



FS3130

Humidity transmitter duct, continuous heated sensor, active output (0-10 V or 4-20 mA)

Measuring size: temperature, dew point temperature, wet bulb temperature, humidity rel., abs. humidity, mixing ratio

Output: 3 x 0-10 V, 3 x 4-20 mA, Relay

Highlights: continuous heated sensor, especially for high humidity areas, aggressive media (chlorine, ammonia)



Description

The humidity transmitter FS3130 detects the temperature and relative humidity in air ventilation ducts and converts the measured values into an active 0-10 V or 4-20 mA output signal. In addition, a further thermodynamic indicator calculated from the measured values can be transmitted at the third output, e.g. mixing ratio, absolute humidity, dew point temperature or wet bulb temperature are output. The third output signal can be selected via DIP switch.

The moisture meter has a continuous heating function and is specially designed for use in the high humidity range of 95 ... 99% relative humidity. Thereby, a much faster reaction rate with changes in relative humidity, even in the range > 95% r.h. is reached. The combined digital humidity and temperature sensor is heated approx. 3K above ambient temperature. From the measured rel. humidity at this overtemperature, chip temperature of the sensor and the ambient temperature (temperature measuring element in the second probe) is calculated and output the "true" relative humidity.

The sensor technology is optimally protected against contamination by a screwable sintered filter.

As an option, a potential-free changeover contact and / or a backlit LCD display are available.

The contents of the backlit display can be rotated by the menu in 90° increments. The actual value, the set switching threshold, the relay status, the MIN / MAX measured values of the selected interval, etc. can be read off.

In addition, the switching threshold, hysteresis, offset value, etc. can be set directly on the device.



Technical Specifications

Measurement range r.H.	0-100% r.H.
Measurement range abs. humidity	0-20 g/m ³ , 0-25 g/m ³ (calculated) selectable by DIP switch
Measurement range air fuel ratio	0-20 g/kg, 0-25 g/kg (calculated) selectable by DIP switch
Measurement range dew point	-20...+50°C DP, 0...+50°C DP (calculated) selectable by DIP switch
Measurement range wet bulb	-30...+30°C, -20...+50°C (calculated)
Measurement range temp.	-20...+80°C
Scales	-20...+80°C, -0...+50°C, -50...+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	screwable stainless steel sintered filter, condensation protection by continuous heating approx. 3 K above ambient temperature
Flow rate	< 2 m/s
Supply voltage	24 V AC/DC (±5%)
Current consumption at 0-10 V	typ. 50 mA
Current consumption at 4-20 mA	typ. 50 mA + max. 20 mA / output
Analogue output 0-10 V	3-wire connection, load current < 0,1 mA, min. load resistance 100 kOhm
Analogue output 4-20 mA	3-wire connection, 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 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 210 mm
Protection type	Housing/electronic: IP65, Sensor: IP30
Protection class	III
Working range r.H.	0...99% r.H., non-condensing air, slight pollutant concentration
Working temperature	-20...+70°C, -20...+50°C (Display)
Storage temperature	-20...+50°C
Installation	mounting flange (in scope of delivery)
Approvals	CE, EAC, RoHS



Variants

Article Number			
Humidity	Temperature	Output	Equipment
FS3130-I-H1T1-DR			
0-100% r.H.	-20...+80°C	3 x 4-20 mA	Display, Relay
FS3130-I-H1T1-R			
0-100% r.H.	-20...+80°C	3 x 4-20 mA	Relay
FS3130-U-H1T1-DR			
0-100% r.H.	-20...+80°C	3 x 0-10 V	Display, Relay
FS3130-U-H1T1-R			
0-100% r.H.	-20...+80°C	3 x 0-10 V	Relay



Dimensional Drawing

