

# Precise dew point measurement with long-term reliability



## Special features

- Automatic calibration
- 4 to 20 mA analogue output
- Pre-alarm/ main alarm via LED
- High accuracy up to  $-80^{\circ}\text{C}_{\text{td}}$
- Quick response time
- g/kg, g/m<sup>3</sup>, % RH selectable via PC
- Up to 350 bar

## Pressure dewpoint retrofit set FA 300-2 in use at a automobile component supplier.

Monitoring of the compressed air subsequent to a refrigerating dryer, alarm values are exceeded:

Pre-alarm and main alarm are exceeded at 11.6 °C pressure dew point. The alarm is triggered.



## The new instrument family FA 300

Applications with compressed air always have one problem: humidity and condensate. The high quality standards in industry require the continuous monitoring of humidity with results which are reliable and invariable over a long period.

The **FA 300-1** with its measuring range from  $-10$  to  $50^{\circ}\text{C}_{\text{td}}$  is the ideal measuring system for monitoring **refrigerating dryers**.

The **FA 300-2** is ideally suited to monitoring **adsorption and membrane dryers** with its measuring range from  $-80$  to  $+20^{\circ}\text{C}_{\text{td}}$ . A pre-alarm and main alarm are triggered by two switching contacts. The control status is displayed via LED.

The **version with display** also has two switching contacts. The humidity sensors, which offer a high level of stability over long periods, and the internal automatic calibration provide reliable measuring results.



## Programming via service software:

- Adjustable alarm values, scaleable analogue output
- Switching between  $^{\circ}\text{C}_{\text{td}}$ , %RH, g/m<sup>3</sup> etc.
- Calibration and adjustment including issuing of certificate
- Read-out of service data

## CS-Messtechnik GmbH: The compressed air professionals

CS-Messtechnik is specialised in practical humidity measuring instruments for industry. Over 20 years of solid experience in air drying speaks for itself.

Our strength lies in years of cooperation with measurement technicians and users. The result is a range of practical measuring instruments perfectly suited to everyday measurements for industry.

We have the ideal measuring instruments for your technical measuring applications and a good many practical tips. Just call us on

**tel. +49 4 61 700 20 25.**

You can contact us Monday to Friday **from 07:00 to 19:00 hours.**

**Technical data**

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Measuring range: pressure dewpoint in °C<sub>td</sub>  
 FA 300-1: -10 to +50 °C<sub>td</sub> ± 4 to 20 mA  
 FA 300-2: -80 to +20 °C<sub>td</sub> ± 4 to 20 mA

**Common data FA 300-1 and F 300-2**

Pressure range: -1 to +50 bar standard  
 Power supply: 24 VDC (10 to 30 V DC)  
 Accuracy: ±0.5 °C<sub>td</sub> (-10 to +50 °C<sub>td</sub>)  
 typical ±2 °C<sub>td</sub> at -40 °C<sub>td</sub>  
 Output: 4 to 20 mA in 2-wire technology  
 Protection class: IP65  
 CE conformity to: DIN EN 61326  
 Operating temperature: -20 to +70 °C  
 Storage temperature: -40 to +80 °C  
 Load for analogue output: ≤ 500 Ohm  
 Screw in thread: G 1/2" stainless steel  
 Material of housing: polycarbonate  
 Sensor protection: sinter filter 50 mm stainless steel

**Display, Option switching contacts**

2 floating switching contacts  
 (60 V/1A max. 30 W)  
 Exceeding alarm values (pre-alarm / main alarm)

Default settings:

**FA 300-12/13:** Pre-alarm +8 °C<sub>td</sub>  
 Main alarm +12 °C<sub>td</sub>  
**FA 300-22/23:** Pre-alarm -40 °C<sub>td</sub>  
 Main alarm -35 °C<sub>td</sub>

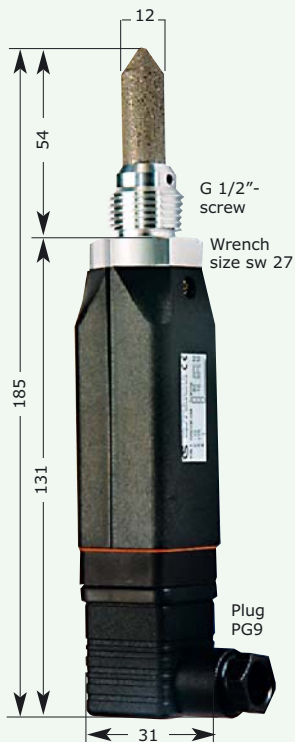
LED display:  
 green: measured value ok  
 yellow: pre-alarm exceeded  
 red: main alarm exceeded

Different alarm value settings on request.

**On request**

- versions up to 350 bar
- outputs 4 to 20 mA in g/m<sup>3</sup>, g/kg, %RH
- digital output
- customer specific setting of pre- and main alarm
- 0 to 20 mA output in 3-wire technology

**Dimensions in mm**



**Instrument family FA 300-1 for refrigerating dryers (-10 to 50°C pressure dewpoint)**

**FA 300-11**



**Basic instrument**  
 4 to 20 mA analogue output  
**Order no. 0699.3011**  
 (See Set 1)

**FA 300-12**



▲ **2 alarm contacts with alarm LED** ▲  
 alarm values +8°C<sub>tdr</sub>, +12°C<sub>td</sub>  
 4 to 20 mA analogue output  
**Order no. 0699.3012**  
 (See Set 2)

► **Display and 2 alarm contacts**  
 alarm value +8°C<sub>tdr</sub>, +12°C<sub>td</sub>  
 4 to 20 mA analogue output  
**Order no. 0699.3013**  
 (See Set 3)

**FA 300-13**



**Instrument family FA 300-2 for adsorption dryers (-80 to 20°C pressure dewpoint)**

**FA 300-21**



**Basic instrument**  
 4 to 20 mA analogue output  
**Order no. 0699.3021**  
 (See Set 4)

**FA 300-22**



▲ **2 alarm contacts with alarm LED** ▲  
 alarm values -40°C<sub>tdr</sub>, -35°C<sub>td</sub>  
 4 to 20 mA analogue output  
**Order no. 0699.3022**  
 (See Set 5)

► **Display and 2 alarm contacts**  
 alarm value -40°C<sub>tdr</sub>, -35°C<sub>td</sub>  
 4 to 20 mA analogue output  
**Order no. 0699.3023**  
 (See Set 6)

**FA 300-23**



The versions of FA 300 with alarm contact and display have a 9-pin wire and a cable length of 5 m as a standard.  
**If cable extension is required, please order a separate plug. Order no. 0699.3501.**

**Installation recommendation**

It is possible to mount the pressure dew-point meters directly in the airflow. We generally, however, recommend the use of a screw-on measuring chamber.



◀ **Screw-on measuring chamber**  
 Advantage: quick measurement, no time-consuming installation



**German Federal Institute for Materials Research and Testing (BAM)**

**The right measuring chamber for each application:**


Standard measuring chamber for compressed air up to 16 bar  
**Order no. 0699.3390**



Measuring chamber for atmospheric pressure dew point  
**Order no. 0699.3690**



Measuring chamber for resin dryers up to 250 mbar  
**Order no. 0699.3490**



Measuring chamber for air tanks up to 350 bar\*  
**Order no. 0699.3790**



High pressure measuring chamber up to 350 bar\*  
**Order no. 0699.3590**

\* higher than 50 bar  
 Please order special version FA 300  
**Order no. 0699.4003**

Extract from BAM's test report of June 2002

**Please request detailed documentation.**

Nominal value in °C <sub>td</sub>	-25.30	-34.46	-50.28
Actual value in °C <sub>td</sub>	-25.0	-34.5	-49.7
Deviation in °C <sub>td</sub>	-0,3	+0.04	-0.5

**Order suggestions for refrigerating dryers (-10 to 50°C pressure dew point)**

**Set 1** FA 300-11, **Set, Order no. 0600.30011** consisting of:  
 FA 300-11 Order no. 0699.3011  
 Standard meas. chamber Order no. 0699.3390  
 Mains unit integrated in wall housing Order no. 0699.3395



**Refrigerating dryers**

**Set 1**

**Set 2** FA 300-12, **Set, Order no. 0600.30012** consisting of:  
 FA 300-12 Order no. 0699.3012  
 Standard meas. chamber Order no. 0699.3390  
 Mains unit integrated in wall housing with alarm (2 directional contacts 230VAC/6A) Order no. 0699.3495



**Set 2**

**Set 3** FA 300-13, **Set, Order no. 0600.30013** consisting of:  
 FA 300-13 Order no. 0699.3013  
 Standard meas. chamber Order no. 0699.3390  
 Mains unit integrated in wall housing with alarm (2 directional contacts 230VAC/6A) Order no. 0699.3495



**Set 3**

**Order suggestions for adsorption dryers (-80 to 20°C pressure dew point)**

**Set 4** FA 300-21, **Set, Order no. 0600.30021** consisting of:  
 FA 300-21 Order no. 0699.3021  
 Standard meas. chamber Order no. 0699.3390  
 Mains unit integrated in wall housing Order no. 0699.3395



**Adsorption dryers**

**Set 4**

**Set 5** FA 300-22, **Set, Order no. 0600.30022** consisting of:  
 FA 300-22 Order no. 0699.3022  
 Standard meas. chamber Order no. 0699.3390  
 Mains unit integrated in wall housing with alarm (2 directional contacts 230VAC/6A) Order no. 0699.3495



**Set 5**

**Set 6** FA 300-23, **Set, Order no. 0600.30023** consisting of:  
 FA 300-23 Order no. 0699.3023  
 Standard meas. chamber Order no. 0699.3390  
 Mains unit integrated in wall housing with alarm (2 directional contacts 230VAC/6A) Order no. 0699.3495



**Set 6**

**Pressure dew point retrofit kit with 2 alarm contacts and alarm unit (acoustic and LED)**  
**Ideal for fitting into existing plants.**

**Pressure dew point retrofit set**

**FA 300** with measuring chamber incl. display with 2 alarm contacts (230 VAC, 3A) for pre-alarm and main alarm and 4 to 20 mA output for processing.

Retrofit set FA 300-11 (-10 to +50°C<sub>td</sub>)

**Order no. 0699.3101**

Retrofit set FA 300-21 (-80 to +20°C<sub>td</sub>)

**Order no. 0699.3102**


**Pressure dew point retrofit set**

**FA 300** with measuring chamber incl. display, see above, with additional alarm: pre-alarm red light signal, main alarm acoustic signal.

Retrofit set FA 300-11 (-10 to +50°C<sub>td</sub>)

**Order no. 0699.3201**

Retrofit set FA 300-21 (-80 to +20°C<sub>td</sub>)

**Order no. 0699.3202**

**The special advantage:**

- Plug-in system with default alarm values.
- Screw on the wall, plug in and start.
- No time-consuming studying of the instruction manual.
- Everything readily wired like "Plug and Play".

**Mobile pressure dew point meter**
**Handheld instrument CS 2390**

Attachable to all versions of FA 300.

Measuring range -80 to +50°C<sub>td</sub>

**Order no. 0699.2390**

**Case Order no. 0699.6000**


**Data logging and evaluation on the PC**
**Data logger with display**

Attachable to all versions of FA 300.

Memory for 16,000 or

64,000 measured values

incl. software and RS 232 cable, for compressed air consumption, pressure, temperature % RH, absolute humidity, etc.

**Order no. 300 626 600**


**Order data**
**Order no.**

FA 300-11 Pressure dew point meter (-10 to +50°C <sub>td</sub> )	0699.3011
FA 300-12 Pressure dew point meter switching contact (-10 to +50°C <sub>td</sub> )	0699.3012
FA 300-13 Pressure dew point meter, display, alarm contact (-10 to +50°C <sub>td</sub> )	0699.3013
FA 300-21 Pressure dew point meter (-80 to +20°C <sub>td</sub> )	0699.3021
FA 300-22 Pressure dew point meter switching contact (-80 to +20°C <sub>td</sub> )	0699.3022
FA 300-23 Pressure dew point meter, display, switching contact (-80 to +20°C <sub>td</sub> )	0699.3023
0 to 20 mA Analogue output for basic instruments FA 300-11/FA 300-21	0699.4001
Standard measuring chamber for compressed air up to 16 bar	0699.3390
High-pressure measuring chamber up to 350 bar*	0699.3590
Measuring chamber for atmospheric pressure dew point	0699.3690
Measuring chamber for air tanks up to 350 bar*	0699.3790
*Special version FA 300 for 350 bar	0699.4003
Special scaling, output in g /kg, %RH, mg/m <sup>3</sup>	0699.4004
Separate display 48 x 24 mm, 24 VDC power supply	0699.1230
Separate display 96 x 48 mm, with sensor excitation	0699.1232
Precision calibration at -40°C <sub>td</sub> incl. certificate	0699.3396
Powerbox for mobile measurement up to 8 hrs., rechargeable	0699.4002
Mains unit top hat rail 230 VAC/24 VDC	0699.3395/3
Mains unit in wall housing 230 VAC/24 VDC	0699.3395
Mains unit in wall housing 230 VAC/24 VDC with alarm processing	0699.3495
Service software, interface, mains unit, cable	0699.3399
Retrofit set FA 300-11 for refrigerating dryers	0699.3101
Retrofit set FA 300-21 for adsorption dryers	0699.3102
Retrofit set FA 300-11 with alarm for refrigerating dryers	0699.3201
Retrofit set FA 300-21 with alarm for adsorption dryers	0699.3202

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