

DX 310



Digital combined temperature and relative humidity probe



- Interchangeable
- Low power
- Centesimal temperature and humidity resolution
- Direct mount on meter possible (skipping cable)
- Fast and accurate
- Multi-point relative humidity adjustment
- Optional DAkKS/ACCREDIA certification available

DESCRIPTION

DX 310 is a digital combined temperature and relative humidity probe for the PRO D01 / PRO D05 handheld meters.

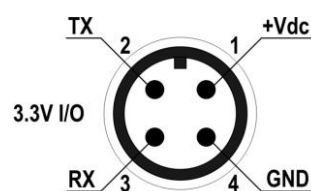
The probe supplies the following calculated quantities:

- Dew point
- Wet bulb temperature
- Absolute and specific humidity
- Mixing ratio
- Specific enthalpy
- Partial vapor pressure
- Frost point temperature
- Saturation vapor pressure above water and above ice

The probe is supplied factory-calibrated in multiple points for relative humidity, and it is ready to use. The probe can be optionally supplied with a DAkKS/ACCREDIA calibration certificate.

The calibration data are stored in the probe, allowing for interchangeability without the need for recalibration.

Equipped with 4-pin M12 connector.

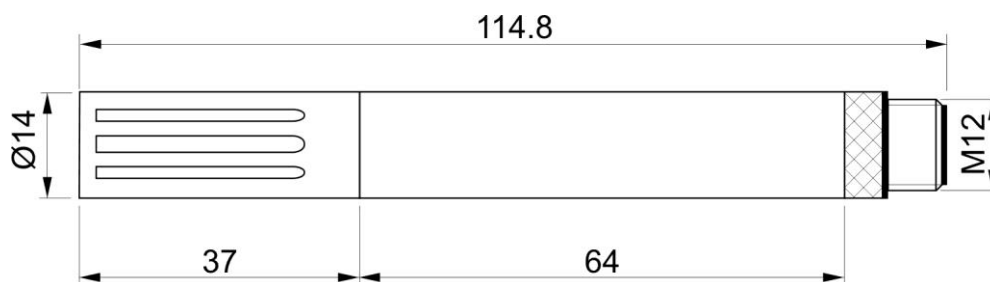


M12 DX 310 sensor pin out

The sensor can either be screwed directly onto the instrument (one-handed operation) or connected with a connection cable.

TECHNICAL SPECIFICATIONS

Sensor	RH	Capacitive, temperature compensated
	Temperature	Pt100
Measuring range	RH	0...100%
	Temperature	-40...+125 °C
Resolution	RH	0.01%
	Temperature	0.01 °C
Accuracy	RH	$\pm 1.2\%$ (0...85%) / $\pm 2\%$ (85...100%) @ T=0...50 °C (1.5 + 1.5% of the measured value)% @ T=remaining range
	Temperature	± 0.1 °C $\pm 0.1\%$ of the measured value
RH response time		10 s (10 → 80 %RH; air speed=2 m/s @ constant temperature)
Long-term drift	RH	± 0.5 %RH/year
	Temperature	± 0.03 °C/year
Adjustment support		Multipoint RH
Calculated quantities		Dew point Wet bulb temperature Absolute humidity Specific humidity Mixing ratio Specific enthalpy Partial vapor pressure Frost point temperature Saturation vapor pressure above water Saturation vapor pressure above ice
Operating conditions		-40...+80 °C / 0...100 %RH
Output		UART (TTL 3.3V): DX-Sensor-Interface
Power consumption		<1 mA typ.
Connection		4-pole M12
Dimensions		Stem: $\varnothing 14$ x 101 mm Overall: $\varnothing 14$ x 114.8 mm
Weight		20 g approx.
Material		Stem and protector cap: PBT



ORDERING CODES

DX 310-00 Digital combined temperature and relative humidity probe in carton box, stem Ø14 x 101 mm.

Art no. 486793

DX 310-L01 Digital combined temperature and relative humidity probe in carton box, stem Ø14 x 101 mm, incl. 1 m PVC connection cable M12

Art no. 486910

SUITABLE INSTRUMENTS

PRO D01 1-channel handheld meter for digital probes. Supplied with 4 x AA alkaline batteries

Art no. 486134

PRO D05.2 2-channel handheld data logger for digital probes. Supplied with 4 NiMH rechargeable batteries, USB cable and software downloadable from Senseca website.

Art no. 486136

PRO D05.3 3-channel handheld data logger for digital probes. Supplied with 4 NiMH rechargeable batteries, USB cable and software downloadable from Senseca website.

Art no. 486137

ACCESSORIES

CABLE-M12-L01 Connection cable M12 5 pole, 1m

Art no. 487020

HD11 Saturated solution for checking Relative Humidity at 11% RH.

Art no. 487623

HD33 Saturated solution for checking Relative Humidity at 33% RH.

Art no. 487624

HD75 Saturated solution for checking Relative Humidity at 75% RH.

Art no. 487625

DX 311



Digital combined temperature and relative humidity probe



- Interchangeable
- Low power
- Centesimal temperature and humidity resolution
- Ergonomic handle
- Fast and accurate
- Multi-point relative humidity calibration
- Optional DAkkS/ACCREDIA certification available

DESCRIPTION

DX 311 is a digital combined temperature and relative humidity probe for the PRO D01 / PRO D05 handheld meters.

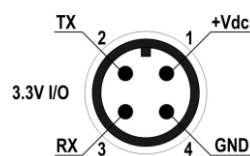
The probe supplies the following calculated quantities:

- Dew point
- Wet bulb temperature
- Absolute and specific humidity
- Mixing ratio
- Specific enthalpy
- Partial vapor pressure
- Frost point temperature
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The probe is supplied factory-calibrated in multiple points for relative humidity, and it is ready to use. The probe can be optionally supplied with a DAkkS/ACCREDIA calibration certificate.

The calibration data are stored in the probe, allowing for interchangeability without the need for recalibration.

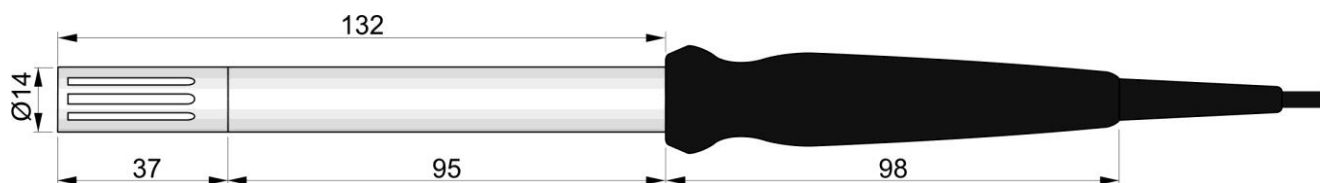
Supplied with 1, 2 or 5 m cable with 4-pin M12 connector.



M12 DX 310 sensor pin out

TECHNICAL SPECIFICATIONS

Sensor	RH	Capacitive, temperature compensated
	Temperature	Pt100
Measuring range	RH	0...100%
	Temperature	-50...+160 °C
Resolution	RH	0.01%
	Temperature	0.01 °C
Accuracy	RH	±1.2% (0...85%) / ±2% (85...100%) @ T=0...50 °C (1.5 + 1.5% of the measured value) % @ T=remaining range
	Temperature	± 0.1 °C ± 0.1% of the measured value
RH response time		10 s (10 → 80 %RH; air speed=2 m/s @ constant temperature)
Long-term drift	RH	±0.5 %RH/year
	Temperature	±0.03 °C/year
Adjustment support		Multipoint RH
Calculated quantities		Dew point Wet bulb temperature Absolute humidity Specific humidity Mixing ratio Specific enthalpy Partial vapor pressure Frost point temperature Saturation vapor pressure above water Saturation vapor pressure above ice
Operating conditions		-50...+160 °C / 0...100 %RH
Output		UART (TTL 3.3V): DX-Sensor-Interface
Power consumption		<1 mA typ.
Connection		4-pole M12 via cable
Dimensions		Stem: Ø14 x 132 mm Handle length 98 mm Cable length: 2, 5 or 10 m
Weight		100 g approx. with 2 m cable
Materials		Stem and protector cap: PBT Handle: Polyamide (PA6-GF30) Cable: PVC



Ordering codes

DX 311 ^{1.}

1.	Cable length	
	-L01	1 m
	-L02	2 m
	-L05	5 m
	-XXX	other length on request

STANDARD ARTICLES

DX 311-L01 Digital combined temperature and relative humidity probe, stem Ø14 x 132 mm, cable length 1 m, in carton box

Art no. 486774

SUITABLE INSTRUMENTS

PRO D01 1-channel handheld meter for digital probes. Supplied with 4 x AA alkaline batteries
Art no. 486134

PRO D05.2 2-channel handheld data logger for digital probes. Supplied with 4 NiMH rechargeable batteries, USB cable and software downloadable from Senseca website.
Art no. 486136

PRO D05.3 3-channel handheld data logger for digital probes. Supplied with 4 NiMH rechargeable batteries, USB cable and software downloadable from Senseca website.
Art no. 486137

ACCESSORIES

CABLE-M12-L01 Connection cable M12 5 pole, 1m
Art no. 487020

HD11 Saturated solution for checking Relative Humidity at 11% RH.
Art no. 487623

HD33 Saturated solution for checking Relative Humidity at 33% RH.
Art no. 487624

HD75 Saturated solution for checking Relative Humidity at 75% RH.
Art no. 487625

DX 330

Digital Indoor Air Quality probe (IAQ)



- Interchangeable
- Low power
- Fast and accurate
- Incorporates high grade rH, CO₂ and VOC sensors
- Premium sensor combination to evaluate air quality in detail
- Adjustable
- Optional DAkKS/ACCREDIA certification available

DESCRIPTION

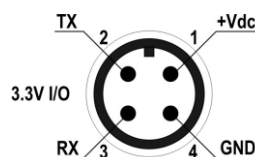
DX 330 is a digital Indoor Air Quality (IAQ) probe for the PRO D01 / PRO D05 handheld meters. The probe measures:

- Temperature
- Relative humidity
- Atmospheric pressure
- CO₂
- VOC index

The probe is supplied factory-calibrated, and it is ready to use. The probe can be optionally supplied with a DAkKS/ACCREDIA calibration certificate.

The calibration data are stored in the probe, allowing for interchangeability without the need for recalibration.

Equipped with 4-pin M12 connector.



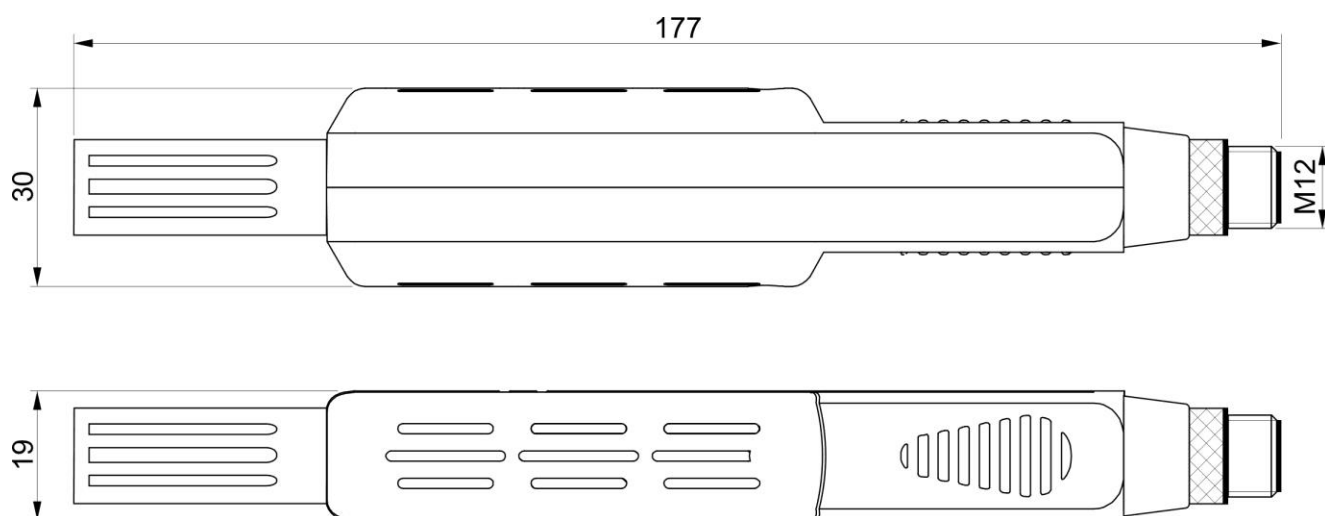
M12 DX 310 sensor pin out

The sensor can either be screwed directly onto the instrument (one-handed operation) or connected with a connection cable.

TECHNICAL SPECIFICATIONS

Sensor	Temperature/RH Pressure CO ₂ VOC	CMOS Piezoresistive Non-Dispersive Infrared (NDIR) Metal-Oxide film
Measuring range	Temperature RH Pressure CO ₂ VOC	-20...+80 °C 0...100% 300...1250 hPa 0...5000 ppm 1...500 (dimensionless index)
Resolution	Temperature RH Pressure CO ₂ VOC	0.1 °C 0.1% 0.1 hPa 1 ppm 1
Accuracy (typ.)	Temperature RH Pressure CO ₂ VOC	±0.1 °C (20...60 °C) / ±0.2 °C (remaining range) ±2% (0...80%RH) / ±3% (80...100%RH) @ T=10...50 °C ±0.5 hPa (300...1100 hPa / -20...65 °C) ± (50 ppm + 3% of the measure) @ 25 °C / 1013 hPa Relative qualitative measurement
Temperature drift	Pressure CO ₂	±0.75 Pa/°C (0...55 °C / 700...1100 hPa) 1 ppm/°C (-20...45 °C)
Long-term drift	Temperature RH Pressure CO ₂	< 0.03 °C/year < 0.25 %RH/year ±0.33 hPa/year 5% of the measure/5 years
Adjustment support		Temperature (offset or 2 points), RH (2 points), CO ₂ (offset or 2 points), pressure (offset)
Response time	Temperature/RH CO ₂	10 s (T ₆₃ with 1 m/s air flow) < 120 s (T ₉₀ with 2 m/s air flow)
Operating conditions		-20...+60 °C / 0...95 %RH non-condensing ^(*)
Output		UART (TTL 3.3V)
Power consumption		< 6 mA typ.
Connection		4-pole M12
Dimensions		177 x 30 x 19 mm
Weight		45 g approx.
Material		ABS

^(*) The sensor shows best performance when operated in 20...80 %RH humidity range. Long term exposure outside the indicated range (especially at high humidity) may temporarily offset the sensor response.



ORDERING CODES

DX 330-00	Digital Indoor Air Quality probe	Art no. 486786
DX 330-L01-00	Digital Indoor Air Quality probe including M12 connection cable 1m	Art no. 488123

SUITABLE INSTRUMENTS

PRO D01	1-channel handheld meter for digital probes. Supplied with 4 x AA alkaline batteries.	Art no. 486134
PRO D05.2	2-channel handheld data logger for digital probes. Supplied with 4 NiMH rechargeable batteries, USB cable and software downloadable from Senseca website.	Art no. 486136
PRO D05.3	3-channel handheld data logger for digital probes. Supplied with 4 NiMH rechargeable batteries, USB cable and software downloadable from Senseca website.	Art no. 486137

ACCESSORIES

CABLE-M12-L01	Connection cable M12 5 pole, 1m	Art no. 487020
HD11	Saturated solution for checking Relative Humidity at 11% RH.	Art no. 487623
HD33	Saturated solution for checking Relative Humidity at 33% RH.	Art no. 487624
HD75	Saturated solution for checking Relative Humidity at 75% RH.	Art no. 487625