

Multimeter Infrared Thermal Imager and Bluetooth Interface HDM 15-ICA

Digital multimeter PCE-HDM 15-ICA incl. ISO Calibration Certificate

Digital multimeter with thermal imager / TRUE RMS / Resistance measurement / Current measurement / Voltage measurement / Rechargeable battery / TFT color display / Bluetooth interface / LED lamp

The digital multimeter PCE-HDM 15 is a universal and robust measuring device. With this digital multimeter, voltages, currents, resistances and many other electrical quantities can be measured. As an additional function with the digital multimeter, a Bluetooth connection with a smartphone can be established. The digital multimeter automatically sends live all measured data to a smartphone. The smartphone itself becomes a data logger. From there, the data measured and sent by the digital multimeter can be analyzed and, for example, transmitted to a PC or sent.

Thanks to the built-in thermal imaging camera in the digital multimeter, temperatures of surfaces can also be measured. This allows temperature measurements from a distance with the digital multimeter. The sturdy rubber holster makes the digital multimeter robust in use in the workshop, on the construction site or in schools for training purposes.

- Multimeter with 11 measuring functions
- Thermal camera
- Bluetooth interface
- Rechargeable battery
- Color TFT display
- TRMS measurement
- incl. ISO Calibration Certificate

Specifications:

Type of measurement

AC voltage AC V TRMS

Measuring range	Resolution	Accuracy
4,000V	0.001V	± 0.5% + 5 Dgt
40.00V	0.01V	at 50 ... 60 Hz
400.0V	0.1V	± 2.5% + 5 Dgt
600V	1V	at 61 ... 1 kHz

Input resistance: > 9 MΩ, The accuracy refers to the measuring range between 10 ... 100% with a sine wave, accuracy of the PEAK function ± 10%, PEAK reaction time 1 ms, overvoltage protection; 600V AC / DC rms

DC voltage DC V

Measuring range	Resolution	Accuracy
400.0 mV	0.1 mV	± 0.8% + 8 Dgt
4,000V	0.001V	± 0.5% + 5 Dgt
40.00V	0.01V	± 0.8% + 5 Dgt

400.0V	0.1V	± 0.8% + 5 Dgt
600V	1V	± 0.8% + 5 Dgt

Input resistance: > 10 MΩ, overvoltage protection; 600V AC / DC rms

AC and DC AC + DC TRMS

Measuring range	Resolution	Accuracy
4,000V	0.001V	
40.00V	0.01V	± 2.5%
400.0V	0.1V	+20 Dgt
600V	1V	at 50 ... 1 kHz

Input resistance: > 10 MΩ, overvoltage protection; 600V AC / DC rms
AC AC TRMS

Measuring range	Resolution	Accuracy
200.0 μA	0.1 μA	± 2.0% + 5 Dgt
4000-mA	1-mA	± 2.5% + 5 Dgt
10.00 a	0.01-mA	± 2.5% + 5 Dgt

The accuracy refers to the measuring range between 5 ... 100% with a sine wave and a frequency between 50 ... 1 kHz. Accuracy of the PEAK function: ± 10%

AC and DC AC + DC TRMS

Measuring range	Resolution	Accuracy
200.0 μA	0.1 μA	
4000-mA	1-mA	± 3.0%
10.00 a	0.01-mA	+20 Dgt
		at 50 ... 1 kHz

DC DC A

200.0 μA	0.1 μA	± 1.5% + 5 Dgt
4000-mA	1-mA	± 2.0% + 5 Dgt
10.00 a	0.01-mA	± 2.0% + 5 Dgt

Resistance

400.0 Ω	0.1 Ω	± 1.0% + 10dgt
4,000 kΩ	0.001 kΩ	± 1.0% + 5 Dgt
40.00 kΩ	0.01 kΩ	± 1.0% + 5 Dgt
400.0 kΩ	0.1 kΩ	± 1.0% + 5 Dgt
4,000 MΩ	0.001mΩ	± 1.0% + 5 Dgt
40.00 MΩ	0.01 MΩ	± 2.5% + 10dgt

Overvoltage protection; 600V AC / DC rms

Capacity

Measuring range	Resolution	Accuracy
40.00 n	0.01 nF	± 3% + 20 Dgt
400.0 nF	0.1 nF	± 3% + 8 Dgt
4,000 μF	0.001 μF	± 3% + 8 Dgt

40.00 μ F	0.01 μ F	$\pm 3\% + 8$ Dgt
400.0 μ F	0.1 μ F	$\pm 3\% + 8$ Dgt
4000 μ F	1 μ F	$\pm 3\% +$ 20 Dgt

Overvoltage protection; 600V AC / DC rms

Frequency

Measuring range	Resolution	Accuracy
40.00 Hz	0.01 Hz	
400.0 Hz	0.1 Hz	
4,000 kHz	0.001 kHz	
40.00 kHz	0.01 kHz	$\pm 0.2\%$ 5 Dgt
4,000 kHz	0.1 kHz	
4,000 Mhz	0.001 MHz	
10.00 MHz	0.01 Mhz	

Overvoltage protection; 600V AC / DC rms

Sensitivity:

> 2 Vrms (at 20 ... 80% duty
cycle and
f < 100 kHz
> 5 Vrms (at 20 ... 80% duty
cycle and
f > 100 kHz

Duty cycle (duty cycle)

Measuring range	Resolution	Accuracy
10.0 ... 99.0%	0.1%	$\pm 1.2\% +$ 2 Dgt

Measurement at a frequency between 40 Hz ... 10 kHz, amplitude ± 5 V (100 μ s ... 100 ms)

Diode test

< 1.5-mA / 3.3V DC

Continuity test

Signal tone at > 50 Ω , test
current < 0.35-mA

Specifications for the thermal imager

Field of view (FOV)	21° x 21°
Smallest focus distance	0.5 m / 1.6 ft
Spatial resolution (IFOV)	4,53 mrad
IR resolution	80 x 80 pixels
Temperature sensitivity	< 0.1°C / 0.18°F at 30°C (86°F)
NETD	100 mK
Image frequency	50 Hz
Focus	Focus free
Focal length	7.5 mm
Sensor type	Uncooled microbolometer
Spectral	8 ... 14 μ m
Measuring range object temperature	-20 ... 260°C / -4 ... 500°F
Measurement accuracy	$\pm 3^\circ\text{C} / 5.4^\circ\text{F}$, or 3% of the measured value, at 10 ... 35°C / 50 ... 95°F ambient temperature and > 0°C / 32°F object temperature

Other specifications

Display

4000 digits with bar graph, color
TFT

Measuring rate

Three measurements per second

Automatic shutdown	15 ... 60 minutes (adjustable and deactivatable)
Power supply battery	3.7V, 1400-mAh Li-ion battery, installed
Power supply micro USB	5V / 1A
Fuses	FF 10 A / 600V
Operating conditions	5 ... 40°C / 41 ... 104°F < 80% rh
Storage conditions	- 20°C ... 60°C / -4 ... 140°F < 80% rh
Reference temperature	18 ... 28°C, 64 ... 82°F
Dimensions	175 x 85 x 55 mm / 7 x 3 x 2 in
Weight	540 g / 1.2 lbs
Max. operating altitude	2000 m / 6561 ft above sea level
Electric security	Double insulation according to EN61010-1 EMC: IEC / EN 61326-1 CAT III 600V / CAT IV 3000V Pollution degree 2

Delivery scope:

1 x Digital Multimeter PCE-HDM 15-ICA
 1 x Test lead set
 1 x USB micro cable
 1 x Transport case
 1 x User manual
 1 x ISO Calibration Certificate