

## Lightning/surge arrester type 1/2 - PWT 100-800AC-FM - 2800531

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Lightning/surge arrester, according to type 1/2 / class I/II, for 3-phase power supply networks with combined PE and N installed in one conductor (L1, L2, L3, PEN).

### Your advantages

- Use in harsh industrial environments
- Very high TOV resistance
- Universal solution for various network types
- Meets installation requirements according to CLC/TS 50539-22
- Meets Lightning Protection Level I
- Free of leakage current/no line follow current
- Encapsulated, non-extinguishing
- Local optical status indication
- Multi-stage status monitoring via remote indication contact
- Type 1/2 arrester based on a varistor



### Key Commercial Data

Packing unit	1 pc
GTIN	 4 046356 570688
GTIN	4046356570688

### Technical data

#### Dimensions

Height	191 mm
Width	176 mm
Depth	280 mm
Horizontal pitch	10 Div.

#### Ambient conditions

Degree of protection	IP20 (only when all terminal points are used)
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## Technical data

### Ambient conditions

Ambient temperature (operation)	-40 °C ... 80 °C
	-40 °C ... 55 °C (serial through wiring $\geq 35 \text{ mm}^2$ )
Ambient temperature (storage/transport)	-40 °C ... 80 °C
Altitude	$\leq 4000 \text{ m}$ (amsl (above mean sea level))
Permissible humidity (operation)	5 % ... 95 %
Shock (operation)	25g (Half-sine / 11 ms / 3x $\pm X$ , $\pm Y$ , $\pm Z$ )
Vibration (operation)	5g (10 ... 150 Hz / 2.5 h / X, Y, Z)
	4g (5 ... 100 Hz / X, Y, Z - according to GL )

### General

IEC test classification	I / II
	T1 / T2
	T1
	I
EN type	T1 / T2
	T1
IEC power supply system	TN-C
	IT
Mode of protection	L-PE
Mounting type	Screw mounting
Color	silver gray
	gray
Housing material	Die-cast aluminum, salt water resistant
Degree of pollution	3
Flammability rating according to UL 94	V-2
Type	Installation module
Number of positions	3
Surge protection fault message	Optical, remote indicator contact

### Additional descriptions

Note	Assembling: Two 8 mm screws with 8 Nm on an isolated or grounded surface
	Long-wave surge current 2 ms in accordance with IEC 60099-4: 250 x 1.0 kA; 500 x 0.5 kA.

### Protective circuit

Nominal voltage $U_N$	690 V AC
	554/960 V AC (TN-C)
	690 V AC (IT)
Nominal frequency $f_N$	50 Hz (60 Hz)
Maximum continuous operating voltage $U_C$ (L-PE)	800 V AC
Rated load current $I_L$	150 A (Serial through wiring with $50 \text{ mm}^2$ )
Residual current $I_{PE}$	$\leq 20 \mu\text{A}$

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## Technical data

### Protective circuit

Standby power consumption $P_c$	$\leq 48$ mVA
Nominal discharge current $I_n$ (8/20) $\mu$ s (L-PE)	35 kA
Maximum discharge current $I_{max}$ (8/20) $\mu$ s (L-PE)	100 kA
Impulse discharge current (10/350) $\mu$ s (L-PE), charge	17.5 As
Impulse discharge current (10/350) $\mu$ s (L-PE), specific energy	305 kJ/ $\Omega$
Impulse discharge current (10/350) $\mu$ s (L-PE), peak current value $I_{imp}$	35 kA
Total discharge current $I_{total}$ (10/350) $\mu$ s	100 kA
Follow current interrupt rating $I_{fi}$ (L-PE)	50 kA
Short-circuit current rating $I_{SCCR}$	50 kA
Voltage protection level $U_p$ (L-PE)	$\leq 4.5$ kV
Residual voltage $U_{res}$ (L-PE)	$\leq 2.7$ kV (at $I_n$ )
	$\leq 2.5$ kV (at 20 kA)
	$\leq 2.3$ kV (at 10 kA)
	$\leq 2.2$ kV (at 5 kA)
	$\leq 2.1$ kV (at 3 kA)
TOV behavior at $U_T$ (L-PE)	1960 V AC (200 ms / withstand mode)
	1500 V AC (5 s / withstand mode)
Response time $t_A$ (L-PE)	$\leq 100$ ns
Max. backup fuse with V-type through wiring	125 A (gG at $\geq 35$ mm <sup>2</sup> )
Max. backup fuse with branch wiring	400 A (gG at 2x 50 mm <sup>2</sup> )
	800 A (aR (only up to $I_{imp} = 25$ kA))

### Indicator/remote signaling

Switching function	2x N/C contacts, 1-pos.
Operating voltage	30 V AC
	30 V DC
Operating current	1.5 A AC
	1.5 A DC
Screw thread	M3
Tightening torque	0.55 Nm
Stripping length	7 mm
Conductor cross section flexible	0.2 mm <sup>2</sup> ... 2.5 mm <sup>2</sup>
Conductor cross section solid	0.2 mm <sup>2</sup> ... 2.5 mm <sup>2</sup>
Conductor cross section AWG	24 ... 12

### Supply status indicator / remote signaling

Operating voltage	19.2 V AC/DC ... 30 V AC/DC
Operating current	7 mA AC/DC ... 13 mA AC/DC
Rated current	10 mA AC/DC
Max. required back-up fuse	1 A (e.g. T to IEC 127-2/III)
Immunity to interference according to IEC 61000-4-5 (line-line)	1 kV

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## Technical data

### Supply status indicator / remote signaling

Immunity to interference according to IEC 61000-4-5 (line-earth)	6 kV
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### Connection data

Connection name	Double terminal point
Connection method	Screw connection
Screw thread	M6
Tightening torque	8.5 Nm
Stripping length	24 mm
Conductor cross section flexible	16 mm <sup>2</sup> ... 50 mm <sup>2</sup>
Conductor cross section solid	16 mm <sup>2</sup> ... 50 mm <sup>2</sup>
Conductor cross section AWG	6 ... 1/0
Connection name	PE conductor connection
Connection method	Ring cable lug
Tightening torque	20 Nm
Conductor cross section flexible	16 mm <sup>2</sup> ... 95 mm <sup>2</sup>
Conductor cross section solid	16 mm <sup>2</sup> ... 95 mm <sup>2</sup>
Conductor cross section AWG	6 ... 3/0

### UL specifications

SPD Type	4CA
Maximum continuous operating voltage MCOV (L-L)	800 V AC
Maximum continuous operating voltage MCOV (L-G)	800 V AC
Nom. voltage	690 V AC
	400 V AC
Mode of protection	L-L
	L-G
Power distribution system	Wye
	Delta
Nominal frequency	60 Hz
Measured limiting voltage MLV (L-L)	8750 V
Measured limiting voltage MLV (L-G)	4370 V
Nominal discharge current I <sub>n</sub> (L-L)	20 kA
Nominal discharge current I <sub>n</sub> (L-G)	20 kA

### UL indicator/remote signaling

Operating voltage	30 V AC
	30 V DC
Operating current	1.5 A AC
	1.5 A DC
Tightening torque	5 lb <sub>f</sub> -in. ... 7 lb <sub>f</sub> -in.
Conductor cross section AWG	24 ... 12

### UL connection data

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## Technical data

### UL connection data

Connection name	Double terminal point
Conductor cross section AWG	1/0 ... 6
Tightening torque	75 lb <sub>F</sub> -in.

### Standards and Regulations

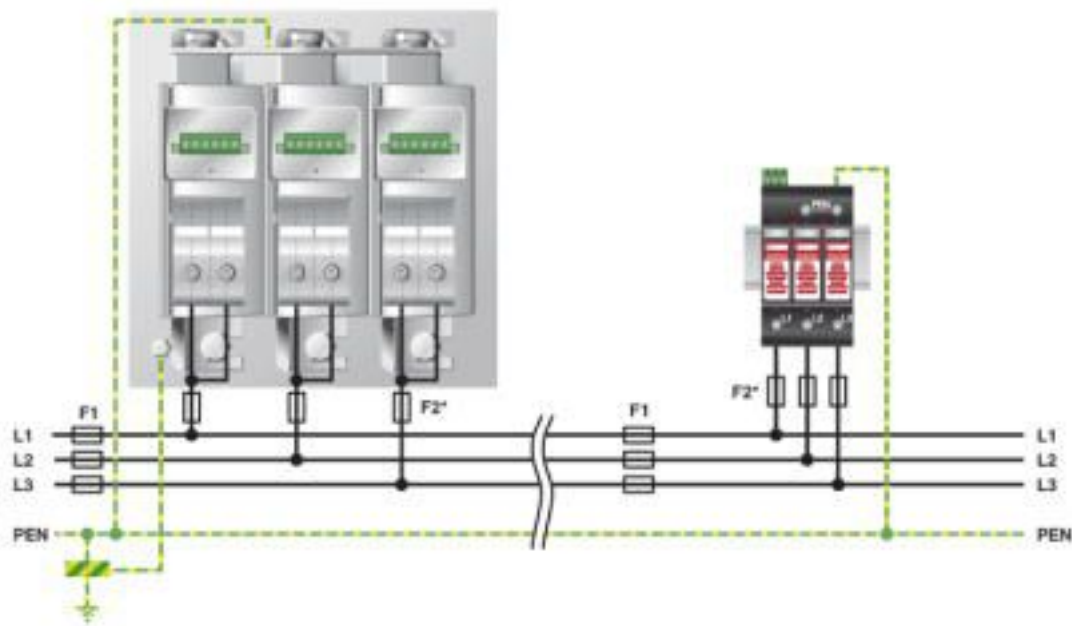
Standards/regulations	IEC 61643-11 2011
	EN 61643-11 2012

### Environmental Product Compliance

REACH SVHC	Lead 7439-92-1
	N,N-dimethylacetamide 127-19-5
China RoHS	Environmentally Friendly Use Period = 50 years
	For details about hazardous substances go to tab "Downloads", Category "Manufacturer's declaration"

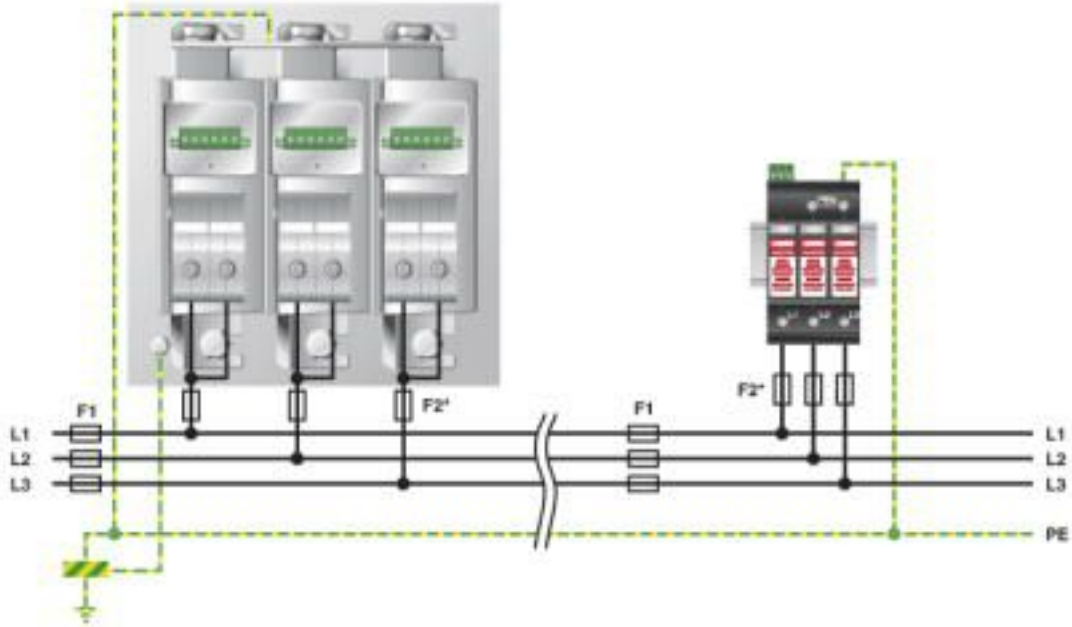
## Drawings

Application drawing

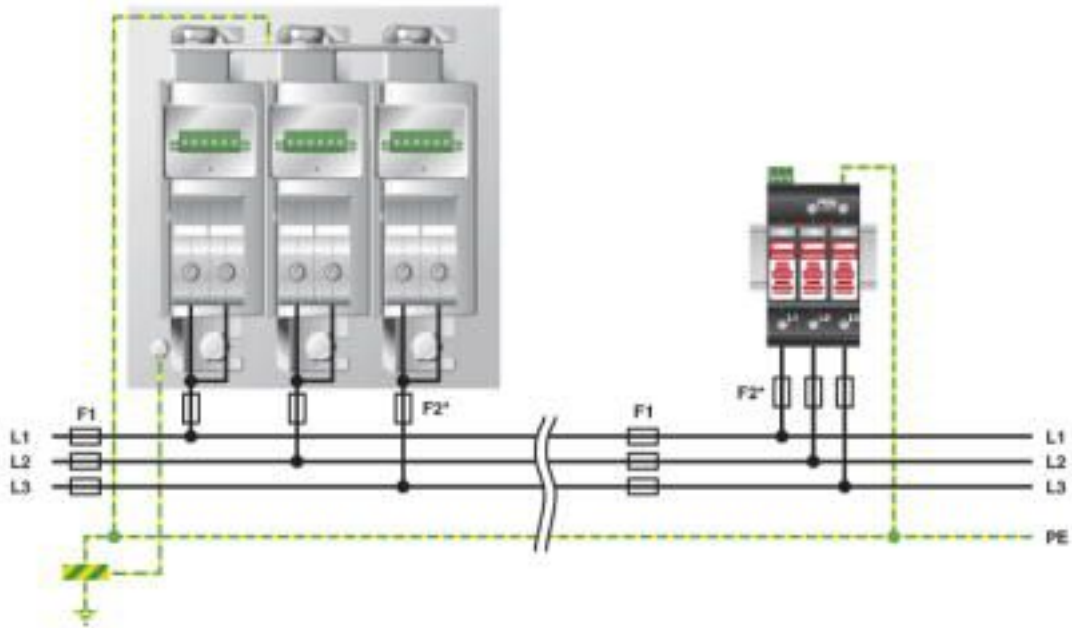


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Application drawing

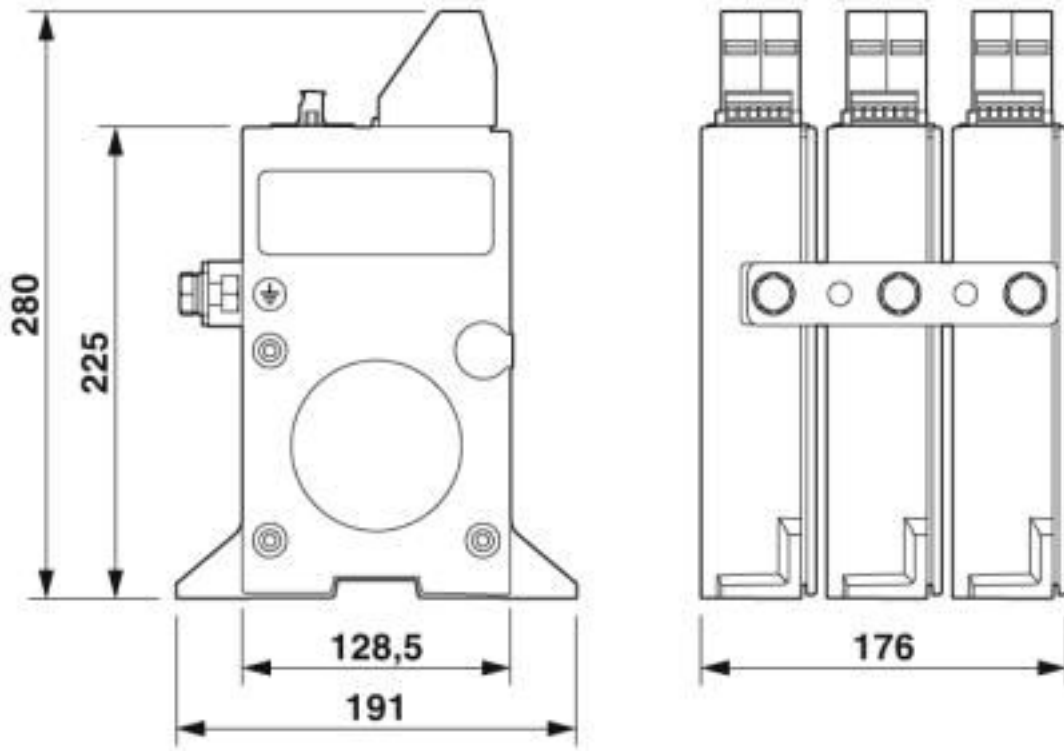


Application drawing

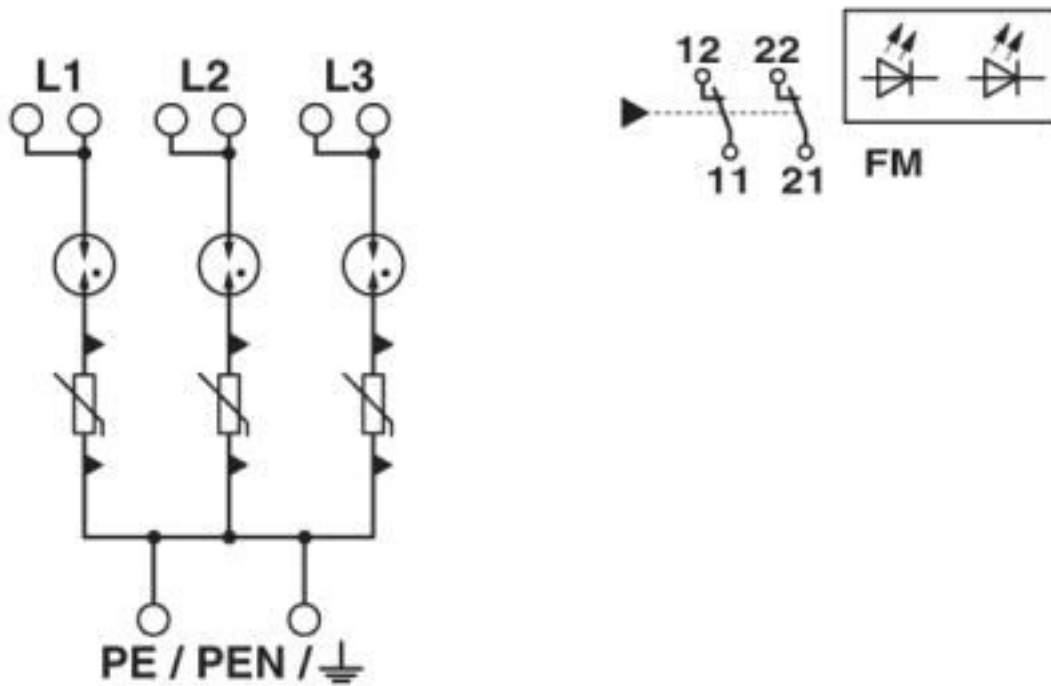


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Dimensional drawing



Circuit diagram



# Lightning/surge arrester type 1/2 - PWT 100-800AC-FM - 2800531

## Classifications

### eCl@ss

eCl@ss 10.0.1	27130802
eCl@ss 11.0	27130802
eCl@ss 4.0	27130800
eCl@ss 4.1	27130800
eCl@ss 5.0	27130800
eCl@ss 5.1	27130800
eCl@ss 6.0	27130800
eCl@ss 7.0	27130802
eCl@ss 8.0	27130802
eCl@ss 9.0	27130802

### ETIM

ETIM 2.0	EC000381
ETIM 3.0	EC000381
ETIM 4.0	EC000381
ETIM 5.0	EC000381
ETIM 6.0	EC000381
ETIM 7.0	EC000381

### UNSPSC

UNSPSC 6.01	30212010
UNSPSC 7.0901	39121610
UNSPSC 11	39121610
UNSPSC 12.01	39121610
UNSPSC 13.2	39121620
UNSPSC 18.0	39121620
UNSPSC 19.0	39121620
UNSPSC 20.0	39121620
UNSPSC 21.0	39121620

## Approvals

### Approvals

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#### Approvals

CCA / UL Recognized / KEMA-KEUR / cUL Recognized / IECEE CB Scheme / EAC / cULus Recognized

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### Ex Approvals

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### Approval details



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## Approvals

CCA			NTR-AT 1910
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UL Recognized		<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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KEMA-KEUR		<a href="http://www.dekra-certification.com">http://www.dekra-certification.com</a>	2162738-01
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cUL Recognized		<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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IECEE CB Scheme		<a href="http://www.iecee.org/">http://www.iecee.org/</a>	AT 2648
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EAC			RU C- DE.*09.B.00169
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cULus Recognized			
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