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# TUP 214...262F001: Pneumatic temperature transducer for duct fitting, centair

## How energy efficiency is improved

Precise measurement of temperature in pneumatic installations for optimum control of HVAC systems

## **Features**

- · Pneumatic temperature measurement and/or regulation of liquid or gaseous media in tanks, boilers or piping in conjunction with pneumatic control facilities (centair)
- Immersion stem made of nickel filled with expansion fluid
- Converts the measured temperature into a pneumatic standard signal of 0.2...1.0 bar
- · Compressed air connections with Rp 1/8" female thread
- · Nozzle-ball system

## **Technical data**

Parameters		
	Supply pressure via ext. restrictor <sup>1)</sup>	1.3 ±0.1 bar (Ø 0.2 mm)
	Output pressure	0.21.0 bar
	Air capacity, air consumption	33 I <sub>n</sub> /h
	Linearity error	< 2%
Time constant	In moving air (0.5 m/s)	3.2 min
	In moving air (3 m/s)	1.6 min
	In water without protective tube	12 s
	In water with protective tube	70 s
	Protective tube, heat-conducting paste	25 s

Ambient conditions			
	Admissible ambient temperature	070 °C	

Overview of types				
Туре	TUP214F001	TUP224F001	TUP242F001	TUP262F001
Measuring range	-2040 °C	535 °C	0120 °C	80200 °C
Total length of stem	304 mm	304 mm	214 mm	214 mm
Active length of stem	201 mm	201 mm	112 mm	112 mm
Admissible sensor temperature	-2570 °C	-2570 °C	-25150 °C	-25210 °C
Weight	0.16 kg	0.16 kg	0.15 kg	0.15 kg
Effect of temperature at instrument head	0.07 K/K	0.07 K/K	0.12 K/K	0.12 K/K

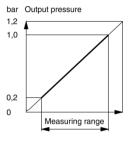
Accessories	
Туре	Description
0364439300	Protective tube, inner diameter 7, of brass, 300 mm for TUP 214, 224, thread R½, 16 bar
0364439225	Protective tube, inner diameter 7, of brass, 225 mm for TUP 242, 262, thread R½, 16 bar
0226811300	Protective tube, inner diameter 7, of stainless steel, 300 mm for TUP 214, 224, thread $G^{1/2}$ male, 25 bar
0226811225	Protective tube, inner diameter 7, of stainless steel, 225 mm for TUP 242, 262, thread $G^{\prime}\!\!/_{\!\!\!2}$ male, 25 bar
0364263000	Welding sleeve of steel, with female thread G½", flat seal of copper
0364264000	Welding sleeve of stainless steel, with female thread $G\frac{1}{2}$ ", flat seal of copper and PTFE (for aggressive media)
0297631000	Flange of thermoplastic for direct fitting to the ventilation duct

Protective tubes: see product data sheet on protective tubes



## TUP2\*\*F001







Restrictors (Ø 0.2 mm) are installed at inputs 3 and 4 in the RCP and RPP 20 standard controllers. For regulations concerning the quality of the air supply, particularly at low ambient temperatures, see www.sauter-controls.com/en/pneumatic\_plants

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#### Additional information

Fitting instructions	MV 23210
Fitting instructions	1017 232 10

## **Description of operation**

The expansion fluid in the immersion stem expands as the temperature rises and produces a proportional stroke on the diaphragm box. A spring converter transforms the stroke into a force on the forcebalance lever. The bleed-off nozzle-ball system converts this force into a corresponding change in pressure. As the temperature increases, so does the output pressure.

#### Intended use

This product is only suitable for the purpose intended by the manufacturer, as described in the "Description of operation" section.

All related product documents must also be adhered to. Changing or converting the product is not admissible.

## **Engineering and fitting notes**

The effect of position can be easily compensated using the screw in the centre of the diaphragm box. The mounting of the spring converter should not be adjusted, because the measuring span is not changed by installation and use of the device.

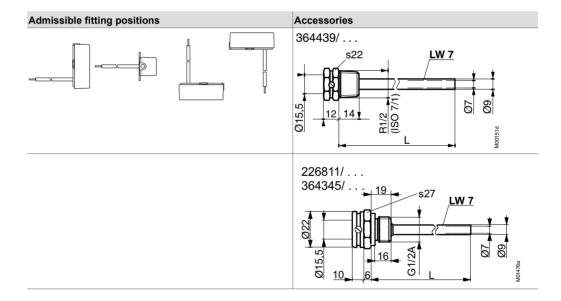
## **Technical information**

Technical manual for centair system 304991 001

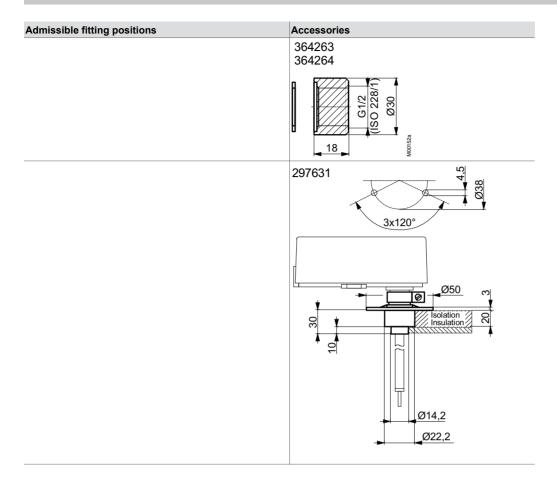
## **Disposal**

When disposing of the product, observe the currently applicable local laws.

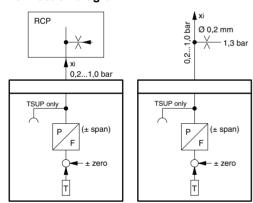
More information on materials can be found in the Declaration on materials and the environment for this product.



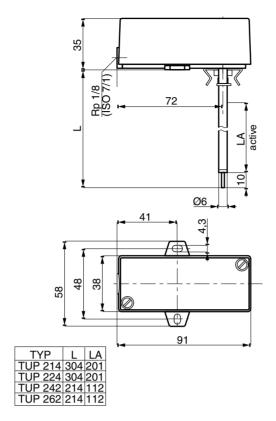
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## **Connection diagram**



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