

2800492

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Surge arrester for 3-conductor power supply systems (L1, N, PE), consisting of a base element and protective connectors, for mounting on NS 35.

Commercial data

Item number	2800492
Packing unit	50 pc
Minimum order quantity	50 pc
Product key	CL1321
GTIN	4046356560931
Weight per piece (including packing)	259.8 g
Weight per piece (excluding packing)	228.5 g
Country of origin	DE

VAL-MS 320/1+1/50 - Type 2 surge arrester



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Technical data

Product properties

Product type	Surge arrester
Product family	VALVETRAB MS
IEC test classification	II
	T2
EN type	T2
Type	DIN rail module, two-section, divisible
Number of positions	2
Surge protection fault message	optical

Insulation characteristics

Overvoltage category	III
Pollution degree	2

Electrical properties

Nominal frequency f_N	50 Hz (60 Hz)
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Connection data

Connection method	Screw connection
Screw thread	M5
Tightening torque	3 Nm (1.5 mm ² ... 16 mm ²)
	4.5 Nm (25 mm ² ... 35 mm ²)
Stripping length	16 mm
Conductor cross section flexible	1.5 mm ² ... 25 mm ²
Conductor cross section rigid	1.5 mm ² ... 35 mm ²
Conductor cross section AWG	15 ... 2
Connection method	Fork-type cable lug
Conductor cross section flexible	1.5 mm ² ... 16 mm ²

Dimensions

Dimensional drawing	
Width	35.6 mm
Height	89.8 mm
Depth	65.7 mm (incl. DIN rail 7.5 mm)
Horizontal pitch	2 Div.

Material specifications

Flammability rating according to UL 94	V-0
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CTI value of material	600
Insulating material	PA 6.6/PBT
Material group	I
Housing material	PA 6.6
	PBT

Protective circuit

Mode of protection	L-N
	L-PE
	N-PE
Direction of action	1L-N & N-PE
Nominal voltage U_N	240/415 V AC (TN-S)
	240/415 V AC (TT)
Nominal frequency f_N	50 Hz (60 Hz)
Maximum continuous operating voltage U_C (L-N)	335 V AC
Maximum continuous operating voltage U_C (L-PE)	335 V AC
Maximum continuous operating voltage U_C (N-PE)	260 V AC
Rated load current I_L	80 A
Residual current I_{PE}	$\leq 5 \mu A$
Standby power consumption P_C	$\leq 150.00 \text{ mVA}$
Nominal discharge current I_n (8/20) μs	20 kA
Maximum discharge current I_{max} (8/20) μs	40 kA
Follow current interrupt rating I_{fi} (N-PE)	100 A
Short-circuit current rating I_{SCCR}	25 kA
Voltage protection level U_p (L-N)	$\leq 1.5 \text{ kV}$
Voltage protection level U_p (L-PE)	$\leq 1.8 \text{ kV}$
Voltage protection level U_p (N-PE)	$\leq 1.5 \text{ kV}$
Residual voltage U_{res} (L-N)	$\leq 1.5 \text{ kV}$ (at I_n)
	$\leq 1.3 \text{ kV}$ (at 10 kA)
	$\leq 1.2 \text{ kV}$ (at 5 kA)
	$\leq 1.1 \text{ kV}$ (at 3 kA)
Residual voltage U_{res} (L-PE)	$\leq 1.8 \text{ kV}$ (at I_n)
	$\leq 1.4 \text{ kV}$ (at 10 kA)
	$\leq 1.2 \text{ kV}$ (at 5 kA)
	$\leq 1.1 \text{ kV}$ (at 3 kA)
Residual voltage U_{res} (N-PE)	$\leq 0.4 \text{ kV}$ (at I_n)
	$\leq 0.25 \text{ kV}$ (at 10 kA)
	$\leq 0.15 \text{ kV}$ (at 5 kA)
	$\leq 0.1 \text{ kV}$ (at 3 kA)
TOV behavior at U_T (L-N)	415 V AC (5 s / withstand mode)
	440 V AC (120 min / safe failure mode)
TOV behavior at U_T (N-PE)	1200 V AC (200 ms / withstand mode)
Response time t_A (L-N)	$\leq 25 \text{ ns}$
Response time t_A (L-PE)	$\leq 100 \text{ ns}$

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Response time t_A (N-PE)	≤ 100 ns
Max. backup fuse with V-type through wiring	80 A (gG)
Max. backup fuse with branch wiring	125 A (gG)

Environmental and real-life conditions

Ambient conditions

Degree of protection	IP20 (only when all terminal points are used)
Ambient temperature (operation)	-40 °C ... 80 °C
Ambient temperature (storage/transport)	-40 °C ... 80 °C
Altitude	≤ 2000 m (amsl)
Permissible humidity (operation)	5 % ... 95 %
Shock (operation)	25g (Half-sine / 11 ms / 3x $\pm X$, $\pm Y$, $\pm Z$)
Vibration (operation)	5g (10 ... 500 Hz / 2.5 h / X, Y, Z)

Approvals

UL specifications

Maximum continuous operating voltage MCOV (L-L)	640 V AC
Maximum continuous operating voltage MCOV (L-N)	320 V AC
Maximum continuous operating voltage MCOV (L-G)	320 V AC
Maximum continuous operating voltage MCOV (N-G)	260 V AC
Nominal discharge current I_n (L-L)	20 kA
Nominal discharge current I_n (L-N)	20 kA
Nominal discharge current I_n (L-G)	20 kA
Nominal discharge current I_n (N-G)	20 kA
Mode of protection	L-L
	L-N
	L-G
	N-G
Nominal voltage	240 V AC
Power distribution system	Single phase
Nominal frequency	50/60 Hz
Measured limiting voltage MLV (L-L)	2900 V
Measured limiting voltage MLV (L-N)	2030 V
Measured limiting voltage MLV (L-G)	2720 V
Measured limiting voltage MLV (N-G)	1370 V
SPD Type	4CA

UL connection data

Tightening torque	30 lb _F -in.
Conductor cross section AWG	10 ... 2

Standards and regulations

Standards/specifications	IEC 61643-11
Note	2011

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Standards/specifications	EN 61643-11
Note	2012

Mounting

Mounting type	DIN rail: 35 mm
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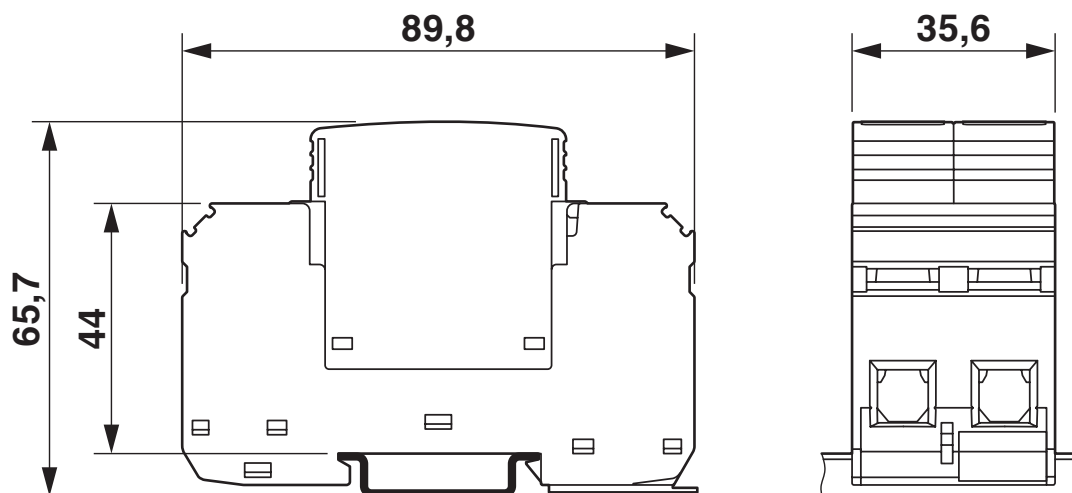
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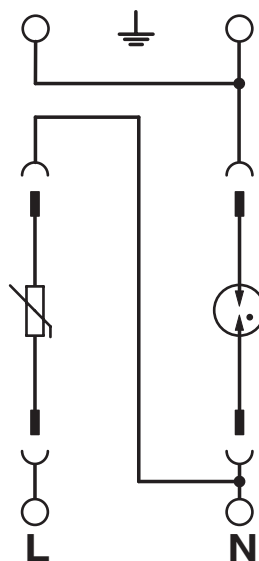


Drawings

Dimensional drawing



Circuit diagram



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Classifications

ECLASS

ECLASS-11.0	27130805
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UNSPSC

UNSPSC 21.0	39121620
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Environmental product compliance

EU RoHS	
Fulfills EU RoHS substance requirements	Yes, No exemptions
China RoHS	
Environment friendly use period (EFUP)	EFUP-E
	No hazardous substances above the limits
EU REACH SVHC	
REACH candidate substance (CAS No.)	No substance above 0.1 wt%

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Accessories

ZBN 18,LGS:ERDE - Marker for terminal blocks

2749589

<https://www.phoenixcontact.com/us/products/2749589>



Marker for terminal blocks, Strip, white, labeled, horizontal: Grounding symbol, mounting type: snapped, for terminal block width: 18 mm, lettering field size: 18 x 5 mm, Number of individual labels: 5

ZBN 18,LGS:L1-N,ERDE - Marker for terminal blocks

2749576

<https://www.phoenixcontact.com/us/products/2749576>



Marker for terminal blocks, Strip, white, labeled, horizontal: L1, L2, L3, N, GND, mounting type: snapped, for terminal block width: 18 mm, lettering field size: 18 x 5 mm, Number of individual labels: 5

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ZBN 18:UNBEDRUCKT - Zack marker strip

2809128

<https://www.phoenixcontact.com/us/products/2809128>



Zack marker strip, Strip, white, unlabeled, can be labeled with: CMS-P1-PLOTTER, PLOTMARK, mounting type: snapped, for terminal block width: 18 mm, lettering field size: 18 x 5 mm, Number of individual labels: 5

B-STIFT - Marker pen

1051993

<https://www.phoenixcontact.com/us/products/1051993>



Marker pen, for manual labeling of unprinted Zack strips, smear-proof and waterproof, line thickness 0.5 mm

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DK-BIC-35 - Feed-through terminal block

2749880

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Feed-through terminal block for VAL and FLT applications



MPB 18/1- 2 - Wiring bridge

2809209

<https://www.phoenixcontact.com/us/products/2809209>

Wiring bridge for modules with connecting pitch 17.5 mm, 1-phase, 2-pos.



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MPB 18/1- 3 - Wiring bridge

2809212

<https://www.phoenixcontact.com/us/products/2809212>

Wiring bridge for modules with connecting pitch 17.5 mm, 1-phase, 3-pos.



MPB 18/1- 4 - Wiring bridge

2809225

<https://www.phoenixcontact.com/us/products/2809225>

Wiring bridge for modules with connecting pitch 17.5 mm, 1-phase, 4-pos.



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MPB 18/1- 6 - Wiring bridge

2748564

<https://www.phoenixcontact.com/us/products/2748564>



Wiring bridge for modules with connecting pitch 17.5 mm, 1-phase, 6-pos.

MPB 18/1- 7 BU - Wiring bridge

2856278

<https://www.phoenixcontact.com/us/products/2856278>



Wiring bridge for modules with connecting pitch 17.5 mm, 1-phase, 7-pos., color: Blue

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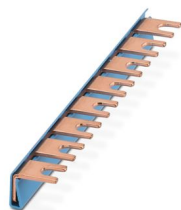
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MPB 18/1- 8 BU - Wiring bridge

2858470

<https://www.phoenixcontact.com/us/products/2858470>



Wiring bridge for modules with connecting pitch 17.5 mm, 1-phase, 8-pos., color: Blue

MPB 18/1- 8 - Wiring bridge

2748577

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Wiring bridge for modules with connecting pitch 17.5 mm, 1-phase, 8-pos.

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MPB 18/1- 9 - Wiring bridge

2748580

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Wiring bridge for modules with connecting pitch 17.5 mm, 1-phase, 9-pos.

MPB 18/1-12 - Wiring bridge

2748593

<https://www.phoenixcontact.com/us/products/2748593>



Wiring bridge for modules with connecting pitch 17.5 mm, 1-phase, 12-pos.

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VAL-MS 320 ST - Type 2 surge protection plug

2838843

<https://www.phoenixcontact.com/us/products/2838843>



Surge protection connector type 2 with high-capacity varistor for VAL-MS base element, thermal monitoring, visual fault warning. Design: 320 V AC

F-MS 12 ST - Type 2 surge protection plug

2817990

<https://www.phoenixcontact.com/us/products/2817990>



Surge protection plug type 2, with N-PE total current spark gap for base element.

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