Digital Multimeter PCE-MCA 50

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Universal calibrator with powerful battery /Transducer for simulation and measurement / Generation of increments / Extensive measurement and simulation functions

The digital multimeter PCE-MCA 50 is designed for calibration and maintenance. This digital multimeter enables the measurement and simulation of electrical quantities. Due to the battery operation, the digital multimeter PCE-MCA 50 can be used in different locations. The measurement functions offered are a versatile measuring instrument that can be used in many areas. Depending on the application, the digital multimeter can run for up to 17 hours per battery charge. The measured results can be stored on the internal measured value memory. This offers a capacity for up to 15000 values.

The digital multimeter offers the possibility of generating and measuring DC and DC. The operation of the digital multimeter is carried out in a simple manner via nine keys installed on the front. Likewise, test leads and thermocouple can be connected. The calibrator performs measurement functions, voltage and current simulations, as well as a continuity test. The measured values can be read off the large LC display.

- Compact handset
- User friendly menu
- Rechargeable strong battery
- Adjustable backlight
- Extreme value and average measurement
- Continuity test
- USB interface
- ABS housing with rubber protective cover

Subject to change

Specifications

Display modes	Measurement: mA / V / mV / mA (24V) / Switch test / Temperature thermocouple / Resistance thermometer / Frequency / Pulse Simulation: mA / V / mV / mA (2 W) / Resistance / Resistance Thermometer / Temperature Thermocouple / Frequency / Pulse
Maximum input voltage	30V DC
Input impedance	Thermocouple, mV, V, frequency, pulse: 1 MΩ
Measurement	mA: 10 MΩ
Response time	<100 ms
Load impedance	> 4.7 KΩ for thermocouple / mV / V / pulse / frequency <750 Ω for mA
Refresh rate display	10 readings per second
Isolation	500V DC
Data storage	150000 measured values maximum
Interface	USB 2.0
Display	3.2" TFT LCD 240 x 320 pixels LED illuminated
Output voltage Current loop	24V DC / 24-mA
HART mA loop Resistance	250 Ω ± 20%
Special features	Step and ramp function Automatic and manual mode √x, x2: For the measuring function
Continuity test	Adjustable threshold value up to 100 Ω
Power supply	Rechargeable battery, 3000-mAh 3.7V
Charging time	Max. 5 hours
Power adapter	100 ... 240V AC, 50/60 Hz, output 5V DC at 1 A
Battery life	> 17 h: Simulation and measurement with low LCD illumination > 9 h: Measurement with low LCD illumination
Dimensions (L x W x H)	185.6 x 97.1 x 41.3 mm / 7.3 x 3.8 x 1.6 in
Weight	<500 g / 1.1 lbs
Protection class	IP20
Operating conditions	0 ... 55°C / 32 ... 131°F, 30 ... 90% RH (non-condensing)
storage conditions	-20 ... 60°C / -4 ... 140°F, 30 ... 90% rh (non-condensing)
Heating time	5 minutes

More information

Manual

More product info

Similar products

Subject to change

Technical data electrical measurement

Parameter	Measuring range	Resolution	Measurement accuracy
V	0 ... 30V DC	0.001V	± 0.02% of v. Mw. ± 2 Dgt
mA	0 ... 24-mA	0.001-mA	± 0.02% of v. Mw. ± 2 Dgt

Technical data electrical simulation

Parameter	Measuring range	Resolution	Measurement accuracy
V	0 ... 12V DC	0.001V	± 0.02% of v. Mw. ± 2 Dgt
mA	0 ... 24-mA	0.001-mA	± 0.02% of v. Mw. ± 2 Dgt

Technical Data Measurement / Simulation Thermocouple mV

Type thermocouple	Measuring range	Resolution	Measurement accuracy
e	-200 ... 1000°C / -328 ... 1832°F	0.1°C / 0.18°F	± 0.3°C / 0.54°F
J	-200 ... 1200°C / -328 ... 2192°F	0.1°C / 0.18°F	± 0.3°C / 0.54°F
K	-200 ... 1372°C /	0.1°C / 0.18°F	± 0.3°C / 0.54°F
T	-200 ... 400°C / -328 ... 752°F	0.1°C / 0.18°F	± 0.3°C / 0.54°F
B	450 ... 1800°C / 842 ... 3272°F	0.1°C / 0.18°F	± 0.5°C / 0.9°F
R	0 ... 1750°C / 32 ... 3182°F	0.1°C / 0.18°F	± 0.5°C / 0.9°F
S	0 ... 1750°C / 32 ... 3182°F	0.1°C / 0.18°F	± 0.5°C / 0.9°F
N	-200 ... 1300°C / -328 ... 2372°F	0.1°C / 0.18°F	± 0.3°C / 0.54°F
mV	-10 ... 80 mV	0.001 mV	± 0.02% of v. Mw. ± 4 µm
	-10 ... 250 mV	0.01 mV	± 0.02% of v. Mw. ± 0.02 mV

Technical data Frequency measurement

Measuring range	Resolution
0.0143 ... 9.9999 Hz	0.0001 Hz
10 ... 99,999 Hz	0.001 Hz
100 ... 999.99 Hz	0.01

1000 ... 9999.9 Hz	0.1 Hz
10000 ... 50,000 Hz	1 Hz

Function	Specification
Triggering threshold	0 ... 12V in 1V increments
Measurement accuracy	± 0.01% of v. Mw. ± 1 Dgt
Supported units	Hz, kHz, cph, cpm, sec., Msec., Msec

Technical data Pulse counting

Function	Specification
Measuring range	0 ... 999999 pulses
Triggering threshold	0 ... 12V in 1V increments

Technical data Frequency generation

Measuring range	Resolution
0.0005 ... 0.5 Hz	0.00001 Hz
0.5 ... 50 Hz	0.0001 Hz
50 ... 500 Hz	0.001 Hz
500 ... 5000 Hz	0.01 Hz
5000 ... 10000 Hz	0.1 Hz

Function	Specification
Output amplitude positive square wave	0 ... 12V PP (± 0.5V)
Output amplitude symmetrical square wave	0 ... 6V PP (± 0.5V)
Measurement accuracy	± 0.02% of reading ± 2
Duty cycle	1 ... 99% (up to 500 Hz)
Supported units	Hz, KHz, cph, cpm, sec., Msec., Msec.

Technical data Pulse generation

Function	Specification
Measuring range	0 ... 999999 pulses
Resolution	1 pulse
Output amplitude positive square wave	0 ... 12V PP (± 0.5V PP)
Output amplitude symmetrical square wave	0 ... 6V PP (± 0.5V PP)
Pulse frequency	0.0005 ... 10000 Hz
Duty cycle	1 ... 99% (up to 500 Hz)

Subject to change

Technical Data Measurement and Simulation

Parameter	Measuring range	Resolution	Measurement accuracy
Resistance (Ω)	0 ... 400 Ω	0.01 Ω	4-wire measurement: ± 0.02% of vol. Mw. ± 0.01Ω Simulation: ± 0.02% v. Mw ± 0.02 Ω
	400 ... 4000 Ω	0.1 Ω	4-wire measurement: ± 0.02% of vol. Mw. ± 0.1Ω Simulation: ± 0.02% of v. Mw ± 0.15 Ω
Pt10 ... Pt100	-200 ... 200°C / -328 ... 392°F 200 ... 600°C / 392 ... 1112°F 600 ... 850°C / 1112 ... 1532°F	Pt10 ... Pt400: 0.01°C / 0.018°F Pt500 ... Pt1000: 0.1°C / 0.18°F	4-wire measurement: ± 0.15°C / 0.27°F Simulation: ± 0.15°C / 0.27°F 4-wire measurement: ± 0.3°C / 0.54°F Simulation: ± 0.35°C / 0.63°F
Ni100	-60 ... 180°C / -76 ... 356°F	0.01°C / 0.018°F	Simulation: ± 0.35°C / 0.63°F 4-wire measurement: ± 0.1°C / 0.18°F
Ni120	-80 ... 260°C / -112 ... 500°F	0.01°C / 0.018°F	Simulation: ± 0.15°C / 0.27°F
Cu10 ... Cu100	-200 ... 260°C / -328 ... 500°F	0.01°C / 0.018°F	4-wire measurement: ± 0.2°C / 0.36°F, Simulation: ± 0.8°C / 1.44°F

Suitable thermocouple types

Pt10 (285)	Pt400 (385)	Ni100 (672)	Cu10 (427)
Pt50 (385)	Pt500 (385)	Ni100 (618)	Cu50 (427)
Pt100 (385)	Pt1000 (385)	Ni120 (672)	Cu100 (427)
Pt200 (385)	Pt100 (3926)		