190 Series General Specifications & Accessories

GENERAL SPECIFICATIONS

Weight:	530g
Operating Temp:	0°C to 45°C (-32°F to 113°F)
Storage Temp:	-20°C to 60°C (-40°F to 140°F)
Relative Humidity:	0% to 80%: (0°C to 35°C/32°F to 95°F)
	0% to 70%: (45°C to 55°C/95°F to 131°F)
Temp Coefficient:	0.1x (Specified Accuracy) per °C for temperature <18°C to>28°C
Power Supply	9 Volt Alkaline Battery

STANDARD ACCESSORIES

A190	Protective Boot
A085	UL Listed Silicone Test Lead Set with Alligator Clips (Screw On)
A104	0.5 Amp/600V UL Ceramic Fuse for 100 series DMMs (2 each)
A110	10 Amp/600V UL Ceramic Fuse for 100 series DMMs (2 each)

OPTIONAL ACCESSORIES

A100	Carrying case	
A191	RS232 cable & software for optically isolated IR port	
A251	AC Clamp-On Accessory for DMMs	0-400 Amps
A254	Low Current AC/DC Adapter for DMMs	10 Amp range, 0.001 resolution
		60 Amp range, 0.01 resolution
A256	AC/DC Clamp-on Accessory for DMMs	0.1 A resolution
A296	AC/DC Clamp-on Accessory for DMMs	0-1,000 Amps
A301	Temperature Adapter with GK11M and battery, 0.1°C or °F resolution	
A620	500psi Pressure/Vacuum Adapter for DMMs	

Distributed by:

To learn about the entire line of TPI products visit:

www.tpi-thevalueleader.com L TAW 190 SERIES-1004
Copyright © 2004 Test Products International, Inc.

---

190 Series 50,000 Count True RMS DMMs

tilt stand on all 190 series DMMs

separate battery & fuse compartment
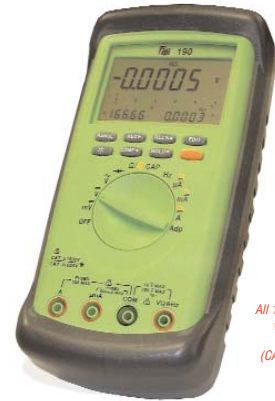
LIMIT-ED LIFE-

All 190 series DMMs come with protective boot and silicone rubber (CAT IV 600V) test leads.

CE c(UL)us LISTED

Features

- **Large 50,000 count display** increases resolution and improves accuracy (1.7" x 2.75", 43mm x 70mm)

- **Triple Display** shows more than one reading simultaneously

- **51 Segment Analog Bar Graph** to catch fast AC fluctuations

- **Back Light** (LED Type) allows viewing in any light condition

- **Auto Range** automatically selects the best range for the measurement

- **Separate battery and fuse compartment** for easy replacement

- **True RMS** needed to accurately measure nonsinusoidal AC voltage and current waveforms found on controls and circuits

- **Increased safety** with Silicone rubber 1,000V CAT III, 600V CAT IV, 10A test leads (CE & cUL listed)

- **Capacitance** measures the value of capacitors

- **Auto Power Off** DMM will automatically power down after approximately 15 minutes of inactivity to extend battery life. Disable Auto Power Off: Hold down the REC button and turn the meter on.

- **Diode Test** displays approximate forward bias voltage

- **Continuity and buzzer** to check for opens and shorts

ADDITIONAL FEATURES AVAILABLE ON 192 & 194 ONLY

- **Time Stamp Logging** logs up to 100 readings (min/max/avg) with a time stamp

- **Pulse Width** measures the duration of a pulse

- **Duty Cycle** displays the total "on" time of a component

- **Inductance** measures the value of inductors and coils

- **Conductance** measures the ability of a material to conduct electricity

- **Temperature** for use in HVAC, electrical, and electronic applications

- **dB Readout** displays a voltage level without regard for impedance

The Value Leader™

visit us at www.tpi-thevalueleader.com

Function Labels (left page)

- **optically isolated RS232 interface port**
- **TRIPLE DISPLAY:** shows more than one reading simultaneously
- **large 50,000 count display**
- **REL%:** relative; display a measured value as a percentage.
- **RANGE:** automatically sets the best range for measurement
- **REC:** record minimum, maximum & average reading
- **EDIT:**
- **BACKLIGHT:** LED type; allows viewing in any light condition
- **HOLD:** data hold
- **COMP:** compare
- **RESISTANCE, CONTINUITY & BUZZER**
- **DIODE TEST:** displays approximate forward bias voltage
- **ADP:** adapter position on range selector switch to directly use optional accessories
  - A251
  - A254
  - A296
  - A301
  - A312
  - A620

  Please refer to back for accessory descriptions

Actual size 4.5"w x 8.0"h x 2.0"d

Features (for all models)

Basic DC accuracy:	0.05%
Compare:	Compares stored value with measured value for matching components
Data Hold:	Enables the reading on the display to be frozen. The two hold system holds the previous reading when a new one is received
Relative:	Display a measured value as a percentage of a stored value. Useful for component testing
Record:	Record Minimum, Maximum, and average reading.
Auto Range:	Automatically selects the best range for measurement
Continuity & Buzzer:	Check for opens and shorts
RS232:	Optically isolated software optional
Safety:	Designed to meet cULus 3111 and IEC1010
LCD:	Large 50,000 count display
Triple Display:	Shows more than one reading simultaneously
Bar Graph	51 Segments Analog Bar Graph to catch fast AC fluctuations
Back Light:	Allows viewing in any light condition
True RMS:	Needed to accurately measure nonsinusoidal AC voltage and current waveforms found on controls and circuits
Test Leads:	Silicone rubber 1,000 CAT III, 600V CAT IV, 10A
Auto Power Off:	DMM will automatically power down after approximately 15 minutes of inactivity to extend battery life. Disable Auto Power Off: Hold down the REC button and turn the meter on
Diode Test:	Displays approximate forward bias voltage

Specification

Specification		190 (resolution)	192 (resolution)	194 (resolution)
AC Volts	Max. reading	750	750	750
	Frequency	(45Hz to 20kHz)	(45Hz to 20kHz)	45Hz to 20kHz)
	Best resolution	(0.0001V)	(0.0001V)	(0.0001V)
DC millivolts	Max. reading	500	500	500
	Best resolution	(0.001mV)	(0.001mV)	(0.001mV)
DC Volts	Max. reading	1,000	1,000	1,000
	Best resolution	(0.0001V)	(0.0001V)	(0.0001V)
DC Microamps	Max. reading	5,000	5,000	5,000
	Best resolution	(0.01uA)	(0.01uA)	(0.01uA)
DC Milliamps	Max. reading	500	500	500
	Best resolution	(0.001mA)	(0.001mA)	(0.001mA)
DC Amps	Max. reading	10	10	10
	Best resolution	(0.0001A)	(0.0001A)	(0.0001A)
AC Microamps	Max. reading	5,000	5,000	5,000
	Best resolution	(0.01uA)	(0.01uA)	(0.01uA)
AC Miliamps	Max. reading	500	500	500
	Best resolution	(0.001mA)	(0.001mA)	(0.001mA)
AC Amps	Max. reading	10	10	10
	Best resolution	(0.0001A)	(0.0001A)	(0.0001A)
Ohms	Max. reading	500	500	500
	Best resolution	(0.01 ohm)	(0.01 ohm)	(0.01 ohm)
Kohms	Max. reading	500	500	500
	Best resolution	(0.0001 Kohm)	(0.0001 Kohm)	(0.0001 Kohm)
Mohms	Max. reading	50	50	50
	Best resolution	(0.0001 Mohm)	(0.0001 Mohm)	(0.0001 Mohm)
Frequency Hz	Max. reading	500	500	500
	Best resolution	(0.001Hz)	(0.001Hz)	(0.001Hz)
Frequency KHz	Max. reading	500	500	500
	Best resolution	(0.0001kHz)	(0.0001kHz)	(0.0001kHz)
Inductance mH	Max. reading	no	300	300
	Best resolution		(0.01)	0.01
Temperature (maximum)			2,462°F	2,462°F
Resolution (maximum			0.1°F	0.1°F
Capacitance	Max. reading	20,000	100	20,000
Micro farads	Best resolution	(0.001)	(0.001)	(0.001)
Conductance			50nS	50nS
Duty Cycle			0.1 to 99.9%	0.1 to 99.9%
Pulse Width			500mS, 1S	500mS, 1S
dB			60dB	60dB
Fuse		600V 500mA	600V 500mA	1000V 440mA
		600V 10A	600V 10A	1000V 11A
Agency Approval:	CEIC61010	CAT II 1,000V	CAT II 1,000V	CAT III 1,000V
		CAT III 600V	CAT III 600V	CAT IV 600V
	cULus3111	pending	pending	pending