

## VSPC 1CL 24VDC R

**Weidmüller Interface GmbH & Co. KG**

Klingenbergstraße 26

D-32758 Detmold

Germany

[www.weidmueller.com](http://www.weidmueller.com)



Analogue signal/current loop (CL) protection includes the following signals:

- Signals from current loops (analogue measurements of sensors over long distances) 4 – 20 mA, 0 – 20 mA etc.
- Two-wire, three-wire and four-wire, without a common reference potential
- e.g. level indication signals from voltage sensors (analogue measurements of sensors over short distances) 0 – 10 V, PT 100 etc. ; e.g. temperature measurement
- Pluggable arrester, with interruption-free and impedance-neutral plug-in and pull-out
- Can be tested with the V-TEST testing device
- Version with floating-earth PE connection used to avoid differences in potential
- Can be used in compliance with the IEC 62305 (D1, C1, C2 and C3) installation standard
- Integrated PE foot safely discharges up to 20 kA (8/20  $\mu$ s) and 2.5 kA (10/350  $\mu$ s) to the PE
- Colour coding of the voltage levels for fast identification on the panel
- Safety function through coding elements for different voltage levels

### General ordering data

|            |   |
|------------|---|
| Version    | Surge protection for instrumentation and control, with warning function / function indicator, $U_P(L/N-PE) < 800$ V |
| Order No.  | <a href="#">8951550000</a>  |
| Type       | VSPC 1CL 24VDC R  |
| GTIN (EAN) | 4032248742790   |
| Qty.       | 1 pc(s).  |

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**Technical data**
**Dimensions and weights**

|            |         |                 |            |
|------------|---------|-----------------|------------|
| Depth      | 69 mm   | Depth (inches)  | 2.717 inch |
| Height     | 98 mm   | Height (inches) | 3.858 inch |
| Width      | 17.8 mm | Width (inches)  | 0.701 inch |
| Net weight | 42 g    |                 |            |

**Temperatures**

|                     |                |                       |                |
|---------------------|----------------|-----------------------|----------------|
| Storage temperature | -40 °C...80 °C | Operating temperature | -40 °C...70 °C |
| Humidity            | 5...96 %       |                       |                |

**Probability of failure**

|           |             |                                    |         |
|-----------|-------------|------------------------------------|---------|
| SIL PAPER | SIL Paper   | SIL in compliance with IEC 61508   | 3       |
| MTTF      | 2,537 Years | SFF                                | 95.27 % |
| λges      | 45          | PFH in 1*10 <sup>-9</sup> per hour | 3.7     |

**Environmental Product Compliance**

|            |                |
|------------|----------------|
| REACH SVHC | Lead 7439-92-1 |
|------------|----------------|

**Rated data UL**

|                      |         |                |                     |
|----------------------|---------|----------------|---------------------|
| Certificate No. (UL) | E311081 | UL certificate | UL 497b Certificate |
|----------------------|---------|----------------|---------------------|

**CSA protection data**

|  |      |  |      |
|--|------|--|------|
| Gas group C                            | IIB  | Gas group D                              | IIA  |
| Gas groups A, B                        | IIC  | Input voltage, max. U <sub>i</sub>       | 28 V |
| Internal capacity, max. C <sub>i</sub> | 1 nF | Internal inductance, max. L <sub>i</sub> | 0 μH |

**General data**

|                          |   |                           |                         |
|--------------------------|---|---------------------------|-------------------------|
| Colour                   | orange  | Design                    | Terminal, miscellaneous |
| Optical function display | green = OK; red = arrester is defective - replace | Protection degree         | IP20                    |
| Segment                  | Measurement - Monitoring - Setting                | UL 94 flammability rating | V-0                     |
| Version                  | with warning function / function indicator        | protected current loops   | 1                       |

**Insulation coordination acc. to EN 50178**

|                    |   |                        |     |
|--------------------|---|------------------------|-----|
| Pollution severity | 2 | Surge voltage category | III |
|--------------------|---|------------------------|-----|

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### Rated data IEC / EN

|   |                               |  |   |
|---|-------------------------------|--|---|
| Discharge current $I_{max}$ (8/20 $\mu$ s) GND-PE                 | 10 kA                         | Discharge current $I_{max}$ (8/20 $\mu$ s) wire-PE                 | 10 kA   |
| Discharge current $I_{max}$ (8/20 $\mu$ s) wire-wire              | 10 kA                         | Discharge current $I_n$ (8/20 $\mu$ s) GND-PE                      | 2.5 kA  |
| Discharge current $I_n$ (8/20 $\mu$ s) wire-PE                    | 2.5 kA                        | Discharge current $I_n$ (8/20 $\mu$ s) wire-wire                   | 2.5 kA  |
| Fuse  | 0.5 A                         | Lightning test current, $I_{imp}$ (10/350 $\mu$ s) GND-PE          | 2.5 kA  |
| Lightning test current, $I_{imp}$ (10/350 $\mu$ s) Wire-PE        | 2.5 kA                        | Lightning test current, $I_{imp}$ (10/350 $\mu$ s) wire-wire       | 2.5 kA  |
| Max. continuous voltage, $U_c$ (DC)                               | 28 V                          | Number of poles  | 1   |
| Overload - failure mode   | Modus 2                       | Protection level $U_p$ (typ.)                                      | < 800 V   |
| Protection level on output side Wire-PE 1kV/ $\mu$ s, typically   | 450 V                         | Protection level on output side Wire-wire 1 kV/ $\mu$ s, typically | 45 V  |
| Protection level on output side Wire-wire 8/20 $\mu$ s, typically | 45 V                          | Protection level, $U_p$ GND - PE                                   | 650 V   |
| Protection level, $U_p$ wire - PE                                 | 450 V                         | Protection level, $U_p$ wire - wire                                | 45 V  |
| Pulse-reset capacity  | $\leq$ 30 ms                  | Rated current $I_N$  | 450 mA  |
| Rated voltage (DC)  | 24 V                          | Requirements category acc. to IEC 61643-21                         | C1, C2, C3, D1  |
| Signal transmission properties (-3 dB)                            | 2.4 MHz                       | Signalling contact   | $U_N$ 250 V AC 0.1 A 1CO at VSPC R with VSPC control unit |
| Standards   | IEC 61643-21, HART-compatible | Surge current-carrying capacity C1                                 | < 1 kA 8/20 $\mu$ s                                       |
| Surge current-carrying capacity C2                                | 5 kA 8/20 $\mu$ s             | Surge current-carrying capacity C3                                 | 100 A 10/1000 $\mu$ s                                     |
| Surge current-carrying capacity D1                                | 2.5 kA 10/350 $\mu$ s         | Voltage type   | DC  |
| Volume resistance   | 2.20 $\Omega$                 |  |   |

### Further details of approvals

GOST certificate GOST-Zertifikat

### Connection data

Type of connection Pluggable in VSPC BASE

### Ratings IECEx/ATEX/cUL

cUL certificate cUL Certificate

### Classifications

|             |             |             |             |
|-------------|-------------|-------------|-------------|
| ETIM 6.0    | EC000943    | ETIM 7.0    | EC000943    |
| ETIM 8.0    | EC000943    | ECLASS 9.0  | 27-13-08-07 |
| ECLASS 9.1  | 27-13-08-07 | ECLASS 10.0 | 27-13-08-07 |
| ECLASS 11.0 | 27-13-08-07 | ECLASS 12.0 | 27-17-90-90 |

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## Technical data

### Tender specification sheets

| Long specification   | Short specification   |
|--|---|
| <p>Surge protection plug for use in connection with the base element VSPC BASE 1 CL R for one floating-ground driven paired cable with integrated status display and remote monitoring option. Two-stage protection circuit consisting of coarse protection, decoupling resistors and fine protection between the signal wires and coarse common mode voltage protection to earth. Mechanical identification of the plug to the base element according to the switching type and rated voltage. Optical identification of the protected plug based on the type of protected switching and the voltage level. Protected plug with coding pin and counter-profile for the base element. It is possible to mark the plug.</p> | <p>Surge protection plug for base element VSPC BASE 1 CL R with integrated status display and remote monitoring option. Transverse voltage coarse and fine protection of one floating-ground powered paired cable, coarse common mode voltage protection to earth. Version: 24 V DC</p> |

### Important note

|                     |  |
|---------------------|--|
| Product information | Mode 2: State where the voltage-limiting part of the SPD was short-circuited due to a very low impedance within the SPD. The line is inoperable, but the measuring equipment is still protected by means of a short-circuit. |
|---------------------|--|

### Approvals

Approvals



|                       |         |
|-----------------------|---------|
| ROHS                  | Conform |
| UL File Number Search | E311081 |

### Downloads

|   |  |
|---|--|
| Approval/Certificate/Document of Conformity | <a href="#">SIL Paper</a><br><a href="#">EU Konformitätserklärung / EU Declaration of Conformity</a> |
| Engineering Data                            | <a href="#">CAD data – STEP</a>  |
| Engineering Data                            | <a href="#">EPLAN, WSCAD</a>   |
| User Documentation                          | <a href="#">Beipackzettel / Instruction sheet</a>  |
| Catalogues                                  | <a href="#">Catalogues in PDF-format</a>   |
| Brochures                                   |  |

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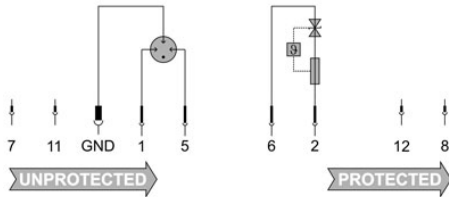
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**Drawings**

**Electric symbol**



Circuit diagram

| Cate- gory | Testing pulse      | Surge voltage             | Surge current                    | Pulse | Type  |
|------------|--------------------|---------------------------|----------------------------------|-------|---|
| C1         | Quick- rising edge | 0.5 - 2 kV<br>1.2/50 µs   | 0.25 - 1 kA<br>mit<br>8/20 µs    | 300   | Surge voltage arrester                            |
| C2         | Quick- rising edge | 2 - 10 kV<br>1.2/50 µs    | 1 - 5 kA<br>mit<br>8/20 µs       | 10    | Surge voltage arrester                            |
| C3         | Quick- rising edge | ≥ 1 kV<br>with<br>1 kV/µs | 10 - 100 A<br>mit<br>10/10000 µs | 300   | Surge voltage arrester                            |
| D1         | High power         | ≥ 1 kV                    | 0.5 - 2.5 kA<br>mit<br>10/350 µs | 2     | Arrester for lightning current and surge voltages |

Discharge capacity

