

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

Please be informed that the data shown in this PDF Document is generated from our Online Catalog. Please find the complete data in the user's documentation. Our General Terms of Use for Downloads are valid (<http://phoenixcontact.com/download>)




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
Weight per Piece (excluding packing)	10,845.000 g
Custom tariff number	85363010
Country of origin	Germany

## Technical data

### Dimensions

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

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

## Technical data

### Ambient conditions

Degree of protection	IP20 (only when all terminal points are used)
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 $50 \text{ mm}^2$ )

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

## Technical data

### Protective circuit

Residual current $I_{PE}$	$\leq 20 \mu A$
Standby power consumption $P_C$	$\leq 48 \text{ mVA}$
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)	$\leq 4.5 \text{ kV}$
Residual voltage $U_{res}$ (L-PE)	$\leq 2.7 \text{ kV}$ (at $I_n$ )
	$\leq 2.5 \text{ kV}$ (at 20 kA)
	$\leq 2.3 \text{ kV}$ (at 10 kA)
	$\leq 2.2 \text{ kV}$ (at 5 kA)
	$\leq 2.1 \text{ kV}$ (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)	$\leq 100 \text{ ns}$
Max. backup fuse with V-type through wiring	125 A (gG at $\geq 35 \text{ mm}^2$ )
Max. backup fuse with branch wiring	400 A (gG at $2 \times 50 \text{ mm}^2$ )
	800 A (aR (only up to $I_{imp} = 25 \text{ kA}$ ))

### 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)

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

## Technical data

### Supply status indicator / remote signaling

Immunity to interference according to IEC 61000-4-5 (core-core)	1 kV
Immunity to interference according to IEC 61000-4-5 (core-ground)	6 kV

### 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

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

## Technical data

### UL connection data

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

### Standards and Regulations

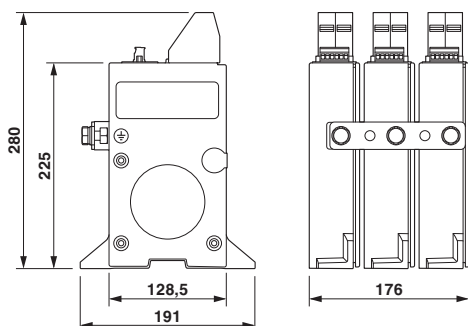
Standards/regulations	IEC 61643-11 2011
	EN 61643-11 2012

### Environmental Product Compliance

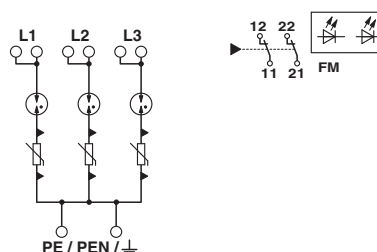
REACH SVHC	N,N-dimethylacetamide 127-19-5
	Lead 7439-92-1
China RoHS	Environmentally Friendly Use Period = 50
	For details about hazardous substances go to tab "Downloads", Category "Manufacturer's declaration"

## Drawings

Dimensional drawing

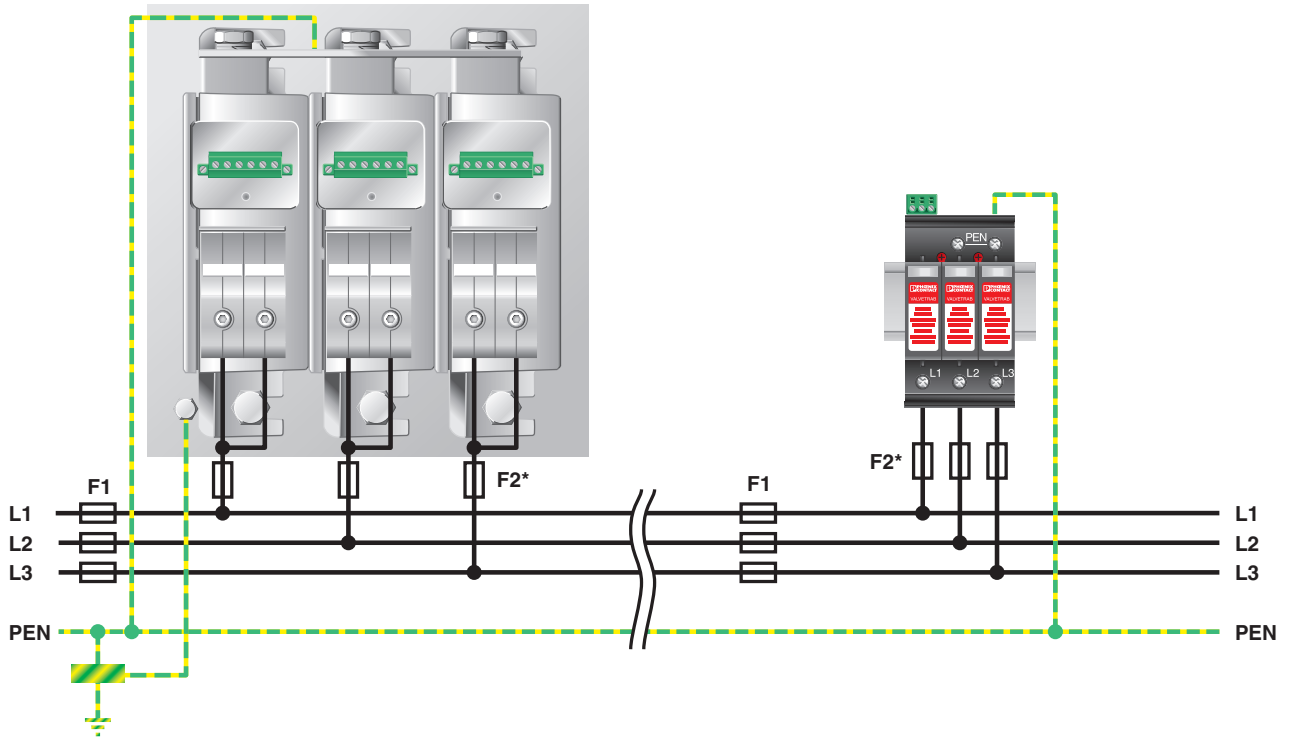


Circuit diagram



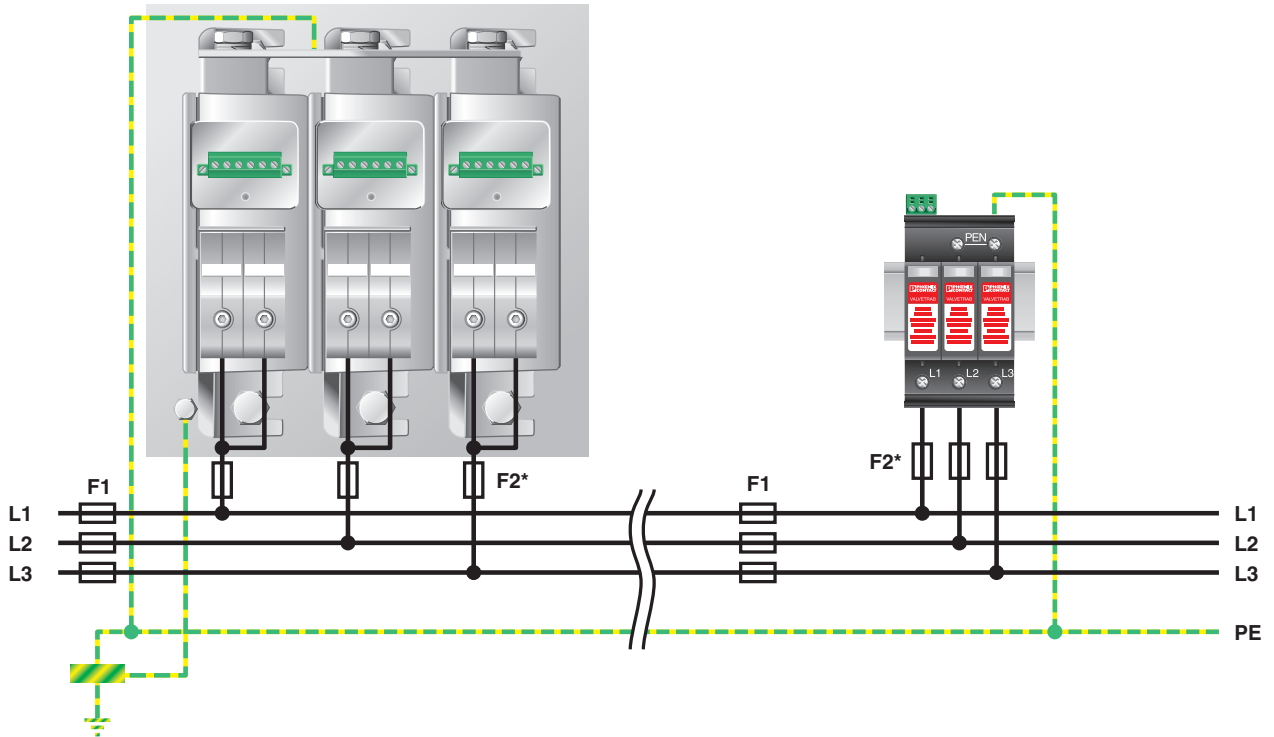
# Lightning/surge arrester type 1/2 - PWT 100-800AC-FM - 2800531

Application drawing



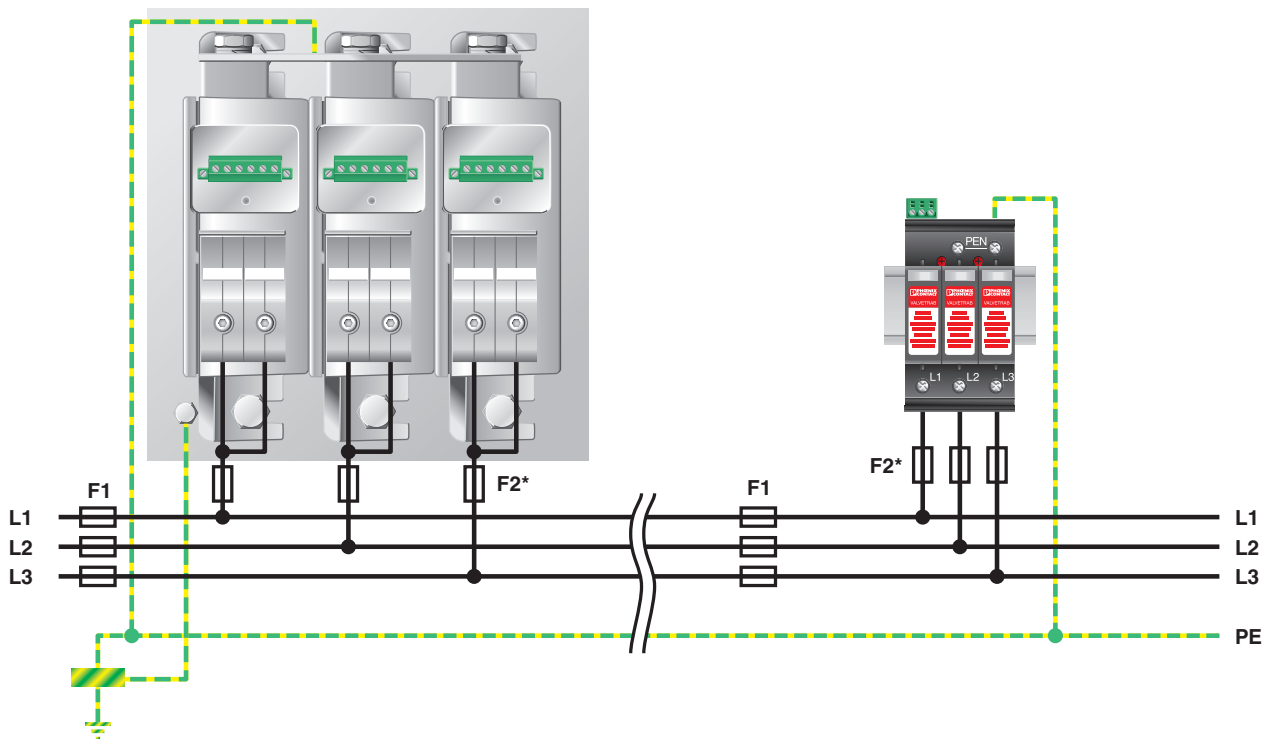
# Lightning/surge arrester type 1/2 - PWT 100-800AC-FM - 2800531

Application drawing



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

Application drawing



## Classifications

eCl@ss

eCl@ss 4.0	27140201
eCl@ss 4.1	27140201
eCl@ss 5.0	27140201
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



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

## Classifications

### UNSPSC

UNSPSC 6.01	30212010
UNSPSC 7.0901	39121610
UNSPSC 11	39121610
UNSPSC 12.01	39121610
UNSPSC 13.2	39121620

## Approvals

### Approvals


#### Approvals

CCA / UL Recognized / KEMA-KEUR / cUL Recognized / IECCEB Scheme / EAC / cULus Recognized

#### Ex Approvals


### Approval details


CCA	NTR-AT 1910
-----	-------------

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
---------------	---	---	---------------

KEMA-KEUR		<a href="http://www.dekra-certification.com">http://www.dekra-certification.com</a>	2162738-01
-----------	---	---	------------

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
----------------	---	---	---------------

IECEE CB Scheme		<a href="http://www.iecee.org/">http://www.iecee.org/</a>	AT 2648
-----------------	---	---	---------

EAC		RU C- DE.A*30.B01561
-----	---	-------------------------

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

## Approvals

cULus Recognized



Phoenix Contact 2019 © - all rights reserved  
<http://www.phoenixcontact.com>