

## Type 1 surge protection device - VAL-US-120/65/1+1-FM - 2910356

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Surge protective device, two channel with remote indicator contact for 120 V AC, 2-wire plus ground.

### Your advantages

- ✓ UL open terminal listed SPD
- ✓ With floating remote indication contact
- ✓ Plugs can be checked with CHECKMASTER
- ✓ Secure hold of plugs in the event of high lightning current loads and strong vibrations thanks to new latching
- ✓ Mechanical coding of all slots
- ✓ Optical, mechanical status indication for the individual arresters
- ✓ Pluggable
- ✓ Thermal disconnect device for each individual plug



### Key Commercial Data

Packing unit	1 pc
GTIN	 4 055626 444963
GTIN	4055626444963

### Technical data

#### Dimensions

Height	96.8 mm
Width	35.6 mm
Depth	77.5 mm
Horizontal pitch	2 Div.

#### 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

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## Technical data

### Ambient conditions

Altitude	≤ 2000 m (amsl (above mean sea level))
Permissible humidity (operation)	5 % ... 95 %
Shock (operation)	30g (Half-sine / 11 ms / 3x ±X, ±Y, ±Z)
Vibration (operation)	7.5g (10 ... 500 Hz / 2.5 h / X, Y, Z)

### General

IEC test classification	I / II
	T1 / T2
EN type	T1 / T2
IEC power supply system	TN-S
	TT
Mode of protection	L-N
	L-PE
	N-PE
Mounting type	DIN rail: 35 mm
Color	jet black RAL 9005
Housing material	PA 6.6
	PBT
Degree of pollution	2
Flammability rating according to UL 94	V-0
Type	DIN rail module, two-section, divisible
Number of positions	2
Surge protection fault message	Optical, remote indicator contact

### Protective circuit

Nominal voltage $U_N$	120 V AC (TN-S)
	120 V AC (TT)
Nominal frequency $f_N$	50 Hz (60 Hz)
Maximum continuous operating voltage $U_C$ (L-N)	175 V AC
Maximum continuous voltage $U_C$ (N-PE)	264 V AC
Rated load current $I_L$	80 A
Residual current $I_{PE}$	≤ 5 μA
Nominal discharge current $I_n$ (8/20) μs (L-N)	12.5 kA
Nominal discharge current $I_n$ (8/20) μs (L-PE)	12.5 kA
Nominal discharge current $I_n$ (8/20) μs (N-PE)	50 kA
Total discharge current $I_{total}$ (10/350) μs	25 kA
Follow current interrupt rating $I_{fi}$ (N-PE)	100 A (264 V AC)
Short-circuit current rating $I_{SCCR}$	25 kA
Voltage protection level $U_p$ (L-N)	≤ 0.8 kV
Voltage protection level $U_p$ (L-PE)	≤ 2 kV
Voltage protection level $U_p$ (N-PE)	≤ 1.7 kV

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## Technical data

### Protective circuit

Residual voltage $U_{res}$ (L-N)	$\leq 0.8$ kV (at $I_n$ )
	$\leq 0.75$ kV (at 10 kA)
	$\leq 0.65$ kV (at 5 kA)
	$\leq 0.6$ kV (at 3 kA)
Residual voltage $U_{res}$ (L-PE)	$\leq 2$ kV (at $I_n$ )
	$\leq 1.5$ kV (at 10 kA)
	$\leq 1.4$ kV (at 5 kA)
	$\leq 1.3$ kV (at 3 kA)
Residual voltage $U_{res}$ (N-PE)	$\leq 0.6$ kV (at $I_n$ )
	$\leq 0.5$ kV (at 10 kA)
	$\leq 0.5$ kV (at 5 kA)
	$\leq 0.4$ kV (at 3 kA)
TOV behavior at $U_T$ (L-N)	208 V AC (5 s / withstand mode)
	240 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)	$\leq 25$ ns
Response time $t_A$ (L-PE)	$\leq 100$ ns
Response time $t_A$ (N-PE)	$\leq 100$ ns
Max. backup fuse with V-type through wiring	80 A (gG)
Max. backup fuse with branch wiring	160 A (gG)

### Indicator/remote signaling

Switching function	PDT contact
Operating voltage	5 V AC ... 250 V AC
	30 V DC
Operating current	5 mA AC ... 1.5 A AC
	1 A DC
Connection method	Screw connection
Screw thread	M2
Tightening torque	0.25 Nm
Stripping length	7 mm
Conductor cross section flexible	0.14 mm <sup>2</sup> ... 1.5 mm <sup>2</sup>
Conductor cross section solid	0.14 mm <sup>2</sup> ... 1.5 mm <sup>2</sup>
Conductor cross section AWG	28 ... 16

### Connection data

Connection method	Screw connection
Screw thread	M5
Tightening torque	4.5 Nm (1.5 mm <sup>2</sup> ... 16 mm <sup>2</sup> )
	4.5 Nm (25 mm <sup>2</sup> ... 35 mm <sup>2</sup> )
Stripping length	16 mm

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## Technical data

### Connection data

Conductor cross section flexible	1.5 mm <sup>2</sup> ... 25 mm <sup>2</sup>
Conductor cross section solid	1.5 mm <sup>2</sup> ... 35 mm <sup>2</sup>
Conductor cross section AWG	15 ... 2

### UL specifications

SPD Type	1
Maximum continuous operating voltage MCOV (L-N)	175 V AC
Maximum continuous operating voltage MCOV (L-G)	175 V AC
Maximum continuous operating voltage MCOV (N-G)	264 V AC
Nom. voltage	120 V AC
Mode of protection	L-N
	L-G
	N-G
Power distribution system	Single phase
Nominal frequency	50/60 Hz
Voltage protection rating VPR (L-N)	700 V
Voltage protection rating VPR (L-G)	1500 V
Voltage protection rating VPR (N-G)	1200 V
Nominal discharge current I <sub>n</sub>	20 kA
Maximum Surge Current per Phase	65 kA
Short-circuit current rating (SCCR)	200 kA

### UL indicator/remote signaling

Operating voltage	125 V AC
Operating current	1 A AC
Tightening torque	2 lb <sub>F</sub> -in. ... 4 lb <sub>F</sub> -in.
Conductor cross section AWG	30 ... 14

### UL connection data

Conductor cross section AWG	10 ... 2
Tightening torque	30 lb <sub>F</sub> -in.

### Standards and Regulations

Standards/regulations	IEC 61643-11 2011
	EN 61643-11 2012

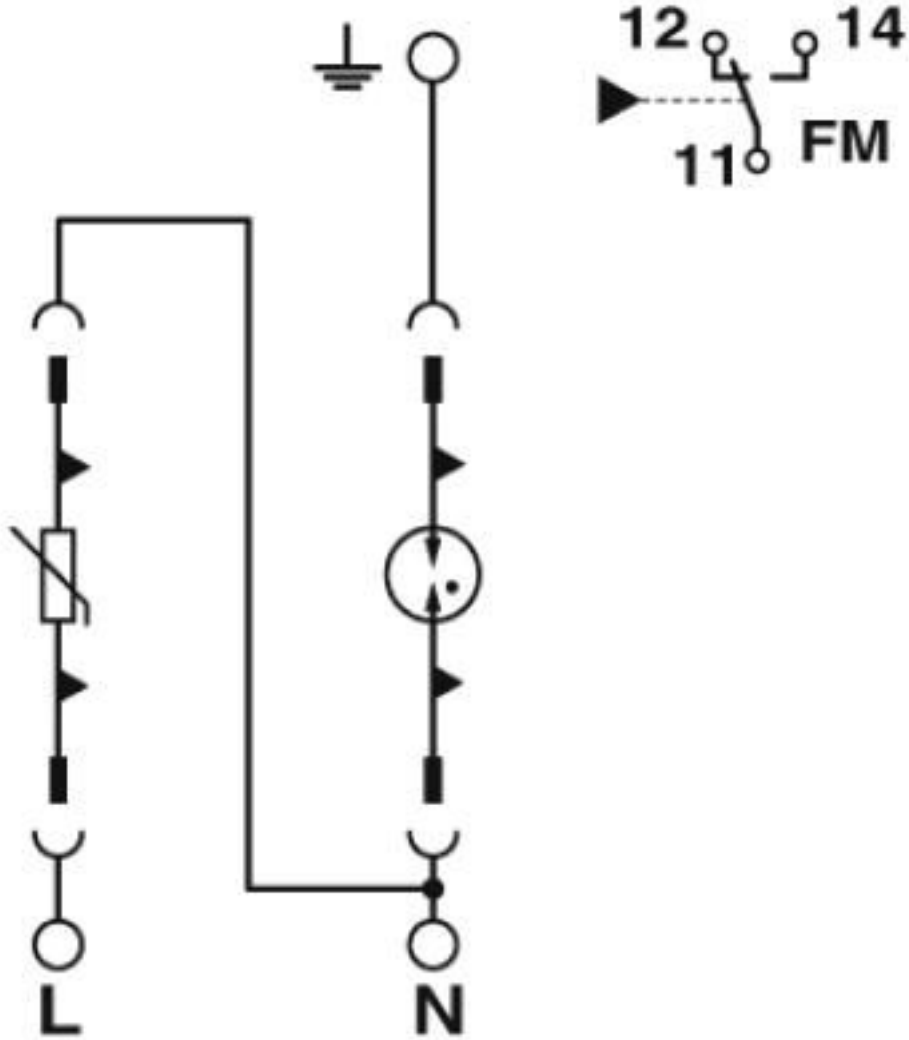
### Environmental Product Compliance

REACH SVHC	Lead 7439-92-1
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## Drawings

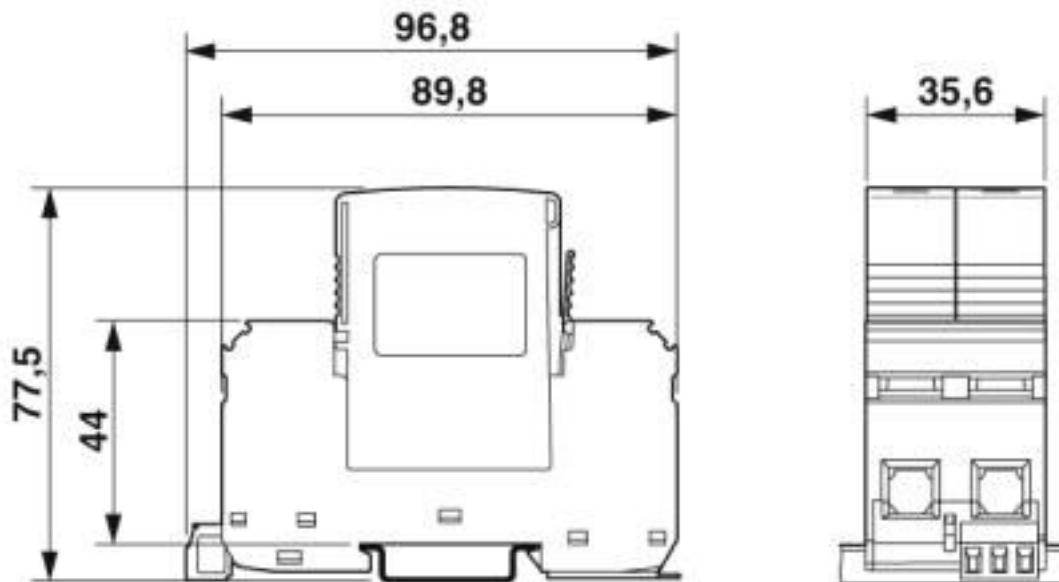
# Type 1 surge protection device - VAL-US-120/65/1+1-FM - 2910356

Circuit diagram



# Type 1 surge protection device - VAL-US-120/65/1+1-FM - 2910356

Dimensional drawing



## Classifications

eCl@ss

eCl@ss 10.0.1	27130805
eCl@ss 6.0	27130800
eCl@ss 7.0	27130805
eCl@ss 8.0	27130805
eCl@ss 9.0	27130805

ETIM

ETIM 5.0	EC000941
ETIM 6.0	EC000941
ETIM 7.0	EC000941

## Approvals

Approvals

Approvals

UL Listed / cUL Listed / cULus Listed

Ex Approvals

Approval details

# Type 1 surge protection device - VAL-US-120/65/1+1-FM - 2910356

## Approvals

UL Listed		<a href="http://database.ul.com/cgi-bin/XYV/template/LISEXT/1FRAME/index.htm">http://database.ul.com/cgi-bin/XYV/template/LISEXT/1FRAME/index.htm</a>	FILE E 330181
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cUL Listed		<a href="http://database.ul.com/cgi-bin/XYV/template/LISEXT/1FRAME/index.htm">http://database.ul.com/cgi-bin/XYV/template/LISEXT/1FRAME/index.htm</a>	FILE E 330181
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cULus Listed			
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## Accessories

### Accessories

#### Bridge

Wiring bridge - MPB F600X16/ 1GS - 2818355



Wiring bridge flexible, diameter: 16 mm<sup>2</sup>, with a fork-type cable lug on one side, length: 600 mm

Wiring bridge - MPB F600X16/ 1GS - 2818355



Wiring bridge flexible, diameter: 16 mm<sup>2</sup>, with a fork-type cable lug on one side, length: 600 mm

Wiring bridge - MPB F200X16/ 1GS - 2818339



Wiring bridge flexible, diameter 16 mm<sup>2</sup>, with a fork-type cable lug on one side, length: 200 mm

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## Accessories

Wiring bridge - MPB 18/1-10/1.0.0 - 2830443



Wiring bridge for modules with connecting pitch 17.5 mm, 1-phase, 10 pitches with contact sequence 1-0-0

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Wiring bridge - MPB 18/4-12 - 2809296



Wiring bridge for modules with connecting pitch 17.5 mm, 4-phase, 12-pos.

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Wiring bridge - MPB 18/4- 8 - 2809283



Wiring bridge for modules with connecting pitch 17.5 mm, 4-phase, 8-pos.

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Wiring bridge - MPB 18/3- 6 - 2809241



Wiring bridge for modules with connecting pitch 17.5 mm, 3-phase, 6-pos.

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Wiring bridge - MPB 18/1-57 - 2809238



Wiring bridge for modules with connecting pitch 17.5 mm, 1-phase, 57-pos.

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## Type 1 surge protection device - VAL-US-120/65/1+1-FM - 2910356

### Accessories

Wiring bridge - MPB 18/1-12 - 2748593



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

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Wiring bridge - MPB 18/1- 9 - 2748580



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

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Wiring bridge - MPB 18/1- 8 - 2748577



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

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Wiring bridge - MPB 18/1- 6 - 2748564



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

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Wiring bridge - MPB 18/1- 4 - 2809225



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

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## Type 1 surge protection device - VAL-US-120/65/1+1-FM - 2910356

### Accessories

Wiring bridge - MPB 18/1- 3 - 2809212



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

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Wiring bridge - MPB 18/1- 2 - 2809209



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

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### Device marking

Zack marker strip - ZBN 18:UNBEDRUCKT - 2809128



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

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### Feed-through terminal block

Feed-through terminal block - DK-BIC-35 - 2749880



Feed-through terminal block for VAL and FLT applications

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### Labeled device marker

Marker for terminal blocks - ZBN 18,LGS:ERDE - 2749589



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

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## Type 1 surge protection device - VAL-US-120/65/1+1-FM - 2910356

### Accessories

Marker for terminal blocks - ZBN 18,LGS:L1-N,ERDE - 2749576



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

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### Marker pen

Marker pen - B-STIFT - 1051993



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

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### Spare parts

Type 1 surge protection plug - VAL-US-120/65-P - 2910330



UL Recognized type 1 SPD and IEC type 2 surge protection plug with a varistor and thermal disconnect for use with VAL-US base elements, mechanical and visual fault warning

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Type 1 surge protection plug - GDT-US-NG/80-P - 2910332



UL Recognized type 1 SPD and IEC type 2 surge protection plug with a gas discharge tube and thermal disconnect for use with VAL-US base elements, mechanical and visual fault warning

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[2713175](#) [4B06B-EC1-150LF](#) [SRA6LC](#) [BPMA75D100LV](#) [CX06M](#) [CCTV1](#) [GUS13](#) [GUS14](#) [GUS5](#) [GUS6](#) [VAL-MS 320/3+0-FM](#) [VAL-US-](#)  
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