



RKFTP/A

Humidity transducer with passive temperature output for ducts

Measuring size: temperature, rel. humidity

Output: 0-10 V, 4-20 mA, Relay, passive sensor

Highlights: easy to install with included mounting flange



Description

The RKFTP/A duct humidity transducer registers the relative humidity 0...100% r.h. using a capacitive sensor and converts this measured value into a linear output signal 0-10 V respectively 4-20 mA. An additional passive resistive sensor is available for measuring temperature.

As an option the device has a potential-free changeover contact and a backlit display.

The display content can be rotated in 90° steps using a menu and the measured value, the switching threshold set, the state of the respective relay, the MIN/MAX measured values for the selected intervals (1 h / 6 h / 12 h / 24 h) etc. can be read out. In addition the humidity measuring device has a heating function to protect the sensor at high humidity 95...99% r.h.. If the relative humidity exceeds the threshold value set ex-works for more than 10 minutes the heating function is activated. The sensor is heated for a limited time and thus dried and protected against condensation. During the heating and the subsequent temperature balancing phase the output signal is kept stable at the last measured value before the heating function was triggered.

The humidity sensor is very well protected against contamination by a screwable sintered filter and can, if required, be finely calibrated in situ using an offset controller.



Technical Specifications

Measurement range r.H.	0-100% r.H.
Measurement range temp.	-20...+80°C
Accuracy humidity	±3% r.H. (30-70% r.H., else ±5% r.H., at 20°C)
Temperature dependency	±0,02% r.H. / K (voltage output), ±0,04% r.H. / K (current output)
Long term stability	±1%/year
Sensor	capacitive humidity sensor; Pt100, Pt500, Pt1000, Ni1000, KTY, NTC, LM235Z (other on request)
Sensor protection	screwable stainless steel sinter filter, condensation protection by heating function in the range of 95...99% r.H.
Flow rate	< 2 m/s
Supply voltage analog 0-10 V	24 V AC/DC (±5%)
Supply voltage analog 4-20 mA	15...36 V DC (U _{min} = 15 V + R _{Load} *0,02A)
Current consumption at 0-10 V	typ. 10 mA, 30 mA peak current consumption for 50 ms at switching moment at option relay
Current consumption at 4-20 mA	max. 20 mA / output, 40 mA peak current consumption for 50 ms at switching moment at option relay
Analogue output 0-10 V	3-wire connection, load current < 0,1 mA
Analogue output 4-20 mA	2-wire connection (transmitter), max. R _{Load} (Ohm) = (+U _b - 15 V) / 0,02 A
Alarm output	1 x potential-free change-over contact, 48 V, 1 A
Switching Hysteresis Relay	2% of the selected scaling (without display), 0,5...5% of the selected scaling adjustable (with display)
Electrical connection	screw terminals max. 1,5 mm ²
Housing	Polycarbonate PC UL 94 V0 with hinge locks, color signal white similar to RAL 9003
Cable gland	PG11 high-strength cable gland with strain relief
Display	optional LCD display with backlight on/off/auto
Material	Protection tube: stainless steel V2A
Dimensions	Housing: L 89 x W 80 x H 47 mm, Protection tube: Ø 16 x 190 mm
Protection type	Housing/electronic: IP65, Sensor: IP30
Protection class	III
Working range r.H.	0...98% r.H. in contaminant-free, non-condensing air
Working temperature	Probe: -20...+80°C, Electronic: -20...+70°C
Storage temperature	-20...+50°C
Installation	mounting flange (in scope of delivery)
Approvals	CE, EAC, RoHS



Variants

Article Number				
Humidity	Temperature	Output r.H.	Output temperature	Version
RKFTP/A-I10				
0-100% r.H.	-20...+80°C	4-20 mA	Pt100	without display
RKFTP/A-I10D				
0-100% r.H.	-20...+80°C	4-20 mA	Pt100	with display
RKFTP/A-I20				
0-100% r.H.	-20...+80°C	4-20 mA	Pt1000	without display
RKFTP/A-I20D				
0-100% r.H.	-20...+80°C	4-20 mA	Pt1000	with display
RKFTP/A-IR10				
0-100% r.H.	-20...+80°C	4-20 mA, changer	Pt100	without display
RKFTP/A-IR10D				
0-100% r.H.	-20...+80°C	4-20 mA, changer	Pt100	with display
RKFTP/A-U10				
0-100% r.H.	-20...+80°C	0-10 V	Pt100	without display
RKFTP/A-U10D				
0-100% r.H.	-20...+80°C	0-10 V	Pt100	with display
RKFTP/A-U20				
0-100% r.H.	-20...+80°C	0-10 V	Pt1000	without display
RKFTP/A-U20D				
0-100% r.H.	-20...+80°C	0-10 V	Pt1000	with display
RKFTP/A-UR10				
0-100% r.H.	-20...+80°C	0-10 V, changer	Pt100	without display
RKFTP/A-UR10D				
0-100% r.H.	-20...+80°C	0-10 V, changer	Pt100	with display
RKFTP/A-UR20				
0-100% r.H.	-20...+80°C	0-10 V, changer	Pt1000	without display
RKFTP/A-UR20D				
0-100% r.H.	-20...+80°C	0-10 V, changer	Pt1000	with display



Accessories



SWS/A

Radiation and weather protection



Dimensional Drawing

