

SPECIFICATIONS

AS AN AUTORANGING VOLTMETER

RANGE: ± 10 microvolts per digit (10mV full range) to ± 100 volts full range in five decade ranges. 100% overranging to 1999 on all ranges.

ACCURACY (20°C to 30°C): $\pm(0.2\%$ of reading $+0.1\%$ of range).

READING TIME: Less than 4 seconds to within 0.1% of final reading, except where limited by source characteristics.

ZERO DRIFT: Less than (50 microvolts $+0.01\%$ of range) per °C, and less than 100 microvolts per 24-hour period after two hours warm-up (during which drift does not exceed 500 microvolts).

NOISE: ± 10 microvolts with input shorted.

INPUT IMPEDANCE: Greater than 2×10^{14} ohms shunted by 20 picofarads. Input resistance may also be selected in decade steps from 10 to 10^{11} ohms.

NORMAL MODE REJECTION RATIO:

RANGE	NMRR	MAX. AC
10mV	94dB	2V p-p
100mV	80dB	2V p-p
1 V	80dB	20V p-p
10 V	60dB	20V p-p
100 V	60dB	200V p-p

For voltage of line frequency and at least 10% of full range dc reading. Maximum total input 200 volts peak ac + dc.

COMMON MODE REJECTION RATIO: Greater than 140 dB at line frequency with 300 volts peak-to-peak from circuit Lo to chassis ground, up to 10^{11} ohm source resistance, and at least 10% of full range dc reading.

AS AN AMMETER

RANGE: $\pm 10^{-16}$ ampere per digit (10^{-13} ampere full range) to ± 0.1 ampere full range in 13 decade ranges. 100% overranging to 1999 on all ranges.

ACCURACY (20°C to 30°C):

Range Switch Setting	Accuracy
10^{-1} to 10^{-7} A	$\pm(0.5\%$ of reading $+0.1\%$ of range)
10^{-8} A	$\pm(2\%$ of reading $+0.1\%$ of range)
10^{-9} to 10^{-11} A	$\pm(5\%$ of reading $+0.1\%$ of range)

NOISE: 2×10^{-15} ampere peak-to-peak on the most sensitive range, exclusive of alpha particle disturbance.

OFFSET CURRENT: Less than 5×10^{-15} ampere.

COMMON MODE REJECTION: 300 volts peak-to-peak at line frequency from circuit Lo to chassis ground on any range and with at least 10% of full range dc reading will not degrade accuracy more than 0.3% of range. (Equivalent to 140 dB CMRR).

AS AN OHMMETER

RANGE: 1 ohm per digit (1000 ohms full range) to 10^{14} ohms full range in 12 decade ranges. 100% overranging to 1999 on all ranges.

ACCURACY (20°C to 30°C):

Range Switch Setting	Accuracy
10^5 to $10^7\Omega$	$\pm(0.5\%$ of reading $+0.1\%$ of range)
$10^8\Omega$	$\pm(2\%$ of reading $+0.1\%$ of range)
10^9 to $10^{12}\Omega$	$\pm(5\%$ of reading $+0.1\%$ of range)

METHOD: Two-terminal constant-current. Current equals reciprocal of OHMS range.

AS A COULOMB METER

RANGE: $\pm 10^{-15}$ coulomb per digit (10^{-12} coulomb full range) to $\pm 10^{-5}$ coulomb full range in 8 decade ranges. 100% overranging to 1999 on all ranges.

ACCURACY (20°C to 30°C): $\pm(5\%$ of reading $+0.1\%$ of range) on all ranges.

AS A CONSTANT CURRENT SOURCE

RANGE: 8 currents in decade steps from 10^{-5} to 10^{-12} ampere using OHMS ranges. Hi terminal is positive.

COMPLIANCE: Up to 200 volts.

ACCURACY (20°C to 30°C): $\pm 0.5\%$ from 10^{-5} to 10^{-7} ampere. $\pm 2\%$ at 10^{-8} ampere. $\pm 5\%$ from 10^{-9} to 10^{-12} ampere.

LOAD REGULATION: Better than 0.1% for loads up to 10^{11} ohms.

GENERAL

DISPLAY: 3 digits plus 1 overrange digit; decimal position, polarity, and overload indication; 5 readings per second. Depending on sensitivity setting, 3 least-significant digits blink or blank when overload condition exists.

POLARITY SELECTION: Automatic

SENSITIVITY SELECTION: Automatic: Voltage sensitivity selection is fully automatic. Sensitivity selection is automatic two decades above and below range switch setting for resistance, charge, and most current measurements. Manual: Front panel switch. Remote: Programmable with the Model 6162 Output/Control (optional).

ISOLATION: Circuit Lo to chassis ground; greater than 10^9 ohms shunted by 500 picofarads (decreasing to 10^8 ohms at 30°C and 70% relative humidity). Circuit Lo may be floated up to ± 1000 volts with respect to chassis ground.

ANALOG OUTPUTS: Unity Gain: For dc inputs, output is equal to input within 20 ppm for output currents of 1mA or less. In the fast mode output polarity is opposite input polarity. 1 volt: ± 1 volt at up to 1mA with respect to circuit Lo for full range input; 100% overrange capability. In the normal mode the output polarity is opposite input polarity.

OPERATING ENVIRONMENT: 20°C to 30°C, 0% to 70% relative humidity. 10°C to 50°C with derated specifications. Storage: 0°C to 70°C.

CONNECTORS: Input: Teflon-insulated triaxial.

Analog Outputs: Unity gain, 1 volt chassis, Lo, and guard; binding posts. BCD Output: Internal connectors for interfacing the Model 6162 Isolated Output/Control.

DIMENSIONS; WEIGHT: Style M 3-1/2 in. half-rack, overall bench size 4 in. high x 8-3/4 in. wide x 15-3/4 in. deep (100 x 220 x 400 mm); net weight, 11 pounds (4,8 kg).

POWER: Line Operation: 90-125 or 180-250 volts (switch selected), 50-60 Hz, 9 watts.

ACCESSORIES SUPPLIED: Model 6011 Input Cable: 3 ft. (1m) triaxial cable with triaxial connector and 3 alligator clips.

NOTE: All accuracy and gain specifications are exclusive of noise and zero offsets. Accuracies include temperature coefficient. On the 5% accuracy ranges as an Ammeter, Ohmmeter, and Constant Current Source the coefficient is less than 0.2% per °C.