Voltage monitoring device Type 8539 / DC 1500V

8539

Description

The voltage monitoring device of the type 8539 with the article numbers 23014x and 23016x has been developed exclusively for the voltage level DC 1500 V. All relevant clearances and creepage distances have been so dimensioned that the test voltage amounts to DC 9.5 kV for all measurements.

The voltage monitoring device of the type 8539 with the article numbers 23014x and 23016x is usually used to indicate or trigger switching operations if the voltage is below the set voltage threshold

Due to the high input resistance (approx. 4 MΩ) and the high overvoltage capability the device is suited e.g. for monitoring the residual voltage on traction power supply systems.

In case of this design the output relay is only activated if the voltage is permanently below the set voltage value, i.e. longer than the preset period, and if the device is in the operating state. Supply failures, system incidents etc. do not lead to an unintended fault signal. Therefore, the monitoring device is suited e.g. for safety tasks like monitoring of residual voltage etc.

Function

The monitoring device of the type 8539 measures the voltage at the position to be monitored. If the measured voltage is below the selected threshold value, it is registered by the device. If the voltage remains permanently below the threshold value for the duration of the set period, the output relay picks up.

If the voltage exceeds the threshold value again, if the threshold time is adjusted or if the supply voltage is switched off and on again, the output relay drops out immediately and only picks up again when the said conditions are fulfilled again.

Putting into service

The voltage monitoring device of the type 8539 is connected to the voltage source to be measured (e.g. contact line and rail). Thereafter, the operating voltage (supply voltage) is applied. When the measuring voltage selected as the threshold value has been applied to the measuring voltage input, the teach-in procedure (programming) of the device can begin. This procedure can also be performed beforehand in the workshop.

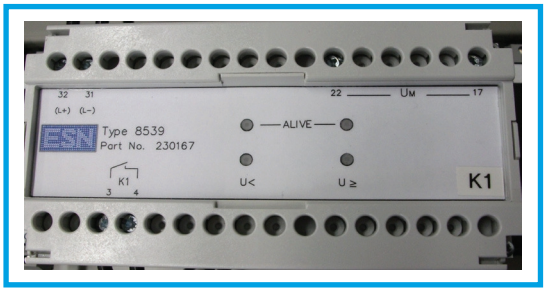
When the button "PROGR USwitch" is actuated, a teach-in procedure is started. During the teach-in the yellow LED lights up. When it goes out, the device works. This teach-in procedure takes less than 30 s. The parameters are stored permanently until the device is re-programmed and also remain stored after a power failure.

The desired response delay can be set with the other button. The response delay can be programmed between 0 s and 9 s.

It is possible to choose between one and two make contacts as the output contact.

Information about further monitoring devices is found in our complete brochure folder.

Accessories: Special designs, other functions and measuring ranges, complete systems, protective housings with additional clamps etc. on enquiry.



Technical data

Dimensions	w/h/d 150/70/115 mm
Housing	ABS / polycarbonate
Fastening	Two holes acc. to hole pattern, top-hat rail acc. to EN 50022
Degree of protection	Housing: IP 40; clamps: IP 10
Ambient air temperature	-20°C to +60°C
Connections	2 x 2.5 mm2 solid acc. to DIN 46288 or 2 x 1.5 mm2 with sleeve
Supply voltage	AC variants: Cl. 30 – 32 AC 230V DC variants: Cl. 32 (+), Cl. 31 (-), DC 24 V ± 20 %
Power input	< 5 VA
Measuring input U_M	Cl. 17, Cl. 22 (polarity-independent)
Input resistance	Approx. 4 MΩ
Input voltage	Max. DC 1800 V continuous
Switching threshold	U_{th}: 20 V to approx. 2000 V
Relay output (s)	Cl. 3, 4 (1 make contact, potential-free, reed-contact)
Voltage below a set value	Relay picked up or Relay dropped
Reponse delay	Programmable 0 - 9 s
Output contact assignment	AC 250 V / 1 A cos Phi > 0.7 DC 120 V / 1 A ohmic load
Displays	Via LEDs: 1 green LED for relay state ($U_M < U_{th}$) 2 yellow LEDs for teach-in phase 1 red LED for incication $U_M < U_{th}$
Programming time	Teach-in phase < 30 s
Test voltage	DC 9.5 kV between: Cl. 17, 22 and Cl. 3, 4 Cl. 17, 22 and AC: Cl. 30, 32 / DC: Cl. 31, 32 Clamps and front foil (service)

Ordering information

Type: 8539/1500V DC Voltage monitoring device	Part No.
AC 230V supply:	
1 relay, relay picked up,	230145
2 relay, relay picked up,	230146
1 relay, relay dropped,	230147
2 relay, relay dropped,	230148
DC 24V supply:	
1 relay, relay picked up,	230165
2 relay, relay picked up,	230166
1 relay, relay dropped,	230167
2 relay, relay dropped,	230168

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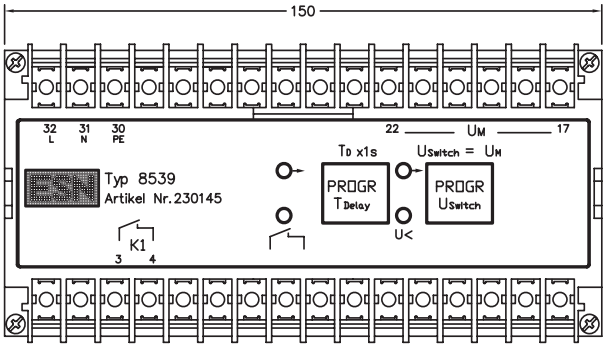

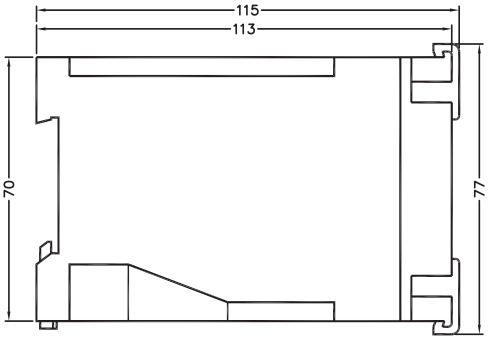

U< – If the red LED U< lights up, the applied voltage UM is smaller than the programmed threshold voltage.

– Switching state of the relay K1 (K2) (LED lights up with closed contact(s))

– The left LED shows the readiness for service of the device with a short flash signal (approx. 5 s cycle).

PROGR USwitch

Programming of the switching point:
- Apply the voltage to be programmed as the switching point to UM.
- Press the button until the opposite yellow LED lights up. After the start of the programming cycle the LED flashes fast 5x. When the programming cycle has been finished, the device automatically begins to measure.

PROGR TDelay

Programming of the output delay:
- Press the button until the opposite yellow LED lights up. After the start of the programming cycle the LED flashes fast 5x. Thereafter, the set delay is shown via cyclic flashing of the LED (e.g. 5 flashes for 5 s).
- Select the desired delay time by permanent actuation of the button "PROGR Sswitch".

ATTENTION: 0 s corresponds to 10 flashes.
- The programming is finished if the button "PROGR Tdelay" is actuated until the opposite LED lights up. When the programming cycle has been finished, the device automatically begins to measure.