FuehlerSysteme eNET International
Die Marke für Sensorik

EN **DATA SHEET**

RRF/A

Humidity transducer for indoors

Measuring size: rel. humidity
Output: 0-10 V, 4-20 mA, Relay
Highlights: modern housing design, on-wall or on flush-mounted box

MADE IN GERMANY

Description

The RRF/A room 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 linear 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. 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 in modern room design 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.
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
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			
Supply voltage	Humidity	Output r.H.	Version
RRF/A-I			
15...36 V DC	0-100% r.H.	4-20 mA	without display
RRF/A-ID			
15...36 V DC	0-100% r.H.	4-20 mA	with display
RRF/A-IR			
15...36 V DC	0-100% r.H.	4-20 mA, changer	without display
RRF/A-IRD			
15...36 V DC	0-100% r.H.	4-20 mA, changer	with display
RRF/A-U			
24 V AC/DC	0-100% r.H.	0-10 V	without display
RRF/A-UD			
24 V AC/DC	0-100% r.H.	0-10 V	with display
RRF/A-UR			
24 V AC/DC	0-100% r.H.	0-10 V, changer	without display
RRF/A-URD			
24 V AC/DC	0-100% r.H.	0-10 V, changer	with display

Accessories

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