



Ex-TRM150

TRM

II 2G Ex d e IIC T6 Gb

II 2D Ex tb IIIC T80 °C Db

FEMA room thermostats are suitable for industrial plants, for greenhouses, livestock buildings and warehouses, and also for monitoring the maximum temperature

in switchgear cabinets and relay stations. Room thermostats are supplied complete with wall bracket H1.



SIL 2 according IEC 61508-2

Technical data

Body	Diecast aluminium GD Al Si 12 according to DIN 1725. Resistant to ammoniacal vapours and seawater
Mounting position	Any, preferably vertical
Permitted ambient temperature	-20 to +60 °C
Permitted temperature at sensor	60°C
Contact arrangement	Single-pole changeover switch
Switching capacity	8 (5) A 250 VAC
Degree of protection	IP 65 according to DIN EN60529 (with vertical installation)
Mounting	With wall bracket H 1 or directly on the wall with 2 screws (Ø 4)
Calibration	Scale value corresponds to the lower switching point (with falling temperature), the upper switching point is higher by the amount of the switching differential
Switching temperature	Adjustable from outside with screwdriver
Switching differential	Not adjustable

Product Summary

Type	Setting range	Switching differential (mean values)
Ex-TRM022	-20 to +20 °C	1.0 K
Ex-TRM40	0 to +40 °C	1.0 K
Ex-TRM150	+10 to +50 °C	1.0 K

Temperature monitoring in explosion-endangered areas



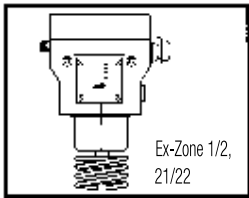
Temperature switches with special equipment can also be used in explosion risk area \geq Zone 1, 2 and 21, 22.

The following alternatives are possible:

1. Thermostats with pressure-proof encapsulated switching device, degree of protection $\text{Ex II 2 G/D EEx de IIC T6 IP65 T 80}^\circ\text{C}$

The thermostat in pressure-proof encapsulation can be used directly in explosion risk areas Zone 1, 2 and 21. The maximum switching voltage, switching capacity and ambient temperature must be taken into account and the rules for installation in the explosion risk area must be observed.

All thermostats may be equipped with explosion-proof switching devices. However, special circuits and designs with an adjustable switching differential are not permitted.

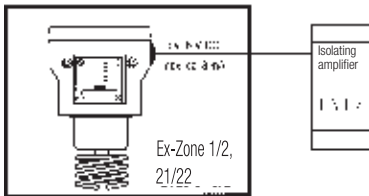


2. Thermostats in Ex-ia version

All thermostats in the standard version can be used in explosion risk areas Zone 1, 2 and 21, 22 if they are incorporated into an "intrinsically safe circuit". Intrinsic safety is based on the principle that the control current circuit in the explosion risk area carries only a small quantity of energy which is not capable of generating an ignitable spark.

Isolating amplifiers, must be tested by the Physikalisch-Technische Bundesanstalt (PTB) pursuant to ATEX 100 and approved for use in explosion risk areas. Isolating amplifiers must in any event be installed outside the explosion risk area.

Thermostats which are intended for Ex-ia installations are equipped with blue terminals and cable entries. In view of the low voltages and currents carried via the contacts of the microswitches, gold-plated contacts are used in the Ex-ia version (additional function ZFT513).

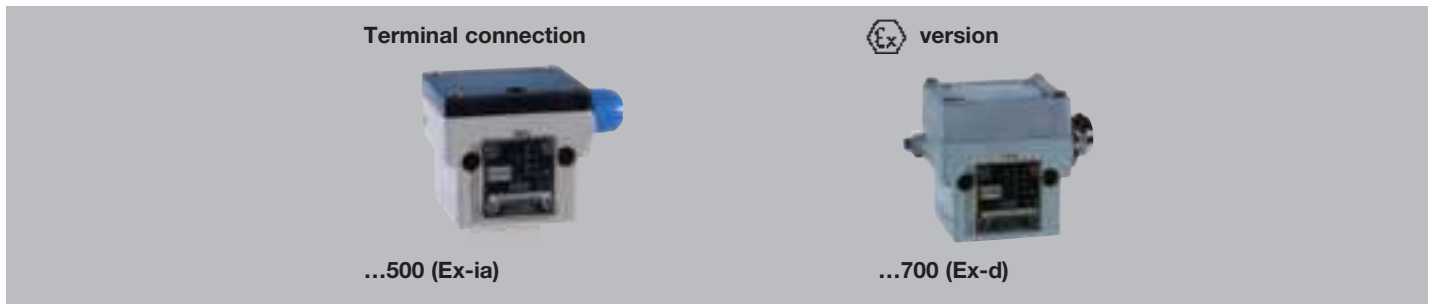


Temperature monitoring in Zone 1 (21) and 2 (22)

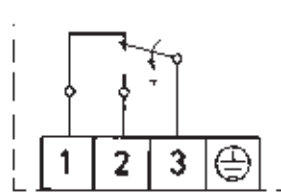
Pressure-proof encapsulated Ex-de ...	Intrinsically safe D ...-513
Explosion protection: $\text{Ex II 2 G/D EEx de IIC T6 IP 65 T80}^\circ\text{C}$	Explosion protection: Ex-ia
ATEX approval for the complete switching device	ATEX approval for isolating amplifier
Thermostats with silver contact	Thermostats with gold-plated contacts, blue terminal and blue cable entry.
Switching capacity: max. 3 A, 250 VAC min. 2 mA, 24 VDC	Switching capacity: max. 100 mA, 24 VDC min. 2 mA, 5 VDC
	Information for devices with additional functions according to EN60079-11:2007: ZF513 ZF574, ZF576 $U_i = 24\text{ V DC}$ $U_i = 20\text{ V DC}$ $I_i = 50\text{ mA}$ $P_i = 0,6\text{ W}$ $R_1 = 10\text{ k}\Omega, 0,6\text{ W}$ $R_2 = 1,5\text{ k}\Omega, 0,6\text{ W}$
	 $L_i = \text{insignificant}$ $C_i = \text{insignificant}$
The thermostat can be installed within the Ex-Zone.	The isolating amplifier must be installed outside the Ex-Zone.

Mechanical thermostats

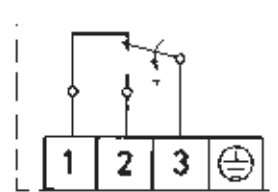
Principal technical data


Switch housing
Switching function and connection scheme

(applies only to version with microswitch)

 Diecast aluminium GDAISi 12
 Floating changeover contact
 With rising pressure
 single pole switching from 3-1 to 3-2


Diecast aluminium GDAISi 12

 Floating changeover contact.
 With rising pressure
 single pole switching from 3-1 to 3-2

Switching capacity

(applies only to version with microswitch)

 8 A at 250 VAC
 5 A at 250 VAC inductive
 8 A at 24 VDC
 0.3 A at 250 VDC
 min. 10 mA, 12 VDC

 3 A at 250 VAC
 2 A at 250 VAC inductive
 3 A at 24 VDC
 0.03 A at 250 VDC
 min. 2 mA, 24 VDC

Mounting position

 Vertical or horizontal,
 preferably vertical

Vertical

Protection class

(in vertical position)

IP 65

IP 65

Explosion protection

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 CE 0035 II 2G Ex db eb IIC T6
 CE 0035 II 2D Ex tb IIIC IP65 T85°C
 Terminal connection

Electrical connection

Terminal connection

Terminal connection

Cable entry
Ambient temperature
Switching point

 M 16 x 1.5
 -15 to +60 °C
 Adjustable with spindle after
 the terminal box cover is removed

 M 16 x 1.5
 -20 to +60 °C
 Adjustable with spindle after
 the terminal box cover is removed

Hysteresis

 Adjustable or not adjustable
 (see Product Summary)

Not adjustable

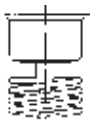
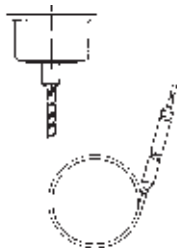
Medium temperature
Vibration strength

 Max. 60 °C
 No significant deviations up to 4 g.
 At higher accelerations, the switching differential is reduced slightly.
 Use over 25 g is not permitted.

Max. 60 °C

Isolation values

 Overvoltage category III, contamination class 3, reference surge voltage 4000 V.
 Conformity to DIN VDE 0110 is confirmed.

Sensor systems

 Room
 sensor TRM

 Capillary tube
 sensor TAM

 Rod sensor
 TX+R10

 Air duct sensor
 TX+R6