# Hand-held instrument

# PI 500

## for industry

**NEW**

▶ **Flow**

▶ **Pressure / Vacuum**

▶ **Temperature**

▶ **Moisture / Dew point**

▶ **Optional third-party sensors**

# 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 400/420

► Temperature sensors Pt 100, Pt 1000 / 4...20 mA

► Dew point sensors FA 410/FA 415

► 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
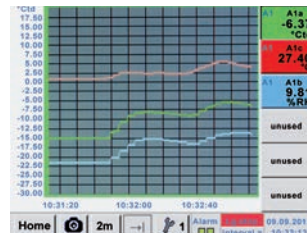


Measurement curves are indicated graphically and thus the user can see at a glance the behaviour of the drier since the start of the measurement.



All physical parameters of moisture measurement are calculated automatically.
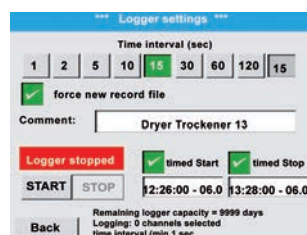


It is possible to store up to 100 million measured values.
Each measurement can be stored with a comment, e.g. measuring site name. The time interval can be freely determined.

# PI 500

## Flexible data recording and transfer via USB cable or USB stick



integrated
USB interface

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.

### 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.
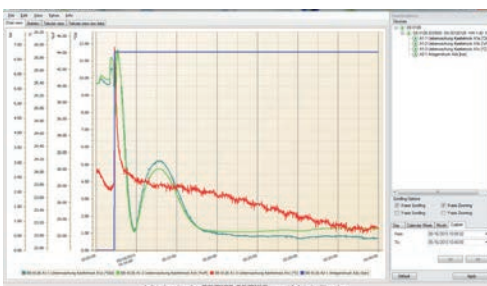


### Graphic evaluation

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 | 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 |

Flow sensor **VA 400**

Dew point sensor **FA 410**

Pressure sensor

Flow meter **VA 420**

Clamp-on ammeter

Screw-in temperature probe **Pt 1000**

Temperature sensor **Pt 100**

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

Current/effective power meter

Hinged current transformer

Flow

Leakage

Dew Point

Pressure

Current

Temperature

MULTIFUNCTION
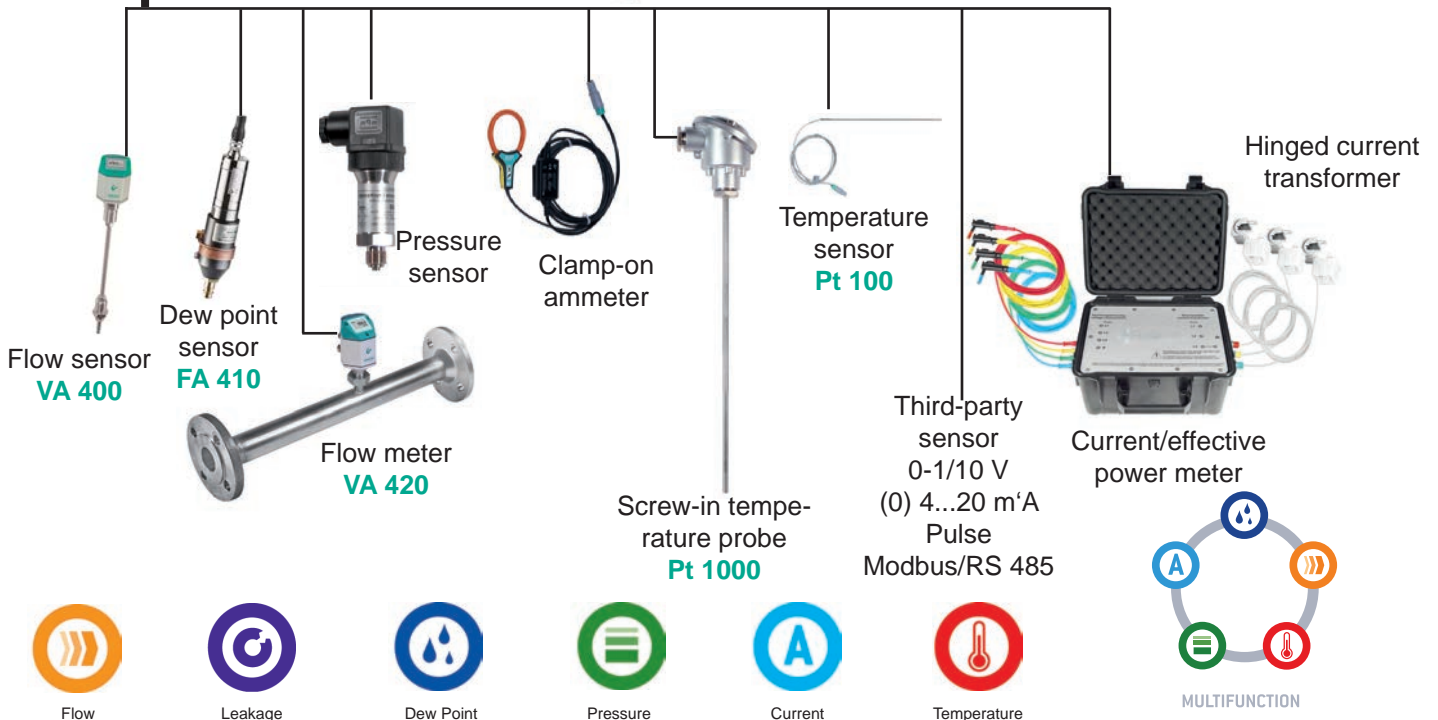
# Suitable sensors for **PI 500**

| Flow sensors VA 400: | Order No. |
|---|---|
| Flow sensor VA 400-Max. Version (185 m/s) sensor length 220 mm, incl. 5 m cable to mobile instruments | 0695 1122 |
| Flow sensor VA 400 High-Speed Version (224 m/s), sensor length 220 mm, 5 m cable to mobile instruments | 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 |
| **Flow measuring range VA 420 for compressed air:**(ISO 1217: 1000 mbar, 20°C) | |
| Flow meter VA 420, 0,8... 90 l/min, (R1/4" DN 8) | 0695 0420 |
| Flow meter VA 420, 0,2... 90 m³/h, (R1/2" DN 15) | 0695 0421 |
| Flow meter VA 420, 0,3... 170 m³/h, (R3/4" DN 20) | 0695 0422 |
| Flow meter VA 420, 0,5... 290 m³/h, (R1" DN 25) | 0695 0423 |
| Flow meter VA 420, 0,7... 480 m³/h, (R11/4" DN 32) | 0695 0426 |
| Flow meter VA 420, 1,0... 550 m³/h, (R11/2" DN 40) | 0695 0424 |
| Flow meter VA 420, 2,0... 900 m³/h, (R2" DN 50) | 0695 0425 |
| **Dew point sensors:** | |
| FA 410 dew point sensor for mobile instruments, -80…+20°Ctd, incl. mobile measuring chamber, 5 m cable and perforated cap | 0699 1411 |
| FA 415 dew point sensor for mobile instruments, -20…+50°Ctd, incl. mobile measuring chamber, 5 m cable and perforated cap | 0699 1415 |
| 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:** | |
| Standard pressure sensor CS 16 from 0…16 bar, ± 1 % accuracy of full scale | 0694 1886 |
| Standard pressure sensor CS 40 from 0…40 bar, ± 1 % accuracy of full scale | 0694 0356 |
| Standard pressure sensor CS 1.6 from 0...1.6 bar abs., ± 1 % accuracy of full scale | 0694 3551 |
| Standard pressure sensor CS 100 from 0…100 bar, ± 1 % accuracy of full scale | 0694 3557 |
| Standard pressure sensor CS 250 from 0…250 bar, ± 1 % accuracy of full scale | 0694 3558 |
| Standard pressure sensor CS 400 from 0…400 bar, ± 1 % accuracy of full scale. | 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 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 mobile instruments | 0604 0106 |
| Screw-in temperature probe Pt100 Class A, length: 300 mm with measuring transducer 4 to 20 mA = -50 to +500 °C ( 2-wire technology) | 0693 0002 |
| Temperature probe Pt100 Class A, length: 300 mm with 5 m connection cable with open ends | 0604 0102 |
| Mini temperature probe cable Pt100 Class A, length 25 mm, ø 4 mm 50°C to +180°C, 5 m probe connection cable with open ends | 0604 0105 |
| Compression fitting 6mm, G1/2", VA clamp ring | 0554 6004 |
| 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 | |
| **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/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<br>► External current transformers for clamping on cables (100 or 600 A)<br>► External magnetic measuring tips for measuring the voltage<br>► Measures kW, kWh, cos phi, kVar, kVA<br>► Data transfer to PI 500 via Modbus<br>► Incl. connection cable for mobile current/effective power meter to mobile instruments, 5 m | | |
| **Optional third-party sensors connectable:** | | |

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

# CS INSTRUMENTS GmbH

## Set for dryer monitoring



**°Ctd**

**bar**

**°C**

| | |
|---|---|
| ❶ PI500 portable measuring instrument with integrated data logger | **0560 0511** |
| ❷ FA 410 dew point sensor for mobile instruments, -80…+20°Ctd incl. mobile measuring chamber, 5 m cable | 0699 1411 |
| 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 PI500 portable measuring instrument with integrated data logger | **0560 0511** |
| ❷ Flow meter VA 420, 0,3... 170 m³/h, (R3/4" DN 20) | 0695 0422 |
| ❸ Connection cable for VA/FA 400, 5 m | 0553 0104 |
| 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** | | |

| | | |
|---|---|---|
| **1** PI500 portable measuring instrument with integrated data logger | | **0560 0511** |
| **2** Flow sensor VA 400-Max. Version (185 m/s) sensor length 220 mm, incl. 5 m cable to portable instruments | | 0695 1122 |
| **3** FA 410 dew point sensor for mobile instruments, -80…+20°Ctd incl. mobile measuring chamber, 5 m cable | | 0699 1411 |
| **4** Standard Pressure sensor CS 16 from 0…16 bar, ± 1 % accuracy of full scale | | 0694 1886 |
| **5** Connection cable for pressure, temperature or external sensors to portable instruments, ODU / open ends, 5 m | | 0553 0501 |
| **6** 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 |
| **7** CS Soft Basic - data evaluation in graphic and table form - reading out of the measured data via USB | | 0554 7040 |
| **8** Transportation case | | 0554 6510 |

## Professional set compressed air



| | | |
|---|---|---:|
| **m³/h** | | |
| **°Ctd** | | |
| **bar** | | |
| **°C** | | |
| **A** | | |

| | | |
|---|---|---|
| **1** PI500 portable measuring instrument with integrated data logger | | **0560 0511** |
| **2** Flow sensor VA 400-Max. Version (185 m/s) sensor length 220 mm, incl. 5 m cable to portable instruments | | 0695 1122 |
| **3** FA 410 dew point sensor for mobile instruments, -80…+20°Ctd incl. mobile measuring chamber, 5 m cable | | 0699 1411 |
| **4** Standard Pressure sensor CS 16 from 0…16 bar, ± 1 % accuracy of full scale | | 0694 1886 |
| **5** Connection cable for pressure, temperature or external sensors to portable instruments, ODU / open ends, 5 m | | 0553 0501 |
| **6** 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 |
| **7** Clamp-on ammeter 0...400 A RMS  10-30 VDC for portable instruments, 3 m cable,ODU 8 pol. | | 0554 0511 |
| **8** CS Soft Basic - data evaluation in graphic and table form - reading out of the measured data via USB | | 0554 7040 |
| **9** Transportation case | | 0554 6510 |