

INTRODUCTION

This document explains how to install Furse ESP Surge Protective Devices (SPDs) for television signal lines:

**ESP CATV/F, ESP MATV/F,
ESP SMATV/F, ESP TV/EURO,
ESP TV/F**



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.

2. Before installation

2.1 Ensure that the SPD's bandwidth will not restrict the system bandwidth.

	Bandwidth (-3 dB 75 Ω)
ESP CATV/F	5-860 MHz
ESP MATV/F	5-3224 MHz
ESP SMATV/F	860-3224 MHz
ESP TV/EURO	5-860 MHz
ESP TV/F	5-860 MHz

2.2 Make sure the insertion loss over the specified bandwidth will not effect the system.

	Insertion Loss 5-860 MHz
ESP CATV/F	< 0.5 dB
ESP MATV/F, ESP TV/EURO, ESP TV/F	< 0.3 dB

	860-2150 MHz
ESP MATV/F, ESP SMATV/F	< 1.5 dB

	2150-3224 MHz
ESP MATV/F, ESP SMATV/F	< 2.2 dB

2.3 Make sure that the system's maximum line voltage (DC or AC peak) will never exceed the SPD's maximum working voltage. Otherwise the SPD will clamp signal voltages as though they were transient overvoltages.

	Max. Working Voltage
ESP CATV/F	140 V
ESP MATV/F, ESP SMATV/F	18.9 V
ESP TV/EURO, ESP TV/F	6.4 V

2.4 Ensure that the current (DC or AC RMS) passing through the SPD does not exceed:

	Max. Operating Current
ESP CATV/F	4 A
ESP MATV/F, ESP SMATV/F	800 mA
ESP TV/EURO, ESP TV/F	300 mA

3. Installation

3.1 Series connection

Furse TV SPDs are connected in series with the coaxial cable video line.

The dirty, or line side of the 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 Figure 1).

3.2 SPD location

The SPD should be installed in a convenient place close to the equipment it is protecting.

SPD location may be determined by the need to keep its connection to earth (or SPD earth bond) short (see Section 3.8 - Connect to earth).



Figure 1:
Series connection.

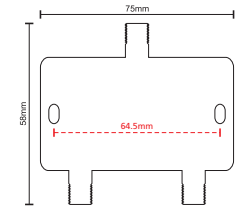


Figure 2.
Fixing dimensions.

3.3 Enclose the SPD

Furse TV SPDs should be installed inside a building (usually a basement or garage), or service entrance.

If outdoor installation is required, contact Furse for suitable enclosures.

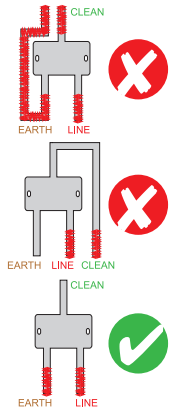
SPDs should always be installed in a dry environment.



Figure 3.
ESP CATV/F mounted in a garage near where the cable enters the building.

... continued overleaf

Figure 4:
Cable
routing.



The SPD is fitted with female F-type connectors (or EURO-TV for ESP TV/EURO) and can easily be connected to the cable.

Connect the line end of the SPD to the dirty, incoming cable.

Connect the clean end to the cable to the protected equipment (see Figure 1).

Note: Hand tighten only.

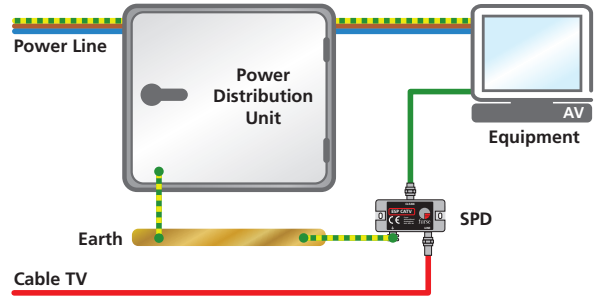
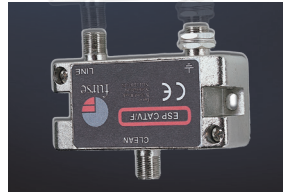


Figure 5.
Within the building the earth star point is usually the local power distribution point.

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.



ESP TV Series
for cable
protective
television surge
INSTRUCTIONS



3.4 Fixing methods

Fixing holes in the base of the SPD enable it to be screwed to flat surfaces (see Figure 2 for fixing dimensions). Figure 3 shows an ESP CATV/F installed.

3.5 Screen connection

ESP TV Series SPDs are supplied ready for use on systems with an earthed screen.

3.6 Clean and line connections

To install the SPD, divide and terminate the coaxial cable.

3.7 Keep clean cables away from dirty cables

Cables connected to the SPD's clean end should never be routed next to dirty line cables or dirty SPD earth bonds (see Figure 4).

3.8 Connect to earth

The SPD must be connected to earth by connecting a crimped earth cable to the SPD's earth stud (see Figures 1 and 3).

The SPD should be bonded to the earth star point. This is the point where all the earths of the system converge.

Within the building the earth star point will be the earth bar of the local power distribution board, from where the equipment is supplied (see Figure 5).

If the SPD is housed in a metal cabinet or cubicle, this should also be bonded to the earth star point.

The SPD to earth bond should be as short as possible and certainly less than 1 m long (otherwise the effectiveness of the SPD will be reduced).

SPD 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, or
 - if both the main earth bar and the SPD are located on a large metal sheet, the SPD can be bonded to the metal sheet which is bonded in turn to the earth bar

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

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