Specific systems protection

OVR RF Series

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.

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.

Accessories

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

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.
OVR RF Series - Technical specification

**Electrical specification**

- **Gas Discharge Tube voltage**: 350 V
- **Maximum working voltage** Uc (RMS): 200 V
- **Characteristic impedance**: 50 Ω
- **Capacitance** (@ 1 MHz): < 5 pF
- **Bandwidth**: DC-2.7 GHz
- **Voltage standing wave ratio**: ≤ 1.1
- **Insertion loss over bandwidth**: ≤ 0.1 dB
- **Maximum power**: 650 W

**Transient specification**

- **Let-through voltage (all conductors)**:<sup>(1)</sup> Up
  - C2 test 4 kV 1.2/50 μs, 2 kA 8/20 μs to BS EN/EN/IEC 61643-21: < 800 V
  - C1 test 1 kV 1.2/50 μs, 0.5 kA 8/20 μs to BS EN/EN/IEC 61643-21: < 650 V
  - B2 test 4 kV 10/700 μs to BS EN/EN/IEC 61643-21: < 550 V
  - 5 kV, 10/700 μs:<sup>(2)</sup> Up: < 580 V
- **Maximum surge current**:<sup>(4)</sup>
  - D1 test 10/350 μs to BS EN/EN/IEC 61643-21: 2.5 kA

**Mechanical specification**

- **ABB order code**
  - OVR RF 111421: 7TCA085450R0065
  - OVR RF AA1421: 7TCA085450R0063
  - OVR RF 441421: 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

<sup>(1)</sup> Power levels have been de-rated to allow for real life ‘worst case’ conditions, calculated with VSWR as 2:1. Higher power levels are possible, contact ABB for details.

<sup>(2)</sup> The maximum transient voltage let-through of the protector throughout the test is ≤ 10%. Response time = 10 ns. This let-through voltage represents a deviation from the applied signal voltage, present at the time of the test.


<sup>(4)</sup> The installation and connections external to the protector may limit the capability of the protector.

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- **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.