

# VOLTAGE INDICATOR

## TYPE SPA

surface-mounted

### General Description

The voltage indicator type SPA can be used in medium voltage networks with a rated voltage of 5 kV to 36 kV. Their function is a permanent indication of the voltage status of the monitored cores. The indication of the voltage is permanently done by one LED indicator for each phase. The connection between the sensors and the display unit is done by potential-free fibre optic cables. The sensors must be mounted on unscreened conductors. For the operation of the display device, an auxiliary power supply is required.

**The behaviour of the remote contact (NO or NC) must be selected when placing the order.**

It is possible to select one remote contact for each phases. Alternatively one common remote contact for all three phases together can be ordered, which is performing a switch operation, as soon as there is no voltage detected on any phase or if there is no voltage on all phases.



figure 1 - Housing of indication unit

### Features and Option

- |                             |  |
|-----------------------------|--|
| Power supply options:       | a) External power supply of 12V DC - 110V DC<br>b) External power supply of 230V AC  |
| Remote indication options:  | a) One relay for indication of no voltage on all phases<br>b) One relay for indication of no voltage on one phase<br>c) Three relays for indication of no voltage for each phase |
| Installation on conductors: | possible on round and flat conductors  |

### External connectors

- |                    |   |
|--------------------|---|
| Optical terminal:  | voltage sensors L1, L2 and L3   |
| Connector 6 - 8:   | 1 Relais: not connected<br>3 Relais: SCADA change-over contact L1                           |
| Connector 9 - 11:  | 1 Relais: SCADA change-over contact L1, L2 and L3<br>3 Relais: SCADA change-over contact L2 |
| Connector 12 - 14: | 1 Relais: not connected<br>3 Relais: SCADA change-over contact L3                           |
| Connector 15 - 17: | External power supply 12V DC - 110V DV Or<br>External power supply 230V AC                  |

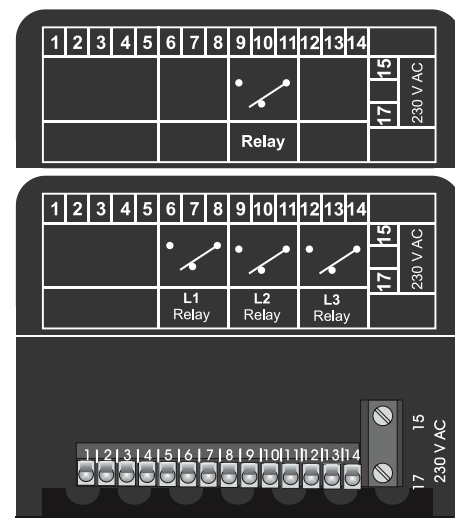
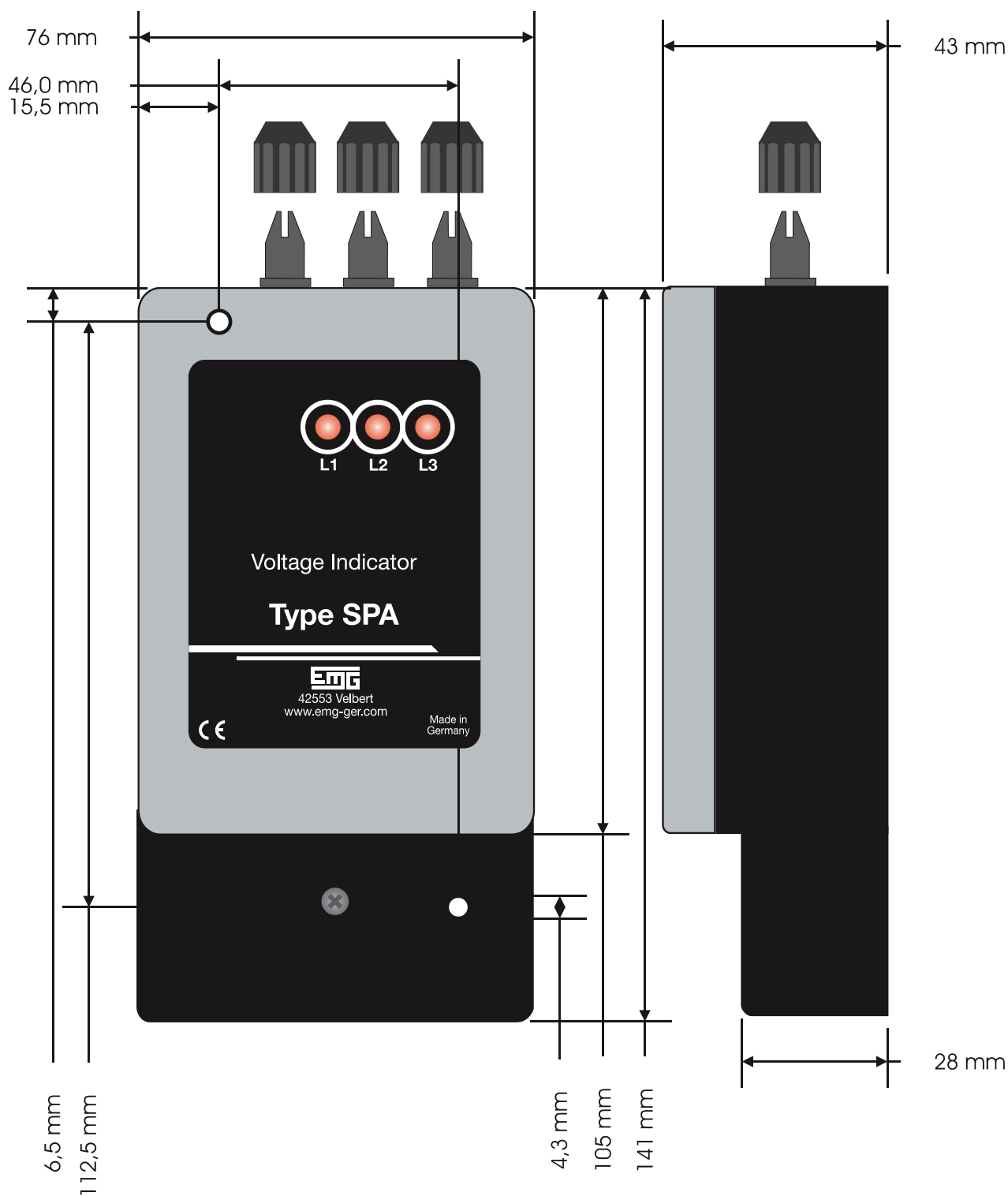


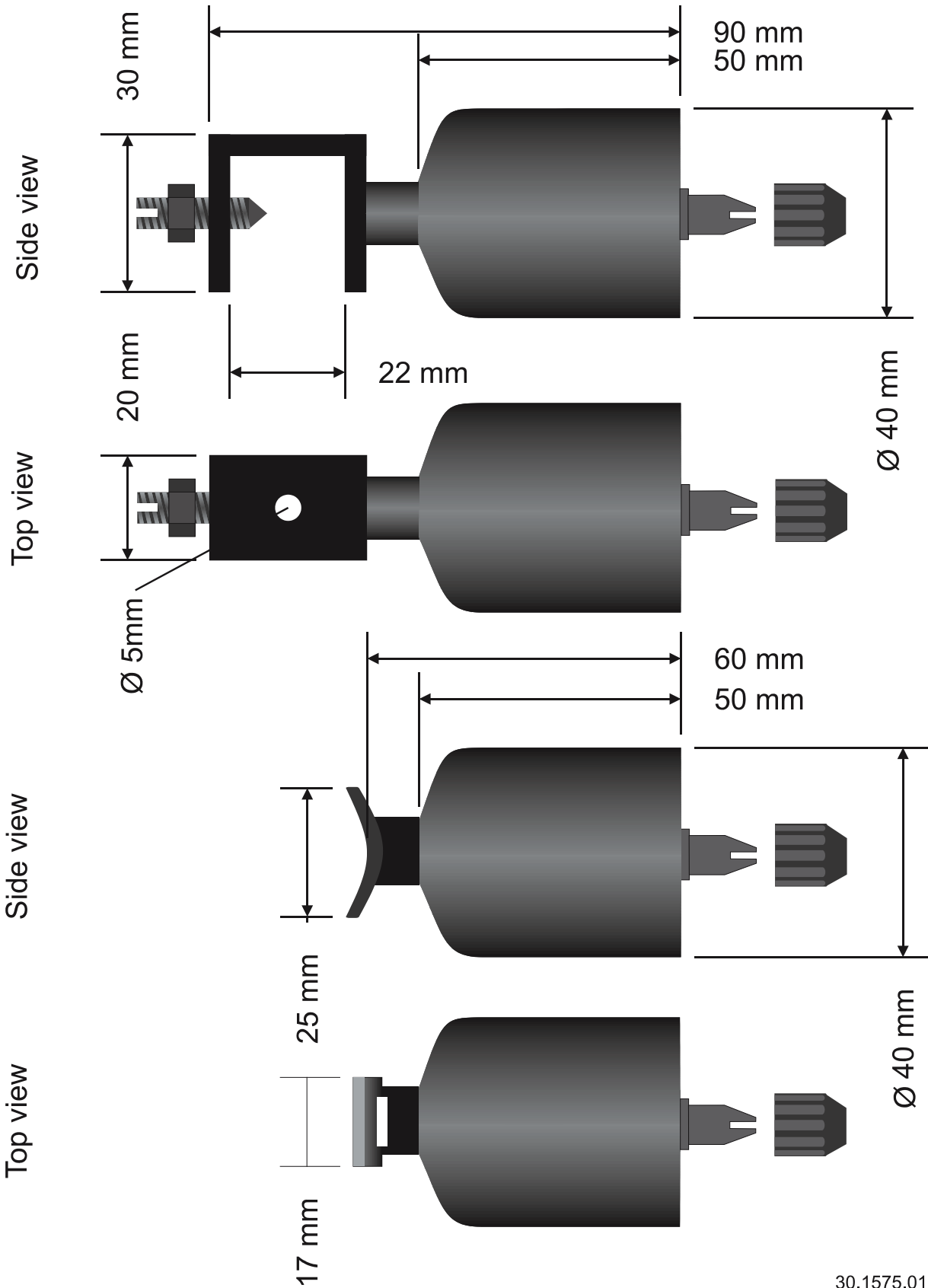
figure 2 - Connectors

## General Data

Subject	Value
voltage ranges	a) 5 kV - 9 kV b) 10 kV - 19 kV c) 20 kV - 29 kV d) 30 kV - 36 kV
indication of voltage	The presence of voltage on a conductor is indicated by permanent blinking of one LED for each phase
flashing frequency	1 blink per second
indication unit	suitable for surface installation
dimensions: indication unit	(WxHxD) 141mm x 76mm x 43mm
protection class: indication unit	housing with electronic: IP65 terminal box: IP54
power supply	a) External power supply of 12V DC - 110V DC b) External power supply of 230V AC (Power supply should be independent of the monitored network.)
SCADA contact	a) 1 Relais: 1x change-over contact b) 3 Relais: 3x change-over contacts max. 230 V AC / max. 2 A / max. 30 W
operation temperature range	-20°C to +70°C



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