

# Ex T ... AT

Sensors with switching function



### Characteristics

- easy installation
- cost-effective
- sturdy design
- several temperature ranges available

The T ... AT is developed for the installation in the ex-area. This sensor is available as temperature fuse / controller or as limiter.

In what extent the built-in temperature fuse or the reset limiter can also be used as limiter for the complete heating alone after the construction of the heating, can only be decided by an expert on site.



### BASIC EQUIPMENT

The temperature acquisition acts directly on the switching element. The two-wire technique switches load of 230 V~, 10 A. Depending on the design temperature controller, temperature fuse or temperature limiter, all rated values are fixed.

### RANGE OF APPLICATION

Wherever no high standards are set for the accuracy of the temperature acquisition of heatings and where the media to be measured has a mass that is much larger than that of the sensor the temperature change should be less than 0,2°K/min. The installation on a metal surface is recommended

### GENERAL TECHNICAL DATA

Nominal voltage	230 V~ or lower (but not below 12 V)
Temperature setpoint	see table
Nominal current	10 A
Design	Aluminium cabinet sealing technique
Ambient temperature	-45 - 180°C qualified according to table
Dimensions L x B x H (mm)	95 x 40 x 35 for limiter 74 x 37 x 28 for controller and fuse
Electrical connection	PTFE Leitung, 3 x 1,5 mm <sup>2</sup> , 1,2 m long, Ø 5-6 mm
Ignition protection category (Gas)	II 2 G Ex db eb mb IIC T3-T6 according to design (see table)
Protection class	IP66 / DIN 40 050
Standard conformity	The equipment meets the requirements of the EN 60079-0:2012+A11:2013, EN 60079-7:2015, EN 60079-1:2014, EN 60079-18:2015
Wiring configuration	brown - switching element blue - switching element yellow/green - cabinet
EU-type examination certificate	PTZ 16 ATEX 0024
Identification	 0344  II 2 G Ex db eb mb IIC T3-T6 according to design (see table)

If the access line is not delivered in standard version, it must be laid protected.

### PRODUCTION NUMBER

xxxx / 03.03

_____	Year
_____	Month
_____	Serial number

### TYPE CODE

Ex T 1 2 3 AT

<b>1</b>	B	Limiter
	R	Controller
	S	Temperature fuse
	W	Temperature monitor

<b>2</b>		Nominal temperature (see table)
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<b>3</b>	-	Standard
	s	with protective hose

Typ	Ex TR/ W	Ex TB	Ex TS
Nominal temperature value °C	10, 30, 50, 70, 80, 100	94, 100, 112, 175	110, 120
Nominal temperature monitor °C	5, 10, 40		

Please consult the table (chapter 3.2).

Example: Limiter with a nominal temperature of 112 °C, without protective hose:

Ex T B 112 AT

1      2      3

## TEMPERATURE CONTROLLER

The sensor as temperature controller (Ex TR...) is switched in row with the active heater and has no separate voltage supply. Also suitable as monitor (see chapter 1.4). It is to be noted, that a high power contact is involved. The switching hysteresis is about 9°K.

## TEMPERATURE MONITOR

The temperature monitor (Ex TW) opens the contact at undertemperature. It signals the blackout of a heating.

## TEMPERATURE FUSE

The temperature fuses are irreparably damaged after the exceeding of the temperature. The construction of a heating apparatus should be designed in order that other monitoring systems in the heater always respond earlier, so that no unacceptably high temperature exists at the temperature fuse. Scope of application especially where the value of the temperature fuse usually is not to be expected and where the max. longer existing value lies 30°K below the nominal value of the temperature fuse.

## TEMPERATURE LIMITER

Same case of application as temperature fuse, but with the following advantages: It can be resetted and the constant temperature load is about 12°K below the nominal value. It has though a larger mass.

## SAFETY-RELATED INFORMATION

The limiter can be resetted manually. The switching element of the limiter is integrated for millionfold in domestic appliances and office equipment. The additional mechanism for automatic return is modified so that a triggering caused by temperature rise can not be avoided. The limiter can only be switched on again, when the temperature has fallen below 40°C.

The complete ATEX approval can also be inspected unter [www.erich-ott.de](http://www.erich-ott.de) as PDF document.

## TEMPERATURE CLASSES

The temperature classes consider, also in optimal use, the temperature rise after switching off.

Zoneneinteilung	Zone 2			Zone 1		
Temperaturklasse	T6	T5	T4	T3	T2	T1
max. zulässige Umgebungstemperatur	70	85	120	180	-	-

## PROTECTIVE MEASURE

The protective measure for the heating circuits is grounding (equipotential bonding). Due to often long supply lines and corresponding capacitive leakage currents, which can significantly increase because of the humidity saturation of the insulation, residual current circuit breakers with 300 mA are advisable. Depending on brands, residual current circuit breakers respond differently.

## CABLES AND LEADS

The supply line, if it is longer than 5 m, should have an outer braiding for EMV suitable installation, that is connected with PE at the feeding point. The minimum cross-section is 1,5mm². The voltage drop at 230 V is not to be determined according to the effective current, but as if the load resistor was connected directly to the net. At three-phase current moderate distribution the neutral conductor must be fully resilient.

## COMPENSATORY CIRCUITS AND INTERFERENCE SUPPRESSION MEASURES

PE-conductors and N-conductors must be led separately from the switch cabinet. If this connection is disconnected in the switch cabinet, it must be possible to check the insulation value with  $\geq 0,5$  kV. According to the regulation the larger value applies.

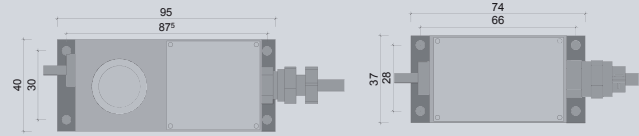
## INSTALLATION SITE

The sensors of the type series Ex T.. AT are destined for the use in installations, e.g. in instrument protective cabinets, on the pipeline under the insulation etc.

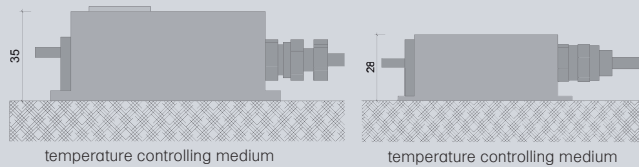
Limiter

Controller

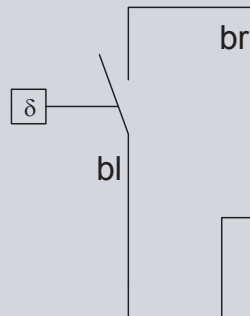
Top view



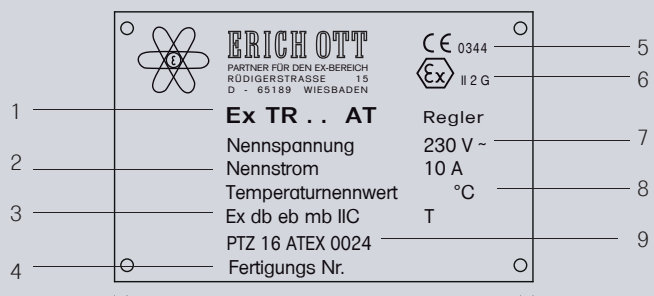
Section



## CONNECTION PLAN



## NAMEPLATE



1-	Type designation	5-	Auditing body
2-	Nominal current	6-	Ex- identification
3-	Ignition protection category	7-	Nominal voltage
4-	Production number	8-	Temperature rating
		9-	EU-type examination certificate

Please take further details from the operating instructions. Download on [www.erich-ott.de](http://www.erich-ott.de)