

INTRODUCTION

This document explains how to install plug-in ABB OVR Surge Protection Devices (SPDs) for computer networks with RJ45 connections:

OVR Cat-5e

for 10/100baseT systems that signal on up to 4 wires of either unshielded or shielded twisted pair cable.

OVR Cat-5e/PoE

for 10/100baseT systems that also transmit power to IEEE 802.3at, using Mode A (combined 'phantom' power/data) and/or Mode B (power on spare pairs).

OVR Cat-6

for 10/100/1000/10GbaseT systems that signal on up to 8 wires of either unshielded or shielded twisted pair cable.

OVR Cat-6/PoE

for 10/100/1000/10GbaseT systems that also transmit power to IEEE 802.3at, using Mode A and/or Mode B.

2. Before installation

2.1 Make sure that the RJ45 sockets on the OVR SPD are physically compatible with the network cabling.

2.2 Check that the maximum signalling voltage of the network will never exceed the OVR SPD's maximum working (or signalling) voltage:

	Maximum Working (or Signalling) Voltage	
	Data	Power
OVR Cat-5e, OVR Cat-6	5 V	-
OVR Cat-5e/PoE, OVR Cat-6/PoE	5 V	58 V

2.3 Ensure that the network's signalling or data rate does not exceed:

	Maximum data rate
OVR Cat-5e, OVR Cat-5e/PoE	100 Mbps
OVR Cat-6, OVR Cat-6/PoE	10 Gbps*

* with Cat-6a cable

3.2 SPD location

- Install the OVR SPD in a convenient place, either:
- (a) near to where the network cable enters or leaves the building,
 - (b) as the 'dirty' line network cable enters the network hub, or
 - (c) close to the equipment being protected

The OVR SPD's location may be dictated by the need to keep its connection to earth short (see Section 3.5 - Earthing).

3.3 Mounting

Fixing holes on the side of the OVR SPD enable it to be screwed to any flat surface, or the TS35 DIN Rail attachment can be used to mount and earth via DIN rail.

Before doing so, ensure that it is close to a good earthing point (see Section 3.5 - Earthing).

3.4 Keep clean cables away from line (dirty) cables

The clean cable (connecting the OVR SPD's clean socket to the protected equipment) should never be routed next to the dirty line or the dirty earth cable (see Figure 2).

The clean cable must be kept at least 5 cm apart from either the OVR SPD's own dirty line or earth cables, or those of neighbouring SPDs.

If the network cables either in or out of the OVR SPD are longer than required, neatly coil and bind the surplus out of the way, keeping this away from clean cables.

3.5 Earthing

OVR SPDs for mains power supplies and OVR SPDs for data/signal/ measurement/ telephone 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, either:

- (a) through installation on a TS35 'top hat' DIN rail (which in turn is connected to earth), or
- (b) by connecting a crimped earth cable to the OVR SPD via the M4 threaded hole in the unit (see Figure 1)

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 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 guidelines below refer to non-DIN rail earthing and the earthing of DIN rail base plates.

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

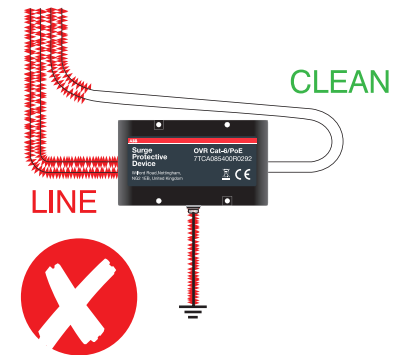
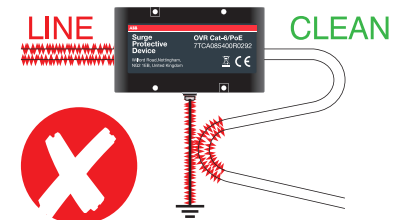
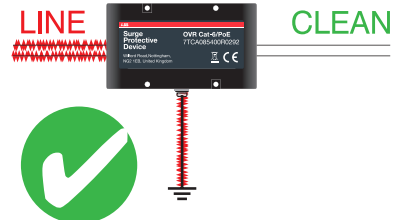


Figure 2: Cable routing.

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



1. Safety note:

Warning! Installation by person with electrotechnical expertise only.

Warnung! Installation nur durch elektrotechnische Fachkraft.

Avvertenza! Fare installare solo da un elettricista qualificato.

Avertissement! Installation uniquement par des personnes qualifiées en électrotechnique.

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



Figure 1: Plug-in series connection.

Where even 4 metres of connecting lead is not sufficient, the incoming line should be re-routed to bring it within 4 metres 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 (eg the earth bar of the local power distribution board) (see Figure 3).

Notes

Lined area for handwritten notes.

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.

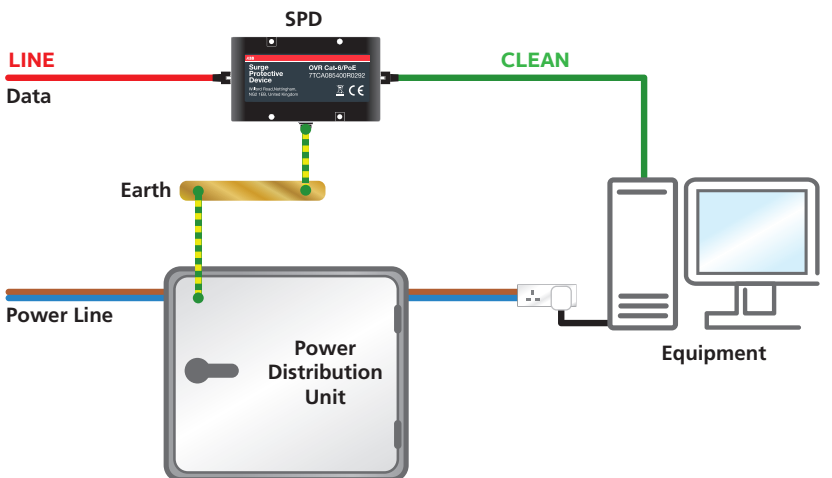


Figure 3:
Connection to the equipment earth star point.



OVR Cat-5 & OVR Cat-6 Series
(with RJ45 connections)

for protecting computer networks

INSTALLATION INSTRUCTIONS



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