Precision High-Pressure Controller Model CPC8000-H



WIKA Data Sheet CT 28.05

Applications

- Pressure instrumentation manufacturers
- Calibration and service companies
- Industry (laboratory, workshop and production)
- Research and development laboratories
- National institutes and institutions

Special Features

- Pressure ranges: 600 / 1000 / 1600 bar
- Pressure medium: Hydraulic oil or water
- Control stability: 0.003 % FS
- Precision: 0.005 %
- Uncertainty of complete measuring chain: 0.01 % FS acc. to EA 10/17 (or DKD-R 6-1)



Areas of application

With its high accuracy and control stability, the CPC8000-H hydraulic high-pressure controller is particularly suitable as a factory/working standard for the automatic testing and/or calibration of high-pressure measuring instruments of any kind. As a result of its robustness and reliability, further perfect applications are autofrettage tasks or cyclic pressure load tests. To operate the controller, apart from the electrical supply, only clean, dry compressed air is needed for the pneumatic control circuit. As a fluid media on the output side, either hydraulic oil or water can be used. On request different media are also available.

Functionality

Due to its special technology, pressure set-points within the controller are controlled quickly and smoothly. The set-point can be entered directly via the user-friendly keypad or can be transmitted through the controller's digital interface. Apart from the input of a defined set value via the keypad, the pressure can also be raised or lowered incrementally by means of programmable STEP and JOG buttons. The high-definition TFT colour display has been designed to

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be particularly clear, allowing up to 4 windows to be viewed at any one time, as well as various functions, such as min, max, etc., to be activated.

Communication interface

For communication and/or data exchange with a PC, the instrument has an RS-232 and an IEEE-488.2 interface. These digital interfaces enable software-controlled operation of the controller, e.g. fully-automatic calibration procedures or the execution of special test routines, which can be generated through programs such as LabVIEW[®], etc..

Complete test and calibration systems

If required, customer-specific test facilities and/or turnkey systems, including software, can also be manufactured.

Calibration certificates

The accuracy of the equipment is certified by a factory calibration certificate. If desired a DKD Calibration Certificate can also be provided for the equipment using our own DKD laboratory.

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Data Sheets showing similar devices: Modular High-Precision Pressure Indicator; Model CPG8000; see Data sheet CT 25.05 High-Precision Pneumatic Pressure Controller; Series CPC8000-L / -X; see Data sheet CT 28.01

Dimensions in mm



Rear view



Specifications CPCCOUCH Measuring range bar 600 1000 1600 Overpressure safety bar 600 1100 1600 Precision % 0.005	Spacifications	_	
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	Calibration		incl. 3.1 calibration report according to DIN EN 10 204

* If only approx 7.5 bar is available as pressure supply source, this optional port and an external pressure intensifier of 1 to 4 at drive air port 1 is required.

Operation of the CPC8000-H

1. Display



On the display of the CPC8000-H the set value and the current measured value (actual value) are clearly displayed. The colour of the measured value changes from white to green immediately the controller achieves the set value in accordance with the accuracy class. Decimal places can be increased or decreased via the menu (altogether up to 7 full digits can be displayed).

2. Setting values using the keypad



A pressure (set value) can simply be input via the keypad and confirmed by pressing the enter key. Optionally, the pressure can also be changed incrementally using the STEP and JOG buttons.

3. Setting values using the digital interface



For PC driven operations, e.g. automatic calibration procedures, the required set value can also be set via the digital interface. For this, the high-pressure controller has an RS-232 and an IEEE-488.2 interface on the back. The interface instruction set is based on standard SCPI commands, which can be communicated by one's own program or through standard software e.g.: LabView[®].

Performance characteristics of the CPC8000-H

Outstanding control concept

The controller consists of a pneumatic primary circuit - and a hydraulic feed back secondary circuit. The widely proven CPC8000 needle-valve unit forms the heart of the pneumatic primary circuit. A pressure increment unit multiplies the pressure of the primary circuit and supplies a corresponding high-precision pressure at the test port of the hydraulic secondary circuit.

Bleed Priming function

The bleed priming function ensures the control circuit is automatically filled (10 ... 12 bar), so that even larger test volumes do not represent a problem.

Highest precision

The high accuracy of the pressure supply is ensured by a precision high-pressure sensor in the hydraulic secondary circuit, whose measured value drives the control unit on the primary circuit.

Adaptive to the operating conditions

Through the menu option: Controller adaption, the controller optimises itself automatically to the current conditions of the test assembly and thus ensures the optimal control performance.

Ease of use

The streamlined and intuitive menu structure is implemented clearly through the colour graphic display, ensuring the instrument is extremely user-friendly.

User-friendly measured value display

Up to 4 display windows, each with full 7-digit measuredvalue indication, can be displayed on the large colour screen. It allows you to choose from 17 standard and 3 programmable units of pressure.

Long-term stability and low maintenance

Due to its high-quality, precision, high-pressure sensor, the equipment features excellent measuring accuracy and longterm stability. In addition, its special needle-valve technology ensures noise- and wear-resistant pressure control.

Useful menu functions for wide-ranging applications

- Minimum-Storage
- Maximum-Storage
- HOLD
- ZERO
- Average
- Limits with visual alarm
- Pressure rate (pressure change/time)
- Zero point/Offset correction

Measuring... 1: Sensor 1 0/1000 0.00



Measuring	
1: Sensor 1 0/1000	2: Sensor 1 0/14500
500.00	7251.9
0.11 _{bar}	1.6 _{psi}
3: Sensor 1 0/1000	4: Sensor 1 0/1000
500.000 0.110 bar	O mbar /seo
Avg	
Press SETUP for general setting Press SELECT for window sett	as 24.0 06:01:02 ings °C 04.04.05

Configuration possibilities for display

Scope of supply

- Precision high-pressure controller CPC8000-H
- Power supply cable 1.5 m with mains plug
- Operating instructions in English or German language
- 3.1 calibration report acc. to DIN EN 10 204

Options

- DKD calibration certificate
- Complete test or calibration system

Accessories

- Pneumatic pressure multiblier 1:4
- Interface cable
- Service tools

Products and Services within our Testing and Calibration Technology Program

- DKD calibration services for pressure
- Repair of calibration units of all makes
- Portable pressure measuring devices for testing and calibration tasks
- Precision pressure measuring units and pressure controllers
- Primary standards for pressure
- Testing technology system solutions

- DKD calibration services for temperature
- Temperature dry well calibrators
- Calibration baths and furnaces
- Temperature measuring instruments for testing and calibrating tasks
- Precision thermometers
- Primary standards for temperature
- Consulting and training

Specifications and dimensions given in this leaflet represent the state of engineering at the time of printing. Modifications may take place and materials specified may be replaced by others without prior notice.

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