

VSPC 1CL 5VDC EX**Weidmüller Interface GmbH & Co. KG**

Klingenbergstraße 26

D-32758 Detmold

Germany

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 µs) and 2.5 kA (10/350 µs) 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, without warning function / function indicator, $U_p(L/N-PE) < 800 \text{ V}$ |
| Order No. | 8953660000 |
| Type | VSPC 1CL 5VDC EX |
| GTIN (EAN) | 4032248745814 |
| Qty. | 1 pc(s). |

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Technical data

Dimensions and weights

| | | | |
|------------|---------|-----------------|------------|
| Depth | 69 mm | Depth (inches) | 2.717 inch |
| Height | 90 mm | Height (inches) | 3.543 inch |
| Width | 17.8 mm | Width (inches) | 0.701 inch |
| Net weight | 46 g | | |

Temperatures

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

Probability of failure

| | | | |
|------------------------------------|---------|------|---------|
| SIL in compliance with IEC 61508 | 3 | MTTF | 2,537 a |
| SFF | 95.67 % | λges | 45 |
| PFH in 1*10 ⁻⁹ per hour | 1.95 | | |

Protection Ex - Data

| | | | |
|---|---|---|---|
| ATEX - dust labelling | II 1 D Ex ia IIC T135 °C ... T85 °C Da | ATEX - gas labelling | II 1 G Ex ia IIC T4... T6 Ga |
| Certificate No. (ATEX) | KEMA10ATEX0148X | IECEx - dust labelling | II 1 D Ex ia IIC T135 °C ... T85 °C Da |
| IECEx - gas labelling | II 1 G Ex ia IIC T4... T6 Ga | Input power, max. P _I | 3 W |
| Input voltage, max. U _i | 6 V | Internal capacity, max. C _I | < 4 nF |
| Internal inductance, max. L _I | 0 μH | Temperature class T4/135°C (-40°C ... +85°C) li | 350 mA |
| Temperature class T5/100°C (-40 °C ... +75°C) li | 250 mA | Temperature class T6/85 °C (-40 °C ... +60°C) li | 250 mA |

CSA protection data

| | | | |
|--|------|--|------|
| Gas group C | IIB | Gas group D | IIA |
| Gas groups A, B | IIC | Input voltage, max. U _i | 6 V |
| Internal capacity, max. C _I | 4 nF | Internal inductance, max. L _I | 0 μH |

General data

| | | | |
|--------------------------|--|---------------------------|-------------------------|
| Colour | Light Blue | Design | Terminal, miscellaneous |
| Optical function display | No | Protection degree | IP20 |
| Segment | Measurement - Monitoring - Setting | UL 94 flammability rating | V-0 |
| Version | without 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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Technical data

Rated data IEC / EN

| | | | |
|--|------------------|--|---|
| Dielectric strength at FG against PE | ≥ 500 V | Discharge current I_{\max} (8/20μs) GND-PE | 10 kA |
| Discharge current I_{\max} (8/20μs) wire-PE | 10 kA | Discharge current I_{\max} (8/20μs) wire-wire | 10 kA |
| Discharge current I_n (8/20μs) GND-PE | 2.5 kA | Discharge current I_n (8/20μs) wire-PE | 2.5 kA |
| Discharge current I_n (8/20μs) wire-wire | 2.5 kA | Input voltage, max. U_i | 6 V |
| Lightning test current, I_{imp} (10/350 μs) GND-PE | 2.5 kA | Lightning test current, I_{imp} (10/350 μs) Wire-PE | 2.5 kA |
| Lightning test current, I_{imp} (10/350 μs) wire-wire | 2.5 kA | Max. continuous voltage, U_c (DC) | 6.4 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/μs, typically | 450 V |
| Protection level on output side Wire-wire 1 kV/μs, typically | 12 V | Protection level on output side Wire-wire 8/20 μs, typically | 12 V |
| Protection level, U_p GND - PE | 650 V | Protection level, U_p wire - PE | 450 V |
| Protection level, U_p wire - wire | 12 V | Pulse-reset capacity | ≤ 20 ms |
| Rated current I_N | 350 mA | Rated voltage (DC) | 5 V |
| Requirements category acc. to IEC 61643-21 | C1, C2, C3, D1 | Signal transmission properties (-3 dB) | 730 KHz |
| Signalling contact | No | Standards | IEC 61643-21, IEC 62305, DIN EN 60079-0:2009, DIN EN 60079-11:2007, DIN EN 60079-26:2007, DIN EN 61241-11:2006, HART-compatible |
| Surge current-carrying capacity C1 | < 1 kA 8/20 μs | Surge current-carrying capacity C2 | 5 kA 8/20 μs |
| Surge current-carrying capacity C3 | 100 A 10/1000 μs | Surge current-carrying capacity D1 | 1 kA 10/350 μs |
| Voltage type | DC | Volume resistance | 2.20 Ω |

Further details of approvals

| | |
|------------------|-----------------|
| GOST certificate | GOST-Zertifikat |
|------------------|-----------------|

Connection data

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

Ratings IECEx/ATEX/cUL

| | | | |
|-----------------------|---|------------------------|---|
| ATEX - dust labelling | II 1 D Ex ia IIIC T135 °C ... T85 °C Da | ATEX - gas labelling | II 1 G Ex ia IIC T4... T6 Ga |
| ATEX certificate | ATEX Certificate | Certificate No. (ATEX) | KEMA10ATEX0148X |
| IEC Ex certificate | IECEX Zertifikat | IECEx - dust labelling | II 1 D Ex ia IIIC T135 °C ... T85 °C Da |
| IECEx - gas labelling | II 1 G Ex ia IIC T4... T6 Ga | cUL certificate | cUL Certificate |

Classifications

| | | | |
|-------------|-------------|-------------|-------------|
| ETIM 6.0 | EC000943 | ETIM 7.0 | EC000943 |
| ETIM 8.0 | EC000943 | ETIM 9.0 | 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 | ECLASS 13.0 | 27-17-90-90 |

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Technical data

Tender specification sheets

Long specification

Surge protection plug for use in connection with the base element VSPC BASE 1CL FG for one floating-ground driven paired cable. 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 suitable for use in intrinsically-safe Ex ia circuits. 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 1CL FG, transverse voltage coarse and fine protection of one floating-ground powered paired cable, suitable for use in intrinsically-safe Ex ia circuits, coarse common mode voltage protection to earth. Version: 5 V DC

Environmental Product Compliance

REACH SVHC

Lead 7439-92-1

SCIP

71e97bb7-979f-4330-94c0-20c629bb05e3

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

Downloads

Approval/Certificate/Document of Conformity

[EG Baumusterprüfung / EC Type Examination](#)[SIL Paper](#)[KEMA 10 ATEX 0148X](#)[EU Konformitätserklärung / EU Declaration of Conformity](#)

Engineering Data

[CAD data – STEP](#)

User Documentation

[Beipackzettel / Instruction sheet](#)[Beipackzettel ATEX / Instruction Sheet](#)

Catalogues

[Catalogues in PDF-format](#)

Brochures

Creation date May 23, 2024 7:42:04 AM CEST

Catalogue status 18.05.2024 / We reserve the right to make technical changes.

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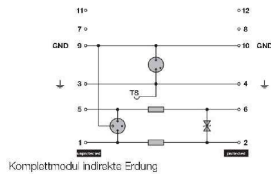
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Drawings

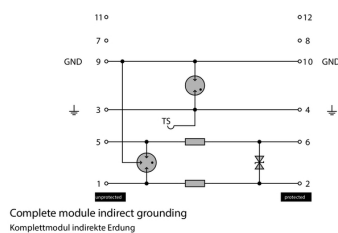
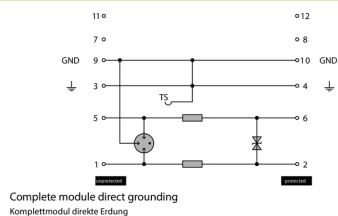
Electric symbol



Circuit diagram

| Cate- gory | Testing pulse | Surge voltage | Surge current | Pulse Type |
|---------------|--------------------------|---------------------------------|----------------------------------|---|
| C1 | Quick- rising edge | 0.5 - 2 kV 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

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 µs) and 2.5 kA (10/350 µs) to PE. Suitable for unearthed signal circuits.

General ordering data

| | | |
|------------|----------------------------|--|
| Type | VSPC BASE 1CL FG EX | Version |
| Order No. | 8951810000 | Surge protection, Flange-mounted housing, Flange-mounted housing |
| GTIN (EAN) | 4032248743056 | |
| Qty. | 1 pc(s). | |

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. | 1854490000 | Dekafix, Terminal marker, 5 x 5 mm, Pitch in mm (P): 5.00 |
| GTIN (EAN) | 4032248393596 | Weidmueller, white |
| Qty. | 1,000 pc(s). | |

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Accessories

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. | 8951860000 | Lightning and surge protection, Testing device |
| GTIN (EAN) | 4032248743100 | |
| Qty. | 1 pc(s). | |

Retaining clip



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

General ordering data

| | | |
|------------|----------------------------|----------------------------|
| Type | VSPC LOCKING CLIP | Version |
| Order No. | 1317340000 | Fastening element, Latches |
| GTIN (EAN) | 4050118121179 | |
| Qty. | 100 pc(s). | |