Technical Information

The TUE30 Terra-Control ground monitoring system is designed for use when filling or discharging potentially explosive materials. The system effectively eliminates any static charges. The proper ground connection of installations reduces the risk of uncontrolled explosions or fires.

The TUE30 system monitors the connection to the bonding conductor and the contact across the ground clamps. This function controls a potential-free changeover contact, which allows to controle optical or acoustic primary detectors, locking mechanisms, pumps, slide valves etc.

The modular system of the Terra-Control TUE30 is available in the following design versions:

- TERRACOMPACT II TCO030, standard enclosure for mounting on a standard rail NS35 for installation in a control panel or control room
- TERRABOX TCB030, wall-mounted enclosure for direct installation in the hazardous zone.

TERRACOMPACT II and TERRABOX are each designed for connecting one ground clamp or a cable rewinder fitted with ground clamp.
For BIG BAG grounding, two ground clamps can be connected to the TERRABOX and to the TERRACOMPACT II.

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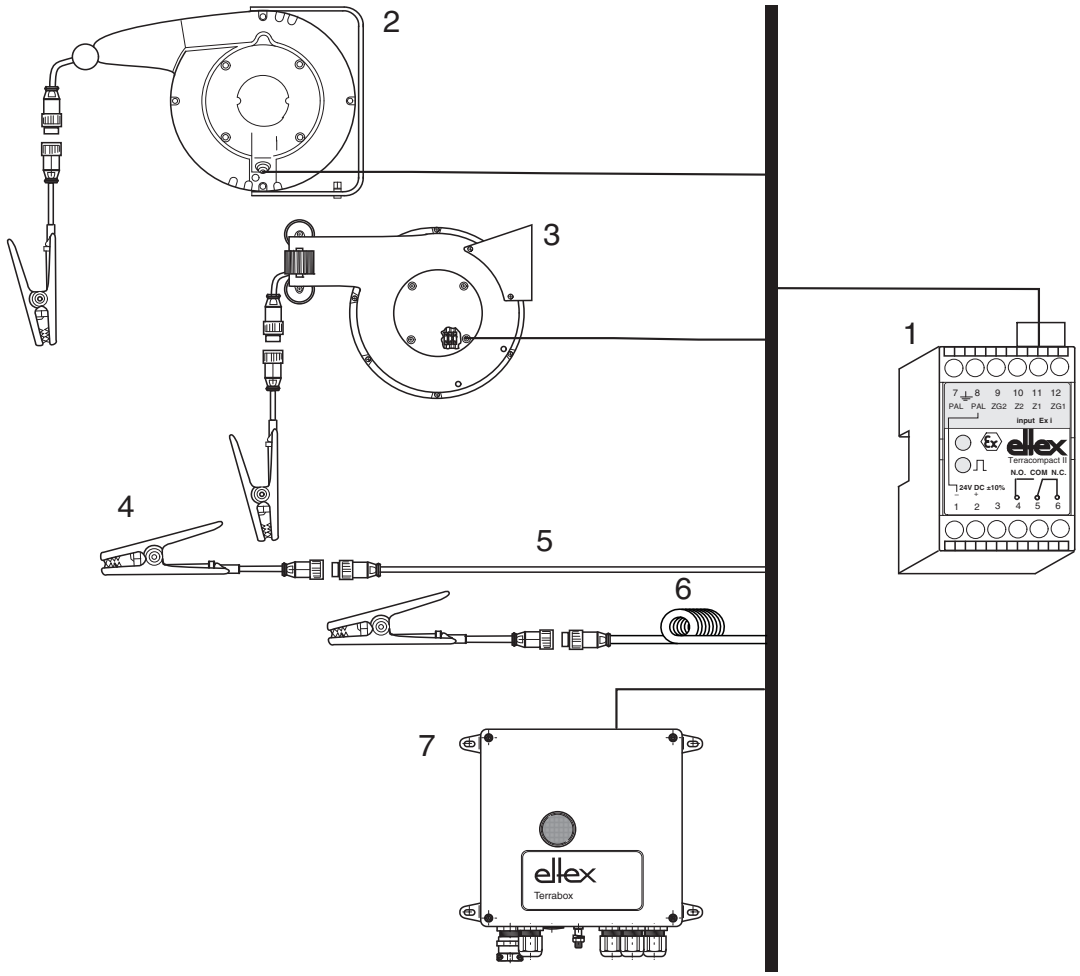
Ground monitoring system Terra-Control TUE30

TI-en-4003-2002

ellex electrostatic innovations

Ground monitoring system TUE30
with TERRACOMPACT II TCO030 and with TERRABOX TCB030

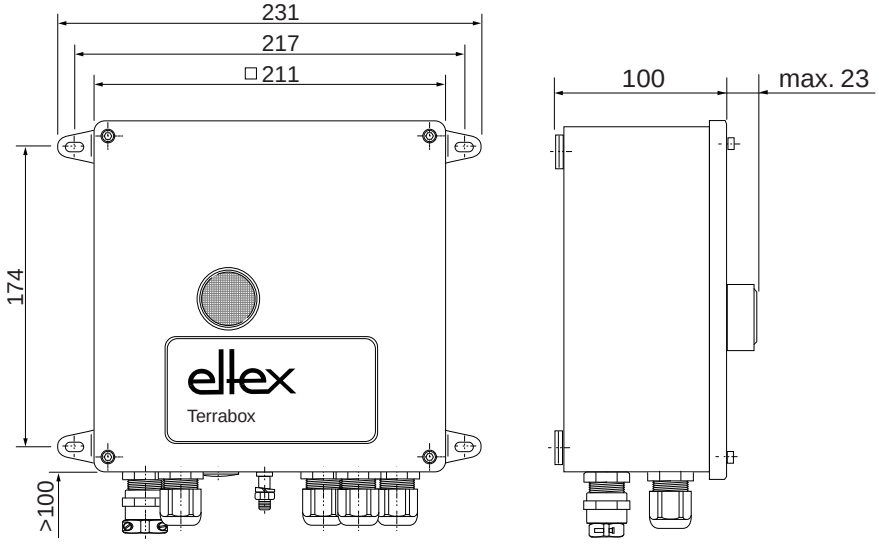
Hazardous area (zone 1/21) **Safe area**



1 TERRACOMPACT II TCO030
2 Cable rewinder, aluminum, 601KR/AW or 601KR/DW with ground clamp
3 Cable rewinder, plastic, 601KR/KW with ground clamp
4 Ground clamp
5 Ground cable KG/BNA
6 Ground helix cable KG/BSA
7 TERRABOX TCB030

Technical specifications TERRABOX TCB030

Supply voltage*	TCB030/_0: 24 (21…31) V DC, 100 mA TCB030/_1: 115 (105…125) V AC 50/60 Hz, 100 mA TCB030/_2: 230 (210…250) V AC 50/60 Hz, 50 mA Maximum safety voltage U_m = 250 V
Ambient operating temperature	–20…+70°C (–4…+158°F)
Storage temperature	–20…+80°C (–4…+176°F)
Ambient humidity	max. 80% r.h., non-dewing; BIG BAG design: max. 70% r.h.
Enclosure material	sheet metal steel with wall bracket, enameled
Protection class	IP 64 according to EN 60529
Dimensions	211 x 211 x 123 mm (H x W x D)
Weight	approx. 5 kg
Indicator signal (Contact circuit)	2 floating changeover contacts Load capacity: U ≤230 V; I ≤5 A; P ≤100 VA Maximum safety voltage U_m = 250 V, Switching signaled by dual color indicator light red/green
Measurement circuit	Intrinsically safe, EN 60079-11 Maximum voltage U_0: 35 V Maximum current I_0: 1.5 mA Maximum output P_0: 13 mW Maximum permissible connected load Capacity / inductance: C_0/L_0: 37nF/50mH or 45nF/2mH, linear characteristic
Operating points	Standard TCB030/S_: ON <20 kOhm, OFF >50 kOhm / ±20% BIG BAG TCB030/B_: ON < 50 MOhm, OFF >100 MOhm / ±20% BIG BAG TCB030/2_: ON < 50 MOhm, OFF >100 MOhm / ±20%
Approval / Identification	ATEX: PTB 00 ATEX 2174 X ⟨Ex⟩ II 2(1) G Ex eb mb [ia Ga] IIC T5 Gb ⟨Ex⟩ II 2(1) D Ex tb [ia Da] IIIC T100°C Db



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Technical specifications TERRACOMPACT II TCO030

Supply voltage*	24 (21…31) V DC maximum voltage for safety reasons: U_m = 250 V
Power input	I_B typical 80 mA
Operating ambient temperature	–20…+70°C (–4…+158°F)
Ambient humidity	maximum 70% r.h., non-dewing
Design	Standard enclosure for installation on standard rail NS35
Protection class	Enclosure IP 40; (terminals IP 10)
Dimensions	68 x 45 x 116 mm (H x W x D)
Weight	approx. 200 g
Assembly	Assembly on NS35 standard rail, path height 15 mm; outside explosion hazard area
Connection	Screw-type terminals, connecting diameter 1.5 mm^2
Indicator signal	Potential-free changeover contact, Load capacity: U ≤230 V; I ≤5 A; P ≤100 VA Maximum voltage for safety reasons: U_m = 250 V Switching action signalled via green/red LED in front plate
Measurement circuit	Intrinsically safe, EN 60079-0 and EN 60079-11 Maximum voltage U_0: 35 V Maximum current I_0: 1.5 mA Maximum power rating P_0: 13 mW Maximum permissible connected load Capacity / inductance: C_0/L_0: 37nF/50mH oder 45nF/2mH, linear characteristic
Operating points	TCO030S: On <20 kOhm, Off >50 kOhm / ±20% TCO030B: On <50 MOhm, Off >100 MOhm / ±20%
Identification	⟨Ex⟩ II (1) G [Ex ia Ga] IIC ⟨Ex⟩ II (1) D [Ex ia Da] IIIC
Approval	PTB 99 ATEX 2188 X

The current approval with all supplements can be found on our servicesite at http://service.eltex.de.

See also Technical Information for Eltex Ground Clamps 70 / Ground Clamps **TERRA**CLAMP and Cable Rewinders 601KR.

* Note:
The unit will be damaged if the maximum supply voltage is exceeded. The safety of the intrinsically safe measurement circuit is, however, ensured up to the maximum technical safety voltage.

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