

EARTH-FAULT AND SHORT-CIRCUIT INDICATOR

TYPE EKL3.2

surface mounted

General description

The earth-fault and short-circuit indicator can be used in radial networks with one input and open-ring networks which are solidly earthed or low resistance earthed.

The potential-free connection between the short-circuit sensors and the display unit is done by fibre optic cables. The sensors can be mounted on screened and unshielded cables.

The connection between the earth-fault sensor and the display unit is done by cable. The sensor must be mounted on screened cables. All sensors are divisible and can be retrofitted on the cable.



Features and Options

- Permanent earth-faults: Indication of permanent earth-faults by double blinking of the earth-fault LED.
- 2nd short-circuit: Indication of a second short-circuit passing through by double blinking of the respective short-circuit LED.
- Separate response delays: The response delay for short-circuits and earth-faults can be adjusted individually.
- Optional two relays: The indicator can be equipped with two remote contact relays to indicate earth-faults and short-circuits separately.
- Optional reset input: For reset by recovering auxiliary voltage supply (V DC or V AC)
- Optional sensor reset: Sensor reset on recovering net current
- Optional power supplies: 10-110 V DC or 110 / 230 V AC power supply with optional lithium backup battery

External connectors

- Optical terminal: short-circuit sensors L1, L2 and L3
- Connector 7 - 8: earth-fault sensor
- Connector 9 - 10: external blinking lamp (Type BL4.1+BL6)
- Connector 10 - 11: Remote reset input
- Connector 12- 14: SCADA relay contacts
- Connector 15 - 17: Optional power supplies (please refer to figures 1, 2 and 3)

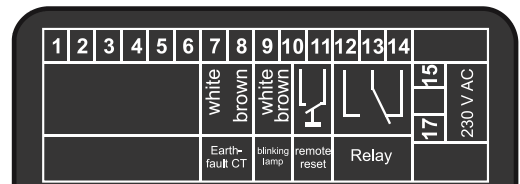


figure 1 - one-relay version (labelling in cover)

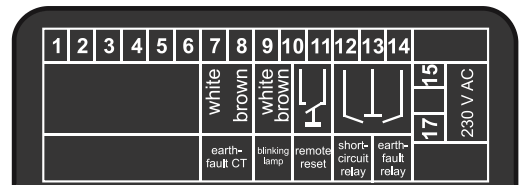


figure 2 - two-relay version (labelling in cover)

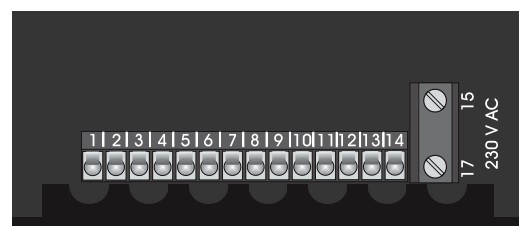
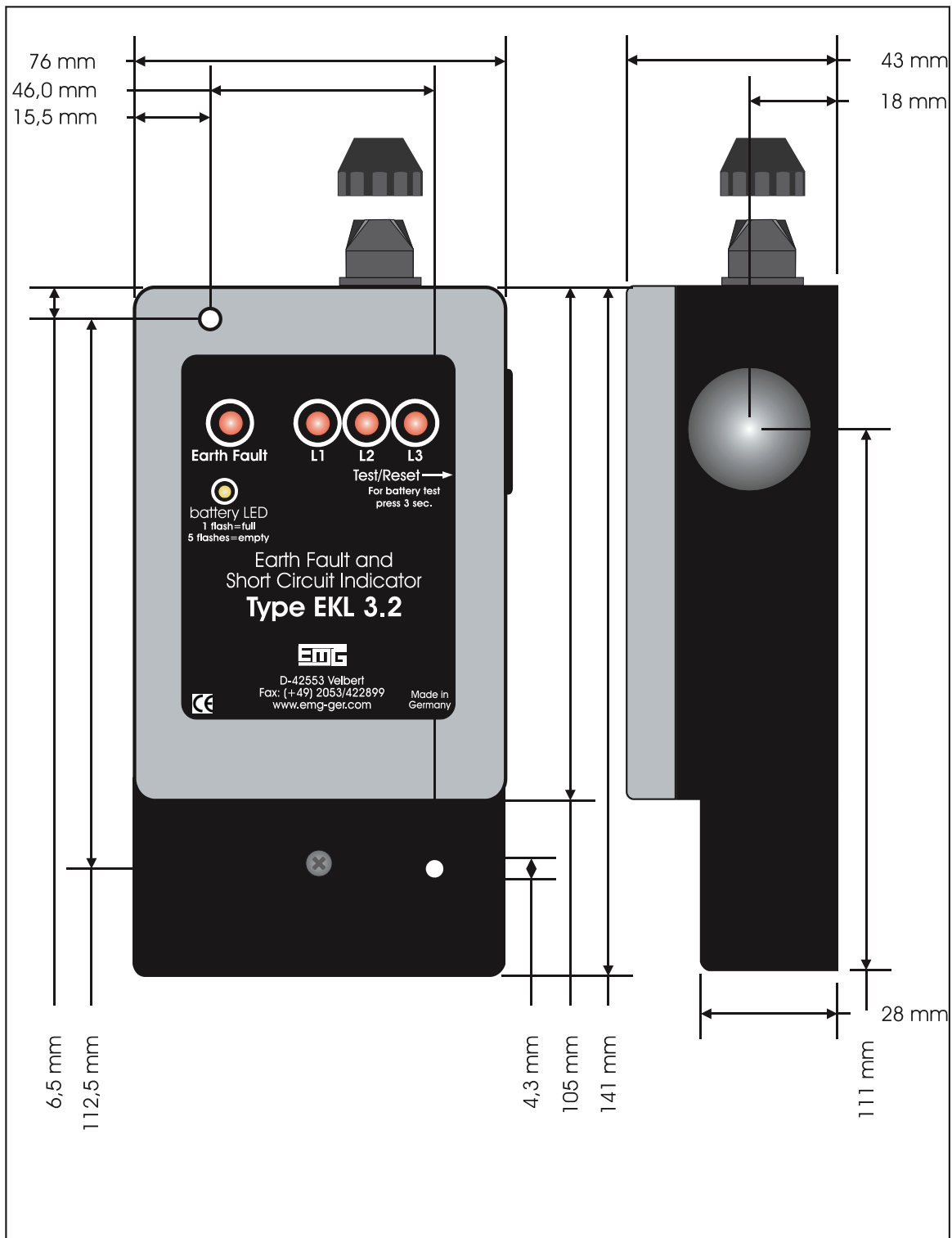



figure 3 - Connectors

General Data

Subject	Value
short-circuit trip current (phase to phase)	adjustable: 200 / 400 / 500 / 600 / 800 / 1000 / 1200 * A ($\pm 10\%$)
earth-fault trip current (phase to ground)	adjustable: 10 / 20 / 40 / 60 / 80 / 100 * A ($\pm 10\%$)
response delay short-circuit	adjustable: 40 / 60 / 80 / 160 * ms
response delay earth-fault	adjustable: 40 / 60 / 80 / 160 * ms
indication unit	suitable for surface installation
indication of a) short-circuit b) earth-fault c) battery	a) one red LED for each phase b) one red LED for earth-fault c) one yellow LED
reset of the indicator	a) manual by push-button b) connection for a potential-free remote reset c) time*: 1 / 2 / 4 / 8 ($\pm 1\%$) hours after fault Optional: d) self-acting after recovering of 230 V AC Optional: e) sensor reset after recovering net current
on site function test a) function test b) battery test	by push-button a) the button has to be pressed for 1 second b) the button has to be pressed for 3 seconds
dimensions: indication unit	(WxHxD) 141mm x 76mm x 43mm
Protection class: indication unit	housing with electronic: IP65 terminal box: IP54
Protection class: sensors	IP67
EMI	according to IEC 1000-4-2, IEC 1000-4-3
internal type test	according to IEEE 495-2007
operation temperature range	-25°C to +70°C
power supply	lithium battery (LiSOC ₂) type AA / 3.6V / 2600 mAh Optional: 10-110 V DC with lithium backup battery type AA / 3.6V / 2600 mAh Optional: 110 / 230 V AC with lithium backup battery type AA / 3.6V / 2600 mAh
SCADA contact	1x change-over contact Optional: 2x NO (separate earth-fault and short-circuit indication) permanent / wipe contact (100ms) (can be selected on site by a dip switch) max. 230 V AC / max. 2 A / max. 30 W
short-circuit sensor (CT)	three short circuit sensors type LK (current transformers for single-core cable) diameter: 22-42* mm connection cable length: 3* m (fibre optic cable)
earth-fault sensor (CT)	one earth-fault sensor type SE (current transformers for a three-core cable) diameter: 80-100* mm connection cable length: 3* m (copper cable)

*PLEASE NOTE: other values can be ordered



Maßstab/scale: 1:1  Elektro-Mechnik GmbH 42553 Velbert Germany	Name: Indication unit type EKL3.2	Erstellt am/von: D. Kusserow/ created on/by: 23.09.2011
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