1. Safety note:

**Warning!** Installation by person with electrotechnische expertise only.

**Warning!** Installation nur durch elektrotechnische Fachkraft.

**Avertissement!** Installare solo da un electricista 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 Check that the voltage drop caused by the resistance of the unit does not interfere with the normal operation of the system.

2.2 Be sure that the SPD’s bandwidth will not restrict the system bandwidth.

2.3 Ensure that the current passing through the SPD does not exceed.

<table>
<thead>
<tr>
<th></th>
<th>Normal Working Voltage</th>
<th>Maximum DC Working Voltage</th>
<th>Maximum AC Working Voltage</th>
</tr>
</thead>
<tbody>
<tr>
<td>OVR SL** Series</td>
<td>6 V</td>
<td>7.79 V</td>
<td>5 V</td>
</tr>
<tr>
<td>OVR SL**/L Series</td>
<td>15 V</td>
<td>16.7 V</td>
<td>11 V</td>
</tr>
<tr>
<td>OVR SL**/3W Series</td>
<td>30 V</td>
<td>36.7 V</td>
<td>25 V</td>
</tr>
<tr>
<td>OVR SL RTD</td>
<td>50 V</td>
<td>56.7 V</td>
<td>40 V</td>
</tr>
<tr>
<td>OVR SL TN</td>
<td>110 V</td>
<td>132 V</td>
<td>93 V</td>
</tr>
<tr>
<td>OVR SL 30/3L</td>
<td>6 V</td>
<td>7.79 V</td>
<td>5 V</td>
</tr>
<tr>
<td>OVR SL 30/3L/4-20</td>
<td>296 V</td>
<td>296 V</td>
<td>-</td>
</tr>
<tr>
<td>OVR SL 30/3L/4-20</td>
<td>30 V</td>
<td>36.7 V</td>
<td>25 V</td>
</tr>
<tr>
<td>OVR SL RS485</td>
<td>15 V</td>
<td>16.7 V</td>
<td>11 V</td>
</tr>
</tbody>
</table>

Note: Maximum current for reliable LED operation is 3 mA. Whilst the SPD functions at lower current ratings, the LED will not illuminate.

2.4 Make sure that the system’s maximum line voltage (DC or AC) will never exceed the maximum working voltage of the OVR SPD. Otherwise, the SPD will clamp signal voltages as though they were transient overvoltages.

3. Installation

3.1 Location

OVR SPDs are usually located either:

(a) Near to where the lines requiring protection enter or leave the building, or
(b) Close to the equipment being protected (or actually within its control panel)

Either way, it is important that the SPD’s connection to earth (or SPD earth bond) is kept short (see Section 3.7 - Earthing).

3.2 Enclose the SPD

OVR SPDs should be installed within a panel or enclosure. The OVR SPD should ideally be installed within an existing cabinet/cubicle or in an enclosure to the required IP rating.

3.3 Series connection

OVR SPDs are connected in-line (series) with the data communication, signal, measurement, or telephone line (see Figures 1a & 1b).

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 OVR SPD ensures a transient free signal to the equipment being protected.

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

3.4 Fixing methods

ABB OVR SPDs should be mounted on a 35 mm DIN rail to EN 50022.

The OVR SPD’s DIN rail release clip features a latchback mechanism to hold the clip off the rail for easy removal and adjustment whilst on the DIN rail. This release clip should be engaged using a terminal screwdriver or by hand by pulling the clip out and upwards in the housing (see Figures 3a & 3b).

Suitable enclosures are available from ABB.

OVR SPDs should always be installed in a dry environment.

3.5 Connections to line, clean, screen and earth terminals

The clean end of the OVR SPD should be connected to the cabling going to the protected equipment (see Figures 1a & 1b). Cable screens are connected to earth (OVR rail & earth terminal) via the terminals marked S, except the OVR **/3W Series & OVR SL RTD where the screen could be connected to the earth terminal marked E. The screw terminals should be tightened between 0.5-0.8 Nm torque (do not exceed 0.8 Nm).

Hand tighten connections only, do not use power driven screwdrivers.

The screw terminals will accommodate conductor of up to 4 mm². We recommend that these are terminated with a boot lace ferrule.

... continued overleaf
For isolated screen versions
For situations where the cable screen needs to be isolated from the local earth to avoid earth loops (e.g. fire alarm panels) the isolated screen version should be used (this has /I suffix in the part code e.g. OVR SL30/I). With isolated screen version should be used (this has /I suffix in the part code e.g. OVR SL30/I). With isolated screen version there is no connection in the absence of a transient overvoltage.

3.6 Keep clean cables away from dirty cables
Cables connected to the OVR SPD’s clean end should be kept at least 5 cm apart from dirty cables (see Figure 5).

Note: When using the DIN rail foot to provide the earth to the OVR SPD in conjunction with a base plate (i.e. DIN rail not directly bonded onto cabinet chassis) ensure the earth bond to the base plate (or DIN rail itself) is kept clear of the clean lines.

3.7 Earthing
OVR Protectors for mains power supplies and OVR SPDs for data/signaLphone 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. This connection should be made, either:
(a) Through installation on a 35 mm DIN rail (which in turn is connected to earth) (b) By connecting an earth cable to the OVR SPD via the unit’s earth terminal marked E (see Figures 1a & 1b)
The best way to ensure a good earth connection when using a DIN rail is to mount the DIN rail in a metal cabinet. The entire length of the DIN rail should be in contact with the metal of the cabinet (if the cabinet is painted this should be removed locally where the rail is to be mounted to give a good electrical connection).

The DIN rail should then be bonded to the cabinet at its mounting points and the chassis of the cabinet bonded to the main electrical earth or earth star point.

Alternatively if a non-metal housing is used the DIN rail should be bonded to a metal base plate. The base plate should then be bonded to the earth star point. The SPD or base plate earth bond should be less than 1 m long (otherwise the effectiveness of the OVR 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 m 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

Where even 4 m of connecting lead is not sufficient, the incoming line should be re-routed to bring it within 4 m of the earth.

In circumstances where the line cannot ideally be re-routed, the OVR SPD can alternatively be connected to the electrical earth local to the equipment being protected (see Figure 6).

3.8 Status indication (LED versions only)
ABB OVR Slim Line LED SPDs give a continuous visual display of their status, via a top-mounted green LED*, as follows:
- Green LED = Full protection, power on. Illuminated
- No light = NO PROTECTION/FAULT from LED
- Check power supply, fuses and connections. Replace module if fault remains.

* LED units designed for use on low current DC power supplies operate only on currents > 3 mA.

3.9 Maintenance/Spares
In the unlikely event of a failure, replacement modules are available, contact ABB sales on +44 (0)115 964 3700. If a replacement module is required please quote part number with a suffix /M (e.g. a replacement module for an OVR SL30 SPD would be OVR SL30/M).

OVR SPDs contain no user serviceable parts and must be replaced with equivalent genuine ABB modules. The modules can easily be removed by pressing in the release button and pulling the module away from the base.

The module is keyed to prevent it being inserted the wrong way around.

3.10 Insulation/Flash testing
When the surge protection module is fitted, OVR SL Series SPDs will not meet the 500 V insulation requirements to earth. The OVR SPD module should therefore be disconnected before insulation testing.

When the module is 1 cm away from being fully inserted there is a 2nd hold point.