



Dew point sensor FA 510/515 from -80 to 20° Ctd

FA 510/515 - the new generation of dew point sensors for residual moisture measurement in compressed air and gases

Typical applications:

- Dew point measurement in the compressed air after desiccant driers/membrane driers
- Residual moisture/ dew point measurement in gases like oxygen, nitrogen, argon ...
- Residual moisture/ dew point measurement after granulate driers in plastics industry



Recommendation:

Mounting with standard measuring chamber for compressed air up to 16 bar
Advantage: Easy installation via quick coupling



Special features:

- Measuring range -80...20°Ctd
- Extremely long-term stable
- Analogue output 4...20 mA
- Condensation insensitive
- Quick response time
- Pressure-tight up to 350 bar (special version)
- **NEW:** Modbus-RTU interface
- **NEW:** Higher resolution of the sensor signal due to improved evaluation electronics
- **NEW:** Sensor diagnosis on site by means of hand-held instrument or CS Service Software

Technical data

FA 510/515

| | |
|------------------------------------|--|
| Measuring range: | -80...20°Ctd |
| Accuracy: | ± 1°C at 20...-20°Ctd ± 2°C at -20...-50°Ctd ± 3°C at -50...-80°Ctd |
| Pressure range: | -1...50 bar special version up to 350 bar |
| Power supply: | 24 VDC (16...30 VDC) |
| Protection class: | IP 65 |
| EMV: | according to DIN EN 61326 |
| Operating temp.: | -20...70 °C |
| Connection: | M12, 5-pole |
| PC connection: | Modbus-RTU interface (RS 485) |
| Analogue output: | 4...20 mA = -80...20°Ctd FA 510: 4...20 mA (3-wire) FA 515: 4...20 mA (2-wire) |
| Burden for analogue output: | < 500 Ω |
| Screw-in thread: | G 1/2" optional: UNF 5/8" NPT 1/2" |
| Dimensions: | Ø 30 mm, length approx. 130 mm |
| Via service software: | |
| Choose units: | % RH, °Ctd, g/m³, mg/m³, ppm V/V |
| Scaling: | change 4...20 mA |

| Description | Order No. |
|--|-----------|
| FA 510 dew point sensor for desiccant driers -80...20°Ctd incl. inspection certificate, 4...20 mA output signal (3-wire connection) and Modbus-RTU interface | 0699 0510 |
| FA 515 dew point sensor for desiccant driers -80...20°Ctd incl. inspection certificate, 4...20 mA output signal (2-wire connection) or Modbus-RTU interface | 0699 0515 |
| Connection cables: | |
| Connection cable for VA/FA sensors, 5 m | 0553 0104 |
| Connection cable for VA/FA sensors, 10 m | 0553 0105 |
| Options for FA 510: | |
| Option analogue output FA510, Special version 2...10 Volt | Z699 0510 |
| Options for FA 510/515: | |
| 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 connection thread FA5xx, 1/2" NPT | Z699 0512 |
| Option surface condition FA5xx, free of oil & grease | Z699 0517 |
| Additional accessories: | |
| Standard measuring chamber up to 16 bar | 0699 3390 |
| High pressure measuring chamber up to 350 bar | 0699 3590 |
| Measuring chamber, stainless steel 1.4305 | 0699 3290 |
| CS Service Software for dew point sensors incl. PC connection set (Modbus to USB Interface) | 0554 2007 |
| Mains unit in wall housing for maximum 2 sensors of the series VA/FA 5xx, 100-240 V, 23 VA, 50-60 Hz / 24 VDC, 0.35 A | 0554 0110 |
| Transformer 100-240 V AC/24 V DC , 0,35 A on top-hat rail | 0699 3340 |
| Calibration and adjustment: | |
| Precision calibration at -40°Ctd or 3° Ctd including ISO certificate | 0699 3396 |
| Precision calibration in the range of -80 to 20° Ctd, one additional point, freely selectable | 0700 7710 |



Dew point monitoring DS 52 for desiccant driers

Consisting of:

- Digital process meter DS 52 (0500 0009)



- Standard measuring chamber



- Option alarm unit (buzzer and continuous red light) (Z500 0003)

- Dew point sensor FA 510 (0699 0510)

The measuring range of $-80...20^{\circ}\text{Ctd}$ makes the dew point set DS 52 with alarm the ideal dew point monitor with analogue output $4...20\text{ mA}$.

The dew point sensor FA 510 is extremely long-term stable and can be installed and removed quickly and easily under pressure by means of the screw able measuring chamber including quick coupling. The dew point set is supplied ready for plug-in, i.e. everything is completely wired. The alarm values can be freely adjusted.

Special features:

- System ready for plug-in: Everything completely wired
- No time-consuming studying of the instruction manual
- 2 alarm contacts (230 VAC, 3 A) pre- and main alarm freely adjustable
- $4...20\text{ mA}$ analogue output
- Option alarm unit: Buzzer and continuous red light

Technical data display DS 52:

| | |
|-------------------------------|--|
| Dimensions: | 118 x 92 x 93 mm |
| Display: | LED red, 7 segments, height: 13 mm, 5 digits, 2 LED for alarm relay |
| Keypad: | 4 keys |
| Input: | $4...20\text{ mA}$ |
| Power supply: | 230 VAC, 50/60 Hz; Option: 24 VDC or 110 VAC 50/60 Hz |
| Alarm outputs: | 2 x relay output, changeover contact, 250 VAC, max. 3 A |
| Operating temperature: | $-10...+60^{\circ}\text{C}$ (storage temp. $-20^{\circ}\text{C}...+80^{\circ}\text{C}$) |
| Alarm thresholds: | freely adjustable |
| Hysteresis: | 2°Ctd |
| Analogue output: | $4...20\text{ mA} = -80...20^{\circ}\text{Ctd}$ |

Technical data dew point sensor FA 510

| | |
|------------------------------------|--|
| Measuring range: | $-80...20^{\circ}\text{Ctd}$ |
| Accuracy: | $\pm 1^{\circ}\text{C}$ bei $20...-20^{\circ}\text{Ctd}$ $\pm 2^{\circ}\text{C}$ bei $-20...-50^{\circ}\text{Ctd}$ $\pm 3^{\circ}\text{C}$ bei $-50...-80^{\circ}\text{Ctd}$ |
| Pressure range: | $-1...50\text{ bar}$ special version up to 350 bar |
| Protection class: | IP 65 |
| EMV: | according DIN EN 61326 |
| Operating temp.: | $-20...70^{\circ}\text{C}$ |
| Connection: | M12, 5-pole |
| PC connection: | Modbus-RTU interface (RS 485) |
| Burden for analogue output: | $< 500\ \Omega$ |
| Screw-in thread: | G 1/2" |

| Description | Order No. |
|---|------------------|
| Dew point monitoring DS 52 for desiccant driers consisting of: | 0600 5100 |
| DS 52 LED display in wall housing | 0500 0009 |
| FA 510 dew point sensor for desiccant driers $-80...20^{\circ}\text{Ctd}$ incl. inspection certificate, $4...20\text{ mA}$ output signal (3-wire connection) and Modbus-RTU interface | 0699 0510 |
| Standard measuring chamber up to 16 bar | 0699 3390 |
| Connection cable for VA/FA sensors, 5 m | 0553 0104 |
| Options: | |
| Power supply 24 VDC (instead of 230 VAC) | Z500 0001 |
| Power supply 110 VAC (instead of 230 VAC) | Z500 0002 |
| Alarm unit mounted at wall housing | Z500 0003 |
| Alarm unit for external mounting with 5 m cable | Z500 0004 |
| Additional accessories: | |
| Precision calibration at -40°Ctd including ISO certificate | 0699 3396 |
| Precision calibration in the range of -80 to 20°Ctd , one additional point, freely selectable | 0700 7710 |



Dew point sensor FA 510/515 from -20 to 50°Ctd

The dew point sensor FA 510/515 for the typical use in refrigeration driers

The ideal dew point sensor for the monitoring of refrigeration driers with analogue output 4...20 mA

Special features:

- Analogue output 4...20 mA
- Precise, long-term stability
- Quick response time
- Measuring range -20...50°Ctd
- **NEW:** Modbus-RTU interface
- Sensor diagnosis on site by means of hand-held instrument or CS Service Software



Recommendation:



Mounting with standard measuring chamber for compressed air up to 16 bar
Advantage: Easy installation via quick coupling

| Description | Order No. |
|---|-----------|
| FA 510 dew point sensor for refrigeration driers -20...50°Ctd incl. inspection certificate, 4...20 mA output signal (3-wire connection), and Modbus-RTU interface | 0699 0512 |
| FA 515 dew point sensor for refrigeration driers -20...50°Ctd incl. inspection certificate, 4...20 mA output signal (2-wire connection), or Modbus-RTU interface | 0699 0517 |
| Connection cables: | |
| Connection cable for VA/FA sensors, 5 m | 0553 0104 |
| Connection cable for VA/FA sensors, 10 m | 0553 0105 |
| Options for FA 510: | |
| Option analogue output FA510, Special version 2...20 Volt | Z699 0510 |
| Options for FA 510/515: | |
| Option max. pressure FA5xx 350 bar | Z699 0515 |
| Option max. pressure FA5xx 500 bar | Z699 0516 |
| Option special scaling FA5xx 4...20 mA= ___ ... ___ g/m ³ , ppm etc. | Z699 0514 |
| Option connection thread FA5xx, 5/8" UNF | Z699 0511 |
| Option connection thread FA5xx, 1/2" NPT | Z699 0512 |
| Option surface condition FA5xx, free of oil & grease | Z699 0517 |
| Additional accessories: | |
| Standard measuring chamber up to 16 bar | 0699 3390 |
| High pressure measuring chamber up to 350 bar | 0699 3590 |
| Measuring chamber, stainless steel 1.4305 | 0699 3290 |
| CS Service Software for FA/VA sensors incl. PC connection set, USB connection and interface adapter to the sensor | 0554 2007 |
| Mains unit in wall housing for maximum 2 sensors of the series VA/FA 5xx, 100-240 V, 23 VA, 50-60 Hz / 24 VDC, 0.35 A | 0554 0110 |
| Transformer 100-240 V AC/24 V DC , 0,35 A on top-hat rail | 0699 3340 |
| Calibration and adjustment: | |
| Precision calibration at 3° Ctd including ISO certificate | 0699 3396 |
| Precision calibration in the range of -20 to 50° Ctd, one additional point, freely selectable | 0700 7710 |

Technical data

FA 510/515

| | |
|------------------------------------|--|
| Measuring range: | -20...50°Ctd resp. 0...100% rF |
| Accuracy: | ± 1°C at 0...20°Ctd ± 2°C remaining range |
| Pressure range: | -1...50 bar special version up to 350 bar |
| Power supply: | 24 VDC (10...30 VDC) |
| Protection class: | IP 65 |
| EMV: | according to DIN EN 61326 |
| Operating temp.: | -20...70 °C |
| Connection: | M12, 5-pole |
| PC connection: | Modbus-RTU interface (RS 485) |
| Analogue output: | FA 510: 4...20 mA (3-wire) FA 515: 4...20 mA (2-wire) |
| Burden for analogue output: | < 500 Ω |
| Screw-in thread: | G 1/2" optional: UNF 5/8" NPT 1/2" |
| Dimensions: | Ø 30 mm, length approx. 130 mm |
| Via service software: | Choose units: % RH, °Ctd, g/m ³ , mg/m ³ , ppm V/V |
| Scaling: | change 4...20 mA |



Dew point monitoring DS 52 for refrigeration driers

Consisting of:

- Digital process meter DS 52 (0500 0009)

- Standard measuring chamber



- Option alarm unit (buzzer and continuous red light) (Z500 0003)

- Dew point sensor FA 510 (0699 0512)

The measuring range of $-20...50^{\circ}\text{Ctd}$ makes the dew point set DS 52 with alarm the ideal dew point monitor with analogue output $4...20\text{ mA}$.

The dew point sensor FA 510 is extremely long-term stable and can be installed and removed quickly and easily under pressure by means of the screw able measuring chamber including quick coupling. The dew point set is supplied ready for plug-in, i.e. everything is completely wired. The alarm values can be freely adjusted.

Special features:

- System ready for plug-in: Everything completely wired
- No time-consuming studying of the instruction manual
- 2 alarm contacts (230 VAC, 3 A) pre- and main alarm freely adjustable
- $4...20\text{ mA}$ analogue output
- Option alarm unit: Buzzer and continuous red light

Technical data display DS 52:

| | |
|-------------------------------|--|
| Dimensions: | 118 x 92 x 93 mm |
| Display: | LED red, 7 segments, height: 13 mm, 5 digits, 2 LED for alarm relay |
| Keypad: | 4 keys |
| Input: | $4...20\text{ mA}$ |
| Power supply: | 230 VAC, 50/60 Hz; Option: 24 VDC or 110 VAC 50/60 Hz |
| Alarm outputs: | 2 x relay output, changeover contact, 250 VAC, max. 3 A |
| Operating temperature: | $-10...+60^{\circ}\text{C}$ (storage temp. $-20^{\circ}\text{C}...+80^{\circ}\text{C}$) |
| Alarm thresholds: | freely adjustable |
| Hysteresis: | 2°Ctd |
| Analogue output: | $4...20\text{ mA} = -20...50^{\circ}\text{Ctd}$ |

Technical data dew point sensor FA 510

| | |
|------------------------------------|--|
| Measuring range: | $-20...50^{\circ}\text{Ctd}$ |
| Accuracy: | $\pm 1^{\circ}\text{C}$ at $0...20^{\circ}\text{Ctd}$ $\pm 2^{\circ}\text{C}$ remaining range |
| Pressure range: | $-1...50\text{ bar}$ special version up to 350 bar |
| Protection class: | IP 65 |
| EMV: | according DIN EN 61326 |
| Operating temp.: | $-20...70^{\circ}\text{C}$ |
| Connection: | M12, 5-pole |
| PC connection: | Modbus-RTU interface (RS 485) |
| Burden for analogue output: | $< 500\ \Omega$ |
| Screw-in thread: | G 1/2" |

| Description | Order No. |
|--|------------------|
| Dew point monitoring DS 52 for refrigeration driers consisting of: | 0600 5120 |
| DS 52 LED display in wall housing | 0500 0009 |
| FA 510 dew point sensor for refrigeration driers $-20...50^{\circ}\text{Ctd}$ incl. inspection certificate, $4...20\text{ mA}$ output signal (3-wire connection), and Modbus-RTU interface | 0699 0512 |
| Standard measuring chamber up to 16 bar | 0699 3390 |
| Connection cable for VA/FA sensors, 5 m | 0553 0104 |
| Options: | |
| Power supply 24 VDC (instead of 230 VAC) | Z500 0001 |
| Power supply 110 VAC (instead of 230 VAC) | Z500 0002 |
| Alarm unit mounted at wall housing | Z500 0003 |
| Alarm unit for external mounting with 5 m cable | Z500 0004 |
| Additional accessories: | |
| Precision calibration at 3°Ctd including ISO certificate | 0699 3396 |