

## 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 | <a href="#">UL Website</a> |
| 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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## Technical data

### 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<br>1 kV/μs, typically | Protection level on output side Wire-PE                | 450 V<br>1kV/μs, typically       |
| Protection level on output side Wire-wire                 | 12 V<br>8/20 μs, typically | Protection level, UP wire - wire                       | 12 V                             |
| 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<br>61643-21 |
| Requirements category acc. to IEC<br>61643-21             | C1, C2, C3, D1             | Max. continuous voltage, U <sub>c</sub> (DC)           | 6.4 V                            |
| Lightning test current, limp (10/350 μs)<br>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)<br>GND-PE        | 2.5 kA                     | Pulse-reset capacity                                   | ≤ 20 ms                          |
| Signal transmission properties (-3 dB)                    | 730 KHz                    | Lightning test current, limp (10/350 μs)<br>Wire-PE    | 2.5 kA                           |
| Overload - failure mode                                   | Modus 2                    | Discharge current I <sub>max</sub> (8/20μs) GND-<br>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-<br>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 -<br>PDF/7950_n1-n4.pdf<br>(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/<br>VSPC.PDF (application/<br>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 |             |             |

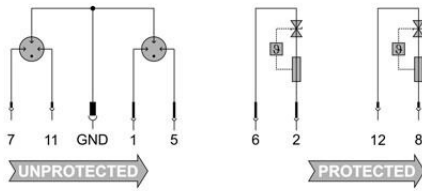
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Drawings

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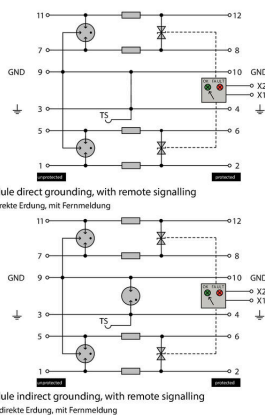
Electric symbol



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                    | 0.5 - 2.5 kA mit 10/350 µs | 2     | Arrester for lightning current and surge voltages |

Discharge capacity



Komplettmodul

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## Accessories

### Supply and alert unit for VSPC R arresters



- Signalling module for all VSPCs with status indicator
- Signalling of cable breaks / signal interruptions
- Power supply of 20 to 31 V DC
- No-voltage changeover contact
- Function display with red/green LED
- Functional alerts with different signal types.

### General ordering data

|            |                            |         |  |
|------------|----------------------------|---------|--|
| Type       | VSPC CONTROL UNIT 24VDC    | Version |  |
| Order No.  | <a href="#">8972270000</a> |         | Surge protection for instrumentation and control, with warning |
| GTIN (EAN) | 4032248793488              |         | function / function indicator                                  |
| Qty.       | 1 ST                       |         |  |

### V-TEST testing device for VSPC



#### V-TEST

- Testing device for checking the protective function of the pluggable overvoltage protection PU I, PU II and VSPC series
  - Device for implementing the IEC 62305 standard (regarding periodic testing)
  - Easy-to-use device with integrated battery set for on-site measurements
  - LCD results display
  - Menu in two languages
  - Including a protective bag and power supply
  - User friendly navigation in German and English
- The V-TEST is a compact, portable test instrument for the plug-in surge protectors VARITECTOR (VSPC) and the surge protectors for the power supply line PU I and PU II. Using this instrument Weidmüller overvoltage protectors can be tested for their protective function in line with the testing schedules laid down in IEC 62305-3 (DIN VDE 0185 part 3). In a display with background illumination, the test result is indicated with "OK" or "Not OK".

### General ordering data

|            |                            |         |  |
|------------|----------------------------|---------|--|
| Type       | V-TEST                     | Version |  |
| Order No.  | <a href="#">8951860000</a> |         | Lightning and surge protection, Testing device |
| GTIN (EAN) | 4032248743100              |         |  |
| Qty.       | 1 ST                       |         |  |

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## Accessories

### Plus



The Dekafix (DEK) marker is the universal marker for all conductor and plug-in connectors as well as for electronic sub-assemblies. The system is ideal for short number sequences and covers a wide range of ready-printed markers.

Strips for fast installation in only one work step. The printing is easy to read, rich in contrast and available in various widths.

- Large range of ready-to-use markers
  - Strips for fast installation
  - Terminal markers, suitable for all Weidmüller cable connectors
  - Available as blank MultiCard or with standard printing
- For custom printing: Please send us a file of our labeling software M-Print PRO or M-Print PRO Online (without installation) for your labeling specifications.

### General ordering data

|            |                            |         |   |
|------------|----------------------------|---------|---|
| Type       | DEK 5/5 PLUS MC NE WS      | Version |   |
| Order No.  | <a href="#">1854490000</a> |         | Dekafix, Terminal marker, 5 x 5 mm, Pitch in mm (P): 5.00 |
| GTIN (EAN) | 4032248393596              |         | Weidmueller, white  |
| Qty.       | 1000 ST                    |         |   |

### Direct earthing

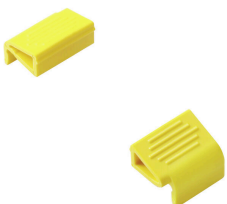


Base element for the pluggable VSPC arrester, integrated PE foot in impedance-neutral VSPC BASE. Can safely discharge up to 20 kA (8/20  $\mu$ s) and 2.5 kA (10/350  $\mu$ s) to the PE.

### General ordering data

|            |                            |         |  |
|------------|----------------------------|---------|--|
| Type       | VSPC BASE 2CL R            | Version |  |
| Order No.  | <a href="#">8951710000</a> |         | Surge protection, Flange-mounted housing, Flange-mounted housing |
| GTIN (EAN) | 4032248742950              |         |  |
| Qty.       | 1 ST                       |         |  |

### Retaining clip



The interlock mechanism on the VSPC Series pluggable arrester delivers extra reliability and an improved permanent contact under strong vibrating conditions.

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## Accessories

### General ordering data

|            |                            |                            |  |
|------------|----------------------------|----------------------------|--|
| Type       | VSPC LOCKING CLIP          | Version                    |  |
| Order No.  | <a href="#">1317340000</a> | Fastening element, Latches |  |
| GTIN (EAN) | 4050118121179              |                            |  |
| Qty.       | 100 ST                     |                            |  |

### Cross-connections



Cross-connection between the VSPC signal contacts can be installed quickly. Cross-connections can be individually separated for the alert function with maximum 10 VSPC R.

### General ordering data

|            |                            |         |  |
|------------|----------------------------|---------|--|
| Type       | QB 17,8/2                  | Version |  |
| Order No.  | <a href="#">1309470000</a> |         |  |
| GTIN (EAN) | 4050118111934              |         |  |
| Qty.       | 90 ST                      |         |  |

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## Counterpart

### Direct earthing



Base element for the pluggable VSPC arrester, integrated PE foot in impedance-neutral VSPC BASE. Can safely discharge up to 20 kA (8/20  $\mu$ s) and 2.5 kA (10/350  $\mu$ s) to the PE.

### General ordering data

|            |                            |  |  |
|------------|----------------------------|--|--|
| Type       | VSPC BASE 2CL R            | Version  |  |
| Order No.  | <a href="#">8951710000</a> | Surge protection, Flange-mounted housing, Flange-mounted housing |  |
| GTIN (EAN) | 4032248742950              |  |  |
| Qty.       | 1 ST                       |  |  |

### Indirect earthing / floating ground via sparkover gap, also suitable for EX ia applications



Base element for the pluggable VSPC arresters. Integrated PE foot in the base of the impedance-neutral VSPC BASE and floating earth PE connection (FG) via integrated sparkover gap, safely discharges up to 20 kA (8/20  $\mu$ s) and 2.5 kA (10/350  $\mu$ s) to PE. Suitable for unearthed signal circuits.

### General ordering data

|            |                            |  |  |
|------------|----------------------------|--|--|
| Type       | VSPC BASE 2CL FG R         | Version  |  |
| Order No.  | <a href="#">8951720000</a> | Surge protection, Flange-mounted housing, Flange-mounted housing |  |
| GTIN (EAN) | 4032248742967              |  |  |
| Qty.       | 1 ST                       |  |  |