

## Type 2 surge protection device - VAL-MS 1000DC/2+F-FM - 2800176

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Surge arrester for 2-pos. isolated DC voltage systems 1000 V DC, for DIN rail mounting, 3-pos. base element with remote indication contact, three pluggable temperature-monitored protective elements, for PE leakage current free, status message on each connector.

### Product Features

- ✓ With or without floating remote indication contact
- ✓ Plugs can be checked with CHECKMASTER
- ✓ Mechanical coding of all slots
- ✓ Type 2 consistent plug-in surge arresters
- ✓ Optical, mechanical status indication for the individual arresters



### Key commercial data

Packing unit	1 pc
Weight per Piece (excluding packing)	340.0 GRM
Custom tariff number	85363010
Country of origin	Germany

### Technical data

#### Dimensions

Height	99 mm
Width	53.4 mm
Depth	65.5 mm
Horizontal pitch	3 Div.

#### Ambient conditions

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

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## Technical data

### General

Housing material	PBT / PA
Inflammability class according to UL 94	V0
Color	black
Standards for air and creepage distances	DIN EN 60664-1
	DIN EN 61643-11
Mounting type	DIN rail: 35 mm
Type	DIN rail module, two-section, divisible
Number of positions	3
Surge protection fault message	Optical, remote indicator contact
Direction of action	(L+)-PE & (L-)-PE & (L+)-(L-)

### Protective circuit

IEC test classification	II
	T2
EN type	T2
Maximum continuous operating voltage $U_C$	1000 V DC
Rated load current $I_L$	$\leq 80$ A DC
Residual current $I_{PE}$	$\leq 1$ $\mu$ A
Standby power consumption $P_C$	$\leq 1$ mVA
Max. discharge current $I_{max}$ (8/20) $\mu$ s	30 kA
Nominal discharge current $I_n$ (8/20) $\mu$ s	15 kA
Voltage protection level $U_p$ (L+) - (L-)	$\leq 5$ kV
Voltage protection level $U_p$ (L+/L-) - PE	$\leq 3$ kV
Residual voltage (L+) - (L-)	$\leq 5$ kV
	$\leq 4.5$ kV (at 10 kA)
	$\leq 4$ kV (at 5 kA)
Residual voltage (L+/L-) - PE	$\leq 3$ kV
	$\leq 2.5$ kV (at 10 kA)
	$\leq 2$ kV (at 5 kA)

### PV protective circuit DC side

Short-circuit current rating $I_{SCPV}$	80 A
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### Connection, protective circuit

Connection method	Screw connection
Connection type IN	Biconnect screw terminal block
Connection type OUT	Biconnect screw terminal block
Connection method	Biconnect terminal block

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#### Connection, protective circuit

Screw thread	M5
Tightening torque	4.5 Nm
Stripping length	16 mm
Conductor cross section stranded min.	1.5 mm <sup>2</sup>
Conductor cross section stranded max.	25 mm <sup>2</sup>
Conductor cross section solid min.	1.5 mm <sup>2</sup>
Conductor cross section solid max.	35 mm <sup>2</sup>
Conductor cross section AWG/kcmil min.	15
Conductor cross section AWG/kcmil max	2

#### Remote indicator contact

Switching function	PDT, 1-pos.
Connection method	MC 1,5/3
Screw thread	M2
Tightening torque	0.25 Nm
Stripping length	7 mm
Conductor cross section stranded min.	0.14 mm <sup>2</sup>
Conductor cross section stranded max.	1.5 mm <sup>2</sup>
Conductor cross section solid min.	0.14 mm <sup>2</sup>
Conductor cross section solid max.	1.5 mm <sup>2</sup>
Conductor cross section AWG/kcmil min.	28
Conductor cross section AWG/kcmil max	16
Maximum operating voltage $U_{max}$ AC	250 V AC
Max. operating current $I_{max}$	1.5 A AC (250 V AC)
	1.5 A DC (30 V DC)

#### Standards and Regulations

Standards/regulations	DIN EN 61643-11 2002
	IEC 61643-1 2005
	IEC 60364-7-712 2002

### Classifications

#### eCl@ss

eCl@ss 4.0	27140201
eCl@ss 4.1	27130801
eCl@ss 5.0	27130801
eCl@ss 5.1	27130801

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## Classifications

### eCl@ss

eCl@ss 6.0	27130805
eCl@ss 7.0	27130805
eCl@ss 8.0	27130805

### ETIM

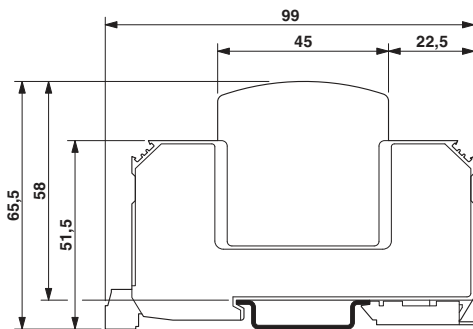
ETIM 2.0	EC000941
ETIM 3.0	EC000941
ETIM 4.0	EC000941
ETIM 5.0	EC000941

### UNSPSC

UNSPSC 6.01	30212010
UNSPSC 7.0901	39121610
UNSPSC 11	39121610
UNSPSC 12.01	39121610
UNSPSC 13.2	39121620

## Drawings

Dimensioned drawing



Circuit diagram

