# Potential Monitoring Device Type 8535

**8535**

## Description

The potential monitoring device Type 8535 monitors potential differences, e.g. between the negative and the grounding conductors in grounded DC railway systems or between the neutral and the grounding conductors to protect against inadmissibly high and dangerous contact voltage.

The low polarity-independent threshold voltage of 24V or 90V and quick response speed of ≤ 2.5 ms at 50 V potential difference guarantee timely shutdown if the return, neutral, or grounding conductor fails or is interrupted.

The large voltage-overload capacity up to max. 1000 V (peak value) ensures the reliable protective function of the monitor.

A bistable zero potential NC contact serves as output. With this output contact, once the control mechanism has been triggered, on-site acknowledgement (after fault correction) is required for reactivation (by pressing "Reset" on the voltage monitor).

To ensure electrical strength and the elimination of environmental influences, the entire circuitry of the potential monitoring voltage is cast.

## Function

An interruption of the return conductor, a poor contact, or similar problem causes the potential in the return busbar (e.g. the negative busbar) to increase relative to the grounding conductor. If the potential exceeds the specified threshold value, the bistable output contact opens. This output contact can be reset only by mechanical means after correction of the fault.

An electronically clocked switching amplifier ensures high operating reliability, response speed, and a large operating voltage range with a low power input. State-of-the-art components guarantee a high safety standard and the stability of the individual characteristics and of the monitor overall.

Special electronic circuits enable the device to be optimized for specific applications and tasks.

## Technical Data

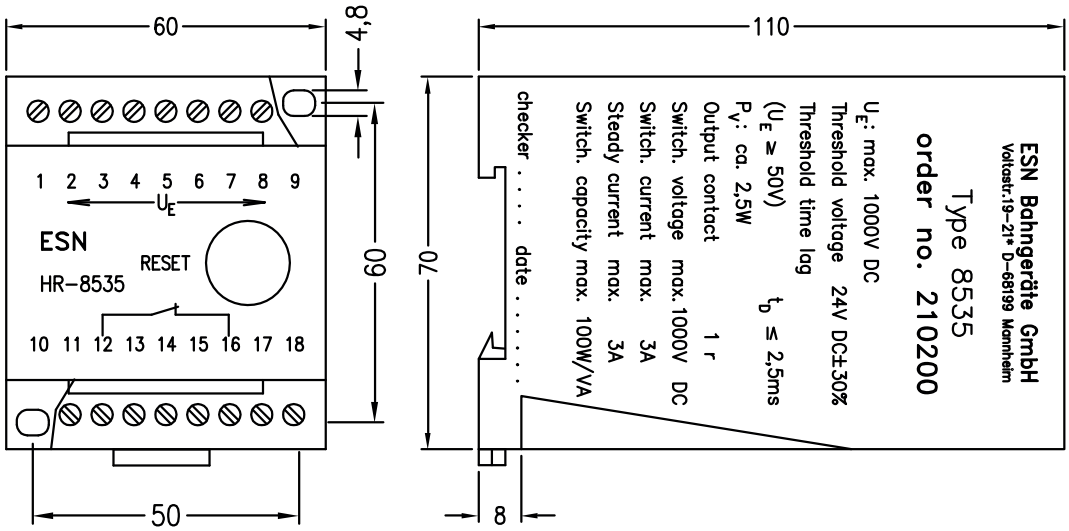
| | |
|---|---|
| **Dimensions** | W / H / D 60 / 70 / 110 mm |
| **Housing** | Polystyrene |
| **Mounting** | 2 bore holes per DIN 43604 or standard support rail per DIN EN 50022 |
| **Protection Class** | Housing: IP 30; Terminals: IP 20 Housing completely cast up to the terminals |
| **Ambient temp.** | -20°C to +70°C |
| **Control voltage $U_E$** | Threshold value: 24 V AC/DC ± 30% (polarity-independent) |
| **Overvoltage protection** | Max. 1000 V (peak value) |
| **Power input** | Approx. 2.5 W |
| **Operating voltage** | = Control voltage |
| **Threshold time lag** | max. 2.5 ms (with $U_E \geq 50$ V) |
| **Operating circuit** | break contact (bistable and zero potential) |
| **Switching voltage** | max. 1000 V DC |
| **Switching current** | max. 3 A |
| **Steady current** | max. 3 A |
| **Switching capacity** | max. 100 W / VA |
| **Reset** | Mechanical, only through integrated acknowledge key (Reset) |
| **Electrical strength** | Input – Output = 6000 V |

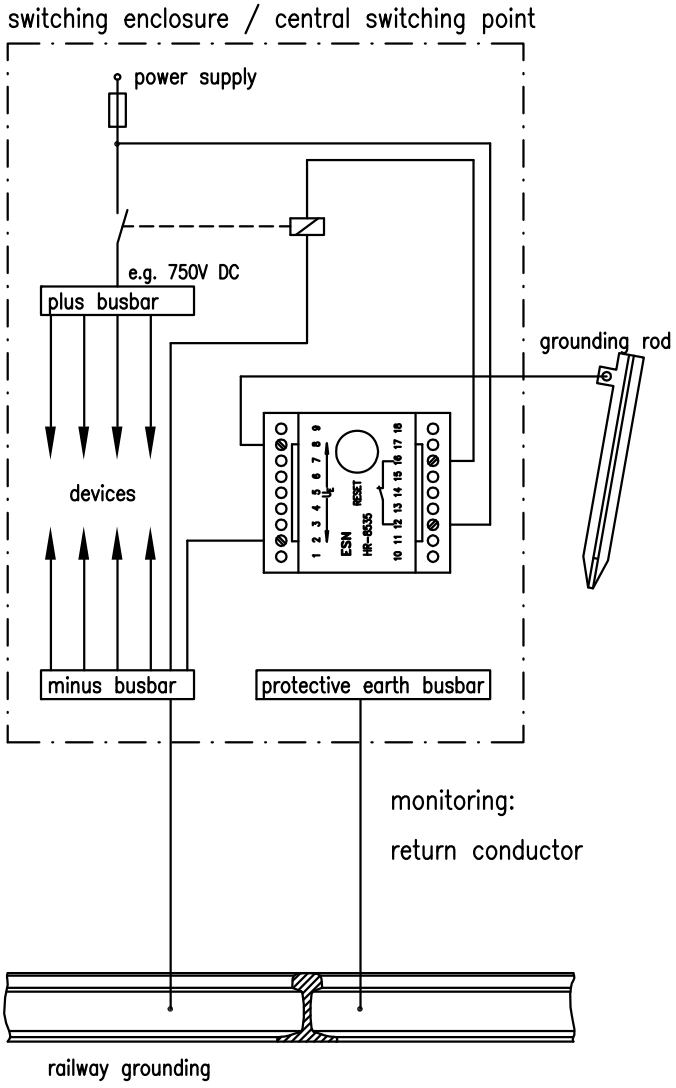
## Ordering Information

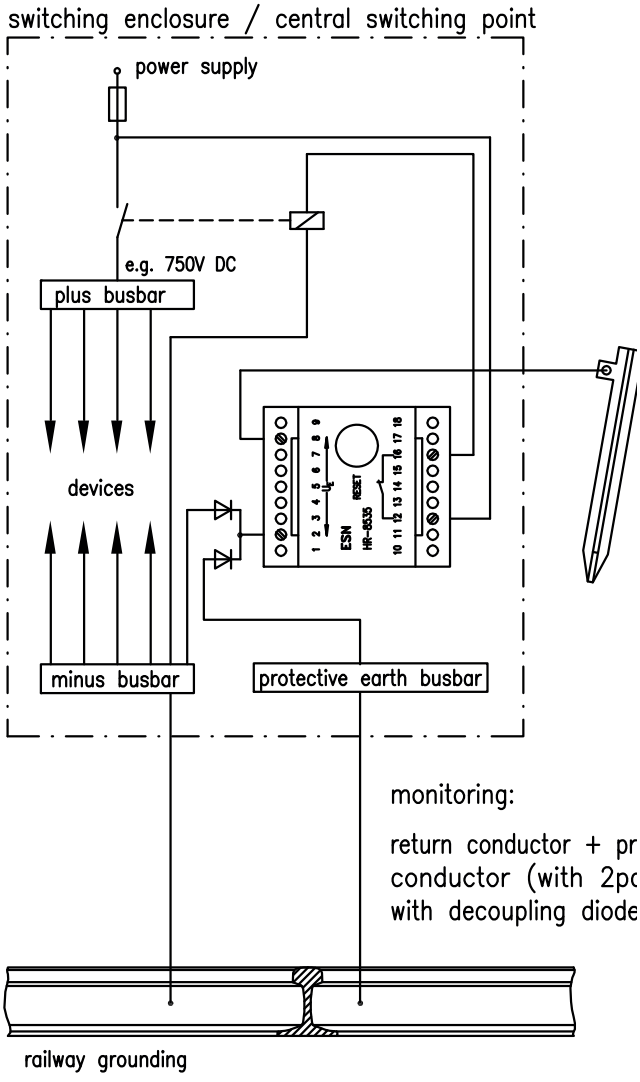
| Type | Order No. |
|---|---|
| **8535, threshold voltage 24V** | **210200** |
| **8535, threshold voltage 90V** | **210202** |

Other design variants of coil connections, fixing, operate values and cable lead lengths on request.

**ESN Bahngeräte GmbH** · Cochemer Straße 12–14 · 68309 Mannheim · Phone +49 62 18 33 47-00 · Fax +49 62 18 33 47-99


60
4,8
1 2 3 4 5 6 7 8 9
$U_E$
ESN
RESET
HR-8535
10 11 12 13 14 15 16 17 18
69
50
110
70
8
ESN Bahngeräte GmbH
Voltast:19-21* D-68199 Mannheim
Type 8535
order no. 210200
$U_E$: max. 1000V DC
Threshold voltage 24V DC±30%
Threshold time lag
($U_E$ ≥ 50V) $t_D$ ≤ 2,5ms
$P_V$: ca. 2,5W
Output contact 1 r
Switch. voltage max. 1000V DC
Switch. current max. 3A
Steady current max. 3A
Switch. capacity max. 100W/VA
checker . . . . . date . . . . . .


switching enclosure / central switching point
power supply
e.g. 750V DC
plus busbar
grounding rod
devices
minus busbar
protective earth busbar
monitoring:
return conductor
railway grounding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conductor (with 2pc
with decoupling diode
railway grounding