

Portable multi-function calibrator Model CEP6000

WIKA data sheet CT 83.01

Applications

- Calibration service companies and service industry
- Instrument and control workshops
- Industry (Laboratories, workshops und production)
- Quality assurance

Special features

- Highest accuracy in class up to $\pm 0.015\%$ of reading
- Source/Read thermocouples (13), resistance thermometers (13), ohms, voltage, current, frequency, pressure and pulse trains
- Isolated mA/V-measuring channel allows complete transmitter calibration (at the same time source and read)
- Entry of custom resistance thermometer coefficients
- Rugged design and easy handling



Portable multi-function calibrator model CEP6000

Description

General

The Multi-Function Calibrator CEP6000 provides a feature set unmatched in high accuracy, hand-held calibrators in its price range. The CEP6000 provides the functions and accuracy associated with fixed installation, laboratory instruments, and has everything needed for virtually any calibration task. Measure and source thermocouples, resistance thermometers, current, voltage, frequency as well as pressure measurement and source pulse trains is supported by the CEP6000. External pressure modules can be connected to an interface. The built-in isolated mA/V-measuring channel allows a complete transmitter calibration.

Extensive applications

Due to its multifunctionality the CEP6000 offers a wide range of application capabilities. It can be used for calibration in industry (laboratory, production, workshops), in calibration service companies and service industry as well as for quality assurance.

Intuitive handling

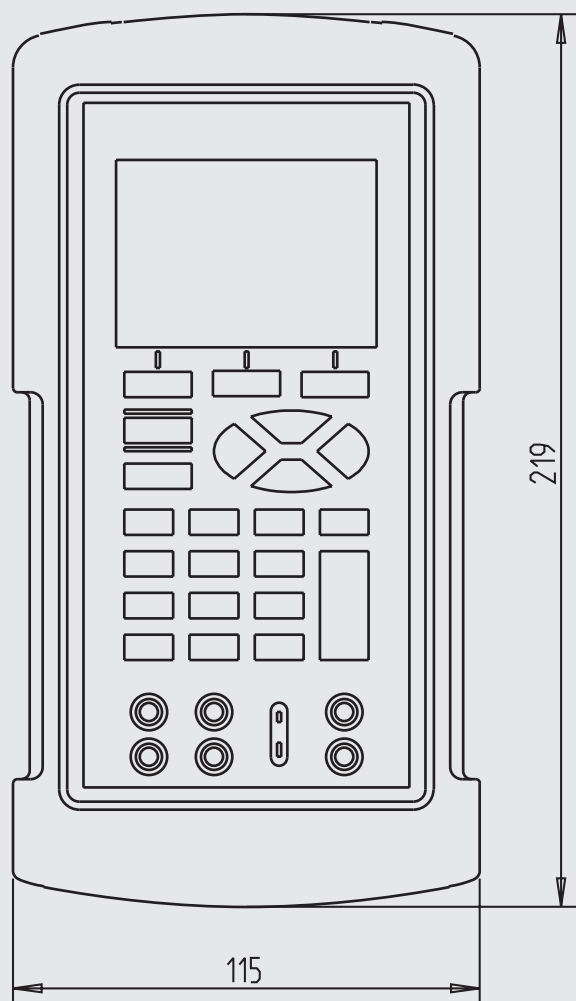
Arrow keys, direct numeric keypad entry, and three software-driven function buttons, plus a large backlit, menu-driven graphics display combine to provide a highly intuitive, simple yet powerful operator interface.

Additional features

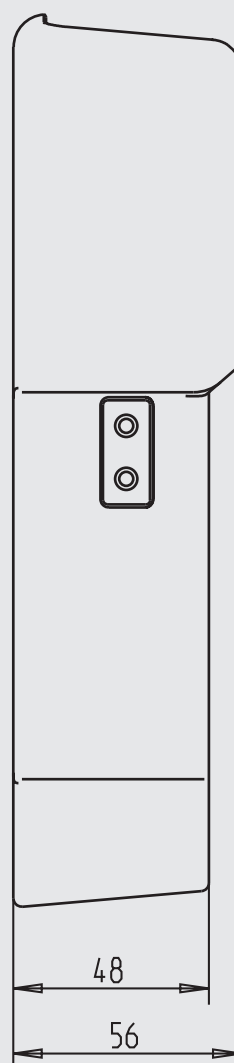
Built-in 250 Ω resistor for HART™ compatibility, 24 V loop power supply, compatibility with smart transmitters and PLCs, full fuseless protection, and a serial communications port for full control with ASCII commands, are just some of the additional features that make the CEP6000 the single, most indispensable tool available for virtually any calibration task. The CEP6000 is supplied with a rugged rubber boot, which ensures shock resistance.

Dimensions in mm

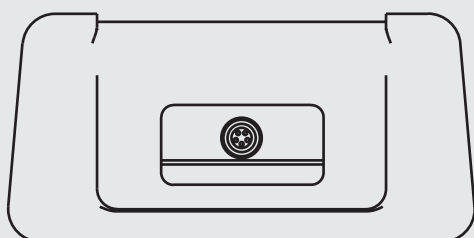
Front view



Side view



Top view



Specifications**Model CEP6000**

| | |
|--|--|
| Display | 2-part with respectively 10 places and character size 8 mm |
| Input and output | |
| Resistance thermometers | Pt100 (385, 3926, 3916), Pt200, Pt500, Pt1000, Ni120, Cu10, Cu50, Cu100, YSI400, Pt10, Pt50 |
| Thermocouples | Type J, K, T, E, R, S, B, L, U, N, C, XK, BP |
| Voltage signal | DC 0 ... 30 V |
| Current signal | 0 ... 24 mA |
| Resistance | 0 ... 400 Ω and 400 ... 4000 Ω |
| Frequency / Pulse | 2 CPM ... 10.00 kHz |
| Pressure | dependent on pressure module |
| Loop supply voltage | DC 24 V |
| Resistance thermometers frequency response | 5 ms; works with all pulsed transmitter |
| Frequency | 1 ... 20 V selectable amplitude |
| Pulse | 1 ... 20 V selectable amplitude (source only) |
| Special features | Automatic step/ramp function, direct entry of custom resistance thermometer coefficients, setpoint setting for each output function and built-in resistor for HART™ communications |
| Interface | RS-232, USB with optional serial adapter |
| Power supply | |
| ■ Batteries | DC 6 V, four (4) AA batteries |
| ■ Operating time | 20 hours |
| ■ Low battery indicator | displayed icon near the end of battery life |
| Permissible | |
| ■ Operating temperature | -10 ... +50 °C |
| ■ Storage Temperature | -20 ... +70 °C |
| ■ Stability | 0.005 % of reading/°C outside of 23 °C \pm 5 °C |
| Case | |
| ■ Material | plastic (with protective rubber boot) |
| ■ Ingress protection | IP 52 |
| CE-conformity | |
| ■ EMC directive | 2004/108/EC, EN 61326 Emission (Group 1, Class B) and immunity (portable test and measuring equipment) |
| Dimensions | 220.9 x 106.6 x 58.4 mm |
| Weight | approx. 863 g |

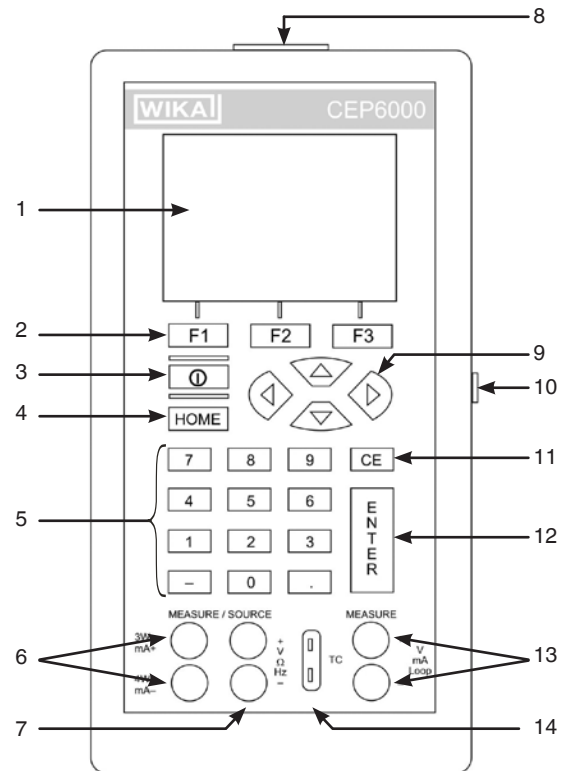
| Input and output signal | Measuring range | Absolute uncertainty (all errors incl.) |
|-------------------------|------------------------|---|
| Voltage signals in mV | -10.000 ... +75.000 mV | 0.02 % of reading ± 10 µV |
| Thermocouples | | |
| Type B | 600 ... 1820 °C | 1.2 ... 1.5 °C |
| Type C | 0 ... 2316 °C | 0.6 ... 2.3 °C |
| Type E | -250 ... +1000 °C | 0.2 ... 0.6 °C |
| Type J | -210 ... +1200 °C | 0.2 ... 0.4 °C |
| Type K | -200 ... +1372 °C | 0.3 ... 0.6 °C |
| Type L | -200 ... +900 °C | 0.2 ... 0.25 °C |
| Type N | -200 ... +1300 °C | 0.4 ... 0.8 °C |
| Type R | 0 ... +1767 °C | 1.2 °C |
| Type S | 0 ... +1767 °C | 1.2 °C |
| Type T | -250 ... +400 °C | 0.2 ... 0.6 °C |
| Type U | -200 ... +600 °C | 0.25 ... 0.5 °C |
| Type XK | -200 ... +800 °C | 0.2 °C |
| Type BP | 0 ... +2500 °C | 0.9 ... 2.3 °C |
| Resistance thermometers | | |
| Pt100 (385) | -200 ... +800 °C | 0.10 ... 0.29 °C |
| Pt100 (3926) | -200 ... +630 °C | 0.10 ... 0.24 °C |
| Pt100 (3916) | -200 ... +630 °C | 0.08 ... 0.25 °C |
| Pt200 | -200 ... +630 °C | 0.40 ... 0.66 °C |
| Pt500 | -200 ... +630 °C | 0.18 ... 0.34 °C |
| Pt1000 | -200 ... +630 °C | 0.10 ... 0.25 °C |
| Pt10 | -200 ... +800 °C | 0.78 ... 1.19 °C |
| PT50 | -200 ... +800 °C | 0.18 ... 0.39 °C |
| Ni120 | -80 ... +260 °C | 0.06 °C |
| Cu 10 | -100 ... +260 °C | 0.82 °C |
| Cu 50 | -180 ... +200 °C | 0.20 °C |
| Cu 100 | -180 ... +200 °C | 0.13 °C |
| YSI 400 | 15 ... 50 °C | 0.05 °C |

| Input and output signal | Measuring range | Absolute uncertainty (of reading) | |
|-------------------------|----------------------------------|-----------------------------------|----------------------------------|
| Current signal | | | |
| ■ Output | 0 ... 24.000 mA | 0.015 % ± 2 µA | |
| ■ Input | 0 ... 24.000 mA | 0.015 % ± 2 µA | |
| Voltage signals | | | |
| ■ Output | 0 ... 20.000 V DC | 0.015 % ± 2 mV | |
| ■ Input | 0 ... 30.000 V DC (isolated) | 0.015 % ± 2 mV | |
| | 0 ... 20.000 V DC (non-isolated) | 0.015 % ± 2 mV | |
| Resistance | | | |
| ■ Output | 5.0 ... 400.0 Ω | 0.015 % ± 0.1 Ω | Stimulus Strom 0.1 ... 0.5 mA |
| | 5.0 ... 400.0 Ω | 0.015 % ± 0.03 Ω | 0.5 ... 3.0 mA |
| | 400.0 ... 1500.0 Ω | 0.015 % ± 0.3 Ω | 0.05 ... 0.8 mA |
| | 1500.0 ... 4000.0 Ω | 0.015 % ± 0.3 Ω | 0.05 ... 0.4 mA |
| ■ Input | 0 ... 400.0 Ω | 0.015 % ± 0.03 Ω | |
| | 400.0 ... 4000.0 Ω | 0.015 % ± 0.3 Ω | |
| Frequency | | | |
| ■ Output | 2 ... 600.0 CPM * | 0.05 % | |
| | 1 ... 1000.0 Hz | 0.05 % | |
| | 1 ... 10.00 kHz | 0.125 % | |
| ■ Input | 2 ... 600.0 CPM * | 0.05 % | ± 0.1 CPM * |
| | 1 ... 1000.0 Hz | 0.05 % | ± 0.1 Hz |
| | 1 ... 10.00 kHz | 0.05 % | ± 0.01 kHz |
| Pulse | | | |
| ■ Output | 1 ... 30.000 counts | | |
| | 2 CPM * ... 10 kHz | | |
| Pressure | | | |
| ■ Input | dependent on pressure module | | |

* Counts per minute

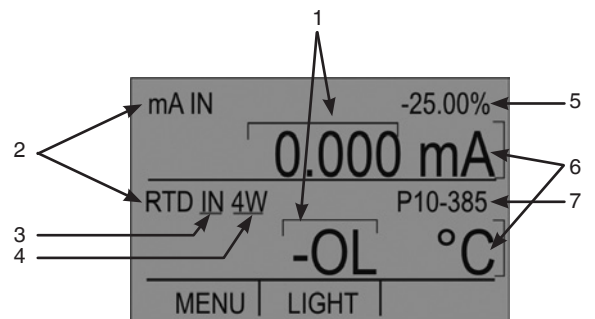
Overview operator controls of CEP6000

- 1) Display
- 2) Function keys, used to operate the menu bar at the bottom of the calibrator display
- 3) On/Off
- 4) HOME, returns to home menu
- 5) Numeric keys
- 6) Current, resistance thermometers (3-wire, 4-wire), input/output
- 7) Voltage, resistance thermometers (2-wire), frequency, pulse, input/output
- 8) Connector for external pressure module
- 9) Select which digits to be changed in output value; increase, decrease or ramp output value
- 10) Interface, Serial port
- 11) Clear the input value
- 12) ENTER
- 13) Current and voltage input as well as supplying mA terminals loop power
- 14) Thermocouple Input/Output



Overview of the display

- 1) Numeric displays
- 2) Primary parameters
- 3) Input/Output control
- 4) Additional settings
- 5) Span indicator
- 6) Units
- 7) Sensor types



Scope of supply

- Portable multi-function calibrator CEP6000
- Operation instructions
- Test leads, 3 sets (red/black)
- Calibration certificate 3.1 per DIN EN 10204
- Four (4) AA batteries
- Protective rubber boot
- Quick Start Guide

Option

- DKD/DAkkS calibration certificate

Accessories

- Rechargeable battery-full equipment, incl. four (4) AA rechargeable batteries, quick charger, power cord, adapters
- Battery set consist of four (4) AA rechargeable batteries
- AC mains adapter / charger
- RS-232 interface cable
- USB serial converter
- Thermocouple wire kit J, K, T, E with mini plugs
- Thermocouple wire kit R/S, N, B with mini plugs
- Low EMF beryllium copper test leads (red)
- Low EMF beryllium copper test leads (black)
- Test leads, 1 set (red/black)
- Service case



Complete service case model CEP6000 and additional accessories

Products and services within our calibration technology program

- 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 units and pressure controllers
- Primary standards for pressure
- Testing technology system solutions
- DKD/DAkkS calibration services for temperature
- Portable measuring devices and calibrators
- Dry well temperature calibrators
- Calibration baths and furnaces
- Precision thermometers
- Primary standards for temperature
- Consulting and seminars

The specifications given in this document represent the state of engineering at the time of publishing. We reserve the right to make modifications to the specifications and materials.



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