



Short Form Catalogue

OVR data and telecom SPDs

Surge Protective Devices for data and telecommunication systems

OVR data and telecom SPDs

Surge protection solutions for data and telecommunications lines

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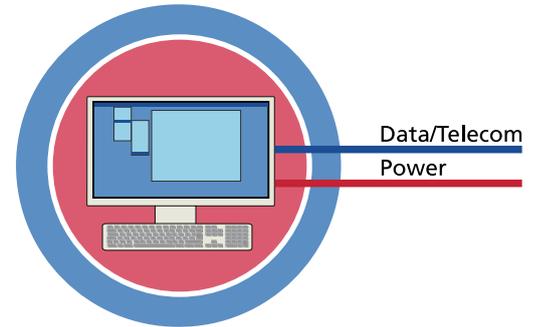
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The new ABB OVR data and telecom SPD range overview

Protecting critical electronic systems

1

The new ABB OVR data/telecom range of SPDs are designed to protect equipment connected to data and telephone lines to complement the OVR power SPD products and offer a complete system protection solution (power & data) against surges. The comprehensive range includes protection for twisted pair data lines (including hazardous environments), computer networks, telecom systems including PBX and ISDN, CCTV, TV and RF systems.



WARNING Equipment is **ONLY** protected if all incoming lines have protection fitted

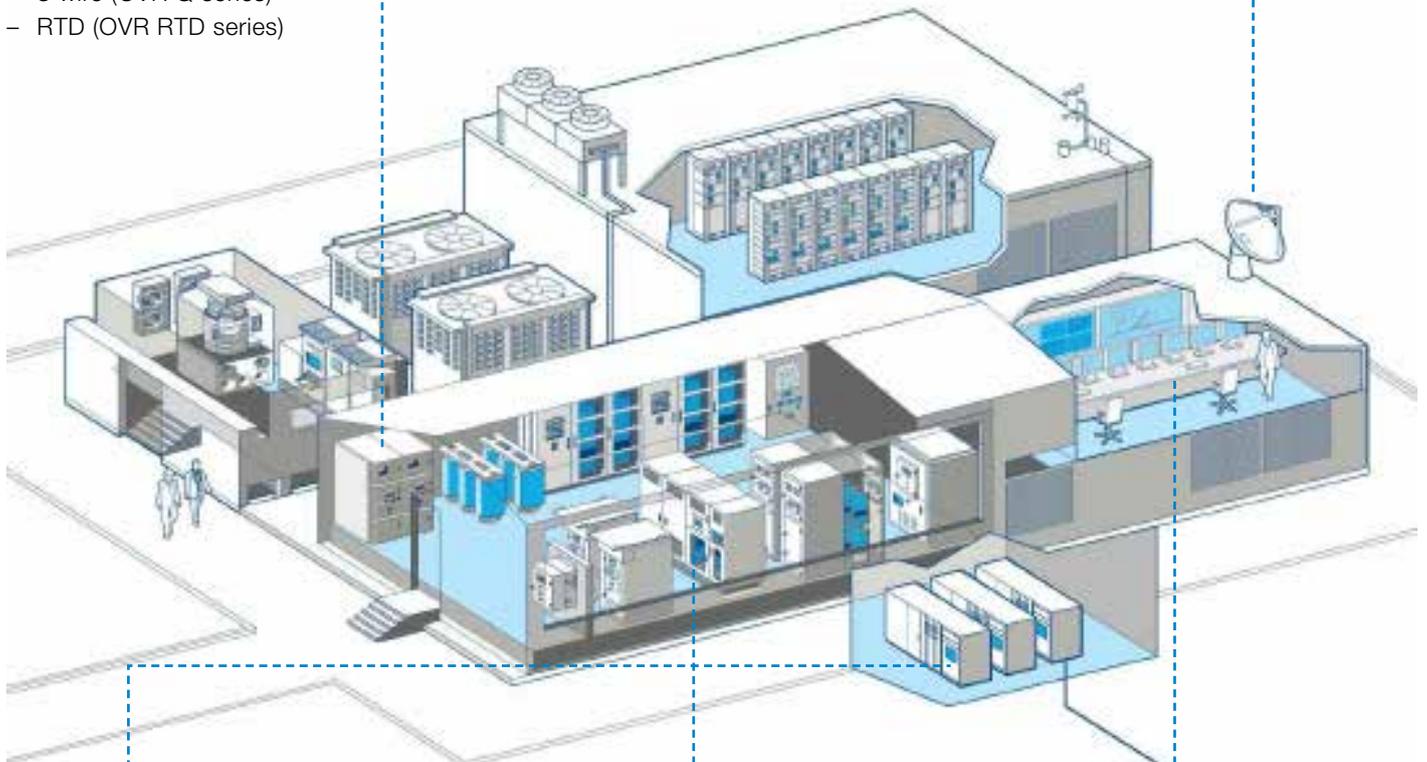
To protect the electronic equipment inside a building, all cables that enter or leave the building must be protected. Cables leaving the building can also provide a route back into the building for transients.

Data & measurement systems

- 2 wire (OVR SL series)
- 2 wire ATEX (OVR SLX series)
- 2 wire (OVR D/E/H series)
- 3 wire (OVR SL-3W series)
- 4-20 mA (OVR SL 4-20)
- 8 wire (OVR Q series)
- RTD (OVR RTD series)

Transceiver/CCTV systems

- RF (OVR RF series)
- CCTV (OVR CCTV series with OVR 240-16A)
- TV (OVR TV series)



Mains power supply

- See OVR power SPD series

Telecom systems

- PBX (OVR KT series)
- RJ11 (OVR TN series)
- RJ45 (OVR ISDN series)
- 2 wire (OVR TN, OVR SLTN)
- 8 wire (OVR TNQ)

Information technology systems

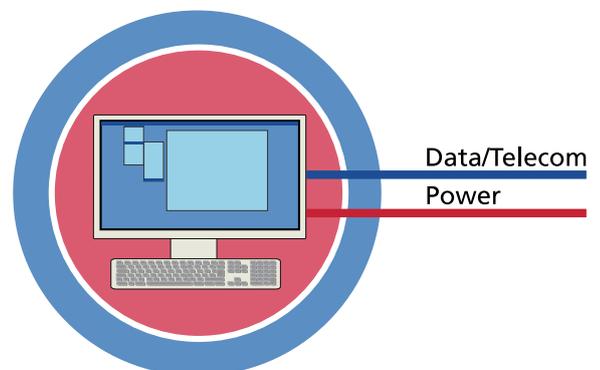
- Cat 6 + PoE (OVR Cat-6 series)
- Cat 5e + PoE (OVR Cat-5e series)
- RS485/HART/Profibus (OVR RS485 series)

Data & measurement systems protection

Product selector - Data and Telecom line protection

Product selection guide - By system interface and application

System/Application	Product	System/Application	Product
RS 232 Data interfaces - Twisted pair data protection	 OVR 15D See page 2/7	DC systems up to 110V, 4A	 OVR H Series See page 2/11
Compact for limited space	 OVR SL15 See page 2/9	DC systems up to 110V, 0.75 A - Compact, for limited space	 OVR SL LED Series See page 2/15
Multiple line protection	 OVR 15Q See page 2/18	3-wire systems - Compact for limited space	 OVR SL/3W Series See page 2/13
RS 422 & RS 423 Data interfaces	 OVR 06E OVR SL06 See pages 2/3 & 2/9	RTD systems (see ABB Application Note OVR AN001)	 OVR RTD OVR SL RTD OVR RTDQ See page 2/20
RS 485 Data interfaces	 OVR RS485 OVR SL RS485 OVR RS485Q See page 4/4	RF radio and antenna communication systems	 OVR RF Series See page 5/2
PBX systems terminating on LSA-Plus disconnection modules	 OVR KT Series See page 3/2	CCTV systems	 OVR CCTV Series OVR 240-16A See pages 5/4 & 5/6
Computer networks, including Power over Ethernet (PoE) (see ABB Application Note OVR N004)	 OVR Cat-5 Series OVR Cat-6 Series See page 4/2	TV systems	 OVR TV Series See page 5/8
4-20 mA loops and low current telemetry systems - Compact, for limited space	 OVR SL30L/4-20 See page 2/15	Hazardous area (process control, fire & gas detectors, 4-20 mA loops, shut down systems)	 OVR SL X Series See pages 2/5
Multiple line and PBX protection	 OVR D & Q Series OVR KT Series See pages 2/7, 2/18 & 3/2		



WARNING Equipment is **ONLY** protected if all incoming lines have protection fitted

Protection overview

The importance of surge protection

1

The need to protect sensitive and critical electronic systems against transient overvoltages (surges) is often neglected. It is only once the equipment has been installed and a risk assessment has been carried out that the need for protection is realised.

What transients are and why you need protection

Transient overvoltages are short duration, high magnitude voltage peaks with fast rising edges, commonly referred to as surges. Often described as a “spike”, transient voltages can reach up to 6000 V on a low-voltage consumer network, with no more than a millisecond duration.

Lightning strikes are the most common source of extreme transient overvoltages where total outage of an unprotected system can occur with damage to cabling insulation through flashover potentially resulting in loss of life through fire and electric shock.

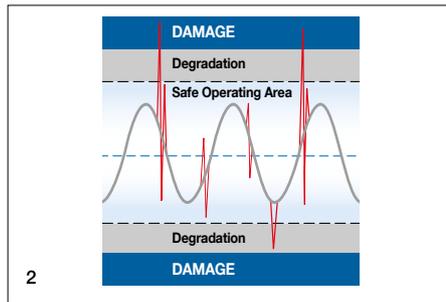
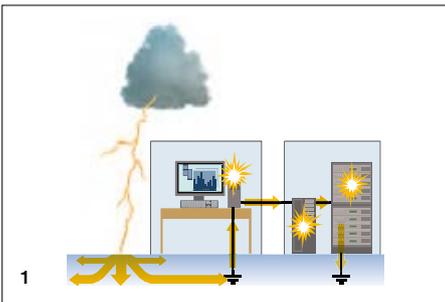
However, electrical and electronic equipment is also continually stressed by hundreds of transients that occur every day on the power supply network through switching operations of inductive loads such as air-conditioning units, lift motors and transformers.

Switching transients may also occur as a result of interrupting short-circuit currents (such as fuses blowing).

Although switching transients are of a lower magnitude than lightning transients, they occur more frequently and equipment failures unexpectedly occur often after a time delay; degradation of electronic components within the equipment is accelerated due to the continual stress caused by these switching transients.

Transient overvoltages, whether caused by lightning or by electrical switching, have similar effects: disruption (e.g. data loss, RCD tripping), degradation (reduced equipment lifespan), damage (outright equipment failure, particularly concerning for essential services such as fire and security alarm systems) and downtime - the biggest cost to any business such as lost productivity and product spoilage, staff overtime, delays to customers and sales lost to competitors.

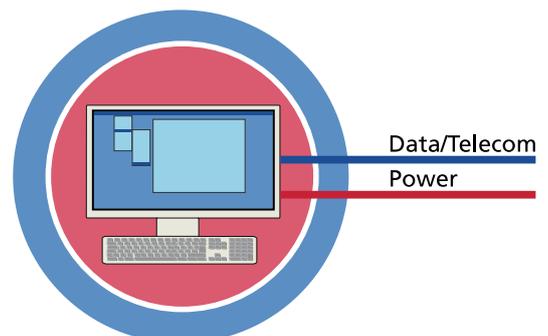
1 Transient damage due to lightning | 2 Equipment risk | 3 Damage to PCB



Applying surge protection

To protect the electronic equipment inside a building, all cables that enter or leave the building must be protected. Cables leaving the building can also provide a route back into the building for transients.

Site or field based electronic equipment with mains power, data communication, video, signal or telephone lines will need to be protected against transient overvoltages using surge protection. It may be helpful to think of each equipment cabinet or cubicle as a separate building with incoming/outgoing cables to be protected.



WARNING Equipment is **ONLY** protected if all incoming lines have protection fitted

Protection against lightning and switching transients

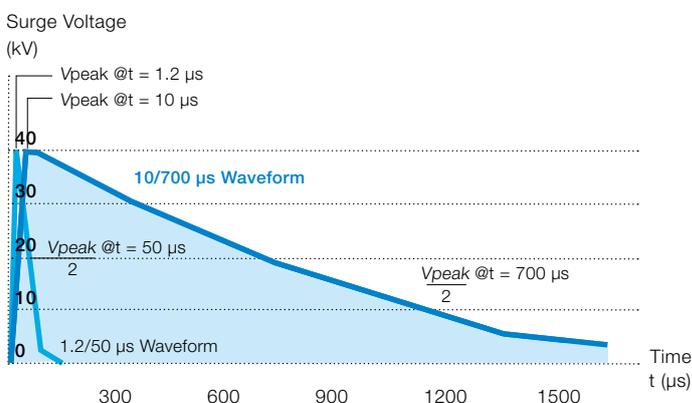
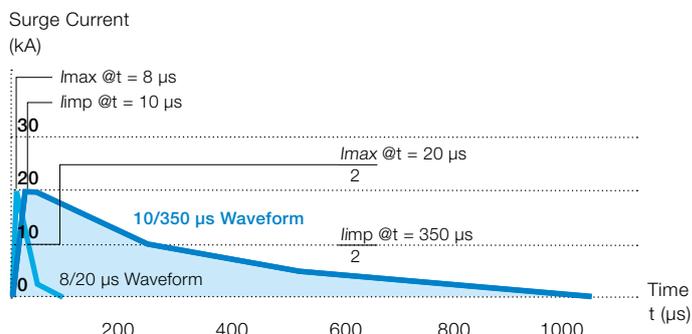
IEC/BS EN 62305 takes account of protection measures on metallic service lines (typically power, signal and telecom lines) using transient overvoltage or surge protective devices (SPDs) against both direct lightning strikes as well as the more common indirect lightning strikes (often described as the secondary effects of lightning) and switching transients.

Standards such as IEC/EN 61643 series define the characteristics of lightning currents and voltages to enable reliable and repeatable testing of SPDs (as well as lightning protection components).

Although these waveforms may differ from actual transients, the standardized forms are based upon years of observation and measurement (and in some cases simulation). In general they provide a fair approximation of the real world transient.

Transient waveforms have a fast rising edge and a longer tail. They are described through their peak value (or magnitude), rise time and their duration (or fall time). The duration is measured as the time taken for the test transient to decay to half its peak value.

The common current and voltage waveforms used to test SPDs for mains, signal and telecom lines



1 Transient overvoltage damage to a circuit board | 2 Most damage is barely visible



The new ABB OVR data and telecom SPD range overview

Introduction

1

Common terminology and definitions

The following common terminologies, as recognized by IEC/BS EN 61643, are used throughout SPD specifications in order to aid correct selection and are defined as follows:

Maximum Continuous Operating Voltage U_c is the maximum RMS voltage that may be continuously applied to the SPDs mode of protection e.g. phase to neutral mode. This is equivalent to the SPDs rated peak voltage.

Impulse Current I_{imp} is defined by three parameters, a current peak with a charge and a specific energy typically simulated with the 10/350 μ s waveform to represent partial lightning currents.

This waveform is used, with peak I_{imp} current value stated, for the mains Type 1 SPD Class I test and typically for data/telecom SPD Test Category D.

Combined Impulse Test with Open Circuit Voltage U_{oc} is a hybrid 1.2/50 μ s voltage test combined with an 8/20 μ s current.

The test is performed using a combination wave generator where its open circuit voltage is defined as U_{oc} , typically 6 kV 1.2/50 μ s for the mains Class III test and up to 4 kV 1.2/50 μ s for signal/telecom Test Category C.

With an impedance of 2 Ω , the generator also produces a peak short circuit current (sometimes referred to as I_{sc}) at half the value of U_{oc} (3 kA 8/20 μ s for the mains Class III test and up to 2 kA 8/20 μ s for signal/telecom Test Category C).

With both voltage and current test waveforms, the combined impulse test is designed to stress all technologies used within SPDs.

Voltage Protection Level U_p is the key parameter that characterizes the performance of the SPD in limiting the transient overvoltage across its terminals. A low protection level value (also known as let-through voltage) is therefore particularly critical for the effective protection and continued operation of electronic equipment.

The peak voltage protection level U_p is declared when the SPD is tested with its stated nominal discharge current I_n (or the peak current (I_{peak}) of I_{imp}) and is also declared when the SPD is subject to combined impulse test (mains Class III test for Type 3 SPDs) as well as data/telecom Test Categories C and B.

Special product development

Whilst this catalogue focuses on our standard product range which meets a wide variety of applications, on occasion a customer will have a special requirement which needs transient overvoltage protection.

In these circumstances we have the technical capability in-house to design and propose a specific solution to meet the customer's special requirement.

Following our proposal, technical and performance parameters of the SPD can be finalized, and the special product manufactured to order.

Special products completed to date include:

- Low-current supply protection to industrial microwave ovens
- Media distribution protection (TV/Radio/DAB on 19" rack)
- Integrated photovoltaic inverter protection
- Overvoltage disconnect for battery-charger installations within substations

For more information about special product development, or to discuss a particular project, please contact us.

Data and Telecom SPD overview

Simplified product selection

All ABB OVR products are designed to provide simple system integration whilst achieving highest levels of effective protection against transients.

Tested in line with the IEC/BS EN standards series, OVR protection can be selected and applied to IEC/BS EN 62305 and BS 7671 easily using the SPD product application tables and data sheets. Key product and application features are represented using the following symbols:

LPZ
0 → 3

Lightning Protection Zone (LPZ) details the boundary (to IEC/BS EN 62305-4) or installation point of the SPD. For example, LPZ 0 - 3 signifies that the SPD can be installed at the service entrance boundary and create an immediate LPZ 3 suitable for protecting electronic equipment close to the SPD installation.

Equipment further downstream of this location may require additional protection, against switching transients for example.

SIGNAL/
TELECOM
TEST CAT
D + C + B

Signal/Telecom Test Category indicates the Test Categories (as defined in IEC/BS EN 61643 series) that SPDs for signal and telecom systems have been subject to, with the results detailed on the transient performance specification.

Test Category D is a high-energy test typically using the 10/350 μ s current waveform. Test Category C is a fast rate of rise test using the 1.2/50 μ s voltage waveform combined with 8/20 μ s current waveform. Test Category B is a slow rate of rise test using the 10/700 μ s waveform, also used within ITU standards. Enhanced SPDs tested with categories D, C and B can offer up to LPZ 0 → 3 protection.

CURRENT
RATING
4 A

Current Rating indicates the maximum continuous current rating of in-line SPDs for data communication, signal and telephone lines.

The SPDs quoted maximum continuous current rating should always exceed the peak running current of the protected system to ensure normal system operation is not impaired.

Damage, through overheating, would result if its quoted current rating were exceeded.

COMMON
MODE
Equipotential
Bonding

Common Mode signifies that the SPD specifically offers protection on conductors with respect to earth. For a mains system, this would be between phases and earth or neutral and earth. For a data/telecom line this would be between signal line(s) to earth.

Common mode surges can result in flashover if the insulation withstand voltage of connected wiring or equipment is exceeded. Flashover could lead to dangerous sparking potentially causing fire or electric shock risks. Test Cat D tested signal/telecom SPDs reduce the risk of flashover by limiting common mode surges.

FULL
MODE
Bonding +
Equipment
Protection

Full Mode means that the SPD protects in all possible modes; common mode (live conductors with respect to earth) and differential mode (between live conductors).

Whilst common mode protection ensures flashover is prevented, differential mode protection is critical to ensure sensitive electronics are protected as well as operational during surge activity.

e
ENHANCED
Low let-through
voltage

Enhanced SPDs (SPD* within IEC/BS EN series) have lower (better) let-through voltage or protection levels (U_p) and therefore further reduce the risk of injury to living beings, physical damage and failure of internal electronic systems. Enhanced SPDs should typically have a protection level U_p no more than twice the peak operating voltage of the protected system, when tested in accordance with IEC/BS EN 61643 series.

LOW IN-LINE
RESISTANCE
1 Ω

Low In-line Resistance states the resistance value in Ohms (Ω) per line of SPDs for data communication, signal and telephone lines.

A low in-line resistance is desirable; particularly for systems with high running currents in order to reduce any voltage drops across the SPD and ensure normal system operation is not impaired.

Consideration should be made for additional SPDs installed on the same line to protect connected equipment at each end of the line (e.g. CCTV camera and connected monitoring equipment) as the in-line resistance of each SPD is introduced into the system.

REPLACEABLE PROTECTION MODULE

Replaceable Protection Module indicates that the SPD component providing protection can be easily removed and replaced following end-of-life with an appropriate replacement module, saving on reinstallation time and protector cost.

The replaceable module includes a quick release mechanism allowing partial removal, which facilitates line commissioning and maintenance.

LED OPTIONAL INDICATION

LED Optional Indication is an additional feature where an SPD can be supplied with an integral LED which indicates performance or fault when installed in low current DC power applications.

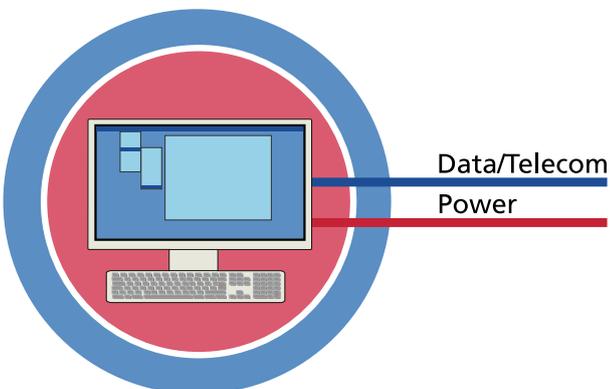
This enables rapid assessment and replacement of SPDs in situations where a considerable number of SPDs are installed.

HIGH BANDWIDTH

High Bandwidth SPDs ensure the full system frequency range of transmission signals, for protected data communication, signal and telephone lines, is not impaired.

Signal frequencies outside the stated SPD bandwidth may potentially be distorted causing information loss or corruption.

As the SPD should accommodate the characteristics of the protected system, the stated SPD bandwidth (typically quoted for a 50 Ω system) should always exceed the protected system's bandwidth.



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BX IP is an International Protection (IP) rating (to IEC/BS EN 60529) for ready-boxed (BX) SPDs typically used in dusty and damp environments.

The IP rating system (also interpreted as “Ingress Protection”) classifies the degrees of protection provided against the intrusion of solid objects (including body parts like hands and fingers), dust, accidental contact and water in electrical enclosures. For example, an IP66 rated enclosure provides no ingress of dust and therefore complete protection against contact as well as against water projected in powerful jets against the enclosure from any direction with no harmful effects.

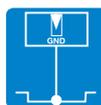
Unboxed SPDs should be installed within distribution panels/cabinets or within external enclosures to the required IP rating (such as the Furse weatherproof WBX enclosure range).



Ultra Slim 7 mm Width highlights the Slim Line feature of our OVR SL range which permits installation in tight spaces, or multiple installation where a high number of lines require protection.



ATEX/IECex Approved indicates that this SPD has undergone the relevant testing and approval process defined by ATEX/IECex, and has proven suitable for use in the hazardous environment as defined on the SPD datasheet.



Direct grounding for non-isolated screen

In the case of the direct grounding SL, the connections for the shield and the reference potential are connected to the DIN rail via the metal mounting foot.



Indirect grounding for isolated screen

In the case of the SL/I, the connections for the shield and the reference potential are connected to the metal mounting foot and therefore the DIN rail via a gas-filled surge arrester.



Data & Measurement Systems

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Protection for 2 Wire systems (OVR SL series)	2/3
Protection for 2 Wire systems in hazardous areas/ATEX (OVR SLX series)	2/5
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Protection for 2 Wire systems high performance (OVR E series)	2/9
Protection for 2 Wire systems high current (OVR H series)	2/11
Protection for 3 Wire systems (OVR SL 3-Wire series)	2/13
Protection for 4-20 mA systems (OVR SL 4-20)	2/15
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Ultra compact 8 Wire protector (OVR Q series)	2/18
Protection for RTD systems RTD (OVR RTD series)	2/20

Data, measurement and telecom systems

Surge protection for 2 wire systems

2

Combined Category D, C, B tested protector (to IEC/EN 61643) suitable for twisted pair 4-20 mA loop systems with innovative LED protector status indication. For use at boundaries up to LPZ 0 to protect against flashover (typically the service entrance location) through to LPZ 3 to protect sensitive electronic equipment (e.g. transmitters, monitors, controllers).

Surge Protective Device
7TCA085400R0366

Nominal voltage	6V
Max working voltage, U _c	7.78V
Current rating	750mA
In-line resistance	1.6Ω
Max surge current	10kA

ABB
Wired Flood
Nottingham,
HQ: 1821, UK

Line

Two stage quick release protection module, allowing easy line commissioning and removal

Direct or Indirect screen grounding capability

Convenient earth connection to DIN rail

Innovative DIN foot rail for easy positioning, with locking feature

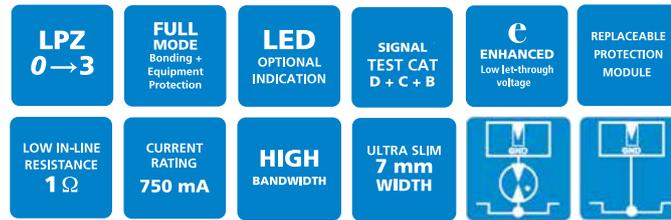
Large, high torque 4mm² terminals

LED status indication option

Space saving installation (7mm wide each)

Data & signal protection

OVR SL Series



Combined Category D, C, B tested protector (to BS EN 61643) suitable for twisted pair signalling applications which require either a lower in-line resistance, an increased current and/or higher bandwidth. Also suitable for DC power applications less than 0.75 Amps. Available for working voltages of up to 6, 15, 30, 50 and 110 Volts. For use at boundaries up to LPZ 0 to protect against flashover (typically the service entrance location) through to LPZ 3 to protect sensitive electronic equipment.

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
- 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 - add L suffix to part number - e.g. OVR SL30L
- 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
- Strong, flame retardant, polycarbonate housing
- 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 - e.g. OVR SL30/I
- 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
- Convenient earthing through DIN foot and/or earth terminal
- Very low (1 Ω) in-line resistance allows resistance critical applications (e.g. alarm loops) to be protected

Application

Use these protectors where installation space is at a premium and large numbers of lines require protection (e.g. process control, high speed digital communication equipment or systems with long signal lines).

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.

Accessories

Replacement modules:

OVR SLXX/M

Standard module replacement where XX is voltage rating (06, 15, 30, 50 or 110)

OVR SLXXL/M

LED module replacement where XX is voltage rating, as above

OVR SL/B

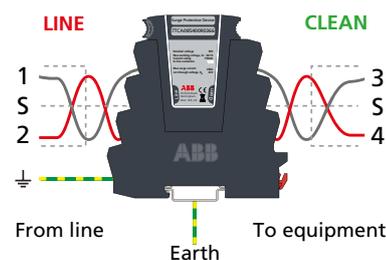
Base replacement (common for standard and LED modules)

OVR SL/I/B

Base replacement with isolated screen from earth

Weatherproof enclosure:

OVR WBX SLQ



NOTE: The OVR SL 'Slim Line' Series is also available for protection of 3-wire, RS 485 and RTD applications (OVR SL/3W, OVR SL RS485 & OVR SL RTD). The OVR SL X Series has approvals for use in hazardous areas. For telecommunication applications use OVR SLTN Series.

Data & signal protection

OVR SL Series

OVR SL Series - Technical specification

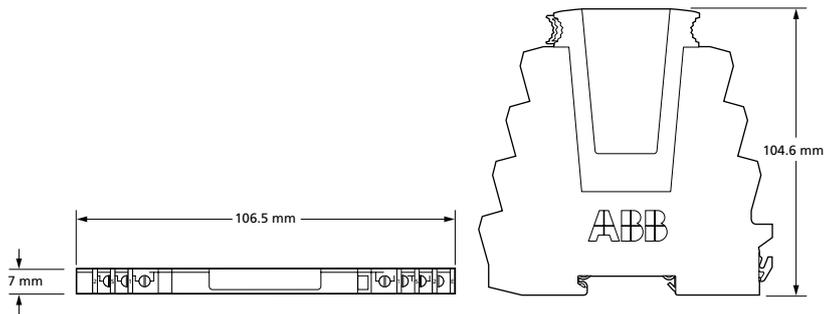
Electrical specification	OVR SL06	OVR SL15	OVR SL30	OVR SL50	OVR SL110
ABB order code	7TCA085400R0360	7TCA085400R0361	7TCA085400R0363	7TCA085400R0364	7TCA085400R0362
Nominal voltage ⁽¹⁾	6 V	15 V	30 V	50 V	110 V
Maximum working voltage U_c (RMS/DC) ⁽²⁾	5 V / 7.79 V	11 V / 16.7 V	25 V / 36.7 V	40 V / 56.7 V	93 V / 132 V
Current rating (signal)	750 mA				
In-line resistance (per line $\pm 10\%$)	1.0 Ω				
Bandwidth (-3 dB 50 Ω system)	45 MHz	45 MHz	45 MHz	45 MHz	45 MHz
Transient specification	OVR SL06	OVR SL15	OVR SL30	OVR SL50	OVR SL110
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	36.0 V	38.4 V	63.0 V	90.3 V	185 V
C1 test 1 kV, 1.2/50 μ s, 0.5 kA 8/20 μ s to BS EN/EN/IEC 61643-21	26.2 V	29.4 V	51.3 V	77.2 V	175 V
B2 test 4 kV 10/700 μ s to BS EN/EN/IEC 61643-21	16.0 V	26.8 V	45.4 V	68.3 V	165 V
5 kV, 10/700 μ s ⁽⁴⁾	17.0 V	27.5 V	46.3 V	69.1 V	170 V
Maximum surge current					
D1 test 10/350 μ s to BS EN/EN/IEC 61643-21: - Per signal wire	1.25 kA				
8/20 μ s to ITU-T K.45:2003, - Per signal wire	10 kA				
IEEE C62.41.2:2002: - Per pair	20 kA				
IEEE C62.41.2:2002: - Per pair	2.5 kA				
Mechanical specification	OVR SL06	OVR SL15	OVR SL30	OVR SL50	OVR SL110
Temperature range	-40 to +80 °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				
- Packaged (per 10)	0.85 kg				
Dimensions	See diagram below				

⁽¹⁾ Nominal voltage (RMS/DC or AC peak) measured at < 10 μ A (OVR SL15, OVR SL30, OVR SL50, OVR SL110 and LED variants) and < 200 μ A (OVR SL06 and OVR SL06L)

⁽²⁾ Maximum working voltage (RMS/DC or AC peak) measured at < 1 mA leakage

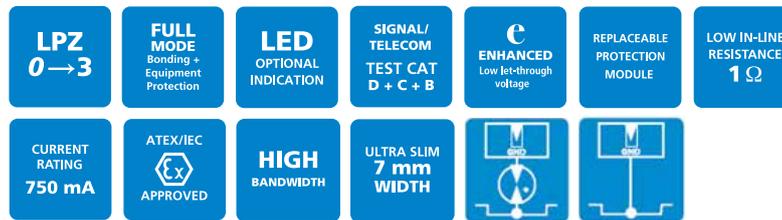
⁽³⁾ The maximum transient voltage let-through of the protector throughout the test ($\pm 10\%$), line to line & line to earth, both polarities. Response time < 10 ns

⁽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)



Data & signal protection

OVR SL X 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

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

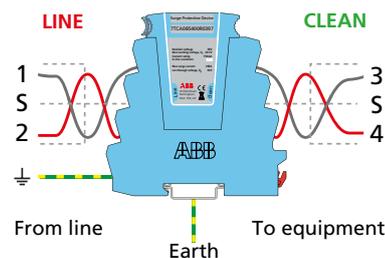
Base replacement with isolated screen from earth

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).

Data & signal protection

OVR SL X Series

2

OVR SL X Series - Technical specification

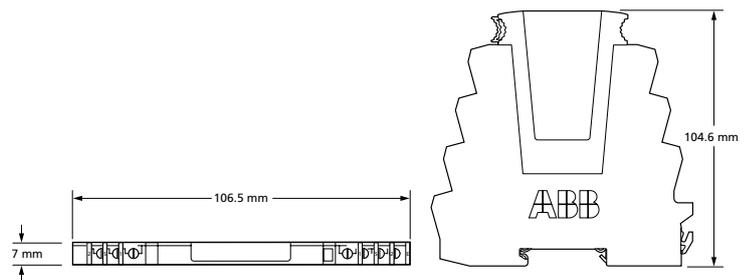
Electrical specification	OVR SL15X	OVR SL30X
ABB order code	7TCA085400R0386	7TCA085400R0387
Nominal voltage ⁽¹⁾	15 V	30 V
Maximum working voltage U_c (RMS/DC) ⁽²⁾	11 V / 16.7 V	25 V / 36.7 V
Current rating (signal)	750 mA	
In-line resistance (per line $\pm 10\%$)	1.0 Ω	
Bandwidth (-3 dB 50 Ω system)	45 MHz	
Intrinsically safe specification	OVR SL15X	OVR SL30X
Maximum voltage U_i	30 V	
Maximum power P_i :		
- Per $-40\text{ }^\circ\text{C} < T_a < 40\text{ }^\circ\text{C}$	1.3 W	
- Per $-40\text{ }^\circ\text{C} < T_a < 60\text{ }^\circ\text{C}$	1.2 W	
- Per $-40\text{ }^\circ\text{C} < T_a < 80\text{ }^\circ\text{C}$	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	1.25 kA	
- Per pair	2.5 kA	
8/20 μs to ITU-T K.45:2003, IEEE C62.41.2:2002:		
- Per signal wire	10 kA	
- Per pair	20 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	
- Packaged (per 10)	0.85 kg	
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)



Data & signal protection

OVR D Series



LPZ 0 → 3	FULL MODE Bonding + Equipment Protection	SIGNAL TEST CAT D + C + B	ENHANCED Low let-through voltage	LOW IN-LINE RESISTANCE 9.4 Ω	CURRENT RATING 300 mA
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Combined Category D, C, B tested protector (to BS EN 61643) suitable for most twisted pair signalling applications. Available for working voltages of up to 6, 15, 30, 50 and 110 Volts. For use at boundaries up to LPZ 0 to protect against flashover (typically the service entrance location) through to LPZ 3 to protect sensitive electronic equipment.

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
- Low in-line resistance minimizes unnecessary reductions in signal strength
- Strong, flame retardant, ABS housing
- Supplied ready for flat mounting on base or side
- Built-in DIN rail foot for simple clip-on mounting to top hat DIN rails
- Colour coded terminals give a quick and easy installation check - grey for the dirty (line) end and green for the clean end
- Screen terminal enables easy connection of cable screen to earth
- Substantial earth stud to enable effective earthing
- Integral earthing plate for enhanced connection to earth via a OVR CME kit

Application

Use on twisted pair lines, e.g. those found in process control equipment, modems and computer communications interfaces.

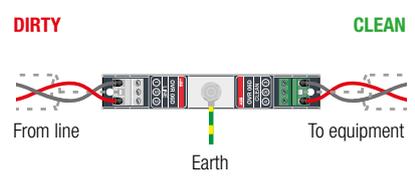
Installation

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.

Accessories

Combined Mounting/Earthing kits: OVR CME 4 Mount & earth up to 4 protectors OVR CME 8 Mount & earth up to 8 protectors OVR CME 16 Mount & earth up to 16 protectors OVR CME 32 Mount & earth up to 32 protectors	Weatherproof enclosures: OVR WBX 4, OVR WBX 4/GS For use with a OVR CME 4 and up to 4 protectors OVR WBX 8, OVR WBX 8/GS For use with a OVR CME 8 and up to 8 protectors OVR WBX 16/2/G For use with one or two OVR CME 16 and up to 32 protectors
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Install in series (in-line)



Slim Line (OVR SL) and ATEX (OVR SLX) versions are also available. If your system requires a protector with a very low resistance or higher current, see the OVR E & H Series. Also use the OVR E Series for systems needing a higher bandwidth. Protectors for 3-wire (OVR SL/3W) and RTD (OVR RTD, OVR SL RTD) are available, as are the space saving protectors (OVR Q, OVR SL Series). The OVR KT and TN Series are additional protectors specifically for telephone lines.

Data & signal protection

OVR D Series

OVR D Series - Technical specification

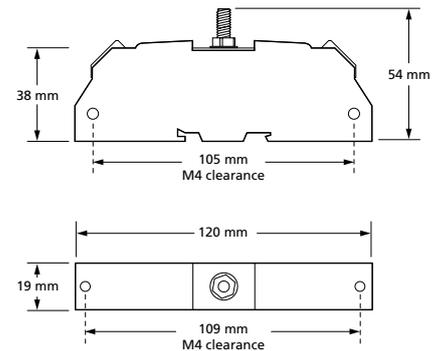
Electrical specification	OVR 06D	OVR 15D	OVR 30D	OVR 50D	OVR 110D
ABB order code	7TCA085400R0288	7TCA085400R0349	7TCA085400R0351	7TCA085400R0352	7TCA085400R0347
Nominal voltage ⁽¹⁾	6 V	15 V	30 V	50 V	110 V
Maximum working voltage U_c (RMS/DC) ⁽²⁾	5 V / 7.79 V	13 V / 19 V	26 V / 37.1 V	41 V / 58 V	93 V / 132 V
Current rating (signal)	300 mA				
In-line resistance (per line $\pm 10\%$)	9.4 Ω	9.4 Ω	9.4 Ω	9.4 Ω	9.4 Ω
Bandwidth (-3 dB 50 Ω system)	800 kHz	2.5 MHz	4 MHz	6 MHz	9 MHz
Transient specification	OVR 06D	OVR 15D	OVR 30D	OVR 50D	OVR 110D
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	12.0 V	25.0 V	44.0 V	78.0 V	155 V
C1 test 1 kV, 1.2/50 μ s, 0.5 kA 8/20 μ s to BS EN/EN/IEC 61643-21	11.5 V	24.5 V	43.5 V	76.0 V	150 V
B2 test 4 kV 10/700 μ s to BS EN/EN/IEC 61643-21	10.0 V	23.0 V	42.5 V	73.0 V	145 V
5 kV, 10/700 μ s ⁽⁴⁾	10.5 V	23.8 V	43.4 V	74.9 V	150 V
Maximum surge current					
D1 test 10/350 μ s to BS EN/EN/IEC 61643-21: - Per signal wire	2.5 kA				
8/20 μ s to ITU-T K.45:2003, IEEE C62.41.2:2002: - Per pair	5 kA				
	10 kA				
	20 kA				
Mechanical specification	OVR 06D	OVR 15D	OVR 30D	OVR 50D	OVR 110D
Temperature range	-40 to +80 $^{\circ}$ C				
Connection type	Screw terminal - maximum torque 0.5 Nm				
Conductor size (stranded)	2.5 mm ²				
Earth connection	M6 stud				
Case material	FR Polymer UL-94 V-0				
Weight: - Unit	0.08 kg				
- Packaged (per 10)	0.85 kg				
Dimensions	See diagram below				

⁽¹⁾ Nominal voltage (RMS/DC or AC peak) measured at < 5 μ A (OVR 15D, OVR 30D, OVR 50D, OVR 110D) and < 200 μ A (OVR 06D)

⁽²⁾ Maximum working voltage (RMS/DC or AC peak) measured at < 1 mA leakage (OVR 15D, OVR 30D, OVR 50D, OVR 110D), < 10 mA (OVR 06D)

⁽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)



Data & signal protection

OVR E Series



LPZ 0 → 3	FULL MODE Bonding + Equipment Protection	HIGH BANDWIDTH	SIGNAL/ TELECOM TEST CAT D + C + B	e ENHANCED Low let-through voltage	LOW IN-LINE RESISTANCE 1 Ω	CURRENT RATING 1.25 A
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Combined Category D, C, B tested protector (to BS EN 61643) suitable for twisted pair signalling applications which require either a lower in-line resistance, an increased current or a higher bandwidth than the OVR D Series. Also suitable for DC power applications less than 1.25 Amps. Available for working voltages of up to 6, 15, 30, 50 and 110 Volts. For use at boundaries up to LPZ 0 to protect against flashover (typically the service entrance location) through to LPZ 3 to protect sensitive electronic equipment.

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
- Very low (1 Ω) in-line resistance allows resistance critical applications (e.g. alarm loops) to be protected
- High (1.25 A) 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
- Strong, flame retardant, ABS housing
- Built-in DIN rail foot for simple clip-on mounting to top hat DIN rails
- Colour coded terminals give a quick and easy installation check - grey for the dirty (line) end and green for clean
- Substantial earth stud to enable effective earthing
- Supplied ready for flat mounting on base or side
- Integral earthing plate for enhanced connection to earth via OVR CME kit)

Application

Use these units to protect resistance sensitive, higher frequency or running current systems, e.g. high speed digital communications equipment or systems with long signal lines.

Installation

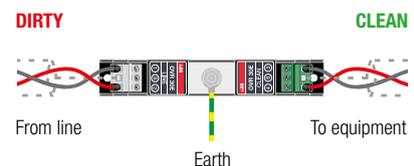
Connect in series with the data communication or signal line either near where it enters or leaves the building or close to the equipment being protected (e.g. within its control panel). Either way, it must be very close to the system's earth star point. Install protectors either within an existing cabinet/cubicle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

Accessories

Combined Mounting/Earthing kits:
OVR CME 4 Mount & earth up to 4 protectors
OVR CME 8 Mount & earth up to 8 protectors
OVR CME 16 Mount & earth up to 16 protectors
OVR CME 32 Mount & earth up to 32 protectors

Weatherproof enclosures:
OVR WBX 4, OVR WBX 4/GS
 For use with a OVR CME 4 and up to 4 protectors
OVR WBX 8, OVR WBX 8/GS
 For use with a OVR CME 8 and up to 8 protectors
OVR WBX 16/2/G
 For use with one or two OVR CME 16 and up to 32 protectors

Install in series (in-line)



NOTE: Slim Line (OVR SL) and ATEX (OVR SLX) are available. For many twisted pair data and signal applications, the lower cost OVR D Series may be suitable. For applications requiring higher current (1.25 A to 4 A) or ultra-low in-line resistance, the OVR H Series protectors may be more suitable.

Data & signal protection

OVR E Series

OVR E Series - Technical specification

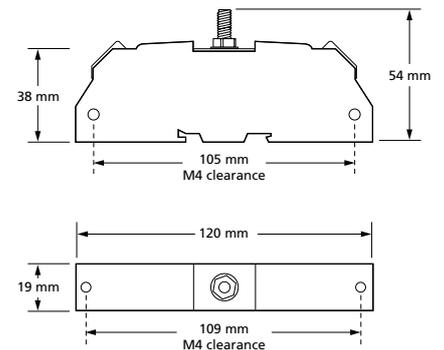
Electrical specification	OVR 06E	OVR 15E	OVR 30E	OVR 50E	OVR 110E
ABB order code	7TCA085400R0346	7TCA085400R0350	7TCA085400R0353	7TCA085400R0354	7TCA085400R0348
Nominal voltage ⁽¹⁾	6 V	15 V	30 V	50 V	110 V
Maximum working voltage U_c (RMS/DC) ⁽²⁾	5 V / 7.79 V	11 V / 16.7 V	25 V / 36.7 V	40 V / 56.7 V	93 V / 132 V
Current rating (signal)	1.25 A				
In-line resistance (per line $\pm 10\%$)	1.0 Ω				
Bandwidth (-3 dB 50 Ω system)	45 MHz				
Transient specification	OVR 06E	OVR 15E	OVR 30E	OVR 50E	OVR 110E
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	36.0 V	39.0 V	60.0 V	86.0 V	180 V
C1 test 1 kV, 1.2/50 μ s, 0.5 kA 8/20 μ s to BS EN/EN/IEC 61643-21	26.2 V	28.0 V	49.0 V	73.5 V	170 V
B2 test 4 kV 10/700 μ s to BS EN/EN/IEC 61643-21	16.0 V	25.5 V	43.5 V	65.0 V	160 V
5 kV, 10/700 μ s ⁽⁴⁾	17.0 V	26.2 V	44.3 V	65.8 V	165 V
Maximum surge current					
D1 test 10/350 μ s to BS EN/EN/IEC 61643-21: - Per signal wire	2.5 kA				
8/20 μ s to ITU-T K.45:2003, IEEE C62.41.2:2002: - Per pair	5 kA				
- Per signal wire	10 kA				
- Per pair	20 kA				
Mechanical specification	OVR 06E	OVR 15E	OVR 30E	OVR 50E	OVR 110E
Temperature range	-40 to +80 $^{\circ}$ C				
Connection type	Screw terminal - maximum torque 0.5 Nm				
Conductor size (stranded)	2.5 mm ²				
Earth connection	M6 stud				
Case material	FR Polymer UL-94 V-0				
Weight: - Unit	0.08 kg				
- Packaged (per 10)	0.85 kg				
Dimensions	See diagram below				

⁽¹⁾ Nominal voltage (RMS/DC or AC peak) measured at < 10 μ A (OVR 15E, OVR 30E, OVR 50E, OVR 110E) and < 200 μ A (OVR 06E)

⁽²⁾ Maximum working voltage (RMS/DC or AC peak) measured at < 5 mA leakage (OVR 15E, OVR 30E, OVR 50E, OVR 110E) and < 10 mA (OVR 06E)

⁽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)



Data & signal protection

OVR H Series



Combined Category D, C, B tested protector (to BS EN 61643) suitable for twisted pair signalling applications which require either a lower in-line resistance or an increased current than the OVR D or E Series. Also suitable for DC power applications less than 4 Amps. Available for working voltages of up to 6, 15, 30, 50 and 110 Volts. For use at boundaries up to LPZ 0 to protect against flashover (typically the service entrance location) through to LPZ 3 to protect sensitive electronic equipment.

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
- Ultra-low (< 0.05 Ω) in-line resistance allows resistance critical applications (e.g. alarm loops) to be protected
- Very high (4 A) maximum running current
- Strong, flame retardant ABS housing
- Supplied ready for flat mounting on base or side
- Built-in DIN rail foot for simple clip-on mounting to top hat DIN rails
- Colour coded terminals give a quick and easy installation check - grey for the dirty (line) end and green for clean
- Screen terminal enables easy connection of cable screen to earth
- Substantial earth stud to enable effective earthing
- Integral earth plate enables enhanced connection to earth via OVR CME kit

Application

Use these applications to protect resistance sensitive or higher running current systems, e.g. systems with long signal lines, or DC power applications.

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.

Accessories

Combined Mounting/Earthing kits:

OVR CME 4 Mount & earth up to 4 protectors

OVR CME 8 Mount & earth up to 8 protectors

OVR CME 16 Mount & earth up to 16 protectors

OVR CME 32 Mount & earth up to 32 protectors

Weatherproof enclosures:

OVR WBX 4, OVR WBX 4/GS

For use with a OVR CME 4 and up to 4 protectors

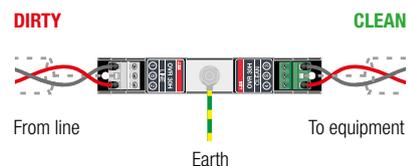
OVR WBX 8, OVR WBX 8/GS

For use with a OVR CME 8 and up to 8 protectors

OVR WBX 16/2/G

For use with one or two OVR CME 16 and up to 32 protectors

Install in series (in-line)



NOTE: For some data and signal applications with lower current, higher in-line resistance or higher bandwidth requirements, the OVR D or E Series protectors or the Slim Line OVR SL Series may be more suitable.

Data & signal protection

OVR H Series

OVR H Series - Technical specification

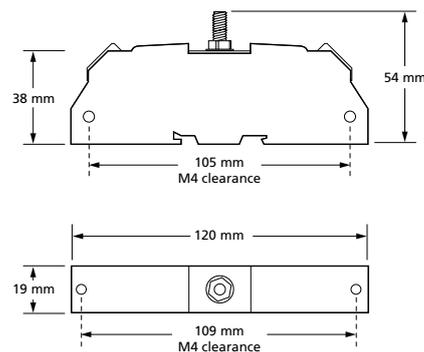
Electrical specification	OVR 06H	OVR 15H	OVR 30H	OVR 50H	OVR 110H
ABB order code	7TCA085400R0355	7TCA085400R0357	7TCA085400R0358	7TCA085400R0359	7TCA085400R0356
Nominal voltage ⁽¹⁾	6 V	15 V	30 V	50 V	110 V
Maximum working voltage U _c (RMS/DC) ⁽²⁾	5 V / 7.79 V	11 V / 16.7 V	25 V / 36.7 V	40 V / 56.7 V	93 V / 132 V
Current rating (signal)	4 A				
In-line resistance (per line ±10%)	0.05 Ω				
Bandwidth (-3 dB 50 Ω system)	160 KHz	140 KHz	130 KHz	120 KHz	120 KHz
Transient specification	OVR 06H	OVR 15H	OVR 30H	OVR 50H	OVR 110H
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	12.0 V	27.5 V	46.0 V	67.0 V	150 V
C1 test 1 kV, 1.2/50 μs, 0.5 kA 8/20 μs to BS EN/EN/IEC 61643-21	11.0 V	26.5 V	45.0 V	66.5 V	145 V
B2 test 4 kV 10/700 μs to BS EN/EN/IEC 61643-21	10.5 V	25.5 V	43.5 V	65.0 V	140 V
5 kV, 10/700 μs ⁽⁴⁾	10.8 V	26.2 V	44.3 V	65.8 V	145 V
Maximum surge current					
D1 test 10/350 μs to BS EN/EN/IEC 61643-21: - Per signal wire	2.5 kA				
8/20 μs to ITU-T K.45:2003, IEEE C62.41.2:2002: - Per pair	5 kA				
	10 kA				
	20 kA				
Mechanical specification	OVR 06E	OVR 15E	OVR 30E	OVR 50E	OVR 110E
Temperature range	-40 to +80 °C				
Connection type	Screw terminal - maximum torque 0.5 Nm				
Conductor size (stranded)	2.5 mm ²				
Earth connection	M6 stud - maximum torque 0.5 Nm				
Case material	FR Polymer UL-94 V-0				
Weight: - Unit	0.08 kg				
- Packaged (per 10)	0.85 kg				
Dimensions	See diagram below				

⁽¹⁾ Nominal voltage (RMS/DC or AC peak) measured at < 10 μA (OVR 15H, OVR 30H, OVR 50H, OVR 110H) and < 200 μA (OVR 06H)

⁽²⁾ Maximum working voltage (RMS/DC or AC peak) measured at < 5 mA leakage (OVR 15H, OVR 30H, OVR 50H, OVR 110H) and < 10 mA (OVR 06H)

⁽³⁾ The maximum transient voltage let-through of the protector throughout 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)



Data & signal protection

OVR SL 3-Wire Series



LPZ 0 → 3	FULL MODE Bonding + Equipment Protection	REPLACEABLE PROTECTION MODULE	SIGNAL/ TELECOM TEST CAT D + C + B	e ENHANCED Low let-through voltage	LOW IN-LINE RESISTANCE 1 Ω
CURRENT RATING 500 mA	HIGH BANDWIDTH	ULTRA SLIM 7 mm WIDTH			

Combined Category D, C, B tested protector (to BS EN 61643) suitable for 3-wire signalling applications which require either a lower in-line resistance, an increased current and/or higher bandwidth. Also suitable for DC power applications less than 0.5 Amps. Available for working voltages of up to 6, 15, 30, 50 and 110 Volts. For use at boundaries up to LPZ 0 to protect against flashover (typically the service entrance location) through to LPZ 3 to protect sensitive electronic equipment.

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
- Ultra slim 7 mm width ideal for compact protection of large numbers of lines (e.g. process control installations)
- 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
- Very low (1 Ω) in-line resistance allows resistance critical applications (e.g. alarm loops) to be protected
- High (500 mA) maximum running current
- High bandwidth enables higher frequency (high traffic or bit rate) data communications
- Strong, flame retardant, polycarbonate housing
- 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
- Convenient earthing through DIN foot and/or earth terminal

Application

Use these protectors for 3-wire systems where installation space is at a premium and large numbers of lines require protection (e.g. process control, high speed digital communication equipment or systems with long signal lines).

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.

Accessories

Replacement modules:

OVR SLXX/3W/M

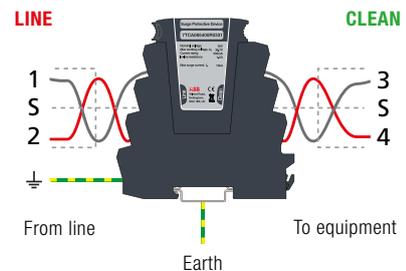
Standard module replacement where XX is voltage rating (06, 15, 30, 50 or 110)

OVR SL/3W/B

Base replacement

Weatherproof enclosure:

OVR WBX SLQ



NOTE: The OVR SL 'Slim Line' Series is also available for protection of 2-wire systems up to 110 V, RS 485, RTD and telecommunication applications (OVR SL Series, OVR SL RS485, OVR SL RTD and OVR SL TN). The OVR SL X Series has approvals for use in hazardous areas.

Data & signal protection

OVR SL 3-Wire Series

OVR SL 3-Wire Series - Technical specification

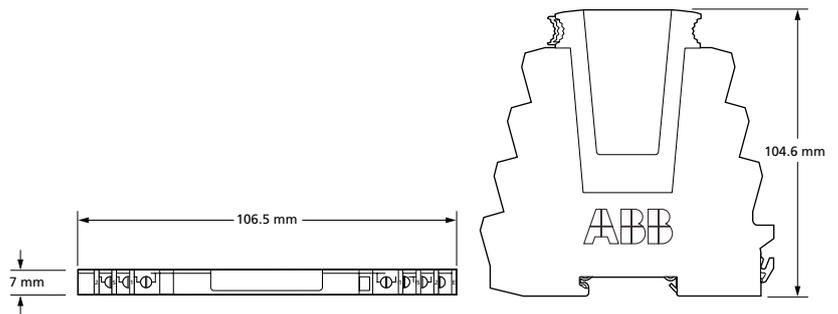
Electrical specification	OVR SL06/3W	OVR SL15/3W	OVR SL30/3W	OVR SL50/3W	OVR SL110/3W
ABB order code	7TCA085400R0328	7TCA085400R0330	7TCA085400R0331	7TCA085400R0332	7TCA085400R0329
Nominal voltage ⁽¹⁾	6 V	15 V	30 V	50 V	110 V
Maximum working voltage U_c (RMS/DC) ⁽²⁾	5 V / 7.79 V	11 V / 16.7 V	25 V / 36.7 V	40 V / 56.7 V	93 V / 132 V
Current rating (signal)	500 mA				
In-line resistance (per line $\pm 10\%$)	1.0 Ω				
Bandwidth (-3 dB 50 Ω system)	45 MHz				
Transient specification	OVR SL06/3W	OVR SL15/3W	OVR SL30/3W	OVR SL50/3W	OVR SL110/3W
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	36.0 V	38.4 V	63.0 V	90.3 V	185 V
C1 test 1 kV, 1.2/50 μ s, 0.5 kA 8/20 μ s to BS EN/EN/IEC 61643-21	26.2 V	29.4 V	51.3 V	77.2 V	175 V
B2 test 4 kV 10/700 μ s to BS EN/EN/IEC 61643-21	16.0 V	26.8 V	45.4 V	68.3 V	165 V
5 kV, 10/700 μ s ⁽⁴⁾	17.0 V	27.5 V	46.3 V	69.1 V	170 V
Maximum surge current					
D1 test 10/350 μ s to BS EN/EN/IEC 61643-21:	- Per signal wire	1.25 kA			
	- Per pair	2.5 kA			
8/20 μ s to ITU-T K.45:2003, IEEE C62.41.2:2002:	- Per signal wire	10 kA			
	- Per pair	20 kA			
Mechanical specification	OVR SL06/3W	OVR SL15/3W	OVR SL30/3W	OVR SL50/3W	OVR SL110/3W
Temperature range	-40 to +80 °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				
- Packaged (per 10)	0.85 kg				
Dimensions	See diagram below				

⁽¹⁾ Nominal voltage (RMS/DC or AC peak) measured at < 10 μ A (OVR SL15/3W, OVR SL30/3W, OVR SL50/3W, OVR SL110/3W) and < 200 μ A (OVR SL06/3W)

⁽²⁾ Maximum working voltage (RMS/DC or AC peak) measured at < 1 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 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)



Data & signal protection

OVR SL LED 4-20 mA Series



LPZ 0 → 3	FULL MODE Bonding + Equipment Protection	REPLACEABLE PROTECTION MODULE	SIGNAL/TELECOM TEST CAT D + C + B	ENHANCED Low let-through voltage	LOW IN-LINE RESISTANCE 1 Ω
CURRENT RATING 75 mA	ULTRA SLIM 7 mm WIDTH	LED INDICATION			

Combined Category D, C, B tested protector (to BS EN 61643) suitable for twisted pair 4-20 mA loop systems with innovative LED protector status indication. For use at boundaries up to LPZ 0 to protect against flashover (typically the service entrance location) through to LPZ 3 to protect sensitive electronic equipment (e.g. transmitters, monitors, controllers).

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
- Innovative LED indication of protection status provides easy visual checking and quick maintenance
- Ultra slim 7 mm width ideal for compact protection of large numbers of lines (e.g. process control installations)
- 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
- Very low (1 Ω) in-line resistance for minimal system interference
- High (75 mA) maximum running current - can also be used on 10-50 mA systems (e.g. process control)
- Screen terminal enables easy connection of cable screen to earth
- Strong, flame retardant, polycarbonate housing
- 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
- Convenient earthing through DIN foot and/or earth terminal

Application

Use these protectors on 4-20 mA loop systems - ideal where installation space is at a premium and large numbers of lines require protection, or for systems with long signal lines.

Installation

Connect in series with the 4-20 mA current loop 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.

Accessories

OVR SL30L/4-20/M

Module replacement

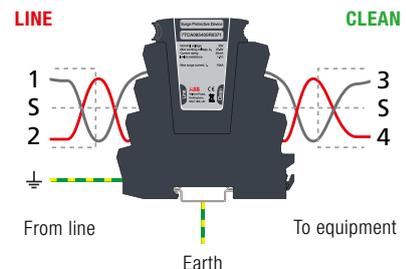
OVR SL/B

Base replacement

Weatherproof enclosure:

OVR WBX SLQ

TECHNICAL NOTE: 4-20 mA current loops can serve multiple devices over a long distance. The devices and wiring produce a voltage drop (also known as "loop drops") but these do not reduce the 4-20 mA current as long as the power supply voltage is greater than the sum of the voltage drops around the loop at the maximum signalling current of 20 mA. For design considerations, each OVR SL30L/4-20 device installed within the loop introduces a 1.7 V loop drop.



NOTE: The OVR SL 'Slim Line' Series is also available for protection of systems up to 110 V as well as 3-wire, RS 485, RTD & telecommunication applications (OVR SL/3W, OVR SL RS485, OVR SL RTD & OVR SL TN). The OVR SL X Series has approvals for use in hazardous areas.

Data & signal protection

OVR SL LED 4-20 mA Series

2

OVR SL LED 4-20 mA Series - Technical specification

Electrical specification	OVR SL30L/4-20	
ABB order code	7TCA085400R0371	
Nominal voltage ⁽¹⁾	30 V	
Maximum working voltage U_c (RMS/DC) ⁽²⁾	25 V / 36.7 V	
Current rating (signal) ⁽³⁾	75 mA	
In-line resistance (per line $\pm 10\%$)	1.0 Ω	
Series voltage drop ⁽⁴⁾	1.7 V	
Bandwidth (-3 dB 50 Ω systems)	45 MHz	
Transient specification	OVR SL30L/4-20	
Let-through voltage (all conductors)⁽⁵⁾ Up		
C2 test 4 kV 1.2/50 μs , 2 kA 8/20 μs to BS EN/EN/IEC 61643-21	63.0 V	
C1 test 1 kV, 1.2/50 μs , 0.5 kA 8/20 μs to BS EN/EN/IEC 61643-21	51.3 V	
B2 test 4 kV 10/700 μs to BS EN/EN/IEC 61643-21	45.4 V	
5 kV, 10/700 μs ⁽⁶⁾	46.3 V	
Maximum surge current		
D1 test 10/350 μs to BS EN/EN/IEC 61643-21:	- Per signal wire	1.25 kA
8/20 μs to ITU-T K.45:2003,	- Per pair	2.5 kA
IEEE C62.41.2:2002:	- Per signal wire	10 kA
	- Per pair	20 kA
Mechanical specification	OVR SL30L/4-20	
Temperature range	-40 to +80 °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	
- Packaged (per 10)	0.85 kg	
Dimensions	See diagram below	

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

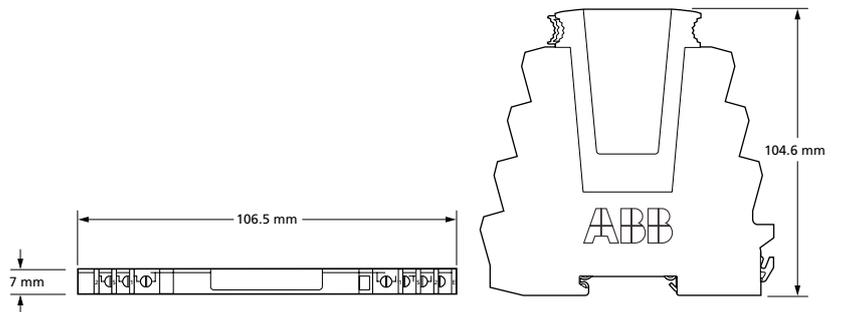
⁽²⁾ Maximum working voltage (RMS/DC or AC peak) measured at < 1 mA leakage

⁽³⁾ The minimum current for LED indicator operation is 2 mA

⁽⁴⁾ At 20 mA

⁽⁵⁾ 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

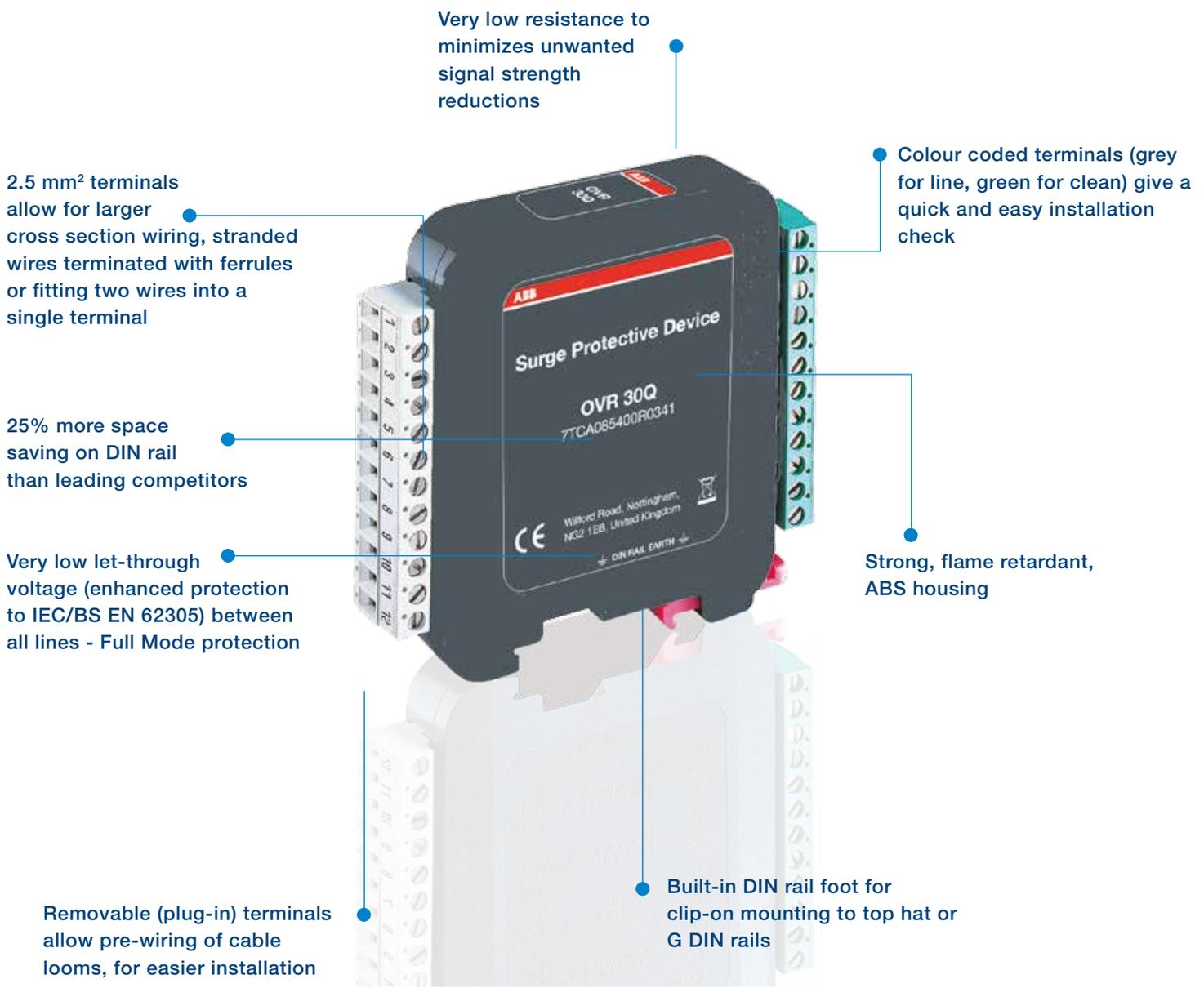
⁽⁶⁾ Test to IEC 61000-4-5:2006, ITU-T (formerly CCITT) K.20, K.21 and K.45, Telcordia GR-1089-CORE, Issue 2:2002, ANSI TIA/EIA/IS-968-A:2002 (formerly FCC Part 68)



Data, measurement and telecom systems

Compact surge protection for up to 8 wire systems

Combined Category D, C, B tested protector (to IEC/EN 61643) suitable for 4 twisted pair lines. Available for working voltages of up to 6, 15, 30, 50 and 110 Volts. OVR TNQ suitable for Broadband, POTS, dial-up, T1/E1, lease line and *DSL telephone applications. For use at boundaries up to LPZ 0 to protect against flashover (typically the service entrance location) through to LPZ 3 to protect sensitive electronic equipment.



Data & signal protection

OVR Q Series

2



Combined Category D, C, B tested protector (to BS EN 61643) suitable for 4 twisted pair lines. Available for working voltages of up to 6, 15, 30, 50 and 110 Volts. For use at boundaries up to LPZ 0 to protect against flashover (typically the service entrance location) through to LPZ 3 to protect sensitive electronic equipment.

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
- Almost twice as space efficient as smallest competitor
- Standard DIN module (18 mm) depth
- Removable (plug-in) terminals allow pre-wiring of cable looms, for easier installation
- Suitable for earthed or isolated screen systems
- Built-in DIN rail foot for clip-on mounting to top hat or G DIN rails
- Optional flat mounting on side
- 2.5 mm² terminals allow for larger cross section wiring, stranded wires terminated with ferrules or fitting two wires into a single terminal
- Very low resistance to minimizes unwanted signal strength reductions
- Strong, flame retardant, ABS housing
- Colour coded terminals (grey for line, green for clean) give a quick and easy installation check
- Screen terminal enables easy connection of cable screen, maintaining continuity through the SPD between the input and output connectors.
- Simple, yet substantial, connection to earth via DIN rail

Application

Use these protectors where installation space is at a premium and large numbers of lines require protection.

Installation

Connect in series with the signal or data line either near where it enters or leaves the building or close to the equipment being protected. Install in a cabinet/cubicle close to the system's earth star point.

Accessories

Weatherproof enclosure: **OVR WBX SLQ**

OVR 06Q, OVR 15Q, OVR 30Q, OVR 50Q and OVR 110Q installed in series (in-line)



NOTE: The OVR Q Series is also available for protection of RS 485 and RTD applications (OVR RS485Q, OVR RTDQ). Protectors for individual data and signal lines are available (OVR D Series and Slim Line OVR SL Series). Alternatively, for individual protectors with higher current or bandwidth use the OVR E and OVR H Series. For telecommunication applications use OVR TNQ Series.

Data & signal protection

OVR Q Series

OVR Q Series - Technical specification

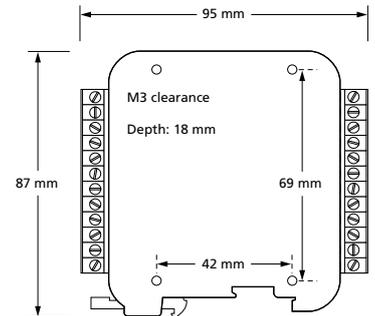
Electrical specification	OVR 06Q	OVR 15Q	OVR 30Q	OVR 50Q	OVR 110Q
ABB order code	7TCA085400R0333	7TCA085400R0340	7TCA085400R0341	7TCA085400R0342	7TCA085400R0343
Nominal voltage ⁽¹⁾	6 V	15 V	30 V	50 V	110 V
Maximum working voltage U_c (RMS/DC) ⁽²⁾	5 V / 7.79 V	13 V / 18.8 V	26 V / 37.8 V	41 V / 57.8 V	93 V / 132 V
Current rating (signal)	750 mA	750 mA	750 mA	750 mA	750 mA
In-line resistance (per line $\pm 10\%$)	1.0 Ω	1.0 Ω	1.0 Ω	1.0 Ω	1.0 Ω
Bandwidth (-3 dB 50 Ω system)	45 MHz	45 MHz	45 MHz	45 MHz	45 MHz
Transient specification	OVR 06Q	OVR 15Q	OVR 30Q	OVR 50Q	OVR 110Q
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	15.0 V	28.0 V	53.0 V	84.0 V	188 V
C1 test 1 kV, 1.2/50 μ s, 0.5 kA 8/20 μ s to BS EN/EN/IEC 61643-21	12.5 V	26.5 V	48.0 V	76.0 V	175 V
B2 test 4 kV 10/700 μ s to BS EN/EN/IEC 61643-21	10.0 V	23.0 V	43.5 V	64.5 V	145 V
5 kV, 10/700 μ s ⁽⁴⁾	10.8 V	26.2 V	44.3 V	65.8 V	150 V
Maximum surge current					
D1 test 10/350 μ s to BS EN/EN/IEC 61643-21: - Per signal wire	2.5 kA				
8/20 μ s to ITU-T K.45:2003, - Per signal wire	10 kA				
IEEE C62.41.2:2002: - Per pair	20 kA				
Mechanical specification	OVR 06Q	OVR 15Q	OVR 30Q	OVR 50Q	OVR 110Q
Temperature range	-40 to +80 °C				
Connection type	Pluggable 12 way screw terminal - maximum torque 0.6 Nm				
Conductor size (stranded)	2.5 mm ²				
Earth connection	Via DIN rail or M5 threaded hole in base of unit				
Case material	FR Polymer UL-94 V-0				
Weight: - Unit	0.1 kg				
- Packaged (each)	0.12 kg				
- Packaged (per 10)	1.3 kg				
Dimensions	See diagram below				

⁽¹⁾ Nominal voltage (RMS/DC or AC peak) measured at < 5 μ A (OVR 15Q, OVR 30Q, OVR 50Q, OVR 110Q) and < 200 μ A (OVR 06Q)

⁽²⁾ Maximum working voltage (RMS/DC or AC peak) measured at < 5 mA leakage (OVR 15Q, OVR 30Q, OVR 50Q, OVR 110Q)

⁽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)



Data & signal protection

OVR RTD, RTDQ & SL RTD Series

2



LPZ 0 → 3	FULL MODE Bonding + Equipment Protection	OVR SL RTD ULTRA SLIM 7 mm WIDTH	SIGNAL/ TELECOM TEST CAT D + C + B	ENHANCED Low let-through voltage	OVR RTDQ ULTRA COMPACT 18 mm WIDTH	LOW IN-LINE RESISTANCE	OVR SL RTD HIGH BANDWIDTH
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Combined Category D, C, B tested protector (to BS EN 61643) suitable for 3-wire RTD systems to protect monitoring equipment. 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 RTD format, or compact OVR RTDQ and Slim Line OVR SL RTD versions for installations where a high number of lines require protection.

Features & benefits

- Protects all three wires on a 3-wire RTD system with a single protector
- 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
- Low in-line resistance minimizes reductions in signal strength
- Built-in DIN rail foot for simple mounting to top hat DIN rails
- Convenient earthing through DIN foot and/or earth terminal
- OVR RTD can be flat mounted on base or side
- OVR RTD and OVR RTDQ have colour coded terminals for quick and easy installation check
- OVR SL RTD has ultra slim 7 mm width ideal for compact protection of large numbers of lines (e.g. process control installations)
- OVR SL RTD 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

For further information on RTD applications, see separate Application Note OVR AN001 (contact us for a copy).

Installation

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 RTD:

OVR SLRTD/M

Standard module replacement

OVR SLRTD/B

Base replacement

Combined Mounting/Earthing kits for OVR RTD:

OVR CME 4 For up to 4 x OVR RTD

OVR CME 8 For up to 8 x OVR RTD

OVR CME 16 For up to 16 x OVR RTD

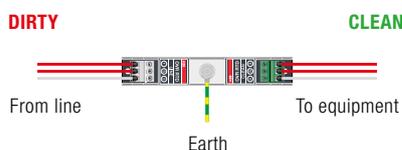
OVR CME 32 For up to 32 x OVR RTD

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.

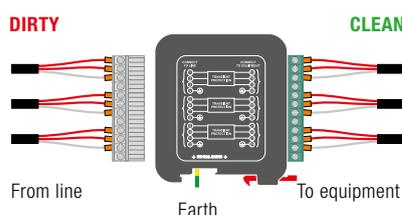
Weatherproof enclosure:

OVR WBX SLQ (OVR SLRTD and OVR RTD Q)

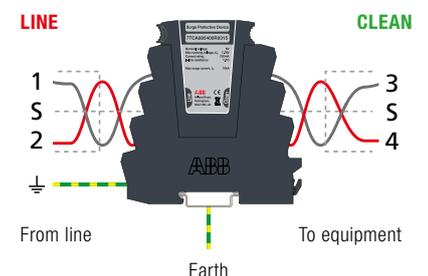
OVR RTD installed in series



OVR RTDQ installed in series (in-line)



OVR SL RTD installed in series



NOTE: For 2-wire or 4-wire RTD applications, use one or two OVR 06D or OVR SL06 protectors respectively.

Data & signal protection

OVR RTD, RTDQ & SL RTD Series

OVR RTD, RTDQ & SL RTD Series - Technical specification

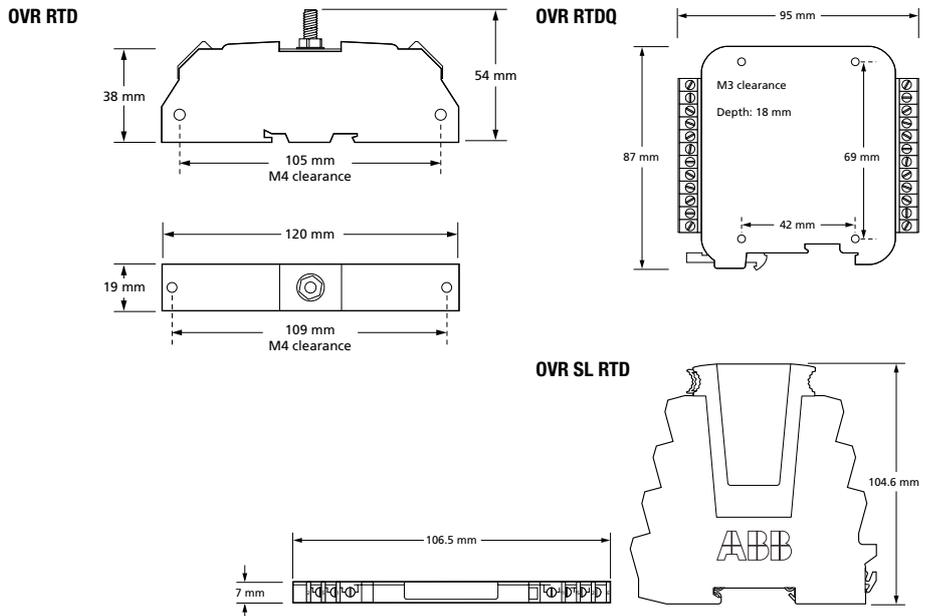
Electrical specification	OVR RTD	OVR SL RTD	OVR RTDQ	
ABB order code	7TCA085400R0313	7TCA085400R0315	7TCA085400R0314	
Nominal voltage ⁽¹⁾	6 V			
Maximum working voltage U _c (RMS/DC) ⁽²⁾	5 V / 7.79 V			
Current rating (signal)	200 mA	500 mA	700 mA	
In-line resistance (per line ±10%)	10 Ω	1.0 Ω	1.0 Ω	
Bandwidth (-3 dB 50 Ω system)	800 kHz	1.5 MHz	800 kHz	
Transient specification	OVR RTD	OVR SL RTD	OVR RTDQ	
Let-through voltage (all conductors)⁽³⁾ Up				
C2 test 4 kV 1.2/50 μs, 2 kA 8/20 μs to BS EN/EN/IEC 61643-21	12.0 V	17.9 V	15.0 V	
C1 test 1 kV, 1.2/50 μs, 0.5 kA 8/20 μs to BS EN/EN/IEC 61643-21	11.5 V	12.1 V	12.5 V	
B2 test 4 kV 10/700 μs to BS EN/EN/IEC 61643-21	10.0 V	11.0 V	10.0 V	
5 kV, 10/700 μs ⁽⁴⁾	10.5 V	11.3 V	10.5 V	
Maximum surge current				
D1 test 10/350 μs to BS EN/EN/IEC 61643-21:	- Per signal wire	2.5 kA	1.25 kA	2.5 kA
8/20 μs 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 RTD	OVR SL RTD	OVR RTDQ	
Temperature range	-40 to +80 °C			
Connection type	Screw terminal - max. torque 0.5 Nm	Screw terminal - max. torque 0.8 Nm	Pluggable 12 way screw terminal	
Conductor size (stranded)	2.5 mm ²	4 mm ²	2.5 mm ²	
Earth connection	M6 stud - max. torque 0.5 Nm	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 - max. torque 0.6 Nm	
Case Material	FR Polymer UL-94 V-0			
Weight: - Unit	0.08 kg	0.08 kg	0.1 kg	
- Packaged (per 10)	0.85 kg	0.85 kg	1.3 kg	
Dimensions	See diagram below			

⁽¹⁾ Nominal voltage (RMS/DC or AC peak) measured at < 200 μA

⁽²⁾ Maximum working voltage (RMS/DC or AC peak) measured at < 10 mA

⁽³⁾ The maximum transient voltage let-through of the protector throughout 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)





Telecoms Systems

Protection for PBX systems (OVR KT series)	3/2
Protection for telecoms systems with RJ11 connections (OVR TN series)	3/4
Protection for ISDN telecom systems with RJ45 connections (OVR ISDN series)	3/4
Protection for 2 Wire telecom systems standard (OVR TN)	3/6
Protection for 2 Wire telecom systems slim format (OVR SLTN)	3/6
Ultra compact 8 Wire protector for four of 2 wire telecom systems	3/6

Telecoms & computer line protection

OVR KT & KE Series

3



Combined Category D, C, B tested protector (to BS EN 61643) suitable for use on ten line LSA-PLUS disconnection modules to PBX telephone exchanges, ISDN and other telecoms equipment with LSA-PLUS disconnection modules. For use at boundaries up to LPZ 0 to protect against flashover (typically the service entrance location) through to LPZ 3 to protect sensitive electronic equipment.

Features & benefits

- Low cost protection for large numbers of data and signal lines
- 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
- Colour of housing distinguishes electrically different protectors - avoids confusion when installed together on the same distribution frame
- Quick and easy plug-in installation, with 'bump' location feedback
- Under power line cross conditions /PTC versions offer safe disconnection during fault duration. Unit auto-resets once fault corrected
- At larger installations OVR K10T1 and OVR K10T1/PTC provide all in one protection for all ten lines on LSA-PLUS disconnection modules
- Use the OVR KE10 to provide trouble free earthing for up to ten OVR KT1 and OVR KT1/PTC (per disconnection module)
- OVR K10T1 and OVR K10T1/PTC have an integral earth connection, and an external M4 earth bush for use with non-metallic LSA-Plus frames
- OVR KT1/PTC and OVR K10T1/PTC have resettable overcurrent protection and are rated for power cross faults
- OVR KT1, OVR KT1/PTC, OVR K10T1 and OVR K10T1/PTC are suitable for telecoms applications in accordance with Telcordia and ANSI Standards

Application

- For PSTN (e.g POTS, dial-up, lease line, T1/E1, *DSL and Broadband) and U interface ISDN lines, use OVR KT1 (or OVR KT1/PTC) and OVR K10T1 (or OVR K10T1/PTC)
- Protect single lines with OVR KT1 or OVR KT1/PTC
- Protect all ten lines on a disconnection module with OVR K10T1 or OVR K10T1/PTC

Installation

Install protectors on all lines that enter or leave each building (including extensions to other buildings). Identify the lines requiring protection and plug-in the protector (ensuring the correct orientation) for a series connection. Plug OVR K10T1 or OVR K10T1/PTC directly into each disconnection module requiring protection.

OVR KT1 and OVR KT1/PTC must be installed via the OVR KE10 earth bar. Clip an OVR KE10 on to the disconnection module and plug an OVR KT1 or OVR KT1/PTC in to each line on the module that needs protecting. In the unlikely situation that the protector is damaged, it will sacrifice itself and fail short circuit, taking the line out of commission, indicating it needs replacing and preventing subsequent transients from damaging equipment.

For further information on global telephony applications, see separate Application Note OVR AN005 (contact us for a copy).

NOTE: For individual telephone lines and lines at unmanned sites the high performance OVR TN or plug-in OVR TN/JP or OVR TN/RJ11 Series should be used. For plug-in S/T interface ISDN protection, use the ISDN Series protectors.

Telecoms & computer line protection

OVR KT & KE Series

OVR KT & KE Series - Technical specification

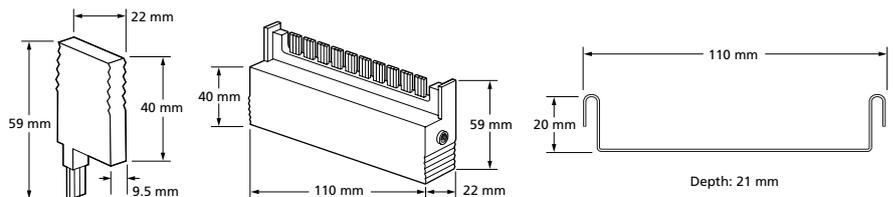
Electrical specification	OVR KT1	OVR KT1/PTC	OVR K10T1	OVR K10T1/PTC	
ABB order code	7TCA085400R0305; 7TCA085400R0306; 7TCA085400R0307; 7TCA085400R0410				
Maximum working voltage $U_c^{(1)}$	- line to line - line to earth	296 V 296 V	296 V 296 V	296 V 296 V	
Current rating (signal)	300 mA	145 mA	300 mA	145 mA	
In-line resistance (per line $\pm 10\%$)	4.4 Ω				
Bandwidth (-3 dB 50 Ω system)	20 MHz				
Transient specification	OVR KT1	OVR KT1/PTC	OVR K10T1	OVR K10T1/PTC	
Let-through voltage (all conductors)⁽²⁾ Up					
C2 test 4 kV 1.2/50 μ s, 2 kA 8/20 μ s to	- line to line	395 V	395 V	395 V	395 V
BS EN/EN/IEC 61643-21	- line to earth	395 V	395 V	395 V	395 V
C1 test 1 kV, 1.2/50 μ s, 0.5 kA 8/20 μ s to	- line to line	390 V	390 V	390 V	390 V
BS EN/EN/IEC 61643-21	- line to earth	390 V	390 V	390 V	390 V
B2 test 4 kV 10/700 μ s to	- line to line	298 V	298 V	298 V	298 V
BS EN/EN/IEC 61643-21	- line to earth	298 V	298 V	298 V	298 V
5 kV, 10/700 μ s ⁽³⁾	- line to line - line to earth	300 V 300 V	300 V 300 V	300 V 300 V	27 V 80 V
Maximum surge current⁽⁴⁾					
D1 test 10/350 μ s to	- line to line	1 kA			
BS EN/EN/IEC 61643-21:	- line to earth	2 kA			
8/20 μ s to ITU-T K.45:2003,	- line to line	5 kA			
IEEE C62.41.2:2002:	- line to earth	10 kA			
Power Faults specification	OVR KT1	OVR KT1/PTC	OVR K10T1	OVR K10T1/PTC	
Power/Line Cross and Power Induction - tests to: ITU-T (formerly CCITT) K.20, K.21 and K.45, Telcordia GR-1089-CORE, Issue 2:2002, UL 60950/IEC 950					
Power/line cross	-	110/230 Vac (15 min)	-	110/230 Vac (15 min)	
Power induction	-	600 V, 1 A (0.2 sec)	-	600 V, 1 A	
Mechanical specification	OVR KT1, OVR KT1/PTC		OVR K10T1, OVR K10T1/PTC		OVR KE10
Temperature range	-40 to +80 $^{\circ}$ C				-
Connection type	To LSA-PLUS disconnection modules (BT part number 237A)				-
Earth connection	Via OVR KE10 earth bar		Via integral earth clip/external M4 bush		-
Material	FR Polymer UL-94 V-0				Stainless Steel
Weight: - Unit	0.01 kg		0.10 kg		0.01 kg
- Packaged	0.12 kg (per 10)		0.12 kg		0.10 kg (per 10)
Dimensions	See diagram below				

⁽¹⁾ Maximum working voltage (DC or AC peak) at 10 μ A for OVR KT1, OVR KT1/PTC, OVR K10T1, OVR K10T1/PTC

⁽²⁾ 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

⁽³⁾ 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)

⁽⁴⁾ The installation and connections external to the protector may limit the capability of the protector



Telecoms & computer line protection

OVR TN/RJ11 & ISDN/RJ45 Series

3



LPZ 0 → 3	FULL MODE Bonding + Equipment Protection	SIGNAL/ TELECOM TEST CAT D + C + B	ENHANCED Low let-through voltage	LOW IN-LINE RESISTANCE 4.4 Ω	CURRENT RATING 300 mA
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Combined Category D, C, B tested protector (to BS EN 61643) suitable to protect telephony equipment plugged into a Modem (RJ11) or ISDN (RJ45) socket. For use at boundaries up to LPZ 0 to protect against flashover (typically the service entrance location) through to LPZ 3 to protect sensitive electronic equipment.

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
- Substantial earth connection to enable effective earthing
- Supplied in a sturdy ABS housing ready for flat mounting, or vertically via TS35 'Top Hat' DIN rail
- OVR TN/RJ11-2/6, OVR TN/RJ11-4/6 and OVR TN/RJ11-6/6 are suitable for telecommunication applications in accordance with Telcordia and ANSI Standards (see Application Note OVR AN005)

Application

- For PSTN (e.g. POTS, dial-up, lease line, T1/E1, *DSL and Broadband) use TN/RJ11
- OVR TN/RJ11... are suitable for use on telephone lines with a maximum (or ringing) voltage of up to 296 Volts
- For telephone lines with RJ11 connections protect the middle 2 (of 6) conductors with OVR TN/RJ11-2/6, the middle 4 (of 6) with OVR TN/RJ11-4/6 or all 6 with OVR TN/RJ11-6/6
- For S/T interface ISDN lines, use OVR ISDN/RJ45-4/8 and OVR ISDN/RJ45-8/8
- For S/T interface ISDN lines with RJ45 connections protect the middle 4 (of 8) conductors (paired 3&6, 4&5) with OVR ISDN/RJ45-4/8, or all 8 (outside pairs 1&2, 7&8) with OVR ISDN/RJ45-8/8

For further information on RJ45 ISDN applications, see separate Application Note OVR AN002 and for global telephony applications, see separate Application Note OVR AN005 (contact us for a copy).

Installation

Connect in series with the telephone or ISDN line. These units are usually installed close to the equipment being protected and within a short distance of a good electrical earth.

Accessories

- OVR CAT5e/UTP-1**
1 metre cable with RJ45 connections

Plug-in series connection for OVR TN/RJ11-2/6, 4/6 & 6/6



Plug-in series connection for OVR ISDN/RJ45-4/8 & 8/8



NOTE: For non-ISDN wire-in applications the high performance OVR TN, OVR SLTN or OVR TNQ can be used. Protect PBX telephone exchanges and other equipment with LSA-PLUS connections using OVR KT series.

Telecoms & computer line protection

OVR TN/RJ11 & ISDN/RJ45 Series

OVR TN/RJ11 & ISDN/RJ45 Series - Technical specification

Electrical specification	OVR TN/ RJ11-2/6	OVR TN/ RJ11-4/6	OVR TN/ RJ11-6/6	OVR ISDN/ RJ45-4/8	OVR ISDN/ RJ45-8/8	
ABB order code	7TCA085400R0337	7TCA085400R0338	7TCA085400R0339	7TCA085460R0359	7TCA085460R0360	
Nominal voltage	296 V	296 V	296 V	5 V	5 V/58 V ⁽²⁾	
Maximum working voltage $U_c^{(1)}$	296 V	296 V	296 V	58 V	58 V	
Current rating (signal)	300 mA					
In-line resistance (per line $\pm 10\%$)	4.4 Ω					
Bandwidth (-3 dB 50 Ω system)	20 MHz	20 MHz	20 MHz	19 MHz	19 MHz	
Transient specification	OVR TN/ RJ11-2/6	OVR TN/ RJ11-4/6	OVR TN/ RJ11-6/6	OVR ISDN/ RJ45-4/8	OVR ISDN/ RJ45-8/8	
Let-through voltage (all conductors)⁽³⁾ Up						
C2 test 4 kV 1.2/50 μ s, 2 kA 8/20 μ s to	– line to line	395 V	395 V	395 V	28 V	28 V/88 V ⁽⁵⁾
BS EN/EN/IEC 61643-21	– line to earth	395 V	395 V	395 V	88 V	88 V
C1 test 1 kV, 1.2/50 μ s, 0.5 kA 8/20 μ s to	– line to line	390 V	390 V	390 V	23 V	23 V/63 V ⁽⁵⁾
BS EN/EN/IEC 61643-21	– line to earth	390 V	390 V	390 V	63 V	63 V
B2 test 4 kV 10/700 μ s to	– line to line	298 V	298 V	298 V	26 V	26 V/65 V ⁽⁵⁾
BS EN/EN/IEC 61643-21	– line to earth	298 V	298 V	298 V	65 V	65 V
5 kV, 10/700 μ s ⁴	– line to line	300 V	300 V	300 V	27 V	27 V/80 V ⁽⁵⁾
	– line to earth	300 V	300 V	300 V	80 V	80 V
Maximum surge current⁽⁶⁾						
D1 test 10/350 μ s to BS EN/EN/IEC 61643-21	1 kA					
8/20 μ s to ITU-T K.45:2003, IEEE C62.41.2:2002:	10 kA					
Mechanical specification	OVR TN/ RJ11-2/6	OVR TN/ RJ11-4/6	OVR TN/ RJ11-6/6	OVR ISDN/ RJ45-4/8	OVR ISDN/ RJ45-8/8	
Temperature range	-40 to +80 °C					
Connection type	RJ11 plug and socket	RJ11 plug and socket	RJ11 plug and socket	RJ45 plug and socket	RJ45 plug and socket	
Earth connection	M4/DIN rail					
Case Material	FR Polymer UL-94 V-0					
Weight: – Unit	0.15 kg					
– Packaged	0.2 kg					
Dimensions	See diagram below					

⁽¹⁾ Maximum working voltage (DC or AC peak) measured at < 10 μ A leakage for OVR TN/RJ11 products and < 5 μ A for OVR ISDN/RJ45 products

⁽²⁾ Maximum working voltage is 5 V for pairs 3/6 & 4/5, and 58 V for pairs 1/2 & 7/8

⁽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)

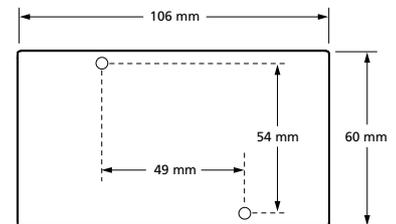
⁽⁵⁾ The first let-through voltage value is for pairs 3/4 & 5/6, and the second value is for pairs 1/2 & 7/8

⁽⁶⁾ The installation and connectors external to the protector may limit the capability of the protector

OVR ISDN/RJ45-4/8, 8/8
cable length: 0.5 m



OVR TN/RJ11-2/6, 4/6, 6/6
cable length: 1 m



Depth: 24 mm
Fixing centres 49 x 54 mm, M3 clearance

Data & signal protection

OVR TN, TNQ & SL TN Series

3



FULL MODE Bonding + Equipment Protection	OVR SLTN ULTRA SLIM 7 mm WIDTH	LPZ 0→3	ENHANCED Low let-through voltage	OVR TNQ ULTRA COMPACT 18 mm WIDTH
SIGNAL/TELECOM TEST CAT D + C + B	LOW IN-LINE RESISTANCE	HIGH BANDWIDTH		

Combined Category D, C, B tested protector (to BS EN 61643) specifically designed for telecommunications applications in accordance with Telcordia and ANSI standards (see Application Note OVR AN005). 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 TN format, or compact OVR TNQ and Slim Line OVR SL TN 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
- 20 MHz bandwidth greatly exceeds VDSL2+ (50Mbps ~ 7MHz) maximum speeds
- Low in-line resistance minimizes reductions in signal strength
- Built-in DIN rail foot for simple mounting to top hat DIN rails
- Convenient earthing through DIN foot and/or earth terminal
- OVR TN can be flat mounted on base or side
- OVR TN and OVR TNQ have colour coded terminals for quick and easy installation check
- OVR SL TN has ultra slim 7 mm width ideal for compact protection of large numbers of lines (e.g. process control installations)
- OVR SL TN 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 TN includes optional LED status indication (add L suffix to part number - i.e. OVR SL TNL)

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 TN:
OVR SLTN/M
Standard module replacement

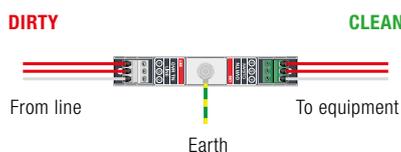
Combined Mounting/Earthing kits for OVR RS485:

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

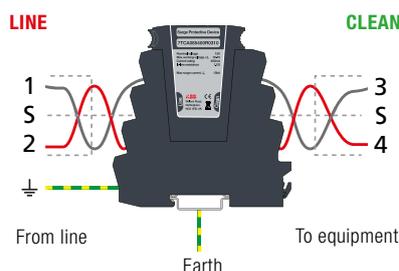
If protectors cannot be incorporated within an existing panel or enclosure, OVR WBX enclosures are available for up to 4, 8, 16 or 32 protectors and their associated OVR CME kit.

Weatherproof enclosure:
OVR WBX SLQ (OVR SLTN and OVR TNQ)

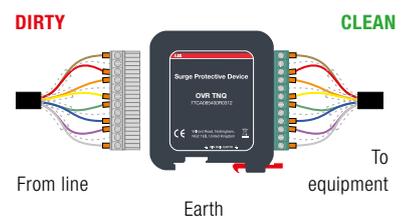
OVR TN installed in series



OVR SL TN installed in series



OVR TNQ installed in series (in-line)



NOTE: The OVR KT Series is also available for telecommunications application using LSA-PLUS disconnection modules. Plug-in solutions are also available for RJ11 connections (see OVR TN RJ11 Series).

Data & signal protection

OVR TN, TNQ & SL TN Series

OVR TN, TNQ & SL TN Series - Technical specification

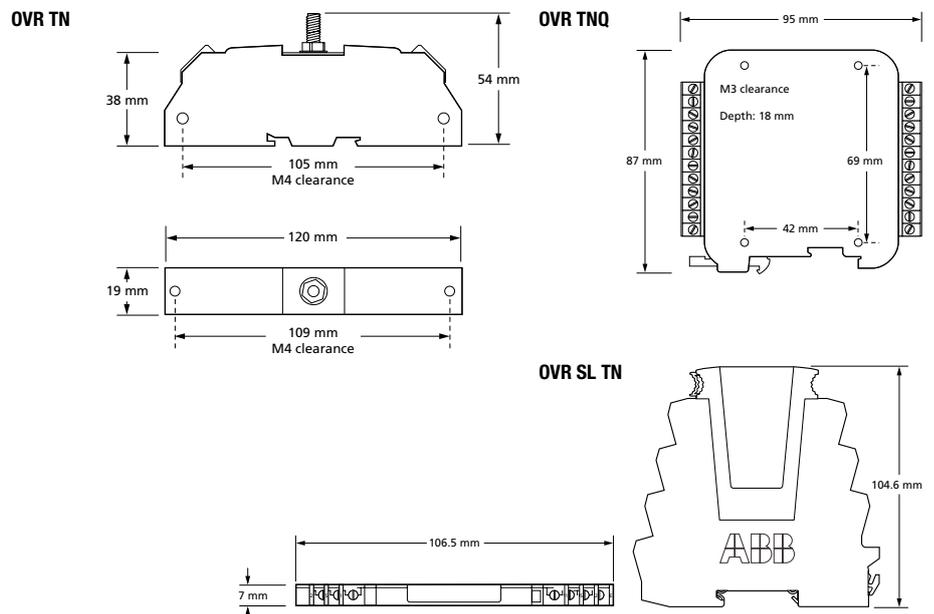
Electrical specification	OVR TN	OVR SL TN , OVR SL TNL	OVR TNQ	
ABB order code	7TCA085400R0345	7TCA085400R0323, 7TCA085400R0418	7TCA085400R0344	
Nominal voltage ⁽¹⁾	–			
Maximum working voltage U _c (RMS/DC) ⁽²⁾	– / 296 V			
Current rating (signal)	300 mA			
In-line resistance (per line ±10%)	4.4 Ω			
Bandwidth (-3 dB 50 Ω system)	20 MHz			
Transient specification	OVR TN	OVR SL TN , OVR SL TNL	OVR TNQ	
Let-through voltage (all conductors)⁽³⁾ Up				
C2 test 4 kV 1.2/50 μs, 2 kA 8/20 μs to BS EN/EN/IEC 61643-21	395 V			
C1 test 1 kV, 1.2/50 μs, 0.5 kA 8/20 μs to BS EN/EN/IEC 61643-21	390 V			
B2 test 4 kV 10/700 μs to BS EN/EN/IEC 61643-21	298 V			
5 kV, 10/700 μs ⁽⁴⁾	300 V			
Maximum surge current				
D1 test 10/350 μs to BS EN/EN/IEC 61643-21:	– Per signal wire	2.5 kA	1.25 kA	2.5 kA
8/20 μs 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 TN	OVR SL TN , OVR SL TNL	OVR TNQ	
Temperature range	-40 to +80 °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			

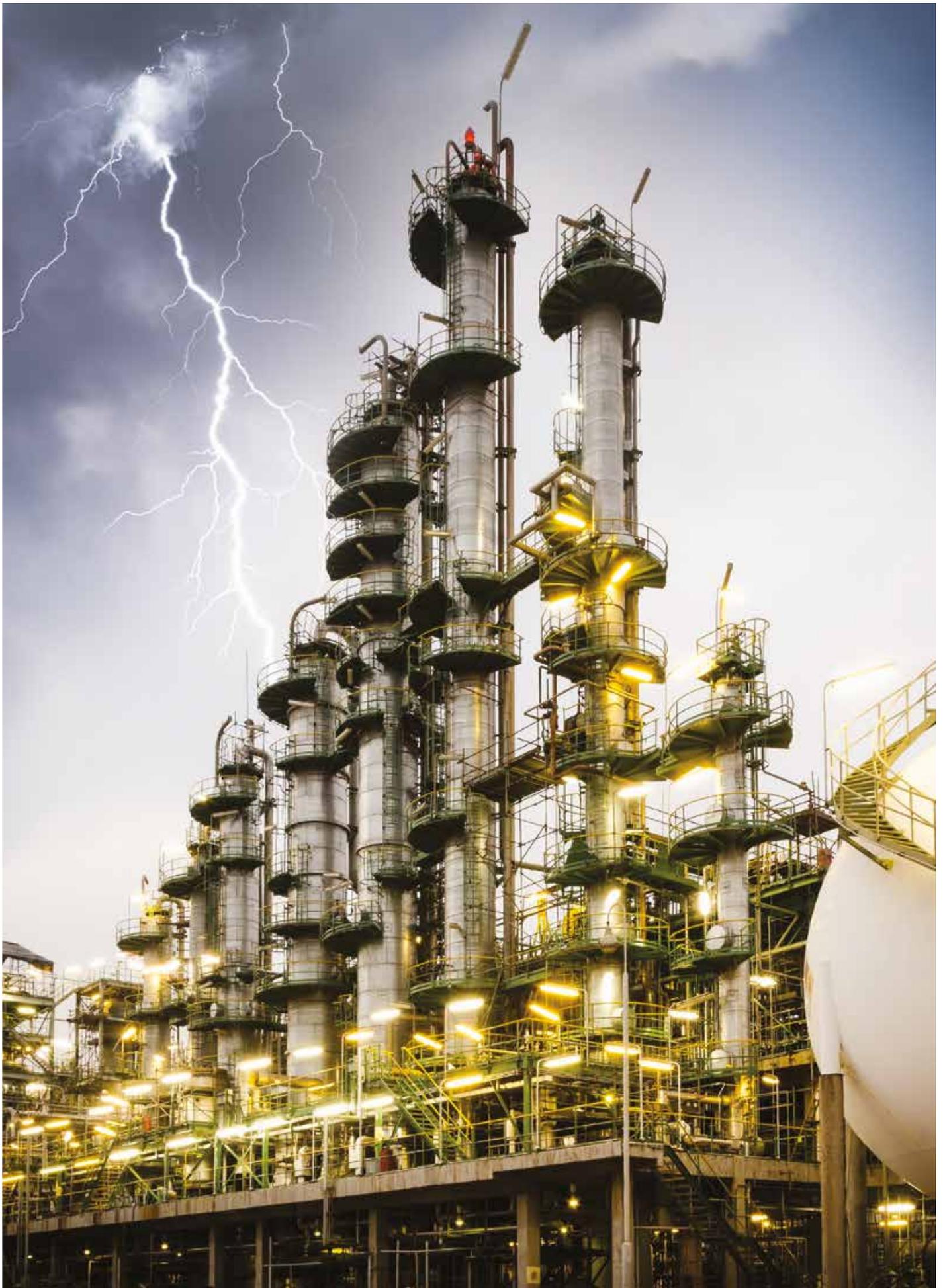
⁽¹⁾ Nominal voltage (RMS/DC or AC peak) measured at < 10 μA

⁽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 (±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)





Information Technology Systems

Protection for up to Cat 6 + PoE systems (OVR Cat-6 series)	4/2
Protection for RS485/HART/Profibus systems (OVR RS485 series)	4/4

Telecom & computer line protection

OVR Cat-5 & Cat-6 Series



LPZ 0→3	FULL MODE Bonding + Equipment Protection	SIGNAL/ TELECOM TEST CAT D + C + B	ENHANCED Low let-through voltage	LOW IN-LINE RESISTANCE 1.5 Ω	HIGH CURRENT RATING	PoE+ Compliant IEEE 802.3at	PoE Modes A & B
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Combined Category D, C, B tested protector (to BS EN 61643) suitable to protect twisted pair Ethernet networks, including Power over Ethernet (PoE), with RJ45 connections. For use at boundaries up to LPZ 0 to protect against flashover (typically the service entrance location) through to LPZ 3 to protect sensitive electronic equipment.

4

Features & benefits

- Suitable for systems signalling on up to eight wires of either shielded or unshielded twisted pair cable
- Very low let-through voltage (enhanced protection to IEC/BS EN 62305) between all lines - Full Mode design capable of handling partial lightning currents as well as allowing continual operation of protected equipment
- Repeated protection in lightning intense environments
- Unlike some competing devices, the ethernet SPDs provide effective protection without impairing the system's normal operation
- Low capacitance circuitry prevents the start-up signal degradation associated with other types of network protector
- Low in-line resistance minimizes unnecessary reductions in signal strength to maximize signalling distance
- Sturdy ABS housing with convenient holes for flat mounting, or vertically via TS35 'Top Hat' DIN rail
- Substantial earth connection to enable effective earthing
- Will protect all PoE powering modes A and B.

Application

Use these protectors on network cables that travel between buildings to prevent damage to equipment, e.g. computers, servers, repeaters and hubs. Suitable for computer networks up to Cat-6A cabling.

- To protect up to 100baseT networks with Cat-5/Cat-5e cabling use OVR Cat-5e
- To protect up to 1000baseT/ 10GbaseT networks with Cat-6/Cat-6A cabling use OVR Cat-6

- To protect up to 100baseT Power over Ethernet (PoE) networks with Cat-5/Cat-5e use OVR Cat-5e/PoE
- To protect up to 1000baseT/ 10GbaseT Power over Ethernet (PoE) networks with Cat-6/Cat-6A cabling use OVR Cat-6/PoE

For further application information, see separate Application Note OVR AN004 (contact us for a copy).

Installation

Connect in series with the network cable, either:

- Near to where it enters or leaves the building, or
- As it enters the network hub, or
- Close to the equipment being protected

This should be close to the system's earth star point (to enable a good connection to earth).

Accessories

OVR CAT5e/UTP-1

1 metre cable with unshielded RJ45 connections

OVR CAT6/STP-2

2 metre screened cable with shielded RJ45 connections

Plug-in series connection



TECHNICAL NOTE:

The interfaces used in Ethernet networks incorporate an isolation transformer which gives these systems an inbuilt immunity to transients between line and earth of 1,500 Volts or more.

NOTE: To protect datacomms systems based on twisted pairs, use the OVR D, E or H Series. Local protection for networked equipment is also available.

Telecom & computer line protection

OVR Cat-5 & Cat-6 Series

OVR Cat-5 & Cat-6 Series - Technical specification

Electrical Specification	OVR Cat-5e	OVR Cat-5e/PoE	OVR Cat-6	OVR Cat-6/PoE
ABB order code	7TCA085400R0289	7TCA085400R0290	7TCA085400R0291	7TCA085400R0292
Maximum working voltage $U_c^{(1)}$	5 V	58 V	–	58 V
Current rating	300 mA	600 mA ⁽⁴⁾	300 mA	600 mA ⁽⁴⁾
In-line resistance (per line $\pm 25\%$)	1.5 Ω	1.5 Ω	–	–
Maximum data rate	100 Mbps	100 Mbps	1000 Mbps	1000 Mbps
Networking standards:	10/100baseT	10/100baseT	10/100/1000/10GbaseT	10/100/1000/10GbaseT
	TIA Cat-5e	TIA Cat-5/PoE	TIA Cat-6	TIA Cat-6
	IEEE 802.3i	IEEE 802.3i	IEEE 802.3i	IEEE 802.3i
	IEEE 802.3u	IEEE 802.3u	IEEE 802.3u	IEEE 802.3u
	–	IEEE 802.3af	IEEE 802.3ab	IEEE 802.3ab
	–	IEEE 802.3at	IEEE 802.3an	IEEE 802.3an
	–	–	–	IEEE 802.3af
	–	–	–	IEEE 802.3at
Transient specification	OVR Cat-5e	OVR Cat-5e/PoE	OVR Cat-6	OVR Cat-6/PoE
Let-through voltage (all conductors)⁽⁶⁾ Up				
C2 test 4 kV 1.2/50 μ s, 2 kA 8/20 μ s to BS EN/EN/IEC 61643-21	120 V	120 V/116 V ⁽⁶⁾	120 V	120 V/116 V ⁽⁶⁾
C1 test 1 kV, 1.2/50 μ s, 0.5 kA 8/20 μ s to BS EN/EN/IEC 61643-21	74 V	74 V/95 V ⁽⁶⁾	74 V	74 V/95 V ⁽⁶⁾
B2 test 4 kV 10/700 μ s to BS EN/EN/IEC 61643-21	21 V	21 V/87 V ⁽⁶⁾	21 V	21 V/87 V ⁽⁶⁾
5 kV, 10/700 μ s ⁽⁷⁾	25 V	25 V/90 V ⁽⁶⁾	25 V	25 V/90 V ⁽⁶⁾
Maximum surge current⁽⁹⁾				
D1 test 10/350 μ s to BS EN/EN/IEC 61643-21	1 kA			
8/20 μ s to ITU-T K.45:2003, IEEE C62.41.2:2002	10 kA			
Mechanical specification	OVR Cat-5e, OVR Cat-5e/PoE		OVR Cat-6, OVR Cat-6/PoE	
Temperature range	-40 to +80 °C			
Connection type	RJ45 sockets			
Cable (supplied)	0.5 m Cat-5e UTP patch lead		0.5 m Cat-6 STP patch lead	
Earth connection	M4/DIN rail			
Case Material	FR Polymer UL-94 V-0			
Weight: – Unit	0.15 kg			
– Packaged	0.2 kg			
Dimensions	See diagram below			

⁽¹⁾ Maximum working voltage (DC or AC peak) measured at 1 mA leakage

⁽²⁾ Data pairs 1/2 and 3/6 are protected as standard. Pairs 4/5 and 7/8 are also protected on Cat-6 barriers

⁽³⁾ PoE protectors transmit power Mode A and Mode B power

⁽⁴⁾ Based on 30W of transmitted PSE power, to IEEE 802.3at.

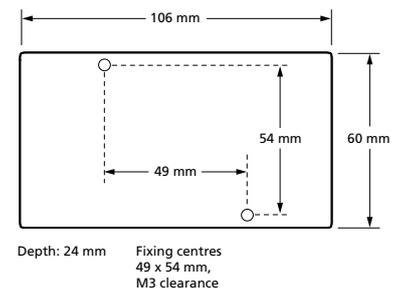
⁽⁵⁾ The maximum transient voltage let-through of the protector throughout the test ($\pm 10\%$), line to line & line to earth. Response time <10 ns (on all protected pairs)

⁽⁶⁾ The interfaces used in network systems incorporate an isolation transformer that inherently provides an inbuilt immunity to transients between line and earth of 1,500 Volts or more

⁽⁷⁾ Test to IEC 61000-4-5:2014, ITU-T (formerly CCITT) K.20, K.21 and K.45, Telcordia GR-1089-CORE, Issue 6:2011, ANSI TIA/EIA/IS-968-A:2005 (formerly FCC Part 68).

⁽⁸⁾ The first number is for the data pair, with the second number for the power pair

⁽⁹⁾ The installation and connectors may limit the capability of the protector



Data & signal protection

OVR RS485, RS485Q & SL RS485 Series

4



FULL MODE Bonding + Equipment Protection	OVR SL RS485 ULTRA SLIM 7 mm WIDTH	LPZ 0 → 3	ENHANCED Low let-through voltage	OVR RS485Q ULTRA COMPACT 18 mm WIDTH
SIGNAL/TELECOM TEST CAT D + C + B	LOW IN-LINE RESISTANCE	HIGH BANDWIDTH		

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

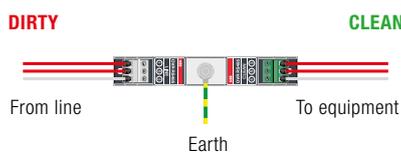
If protectors cannot be incorporated within an existing panel or enclosure, OVR WBX enclosures are available for up to 4, 8, 16 or 32 protectors and their associated OVR CME kit.

Combined Mounting/Earthing kits for OVR RS485:

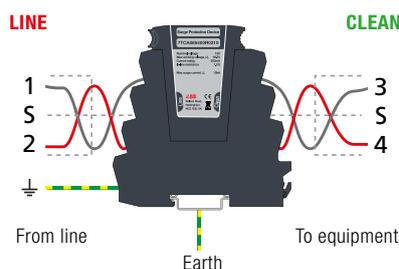
- OVR CME 4** For up to 4 x OVR RS485
- OVR CME 8** For up to 8 x OVR RS485
- OVR CME 16** For up to 16 x OVR RS485
- OVR CME 32** For up to 32 x OVR RS485

Weatherproof enclosure:
OVR WBX SLQ (OVR SL RS485 and OVR RS485Q)

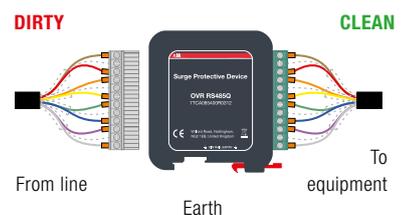
OVR RS485 installed in series



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.

Data & signal protection

OVR RS485, RS485Q & SL RS485 Series

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			

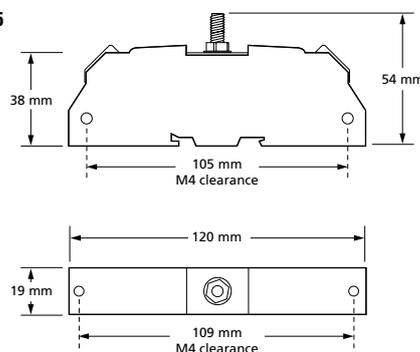
⁽¹⁾ Nominal voltage (RMS/DC or AC peak) measured at < 10 μ A

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

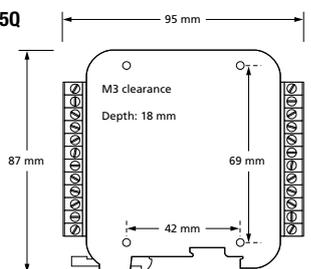
⁽³⁾ The maximum transient voltage let-through of the protector throughout the test ($\pm 10\%$), line to line & line to earth, both polarities. Response time < 10 ns

⁽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)

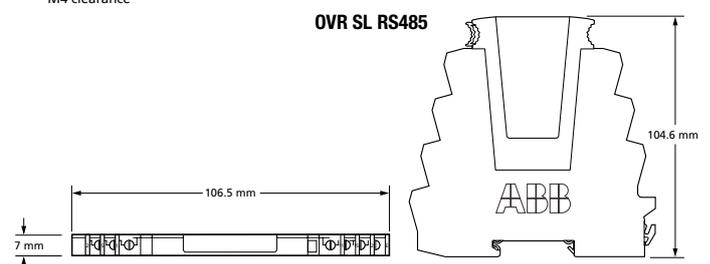
OVR RS485



OVR RS485Q



OVR SL RS485





Transceiver/CCTV Systems

Protection for RF systems (OVR RF series)	5/2
Protection for CCTV systems video lines (OVR CCTV series)	5/4
Protection for CCTV power lines (OVR 240-16A)	5/6
Protection for TV systems (OVR TV series)	5/8

Specific systems protection

OVR RF Series



FULL MODE
Bonding + Equipment Protection

LPZ
0 → 3

ENHANCED
Low let-through voltage

SIGNAL/TELECOM
TEST CAT D + C + B

HIGH
BANDWIDTH

Combined Category D, C, B tested protector (to BS EN 61643) suitable for RF systems using coaxial cables at frequencies between DC and 2.7 GHz and where DC power is present. Suitable for RF systems with power up to 1.9 kW. For use at boundaries up to LPZ 0 to protect against flashover (typically the service entrance location) through to LPZ 3 to protect sensitive electronic equipment.

5

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
- Wide bandwidth means a single product is suitable for a range of applications
- Very low attenuation and near unity VSWR over a wide range of frequencies ensure the protectors do not impair system performance
- Available with N, 7/16 DIN and BNC connectors
- Easily mounted and earthed via fixtures on the base of the unit that accept M3 and M5 screws or via mounting brackets
- Additional mounting plates give increased flexibility
- Robust aluminium housing

Application

Use on coaxial cables to protect RF transmitter and receiver systems, including electronics located at the antenna or dish. Typical examples include cell sites, military communications, satellite earth stations, pager systems and emergency services communications systems.

Installation

In a building, connect in series with the coaxial cable near where it enters or leaves the structure, or close to the equipment being protected. This should be as close as possible to the system's earth star point (to enable a good connection to earth). On a mast, connect in series with the coaxial cable near the antenna/dish being protected. Install in a radio communications room, an existing cabinet or a suitable enclosure.

Accessories

- | | |
|---|---|
| <p>OVR RF BK1 Straight mounting plates</p> <p>OVR RF BK2 90° angled mounting plates</p> <p>OVR RF BK3 Bulkhead through mounting plate (single)</p> | <p>OVR RF BK4 Bulkhead through mounting plate (for 4 products)</p> <p>OVR RF GDT-4 Replacement gas discharge tube</p> |
|---|---|

OVR RF 111421 with N female connectors installed in series



NOTE: These protectors are based on a continuous transmission line with a GDT connected between this line and screen/earth, and are suited for applications where DC is required to pass to the equipment. OVR CCTV/B and OVR CCTV/T are suitable for use on coaxial (or twisted pair) CCTV lines. For coaxial CATV lines, use the OVR CATV/F.

Specific systems protection

OVR RF Series

OVR RF Series - Technical specification

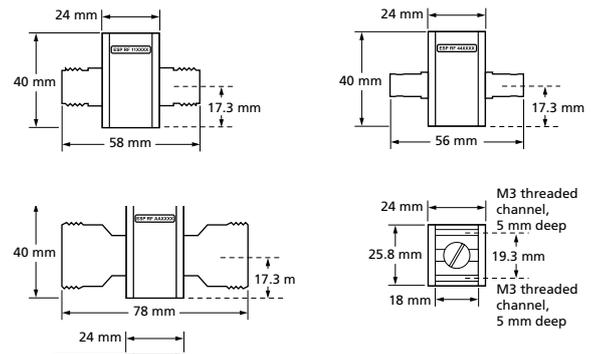
Electrical specification	OVR RF 111421, OVR RF AA1421, OVR RF 441421		
Gas Discharge Tube voltage	350 V		
Maximum working voltage U_c (RMS)	200 V		
Characteristic impedance	50 Ω		
Bandwidth	DC-2.7 GHz		
Voltage standing wave ratio	≤ 1.1		
Insertion loss over bandwidth	≤ 0.1 dB		
Maximum power ⁽¹⁾	650 W		
Transient specification	OVR RF 111421, OVR RF AA1421, OVR RF 441421		
Let-through voltage (all conductors)⁽²⁾ Up			
C2 test 4 kV 1.2/50 μ s, 2 kA 8/20 μ s to BS EN/EN/IEC 61643-21	< 800 V		
C1 test 1 kV 1.2/50 μ s, 0.5 kA 8/20 μ s to BS EN/EN/IEC 61643-21	< 650 V		
B2 test 4 kV 10/700 μ s to BS EN/EN/IEC 61643-21	< 550 V		
5 kV, 10/700 μ s ⁽³⁾	< 580 V		
Maximum surge current⁽⁴⁾			
D1 test 10/350 μ s to BS EN/EN/IEC 61643-21	2.5 kA		
8/20 μ s to ITU-T K.45:2003, IEEE C62.41.2:2002	20 kA		
Mechanical specification	OVR RF 111421	OVR RF AA1421	OVR RF 441421
ABB order code	7TCA085450R0065	7TCA085450R0063	7TCA085450R0066
Temperature range	-40 to +80 °C		
Connection type	N female	7/16 DIN female	BNC female
Conductor size (stranded)	Via mounting fixtures		
Case Material	Aluminium body, nickel plated. Brass connectors, white bronze plated		
Weight: – Unit	120 g	190 g	90 g
– Packaged	140 g	210 g	110 g
Dimensions	See diagram below		

⁽¹⁾ Power levels have been de-rated to allow for real life 'worst case' conditions, calculated with VSWR as 2:1

⁽²⁾ The maximum transient voltage let-through of the protector throughout the test ($\pm 10\%$) ($\pm 10\%$). Response time < 10 ns. This let-through voltage represents a deviation from the applied signal voltage, present at the time of the test

⁽³⁾ 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)

⁽⁴⁾ The installation and connections external to the protector may limit the capability of the protector



OVR RF BK1 (ABB order code: 7TCA085400R0416)

Straight mounting bracket, 53 x 26.3 x 3 mm

2 x M4 clearance mounting holes, 16.3 mm apart

OVR RF BK2 (ABB order code: 7TCA085400R0064)

90° mounting bracket, 33 x 26.3 x 3 mm, 20 x 26.3 x 3 mm

2 x M4 clearance mounting holes, 16.3 mm apart, 14 mm from fold line

OVR RF BK3 (ABB order code: 7TCA085400R0412)

90° mounting bracket, 50 x 24 x 1.5 mm, 60 x 24 x 1.5 mm

2 x M5 clearance mounting holes, 40 mm apart

OVR RF BK4 (ABB order code: 7TCA085400R0413)

90° quad mounting bracket, 50 x 24 x 1.5 mm, 210 x 24 x 1.5 mm

5 x M5 clearance mounting holes, various spacings

Mounting brackets supplied with screws for fixing to protector

Specific systems protection

OVR CCTV Series



LPZ 0 → 3	FULL MODE Bonding + Equipment Protection	HIGH BANDWIDTH	SIGNAL/ TELECOM TEST CAT D + C + B	ENHANCED Low let-through voltage
LOW IN-LINE RESISTANCE 1 Ω	CURRENT RATING 300 mA			

Combined Category D, C, B tested protector (to BS EN 61643) suitable for coaxial CCTV cables with BNC connectors (OVR CCTV/B) or twisted pair CCTV lines (OVR CCTV/T) on systems with either an earthed or an isolated screen. Not suitable for use on broadcast, satellite or cable TV systems. For use at boundaries up to LPZ 0 to protect against flashover (typically the service entrance location) through to LPZ 3 to protect sensitive electronic equipment.

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
- 100 MHz bandwidth prevents the degradation of high frequency signals
- Low in-line resistance to minimize unnecessary reductions in signal strength and maximizes signalling distance
- Very low reflection coefficient/VSWR ensure that the protector doesn't disrupt system operations

- Suitable for either earthed or isolated screen systems
- Sturdy, conductive ABS housing for 2 way shielding - preventing emissions & providing signals with immunity from external interference
- Convenient holes for flat mounting on base or side
- Built-in DIN rail foot for easy installation on a top hat DIN rail
- OVR CCTV/T has colour coded terminals for a quick and easy installation check - grey for the dirty (line) end and green for the clean end
- Substantial earth stud to enable effective earthing
- Integral earthing plate for enhanced connection to earth via OVR CME kit

Application

Use these protectors on the video cable to outdoor CCTV cameras and central control and monitoring equipment.

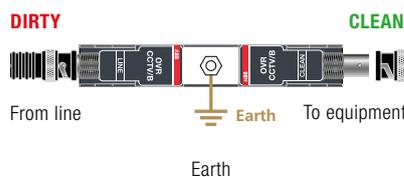
Installation

Connect in series with the CCTV cable in a convenient place close to the equipment being protected. For outdoor CCTV cameras, protectors should be mounted in the junction box, or in a separate enclosure, close to the camera. Protect central control and monitoring equipment inside the building by installing protectors on all incoming or outgoing lines, either: a) near where they enter or leave the building, or b) close to the equipment being protected (or actually within its control panel).

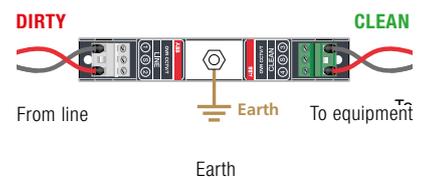
Accessories

When CCTV protectors are installed in groups, or alongside protectors for signal and mains power lines, these can be mounted and earthed simultaneously on a OVR CME kit. An OVR CME 4 will accommodate the video, telemetry and power protectors to a camera. 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. The OVR WBX 4/GS is a secure IP66 enclosure suitable for a OVR CME 4 and associated protectors.

Series connection for OVR CCTV/B



Series connection for OVR CCTV/T



NOTE: Camera telemetry or control lines should be protected with a suitable Lightning Barrier from the OVR D or E Series. Protectors for the power supply to individual cameras (e.g. OVR 240-16A) and the mains supply to the control room are available. For coaxial RF (OVR RF Series) cable protectors and CATV systems (OVR CATV/F) are also available.

Specific systems protection

OVR CCTV Series

OVR CCTV Series - Technical specification

Electrical specification	OVR CCTV/B	OVR CCTV/B-15V	OVR CCTV/B-30V	OVR CCTV/B-50V	OVR CCTV/T	OVR CCTV/T-15V	OVR CCTV/T-30V	OVR CCTV/T-50V
ABB order code	7TCA085400R0296	7TCA085400R0297	7TCA085400R0299	7TCA085400R0300	7TCA085400R0301	7TCA085400R0302	7TCA085400R0298	7TCA085400R0303
Nominal voltage ⁽¹⁾ (peak-peak)	1 V				2 V			
Maximum working voltage U_c ⁽²⁾ (peak)	7.79 V	16.7 V	36.7 V	56.7 V	7.79 V	16.7 V	36.7 V	56.7 V
Current rating (signal)	300 mA							
In-line resistance ($\pm 10\%$)	1 Ω inserted in coax inner				1 Ω per line			
Bandwidth (-3 dB 75 Ω system) ⁽³⁾	> 100 MHz							
Voltage standing wave ratio	< 1.2:1							
Transient specification	OVR CCTV/B	OVR CCTV/B-15V	OVR CCTV/B-30V	OVR CCTV/B-50V	OVR CCTV/T	OVR CCTV/T-15V	OVR CCTV/T-30V	OVR CCTV/T-50V
Let-through voltage (all conductors)⁽⁴⁾ Up								
C2 test 4 kV 1.2/50 μ s, 2 kA 8/20 μ s to BS EN/EN/IEC 61643-21	39.5 V	55.0 V	78.0 V	105.0 V	39.5 V	55.0 V	78.0 V	105.0 V
C1 test 1 kV 1.2/50 μ s, 0.5 kA 8/20 μ s to BS EN/EN/IEC 61643-21	26.0 V	42.0 V	66.5 V	93.5 V	26.0 V	42.0 V	66.5 V	93.5 V
B2 test 4 kV 10/700 μ s to BS EN/EN/IEC 61643-21	16.0 V	27.2 V	47.5 V	73.6 V	16.0 V	27.2 V	47.5 V	73.6 V
5 kV, 10/700 μ s ⁽⁵⁾	17.0 V	28.2 V	49.5 V	76.2 V	17.0 V	28.2 V	49.5 V	76.2 V
Maximum surge current⁽⁶⁾								
D1 test 10/350 μ s to BS EN/EN/IEC 61643-21: - Per signal wire	2.5 kA				2.5 kA			
- Per pair	-				5 kA			
8/20 μ s to ITU (formerly CCITT): - Per signal wire	10 kA				10 kA			
- Per pair	-				20 kA			
Mechanical specification	OVR CCTV/B variants				OVR CCTV/T variants			
Temperature range	-40 to +80 °C							
Connection type	Coaxial BNC female				Screw terminal			
Conductor size (stranded)	Not applicable				2.5 mm ²			
Earth connection	M6 stud							
Case Material	ABS UL94 V-0				ABS UL94 V-0			
Weight: - Unit	0.08 kg							
- Packaged	0.9 kg							
Dimensions	See diagram below							

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

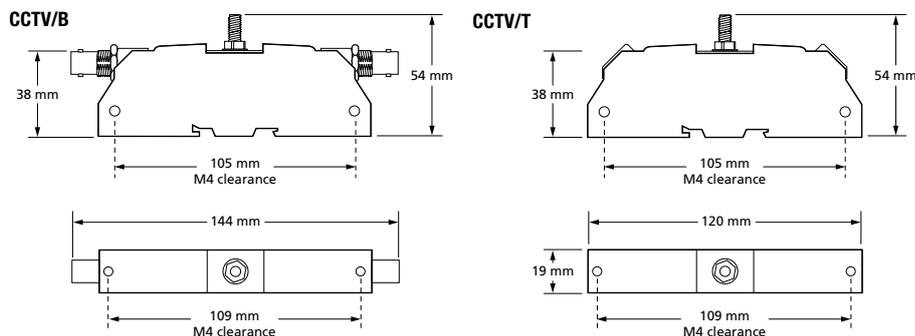
⁽²⁾ Maximum working voltage (DC or AC peak) measured at 5 mA leakage

⁽³⁾ Capacitance < 30 pF

⁽⁴⁾ The maximum transient voltage let-through of the protector throughout the test ($\pm 10\%$), line to line & line to earth. Screen to earth let-through voltage will be up to 600 V (with 5 kV 10/700 test), when protector is configured for use with non-earthed or isolated screen systems. Response time < 10 ns

⁽⁵⁾ 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)

⁽⁶⁾ The installation and connectors external to the protector may limit the capability of the protector



Mains power protection

OVR 240-16A



Combined Type 2 and 3 tested protector (to BS EN 61643) for use on low current (up to 16 A) single phase systems to protect connected electronic equipment from transient overvoltages on the mains supply, e.g. CCTV systems, fire/intruder alarm panels.

5

Features & benefits

- Very low let-through voltage (enhanced protection to IEC/BS EN 62305) between all sets of conductors (phase to neutral, phase to earth, neutral to earth - Full Mode protection) allowing continuous operation of equipment
- Repeated protection in lightning intense environments
- Compact size for easy incorporation in the protected system
- Removable DIN rail foot for simple clip-on mounting to top hat DIN rails
- Colour coded terminals give a quick and easy installation check - grey for the dirty (line) end and green for the clean end
- Robust housing and substantial earth stud fixing holes ready for flat mounting
- Maintenance free

Application

Use these protectors on low current mains power supplies, e.g. CCTV cameras, alarm panels and telemetry equipment.

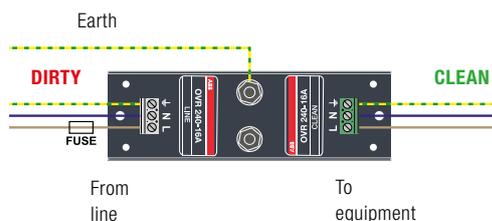
Installation

Connect in-line with the power supply usually either within the equipment panel (or for CCTV cameras, in an enclosure close by), or on the fused connection that supplies equipment. To protect equipment inside a building from transients entering on an outgoing feed (e.g. to CCTV cameras or to site lighting) the protector should be installed as close to where the cable leaves the building as possible. Protectors should be installed either within an existing cabinet/cubicle or in a separate enclosure.

Accessories

If several OVR 240-16A protectors are to be installed together, or if one is in use alongside OVR SPDs for video or signal lines, these can be simultaneously mounted and earthed on a OVR CME kit and housed in a suitable OVR WBX enclosure.

Connect in-line on supplies fused up to 16 A. Note how the protector can also be earthed from its earth stud.



Mains power protection

OVR 240-16A

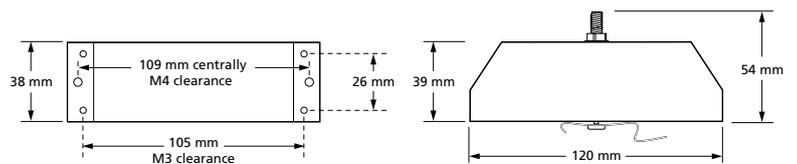
OVR 240-16A - Technical specification

Electrical specification	OVR 240-16A
ABB order code	7TCA085460R0361
Nominal voltage - Phase-Neutral U_0 (RMS)	240 V
Maximum voltage - Phase-Neutral U_c (RMS)	280 V
Working voltage (RMS)	200-280 V
Frequency range	47-63 Hz
Current rating (supply)	16 A or less
Max. back-up fuse (see installation instructions)	≤ 16 A
Leakage current (to earth)	< 0.5 mA
Transient specification	OVR 240-16A
Type 2 (BS EN/EN), Class II (IEC)	
Nominal discharge current 8/20 μ s (per mode) I_n	5 kA
Let-through voltage U_p at $I_n^{(1)}$	750 V
Maximum discharge current I_{max} (per mode) ⁽²⁾	10 kA
Type 3 (BS EN/EN), Class III (IEC)	
Let-through voltage at U_{oc} of 6 kV 1.2/50 μ s and I_{sc} of 3 kA 8/20 μ s (per mode) ^(1,3)	600 V
Electrical specification	OVR 240-16A
Temperature range	-40 to +80 °C
Connection type	Screw terminal - maximum torque 0.5 Nm
Conductor size (stranded)	4 mm ²
Earth connection	Via M6 stud or earth terminal - maximum torque 0.5 Nm
Degree of protection (IEC 60529)	IP20
Case material	Steel
Weight: – Unit	0.23 kg
– Packaged	0.25 kg
Dimensions	See diagrams below

⁽¹⁾ The maximum transient voltage let-through of the protector throughout the test ($\pm 10\%$), phase to neutral, phase to earth and neutral to earth

⁽²⁾ The electrical system, external to the unit, may constrain the actual current rating achieved in a particular installation

⁽³⁾ Combination wave test within IEC/BS EN 61643, IEEE C62.41-2002 Location Cats C1 & B3, SS 555:2010, AS/NZS 1768-2007, UL 1449 mains wire-in



Specific systems protection

OVR TV Series



Combined Category D, C, B tested protector (to BS EN 61643) suitable to protect Cable, Terrestrial and Satellite TV systems. For use on lines running within buildings at boundaries up to LPZ 0 to through to LPZ 3 to protect sensitive electronic equipment.

5

Features & benefits

- Very low let-through voltage (enhanced protection to IEC/BS EN 62305) between all lines - Full Mode protection
- Low attenuation and high return loss over a wide range of frequencies ensures the protectors do not impair system performance
- Substantial earth termination
- Supplied ready for flat mounting
- Strong metal housing

Application

Use to protect analogue and digital Cable, Terrestrial and Satellite TV installations. OVR CATV/F, OVR MATV/F, OVR SMATV/F and OVR TV/F are suitable for systems using F connectors. OVR TV/EURO is suitable for systems using EURO-TV connectors.

- For protecting terrestrial antenna feeds use OVR TV/F or OVR TV/EURO
- For protecting satellite feeds use OVR SMATV/F

- For protecting distributed combined TV feeds use OVR MATV/F
- For protecting cable TV feeds use OVR CATV/F

For further information on TV applications, see separate Application Note OVR AN006 (contact us for a copy).

Installation

Connect in series with the coaxial cable either near where it enters or leaves each building or close to equipment being protected.



NOTE: Protectors for coaxial (or twisted pair) CCTV Lines are available. For coaxial RF lines, use the OVR RF Series. Transients can also be conducted into TV systems via the mains power supplies - use suitable OVR mains protection.

Specific systems protection

OVR TV Series

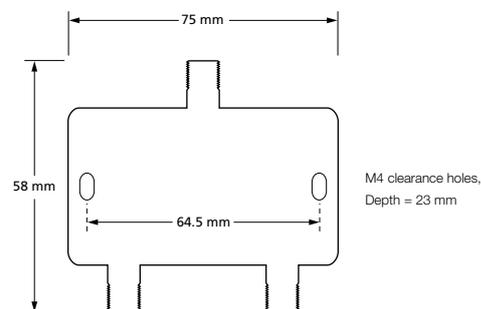
OVR TV Series - Technical specification

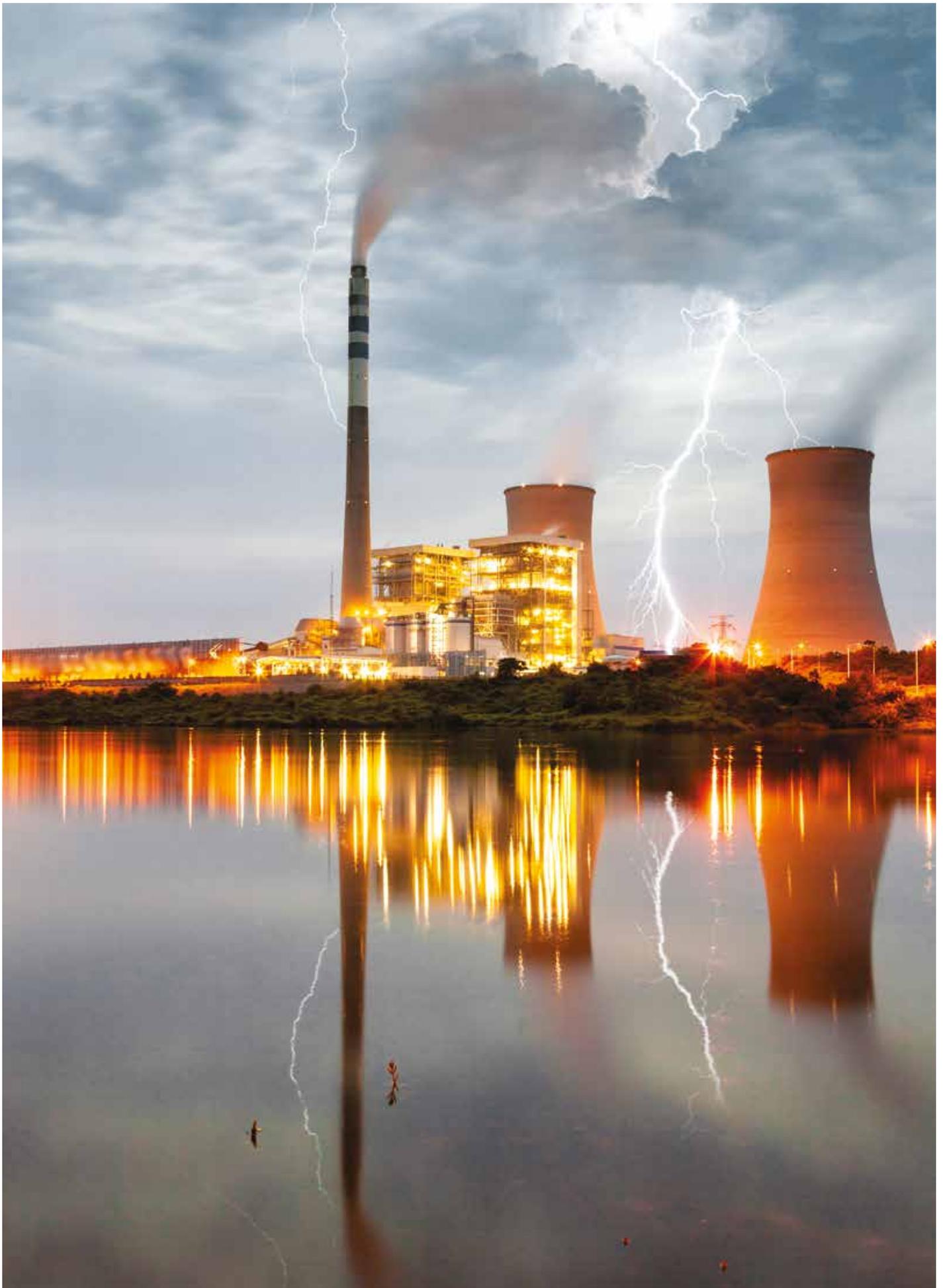
Electrical specification	OVR CATV/F	OVR MATV/F	OVR SMATV/F	OVR TV/F	OVR TV/EURO
ABB order code	7TCA085400R0293	7TCA085400R0308	7TCA085400R0336	7TCA085400R0335	7TCA085400R0334
Maximum working voltage ⁽¹⁾	140 V	18.9 V	18.9 V	6.4 V	6.4 V
Maximum operating current	4 A	800 mA	800 mA	300 mA	300 mA
Characteristic impedance	75 Ω				
Bandwidth	5-860 MHz	5-3224 MHz	860-3224 MHz	5-860 MHz	5-860 MHz
Insertion loss:					
– 5-860 MHz	< 0.5 dB	< 0.3 dB	–	< 0.3 dB	< 0.3 dB
– 860-2150 MHz	–	< 1.5 dB	< 1.5 dB	–	–
– 2150-3224 MHz	–	< 2.2 dB	< 2.2 dB	–	–
Return loss (VSWR):					
– 5-860 MHz	> 20 dB (< 1.2:1)	> 32 dB (< 1.05:1)	–	> 32 dB (< 1.05:1)	> 32 dB (< 1.05:1)
– 860-2150 MHz	–	> 20 dB (< 1.2:1)	> 20 dB (< 1.2:1)	–	–
– 2150-3224 MHz	–	< 2.2 dB	< 2.2 dB	–	–
Transient specification	OVR CATV/F	OVR MATV/F	OVR SMATV/F	OVR TV/F	OVR TV/EURO
Let-through voltage (all conductors)⁽²⁾ Up					
C2 test 4 kV 1.2/50 μs, 2 kA 8/20 μs to BS EN/EN/IEC 61643-21	270 V	70 V	70 V	65 V	65 V
C1 test 1 kV 1.2/50 μs, 0.5 kA 8/20 μs to BS EN/EN/IEC 61643-21	265 V	60 V	60 V	50 V	50 V
B2 test 4 kV 10/700 μs to BS EN/EN/IEC 61643-21	245 V	45 V	45 V	30 V	30 V
5 kV, 10/700 μs ⁽³⁾	250 V	50 V	50 V	35 V	35 V
Maximum surge current					
8/20 μs to ITU-T K.45:2003, IEEE C62.41.2:2002	3 kA				
D1 test 10/350 μs to BS EN/EN/IEC 61643-21	500 A	750 A	750 A	750 A	750 A
Mechanical specification	OVR CATV/F	OVR MATV/F	OVR SMATV/F	OVR TV/F	OVR TV/EURO
Temperature range	-40 to +80 °C				-40 to +80 °C
Connection type	F female				Euro-TV
Earth connection	~ 9.5 mm (3/8") diameter earth stud				~ 9.5 mm (3/8") diameter earth stud
Case Material	Diecast				Diecast
Weight: – Unit	0.14 kg				0.14 kg
– Packaged	0.15 kg				0.15 kg
Dimensions	See diagram below				

⁽¹⁾ Maximum working voltage (DC or AC peak) measured at < 5 μA (OVR CATV/F) and < 50 mA (OVR MATV/F, OVR SMATV/F, OVR TV/EURO, OVR TV/F)

⁽²⁾ The maximum transient voltage let-through of the protector throughout the test (±10%) line to earth. Response time < 10 ns

⁽³⁾ 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)





Enclosures and Accessories

Weather proof enclosures (OVR WBX series)	6/2
Combined Mounting and Earthing kits (OVR CME series)	6/3
OVR SL replacement base/modules, OVR RF accessories and OVR cable assemblies (RJ45)	6/4

Protector accessories

OVR WBX Series



OVR WBX Series

A range of moisture and dirt resistant enclosures for the convenient installation of any OVR protector. For signalling applications they can be used with their associated OVR CME with grey base and either a see-through or grey (part number /G or /GS) lid.

Features & benefits

- Tough polycarbonate enclosures
- Weatherproof with IP resistance to dirt and water of IP56 or more
- Clear lid enables easy visual inspection of the protector's visual status indication (OVR WBX 4, OVR WBX 8)
- Grey lid for applications not needing regular protector inspection (OVR WBX 4/GS, OVR WBX 8/GS and OVR WBX 16/2/G)
- For external CCTV and other installations requiring added security the OVR WBX 4/GS and OVR WBX 8/GS are supplied with an opaque lid and special secure head screws (plus tool)
- Supplied complete with metal base (mounting) plate with pre-prepared mounting positions and fixing hardware for easy installation

Application

Use OVR WBX enclosures when your OVR protector(s) can't be installed within the existing equipment panel or enclosure and for added protection in damp and dirty environments.

OVR WBX Series

Installation

The protector(s), or OVR CME kit, are mounted on the metal base plate, which in turn mounts in the enclosure.

OVR WBX Series - Technical specification

Enclosure part no.	For use with following protectors
OVR WBX 4 or the secure OVR WBX 4/GS	1 OVR CME 4 and associated protectors
OVR WBX 8 or the secure OVR WBX 8/GS	1 OVR CME 8 and associated protectors
OVR WBX 16/2/G	1 or 2 OVR CME 16 and associated protectors
OVR WBX SLQ or OVR WBX SLQ/G	Up to 6 x OVR**Q, or up to 15 x OVR SL**

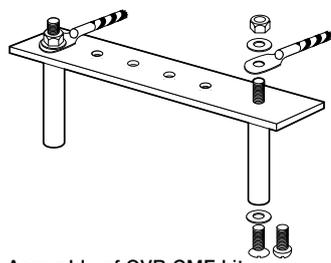
	OVR WBX 4 OVR WBX 4/GS	OVR WBX 8 OVR WBX 8/GS	OVR WBX 16/2/G	OVR WBX SLQ OVR WBX SLQ/G
ABB Order Code	7TCA085410R0048 7TCA085410R0049	7TCA085410R0050 7TCA085410R0051	7TCA085410R0047	7TCA085400R0326 7TCA085400R0327
Weight: – Unit	0.9 kg	1.3 kg	6.4 kg	0.7 kg
– Packaged	0.95 kg	1.35kg	7.6 kg	1.0 kg
Dimensions:				
Length: – Internal	246 mm	225 mm	460 mm	230 mm
– External	255 mm	235 mm	474 mm	250 mm
Width: – Internal	171 mm	225 mm	380 mm	105 mm
– External	180 mm	235 mm	396 mm	125 mm
Depth: – Internal	119 mm	100 mm	120 mm	110 mm
– External	125 mm	117 mm	128 mm	125 mm
Fixing centres (mm)	240 x 165	215 x 215	380 x 310	235 x 110
IP rating	IP66	IP66	IP56	IP67
Temperature range	-15 to +75 °C	-15 to +75 °C	-25 to +60 °C	-40 to +80 °C
Flammability	UL 94 V2	UL 94 V2	UL 94 V0	UL 746C 5V

Protector accessories

OVR CME Series



OVR CME Series



Assembly of OVR CME kit
Earth connection (not supplied)

OVR CME Series

Enables groups of protectors to be simultaneously mounted and earthed via their earth stud. Suitable for installing protectors with one or two earth studs on their top face. Available with 4, 8, 16 and 32 mounting holes.

Features & benefits

- Enables quick and easy installation of protectors for added convenience
- Speedy installation of groups of protectors saves time and money
- Individual protectors can be changed without needing to remove others
- Sturdy construction
- Supplied with a choice of flat and round ended fixing screws to suit your application

Application

Use OVR CME kits to simultaneously mount and earth groups of single and double earth stud protectors. Each single earth stud protector requires one OVR CME mounting position and each double earth stud protector requires two OVR CME mounting positions, this includes:

- High conductivity copper with electro-tin plating and nylon insulating pillars, for low impedance to earth

Single earth stud protectors which are:

- | | | | |
|------------|------------|------------|--------------|
| - OVR 06D | - OVR 06E | - OVR 06H | - OVR TN |
| - OVR 15D | - OVR 15E | - OVR 15H | - OVR RTD |
| - OVR 30D | - OVR 30E | - OVR 30H | - OVR CCTV/B |
| - OVR 50D | - OVR 50E | - OVR 50H | - OVR CCTV/T |
| - OVR 110D | - OVR 110E | - OVR 110H | - OVR RS485 |

Double earth stud protectors which are:

- OVR 240-16A

Once you know how many OVR CME mounting positions you require choose a OVR CME kit to suit:

- OVR CME 4 has 4 mounting positions
- OVR CME 8 has 8 mounting positions
- OVR CME 16 has 16 mounting positions
- OVR CME 32 has 32 mounting positions

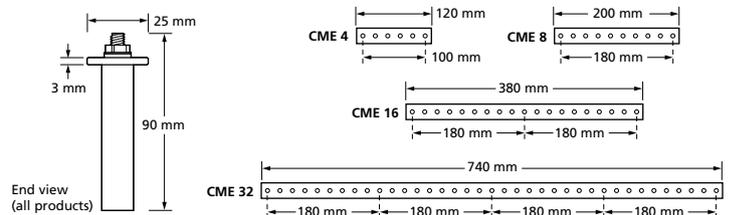
Accessories

Enclosures suitable for a OVR CME 4 and its associated protectors:

(OVR WBX 4/GS), OVR CME 8 and protectors **(OVR WBX 8/GS)** or one or two **OVR CME 16** and protectors **(OVR WBX 16/2/G)**

Installation

The earth bar is supported by a series of mounting pillars (which are fixed to the cubicle or box base). Protectors are attached to the OVR CME's earth bar via their earth stud(s) and earthed with shared connections to earth. We suggest one earth connection per mounting pillar.



OVR CME Series - Technical specification

	OVR CME 4	OVR CME 8	OVR CME 16	OVR CME 32
ABB order code	7TCA085400R0414	7TCA085400R0415	7TCA085410R0045	7TCA085410R0046
Hole size	6.5 mm with 20 mm spacings			
Weight	0.1 kg	0.15 kg	0.3 kg	0.6 kg
Dimensions	See diagram opposite			

Protector accessories

Accessories



Slim Line replacement base/module

Slim Line replacement base/module

Replacement: Base & module for the Slim Line Series of protectors

Part no.	Description
Slim Line protector replacement base	
OVR SL/B	For use with standard and 4-20 mA Slim Line Series
OVR SL/I/B	Isolated screen version for use with standard and 4-20 mA Slim Line Series
OVR SLX/B	For use with Slim Line Intrinsically Safe (ATEX) Series
OVR SLX/I/B	Isolated screen version for use with Slim Line Intrinsically Safe (ATEX) Series
OVR SL/3W/B	For use with Slim Line 3-wire Series
OVR SLRTD/B	For use with Slim Line RTD Series
OVR SL RS485/B	For use with Slim Line RS485 Series

Slim Line protector replacement module

OVR SLXX/M	For use with Slim Line Series - replace 'XX' with relevant voltage, i.e. 06, 15, 30, 50, 110
OVR SLTN/M	For use with Slim Line TN Series
OVR SL15X/M	For use with Slim Line Intrinsically Safe (ATEX) Series, 15 V
OVR SL30X/M	For use with Slim Line Intrinsically Safe (ATEX) Series, 30 V
OVR SLRTD/M	For use with Slim Line RTD Series
OVR SLRS485/M	For use with Slim Line RS485 Series

Slim Line LED protector replacement module

OVR SLXXL/M	For use with Slim Line LED Series - replace 'XX' with relevant voltage, i.e. 06, 15, 30, 50, 110
OVR SL30L/4-20/M	For use with Slim Line LED Series, 4-20 mA
OVR SL15XL/M	For use with Slim Line Intrinsically Safe (ATEX) LED Series, 15 V
OVR SL30XL/M	For use with Slim Line Intrinsically Safe (ATEX) LED Series, 30 V
OVR SLXX/3W/M	For use with Slim Line 3-wire LED Series – replace 'XX' with relevant voltage, i.e. 06, 15, 30, 50, 110
OVR SLTNL/M	For use with Slim Line TN LED Series



Cable assembly

Use with: OVR ISDN/RJ45-*/8 or OVR Cat-5e or OVR Cat-6 protector range

Part no.	Description	Length
OVR CAT5e/UTP-1	Cable assembly for OVR Cat-5e with unshielded RJ45 connections	1 m
OVR CAT6/STP-2	Cable assembly for OVR Cat-6 with shielded RJ45 connections	2 m

Cable assembly with RJ45 connections for the OVR ISDN/RJ45-4/8 or OVR ISDN/RJ45-8/8 plug-in ISDN protectors for use if the standard 0.5 m cable is insufficient



OVR RF mounting plates

OVR RF mounting plates

Use with: Any ESP RF protector to assist installation

Part no.	Description
OVR RF BK1	Straight Mounting plate
OVR RF BK2	90° Mounting plate
OVR RF BK3	Bulkhead through mounting plate (single)
OVR RF BK4	Bulkhead through mounting plate (4 protectors)



OVR RF GDT-4

OVR RF GDT-4

Replacement: Gas Discharge Tubes for use with standard RF protectors

Part no.	Description	Voltage
OVR RF GDT-4	Gas Discharge Tube	350 V

Part number index – OVR data & telecom SPDs

Alphanumeric product list

Part No.	ABB order code
OVR 06D	7TCA085400R0288
OVR 06E	7TCA085400R0346
OVR 06H	7TCA085400R0355
OVR 06Q	7TCA085400R0333
OVR 110D	7TCA085400R0347
OVR 110E	7TCA085400R0348
OVR 110H	7TCA085400R0356
OVR 110Q	7TCA085400R0343
OVR 15D	7TCA085400R0349
OVR 15E	7TCA085400R0350
OVR 15H	7TCA085400R0357
OVR 15Q	7TCA085400R0340
OVR 240-16A	7TCA085460R0361
OVR 30D	7TCA085400R0351
OVR 30E	7TCA085400R0353
OVR 30H	7TCA085400R0358
OVR 30Q	7TCA085400R0341
OVR 50D	7TCA085400R0352
OVR 50E	7TCA085400R0354
OVR 50H	7TCA085400R0359
OVR 50Q	7TCA085400R0342
OVR CAT-5E	7TCA085400R0289
OVR CAT-5E/POE	7TCA085400R0290
OVR CAT-5E/UTP-1	7TCA085400R0294
OVR CAT-6	7TCA085400R0291
OVR CAT-6/POE	7TCA085400R0292
OVR CAT6/STP-2	7TCA085400R0295
OVR CATV/F	7TCA085400R0293
OVR CCTV/B	7TCA085400R0296
OVR CCTV/B-15V	7TCA085400R0297
OVR CCTV/B-30V	7TCA085400R0299
OVR CCTV/B-50V	7TCA085400R0300
OVR CCTV/T	7TCA085400R0301
OVR CCTV/T-15V	7TCA085400R0302
OVR CCTV/T-30V	7TCA085400R0298
OVR CCTV/T-50V	7TCA085400R0303
OVR CME16	7TCA085410R0045
OVR CME32	7TCA085410R0046
OVR CME4	7TCA085400R0414
OVR CME8	7TCA085400R0415
OVR ISDN/RJ45-4/8	7TCA085460R0359
OVR ISDN/RJ45-8/8	7TCA085460R0360
OVR K10T1	7TCA085400R0307
OVR K10T1/PTC	7TCA085400R0410
OVR KE10	7TCA085400R0304
OVR KT1	7TCA085400R0305
OVR KT1/PTC	7TCA085400R0306
OVR MATV/F	7TCA085400R0308

Part No.	ABB order code
OVR RF 111421	7TCA085450R0065
OVR RF 441421	7TCA085450R0066
OVR RF AA1421	7TCA085450R0063
OVR RF BK1	7TCA085400R0416
OVR RF BK2	7TCA085450R0064
OVR RF GDT-4	7TCA085400R0309
OVR RF-BK3	7TCA085400R0412
OVR RF-BK4	7TCA085400R0413
OVR RS485	7TCA085400R0311
OVR RS485Q	7TCA085400R0312
OVR RTD	7TCA085400R0313
OVR RTDQ	7TCA085400R0314
OVR SL 3W/B	7TCA085400R0319
OVR SL RS485/B	7TCA085400R0316
OVR SL RS485/M	7TCA085400R0317
OVR SL RTD/B	7TCA085400R0318
OVR SL/B	7TCA085400R0320
OVR SL/I/B	7TCA085400R0321
OVR SL06	7TCA085400R0360
OVR SL06/3W	7TCA085400R0328
OVR SL06/3W/M	7TCA085400R0405
OVR SL06/I	7TCA085400R0365
OVR SL06/M	7TCA085400R0375
OVR SL06L	7TCA085400R0366
OVR SL06L/I	7TCA085400R0390
OVR SL06L/M	7TCA085400R0399
OVR SL110	7TCA085400R0362
OVR SL110/3W	7TCA085400R0329
OVR SL110/3W/M	7TCA085400R0408
OVR SL110/I	7TCA085400R0385
OVR SL110/M	7TCA085400R0379
OVR SL110L	7TCA085400R0370
OVR SL110L/I	7TCA085400R0395
OVR SL110L/M	7TCA085400R0402
OVR SL15	7TCA085400R0361
OVR SL15/3W	7TCA085400R0330
OVR SL15/3W/M	7TCA085400R0406
OVR SL15/I	7TCA085400R0382
OVR SL15/M	7TCA085400R0376
OVR SL15L	7TCA085400R0367
OVR SL15L/I	7TCA085400R0391
OVR SL15L/M	7TCA085400R0411
OVR SL15X	7TCA085400R0386
OVR SL15X/I	7TCA085400R0388
OVR SL15X/M	7TCA085400R0380
OVR SL15XL	7TCA085400R0396
OVR SL15XL/I	7TCA085400R0389
OVR SL15XL/M	7TCA085400R0404

Part No.	ABB order code
OVR SL30	7TCA085400R0363
OVR SL30/3W	7TCA085400R0331
OVR SL30/3W/M	7TCA085400R0407
OVR SL30/I	7TCA085400R0383
OVR SL30/M	7TCA085400R0377
OVR SL30L	7TCA085400R0368
OVR SL30L/4-20	7TCA085400R0371
OVR SL30L/4-20/I	7TCA085400R0372
OVR SL30L/4-20/M	7TCA085400R0373
OVR SL30L/I	7TCA085400R0393
OVR SL30L/M	7TCA085400R0400
OVR SL30X	7TCA085400R0387
OVR SL30X/I	7TCA085400R0392
OVR SL30X/M	7TCA085400R0381
OVR SL30XL	7TCA085400R0397
OVR SL30XL/I	7TCA085400R0398
OVR SL30XL/M	7TCA085400R0403
OVR SL50	7TCA085400R0364
OVR SL50/3W	7TCA085400R0332
OVR SL50/3W/M	7TCA085400R0409
OVR SL50/I	7TCA085400R0384
OVR SL50/M	7TCA085400R0378
OVR SL50L	7TCA085400R0369
OVR SL50L/I	7TCA085400R0394
OVR SL50L/M	7TCA085400R0401
OVR SLRS485	7TCA085400R0310
OVR SLRTD	7TCA085400R0315
OVR SLRTD/M	7TCA085400R0322
OVR SLTN	7TCA085400R0323
OVR SLTNL	7TCA085400R0418
OVR SLTN/M	7TCA085400R0324
OVR SLX/B	7TCA085400R0325
OVR SLX/I/B	7TCA085400R0374
OVR SMATV/F	7TCA085400R0336
OVR TN	7TCA085400R0345
OVR TN/RJ11-2/6	7TCA085400R0337
OVR TN/RJ11-4/6	7TCA085400R0338
OVR TN/RJ11-6/6	7TCA085400R0339
OVR TNQ	7TCA085400R0344
OVR TV/EURO	7TCA085400R0334
OVR TV/F	7TCA085400R0335
OVR WBX SLQ	7TCA085400R0326
OVR WBX SLQ/G	7TCA085400R0327
OVR WBX16/2/G	7TCA085410R0047
OVR WBX4	7TCA085410R0048
OVR WBX4/GS	7TCA085410R0049
OVR WBX8	7TCA085410R0050
OVR WBX8/GS	7TCA085410R0051

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