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

OVRF 111421
OVRF AA4121
OVRF 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 par des 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.

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

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

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.

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).

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

... continued overleaf
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:

<table>
<thead>
<tr>
<th>Mounting facility</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>OVR RF BK1 Straight</td>
<td>1 unit</td>
</tr>
<tr>
<td>OVR RF BK2 90º angled</td>
<td>1 unit</td>
</tr>
<tr>
<td>OVR RF BK3 Bulkhead through</td>
<td>1 unit</td>
</tr>
<tr>
<td>OVR RF BK4 Bulkhead through</td>
<td>4 units</td>
</tr>
</tbody>
</table>

Contact ABB for further information.

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.

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).

3.5 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.

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 bond.

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
- these parallel earth bonds are kept at least 5 cm apart from each other

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 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.

Contact ABB for further advice.

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. It contains valuable raw materials which can be recycled. Therefore, contact ABB for disposal of this equipment.

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