



Ex-TRM150

Ex - 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.



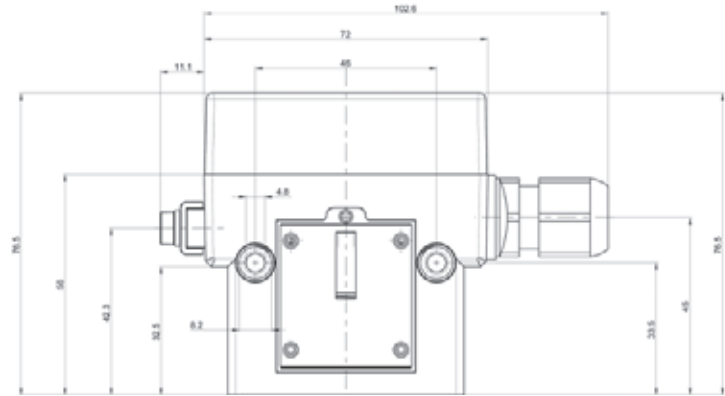
Technical data

- Body** Diecast aluminium GD Al Si 12 according to DIN 1725. Resistant to ammoniacal vapours and seawater
- Mounting position** vertically upright
- 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

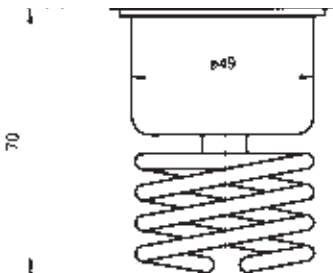
Product Summary

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

Dimensioned drawings (mm)



Switching housing



Temperature sensor

Temperature monitoring in explosion-endangered areas



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

The following alternatives are possible:

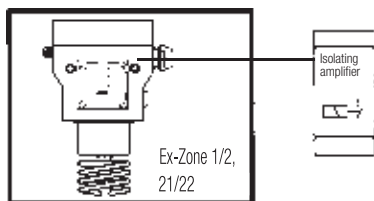
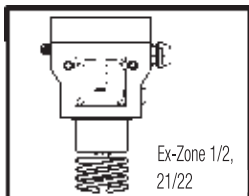
1. Type of ignition protection Ex-d, Ex-e and Ex-t:

The thermostat with protection type "Flameproof Ex-d and Increased Safety Ex-e" can be used in hazardous areas of zone 1 and 2 for flammable gas mixtures. For use in dust atmospheres, the protection is "protected by enclosure Ex-t".

The thermostat may be used in hazardous areas of zones 21 and 22 for explosive dusts. In addition, for the dust – explosion protect zone 20 on the sensor (device screwed into container walls, which may occur in the interior permanent dust atmosphere).

The permissible values for switching voltage, switching capacity and ambient temperature please refer to the detailed description of the Ex equipment, and the installation and operating instructions. In addition, please note the general rules for the use and installation of equipment in hazardous atmosphere.

Special circuits, as well as versions with adjustable switching differential or internal interlock (reclosing lock) are not possible.



2. Ignition protection Ex-i

All thermostat with features for intrinsically safe circuits can be used in hazardous areas Zone 1 and 2 (Gas) and zones 21 and 22 (Dust). A circuit is considered to be "intrinsically safe" if the amount of energy conveyed therein is not capable of generating an ignitable sparks. This thermostat can only be operated in combination with a suitable isolating switching amplifier, which is approved for the type Ex-i. Because of the low voltages and currents in intrinsically safe circuits, micro switches with gold contacts are used for temperature monitors with automatic reset. FEMA thermostats for use in intrinsically safe circuit are marked by blue terminals and cable entries. In addition, the thermostats has been tested by a "notified body". The units get a serial number and the nameplate inform about the ignition protection and registration number.

Igniton protection for temperature monitoring in Zone 0 (20), 1 (21) and 2 (22)

Pressure-proof encapsulation Ex-d (EN60079-0:2009)
Enhanced safety Ex-e (EN60079-7:2007)
Protection via housing Ex-t (EN60079-31:2009)
Ex-T...

Intrinsically safe Ex-i
(EN 60079-11:2012)
T...-513, ...-563

Marking, use in thermowell:

CE 0035 Ex II 2G Ex d e IIC T6 Gb
CE 0035 Ex II 1/2D Ex ta/tb IIIC T80°C Da/Db

Exception: EX-TRM...:

CE 0035 Ex II 2G Ex d e IIC T6 Gb
CE 0035 Ex II 2D Ex tb IIIC T80°C Db

Marking:

CE 0035 Ex II 2G Ex ia IIC T6 Gb
CE 0035 Ex II 2D Ex ia IIIC T80°C Db

ATEX approval for the complete switching device

ATEX approval for the complete switching device
ATEX approval for isolating amplifiers

Thermostat with a silver contact

Monitor with gold-plated contacts

Switching capacity:
max. 3 A, 250 VAC
min. 2 mA, 24 VDC

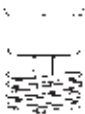
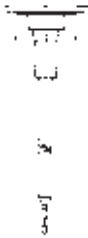
Rated value without resistor combination
...-513 /...-563:
Ui: 24VDC
Ii: 100mA
Ci: 1nF
Li: 100µH

Thermostat can be installed within the Ex-Zone

Thermostat will be installed in Ex-Zone.
The isolating amplifier must be installed outside the Ex-Zone.

Mechanical thermostats

Principal technical data

Terminal connection		Ex version	
			
...500 (Ex-i)		...700 (Ex-d)	
Switch housing	Diecast aluminium GDAISi 12	Diecast aluminium GDAISi 12	
Switching function and connection scheme (applies only to version with microswitch)	Floating changeover contact With rising temperature single pole switching from 3-1 to 3-2	Floating changeover contact. With rising temperature single pole switching from 3-1 to 3-2	
Switching capacity (applies only to version with microswitch)	max. 100 mA, 24 VDC min. 2 mA, 24 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, vertically upright	Vertically upright	
Protection class (in vertical position)	IP 65	IP 65	
Explosion protection with immersion well	Ex II 1/2G Ex ia IIC T6 Ga/Gb Ex II 1/2D Ex ia IIIC T80 °C	CE 0035 Ex II 2G Ex d e IIC T6 Gb CE 0035 Ex II 1/2D Ex ta/tb IIIC T80 °C Da/Db Exception: EX-TRM...: Ex II 2G Ex d e IIC T6 Gb Ex II 2D Ex tb IIIC T80 °C Db	
Electrical connection	Terminal connection	Terminal connection	
Cable entry	M 16 x 1.5	M 16 x 1.5	
Ambient temperature	-15 to +60 °C	-20 to +60 °C	
Switching point	Adjustable with spindle after the terminal box cover is removed	Adjustable with spindle after the terminal box cover is removed	
Switching differential	not adjustable	Not adjustable	
Medium temperature	Max. 60 °C	Max. 60 °C	
Vibration strength	No significant deviations up to 4 g. At higher accelerations, the switching differential is reduced slightly. Use over 25 g is not permitted.		
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