

# VAL-MS 1000DC-PV-ST/4 - Type 2 surge protection plug



1019121

<https://www.phoenixcontact.com/us/products/1019121>

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Replacement plug for PV arrester combinations from the VAL-MS 1000DC-PV-... product range



## Your advantages

- Increased safety, thanks to compliance with standard EN 50539-11
- Reliable contact, thanks to integrated rotating latch
- Easy replacement, thanks to plug-in arresters
- Optimum inverter protection, thanks to low protection level
- Efficient replacement of defective plugs, thanks to visual status indicator
- Protection against mismatching, thanks to keyed plugs and base elements

## Commercial data

Item number	1019121
Packing unit	4 pc
Minimum order quantity	4 pc
Product key	CL1324
GTIN	4055626504889
Weight per piece (including packing)	54.675 g
Weight per piece (excluding packing)	51.2 g
Country of origin	CN

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## Technical data

### Product properties

Product type	Replacement plug
Product family	VALVETRAB MS
IEC test classification	PV II PV T2
EN type	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

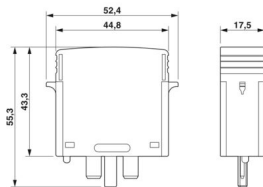
### Insulation characteristics

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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Standby power consumption $P_C$	$\leq 25$ mVA
Nominal discharge current $I_n$ (8/20) $\mu$ s	15 kA
Maximum discharge current $I_{max}$ (8/20) $\mu$ s	40 kA
Voltage protection level $U_p$	$\leq 1.9$ kV
Residual voltage $U_{res}$	$\leq 1.9$ kV (at $I_n$ )
	$\leq 1.5$ kV (at 5 kA)
	$\leq 1.7$ kV (at 10 kA)
	$\leq 2$ kV (at 20 kA)
	$\leq 2.3$ kV (at 30 kA)
	$\leq 2.5$ kV (at 40 kA)
Response time $t_A$	$\leq 25$ ns

## Protective circuit DC voltage side (DC)

Maximum continuous operating voltage $U_{CPV}$	585 V DC
Short-circuit current rating $I_{SCPV}$	2000 A
Open-circuit voltage $U_{OCSTC}$	$\leq 487.5$ V DC
Maximum discharge current $I_{max}$ (8/20) $\mu$ s	40 kA
Response time $t_A$	$\leq 25$ ns
Insulation resistance $R_{iso}$	$> 5$ G $\Omega$ (at 500 V DC)
Nominal discharge current $I_n$ (8/20) $\mu$ s	15 kA
Continuous operating current $I_{CPV}$	$< 20$ $\mu$ A
Maximum continuous operating voltage $U_{CPV}$	585 V DC
Short-circuit current rating $I_{SCPV}$	2000 A
Residual voltage $U_{res}$	$\leq 1.9$ kV (at $I_n$ )
	$\leq 1.5$ kV (at 5 kA)
	$\leq 1.7$ kV (at 10 kA)
	$\leq 2$ kV (at 20 kA)
	$\leq 2.3$ kV (at 30 kA)
	$\leq 2.5$ kV (at 40 kA)
Voltage protection level $U_p$	$\leq 1.9$ kV
Standby power consumption $P_C$	$\leq 25$ 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
Altitude	$\leq 2000$ m (amsl)
Permissible humidity (operation)	5 % ... 95 %
Shock (operation)	60g (Half-sine / 11 ms / 3x $\pm$ X, $\pm$ Y, $\pm$ Z)
Vibration (operation)	7.5g (5-500 Hz/2.5 h/XYZ)

## Approvals

UL specifications

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Maximum continuous operating voltage MCOV	1170 V DC
Short-circuit current rating (SCCR)	50 kA
Voltage protection rating VPR	3 kV
Nominal discharge current $I_n$	10 kA
Mode of protection	(L+) - (L-) (L+) - G (L-) - G
Nominal voltage	1170 V DC
Power distribution system	DC PV
SPD Type	1CA

## Standards and regulations

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

Dimensional drawing



Circuit diagram



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## Classifications

### ECLASS

ECLASS-13.0	27171492
ECLASS-15.0	27171492

### ETIM

ETIM 10.0	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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