVR RS485Q	7TCA085400R0312	**OVR CME16**	7TCA085410R0045	**WBX 16/2/G**	7TCA085410R0020

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