

MODEL	RANGE °C ⁽¹⁾	APPLICATION	OUTPUT SIGNAL
TT-A31	T50	Room	0...10 V-
TT-C31	T100	Immersion	
TT-D31	-50T50	Duct	
TT-A21	T50	Room	4...20 mA
TT-C21	T100	Immersion	
TT-D21	-50T50	Duct	
TT-E21	-50T50	Outdoor	

⁽¹⁾ Range extremes correspond to output signal extremes. The real working range is indicated as "working temperature" in the "Technical Characteristics" paragraph.

APPLICATION AND USE

TT temperature transmitters are used in commercial and industrial processes for air, gas and fluid temperature measurement in ambients, pipes, tanks, ducts, etc.

OPERATION

All the transmitters detect the temperature value to be measured by means of a semiconductor sensing element, whose signal, suitably linearized and amplified, is transformed into a voltage (0...10 V-) or current (4...20mA) output signal.

MANUFACTURING CHARACTERISTICS

TT temperature transmitters consist of a thermoplastic case containing the electronic card with terminals for electrical connections.

The case cover is fastened by screws, and, in room models (TT-A), it is slotted for air circulation.

The sensing element is fitted in an AISI 304 stainless steel pipe which is bound to the transmitter housing in immersion (TT-C) and duct (TT-D) models, while, in room models (TT-A), it is directly connected to the electronic card and in outdoor transmitters (TT-E) is fastened to the case inner part.

The immersion transmitter (TT-C) is equipped with an AISI 304 stainless-steel well with threaded connection for pipe assembly.

The duct transmitter (TT-D) is fitted with a wall mounting flange.

Circuits are protected against short circuit and polarity errors.



TECHNICAL CHARACTERISTICS

Power supply	TT-3.	14,5...35 V- or 24V~ ±10%
	TT-2.	See "Installation and mounting"
Consumption		1VA
Range		See available models
Accuracy		± 0,8 K
Sensing element		semiconductor
Output signal		
	TT-3.	0...10 V- (12 V- max.)
	TT-2.	4...20 mA (28 mA max.)
Max. load		
	TT-3.	10 mA (20 mA short circuit)
	TT-2.	600 ohm
Temperature		
- working		-10T60 °C, -30T65 °C (TT-E)
- storage		-25T65 °C
Terminal boards		screw-type for 2,5 mm ² max. leads
Conduit opening		PG9 cable gland (except TT-A)
Protection degree		
	TT-A	IP 30
	TT-C,TT-D,TT-E	IP 55
Weight		0,2 Kg max
Fluid temperature		-20T140°C (TT-C)
Max fluid pressure		4000 kPa (TT-C)
Time constant (s) (Ref. standards: IEC 751(1983) + MOD. 1 (1986) / CENELEC HD 459 S2 / CEI 65-8)		

MOD	τ 0,1	τ 0,5	
TT-A	19	120	with air 0,4 m/s
TT-C	4	12	with water 0,4 m/s (with well)
TT-D	10	62	with air 3 m/s
TT-E	52	236	with air 0,4 m/s

Product conforms to EMC 89/336 directive according to the following standards:
for emission EN 50081-1 for immunity EN 50082-1

POSSIBLE COMBINATIONS AND CONNECTIONS

The transmitters can be connected to any controller having an input signal compatible (both as regards type and range) with the transmitters output signal.

In particular, TT-.3. temperature transmitters can be connected to CONTROLLI WV539 and WV511 controllers; while TT-.2. transmitters to CONTROLLI WA539 and WA511 controllers.

INSTALLATION AND MOUNTING

The models with current output (TT-.2.) are supplied by the same S1 and S2 terminals from which they emit their signal. At S1 terminal there must be a direct voltage having a value (expressed in Volt) higher than the one obtained by the following formula:

$$V = (0,028 \times Z) + 6.2$$

where Z is the controller input impedance expressed in ohm. Do not use leads with cross-section lower than 1 mm² and carry out the connections in compliance with existing standards.

TT-A transmitters (Fig. 1)

Mount the transmitter on a wall at approximately 1.5 m from floor level, in a place representing the room average temperature (preferably far from air stagnation areas, doors, windows and heating sources). Remove the lid and screw the transmitter to the wall, using the two holes provided on the case bottom.

TT-C transmitters (Fig. 2)

Fit the well on the pipe, preferably on a curve. Insert the sensing element rod as much as possible into the well in order to obtain a higher measurement accuracy, then tighten the locking screw on the well connection.

TT-D transmitters (Fig. 3)

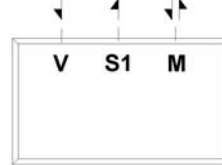
Mount the transmitter by fastening the relevant flange to the duct wall (possibly at the centre), insert the sensing element into the bushing hole at the required depth, then tighten the locking screw.

TT-E transmitters (Fig. 4)

When possible, it is advisable to install the transmitter on the less exposed side of the building (North, North-West), protected from pouring rain, at least at a height of 2,5 m from ground level and far from air stagnation areas, chimneys or other heating and cooling sources.

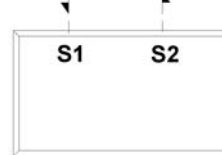
Fasten the supplied bracket to the wall by means of the two holes, and mount the device on the bracket by screwing the transmitter connecting plate.

TERMINAL BOARDS



V Power supply
S1 0...10V- signal
M Common

N3132



S1 Input
S2 4...20mA signal

OVERALL DIMENSIONS (mm)

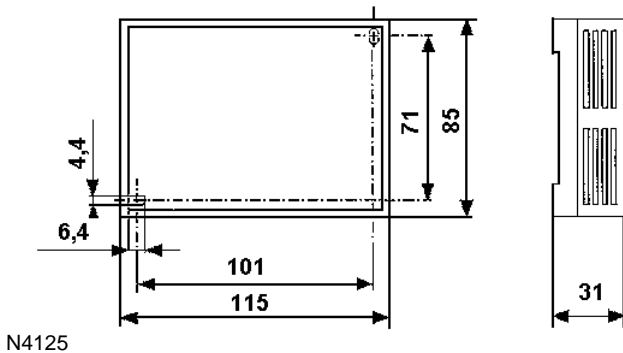


FIG. 1

N4125

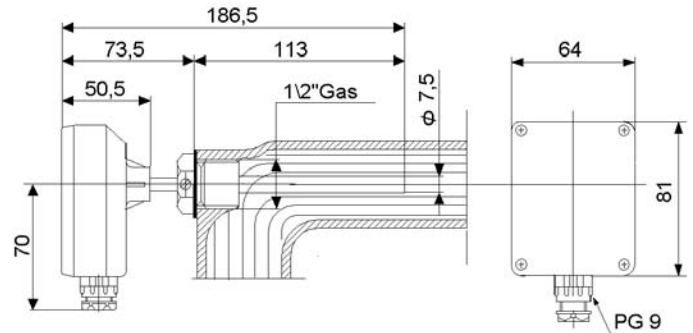


FIG. 2

N4147

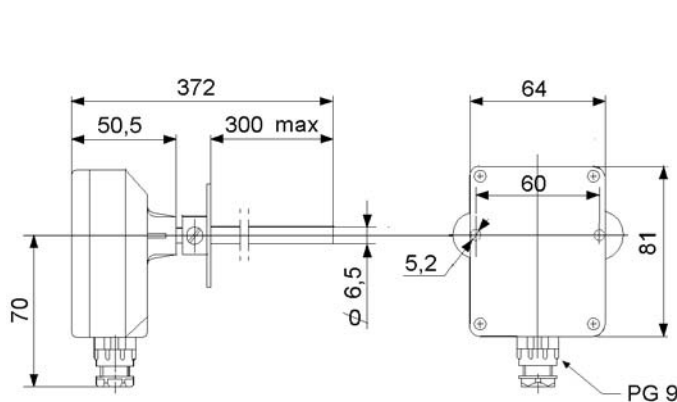


FIG. 3

N4148

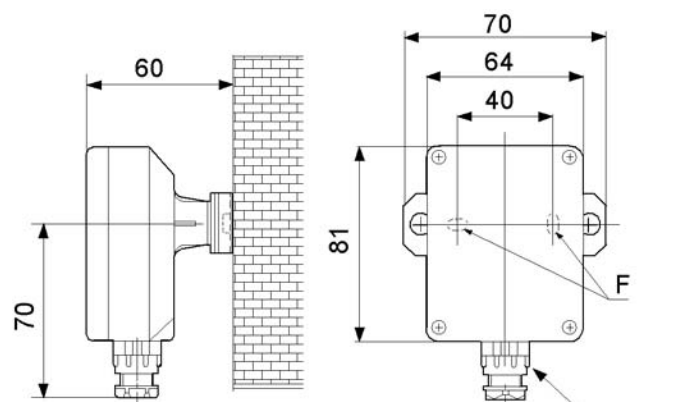


FIG. 4

N4146

F = Two 4,5 x 8,5 holes for bracket wall mounting

The performances stated on this sheet can be modified without any prior notice due to design improvement.