

## 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
Order No.	<a href="#">8951550000</a>
Type	VSPC 1CL 24VDC R
GTIN (EAN)	4032248742790
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	42 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/ E311081VOL1SEC2.pdf (application/pdf)
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**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	1 nF		

**General data**

Optical function display	green = OK; red = arrester is defective - replace	Segment	Measurement - Monitoring - Setting
Version	with warning function / function indicator	Colour	orange
Protection degree	IP20	protected current loops	1

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## Technical data

### Insulation coordination acc. to EN 50178

Surge voltage category	III	Pollution severity	2
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### Rated data IEC / EN

Number of poles	1	Signalling contact	250 V 1A 1CO
Rated current I <sub>N</sub>	450 mA	Protection level on output side Wire-wire	45 V 1 kV/μs, typically
Protection level on output side Wire-PE	450 V 1 kV/μs, typically	Protection level on output side Wire-wire	45 V 8/20 μs, typically
Protection level, UP wire - wire	45 V	Protection level, UP wire - PE	450 V
Voltage type	DC	Fuse protection	0.5 A
Volume resistance	2.20 Ω	Standards	IEC 61643-21
Requirements category acc. to IEC 61643-21	C1, C2, C3, D1	Lightning test current, I <sub>imp</sub> (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, I <sub>imp</sub> (10/350 μs) GND-PE	2.5 kA
Pulse-reset capacity	≤ 30 ms	Signal transmission properties (-3 dB)	2.4 MHz
Lightning test current, I <sub>imp</sub> (10/350 μs) Wire-PE	2.5 kA	Overload - failure mode	Modus 2
Discharge current I <sub>max</sub> (8/20 μs) GND-PE	10 kA	Rated load current I <sub>L</sub>	450 mA
Discharge current I <sub>n</sub> (8/20 μs) wire-wire	2.5 kA	Discharge current I <sub>n</sub> (8/20 μs) wire-PE	2.5 kA
Discharge current I <sub>max</sub> (8/20 μs) wire-PE	10 kA	Discharge current I <sub>max</sub> (8/20 μs) wire-wire	10 kA
Discharge current I <sub>n</sub> (8/20 μs) 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)
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### Connection data

Type of connection	Pluggable in VSPC BASE
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### Electrical data

Voltage type	DC
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### 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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### 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.
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## Technical data

### 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	<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>	Short specification	<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>
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Drawings

www.weidmueller.com

Electric symbol



Circuit diagram

Category	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

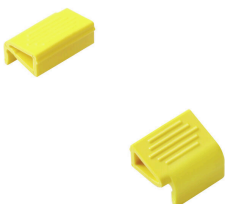


Base element for the pluggable VSPC arrester, integrated PE foot in impedance-neutral VSPC BASE. Can safely discharge up to 20 kA (8/20  $\mu$ s) and 2.5 kA (10/350  $\mu$ s) to the PE.

### General ordering data

Type	VSPC BASE 1CL R	Version	
Order No.	<a href="#">8951730000</a>		Surge protection, Flange-mounted housing, Flange-mounted housing
GTIN (EAN)	4032248742974		
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

### 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 R	Version	
Order No.	<a href="#">8951740000</a>	Surge protection, Flange-mounted housing, Flange-mounted housing	
GTIN (EAN)	4032248742981		
Qty.	1 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 µs) and 2.5 kA (10/350 µs) to the PE.

### General ordering data

Type	VSPC BASE 1CL R	Version	
Order No.	<a href="#">8951730000</a>	Surge protection, Flange-mounted housing, Flange-mounted housing	
GTIN (EAN)	4032248742974		
Qty.	1 ST		