



RRFTP/A

Humidity transducer with passive temperature output for indoors

Measuring size: rel. humidity

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

Highlights: modern housing design, on-wall or on flush-mounted box



Description

The RRFTP/A humidity transducer in the modern room design housing 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. A 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 a certain period of time 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 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.	0...+50°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	mounted inside housing, condensation protection by heating function in the range of 95...99% r.H.
Supply voltage analog 0-10 V	24 V AC/DC (±5%)
Supply voltage analog 4-20 mA	15...36 V DC ($U_{bmin} = 15 V + R_{Load} \cdot 0,02 A$)
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	ABS polyman, colour signal white like RAL 9003
Cable gland	on the back or housing side (predetermined breaking point)
Display	optional LCD display with backlight on/off/auto
Dimensions	Housing: L 82 x W 82 x H 25 mm
Protection type	IP30, IP20 (with display)
Protection class	III
Working range r.H.	0...98% r.H. in contaminant-free, non-condensing air
Working temperature	0...+50°C
Storage temperature	-20...+50°C
Installation	on-wall or on flush-mounted box
Approvals	CE, EAC, RoHS



Variants

Article Number				
Humidity	Temperature	Output r.H.	Output temperature	Version
RRFTP/A-I10				
0-100% r.H.	0...+50°C	4-20 mA	Pt100	without display
RRFTP/A-I10D				
0-100% r.H.	0...+50°C	4-20 mA	Pt100	with display
RRFTP/A-I20				
0-100% r.H.	0...+50°C	4-20 mA	Pt1000	without display
RRFTP/A-I20D				
0-100% r.H.	0...+50°C	4-20 mA	Pt1000	with display
RRFTP/A-I30				
0-100% r.H.	0...+50°C	4-20 mA	Ni1000 (glass passivated)	without display
RRFTP/A-I40				
0-100% r.H.	0...+50°C	4-20 mA	Ni1000TK5000 (glass passivated)	without display
RRFTP/A-I60				
0-100% r.H.	0...+50°C	4-20 mA	LM235Z	without display
RRFTP/A-I70				
0-100% r.H.	0...+50°C	4-20 mA	NTC20k	without display
RRFTP/A-I80				
0-100% r.H.	0...+50°C	4-20 mA	NTC10k	without display
RRFTP/A-IR10				
0-100% r.H.	0...+50°C	4-20 mA, changer	Pt100	without display
RRFTP/A-IR10D				
0-100% r.H.	0...+50°C	4-20 mA, changer	Pt100	with display
RRFTP/A-IR20				
0-100% r.H.	0...+50°C	4-20 mA, changer	Pt1000	without display
RRFTP/A-IR20D				
0-100% r.H.	0...+50°C	4-20 mA, changer	Pt1000	with display
RRFTP/A-IR30				
0-100% r.H.	0...+50°C	4-20 mA, changer	Ni1000 (glass passivated)	without display
RRFTP/A-IR40				



0-100% r.H.	0...+50°C	4-20 mA, changer	Ni1000TK5000 (glass passivated)	without display
RRFTP/A-IR60				
0-100% r.H.	0...+50°C	4-20 mA, changer	LM235Z	without display
RRFTP/A-IR70				
0-100% r.H.	0...+50°C	4-20 mA, changer	NTC20k	without display
RRFTP/A-IR80				
0-100% r.H.	0...+50°C	4-20 mA, changer	NTC10k	without display
RRFTP/A-U10				
0-100% r.H.	0...+50°C	0-10 V	Pt100	without display
RRFTP/A-U10D				
0-100% r.H.	0...+50°C	0-10 V	Pt100	with display
RRFTP/A-U20				
0-100% r.H.	0...+50°C	0-10 V	Pt1000	without display
RRFTP/A-U20D				
0-100% r.H.	0...+50°C	0-10 V	Pt1000	with display
RRFTP/A-U30				
0-100% r.H.	0...+50°C	0-10 V	Ni1000 (glass passivated)	without display
RRFTP/A-U40				
0-100% r.H.	0...+50°C	0-10 V	Ni1000TK5000 (glass passivated)	without display
RRFTP/A-U60				
0-100% r.H.	0...+50°C	0-10 V	LM235Z	without display
RRFTP/A-U70				
0-100% r.H.	0...+50°C	0-10 V	NTC20k	without display
RRFTP/A-U80				
0-100% r.H.	0...+50°C	0-10 V	NTC10k	without display
RRFTP/A-UR10				
0-100% r.H.	0...+50°C	0-10 V, changer	Pt100	without display
RRFTP/A-UR10D				
0-100% r.H.	0...+50°C	0-10 V, changer	Pt100	with display
RRFTP/A-UR20				
0-100% r.H.	0...+50°C	0-10 V, changer	Pt1000	without display
RRFTP/A-UR20D				
0-100% r.H.	0...+50°C	0-10 V, changer	Pt1000	with display



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RRFTP/A-UR40				
0-100% r.H.	0...+50°C	0-10 V, changer	Ni1000TK5000 (glass passivated)	without display
RRFTP/A-UR60				
0-100% r.H.	0...+50°C	0-10 V, changer	LM235Z	without display
RRFTP/A-UR70				
0-100% r.H.	0...+50°C	0-10 V, changer	NTC20k	without display
RRFTP/A-UR80				
0-100% r.H.	0...+50°C	0-10 V, changer	NTC10k	without display

Accessories



DT/G
Digital display



FS9510
Table stand for room housing



motrona AX350
AX350: touchMATRIX® Process Indicator with two 16 bit Analog Inputs



motrona AX020
AX020: Process Indicator for Analog Signals



Dimensional Drawing

