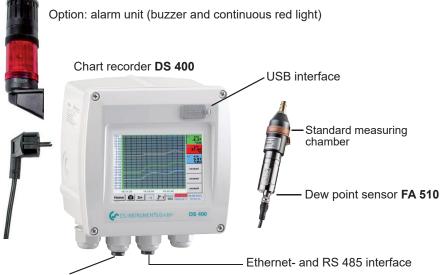
# DS 400 Dew point monitoring

For stationary dew point monitoring of refrigeration or desiccant dryers. The touch screen graphic display enables an intuitive operation and shows the progress of the measured values. 2 alarm relays are available for monitoring of threshold values. Available either with a classic analogue output 4...20 mA or optionally with digital interfaces like Ethernet and RS 485 (Modbus protocol). As a stand-alone solution the measured data stored in the optional data logger can be read-out via USB stick and evaluated by means of the software CS Soft Basic.



**Special features:** 

- 3.5" Graphic display easy to use with touchscreen
- · Plug-in system: everything wired and ready
- 2 alarm contacts (230 VAC, 3 A) Pre-alarm and main alarm freely adjustabler
- An alarm delay can be set for each alarm relay
- 4...20 mA Analog output
- Option: Ethernet and RS 485 interface (Modbus protocole)
- · Option: Webserver

2nd sensor input for dew point or consumption sensors VA 500/520

#### Transfer the data via USB stick to the PC



- Option: Integrated data logger
- Record dew point curve up to 100 million readings
- CS Basic for graphical and tabular evaluation. Read out data either via USB stick or Ethernet

| DESCRIPTION   | ORDER-NO. |
|---|-----------|
| DESCRIPTION   | ORDER-NO. |
| Dew point monitoring DS400 for desiccant driers (-80+20° Ctd.)  | 0601 0510 |
| Dew point monitoring DS400 for refrigeration driers (-20+50°Ctd)  | 0601 0512 |
|   |           |
| Options   |           |
| Option: Integrated data logger for 100 million measured values  | Z500 4002 |
| Option: Integrated Ethernet and RS 485 interface  | Z500 4004 |
| Option: Integrated webserver  | Z500 4005 |
| Option: 2 additional sensor inputs for analogue sensors (pressure sensor, temperature sensor and so on)                                   | Z500 4001 |
|   |           |
| Additional accessories  |           |
| CS Basic – data evaluation graphically and in tabular form - reading of the measured data via USB or Ethernet, license for 2 workstations | 0554 8040 |
| Alarm unit mounted at wall housing  | Z500 0003 |
| Alarm unit for external mounting with 5 m cable   | Z500 0004 |
| Calibration and adjustment  |           |
| Precision calibration at -40 °Ctd or +3 °Ctd including ISO certificate  | 0699 3396 |

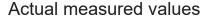
| TECHNICAL DATA                 | DS 400   |
|--------------------------------|--|
| Dimensions:                    | 118 x 115 x 98 mm<br>IP 54 (wall housing)<br>92 x 92 x 75 mm<br>(panel mounting)   |
| Inputs:                        | 2 digital inputs for FA 510 resp.<br>VA 500/520  |
| Interface:                     | USB interface  |
| Power supply:                  | 100240 VAC, 50-60 Hz   |
| Accuracy:                      | please see FA 510  |
| Alarm outputs:                 | 2 relays, (pot free)   |
| Options                        |  |
| Data logger:                   | 100 million measuring values<br>start/stop time, measuring rate<br>freely adjustable   |
| 2 additional<br>sensor inputs: | for connection of pressure<br>sensors, temperature sensors,<br>clamp-on ammeters, third-party<br>sensors with 420 mA 0 to 10<br>V, Pt 100, Pt 1000 |

| TECHNICAL DATA   | FA 510  |
|------------------|---|
| Measuring range: | -8020 °Ctd resp.<br>-2050 °Ctd                                      |
| Accuracy:        | ± 1 °C at 5020 °Ctd<br>± 2 °C at -2050 °Ctd<br>± 3 °C at -5080 °Ctd |
| Pressure range:  | -150 bar, special version up to 350 bar                             |

Dew point

## Easy operation via Touch screen

| A1a | Dryer/Trockne  | r A1a   |
|-----|----------------|---|
|     |                | -58.60  |
|     |                | °Ctd  |
| A1c | Dryer/Trockner | A1c   |
|     |                | 22.00 °C  |
| A1b | Dryer/Trockner | A1b   |
|     |                | 0.04 %RH  |
| Hom | e 🙆 Setup      | Alarm Lg.stop 09.09.2013<br>pacity = 9 10:47:55 |



All measured values can be seen at a glance. Threshold exceeding are indicated in red color. A "measuring site name" can be allocated to each sensor.

#### Graphic view

In the graphic view all measured values are indicated as curves. It is possible to brows back on the time axis by a slide of the finger (without data logger maximum 24 h, with data logger back to the start of the measurement).

| 10:31:3 | 20 10:33                  | 2:00 10:32: | 40               |
|---------|---------------------------|-------------|------------------|
| 30.00   |                           |             | unused           |
| 25.00   |                           |             |                  |
| 22.50   |                           |             | unuseu           |
| 20.00   |                           |             | unused           |
| 17.50   |                           |             |                  |
| 12.50   |                           |             | unused           |
| 10.00   |                           |             | unused           |
| -7.50   |                           |             | 70 Kr            |
| -2.50   |                           |             | 9.8 <sup>4</sup> |
| 0.00    |                           |             | A1 A1b           |
| 2.50    |                           |             |                  |
| 5.00    |                           |             | 27.40            |
| 10.00   | <u> 1997 Milli 1938 M</u> |             |                  |
| 12.50   |                           |             | °Cte             |
| 15.00   |                           |             | -6.3             |
| 17.50   |                           |             | A1 A1a           |

| ***            | Logger settings ***                             |
|----------------|---|
|                | Time interval (sec)                             |
| 1 2 5          | 10 15 30 60 120 15                              |
| force new r    | ecord file                                      |
| Comment:       | Dryer Trockener 13                              |
| Logger stopped | timed Start 🔽 timed Stop                        |
| START STOP     | 12:26:00 - 06.0 13:28:00 - 06.0                 |
| 1 .            | Ining logger capacity = 9999 days               |
|                | ing: 0 channels selected<br>interval (min 1 sec |

| Can you read this text? |         |            |
|-------------------------|---------|------------|
| English                 | Deutsch | Spanish    |
| Italian                 | Danish  | Русский    |
| Polski                  | French  | Portuguese |
| Romanian                |         |            |

| - Upper limit - | Value<br>°Ctd | Hysteresis<br>+/- | Relay<br>1 2 |
|-----------------|---------------|-------------------|--------------|
| Alarm 1 🗸       | -35.000       | 2.000             | TT           |
| Alarm 2 🖌       | -30.000       | 2.000             | TO           |
| - Lower limit - |               |                   |              |
| Alarm 1 🖌       | 12.000        | 2.000             | T2           |
| Alarm 2 🔽       | 8.000         | 2.000             | T3           |

#### Data logger

Measured values are stored in DS 400 by means of the option "integrated data logger".

The time interval can be freely set. Furthermore there is the possibility to fix the starting time and the end time of the data recording.

Read-out of the measured data via USB interface or via the optional Ethernet interface.

#### Selection of the language

DS 400 "speaks" several languages. The required language can be selected by means of the select button.

### Adjustment of the alarm relays

Each one of the 2 alarm relays can be allocated individually to a connected sensor. The alarm thresholds and the hysteresis can be freely adjusted.

**New:** It is possible to set an alarm delay for each alarm relay so that the relay is just triggered after that period of time.