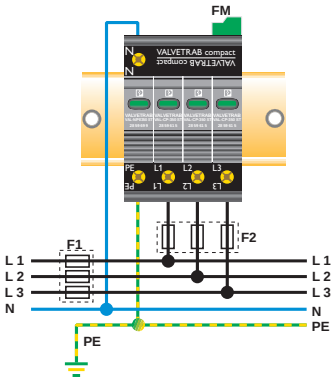
Slim surge arresters for the power supply in the TT and TN-S system

VALVETRAB compact

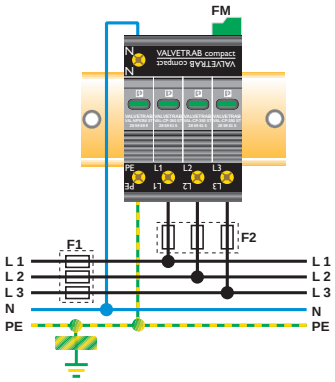
VALVETRAB compact are multi-position type 2 (formerly arrester class C) surge arresters. The modules meet the highest standards with regard to power and convenience. There are fully equipped installation blocks for almost every power supply system. The high nominal arrester voltage of VALVETRAB compact allows worldwide use in all 230 V/400 V ... 240 V/415 V power supply networks. The slim design of just 12 mm per channel sets a new standard worldwide. Only varistors with a low leakage current are used with VALVETRAB compact. This reduces the energy turnover in the component, thus extending the life of the arresters.

Further properties of VALVETRAB compact:

- Slim, application-oriented installation blocks
- Universal pluggability
- Mechanical coding of all slots
- Variable installation direction
- Thermal disconnect device
- Mechanical coding of all slots
- Variable installation direction
- Thermal disconnect device
- Mechanical status display of the individual arresters without consumption of electrical power
- Integrated floating changeover contact for remote signaling
- Biconnect terminal blocks
- Extensive labeling possibilities
- Clamping part pockets with protective guide
- In order to ensure the full performance capability of the surge protection devices, missing plugs or plugs without components are reported as errors at the remote indicator contact.



Branch wiring of VAL-CP-3S-350 in the TT system



Branch wiring of VAL-CP-3S-350 in the TN-S system

CHECKMASTER

Note

Products bearing this stamp (plug elements) can all be tested with the CHECKMASTER.

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VAL-CP-3S-350 / VAL-CP-3S-350VF

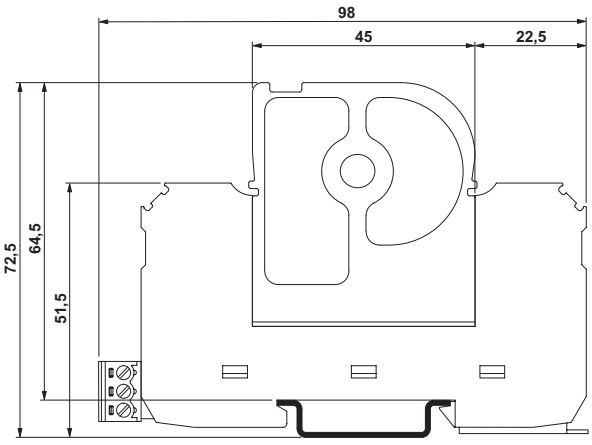
Arrester combination for 5-conductor networks with a TT and TN-S system

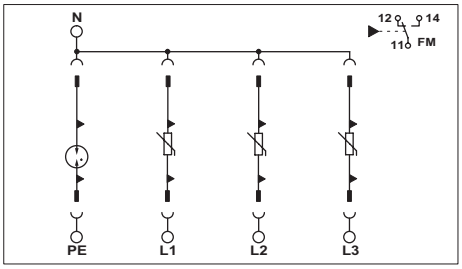
Technical Data

		Type	Order No.	Pcs. Pkt.
VALVETRAB compact, for 3-phase power supply systems with varistor	L1, L2, L3, N, PE	**VAL-CP-3S-350**	**28 59 52 1**	**1**
VALVETRAB compact, for 3-phase power supply systems with varistor + gas-filled surge arrester	L1, L2, L3, N, PE	**VAL-CP-3S-350VF**	**28 59 51 8**	**1**
Replacement plug,	L-N	**VAL-CP-350-ST**	**28 59 60 2**	**10**
	L-N	**VAL-CP-350VF-ST**	**28 59 61 5**	**10**
	N-PE	**VAL-CP-N/PE-350-ST**	**28 59 69 9**	**10**

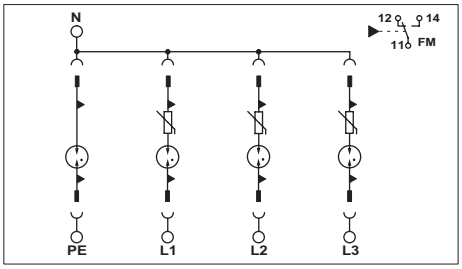
Technical data		**VAL-CP-3S-350**	**VAL-CP-3S-350VF**
IEC category/VDE requirement class/EN type		II/ C/ T2	
Nominal voltage U_N:		230 / 400 V AC ... 240 / 415 V AC	
Arrester rated voltage U_C:	L-N (N-PE)	350 V AC	
Nominal discharge surge current i_{sn} (8/20)µs:	L-N/N-PE (per pole)	20 kA	10 kA / 20 kA
Max. discharge surge current I_{max} (8/20)µs	L-N/N-PE (per pole)	40 kA	20 kA / 40 kA
Residual voltage at 5 kA:	L-N/N-PE/L-PE	≤ 1.1 kV/≤ 0.25 kV/≤ 1.2 kV	≤ 1 kV/≤ 0.25 kV/≤ 1.1 kV
Protection level U_p with I_N:	L-N/N-PE	≤ 1.4 kV/≤ 1.3 kV	≤ 1.5 kV/≤ 1.5 kV
Response time t_a:	L-N/N-PE	≤ 25 ns/≤ 100 ns	≤ 100 ns/≤ 100 ns
Backup fuse [1]) max. in acc. with IEC:		125 A gL	125 A gL
Short circuit resistance with max. backup fuse:		25 kA_{rms}	25 kA_{rms}
Temperature range:		- 40 °C to + 80 °C	
Degree of protection in acc. with IEC 60 529/EN 60 529:		IP20	
Total width:		48 mm	
Insulation housing:		PBT	
Inflammability class:		V0	
Thread/torque	Biconnect terminal block	M5 / 4.5 Nm	
	Remote indicator contact	M2 / 0.25 Nm	
Certification:		KEMA KEUR applied for	
Test standards:		DIN EN 61643-11:2002-07/IEC 61643-1:1998-02/ UL 1449/IEEE C62.1; C62.45	
Remote indicator contact:	PDT	Floating	
	max. operating voltage	250 AC / 125 V DC	
	max. operating current AC (Ω/Ind.)	1 A / 1 A	
	max. operating current DC (Ω/Ind.)	0.2 A / 30 mA	

[1]) 125 A gL/gG with branch wiring;
63 A gL/gG with (V) through wiring





Circuit diagram: VAL-CP-3S-350



Circuit diagram: VAL-CP-3S-350/VF

VAL-CP-2S-350 / VAL-CP-2S-350VF

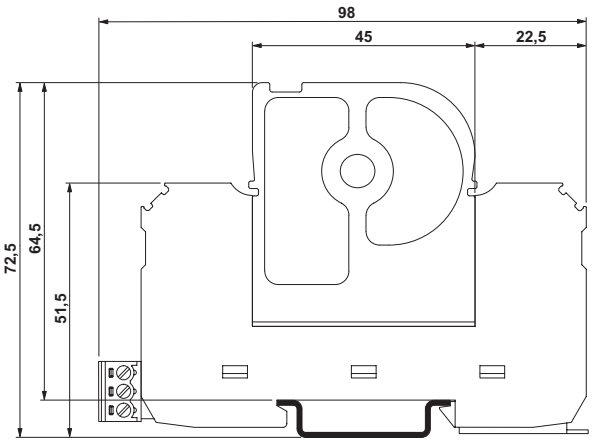
Arrester combination for 4-conductor networks with a TT and TN-S system

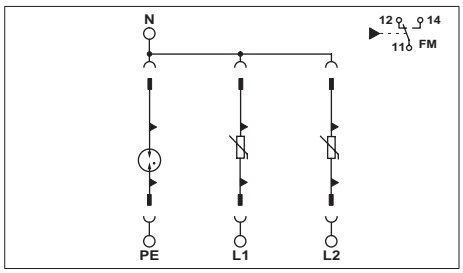
Technical Data

		Type	Order No.	Pcs. Pkt.
VALVETRAB compact, for 2-phase power supply systems with varistor	L1, L2, N, PE	**VAL-CP-2S-350**	**28 59 50 5**	**1**
VALVETRAB compact, for 2-phase power supply systems with varistor + gas-filled surge arrester	L1, L2, N, PE	**VAL-CP-2S-350VF**	**28 59 59 2**	**1**
Replacement plug,	L-N	**VAL-CP-350-ST**	**28 59 60 2**	**10**
	L-N	**VAL-CP-350VF-ST**	**28 59 61 5**	**10**
	N-PE	**VAL-CP-N/PE-350-ST**	**28 59 69 9**	**10**

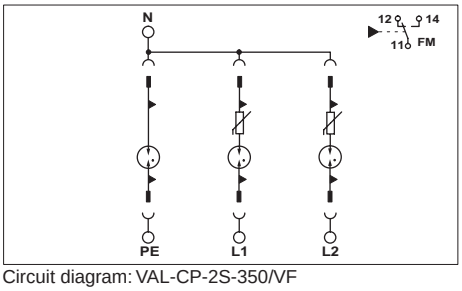
Technical data		**VAL-CP-2S-350**	**VAL-CP-2S-350VF**
IEC category/VDE requirement class/EN type		II/ C/ T2	
Nominal voltage U_N:		240 V AC / 415 V AC	
Arrester rated voltage U_C:	L-N (N-PE)	350 V AC	
Nominal discharge surge current i_{sn} (8/20)µs:	L-N/N-PE (per pole)	20 kA	10 kA / 20 kA
Max. discharge surge current I_{max} (8/20)µs	L-N/N-PE (per pole)	40 kA	20 kA / 40 kA
Residual voltage at 5 kA:	L-N/N-PE/L-PE	≤ 1.1 kV/≤ 0.9 kV	≤ 1 kV/≤ 0.9 kV
Protection level U_p with I_N:	L-N/N-PE	≤ 1.4 kV/≤ 1.3 kV	≤ 1.5 kV/≤ 1.5 kV
Response time t_a:	L-N/N-PE	≤ 25 ns/≤ 100 ns	≤ 100 ns/≤ 100 ns
Backup fuse [1]) max. in acc. with IEC:		125 A gL	125 A gL
Short circuit resistance with max. backup fuse:		25 kA_{rms}	25 kA_{rms}
Temperature range:		- 40 °C to + 80 °C	
Degree of protection in acc. with IEC 60 529/EN 60 529:		IP20	
Total width:		24 mm	
Insulation housing:		PBT	
Inflammability class:		V0	
Thread/torque	Biconnect terminal block	M5 / 4.5 Nm	
	Remote indicator contact	M2 / 0.25 Nm	
Certification:		KEMA EUR applied for	
Test standards:		DIN EN 61643-11:2002-07/IEC 61643-1:1998-02/ UL 1449/IEEE C62.1; C62.45	
Remote indicator contact:	PDT	Floating	
	max. operating voltage	250 AC / 125 V DC	
	max. operating current AC (Ω/Ind.)	1 A / 1 A	
	max. operating current DC (Ω/Ind.)	0.2 A / 30 mA	

[1]) 125 A gL/gG with branch wiring;
63 A gL/gG with (V) through wiring





Circuit diagram: VAL-CP-2S-350



Circuit diagram: VAL-CP-2S-350/VF

VAL-CP-1S-350 / VAL-CP-1S-350VF

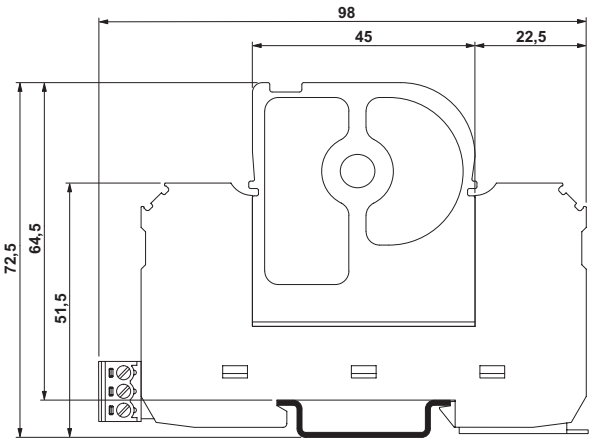
Arrester combination for 3-conductor networks with a TT and TN-S system

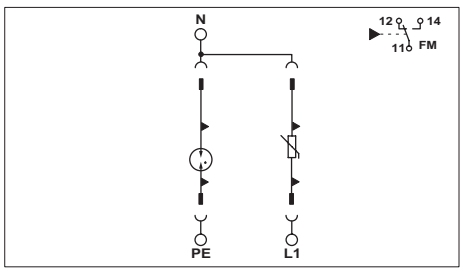
Technical Data

		Type	Order No.	Pcs. Pkt.
VALVETRAB compact, for 1-phase power supply systems with varistor	L1, N, PE	**VAL-CP-1S-350**	**28 59 56 3**	**1**
VALVETRAB compact, for 1-phase power supply systems with varistor + gas-filled surge arrester	L1, N, PE	**VAL-CP-1S-350VF**	**28 59 55 0**	**1**
Replacement plug,	L-N	**VAL-CP-350-ST**	**28 59 60 2**	**10**
	L-N	**VAL-CP-350VF-ST**	**28 59 61 5**	**10**
	N-PE	**VAL-CP-N/PE-350-ST**	**28 59 69 9**	**10**

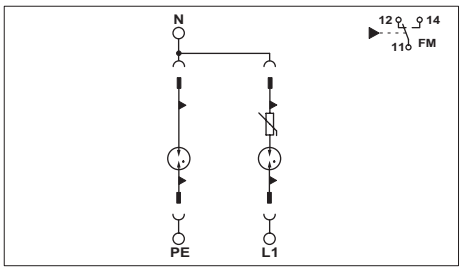
Technical data		**VAL-CP-1S-350**	**VAL-CP-1S-350VF**
IEC category/VDE requirement class/EN type		II/ C/ T2	
Nominal voltage U_N:		230 / 400 V AC ... 240 / 415 V AC	
Arrester rated voltage U_C:	L-N (N-PE)	350 V AC	
Nominal discharge surge current i_{sn} (8/20)µs:	L-N/N-PE (per pole)	20 kA	10 kA / 20 kA
Max. discharge surge current I_{max} (8/20)µs	L-N/N-PE (per pole)	40 kA	20 kA / 40 kA
Residual voltage at 5 kA:	L-N/N-PE/L-PE	≤ 1.1 kV/≤ 0.25 kV/≤ 1.2 kV	≤ 1 kV/≤ 0.25 kV/≤ 1.1 kV
Protection level U_p with I_N:	L-N/N-PE	≤ 1.4 kV/≤ 1.3 kV	≤ 1.5 kV/≤ 1.5 kV
Response time t_a:	L-N/N-PE	≤ 25 ns/≤ 100 ns	≤ 100 ns/≤ 100 ns
Backup fuse [1]) max. in acc. with IEC:		125 A gL	125 A gL
Short circuit resistance with max. backup fuse:		25 kA_{rms}	25 kA_{rms}
Temperature range:		- 40 °C to + 80 °C	
Degree of protection in acc. with IEC 60 529/EN 60 529:		IP20	
Total width:		24 mm	
Insulation housing:		PBT	
Inflammability class:		V0	
Thread/torque	Biconnect terminal block	M5 / 4.5 Nm	
	Remote indicator contact	M2 / 0.25 Nm	
Certification:		KEMA KEUR applied for	
Test standards:		DIN EN 61643-11:2002-07/IEC 61643-1:1998-02/ UL 1449/IEEE C62.1; C62.45	
Remote indicator contact:	PDT	Floating	
	max. operating voltage	250 AC / 125 V DC	
	max. operating current AC (Ω/Ind.)	1 A / 1 A	
	max. operating current DC (Ω/Ind.)	0.2 A / 30 mA	

[1]) 125 A gL/gG with branch wiring;
63 A gL/gG with (V) through wiring





Circuit diagram: VAL-CP-1S-350



Circuit diagram: VAL-CP-1S-350/VF