

**KFF-20...**

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## **Air duct temperature and humidity sensor**



### **Summary**

The KFF-20... and KFTF-20... are an air duct temperature and relative humidity sensors for universal use in the HVAC sector.

### **Application**

- HVAC systems – air duct temperature and humidity measuring

### **Function**

The sensor measures temperature and relative humidity of air and other non-aggressive gases. It is used in refrigeration, air conditioning and clean room technology as well as in residential and public buildings. The temperature and humidity sensor signals are converted into active signals 0..10 V or 4...20 mA.

Relative humidity is measured by a capacitive sensor. The sensor is protected by an exchangeable diaphragm filter.

The sensors are intended for operating in a normal and chemically non-aggressive environment. They do not need any servicing or maintenance.

The sensors are fixed to the duct by means of an included flange.

### **Technical data**

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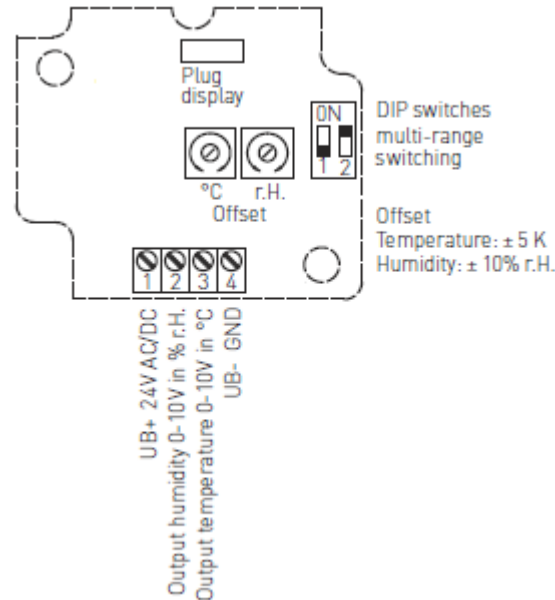
Power

24 V AC ( $\pm 20\%$ ) and 15...36 V DC ( $\pm 10\%$ ) for –U  
(voltage output 0...10 V)  
15...36 V DC ( $\pm 10\%$ ) for –I (current output 4...20  
mA)

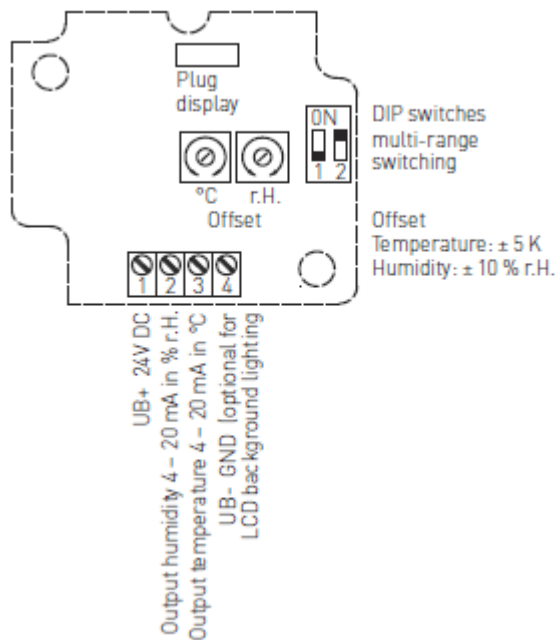
|                                   |  |
|-----------------------------------|--|
| Operating range:                  |  |
| - temperature                     | -35 ...+80 °C  |
| - humidity                        | 0...95% rH   |
| Measuring range:                  |  |
| - temperature                     | -35 ...+35 °C; -35 ...+75 °C; 0 ...+50 °C;   |
|                                   | 0 ...+80 °C (see table below)  |
| - humidity                        | 0...100% rH  |
| Deviation                         | <b>±2 % rH (20...90 % at 20°C),</b><br><b>otherwise ±3 %</b><br>±0.8 K at 20 °C (depending on installation conditions) |
| Long-term stability               | ±1% per year   |
| Storage and transport temperature | -25...+50 °C   |
| Operating temperature             | -5...+55 °C  |
| Protecting tube                   | stainless steel, Ø 16 x 225 mm   |
| Protection class                  | III (according to EN 60730)  |
| Protection degree                 | IP 65 (according to EN 60529)  |
| Terminals                         | screw terminals for wires 0,14 – 1,5 mm <sup>2</sup>   |
| Cover                             | polyamid reinforced with 30 % glass fiber, colour similar to RAL9010   |
| Dimensions                        | see below  |

## Terminals

### KFTF-20U



### KFTF-20I



- |   |   |
|---|---|
| <p><b>KFF-20U</b></p> <p>1 +UB 24V AC/DC</p> <p>2 Output humidity in % r.H. 0...10V</p> <p>3 Free</p> <p>4 -UB-GND</p>                              | <p><b>KFF-20I</b></p> <p>1 +UB 24 V DC</p> <p>2 Output humidity in % r.H. 4...20 mA</p> <p>3 Free</p> <p>4 -UB-GND (optional for backlighting)</p>                                |
| <p><b>KFTF-20U</b></p> <p>1 +UB 24V AC/DC</p> <p>2 Output humidity in % r.H. 0...10V</p> <p>3 Output temperature in °C 0...10V</p> <p>4 -UB-GND</p> | <p><b>KFTF-20I</b></p> <p>1 +UB 24 V DC</p> <p>2 Output humidity in % r.H. 4...20 mA</p> <p>3 Output temperature in °C 4...20 mA</p> <p>4 -UB-GND (optional for backlighting)</p> |

| Temperature measuring ranges (adjustable) | DIP 1 | DIP 2 |
|---|-------|-------|
| -35 ... +75 °C                            | ON    | ON    |
| -35 ... +35 °C                            | OFF   | OFF   |
| 0 ... +50 °C (default)                    | OFF   | ON    |
| 0 ... +80 °C                              | ON    | OFF   |

**Type table**

| Type    | Output rH | Output t |
|---------|-----------|----------|
| KFF-20I | 4...20 mA | -        |

|                 |           |           |
|-----------------|-----------|-----------|
| <b>KFF-20U</b>  | 0...10 V  | -         |
| <b>KFTF-20I</b> | 4...20 mA | 4...20 mA |
| <b>KFTF-20U</b> | 0...10 V  | 0...10 V  |

Optional with display.

## Dimensions

