DIGITAL MULTIMETER

PCE-ITM 20



- **Automatic range selection**
- **Capacitance measurement**
- **Integrated isolation tester**
- **Large LCD display, backlight**
- **Internal memory**
- **Hold Function**
- **To IEC 1010, CAT III 1000 V, CAT IV 600 V**
- **Frequency measurement**

This digital multimeter PCE-ITM 20 combines a versatile multimeter with an insulation tester. In addition to the usual measured quantities such as voltage, current and resistance, this digital multimeter PCE-ITM 20 is also equipped with a frequency and capacitance measurement. A thermocouple included in the delivery can also be used to measure the temperature. Automatic range selection (Autorange) allows fast and safe operation with the isolation multimeter, while the large backlit LCD display ensures good readability.
The highlight of this isolation multimeter is the integrated insulation tester. With test voltages of up to 1000 V, insulation resistances of up to 5000 MΩ (5 GΩ) are measured. Likewise, the isolation multimeter can directly measure the PI and DAR value. Thus, it is quickly possible to make a statement about the insulation value of the DUT with the help of the insulation multimeter.
In addition, this isolation multimeter has an internal memory. This gives you the opportunity to recall the stored measured values for subsequent analysis in the display and to transfer the measured values via the wireless USB interface from the isolation multimeter to a PC.

Specification

Direct voltage DC	
Measuring range	0 ... 50 mV
Resolution	0,001 mV
Accuracy	±(0.06% +20 Digits)
Direct voltage DC	
Measuring range	0 ... 500 mV
Resolution	0,01 mV
Accuracy	±(0.06% +6 Digits)
Direct voltage DC	
Measuring range	0 ... 5 V
Resolution	0,0001 V
Accuracy	±(0.06% +4 Digits)
Direct voltage DC	
Measuring range	0 ... 50 V
Resolution	0,001 V
Accuracy	±(0.06% +4 Digits)
Direct voltage DC	
Measuring range	0 ... 500 V
Resolution	0,01 V
Accuracy	±(0.06% +4 Digits)
Direct voltage DC	
Measuring range	0 ... 1000 V
Resolution	0,1 V
Accuracy	±(0.1% +3 Digits)
Direct current DC	
Measuring range	0 ... 500 µA
Resolution	0,01 µA
Accuracy	±(0.5% +3 Digits)
Direct current DC	
Measuring range	0 ... 5000 µA
Resolution	0,1 µA
Accuracy	±(0.5% +3 Digits)
Direct current DC	
Measuring range	0 ... 50 mA
Resolution	0,001 mA
Accuracy	±(0.5% +3 Digits)
Direct current DC	
Measuring range	0 ... 500 mA

General technical data	
Measuring functions	HOLD, MIN, MAX, Peak hold
Frequency	50 ... 1000 Hz
Display type	LCD with backlight
Measuring rate	10 Hz
Storage medium	Internal memory
Storage capacity	9999 Values
Storage interval from	0 s
Storage interval to	255 s
Standard(s)	EN 61010-1, IEC 61010-1 Part 2 (2001), UL 61010-1 part 2 (2004), CAN/CSA C22.2 No 6110-1 Part 2 (2004), UL 61010B-2-031 part 1 (2003)
Automatic power-off	15 min
Operating height	2000 m max. above sea level
Bandwidth	50 ... 1000 Hz
Safety standard	CAT IV 600V, CAT III 1000V
Fuse(s)	mA, µA: 0.5 A / 1000V ceramic fast and A: 10 A / 1000V ceramic fast
Sensitivity	0.8 Vrms min @ 20% ... 80% Duty Cylce < 100 kHz 5V RMS min @ 20% ... 80% > 100 kHz
Diode test	Test current 0.9 mA Open-circuit voltage 2.8V
Menu language	English, English (GB)
Protection class (device)	IP67
(Rechargeable) battery	6 x 1,5 V AA battery , Alkali-manganese
Capacity	3000 mAh
Operating conditions	5 ... 40 °C , 0 ... 80 % RH
Storage conditions	-20 ... 60 °C , 0 ... 80 % RH
Dimensions (L x W x H)	220 x 95 x 50 mm
Weight	720 g

PCE Instruments UK Ltd.
Chester Rd, Old Trafford Suite 1N-B, Trafford House, M32 0RS Manchester
Great Britain

Phone: +44 (0) 161 4649020
info@pce-instruments.co.uk

Resolution	0,01 A
Accuracy	±(0.5% +3 Digits)
Direct current DC	
Measuring range	0 ... 10 A
Resolution	0,001 A
Accuracy	±(0.5% +3 Digits)
Capacity	
Measuring range	0 ... 5 nF
Resolution	0,001 mF
Accuracy	±(1.5% +50 Digits)
Capacity	
Measuring range	0 ... 50 nF
Resolution	0,01 nF
Accuracy	±(1.5% +10 digits)
Capacity	
Measuring range	0 ... 500 nF
Resolution	0,1 nF
Accuracy	±(1.5% +10 digits)
Capacity	
Measuring range	0 ... 5 µF
Resolution	0,001 µF
Accuracy	±(1.5 % +5 digits)
Capacity	
Measuring range	0 ... 50 µF
Resolution	0,01 µF
Accuracy	±(1.5 % +5 digits)
Capacity	
Measuring range	0 ... 500 µF
Resolution	0,1 µF
Accuracy	±(1.5 % +5 digits)
Capacity	
Measuring range	0 ... 5 mF
Resolution	0,001 mF
Accuracy	±(3% +30 Digits)
Capacity	
Measuring range	0 ... 10 mF
Resolution	0,01 mF
Accuracy	±(3% +30 Digits)
Type K temperature	

Measuring range	-50 ... +1350 °C
Resolution	0,1 °C
Accuracy	±(0.5% +3.5°C)
Type K temperature	
Measuring range	-58 ... +2462 °F
Resolution	0,1 °F
Accuracy	±(0.5% +7°F)
AC voltage	
Measuring range	0 ... 50 mV
Resolution	0,001 mV
Accuracy	±(1% +50 Digits)
Frequency range	50 ... 1000 Hz
AC voltage	
Measuring range	0 ... 500 mV
Resolution	0,01 mV
Accuracy	±(1% +50 Digits)
Frequency range	50 ... 1000 Hz
AC voltage	
Measuring range	0 ... 5 V
Resolution	0,0001 V
Accuracy	±(1 % +30 digits)
Frequency range	50 ... 1000 Hz
AC voltage	
Measuring range	0 ... 50 V
Resolution	0,001 V
Accuracy	±(1 % +30 digits)
Frequency range	50 ... 1000 Hz
AC voltage	
Measuring range	0 ... 500 V
Resolution	0,01 V
Accuracy	±(1 % +30 digits)
Frequency range	50 ... 1000 Hz
AC voltage	
Measuring range	0 ... 1000 V
Resolution	0,1 V
Accuracy	±(1 % +30 digits)
Frequency range	50 ... 1000 Hz
Alternating current AC	
Measuring range	0 ... 500 µA

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Resolution	0,01 µA
Accuracy	±(1 % +30 digits)
Frequency range	50 ... 1000 Hz
Alternating current AC	
Measuring range	0 ... 5000 µA
Resolution	0,1 µA
Accuracy	±(1 % +30 digits)
Frequency range	50 ... 1000 Hz
Alternating current AC	
Measuring range	0 ... 50 mA
Resolution	0,001 mA
Accuracy	±(1 % +30 digits)
Frequency range	50 ... 1000 Hz
Alternating current AC	
Measuring range	0 ... 500 mA
Resolution	0,01 A
Accuracy	±(1 % +30 digits)
Frequency range	50 ... 1000 Hz
Alternating current AC	
Measuring range	0 ... 10 A
Resolution	0,001 A
Accuracy	±(1 % +30 digits)
Insulation resistance	
Test voltage DC	125V, 250V, 500V, 1000V, 50V
Measuring range	0,01 ... 5 M Ω
Resolution	0,001 M Ω
Accuracy	±(2% +20 Digits)
Insulation resistance	
Test voltage DC	50V, 125V, 250V, 500V, 1000V
Measuring range	5 ... 50 M Ω
Resolution	0,001 M Ω
Accuracy	±(2% +20 Digits) M Ω
Insulation resistance	
Test voltage DC	50V, 125V, 250V, 500V, 1000V
Measuring range	50 ... 500 M Ω
Resolution	0,01 M Ω
Accuracy	±(3% +20 Digits)
Insulation resistance	
Test voltage DC	50V, 125V, 250V, 500V, 1000V

Measuring range	500 ... 5000 M Ω
Resolution	0,1 M Ω
Accuracy	±(4% +20 Digits)
Resistance	
Measuring range	0 ... 50 Ω
Resolution	0,01 Ω
Accuracy	±(0.2% +20 Digits)
Resistance	
Measuring range	0 ... 500 Ω
Resolution	0,1 Ω
Accuracy	±(0.1% +10 digits)
Resistance	
Measuring range	0 ... 5 kΩ
Resolution	0,0001 Ω
Accuracy	±(0.1% +3 Digits)
Resistance	
Measuring range	0 ... 50 kΩ
Resolution	0,001 kΩ
Accuracy	±(0.1% +3 Digits)
Resistance	
Measuring range	0 ... 500 kΩ
Resolution	0,01 kΩ
Accuracy	±(0.1% +3 Digits)
Resistance	
Measuring range	0 ... 5 M Ω
Resolution	0,001 M Ω
Accuracy	±(1% +10 Digits)
Resistance	
Measuring range	0 ... 50 M Ω
Resolution	0,001 M Ω
Accuracy	±(1.5% +50 Digits)
Frequency	
Measuring range	0 ... 50 Hz
Resolution	0,001 Hz
Accuracy	±(0.02% +3 Digits)
Frequency	
Measuring range	0 ... 500 Hz
Resolution	0,01 Hz
Accuracy	±(0.02% +3 Digits)

Frequency	
Measuring range	0 ... 5 kHz
Resolution	0,0001 kHz
Accuracy	±(0.02% +3 Digits)
Frequency	
Measuring range	0 ... 50 kHz
Resolution	0,001 kHz
Accuracy	±(0.02% +3 Digits)
Frequency	
Measuring range	0 ... 500 kHz
Resolution	0,01 kHz
Accuracy	±(0.02% +3 Digits)
Frequency	
Measuring range	0 ... 5 MHz
Resolution	0,0001 MHz
Accuracy	±(0.02% +3 Digits)
Frequency	
Measuring range	0 ... 50 MHz
Resolution	0,001 MHz
Accuracy	±(0.02% +3 Digits)
Frequency	
Measuring range	0 ... 100 MHz
Resolution	0,01 MHz
Accuracy	not specified