

Voltage monitoring unit

Type 8539 / 1500V DC

8539



Description

The voltage monitoring unit part No. 23014x/23015x was consistently developed for the voltage level DC 1500V. All relevant air and creepage distances are equal to 32/25mm. The test voltage is DC 9.5 kV/DC 5,5kV for all measurements betw. all terminals and front foil (operation). The voltage monitoring unit part No. 23014x/23015x is mostly used for reporting or triggering of switching operations when the system falls below the set voltage threshold. Due to the high input resistance (approx. 4 MΩ) and high overvoltage capability, the device is suitable particularly for monitoring of residual voltage in traction power supply systems. In this version of the device, the output relay is only activated if the voltage continuously falls below the preset value for longer than the specified time while the device is in operation. Mains power failures, disruption etc., do not lead to unwanted false alarms. The monitoring device is therefore suitable for safety tasks such as monitoring of residual voltage.

Function

The voltage monitoring unit (for example) part No. 230145 measures the voltage at the point to be monitored. If the measured voltage falls below the programmed threshold value, this is registered by the device. If the voltage continuously remains below the threshold for a preset time, the output relay is activated.

If the threshold is exceeded again, the response time is changed or the supply voltage is switched off and on again, the output relay drops out immediately and is activated again only if the above mentioned conditions have been met again.

Starting up

The voltage monitoring unit (for example) part No. 230145 is connected to the voltage source to be monitored (e.g. overhead traction line and rail or similar) and the operating voltage (supply voltage) is applied. After applying the desired measurement voltage as a threshold value at the measurement voltage input, the learning procedure (programming) of the device can begin. This procedure can also be performed in advance in the workshop. The learning procedure is started by pressing the "PROGR USwitch" button. The yellow LED flashes during the learning procedure. The device starts operation when the yellow LED goes out. The learning procedure takes less than 30 seconds. The parameters are saved permanently until programming is done again and are retained even if the mains power supply fails.

The desired response delay can be set with the second selector switch. The response delay can be programmed from 0 to 9 seconds.

A changeover contact is available as an output contact.

See the complete brochure folder for other monitoring devices.



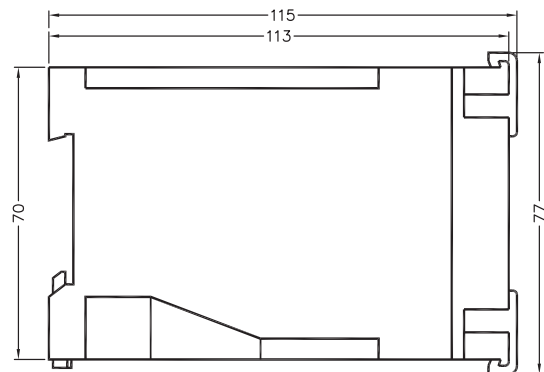
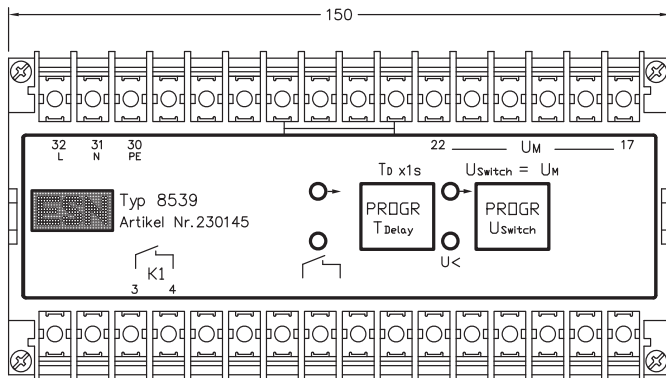
Technical data

Dimensions	WxHxD 150/70/115 mm
Housing material	ABS / polycarbonate
Installation	2 holes to be drilled as per the drilling template, top hat rail in accordance with DIN EN 50022
Type of protection	Housing: IP 40; terminals: IP 10
Ambient temperature	-20°C to +60°C
Connections	2 X 2.5 mm ² solid as per DIN 46288 or 2 x 1.5 mm ² with sleeve
Supply voltage	
23014x:	Terminal 30 - 32, AC 230V or terminal 32(+) and 31(-)
23015x:	
Power drawn	approx. 5 VA
Measuring input U_M	Terminal 17, terminal 22 (polarity-independent)
Input resistance	approx. 4 MΩ
Input voltage	max. 1800 V continuous
Switching threshold	20 V to 1800 V
Relay output	Terminals 3, 4 (1 making contact, zero-potential)
voltage below the threshold	Relay energized (230145/230146) Relay drops (230147/230148)
Response delay	programmable 0 - 9s
Contact rating	AC 250 V / 1 A cosφ > 0.7 DC 120 V / 1 A ohmic load
Displays	by means of LEDs; 1 yellow LED for relay activated (U <) 2 yellow LED for learning phase 1 red LED for warning (U <)
Programming Time	Teach-in phase < 30 s.
Test voltage	AC-supply: DC 9,5kV betw. all terminals and front foil (operation) DC-supply: DC 5,5kV betw. all terminals and front foil (operation)


Ordering information

Type	Part No.
Voltage monitoring unit 8539, AC 230V, relay energized	230145
Voltage monitoring unit 8539, DC 18 to 80V, relay energized	230155
Voltage monitoring unit 8539, AC 230V, relay drops	230147
Voltage monitoring unit 8539, DC 18 to 80V, relay drops	230157

Accessories: Special designs, other functions and measuring ranges, complete units, protective housings with additional terminals etc., upon request




 $U<$ – The red LED $U<$ lights up when the applied voltage U_M is less than the programmed switching threshold.

 – Switching status of the relay K1 (LED lights up when the contact is closed)

 **PROGR USwitch**

Programming of the switching point

- Apply voltage at U_M that should be programmed as the switching point.
- Keep the button pressed until the opposite yellow LED begins flashing. After the start of the programming cycle the LED will flash quickly 5 times.
- At the end of the programming cycle the device automatically switches to the measuring mode.

 – In the measuring mode, the left LED indicates readiness for operation by a short flashing signal (a cycle of approx. 5 seconds).

 **PROGR TDelay**

Programming of the output delay

- Keep the button pressed until the opposite yellow LED begins flashing. After the start of the programming cycle the LED will flash quickly 5 times. The set delay will then be indicated by periodic flashing of the LED (for example, flashing 5 times for 5 sec)
 - Select the desired delay time by continuously pressing the "PROGR USwitch" button.
- NOTE: 0 seconds corresponds to flashing 10 times.
- Finish the programming by pressing the "PROGR TDelay" button until the opposite LED lights up.
 - At the end of the programming cycle the device automatically switches to the measuring mode.