

# SHORT-CIRCUIT INDICATOR

## TYPE MF

surface mounted

### General description

The short-circuit indicator can be used in radial networks with one input and open-ring networks. The sensors are divisible and can be retrofitted on the cable.

**The type MF is available in two versions:**

**Version MF-L:** The potential-free connection between the sensors and the display unit is done by fibre optic cables. The sensor can be mounted on screened and unscreened cables.

**Version MF-S:** The connection between the sensors and the display unit is done by cable. The sensors must be mounted on screened cables only.



### Features and Options

2nd short-circuit pass-through: Indication of a second short-circuit passing through by double blinking of the respective short-circuit LED.

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

### MF-L connectors (please refer to figure 1)

Optical terminal: short-circuit sensors L1, L2 and L3

Connector 9 - 10: external blinking lamp (Type BL4.1+BL6)

Connector 10 - 11: Remote reset input

Connector 12- 14: SCADA change-over contact

Connector 15 - 17: Optional power supplies

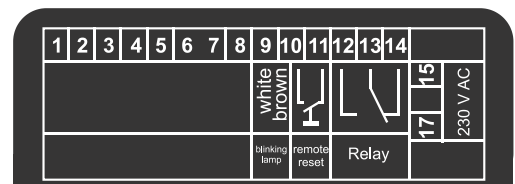


figure 1 - Connectors MF-L

### MF-S connectors (please refer to figure 2)

connector 1 - 2: short-circuit sensor L1

connector 3 - 4: short-circuit sensor L2

connector 5 - 6: short-circuit sensor L3

connector 9 - 10: external blinking lamp (Typ BL4.1+BL6)

connector 10 - 11: remote reset input

connector 13 - 14: SCADA change-over contact

connector 15 - 17: optional: power supply

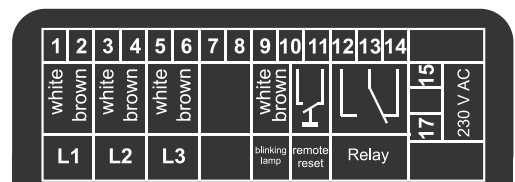


figure 2 - Connectors MF-S

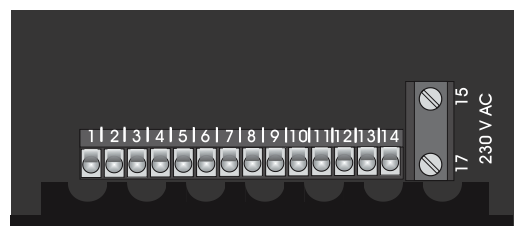
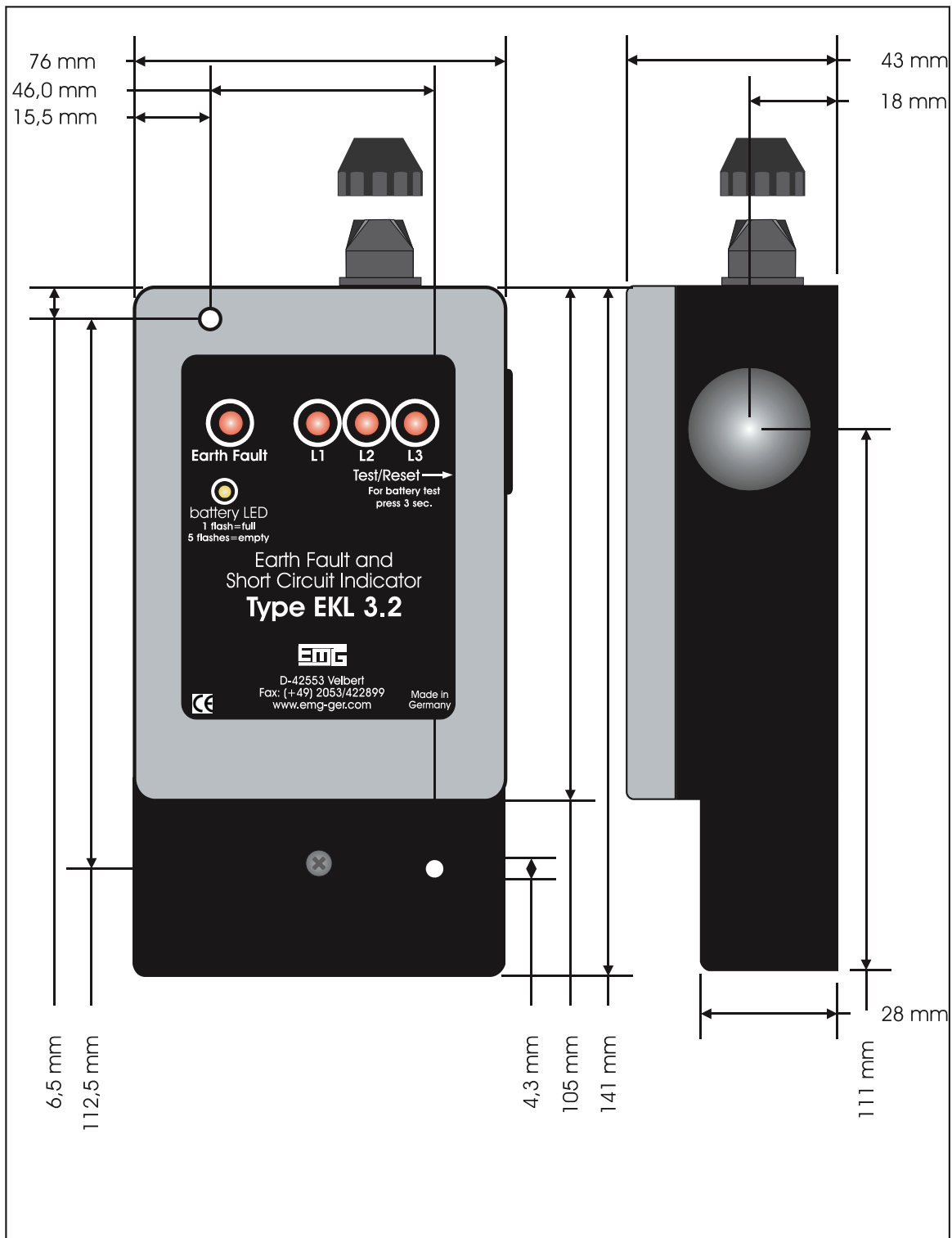



figure 3 - Connectors

## General Data

Subject	Value
<b>MF-L</b> short-circuit trip current (phase to phase)	adjustable: 200 / 300 / 400 / 500 / 600 / 800 / 1000 * A ( $\pm 10\%$ )
<b>MF-S</b> short-circuit trip current (phase to phase)	adjustable: 200 / 400 / 600 / 800 / 1000 * A ( $\pm 10\%$ )
response delay	adjustable: 40 / 60 / 80 / 160 * ms
indication unit	suitable for panel installation
indication of a) short-circuit b) battery	a) one red LED for each phase b) 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 (+/-1%) hours after fault Optional: d) self-acting after recovering of 230 V AC Optional: e) sensor reset after recovering net current (Only for MF-S and net current of 20A upwards)
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 (LiSOCl <sub>2</sub> ) 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 permanent / wipe contact (100 * ms) (can be selected on site by a dip switch) max. 230 V AC / max. 2 A / max. 30 W
short-circuit sensor (CT)	<b>MF-L:</b> three short circuit sensors type LK (fibre optic cable) <b>MF-S:</b> three short circuit sensors type SK (copper cable) (current transformers for single-core cable) diameter: 22-42* mm connection cable length: 3* m

\*PLEASE NOTE: other values can be ordered



<b>Maßstab/scale:</b> 1:1  Elektro-Mechnik GmbH 42553 Velbert Germany	<b>Name:</b> Indication unit type EKL3.2	<b>Erstellt am/von:</b> D. Kusserow/ <b>created on/by:</b> 23.09.2011
	<b>Status:</b> <input type="checkbox"/> ungültig/invalid Ersetzt durch/replaced by: _____	<b>Zeichnungsnummer/                  drawing number:</b> 221585.00

