

VSPC 1CL 24VDC 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 μ s) and 2.5 kA (10/350 μ 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, without warning function / function indicator, $U_p(L/N-PE) < 800$ V |
| Order No. | 8953600000 |
| Type | VSPC 1CL 24VDC EX |
| GTIN (EAN) | 4032248745753 |
| 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 | 47 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 | 95.67 % |
| λges | 45 | PFH in 1*10 ⁻⁹ per hour | 1.95 |

Environmental Product Compliance

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

Protection Ex - Data

| | | | |
|---|--|---|--|
| 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 |
| Certificate No. (ATEX) | KEMA10ATEX0148X | 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 | Input power, max. P _i | 3 W |
| Input voltage, max. U _i | 26 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 | 26 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} (8/20 μ s) GND-PE | 10 kA |
| Discharge current I_{max} (8/20 μ s) wire-PE | 10 kA | Discharge current I_{max} (8/20 μ s) wire-wire | 10 kA |
| Discharge current I_n (8/20 μ s) GND-PE | 2.5 kA | Discharge current I_n (8/20 μ s) wire-PE | 2.5 kA |
| Discharge current I_n (8/20 μ s) wire-wire | 2.5 kA | Input voltage, max. U_i | 26 V |
| Lightning test current, I_{imp} (10/350 μ s) GND-PE | 2.5 kA | Lightning test current, I_{imp} (10/350 μ s) Wire-PE | 2.5 kA |
| Lightning test current, I_{imp} (10/350 μ s) wire-wire | 2.5 kA | Max. continuous voltage, U_c (DC) | 26 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/ μ s, typically | 450 V |
| Protection level on output side Wire-wire 1 kV/ μ s, typically | 45 V | Protection level on output side Wire-wire 8/20 μ 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 | ≤ 30 ms |
| Rated current I_N | 350 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 | 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 μ s | Surge current-carrying capacity C2 | 5 kA 8/20 μ s |
| Surge current-carrying capacity C3 | 100 A 10/1000 μ s | Surge current-carrying capacity D1 | 1 kA 10/350 μ s |
| 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 | 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 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.</p> | <p>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: 24V 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 |
|------|---------|

Downloads

| | |
|---|--|
| Approval/Certificate/Document of Conformity | SIL Paper KEMA 10 ATEX 0148X EU Konformitätserklärung / EU Declaration of Conformity |
| Engineering Data | CAD data – STEP |
| Engineering Data | EPLAN.WSCAD |
| User Documentation | Beipackzettel / Instruction sheet |
| Catalogues | Catalogues in PDF-format |
| Brochures | |

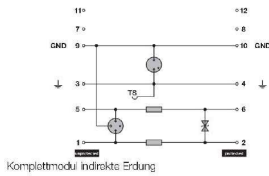
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Drawings

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

