INTRODUCTION

This document explains how to install ABB OVR Surge Protective Devices (SPDs) for RF communication installations:

OVR RF 111421 OVR RF AA1421 OVR RF 441421







1. Safety note:

Warning! Installation by person with electrotechnical expertise only.

Warnung! Installation nur durch elektrotechnische Fachkraft

Avvertenza! Fare installare solo da unelettricista qualificato.

Avertissement! Installation uniquement pardes personnes qualifiées en électrotechnique.

Advertencia! La instalación deberá ser realizada únicamente por electricistas especializados.

2. Before installation

2.1 Be sure that the OVR SPD's bandwidth will not restrict the system.

	Bandwidth
II OVR	DC-2700 MHz
F Series	

2.2 Check that signal loss caused by insertion of the unit does not interfere with normal system operation.

	Insertion Loss over Bandwidth	
All OVR	< 0.1 dB	
RF Series		

2.3 Ensure that the characteristic impedance of the OVR SPD matches that of the system on to which it is to be installed

	Impedance
All OVR	50 Ω
RF Series	

2.4 Ensure the system's maximum line voltage (RMS) never exceeds the maximum working voltage of the OVR SPD.

Otherwise the OVR SPD will clamp signal voltages as though they were transient overvoltages.

	Max RF Voltage		Man DE	
	VPEAK	VRMS	Max RF Power	
RFxx1421	280 V	200 V	650 W	

Where 'xx' in the table represents connector type (ie '11', '44', 'AA').

Note: Incorrect application may result in damage to the SPD and put the system at risk.

3. Installation

3.1 Series connection

ABB OVR SPDs are connected in series with the RF line.

The dirty, or line side of the OVR SPD should be connected to the cable carrying the incoming transient overvoltages.

The output or clean side of the SPD ensures a transient free signal to the equipment being protected (see Figures 1, 2 & 3).

3.2 SPD location

OVR SPDs are usually located either:

- (a) near to where the line requiring protection enters or leaves the building, or(b) close to the equipment being protected (or actually within its control panel).
- It is important that the OVR SPD's connection to earth (or SPD earth bond) is kept short (see Section 3.7 - Earthing).



Figure 1: OVR RF 111421.



Figure 2: OVR RF AA1421.

Note: Do NOT use power driven screwdrivers to make connections to OVR SPDs. Hand tighten only.

3.3 Enclose the SPD

OVR SPDs should be installed within a panel or enclosure. Ideally, the OVR SPD should be installed within an existing



Figure 3: OVR RF 441421.

fixture.



Figure 4:

OVR RF 111421 installed on a coaxial cable running between an antenna and a RF receiver. Note the earth lead (behind the cable tray) attached to the mounting

cabinet/cubicle or in an enclosure to the required IP rating.

Suitable enclosures are available from ABB. OVR SPDs should always be installed in a dry environment.

3.4 Fixing methods

OVR RF Series SPDs have two mounting options:

(a) Flat mounting

M3 serrated channels in the OVR SPD's base enable it to be fixed to flat surfaces (see Figure 4, overleaf).

(b) Bracket mounting

Four mounting brackets are available from ABB to enable easier and more flexible mounting:

Mounting facility

OVR RF BK1	Straight mounting bracket (1 unit)
OVR RF BK2	90º angled mounti bracket (1 unit)
OVR RF BK3	Bulkhead through mounting bracket (1 unit)
OVR RF BK4	Bulkhead through mounting bracket

Contact ABB for further information.

(4 units)

3.4 Line, clean, screen and earth connections

Cable wires should be terminated with a male type connector.

The line end of the OVR SPD should be connected to the dirty, incoming cable.

The clean end of the OVR SPD should be connected to the cable going to the protected equipment. Cable screens are earthed when connected to the unit (see Section 3.7 - Earthing).

Note: Do NOT use power driven screwdrivers to make connections to OVR SPDs. Hand tighten only.

3.5 Keep clean cables away from dirty cables

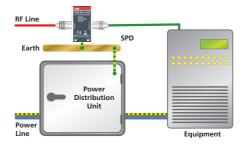
Cables connected to the OVR SPD's clean end should never be routed next to dirty line cables or dirty SPD earth bonds (see Figures 1, 2, and 3, overleaf).

If rows of OVR SPDs are installed close to each other, dirty line cables and earth bonds must be kept at least 5 cm apart from clean cables.

3.6 Earthing

Protectors for mains power supplies and OVR SPDs for RF lines should be connected to the same earth point. The OVR SPD should therefore Figure 5: If connection to the main electrical earth is not possible, the SPD can be connected to the earth local to the protected

equipment.



be bonded to the main electrical earth or earth star point.

The OVR SPD must be connected to earth by connecting a crimped earth cable via the M3 serrated channels or M5 caged nuts in the base of the unit.

Note: Most metal cable trays are insufficiently bonded together to form a good earth bond. A separate earth wire should still be used.

The SPD or base plate earth bond should be less than 1 m long (otherwise the effectiveness of the SPD will be reduced).

10 mm² stranded green/yellow cable should be used for this

SPD or base plate earth bonds of 2, 3 or 4 metres are allowed if:

 2, 3 or 4 parallel earth bonds are used and

bond

 these parallel earth bonds are kept at least 5 cm apart from each other Where even 4 metres of connecting lead is not sufficient, the incoming cable should be re-routed to bring it within 4 metres of the earth. In circumstances where the cable cannot be re-routed the OVR SPD can alternatively be

connected to the electrical earth local to the equipment being protected (eg the earth bar of the local power distribution board) (see Figure 5).

3.7 Replacement Gas Discharge Tube (GDT)

A replacement GDT is available (OVR RF GDT-4). Contact ABB for further advice.

Environment

Consider the protection of the environment! Used electrical and electronic equipment must NOT be disposed of with domestic waste. The device contains valuable raw materials which can be recycled. Therefore, contact ABB for disposal of this equipment.



OVR RF **1421 series

for RF communication Surge Protective Devices

INSTALLATION SNOITOUSTENI





Contact us

ABB Ltd

Tower Court Foleshill Enterprise Park Courtaulds Way Coventry CV6 5NX

Tel: 0333 999 9900 Fax: 0333 999 9901

E-Mail: LV.Enquiries@gb.abb.com

Twitter: @ABBUKLVP

www.abb.co.uk/lowvoltage

© Copyright 2018 ABB. All rights reserved. Specifications subject to change without notice.