

Specifications

ACCURACY

Accuracies apply for 1 year 19°C to 25°C. Temperature coefficient outside these limits is <0.1 x quoted range accuracy per °C.

DC Volts

Range	Accuracy	Resolution	
100mV	0.06% ± 3 dig.*	10uV	* after null
1000mV	0.04% ± 2 dig.	100uV	
10V	0.06% ± 2dig.	1mV	
100V	0.06% ± 2 dig.	10mV	
1000V	0.06% ± 2 dig.	100mV	

Input Impedance: 10MΩ//<100pF, except for Vdc plus Vac measurement when the 1MΩ ac attenuator is in parallel with the 10MΩ dc attenuator.

Maximum Input: 1kV DC or AC peak, any range.

NMR: >60dB at 50/60Hz.

1kΩ Unbalanced CMR: >90dB at DC/50Hz/60Hz.

Maximum Allowable AC Voltage While Measuring DC Voltage

Range	Max AC
100mV, 1000mV	6V
100V	200V

Range	Max AC
10V	80V
1000V	1000V

The table shows the maximum AC voltage (45Hz-50kHz) that can be applied without affecting the accuracy of the DC measurement.

AC Volts (True RMS)

Range	Accuracy			Resolution
	45Hz - 10kHz	10kHz - 20kHz	20kHz - 50kHz	
100mV	0.2% ± 20 dig	1% ± 20 dig.	-	10µV
1000mV		0.2% ± 20 dig	1% ± 50 dig	100µV
10V			1% ± 80 dig	1mV
100V			1% ± 80 dig	10mV
750V		-	100mV	

Accuracy specifications apply for readings between 1,000 and 12,000 counts. Additional error at crest factor = 3 typically 0.2%.

Extended frequency performance (typical):

100mV range <-1dB at 50kHz; 1000mV, 10V and 100V ranges <-1dB at 100kHz.

Input Impedance:

1MΩ//<100pF

Maximum Input:

750V rms, 1000V peak; any range.

1kΩ Unbalanced CMR:

>60dB at DC/50Hz/60Hz

(AC + DC) Voltage Accuracy

Total measurement error will not exceed the sum of the separate ac and dc accuracy specifications plus 1 display count.

Resistance

Range	Accuracy	Resolution
100Ω	0.1% ± 3 dig.	10mΩ
1000Ω	0.08% ± 2 dig.	100mΩ
10kΩ	0.09% ± 2 dig.	1Ω
100kΩ	0.09% ± 2 dig.	10Ω
1000kΩ	0.12% ± 2 dig.	100Ω
10MΩ	0.5% ± 2 dig.	1kΩ
20MΩ	0.5% ± 2 dig.	10kΩ

Maximum Input: 300V DC or AC rms, any range.

Maximum Open Circuit Voltage: 4V

DC Current

Range	Accuracy	Resolution
1mA	0.1% ± 3 dig.	100nA
100mA	0.1% ± 3 dig.	10uA
10A	0.3% ± 3 dig. to 1A	1mA
10A	1.0% ± 3 dig. to 5A	1mA
10A	3% ± 10 dig to 10A	1mA

Maximum Input: mA ranges - 500mA DC or AC rms, 250V, fuse protected.

10A range - 10A DC or AC rms, 250V, fuse protected.

Typical Voltage Burden: mA ranges - <250mV

10A range - <500mV

AC Current (True RMS)

Range	Accuracy (45Hz - 10kHz)	Resolution
1mA	0.35% ± 20dig.	100nA
100mA	0.35% ± 20 dig.	10uA
10A	0.5% ± 20 dig. to 1A	1mA
10A	1.2% ± 20 dig to 5A	1mA
10A	3% ± 20 dig. to 10A	1mA

Accuracy specifications apply for readings between 1,000 and 12,000 counts. Additional error at crest factory = 3 typically 0.2%.

Maximum Input: mA ranges - 500mA DC or AC rms, 250V, fuse protected.

10A range - 10A DC or AC rms, 250V, fuse protected.

Typical Voltage Burden: mA ranges - <250mV

10A range - <500mV

Frequency

Range	Accuracy	Resolution
100Hz	0.01% ± 1 dig.	0.01Hz
1000Hz		0.1Hz
10kHz		1Hz
100kHz		10Hz

Range: 10Hz to 100kHz
Input sensitivity: Better than 30m Vrms (100mV range); better than 10% of range for all other Vac and Iac ranges.

Capacitance

Range	Accuracy	Resolution
10nF	2% ± 5 dig.	10pF
100nF		100pF
1uF		1nF
10uF		10nF
100uF	5% ± 5 dig.	100nF

Continuity and Diode Test

Continuity: 1000Ω range selected; audible tone sounds for impedance <10Ω.
Diode Test: Test current approximately 0.5mA; displays voltages up to 1.2V.
Maximum Open Circuit Voltage: 4V
Maximum Input: 300V DC or AC rms, any range.

DISPLAY

Display Type: High contrast LCD. Main display 4½ digits 17mm high, secondary display 5 digits 10mm high.
Scale Length: 4¼ digits (12000 counts) in most modes.
Annunciators: LCD annunciators for all ranges, functions and program modes.
Reading Rate: Varies with function, maximum 4/sec.
Overrange: Display flashes 12000 if input too great for range.
Overflow: Displays -Or- if calculated result overflows display.

COMPUTING FUNCTIONS

Null (Relative) Stores current reading and subtracts it from future readings.
Ω Null: Additional non-volatile function for nulling test lead resistance.
Hold: Reading is frozen
T-Hold (Touch & Hold): Reading is frozen when stable.
dB: Displays measurement in dBm relative to 600Ω or other user-entered impedance.

AC plus DC:	The RMS value of the ac plus dc parts of the signal is calculated and displayed.
% Deviation:	Displays % deviation from entered reference value.
Ax+B:	Linear scaling of results, with offset.
Limits:	Reading displayed with HI, LO, or PASS with respect to user-defined high and low limits.
Min/Max:	Minimum and maximum reading stored.
Power:	Calculates V^2/R and displays in Watts with respect to a user-defined impedance.
VA:	Calculates and displays Volts x Amps.
Data Logger:	Manual or automatic storage of 100 measurements. Storage interval 1s to 9999s, manually from keyboard, or by remote contact closure.

INTERFACES

Full remote control facilities are available through the RS232 (all models) or GPIB (alternative mains-only version) interfaces.

RS232:	Baud rates 2400, 9600 or 19200. Complies fully with the ARC (Addressable RS232 Chain) interface standard. Address selectable from the front panel. Operational only when the meter is powered from the AC input.
GPIB (IEEE-488):	The meter can be specified with an IEEE-488 interface. This is an alternative version which operates only from AC mains; IEEE-488 is not a retrofittable option. Address selectable from the front panel.

POWER REQUIREMENTS

AC Input:	220V-240V or 110-120V AC $\pm 10\%$, 50/60Hz, by internal adjustment; 5VA max. Installation Category II.
Batteries:	6 x C cells, disposable or rechargeable.
Battery Life:	>150 hours from alkaline cells; typically 70 hours from rechargeable cells.

GENERAL

Operating Range:	+5°C to + 40°C, 20% to 80% RH
Storage Range:	-20°C to + 60°C
Environmental:	Indoor use at altitudes up to 2000m, Pollution Degree 1.
Safety:	Complies with EN61010-1.
EMC:	Complies with EN61326.
Size:	260(W) x 88(H) x 235(D)mm, excl. handle and feet.
Weight:	2.0kg.