V 25-B/3+NPE overvoltage arrester

Application

The OBO V 25-B/3+NPE (requirement category B) is a special overvoltage arrester for use in TT and IT mains. It was especially designed for the new requirements under DIN VDE 0100, Part 534 in order to allow the user simple installation of the equipment in the TT and IT mains. The OBO V 25-B/3+NPE protects the low-voltage consumer systems from transients caused by thunderstorm and switching action.

Function

The components used to reduce overvoltages between the phases and the neutral conductor are zinc oxide varistors. As a result, you get an extremely low protective threshold and at the same time a high discharge current and a short response time. Overvoltage reduction between the neutral and protective conductors is provided by a high-power spark discharger.

Should a varistor become defective because of an overload condition the built-in cut-off device within the arrester module disconnects the defective device from the mains. Therefore there will be no fault currents between the phases and the protective conductor nor, depending on the existing earth resistance, any excessive contact voltage. In this situation the defective indicator in the inspection window changes from green to red.

The design of the NPE spark discharger is such that no functional monitoring is required.

Place of installation/mounting

The V 25-B/3+NPE is installed simply by locking onto the 35 mm top hat rail.

As the overvoltage-reducing varistors are inserted between the phases **and the** neutral conductor you can install the V 25-B/3+NPE **before** the FI circuit breaker. This is to prevent overvoltages actuating the FI circuit breaker.

Special features

For remote monitoring of the varistor modules, you can easily use the LS light barrier system. In addition, the V 25-B/3+NPE/FS overvoltage arrester is also available with a permanently mounted remote signalling module.

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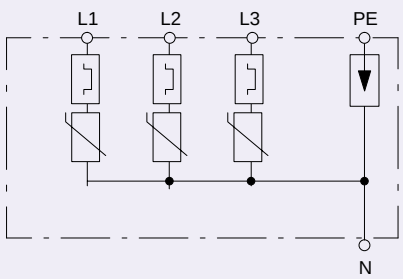
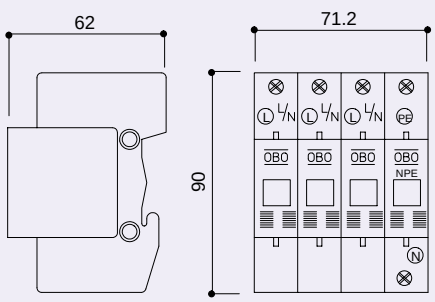
Technical data

V 25-B overvoltage arrester		Single-pole		Three-pole	
Nominal voltage	U_N	130 V~	230 V~	130 V~	230 V~
Max. admissible operating voltage	$U\sim_{max.}$ $U^-_{max.}$	150 V 200 V	275 V 350 V	150 V 200 V	275 V 350 V
LPZ		0 -> 2			
Requirement category acc. VDE 0675, Part 6 (Draft 11.89)		B			
Nominal discharge surge current per upper part	i_{SN} (8/20)	30 kA			
Impulse current (10/350)		7 kA			
Response time	t_A	< 25 ns			
Short-circuit withstand 25 kA with max. back-up fuse		160 A gl			
Operating temperature range		-40 °C to +80 °C			
Connection cross-section		2.5 - 35 mm² (single- and multi-wire) 2.5 - 25 mm² (fine-wire with end ferrule)			
		Subject to engineering changes			

NPE spark discharger		
Arrester calibration voltage	U_r	255 V~ 50/60 Hz
Insulating resistance at 100 V	R_{iso}	> 10 GOhm
Lightning testing current (10/350) acc. IEC 529 Current peak value Charge Specific energy	 i_S max. Q W/R	 25 kA 12.5 As 160 kJ/Ω
Nominal discharge surge current	i_{SN} (8/20)	50 kA
100% Response lightning surge voltage (1.2/50)	$U_{AS\ 100}$	≤ 1,2 kV
Protective threshold		≤ 1,2 kV
Response time	t_A	≤ 100 ns
Operating temperature range		-40 °C to +80 °C
		Subject to engineering changes



V 25-B/3+NPE block diagram



V 25-B/3+NPE dimensional diagram

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