



# Installation and Operating Instructions for Temperature Controller Type TC ATEX ...

EC Type Test Certificate PTB 04 ATEX 2022 X

## 1 Application

The Type TC ATEX ... temperature controller is manufactured in accordance with Directive 94/9EC (ATEX 100a) and, among other applications, is designed for temperature control of instrument enclosures, protective cabinets or heat tracing cables.

TC ATEX... is supplied either with a connection cable (Index "C") or with terminal box section (Index "J") and can be connected on site to the heat source to be controlled. Depending on the model, it is equipped with an internal sensor (Index "I") or an external sensor (Index "E"). The HI version can be equipped with an additional sensor connection to the control device of the heating source.

The TC ATEX... temperature controller is approved for use in Zone 1 and Zone 2 hazardous areas, for explosion groups G/D, type of ignition protection "e mb d ib" to EN 60079-0, EN 60079-1, EN 60079-7, EN 60079-11 and EN 60079-18, and EN 61241-1 and in temperature class T4.

## 2 Installation Instructions

The installation personnel must be fully qualified as "Electrical Technicians".

For mounting in dust hazardous areas, certified components must be used. The connection cables must be firmly installed and mechanically protected.

In case of version C with a cable, if the connection is in a hazardous area, the cable must be connected in a junction box that meets the requirements of one of the types of ignition protection mentioned in IEC EN 60079-0.

Only heat-resistant connection cables must be used.

## 3 Technical Data

Rated voltage	Max. 250 V AC
Permissible operating voltage	Max. 275 V AC
Rated current (according to VDE 0298)	Max. 10 A
Ambient temperature range	-50 to + 80 °C
Operating temperature range, when operated at normal rating	-50 to + 80 °C
Installation position	Any
Switching capacity	10 A
Temperature class	T4
Minimum load	75 W

## 4 Installation

The controller housing must only be mounted in a place where the temperature does not exceed 80 °C.

If higher temperatures are to be controlled, the intrinsically safe external sensor must be installed in the area to be controlled, with the controller housing placed outside the heated enclosure.

## 5 Connection

The heating system must only be connected and secured in accordance with the label specifications "rated voltage" and "rated current":

Circuit breakers (characteristics B) suitable for up to 16 A can be used for short circuit and line protection.

Additionally, a ground terminal is necessary for the purpose of ensuring potential equalization.

A residual current operated device with a rated value of not more than 300 mA, preferably 50 mA, has to be installed.

## 6 Routine Check Tests

The following check tests have to be carried out on the installed heating system:

- Visual inspection, to determine if the conditions mentioned under 2 are met.
- Insulation test with a test voltage of 1500 V. Before the insulation test starts, the controller must be by-passed to protect the electronics.

Type	Bridge over Terminals	
TC ATEX A..C	br / bl	
TC ATEX A..J	1 / 2	3 / 4
TC ATEX D..J	1 / 2	5 / 6

In the case of heat tracing cables, the insulation test has to be carried out with a discharging resistor, in order to protect the anti-interference capacitors.

## 7 Initial Operation

When the tests are successfully completed, the controller and the heater can be switched on.

## 8 Maintenance

Performance and safety tests can be conducted at intervals to be determined by the operator in compliance with current operations.

Repair work must only be carried out by the manufacturer.

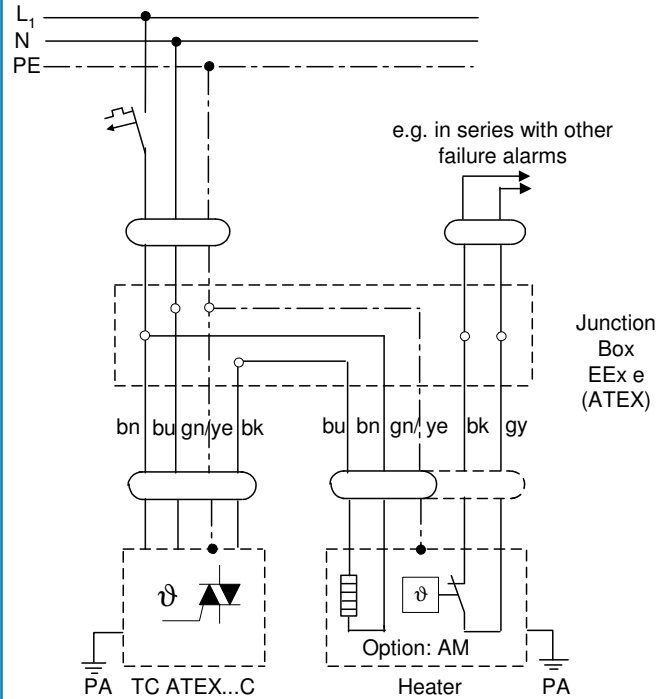


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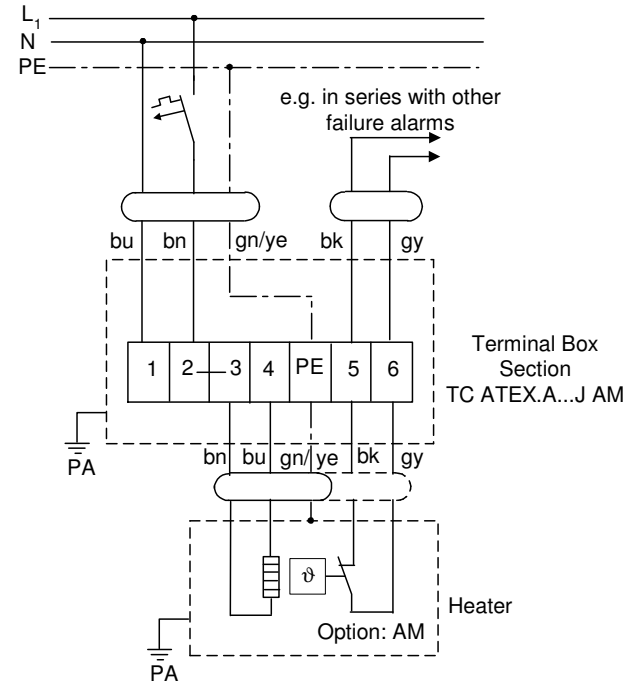
## 9 Wiring Diagramme

### 9.1 TC ATEX A...C with cable



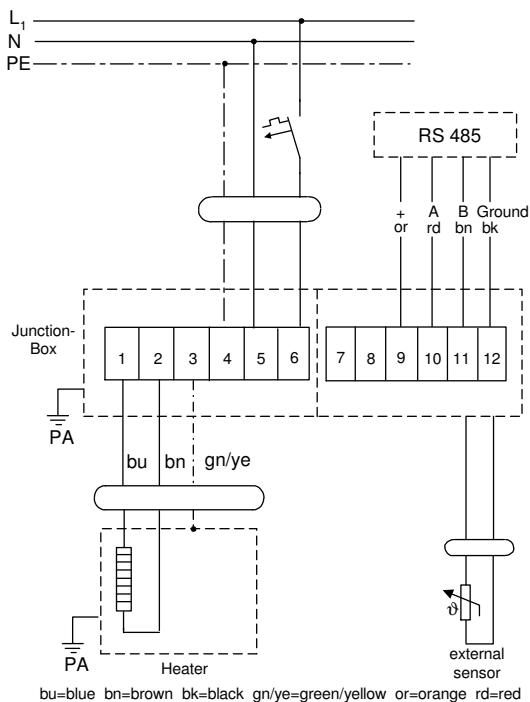
bu= blue bn= brown gn/ye= green/yellow bk= black gy= gray

### 9.3 TC ATEX A...J AM with integrated junction box



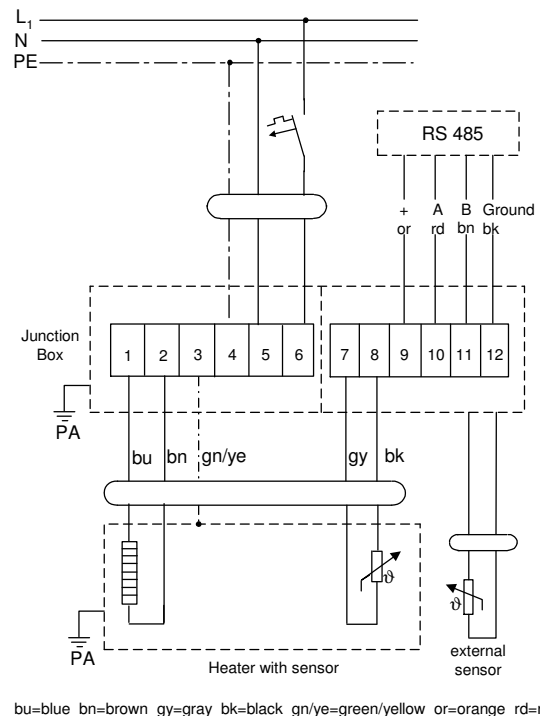
bu= blue bn= brown gn/ye= green/yellow bk= black gy= gray

### 9.2 TC ATEX D E...J



bu=blue bn=brown bk=black gn/ye=green/yellow or=orange rd=red

### 9.4 TC ATEX D E HI...J



bu=blue bn=brown gy=gray bk=black gn/ye=green/yellow or=orange rd=red