

## TWUP: Outdoor-temperature transducer

Ideally, for measuring the outdoor temperature in conjunction with pneumatic *centair* control systems. Housing plinth of light alloy; force-balance system with nozzle-ball. Measuring element: cartridge Ø 9 mm with 1.5 m of capillary tubing filled with expansion fluid; diaphragm box; lever system with spring converter. Cover of thermoplastic; compressed-air connection Rp 1/8, female thread. Aluminium sensor holder in a thermoplastic housing for wall mounting.

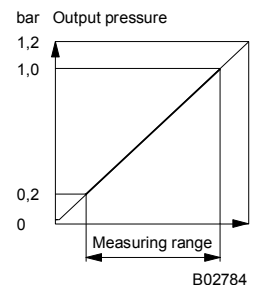
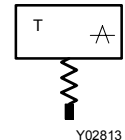
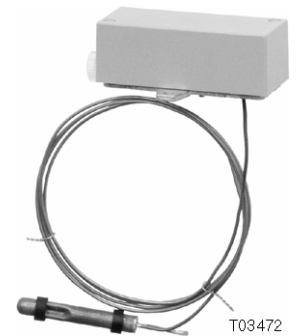
Type	Measuring range °C	Cartridge Ø mm	Capillary tube m	Sensor temp. °C	Weight kg
<b>TWUP 210 F001</b>	-20...40	9	1.5	-25...70	0.24
<b>TWUP 220 F001</b>	5...35	9	1.5	-25...70	0.24
Supply pressure <sup>1)</sup>					
via external restrictor Ø 0.2 mm		1.3 ± 0.1 bar	0.5 m/s		3.2 min
Output pressure		0.2...1.0 bar	3.0 m/s		1.6 min
Air capacity, air consumption		33 l <sub>n</sub> /h			
Linearity		< 2%			
Time constant in water					
without sheath		12 s			
with sheath		70 s			
sheath plus heat-conducting paste		25 s			
Time constant in air					
			0.5 m/s		3.2 min
			3.0 m/s		1.6 min
Influence of temp. at instrument head					
Permissible ambient temp.					0.1 K/K 0...70 °C
Connection diagram					
Dimension drawing					
Fitting instructions					

### Accessories

- 0364244 120\*** LW15 pocket of brass, 120mm, with R1/2 thread; 16bar; bushing (0364140) also required<sup>2)</sup>
- 0364258 120\*** LW15 pocket of inox, 120mm, with G1/2 thread; 25bar; bushing (0364140) also required<sup>2)</sup>
- 0364140 000\*** Support to relieve pressure on capillary tube in sheath
- 0303212 000\*** Sensor holder for duct mounting

<sup>\*)</sup> Dimension drawing or wiring diagram are available under the same number

- 1) In the RCP and RPP 20 controllers, the restrictors (Ø 0.2 mm) are fitted at inputs 3 and 4. If the transducer is used for measuring the command variable (e.g. outside temperature), then connection is made via an external restrictor of Ø 0.2 mm.  
See Section 60 on regulations concerning the quality of supply air, especially at low ambient temperatures..
- 2) For further technical details, see page 29.01 or 29.001



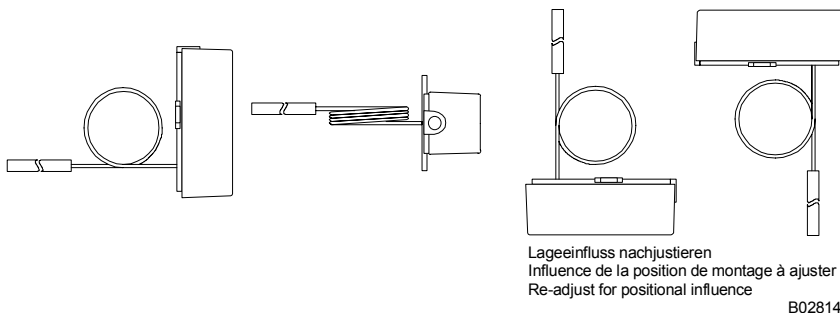
### Operation

The expansion fluid in the cartridge expands when exposed to heat and exerts a proportional pressure on the diaphragm box. This is converted by spring converter into a force acting on the force-comparison lever. The bleed-off nozzle-ball system converts this force into a corresponding pressure change. The output pressure increases as the temperature rises.

### Engineering and fitting instructions

The positional effect can easily be negated by making the necessary adjustment of the screw in the centre of the diaphragm box. Since the measuring span is unaffected by either fitting or use, the tension of the spring converter should not be altered.

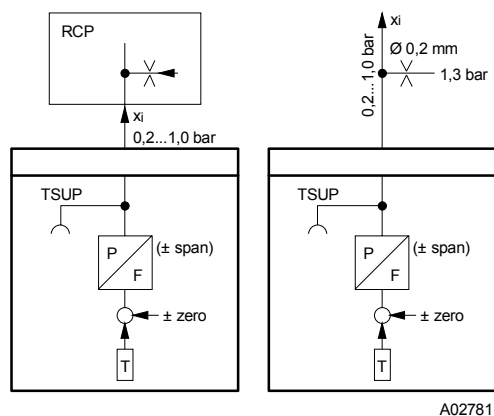
### Permissible fitting positions



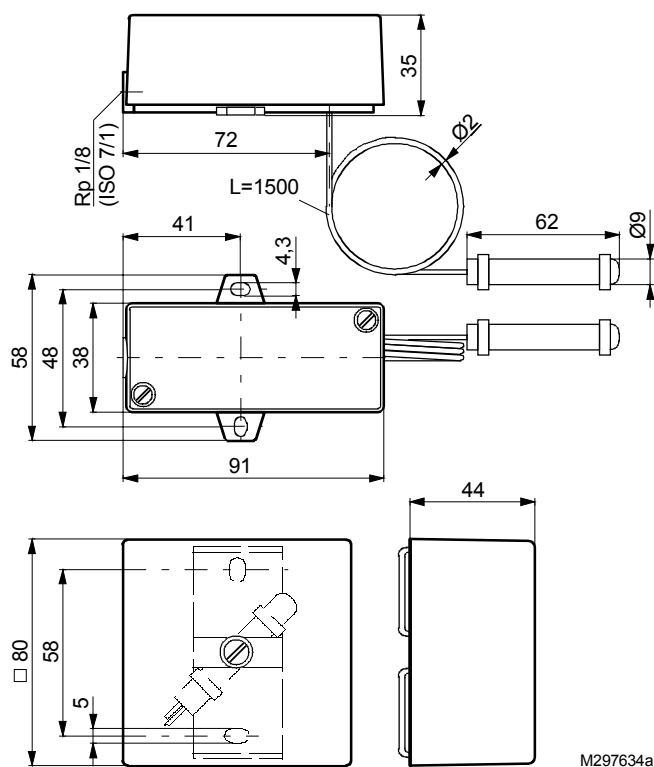
### Technical information

Technical manual: *centair* system 304991 003

### Connection diagram

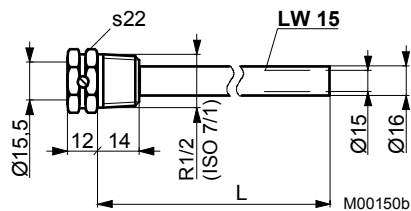


## Dimension drawing

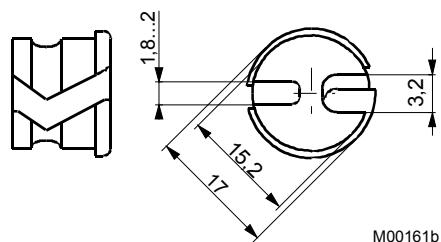


## Accessories

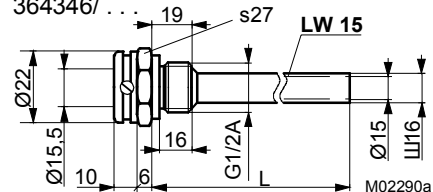
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