

## Type 2 surge protection device - VAL-MS 350/20/1+1-FM - 2803629

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Surge arrester for 3-conductor power supply systems (L1, N, PE), consisting of a base element with remote indication contact and protective connectors, for mounting on NS 35.

### Product Features

- With or without floating remote indication contact
- Solutions for the low performance class
- Disconnect device on each individual plug
- Type 2 consistent plug-in surge arresters
- Multi-channel type 2 arresters
- Optical, mechanical status indication for the individual arresters
- Mechanical coding of all slots



### Key commercial data

Packing unit	1 pc
Weight per Piece (excluding packing)	240.0 GRM
Custom tariff number	85363010
Country of origin	Germany

### Technical data

#### Dimensions

Height	99 mm
Width	35.6 mm
Depth	65.5 mm
Horizontal pitch	2 Div.

#### Ambient conditions

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#### Ambient conditions

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

#### General

Housing material	PBT / PA
Inflammability class according to UL 94	V0
Color	black
Standards for air and creepage distances	EN 60664-1
	EN 61643-11
Mounting type	DIN rail: 35 mm
Type	DIN rail module, two-section, divisible
Number of positions	2
Surge protection fault message	Optical, remote indicator contact
Direction of action	1L-N & N-PE

#### Protective circuit

IEC test classification	II
EN type	T2
Nominal voltage $U_N$	230 V AC (400 V AC)
	400 V AC
	230 V AC
Maximum continuous operating voltage $U_C$	350 V AC
Maximum continuous operating voltage $U_C$ (L-N)	350 V AC
Maximum continuous operating voltage $U_C$ (N-PE)	260 V AC
$U_T$ (TOV-proof)	415 V AC (5 s / L-N)
	1200 V AC (200 ms / N-PE)
Nominal frequency $f_N$	50 Hz (60 Hz)
Residual current $I_{PE}$	$\leq 3 \mu A$
Standby power consumption $P_C$	$\leq 120 \text{ mVA}$
Max. discharge current $I_{max}$ (8/20) $\mu s$	20 kA (Channel L-N)
Max. discharge current $I_{max}$ (8/20) $\mu s$ maximum (L-N)	20 kA
Max. discharge current $I_{max}$ (8/20) $\mu s$ maximum (N-PE)	30 kA
Nominal discharge current $I_n$ (8/20) $\mu s$ (L-N)	10 kA
Nominal discharge current $I_n$ (8/20) $\mu s$ (N-PE)	20 kA
Front of wave sparkover voltage at 6 kV (1.2/50) $\mu s$ (N-PE)	$\leq 1.5 \text{ kV}$
Voltage protection level $U_p$ (L-N)	$\leq 1.4 \text{ kV}$
Voltage protection level $U_p$ (N-PE)	$\leq 1.5 \text{ kV}$
Residual voltage (L-N)	$\leq 1.4 \text{ kV}$

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#### Protective circuit

	$\leq 1.2$ kV (at 5 kA)
	$\leq 1.1$ kV (at 3 kA)
Residual voltage (L-PE)	$\leq 1.5$ kV
	$\leq 1.3$ kV (at 5 kA)
	$\leq 1.2$ kV (at 3 kA)
Residual voltage (N-PE)	$\leq 250$ V
	$\leq 150$ V (at 5 kA)
	$\leq 100$ V (at 3 kA)
Response time (L-N)	$\leq 25$ ns
Response time (L-PE)	$\leq 100$ ns
Response time (N-PE)	$\leq 100$ ns
Max. backup fuse with branch wiring	125 A (gL/gG)
Short-circuit resistance $I_p$ with max. backup fuse (effective)	25 kA
Follow current quenching capacity $I_f$ (N-PE)	100 A

#### Connection, protective circuit

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

Connection name	Remote fault indicator contact
Switching function	PDT, 1-pos.
Connection method	Screw connection
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>

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### Remote indicator contact

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 <sub>max.</sub> AC	250 V AC
Max. operating current I <sub>max</sub>	1.5 A AC (250 V AC)
	1.5 A (30 V DC)

### Standards and Regulations

Standards/regulations	IEC 61643-1 2005
	EN 61643-11/A11 2007

## Classifications

### eCl@ss

eCl@ss 4.0	27140201
eCl@ss 4.1	27130801
eCl@ss 5.0	27130801
eCl@ss 5.1	27130801
eCl@ss 6.0	27130805
eCl@ss 7.0	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

## Approvals

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### Approvals

Approvals

KEMA-KEUR / ÖVE / GOST / CCA / IECCEB Scheme

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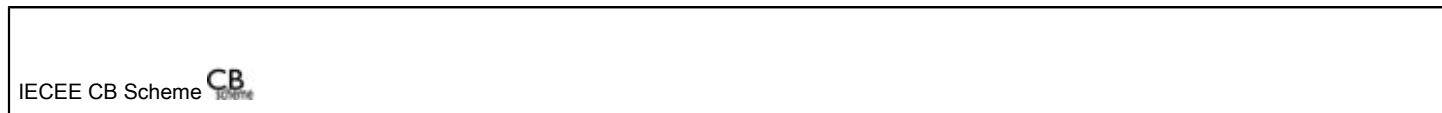
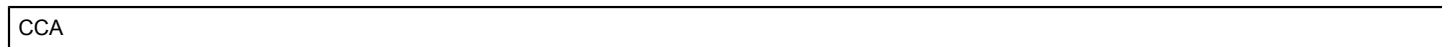
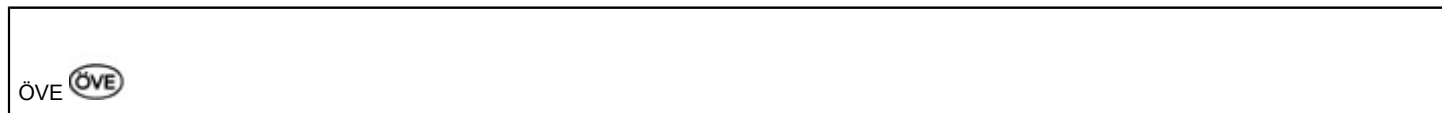
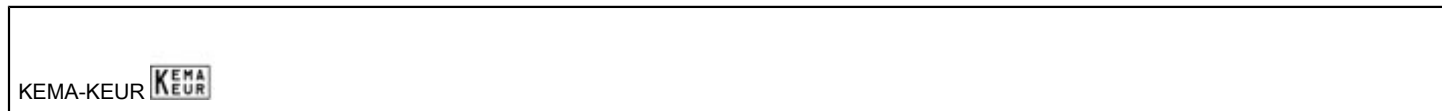
Ex Approvals

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Approvals submitted

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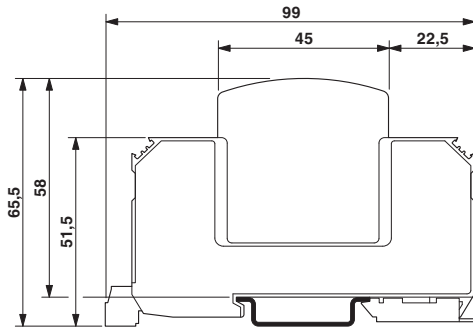
### Approval details



### Drawings

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Dimensioned drawing



Circuit diagram

