



# IP65 Active Duct Temperature Transmitter TDF 420

Jan.08



TDF



TDF with Display

## Features

- Pre-calibrated for ease of commissioning
- Flange plate for adjust of penetration depth
- Different length of probes
- Pt100 Class B accuracy
- 5 different temperature ranges as standard
- Quick locking screws
- Head mounted electronics
- Display for actual temperature as option
- Reverse polarity protected
- Loop-powered (not display version)

## Application

The Duct Temperature Sensor TDF 420 is to used to sense temperature in airflows and gaseous media, e.g. in ventilation and air conditioning ducts:

Typical examples being:

- Return or supply air temperature control
- Supply air high or low limit

## Design Features

The TDF 420 sensing element is fitted into a xxx mm long probe.

The rated IP65 enclosure quick-locking screws and mounting flange included.

## Function

The sensing element is a Pt100b.

The element change its resistance proportional to temperature and the electronics convert this resistance to 4-20mA

The voltage outputs are short-circuit proof against ground wire.

Applying voltage supply to the output terminals will destroy the device.

## Ordering Codes

<b>TDF 420/50/50</b>	4-20mA, 0-50°C, <b>50mm</b> length
<b>TDF 420/100/50</b>	4-20mA, 0-50°C, <b>100mm</b> length
<b>TDF 420/150/50</b>	4-20mA, 0-50°C, <b>150mm</b> length
<b>TDF 420/200/50</b>	4-20mA, 0-50°C, <b>200mm</b> length
<b>TDF 420/250/50</b>	4-20mA, 0-50°C, <b>250mm</b> length
<b>TDF 420/300/50</b>	4-20mA, 0-50°C, <b>300mm</b> length
<b>/D</b>	8-digit display

Other Standard Measurements Range available:

-50...+50°C    0...100°C    0...+150°C    -20...150°C

## Technical Data

**Measuring range**    0...+50°C    0...100°C    0...150°C  
                              -50...+50°C    -20...+150°C

**Linearity error**    0,6% of present range

**Accuracy**

**Zero point drift**    0,6%/10K

**Voltage drift**    0,6%/10K

**Auxiliary power influen** 0,2%/V

**Linearisation**    Temperature linear according IEC751

**Power Supply**    14-35Vdc

**Connection**    2-wire screened cable  
                              screw terminals 0,14 to 1,5mm<sup>2</sup>  
                              3-wire for display-version

**Humidity**    max 95% RH non-condensing

**Protection Class**    IP65

**Housing**    Plastic, polyamide 30% glass-globe-reinforced **with quick-locking screws**.  
                              Colour pure white (similar RAL9010)

**Ambient temperature** -30...+70°C Transducer

**Probe**    Stainless steel 6mm

**Cable union**    M16, including strain relief

**Dimension**    64x72x39,4mm exclusive gland

This product meets the requirement of CE-approval

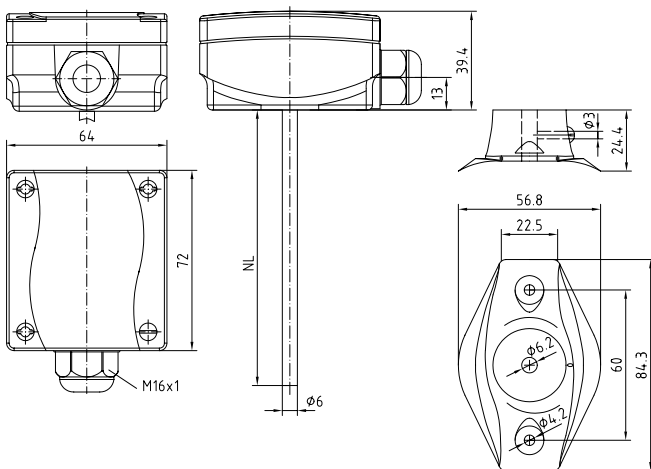


## Mounting and Installation

The following installation advice should be observed:

- Supply air temperature sensing;  
The sensor should be a minimum distance of 1,5m from heater battery.
- Return air temperature sensing;  
The sensor upstream of the extract fan so as to be representative of the room temperature
- Supply air low limit sensing;  
The sensor should be as close to discharge as possible
- Avoid duct locations where stratification may occur
- The sensor should be located away from any obstructions that could interfere with removal for servicing or replacement

## Dimensions



NL = 50, 100, 150, 200, 250, 300 mm (probes)

## Installation and Connection Details

All connections to DDC controllers, data recorders etc. should be made using screened cable.

Normally, the screen should be earthed at one end only (usually the controller end) to avoid earth hum loops which can create noise.

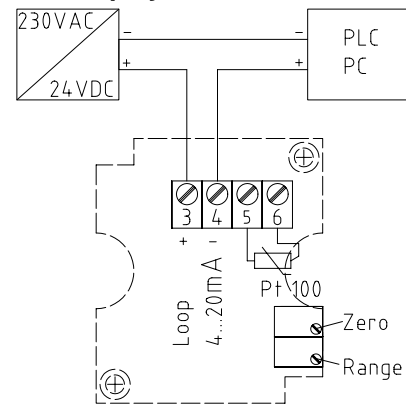
Low voltage signal and supply cables should be routed separately from high voltage or mains cabling.

Separate conduit or cable trays should be used.

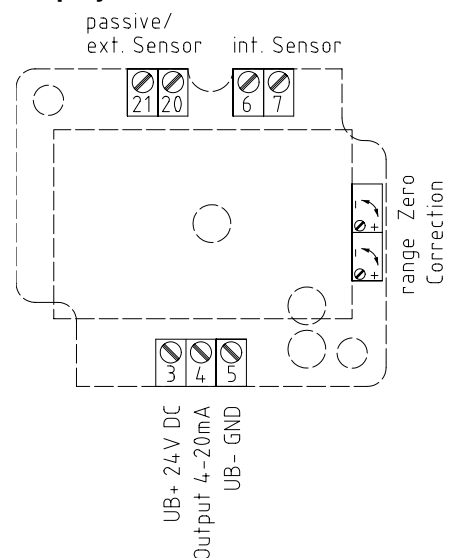
Where possible, the controller's earth should be connected to a FUNCTIONAL EARTH, rather than the mains safety earth. This will provide better immunity to high frequency noise.

Most modern buildings have a separate earth for this purpose

### 4-20mA without display



### 4-20mA with display



## Supply Voltage

For operating voltage reverse polarity protection, a one-way rectifier or reverse polarity protection diode is integrated in this device variant.

Operating dc-voltage input UB+ is to be used for 15-36Vdc supply and UB- or GND for ground wire.