

## ProcessCalibrator Model CPH6000

WIKA data sheet CT 15.01

### Applications

- Calibration service companies/service industry
- Maintenance facilities
- Measurement and control laboratories
- 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



ProcessCalibrator model CPH6000

## Description

### Handling

For a solution that always matches the application, there are many pressure sensors to choose from, with accuracies of up to 0.025 % and measuring ranges up to 6,000 bar, which can be interchanged quickly and without tools. In addition to being fixed to the instrument, the pressure sensor can, optionally, be used externally via an approx. 1 m long connecting cable. If the pressure sensor on the instrument is changed, then the digital instrument will recognise the new measuring range and thus saves the operator from having to configure it via the menu.

### Functionality

In the Setup menu there are 3 operating modes to choose from: MEASURING / CALIBRATION / PRESSURE SWITCH TEST. In the CALIBRATION & PRESSURE SWITCH TEST modes a menu assistant supports the user during each operation and records, for example, the calibration data from several calibrations or automatically evaluates the switch hysteresis. To power the test item and to read their measurement signals there are electrical inputs and outputs, which are protected from adverse conditions in the field by captive protective caps.

### Software

For the evaluation and documentation of the calibration data stored in the CPH6000 there are 2 PC programs available. Using the PrintCal software (based on Excel®) the data is automatically transferred into a printable calibration certificate. The EasyCal calibration software also offers, over and above PC-supported calibration, the management of the calibration and instrument data in an Access database. For data transfer, an RS-232 and a USB interface are available.

### Complete service/test cases

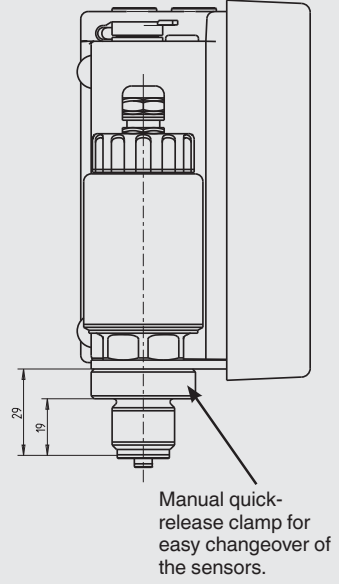
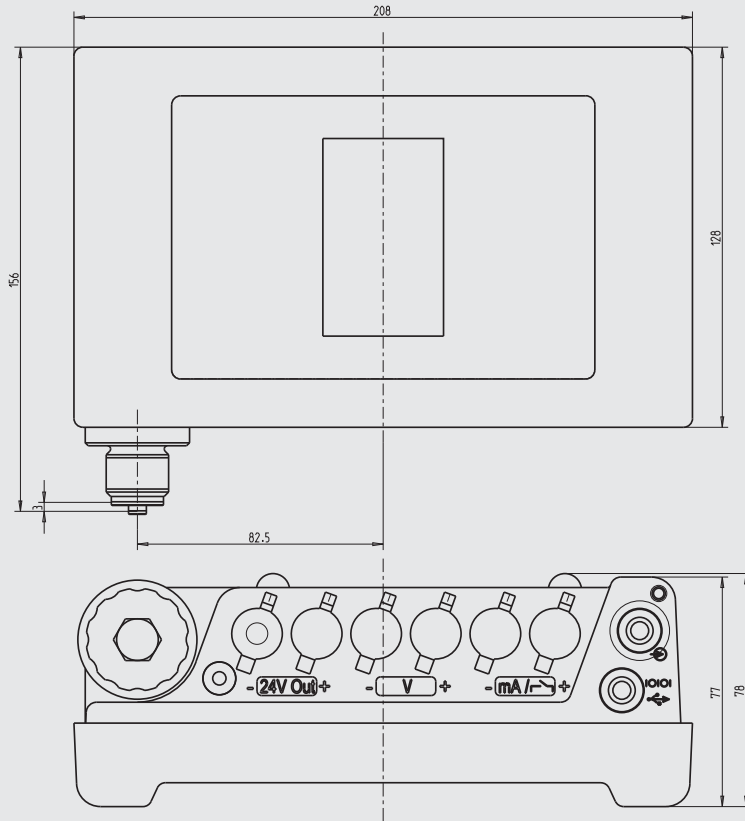
For maintenance and service applications, various service cases are available. These include pressure service cases with or without pressure generation, charger, adapter, etc.

### Certified accuracy

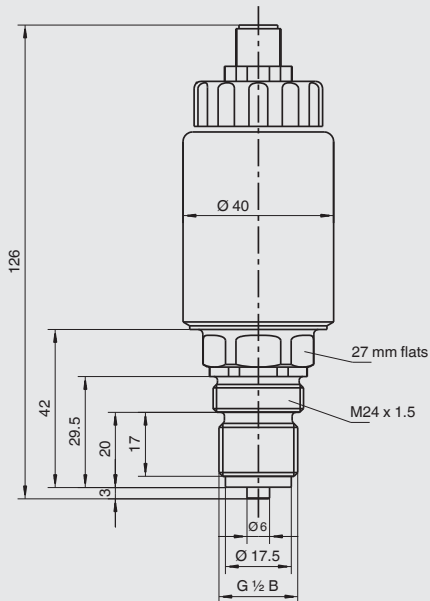
For each reference pressure transmitter, the accuracy is certified by a factory calibration certificate which accompanies the instrument. On request, we are also pleased to provide a DKD/DAkkS calibration certificate for the instrument from our own DKD/DAkkS laboratory.

# Dimensions in mm

## Digital instrument CPH6000



## Reference pressure sensor CPT6000



Specifications		ProcessCalibrator CPH6000									
Sensor technology		1 reference pressure sensor (interchangeable without tools) <sup>1)</sup> ; 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 <sup>2)</sup>									
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 <sup>2)</sup>									
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 <sup>2)</sup>									
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 (optional: DKD/DAkkS 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 <sup>3)</sup>											
■ Measuring range	V	0 ... 1; 0 ... 2; 0 ... 5; 0 ... 10									
■ Resolution	mV	0.1									
■ Accuracy	mV	0.5									
Measurement input, current <sup>3)</sup>											
■ 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		Stainless steel for wetted parts (for measuring ranges > 25 bar ... ≤ 1000 bar additional Elgiloy®)									
Internal transmission fluid		Synthetic oil (only for measuring ranges up to 25 bar) {Halocarbon oil for oxygen variants} <sup>4)</sup>									
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 (optional: DKD/DAkkS 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:

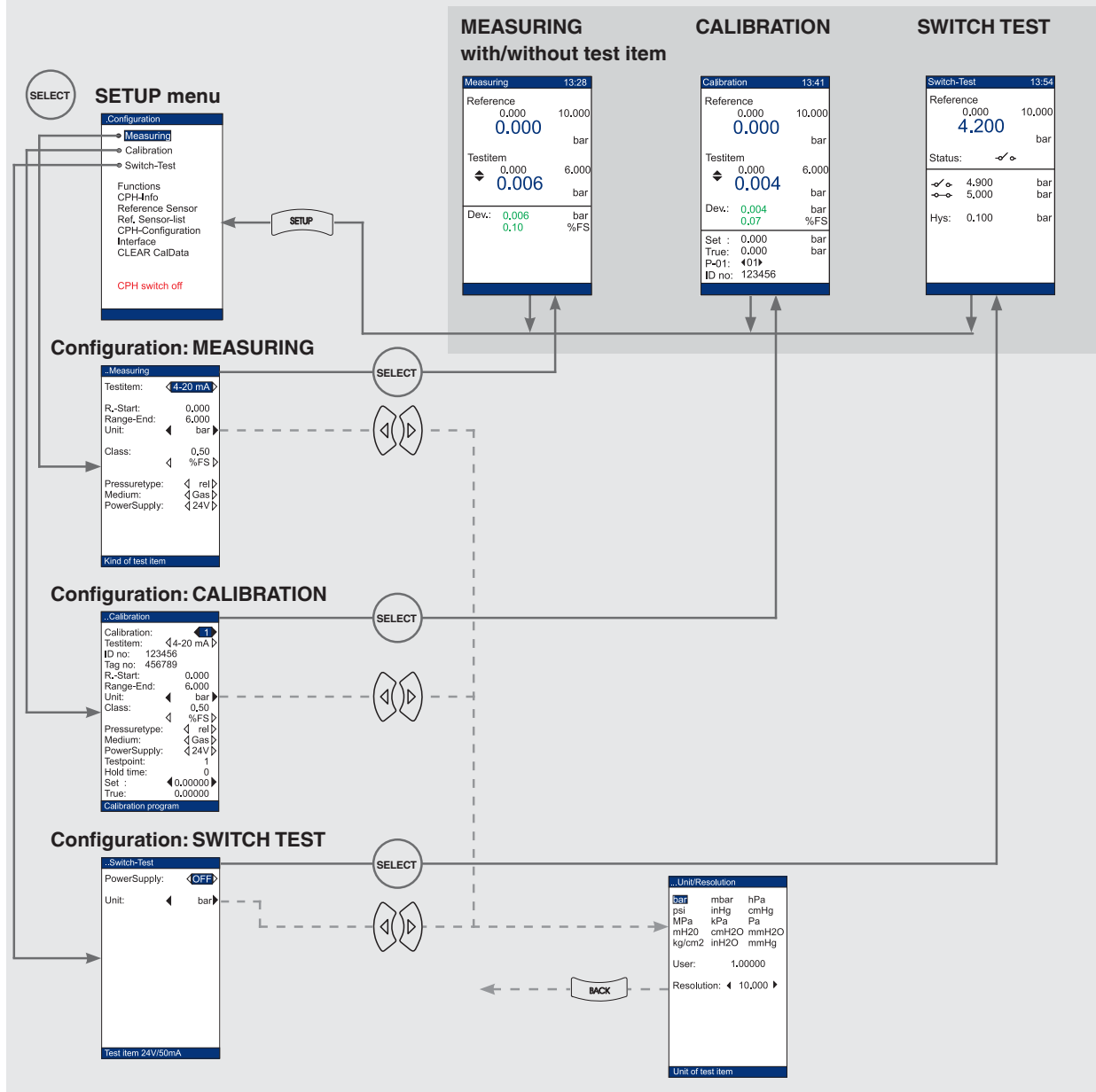


- 1 Setup menu
- 2 Selection and entry confirmation
- 3 Return to previous level
- 4 Clear entry
- 5 Entry acknowledgment
- 6 Numeric keypad

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

## Menu structure:

## Operating modes



# Operating modes: MEASURING / CALIBRATION / SWITCH TEST

## Operating mode: MEASURING



Measuring		13:28
Reference	0,000	10,000
	<b>0.000</b>	bar
Testitem	0,000	6,000
	<b>0.006</b>	bar
Dev.: 0,006		bar
	0.10	%FS

with/without display of test item

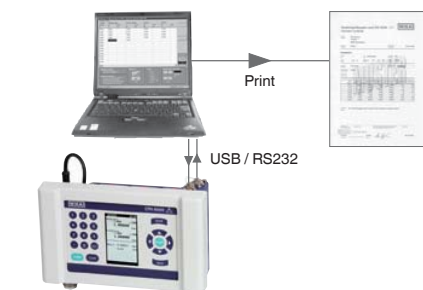
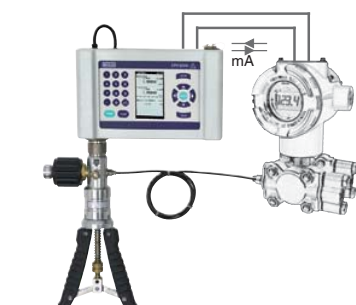
### Features

- Up to 6 display digits
- 15 pressure units + 1 programmable unit
- Programmable functions: Min/Max/Tare/Filter/Alarm/Altitude correction
- The display of the test item measured value is also possible as an original electrical signal (mA/V)

### Applications

- Measurement of operating/process pressures
- Comparative measurements with test items (power supply and display for the test items through the CPH6000)
- Maximum and Minimum memory (e.g. for leak testing)
- Alarm function for safety testing

## Operating mode: CALIBRATION



Calibration		13:41
Reference	0,000	10,000
	<b>0.000</b>	bar
Testitem	0,000	6,000
	<b>0.004</b>	bar
Dev.: 0,004		bar
	0.07	%FS
Set : 0,000		bar
True: 0,000		bar
P-01: 101		
ID no: 123456		

### Features

- Calibration assistant
- Programmable altitude correction
- Recordable calibration temperature

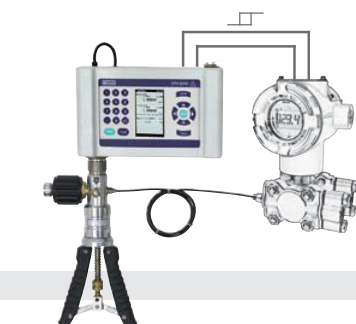
### Applications

- On-site calibration of pressure sensors and pressure measuring instruments (without PC)
- A calibration assistant guides you comfortably through the calibration (following DKD/DAkks). For this, the data sets, including the date and time, are stored in the CPH6000. Prior to a calibration, the steps can be entered directly into the instrument, or via the EasyCal PC software.

### PC software available

- PrintCal (simple certificate-printing tool via Excel®)
- EasyCal (calibration software with Access® database)

## Operating mode: SWITCH TEST



Switch-Test		13:54
Reference	0,000	10,000
	<b>4.200</b>	bar
Status:	↗↘	
↗↘	4,900	bar
↗↘	5,000	bar
Hys:	0,100	bar

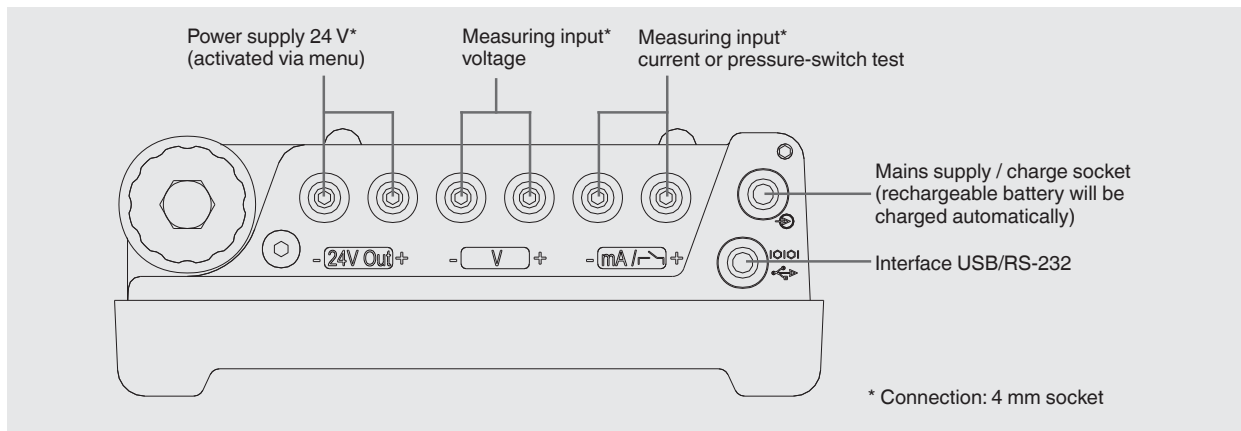
### Features

- Pressure switch test assistant
- Automatic calculation of the hysteresis

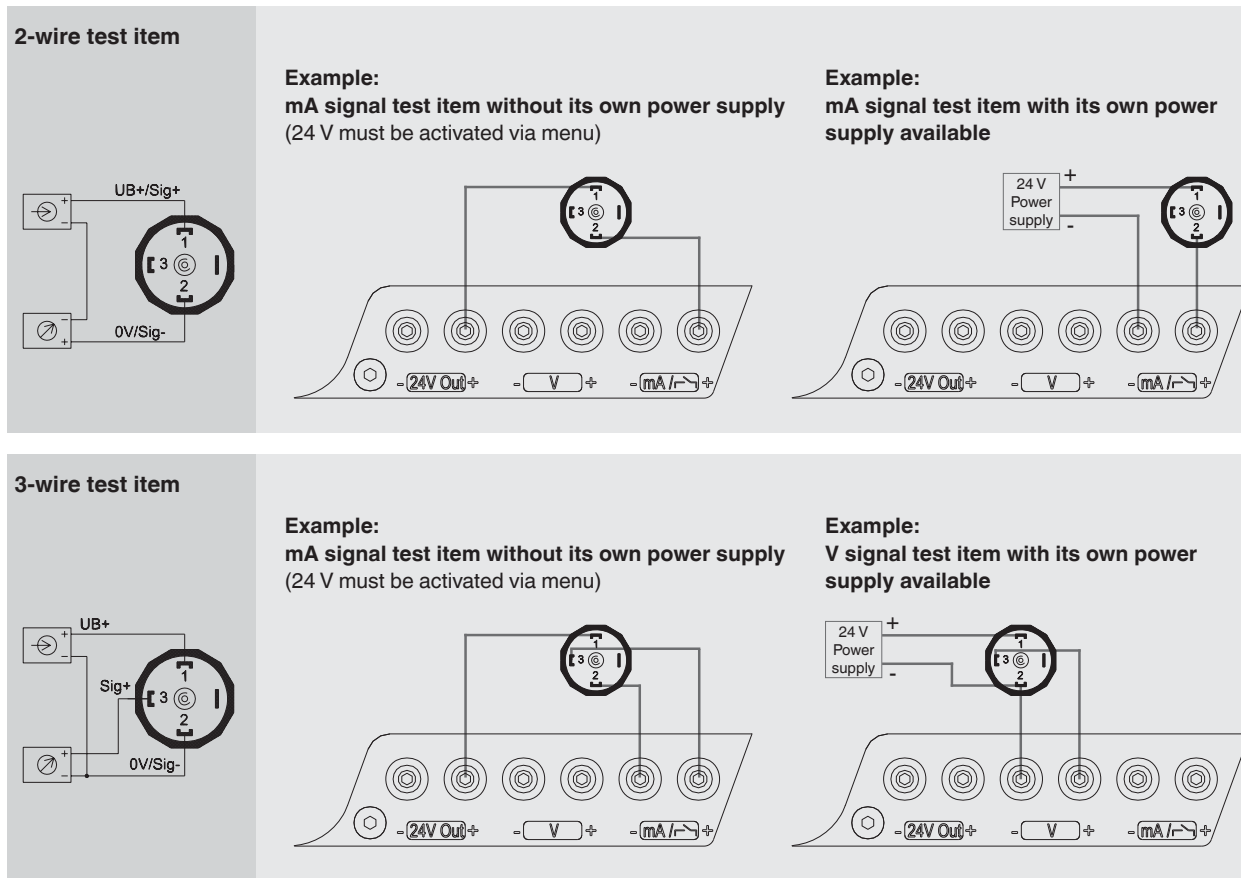
### Applications

- Convenient checking of pressure switches.
- A pressure switch test assistant conveniently guides the operator through the checking and automatic calculation of the switch hysteresis.

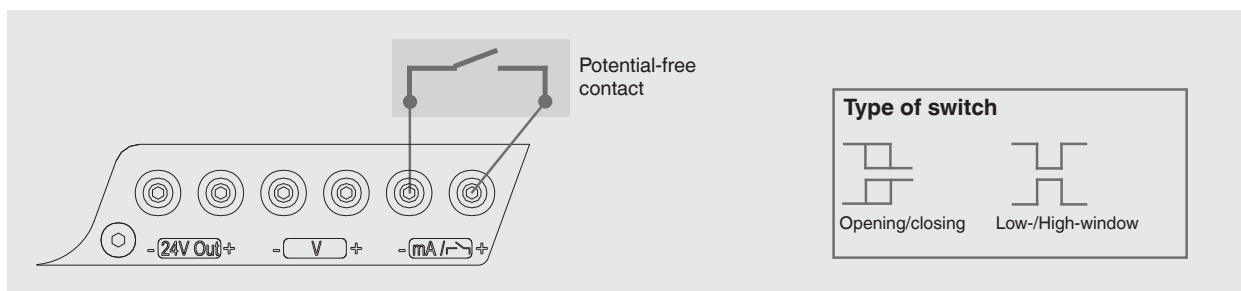
# Electrical connections to the digital instrument



## Electrical connection for: CALIBRATION



## Electrical connections for: PRESSURE SWITCH TEST



## Complete test and service cases



CPH6000 service case I

### Calibration case with model CPH6000 ProcessCalibrator for pressures consisting of:

- Plastic service case with foam insert
- ProcessCalibrator model CPH6000
- 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

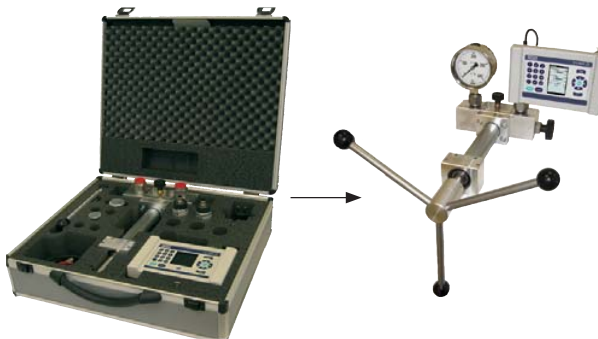


Service case incl. pneumatic pressure generation

### 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 model CPP30, -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 model CPP1000-L 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

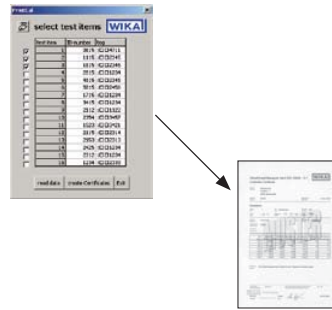
Available pressure ranges: see specifications on page 3

## Scope of delivery

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

## Options

- DKD/DAkkS certified accuracy
- Sensors for oxygen applications



## Software: PrintCal

## 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

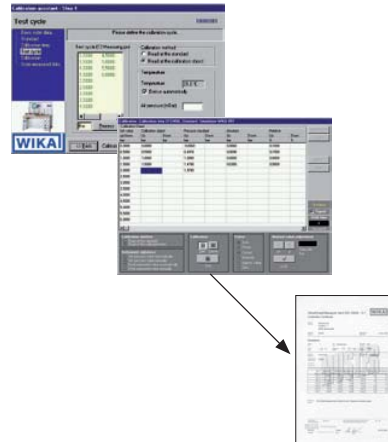
- Pneumatic pumps
- Hydraulic pumps
- Integral reservoir and pressure hoses

### Service cases

- Measuring cases
- Various calibration cases incl. test pump

### Software

- PrintCal calibration certificate print tool
- EasyCal Standard calibration software



## Ordering information

CPH6000 / Ingress protection / Additional cable for reference pressure sensor / Software / Interface cable / Test pump / Carrying case / Additional order details

CPT6000 / Pressure application area / Unit / Pressure range / Process connection / Special design features / Typ of certificate / Additional order details

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