



## FA 500 - Dew point sensor from -80 to 20 °Ctd

FA 500 is the ideal dew point measuring instrument with integrated display and alarm relay for refrigeration, membrane and adsorption dryers.



### Special features:

- Integrated display
- Threshold value adjustable via keypad, alarm relay (max. 60 VDC, 0.5 A)
- Pressure-tight up to 500 bar (special version)
- Extremely stable in the long term
- Quick adaption time
- 4...20 mA analogue output for dew point
- Different refrigeration and adsorption dryer versions
- **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/m³]
- Moisture content V/V [ppmV/V]
- Water vapour particle pressure [hPa]
- Atmospheric dew point [°Ctd.atm]



The integrated keys enable simple, menu-controlled operation



### Upper connection:

Power supply, 4...20 mA output, Modbus-RTU output

### Lower connection:

Alarm relay



**Option:** Ethernet interface (PoE)

## Easy operation via the keys on the display



The screenshots show the following screens:

- FA500 R&D**: Main display showing -47.8 °Ctd, 22.10 °C, 0.1940 %rH, 0.0378 g/m³, 0.0321 g/kg, 50.88 ppm, 0.0522 hPa, and -47.80 °Ctd.
- FA500 Alarm**: Alarm status screen showing Alarm (checked), Unit (°Ctd), Value (-60.00), Hysteresis (2.00), and an overrun button.
- FA500 4-20mA Channel 1**: Scaling screen for the 4-20mA output, showing State (on), Unit (°Ctd), and Scale 4mA (-80.00°Ctd) and Scale 20mA (20.00°Ctd).
- IP Adresse Einstellen**: IP configuration screen showing DHCP (checked), IP Address (192.168.172.010), Sub Netz (255.255.255.000), Gateway (192.168.172.001), and buttons for Erweitert, Speicher, and Abbruch.
- FA500 Pressure Setting**: Pressure setting screen showing Ref. Pressure (1013.00 hPa) and Sys. Pressure (7500.00 hPa).

The integrated display shows the dew point in big figures as well as further humidity parameters on two more display pages. The arrow key can be used to scroll between the display pages.

The alarm threshold value for the integrated relay can be freely entered via the keys. In addition to the alarm threshold, the hysteresis can also be freely entered.

The 4...20 mA analogue output can be scaled freely or also allocated to one further parameter, e. g. g/m³.

After entering the system pressure of the compressed air system and the reference pressure (atmospheric pressure), the sensor can also calculate back to the atmospheric dew point from the measured pressure dew point if desired.

| DESCRIPTION                                                                                                           | ORDER NO. |
|-----------------------------------------------------------------------------------------------------------------------|-----------|
| FA 500 dew point sensor for refrigeration dryers, -20...50 °Ctd                                                       | 0699 0501 |
| FA 500 dew point sensor for adsorption dryers, -80...20 °Ctd                                                          | 0699 0502 |
| FA 500 dew point sensor for adsorption dryers, -60...30 °Ctd                                                          | 0699 0503 |
| <b>Connection cables:</b>                                                                                             |           |
| Connection cable for VA/FA series, 5 m                                                                                | 0553 0104 |
| Connection cable for VA/FA sensors, 10 m                                                                              | 0553 0105 |
| Cable for alarm/pulse output, with M12 plug, length 5 m                                                               | 0553 0106 |
| Cable for alarm/pulse output, with M12 plug, length 10 m                                                              | 0553 0107 |
| Ethernet connection cable length 5 m, M12 plug x-coded (8 pin) to RJ 45 plug                                          | 0553 2503 |
| Ethernet connection cable length 10 m, M12 plug x-coded (8 pin) to RJ 45 plug                                         | 0553 2504 |
| <b>Options for FA 500:</b>                                                                                            |           |
| 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 |
| Ethernet-Interface for VA 500/520 and FA 500                                                                          | Z695 5006 |
| Ethernet-Interface PoE for VA 500/520 and FA 500                                                                      | Z695 5007 |
| M-Bus board for VA 500/520 and FA 500                                                                                 | Z695 5004 |
| <b>Further accessories:</b>                                                                                           |           |
| Standard measuring chamber for compressed air up to 16 bar                                                            | 0699 3390 |
| High pressure measuring chamber up to 350 bar                                                                         | 0699 3590 |
| 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 |
| AC adapter plug 100-240 VAC / 24 VDC for VA/FA 5xx                                                                    | 0554 0109 |
| <b>Calibration and adjustment:</b>                                                                                    |           |
| Precision calibration at -40 °Ctd or +3 °Ctd incl. ISO certificate                                                    | 0699 3396 |

### TECHNICAL DATA FA 500

|                                    |                                                                                                                |
|------------------------------------|----------------------------------------------------------------------------------------------------------------|
| <b>Measuring range:</b>            | -80...20 °Ctd, -60...30 °Ctd, -20...50 °Ctd, or 0...100% RH                                                    |
| <b>Accuracy:</b>                   | ± 1 °C at +50...-20 °Ctd<br>± 2 °C at -20...-50 °Ctd<br>± 3 °C at -50...-80 °Ctd                               |
| <b>Pressure range:</b>             | -1...50 bar<br>Special version up to 500 bar                                                                   |
| <b>Power supply:</b>               | 24 VDC (10...36 VDC)                                                                                           |
| <b>Protection class:</b>           | IP 65                                                                                                          |
| <b>EMC:</b>                        | In acc. with DIN EN 61326-1                                                                                    |
| <b>Operating temperature:</b>      | -20...50 °C                                                                                                    |
| <b>Connection:</b>                 | 2 x M12, 5-pin for analogue output, Modbus-RTU and alarm output, M-Bus (optional)<br>Ethernet (PoE) (optional) |
| <b>PC connection:</b>              | Modbus-RTU interface (RS 485)                                                                                  |
| <b>Output: (3-wire)</b>            | 4...20 mA = -80...20 °Ctd<br>4...20 mA = -60...30 °Ctd<br>4...20 mA = -20...50 °Ctd                            |
| <b>Burden for analogue output:</b> | < 500 Ω                                                                                                        |
| <b>Alarm relay:</b>                | NC, max. 60 VDC, 0.5 A                                                                                         |
| <b>Screw-in thread:</b>            | G 1/2"                                                                                                         |
| <b>Dimensions housing:</b>         | 76.5 x 85 x 75 mm (Wx-HxD)                                                                                     |