TES

Reliable in Quality

Electrical / Electronic

Test Instruments

Proper gears do the right work

TES 1370 CO₂ Meter

TES 1358 Sound Analyzer

TES 3600 Power Analyzer

TES 33 BATTERY CAPACITY TESTER

TES 1161 Thermo-Hygro-Barometer

TES 593 ELECTROSMOG METER

PROVA 200 Solar Module Analyzer

TES 5321 AIR QUALITY MONITOR

TES 5110 PARTICAL COUNTER

TES 133 Luminous Flux Meter

CE ⓤL TÜV ISO 9001

**TES** is a professional test instrument manufacturer dedicated to all kinds of hand held equipment. Our goal is to provide top quality products to fit in each customer's needs.

Our company was founded in 1988 with an initial gross investment of 1,000,000 USD and the products line was focused on low cost testers with basic functions.

Through we had built up a lot of designing know-how in the first two years in that specific area, we decided to upgrade our products line to high end digital testers. In order to provide the top quality products, the SMT equipments and fully automatic assembly lines were quickly adopted in the company. With determination and efforts, our focus of products line has been gradually shifted to top quality digital testers.

TES ELECTRICAL ELECTRONIC CORP.
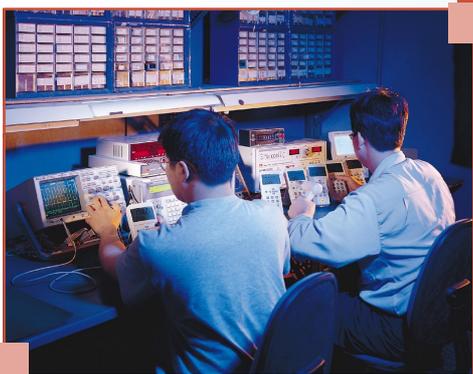
Because of the increasing population of personal computer, we had implemented data recording and computer linking capability on several high end products. And we also began to provide environmental monitoring and medical instruments.

Now TES has become a corporation with more than 100 employees and with an annual revenue of 10,000,000 USD. We have an excellent R&D team to develop and design new products and customized products according to the required specifications.

Our products are sold all over the world and that makes a big population of happy customers. If you are interested in any of our products or looking for some information, fell free to contact us directly. It will be an honor for us to serve your needs.

TES ELECTRICAL ELECTRONIC CORP.

DC / AC Current Clamp

Earth / Ground Tester

EMF Tester

Flexible Clamp Meter

Harmonic Clamp Meter

Humidity Temp. Meter

Leakage Current Tester

Insulation Tester

LAN Cable Tester

Light Meter

Loop / PSC Tester

RCD Tester

Milli / Micro-Ohmmeter

Multimeter

TES ELECTRICAL ELECTRONIC CORP.

Air Quality Monitor

TES-5321 / 5322 Air Quality Monitor

Features

◆ Fine particulate matter (PM2.5) measurement.
◆ Mix gases (VOCs-Volatile organic compounds) measurement. High sensitivity to H2, C2H5OH, C4H10, CO and CH4. (5322)
◆ Temperature and Humidity measurements.
◆ Health index (0 ~ 9) detection and alarm.
◆ PM2.5 and VOCs time weighted average reading.
◆ Data hold and MAX/MIN with time stamp function.
◆ Six color LED indication air quality at good / moderate / poor.

◆ Preset warning point of buzzer alarm, LED and alarm output.
◆ Manual data memory and read function.
◆ Auto data logger function. (5322)
◆ USB Interface. (5322)
◆ Micro SD CARD 4GB (5322)

PM2.5：0 to 500 $\mu g/m^3$
VOCs：1 to 50ppm (5322)
Humidity：1% to 99%R.H.
Temperature：-20°C ~ +60°C (-4°F ~ +140°F)

Particle Counter

TES-5110 Particle Counter

Features

◆ 6 particle size channels：0.3μm，0.5μm，1.0μm，2.0μm，5.0μm，10μm
◆ Integrated temperature / humidity sensor (no need for external add-on).
◆ Flow rate 2.83 L/minute (0.1 CF / minute).
◆ Rechargeable battery provides up to 4 hours of continuous operation (charge time 2 hours).
◆ Buffer function allows storing and redisplay of up to 500 measurement data sets. (SD Card Memory)
◆ Password protection for measurement settings.

Applications:

◆ Monitoring clean rooms.
◆ Indoor air quality investigations.
◆ Monitoring growing rooms.
◆ Testing filter seals.
◆ Locating particle contamination sources.
◆ Monitoring particle size distributions.
   Sample flow rate: 2.83L/min
   Max. Particle concentration: 70,000 particles/L (coincidence loss max. 5%)
   Buffer function: Store and recall values for up to 500 measurements
   PC interface: USB interface
   SD storage device

TES-5200 Particle Mass Counter

Features

◆ Particle mass & particle counter in a single handheld unit.
◆ Six mass ranges (PM1, PM2.5, PM4, PM7, PM10, and TSP) and Eight particle sizes (0.5mm, 0.7mm, 1.0mm, 2.5mm, 4.0mm, 5.0mm, 7.0mm, 10mm).
◆ User K-factors setting for special particulate with different densities.
◆ Integrated temperature / humidity sensor (no need for external add-on).
◆ Flow rate 2.83 L / minute (0.1 CF / minute).
◆ Rechargeable battery provides up to 4 hours of continuous operation (charge time 2 hours).
◆ Buffer function allows storing and redisplay of up to 500 measurement data sets.

Applications:

◆ Controlled Environments
◆ Indoor Air Quality
◆ Hospitals & Clinics
◆ Monitoring Growing Rooms
◆ HVAC Applications
◆ Filter Testing
◆ Mining & Ore Processing
◆ Emission Sourcing
Sample flow rate: 2.83L/min
Max. Particle concentration: 105,900 particles / L (coincidence loss max. 5%)
Buffer function: Store and recall values for up to 500 measurements
PC interface: USB interface
SD storage device

TES ELECTRICAL ELECTRONIC CORP.

Sound Level Meter

TES-1150 / 1151 Digital Sound Level Meter

Features

- 0.1dB resolution
- Range from 30 to 130dB
- Maximum hold function
- A, C, Z frequency weightings
- A, C, Z peak hold function
- Fast, Slow and Impulse Time Weighting
- AC/DC output jack
- Back-screw for tripod fixture
- Micro-USB (1151)
- Auto data memory microSD CARD 4GB (1151)

CE
IEC 61672-1
Class 2

- Digital Display：4 digital LCD
- Range：30-90dB, 45-110dB, 65-130dB
- Resolution：0.1dB
- Typical Instrument Frequency Range：31.5Hz to 8KHz
- Accuracy：±1.0dB (ref 94dB@1KHz)
- Dynamic Range：65dB
- Frequency Weighting：A, C and Z
- Time Weighting：F (Fast), S (Slow) and I (Impulse)

Thermo / Hygro / Barometer

TES-1160 / 1161 Thermo / Hygro / Barometer

Features

- Triple LCD displays Barometric pressure, Temperature, and Relative humidity.
- Dew point and Wet bulb temperature reading.
- Absolute humidity, Mixing ratio and Enthalpy reading.
- Water vapor pressure and Water saturation pressure reading.
- Pressure trend and tendency (P3h) reading.
- Heat Index and Humidex reading.
- MAX/MIN with Time Stamp.
- Comparator function.
- Alarm output function.
- Auto power off function.
- Data Hold function.
- Manual data memory and read function.
- Auto data logger function. (1161)
- USB Interface. (1161)
- Measurement Range：
  Humidity：1% to 100%R.H.
  Temperature：-40°C~+100°C (-40°F~+212°F)
  Atmospheric pressure：300 to 1200hPa

- Resolution：0.1% R.H., 0.1°C, 0.1°F, 0.1hPa
- Accuracy：
  Temperature：± 0.4°C (at +5°C to +60°C)
  ± 0.8°C (at -20°C to 5°C and +60°C to +80°C)
  ± 1.2°C (at -40°C to -20°C and +80°C to +100°C)
  ± 0.8°F (at +41°F to +140°F)
  ± 1.6°F (at -4°F to 41°F and +140°F to +176°F)
  ± 2.4°F (at -40°F to -4°F and +176°F to +212°F)
  Humidity：± 3%RH (at 25°C, 20 to 80% RH)
  ± 4%RH (at 25°C, 10 to 20% RH and 80 to 90% RH).
  ± 5%RH (at 25°C, 0 to 10% RH and 90 to 100% RH).
  Atmospheric pressure：
  ± 2hPa at 25°C, ± 4hPa at -20°C to 85°C
- Response Time (at 1m/s air flow):
  Humidity：τ 63% <10s (from 33 to 75% RH)
  Temperature ：τ 63% < 10s (from 15 to 45)
- Sampling Rate：1 sample/second.
- Data Memory Capacity：99 sets.
  (Direct reading from LCD display)
- Data Logger Capacity：microSD Card 4GB (1161)

Chroma Meter

Features

- Triple Display, 4-digit LCD reading.
- LED Color Bin select function (x, y) or (Tcp, △uv).
- User calibration function.
- User reference value setting function.
- Data Hold function
- Data memory and read function.
- Data logger function.
- Auto power off function
- USB Interface

Applications:

- Measure tristimulus values, chromaticity, color difference, correlated color temperature, and illuminance of light sources.
- R&D and color inspection of light in a variety of industries such as lamp manufacturers, building and interior design.
- Set-up projectors for presentation purposes.
- Adjust color of CRTs, flat panel, and other display devices.
- Evaluate and control color of light boxes and light booths.

Display : Triple display, 4 digit LCD reading
Measuring Function :
Tristimulus values : XYZ

TES-136 Chroma Meter

Chromaticity :
(Ev, x, y); (Ev, u', v'); (Ev, λ d, Pe);
(Ev, λ d, Pc); (Ev, MAX, MIN).
Correlated color temperature:
(Ev, Tcp, △uv); (△Ev, △Tcp, △uv △)
Color difference:
(△X, △Y, △Z); (△Ev, △x, △y);
(△Ev, △u', △v'); (△Ev, △u' v');
(△Ev, △λ d,△Pe); (△Ev, △λ d, △Pc)
Range: 0.1 to 99990 lx, 0.01 to 9999 fc
(Chromaticity: 5 lx, 0.5 fcd or above)
Accuracy:
Ev (Linearity): ± 3%rdg ± 2dgts,
xy:± 0.02 (800 lx, Standard Illuminant A measured)
Repeatability:
Ev: ± 0.5%rdg ± 1dgt, xy: ± 0.003
(800 lx, Standard Illuminant A measured)
Temperature Drift:
Ev: ± 5%rdg ± 2dgts, xy: ± 0.008
Humidity Drift:
Ev: ± 3%rdg ± 2dgts, xy: ± 0.005
Data Memory Capacity: 80 sets
Data Logger Capacity: micro SD Card 4GB

TES ELECTRICAL ELECTRONIC CORP.

Luminance Meter

TES-137 Luminance Meter

Features

◆ Dual Display, 4-digit LCD reading
◆ Spectral Sensitivity close to CIE photopic Curve.
◆ Measuring Levels Ranging 0.001 to 1999k cd/m2, 0.001 to 580.0k fL.
◆ Luminance ratio A/B, deviation %A, different B-A and peak luminance measurements
◆ User calibration factor and color-correction functions
◆ Accumulation luminance measurement
◆ Max/Min/AVG function
◆ Comparator function
◆ Data Hold function
◆ Data memory and read function
◆ Data logger function
◆ USB Interface

Applications:

◆ Luminance measurement of LCDs, CRTs, LEDs, etc.
◆ Luminance measurement of street lighting, tunnel lighting, etc.

◆ Measurement of airport lighting facilities.
◆ Transmittance measurement for LCD polarizing plates and various filters.
◆ Measurement of medical lighting.
◆ Illuminance irregularities of automobile license plates.
◆ Luminance measurement of various lighting facilities, etc.

Display: LCD display, 4 digit LCD reading
Range: 9.999, 99.99, 999.9, 9999, 99.99k, 999.9k, 1999k cd/m^2
9.999, 99.99, 999.9, 9999, 99.99k, 580.0k fL
Auto ranging (6 step) (1 fL = 3.426 cd/m^2)
Measuring Angle: 2°
Overrange Display: Display show "OL"
Resolution: 0.001 cd/m^2, 0.001 fL
Accuracy: ± 3% rdg ± 5dgt
(Calibrated to standard, incandescent lamp, 2856°K , at 25°C/ 77°F)
Data Memory Capacity: 200 sets
Data Logger Capacity: micro SD Card 4GB
Measuring Rate: Approx. 5 times/sec

Sound Analyzer

TES-1358C Sound Analyzer

Features

◆ For Delicate Sound Improvement (Sound Effect/Sound Environment)
◆ Compliant with IEC 61672-1 class 2 standard
◆ Real Time 1/1 (11 bands) & 1/3 (33 bands) octave analysis
◆ Measurement can be started by internal or external trigger.
◆ Data transfer using USB
◆ Dynamic range of 90dB
◆ Real time clock with calendar
◆ AC and DC output

● **Display:** TFT-LCD color display
● **Range:** 30dB to 130dB
● **Function:** Lp, Leq, L$_E$, Lmax, Lmin
● **Frequency:** 12.5Hz to 20KHz
● **Frequency Weighting:** A, C and Z
● **Time Weighting:** Fast, Slow
● **1/1-1/3 Analyzer level range:** 5 ranges in 10dB step, 40-130dB / 30-120dB / 20-110dB / 10-100dB / 0-90dB
● **Memory Capacity:** 10,000 data (Sound level mode)

TES-1358E Sound Analyzer

Features

◆ For Delicate Sound Improvement (Sound Effect/Sound Environment)
◆ Compliant with IEC 61672-1 class 1 standard
◆ Real Time 1/1 (11 bands) & 1/3 (33 bands) octave analysis
◆ Measurement can be started by internal or external trigger.
◆ Comparator output to trigger external devices
◆ Data transfer using USB
◆ Dynamic range of 90dB
◆ AC and DC output
◆ Micro SD Card 4GB

● **Display:** Super high-contrast backlight TFT-LCD color display
● **Range:** 30dB to 130dB
● **Function:** Lp, Leq, LE, Lmax, Lmin, L05, L10, L50, L90, L95
● **Frequency:** 12.5Hz to 20KHz
● **Frequency Weighting:** A, C and Z
● **Time Weighting:** Fast, Slow, τ =10ms, Impulse
● **Measurement level range:** 5 ranges, 20-90dB / 20-100dB, 20-110dB / 30-120dB / 40-130dB
● **Memory Capacity:** Manual — 250 data sets, Auto — 250 blocks on micro SD CARD 4GB

Clamp Meter

CAT III 1000V
CAT IV 600V

Features

◆ Motor Inrush Current measurement
◆ Check 3φ phase sequence
◆ Variable-frequency drive (VFD) V & Hz measurement.
◆ Lo-Z voltage measurement to drain ghost voltages.
◆ Crest Factor & Harmonic ratio measurement. (3901)
◆ True RMS reading on AC and DC+AC mode. (3901)

TES-3900 / 3901 Clamp Meter (1000A)

◆ uA measurement for HVAC flame sensors (3901)
◆ mV measurement range to interface with other accessories (3901)
◆ Data Hold, Auto hold & Peak hold mode
◆ Max / Min record mode
◆ Data memory & read function (10 readings)

AC Current (50Hz to 400Hz) :

Range	Resolution	Accuracy	Sensitivity
99.99A	10mA	± 2% ± 20dgts (50, 60Hz)	0.10A
999.9A	100mA	± 4% ± 20dgts (40 to 400Hz)	1.0A

ACA Inrush Current :

Range	Resolution	Sensitivity	Measurement Time
99.99A	0.01A	>5A	100mS
999.9A	0.1A	>50A	

µATrms : (AC+DC) (Burden Voltage : 5mV/ µA) (3901)

Range	Resolution	Accuracy	Sensitivity
99.99 µA	10nA	± 1% ± 20dgts	0.20 µA
999.9 µA	A100nA		2.0 µA

AC Voltage (50Hz to 400Hz) :

Range	Resolution	Accuracy	Sensitivity
999.9mV	0.1mV	± 1% ± 20 dgts (50, 60Hz)	2.0mV
9.999V	1mV		0.020V
99.99V	10mV	± 2% ± 20 dgts (40 to 400Hz)	0.20V
600.0V	100mV		2V

DC Voltage :

Range	Resolution	Accuracy	Sensitivity
999.9mV	0.1mV	± 1% ± 20 dgts	2.0mV
9.999V	1mV		0.020V
99.99V	10mV		0.20V
600.0V	100mV		2V

Resistance (Continuity<40 Ω on the 999.9 Ω range) :

Range	Resolution	Accuracy	Overload Protection
999.9 Ω	100m Ω	± 1% ± 10 dgts	1000V
9.999K Ω	1 Ω		
99.99K Ω	10 Ω		
999.9K Ω	100 Ω		

3φ Phase sequence indication :

Range	Frequency Response	Overload Protection
80V to 480V	50Hz / 60Hz	1000V

Diode (Continuity<40mV) :

Range	Resolution	Accuracy	Overload Protection
3.000V	1mV	± 2% ± 1dgt	1000V

Frequency :

Range	Resolution	Accuracy	Sensitivity
40Hz/1KHz	0.1Hz	± 0.5%rdg ± 2dgts	ACV>1.2V, ACA>6A

TES-3910 Trms Clamp Meter (DC/AC 1000A)

CAT III 1000V
CAT IV 600V

Features

◆ Variable-frequency drive (VFD) V & Hz measurement.
◆ Lo-Z voltage measurement to drain ghost voltages.
◆ Check 3Φ phase sequence.
◆ True RMS reading on AC and DC+AC mode.
◆ Inrush current measurement.
◆ µA measurement for HVAC flame sensors.
◆ mV measurement range to interface with other accessories.
◆ Crest Factor & Harmonic ratio measurement.

◆ Data hold, Auto hold & Peak hold mode.
◆ Max/Min/Avg record mode.
◆ Data memory & read function.

AC Current (40Hz to 400Hz) : VFD Trms

Range	Resolution	Accuracy	Sensitivity
99.99A	10mA	± 2% ± 20dgts (50, 60Hz)	> 0.25A
999.9A	100mA	± 4% ± 20dgts (40 to 400Hz)	> 2.5A

Overload Protection : 1000A

DC Current :

Range	Resolution	Accuracy	Sensitivity
99.99A	10mA	± 2% ± 20dgts	> 0.25A
999.9A	100mA		> 2.5A

Overload Protection : 1000A

ACA Inrush Current : VFD Trms

Range	Resolution	Sensitivity	Measurement Time
99.99A	0.01A	>5A	100mS
999.9A	0.1A	>50A	

Overload Protection : 1000AAC

DC µA : (Burden Voltage : 3.6mV/ µA)

Range	Resolution	Accuracy	Sensitivity
99.99 µA	10nA	± 1% ± 20dgts	> 0.30 µA
999.9 µA	A100nA		> 3.0 µA

Overload Protection : 1000AAC

AC µA : VFD Trms (Burden Voltage : 3.6mV/ µA)

Range	Resolution	Accuracy	Sensitivity
99.99 µA	10nA	±1% ±10dgts (50, 60Hz)	> 0.30 µA
999.9 µA	100nA	±2% ±10dgts (40~400Hz)	> 3.0 µA

Overload Protection : 1000AAC

AC Voltage (40Hz to 400Hz) : VFD Trms

Range	Resolution	Accuracy	Sensitivity
999.9mV	0.1mV	± 1% ± 10dgts (50, 60Hz)	> 2mV
9.999V	1mV	± 2% ± 10dgts (40~400Hz) 40~300Hz on mV range >2mV	> 20mV
99.99V	10mV		> 200mV
999.9V	100mV		> 2V

Overload Protection : 1000V

DC Voltage :

Range	Resolution	Accuracy	Sensitivity
999.9mV	0.1mV	± 1% ± 20 dgts	> 2mV
9.999V	1mV		> 20mV
99.99V	10mV		> 200mV
999.9V	100mV		> 2V

Resistance (Continuity<40 Ω on the ·)) range) :

Range	Resolution	Accuracy	Overload Protection
999.9 Ω	100m Ω	± 1% ± 10 dgts	1000V
9.999K Ω	1 Ω		
99.99K Ω	10 Ω		
999.9K Ω	100 Ω		

3φ Phase sequence indication :

Range	Frequency Response	Overload Protection
80V to 480V	50Hz / 60Hz	1000V

Diode (Continuity<40mV) :

Range	Resolution	Accuracy	Overload Protection
3.000V	1mV	± 1% ± 10dgt	1000V

Frequency :

Range	Resolution	Accuracy	Sensitivity
40Hz/1KHz	0.1Hz	± 0.5%rdg ± 2dgts	V > 5% range µ A, A > 30%

TES ELECTRICAL ELECTRONIC CORP.

Multimeter

TES-2900 True RMS Multimeter

CAT III 1000V
CAT IV 600V

◆ Relative value display.
◆ 3φ phase Rotation Measurement
◆ Data hold & Auto hold mode.
◆ Max/Min/Avg record mode.
◆ Frequency count. (Auto-Range)
◆ Data memory & read function.

Specifications:

● **AC conversions are ac-coupled and valid from 3 % to 100 % of range.**
● **AC Voltage**：999.9mV / 9.999V / 99.99V / 999.9V / VFD
● **DC Voltage**：999.9mV / 9.999V / 99.99V / 999.9V
● **Resistance**：999.9 Ω /9.999kΩ /99.99kΩ /999.9kΩ /9.999MΩ /50MΩ
● **Conductance**：99.99nS
● **Temperature**：K Type：- 40 ~ 1372℃ (- 40 ~ 2502˚F)
                        J Type：- 40 ~ 1200℃ (- 40 ~ 2192˚F)
● **AC Current**：999.9uA / 9999uA / 99.99mA / 400.0mA / 9.999A
● **DC Current**：999.9uA / 9999uA / 99.99mA / 400.0mA / 9.999A
● **Capacitance**：10.00nF/ 100.0nF/ 1.000uF/ 10.00uF/ 100.0uF/ 9999uF
● **Diode**：2V
● **3Φ Phase sequence indication**：80V ~ 480V
● **Frequency**：99.99Hz / 999.9Hz / 9.999kHz / 99.99kHz / 999.9kHz / 9999kHz

Features

◆ 10,000 Count True RMS reading
◆ Capacitance check (10nF ~ 10, 000uF)
◆ Temperature check (-40℃~1372℃, K type)
◆ Variable Frequency drive (VFD) V & Hz measurement.
◆ Lo-Z voltage measurement to drain ghost voltages.

TES-2950 LCR Trms Multimeter

CAT III 1000V
CAT IV 600V

Features

◆ Variable Frequency drive (VFD) V & Hz measurement.
◆ Inductance (4mH ~ 40H) & Capacitance (4nF ~ 40uF) measurement
◆ 20MHz TTL logic check
◆ Frequency Check (4kHz ~ 4000kHz, Auto-ranging)
◆ Relative value display
◆ Temperature type K, J measurement (-40℃~200℃)
◆ Data hold, Auto hold & Peak hold mode.
◆ Max/Min/Avg record mode.

Specifications:

● **AC Voltage (Trms)**：400mV/ 4V/ 40V/ 400V/ 1000V
  DC Voltage：400mV/ 4V/ 40V / 400V/ 1000V
● **AC Current (Trms)**：400uA/ 4mA/ 40mA/ 400mA/ 10A
● **DC Current**：400uA/ 4mA/ 40mA/ 400mA/ 10A
● **Resistance**：400Ω / 4kΩ/ 40kΩ/ 400kΩ/ 4M Ω/ 40M Ω
● **Frequency**：4kHz / 40KHz / 400kHz / 4000kHz
● **Capacitance**：4nF/ 40nF/ 400nF/ 4uF/ 40uF
● **Inductance (H)**：4mH/ 40mH/ 400mH/ 4H/ 40H
● **Temperature**：K Type：-40 ~ 200℃ (-40 ~ 392˚F)
                        J Type：-40 ~ 200℃ (-40 ~ 392˚F)

Diode :

Range	Resolution	Accuracy	Overload Protection
➤⊢	1mV	± 2% ± 1	1000V

Continuity(·)))) :

Range	Operation Resistance	Overload Protection
·)))	Continuous audible tone for test resistance below 30 Ω	1000V

TES ELECTRICAL ELECTRONIC CORP.

Transformer Turns Ratio Meter

Prova 1660 Transformer Turns Ratio Meter

◆ Graphical and Literal Illustration of Measurements and Connections with Large Back-lighted Dot Matrix 240 x 128 LCD. Display Test Data with Nameplate Transformer Values for Easy Interpretation.
◆ Display Turns Ratio, Deviation, Secondary Output, Excitation Voltage and Current, Phase Angle and Nameplate Transformer/VT/CT Values in one page for easy transformer quality interpretation.
◆ Check for Live Test Points, Short Circuit, Open Circuit, and Reverse Polarity before Each Measurement. Message is displayed to Warn Users (But, checking is not performed once measurement starts).
◆ Store 4096 Files of Transformer Nameplate Values (VT/PT/CT,1Φ / 3Φ, Test Frequency, Primary and Secondary Voltages or Ratio, RCF) and Measuring Data.
◆ 9 types of 3Φ Windings Connections pre-installed for easy user selection.

◆ Wireless Blue Tooth Communication with PC.
◆ Select Filter to Remove Field Noise (Slow, Normal, Fast).
◆ Disable or Enable Auto-Power-Off with Programmable Time.
◆ Built-in calendar clock.
◆ Records with Date and Time Stamp.
◆ Powerful Lithium Battery (3400mAH) with built-in Charging Circuit.
◆ User Programmable RCF (Reference Correction Factor, 0.99~1.01) to Correct Accuracy within 1% Error.
◆ Friendly File System for Easy On-site Data Retrieval and Nameplate Values Management.
◆ PC Application Software included.

CAT Ⅳ 50V

Features
◆ Measurements of 1 Φ and 3 Φ Transformer/VT/CT Turns Ratio.
◆ VT/PT ratio 0.8~10000, CT ratio 0.8~2000.
◆ Ten Test Frequencies (50~400Hz).

Color Meter

TES-135A Color Meter

Features
◆ Check color difference between two samples
◆ Color difference displayed in △(L*, a*, b*), △(E*ab, C*ab, H*ab),△(Y, x, y), △(X, Y, Z) or △(Rs, Gs, Bs)
◆ Color space displayed in (L*, a*, b*), (L*, C*ab, hab), (Y, x, y), (X, Y, Z) or (Rs, Gs, Bs).
◆ MAX, MIN & AVG functions
◆ Software with Mini-USB cable
◆ Tolerance function
◆ Auto Memory (99 sets) & Read function

- **Display:** Triple 4 digit LCD display
- **Illuminating / Viewing geometry:** 45˚/0˚ - 1 illumination at 45˚, measurement at 0˚
- **Measuring area:** Approx. φ 2mm
- **Target color memory:** 8 channel; set by measurement or keypad
- **Measuring range:** L*: 10 to 100
- **Measurement conditions:** Observe: CIE 2˚ Standard Observer. Illuminant: White LED lamp.
- **Repeatability:** Standard deviation within △ E*ab 0.5
- **Auto data Memory & Read:** 99 sets
- **Auto Power off:** Approx. 3 minutes

Luminous Flux Meter

TES-133 Luminous Flux Meter

Ideal for:
◆ LEDs, Optical Fiber lamps, Small lamps

Features
◆ Measuring range : 0.05 ~ 7000 lumens
◆ Comparator function
◆ RS-232 Interface / Software
◆ Data Memory : 999 sets (Direct reading from LCD display)
◆ Data Logging function : 40,000 sets

- **Display:** 4 digit LCD read out
- **Range:** 9.999, 99.99, 999.9, 7000 lumens. Auto ranging (4 Steps)
- **Resolution:** 0.001 lumens
- **Accuracy:** 0.05 ~ 0.1 - ± 7%, 0.1 ~ 1000 - ± 1%, 1000 to 7000 - ± 3%
- **Integrating Sphere:** Diameter: 50mm Sample pore: 12.7mm diameter
- **CIE photopic f'1:** ≦ 6%
- **Temperature Characteristics:** ± 0.1%/˚C
- **Data Memory Capacity:** 999 sets
- **Data Logger Capacity:** 40,000 sets

TES ELECTRICAL ELECTRONIC CORP.

PV Analyzer

Prova 200A / 200A-24 / 210 / 218 PV Analyzer
(Photovoltaic I-V Curve Tester)

CAT I

Features

◆ Prova 200A, 210, 218: I-V curve test for solar panel/module
◆ Prova 200A-24: I-V curve test for solar cell/panel

◆ Max. solar panel power (Pmax) search by auto-scan:
  Prova 200A: 60V, 6A
  Prova 200A-24:24V, 600mA
  Prova 210: 60V, 12A
  Prova 218: 85V, 8.5A (500W capability)
◆ Best Resolution:
  Prova 200A: 1mV, .01mA
  Prova 200A-24: 1mV, 10 μ A
  Prova 210, 218: 1mV, 1mA
◆ Manual single point I-V test
◆ Max. voltage (Vmaxp) at Pmax
◆ Max. current (Imaxp) at Pmax
◆ Voltage at open circuit (Vopen)
◆ Current at short circuit (Ishort)
◆ I-V Curve with cursor to display each data point
◆ Efficiency (%) calculation of solar panel
◆ Solar panel area setting: 0.001m² ~ 9999m²
◆ Standard light source setting: 10W/ m² ~ 1000W/ m²

◆ Communicate with PC with USB cable
◆ Min. power setting for alarm function
◆ Built-in calendar clock
◆ Built-in battery charging circuit
◆ Rechargeable lithium batteries and AC adaptor
◆ Memory Size: 100 records
◆ Prova 210, 218: Sampling time of data logging: 0 ~ 99 min.
◆ Large LCD with backlight

Application:

● Quality Control in the production line, warehouse, or site of installation
● Identify the solar power system requirement
● Maintenance of solar panels
● Verify the best installation angle of solar panels

Prova 1011 PV System Analyzer
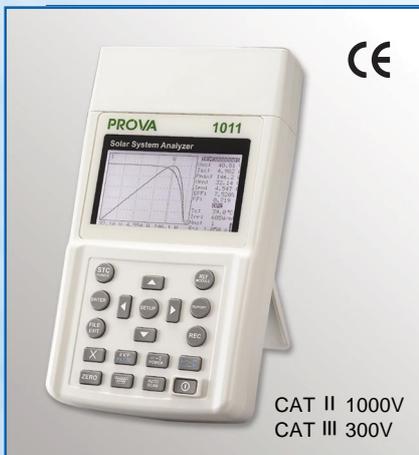
CAT II 1000V
CAT III 300V

Features

◆ I-V curve test for solar system
◆ Max. solar system power (Pmax) search by auto-scan: 1000V, 12A (12000W capability)
◆ The analyzer and the Remote Solar Detector are connected by Bluetooth wireless communication (Bluetooth 2.1 + EDR Class 1).
◆ Intelligent test logic with no personnel attendance required in the field. Solar system analyzer waits and tests the system until appropriate sunlight irradiance is detected
◆ Max. Voltage (Vpm) at Pmax; Max. Current (Ipm) at Pmax.

◆ Voltage at open circuit (Voc); Current at short circuit (Isc).
◆ Efficiency (%) calculation of solar panels with Parameters entry
◆ Temperature measurement of solar panel
◆ Irradiance measurement of sun light.
◆ Series resistance (Rs) calculation of solar panels
◆ I-V curve with cursor to display each data point.
◆ With data logging/open function, the I-V curves of solar system can be analyzed / recorded for a period of time (e.g. 60 min.).
◆ Conversion of I-V curve under OPC to data under standard test condition (STC) based upon IEC standard
◆ Provide Operation Condition (OPC) and Standard Test Condition (STC) test reports for verification of solar panel performance (OK or NO OK)
◆ With optional power clamps (SOLAR 15 and SOLAR 21), measure/record DC power output of solar system and AC power output of inverter (1 phase or balanced 3 phase); calculate efficiency of DC to AC power conversion and max. output power

◆ Data logging with built-in calendar clock
◆ Optical USB cable for PC
◆ Rechargeable Lithium battery, low battery warning, AC power adaptor

DC Voltage Measurement

Range	Resolution	Accuracy
1 ~ 1000V	0.01V/0.1V/1V	± 1% ± (1% of Voc ± 0.1V)

Voc: Open circuit voltage of solar system

DC Current Measurement

Range	Resolution	Accuracy
0.1 ~ 12A	1mA / 10mA	± 1% ± (1% of Isc ± 0.1V)

Isc: Short circuit current of solar system

DC Current Simulation

Range	Resolution	Accuracy
0.1~ 12A	1mA / 10mA	± 1% ± 9mA

Irradiance Measurement

Range	Resolution	Accuracy
0~2000W/m²	1W/m²	± 3% ± 20dgts

Temperature Measurement

Range	Resolution	Accuracy
-20~85℃	0.1℃	± 1% ± 1℃

Optional power clamps:
SOLAR 15 DC Current Probe
SOLAR 21 AC Power Clamp

TES ELECTRICAL ELECTRONIC CORP.

Solar Power Meter

TES-132 Solar Power Meter (Data logging)

Features

- ◆ Wide spectral range.
- ◆ Excellent long term stability.
- ◆ Cosine corrected.
- ◆ Automatic transmission measurements.
- ◆ Select either power or transmission.
- ◆ Solar energy measurement.
- ◆ User calibration factor setting function.
- ◆ Select either W/m² or Btu / (ft² x h) units.
- ◆ Data Hold/MAX/MIN/AVG modes.
- ◆ Auto Data Memory function. (microSD CARD 2GB)
- ◆ Data Memory and Read function. (99 sets)
- ◆ Software and USB interface to PC.

Applications

- Meteorology.
- Agriculture.
- Solar radiation measurement.
- Solar power research.
- Physics and optical laboratories.
- Solar transmission measurement.

- Identify high performance windows.

Display: LCD display, 4 digit LCD reading
Range: 200.0 W/m² , 2000 W/m²
　　　　63.4 Btu / (ft² x h),
　　　　634 Btu / (ft² x h)
Resolution: 0.1W / m² , 1W/m²
　　　　0.1Btu / (ft² x h), 1Btu / (ft² x h)
Spectral response: 400 to 1000nm
Accuracy: Typically within ± 10 W/m²
　　　　[± 3 Btu / (ft² x h)] or ± 5%,
　　　　whichever is greater in sunlight;
　　　　Additional temperature induced
　　　　error ± 0.38 W/m²/°C [± 0.12
　　　　Btu / (ft² x h)/°C] from 25°C
Angular accuracy:
Cosine corrected <5% for angles < 60 °
Drift: < ± 2% per year
Calibration: User recalibration available
Over-Input: Display shows "OL"
Sampling Rate: 1 times/sec
Manual Data Memory and Read: 99 sets
Auto Data Memory: MicroSD CARD 2GB

TES-1333 / TES-1333R Solar Power Meter

Features

- ◆ Wide spectral range
- ◆ Excellent long term stability
- ◆ Cosine corrected
- ◆ Automatic transmission measurements
- ◆ Select either power or transmission
- ◆ Solar energy measurement
- ◆ Current time setting function
- ◆ User calibration factor setting function
- ◆ End-mount light sensor
- ◆ Select either W/m² or Btu/(ft² x h) units

- ◆ Data Hold / MAX / MIN / AVE modes
- ◆ Data Memory and Read function (99 sets)
- ◆ Auto Data Memory and RS232 interface to PC (TES-1333R)

Applications

- Meteorology
- Agriculture
- Solar radiation measurement
- Solar power research
- Physics and optical laboratories
- Solar transmission measurement
- Identify high performance windows

TES-SS1 Solar Power Development System
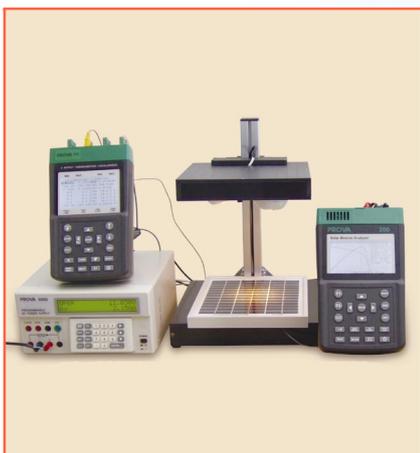
Includes

- ◆ Prova 200A PV Analyzer
- ◆ Prova 800 Multi-Input Thermometer / Datalogger
- ◆ Prova 8300 Light Radiation Controller
  Features
  1. Control halogen lamp (or other light source) to emulate sunlight irradiance
  2. Low cost for educational purpose
  3. Standard pyranometer (sunlight sensor) to show true irradiance
  4. User Friendly Interface
- ◆ Solar Cell / Module Table Specifications

1. Dimension: 300 (L) x 300 (W) x 420 (H) mm / 11.8" x 11.8" x 16.5"
2. Height from Halogen Lamps to table base:
   * Adjustable from 90mm to 30cm
   * Standard: 150mm
3. Solar Cell / Module for measurement: max. 300 x 250mm / 11.8" x 9.8"
4. Light sensor: 0 ~ 1500W/m²
5. with K-type Thermocouple
6. with Halogen Lamp (Simulation of Sun Light): DC 12V, 50W x 3 pcs
7. Input Voltage (for Halogen Lamps): DC 0V ~ 40V

TES ELECTRICAL ELECTRONIC CORP.

Multi-input Thermometer / Datalogger

Prova 800 Multi-input Thermometer / Datalogger
Prova 830 Portable Paperless recorder

Features

◆ Both models can work as Multi-input thermometer or Paperless Recorder
◆ **Prova 830:** 5.7" Color TFT LCD (320 x 240) with backlight
   Prova 800: 4.5" STN LCD (240 x 128) with backlight
◆ **Prova 830:** Color graphic display of 8 curves at the same time
   Prova 800: Graphic display of overall trend for each input
◆ 8 input temperature measurement/logging (˚C/˚F)
◆ Selection of 11 types of thermocouple
◆ Easy socket for thermocouple mini connector
◆ Basic accuracy 0.1% ± 1˚C (K type)
◆ Programmable Hi-Lo alarm with timers when out of HI-LO limits
◆ Display of max and min values for each input
◆ Sampling Rate 8 Inputs / 1 second
◆ **Prova 830:** 28 Hours Recording with Lithium Battery of 3400mAH
   Prova 800: 24 Hours Recording with Alkaline Batteries of 2400mAH
◆ Standard 2G SD memory card (store 3.8-year of data)

◆ SD card directly read by PC
◆ Easy data file management (Read and Delete functions)
◆ Built-in calendar clock
◆ Accept Analog Outputs from instruments
◆ Screen hardcopy for easy documentation
◆ Isolated Input Protection of 350Vp-p between any two inputs
◆ Ready to use package (Thermocouples, SD card and Battery)
◆ Independent Input Setup (type of thermocouple, Hi-Lo alarm values, name of Engineering Unit)
◆ Programmable Engineering Unit (E.U.) to integrate Analog Output (-60 to 60 mV) from instruments (e.g. Sound level meter, Humidity meter, Current adaptor)
◆ **Prova 830:** Digital and analog (bar graph) data display
   Prova 800: Hide or display selected curves

Application:

PC, Semiconductor, Automotive, Air-conditioning, Freezer, Metallurgy, Petroleum, Chemical, Construction materials, Papermaking, Food, Pharmacy, Agriculture, Flower planting, Thermal treatment, Water treatment

TES-1384 4 Channels Thermometer / Datalogger

Features

◆ Isolated Input Protection of 350Vp-p between any two inputs
◆ 0.05% Accuracy.
◆ K, J, E, T, R, S, N, L, U, B, C Thermocouple Input
◆ Display T1, T2, T3 & T4 Simultaneously
◆ Programmable Hi-Lo alarm for 4 inputs
◆ MAX, MIN, Max-Min & AVG values

◆ Independent Input Setup (type of thermocouple, Hi-Lo alarm values)
◆ Data Memory and Read function (99 sets)
◆ Datalogging Capacity (512 KB)
◆ Software with USB cable
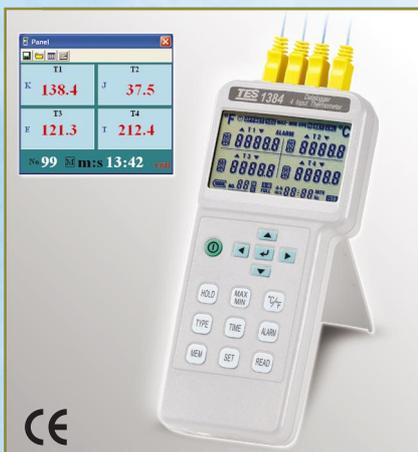
Anemometer

AVM-01/03 Anemometer

Features
◆ Sensitive for low/high air velocity
◆ Ergonomic Design
◆ Detachable 52mm (diameter) Vane Head

● **Range:** (± 3%rdg ± 0.3)
  M/S: 0.0~45.0 (Meter/per Sec.)
  KNOTS: 0.0~88.0
  Ft/min: 0~8800
  Km/hr: 0.0~140.0
  Temperature (AVM-03): 0~60˚C (32~140˚F)

Anemometer Comparison

Model	Air Velocity	Air Temperature	Air Flow	Working with PC	Memory (Datalogging)
AVM-01	●				
AVM-03	●	●			
AVM-05	●	●	●		●
AVM-07	●	●	●	●	●
AVM-301	●				
AVM-303	●			●	
AVM-305	●	●		●	

AVM-05/07 Flow Anemometer

Features
◆ Flow (CFM, CMM)
◆ Instant/Ave/2/3 Vmax Flow Measurement
◆ Velocity m/s, ft/min, knots, km/hr, mph
◆ Memory of 2000 Records
◆ RS-232C (AVM-07)
◆ Hold / Max / Min Function

● **Range:** (± 3%rdg ± 0.3)
  M/S: 0.0~45.0 (Meter/per Sec.)
  KNOTS: 0.0~88.0
  Ft/min: 0~8800
  Km/hr: 0.0~140.0
  Mph: 0.0~100.0
  Wind Temperature :
   0~45˚C (32~113˚F)
   (± 1.0˚C/ ± 1.8˚F)
● **Operation Temperature:** 0˚C~50˚C
● **Display:** 3 1/2 Digits Dual Display LCD

AVM-301 / 303 / 305 Anemometer
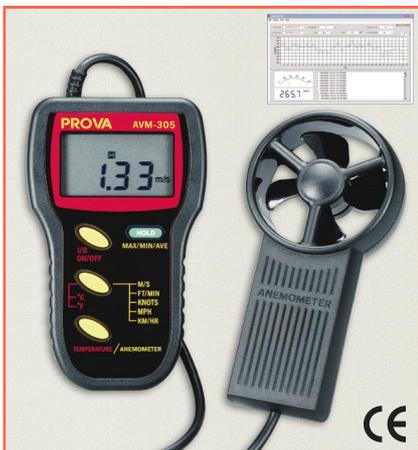
Ideal for
● Ventilation survey
● Air-conditioning / Heating
● Sports recreational

Features
◆ Sensitive for low air velocity
◆ Ergonomic Design
◆ Detachable 52mm (diameter) Vane Head
◆ 1.8 meters coiled cable/back mounting screw for long extension

◆ Lower Power Consumption (6mA)
◆ Max/Min/Ave and Data hold function
◆ RS-232C interface (AVM-303/305 only)
◆ Optional portable thermal printer (AVM-303/305 only)
◆ Air Temperature Measurement (AVM-305 only)

Units	Range	Resolution	Threshold	Accuracy
M/s	0.0~45.0	0.01	0.5	± 3% ± 0.3
ft/min	0~8800	0.01/0.1/1	60	± 3% ± 40
knots	0.0~88.00	0.01/0.1	0.6	± 3% ± 0.4
Km/hr	0.0~160.0	0.01/0.1	1.0	± 3% ± 0.8
mph	0.0~100.0	0.01/0.1	0.7	± 3% ± 0.4

Hot-Wire Anemometer

TES-1340 / 1341 Hot-Wire Anemometer

Features

- Air Velocity / Air Volume (CFM / CMM)
- Instant / Avg / 2/3 Vmax Flow Measurement
- Velocity m/s, ft/min, knots, km/hr, mph
- Data hold & Max/Min with time stamp
- Fast Response / Telescopic Probe
- Manual Data Memory and Read function (99 sets)
- Stand-alone Datalogging Capacity 20,000 sets (TES-1341)
- Relative Humidity Measurement, DEW point & Wet bulb function (TES-1341)
- Software via USB cable (TES-1341)

	Measuring Range	Resolution	Accuracy
Air Flow	0.1 to 30.0 m/s	0.01 m/s	± 3% of reading ± 1%FS
	0.2 to 110 km/hr	0.1 km/hr	
	10 to 6000 ft/min	1 ft/min	
	0.1 to 59 knots	0.01 knots	
	0.12 to 68 MPH	0.01 MPH	
Air Flow Volume	0 to 999900 CFM	0.001 CFM	
	0 to 999900 CMM	0.001 CMM	
Temperature	-20°C ~ +60°C	0.1°C, 0.1°F	± 0.5°C, ± 0.9°F
	-4°F ~ +140°F		
Humidity	0 to 100%RH	0.1% RH	± 3%RH

Battery Tester

TES-32 Battery Capacrty Tester

Features

- Right Device to know the "True Life"of your battery capacity. (Resistive/Voltage)
- On-line testing without shutting down battery
- Built in Comparator
- RS-232 Interface & Software
- Datalogging function

- **Battery Types Tested:** Compact storage battery, Alkali and lead-acid batteries.
- **Frequency:** 1KHz
- **Accuracy:** ± 10%

	Ω	V
Range	40mΩ, 400mΩ, 4Ω, 40Ω	4V, 40V
Resolution	10μΩ,100μΩ, 1mΩ, 10mΩ	1mV, 10mV
Accuracy	± (1% + 8dgt)	±(0.1% + 6dgt)

TES-33 Battery Capacity Tester

Features

- Test Condition Without Shutting Down Battery
- Simultaneously Measure Battery Resistance, Voltage, Current &Temperature
- Auto-hold and Auto-data storage
- Rates Conditions as Pass, Warning, or Fail
- Memory and Read function
- Datalogging function
- Compact and Light weight
- Manual Data Memory: 999 sets
- Continuous Data Memory: 6000 sets
- RS-232 Interface / Software

- **Battery Types Tested:** Compact storage batteries, Alkaline and lead-acid batteries
- **Resistance:** 4mΩ, 40mΩ, 400mΩ, 4Ω, 40Ω, 400Ω
- **Measurement Condition:** Current: Approx. 40mA, 4mA, 400 μ A,40 μ A, 4 μ A Frequency: 1KHz ± 30Hz
- **DC Voltage:** 6V, 60V
- **Temperature:** -20°C ~ 60°C (-4°F ~ 140°F)
- **DC Current:** 600A
- **Open Circuit Voltage:** 5V max

Calibrator

Prova iCal Documenting Multifunction Calibrator

◆ **Short circuit protection** for voltage output.

◆ **Clear and easy user interface** (Numerical key pad, sliding switch and dot matrix LCM with backlight).

◆ Voltage, frequency, PWM duty-cycle (square wave and triangular wave), and offset are program-mable in the **Hz function**.

◆ **Frequency range (0.3Hz to 20 KHz)** covers application of audio band (speaker, MP3, MD etc.)

◆ **DTMF** (Dual Tone Multi-Frequency) can perform profes-sional testing for telephone line and audio product (MP3 or MD).

◆ **Auto-step and auto-ramp functions** can quickly perform linear test.

◆ **PC** can program calibrator through USB port.

◆ iCal can perform **data logging** with programmable sampling time (0-255 seconds) and memory of 4000 records.

◆ **Rechargeable Lithium battery** (1600mAH) with built-in charging circuit.

◆ **Calibration results** (source and measure) can be saved in memory (2000 records). Then users download them to a PC for documentation. No needs to transcribe calibration data manually.

◆ To **distinguish calibration data** at different locations, data can be saved under different file names.

Applications:

● **Calibration of 4 to 20mA** transmitters and panel meters.
● **Temperature calibration** of panel meters or instruments for 11 types of thermocouples.
● **Calibration of valve opening** by changing duty cycle of a PWM signal.
● **Generation** of selected test **frequency and waveform** for electronic device.
● **Pre-stored** 1/3 octave audition, white noise, and pink noise for MP3, MD, speaker and audio driver tests.
● **Audio Frequency Synthesizer:** Programmable frequency and phase synthesis of single tone, DTMF(Double Tone, Multi-Frequency) for audio products such as MP3, MD and tele-phone line.
● **Function generation** for transistor DC bias characteris-tics test, amplifier overload and transient characteristics.
● **Function generation** for vibration testing.
● **Calibration of a chart recorder** with different waveforms (sine, square, or triangular wave).

Features

◆ **Unique mapping function** let you calibrate temperature (300˚C) or voltage (220V) directly (instead of 4 to 20mA indirectly)

◆ iCal is **a multifunction calibrator** and an **arbitrary function generator**.

◆ **Source:** mA (4 to 20mA), V (0 to 15V, 0 to 70mV), Hz, sine wave, square wave, triangular wave, truncated sine wave, user program-mable waveform and temperature for 11 types of thermocouples.

◆ **Measure:** Current (mA), Voltage (V, mV) and temperature in ˚C or ˚F.

◆ **Programmable cold junction compensation** allows users to fine tune temperature output and measurement.

◆ Programmable 0% and 100% value for easy **25% step function**.

◆ **Output error warning** when output is shorted or open.

Prova 100 4-20 mA Loop Calibrator

Features

◆ 4-20 mA (1kΩ load, 24V Loop Supply)
◆ 0-24V output
◆ Easy Key-pad Operation
◆ Auto Step and Auto Ramp Functions
◆ 0-20mA, 0-24mA selectable
◆ 0-100% Input, step up and down
◆ Beeper Warning when Output is Open

Range	Resolution	Accuracy
0-4mA	1 μA	± 0.025% + 10 μA
4-24mA	1 μA	± 0.025% + 5 μA

Beeper warning when output is open and specified output > 1mA

Range	Resolution	Accuracy
0-4V	1mV	± 0.05% + 10mV
4-24V	1mV	± 0.05% + 5mV

Beeper warning when output is short and specified output > 100mV

Prova 123 Multifunction Calibrator
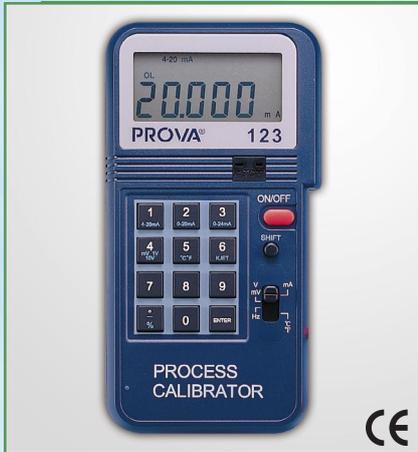
Features
◆ 4-20mA (1K Ω load, 24V Loop Supply)
◆ 0~100.00mV, 0~1.0000V, 0~10.000V
◆ K.J.E.T. Thermocouples (˚C & ˚F)
◆ Frequency 1~62,500 Hz
◆ 0.025% Basic Accuracy
◆ Easy Key-pad Operation
◆ Easy Step & Auto Ramp Functions
◆ 0~20mA, 0~24mA selectable
◆ 0~100% Input (mA, mV, V)
◆ Beeper warning when output is open (mA) or short (mV, V)

mA DC Current (1kΩ Max, Load, 24V Loop Supply)

Range	Resolution	Accuracy
0~24mA	1μA	± 0.025% ± 3μA

Beeper warning when output is open and specified utput >1mA

mV, V DC Voltage (1mA Supply Current)

Range	Resolution	Accuracy
0~100.00mV	10 μV	± 0.05% ± 30 μV
0~10.000V	1mV	± 0.05% ± 3mV
0~1.0000V	100 μV	± 0.05% ± 300 μV

Beeper warning when output is short and specified output >10mV

K, J, E, T Type (1˚C, 1˚F Resolution, 1kΩ load Min.)

Range	Typical Accuracy
K: -200~1370˚C/-328~2400˚F	± 0.8˚C/ ± 1.5˚F
J: -100~760˚C/-148~1400˚F	± 0.7˚C/ ± 1.2˚F
E: -100~700˚C/-148~1292˚F	± 0.7˚C/ ± 1.2˚F
T: -200~400˚C/-328~752˚F	± 0.8˚C/ ± 1.5˚F

Prova 125 Temperature Calibrator
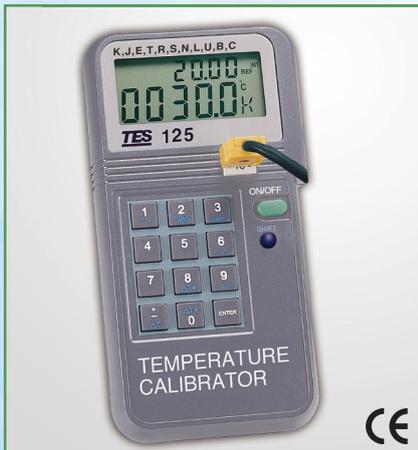
Features
◆ 11 Types of Thermocouples (K, J, E, T, R, S, N, L, U, B, C)
◆ ˚C, ˚F and mV outputs
◆ 0.1˚C, 0.1˚F Resolution
◆ △ T function, Easy INCREMENT& DECREMENT
◆ Ideal for: R&D Laboratory, Production Line and Service & Calibration
● **Display:** 4+5 Digits

Range	Typical Accuracy
K: -200~1,370˚C/-328~2,498˚F	± 0.4˚C/ ± 0.7˚F
J: -200~1,050˚C/-328~1,922˚F	± 0.4˚C/ ± 0.7˚F
E: -150~800˚C/-238~1,472˚F	± 0.4˚C/ ± 0.7˚F
T: -200~400˚C/-328~752˚F	± 0.4˚C/ ± 0.7˚F
R: 0~1,760˚C/32~3,200˚F	± 0.5˚C/ ± 0.9˚F
S: 0~1,760˚C/32~3,200˚F	± 0.5˚C/ ± 1.0˚F
N: -200~1,300˚C/-328~2,372˚F	± 0.4˚C/ ± 0.7˚F
L: -200~900˚C/-328~1,652˚F	± 0.4˚C/ ± 0.7˚F
U: 0~600˚C/32~1,112˚F	± 0.4˚C/ ± 0.7˚F
B: 600~1,820˚C/1,112~3,308˚F	± 0.5˚C/ ± 0.9˚F
C: 0~2,310˚C/32~4,190˚F	± 0.4˚C/ ± 0.8˚F

TES-1356 Sound Level Calibrator

Features
◆ 94dB and 114dB Sound Calibration at 1KHz
◆ Fits 1", 1/2" or 1/4" diameter microphone
◆ Conforms to ANSI S1.40-1984 and IEC942-1988 Class 2.

● **Output sound-pressure levels:** 114dB and 94dB re 20 uPa under reference conditions
● **Output frequency:** 1000Hz ± 4%
● **Reference condition:** Temperature → 20˚C (68˚F)
● **Atmospheric Pressure:** 1013mbar (760mm par Hg)
● **Relative humidity:** 65%
● **Accuracy:** ± 0.5dB

IEC 942 1988 Class2

Capacitance Meter

TES-1500 Capacitance Meter

Features

◆ 0.5% Accuracy
◆ Overload Fuse protection
◆ Test Clips/Direct insert jack for easy measure

● **Range:** 200pF/2nF/20nF/200nF/ 2μF/20μF/200μF/2000μF/20mF
● **Measurement Voltage:** 4.5V max.
● **Test frequency:** 8/80/800 Hz
● **Principle:** Dual Slop Integration
● **Zero Aro Adjustment:** $\pm$ 20pF Approx.

CO / CO$_2$ Analyzer

TES-1370 CO$_2$ Analyzer

Features

◆ Data Memory and Read function
◆ Continuous or manual data logging and reading
◆ Data hold & Max/Min with Time stamp
◆ Alarm & Time setting
◆ Maintenance free dual wave-length NDIR infrared CO$_2$ sensor (non-dispersive infrared)
● **Measuring Range:**
CO$_2$: 0~6,000 ppm
Temp.: -20~ 60°C / -4 ~ 140°F
Humidity: 10% ~ 95%RH

● **Resolution:**
1ppm, 0.1°C/0.1°F, 0.1%RH
● **Accuracy:**
CO$_2$: $\pm$ 3% of reading or $\pm$ 50ppm,which is greater
Temp.: $\pm$ 0.5°C / $\pm$ 0.9°F
Humidity:
$\pm$ 3%RH (at 25°C, 30 ~95%RH)
$\pm$ 5%RH (at 25°C, 10 ~ 30%RH)
● **Manual Data Memory Capacity:**
99 sets
● **Auto Memory Capacity:**
20,000 sets
TES-1370A (220V),
TES-1370B(110V)

TES-1372 / 1372R CO Analyzer

Features

◆ CO Range: 0 ~ 999 ppm (CO)
◆ Max Hold with Time Stamp / STEL,TWA
◆ Alarm level Setting
◆ Replaceable Sensor extends meter life
◆ Stabilized electrochemical CO sensor
◆ Automatic sensor zeroing upon start-up
◆ Auto Power-off time setting
◆ Typical three year sensor life, one year calibration cycle
◆ Manual Data memory (999 sets)

◆ Auto Datalogger (10,000 sets) (1372R)
● **Range:** 0 ~ 999 ppm
● **Resolution:** 1 ppm
● **Accuracy:** $\pm$ 5% of reading or 2ppm, which is greater
● **Sensor Type / Life:** Stabilized electrochemical Gas-specific / 3 years
● **Manual Data Memory Capacity:** 999 sets (Direct reading from LCD display)
● **Auto Data Memory Capacity:** 10,000 sets (Only downloaded by PC) (1372R)

TES ELECTRICAL ELECTRONIC CORP.

Conductivity & pH / ORP Meter

TES-1380 pH/ORP/Temp. Meter (RS-232)

Features

◆ Fast and easy pH measurement
◆ Dual LCD display shows pH/˚C & ˚F or mV/˚C&˚F simultaneously
◆ Single record 99 point, continuous record 99 point MAX 4500 data
◆ Auto-Data-Hold function
◆ RS-232 Interface & Software
◆ TES-1380K for complete kits (with BS4, BS7, PH-200 and PT-100, Ipc/each)

● **Range:**
  pH: 0~14 pH mV: 0~1999mV
  Temp.: 0~100˚C (32~200˚F)
● **Resolution:**
  pH: 0.001pH mV: 0.1mV
  Temp. (˚C): 0.1˚C
  Temp. (˚F): 0.1˚F
● **Accuracy:**
  pH: ± 0.002pH mV: ± 0.2mV
  Temp. (˚C): 0.5˚C, Temp. (˚F): 0.9˚F
● **Optional:**
  pH electrode, Temperature probe & Buffer solution

Conductivity & pH/ORP Meter

TES-1381 Conductivity & pH/ORP Meter

Features

◆ 0.001pH High Resolution
◆ pH, mV, Conductivity, TDS, Resistance, Salinity, Concentration & Temperature Measurement
◆ Programmable Temperature Coefficient for conductivity measurement
◆ Practical Salinity in the Range of 0 ~ 42.0, in accordance with UNESCO data measurement
◆ Concentration mode, the operator can create a user-defined table.
◆ 99 sets data memory and read function
◆ 512KB auto datalogging capacity
◆ USB Interface
● **Display:** 41/2 digital LCD display
● **Resolution:** pH: 0.001pH, mV: 0.1mV, Temp.: 0.1˚C/0.1˚F, Conductivity: 0.01 μS/cm, TDS: 0.01mg/L, Resistivity: 0.001 M Ω · cm, Salinity: 0.1

● **Measurement Range:**
  pH: 0 ~ 14pH, mV: 0 ~ 2000mV
  Temp.: 0~100˚C (32 ~ 212˚F)
  Conductivity: 0~ 19.99μS/199.9μS/ 1999μS/19.99mS/199mS/cm
  TDS: 0~13.20mg/L, 132.0mg/L, 1320mg/L, 13.2g/L, 132g/L
  Resistivity: 0~ 1.999MΩ · cm, 0~19.99MΩ · cm
  Salinity: 0.0 to 42.0 S (ppt)
  Concentration: 0 to 9999
● **Accuracy:**
  pH: ± 0.01pH
  mV: ± (0.1%+1d)
  Temp.: ± 0.5˚C(0.9˚F)
  Conductivity / TDS / Resistivity / Salinity: ± 0.3% reading
● **Optional Accessories:**
  PT100: RTD Temp. probe
  pH-200: pH Electrode
  CS150: Conductivity probe (K=1.0)
  BS4: pH4 buffer solution
  BS7: pH7 buffer solution

DC / AC Current Clamp

CM-01 DC/AC Clamp Meter

Features

◆ High Resolution DC/AC 10mA
◆ 23mm Large Jaw Diameter
◆ One Touch Zero for DCA adjustment
◆ Large 3 3/4 Digits LCD (4032 Counts)
◆ Fast Analog Bargraph Display
◆ Max/Min, Data Hold
◆ 600Vrms Overload Protection for Ohm Measurement

● **AC/DC Current:** 40A/0~150A/ 150~200A
● **AC/DC Voltage:** 400V
● **Resistance:** 40~400 Ω (beep if < 40.0 Ω)
● **Frequency:** 1~100KHz

IEC 1010
CAT Ⅲ 300V
CAT Ⅱ 600V

TES ELECTRICAL ELECTRONIC CORP.

CM-02 AC/DC Clamp Meter Automotive Clamp

IEC 1010
CAT III 300V
CAT II 600V

Features

◆ DC/AC 10mA Resolution
◆ 23mm Jaw Diameter
◆ Auto Range V , A,Ω,F and Temperature
◆ AC/DC 0.01~200A
◆ One Touch Zero for DCA adjustment
◆ 3 3/4 Digits (4,032 Counts)
◆ Capacitance & Diode Measurement
◆ Temperature:℃, ℉ seletable
◆ Max / Min, Date Hold

● **AC/DC Current:** 40/200A
● **AC/DC Voltage:**400m/4/40/400/600 V
● **Resistance:**400/4K/40K/400K/4M/40M Ω
● **Frequency:** 1~100KHz
● **Continuity :**40~400 Ω
● **Temperature:**-40~1000℃ ，-40~1800℉

CM-05 AC/DC Current Probe

IEC 1010
CAT III 300V
CAT II 600V

Features

◆ Accurate DC/AC current probe
◆ 10mADC, 1mAAC high resolution
◆ 23mm Jaw Diameter
◆ One Touch Zero for DCA adjustment
◆ Easy single rotary switch for any function selection

● **AC/DC Current:**
  4A/40A/150A/200A
● **Sensitivity:**
  0.1mV/1 mA
  0.1mV/10 mA
  0.1 mV/100 mA

CM-07 TRMS AC/DC Clamp Meter

IEC 1010
CAT III 300V
CAT II 600V

Features

◆ High Resolution DC 10mA, AC 1mA
◆ True RMS reading
◆ Non-contact Current, Frequency Measurement
◆ 23mm Large Jaw Diameter
◆ One Touch Zero for DCA adjustment
◆ Large 3 3/4 Digits LCD(4032 counts)
◆ Fast Analog Bargraph Display
◆ Max/Min, Data Hold
● **AC/DC Current:**
  40A/150A/200A/400A (DC)
  4A/40A/100A/200A/400A (AC)
● **Frequency:** 1~100K Hz

Prova 11 AC/DC mA TRMS Clamp Meter

IEC 1010
CAT III 300V
CAT II 600V

Features

◆ Super High Resolution-DC/1 mA, AC/0.1mA
◆ True RMS
◆ One Touch Zero for DCA adjustment
◆ 23mm jaw diameter
◆ Lager 3 3/4 Digits LCD(4032 counts)
◆ Fast bargraph display
◆ Max/Min, Data Hold
● **AC/DC Current:**
  0~4A/30A/40A(DC)
  400mA/4,000mA/30A(AC)
● **AC/DC Voltage:** 400 V

TES ELECTRICAL ELECTRONIC CORP.

Prova 1200 AC/DC Clamp Meter

Features

◆ 1,200A AC/DC current measurement
◆ Integrated current probe for waveform observation or recording
◆ One touch zero for DCA adjustment
◆ Fast bargraph display (30 times/ sec.) for transient observation
◆ Max/Min and Data hold function
◆ Ideal for works in crowded switch box or cable areas

◆ 23mm Large Jaw Diameter
◆ Large 3 3/4 Digits LCD
◆ Fast bargraph display
● **DC Current:** ($\pm$ 2.0% + 3 dgts) 0~400A (0.1A), 0~1200A (1A)
● **AC Current:** 0~400A (0.1A), 0~1200A (1A) $\pm$ 2.0% + 3 dgts － 50/60 Hz
● **Analog Output:** AC/DC: 1 mV/A (0~400A) AC/DC: 0.1 mV/A (0~1200A)

Prova 15 AC/DC mA Current Probe

Features

◆ High Resolution DC 1mA, AC 0.1mA
◆ Connect to an Oscilloscope to observe Current Waveform
◆ Connect to Chart Recorder / Datalogger/ DMM to Record Current Data
◆ One touch Zero for DCA adjustment
◆ 23mm jaw diameter

● **AC /DC Current:** 400mA/4A/30A
● **Sensitivity:** 0.1mV/ 0.1 mA 0.1mV/1 mA 0.1 mV/10 mA

IEC 1010
CAT Ⅲ 300V
CAT Ⅱ 600V

Prova 2000/2003 AC/DC Clamp Meter

Features

◆ DC 2500A, AC 2100A
◆ ϕ 55mm, Bus Bar 65mmx24mm
◆ True RMS (Prova 2000)
◆ Auto Range A, V, Ω, Hz
◆ DCA One Touch Zero
◆ Diode Test
◆ Continuity with buzzer
◆ Max/Min/Hold
◆ Relative Measurement
◆ Large 3 3/4 Digits LCD
◆ Fast bargraph display
◆ Resistance measurement

● **Current:** (AC/DC) DC~400A/2500A AC~400A/2100A
● **Current Analog Output:** 400A/2,100A(1mV/A)
● **Voltage:** (AC/DC) DC~400m/4V/40V/400V/600V AC~4V/40V/400V/600V
● **Frequency:** (Hz) 1~100KHz

IEC 1010
CAT Ⅲ 600V
CAT Ⅱ 1000V

TES-3010/3012 Prof. Clamp Meter

Features

◆ Frequency Count, Diode Check & Beeper
◆ Peak/Data Hold
◆ Unit & Sign Display

● **Current:** (AC) 20/200/600A (TES-3010) 20/200/600/1,000A (TES-3012)
● **Voltage:** (AC/DC) DC-1,000V; AC-200V/750V
● **Frequency:** (Hz) 2KHz
● **Ohms:** (Resistance) 200 Ω /20K Ω

TES ELECTRICAL ELECTRONIC CORP.

TES-3040 AC Clamp Meter

Features
◆ 3-3/4 Digital LCD with bar-graph
◆ Auto-power off with Data Hold & MAX/MIN mode
◆ Zero Adjustment/Relative Reading

IEC 61010
CAT III 600V
CAT II 1000V

● **Current:** (AC)
400/1,000A
● **Voltage:** (AC/DC)
DC-400mV/4V/40V/400V/600V
AC-4V/40V/400V/600V
● **Resistance:** (Ohm)
400Ω/4KΩ/40KΩ/400KΩ/
4MΩ/40MΩ
● **Frequency:** (Hz)
100Hz/1KHz/10KHz/100KHz/
800KHz

TES-3050 TRMS AC/DC Clamp Meter

Features
◆ 3-3/4 Digital LCD with bar-graph
◆ Auto-ranging off/Data Hold/ Peak Hold
◆ MAX/MIN mode
◆ Zero Adjustment/Relative Reading

IEC 61010
CAT III 600V
CAT II 1000V

● **Current:** (AC/DC)
400/1000A
● **Voltage:** (AC/DC)
DC-400mV/4V/40V/400V/600V
AC-4V/40V/400V/600V
● **Frequency:** (Hz)
100Hz/1KHz/10KHz/100KHz/
800KHz
● **Ohms:** (Resistance)
400Ω/4KΩ/40KΩ/400KΩ/
4MΩ/40MΩ

TES-3082 TRMS AC/DC Clamp Meter

Features
◆ True RMS Reading
◆ 4000 count Reading
◆ AC/DC 600A
◆ DCA One-touch-Zero

IEC 61010
CAT III 600V
CAT II 1000V

● **Current:** (DC/AC)
(± 1.9%rdg ± 5dgts)
400A/600A
● **Voltage:** (DC/AC)
DC-600V; AC-400V/600V
● **Resistance:** (Ohms)4KΩ
● **Frequency:** (Autorange)
4KHz/20KHz

TES-3092 AC/DC Clamp Meter (700A AC/DC)

Features
◆ Compact & Pocket Size
◆ AC 700A & DC 800A
◆ 600V AC & 200V DC Ohm/ Continuity Beeper.
◆ One Touch DAC Zero

EN 61010
CAT III 600V
CAT II 1000V

● **DC/AC Current:**
200A/800A (DCA)
200A/700A (ACA)
● **DC/AC Voltage:**
200V (DCV)
600V (ACV)
● **Ohms:** 2KΩ
● **Resolution:** 0.1 A/1A, 0.1V/1V

TES ELECTRICAL ELECTRONIC CORP.

Earth / Ground Tester

Prova 5601 Clamp-on Ground Resistance Tester

Features

◆ Non-Contact Ground Resistance Measurement
◆ No Auxiliary Electrode Needed
◆ Jaw Diameter Φ 23mm
◆ 0.2mA~30A True RMS
◆ 116 Sets of Memory
◆ Programmable High and Low Alarm
◆ Programmable Data Logging
◆ Data Logging interval:1 to 255 sec.

CAT II 600V
CAT III 300V
EN61010-2-032

● **Ground Resistance:**
0.025~0.250/0.251~1.000/
1.001~10.00/10.01~50.00/
50.01~100.0/100.1~200.0/
200.1~400.0/400.1~600.0/
600.1~1500 Ω
● **Ground/Leakage Current:**
(50/60Hz, True RMS)
0.300~1.000/1.00~10.00/
10.0~100.0/100~1000mA
0.20~4.000A
4.00~30.00A

TES-1605 Digital Earth Tester
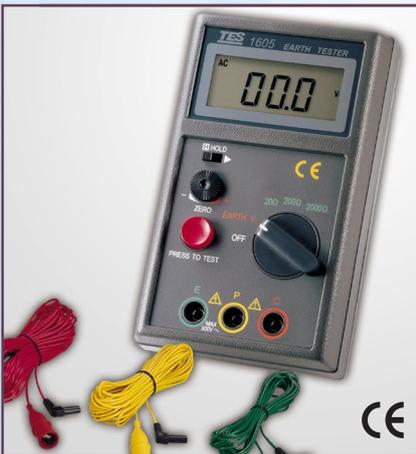
Features

◆ Earth Resistance (20Ω/200Ω/2000Ω)
◆ Zero ohm adjustment
◆ Capable of measuring earth voltage
◆ Data hold function
◆ Auto power off function

● **Earth voltage:**
0.1V, $\pm$(1% + 4)
● **Earth Resistance:**
20Ω / $\pm$(2% + 0.1Ω)
200Ω/2000Ω/ $\pm$(2% +3dgts)
● **Current Consumption:**
Earth V: 22mA
20Ω/200Ω/2000Ω: 42mA
● **Overload Protection:**
Earth Voltage: 300Vrms/1 min
Earth Resistance: 200Vrms/
10 sec.

TES-1700 Earth Resistance Tester

Features

◆ Auto power off function
◆ 2mA measuring current permits earth resistance tests with tripping earth leakage current breakers in the circuit under test

● **Measuring Range:**
0~399.9V (50Hz, 60Hz)
$\pm$(1%rdg+4dgts)
● **Resistance:**
0~39.99Ω/0~399.9Ω/0~3999Ω
$\pm$(2%rdg+3dgts)
● **Overload Protection:**
Earth Voltage: 400Vrms/1 minute
Earth Resistance: 250Vrms/1 seconds.
● **Current Consumption:**

Range	ON
40 Ω /400 Ω /4000 Ω	42mA
Earth V	22mA

TES ELECTRICAL ELECTRONIC CORP.

EMF Tester

TES-1390/1392 EMF Tester (Single axis)

Features

◆ Measures EMF (Electro Magnetic Field) Strength
◆ Data Hold/Pick Hold function to capture the highest EMF strength automatically
◆ RS-232 Interface/Software for TES-1392
◆ Stand-alone Datalogging function for TES-1392 (15,750 points)

- **Display:**
  3-1/2 digits, Max. indication 1999
- **Range:**
  200/2000 milli Gauss;
  20/200 micro Tesla
- **Resolution:**
  0.1/1 milli Gauss; 0.01/0.1 micro Tesla
- **Accuracy:**
  ±(3%+3d) at 50Hz /60Hz
- **Number of Axis:** Single axis
- **Band Width:** 30 Hz~300 Hz
- **Datalogging Capacity (TES-1392):**
  16,000 Points
- **Sampling Time:**
  Approx. 0.4 second

TES-1393/1394S EMF Tester (Three axis)

Features

◆ Triple LCD display to show X.Y.Z. axis each EMF Reading and plus average reading X+Y+Z/3
◆ MAX/MIN/AVG Reading
◆ Stand-alone Datalogging function
◆ RS-232 Interface/Software for TES-1394
- **Display:**
  3-1/2 digits, Max. indication 1999
- **Range:**
  20/200/2000 milli Gauss
  2//20/200 micro Tesla

- **Resolution:**
  0.01/0.1/1 milli Gauss
  0.001/0.01/0.1 micro Tesla
- **Accuracy:**
  ±(3%+3d) at 50Hz/60Hz
  ±(5%+3d) at 40 Hz~/200Hz
- **Number of Axis:** Three axis
- **Band Width:** 30 Hz~2000 Hz
- **Data logging Capacity:** 999 Points
- **Sampling Time:** Approx. 0.5 second

TES-92 Electro Smog Meter

Features

◆ 50MHz to 3.5GHz Frequency range
◆ For isotropic measurements of electromagnetic fields
◆ Non-directional (isotropic) measurement with threechannel measurement probe
◆ High dynamic range due to three-channel digital results processing
◆ Configurable alarm threshold and memory function
◆ Easy to use

Applications

◆ High frequency (RF) electromagnetic wave field strength measurement

◆ Mobil phone base station antenna radiation power density measurement
◆ Wireless communication applications (CW, TDMA, GSM, DECT)
◆ RF power measurement for transmitters
◆ Wireless LAN (Wi-Fi) detection, installation
◆ Spy camera, wireless bug finder
◆ Cellular / Cordless phone radiation safety level
◆ Microwave oven leakage detection
◆ Personal living environment EMF safety

TES ELECTRICAL ELECTRONIC CORP.

TES-593 Electro Smog Meter (3 axis)

Features

◆ Frequency range 10MHz to 8.0GHz
◆ 3 axis isotropic measurements of EMF
◆ Non-directional (isotropic) measurement with three-channel measurement probe
◆ High dynamic range
◆ Configurable alarm threshold and memory function
◆ Easy & safe to use

Applications

◆ High Frequency (RF) electromagnetic wave field strength measurement

◆ Mobile phone base station antenna radiation power density measurement
◆ Wireless communication applications (CW, TDMA, GSM, DECT)
◆ RF power measurement for transmitters
◆ Wireless LAN (Wi-Fi) detection, installation
◆ Spy camera, wireless bug finder
◆ Cellular/Cordless phone radiation safety level
◆ Microwave oven leakage detection
◆ Personal living environment EMFsafety

Flexible Clamp Meter

AFLEX 3030 Flexible AC Current Probe

Features

◆ Three Current Ranges: 30A, 300A and 3000A
◆ Two Output Sensitivity (300mV and 1V), Versatile for Measuring Instruments
◆ Flexible Shape for Cables and Bus Bar
◆ Max. 170mm Diameter
◆ Suitable for Any Electrical System
◆ Wide Bandwidth, Low Phase Shift
◆ Low Battery Indication

EN 61010-2-032
CAT III 600V
Pollution Degree 2

AFLEX 3001/3002 Flexible AC Current Clamp

Features

◆ Up to 3000A, True RMS
◆ Direct Reading, no DMM required
◆ True RMS measurement of A at with 1% of scale basic accuracy
◆ True RMS measurement of V at with 0.5% basic accuracy (model 3002 only)
◆ Fast peak function (39μs for 50Hz, 33μs for 60Hz)
◆ Max, Min and data hold functions.
◆ Auto Power off function in 15 minutes
● **AC Current**
Range: 5-300.A / 300.0-999.9A / 1000-3000A
Resolution: 0.1A / 0.1A / 1A
Accuracy of Readings: ± 1% of range
● **AC Voltage (AFLEX 3002 only)**
Range: 4.0V-600.0V
Resolution: 0.1V
Accuracy of Readings: ± 0.5% ± 5dgts
● **Frequency of ACV (RMS value > 30VAC) or ACA (RMS value > 30A)**
Range: 45-65
Resolution: 0.1
Accuracy of Readings: ± 0.2Hz

EN 61010-2-032
CAT III 600V
Pollution Degree 2

TES ELECTRICAL ELECTRONIC CORP.
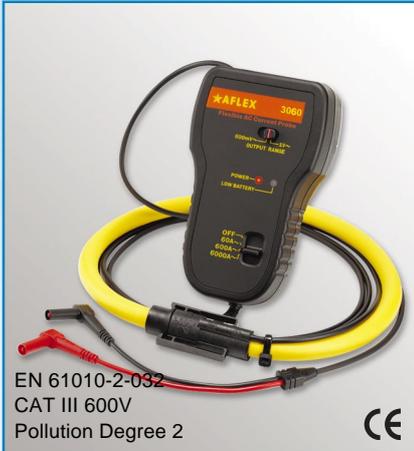
AFLEX 3060 Flexible AC Current Probe (6000A, 36")

Features

- ◆ Three current ranges: 60A, 600A, 6000A
- ◆ Two output sensitivity (600mV and 1V), versatile for measuring instruments
- ◆ Suitable for any electrical system
- ◆ Wide bandwidth: 10 to 10KHz
- ◆ Low phase shift
- ◆ Low battery indication
- ◆ Probe length: 36 in. / 920 mm

EN 61010-2-032
CAT III 600V
Pollution Degree 2

CE

Harmonic Clamp Meter

Prova 19/21/23 Leakage and Harmonics Tester

- ◆ Harmonic Analysis (V and A) to the 99th Order
- ◆ Better Understanding of High Frequency Harmonic Analysis (up to 5/6 KHz)
- ◆ Analysis of Total Harmonic Distortion (THD-F)
- ◆ Analysis of Crest Factor (C.F.)
- ◆ Fast Peak Function (33 μ s and 39 μ s)

Prova 21 (50A) and Prova 23 (100A)

- ◆ W, KW, H.P.
- ◆ VA, KVA, VAR, KVAR
- ◆ PF, Phase Angle (Φ)
- ◆ Energy (mWH, WH, KWH)
- ◆ Analysis of Standby Power Consumption
- ◆ Balanced 3 Φ Power Quality and Sequence
- ● **AC Watt (Prova 21/23)**
  Range: 0.050W~9,999KW
- ● **AC Current (50 or 60 Hz, True RMS)**
  Range: 0.5~50A (19,21)
  0.5~100A (23)

- ● **AC Voltage (50 or 60 Hz, True RMS)**
  Range: 5V~600V
- ● **Harmonics of AC Voltage in % and Magnitude (1~99th order)**
  Range: 50V~600V
- ● **Harmonics of ACA in % Percentage and Magnitude (1~ 99th order)**
  Range: 0.5~50A(19, 21)
  0.5~100A(23)
- ● **Power Factor and Phase Angle (21 & 23)**
  Range (PF): 0.000~1.000
  Range (Φ): -180˚~180˚ (0˚~360˚)
- ● **Total Harmonic Distortion (THD-F, 1~50th order)**
  Range: 0.0~999.9 %
- ● **Crest Factor (C.F.,Accuracy of Readings)**
  Range: 1.00~99.99

EN 61010-2-032
CAT III 300V，CAT II 600V
Pollution Degree 2

CE

Features

- ◆ True RMS value (V and A)
- ◆ Leakage Current Measurement at 10 μ A Resolution

Prova 6603/6605 Power and Harmonics Tester

Features

- ◆ Active (W, KW, HP), reactive (VAR, KVAR) and apparent (VA, KVA) power
- ◆ Power factor (PF), phase angle (Φ), and energy (WH, KWH)
- ◆ Non-interrupted AC current harmonic analysis
- ◆ 1 to 99th order of harmonics at 2.0% basic accuracy
- ◆ Total harmonic distortion (%THD-F) and crest factor (CF)
- ◆ True RMS measurement of V and A
- ◆ Fast peak function (39 μ s for 50Hz, 33 μ s for 60Hz)
- ◆ Resistance and Continuity with Beeper
- ◆ Measurement of balanced 3 Φ power
- ◆ Measurement of balanced 3 Φ sequence
- ◆ Programmable CT ratio from 1~ 250
- ◆ Max, Min and data hold functions.
- ◆ Active power in H.P.
- ◆ Auto power off function in 30 minutes

- ● **Prova 6603:** 0~750A,
  Prova 6605: 0~1,500A AC Watt
  Range: 10.0W~9999KW
  Accuracy: ± 2% ± 20dgts
- ● **AC Current**
  Range: 10.0~750.0A (6603)
  10.0 ~ 1500.0A (6605)
  Accuracy: ± 2% ± 5dgts
- ● **AC Voltage**
  Range: 10.0V~600.0V
  Accuracy: ± 0.5% ± 5dgts
- ● **Harmonics of AC Voltage in Percentage**
  Range: 1st~99th Accuracy: ± 2%
- ● **Harmonics of AC Current in Percentage**
  Range: 1st~99th Accuracy: ± 2%
- ● **Power Factor (PF)**
  Range: 0.000~1.000 Accuracy: ± 0.04
- ● **Phase Angle (Φ)**
  Range: -180˚~180˚ / 0˚~360˚
  Accuracy: ± 2˚
- ● **Total Harmonic Distortion**
  Range: 0.0~999.9% Accuracy: ± 2%

EN61010-2-032
CAT III 600V
Pollution Degree2

CE

TES ELECTRICAL ELECTRONIC CORP.

Humidity Temp. Meter

TES-1260 Humidity Temperature Meter

Features

◆ Slimiline and Stylish
◆ Large Dual LCD display
◆ Dew Point Reading / Wet Bulb Reading
◆ MAX/MIN with Time Stamp
◆ Data Hold function
◆ ˚C/˚F Switchable
◆ Data memory and read function (99 readings from LCD display)
◆ Auto Power Off

● **Range:**
   Temperature:
   -20˚C~60˚C (-4˚F~140˚F)
   Humidity: 1%RH ~ 99%RH
● **Resolution:** 0.1˚C/0.1˚F/0.1%RH
● **Accuracy:**
   Temperature: ± 0.5˚C, ± 0.9˚F
   Humidity:
   ± 3%RH (at 25˚C, 30~99%RH)
   ± 5%RH (at 25˚C, 1~30%RH)
● **Data Memory Capacity:**
   99 sets reading from LCD display

TES-1360A Humidity/Temperature MeterFeatures

Features

◆ Ideal for: Laboratory, Quality Control, Air Conditioning & Process Engineering
◆ Instant performance of Humidity measurement by Precision thin-film capacitance sensor.
◆ High Resolution of 0.1% R.H., 0.1˚C & 0.1˚F
◆ Data Hold function to hold the LCD reading.
◆ Data memory and read function (99 sets)

● **Range:**
   Humidity: 10%~95% R.H.
   Temperature: -20˚C~+60˚C / -4˚F~+140˚F
   Resolution: 0.1% R.H. 0.1˚C, 0.1˚F
● **Accuracy (after calibration)**
   Humidity: ± 3% R.H.
   Temperature: ± 0.8˚C, ± 1.5˚F
● **Auxiliary outputs:**
   Humidity: 10mV DC/1% R.H.
   Temperature: 10mV DC/1˚C, 10mV DC/1˚F

TES-1361C Datalogging Humidity/Temperature Meter

Features

◆ Logging 7000 dual Reading (RH% & Temp) with Data/Time Stamp
◆ Switchable Main display & Secondary display
◆ Dual display with time clock
◆ Accurate & Easy Operation
◆ RS-232 interface (software included)

● **Range:**
   Humidity: 10%...95%R.H.
   Temperature: -20˚C~+60˚C/-4˚F ~+140˚F
● **Accuracy:**
   Humidity: ± 3%R.H. (at 25˚C, 30~95%R.H.)
   Temperature: ± 0.8˚C, ± 1.5˚F
● **Record:** (Data logging)
   7000 Point Data logger (Dual Data)

TES ELECTRICAL ELECTRONIC CORP.

TES-1362 Printing Humidity/Temperature Meter

Features

◆ Triple LCD Display for RH% Humidity, T1 for air, T2 for Type K
◆ Dew Point Reading
◆ Max/Min/Data Hold
◆ Real Time Stamp
◆ Periodically Print out from Pre-Set time interval

- **Range:**
  T1: Temp.: -20°C~60°C
  (-4°F~140°F) / (± 0.8°C, ± 1.5°F)
  Humidity: 10%RH~95%RH
  (± 3%RH)
  T2: Type K: -200°C~1333°C
  (-58°F~2431°F) /
  (0.1%rdg + 0.8°C)
- **Resolution:** 0.1°C/0.1°F/0.1%RH
- **Sampling Rate:** 1 time/sec.

TES-1364/1365 Datalogging Humidity/Temperature Meter

Features

◆ Data Hold & Relative function
◆ Dual LCD display with Bargraph indication
◆ Dew Point Reading & Wet Bulb Reading
◆ MAX/MIN with Time Stamp
◆ Data Memory and Read function (99 readings from LCD display)
◆ Datalogging capacity 15,000 dual reading (%RH & Temp-TES-1365)
◆ RS-232 Interface & window software (TES-1365)

◆ Automatic Timer Recording for Datalogger(TES-1365)
- **Range:**
  Temperature:-20°C~60°C(-4°F ~140°F)
  Humidity: 10%RH~95%RH
- **Resolution:** 0.1°C/0.1°F/0.1% RH
- **Accuracy:**
  Temperature : ± 0.5°C, ± 0.9°F
  Humidity:
  ± 3%RH(at 25°C30~95%RH)
  ± 5%RH(at 25°C10~30%RH)
- **Datalogging:** (TES-1365)
  Continues Recorder: 15,000 data sets.

Leakage Current Tester

CM-03 Leakage Current Tester

Features

◆ 10uA Ultra High Resolution on 40mA range
◆ 30mm Large Conductor Diameter
◆ ACA 5 Range (40mA, 400mA, 4A, 40A, 60A)
◆ Fast bargraph display (30 times/sec.)
◆ Max/Min, Data Hold function
◆ Relative measurement
- **AC Current:**
  (± 1.0% rdg ± 3dgts)
  40m/400m/4A/40A/60A
- **AC Voltage:** 400V
- **Resistance and Continuity:** 40~400 Ω

IEC 1010
CAT III 300V
CAT II 600V

Insulation Tester

TES-1600 Insulation Tester
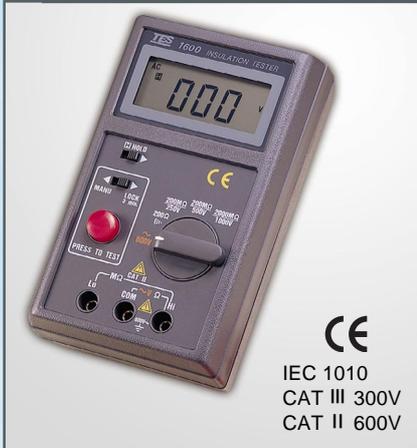
Features

◆ 2000M Ω /1000V, 200M Ω /500V, 200M Ω /250V
◆ Power lock for 3 minutes
   (Auto power off)
◆ Auto-Zero adjustment
◆ Data-Hold-Function/Continuity Beeper
◆ 1mA Test Current
● AC Voltage: 600V
● MEG OHMS: ($\pm$ 3%rdg $\pm$ 5Ct)
       200M Ω /250V
       200M Ω /500V
       2000M Ω /1000V
● OHMS: 200 Ω

IEC 1010
CAT III 300V
CAT II 600V

TES-1601 Auto Ranging Insulation Tester

Features

◆ 4,000 M Ω /V Reading/ 10,000M Ω analog indication
◆ "Test Hold" function
◆ Backlight illumination
◆ 1mA Test Current
◆ 200mA short Circuit continuity current
● **AC Voltage:** 600V ACV
● **Continuity:** 400 Ohm (Ish>200mA)
● **MEG OHM:** ($\pm$ 3%rdg $\pm$ 5Ct)
   4000M Ω /250V w/autorange
   4000M Ω /500V w/autorange
   4000M Ω /1000V w/autorange
   Autorange: 4000M/400M/40M/4M

IEC 61010
CAT III 300V
CAT II 600V

TES-1604 Datalogging Insulation Tester (RS-232)

Features

◆ Auto Range for Mega ohm range
◆ 200mA short circuit continuity current
◆ Via RS-232 interface to talk with PC
◆ 7000 Record data logging capacity
● **AC Voltage:**
   600V ACV (1.5% rdg +3 dgts)
● **Continuity:**
   40 Ohm (1sh > 200mA)(1% rdg +30dgts)
● **Mega OHM:** ($\pm$ 3% rdg $\pm$ 5Ct)
   4000M Ω /250V w/auto-range
   4000M Ω /500V w/auto-range
   4000M Ω /1,000V w/auto-range
   Auto-range: 4,000M/400M/40M/4M

IEC 1010
CAT III 600V
CAT II 1000V

TES ELECTRICAL ELECTRONIC CORP.

TES-3660 Autoranging Insulation Tester
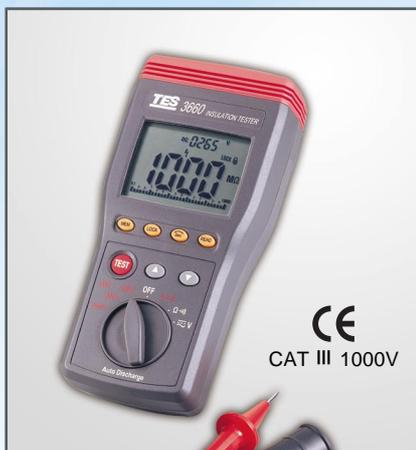
Features

◆ Large LCD with analog bar graph and digital display
◆ 250V, 500V, 1000V output voltage for insulation M Ω testing
◆ 10G Ω insulation testing with utomatically switch to voltage easurement
◆ Lo Ω function for testing connections
◆ Last reading HOLD display
◆ Auto discharge of capacitive voltage charges
◆ AC/DC voltage measurement up to 999V
◆ Manual data memory and read function (9 sets)

CAT III 1000V

● **Mega OHM:**
  (± 3% rdg ± 5Ct < 1G Ω;
  ± 5% rdg ± 5Ct > 1G Ω)
  10G Ω /250V, 10G Ω /500V, 10G Ω /1000V
  w/auto range (4M/40M/400M/ 4000M/10G Ω)
● **Lo Ω :** 40.00 Ω (± 2% rdg ± 2dgts)
● **AC Voltage (50~400Hz):**
  999V (± 2% rdg+2 dgts)
● **DC Voltage:**
  999V(± 1% rdg+2dgts)
● **Resistance:**
  9999 Ohm (± 1% rdg+3dgts)

LAN Cable Tester

TES-45A LAN Cable Tester

Features

◆ Check Open, Short, Reversed, Crossed & Split wires of wiring faults
◆ 8 different cables-remoteidentifiers available (#1, #2, #3, #4, #5, #6, #7, #8)
◆ Double digits LED display and plus 4 pairs LED to show wiring fault status/pairing test
● **Connector:** RJ45, BNC
● **Cable pairs tested:** 1/2, 3/6, 4/5, 7/8

● **Faults status:** Open, Short, Reversed, Crossed, Split and Low Battery
● **Test Cable length:**
  Maximum 150M (492 ft)
● **Accessories:**
  One Patch Cable (RJ45 to RJ45, 30cm long) & One Remote Identifier #1
● Optional for A #2, #3, #4 for B #5, #6, #7, #8

TES-46 LAN Cable Meter

Features

◆ Detects Wiring Problem: Open, Short, Reversed, Crossed & Split wires
◆ Locates wiring/connection errors (distance to the open or short)
◆ Measures cable length(2~1000 ft/ 1~350M)
◆ Can identify up to 8 different cables at one end by provided remote identifiers

● **Display:** 2 lines characters LCD display
● **Connector:** RJ45, BNC
● **Category:** CAT3, CAT4, CAT5, User-Calibration
● **Resolution:**
  0.5 M/0.5ft < 100 M/100 ft
  1 M/1ft > 100 M/100 ft
● **Accuracy:** ± (5%+1M)/ ± (5%+3ft)

Light Meter

TES-1330A/1332A/1334A Light Meter

Features

◆ Cosine Angular corrected
◆ Analog output jack for recording (1332A/1334A)
◆ Data Hold function, Peak Hold function for 1334A

● **Range:** (± 3% rdg ± 0.5%f.s.)
20/200/2,000/20,000
Lux for TES-1330A
200/2,000/20,000/200,000
Lux for TES-1332A
20/200/2,000/20,000Lux/Foot-candle for TES-1334A
20,000 lux-reading x10; 200,000 lux-reading x100
● **Over-range Display:**
Highest digit of (1) is displayed

TES-1335 Light Meter

Features

◆ Cosine Angular corrected
◆ Relative function
◆ Auto-Power off function
◆ Accurate and instant response
◆ Peak Hold function
◆ Data Hold, MAX/MIN function

● **Range:**
40, 400, 4,000, 40,000, 400,000 Lux
40, 400, 4,000, 40,000 fc
● **Accuracy:**
± 3% rdg ± 0.5% f.s.
± 4% rdg ± 10 dgt as >10,000 lux/fc
● **Resolution:** 0.01LuxCIE V λ
function f'1 $\leqq$ 6%
● **Over-range Display:** LCD will show "OL" symbol

TES-1336A Datalogging Light Meter (RS-232)

Features

◆ Spectrum of photo sensor meets C.I.E. photopic curve V(λ)
◆ 16000 Records Data logging capacity
◆ RS-232 interface (software included)
◆ Measurement of Luminousintensity (PC Software)

● **Range:** (± 3% rdg ± 0.5%f.s.)20/200/2,000/20,000 Lux
20/200/2,000/20,000 Fc,
(20,000 Lux/Fc range reading x 10)
● **Display:** 31/2 digit LCD
● **Measuring Rate:** 2.5 times/sec.

TES ELECTRICAL ELECTRONIC CORP.

TES-1337 Light Meter
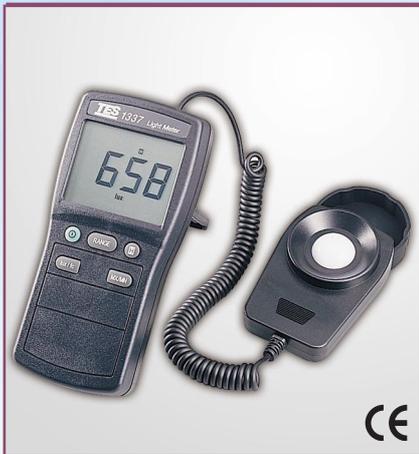
Features
◆ Spectral Sensitivity close to CIE photopic Curve
◆ Accurate and instant response
◆ Data Hold function
◆ MAX/MIN function
◆ Relative function

- **Range:** ($\pm$ 3% rdg $\pm$ 5 dgt) 20, 200, 2,000, 20,000 Lux 20, 200, 2,000, 20,000 fc
- **Accuracy:** $\pm$ 3% rdg $\pm$ 0.5% f.s. $\pm$ 4% rdg $\pm$ 10 dgt as > 10,000 lux/fc
- **Resolution:** 0.01Lux CIE V λ function f'1 $\leqq$ 6%
- **Over-range Display:** LCD will show "OL" symbol

TES-1339 / 1339R Light Meter Pro. (RS-232)

◆ Measuring Levels Ranging 0.01 to 999900 Lux, 0.001 to 92927 fc, Autoranging 5 steps
◆ Accurate and Instant Response
◆ Integral illuminance measurement
◆ Luminous Intensity measurement
◆ Reference value setting for relative or percentage deviation measurement
◆ Ripple Measurement for STRAY & LIGHT function
◆ Time-Hold measurement
◆ Point-average function
◆ Comparator function
◆ Auto power off function
◆ Data Hold function
◆ CNS 5119 Class II
◆ Data memory and read function (99 readings)
◆ Data Logging function (40,000 readings) (TES-1339R)

◆ RS-232 Interface & Software (TES-1339R)
- **Range ($\pm$ 3% rdg $\pm$ 5 dgt):** 99.99, 999.9, 9999, 99990, 999900 Lux / 9.292, 92.92, 929.2, 9292, 92927 fc. Auto ranging (5 step) (1fc = 10.76 Lux)
- **Resolution:** 0.01 Lux, 0.001 fc
- **Over range Display:** OL is displayed
- **CIE photopic f' 1:** $\leqq$ 6%
- **Temperature Characteristics:** $\pm$ 0.1%/°C
- **Measuring Rate:** 5 time/sec (approx.)
- **Data Memory Capacity:** 99 sets (Direct reading from LCD display)
- **Data Logger Capacity:** 40,000 sets (TES-1339R)

Features
◆ Dual Display 4-digit LCD reading
◆ Spectral Sensitivity close to CIE photopic Curve

Loop/PSC Tester

TES-1800 Loop/PSC Tester

Features
◆ Auto lock out if test resister overheats
◆ Measure low loop with 0.01 resolution
◆ High loop range permit measurement of ground spikes.
◆ 1800A 230V
◆ 1800B 110V

- **Range:** 20/200/2000 Ω
- **Accuracy:** $\pm$(2%+2digit) at 1Ω on 20Ω range
- **Lowest Resolution:** 0.01Ω
- **Voltage Display:** $\pm$ 2%+1digit
- **AC Test Current:** 25A nominal at 20 Range
- **AC Test Period:** 20ms
- **PSC Range:** 200A/2000A/20KA
- **Operation Voltage:** 230V $\pm$ 10%, 50Hz $\pm$ 1%
- **Fuse Protection:** HRC ceramic fuse

IEC 61010-1
CAT III 300V

TES ELECTRICAL ELECTRONIC CORP.

RCD Tester

TES-1900 Digital RCD Tester

Features
◆ 3 LED's for checking wiring status
◆ 0 and 180 degree phase angle switch permits quick tests and consistent readings
◆ Digital read out of tripping time
◆ Visual indication of reversed phase and neutral wring at socket
◆ Resilient case made from modern plastics to take everyday knock and brings
◆ 1900A 230V
◆ 1900B 110V

● **Rated Tripping Current:** 10/20/30/100/300/500mA
● **Fault Condition Setting:** X1/2, X1, X5
● **Fault Trip Time:** 2000ms, 40ms (X5)
● **Low Set Resolution:** 1ms (X1/2, X1), 0.1ms (X5)
● **Trip Time Accuracy:** ±(1% rdg + 2 digits)
● **Operation Voltage:** 230V ± 10%, 50/60Hz

Milli / Micro-Ohmmeter

Prova 700 / 710 Milli / Micro-Ohmmeter

Features
◆ Max. Test current: 5A (Prova 700)
◆ Max. Test Current: 10A (Prova 710)
◆ Four Terminal Kelvin measurement.
◆ Best resolution 1 $\mu\Omega$.
◆ Basic accuracy 0.25%.
◆ Manual or Auto Range.
◆ Measurement of resistive and inductive materials.
◆ Readings Hold function.
◆ Cable length measurement

◆ Large LCD (5-digit) with backlight
◆ Low battery (voltage) alarm.
◆ Low Power consumption
◆ Rechargeable lithium batteries and AC adaptor
◆ RS232C (to USB bridge) cable
◆ Built-in calendar clock
◆ Built-in batteries charging circuit

Application
● Coil resistance of Electric motor
● Contact resistance of Switch and Relay
● Resistance of Bus bar, Breaker, Fuse, Inductance and Shunt

Multimeters

Prova 803 Precision Multimeter (Mobile Bench-top) DMM

Features
◆ 60,000 Counts Dual Channels
◆ 0.04% DC Basic Accuracy, 0.2% AC Basic Accuracy
◆ 10KHz (max.) bandwidth
◆ Fast ACV, ACA Response
◆ Standalone Data Logging of 10708 Records for both channels
◆ Study of Relationship of Voltage and Current with One DMM
◆ Dual Display of Frequency and Duty Cycle
◆ Record Data of Both Channels Using a PC through the RS-232C interface

● **DCV/ACV:** 60.000mV ~ 1000.0V
● **DCA/ACA:** 600.00 μ A ~ 10.000A
● **Resistance:** 999.99 Ω ~ 40.000m Ω
● **Capacitance:** 60.00nF ~ 999.9 μ F
● **Frequency:** 1.000Hz ~ 2MHz
● Duty-Cycle and Diode-Test

IEC 61010-1
CAT III 1000V
CAT IV 600V

TES ELECTRICAL ELECTRONIC CORP.

Prova 901/903 Precision Multimeter (Mobile Bench-top) DMM

IEC 61010-1
CAT III 1000V
CAT IV 600V

Features

◆ 60,000 Counts Dual Channels
◆ 0.03% DC Basic Accuracy, 0.1% AC Basic Accuracy
◆ 200KHz (max.) bandwidth and True RMS
◆ Fast ACV, ACA Response
◆ Standalone Data Logging of 10708 Records (for Prova 903 only)
◆ Study of Relationship of Voltage and Current with One DMM
◆ Dual Display of Frequency and Duty Cycle
◆ Record Data of Both Channels Using a PC through the RS-232C interface

● **DCV/ACV:** 60.000mV ~ 1000.0V
● **DCA/ACA:** 600.00µA ~ 10.000A
● **Resistance:** 999.99Ω ~ 40.000mΩ
● **Capacitance:** 60.00nF ~ 999.9µF
● **Frequency:** 1.000Hz ~ 2MHz
● Duty-Cycle and Diode-Test

TES-2620 (3 3/4 Digits) True RMS Multimeter

Features

◆ 3 3/4 Digital LCD with Bar-graph
◆ Water-Proof ABS housing
◆ Auto-power off
◆ Auto ranging
◆ ADP range to accommodate Current, Temp., Humidity adaptor

● **Current:** (AC/DC)4m/40m/400m/20A
● **Voltage:** (AC/DC) (± 0.5% rdg ± 1 dgt) 400m/4/40/400/750V (AC)/1000V (DC)
● **Resistance:** 400/4K/40K/400K/4M/40MΩ
● **Frequency:** 100/1K/10K/100K/500K Hz

TES-2700 Auto Ranging Multimeter

Features

◆ Autoranging and Auto-power-off
◆ 3200 count LCD analog bar-graph
◆ Data-hold mode available at ohms
◆ Overload protection up to 600 Vrms

● **Current:** 320u/3.2m/32m/320m/20A
● **Voltage:** (AC/DC) (± 0.5% rdg ± 2 dgt) 320m/3.2/32/600V (DC) 3.2/32/320/600V (AC)
● **Resistance:** 320/3.2K/32K/320K/3.2M/30M Ω

IEC 61010-1
CAT III 300V
CAT II 600V

TES ELECTRICAL ELECTRONIC CORP.

TES-2712 LCR Multimeter

Features

◆ 3 1/2 LCD
◆ Data-hold and Peak-hold function available
◆ Inductance, Capacitance & ohm measurement

IEC 61010-1
CAT III 300V
CAT II 600V

● **Current:** 200 μ /2m/20m/200m/20A
● **Voltage:** (AC/DC) ($\pm$ 0.5% rdg $\pm$ 1dgt) 200m/2/20/200/600V (DC)/600V (AC)
● **Capacitance:** 2000P/200n/2μ F/20μ F
● **Inductance:** 20m/200m/2/20H
● **Resistance:** 2K/20K/200K/2M/20MΩ

TES-2732A Data Logger Multimeter (RS-232)

Features

◆ DMM talks with PC via RS-232 interface
◆ Data logger function (4,808 readings)
◆ Direct input of V, A, Ohm, Hz, Cx&°C/°F without any further signal modification

IEC 61010-1
CAT III 300V
CAT II 600V

● **Current:** (AC/DC) 200u/2m/20m/200m/20A (AC/DC)
● **Voltage:** (AC/DC) ($\pm$ 0.5% rdg $\pm$ 1 dgt) 200m/2/20/200/600V (DC)/600V (AC)
● **Frequency:** ($\pm$ 0.5% rdg $\pm$ 2 dgts) 10Hz~20M Hz (Auto range)
● **Resistance:** 200/2K/20K/200K/2M/20MΩ
● **Capacitance:** 2000P/200n/2μ F/20μ F

Power Supply

Prova 8000 Programmable Power Supply

Features

◆ Switching Technology, Analog Quality
◆ 1+2 Output 200w
◆ One Programmable Output 0-40V/5A
◆ Two Fixed Outputs 5V/2A, 3.3V/3A
◆ 1mV, 1mA High resolution
◆ 3mVrms, 3mArms low noise
◆ High Stability, Low Drift
◆ Over-Voltage, Over-Current Protection

◆ OCP with Programmable Timer
◆ Built-in Buzzer Alarm
◆ 200 Sets Memory
◆ Easy RECALL & STORE function
◆ AUTO-STEP function with programmable interval
◆ Stand by/Operate Button
◆ Bi-direction RS-232C interface

TES ELECTRICAL ELECTRONIC CORP.

Prova 8500 Electric Energy-Saving Tester

CE

Features

◆ AC Power Supply + AC PowerMeter
◆ Standby Power Measurement of Note Book, Desktop PC, LCD TV, ˇ
◆ Two Measurement Terminals:
  a. Programmable nominal output: 85V~250V, 45Hz~65Hz.
  b. External power input: max. 2000W
◆ High Resolution (0.1V, 0.1mA), High Stability and Low Drift
◆ Power Quality Measurement (W, PF, V, A, harmonics)
◆ PC Programmable through RS-232C Interface (included RS-232C to USB Bridge)
◆ Programmable Over Current Protection (OCP)
◆ Memory of 99 Preset Voltage and Frequency
◆ LCD display for monitoring output V, A, W

◆ Cost Calculation based on a Day, a Month or a Year.
◆ 230V/115V Selectable by Switch

Specifications of Front Panel
(AC Sine Wave Output)

Range	Resolution	Accuracy
85V — 250V	0.1V	± 1%
45Hz - 65Hz	0.01Hz	± 0.1 Hz
0.01W - 100W	0.001W	± 1 % ± 0.1W
0.5A - 1.5A	0.001A	± 1 % ± 0.05A
PF (0 ~ 1)	0.001PF	± 0.04

Specifications of Rear Panel
(Max. 2000W, AC Measurement)

Range	Resolution	Accuracy
0.1W — 2000W	0.001W/ 0.01W / 0.1W/ 1W	± 1 % ± 0.1W
85V - 250V	0.1V	± 1 %
0.01A - 10A	0.001A/0.01A	± 1 % ± 0.05A
PF (0~1)	0.001PF	± 0.04
45Hz - 65Hz	0.01Hz	± 0.1Hz
THD	0.1%	± 2 %
Hn(1~50th)	0.1mA/0.001A/0.01A	± 1.4 %

Power Analyzer

TES-3600 3 phase Power Analyzer

LVD
CE CAT III 1000V

Features

◆ 10 Display Easy-to-View LCD screen
◆ Connectors for 4 Current Clamp probes
◆ 1P2W, 1P3W, 3P3W2M, 3P4W Power Measurement
◆ True RMS Sensing
◆ Power KW, KVAR, KVA, PF, θ, Hz & Energy KWh, KVARh, KVAh Measurement
◆ Manual Data Memory and Read (99 sets)
◆ Datalogging (504KB memory, 20,000 sets)
◆ Programmable Trigger-Points and Start/Stop Time
◆ RS-232 Optical Interface with three phase voltage/current Waveform display and Harmonic analysis
◆ TES-3600A for 220V
◆ TES-3600B for 110V

● **Range:**
V: 999.9V (± 0.3% rdg ± 10dgts)
A: 999.9A (± 0.5% rdg ± 15dgts)
KW: 999.9KW (± 1% rdg ± 20dgts)
KVA: 999.9KVA (± 1% rdg ± 20dgts)
KVAR: 999.9KVAR(± 2.5% rdg ± 20dgts)
Power Factor: -1~0 ~ +1 (± 1% rdg ± 40dgts)
Phase Angle: 0~ ± 15˚ (± 6.0˚)
± 15˚ ~ ± 75˚ (± 3.0˚)
± 75˚ ~ ± 90˚ (± 6.0˚)
Hz: 0.01~60Hz (± 0.1%rdg ± 2dgt)
Three Phase Sequence Detection: 3P > 50V
Power Energy Measurement (Wh, Vah, VARh): 119.3M
Wh: ± 1% rdg ± 20 dgts
VAh: ± 1% rdg ± 20 dgts
VARh: ± 1% rdg ± 20 dgts
Harmonic Measurement: 1~31(± 3% THD)

AFLEX 3003/3005 Flexible VA Harmonics/ Power Quality Tester

EN 61010-2-032
CAT III 600V
Pollution Degree 2
CE

Features

Power Analysis (3005)

◆ W, KW, H.P.
◆ VA, KVA, VAR, KVAR
◆ PF, Phase Angle (Φ)
◆ Energy (WH, KWH)
◆ Dual displays (W+PF, VA+KVAR)
◆ Balanced 3 Φ Power Quality
◆ Balanced 3 Φ Sequence

Harmonics Analysis (3003, 3005)

◆ True RMS (V and A)
◆ 3000A
◆ Non-interrupted Harmonic Analysis (V and A) to the 50th Order in % and Magnitude
◆ Fast Peak Function (33μs and 39μs)
◆ Programmable VT (1 to 3000) Ratios
◆ Auto-Power-Off: 30 minutes
◆ Analysis of %THD-F and C.F.
◆ Max, Min, Date hold functions

TES ELECTRICAL ELECTRONIC CORP.

AFLEX 6300 Graphic Power Quality Analyzer

- True RMS Value (V and I)
- Active Power (KW), Apparent (KVA) and Reactive Power (KVAR)
- Power Factor (PF), Phase Angle (Φ)
- Energy (WH, KWH, KVARH, PFH)
- Display of Overlapped Voltage and Current Waveform
- Max. Demand (MD in W, KW, MW) with Programmable Period
- Harmonics Analysis (V & I) to the 50th order
- Display of 25 Harmonics in One Screen with Waveform
- Display of Waveform with Peak Values (512 Samples/Period),
- Datalogging of 32, 64, 128 or 256 Points/Cycles
- Analysis of Total Harmonic Distortion (%THD-F)
- Graphic Phasor Diagram
- Transient detection and logging of Swell, Dip and Outage(Max. 32000 events)
- Data Logging Memory Size: 512K bytes
- Output of Waveform, Power Parameters and 50 Harmonics at Command
- Large Dot Matrix LCD Display with Backlight

Features
- Analysis for Single Phase and Balanced 3 Phase Systems

Prova 6830A+6801/6802/6803/3006/3009 Power and Harmonics Analyzer

- Current Measurement:(TRMS)
  Prova 6830A+6801: 0.04A ~ 100A
  Prova 6830A+6802: 0.4A ~ 1000A
  Prova 6830A+6803: 10.0A ~ 3000A
  Prova 6830A+3006: 20.0A ~ 6000A
  Prova 6830A+3009: 6.0A ~ 1200A
- Display of 35 Parameters in One Screen (3P4W)
- Voltage and Current Waveform
- Average Demand (AD in W, KW, MW)
- Maximum Demand (MD in W, KW, MW) with Programmable Period
- Harmonic Analysis to the 99th Order
- Display of Waveform with Peak Values (1024 Samples / Period)
- Analysis of Total Harmonic Distortion (%THD-F)
- Graphic Phasor Diagram with 3 Phase System Parameters
- Capture 28 Transient Events (Time + Cycles) with Programmable Threshold (%)
- DIP, SWELL, and OUTAGE are included in transient events
- Calculate Unbalanced Current through Neutral Line (In)
- 512K Memory with Programmable Interval (Sampling time from 2 to 3000 seconds, 17,000 records for 3P4W system)
- Large Dot Matrix LCD Display with Backlight
- Optical isolated RS232C to USB Interface
- Built-in Timer and Calendar for Data Logging
- Conductor size:
  Prova 6801: 30mm
  Prova 6802: 55mm
- Flexible probe length:
  Prova 6803: 610 mm/24 in
  AFLEX 3006: 920 mm / 36 in
  AFLEX 3009: 460mm / 18in
- Range selection: manual
  Prova 6801: 1A, 10A, 100A
  Prova 6802: 10A, 100A, 1000A
  Prova 6803: 300A, 3000A
  AFLEX 3006: 600A / 6000A
  AFLEX 3009: 120A, 1200A

Features
- Analysis for 3P4W, 3P3W, 1P2W, 1P3W
- True RMS Value (V123 and I123)
- Active Power (W, KW, MW, GW)
- Apparent and Reactive Power (KVA, KVAR)
- Power Factor (PF), Phase Angle(Φ)
- Energy (WH, KWH, KVARH, PFH)

WM-01/03 Power Analyzer / Datalogger

Features
- Solution for better PF
- 4 LCD Displays with W, PF, V, A
- Easy Plug-in and Test
- RS-232 Computer Interface
- Software for:
  1. Phase Angle
  2. Apparent Power
  3. Reactive Power
  4. Kilo- Watt Hour
  5. Estimated kilo-Watt per day/ month/year
  6. Energy Cost/Kwh
  7. Serial Number/record print out of your appliance measured
- **Watt:** (Auto Range, AC+DC) 200/ 2,000 ($\pm$ 0.9%rdg $\pm$ 5dgts)
- **Voltage:** (True RMS, Auto Range , AC+DC) 200/750 ($\pm$ 0.5%rdg $\pm$ 4dgt)
- **Current:** 2/20A(AC+DC)
- **Frequency:** 40-20KHz

Prova 6200 Graphic Power Quality Analyzer

Features

- ◆ Analysis for Single Phase and Balanced 3 Phase System
- ◆ True RMS Value (V and I)
- ◆ Active Power (W, KW, MW, GW)
- ◆ Apparent Power (VA, KVA, MVA)
- ◆ Reactive Power (VAR, KVAR, MVAR)
- ◆ Power Factor (PF), Phase Angle (Φ)
- ◆ Energy (WH, KWH, KVARH, PFH)
- ◆ Programmable VT (1 to 3000) Ratios
- ◆ Display of Overlapped Voltage and Current Waveform
- ◆ Maximum Demand (MD in W, KW, MW) with Programmable Period
- ◆ Harmonic Analysis (V and I) to the 50th Order
- ◆ Display of 25 Harmonics in One Screen

- ◆ Waveform Datalogging of 32, 64, 128 or 256 points/cycles
- ◆ Analysis of Total Harmonic Distortion (%THD-F)
- ◆ Graphic Phasor Diagram
- ◆ Transient detection and logging of Swell, Dip and Outage(Max. 32000 events)
- ◆ 50,000 Records with Programmable Interval (1 to 6,000 seconds)
- ◆ Real-time Output of Waveform, Power Parameters and Harmonics at Command
- ◆ Large Dot Matrix LCD Display with Backlight
- ◆ Optical Isolated RS-232C Interface
- ◆ Smart Datalogging to Save Battery Power for Long-term Monitoring
- ◆ Built-in Calendar Clock for Data Logging

Power Clamp Meter

Prova 6600 3 Phase/1 Phase Power Clamp

Features

- ◆ 3 φ 4W, 3 φ 3W, 3 φ Balanced, 1 φ 2W, 1 φ 3W
- ◆ AC+DC 2000KW (3 φ), 1200KW (1 φ)
- ◆ Dual Display W +PF, KVA +KVAR, A+Hz, V+Hz, V+A
- ◆ Phase Angle, Phase Sequence Indication
- ◆ AC+ DC 600V, 2000A, Power Factor
- ◆ AC/DC Auto Detection

- ● **AC+DC True Power:** 0~99.99/100~999.9/ 1,000~1,200KW
- ● **AC + DC Voltage:(TRMS)** 0~200V/200~500V/500~600V
- ● **AC+DC Current:(TRMS)** (± 1.5%rdg ± 5dgts) 0~200/200~500/500~2,000A

IEC 1010
CAT III 600V
CAT II 1000V

Prova 6601 3 Phase PF Power Clamp

Features

- ◆ PF (3 φ 4W, 3 φ 3W,1 φ 2W)
- ◆ AC+DC 2000KW (3 φ), AC+DC 1200KW (1 φ)
- ◆ Dual Display W+PF,KVA +KVAR, A+V,V+Hz
- ◆ AC+DC 600V, 2000A
- ◆ AC/DC Auto Detection
- ◆ Memory of 4 records
- ◆ Auto range

- ● **AC + DC True Power:** (± 2%rdg ± 0.05KW) 0~99.99/100~999.9/ 1000~1,200KW
- ● **AC + DC Voltage:(TRMS)** 0~200V/200~500V/500~600V
- ● **AC+DC Current:(TRMS)** (± 1.5%rdg ± 5dgts) 0~200/200~500/500~2,000A
- ● **AC + DC KVAR:** 0~99.99/100~999.9/ 1,000~1,200KW

IEC 1010
CAT III 600V
CAT II 1000V

TES-3063 Datalogging Power AC/DC Clamp Meter

Features

- ◆ True Power/Apparent/Power Factor
- ◆ RS-232 interface to talk with PC
- ◆ Dual display KW+PF, KVA+PF, V+A, A+Hz, V+Hz
- ◆ Datalogging Capacity (4000 Reading)
- ◆ Peak/Max/MIN function
- ● True Power & Apparent Power Measurement:
  V<130V, A<150A/V>130V, A <150A/V<130V, A>150A/V > 130V, A>150A

- ● **DCA/ACA/DCV/ACV:**
  DCA & ACA-1000A
  DCV & ACV-600V
- ● **Peak Indication:**
  20~80A, 80~1000A
  20~80V, 80~600V
- ● **Resistance:** 10KΩ
- ● **Frequency (Hz):** 1KHz/5KHz

CB (UL)

IEC 61010-1
CAT III 600V
CAT II 1000V

TES-3079M Power/HVAC Trms Clamp Meter (1000A)

CE (UL)

Features

HVAC Application :

- ◆ Check current draw in motors and compressors.
- ◆ Use MAX/MIN/Recording in the temperature mode to assess efficiency.
- ◆ Test run/start capacitors.
- ◆ Confirm low voltage control signals.
- ◆ Measure current draw of flame safeguard device
- ◆ Confirm power sources
- ◆ Analyze temperature and voltage or current data with the aid of the time stamp.
- ◆ Insulation test up to 100M Ω.

Electrical Application :

- ◆ Check for energized circuits and balanced loads.
- ◆ 1 φ / 3 φ (3P3W/3P4W) Power analyzer.
- ◆ Evaluate electrical contacts.
- ◆ Capture motors in-rush current readings.
- ◆ Determine peak power demand periods.
- ◆ Verify line voltage stability.
- ◆ Monitor motors and other loads for excess heat.
- ◆ Check motors run/start capacitor values.
- ◆ ACA Inrush current
- ◆ Check 3 Φ phase sequence.

Sound Level Meters

TES-1350A Sound Level Meter

Features

- ◆ 0.1dB Resolution
- ◆ Maximum hold function
- ◆ AUX OUTPUT JACKS

- ● **Range:**
  A LO (Low) Weighting: 35~100dBA
  HI (High) Weighting: 65~130dB
  C LO (Low) Weighting: 35~100dB
  C HI (High) Weighting: 65~130dB
- ● **Frequency:** 31.5Hz~8KHz
- ● **Dynamic:** 65dB
- ● **Display:** 4 digital
- ● **Accuracy:** ± 2dB

CE

TES ELECTRICAL ELECTRONIC CORP.

TES-1351B Sound Level Meter

Features
◆ 0.1dB Resolution
◆ Maximum hold function
◆ AUX OUTPUT JACKS

IEC 60672
Class 2

- **Range:**
  A LO (Low) Weighting: 35~90dB
  A HI (High) Weighting: 65~130dB
  C LO (Low) Weighting: 35~90dB
  C HI (High) Weighting: 65~130dB
- **Frequency:** 20Hz~8KHz
- **Dynamic:** 65dB
- **Display:** 4 digital
- **Accuracy:** ± 1.4dB(ref 94dB@1KHz)

TES-52A Sound Level Meter

IEC61672-1 :
 2002 Class 2

Features
◆ 0.1dB Resolution
◆ 60dB Dynamic range
◆ 30 to 130dB Measurement ranges
◆ A&C Frequency weighting
◆ Fast/Slow Time weighting
◆ Maximum/Minimum with Elapsed time
◆ Manual data memory and read

- **Measurement frequency range:** 31.5 Hz to 8KHz
- **Measurement level range:** 6 ranges in 10-dB step: 25~80dB, 30~90dB,40~100dB, 50~110dB, 60~120dB, 70~130dB
- **Manual data memory capacity:** 99 sets

TES-1352S Programmable Sound Level Meter

Features
◆ USB interface
◆ 16,000 Records Data logging function
◆ Real Time Clock with Calendar
◆ Auto Ranging

IEC 61672-1
Class 2

- **Frequency:** 31.5 HZ~ 8KHz
- **Level A/C weighting:** 30dB~130dB
- **Six Range:** 6 ranges in 10dB step, 30-80dB/ 40-90dB/50-100dB/60-110dB/ 70-120dB/80-130dB
- **Auto Range:** 30-130dB
- **Dynamic Range:** 50dB
- **Display:** 4 digit LCD
- **Accuracy:** ± 1.5dB

TES ELECTRICAL ELECTRONIC CORP.

TES-1353S Integrating Sound Level Meter

Features

◆ SPL, Leq, SEL, MaxL, MinL
◆ Wide linearity range of 100dB
◆ 32000 Records Data logging function
◆ USB Interface

CE
IEC 61672-1
Class 2

- **Function:**
  SPL, Leq, SEL, MaxL, MinL
- **Frequency:** 31.5 HZ~8KHz
- **Level A/C weighting:**
  30dB~130dB
- **Display:**
  4 digit LCD, 0.1dB resolution, updated every 0.5s
- **Accuracy:** ± 1.5dB

TES-1354/1355 Noise Dosi-Meter

Features

◆ Measures% Noise Dose/ Exposure Time/Sound Level
◆ Real Time Clock with Calendar
◆ RS-232 interface (1355)

CE
ANSI S1.25-1978

- **Range:** 70~140dBA (± 1.5dB)
- **Digital Display:**
  0.01~99.99% DOSE
- **Criterion Level:** 80, 84, 85, 90dB
- **Threshold Level:**
  70~90dB (1dB step)
- **Exchange Rate:**
  3dB, 4dB, 5dB or 6dB
- **High Level Detector:** 115dBA
- **Peak Flag:** 140dB

## TES-1357 Precision Sound Level Meter

Features

◆ 0.1dB Resolution
◆ Fast/Slow dynamic characteristic
◆ Range from 30~130dB
◆ A&C Frequency Weighting

CE
IEC 60651
Type2

- **Accuracy:** ± 1.5dB (ref 94dB)
- **Frequency Weighting:** A, C
- **Measuring Level:** 30~130dB
- **Range:**
  30~80dB, 50~100dB, 60~110dB, 80~130dB
- **Frequency:** 31.5 Hz~8kHz

TES ELECTRICAL ELECTRONIC CORP.

TES-1358C Sound Analyzer

Features

◆ For Delicate Sound Improvement (Sound Effect/Sound Environment)
◆ Compliant with IEC 61672-1 class 2 standard
◆ Real Time 1/1 (11 bands) & 1/3 (33 bands) octave analysis
◆ Measurement can be started by internal or external trigger.
◆ Data transfer using USB
◆ Dynamic range of 90dB
◆ Real time clock with calendar
◆ AC and DC output

● **Display:** TFT-LCD color display
● **Range:** 30dB to 130dB
● **Function:** Lp, Leq, L_E, Lmax, Lmin
● **Frequency:** 12.5Hz to 20KHz
● **Frequency Weighting:** A, C and Z
● **Time Weighting:** Fast, Slow
● **1/1-1/3 Analyzer level range:** 5 ranges in 10dB step, 40-130dB / 30-120dB / 20-110dB / 10-100dB / 0-90dB
● **Memory Capacity:** 10,000 data (Sound level mode)

TES-1358E Sound Analyzer

Features

◆ For Delicate Sound Improvement (Sound Effect/Sound Environment)
◆ Compliant with IEC 61672-1 class 1 standard
◆ Real Time 1/1 (11 bands) & 1/3 (33 bands) octave analysis
◆ Measurement can be started by internal or external trigger.
◆ Comparator output to trigger external devices
◆ Data transfer using USB
◆ Dynamic range of 90dB
◆ AC and DC output
◆ Micro SD Card 4GB

● **Display:** Super high-contrast backlight TFT-LCD color display
● **Range:** 30dB to 130dB
● **Function:** Lp, Leq, LE, Lmax, Lmin, L05, L10, L50, L90, L95
● **Frequency:** 12.5Hz to 20KHz
● **Frequency Weighting:** A, C and Z
● **Time Weighting:** Fast, Slow, τ =10ms, Impulse
● **Measurement level range:** 5 ranges, 20-90dB / 20-100dB, 20-110dB / 30-120dB / 40-130dB
● **Memory Capacity:** Manual ─ 250 data sets, Auto ─ 250 blocks on micro SD CARD 4GB

TES-1359 Sound Level Meter
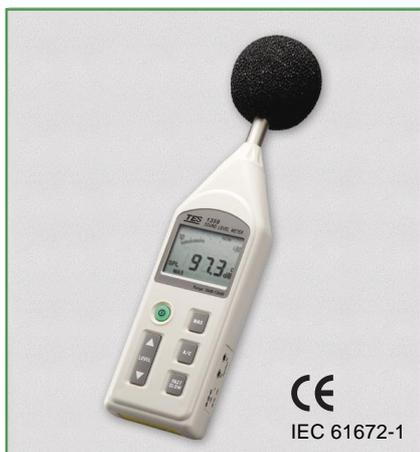
Features

◆ Complies with IEC 61672-1 standard
◆ Dynamic range: 60dB
◆ Five ranges (30 to 130 dB)
◆ A&C Frequency weighting
◆ Fast / Slow time weighting
◆ Maximum hold
● **Accuracy:** ± 1.4dB@1KHz
● **Measurement Level:** 30dB to 130dB
● **5 ranges in 10 dB step:** 30~ 90dB, 40 ~ 100dB, 50 ~ 110dB, 60 ~ 120dB, 70 ~ 130dB
● **Linearity range:** 60dB
● **Frequency:** 31.5Hz to 8KHz
● **Frequency weight:** A and C
● **Time weight:** Fast and Slow
● **Display Warning function:** Overrange Indicator: Displayed at the upper limit
   Underrange indicator: Displayed at the lower limit
● **Analog AC/DC output:** 1Vrms (at full scale), 10mVDC/dB

IEC 61672-1

TES ELECTRICAL ELECTRONIC CORP.

Tachometer

RM-1000 Digital Optical Tachometer

Features

- Range: 10.0-100,000RPM
- Direct Light-Beam Sensing
- Memory Recall/Data Hold
- 5 digits LCD display
- Auto range
- Sampling rate: 1 sec.($>$ 60 rpm)
  $>$ 1 sec.(10~60 rpm)

- **Accuracy:** $\pm$ 0.01% $\pm$ 1dgts
- **Resolution:** 0.1/1/10 RPM
- **Measuring Distance:**
  50mm~300mm
- **Max distance:** 300mm
- MAX/ MIN/STAND-BY
- Data Hold
- **Time Base:** 12.0MHz Quartz
  Crystal

RM-1500/1501 Digital Tachometer

RM-1502

Features

- 5 Digits LCD Display
- Auto Range
- Measuring Distance 50~300 mm
- Combination for non-contact & contact measurements
- RS-232 (RM-1501)
- Resolution(Non-Contact): 0.01/0.1/1rpm
- Max / Min / Hold, True Average
- Sampling time:
  0.7 sec.($>$ 60 rpm),
  $>$ 1 sec.(10~60 rpm)

Speed (Non-contact)

- **RPM:** 10~99,990
- **rps (Hz):** 0.2000~2,000.0

Speed (Contace)

- 10.000~29,999RPM

Event Counter

- 0-99999

Optional Accessory:

- RM-1502, Contact Adaptor

Thermometers

TES-1300/1303 Thermometer

Features

- Max Hold Function
- Data Hold Function
- Aux output JACKS
- T1-T2 differential measurement

- **Range:**-50°C~1300°C/-50°F~1,999°F
- **Sensor:** K Type thermocouple
- **Input:** Single (1300), Dual (1303)
- **Display:** 3-1/2 digit LCD
- **Resolution:**0.1°

TES ELECTRICAL ELECTRONIC CORP.

TES-1304 Printing Thermometer

Features

◆ Type K.J.E.T. Thermocouple Input
◆ Dual Channels with multifunctions
  (T1, T2 & T1-T2)
◆ Built-in thermo printer with
  programmable Time interval setting
● **Range:**
  Type K: -200~1333°C(-328~2431°F)
  Type J: -200~760°C(-328~1400°F)
  Type E: -200~703°C(-328~1297°F)
  Type T: -200~400°C(-328~752°F)
● **Display:** 4 1/2 LCD Digital Display

TES-1306 K/J Thermometer

Features

◆ K/J Type thermocouple input
◆ Auto ranging
◆ Data Hold
◆ Maximum/Minimum reading
◆ Multi-channels scanner
  (T1 → T2 → T1-T2)

● **Range:**
  Type K: -200°C~1370°C/-328°F~2498°F
  Type J: -200°C~760°C/ -328°F~1400°F
  Sensor: K/J Type thermocouple
● **Display:** 3-1/2 digit LCD

TES-1307 Datalogging K/J Thermometer

Features

◆ K/J Type thermocouple input
◆ Auto ranging/Data Hold
◆ 15,000 Record Data logging Capacity
◆ Maximum/Minimum/Average reading
◆ RS-232 Interface (Software Include)
◆ Dual display LCD with Clock
● **Range:**
  Type K: -190°C~1333°C/ -310°F~2431°F
  Type J: -190°C~760°C/ -310°F~1400°F
● **Resolution:**
  0.1°C for -190°C~1000°C
  1°C for 1000°C~1333°C
● **Condition:**
  0°C~40°C below 80% R.H.
  -10°C~60°C below 70% R.H.

TES ELECTRICAL ELECTRONIC CORP.

TES-1311A Thermometer

Features

◆ Switchable Resolution 0.1˚ /1.0˚
◆ With ˚C & ˚F switching
◆ Data Hold Function
◆ Room Temperature compensated
◆ Data Memory 150 readings
  (Memory/Read)
● **Range:** (± 0.1%rdg ± 1˚C/2˚F)
  -50˚C~1,300˚C/-58˚F~1,999˚F
● **Sensor:** K Type thermocouple
● **Input:** Single
● **Sampling Rate:** 2.5 times/sec.
● **Resolution:** -50˚C~199.9˚C:0.1˚C
            -59˚F~199.9˚F:0.1˚F
            Others:1˚C/1˚F

TES-1312A Triple Display Thermometer

Features

◆ Type "K" thermocouple input
◆ Autorange resolution 0.1˚ /1˚
◆ With ˚C, ˚F & K switching
◆ Offset (Relative) /Data Hold Function
◆ MAX/MIN/AVG with elapse time function
◆ Room Temperature compensated
◆ T1 & T2 dual points display
◆ T1-T2 differential measurement
◆ Backlight Large LCD display
● **Range:** -200˚C~1,370˚C/-328˚F~1,999˚F
● **Resolution:**-200˚C~199.9˚C:0.1˚C
            -328˚F~199.9˚F:0.1˚F
            Others:1˚C/1˚F
● **Accuracy:**-200~1,000˚C (-328~1832˚F): ±(0.3%rdg+1˚C/2˚F)
  1,000~1370˚C (1832~1,999˚F): ±(0.5%rdg+1˚C/2˚F)
● **Sampling Rate:** 2.5 times/sec.

TES-1314 K, J, E, T, R, S, N Thermometer

Features

◆ High accuracy with K, J, E, T, R,
  S, N type
◆ Dual input, T1/T2 temp. display
◆ Warning beeper with HI/LO
  setting
◆ MAX/MIN with TIME, MAX-MIN,
  AVG, HOLD
◆ ˚C/˚F/K User-Selective
◆ Back-Light LCD display

● **Range:**
  K: -150.0~+1,372.0˚C(-200.0˚F~+2,501.0˚F)
  J: -150.0~+1,090.0˚C(-200.0~+1994.0˚F)
  E: -150.0~+870.0˚C(-200.0~+1598.0˚F)
  T: -150.0~+400.0˚C(-200.0~+752.0˚F)
  R,S: 2.0~+1767.0˚C(+35.0~+1999.9˚F)
  N: -150.0~+1300.0˚C(-200.0~+1999.9˚F)
● **Resolution:**
  J, K, T, E and N Type: 0.1˚C/˚F/K
  R and S Type: 1.0˚C/˚F/K ≧ 200˚
● **Sampling Rate:** One time per 1.5 sec.

TES-1315/1316 Datalogging Thermometer K, J, E, T, R, S, N

Features

- ◆ High accuracy with K, J, E, T, R, S, N type
- ◆ Dual input, T1/T2 temp. display. (1316)
- ◆ 7,500 Datalogging capacity
- ◆ Warning beeper with HI/LO setting
- ◆ MAX/MIN with TIME, MAX-MIN, AVG, HOLD
- ◆ °C/°F/K User-Selective
- ◆ Back-Light LCD display

- ● **Range:**
  K: -150.0~+1,372.0°C(-200.0°F~+2,501.0°F)
  J: -150.0~ +1,090.0°C(-200.0~+1994.0°F)
  E: -150.0~+870.0°C(-200.0~+1598.0°F)
  T: -150.0~+400°C(-200.0~+752.0°F)
  R,S: 2.0~+1767.0°C(+35.0~+1999.9°F)
  N: -150.0~+1300.0°C(-200.0~+1999.9°F)
- ● **Resolution:**
  J, K, T, E and N Type: 0.1°C/°F/K
  R and S Type: 1.0°C/°F/K ≧ 200°
- ● **Sampling Rate:** One time per 1.5 sec.

TES-1317/1317R Platinum RTD Thermometer
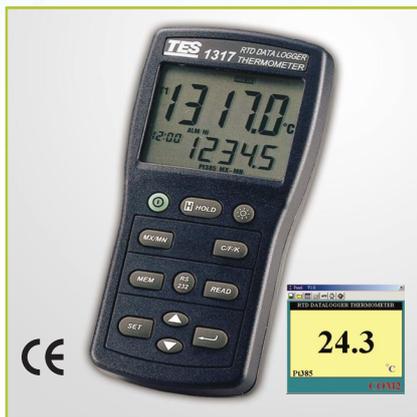
Features

- ◆ Pt 3916/3926/385 RTD standard
- ◆ Stand-alone logging function 97 sets
- ◆ 4,200 Datalogging capacity (1317R)
- ◆ Warning beeper with HI/LO setting
- ◆ Time setting
- ◆ MAX/MIN with TIME, MAX-MIN, AVG Hold
- ◆ °C/°F/K User-Selective
- ◆ Back-Light LCD display

- ◆ RS-232 (TES-1317R)
- ● **Range:**
  (± 0.05 % rdg ± 0.5°C/0.9°F)
  -190°C~790°C (-310°F~1454°F)
- ● **Resolution:** 0.1°C/0.1°F/0.1K
- ● **Sampling Rate:** 1.5 time/sec.

TES-1318 Platinum RTD Thermometer (Dual Channels)

Features

- ◆ Pt 3916/3926/385 RTD standard
- ◆ Stand-alone logging function 40 sets
- ◆ Warning beeper with HI/LO setting
- ◆ Time setting
- ◆ MAX/MIN with TIME, MAX-MIN, AVG Hold
- ◆ °C/°F/K User-Selective
- ◆ Back-Light LCD display

- ● **Range:**
  (± 0.05 %rdg ± 0.5°C/0.9°F)
  Pt385: -190~790°C (-310~1454°F)
  Pt3916: -190~615°C (-310~1139°F)
  Pt3926: -190~615°C (-310~1139°F)
- ● **Resolution:** 0.1°C/0.1°F/0.1K
- ● **Sampling Rate:** One time per 1.5 sec.

TES ELECTRICAL ELECTRONIC CORP.

TES-1319A Thermometer (Type K)

Features
◆ Switchable Resolution 0.1˚ /1˚
◆ With ˚C & ˚F switching
◆ Data Hold Function
◆ Memory/Read function
◆ Filp-up stand

● **Range:**
  -50˚C~1300˚C, -58˚F~1999˚F
● **Resolution:**
  -50˚C~199.9˚C⋯0.1˚C
  -59˚F~199.9˚F⋯ 0.1˚F
  Others⋯1˚C/1˚F
● **Accuracy:**
  -50~0˚C (-58~0˚F):±(0.5%+1˚C/2˚F)
  0~1,000˚C(0~1832˚F):±(0.3%+1˚C/2˚F)
  1,000~1,300˚C(1,832~1,999˚F):
  ±(0.5%+1˚C/2˚F)
● **Sampling:** 2.5 times/sec.

TES-1384 4 Channels Thermometer / Datalogger

Features
◆ Isolated Input Protection of 350Vp-p between any two inputs
◆ 0.05% Accuracy.
◆ K, J, E, T, R, S, N, L, U, B, C Thermocouple Input
◆ Display T1, T2, T3 & T4 Simultaneously
◆ Programmable Hi-Lo alarm for 4 inputs
◆ MAX, MIN, Max-Min & AVG values

◆ Independent Input Setup (type of thermocouple, Hi-Lo alarm values)
◆ Data Memory and Read function (99 sets)
◆ Datalogging Capacity (512 KB)
◆ Software with USB cable

TES-1326S/1327/1327K Infrared / K Type Thermometer

Features
◆ ˚C / ˚F Selectable / 0.1˚C / 0.2˚F Resolution
◆ Built-in Laser Sighting / Backlight LCD display
◆ Auto Power off (approx. 15 sec.)
◆ Laser targeting.
◆ Maximum / Minimum function.
◆ Data memory and read function. (50 readings)
◆ Emissivity adjustable. (1327/1327K)
◆ Audible and visible alarm. (1327/1327K)
◆ Dual thermometer and Dual display. (1327K)

Infrared Thermometer
● **Display:** Backlight LCD display
● **Measurement Range:** -35˚C ~ 500˚C (-31˚F ~ 932˚F)
● **Resolution:** 0.1˚C / 0.2˚F
● **Accuracy:** 2% reading or 2˚C
● **Spectral Response:** 6 ~ 14 μ m
● **Field of View:** 12:1 optics ratio with a 1" min target
● **Emissivity:** 0.17 ~ 1.00 (1326S : fixed 0.95)
● **Sighting:** Laser marker < 1mw

K-Type Thermometer (TES-1327K)
Measurement Range : -150˚C ~ 1350˚C (-238˚F ~ 1999˚F)
Resolution : 0.1˚C / 1˚C，0.1˚F / 1˚F

Function	Resolution	Range	Accuracy
˚C	0.1˚C	-150˚C ~ 0˚C	±(0.2% rdg + 1.0˚C)
		0˚C ~ 200˚C	±(0.1% rdg + 1.0˚C)
	1˚C	200˚C ~ 1350˚C	±(0.2% rdg + 2˚C)
˚F	0.1˚F	-238˚F ~ 32˚F	±(0.2% rdg + 2˚F)
		32˚F ~ 200˚F	±(0.1% rdg + 2˚F)
	1˚F	200˚F ~ 1999˚F	±(0.2% rdg + 4˚F)

TES ELECTRICAL ELECTRONIC CORP.

TES-1327K-USB IR Thermometer

Features

- ◆ Dual Thermometer and Dual display.
- ◆ USB Interface / Software
- ◆ Datalogging Capacity 21,000 set
- ◆ Emissivity adjustable.
- ◆ ˚C / ˚F Selectable / 0.1˚C / 0.2˚F Resolution
- ◆ Built-in Laser Sighting / Backlight LCD display
- ◆ Laser targeting.
- ◆ Maximum / Minimum function.
- ◆ Data memory and read function. (99 readings)
- ◆ Audible and visible alarm.

Infrared Thermometer

- ● **Display:** Backlight LCD display
- ● **Measurement Range:** -35˚C ~ 500˚C (-31˚F ~ 932˚F)
- ● **Resolution:** 0.1˚C / 0.2˚F
- ● **Accuracy:** ± 2% reading or ± 2˚C
- ● **Spectral Response:** 6 ~ 14 μ m
- ● **Field of View:** 12:1 optics ratio with a 1" min target
- ● **Emissivity:** 0.17 ~ 1.00
- ● **Sighting:** Laser marker < 1mw

K-Type Thermometer

Measurement Range : -150˚C ~ 1350˚C (-238˚F ~ 1999˚F)
Resolution : 0.1˚C / 1˚C，0.1˚F / 1˚F

Function	Resolution	Range	Accuracy
˚C	0.1˚C	-150˚C ~ 0˚C	±(0.2% rdg + 1.0˚C)
		0˚C ~ 200˚C	±(0.1% rdg + 1.0˚C)
	1˚C	200˚C ~ 1350˚C	±(0.2% rdg + 2˚C)
˚F	0.1˚F	-238˚F ~ 32˚F	±(0.2% rdg + 2˚F)
		32˚F ~ 200˚F	±(0.1% rdg + 2˚F)
	1˚F	200˚F ~ 1999˚F	±(0.2% rdg + 4˚F)

Transformation Device

VT-01 Transformation Device

Features

- ◆ Display Measurement Reading on the LCD panel without Personal Computer
- ◆ Easy, Simple and cost effective
- ◆ Public information display from measuring instrument

Idea for

- ◆ CO2 Meter
- ◆ Temperature Humidity Meter
- ◆ Sound Level Meter

Specifications

- ◆ **Input:** RS-232 serial port (Male)
- ◆ **Output:** VGA display port
- ◆ **AC Adapter:** 5V, 2.5A

Watt Clamp Meter

Prova 400 AC/DC TRMS WATT Clamp Meter

Features:

- ◆ True Power, AC 240KW, DC 240KW
- ◆ True RMS ACA 400A, ACV 600V
- ◆ DCA 400A, DCV 400V
- ◆ Large 3 3/4 digits LCD(4032 counts)
- ◆ Fast Bargraph Display (30times/sec.)
- ◆ Max/Min, Date Hold

- ◆ Relative Measurement
  - ● **AC/DC Power:** 40/240 KW
  - ● **AC Voltage:** 600 V
  - ● **DC Voltage:** 400 V
  - ● **Frequency:** 1~100KHz
- ◆ 23mm Jaw diameter
- ◆ One touch zero for DAC, DCW

IEC 1010
CAT Ⅲ 300V
CAT Ⅱ 600V

Optional Accessories:

Model No.	Description
BS4	pH4 Buffer Solution for TES-1380
BS7	pH7 Buffer Solution for TES-1380
CS-150	Conductivity probe for TES-1381
PAPER 300XP	Replacement Paper, 10 rolls/box for Prova 300XP / 310XP
PH-200	pH Electrode for TES-1380
PT-100	Temperature Probe for TES-1380
PT-100A	RTD Probe for TES-1317, TES-1318
RFT-01	Reflective Tape for RM-1000, RM-1500, RM-1501
RID45-234	Cable Remote Identifier Kit for TES-45, #2, #3, #4
RID45-5678	Cable Remote Identifier Kit for TES-45, #5, #6, #7, #8
RID46-234	Cable Remote Identifier Kit for TES-46, #2, #3, #4
RID46-5678	Cable Remote Identifier Kit for TES-46, #5, #6, #7, #8
RM-1502	Contact Adaptor for RM-1500, RM-1501
SOLAR 15	DC Probe for Prova 1011
SOLAR 21	AC Clamp for Prova 1011
TES-3092CP	DCA Current Adaptor for TES-33
TES-3620-2	Test Leads for TES-33
TES-3620-3	Test Leads for TES-33, Alligator Type
THP-38	Thermo Paper for TES-1304, TES-1362
TL-088-1	Test Lead for TES-3063
TL-700 CLIP	Alligator Clip for Prova 700 / 710 / 200A / 210 / 218
TL-200 KELVIN CLIP	Kelvin Clips for Prova 200A / 210 / 218
TL-700 KELVIN CLIP	Kelvin Clips for Prova 700 / 710
TL-700 SPRING LEADS	4-Wire double prod Test Leads for Prova 700 / 710
TL-B15-1 (90˚)	Test Lead for TES-2620, TES-2700, TES-2712, TES-2730, TES-2732A
TL-B15-1 (180˚)	Test Lead for TES-3010, TES-3012
TL-B25-1	Test Lead for TES-1500
TL-D36	Test Lead for TES-1600
TL-E33	Test Lead for TES-3660, TES-3663
TL-E45-1	Test Lead for TES-1601, TES-1604
TL-E53	Test Lead for TES-1800
TL-E57-1	Test Lead for TES-3040, TES-3050, TES-3074, TES-3079M, TES-3082, TES-3091N, TES-3092, TES-3095T, TES-3096T
TL-E61	Test Lead for TES-32
TL-F47A	Microphone Extension Cable (5M)
TL-F47B	Microphone Extension Cable (10M)
TL-F54	Test Lead for TES-1605, TES-1700
TP-K01	Temperature "Bead" Probe
TP-K02	Temperature "Immersion" Probe
TP-K03	Temperature "Surface" Probe

Test Instruments
CE ISO 9001 UL TUV

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