

Model 610C/610CR Specifications

AS A VOLTMETER

RANGE: 0.001V full scale to 100V in eleven 1× and 3× ranges.

ACCURACY: ±1% of full scale on all ranges, exclusive of noise and drift.

ZERO DRIFT: <1mV per 24 hours; <150μV per °C after 30-minute warm-up.

METER NOISE: ±25μV maximum with input shorted on most sensitive range.

INPUT IMPEDANCE: >10¹⁴Ω shunted by 20pF. Input resistance may also be selected in decade steps from 10 to 10¹¹Ω.

AS AN AMMETER

RANGE: 10⁻¹⁴A full scale to 0.3A in twenty-eight 1× and 3× ranges.

ACCURACY: ±2% of full scale on 0.3 to 10⁻¹¹A ranges using the smallest available multiplier setting; ±4% of full scale on 3 × 10⁻¹² to 10⁻¹⁴A ranges.

METER NOISE: <±3 × 10⁻¹⁵A.

OFFSET CURRENT: <5 × 10⁻¹⁵A.

AS AN AMPLIFIER

INPUT IMPEDANCE: >10¹⁴Ω shunted by 20pF. Input resistance may also be selected in decade steps from 10 to 10¹¹Ω.

OUTPUTS: Unity-gain output and either voltage or current recorder output.

UNITY-GAIN OUTPUT: At DC, output is equal to input within 10ppm, exclusive of noise and drift, for output currents ≤100μA. Up to 1mA may be drawn for input voltages ≤10V. Output polarity is the same as input polarity.

VOLTAGE RECORDER OUTPUT: ±3V for full scale input. Internal resistance is 3kΩ. Output polarity is opposite input polarity.

GAIN: 0.03, 0.1, etc. to 3000.

FREQUENCY RESPONSE (within 3db): DC to 40kHz at a gain of 1 and lower, decreasing to DC to 100Hz at maximum gain. Full output response limited to 3kHz on any gain.

NOISE: <3% rms of full scale at gain of 3000, decreasing to 1% at gains below 100.

CURRENT RECORDER OUTPUT: ±1mA for full scale input, variable ±5% with 1400Ω recorders.

AS AN OHMMETER

RANGE: 100Ω full scale to 10¹⁴Ω in 25 linear 1× and 3× ranges.

ACCURACY: ±3% of full scale on 100 to 10¹⁰Ω ranges using the largest available multiplier setting; ±5% of full scale on 3 × 10¹⁰ to 10¹⁴Ω ranges.

AS A COULOMBMETER

RANGE: 10⁻¹³C full scale to 10⁻⁵C in seventeen 1× and 3× ranges.

ACCURACY: ±5% of full scale on all ranges. Drift due to offset current does not exceed 5 × 10⁻¹⁵C per second.

GENERAL

POLARITY: Meter switch selects left-zero (positive or negative) or center-zero scales. Output polarity is not reversed.

CONNECTORS:

Input: Teflon-insulated UHF type; ground binding post.

Voltage or current output: Amphenol 80-PC2F.

Unity gain output: Binding posts.

POWER: 105–125V or 210–250V (switch selected), 50–1000Hz, 10W.

LINE STABILITY: A 10% change in line voltage will cause <10μV meter deflection on all ranges.

DIMENSIONS, WEIGHT: Model 610C: 270mm high × 170mm wide × 255mm deep (10.5 in × 6.625 in × 10.0 in). **Model 610CR:** 135mm high × 485mm wide × 255mm deep (5.25 in × 19.0 in × 10 in). Net weight 5.4kg (12 lb).

ACCESSORIES SUPPLIED: Mating input and output connectors; binding post adapter.