RDF/A

Humidity transducer for ceiling installation

Measuring size: rel. humidity

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

Highlights: in the false ceiling by 2 tension springs

MADE IN GERMANY   EHL   CE   RoHS COMPLIANT

Description

The RDF/A humidity transducer registers the relative humidity 0...100% r.h. of the air in the environment using a capacitive sensor and converts this measured value into a standard output signal 0-10 V respectively 4-20 mA.

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. The unobtrusive housing with a clip fastening and reverse polarity protected socket is suitable for the quick assembly in intermediate ceilings. 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 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

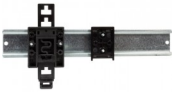|	
Measurement range r.H.	0-100% r.H.
Accuracy	±3% r.H. (30%...70% r.H., else ±5% r.H. at 20°C)
Temperature dependency	±0,02% r.H. / K (voltage output), ±0,04% r.H. / K (current output)
Long term stability	±1%/year
Sensor	capacitive humidity sensor
Sensor protection	mounted inside housing, condensation 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 (Ubmin = 15 V + RLoad*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. RLoad(Ohm) = (+Ub - 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 mm²
Cable	1 m PVC cable
Housing	Sensor: aluminium, colour signal white like RAL 9003, Electronic: 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
Dimensions	Housing: L 89 x W 80 x H 47 mm, Cable: 1 m PVC
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	in the false ceiling by 2 tension springs
Approvals	CE, EAC, RoHS

Variants

Article Number			
Humidity	Output r.H.	Cable length	Version

RDF/A-I02			
0-100% r.H.	4-20 mA	1 m	without display

RDF/A-I02D			
0-100% r.H.	4-20 mA	1 m	with display

RDF/A-IR02			
0-100% r.H.	4-20 mA, changer	1 m	without display

RDF/A-IR02D			
0-100% r.H.	4-20 mA, changer	1 m	with display

RDF/A-U02			
0-100% r.H.	0-10 V	1 m	without display

RDF/A-U02D			
0-100% r.H.	0-10 V	1 m	with display

RDF/A-UR02			
0-100% r.H.	0-10 V, changer	1 m	without display

RDF/A-UR02D			
0-100% r.H.	0-10 V, changer	1 m	with display

Accessories

SB/E

Snap-on mounting for DIN rails

motrona AX350

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

motrona AX020

AX020: Process Indicator for Analog Signals

Dimensional Drawing

KL

24,5

30

Ø 23

80

80

89

14,5

16,5

63

65

PG11 / SW22

Ø 4,25