Documenting multifunction calibrator Model CEP6100

Applications

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

Special features

- Store up to 21 test points from up to 50 test items
- Highest accuracy in class up to ± 0.015 % of reading
- Source/Read thermocouples (13), resistance thermometers (13), resistance, voltage, current, frequency, pressure and pulse trains
- Isolated mA/V measuring channel for complete transmitter calibration (measuring and simulation at the same time)
- Entry of custom resistance thermometer coefficients

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Description

General

The documenting multifunction calibrator CEP6100 provides a feature set unmatched in high accuracy, hand-held calibrators in its price range. It provides the functions and accuracy associated with fixed installation, laboratory instruments, and has everything needed for virtually any calibration task.

Documenting function

What makes this versatile calibrator best in class is the ability to fully document any calibration easily while performing the normal job. With CalLOG software calibration certificates can be generated for test items at the PC after calibration in the field.

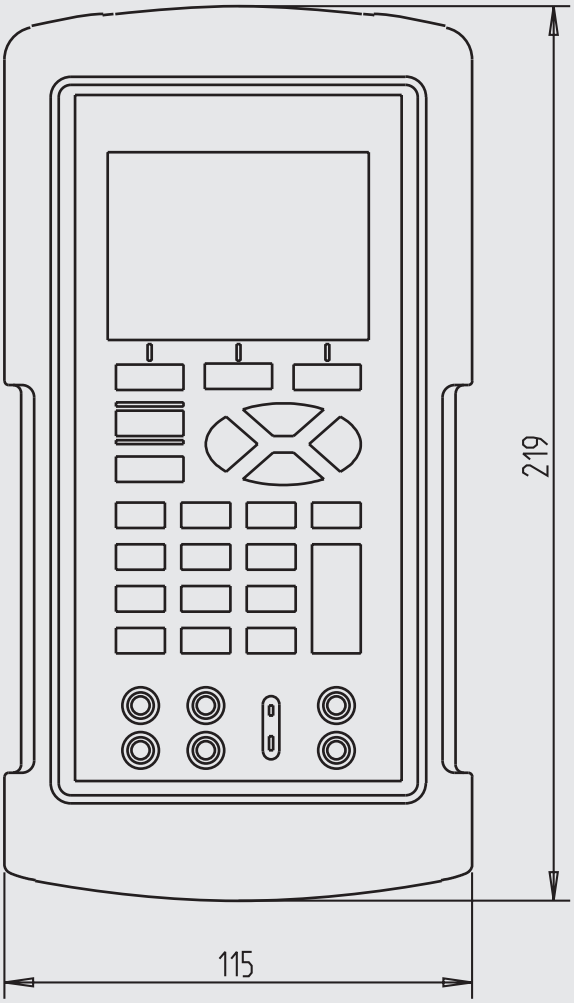
Features

The CEP6100 also features the ability to print calibration certificates right in the field, with no PC needed, using an optional portable certificate printer.

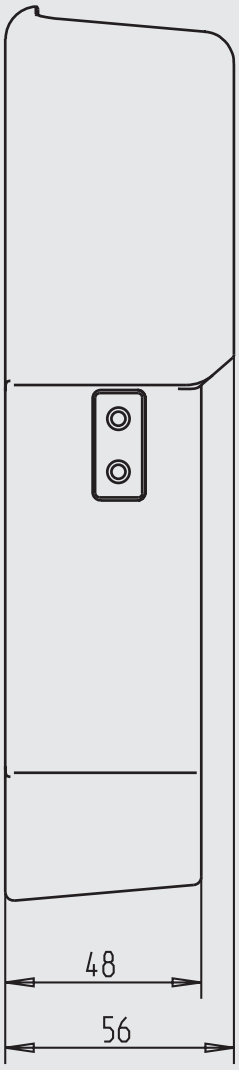
The CEP6100 enables to measure and simulate thermocouples, resistance thermometers, resistance, current, voltage, frequency, pressure and source pulse trains with one lightweight easy to use calibrator. A communications port compatible with different pressure modules is provided, as is an isolated mA/V measuring channel. An integrated 24 V supply power can drive 4 ... 20 mA loops up to 1000 Ω. Arrow keys combined with a large backlit, menu-driven graphics display offer a high quality but simple operator interface. A built-in 250 Ω resistor is provided for HART™ 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 CEP6100 the single, most indispensable tool available for virtually any calibration task. The CEP6100 is delivered in a protective rubber boot.

Dimensions in mm

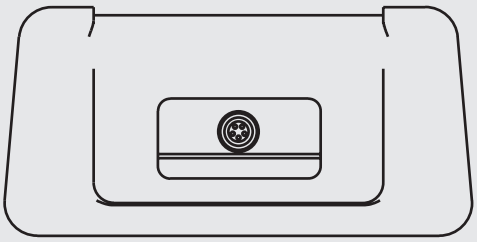
Front view



Side view



Top view



Specifications Model CEP6100

Display	2-part with 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
Function of calibration	Store up to 21 test points from up to 50 test items
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 coeficients, 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 ± 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			Stimulus Strom
■ Output	5.0 ... 400.0 Ω	0.015 % ± 0.1 Ω	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

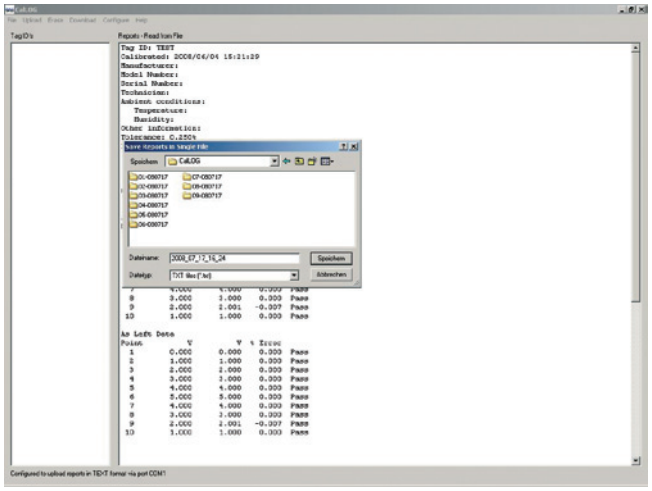
Calibration mode

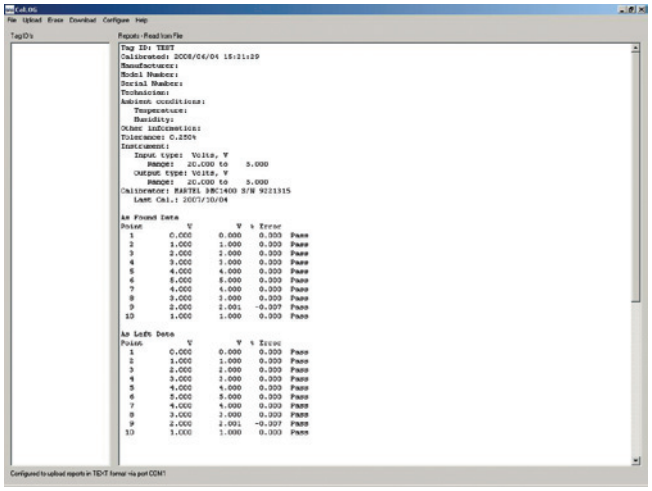
Adding documenting to your normal workflow is easy. Before you start a calibration, simply choose "DOCUMENT" from the calibrator operating menu. Then choose the calibrator input and output types. A neat feature is that you can also choose "manual" for either or both input and output. That allows you to calibrate and document virtually anything. Connect the calibrator to the instrument you're testing and use it as you normally would. After each calibration point, just press the "SAVE" key. When you're done, press the "DONE" key.

The calibrator will then prompt you to enter tag and instrument data, technician ID, ambient conditions and so on. Save that and you have completed the "AS FOUND" part of your test. You can also choose to have the calibrator evaluate the "PASS/FAIL" status of the instrument by supplying an allowable error tolerance in terms of the full scale performance of the instrument. If the instrument passes, you can choose to copy the "AS FOUND" data to the "AS LEFT" data, and you've completely documented your calibration.

When the day's work is over, you can save the data to a PC. The CalLOG software, which is included in the scope of supply, allows to document and generate calibration certificates.

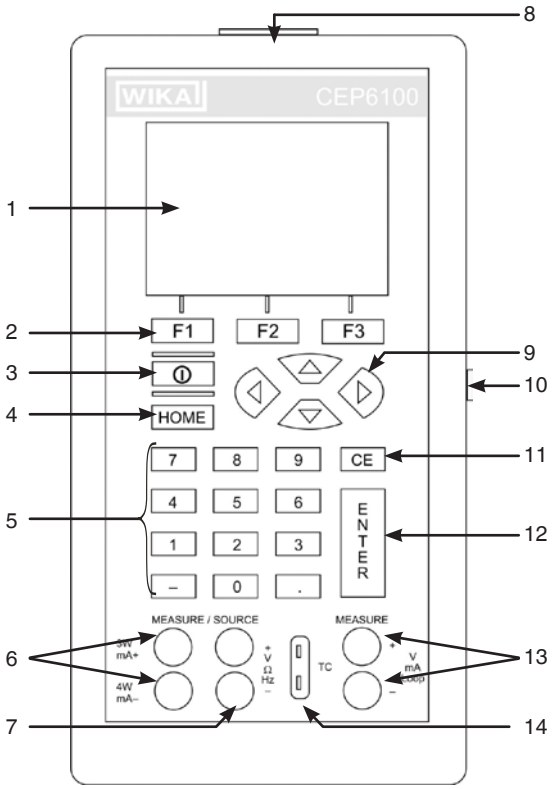
CalLOG will even organize your calibrations in subdirectories to keep your data in easy to find and retrieve status. With the CEP6100, it's all you need to have a complete, organized and paperless calibration system.





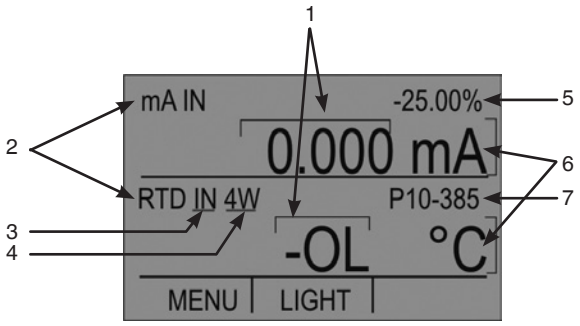
Overview operator controls of CEP6100

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

- Documenting multifunction calibrator CEP6100
- Operation instructions
- Test leads, 3 sets (red/black)
- Calibration certificate 3.1 per DIN EN 10204
- Four (4) AA batteries
- Protective rubber boot
- RS-232 Communication cable
- USB serial converter
- Quick Start Guide
- CalLOG software

Option

- DKD/DAkkS calibration certificate

Accessories

- Rechargeable battery-full equipment, incl. four (4) AA re-chargeable batteries, quick charger, power cord, adapters
- Battery set consist of four (4) AA rechargeable batteries
- AC mains adapter / charger
- 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)
- Portable certificate printer, incl. charger, communications cable, 1 roll of paper
- Service case

Complete service case model CEP6100 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

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