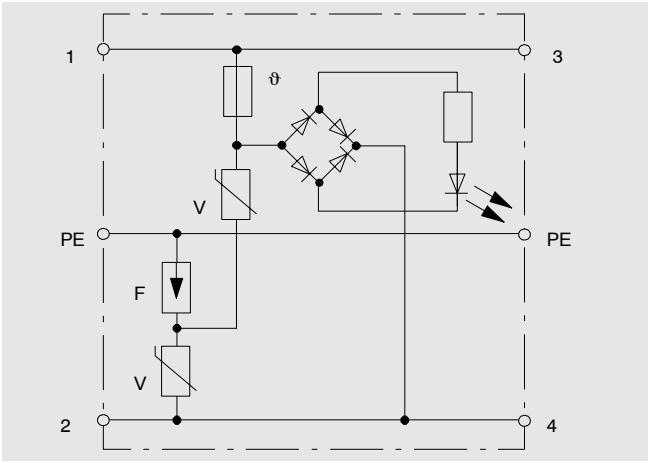
Lightning barriers OBO VF and VF-FS

Operation and fields of application

Lightning barriers VF and VF-FS are used as precision protection devices in power supplies for computer installations, modems, ripple control installations, etc., to protect them from surges that may be caused by atmospheric discharges (storms) or switching operations.

The built-in protection circuit, which is made up of gas discharge tubes and varistors, is permanently monitored by a temperature cutout. A green LED indicates that it is ready to operate. If the protection circuit is overloaded, an integral isolating device isolates the circuit and the green LED goes out. In the version with remote signalling, a floating changeover contact also operates.



Block diagram of VF

Mounting

VF devices are mounted on a 35 mm top-hat rail inside the distribution box or switchgear cabinet. The remote signalling circuit is connected by means of a plug (supplied).

Features at a glance VF		Advantages in use
Mounting on 35 mm top-hat rail	▶	Direct installation in distribution board housing or switchgear cabinet
Available with remote signalling (VF ...-FS)	▶	Permanent check of the varistors in switchgear with poor access
Screwless clamp terminals	▶	Easy to install
Y circuit	▶	Safety from transient surges on the phase, neutral or protective earth wire

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Technical data

Lightning barrier VF AC						
Nominal voltage	U_N	24 V~	48 V~	60 V~	110 V~	230 V~
Maximum continuous operating voltage	U_c	34 V~	60 V~	80 V~	150 V~	255 V~
LPZ		2->3				
Requirement class to DIN VDE 0675, Part 6 (Draft 11.89) A1, A2 to IEC 61643-1		D class III				
Rated load current	I_L	16 A				
Nominal discharge current	I_n (8/20)	700 A			2000 A	2500 A
Maximum discharge current	I_{max} (8/20)	2000 A			6500 A	7000 A
Voltage protection level U_p	I_n $U_{p\ L-N}$ I_{max} $U_{p\ L-N}$	≤ 160 V ≤ 220 V	≤ 220 V ≤ 300 V	≤ 360 V ≤ 480 V	≤ 530 V ≤ 850 V	≤ 1060 V ≤ 1500 V
Response time	t_A	≤ 25 ns				

Lightning barrier VF DC							
Nominal voltage	U_N	12 V-	24 V-	48 V-	60 V-	110 V-	230 V-
Maximum continuous operating voltage	U_c	18 V-	36 V-	76 V-	90 V-	170 V-	300 V-
LPZ		2->3					
Requirement class to DIN VDE 0675, Part 6 (Draft 11.89) A1, A2 to IEC 61643-1		D class III					
Rated load current	I_L	16 A					
Nominal discharge current	I_n (8/20)	700 A				2000 A	
Maximum discharge current	I_{max} (8/20)	2000 A				6500 A	
Voltage protection level U_p	I_n $U_{p\ L-N}$ I_{max} $U_{p\ L-N}$	≤ 70 V ≤ 100 V	≤ 130 V ≤ 170 V	≤ 240 V ≤ 300 V	≤ 280 V ≤ 350 V	≤ 500 V ≤ 800 V	≤ 820 V ≤ 1020 V
Response time	t_A	≤ 25 ns					

Lightning barrier VF AC/DC	
Connection cross-section single-stranded, multi-stranded, fine-stranded with core end sleeve, pin cable lug, crimp sleeve	0.14-2.5 mm²
Stripping length for connecting cables	6-7 mm
Colour	Light grey, similar to RAL 7035
Material	Polyamide 6
Mounting	Snap-fitting on 35 mm top-hat rail to DIN EN 50022
Dimensions	Width 17.8 mm-depth 55.0 mm

Remote signalling, lightning barrier VF AC/DC-FS		
Max. switching voltage	$U_{max.}$	250 V~, 220 V-
Max. switching current	$I_{max.}$	2 A
Max. switching power	$P_{max.}$	125 VA, 60 W
Connection cross-section, flexible or rigid		0.14-1.5 mm²
Signal contact	NO (make) NC (break)	1-2 1-3

Other voltages on request. Subject to technical alterations

Ordering data

Type	Description	Order no.
VF 24-AC	Alternating current systems; 24 V version	**5097 60 6**
VF 48-AC	Alternating current systems; 48 V version	**5097 61 4**
VF 60-AC	Alternating current systems; 60 V version	**5097 62 2**
VF 110-AC	Alternating current systems; 110 V version	**5097 63 0**
VF 230-AC	Alternating current systems; 230 V version	**5097 64 9**
VF 12-DC	Direct current systems; 12 V version	**5097 45 2**
VF 24-DC	Direct current systems; 24 V version	**5097 46 0**
VF 48-DC	Direct current systems; 48 V version	**5097 47 9**
VF 60-DC	Direct current systems; 60 V version	**5097 48 7**
VF 110-DC	Direct current systems; 110 V version	**5097 49 5**
VF 230-DC	Direct current systems; 230 V version	**5097 50 9**
VF 24-AC-FS	Alternating current systems; 24 V with FS*	**5097 81 9**
VF 230-AC-FS	Alternating current systems; 230 V with FS*	**5097 85 1**

* FS = remote signalling