

Electrometer

Model: 7010-EL-001

Application

Tyne has designed an economical fempto amp electrometer for use by OEMs to support instruments that normally use larger more expensive electrometers. The electrometer will accept currents in femptoamps and convert them to signals in millivolts.

Features

- Small size
- Very high sensitivity : down to 1 fA
- Will fit into OEM instruments
- Low cost



Description

The Tyne electrometer is a compact device that can measure currents as low as 1 fA at a floating potential of up to 100 VDC and convert it to 1 mV. The electrometer has a BNC input and 18 AWG flying lead outputs. The device requires +/- 15 VDC at 10mA power for operation. The lowest measurement range at this power is 1 fA – 15,000 fA mapped to 1 mV – 15,000 mV. The customer can select any measurement range from 1 fA to 1 mA over 15,000 units of measurement.

Weight	120 grams
Signal Input Range	1 to 15,000 fA (via BNC connector)
Signal Output	V(out) = 1×10^{12} times the signal input Can measure to 1mV = 1fA of input current 15 VDC to +15 VDC With respect to the Common Lead
Power Input	Red and Black leads +/-15VDC, 4 mA
Common float	Common floats between +100VDC to -100VDC with respect to ground
Noise	+/- 2 mVDC
Drift	+/- 2 mVDC over 24 hours 2 mVDC/degree C
Current to Voltage Accuracy	
Op Amp output resistance	<3.0 ohms
Frequency response	up to 10 Hz
Settling time	1 minute after first connection
Leakage current	< 1fA
Connections	BNC Input, flying leads power and output
Identification of Leads	Red - Power +/-15VDC Black - Power return White - Signal V(out) = 1×10^{12} (in) Orange - common +100VDC to -100VDC BNC - signal in
	Note: current input can float off of ground by +/- 100 VDC

Specifications

Physical Size	3 x 2.5 x 1/4 inches (76mm x 63.5mm x 19mm)
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