

# PWT 35-800AC-FM - Lightning/surge arrester type 1/2



2800419

<https://www.phoenixcontact.com/us/products/2800419>

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

## Your advantages

- Use in harsh environments with robust design
- Universal solution for various network types
- Function monitoring using optical status indicator
- Multi-stage status monitoring via remote indication contact

## Commercial data

Item number	2800419
Packing unit	1 pc
Minimum order quantity	1 pc
Sales key	CL01
Product key	CL1141
Catalog page	Page 52 (C-4-2019)
GTIN	4046356556156
Weight per piece (including packing)	3,500 g
Weight per piece (excluding packing)	3,500 g
Customs tariff number	85363010
Country of origin	DE

## Technical data

### Notes

#### General

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.

### Product properties

IEC test classification	I / II T1 / T2
EN type	T1 / T2
IEC power supply system	TN-C IT
Type	Installation module
Product type	Arrester combination
Product family	POWERTRAB
Number of positions	1
Surge protection fault message	Optical, remote indicator contact

#### Insulation characteristics

Overvoltage category	8 kV: IV (600 V), III (1000 V)
Pollution degree	3

### Electrical properties

Nominal frequency $f_N$	50 Hz (60 Hz)
Nominal voltage $U_N$	690 V AC

#### Indicator/remote signaling

Connection name	Remote fault indicator contact
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

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

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## Connection data

### 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 rigid	16 mm <sup>2</sup> ... 50 mm <sup>2</sup>
Conductor cross section AWG	6 ... 1/0

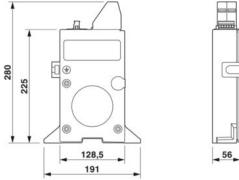
### PE conductor connection

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 rigid	16 mm <sup>2</sup> ... 95 mm <sup>2</sup>
Conductor cross section AWG	6 ... 3/0

### Remote fault indicator contact

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 rigid	0.2 mm <sup>2</sup> ... 2.5 mm <sup>2</sup>
Conductor cross section AWG	24 ... 12

## Dimensions

Dimensional drawing	
Width	56 mm
Height	191 mm
Depth	280 mm
Horizontal pitch	3 Div.

## Material specifications

Color	Silver
Flammability rating according to UL 94	V-2
CTI value of material	600
	250
Insulating material	PA/PC

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Material group	I (PA 6.6/PC)
	IIIa (PA 4.6)
Housing surface material	die-cast aluminum
Housing material	Die-cast aluminum, salt water resistant

## Mechanical properties

### Mechanical data

Open side panel	No
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## Protective circuit

Mode of protection	L-PE
Direction of action	1L-PEN
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 mm <sup>2</sup> )
Residual current $I_{PE}$	≤ 20 μA
Standby power consumption $P_C$	≤ 16.00 mVA
Nominal discharge current $I_n$ (8/20) μs (L-PE)	35 kA
Maximum discharge current $I_{max}$ (8/20) μs (L-PE)	100 kA
Impulse discharge current (10/350) μs (L-PE), charge	17.5 As
Impulse discharge current (10/350) μs (L-PE), specific energy	305 kJ/Ω
Impulse discharge current (10/350) μs (L-PE), peak current value $I_{imp}$	35 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)	≤ 4.5 kV
Residual voltage $U_{res}$ (L-PE)	≤ 2.7 kV (at $I_n$ )
	≤ 2.5 kV (at 20 kA)
	≤ 2.3 kV (at 10 kA)
	≤ 2.2 kV (at 5 kA)
	≤ 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)	≤ 100 ns
Max. backup fuse with V-type through wiring	125 A (gG at ≥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))

## Environmental and real-life conditions

### Ambient conditions

Degree of protection	IP20 (only when all terminal points are used)
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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	$\leq 4000 \text{ m (amsl)}$
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 )

## Approvals

### UL specifications

Maximum continuous operating voltage MCOV (L-G)	800 V AC
Nominal discharge current $I_n$ (L-G)	20 kA
Mode of protection	L-G
Nominal voltage	690 V AC
Power distribution system	Single phase
Nominal frequency	60 Hz
Measured limiting voltage MLV (L-G)	4370 V
SPD Type	4CA

### UL indicator/remote signaling

Operating voltage	30 V AC
DC operating voltage	30 V DC
AC operating current	1.5 A AC
DC operating current	1.5 A DC

### UL connection data Double terminal point

Tightening torque	75 lb <sub>F</sub> -in.
Conductor cross section AWG	1/0 ... 6

### UL connection data PE conductor connection

Tightening torque	175 lb <sub>F</sub> -in.
Conductor cross section AWG	3/0

## Standards and regulations

Standards/specifications	IEC 61643-11
Note	2011
Standards/specifications	EN 61643-11
Note	2012

## Mounting

Mounting type	Screw mounting
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## Classifications

### ECLASS

ECLASS-11.0	27130802
ECLASS-13.0	27171201

### ETIM

ETIM 9.0	EC000381
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### UNSPSC

UNSPSC 21.0	39121600
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## Environmental product compliance

REACH SVHC	Lead 7439-92-1
	N,N-dimethylacetamide 127-19-5
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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