

## VSPC 2CL 5VDC 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, UP(L/N-PE) <800 V |
| Order No.  | <a href="#">8951460000</a>  |
| Type       | VSPC 2CL 5VDC R   |
| GTIN (EAN) | 4032248742509   |
| Qty.       | 1 items   |

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## Technical data

## Approvals

Approvals



ROHS Conform

UL File Number Search [UL Website](#)

Certificate No. (UL) E311081

## Dimensions and weights

|            |         |                 |             |
|------------|---------|-----------------|-------------|
| Depth      | 69 mm   | Depth (inches)  | 2.7165 inch |
| Height     | 98 mm   | Height (inches) | 3.8583 inch |
| Width      | 17.8 mm | Width (inches)  | 0.7008 inch |
| Net weight | 47 g    |                 |             |

## Temperatures

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

## Probability of failure

|                                    |         |      |        |
|------------------------------------|---------|------|--------|
| SIL in compliance with IEC 61508   | 3       | MTTF | 2537 a |
| SFF                                | 95.27 % | λges | 45     |
| PFH in 1*10 <sup>-9</sup> per hour | 3.7     |      |        |

## Environmental Product Compliance

|                                      |                                      |
|--------------------------------------|--------------------------------------|
| RoHS Compliance Status               | Compliant with exemption             |
| RoHS Exemption (if applicable/known) | 7a, 7cl                              |
| REACH SVHC                           | Lead 7439-92-1                       |
| SCIP                                 | 71e97bb7-979f-4330-94c0-20c629bb05e3 |

## Rated data UL

|                      |         |                |  |
|----------------------|---------|----------------|--|
| Certificate No. (UL) | E311081 | UL certificate | UL 497b Certificate - PDF/<br>E311081VOL1SEC2.pdf<br>(application/pdf) |
|----------------------|---------|----------------|--|

## CSA protection data

|                            |      |                              |       |
|----------------------------|------|------------------------------|-------|
| Gas group D                | IIA  | Gas groups A, B              | IIC   |
| Gas group C                | IIB  | Internal inductance, max. LI | 0 μH  |
| Internal capacity, max. CI | 2 nF | Input voltage, max. Ui       | 6.4 V |

## General data

|                           |   |                         |                                    |
|---------------------------|---|-------------------------|------------------------------------|
| Optical function display  | green = OK; red = arrester is defective - replace | Segment                 | Measurement - Monitoring - Setting |
| Version                   | with warning function / function indicator        | Design                  | Terminal, miscellaneous            |
| UL 94 flammability rating | V-0   | Colour                  | orange                             |
| Protection degree         | IP20  | protected current loops | 2                                  |

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### Insulation coordination acc. to EN 50178

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

### Rated data IEC / EN

|   |                |  |                               |
|---|----------------|--|-------------------------------|
| Number of poles                                       | 1              | Signalling contact                                     | 250 V 1A 1CO                  |
| Rated voltage (DC)                                    | 5 V            | Rated current I <sub>N</sub>                           | 450 mA                        |
| Protection level on output side Wire-wire             | 12 V           | Protection level on output side Wire-PE                | 450 V                         |
| 1 kV/μs, typically                                    |                | 1kV/μs, typically                                      |                               |
| Protection level on output side Wire-wire             | 12 V           | Protection level, UP wire - wire                       | 12 V                          |
| 8/20 μs, typically                                    |                |  |                               |
| Protection level, UP wire - PE                        | 450 V          | Protection level UP (typ.)                             | <800 V                        |
| Voltage type  | DC             | Fuse protection  | 0.5 A                         |
| Volume resistance                                     | 2.20 Ω         | Standards  | HART-compatible, IEC 61643-21 |
| Requirements category acc. to IEC 61643-21            | C1, C2, C3, D1 | Max. continuous voltage, U <sub>c</sub> (DC)           | 6.4 V                         |
| Lightning test current, limp (10/350 μs) wire-wire    | 2.5 kA         | Surge current-carrying capacity D1                     | 2.5 kA 10/350 μs              |
| Surge current-carrying capacity C1                    | <1 kA 8/20 μs  | Surge current-carrying capacity C3                     | 100 A 10/1000 μs              |
| Lightning test current, limp (10/350 μs) GND-PE       | 2.5 kA         | Pulse-reset capacity                                   | ≤ 20 ms                       |
| Signal transmission properties (-3 dB)                | 730 KHz        | Lightning test current, limp (10/350 μs) Wire-PE       | 2.5 kA                        |
| Overload - failure mode                               | Modus 2        | Discharge current I <sub>max</sub> (8/20μs) GND-PE     | 10 kA                         |
| Rated load current I <sub>L</sub>                     | 450 mA         | Discharge current I <sub>n</sub> (8/20μs) wire-wire    | 2.5 kA                        |
| Discharge current I <sub>n</sub> (8/20μs) wire-PE     | 2.5 kA         | Discharge current I <sub>max</sub> (8/20μs) wire-PE2 x | 10 kA                         |
| Discharge current I <sub>max</sub> (8/20μs) wire-wire | 10 kA          | Discharge current I <sub>n</sub> (8/20μs) GND-PE       | 2.5 kA                        |
| Surge current-carrying capacity C2                    | 5 kA 8/20 μs   |  |                               |

### Further details of approvals

|                  |  |
|------------------|--|
| GOST certificate | GOST-Zertifikat - PDF/7950_n1-n4.pdf (application/pdf) |
|------------------|--|

### Connection data

|                    |                        |
|--------------------|------------------------|
| Type of connection | Pluggable in VSPC BASE |
|--------------------|------------------------|

### Electrical data

|              |    |
|--------------|----|
| Voltage type | DC |
|--------------|----|

### General data

|                 |        |                   |      |
|-----------------|--------|-------------------|------|
| Number of poles | 1      | Protection degree | IP20 |
| Colour          | orange |                   |      |

### Ratings IECEx/ATEX/cUL

|                 |   |
|-----------------|---|
| cUL certificate | cUL Certificate - pdf/ VSPC.PDF (application/pdf) |
|-----------------|---|

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## Technical data

### Guarantee

Time interval 5 years

### 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.

### Classifications

|             |             |             |             |
|-------------|-------------|-------------|-------------|
| ETIM 8.0    | EC000943    | ETIM 9.0    | EC000943    |
| ETIM 10.0   | EC000943    | ECLASS 14.0 | 27-17-15-01 |
| ECLASS 15.0 | 27-17-15-01 |             |             |

### Tender specification sheets

|                    |   |                     |   |
|--------------------|---|---------------------|---|
| Long specification | Surge protection plug for use in connection with the base element VSPC BASE 2CL R for two floating-ground driven paired cables 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. | Short specification | Surge protection plug for base element VSPC BASE 2CL R with integrated status indicator and remote monitoring option, transverse voltage coarse and fine protection for two floating-ground powered paired cables and alert function, coarse common mode voltage protection to earth. Version: 5 V DC |
|--------------------|---|---------------------|---|

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Drawings

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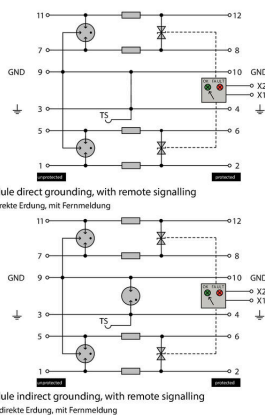
Electric symbol



Circuit diagram

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

Discharge capacity



Komplettmodul