PDA-750

Features:

- Eight Decade Dynamic Range
- Less Than 1 pA Noise
- Maximum Resolution 1 part in +/- 20 000
- Rechargeable Ni-mH Batteries for Low Noise
- Digital Input of A/W value yields readout in Watts
- Computer Interface for easy control
- Background Cancelation of +/- 200 %
- Digitally set bias source from -14.00V to +14.00V

Photodiode Transimpdance Amplifier

The PDA-750 is a low noise, high gain, transimpedance amplifier designed to provide a direct digital readout of the current generated from a photodiode photomultiplier, or other similar current source. With full scale input ranges of ± 20 nA to ± 20 mA and a noise level of less than 1 pA, the PDA-750 offers superb dynamic range. Digital entry of an Amps/Watt setting via the front panel controls permits the instrument to display current measurements in units of Watts. The A/W setting ranges from 1.000 to 0.100. A variable bias supply is built into the instrument and may be switched into series with the device under test. It can supply digitally selectable voltages ranging from -14.00 to + 14.00 volts. The Offset control permits the nulling of background signals as large as ± 200% of the range currently in use. Rechargeable batteries isolate the unit from the mains and eliminate the effects of ground loops and/or power line noise that may be present during sensitive measurements. They will power the instrument for approximately 10 hours between charges. The unit may be operated normally while the batteries are charging.

The large 4 1/2 digit Liquid Crystal Display provides a maximum resolution of 1 part in ±20,000, thus enabling the detection of very small changes in the signal under test. An analog output port provides a ± 2 Volt, full-scale signal that is directly proportional to the display reading of ± 20,000 counts. The PDA-750 is equipped with a bidirectional Rs-232 serial port that enables the user to remotely control the instrument and read data and the instrument's status.

Applications for the PDA-750 include: serving as a precision readout device for Unity Quantum Efficient detectors such as the QED-150 manufactured by UDT Instruments, characterization of detector dark current, a readout interface for spectrometers, spectral calibration of detectors, a high gain precision transimpedance amplifier and as a sensitive, high precision optical power meter. The ease of use and convenience of this instrument is typical of TTI products. This instrument is covered by our standard two year limited warranty and guarantee of satisfaction. The PDA750 may be purchased with a 10DP Silicon Photodiode.

Ordering Information

PDA-750	Photodiode Amplifier
PDA-750-10DP	Photodiode Amplifier with 10DP Si Photodiode with Stand and Holder
10-DP	10DP Si Photodiode with Stand and Holder

Made In the USA

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PDA-750 Photodiode Transimpedance Amplifier

PDA-750 Photodiode Amplifier Specifications	
Full Scale Ranges	± 20 nA to ± 20 mA in decade steps, 1 pA maximum resolution
Maximum Input Current Without Damage	± 25 mA
Measurement Uncertainty	± 0.05 % of Reading ± 2 Least Significant Digits
A/W Setting	0.100 to 1.000 A/W in increments of .005 A/W
Input Impedance (DC to 2 KHz)	Zero Ohms Virtual Ground, Single Ended
Input Capacitance	25 pF
Output Impedance	100 Ohms
Bias Voltage	Selectable from - 14 V to + 14 V in 6.5 mv increments
Analog Output Port	± 2 V corresponds to ± 20 000 counts of range in use
Noise and Drift	< ± 1 pA/5 seconds on most sensitive range
Background Cancelation	± 200 % of the range in use
Analog Output Port Frequency Response	DC to 2 KHz, most sensitive range, DC to 40 KHz, least sensitive range
Rs-232 Interface	9600 Baud, N-8-1, 3 wire, Bidirectional, Cable Provided
Display	4 1/2 Digit LCD, 0.4 " high
Power Requirements	Rechargeable Ni-mH batteries provide approximately 10 hours of use
External Power Supply/Charger	85 - 250 VAC, 50-60 Hz, < 9 VA
Mains Adaptors	Adaptors provided for US, Continental Europe, Great Britain and Australia
Operating Temperature Range	0 - 40 C
Dimensions	5.5" W x 2.5" H x 8.5" L (140 x 63 x 215 mm)
Weight	2 Lbs., 0.9 kg (excluding external power supply)
Interconnecting cable supplied	Rs-232, 14 feet max length
CE Certification	Yes
Accessories Provided	Rs-232 cable, Power Supply/Charger, Operating Manual
Standard Warranty	Two years, Components and Workmanship, 30 Day Satisfaction Guarantee
Application Software Provided	Downloadable from TTI website, www.teratec.us

TTI reserves the right to change specifications without notice.

PDA750 with 10DP Photodiode

PIN 10DP Photo Voltaic Detector	
Active Area	Area (mm^2) 100, Dimensions (mm) 11.28ϕ
Peak Responsivity Wavelength typ. (λp)	970nm
Responsivity at λp	Min. 0.55 A/W and typ. 0.60 A/W
Capacitance (pF) OV	9800 Max.
Shunt Resistance (GΩ at -10mV	Min. 0.05 A/W and Typ. 0.2 A/W
NEP @ 0V and 970nm	6.8 3-15 typ.
Rise Time @ 0V and 632nm with 50Ω	1000 ns typ.
Temp range	Operating -40C to +100C, Storage -55C to +125C

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