# VAISALA

# Surge Protector WSP150

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Vaisala Surge Protector WSP150 is a compact transient overvoltage suppressor designed for outdoor use. It can provide overvoltage protection for 2 power supply lines and RS-422, RS-485, RS-232 serial communication or 2 mA loop lines. It can be used with WXT530 series, WMT700 (non-heated) WA15 wind set, WM30 wind set, DSC211, and DST111. Also other instruments can be protected if the current consumption is less than 1.5 A.

## Superior Protection

A lightning strike nearby may induce a high voltage surge, which the integral transient suppressor of the instrument may not tolerate. Additional protection is needed, especially where frequent and severe thunderstorms are common and where cables longer than 30 m (98 ft 5 in) are used. Also use WSP150 if you have unshielded, open-wire lines.

WSP150 offers 3-stage protection against surge currents up to 10 kA entering through the power and signal cables.

## Powerful Technology

WSP150 has 4 channels, 2 of which are dedicated to power lines and 2 for data lines. Each channel uses a 3-stage protection scheme: first there are discharge tubes, then voltage dependent resistors (VDR), and finally transient zener diodes. Between each stage, there are either series inductors or resistors.

Both differential and common mode protection is provided for each channel: across the wire pairs, against the operating voltage ground, and against the earth.

WSP150 also provides an additional filter for blocking the HF-conducted interference.

## Applications

Vaisala recommends using WSP150 when wind and weather instruments are installed on top of high buildings or masts and in open grounds, that is, anywhere with an elevated risk of lightning.

# Technical Data

## Operating Environment

| | |
|---|---|
| Operating temperature | -52 ... +70 °C (-60 ... +158 °F) |
| Storage temperature | -52 ... +70 °C (-60 ... +158 °F) |
| Installation temperature | -40 ... +70 °C (-40 ... +158 °F) |
| Maintenance work temperature | -40 ... +70 °C (-40 ... +158 °F) |

## Inputs and Outputs

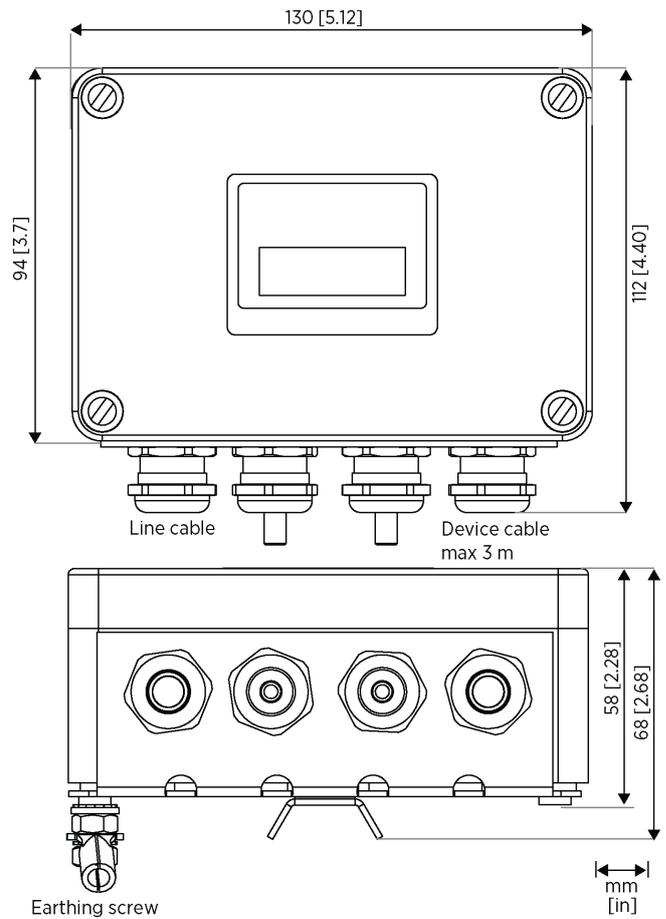| | |
|---|---|
| Input voltage [1] | Power channels: max. ±43 V<br>Data channels: max. ±13 V |
| Input common mode voltage | Any line to earth: max. ±72 V |
| Throughput current | Power lines: max. 1.5 A<br>Data lines: max. 0.16 A |
| Throughput resistance (per line) | Power lines: max. 0.3 Ω<br>Data lines: max. 15 Ω |
| Turn-on voltage | Power channels: max. ±60 V<br>Data channels: max. ±16 V |
| Surge current | To earth: max. 10 kA<br>Differential: max. 5 kA |

1) Across channel line pair and from line to GND, terminals #3

## Mechanical Specifications

| | |
|---|---|
| Weight | 0.65 kg (1.43 lb) |
| Housing material | Polycarbonate, stainless steel |
| Housing dimensions (H × W × D) | 94 × 130 × 58 mm<br>(3.70 × 5.12 × 2.28 in) |
| Dimensions with cable glands and mounting assembly (H × W × D) | 112 × 130 × 69 mm<br>(4.41 × 5.12 × 2.72 in) |
| Cables (Ø) | 5 ... 10 mm (0.20 ... 0.39 in) |
| Wires (Ø) | 0.4 ... 1.7 mm (0.016 ... 0.067 in)<br>(AWG 26 ... 14) |

## Compliance

| | |
|---|---|
| EMC surge tolerance | EN 61000-4-5 (4 kV, 2 kA)<br>IEEE C62.45 (6 kV, 3 kA) |
| IP rating | IP66 (NEMA 4X) |

Dimensions in mm [in]

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