RDFT/A

Humidity / temperature transducer for ceiling installation

Measuring size: temperature, dew point temperature, rel. humidity, abs. humidity, mixing ratio
Output: 2 x 0-10 V, 2 x 4-20 mA, Relay
Highlights: heating function for condensation protection, easy-to-install surface-mounted housing

MADE IN GERMANY

Description

The RDFT/A humidity and temperature transducer registers the temperature and, optionally, the relative humidity, absolute humidity, the mixing ratio or the dew point of the air in the environment 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 changeover contact can be defined for one of the two measured values.
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 value measured in addition to the temperature can be selected from the 4 parameters % r.h., g/m³, g/kg, dp can easily be selected per DIP switch.
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 and temperature 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.

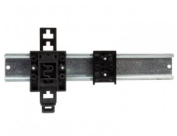
Technical Specifications

Measurement range r.H.	0-100% r.H.
Measurement range abs. humidity	0-50 g/m³, 0-80 g/m³ (calculated) selectable by DIP switch
Measurement range air fuel ratio	0-50 g/kg, 0-80 g/kg (calculated) selectable by DIP switch
Measurement range dew point	-20...+50°C DP, -20...+80°C DP, 0...+50°C DP (calculated) selectable by DIP switch
Measurement range temp.	-20...+80°C
Scales	-30...+70°C, -20...+80°C, 0...+50°C, 0...+100°C selectable by DIP switch
Accuracy humidity	±3% r.H. (30-70% r.H., else ±5% r.H., at 20°C)
Accuracy temperature	±0,5 K
Temperature dependency	±0,02% r.H. / K (voltage output), ±0,04% r.H. / K (current version); ±0,05°C / 10 K (voltage version), ±0,07°C / 10 K (current output)
Long term stability	±1%/year
Sensor	Combined electronic humidity and temperature 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	Temperature: 2K (without display), 0,5...5K adjustable (with display); Other measuring sizes: 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	Temperature	Output	Version
RDFT/A-I02			
0-100% r.H.	-20...+80°C	2 x 4-20 mA	without display
RDFT/A-I02D			
0-100% r.H.	-20...+80°C	2 x 4-20 mA	with display
RDFT/A-IR02			
0-100% r.H.	-20...+80°C	2 x 4-20 mA, changer	without display
RDFT/A-IR02D			
0-100% r.H.	-20...+80°C	2 x 4-20 mA, changer	with display
RDFT/A-U02			
0-100% r.H.	-20...+80°C	2 x 0-10 V	without display
RDFT/A-U02D			
0-100% r.H.	-20...+80°C	2 x 0-10 V	with display
RDFT/A-UR02			
0-100% r.H.	-20...+80°C	2 x 0-10 V, changer	without display
RDFT/A-UR02D			
0-100% r.H.	-20...+80°C	2 x 0-10 V, changer	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