Dew point measuring for moisture monitoring in granulate driers

CS Instruments GmbH & Co.KG offers the appropriate instruments for measuring the dew point (degree of drying in granulate driers).

During transport and storage, plastic granules absorb more or less moisture depending on climatic conditions. Using wet granules leads to quality problems in the injection moulding process.

If the plastic is not optimally dried during processing in injection moulding machines, this has many negative effects on the end product. For example, when processing excessively wet plastic, bubbles or streaks may appear on the surface or dimensional accuracy is not assured.

Increasing quality requirements for plastic products make economical drying of the plastic granulate to be processed necessary. When drying, the dew point in °Ctd (degree of drying) should ideally be in the range between -30...-60 °Ctd.

Below -15 °Ctd dew point no adequate drying effect is achieved.

www.cs-instruments.com
Portable dew point meter DP 510 for quick check of granulate driers

The DP 500/DP 510 instruments are the ideal mobile service instruments for dew point measurement for all types of driers down to -80°Ctd dew point.

The 3.5" graphic display with touch screen makes the operation very easy.

The graphic indication of coloured measuring curves is unique. Ideal for measurement of the current dew point and for graphic indication of the dew point curve, the switching behaviour of the drier over a longer period of time.

Up to 100 million measured values can be stored with date and measuring site name. The measured data can be transferred to the computer via USB stick. The data can be evaluated comfortably by means of the software CS Soft Basic.

Everything at a glance

Measurement curves are indicated graphically and thus the user can see at a glance the behaviour of the drier since the start of the measurement.

All physical parameters of moisture measurement are calculated automatically. In case of DP 510 the measured values of the third-party sensor are indicated additionally.

Technical data:

- **Display:** 3.5" touch screen
- **Measuring range:** -80...+50°Ctd
  -20...+70°C
  0...100 % RH
- **Accuracy:** ± 0.5°Ctd at -10...+50°Ctd
  typ. ± 2°Ctd remain.
  range
- **Moisture-parameters:** g/m³, mg/m³, ppm V/V, g/kg, °Ctdatm, %RH
- **Pressure range:** -1...50 bar standard
  -1...350 bar special version
- **Interface:** USB interface
- **Data logger:** 2 GB SD memory card (100 million values)
- **Power supply for sensors:** Output voltage: 24 VDC ± 10 %
  Output current: 120 mA continuous operation
- **Power supply:** Internal rechargeable Li-Ion batteries, approx 12 h continuous operation, 4 h charging time
- **Screw-in thread:** G 1/2" stainless steel
- **Surrounding temperature:** 0...+50°C
- **EMV:** DIN EN 61326

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**Description**

<table>
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<tr>
<th>Description</th>
<th>Order No.</th>
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<tr>
<td><strong>Set DP 510 in a case - consisting of:</strong></td>
<td>0600 0510 / 0037</td>
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<tr>
<td>- Portable dew point meter DP 510 with one additional sensor input</td>
<td>0560 0510</td>
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<tr>
<td>- Measuring chamber for granulate driers</td>
<td>0699 3490</td>
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<tr>
<td>- Mobile measuring chamber up to 16 bar</td>
<td>0699 4490</td>
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<tr>
<td>- Diffusion-tight PTFE hose with quick connector, length 1 m</td>
<td>0554 0003</td>
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<td>- Power supply for DP 500/510</td>
<td>0554 0009</td>
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<tr>
<td>- Control and calibration set 11.3 % RH</td>
<td>0554 0002</td>
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<td>- Quick-lock coupling</td>
<td>0530 1101</td>
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<tr>
<td>- Dry container for CS dew point sensors</td>
<td>0699 2500</td>
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<tr>
<td>- Transportation case (big) for DP 510 as well as further sensors</td>
<td>0554 6510</td>
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<td><strong>Further options, not included in the set</strong></td>
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<tr>
<td>CS Soft Basic - data evaluation in graphic and table form - reading out of</td>
<td>0554 7040</td>
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<tr>
<td>the measured data via USB stick</td>
<td></td>
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<tr>
<td>Precision calibration at -40°Ctd or 3°Ctd with ISO certificate</td>
<td>0699 3396</td>
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<td>Additional calibration point freely selectable in the range between</td>
<td>0700 7710</td>
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<td>-80...+20°Ctd</td>
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The dew point sensor FA 510 was specially developed for measuring moisture in granulate driers and adsorption driers for compressed air.

**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

**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 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 °C (storage temp. 25°C)
- **Alarm thresholds:** freely adjustable
- **Hysteresis:** 2 °Ctd
- **Analogue output:** 4...20 mA = -80...20 °Ctd

**Dew point monitoring DS 52 set**

- **Display DS 52**
- **Standard measuring chamber**
- **Option alarm unit**
- **Dew point sensor FA 510**

**Description**

- **Dew point monitoring DS 52 set for granulate driers**

  consisting of: DS 52 LED process display, dew point sensor FA 510, measuring chamber for granulate drier, connection cable

  **Description**

  - **Dew point monitoring DS 52 set for granulate driers**
  0600 5101

  - **Dew point monitoring DS 52 set for compressed air (refrigeration driers)**

  consisting of: DS 52 LED process display, dew point sensor FA 510, standard measuring chamber up to 16 bars, connection cable

  **Options:**

  - Alarm unit mounted to the wall housing
  - Alarm unit for external mounting with 5 m cable

  **Description**

  - **Alarm unit mounted to the wall housing**
  Z500 0003

  - **Alarm unit for external mounting with 5 m cable**
  Z500 0004
That’s what customers say...

Statement of the company STOLZ & SENG in Donaueschingen:
“Increasing quality requirements for plastic products make economical drying of the plastic granulate to be processed necessary. During drying, the dew point in °Ctd (degree of drying) must ideally be in the range between -30…-60 °Ctd.”

The company Stolz und Seng, Managing Director Mr. Seng has already decided since several years to use FA 510 dew point sensors from CS Instruments GmbH & Co. KG.

STOLZ & SENG Kunststoffspritzguss und Formenbau GmbH in 78166 Donaueschingen, is a member of “Association of German Tool and Mold Makers” and is DIN EN ISO 9001:2015 certified.

We are happy to advise you on this topic:

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