PI 500
Hand-held instrument for industry

The new PI 500 is an all-purpose hand-held measuring instrument for many applications in industry like e. g.:

- **Flow measurement**
- **Pressure/vacuum measurement**
- **Temperature measurement**
- **Moisture/dew point measurement**

The graphic indication of coloured measurement curves is inimitably.

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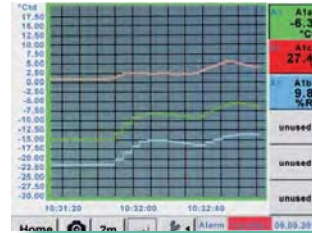The data can be comfortably evaluated

with the CS Soft Basic software. Measured data and service reports can be issued easily and quickly. The following sensors can be connected to the freely configurable sensor input of PI 500:

- Pressure sensor (high and low pressure)
- Flow sensors, VA 500/520
- Temperature sensors Pt 100, Pt 1000 / 4...20 mA
- Dew point sensors FA 510
- Effective power meters
- Optional third-party sensors with the following signals: 0...1/10 V, 0/4...20 mA, Pt 100, Pt 1000, pulse, Modbus

Special features:

- **Universal sensor input for lots of common sensor signals**
- **Internal rechargeable Li-Ion batteries (approx.12h continuous operation)**
- **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**
- **International: Up to 8 languages selectable**

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

All physical parameters of moisture measurement are calculated automatically.

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.

PI 500

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.
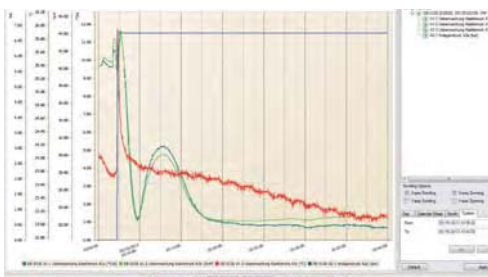
integrated
USB interface

World debut screenshot 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 screenshot key the „current screen" can be stored as an image file and printed out at the computer or edited without any additional software.

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.

PI 500
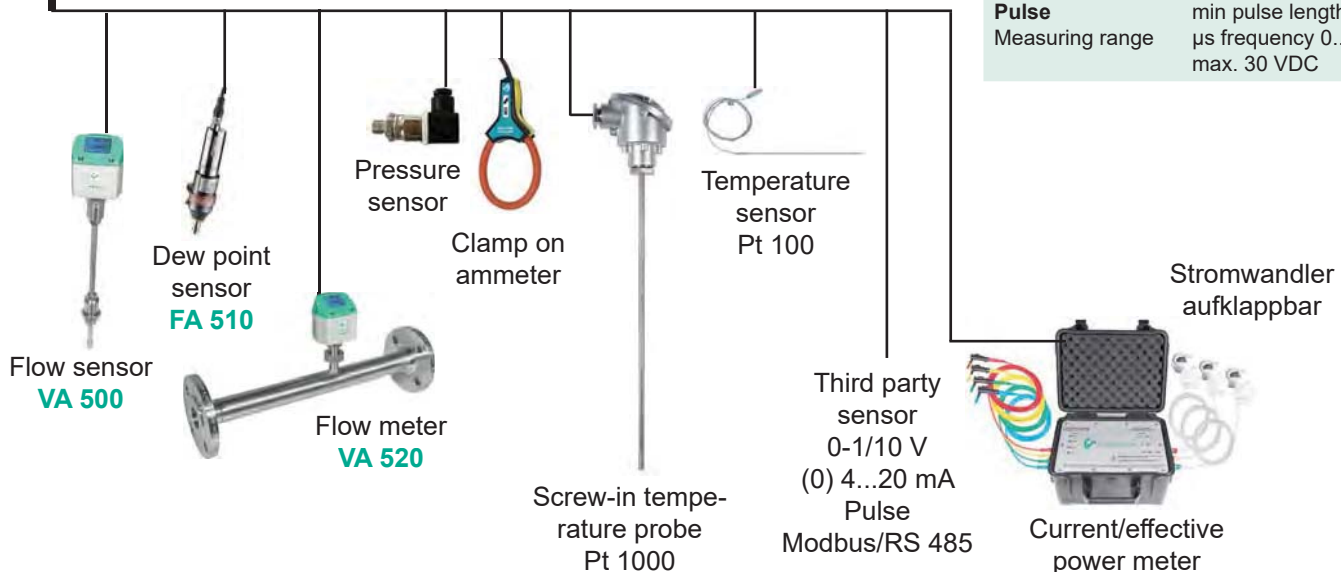## Hand-held instrument with large range of sensors

Description	Order No.
PI500 portable measuring instrument with integrated data logger, incl. power supply	0560 0511
Option for PI 500: "mathematics calculation function" for 4 freely selectable „virtual" channels	Z500 5107
Option for PI 500: „Totalizer function for analogue signals"	Z500 5106
CS Soft Basic - data evaluation in graphic and table form - reading out of the measured data via USB	0554 7040
Transportation case	0554 6510

Technical data PI 500:

Colour screen:	3.5"-Touchpanel TFT transmissive, graphics, curves, statistics
Interfaces:	USB
Power supply for sensors:	Output voltage: 24 VDC ± 10% Output current: 120 mA continuous operation
Current supply:	Internal rechargeable Li-Ion batteries charging time approx. 4 h PI 500 operation: > 4h depending on current consumption of external sensors
Power supply unit:	100 - 240 VAC/50 - 60 Hz, 12 VDC - 1A Safety class 2, only for application in dry rooms
Dimensions:	82 x 96 x 245 mm
Material:	Plastic PC/ABS
Weight:	450 g
Operating temperature:	-20...70°C measuring gas temperature 0...50°C ambient temperature
Storage temperature:	-20 to +70°C
EMC:	DIN EN 61326
Sensor inputs:	for connection of pressure sensors, temperature sensors, clamp-on ammeters, third party sensors with 4...20mA, 0-10 V, Pt 100, Pt 1000
Memory size:	4 GB - SD memory card standard

Input signals

Current signal internal or external power supply	(0...20mA/4...20mA)
Measuring range	0...20 mA
Resolution	0.0001 mA
Accuracy	± 0.03 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	1 MΩ
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 (further 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 500 µs frequency 0...1 kHz max. 30 VDC

Flow sensor **VA 500**

Dew point sensor **FA 510**

Flow meter **VA 520**

Pressure sensor

Clamp on ammeter

Screw-in temperature probe Pt 1000

Temperature sensor Pt 100

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

Stromwandler aufklappbar

Current/effective power meter

Suitable sensors for **PI 500**

Flow sensors VA 500:	Order No.
Flow sensor VA 500 Max. Version (185 m/s) sensor length 220 mm, incl. 5 m cable to mobile instruments	0695 1124
Flow sensor VA 500 High-Speed Version (224 m/s), sensor length 220 mm, 5 m cable to mobile instruments	0695 1125
Options for VA 500: (see page 81)	
Flow measuring range VA 520 for compressed air:(ISO 1217: 1000 mbar, 20°C)	
Flow meter VA 520, 0,8... 90 l/min, (R 1/4" DN 8)	0695 0520
Flow meter VA 520, 0,2... 90 m³/h, (R 1/2" DN 15)	0695 0521
Flow meter VA 520, 0,3... 170 m³/h, (R 3/4" DN 20)	0695 0522
Flow meter VA 520, 0,5... 290 m³/h, (R 1" DN 25)	0695 0523
Flow meter VA 520, 0,7... 530 m³/h, (R 1 1/4" DN 32)	0695 0526
Flow meter VA 520, 1,0... 730 m³/h, (R 1 1/2" DN 40)	0695 0524
Flow meter VA 520, 2,0... 1195 m³/h, (R 2" DN 50)	0695 0525
Dew point sensors:	
FA 510 dew point sensor for mobile instruments, -80…+20°Ctd, incl. mobile measuring chamber, 5 m cable and perforated cap	0699 1510
FA 510 dew point sensor for mobile instruments, -20…+50°Ctd, incl. mobile measuring chamber, 5 m cable and perforated cap	0699 1512
Connection cable for VA/FA sensors:	
Connection cable for VA/FA series on mobile insruments, ODU / M12, 5m	0553 1503
Extension cable for mobile instruments ODU/ODU, 10m	0553 0504
Calibration certificate for flow / dew point sensors:	
5 point precision calibration with ISO certificate	3200 0001
Precision calibration at -40 °Ctd incl. ISO certificate	0699 3396

Pressure sensors:	± 1 % accuracy of full scale	± 0,5 % accuracy of full scale
Standard pressure sensor CS 16 from 0…16 bar	0694 1886	0694 3555
Standard pressure sensor CS 40 from 0…40 bar	0694 0356	0694 3930
Standard pressure sensor CS 1.6 from 0...1.6 bar abs.		0694 3550
Standard pressure sensor CS 10 from 0...10 bar	0694 3556	0694 3554
Standard pressure sensor CS 100 from 0…100 bar		0694 3557
Standard pressure sensor CS 250 from 0…250 bar		0694 3558
Standard pressure sensor CS 400 from 0…400 bar		0694 3559
Precision pressure sensor CS -1...+15 bar, ±0.5 % accuracy of full scale		0694 3553
Precision differential pressure sensor CS 400, 0...400 mbar differential pressure, 0.075% accuracy of full scale, static pressure max. 40 bar	0694 3560	
Calibration of pressure sensor 5 points between 0 and 10/16 bar	3200 0004	

Temperature sensors:	
Bendable temperature probe PT 100 (2-wire) class A, length: 300 mm, d=3 mm, -70°C to +500°C, connection cable PFA, 2 m with ODU-plug (8 pole) to mobile instruments	0604 0200
Screw-in temperature probe PT 100 class A, length: 300 mm, d=6mm, with integrated transducer 4…20 mA = -50°C…+500°C (2-wire)	0604 0201
Cross-band surface temperature probe, thermocouple Type K, with integrated transducer 4…20 mA = 0°C…+180°C, 2 m connection calbe (PVC) with ODU-plug (8-pole) to mobile instruments	0604 0202
Temperature probe PT 100 class A (4-wire) with cable, length: 300 mm, d=6 mm, -70°C to +260°C, 5 m connection cable (PFA) with open ends	0604 0205
Temperature probe PT 100 class A (4-wire) with cable, length: 100 mm, d=6 -70°C to +260°C, 5 m connection cable (PFA) with open ends	0604 0206
Temperature probe PT 100 class A (4-wire) with cable, length: 200 mm, d=6 -70°C to +260°C, 5 m connection cable (PFA) with open ends	0604 0207
Surface temperature probe, magnetic, magnet dimensions 39x26x25 mm, PT 100 class B (2-wire), -30 to +180°C, 5 m connection cable (PFA) with open ends	0604 0208
Clamp screwing 6mm; G 1/2" PTFE clamp ring pressure tight up 10 bar material: stainless steel, temperature range: max. +260°C	0554 0200
Clamp screwing 6mm; G 1/2" stainless steel clamp ring pressure tight up to 16 bar, material: stainless steel, temperature range: max. +260°C	0554 0201
Temperature calibration certificate 2 measuring points	0520 0180

Suitable sensors for **PI 500**

Connection cables for pressure sensors / temperature sensors:	Order No.
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
Mounted Odu plug for connection on mobile instruments	Z604 0104
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 0519
Calibration certificate for clamp-on ammeter	0554 3333
CS PM 600 Current/effective power meter up to 100 A	**0554 5341**
CS PM 600 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 xternal 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 PI 500 via Modbus Incl. connection cable for mobile current/effective power meter to mobile instruments, 5 m	
Current transformer 100A/1A consisting of 3 transformers for mobile instruments	Z554 0001
Current transformer 600A/1A consisting of 3 transformers for mobile instruments	Z554 0002
Current transformer 1000A/1A consisting of 3 transformers for mobile instruments	Z554 0003
Optional third-party sensors connectable:	
e.g. heat meters, current meters, gas meters, water meters and so on. To the freely assignable sensor input all our sensors 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), Pt 1000 (2- or 3-wire), KTY I pulse outputs (e.g. of gas counters) I Frequency output I Modbus protocol	

Application: **Portable flow measurement** in production in front of machines and plants

Set for dryer monitoring

°Ctd

bar

°C

❶ PI 500 portable measuring instrument with integrated data logger, incl. power supply	0560 0511
❷ FA 510 dew point sensor for mobile instruments, -80…+20°Ctd incl. mobile measuring chamber, 5 m cable	0699 1510
❸ Standard Pressure sensor CS 16 from 0…16 bar, ± 1 % accuracy of full scale	0694 1886
❹ Connection cable for pressure, temperature or external sensors to portable instruments, ODU / open ends, 5 m	0553 0501
❺ Bendable temperature probe Pt100 Class B, length 300 mm, ø 3 mm, -70…+500°C, 2 m probe connection cable glass fibre/stainless steel with ODU plug 8 pole for portable instruments	0604 0106
❻ CS Soft Basic - data evaluation in graphic and table form - reading out of the measured data via USB	0554 7040
❼ Transportation case	0554 6510

Set for portable flow measurement

m³/h

❶ PI 500 portable measuring instrument with integrated data logger, incl. power supply	0560 0511
❷ Flow meter VA 520, 0,3... 170 m³/h, (R3/4" DN 20)	0695 0522
❸ Connection cable for VA/FA Series on mobile instruments, ODU / M12, 5 m	0553 1503
❹ CS Soft Basic - data evaluation in graphic and table form - reading out of the measured data via USB	0554 7040
❺ Transportation case	0554 6510

Standard set compressed air

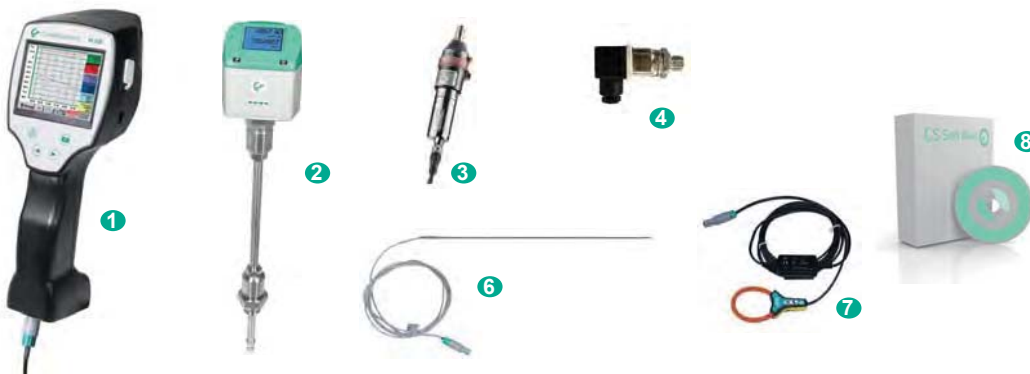| | m³/h |
	°Ctd
	bar
	°C

❶ PI 500 portable measuring instrument with integrated data logger, incl. power supply	0560 0511
❷ Flow sensor VA 500 Max. Version (185 m/s) sensor length 220 mm, incl. 5 m cable to portable instruments	0695 1124
❸ FA 510 dew point sensor for mobile instruments, -80…+20°Ctd incl. mobile measuring chamber, 5 m cable	0699 1510
❹ Standard Pressure sensor CS 16 from 0…16 bar, ± 1 % accuracy of full scale	0694 1886
❺ Connection cable for pressure, temperature or external sensors to portable instruments, ODU / open ends, 5 m	0553 0501
❻ Bendable temperature probe Pt100 Class B, length 300 mm, ø 3 mm, -70…+500°C, 2 m probe connection cable glass fibre/stainless steel with ODU plug 8 pole for portable instruments	0604 0106
❼ CS Soft Basic - data evaluation in graphic and table form - reading out of the measured data via USB	0554 7040
❽ Transportation case	0554 6510

Professional set compressed air

	m³/h
	°Ctd
	bar
	°C
	A

❶ PI 500 portable measuring instrument with integrated data logger, incl. power supply	0560 0511
❷ Flow sensor VA 500 Max. Version (185 m/s) sensor length 220 mm, incl. 5 m cable to portable instruments	0695 1124
❸ FA 510 dew point sensor for mobile instruments, -80…+20°Ctd incl. mobile measuring chamber, 5 m cable	0699 1510
❹ Standard Pressure sensor CS 16 from 0…16 bar, ± 1 % accuracy of full scale	0694 1886
❺ Connection cable for pressure, temperature or external sensors to portable instruments, ODU / open ends, 5 m	0553 0501
❻ Bendable temperature probe Pt100 Class B, length 300 mm, ø 3 mm, -70…+500°C, 2 m probe connection cable glass fibre/stainless steel with ODU plug 8 pole for portable instruments	0604 0106
❼ Clamp-on ammeter 0...400 A RMS 10-30 VDC for portable instruments, 3 m cable,ODU 8 pol.	0554 0511
❽ CS Soft Basic - data evaluation in graphic and table form - reading out of the measured data via USB	0554 7040
❾ Transportation case	0554 6510

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