VAL-US-SPP-120/50/1+1-R - Surge protection device

1790745

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Surge protective device, UL Listed type 1 and IEC type 2, for 1-phase power supply networks with neutral conductor for 120 V AC, replaceable surge protection plugs with local status indicator (green/red), with plug-in remote signaling.

Your advantages

- Universal surge protective device (SPD) with UL Listed type 1 and IEC type 2: suitable for all common supply system configurations and supply voltages in North America
- Minimal maintenance with replaceable surge protection plugs
- Clear status indication with local optical green/red display and plug-in remote signaling for quick and easy installation
- Simple planning with comprehensive digital data
- Miswiring and touch protection for safe installation

ELEKTROGERÄTE RÜCKNAHME

Commercial data

Item number	1790745
Packing unit	1 pc
Minimum order quantity	1 pc
Sales key	CL17
Product key	CL138U
GTIN	4067923409781
Weight per piece (including packing)	243 g
Weight per piece (excluding packing)	236.7 g
Customs tariff number	85363030
Country of origin	DE

Technical data

Product properties

Product type	Surge protection for NEMA power supply units
Product family	VAL-SPP
IEC test classification	II
	T2
EN type	T2
IEC power supply system	TN-S
	TT
Type	DIN rail module, two-section, divisible
Number of positions	2
End-of-life mode	OCM
Surge protection fault message	Optical, remote indicator contact
Number of ports	One

Insulation characteristics

Overvoltage category	III
Pollution degree	3

Electrical properties

Nominal frequency f_N	50 Hz (60 Hz)

Indicator/remote signaling

Connection name	Remote fault indicator contact
Switching function	Changeover contact
Max. required back-up fuse	1 A (gG)
AC operating voltage	5 V AC ... 250 V AC
AC operating current	5 mA AC ... 1 A AC
DC operating voltage	30 V DC
DC operating current	1 A DC
DC operating voltage	125 V DC
DC operating current	200 mA DC
Insulation type	The product has double/reinforced insulation between the main and auxiliary circuit.

Connection data

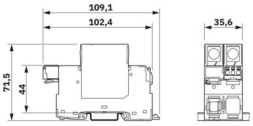
Connection method	Screw connection
Screw thread	M5
Tightening torque	3 Nm ... 3.5 Nm
Stripping length	18 mm
Conductor cross-section flexible	1.5 mm² ... 35 mm² (without ferrule)
	2x 1.5 mm² ... 16 mm² (2 conductors with the same cross-section)
Conductor cross-section rigid	1.5 mm² ... 50 mm²

	2x 1.5 mm² ... 16 mm² (2 conductors with the same cross-section)
Conductor cross-section AWG	15 ... 2
2 conductors with the same cross section, flexible, with TWIN ferrule with plastic sleeve	1.5 mm² ... 16 mm²
Conductor cross-section, flexible, with ferrule, with plastic sleeve	1.5 mm² ... 35 mm²
	2x 1.5 mm² ... 10 mm² (2 conductors with the same cross-section)
Conductor cross-section, flexible, with ferrule, without plastic sleeve	1.5 mm² ... 25 mm²
	2x 1.5 mm² ... 16 mm² (2 conductors with the same cross-section)
Connection method	Fork-type cable lug
Conductor cross-section flexible	1.5 mm² ... 25 mm²

Remote fault indicator contact

Connection method	Push-in connection
Stripping length	8 mm
Conductor cross-section flexible	0.25 mm² ... 1.5 mm²
Conductor cross-section rigid	0.25 mm² ... 1.5 mm²
Conductor cross-section AWG	24 ... 16
Conductor cross-section, flexible, with ferrule, with plastic sleeve	0.25 mm² ... 1.5 mm²
Conductor cross-section, flexible, with ferrule, without plastic sleeve	0.25 mm² ... 0.75 mm²

Dimensions

Dimensional drawing	
Width	35.6 mm
Height	109.1 mm
Depth	71.5 mm (incl. DIN rail 7.5 mm)
Horizontal pitch	2 HP

Material specifications

Color	gray (RAL 7042)
	light gray (RAL 7035)
Flammability rating according to UL 94	V-0
CTI value of material	600
Insulating material	PA 6.6-FR 20 % GF
	PBT
Material group	I
Housing material	PA 6.6-FR 20 % GF
	PBT

Mechanical properties

Mechanical data

Open side panel	No

Protective circuit

Mode of protection	L-N
	L-PE
	N-PE
Nominal voltage U_N	120 V AC ±10 % (TN-S)
	120 V AC ±10 % (TT)
Nominal frequency f_N	50 Hz (60 Hz)
Maximum continuous operating voltage U_C (L-N)	175 V AC
Maximum continuous operating voltage U_C (L-PE)	175 V AC
Maximum continuous operating voltage U_C (N-PE)	305 V AC
Rated load current I_L	80 A (25 mm²)
Protective conductor current I_{PE}	≤ 5 µA
Standby power consumption P_C	≤ 70 mVA
Operating effective current I_C at U_N	≤ 0.4 mA
Nominal discharge current I_n (8/20) µs	20 kA
Follow current interrupt rating I_{fi} (N-PE)	100 A
Short-circuit current rating I_{SCCR}	50 kA
Voltage protection level U_p (L-N)	≤ 1 kV
Voltage protection level U_p (L-PE)	≤ 1.5 kV
Voltage protection level U_p (N-PE)	≤ 1.5 kV
Residual voltage U_{res} (L-N)	≤ 1.5 kV (at I_n)
Residual voltage U_{res} (L-PE)	≤ 1.5 kV (at I_n)
Residual voltage U_{res} (N-PE)	≤ 0.5 kV (at I_n)
TOV behavior at U_T (L-N)	175 V AC (5 s / withstand mode)
	230 V AC (120 min / safe failure mode)
TOV behavior at U_T (L-PE)	1332 V AC (200 ms/withstand mode)
TOV behavior at U_T (N-PE)	1200 V AC (200 ms / withstand mode)
Response time t_A (L-N)	≤ 25 ns
Response time t_A (L-PE)	≤ 100 ns
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	315 A (gG)

Additional technical data

Short-circuit current rating I_{SCCR}	100 kA
TOV behavior at U_T (L-PE)	710 V AC (30 A / 1 s / withstand mode)
TOV behavior at U_T (N-PE)	600 V AC (30 A / 1 s / withstand mode)

Environmental and real-life conditions

Ambient conditions

Degree of protection	IP20C (Installed)
Ambient temperature (operation)	-40 °C ... 85 °C
Ambient temperature (storage/transport)	-40 °C ... 85 °C
Ambient temperature (assembly)	-5 °C ... 50 °C
Altitude	≤ 2000 m (amsl)
Permissible humidity (operation)	5 % ... 95 %
Shock (operation)	25g (Half-sine / 11 ms / 3x ±X, ±Y, ±Z)
Vibration (operation)	5g (10 ... 500 Hz / 2.5 h / X, Y, Z)

Approvals

UL specifications

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)	305 V AC
Short-circuit current rating (SCCR)	200 kA
Voltage protection rating VPR (L-N)	700 V
Voltage protection rating VPR (L-G)	900 V
Voltage protection rating VPR (N-G)	900 V
Nominal discharge current I_n	20 kA
Maximum Surge Current per Phase	1x 50 kA (IEEE C62.73)
Mode of protection	L-N
	L-G
	N-G
Nominal voltage	120 V AC (Single Phase)
Power distribution system	Single phase
Nominal frequency	50/60 Hz
SPD Type	1

UL indicator/remote signaling

Operating voltage	250 V AC
DC operating voltage	30 V DC
AC operating current	5 mA AC ... 1 A AC
DC operating current	1 A DC

UL connection data

Tightening torque	30 lb_f-in.
Conductor cross-section AWG	14 ... 2

Standards and regulations

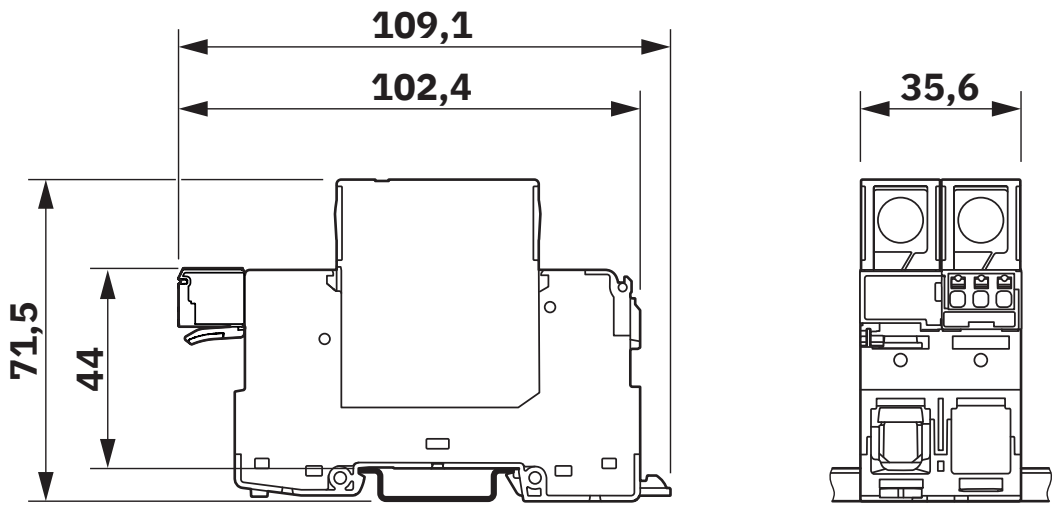
Standards/specifications	IEC 61643-11
Note	2011
Standards/specifications	EN 61643-11
Note	2012 + A11:2018

Mounting

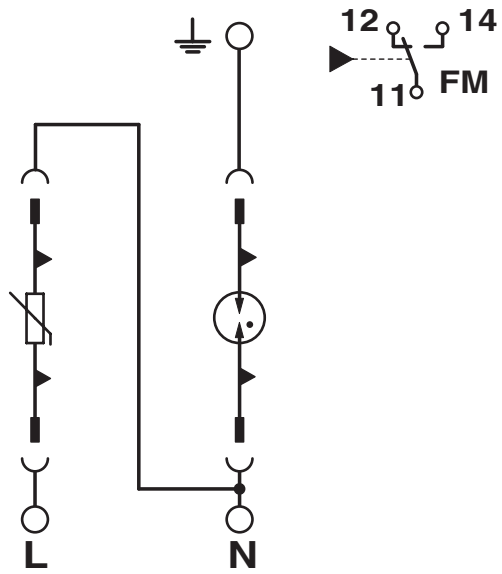
Mounting type	DIN rail: 35 mm

Drawings

Dimensional drawing



Circuit diagram



Approvals

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cULus Listed
Approval ID: E330181-20251028

Classifications

ECLASS

ECLASS-13.0	27171202
ECLASS-15.0	27171202

ETIM

ETIM 10.0	EC000941

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.)	Benzene-1,2,4-tricarboxylic acid 1,2 anhydride(CAS: 552-30-7)

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