

VAL-MS-T1/T2 600DC-PV-ST - Type 1/2 surge protection plug



2801165

<https://www.phoenixcontact.com/ae/products/2801165>

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Replacement plug for PV arrester combinations from the VAL-MS-T1/T2 600DC-PV-... product range

Commercial data

Item number	2801165
Packing unit	1 pc
Minimum order quantity	1 pc
Sales key	CL1
Product key	CL1152
GTIN	4046356714280
Weight per piece (including packing)	82.3 g
Weight per piece (excluding packing)	57.42 g
Customs tariff number	85363030
Country of origin	DE

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Technical data

Product properties

Product type	Replacement plug
Product family	VALVETRAB MS
IEC test classification	PV I / II
	PV T1 / T2
EN type	T1 / T2
IEC power supply system	DC
Type	Male
Environment	Indoor
Installation location of the disconnect device	Internal
Accessibility	Accessible
End-of-life mode	OCFM (Open-Circuit Failure Mode)
Surge protection fault message	optical

Insulation characteristics

Overvoltage category	III
Pollution degree	2

Connection data

Connection method	pluggable
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Dimensions

Dimensional drawing	
Width	17.5 mm
Height	52.4 mm
Depth	55.3 mm
Horizontal pitch	1 Div.

Material specifications

Color	black (RAL 9005)
Flammability rating according to UL 94	V-0
CTI value of material	600
Insulating material	PA 6.6-FR
Material group	I
Housing material	PA 6.6-FR

Protective circuit

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Direction of action	(L+)-PE & (L-)-PE & (L+)-(L-)
Standby power consumption P_C	$\leq 10 \text{ mVA}$
Nominal discharge current I_n (8/20) μs	15 kA
Maximum discharge current $I_{\max}$ (8/20) μs	40 kA
Impulse discharge current (10/350) μs , charge	2.5 As
Impulse discharge current (10/350) μs , specific energy	6.25 kJ/ Ω
Impulse discharge current (10/350) μs , peak value I_{imp}	5 kA
Voltage protection level U_p	$\leq 1.4 \text{ kV}$
Residual voltage U_{res}	$\leq 1.4 \text{ kV}$ (at I_n)
	$\leq 1.1 \text{ kV}$ (at 5 kA)
	$\leq 1.2 \text{ kV}$ (at 10 kA)
	$\leq 1.5 \text{ kV}$ (at 20 kA)
	$\leq 1.6 \text{ kV}$ (at 30 kA)
	$\leq 1.8 \text{ kV}$ (at 40 kA)
Response time t_A	$\leq 25 \text{ ns}$

Protective circuit DC voltage side (DC)

Maximum continuous operating voltage U_{CPV}	360 V DC
Short-circuit current rating I_{SCPV}	2000 A
Open-circuit voltage U_{OCSTC}	$\leq 300 \text{ V DC}$
Maximum discharge current $I_{\max}$ (8/20) μs	40 kA
Response time t_A	$\leq 25 \text{ ns}$
Impulse discharge current (10/350) μs , charge	2.5 As
Impulse discharge current (10/350) μs , specific energy	6.25 kJ/ Ω
Impulse discharge current (10/350) μs , peak value I_{imp}	5 kA
Insulation resistance R_{iso}	$> 5 \text{ G}\Omega$ (at 500 V DC)
Nominal discharge current I_n (8/20) μs	15 kA
Continuous operating current I_{CPV}	$< 20 \mu\text{A}$
Maximum continuous operating voltage U_{CPV}	360 V DC
Short-circuit current rating I_{SCPV}	2000 A
Residual voltage U_{res}	$\leq 1.4 \text{ kV}$ (at I_n)
	$\leq 1.1 \text{ kV}$ (at 5 kA)
	$\leq 1.2 \text{ kV}$ (at 10 kA)
	$\leq 1.5 \text{ kV}$ (at 20 kA)
	$\leq 1.6 \text{ kV}$ (at 30 kA)
	$\leq 1.8 \text{ kV}$ (at 40 kA)
Voltage protection level U_p	$\leq 1.4 \text{ kV}$
Standby power consumption P_C	$\leq 10 \text{ mVA}$

Environmental and real-life conditions

Ambient conditions

Degree of protection	IP20
Ambient temperature (operation)	-40 °C ... 80 °C
Ambient temperature (storage/transport)	-40 °C ... 80 °C

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Altitude	≤ 2000 m (amsl)
Permissible humidity (operation)	5 % ... 95 %
Shock (operation)	60g (Half-sine / 11 ms / 3x ±X, ±Y, ±Z)
Vibration (operation)	7.5g (5-500 Hz/2.5 h/XYZ)

Approvals

UL specifications

Maximum continuous operating voltage MCOV	800 V DC
Short-circuit current rating (SCCR)	50 kA
Voltage protection rating VPR	2 kV
Nominal discharge current I_n	20 kA
Mode of protection	(L+) - (L-)
	(L+) - G
	(L-) - G
Nominal voltage	800 V DC
Power distribution system	DC PV
SPD Type	1CA

Standards and regulations

EN 61643-31

Standards/specifications	EN 61643-31
Note	2019
Standards/specifications	IEC 61643-31
Note	2018

Mounting

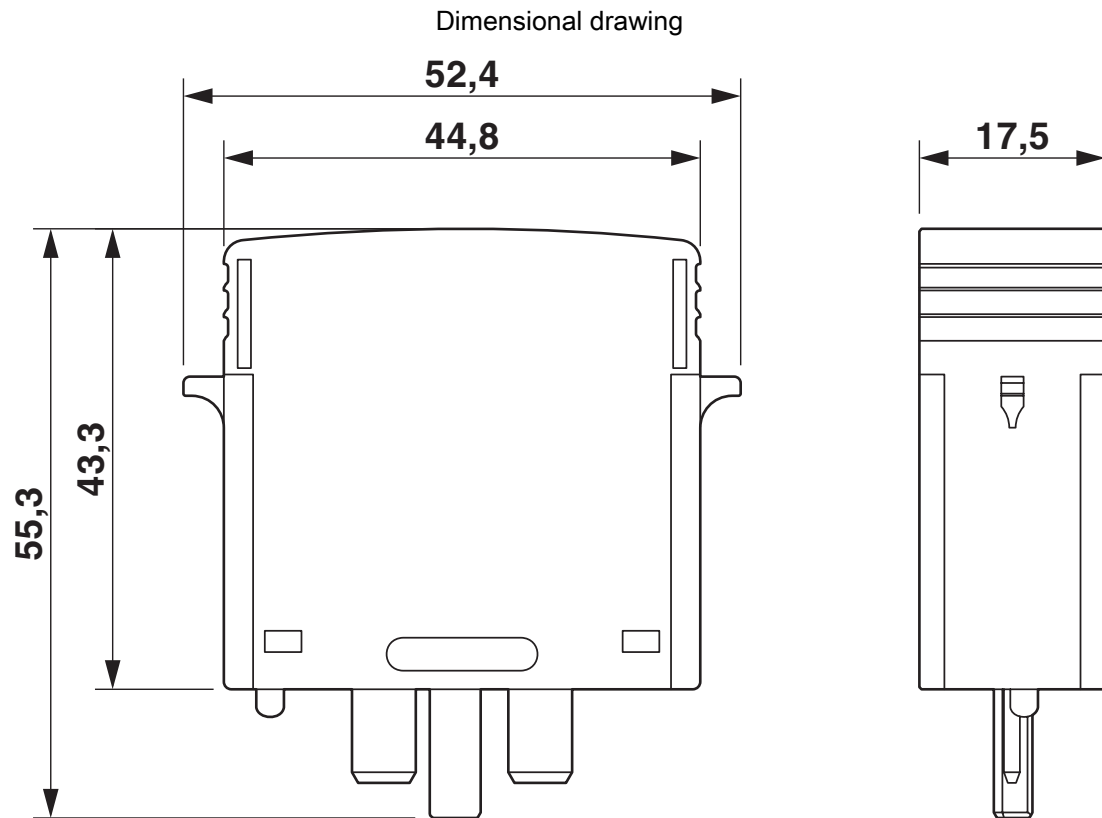
Mounting type	on base element
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Drawings



Circuit diagram



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Approvals

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cUL Recognized
Approval ID: FILE E 330181



UL Recognized
Approval ID: FILE E 330181



KEMA-KEUR
Approval ID: 71-123544 REV.3



IECEE CB Scheme
Approval ID: NL-81006/A1

CCA

Approval ID: NTR-NL 7937

UAE-RoHS

Approval ID: 23-10-88705

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Classifications

ECLASS

ECLASS-13.0	27171492
ECLASS-15.0	27171492

ETIM

ETIM 9.0	EC002496
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UNSPSC

UNSPSC 21.0	39121620
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Environmental product compliance

EU RoHS

Fulfills EU RoHS substance requirements	Yes, No exemptions
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China RoHS

Environment friendly use period (EFUP)	EFUP-E
	No hazardous substances above the limits

EU REACH SVHC

REACH candidate substance (CAS No.)	No substance above 0.1 wt%
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EF3.0 Climate Change

CO2e kg	2.138 kg CO2e
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