

Documenting Multi-Function Calibrator Model CEP6100

WIKA Data Sheet CT 83.51

Applications

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

Special Features

- Store up to 21 data points from 50 instruments in non-volatile memory
- Highest accuracy in class up to $\pm 0.015\%$ of reading
- Source/Read thermocouples (13), RTDs (13), ohms, current, voltage, frequency and pulse trains (only source)
- Isolated mA/V read-back circuit for complete transmitter calibration
- Programming of setpoints to speed up calibration tasks



Documenting Multi-Function Calibrator Model CEP6100

Description

General

The Documenting Multi-Function Calibrator CEP6100 provides a feature set unmatched in high accuracy, handheld 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. No special software is required! Some functions will require a Microsoft® Excel®-compatible spreadsheet.

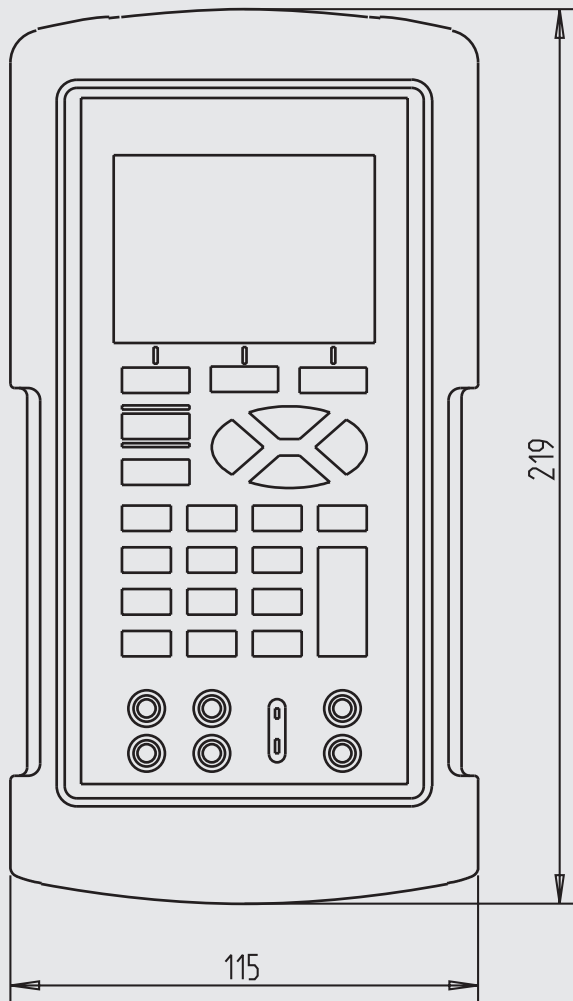
Features

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

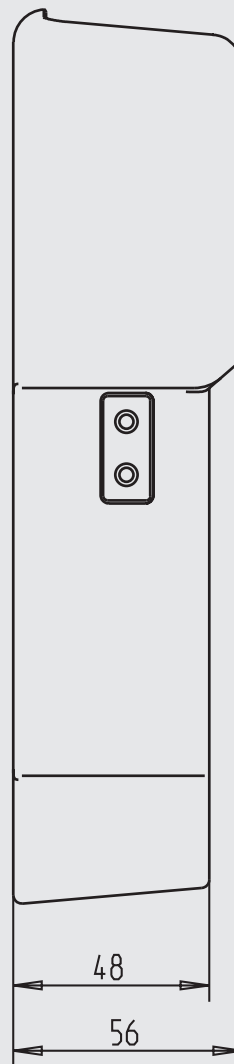
Measure and simulate thermocouples, RTDs, current, voltage, frequency, pressure and source pulse trains with one lightweight easy to use calibrator. A communications port compatible with different pressure modules is provided, as is an isolated milliamp/Volt read-back circuit. An integrated 24 V supply 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

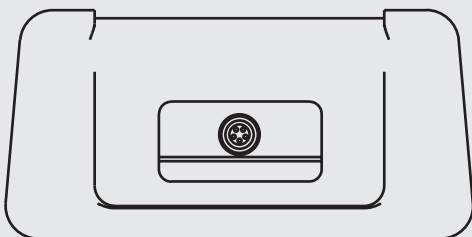
Front view



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	0 ... 30 V DC
Current signal	0 ... 24 mA
Resistance	0 ... 400 Ω and 400 ... 4000 Ω
Frequency / Pulse	2 CPM ... 10.00 kHz
Loop supply voltage	24 V DC
RTD frequency response	5 ms; works with all pulsed transmitter
Frequency	1 ... 20 V selectable amplitude
Pulse	1 ... 20 V selectable amplitude (source only)
Automatic step / ramp function	available
Direct entry of custom RTD coefficients	available
Setpoint setting	for each output function
Built-in resistor for HART™ Communications	available
Interface	RS-232, USB with optional serial adapter
Power supply	4 AA alkaline batteries, 6 V DC
■ Battery life	20 h
■ Low battery indicator	displayed icon near the end of battery life
EMC	EN 50 082-1 from 1992 and EN 55 022 from 1994 class B
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	
Ingress protection	IP 52
Dimensions	220.9 x 106.6 x 58.4 mm
Weight	approx. 863 g

Thermocouples output and input

TC type	Range (°C)		Absolute uncertainty ± (°C)	
	Minimum	Maximum	MIN	MAX
TC mV	-10.000 mV	+75.000 mV	0.02 % of reading ± 10 µV	
B	600	1820	1.2	1.5
C	0	2316	0.6	2.3
E	-250	+1000	0.2	0.6
J	-210	+1200	0.2	0.4
K	-200	+1372	0.3	0.6
L	-200	+900	0.2	0.25
N	-200	+1300	0.4	0.8
R	0	1767	1.2	1.2
S	0	1767	1.2	1.2
T	-250	+400	0.2	0.6
U	-200	+600	0.25	0.5
XK	-200	+800	0.2	0.2
BP	0	2500	0.9	2.3

RTD output and input

RTD type	Range (°C)		Absolute uncertainty ± (°C)	
	Minimum	Maximum	MIN	MAX
Pt 385, 100 Ω	-200.0	+800.0	0.10	0.29
Pt 3926, 100 Ω	-200.0	+630.0	0.10	0.24
Pt 3916, 100 Ω	-200.0	+630.0	0.08	0.25
Pt 385, 200 Ω	-200.0	+630.0	0.40	0.66
Pt 385, 500 Ω	-200.0	+630.0	0.18	0.34
Pt 385, 1000 Ω	-200.0	+630.0	0.10	0.25
Pt 385, 10 Ω	-200.0	+800.0	0.78	1.19
Pt 385, 50 Ω	-200.0	+800.0	0.18	0.39
Ni120, (372)	-80.0	+260.0	0.06	0.06
Cu 10	-100.0	+260.0	0.82	0.82
Cu 50	-180.0	+200.0	0.20	0.20
Cu 100	-180.0	+200.0	0.13	0.13
YSI 400	15.0	50.0	0.05	0.05

Standard signals output and input

	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		

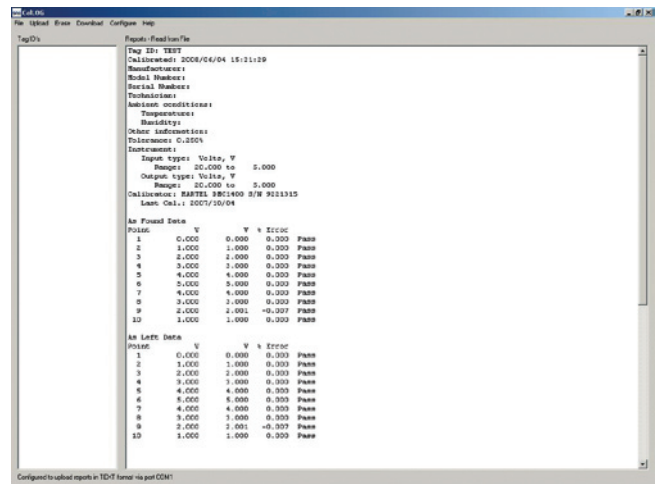
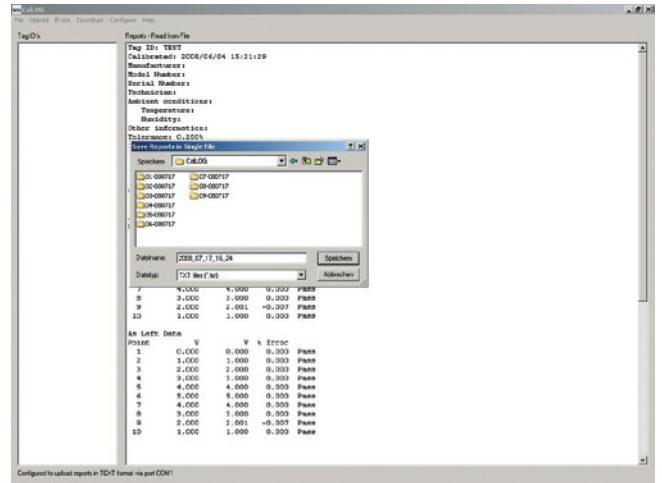
The Documenting Function

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.

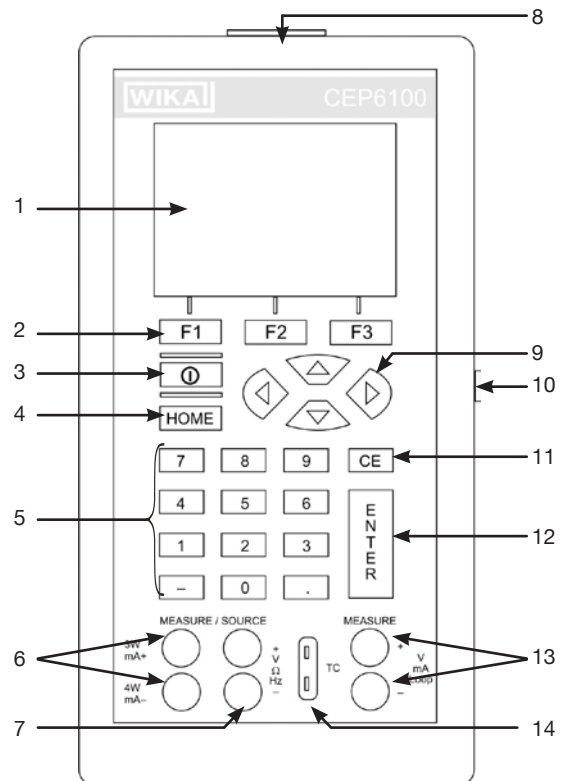
When the day's work is over, you can save the data to a PC. A Windows® PC already has most of the software you need. If you will just print calibration certificates, use Windows HyperTerminal to upload an ASCII image of the certificate and print away.

With a Microsoft Excel compatible spreadsheet, you can choose to upload .CSV files using the CalLOG software. 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.



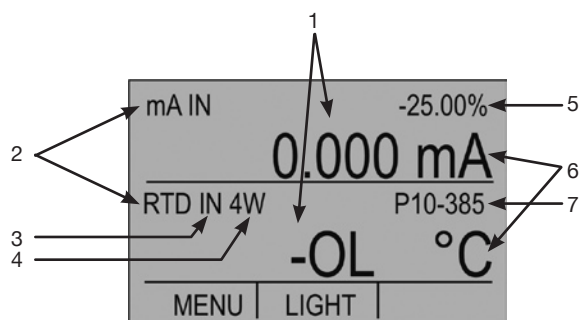
Overview keypad of CEP6100

- 1) Display
- 2) F1, F2, F3, 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) MEASURE/SOURCE, mA terminals, 3W, 4W
- 7) MEASURE/SOURCE, V, RTD 2W, Hz
- 8) Connector for external pressure module
- 9) User arrow, select which decade to be changed in output value; increase, decrease or ramp output value
- 10) Interface, Serial port
- 11) Clear Entry, allows the user to clear a value
- 12) Enter key
- 13) Input terminals for measuring current, voltage and supplying mA terminals loop power
- 14) Thermocouple Input/Output



Overview of the display

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



Scope of supply

- Documenting Multi-Function Calibrator CEP6100
- Operation instructions
- Test leads, 3 sets (red/black)
- Calibration certificate 3.1 per DIN EN 10 204
- 4 AA NiMH batteries
- Protective rubber boot
- RS-232 Communication cable
- USB serial converter
- Quick start guide
- CalLOG software

Accessories

- Rechargeable battery kit, incl. 4 NiMH batteries, quick charger, power cord, adapters
- Battery set, 4 NiMH 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

Option

- DKD calibration certificate

Products and Services within our Calibration Technology Program

- DKD calibration services for pressure
- Repair of all makes of calibration units
- 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 calibration services for temperature
- Temperature dry-well calibrators
- Calibration baths and furnaces
- Temperature measuring instruments for test and calibrating tasks
- Precision thermometers
- Primary standards for temperature
- Consulting and seminars

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.

