

# Type 1+2 special combined lightning current and surge arrester - SYS-SET/ 1



2880448

<https://www.phoenixcontact.com/in/products/2880448>

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Plug-in lightning and surge arrester combination, in accordance with Type 1+2/Class I+II, for 3-phase power supply networks, with separate N and PE (L1, L2, L3, PE, N).

## Commercial Data

Item number	2880448
Packing unit	1 pc
Minimum order quantity	1 pc
Sales Key	CL1
Product Key	CL1243
GTIN	4017918981303
Weight per Piece (including packing)	1,362.5 g
Weight per Piece (excluding packing)	1,184 g
Customs tariff number	85363030
Country of origin	DE

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## Technical Data

### Product properties

IEC test classification	I + II
	T1 + T2
	I
EN type	T1 + T2
IEC power supply system	TN-S
	TT
Type	DIN rail module, two-section, divisible
Product type	Arrester combination
Number of positions	4
Surge protection fault message	Optical, remote indicator contact

### Insulation characteristics

Overvoltage category	III
Pollution degree	2

### Electrical properties

Nominal frequency $f_N$	50 Hz (60 Hz)
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### Indicator/remote signaling

Connection name	Remote fault indicator contact
Switching function	Changeover contact
Operating voltage	12 V AC ... 250 V AC
	125 V DC (200 mA DC)
Operating current	10 mA AC ... 1 A AC
	1 A DC (30 V DC)

### Connection data

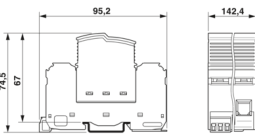
Connection method	Screw connection
Screw thread	M5
Tightening torque	4.5 Nm
Stripping length	18 mm
Conductor cross section flexible	2.5 mm <sup>2</sup> ... 35 mm <sup>2</sup>
Conductor cross section solid	2.5 mm <sup>2</sup> ... 35 mm <sup>2</sup>
Conductor cross section AWG	13 ... 2
Connection method	Fork-type cable lug
Conductor cross section flexible	1.5 mm <sup>2</sup> ... 16 mm <sup>2</sup>

### Dimensions

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Dimensional drawing	
Width	142.4 mm
Width	142.4 mm
Height	95.2 mm
Height	95.2 mm
Depth	74.5 mm (incl. DIN rail 7.5 mm)
Depth	74.5 mm
Horizontal pitch	8 Div.

## Material specifications

Color	light grey RAL 7035
	traffic grey A RAL 7042
Flammability rating according to UL 94	V-0
CTI value of material	600
Insulating material	PA6.6-FR 20% GF
	PBT-FR
Material group	I
Housing material	PA 6.6-FR 20 % GF
	PBT-FR

## Mechanical properties

### Mechanical data

Open side panel	No
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## Protective circuit

Mode of protection	L-N
	L-PE
	N-PE
Direction of action	3L-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 voltage $U_C$	350 V AC
Rated load current $I_L$	125 A (< 55 °C)
Residual current $I_{PE}$	≤ 0.01 mA
Nominal discharge current $I_n$ (8/20) μs (L-N)	25 kA
Nominal discharge current $I_n$ (8/20) μs (L-PE)	25 kA
Nominal discharge current $I_n$ (8/20) μs (N-PE)	100 kA

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Impulse discharge current (10/350) $\mu\text{s}$ (L-N), charge	12.5 As
Impulse discharge current (10/350) $\mu\text{s}$ (L-N), specific energy	160 kJ/ $\Omega$
Impulse discharge current (10/350) $\mu\text{s}$ (L-N), peak current value $I_{\text{imp}}$	25 kA
Impulse discharge current (10/350) $\mu\text{s}$ (L-PE), charge	12.5 As
Impulse discharge current (10/350) $\mu\text{s}$ (L-PE), specific energy	160 kJ/ $\Omega$
Impulse discharge current (10/350) $\mu\text{s}$ (L-PE), peak current value $I_{\text{imp}}$	25 kA
Impulse discharge current (10/350) $\mu\text{s}$ (N-PE), charge	50 As
Impulse discharge current (10/350) $\mu\text{s}$ (N-PE), specific energy	2500 kJ/ $\Omega$
Impulse discharge current (10/350) $\mu\text{s}$ (N-PE), peak current value $I_{\text{imp}}$	100 kA
Follow current quenching capacity $I_{\text{fi}}$ (L-N)	25 kA (264 V AC)
	3 kA (350 V AC)
Follow current interrupt rating $I_{\text{fi}}$ (N-PE)	100 A (350 V AC)
Short-circuit current rating $I_{\text{SCCR}}$	25 kA (264 V AC)
	3 kA (350 V AC)
Voltage protection level $U_{\text{p}}$ (L-N)	$\leq 1.5$ kV
Voltage protection level $U_{\text{p}}$ (L-PE)	$\leq 2.2$ kV
Voltage protection level $U_{\text{p}}$ (N-PE)	$\leq 1.5$ kV
Residual voltage $U_{\text{res}}$ (L-N)	$\leq 1.5$ kV (at $I_{\text{n}}$ )
	$\leq 1.2$ kV (at 10 kA)
	$\leq 1$ kV (at 5 kA)
	$\leq 0.9$ kV (at 3 kA)
Residual voltage $U_{\text{res}}$ (L-PE)	$\leq 2.2$ kV (at $I_{\text{n}}$ )
	$\leq 2$ kV (at 10 kA)
	$\leq 1.8$ kV (at 5 kA)
	$\leq 1.6$ kV (at 3 kA)
Residual voltage $U_{\text{res}}$ (N-PE)	$\leq 1.5$ kV (at $I_{\text{n}}$ )
	$\leq 1$ kV (at 10 kA)
	$\leq 0.9$ kV (at 5 kA)
	$\leq 0.8$ kV (at 3 kA)
TOV behavior at $U_{\text{T}}$ (L-N)	415 V AC (5 s / withstand mode)
	457 V AC (120 min / safe failure mode)
TOV behavior at $U_{\text{T}}$ (N-PE)	1200 V AC (200 ms / withstand mode)
Response time $t_{\text{A}}$ (L-N)	$\leq 25$ ns
Response time $t_{\text{A}}$ (N-PE)	$\leq 100$ ns
Max. backup fuse with V-type through wiring	125 A (gG)
Max. backup fuse with branch wiring	315 A (gG)

## Additional technical data

Maximum discharge current $I_{\text{max}}$ (8/20) $\mu\text{s}$	100 kA
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## Environmental and real-life conditions

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

## Approval data

### UL specifications

Maximum continuous operating voltage MCOV (L-L)	528 V AC
Maximum continuous operating voltage MCOV (L-N)	264 V AC
Maximum continuous operating voltage MCOV (L-G)	264 V AC
Maximum continuous operating voltage MCOV (N-G)	350 V AC
Short-circuit current rating (SCCR)	50 kA
Voltage protection rating VPR (L-L)	2000 V
Voltage protection rating VPR (L-N)	1200 V
Voltage protection rating VPR (L-G)	1500 V
Voltage protection rating VPR (N-G)	1200 V
Mode of protection	L-L L-N L-G N-G
Nominal voltage	240/415 V AC
Rated load current $I_L$	50 A
Power distribution system	Wye
Nominal frequency	50/60 Hz
SPD Type	2CA
AC operating voltage	125 V AC
AC operating current	1 A AC

### UL connection data

Tightening torque	40 lb <sub>F</sub> -in.
Conductor cross section AWG	3 ... 2

## Standards and regulations

Standards/specifications	IEC 61643-11
Standards/specifications	EN 61643-11

## Mounting

Mounting type	DIN rail: 35 mm
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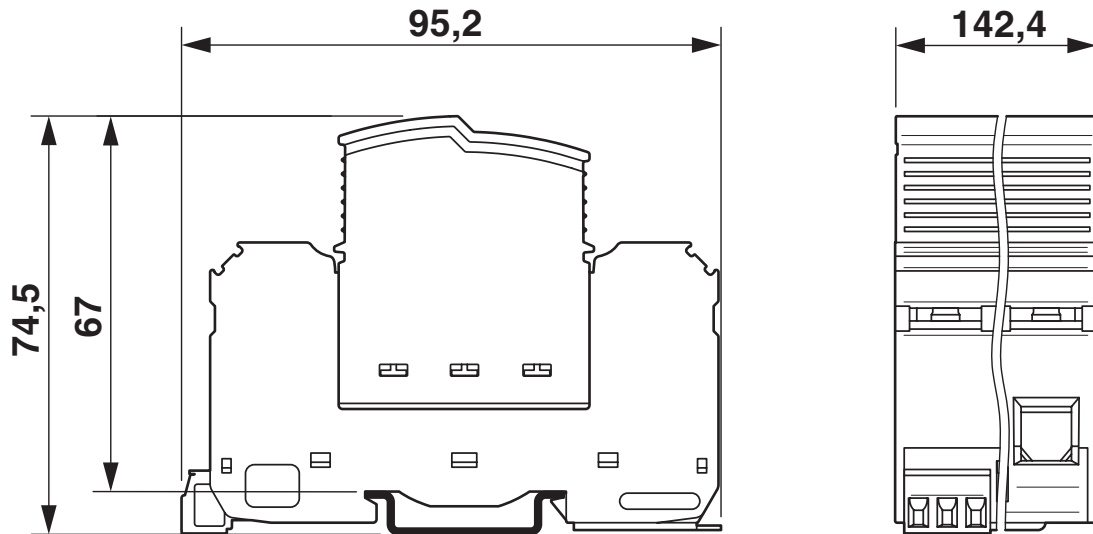
# Type 1+2 special combined lightning current and surge arrester - SYS-SET/ 1

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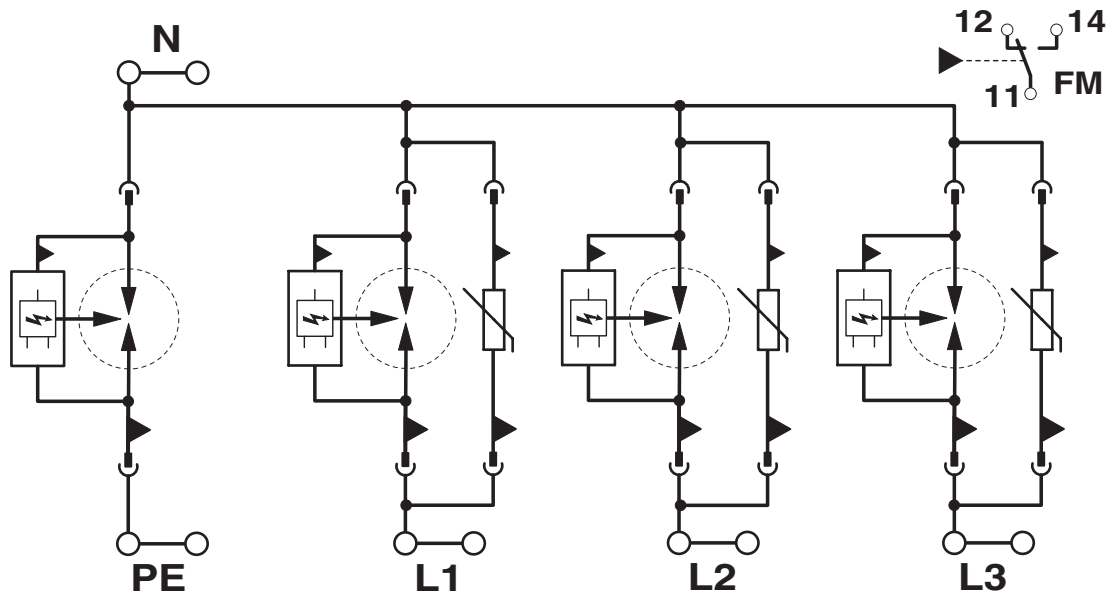
<https://www.phoenixcontact.com/in/products/2880448>

## Drawings

Dimensional drawing



Circuit diagram



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## Approvals



cUL Recognized



UL Recognized



IECEE CB Scheme



EAC

CCA



KEMA-KEUR

cULus Recognized

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## Classifications

### ECLASS

ECLASS-9.0	27130808
ECLASS-10.0.1	27130808
ECLASS-11.0	27130808

### ETIM

ETIM 8.0	EC001457
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### UNSPSC

UNSPSC 21.0	39121600
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## Environmental Product Compliance

REACH SVHC	Lead 7439-92-1
China RoHS	Environmentally Friendly Use Period = 50 years
	For information on hazardous substances, refer to the manufacturer's declaration available under "Downloads"

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## Accessories

### End clamp

End clamp - CLIPFIX 35 - 3022218

<https://www.phoenixcontact.com/in/products/3022218>

Quick mounting end clamp for NS 35/7,5 DIN rail or NS 35/15 DIN rail, with marking option, width: 9.5 mm, color: gray



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### Marker pen

Marker pen - X-PEN 0,35 - 0811228

<https://www.phoenixcontact.com/in/products/0811228>

Marker pen without ink cartridge, for manual labeling of markers, labeling extremely wipe-proof, line thickness 0.35 mm



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## Label

Label - EML (20XE)R - 0803452

<https://www.phoenixcontact.com/in/products/0803452>



Label, Roll, white, unlabeled, can be labeled with: THERMOMARK ROLLMASTER 300/600, THERMOMARK X1.2, THERMOMARK ROLL X1, THERMOMARK ROLL 2.0, THERMOMARK ROLL, mounting type: adhesive, lettering field size: continuous x 20 mm

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## Label

Label - EML (20XE)R YE - 0803453

<https://www.phoenixcontact.com/in/products/0803453>



Label, Roll, yellow, unlabeled, can be labeled with: THERMOMARK ROLLMASTER 300/600, THERMOMARK X1.2, THERMOMARK ROLL X1, THERMOMARK ROLL 2.0, THERMOMARK ROLL, mounting type: adhesive, lettering field size: continuous x 20 mm

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## Zack marker strip

Zack marker strip - ZBN 18:UNBEDRUCKT - 2809128

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



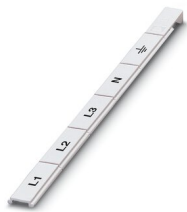
Zack marker strip, Strip, white, unlabeled, can be labeled with: CMS-P1-PLOTTER, PLOTMARK, mounting type: snapped, for terminal block width: 18 mm, lettering field size: 18 x 5 mm, Number of individual labels: 5

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## Marker for terminal blocks

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

<https://www.phoenixcontact.com/in/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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## Marker for terminal blocks

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

<https://www.phoenixcontact.com/in/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

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## Flat zack marker sheet

Flat zack marker sheet - ZBFM 5/WH:UNBEDRUCKT - 0803595

<https://www.phoenixcontact.com/in/products/0803595>



Flat zack marker sheet, Sheet, white, unlabeled, can be labeled with: CMS-P1-PLOTTER, PLOTMARK, mounting type: snapped, for terminal block width: 5.2 mm, lettering field size: 5 x 4.5 mm, Number of individual labels: 120

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## Type 1/2 surge protection plug

Type 1/2 surge protection plug - FLT-SEC-T1-350/25-P - 2905471

<https://www.phoenixcontact.com/in/products/2905471>



Replacement plug for lightning and surge arresters from the FLASHTRAB SEC product range, for L-N and L-PEN paths.

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## Type 2 surge protection plug

Type 2 surge protection plug - VAL-SEC-T2-350-P - 2905346

<https://www.phoenixcontact.com/in/products/2905346>



Replacement plug for surge arresters from the VALVETRAB SEC product range for L-N and L-PEN paths.

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## Type 1 surge protection plug

Type 1 surge protection plug - FLT-SEC-P-T1-N/PE-350/100-P - 2905473

<https://www.phoenixcontact.com/in/products/2905473>



Replacement plug for lightning current arresters from the FLASHTRAB SEC product range, for the N-PE path.

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