



Dew point

FA 510/515 - Dew point sensor

FA 510/515 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

Recommendation:

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

Advantage: Easy installation via quick coupling

- Special features:
- Extremely stable in the long term
  - Analog output 4...20 mA for dew point
  - Condensation-resistant
  - Quick adaption time
  - Pressure-tight up to 350 bar (special version)
  - **NEW:** Modbus-RTU interface
  - **NEW:** Higher resolution of sensor signal due to the improved evaluation electronics
  - **NEW:** Sensor diagnosis on site with a portable device or CS Service Software
  - **Readable via Modbus:**
    - Pressure dew point [°Ctd.]
    - Temperature [°C]
    - rel. humidity [% RH]
    - abs. humidity [g/m³]
    - Degree of humidity [g/kg]
    - Moisture content V/V [ppmV/V]
    - Partial vapour pressure [hPa]
    - Atmospheric dew point [°Ctd.atm]

| 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) or Modbus-RTU interface    | 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) or Modbus-RTU interface  | 0699 0517 |
| <b>Connection cables:</b><br>Connection cable for VA/FA series, 5 m                                                                                             | 0553 0104 |
| Connection cable for VA/FA sensors, 10 m                                                                                                                        | 0553 0105 |
| <b>Option for FA 510:</b><br>Option: analogue output FA 510, special version 2...10 volts                                                                       | Z699 0510 |
| <b>Options for FA 510/515:</b><br>Option: max. pressure FA5xx 350 bar                                                                                           | Z699 0515 |
| Option: max. pressure FA5xx 500 bar                                                                                                                             | Z699 0516 |
| Option: special scaling FA5xx 4...20 mA=___ ... ___ g/m³, ppm etc.                                                                                              | Z699 0514 |
| Option: connection thread FA5xx, 5/8" UNF                                                                                                                       | Z699 0511 |
| Option: surface condition FA 5xx, free of oil & grease                                                                                                          | Z699 0517 |
| <b>Further accessories:</b><br>Standard measuring chamber up to 16 bar                                                                                          | 0699 3390 |
| 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 |
| <b>Calibration and adjustment:</b><br>Precision calibration at -40 °Ctd or 3 °Ctd incl. ISO certificate                                                         | 0699 3396 |
| Additional calibration point freely selectable                                                                                                                  | 0700 7710 |

| TECHNICAL DATA FA 510/515   |                                                                                                                    |
|-----------------------------|--------------------------------------------------------------------------------------------------------------------|
| Measuring range:            | -80...20 °Ctd, -20...50 °Ctd                                                                                       |
| Accuracy:                   | ± 1 °C at 50...-20 °Ctd<br>± 2 °C at -20...-50 °Ctd<br>± 3 °C at -50...-80 °Ctd                                    |
| Pressure range:             | -1...50 bar<br>Special version up to 350 bar                                                                       |
| Power supply:               | 24 VDC (10...36 VDC)                                                                                               |
| Protection class:           | IP 65                                                                                                              |
| EMC:                        | In acc. with DIN EN 61326-1                                                                                        |
| Operating temperature:      | -20...70 °C                                                                                                        |
| Connection:                 | M12, 5-pin                                                                                                         |
| PC connection:              | Modbus-RTU interface (RS 485)                                                                                      |
| Analogue output:            | 4...20 mA = -80...20 °Ctd<br>4...20 mA = -20...50 °Ctd<br>FA 510: 4...20 mA (3-wire)<br>FA 515: 4...20 mA (2-wire) |
| Burden for analogue output: | < 500 Ω                                                                                                            |
| Screw-in thread:            | G 1/2"<br>Optional: UNF 5/8", NPT 1/2"                                                                             |
| Dimensions:                 | Ø 30 mm, length approx. 130 mm                                                                                     |
| Via service software:       | Choose units<br>Scaling                                                                                            |
|                             | % RH, °Ctd, g/m³, mg/m³, ppm V/V<br>4...20 mA change                                                               |