

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



2800531

<https://www.phoenixcontact.com/us/products/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 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	2800531
Packing unit	1 pc
Minimum order quantity	1 pc
Sales key	CL01
Product key	CL1141
Catalog page	Page 52 (C-4-2019)
GTIN	4046356570688
Weight per piece (including packing)	10,845 g
Weight per piece (excluding packing)	11,160 g
Customs tariff number	85363010
Country of origin	DE

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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	3
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 ² ... 50 mm ²
Conductor cross section rigid	16 mm ² ... 50 mm ²
Conductor cross section AWG	6 ... 1/0

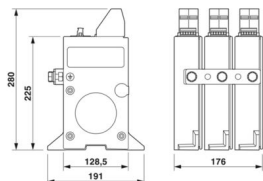
PE conductor connection

Connection method	Ring cable lug
Tightening torque	20 Nm
Conductor cross section flexible	16 mm ² ... 95 mm ²
Conductor cross section rigid	16 mm ² ... 95 mm ²
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 ² ... 2.5 mm ²
Conductor cross section rigid	0.2 mm ² ... 2.5 mm ²
Conductor cross section AWG	24 ... 12

Dimensions

Dimensional drawing	
Width	176 mm
Height	191 mm
Depth	280 mm
Horizontal pitch	10 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	3L-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 ²)
Residual current I_{PE}	≤ 20 μA
Standby power consumption P_C	≤ 48.00 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
Total discharge current I_{total} (10/350) μs	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)	≤ 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 ²)
Max. backup fuse with branch wiring	400 A (gG at 2x 50 mm ²)
	800 A (aR (only up to $I_{imp} = 25$ kA))

Environmental and real-life conditions

Ambient conditions

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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)
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-L)	800 V AC
Maximum continuous operating voltage MCOV (L-G)	800 V AC
Nominal discharge current I_n (L-L)	20 kA
Nominal discharge current I_n (L-G)	20 kA
Mode of protection	L-L
	L-G
Nominal voltage	690 V AC
	400 V AC
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
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 _F -in.
Conductor cross section AWG	1/0 ... 6

UL connection data PE conductor connection

Tightening torque	175 lb _F -in.
Conductor cross section AWG	3/0

Standards and regulations

Air clearances and creepage distances

Standards/regulations	DIN EN 60664-1 / EN 61643-11
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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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