

## EARTH-FAULT INDICATOR

### TYPE **TERRA-C**

surface-mounted

#### General description

The earth-fault indicator type TERRA-C can be used in radial medium voltage networks with one input and open-ring networks. The network has to be solidly earthed or low resistance-earthed. The indication of the earth-fault is done by a flag indicator and an LED.

The indicator consists of one display unit, one sensor (CT) for the detection of fault currents and one optional power supply CT. The sensors are connected to the indication unit by copper cables. The sensors must be mounted on screened cables.

Both sensors are divisible and can be retrofitted on the cable.

The device is power supplied by super capacitors. The super capacitors can be charged by a 230V AC power supply which can fail during fault situations and/or a special power supply CT which is mounted onto a single phase.

The super capacitors are used to flash an internal LED and optionally also an external blinking lamp. Due to the bistable flag indication an unambiguous indication is guaranteed even if the load of the super capacitors is drained.



#### Features

- No batteries: Due to the bistable flag indication and the internal super capacitors no fail-safe power supply and no batteries are necessary for operation.
- Reset by recovering network: The indicator is able to automatically reset by a recovering 230V AC power supply or by recovering network current.
- Remote indication: The indicator is able to remotely indicate faults via potential-free contacts.

#### External connectors

- Connector 1 - 2: earth-fault sensor (CT)
- Connector 3 - 4: remote test
- Connector 4 - 5: remote reset
- Connector 6 - 7: external blinking lamp type BL4.1 / BL6
- Connector 8 - 10: SCADA change-over contact
- Connector 11 - 12: SCADA contact NO
- Connector 13 - 14: power supply CT
- Connector 16 - 18: 230V AC power supply

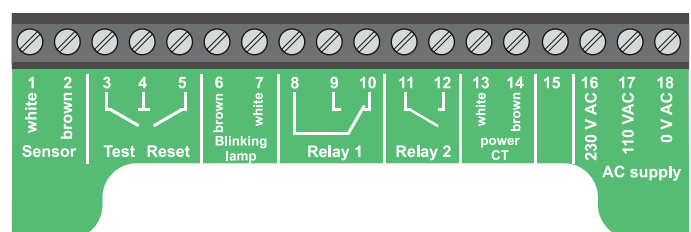
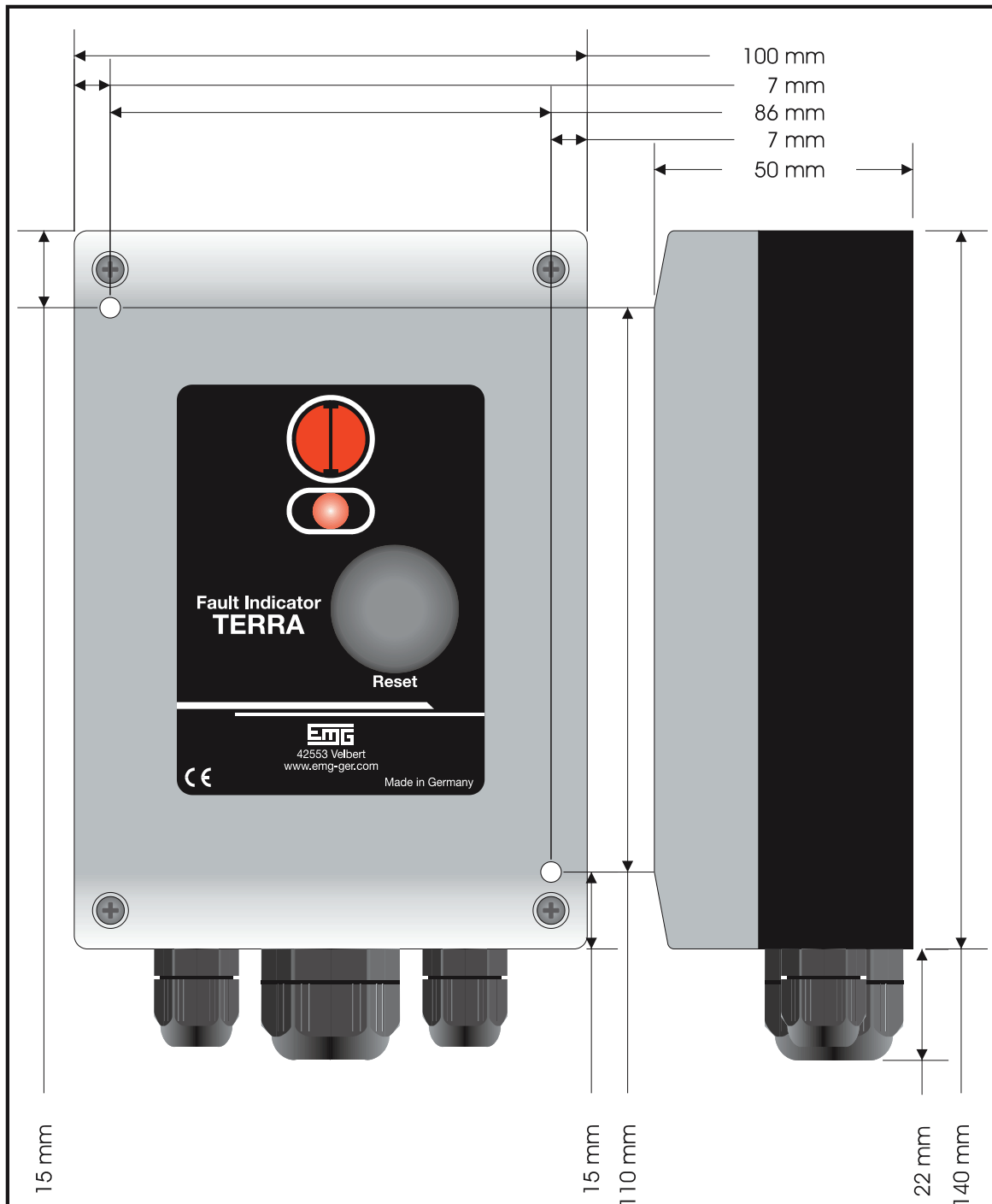



figure 1 - Connectors

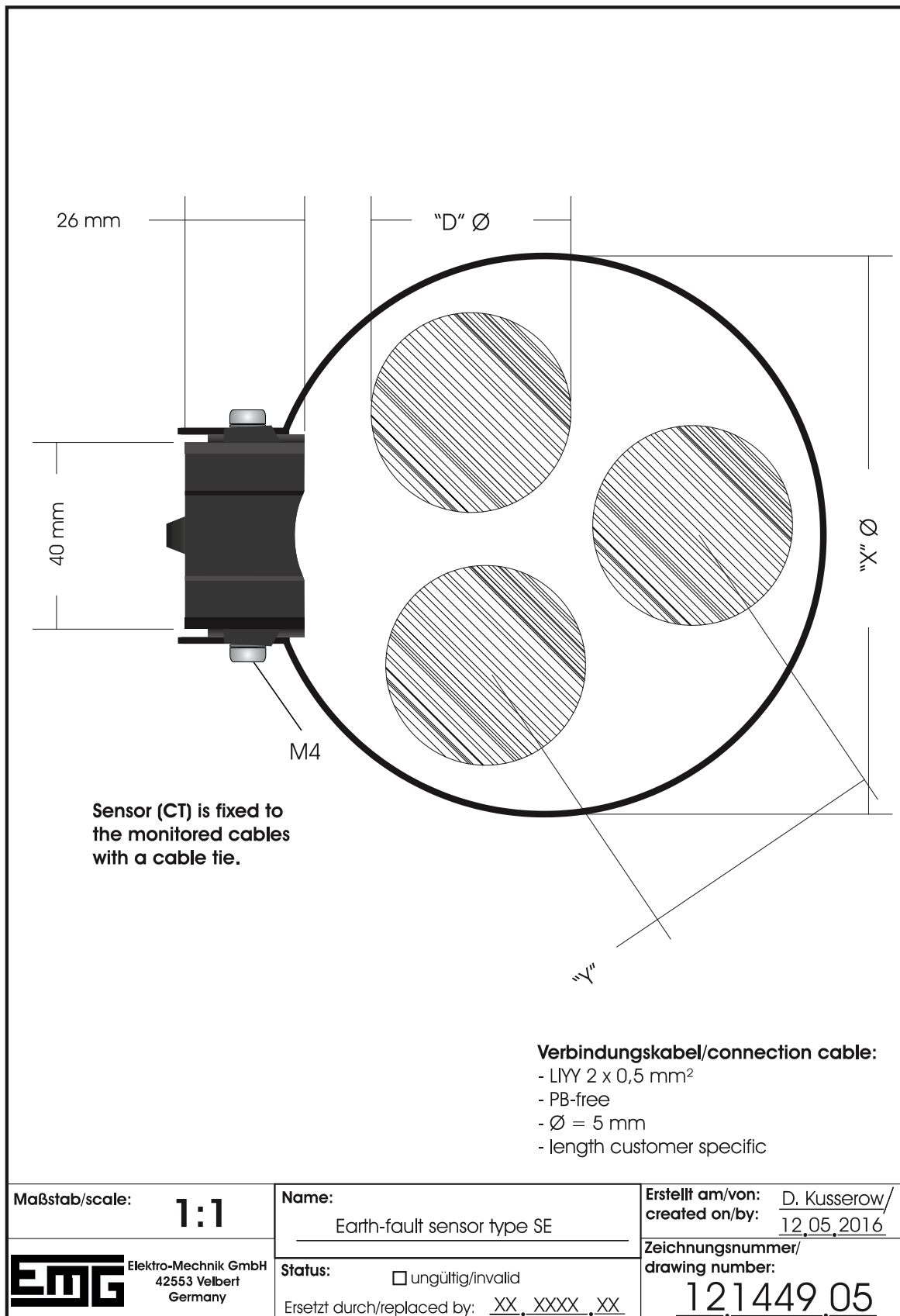
## General Data

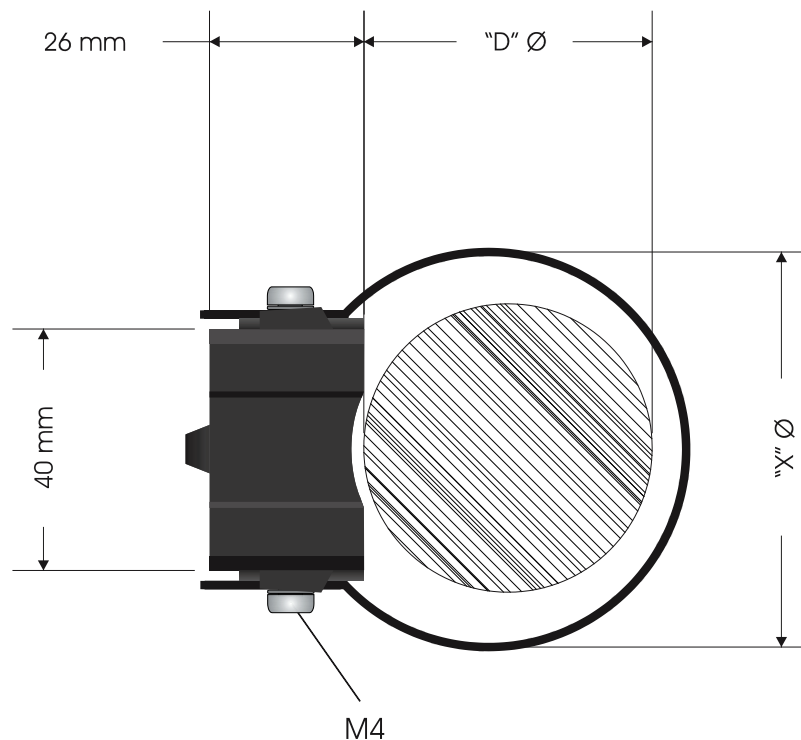
Subject	Value
earth fault current (phase to ground)	adjustable: 40 / 60 / 80 / 100 / 125 A ( $\pm 10\%$ ) *
response delay	20 / 40 / 80 / 160 ms *
indication unit	suitable for surface installation
indication	a) flag indication b) LED indication c) connection for external blinking lamp type BL4.1 / BL6
reset of the indicator	a) manual by push-button (only if power supply is available/super capacitors are charged) b) self-acting by 230 V AC (the 230 V AC connector is for reset and for supply) c) self-acting by recovering network current (unbalanced current of approx. 4A required) d) reset by time: 1 / 2 / 3 / 4h *
power supply	Super capacitors
power source	The super capacitor can be charged by a) 230 V AC b) power supply CT
dimensions: indication unit	(WxHxD) 100 mm x 149 mm x 50 mm
Protection class: indication unit	IP65
Protection class: sensors / CTs	IP67
internal type test	according to IEEE 495-2007
operation temperature range	-40°C to +80°C
SCADA contact	1 x change-over contact and 1 x NO contact max. 230 V AC / max. 2 A / max. 30 W
earth-fault sensor (CT)	one earth-fault sensor type SE (current transformer for a three-core cable or three single core cables) diameter: 80-100* mm. connection cable length: 3* m
power supply CT	one power supply CT type SP (current transformer mounted on a single phase) diameter: 20-55* mm. connection cable length: 3* m

\*PLEASE NOTE: other values can be ordered




<b>Maßstab/scale:</b> <span style="font-size: 2em;">1:1</span>	<b>Name:</b> Housing Type TERRA-C	<b>Erstellt am/von:</b> D. Kusserow/ <b>created on/by:</b> 03.03.2016
 Elektro-Mechnik GmbH 42553 Velbert Germany	<b>Status:</b> <input type="checkbox"/> ungültig/invalid Ersetzt durch/replaced by: XX.XXXX.XX	<b>Zeichnungsnummer/                  drawing number:</b> <span style="font-size: 1.5em;">261888.02</span>





Sensor (CT) is fixed to the cable with a cable tie.

Cable diameter D  $\varnothing$  = 20 - 55 mm

Maßstab/scale: <b>1:1</b>	Name: <u>power supply CT type SP</u>	Erstellt am/von: <u>D. Kusserow/</u> created on/by: <u>27.02.2017</u>
 Elektro-Mechnik GmbH 42553 Velbert Germany	Status: <input type="checkbox"/> ungültig/invalid Ersetzt durch/replaced by: <u>XX, XXXX, XX</u>	Zeichnungsnummer/ drawing number: <u>121891.02</u>