

**431200 – 431204 (plastic housing)**  
**431210 – 431214 (aluminium housing)**



## Application

for electrical transmission of air temperature, with a platinum resistor PT 100 for measurement of air temperature. The outgoing analogue signal can be used for meteorological purposes or as input signal for control and regulation applications.

## Construction and mode of operation

PT 100 outgoing electronic signal of actual air temperature will be transformed into a proportional standardised electrical output. The water resistant housing of the sensor will protect the electronic against the influence of the weather. The sensing element protection against dust is achieved by using metal cover. The series 43120x has a plastic housing, series 43121x – aluminium.

**Technical Data:**

<b>measuring range</b>	: -30 ... 70°C
<b>accuracy</b>	
431200, 431210	: ± (0.10 K + 0.0017 x  t ), t = temperature °C (direct PT100 output)
other sensors	: ± 0.3 K (-30...70 °C)
<b>settling time</b>	: approx. 10 sec.
<b>electronic output:</b>	
431200, 431210	: Pt100
431201, 431211	: 0 ... 1 V, load resistance > 10 kOhm
431202, 431212	: 0 ... 10 V, load resistance > 10 kOhm
431203, 431213	: 0 ... 20 mA, load resistance < 500 Ohm, 0 ... 10 V, load resistance > 10 kOhm
431204, 431214	: 4 ... 20 mA, load resistance < 500 Ohm, 0 ... 10 V, load resistance > 10 kOhm
<b>operating voltage</b>	
431200, 431210	: no specified
431201, 431211	: 10,5...28 VDC
431202, 431212	: 10,5...28 VDC
431203, 431213	: 13...28VDC
431204, 431214	: 13...28VDC
<b>operating current</b>	
431200, 431210	: 0,5 mA
431201, 431211	: max. 9 mA
431202, 431212	: max. 9 mA
431203, 431213	: max. 40mA
431204, 431214	: max. 40mA
<b>mounting</b>	: clamping diameter 12 mm, : on vertical walls of plastic housing two mounting holes diameter 4 mm. : on vertical walls of aluminium housing – special holder (order separately).
<b>operating temperature</b>	: -40 ... 80 °C
<b>protecting</b>	: IP 55 for plastic housing, IP65 for sensing element : IP 65 for aluminium housing, IP65 for sensing element
<b>cable</b>	
431200, 431210	: LiYCY 4 x 0.2 mm <sup>2</sup>
431201, 431211	: LiYCY 4 x 0.2 mm <sup>2</sup>
431202, 431212	: LiYCY 4 x 0.2 mm <sup>2</sup>
431203, 431213	: LiYCY 6 x 0.2 mm <sup>2</sup>
431204, 431214	: LiYCY 6 x 0.2 mm <sup>2</sup>
<b>Dimension</b>	
Plastic housing	
431200	: 50x52x40mm, sensing element holder: 170mm x Ø6,0 mm
431201-431204	: 115x60x40mm, sensing element holder: 170 mm x Ø6,0 mm
aluminium housing	
431210-431214	: 114x60x35mm, sensing element holder: 170 mm x Ø6,0 mm
<b>weight</b>	
431400, 431410	: approx. 150g
other sensors	: approx. 350g

## Installation & Maintenance

It is recommended to mount the sensing element of temperature sensor inside of radiation shield 439101 (natural ventilation), 439102 (ventilation with use of the 12VDC-cooler) or other compatible, protected from direct sunlight as well as the precipitation. Whenever possible, sensors should be installed at a height of 7 ft. (2 meters) or greater over earth or sod enough far away from any concrete or other hard-surfaced area and not closer to any other object than four times the height of the object above the instrument shelter or remote sensors. Avoid roof installations if possible. If it is necessary to roof-mount shelters and sensors, they should not be closer than 30 ft. (9 meters) to any large, vertical reflecting surface (walls, etc.), exhaust fans, or cooling towers. Electronic remote sensors when roof-mounted should be at least 9 ft. (3 meters) or greater above the roof surface. To minimize radiation effects from the roof, they can also be mounted on a horizontal boom so that they will extend from the side of the building roof or tower assembly. Because of the interchangeability and the ease with which the elements can be replaced, it is recommended that the element be examined every two to three years to maintain accuracy. We can examine it in our labor in accordance to DIN EN 10204.



Example: radiation shield 439102 and T/H-sensor 431200

**Connection:**

**431200, 431210**

Position	Connection
1	PT100 power supply
2	PT100 signal output +
3	PT100 signal output -
4	PT100 supply ground

**431201, 431211**

Position	Connection
1	supply 10,5 ...28 VDC
2	supply ground
3	0...1 V output
4	output ground

**431202, 431212**

Position	Connection
1	supply 10,5 ...28 VDC
2	supply ground
3	0...10 V output
4	output ground

**431203, 431213**

Position	Connection
1	supply 13 ...28 VDC
2	supply ground
3	0...10 V output
4	output ground
5	0...20mA output
6	output ground

**431204, 431214**

Position	Connection
1	supply 13 ...28 VDC
2	supply ground
3	0...10 V output
4	output ground
5	0...20mA output
6	output ground

The Fischer company reserves the right to make changes/improvements to their products and to their specifications at any time without prior notice to anyone.



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