TC ATEX AI... Temperature Controller

1 Application

The electronic temperature controller TC ATEX AI… has been designed to regulate the inside temperature in electrically heated instrument enclosures and protective cabinets for control valves, measuring equipment and the like in hazardous locations.

2 Features

- Longest possible life of the controller as only solid state elements are used. The calculated failure probability with uninterrupted operation of 10 years is less than 5%.
- Constant temperature in the instrument enclosure due to PD (= proportional plus derivative) control action of the regulator .
- Minimum mains interference due to full-cycle zero voltage switching (excellent electromagnetic compatibility
- Adjustable nominal temperature.
- Heavy-duty industrial design in aluminium terminal box.

3 Description

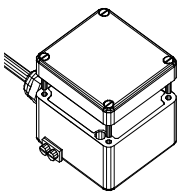
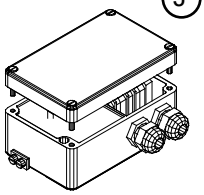
The electronic temperature controller TC ATEX AI… is a controller with proportional band. It consists of an integrated zero voltage switch, a triac (triode AC switch) as switching element and a temperature-sensitive resistance (NTC) as sensor. It is completely sealed. The temperaturesensor is integrated into the housing.

The electronic temperature controller TC is available in various designs:

A) with connection cable (C)
- factory-set (F) or
- adjustable setpoint (S) (in 10 °C increments)

B) with integrated junction box (J)
- factory-set (F) or
- adjustable setpoint (S) (in 10 °C increments)

4 Models and Technical Data

	C	J
		
Factory Set	**TC ATEX AI Fii C1**	**TC ATEX AI Fii J**
Possible Setpoints	ii = 10, 20, 25, 30, 35, 40°C	
Adjustable Setpoint	**TC ATEX AI S10-40 C1**	**TC ATEX AI S10-40 J**
Range	10 up to 40°C in 6 steps each 5°C	10 up to 40°C in 6 steps each 5°C
EC Examination Certificate	PTB 04 ATEX 2022 X	
Marking	II 2 G Ex e mb IIC T4 II 2 D Ex tD A21 IP66 T130°C	
Ingress Protection	IP 66	
Nominal Voltage	230 V AC .. 265 V AC	
Load (min/max)	75 W / 2000 W	75 W / 1000 W
Max. Ambient Temperature	-50°C to 80°C	50°C to 40°C
Connection Cable	4 x 1mm^2, 1m long ∅ 8,0 mm, other lengths of request	Factory-installed
Cable Fitting	--	M20x1,5
Dimensions (H x W x D)	57 x 75 x 80 mm	57 x 125 x 80 mm
Material	Seawater proof aluminum housing, lacquered	

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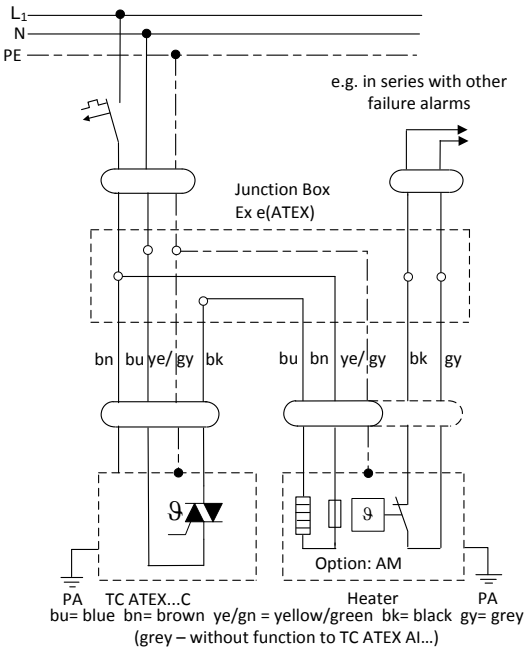
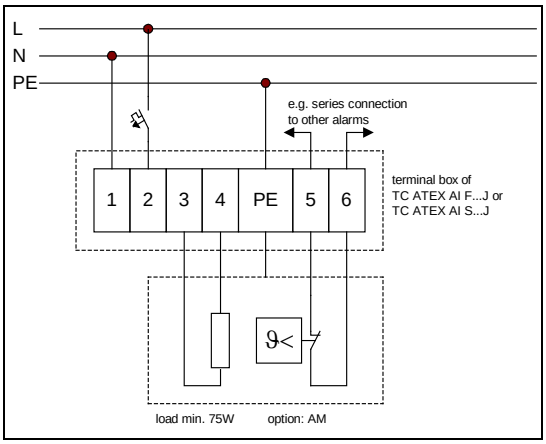
5 Wiring Diagramme

5.1 TC ATEX AI..Cx with external Ex(e) terminal box



5.2 TC ATEX AI.. J with internal terminal box

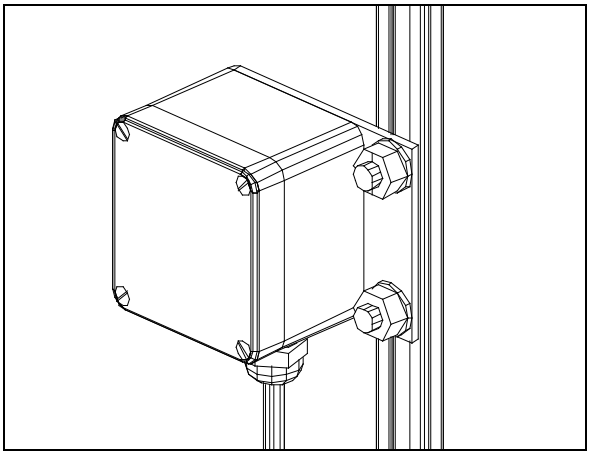


6 Installation of the controller

In order to maintain control accuracy, the controller has to be thermally isolated from the other metallic parts in the enclosure (e.g. mounting rails, transmitters etc.). This can be accomplished, for example, by means of the GRP mounting plate that is supplied with the thermostat, and that can be attached to a 'C' rail in the enclosure. The accessories include a mounting bracket designed to be attached to a mounting plate or 'C' rail in the enclosure.

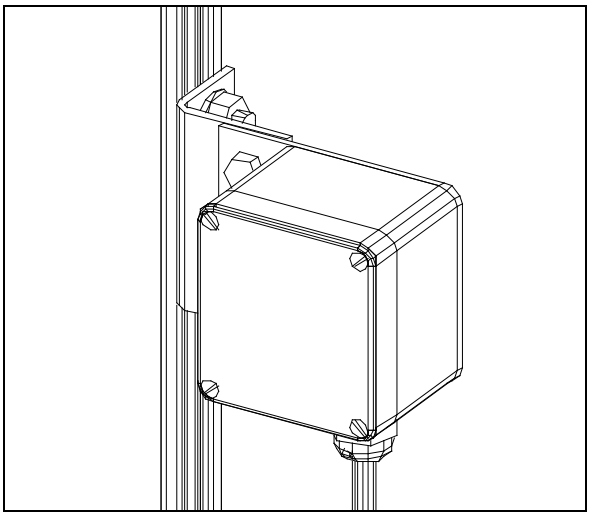
The thermostat should not be mounted in the immediate vicinity of - or directly above - the heater.

6.1 With Mounting Plate



By using spacers, the mounting plate of the controller can also be attached directly to a mounting plate in the enclosure or to the external wall of a steel cabinet. The mounting plate TCMP and all bolts shown above are supplied with the thermostat.

6.2 With Mounting Plate and Bracket



By using the mounting bracket (TCMW), which is available in our accessories, it is possible to install the thermostat at right angles to the 'C' rail or on a mounting plate.

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