

Electricity Meters

TM-10

TV and satellite signal level meter

This TV and satellite signal level meter measures the quality of TV VHF / UHF signals from an antenna to the customer's IRD. It is compact, portable and very easy to use, making it the ideal test instrument for satellite installers. It is very useful for optimising the placement or orientation of installations. Its large LCD with bar graph shows the reading of several values, such as frequency, field value, operative option and the unit of measurement. The metal enclosure provides good protection of internal systems or outdoor applications.

- TV and satellite signal level measurements
- PLL tuning control for frequency selection
- Audio level measurement of 4.5 / 5.5 / 6 and 6.5 MHz
- Line voltage measurement (70 V)
- Rechargeable battery / Auto shut-off
- 99 favourite channel memory
- Peak holder function for detecting maximum input level
- Buzzer for acoustic signal strength monitoring
- Automatically records selected adjustment



Technical specifications

Frequency range	5 to 862 MHz; 250 kHz
Tuning control	PLL control
for frequency	(tuning control of frequency)
Input level range	30 to 120 dB μ V; ± 3 dB (0 to +40 °C) -0.1 dB
HF input	F connector
Audio	A: +4.5 MHz / B: +5.5 MHz C: +6 MHz / D: +6.5 MHz
Frequency range	frequency
resolution	(5 to 862 MHz in steps of 250 kHz)
Memory	video, audio, peak value
Units	dB, μ V, DCV, ACV
Power	12 V / 1200 mA rechargeable batteries
Battery life	3 hours
External power supply	12 V DC, 500 mA
Indicators	frequency, channel, level, dB, μ V, ACV, DCV function, battery level, audio level (bandwidth) and bar graph
Dimensions	180 x 75 x 150 mm
Weight	1500 g



Contents

TM-10 TV and satellite signal level meter, carrying case, battery charger, internal batteries and user's manual (For U.K. customers: incl. U.K. AC Mains Power Adaptor)

Model No.	Description
TM-10	TV and satellite signal level meter

PCE-123

Multifunction calibrator for thermocouple and frequency inputs

This precision multifunction calibrator is a device that doesn't need mains connection and it has a frequency source of 1 Hz to 62.5 kHz in over 700 steps. You will be able to simulate phase regulation signals and individual signals in your technical checks and adjustments (MSR). You will be able to check and calibrate all the measurement parameters. The nominal value indicator allows you to prepare an electrical output signal. This calibrator also possesses an automatic graduation, set output percentage steps (0 to 100%) and a direct indication of the output value.

- 4 to 20 mA (1 k Ω , 24 V power supply)
- 0 to 100 mV / 0 to 1 V / 0 to 12 V
- K, J, E, T thermocouples (°C and °F)
- Frequency range: 1 to 62500 Hz
- Basic accuracy: 0.025 %
- Easy to use
- Step and auto-ramp features
- Output 0 to 100 %
(mA, mV, V)
- ISO calibration certificate (optional)



Technical specifications

mA DC Current (1 k Ω max. load , 24 V power supply)	
Range	4 to 20 mA / 0 to 20 mA / 0 to 24 mA
Resolution	1 μ A
Accuracy	± 0.025 % ± 3 μ A
mV, V DC Voltage (1 mA power supply)	
Ranges / Resolution	0 to 100.00 mV / 10 μ V 0 to 10.000 V / 1 mV 0 to 1.0000 V / 100 μ V
Accuracy	± 0.05 % ± 30 μ V ± 0.05 % ± 3 mV ± 0.05 % ± 300 μ V
K, J, E, T Thermocouples	
Ranges	-200 to 0 °C and 0 to +1370 °C
Resolution	1 °C
Accuracy	± 1.1 °C and ± 0.8 °C
Frequency	
Ranges	1 to 125 Hz and 126 to 62.5 kHz
Resolution	1 to 125 Hz / 1 Hz 126 to 62.5 kHz in 604 steps
Accuracy	± 0.04 Hz
Power	9 V battery or 6 batteries (1.5 V)
Dimensions	88 x 168 x 26 mm
Weight	330 g

Contents

PCE-123 precision multifunction calibrator, carrying case, type-K adaptor, batteries, test cables with alligator clips and user's manual

Model No.	Description
PCE-123	Multifunction calibrator

Optional accessories

CAL-123	ISO certificate
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PCE-OC 1

Handheld Digital Storage Scope Meter / Oscilloscope with USB-Interface

This programmable universal oscilloscope offers enhanced features that similar types test instruments on the market today don't have. The most frequent use of the oscilloscope is troubleshooting malfunctioning electronic equipment. One of the advantages is that the oscilloscope can be used in a frequency range of 5 MHz in real 2-channel-use and shows the signals graphically: where a single voltmeter may show a totally unexpected voltage, the scope may reveal that the circuit is oscillating.

- Dual channel and auto calibration
- DC to 5 MHz, 1 MHz oscilloscope band width
- Built-in auto ranging true RMS multimeter
- PC interface for transferring measurement data and waveform
- Backlight display, 132 x 128 pixels
- Data hold and run mode
- Low battery indicator
- ISO calibration certificate (optional)



Technical specifications

Oscilloscope	
Input channels	2
Band width frequency	5 MHz DC
Sampling rate	25 MS/s (dual) / 50 MS/s (single)
Input	AC, DC
Input impedance	1 M Ω
Accuracy	± 3.0 % vertical / ± 0.01 % horizontal
Waveform memory	16 curves
Multimeter	
Ranging	auto, manual
Voltage DC	1000 V DC / ± 0.3 % +3 dgt.
Voltage AC	750 V AC (TRUE RMS) / ± 0.75 % +5 dgt. (50 to 450 Hz)
Resistance	5 / 50 / 500 k Ω / 5 M Ω / ± 0.5 % +5 dgt.
Continuity buzzer	1.7 V test voltage
Frequency	100 Hz / 1 / 10 / 100 kHz / 1 / 10 MHz ± 0.05 % +5 dgt.
Revolutions	240 to 60,000 r.p.m.
General specifications	
Display	132 x 128 pixels
Power	3.7 V Li-Ion battery or mains power adaptor
Interface	USB
Dimensions / Weight	90 x 195 x 40 mm / 460 g
Approvals	DIN 57 411 / VDE 0411; IEC 1010; EN 61010; CAT III / 600 V

Contents

PCE-OC 1 oscilloscope, software, USB cable, test leads, case, holster, batterie charger, Li-Ion battery and user's manual

Model No.	Description
PCE-OC 1	Oscilloscope

Optional accessories

CAL-PCE-OC 1	ISO certificate
PCE-CA 502	Amp clamp adaptor to 1000 A

Temperature Meters

PCE-IR10

Thermometer with LCD to measure the temperature of solids by infrared (for fixed installations)

The PCE-IR10 infrared thermometer is made up of a sensor head and a separate electronic component that can be disconnected to accommodate optional sensors with longer cable lengths. Its sensor is so small that it can be installed anywhere yet offers the same benefits as other bigger systems. The electronic component offers signal processing functions that usually other products can't offer, for example, with the LCD controller you can adjust emissivity, choose maximum value, minimum value or calculate average value. You can also program the thermometer using optional PC software. This product can measure the temperature of moving objects without difficulties. Its small dimensions and low cost makes it ideal for multiple installation in a production process.

- Measurement range up to 600 °C
- Sensor head can be installed anywhere
- Analogue output
- USB / RS-232 / RS-485 output relay (optional)
- Adjustable emissivity
- LCD
- Series connection: maximum of 32 sensors
- Power supply: 8 to 36 VDC



Technical specifications

Outputs	analogue: 4 to 20 mA, 0 to 20 mA, 0 to 5 V, 0 to 10 V (in scale), type-K or type-J thermocouple optional: relay, USB, RS-232, RS-485
Inputs	emissivity value, ambient temperature compensation, programmable software
Cable length	1 m (standard, you can order other cable lengths)
Current	max. 100 mA
Power	8 to 36 VDC
Ingress protection	IP65 (NEMA-4)
Operating temperature (head)	-20 to 180 °C
Storage temperature	-40 to 85 °C
Relative humidity	10 to 95 % without condensation
Weight (sensor head)	40 g
(electronic component)	420 g
Measurement range	-40 to 600 °C
Spectral range	8.0 to 14 µm
Optical resolution	15 : 1
Accuracy	±1 % or ±1 °C
Repeatability	±0.5 % or ±0.5 °C
Temperature coefficient	±0.05 °C / °C or ±0.05 % / °C
Temperature resolution	0.1 °C
Response time	150 ms (95 %)
Emissivity	0.100 - 1.100 digital adjustment, reading 0.001
Transmission	0.100 - 1.000 digital adjustment, reading 0.001
Signal processing	maximum value, minimum value and average value

Contents

Thermometer (electronic unit), analogue interface, 1 m cable with sensor head (ratio 15:1) and user's manual

Model No.	Description
PCE-IR10	Thermometer PCE-IR10

Optional Accessories

ACCTFB	Mounting bracket
ACCTMG	Mounting fork adjustable on 2 axis
ACCTAP	Cooling camera for infrared
ACCTUSBK	USB kit with USB interface, cable, software
ACCTRS232K	RS232 kit with interface, cable, software
ACCTRS485K	RS485 kit to connect up to 32 sensors in series
ACCTRS485B	RS485 interface card
ACCTRI	Output relay, two other open relays, 60VDC / 42VAC, 0.4A
CAL-PCE-IR10	ISO calibration certificate

PCE-IC1

Blackbody IR calibrator up to +350 °C for Infrared thermometers

The PCE-IC1 is a portable blackbody calibration source covering the range from +50 to 350 °C with 0.1 °C resolution. Whether you are using an infrared thermometer, you need a high performance calibration standard to verify accuracy. The portable IR calibrator provides a stable blackbody target for calibration non-contact IR thermometers up to 350 °C. The IR calibrator is as easy to use as point and shoot. Simply set the desired temperature from the convenient front panel control buttons, wait a few minutes for equilibrium, then point the IR thermometer at the target. The radiated energy from the blackbody is measured by your IR thermometer. Now simply compare it is reading to the display on the IR calibrator and record the difference.

- Easy to use
- Emitter diameter 58 mm
- Range from +50 °C to +350 °C
- High accuracy
- Compact design



Technical specifications

Temperature range	+50 to +350 °C
Accuracy	±0.5 °C up to 100 °C ±1.0 °C up to 200 °C ±1.5 °C up to 350 °C
Emissivity Blackbody	0.95
Emitter diameter	Ø 58 mm
Heating time	30 min up to 350 °C
Cooling time	30 min from 350 °C below 100 °C
Power	230 V / 50 Hz
Dimensions	180 x 114 x 233 mm
Weight	3000 g



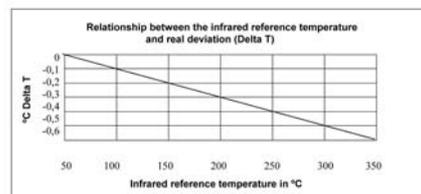
Contents

PCE-IC1 temperature-calibrator, manufacturer certificate and user's manual

Model No.	Description
PCE-IC1	Blackbody-IR-Calibrator

Optional Accessories

CAL-PCE-IC1	ISO calibration certificate
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Sound Level Meters

PCE-355

Personal noise dosimeter with data logger, interface and software

The PCE-355 personal noise dosimeter is used to measure the noise level accumulated in the workplace, in the industrial sector, etc. The most important features of this device are its external microphone that you can hang on your neck using a clip, its data logging to store the measurements and its software. It can be connected to a PC to display the dose in %, assess the data, establish the quota and exposure time. The device is pocket-sized, so you can put it in your coat pocket and, for example, you will be able to measure and store the acoustic values that occurred during your working day (8 hours).

- Lightweight and easy to use
- Measurement range of 70 to 140 dB (A)
- Noise dose range of 0 to 1999 %
- Data logger, interface and software
- A frequency weighting
- Fast and slow time weighting
- 4 digit LCD
- Wind shield
- ISO calibration certificate (optional)



Technical specifications

Measurement range	sound dose: 0 to 1999 % sound range: 70 to 140 dB(A)
Resolution	0.1 dB
Accuracy	±1.5 dB (for 94 dB and 1 kHz)
Frequency weighting	A
Criterion levels	80, 84, 85, 90 dB
Threshold level	70 to 90 dB of reading; 1 dB
Time weighting	fast / slow
Microphone	1/2 inch Electret condenser
Operating conditions	0 to +50 °C, <80 % r.h.
Power	4 AAA batteries
Battery life	approx. 38 hours
Dimensions	106 x 60 x 34 mm
Weight	350 g
Applicable standards	IEC 651 type II, ANSI S1.25-1991

Contents

Noise dosimeter, external microphone with 1.5 m cable, interface, software in English, wind shield, carrying case and user's manual

Model No.	Description
PCE-355	Noise dosimeter

Optional accessories

PCE-SC41	Sound calibrator (94 dB)
CAL-355	ISO Certificate
RS232-USB	RS-232 to USB adaptor

PCE-999

Industrial sound level meter for first time users

The PCE-999 sound level meter has some characteristics that only the most expensive devices possess. It measures noise, assess the noise in the workplace and controls measurements for gastronomy, traffic, environment, works, etc. You can purchase the optional ISO calibration certificate, as for the PCE-318, PCE-322A and PCE-353 LEQ models (with a laboratory calibration and a certificate for your company) and a sound calibrator (class II) to recalibrate.

- 2 measurements ranges: Low & High
- A and C frequency weighting
- Frequency range 31.5 Hz up to 8 kHz
- Fast and slow time weighting
- Min / Max Hold functions
- 4 digit LCD
- Auto shut-off feature
- 1/2" Electret microphone
- ISO calibration certificate (optional)



Precision sound calibrator



Technical specifications

Measurement range	30 to 130 dB in 2 ranges
Resolution	0.1 dB
Accuracy	±1.5 dB
Updating	1 x /s
Frequency	31.5 Hz to 8 kHz
MIN / MAX functions	- / yes
LEQ	-
Memory	-
Outputs	-
Software	-
Frequency weighting	A & C
Indicator	4 digit LCD
Operating conditions	0 to +40 °C, <90 % r.h.
Power	9 V battery
Dimensions	210 x 55 x 32 mm
Weight	230 g
Applicable standards	IEC 651 type II, EN60651

Contents

PCE-999, carrying case, wind shield, battery and user's manual

Model No.	Description
PCE-999	Sound Level Meter

Optional accessories

PCE-SC41	Sound calibrator (94 dB)
CAL-SL	ISO Certificate

PCE-318

Sound level meter with a measurement range from 26dB(A) and analogue output

The PCE-318 sound level meter has a measurement range from 26 to 130dB. This sound level meter is best suited to measure very low noises, such as those generated by computers fans, acoustic protection in machine housings, etc. It has an analogue output that makes it possible to record the values in external places. If you want, you can purchase the ISO calibration certificate and a sound calibrator of (class II) for in-house recalibrations when required.

- Measurement range from 26dB(A)
- Datalogging function records up to 99 records (manual)
- Analogue output: AC & DC
- 6 adjustable measurement ranges
- A and C frequency weighting
- Frequency range from 31.5 Hz to 8 kHz
- Fast and slow time weighting
- Min & Max Hold functions
- LCD with analogue bargraph
- ISO calibration certificate (optional)



Precision sound calibrator



Technical specifications

Measurement range	26 to 130 dB in 6 ranges
Resolution	0.1 dB
Accuracy	±1.5 dB
Updating	1 x /s
Frequency	31.5 Hz to 8 kHz
MIN / MAX functions	yes / yes
LEQ	-
Memory	99 (with keyboard)
Outputs	analogue AC & DC
Software	-
Frequency weighting	A & C
Indicator	4 digit LCD with analogue bargraph
Operating conditions	-10 to +50 °C, <90 % r.h.
Power	9 V battery
Dimensions	264 x 68 x 27 mm
Weight	260 g
Applicable standards	IEC 651 type II, EN60651

Contents

PCE-318, carrying case, wind shield, adjustment screwdriver, 3.5 mm pin (for analogue output), battery and user's manual

Model No.	Description
PCE-318	Sound Level Meter

Optional accessories

PCE-SC41	Sound calibrator (94 dB)
CAL-SL	ISO Certificate
MIC	Microphone extension cable (5 m)
STAT	Tripod mount
NET	AC adaptor (300 mA)