

Optical to Electrical Converter

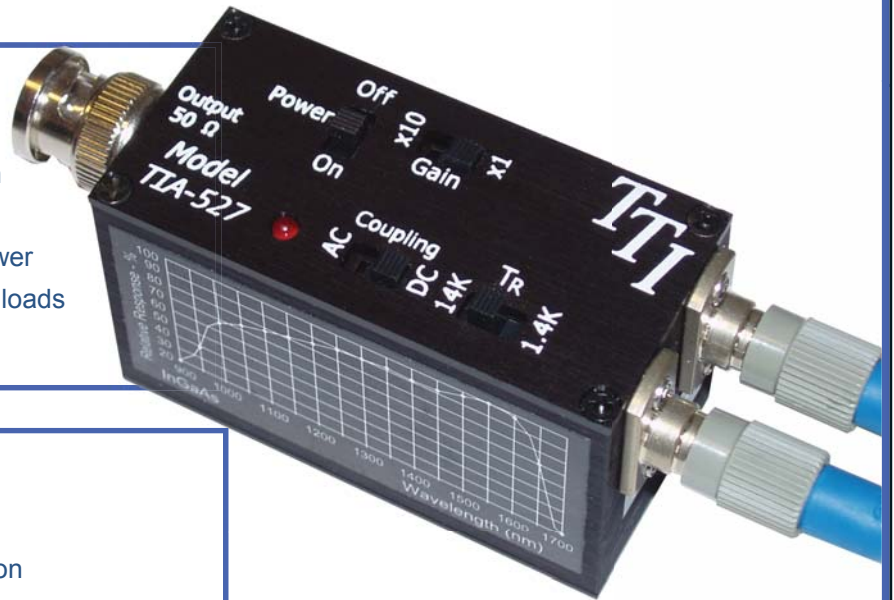
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Features:

- Matched InGaAs detectors
- DC to 125 MHz Analog Bandwidth
- Selectable Gain Settings
- Operates from Battery or Line Power
- Capability to drive 50 Ohm output loads
- Low Noise - 3.6 pW/root-Hz

Applications:

- Coherent Heterodyne Detection
- Polarization-Shift-Keying Modulation
- Spectroscopy
- Binary Differential Phase-Shift Keying (2-DPSK)



The TIA-527 balanced optical to electrical converter operates by subtracting the photo currents from two well-matched Indium Gallium Arsenide detectors. The result is then amplified and presented to the output port. Each of the optical signals causes the output to move with a different sense. Common mode signals (e.g. laser RIN noise) are effectively cancelled out.

With selectable gain settings and a bandwidth of DC to 125 MHz this receiver is useful for coherent heterodyne detection applications, differential polarization or phase shifted keying modulation systems, spectroscopy, and similar applications for which the ability to discern small variations in signal strength in two optical paths is critical.

Use of this converter can greatly simplify signal processing requirements downstream from the experiment. Gains of 1400 V/W, 14 000 V/W and 140 000 V/W may be selected as well as selectable AC inter-stage coupling.

The unit is designed to be conveniently mounted on an oscilloscope input BNC connector and may be powered by its internal battery or with the universal wall-mount supply that is provided with each unit.



Made In the USA

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TIA-527 Specifications

| | |
|--------------------------------------|--|
| Detector Type | Matched InGaAs |
| Analog Signal Bandwidth (-3 dB) | DC to 125 MHz (Tr = 1.4 K), DC to 35 MHz (Tr = 14 K) |
| Selectable Trans impedance settings | 1.4 K Ohms, 14 K Ohms |
| Gain Selections | X 1 or X 10 |
| Maximum Linear Input Power | 1.2 mW |
| Maximum Input power without damage | 10 mW |
| Spectral Response | 850 - 1700 nm |
| Output Impedance | 50 Ohms |
| Output Connector | Male BNC |
| Fiber Optic Connector | FC |
| Input Numerical Aperture | 0.29 |
| Inter-stage Coupling | DC or AC (100 Hz Low Frequency Cutoff) |
| Output Offset Voltage | +/- 0.1 Volt |
| Noise Level | 3.6 pW/ root-Hz |
| Maximum Output Voltage | 4 V pk-pk, no load, 2 V pk-pk with 50 Ohm Load |
| Power Requirements | Power Requirements 9 V Battery or supplied universal wall-mount power supply |
| Battery Life | Approximately 30 hours, (no load) |
| Wall-mount Supply Power Requirements | 95-260VAC, 50 - 60 Hz, 16 VA Max. |
| Mains Connectors Supplied | North America, British, Continental Europe, Australian |
| Dimensions (mm) | 63 L x 30.5 W x 30 H |
| Weight | 5.6 oz (0.16 Kg) |
| LED Annunciators Provided | Power On |
| Operating Temperature Range | 0 - 40 C |
| Standard Warranty | Two Years, Component and Workmanship, 30 Satisfaction Guarantee |
| Accessories Supplied | Transit Case, Universal Power Supply, 9 V ULTRALIFE Lithium Battery, Manual |

TTI reserves the right to change specifications without notice.

**We welcome the challenge of custom applications.
Call, Fax or e-mail us with your requirements.**



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