

Explosion prevention

TRUCK EARTHING SYSTEM TES-01 (IP)(EX)

Technical Data Sheet

Application

Use TES-01 truck earthing systems for safe electrical earthing of tanker trucks during loading and unloading of bulk liquids or solids.

Working principle

A TES-01 truck earthing systems consists of a clamp, cable and control unit. When connecting the earthing clamp to the truck, the TES-01 will check if a low electrical resistance connection is established between the truck, clamp, cable and TES-01 control unit, then will check for the presence of a truck through a capacitive measurement. When both the resistance and capacitance are within a safe range, the loading or unloading process is allowed to start. The electrical resistance is continuously monitored throughout the (un)loading process. Interlock contacts are provided to link the TES-01 to process equipment or PLCs providing for safe loading or unloading processes.

General characteristics

Power supply	100-240 V AC, 50/60 Hz, auto-ranging or 24 V DC
Power consumption	20 W
Operating temperature and humidity limits	-20 to +40 °C 95% relative humidity at 20 °C in non-condensing conditions
Remote signalling	Voltage free contact 8 A at 250 V AC or 30 V DC NO
Signalling lights	Red (fault/incorrect connection to earth) and green (correct connection to earth)
Safety features	SIL 2 with measurement and earth connection circuits intrinsically safe EEx I; compliant with IEC 60079-32-1 and NFPA77

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The Stuvex TES-01 Truck Earthing System exists in two variants. For potentially explosive gas atmospheres, use TES-01 EX. For potentially explosive dust atmospheres use TES-01 IP.

TES-01 EX

ATEX information	Approved for use in zones 1, 2, 21 and 22
Marking	CE Ex II 2(1) GD Ex d [ia Ga] IIC T6 Gb Ex tb [ia Da] IIIC T85 °C Db IP66
Housing	Grey coloured cast aluminium explosion proof, copper free
Dimensions (l,w,h)	265 x 230 x 150 mm
Mass	10 kg
Connections	4 x M20 x 1,5 mm
Bypass	Optional via separate key switch

TES-01 IP

ATEX information	Approved for use in zones 21 and 22
Marking	CE Ex II 1 (1) 6 D II 2(1) DEx/tb [ia Da] IIIC T135 °C Db IP66
Housing	Mild steel painted with aluminium front plate
Dimensions (l,w,h)	300 x 200 x 80 mm
Mass	5 kg
Connections	3 x M20 cable glands, clamping range 5-10 mm
Bypass	Integrated
Additional interlock	6 A contact 250 V AC or 30 V DC

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All of the accessories are compatible with both the EX and IP variants of the TES-01 Truck Earthing System.

Accessories

Clamps	II 1GD Ex c, ia IIC, IIIC T6 T85 °C passive EEx i component for use in zones 0, 1, 2, 20, 21, 22
CL1	Large size 260 mm aluminium clamp, jaw opening 3-15 mm, heavy industrial use, oil and gasoline resistant; 3 x 1,5 mm ² cable premounted
CM1	Medium size 210 mm stainless steel clamp, jaw opening 3-35 mm, regular industrial use, oil and gasoline resistant; 3 x 1,5 mm ² cable premounted
CS1	Small size 162 mm stainless steel clamp, jaw opening 3-35 mm, light industrial use, oil and gasoline resistant, 3 x 1,5 mm ² cable premounted
Cables	II 2GD Ex c, ia IIC, IIIC T6 T85 °C passive EEx i component for use in zones 1, 21
CO01/10	10 m H05RN-F2 x 1,5 + 1,5 mm ² straight cable without reel, UV and oil resistant cable sheathing, flame retardant, -25 to +60 °C, black
SP1/10	10 m spiral cable, sheathing in UV resistant and flame retardant material; Ø 8 mm, 3 x 0,75 mm ² , RAL 5015
CR1/65	15 m H05RN-F 2 x 1,5 + 1,5 mm ² cable and reel; housing IP65, aluminium, pivotable on bracket, shock and weather resistant; spring activated automatic rewinding, default delivered with auto brake rewinding mechanism on; 1,7 m connecting cable; ring terminal for cable reel bracket earthing connection
Clamp station/hook	Clamp station/hook in stainless steel/plastic

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Ordering information

Article reference	Product description
502-4010-000	TES-01 IP control unit
501-4010-000	TES-01 EX control unit
503-1100-008	CL1 active clamp, male connector mounted
503-1050-003	CM1 active clamp, male connector mounted
503-1000-003	CS1 active clamp, male connector mounted
503-5910-100	SP1/10 10 m spiral cable
503-5900-100	CO1/10 10 m straight cable
503-3250-010	CR1/65 15 m cable reel
641-1100-020	Optional TES-01 EX remote bypass key switch IP66, zones 1, 21; 1 NO 1 NC contact
503-0900-003	Clamp station
503-0900-103	Clamp hook
501-5800-000	Cable gland set consisting of 2 plugs M20, 4 M20 glands for cable Ø 3-12 mm, EX II 2G/D Eex d II C IP66
503-1500-000	Spare male/female connector set for use with cable reel/clamp

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