

EARTH-FAULT AND SHORT-CIRCUIT INDICATOR TYPE EKL8001 / EKL8002

surface-mounted

General description

The earth-fault and short-circuit indicators type EKL8001 and type EKL8002 can be used in radial networks with one input and open-ring networks. The device detects short-circuits by measuring the phase-currents and earth-faults by measuring the sum current. Faults are identified when the measured current is exceeding an adjusted threshold. Detected faults will be displayed by one LED per phase and one LED for earth-faults.

The fault indicator type EKL8001 and type EKL8002 consist of one weather-proof display unit for surface-mounted installation and four sensors (three phase-mounted sensors and one sum current sensor). The sensors have a rigid housing and their interior is fully sealed from the environment. The sensors are divisible and can be retrofitted on the cables.

The potential-free connections between all four sensors and the display unit are done by fibre optic cables. The short-circuit sensors can be mounted on screened and unscreened cables.

The device is power supplied by an exchangeable long-life lithium battery. To extend the battery lifetime an external power supply can be equipped as an option.



Features and Options

- Permanent earth-faults: Indication of permanent earth-faults by double blinking of the earth-fault LED.
- 2nd short-circuit pass-through: Indication of a second short-circuit pass-through by double blinking
- Separate response delays: The response delay for short-circuits and earth-faults can be adjusted individually
- Two relays: Configurable two relays. Options for configuration:
 - permanent contact or wipe contact
 - combined or separate remote indication of earth-faults and short-circuits
 - NO or NC contacts
- Optional three relays: Third relay for low battery indication (type EKL8002)
- Optional reset input: For reset by recovering external power supply
- Optional power supplies: 10-110 V DC or 110 / 230 V AC power supply with optional lithium backup battery

External Connectors

- Optical terminals L1 - L3: 3x short-circuit sensors type LK
- Optical terminal E: 1x earth-fault sensor type LE
- Connectors 1 - 2: Optional external power supply
- Connectors 3 - 4: Remote test input
- Connectors 4 - 5: Remote reset input
- Connectors 14 - 15: Blinking lamp type BL4.1 / BL6
- Connectors 16 - 19: SCADA NO/NC relay contacts 1 and 2

Type EKL8002

- Connectors 19 - 20: SCADA NO/NC relay contact for empty battery remote indication

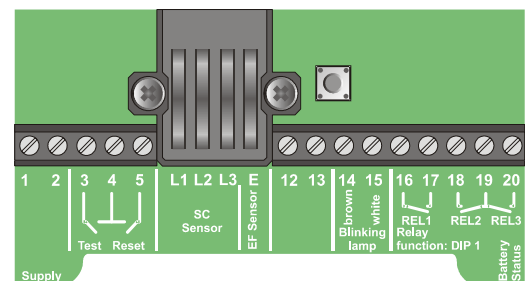


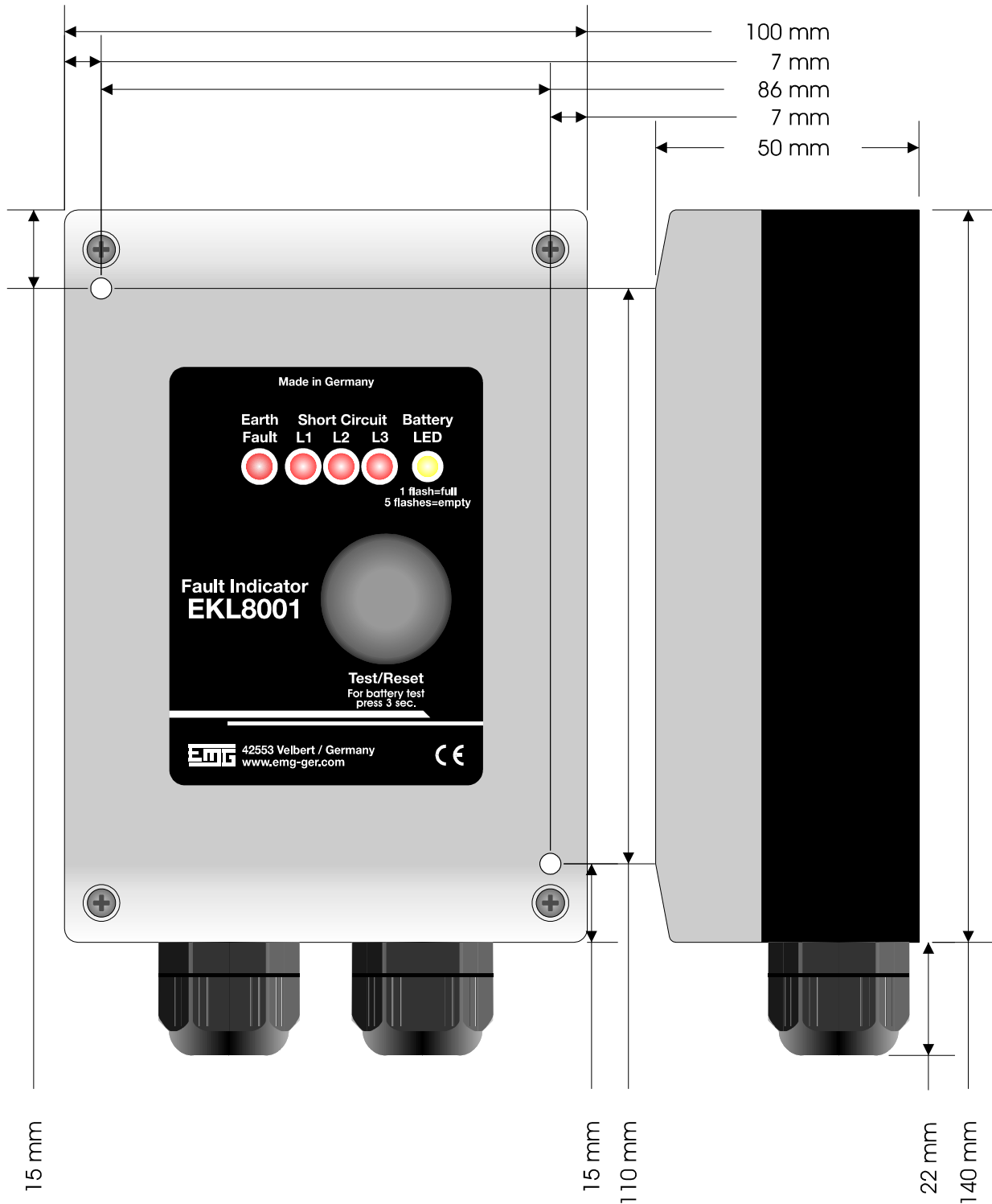
figure 1: connectors type EKL8002

General Data

Subject	Value
short-circuit current	adjustable: 200 / 300 / 400 / 500 / 600 / 800 / 1000 * A (± 10 %)
earth-fault current	adjustable: 10 / 20 / 30 / 40 / 60 / 80 / 100 * A (± 10 %)
Response delay	adjustable for short-circuit: 40 / 60 / 80 / 160 * ms adjustable for earth-fault: 40 / 60 / 80 / 160 * ms optional: one common setting for short-circuit and earth-fault with up to 16 adjustable values ranging from 20ms to 500ms
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 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 * hours after fault d) optional: self-acting after recovering of external power supply
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: display unit	(WxHxD) 100 mm x 162 mm x 50 mm
Protection class: display unit	IP65
Protection class: sensors	IP67
Internal type test	According to IEEE 495-2007
Operation temperature range	-20°C to +70°C
Power supply	lithium battery (LiSOCl ₂) type AA / 3.6V / 2600 mAh optional: 10-110 V DC with backup battery type AA / 3.6V / 2600 mAh optional: 110/230 V AC with backup battery type AA / 3.6V / 2600 mAh
SCADA contacts	2x NO/NC contacts EKL8002 1x additional relay for empty battery remote indication Configurable at site by DIP switch: - contact type (NO or NC) - permanent / wipe contact (100ms) max. 230 V AC / max. 2 A / max. 30 W
Short-circuit sensors	3x short-circuit sensors type LK (fibre optic cable) diameter: 22-42** mm connection cable length: 3* m (* Other diameter ranges for all standard cables are available.)
Earth-fault sensor	1x earth-fault sensor type LE (fibre optic cable) diameter: 80-100** mm connection cable length: 3* m (* Other diameter ranges for all standard cables are available.)

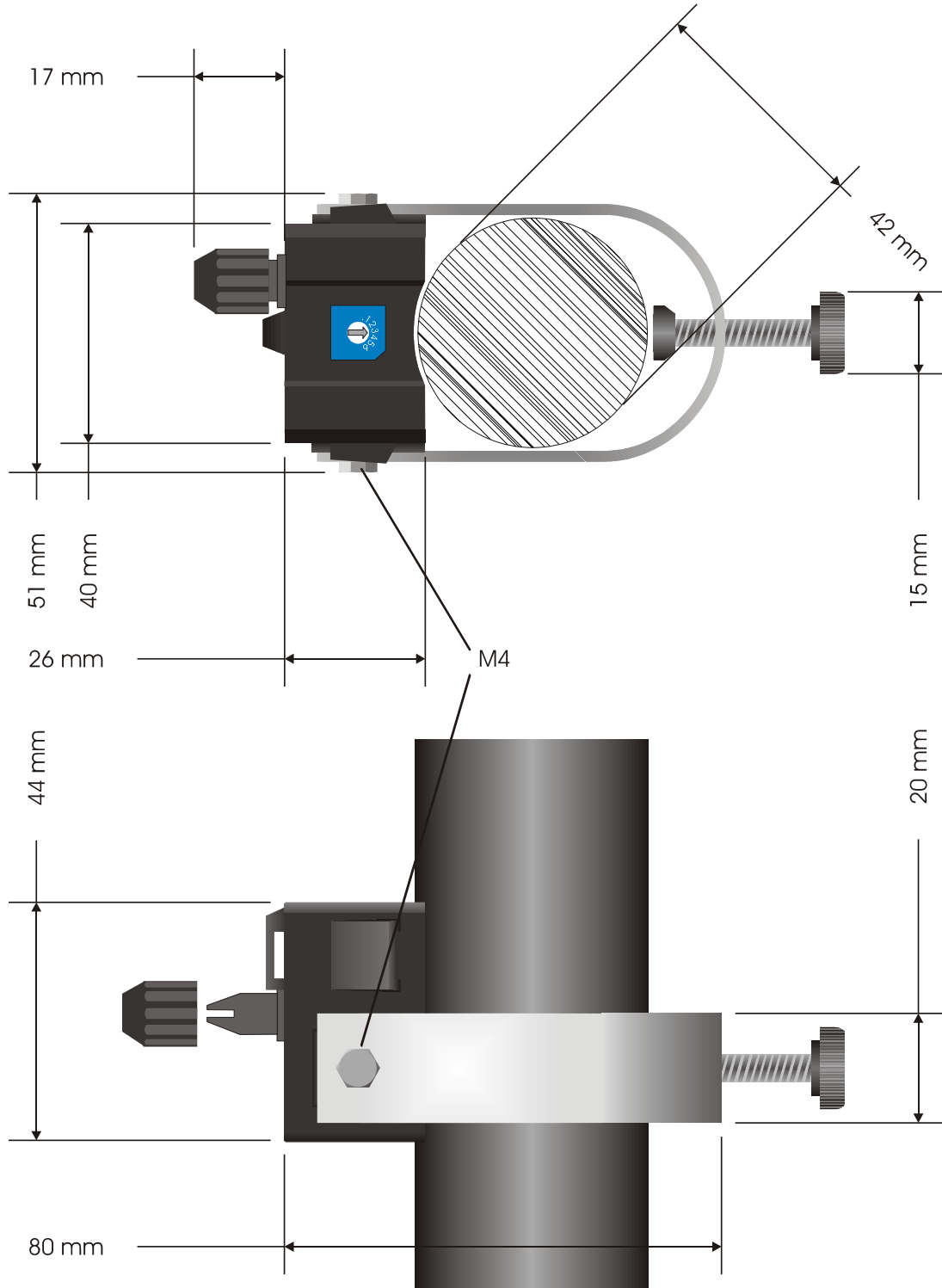
* **Please note:** Other values can be ordered.

Display unit



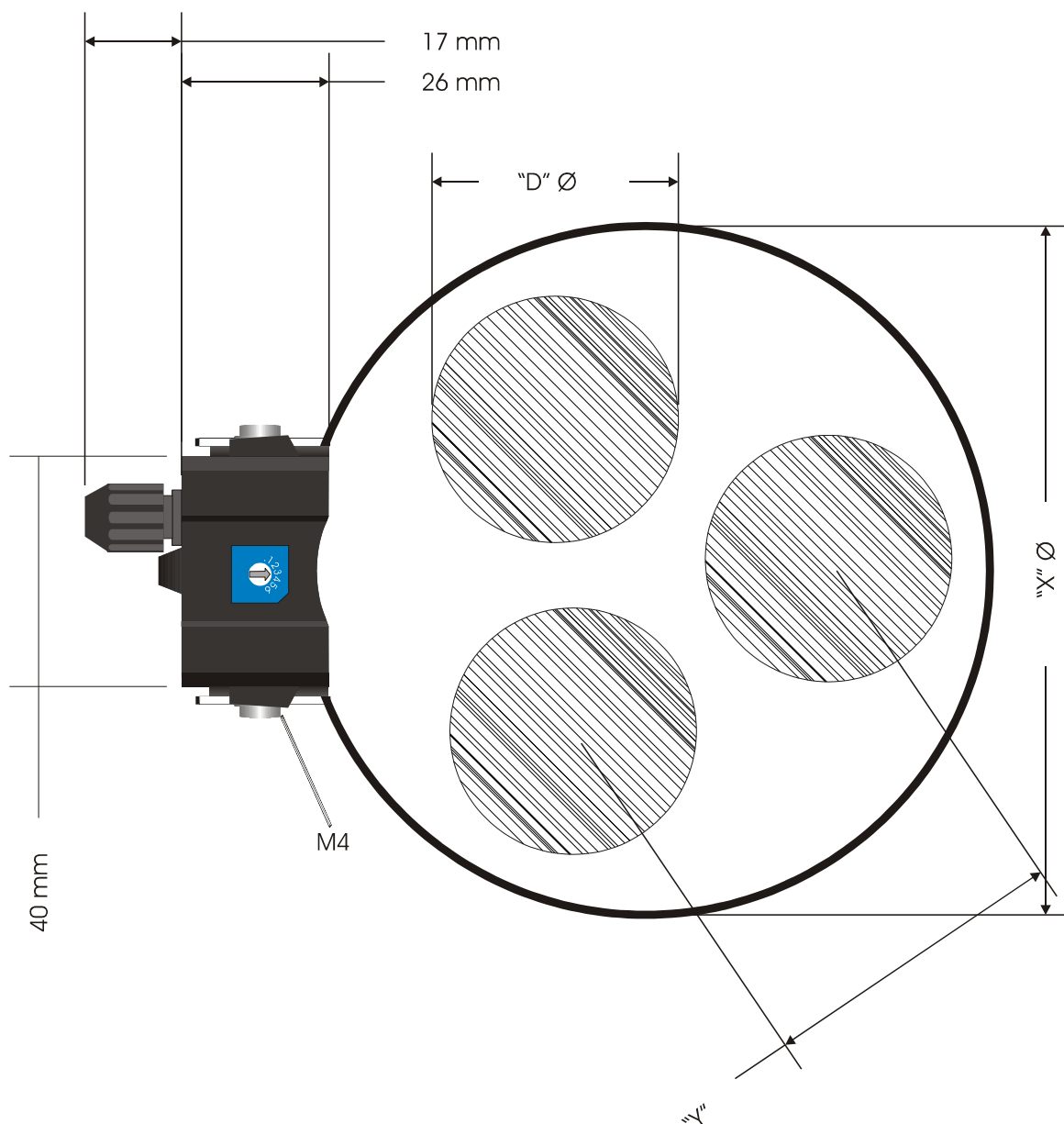
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Sensor type LK



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Sensor type LE



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