

Heavy Duty Industrial Multimeter PCE-HDM 20-ICA

Digital multimeter PCE-HDM 20-ICA incl. ISO calibration certificate TRMS digital multimeter for current, voltage, capacity, frequency and resistance / CAT IV 600 V / CAT III 1000 V / with contactless temperature measurement via infrared / MAX, MIN and HOLD function

The multimeter PCE-HDM 20-ICA is a universal measuring instrument. The multimeter PCE-HDM 20-ICA allows a variety of measurement projects. This makes it easy to investigate current, voltage, capacitance, frequency and resistances. In addition to these measurements, the PCE-HDM 20-ICA digital multimeter can also perform measurements such as duty cycle, diode test and continuity test.

In addition to the electrical parameters, the digital multimeter can also be used for temperature determination. The determination of the temperature can be done in two different ways. In the first case, the temperature can be measured by plugging in a thermocouple. In the second case, the digital multimeter offers non-contact temperature measurement. For this purpose, an infrared optic is installed on the digital multimeter, which thus enables the temperature determination from a distance. The thermal image is then clearly shown on the display. For a closer look, there are five different colour palettes available, which can be chosen at will. To measure the temperature using the IR sensor, a lamp helps to make darkened areas brighter. In addition, the digital multimeter has a laser that helps to locate the target area.

- Automatic shutdown
- 2.8" LC Display
- Built-in thermal imaging camera
- Heat measurement via IR or thermocouple
- Resistance measurement and continuity test
- Diode test and capacitance measurement
- **Incl. ISO calibration certificate**

Specifications:

Temperature measurement with thermal imaging camera

Sampling rate	3 times per second
Field of view (FOV)	21° x 21° / 0.5 m / 1 ft 7.6"
Spatial resolution (IFOV)	4.53 mrad
Resolution infrared camera	80 x 80 Pixel
Thermal sensitivity / NETD	<0.1°C (0.18°F) at 30°C (86°F) / 100 mK
Frame rate	50 Hz
Focal length	7.5 mm
Sensor type	uncooled microbolometer
Spectral range	8 ... 14 µm

Measuring range object temperature	-20 ... 260°C / -4 ... 500°F
Measurement accuracy	± 3°C / 5.4°F or 3% of the measured value, at 10 ... 35°C / 50 ... 95°F ambient temperature and > 0°C / 32°F object temperature

General Technical Data

Display	Colour TFT, 6000 points with status display
Conversion	TRMS
Reference standards	IEC/EN61010-1, IEC/EN61326-1
Isolation	Double
Pollution degree	2
Overload category	CAT IV 600 V, CAT III 1000 V
Battery type	1 x 7.4V Li-Ion battery, 2300-mAh
Power supply charger	100 / 240V AC, 50/60 Hz, 10V DC, 1 A
Battery level indicator	Yes
Automatic shutdown	After 15, 30 or 60 minutes of inactivity (deactivatable)
Fuses	F10A/1000V, 10 x 38 mm (Input 10 A) F800mA/1000V, 6 x 32 mm (Input mA, µA)
Test temperature	18 ... 28°C / 64 ... 82°F
Operating conditions	5 ... 40°C / 41 ... 104°F, <80% r.H.
Storage conditions	-20 ... 60°C / -4 ... 140°F, <80% r.H.
Maximum operating height	2000 m / 2187 yd
Dimensions	175 x 85 x 55 mm / 6.9 x 3.3 x 2.1 in
Weight	540 g / 1 lb 3oz

Technical Data DC Voltage

Measuring range	Resolution	Measurement accuracy	Input resistance	Overload protection
600 mV	0.1 mV	± (0.2% of measurement value + 5 Dgt)	>10 MΩ	1000V DC / ACrms
6V	0.001V	± (0.2% of measurement value + 5 Dgt)	>10 MΩ	1000V DC / ACrms
60V	0.01V	± (0.2% of measurement value + 5 Dgt)	>10 MΩ	1000V DC / ACrms
600V	0.1V	± (0.2% of measurement value + 5 Dgt)	>10 MΩ	1000V DC / ACrms
1000V	1V	± (0.2% of measurement value + 5 Dgt)	>10 MΩ	1000V DC / ACrms

Technical Data AC Voltage (TRMS)

Measuring range	Resolution	Measurement accuracy (50 ... 60 Hz)	Measurement accuracy (61 Hz ... 1 kHz)	Overload protection
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6V	0.001V	$\pm (0.8\% \text{ of measurement value} + 5 \text{ Dgt}) \pm$	(2.4% of measurement value +5 Dgt)	1000V DC / ACrms
60V	0.01V	$\pm (0.8\% \text{ of measurement value} + 5 \text{ Dgt})$	$\pm (2.4\% \text{ of measurement value} + 5 \text{ Dgt})$	1000V DC / ACrms
600V	0.1V	$\pm (0.8\% \text{ of measurement value} + 5 \text{ Dgt})$	$\pm (2.4\% \text{ of measurement value} + 5 \text{ Dgt})$	1000V DC / ACrms
1000V	1V	$\pm (0.8\% \text{ of measurement value} + 5 \text{ Dgt})$	$\pm (2.4\% \text{ of measurement value} + 5 \text{ Dgt})$	1000V DC / ACrms

Technical Data DC and AC voltage (TRMS)

Measuring range	Resolution	Measurement accuracy	Input resistance	Overload protection
6V	0.001V	$\pm (2.4\% \text{ of measurement value} + 20 \text{ Dgt})$	>10 M Ω	1000V DC / ACrms
60V	0.01V	$\pm (2.4\% \text{ of measurement value} + 20 \text{ Dgt})$	>10 M Ω	1000V DC / ACrms
600V	0.1V	$\pm (2.4\% \text{ of measurement value} + 20 \text{ Dgt})$	>10 M Ω	1000V DC / ACrms
1000V	1V	$\pm (2.4\% \text{ of measurement value} + 20 \text{ Dgt})$	>10 M Ω	1000V DC / ACrms

Technical Data Direct Current

Measuring range	Resolution	Measurement accuracy	Overload protection
600 μ A	0.1 μ A	$\pm (0.9\% \text{ of measurement value} + 5 \text{ Dgt})$	Protection 800-mA / 1000 V
6000 μ A	1 μ A	$\pm (0.9\% \text{ of measurement value} + 5 \text{ Dgt})$	Protection 800-mA / 1000V
60-mA	0.01-mA	$\pm (0.9\% \text{ of measurement value} + 5 \text{ Dgt})$	Protection 800-mA / 1000V
600-mA	0.1-mA	$\pm (0.9\% \text{ of measurement value} + 8 \text{ Dgt})$	Protection 800-mA / 1000V
10 A	0.01 A	$\pm (1.5\% \text{ of measurement value} + 5 \text{ Dgt})$	Protection 10 A / 1000V

Technical Data Alternating Current (TRMS)

Measuring range	Resolution	Measurement accuracy	Overload protection
600 μ A	0.1 μ A	$\pm (1.2\% \text{ of measurement value} + 5 \text{ Dgt})$	Protection 800-mA / 1000V
6000 μ A	1 μ A	$\pm (1.2\% \text{ of measurement value} + 5 \text{ Dgt})$	Protection 800-mA / 1000V
60-mA	0.01-mA	$\pm (1.2\% \text{ of measurement value} + 5 \text{ Dgt})$	Protection 800-mA / 1000V
600-mA	0.1-mA	$\pm (1.2\% \text{ of measurement value} + 5 \text{ Dgt})$	Protection 800-mA / 1000V

10 A	0.01 A	± (1.5% of measurement value +5 Dgt)	Protection 10 A / 1000V
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Technical Data Coil Current

Measuring range	Resolution	Measurement accuracy (50 ... 60 Hz)	Measurement accuracy (61 Hz ... 1 kHz)	Overload protection
30 A	0.01 A	± (0.8% of measurement value +5 Dgt)	± (2.4% of measurement value +5 Dgt)	1000V DC / ACrms
300 A	0.1 A	± (0.8% of measurement value +5 Dgt)	± (2.4% of measurement value +5 Dgt)	1000V DC / ACrms
3000 A	1 A	± (0.8% of measurement value +5 Dgt)	± (2.4% of measurement value +5 Dgt)	1000V DC / ACrms

Technical Data Diode Test

Test current <1.5-mA

Maximum voltage at the open circuit 3.3V DC

Resistance and continuity test

Measuring range	Resolution	Measurement accuracy	Acoustic warning sound	Overload protection
600 Ω	0.1Ω	± (0.5% of measurement value +10 Dgt)	>50 Ω	1000V DC / ACrms
6 Ω	0.001 kΩ	± (0.5% of measurement value +5 Dgt)	>50 Ω	1000V DC / ACrms
60 kΩ	0.01 kΩ	± (0.5% of measurement value +5 Dgt)	>50 Ω	1000V DC / ACrms
600 kΩ	0.1 kΩ	± (0.5% of measurement value +5 Dgt)	>50 Ω	1000V DC / ACrms
6 MΩ	0.001 MΩ	± (0.5% of measurement value +5 Dgt)	>50 Ω	1000V DC / ACrms
60 MΩ	0.01 MΩ	± (2.5% of measurement value +10 Dgt)	>50 Ω	1000V DC / ACrms

Technical Data Frequency

Measuring range	Resolution	Measurement accuracy	Overload protection
40 Hz ... 10 kHz	0.01 Hz ... 0.001 kHz	± (0.5% of measurement value)	1000V DC / ACrms
60 Hz	0.01 Hz	± (0.09% of measurement value +5 Dgt)	1000V DC / ACrms
600 Hz	0.1 Hz	± (0.09% of measurement value +5 Dgt)	1000V DC / ACrms
6 kHz	0.001kHz	± (0.09% of measurement value +5 Dgt)	1000V DC / ACrms

60 kHz	0.01kHz	± (0.09% of measurement value +5 Dgt)	1000V DC / ACrms
600 kHz	0.1 kHz	± (0.09% of measurement value +5 Dgt)	1000V DC / ACrms
6 MHz	0.001 MHz	± (0.09% of measurement value +5 Dgt)	1000V DC / ACrms
10 MHz	0.01 MHz	± (0.09% of measurement value +5 Dgt)	1000V DC / ACrms

Technical Data Duty Cycle

Measuring range	Resolution	Measurement accuracy
5 ... 95%	0.1%	± (1.2% of measurement value +2 Dgt)

Technical Data Capacitance

Measuring range	Resolution	Measurement accuracy	Overload protection
60 nF	0.01 nF	± (1.5% of measurement value +20 Dgt)	1000V DC / ACrms
600 nF	0.1 nF	± (1.2% of measurement value +8 Dgt)	1000V DC / ACrms
6 µF	0.001 µF	± (1.5% of measurement value +8 Dgt)	1000V DC / ACrms
60 µF	0.01 µF	± (1.2% of measurement value +8 Dgt)	1000V DC / ACrms
600 µF	0.1 µF	± (1.5% of measurement value +8 Dgt)	1000V DC / ACrms
6000 µF	1 µF	± (2.5% of measurement value +20 Dgt)	1000V DC / ACrms

Technical Data Temperature (Thermoelement Type K)

Measuring range	Resolution	Measurement accuracy	Overload protection
-40 ... 600°C / -40 ... 1112°F	0.1°C / 0.18°F	± (1.5% of measurement value 3°C / 5.4°F)	1000V DC / ACrms
600 ... 1000°C / 1112°F ... 1832°F	1°C / 1.8°F	± (1.5% of measurement value 3°C / 5.4°F)	1000V DC / ACrms

Delivery scope:

- 1 x Digital multimeter PCE-HDM 20-ICA
- 2 x Measurement line
- 1 x Type K Type K thermocouple probe
- 2 x Li-ion battery
- 1 x Charger
- 1 x Power plug
- 3 x Attachment for power plug
- 1 x Micro-SD Card (8 GB)
- 1 x Magnet

- 1 x Fabric loop
- 1 x Temperature adapter
- 1 x User manual
- 1 x ISO calibration certificate