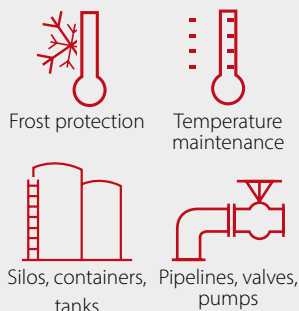




At a glance

Applications



- › Potentially explosive areas
- › Power plants
- › Chemical industry
- › Petrochemical industry
- › Oil and gas industry
- › Pharmaceutical industry
- › Plastics industry
- › Process technology

Advantages

- › Three function options
- › Non-conductive and UV-resistant housing
- › Easy setup and easy operation

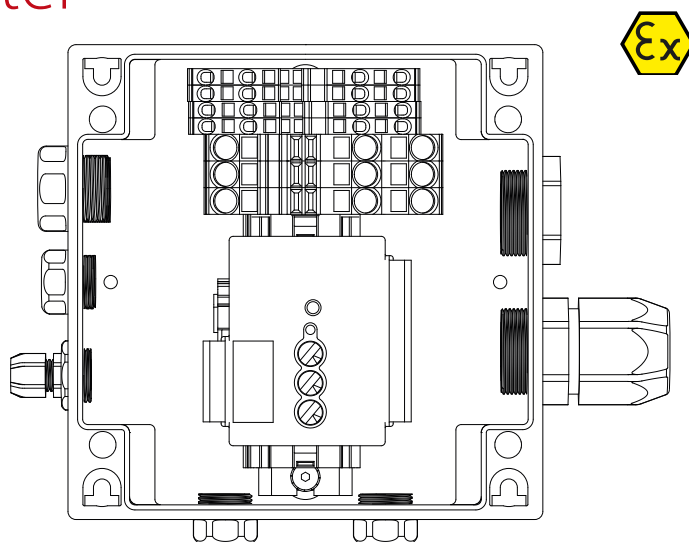
Approvals



- › II 2D Ex ib tb IIIC T85°C Db
- › II 2G Ex eb ib mb IIC T6 Gb
- › IBExU20ATEX1015X
- › IECEx IBE 20.0002X
- › UKEx CML 21UKEX3952X

Ex-TC-10

Temperature Controller & Limiter



The electronic temperature controller Ex-TC-10 features a wide setpoint temperature range from 0 °C to +450 °C. The ambient temperature range is between –55 °C and +50 °C. The controller was developed for use in potentially explosive atmospheres. Typical applications include frost protection and temperature maintenance. Choose between a temperature controller with alarm relay, a variant with RS 485 interface with Modbus protocol or a controller-limiter combination with alarm relay. The device is able to switch high nominal currents and ensures optimum mechanical safety. The cover closes quickly, making it easy to handle where it is used. All variants are suitable for use with our self-regulating heating cables (ELSR) and resistance heating cables (ELK), as well as mineral-insulated heating cables (MI).

Checklist

Temperature sensors

ELTF-PT.15	Pt100, 3-wire, 5x50 mm, PTFE 3.0 m, IP67	0650070
ELTF-PT.2	Double Pt100, 3-wire, 5x50 mm, PFA 3.0 m, IP65	0650072

Assembly Accessories

EL-VSB 310	Mounting bracket, adjustable h = 180 - 300 mm, mat. 1.4301	0941089
EL-VSB 410	Mounting bracket, adjustable h = 280 - 400 mm, mat. 1.4301	0941090
ELB-13V1	Threaded strapping tape, 11 mm, 30 m, mat. 1.4301	2723001010
ELB-13V2	Turnbuckle 1.4301 (pkg. = 10 pieces), mat. 1.4301	0930042

Technical Specifications

Operating voltage	230 V AC $\pm 10\%$, 50 Hz
Nominal current	Max. 25 A (to 40 °C) T6 with power supply cable $\geq 2.5 \text{ mm}^2$ Max. 20 A (to 50 °C) T6 with power supply cable $\geq 2.5 \text{ mm}^2$ Power supply cables can be connected in series up to a total length of 25 A
Power consumption	5 VA without load
External fuse protection	25 A (20 A)
Relay output for general alarm	1 N/O contact 3 A, 250 VAC, 100 VA or 5 A, 24 VDC, 100 W
Load relay	Single pole
Ambient temperature	- 55 °C to + 50 °C (20 A) / + 40 °C (25 A)
Specified temperature	°C
Setpoint temperature range	1 °C to 450 °C (T1)
Measuring range	- 99 °C to 450 °C (T1)
Switching hysteresis	< 100 °C: 3 K, > 100 °C: 3 %
Switching point accuracy	< 2 K
Sensor connection	Intrinsically safe connection up to 3 wires
Undertemperature alarm (/A, /M and /AL)	1 °C to 450 °C, factory setting: 0 °C
Overtemperature alarm (/AL only)	1 °C to 450 °C, factory setting: 0 °C
Limit value for limiter restart	5 K below limiter limit value
Interference immunity	> 7 J
Housing	Fibreglass-reinforced polyester, black
Protection	IP66
Weight	approx. 1 kg
Terminal sizes / Possible cross-sections	2.5 mm ² to 10 mm ² / 16 mm ² stranded wire (power supply cable, with / without wire end ferrule) 0.1 mm ² to 4 mm ² stranded wire (heating cables, with / without wire end ferrule) 0.2 mm ² to 4 mm ² stranded wire (sensor and signal cable, with and without wire end ferrule) 0.25 mm ² to 1.5 mm ² / 2.5 mm ² stranded wire (bus line, with / without wire end ferrule)

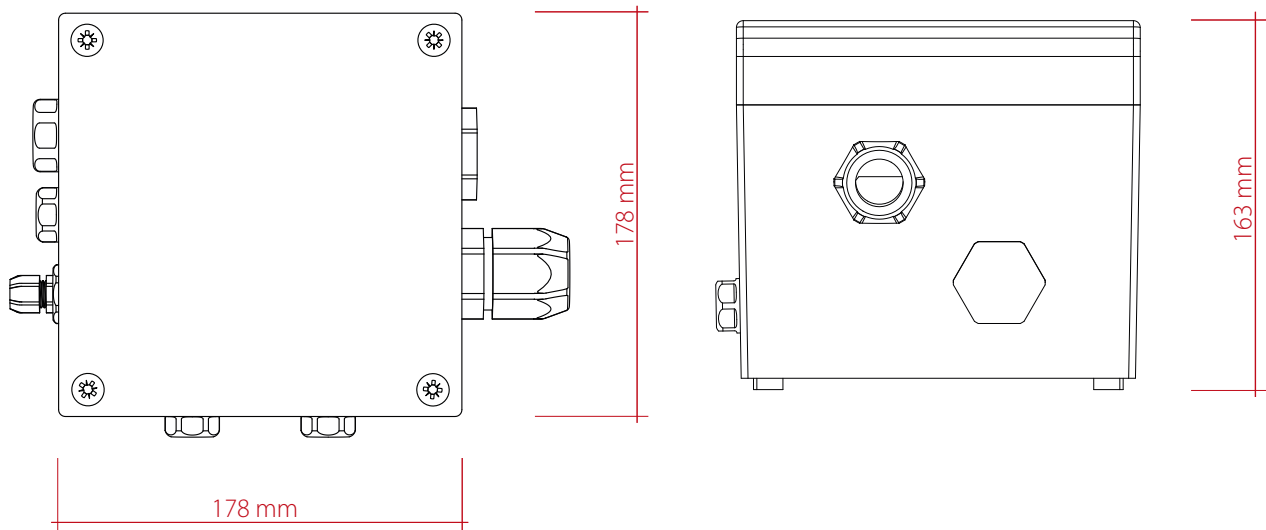
Intrinsically safe measuring circuit (maximum values) $U_0=2.5 \text{ V}$, $I_0=36.8 \text{ mA}$, $P_0=40 \text{ mW}$, $R=155 \text{ ohms}$

Ex ib	IIC			IIB, IIIC		
Max. external inductance	44 mH	10 mH	1 mH	100 mH	10 mH	1 mH
Max. external capacitance	1.2 μF	7.1 μF	14 μF	28 μF	65 μF	110 μF

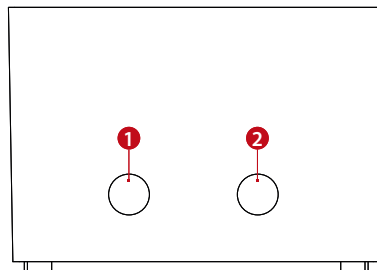
Ordering Information

Type	Mounting	Ø of power supply cable	Ø of alarm/bus cable	Item no.
Ex-TC/A-10 Controller with Alarm	Wall mounting	2 x 12 mm - 21 mm 2 x 9 mm - 17 mm	4 mm – 13 mm	0X6010X
Ex-TC/AL-10 Controller / Limiter with Alarm	Wall mounting	2 x 12 mm - 21 mm 2 x 9 mm - 17 mm	4 mm – 13 mm	0X6012X
Ex-TC/M-10 Controller with Modbus	Wall mounting	2 x 12 mm - 21 mm 2 x 9 mm - 17 mm	2 x 4 mm – 13 mm	0X6013X

Dimensions



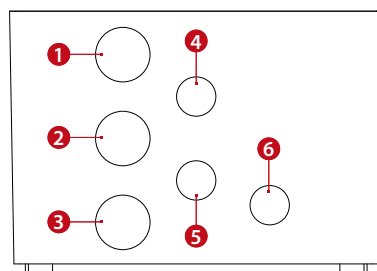
page A



A1 = Ø M20

A2 = Ø M20

page B



B1 = Ø M25

B2 = Ø M25

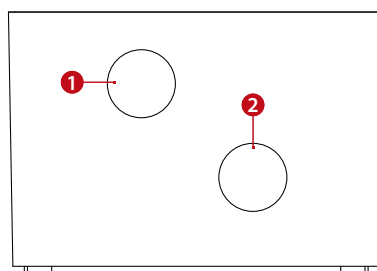
B3 = Ø M25

B4 = Ø M20

B5 = Ø M20

B6 = Ø M20

page C



C1 = Ø M32

C2 = Ø M32

Scope of Delivery

Ex-TC/A-10

Installed

Bore-hole	Type	Item no.	pc.
A1	Plug M20x1.5	2576020059	1
A2	Plug M20x1.5	2576020059	1
B1	Plug M25x1.5	2570302001	1
B2	Plug M25x1.5	2570302001	1
B3	Plug M25x1.5	2570302001	1
B4	Plug M20x1.5	2576020059	1
B5	Plug M20x1.5	2576020059	1
B6	Reduc. M20x1.5 - M12x1.5	2572580008	1
	Cable gland M12x1.5	2576012023	1
C1	Cable gland M32x1.5	2576025034	1
C2	Plug M32x1.5	2576020042	1

Enclosed, loose

Type	Art. no.	pc.
Cable gland M25x1.5	2576025094	1
Reduc. M32x1.5 - M25x1.5	2572580010	1
Cable gland M20x1.5	2576020060	2

Ex-TC/AL-10

Bore-hole	Type	Item no.	pc.
A1	Reduc. M20x1.5 - M12x1.5	2572580008	1
	Cable gland M12x1.5	2576012023	1
A2	Reduc. M20x1.5 - M12x1.5	2572580008	1
	Cable gland M12x1.5	2576012023	1
B1	Plug M25x1.5	2570302001	1
B2	Plug M25x1.5	2570302001	1
B3	Plug M25x1.5	2570302001	1
B4	Plug M20x1.5	2576020059	1
B5	Plug M20x1.5	2576020059	1
B6	Plug M20x1.5	2576020059	1
C1	Cable gland M32x1.5	2576025034	1
C2	Plug M32x1.5	2576020042	1

Type	Art. no.	pc.
Cable gland M25x1.5	2576025094	1
Reduc. M32x1.5 - M25x1.5	2572580010	1
Cable gland M20x1.5	2576020060	2

Ex-TC/M-10

Bore-hole	Type	Item no.	pc.
A1	Plug M20x1.5	2576020059	1
A2	Plug M20x1.5	2576020059	1
B1	Plug M25x1.5	2570302001	1
B2	Plug M25x1.5	2570302001	1
B3	Plug M25x1.5	2570302001	1
B4	Plug M20x1.5	2576020059	1
B5	Plug M20x1.5	2576020059	1
B6	Reduc. M20x1.5 - M12x1.5	2572580008	1
	Cable gland M12x1.5	2576012023	1
C1	Cable gland M32x1.5	2576025034	1
C2	Plug M32x1.5	2576020042	1

Type	Art. no.	pc.
Cable gland M25x1.5	2576025094	1
Reduc. M32x1.5 - M25x1.5	2572580010	1
Cable gland M20x1.5	2576020060	2