



FA 510/515 - Dew point sensor for residual moisture measurement in compressed air and gases



Typical applications:

- Dew point measurement in the compressed air after adsorption dryer, membrane dryer, refrigeration dryer
- Residual moisture/dew point measurement in gases such as oxygen, nitrogen, argon...
- Residual moisture/dew point measurement after granulate dryers in the plastics industry
- Easy integration of dew point measurement in front of machines and systems through IO-Link interface

Special features:

- Extremely stable in the long term
- Condensation-resistant
- Quick adaption time
- Optional with integrated pressure sensor

Recommendation:

Mounting with standard measuring chamber for compressed air up to 16 bar

Advantage: Easy installation via quick coupling increases service life and accelerates response time.

TECHNICAL DATA FA 510/515

Measuring range:	see order code
Accuracy:	± 1 °C at 50...-20 °Ctd ± 2 °C at -20...-50 °Ctd ± 3 °C at -50...-80 °Ctd
Pressure range:	-1...50 bar Special version up to 500 bar
Power supply:	24 VDC (10...36 VDC)
Protection class:	IP 66
EMC:	In acc. with DIN EN 61326-1
Operating temperature:	-20...70 °C
Connection:	M12, 5-pin
Interface:	Modbus-RTU, (RS 485), 4...20 mA, 2...10 V, IO-Link
Readable via Modbus:	- Pressure dew point [°Ctd] - Temperature [°C] - rel. humidity [%rF] - abs. humidity [g/m³] - Degree of humidity [g/kg] - Moisture content V/V [ppmV/V] - Partial vapor pressure [hPa] - Atmospheric dew point [°Ctd.atm]
	Optional: System pressure [bar(g)]
Burden for analogue output:	< 500 Ω
Screw-in thread:	G 1/2" Stainless steel Optional: UNF 5/8", NPT 1/2", NPT 3/8"
Dimensions:	Ø 30 mm, length approx. 130 mm

DESCRIPTION	ORDER NO.
FA 510 dew point sensor for adsorption dryers -80...20 °Ctd incl. factory certificate, 4...20 mA analogue output (3-wire connection) and Modbus-RTU interface	0699 0510
FA 515 dew point sensor for adsorption dryers -80...20 °Ctd incl. factory certificate, 4...20 mA analogue output (2-wire connection)	0699 0515
FA 510 dew point sensor for refrigeration dryer -20...50 °Ctd incl. factory certificate, 4...20 mA analogue output (3-wire connection) and Modbus-RTU interface	0699 0512
FA 515 dew point sensor for refrigeration dryer -20...50 °Ctd incl. factory certificate, 4...20 mA analogue output (2-wire connection)	0699 0517
Connection cables:	
Connection cable for VA/FA series, 5 m	0553 0104
Connection cable for VA/FA sensors, 10 m	0553 0105
Further accessories:	
Standard measuring chamber up to 16 bar	0699 3390
Standard measuring chamber up to 16 bar, 1/2" NPT male thread	0699 3393
High pressure measuring chamber up to 350 bar	0699 3590
Stainless steel bypass measuring chamber for dew point measurement in gases under pressure	0699 3290
CS Service Software for dew point sensors incl. PC connection set (Modbus to USB Interface).	0554 2007
Calibration and adjustment:	
Precision calibration at -40 °Ctd or 3 °Ctd incl. ISO certificate	0699 3396
Additional calibration point freely selectable	0700 7710

FA 510/515 - Dew point sensor

Example order code FA 51x:

0699 0510_B1_C1_D1_E1_F1_G1_I1_Y1

FA 510	
Signal output	
B1	RS 485 (Modbus RTU), 4...20 mA (3-wire)
B2	2...10 V, RS 485 (Modbus RTU)
B3	I/O Link, RS 485 (Modbus RTU)

FA 515	
Signal output	
B1	4...20 mA (2-wire)

Scaling analogue output	
C1	Standard scaling
C2	Special scaling 4...20 mA = 0...x °Ctd, g/m3, ppm, g/kg...
Sensor protection cap	
D1	Stainless steel sintered cap (~ 50 µm)
D2	perforated stainless steel cap
Connection thread	
E1	G1/2"
E2	UNF 5/8"
E3	NPT 1/2"
E4	NPT 3/8"
Maximum pressure	
F1	50 bar
F2	350 bar
F3	500 bar
F4	30 bar (only with Y2)
Surface conditon	
G1	standard version
G2	special cleaning - oil and grease free (e.g. for oxygen applications and so on)
G3	Silicone-free version including special cleaning oil- and grease-free
Connector	
I1	M12 plug (straight)
I2	M12 plug 90° angled
I3	Adapter plug Michell Easidew valve plug DIN 43650 Form C 8 mm (only for FA 515)
Pressure measurement	
Y1	without pressure sensor
Y2	with integrated pressure sensor 0...30 bar (g), Output only via digital interfaces (only with F4, not with E2 and E4), usable for compressed air, nitrogen and argon