

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
GTIN	4046356570688
Weight per piece (including packing)	11,160 g
Weight per piece (excluding packing)	10,845 g
Customs tariff number	85363010
Country of origin	TR

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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

Product type	Arrester combination
Product family	POWERTRAB
IEC test classification	I / II
	T1 / T2
EN type	T1 / T2
IEC power supply system	TN-C
	IT
Type	Installation module
Number of positions	3
Surge protection fault message	Optical, remote indicator contact
Number of ports	One

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-colored
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 material	Die-cast aluminum, salt water resistant
Housing surface material	die-cast aluminum

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)
Protective conductor current I_{PE}	≤ 20 μA
Standby power consumption P_C	≤ 48 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 Hz ... 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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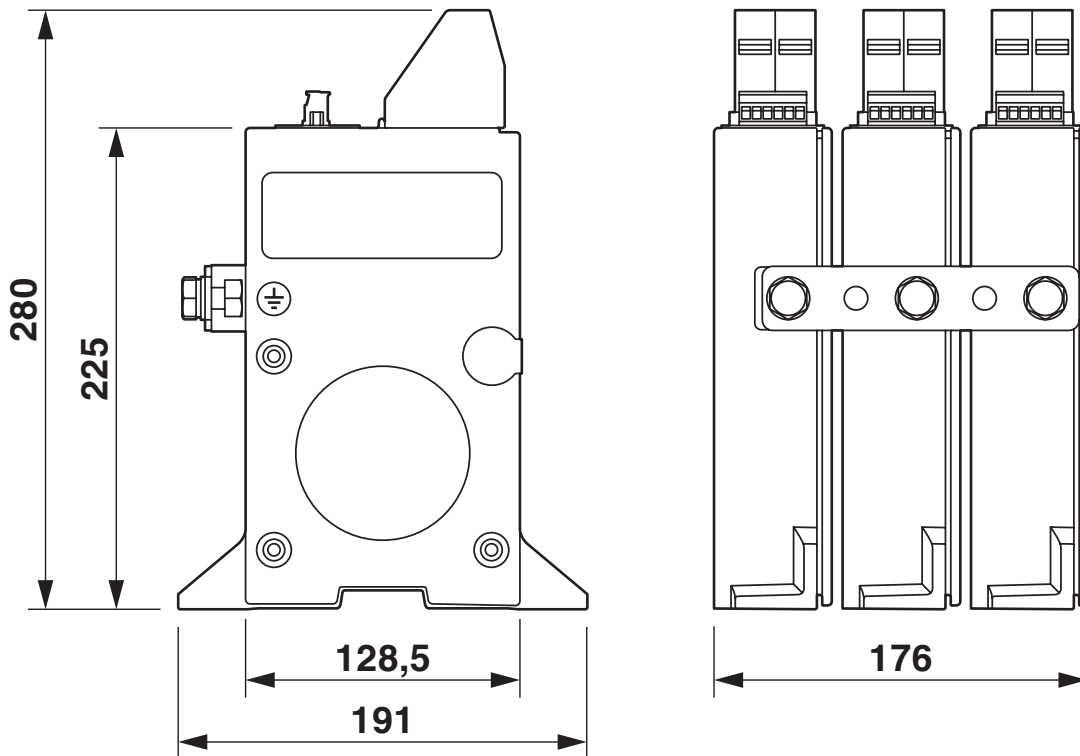
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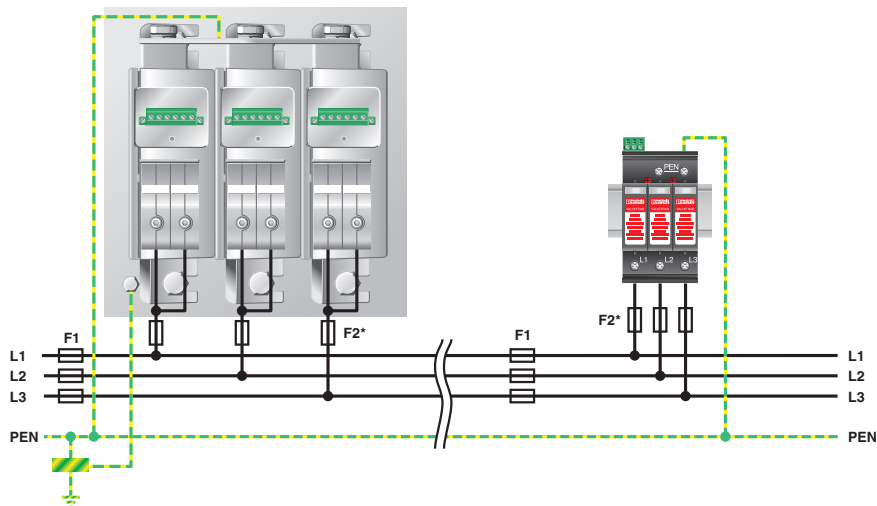
<https://www.phoenixcontact.com/us/products/2800531>

Drawings

Dimensional drawing



Application drawing

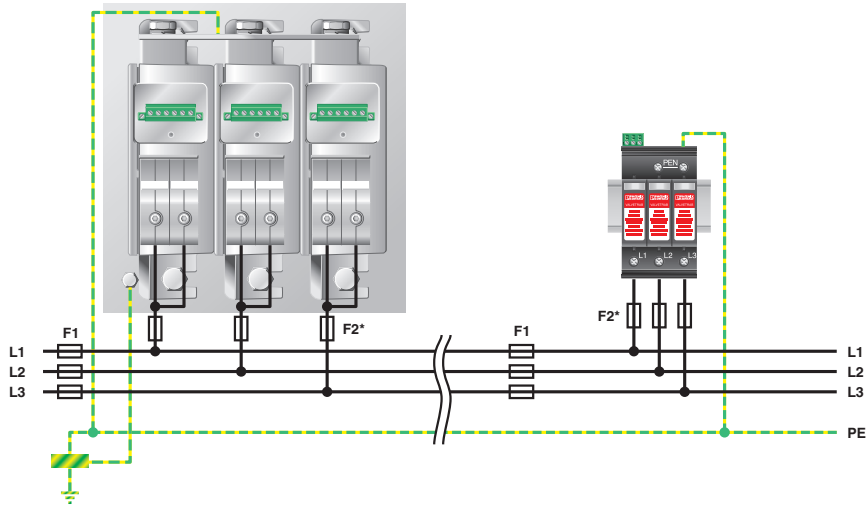


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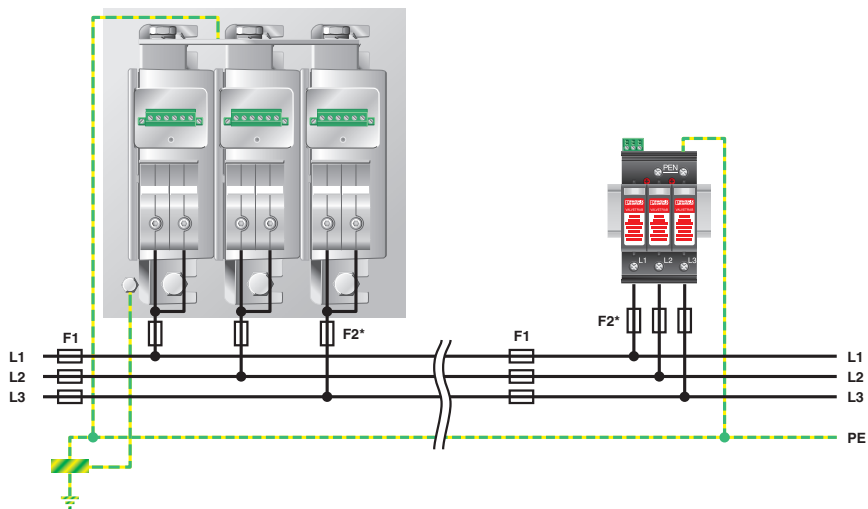
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Application drawing



Application drawing

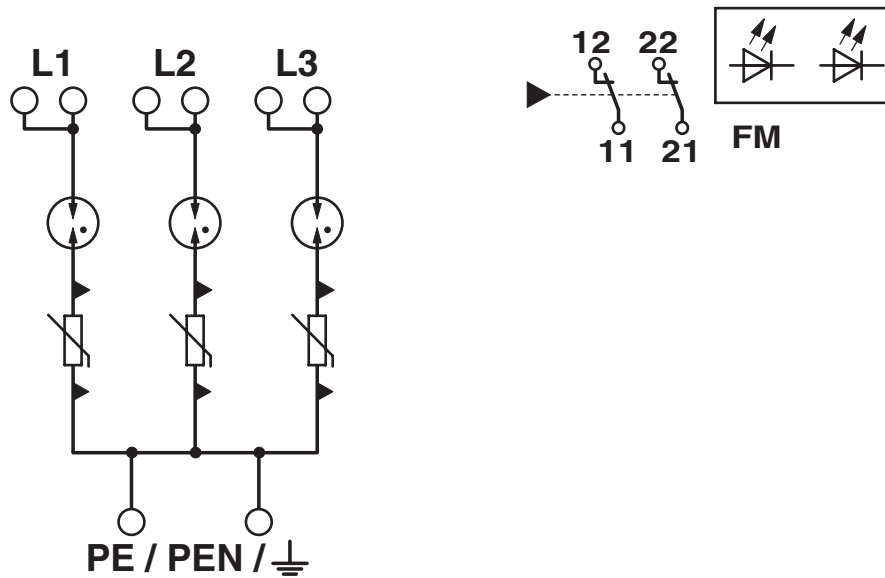


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Circuit diagram



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Approvals

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IECEE CB Scheme

Approval ID: AT 2648

CCA

Approval ID: NTR-AT 1910



KEMA-KEUR

Approval ID: 71-165053

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Classifications

ECLASS

ECLASS-13.0	27171201
ECLASS-15.0	27171201

ETIM

ETIM 10.0	EC000381
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UNSPSC

UNSPSC 21.0	39121600
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Environmental product compliance

EU RoHS

Fulfills EU RoHS substance requirements	Yes
Exemption	7(a), 7(c)-I

China RoHS

Environment friendly use period (EFUP)	EFUP-50
	An article-related China RoHS declaration table can be found in the download area for the respective article under "Manufacturer declaration". For all articles with EFUP-E, no China RoHS declaration table issued and required.

EU REACH SVHC

REACH candidate substance (CAS No.)	N,N-dimethylacetamide(CAS: 127-19-5)
	Lead(CAS: 7439-92-1)
SCIP	1a3f3787-eaf4-478a-b3df-7a7d8a9aef75

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