CS INSTRUMENTS GmbH

NEW

CS INSTRUMENTS   DP 500

Portable dew point meters

DP 500
DP 510

DP 500/DP 510
Portable dew point meters with data logger

The new instruments **DP 500/DP510** are the ideal portable 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 colored measuring curves is unique.

Ideal for measurement of the current dew point and for graphic indication of the dew point curve/the switching behavior 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. Measured data and service reports can be issued easily and quickly.

DP 510 additionally disposes of one further freely assignable sensor input.

Apart from the internal dew point measurement one further optional sensor can be connected like for example:

- Pressure sensors
- Flow sensors, VA 400/420
- Temperature sensors Pt 100, 4..20 mA
- Further dew point sensors
- Effective power meters
- Optional third-party sensors with the following signals: 0...1/10 V, 0/4...20 mA, Pt100, Pt1000, pulse, Modbus

Pressure sensor

2nd freely assignable sensor input for for third-party sensors (only DP 510)

Special features:

- Precise dew point measurement down to -80°Ctd.
- Quick response time
- 3.5" graphic display / easy operation via touch screen
- Integrated data logger for storage of the measured values
- USB interface for reading out via USB stick
- Calculates all necessary moisture parameters like g/m³, mg/m³, ppm V/V, g/kg, °Ctdatm
- 2nd freely assignable sensor input for third-party sensors (only DP 510)
- International: Up to 8 languages selectable

Application ranges:

- Compressed air: Examination of refrigeration, membrane, adsorption driers
- Technical gases: Residual moisture meas. in gases like N2, O2 and so on
- Plastics industry: Examination of granulate driers
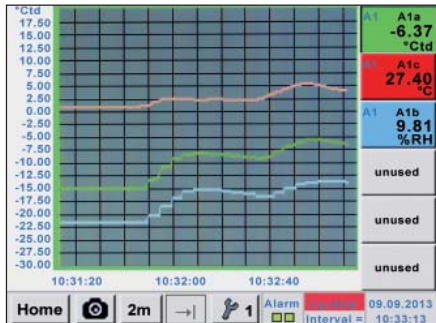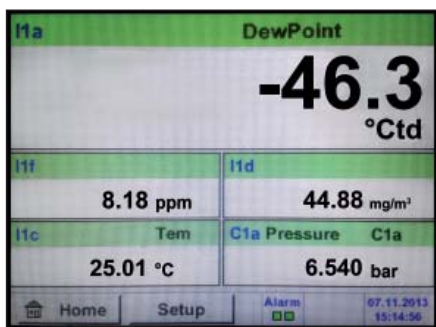- Medical compressed air/breathing air

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.

It is possible to store up to 100 million measured values.
Each measurement can be stored with a comment, e. g. measuring site name.
The time interval can be freely determined.

Quick installation by means of measuring chamber and quick connector

Ideal for service technicians - everything in one case

Dry container - for sensor protection and quick adaptation time

Description	Order No.
Set DP 500 in a case - consisting of:	0600 0500
Portable dew point meter DP 500 for compressed air and gases	0560 0500
Mobile measuring chamber up to 16 bar	0699 4490
Diffusion-tight PTFE hose with quick connector, length 1 m	0554 0003
Power supply for DP 500/510	0554 0009
Control and calibration set 11.3 % RH	0554 0002
Quick-lock coupling	0530 1101
Dry container for CS dew point sensors	0699 2500
Transportation case (small) for DP 500	0554 6500
Further options, not included in the set	
CS Soft Basic - data evaluation in graphic and table form - reading out of the measured data of DP500/510 via USB	0554 7040
Precision calibration at -40°Ctd with ISO certificate	0699 3396
Additional calibr. point freely selectable in the range between -80…+20°Ctd	0700 7710
High pressure measuring chamber up to 350 bar	0699 3590
Measuring chamber for atmospheric dew point	0699 3690
Measuring chamber for granulate driers with minimum overpressure	0699 3490
Measuring chamber for respiratory air bottles up to 350 bar	0699 3790
Portable dew point meter DP 500 for compressed air and gases (high pressure version up to 350 bar)	0560 0501

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:	Internal rechargeable Li-Ion batteries, approx 12 h continuous operation, 4 h charging time
Screw-in thread:	G1/2" stainless steel
Surrounding temperature:	0…+50°C
EMV:	DIN EN 61326

DP 500 / DP 510

Flexible data recording and transfer via USB cable or USB stick

The stored measured data can be easily transferred to the computer via a USB stick or via a USB cable.

The time periods are freely selectable or you just read out the whole memory.

The data can be evaluated by means of the software CS Soft Basic in table and in graphic form.

USB stick

WORLD DEBUT
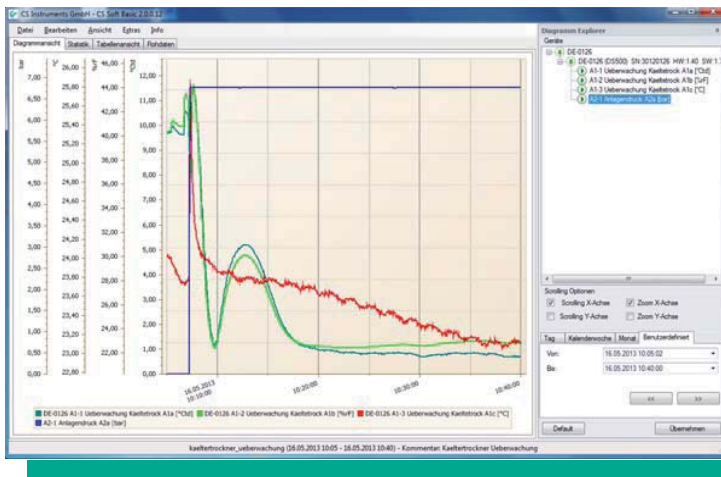Photo key stores current screen as image file.

World debut photo key

Ideal for documentation of the measured values/measurement curves on site. Coloured measurement curves can be sent by e-mail or integrated into a service report. By means of the photo key the "current screen" can be stored as an image file and printed out at the computer or edited without any additional software.

In the past mini thermo transfer printers were used frequently. The lifetime of the printout is temporary and it cannot be used in the computer. Therefore the printout was glued onto a paper very often.

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Data evaluation in 5 languages by means of CS Soft Basic

Everything at a glance: Table, graph, statistics -
at the touch of a button the user gets all necessary information.

Graphic evaluation

All measurement curves are indicated in terms of colour. All necessary functions such as zoom, selection/deselection of single measurement curves, freely selectable time periods, scaling of the axis, selection of colours and so on are integrated:

This view can be stored as a pdf file and sent by e-mail. Different data can be consolidated to a common file.

Table view

All measuring points are listed with exact time interval. The desired measuring channels with measuring site name can be selected via the diagram explorer.

Statistics

All necessary statistic data are visible at a glance.
So the user can quickly see which minimum or maximum measured values occurred at which time and for how long.

DP 510
Portable dew point meter
with data logger and third-party sensor

Performing measuring tasks with one instrument

DP 510 disposes of all functions of DP 500 and has an additional freely assignable sensor input.

Additionally to the internal dew point measurement one further optional sensor can be connected.
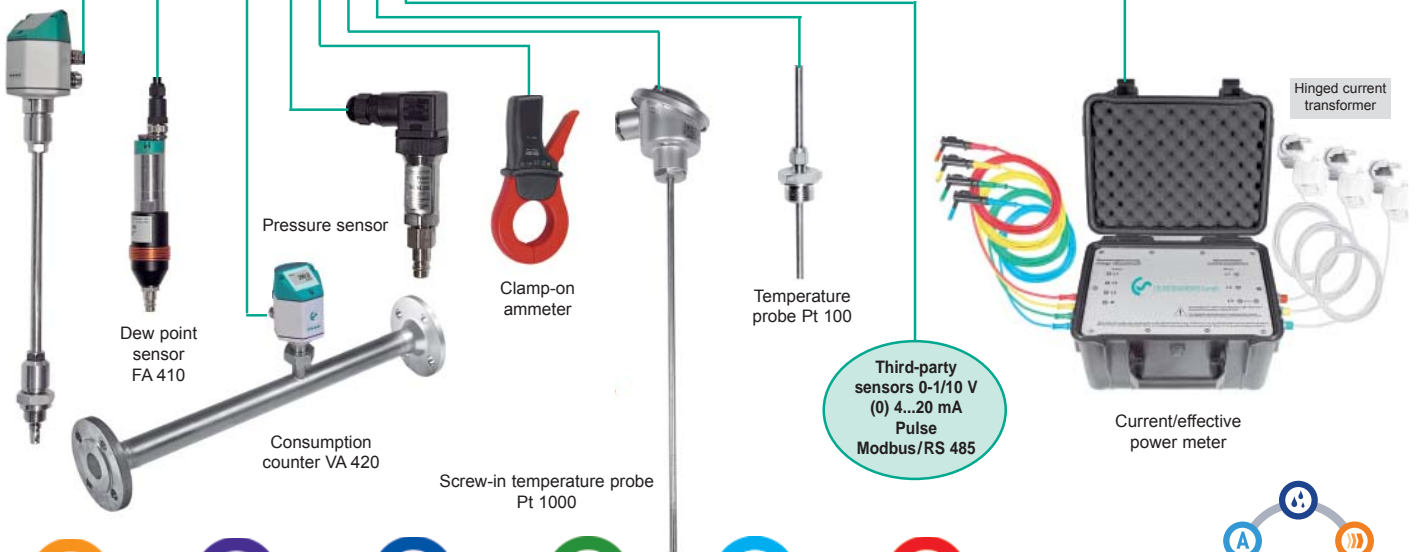
So the user can meet nearly all industrial measuring tasks like for example:

- Separate pressure measurement
- Dew point distance via external temperature sensor
- Compressed air consumption measurement
- Active power in kWh/kW

Description	Order No.
Set DP 510 in a case - consisting of:	0600 0510
Portable dew point meter DP 510 with one additional sensor input	0560 0510
Mobile measuring chamber up to 16 bar	0699 4490
Diffusion-tight PTFE hose with quick connector, length 1 m	0554 0003
Power supply for DP 500/510	0554 0009
Control and calibration set 11.3 % RH	0554 0002
Quick-lock coupling	0530 1101
Dry container for CS dew point sensors	0699 2500
Transportation case (big) for DP 510 as well as further sensors	0554 6510
Further options, not included in the set	
Option for DP 510: "Mathematics calculation function" for 4 freely selectable channels, (virtual channels): addition, subtraction, division, multiplication	Z500 5107
Option for DP 510: "Totalizer function for analogue signals"	Z500 5106
CS Soft Basic - data evaluation in graphic and table form - reading out of the measured data of DP500/510 via USB	0554 7040
Precision calibration at -40°Ctd with ISO certificate	0699 3396
Additional calibr. point freely selectable in the range between -80…+20°Ctd	0700 7710
High preassure measuring chamber up to 350 bar	0699 3590
Measuring chamber for atmospheric dew point	0699 3690
Measuring chamber for granulate driers with minimum overpressure	0699 3490
Measuring chamber for respiratory air bottles up to 350 bar	0699 3790
Portable dew point meter DP 510 for compressed air and gases (high pressure version up to 350 bar)	0560 0512

Consumption sensor VA 400

Dew point sensor FA 410

Pressure sensor

Consumption counter VA 420

Clamp-on ammeter

Screw-in temperature probe Pt 1000

Temperature probe Pt 100

Third-party sensors 0-1/10 V (0) 4...20 mA Pulse Modbus/RS 485

Current/effective power meter

Hinged current transformer

Consumption | Leakage | Dew point | Pressure | Current | Temperature

MULTIFUNCTION

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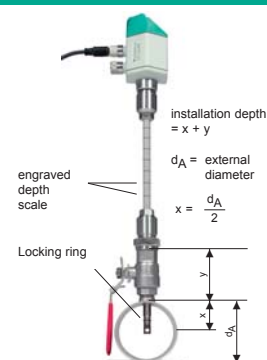www.onetemp.com.au
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Suitable sensors for **DP 510**

Flow sensors VA 400:	Order No.
VA 400 flow sensor, Max version (185 m/s), sensor length 220 mm, incl. 5 m connection cable to DP 510	0695 1122
VA 400 flow sensor, HighSpeed version (224 m/s), sensor length 220 mm, incl. 5 m connection cable to DP 510	0695 1123

Option for VA 400:	sensor length 120 mm	ZSL 0120
	sensor length 160 mm	ZSL 0160
	sensor length 300 mm	ZSL 0300
	sensor length 400 mm	ZSL 0400

installation depth = x + y

d_A = external diameter

engraved depth scale

$x = \dfrac{d_A}{2}$

Locking ring

Flow measuring range VA 420 for compressed air (ISO 1217: 1000 mbar, 20°C)			
Flow sensor VA 420	0.8... 90 l/min	(R1/4" DN 8)	0695 0420
Flow sensor VA 420	0.2... 90 m^3/h	(R1/2" DN 15)	0695 0421
Flow sensor VA 420	0.3... 170 m^3/h	(R3/4" DN 20)	0695 0422
Flow sensor VA 420	0.5... 290 m^3/h	(R1" DN 25)	0695 0423
Flow sensor VA 420	0.7... 480 m^3/h	(R11/4" DN 32)	0695 0426
Flow sensor VA 420	1.0... 550 m^3/h	(R11/2" DN 40)	0695 0424
Flow sensor VA 420	2.0... 900 m^3/h	(R2" DN 50)	0695 0425

Consumption

Dew point sensor:	
FA 410 dew point sensor, -80...20°Ctd incl. mobile measuring chamber and 5 m connection cable to DP 510	0699 1411

Dew point

Connection cable for VA/FA sensors:	
Connection cable for VA/FA series on mobile instruments, ODU / M12, 5 m	0553 0503

Calibration certificate for flow/dew point sensors:	
5 point precision calibration for flow sensors incl. ISO certificate	3200 0001
Precision calibration at -40°Ctd with ISO certificate	0699 3396

Pressure sensors:	Order No.
Standard pressure sensor CS 16, 0...16 bar, ± 1 % accuracy of full scale	0694 1886
Standard pressure sensor CS 40, 0...40 bar, ± 1 % accuracy of full scale	0694 0356

Pressure

Temperature sensors:	
Bendable temperature probe, Pt100 Class B, length 300 mm, Ø3 mm, -70...+500°C, 2 m probe connection cable glass fibre /stainless steel with ODU plug for mobile instruments	0604 0106
Screw-in temperature sensor Pt 100, Class A, length 300 mm, Ø 6 mm, with measuring transducer 4...20 mA = 50...+500°C (2-wire technology)	0693 0002
Temperature probe cable Pt 100, Class A, length 300 mm, Ø 6 mm, -50...+180°C, 5 m probe connection cable with open ends	0604 0102
Miniature temperature probe cable Pt 100, Class A, length 25 mm, Ø 4 mm, -50...+180°C, 5 m connection cable	0604 0105
Clamp screwing 6 mm, G1/2", VA clamping ring, pressure tight up to 10 bar	0554 6004
Temperature calibration certificate, 2 calibration points	0520 0180

Connection cables for pressure sensors/temperature sensors:	
Connection cable for pressure, temperature or external sensors on mobile instruments, ODU / open ends, 5 m	0553 0501
Connection cable for pressure,temperature or external sensors on mobile instruments, ODU / open ends, 10 m	0553 0502
Extension cable for mobile instruments,ODU / ODU, 10 m	0553 0504

Temperature

Clamp-on ammeters:	
Clamp-on ammeter 0…400 A TRMS incl. 5 m connection cable	0554 0511
Clamp-on ammeter 0...1000 A TRMS incl. 5 m connection cable	0554 0508
Calibration certificate for clamp-on ammeter	0554 3333

Current A

Current/effective power meter up to 100 A	**0554 5341**
Current/effective power meter up to 600 A	**0554 5342**

- Mobile current/effective power meter with 3 external current transducers
  for big machines and plants
- External current transformers for clamping on cables (100 or 600 A)
- External magnetic measuring tips for measuring the voltage
- Measures kW, kWh, cos phi, kVar, kVA
- Data transfer to DP 510 via Modbus

Connection cable for mobile current/effective power meter to DP 510, 5 m	0553 0506

Current A

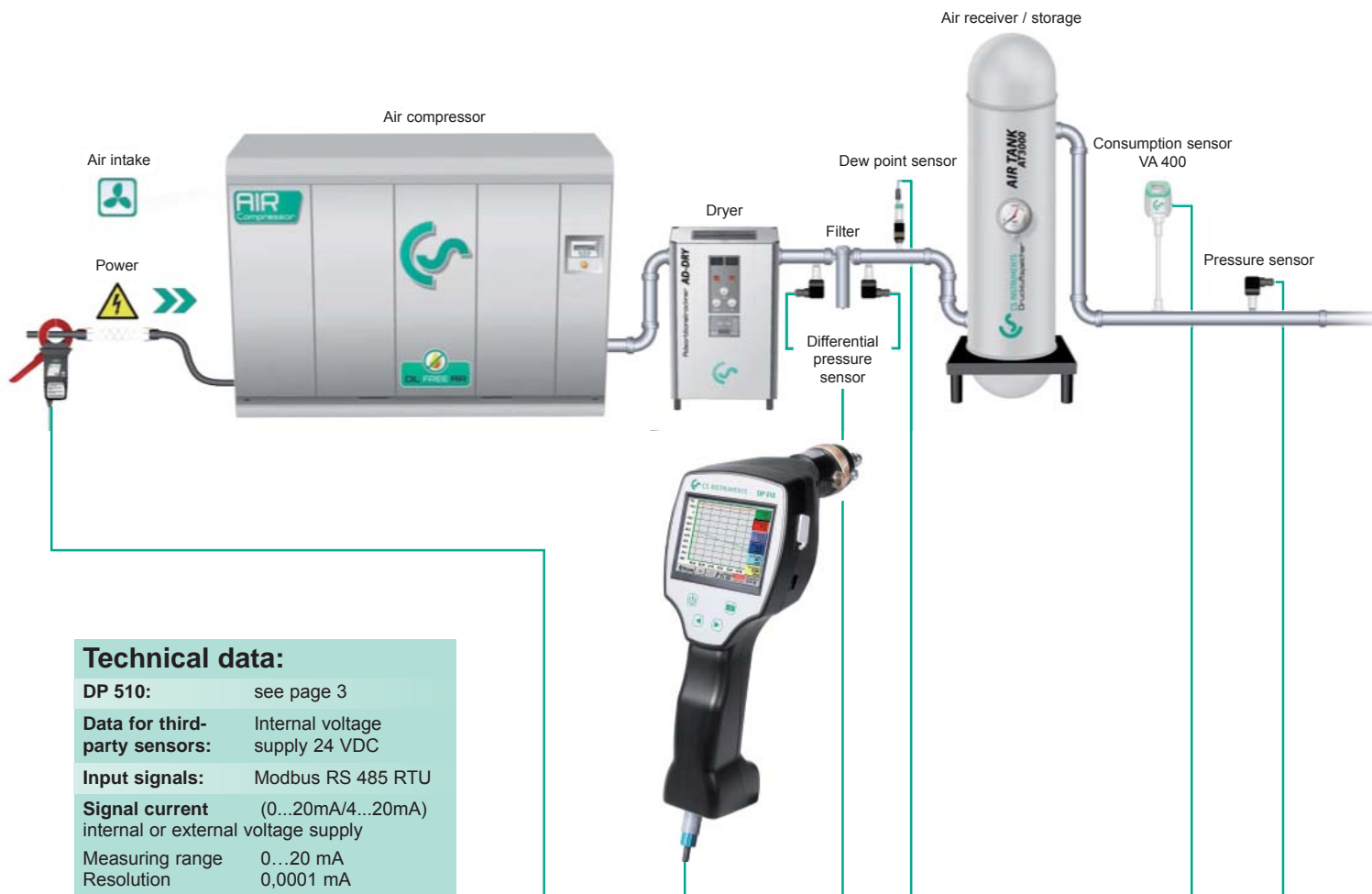| Optional third-party sensors connectibel:	
e.g. heat meters, current meters, gas meters, water meters and so on.	
To the 2nd freely assignable sensor input all sensors of CS Instruments can be connected as well as optional third-party sensors and counters with the following signal outputs: 4-20 mA, 0-20 mA I 0-1 V / 0-10 V / 0-30 V I Pt100 (2- or 3-wire), Pt1000 (2- or 3-wire), KTY I pulse outputs (e.g. of gas counters) I Frequency output I Modbus protocol	

Third-party sensors

DP 510

Meeting all measuring tasks with one device

Air receiver / storage

Air compressor

Air intake

Power

Dew point sensor

Consumption sensor VA 400

Dryer

Filter

Pressure sensor

Differential pressure sensor

Technical data:

DP 510:	see page 3
Data for third-party sensors:	Internal voltage supply 24 VDC
Input signals:	Modbus RS 485 RTU
Signal current internal or external voltage supply	(0...20mA/4...20mA)
Measuring range	0…20 mA
Resolution	0,0001 mA
Accuracy	± 0.003 mA ± 0.05 %
Input resistance	50 Ω
Voltage signal	(0...1 V)
Measuring range	0…1 V
Resolution	0,05 mV
Accuracy	± 0.2 mV ± 0.05 %
Input resistance	100 kΩ
Voltage signal	(0...10 V / 30 V)
Measuring range	0…10 V
Resolution	0,5 mV
Accuracy	± 2 mV ± 0.05 %
Input resistance	1 MΩ
RTD Pt 100	
Measuring range	-200…850° C
Resolution	0.1° C
Accuracy	± 0,2°C (-100...400°C)
	± 0,3°C (remaining range)
RTD Pt 1000	
Measuring range	-200…850° C
Resolution	0,1° C
Accuracy	± 0.2° (-100...400°C)
Pulse	
Measuring range	Min. pulse length 100 µs
	Frequency 0...1 kHz
	max. 30 VDC

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www.onetemp.com.au
1300 768 887

SALES OFFICE SOUTH
CS INSTRUMENTS GMBH
Zindelsteiner Straße 15
D-78052 VS-Tannheim
Phone +49 (0) 7705 978 99-0
Fax   +49 (0) 7705 978 99-20
info@cs-instruments.com

SALES OFFICE NORTH
CS INSTRUMENTS GMBH
Am Oxer 28c
D-24955 Harrislee
Phone +49 (0) 461 700 20 25
Fax   +49 (0) 461 700 20 26
info@cs-instruments.com

www.cs-instruments.com
www.onetemp.com.au
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