

Process Calibrator Model CPH 6000

WIKA Datasheet CPH 6000

Applications

- Calibration and service companies
- Maintenance facilities
- Control and instrumentation workshops
- Quality assurance

Special Features

- Digital instrument with easily interchangeable reference pressure sensors (sensor can also be attached externally)
- Measuring ranges from 0 ... 250 mbar to 0 ... 6.000 bar
- Accuracy: 0.025 % (incl. calibration certificate)
- Calibration and pressure-switch test functions
- PC software and complete service cases (incl. pumps) available

Description

Applications

In order to provide an optimal solution for each application, a wide variety of pressure sensors are available. With an accuracy of 0.025% and pressure ranges up to 6,000 bar, all are quickly and easily interchangeable without the need for additional tools. In addition to being mounted on the instrument, the pressure sensor can also be mounted remotely using an extension cable (approximately 1 m long). If the pressure sensor is changed, the instrument automatically recognises the new measuring range and thus the operator does not need to reconfigure it manually.

Functionality

In the set-up menu there are three operating modes to choose from: MEASURING / CALIBRATION and PRESSURE-SWITCH TEST. In the CALIBRATION and PRESSURE-SWITCH TEST modes respectively, calibration data for several calibrations can be stored or the switching hysteresis can be automatically determined, with the help of a menu assistant. The electrical and signal connections for the test devices are protected against rough conditions in the field by captive rubber covers.



Process Calibrator CPH 6000

Software

For evaluating and documenting the calibration data stored in the CPH 6000, two PC programs are available. By using PrintCal software (based on EXCEL), the data can be transferred automatically into a printable calibration certificate. EasyCal software, in addition to offering PC-driven calibration, allows the administration of calibration and instrument data within an ACCESS database. For data transfer from the instrument, both an RS 232 and a USB interface are available.

Complete service and test sets

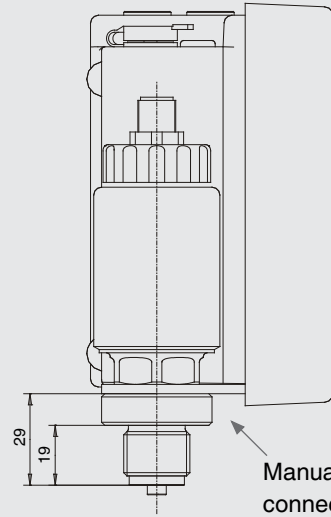
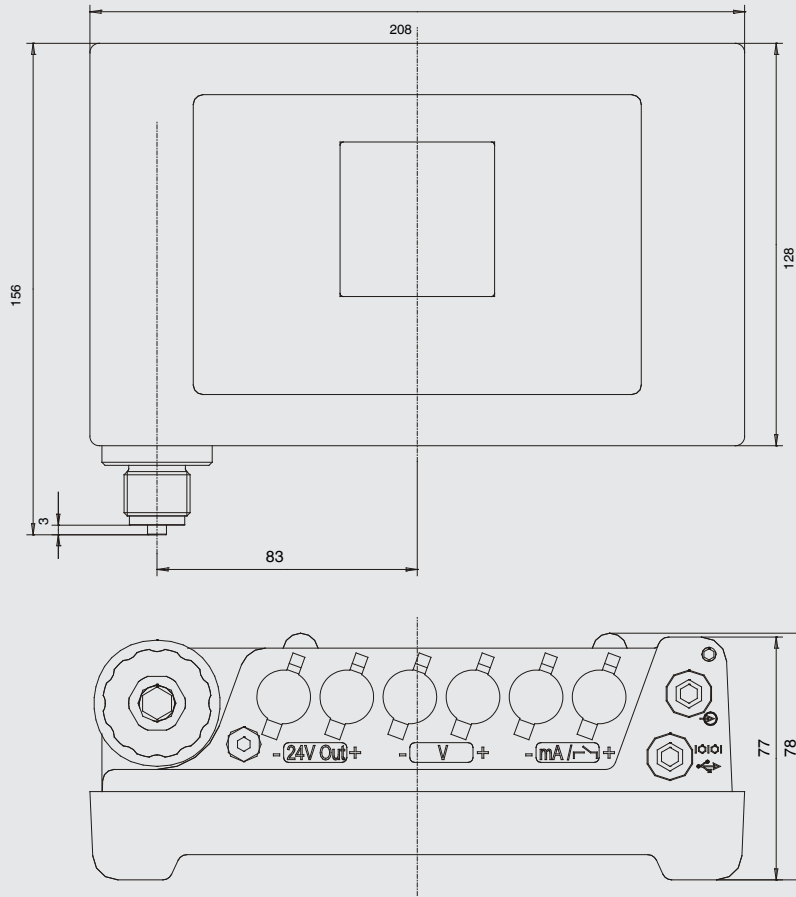
Various configurations of fully equipped service cases are available for maintenance and service applications. Service cases are available with pressure generating equipment, battery charging unit, measuring cable set, pressure-connector adapters, etc..

Certified accuracy

For each pressure transmitter the accuracy is certified and a factory calibration certificate accompanies the equipment. If required, we will also happily provide a DKD calibration certificate for the equipment, issued from our in-house DKD laboratory.

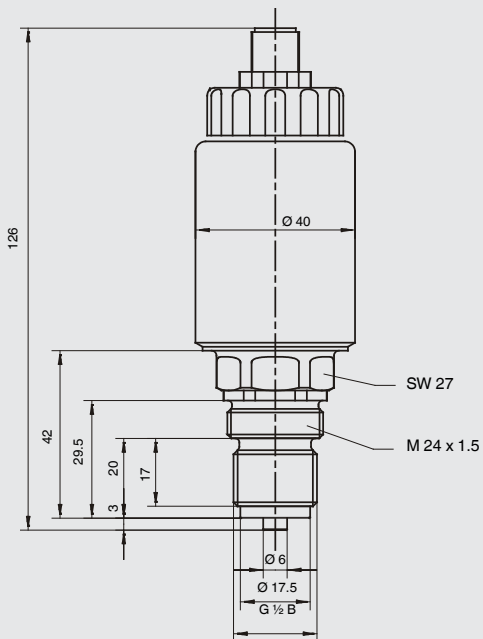
Dimensions in mm

DigitalConsole CPH 6000



Manual quick-connection enabling easy change of sensors.

Pressure transmitter CPT 6000



Specifications		Process Calibrator CPH6000									
Sensor technology		1 reference pressure sensor (interchangeable without tools) ¹⁾ ; optional: external operation via 1.2 m cable									
Measuring range	bar	0.25	0.4	0.6	1	1.6	2.5	4	6	10	16
Overpressure safety	bar	1.6	2	4	5	10	10	17	35	35	80
Burst pressure	bar	2.4	2.4	4.8	6	12	12	20.5	40	42	96
Accuracy of the measuring chain		0.025 % FS ²⁾									
Measuring range	bar	25	40	60	100	160	250	400	600	1,000	
Overpressure safety	bar	80	80	120	200	320	500	800	1,200	1,500	
Burst pressure	bar	96	96	550	800	1,000	1,200	1,700	2,400	3,000	
Accuracy of the measuring chain		0.025 % FS ²⁾									
Measuring range	bar	1,600	2,500	4,000	5,000	6,000					
Overpressure safety	bar	2,300	3,500	5,000	6,000	7,000					
Burst pressure	bar	4,000	6,000	8,000	10,000	11,000					
Accuracy of the measuring chain		0.1 % FS ²⁾									
Type of pressure		{In addition to the above-specified pressures; vacuum, bi-directional ranges and absolute pressures are available}; {bi-directional ranges (±): minimum span 500 mbar, e.g. -250 mbar ... +250 mbar}									
Pressure units		15 standard units and one freely programmable unit; see page 4, menu structure									
Active temperature compensation	°C	0 ... 50									
Permissible ambient temperature	°C	0 ... 50									
Calibration		Factory calibration certificate									

Specifications		CPH6000 digital instrument									
Operating mode		MEASURING / CALIBRATION / SWITCH TEST									
Display		Large TFT colour screen for the display of reference and test signals, and additional information									
Display resolution		up to 6 digits; selectable									
Measuring rate (pressure)		2 values/sec									
Functions		CALIBRATION function, SWITCH TEST function. Min/Max memory, Tare, Min/Max alarm (visual), filter (running average), zero-point adjustment, PowerSave function									
CALIBRATION function											
■ Memory capacity		up to 16 test items									
■ Test points/test item		up to 32 comparison points									
SWITCH TEST function		Determination of the switch point and automatic calculation of the hysteresis									
Measurement input, voltage ³⁾											
■ Measuring range	V	0 ... 1; 0 ... 2; 0 ... 5; 0 ... 10									
■ Resolution	mV	0.1									
■ Accuracy	mV	0.5									
Measurement input, current ³⁾											
■ Measuring range	mA	0 ... 20; 4 ... 20									
■ Resolution	µA	1									
■ Accuracy	µA	1.6									
Loop supply voltage		24 V [Load: max. 50 mA; min 20 mA] (can be activated via menu)									
Interface		RS-232 and USB									
Power supply		internal Lithium-Ion rechargeable battery (charging time: < 6 h)									
Battery operation	h	approx. 20									
Permissible relative humidity	% r.H.	0 ... 85 (non-condensing; at 50 °C)									
Permissible storage temperature	°C	-20 ... +70									
Case		impact-resistant ABS plastic, membrane keypad, transparent screen									
Ingress protection		IP 54 (with protective caps closed)									
Weight	g	approx. 850									
CE conformity											
■ EMC directive		2004/108/EC, EN 61326 Emission (Group 1, Class B) and Immunity (portable measuring equipment)									

Specifications		CPT6000 reference pressure sensor									
Pressure connection		≤ 1000 bar: G ½ B; {various connection adapters on request} > 1000 bar: M16 x 1.5 female, with sealing cone									
Material		Wetted parts: stainless steel									
Internal transmission fluid		Synthetic oil (only for measuring ranges up to 25 bar) {Halocarbon oil for oxygen variants} ⁴⁾									
Permissible temperature ranges											
■ Medium	°C	-20 ... +80									
■ Storage	°C	-40 ... +85									
Case		Stainless steel									
Ingress protection		IP 65 (with cable connected)									
Weight	g	approx. 230									
CE conformity											
■ Pressure equipment directive		97/23/EC; Module A									
■ EMC directive		2004/108/EC, EN 61326 Emission (Group 1, Class B) and Immunity (industrial locations)									

1) Up to 10 transmitters can be supported on each instrument (up to 10 calibration data sets)

2) Calibrated at 23 °C and in vertical mounting position with pressure connection facing downwards.

3) Factory calibration certificate

4) For oxygen versions, the medium temperature must not exceed 60 °C.

{ } Items in curved brackets are optional extras for an additional price.

User interface:

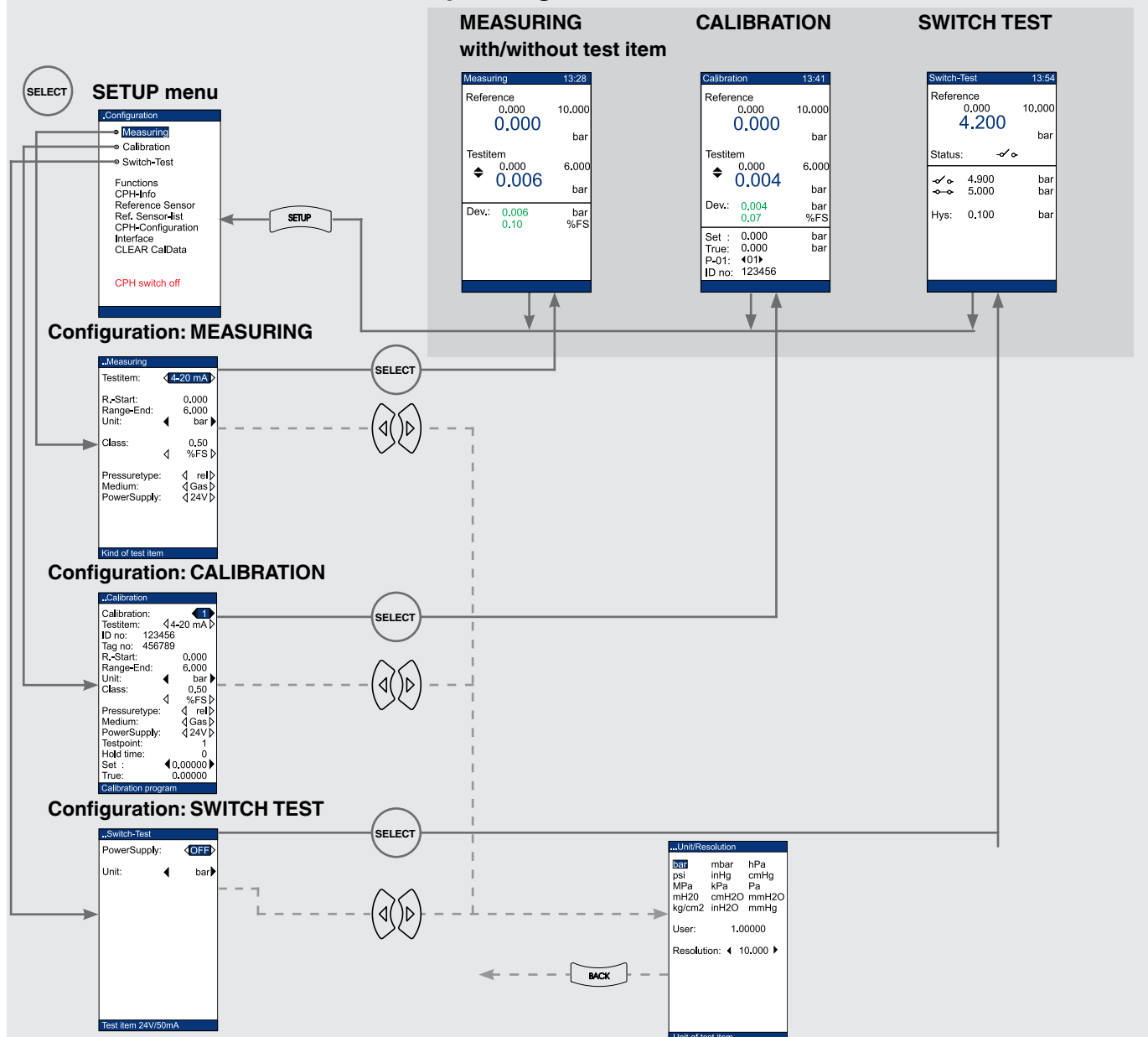


- 1 Setup menu
- 2 Selection and entry confirmation
- 3 Return to previous level
- 4 Clear entry
- 5 Entry acknowledgment
- 6 Numeric keypad

Switch on via pressing any button.
Switch off via menu item in main menu.

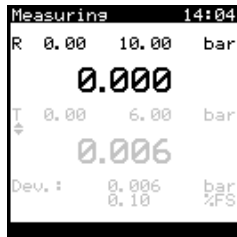
Menu structure:

Operating modes



Operating mode: MEASURING / CALIBRATION / PRESSURE-SWITCH TEST

Operating mode: MEASURING



with/without display of test item



B) With external pressure transmitter

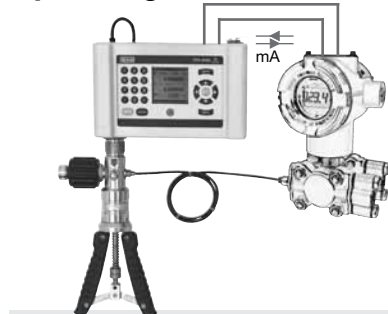
Characteristics

- Up to 6 display digits
- 15 pressure units + 1 programmable unit
- Programmable functions: Min/Max/Tare/Filter/Alarm/Altitude correction

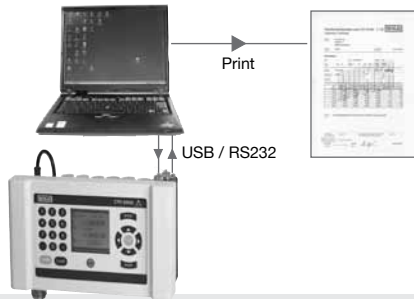
Application

- Measurement of operating pressure / process pressure
- Comparison measurements with test items (power supply & display of test items via CPH 6000)
- Maximum and Minimum memory (e.g. for leak testing)
- Alarm function for safety tests

Operating mode: CALIBRATION



1. Storage of calibration data on CPH 6000



2. Transfer of calibration data to PC & printing of calibration certificate

Characteristics

- Calibration assistant
- Altitude correction possible
- Calibration temperature can be stored

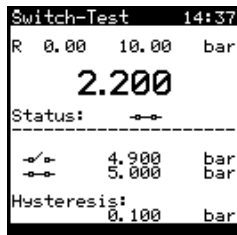
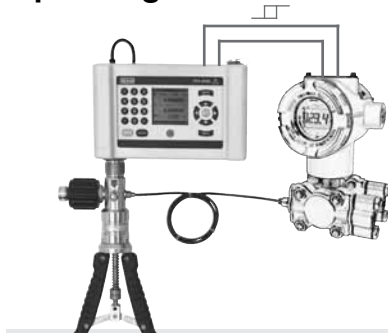
Application

- On-site calibration of pressure transmitters and pressure indicators (without PC)
- Calibration assistant to guide operator through calibration. In addition to the values, date and time are also stored during calibration. The calibration steps can be programmed on the CPH 6000 directly or downloaded from EasyCal before the calibration.

PC Software available

- PrintCal (simple certificate-printing tool using EXCEL)
- EasyCal (Calibration software with Access database)

Operating mode: PRESSURE SWITCH TEST



With pressure-switch test assistant

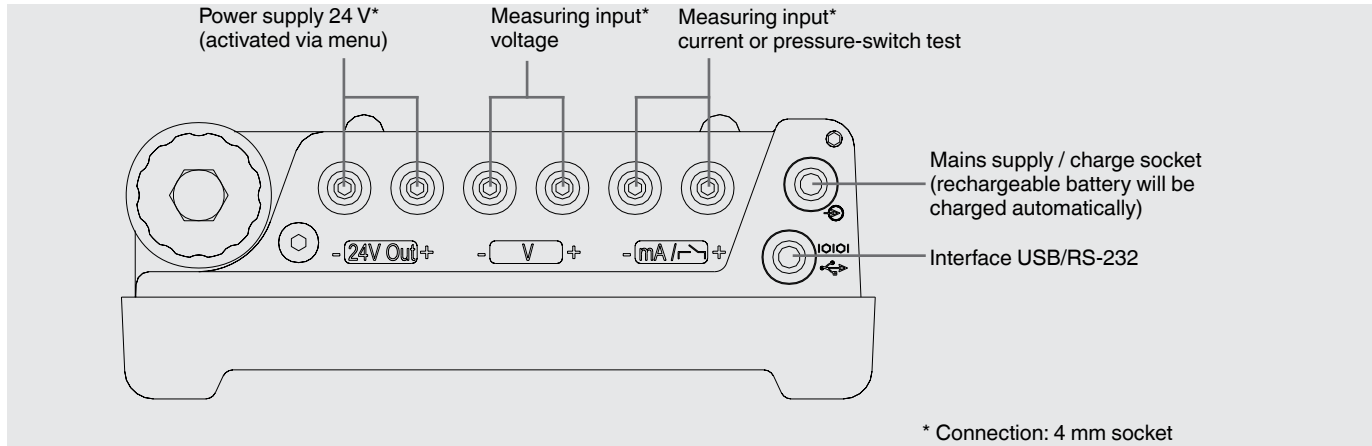
Characteristics

- Switch-test assistant
- Automatic hysteresis calculation

Application

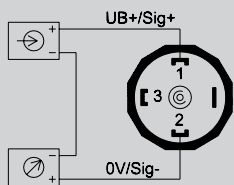
- Convenient testing of pressure switches
- Pressure-switch assistant automatically calculates the switching hysteresis.

Electrical connections to the digital instrument

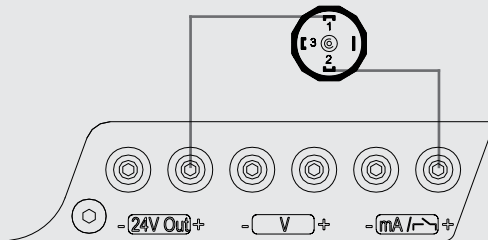


Electrical connection for: CALIBRATION

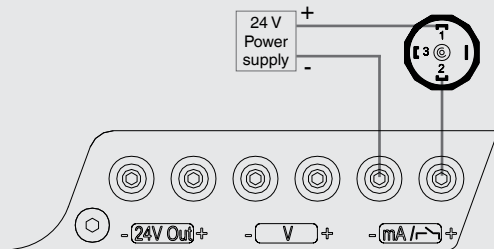
2-wire test item



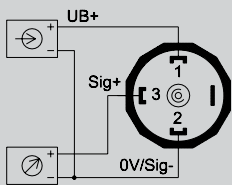
Example:
mA signal test item without its own power supply
(24 V must be activated via menu)



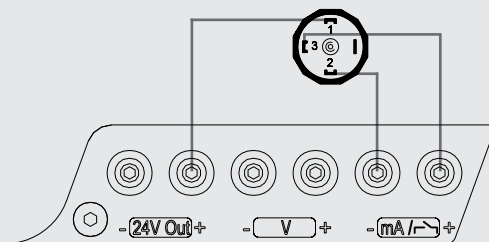
Example:
mA signal test item with its own power supply available



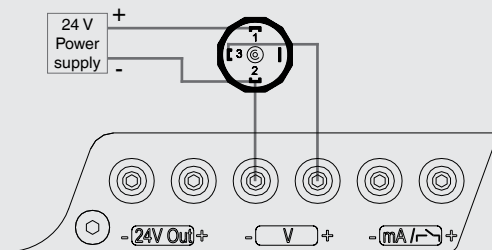
3-wire test item



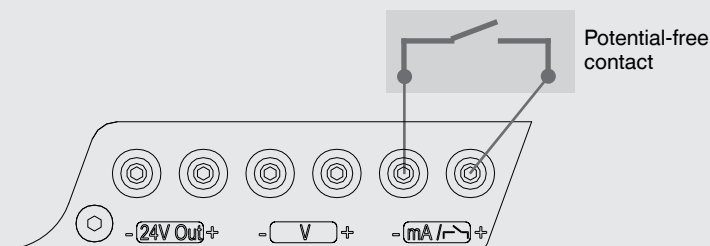
Example:
mA signal test item without its own power supply
(24 V must be activated via menu)



Example:
V signal test item with its own power supply available



Electrical connections for: PRESSURE SWITCH TEST



Type of switch



Opening/closing



Low-/High-window

Complete test and service cases



CPH6000 service case I

Measuring set for pressure consisting of:

- Plastic service case with ProcessCalibrator CPH 6000
- Sensor cable for external operation of sensor
- Measuring cable set with connectors
- Charger
- Interface cable
- Various seals
- Space for different CPT 6000 reference pressure sensor

Available pressure ranges: see specification on page 3.



Service case incl. pneumatic pressure generation

Calibration case with model CPH6000 ProcessCalibrator and model CPP30 hand test pump for pressures -0.95 up to +35 bar consisting of:

- Transport case with model CPH6000 ProcessCalibrator
- Pneumatic hand test pump, -0.95 ... +35 bar
- Sensor cable for external operation of sensor
- Test-cable set with connectors
- Charger
- Interface cable
- Various seals
- Space for different CPT6000 reference pressure sensors

Available pressure ranges: see specifications on page 3



Service case incl. hydraulic pressure generation

Calibration case with model CPH6000 ProcessCalibrator and model CPP1000-L hand spindle pump for pressures up to 1,000 bar consisting of:

- Transport case with model CPH6000 ProcessCalibrator
- Hydraulic hand spindle pump up to 1,000 bar
- Sensor cable for external operation of sensor
- Test-cable set with connectors
- Charger
- Interface cable
- Various seals
- Space for different CPT6000 reference pressure sensors

Available pressure ranges: see specifications on page 3

Scope of delivery

- ProcessCalibrator model CPH6000
- Battery charger
- Test-cable set with various connectors
- 3.1 calibration certificate per DIN EN 10204
- Choice of sensor

Options

- DKD certified accuracy of 0.025%
- Sensors for oxygen applications

Accessories

Connection adapters

- Various pressure adapters
- "Minimess" quick-connect process connection system

Power supply

- Battery charger

Connection cable

- Test-cable set with various connectors
- USB or RS-232 interface cable

Pressure generation

- Pneumatic pumps
- Hydraulic pumps
- Integral reservoir and pressure hoses

Service cases

- Measuring cases
- Various calibration cases incl. test pump

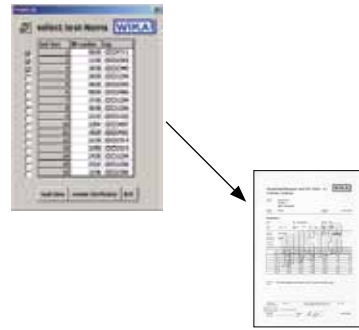
Software

- PrintCal calibration certificate print tool
- EasyCal Standard calibration software

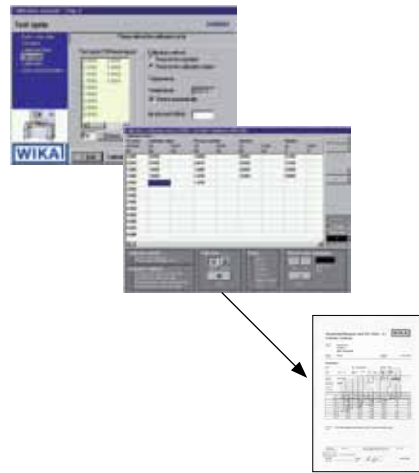
Products and services within our calibration technology programme

- DKD/DAkkS calibration services for pressure
- Repair of calibration units of all makes
- Portable pressure measuring devices for test and calibration tasks
- Precision pressure measuring instruments and pressure controllers
- Primary standards for pressure
- Testing technology system solutions
- DKD/DAkkS calibration services for temperature
- Portable measuring instruments and calibrators
- Temperature dry well calibrators
- Calibration baths and ovens
- Precision thermometers
- Primary standards for temperature
- Consulting and training

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Software: PrintCal



Software: EasyCal



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