

# Voltage Monitor Type 8539

# 8539



## Description

The ESN-8539 voltage monitor is normally used to report or activate switching processes when the pre-set voltage threshold is fallen short of.

Due to the high input resistance (approx. 2 MΩ) and the high overvoltage strength, the device is suitable for monitoring residual voltages in traction current installations, for example.

In the ESN-853900 model the output relay is only activated if the pre-set voltage is continuously fallen short of for longer than the pre-determined time limit when the device is in operation. Power cuts, supply failures etc. do not lead to an unnecessary error report. The monitoring device is therefore suitable for safety tasks, for example, such as residual voltage monitoring, etc.

With the Type ESN-823910, a model with reverse relay function is available.

The ESN-8539 monitoring device measures the voltage at the location to be monitored. If the voltage falls below the selected threshold value it is registered by the device. If the threshold value is fallen short of for the duration of the pre-set time, the output relay is closed.

If the threshold value is then exceeded once more, the response time altered or the supply voltage switched off and then on again, the output relay immediately opens and only closes again if the previously described boundary conditions are fulfilled.

The monitoring device is connected to the voltage source to be monitored (e. g. overhead contact line and rail or similar) and the operating voltage (supply voltage) applied. After applying the desired measurement voltage as threshold value at the measurement voltage input, teaching in (programming) of the device can proceed.

The teaching in procedure is started by pressing the "PROG" key. The yellow diode glows during teaching in. When the yellow diode goes out the device is operating. Teaching in takes less than 30 sec. The parameters are permanently saved until further programming takes place and are also retained in case of a power cut.

The desired response time can be set using the two-key selector switch. The positions 1 -9 are multipliers for 10 sec. segments, i.e. in position "4" the time window is  $4 \times 10 = 40$  seconds. In position "0" the time window is 2 sec. (can be used for testing purposes).

Temporary alteration of the response time can also be used to reset a report.

The circuit diagram on the device corresponds to the functioning under the conditions described.

Please see the complete range of brochures for further monitoring devices.



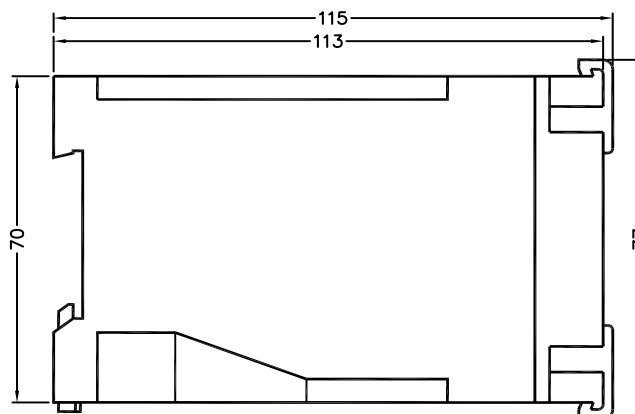
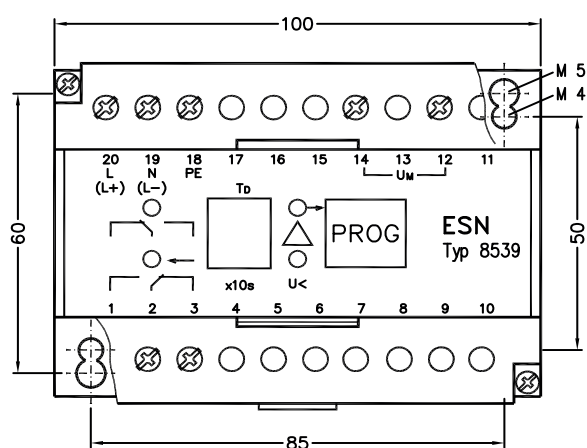
## Technical Data

<b>Dimensions</b>	W/H/D 100/70/115 mm
<b>Casing</b>	ABS / Polycarbonate
<b>Mounting</b>	2 bores in acc. with template, top hat rail in acc. with DIN EN 50022
<b>Protective system</b>	Casing: IP 40; terminals IP: 10
<b>Ambient temp.</b>	-20° C to + 60° C
<b>Connections</b>	2 X 2.5 mm <sup>2</sup> solid in acc. with DIN 46288 or 2 x 1.5 mm <sup>2</sup> with sleeve
<b>Supply terminal</b>	18 (PE); terminal 19 (N); terminal 20 (L)
<b>Supply voltage</b>	DC 19.2 V to DC 110 V; terminal 19 (L-); terminal 20 (L+) → 8539 -1; 2.5 W
<b>Measurement input</b>	terminal 12, terminal 14 (polarity-independent)
<b>Input resistance</b>	approx. 2 MΩ
<b>Input voltage</b>	max. 1200 V continuous
<b>Switching threshold</b>	10 V to 1000 V (different values on request)
<b>Relay output</b>	terminal 1, 2, 3 (1 u, potentialfree)
<b>Failure to reach voltage</b>	Relay closed → 8539 0- Relay open → 8539 1-
<b>Response time</b>	dependent on position of selector switch position 0: ≤ 2 sec., positions 1 to 9: = displayed digit x 10 sec.
<b>Contact ass.</b>	AC 250 V / 4 A cos phi > 0.7 DC 120 V / 1 A resistive load
<b>Displays</b>	by means of LED's; see reverse 1 yellow LED for relay open (U > ) 1 yellow LED for relay closed (U < ) 1 yellow LED for teaching in phase 1 yellow LED for warning (U < )
<b>Times</b>	Teaching in phase < 30 sec.
<b>Test voltage</b>	4 kV <sub>eff</sub>
<b>Accessories</b>	Special designs, differing functions and measuring ranges, complete installations, protective casings with additional terminals, etc. on request

## Ordering Information

Type	Order No.
8539 11	230108
8539 01	230109

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Programming button



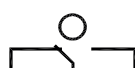
Time delay  
(relay switches after (set number x 10) seconds)



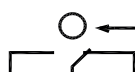
Teach-in mode: lights up during programming



LED lights up when the measuring voltage ( $U_M$ ) is less than the programmed voltage ( $U_p$ )



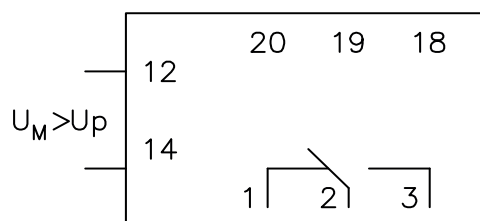
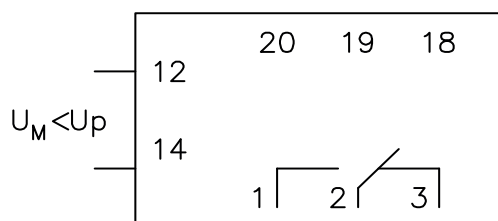
LED lights up when the relay is not drawn in



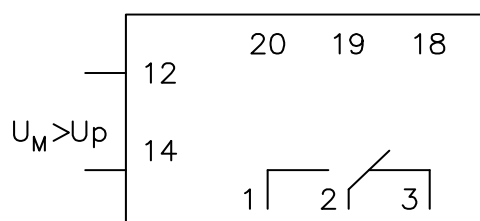
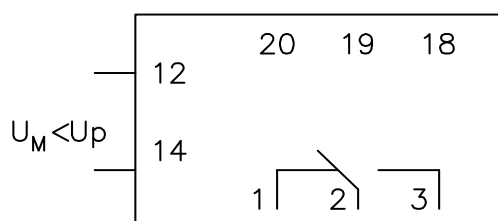
LED lights up when the relay is drawn in

## Function

Configuration: Type 85390\_



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$U_M$ : Measuring voltage

$U_p$ : Programmed voltage (switching voltage)