

OT-301

Versatile Position Sensing Amplifier

For: Duolateral • Tetralateral • Quad
One Dimensional • BiCell



Features

- X, Y Analog Position Output Voltages
- Sum Output
- Wide Dynamic Range: 0.1 μ A to 1.5 mA
- DC to 15kHz
- Compatible With All Position Sensing Detectors
- Zero Offset/Nulling
- Calibration Adjust
- Automatic Detector Bias
- Position Independent of Beam Intensity

OT-301 Position Sensing Amplifier. Plug-And-Play Convenience And Precision.

The OT-301 Position Sensing Amplifier is the easiest, most precise way to process the current output from any position sensing detector (PSD) on the market.

Plug-And-Play... Out Of The Box.

Truly plug-and-play, the OT-301 eliminates the hassle of having to design and build a custom amplification solution. Simply plug in the detector, switch on the power, and you're ready to go.

The benefit is greater convenience, efficiency and productivity... plus 100% compatibility with your future position sensing needs. The OT-301 pays for itself in no time.

Any Application... Any Detector.

From laser beam alignment, to beam centering, to mirror stabilization, the OT-301 is ideal for one- and two-dimensional absolute optical positioning or precision centering and nulling requirements.

Read the X-Y position output and SUM output from duolateral, tetralateral, single axis, quadrant and bi-cell PSDs.

Universal PSD Compatibility

One-Dimensional PSD

Common Anode
Common Cathode

Two-Dimensional PSD

Duolateral
Tetralateral Common Anode
Tetralateral Common Cathode
Pin Cushion Tetralateral-Silicon or Germanium

Quad and Bi-Cell

Common Anode
Common Cathode

X, Y Analog Output That's Directly Proportional To Beam Position.

The photocurrent generated from the position sensing detector is processed by the four-channel amplifier system using a position sensing algorithm. The result is X and Y analog outputs that are directly proportional to beam position—independent of changes in beam intensity.

Six Gain Settings: 0.1 μ A to 1.5 mA.

Six gain settings accommodate input current ranges from 0.1 μ A to 1.5 mA with a frequency response to 15 kHz. A convenient ZERO adjust enables you to electronically move the zero to a relative position on the PSD. A CAL adjust allows calibration to absolute position.

Lifetime Warranty.

So reliable is the OT-301, we back it with a comprehensive lifetime warranty... at no additional charge.

Four Transimpedance Amplifiers.

Four transimpedance amplifier channels and precision signal processing electronics deliver the performance necessary for close-tolerance angle, surface uniformity, flatness, parallelism and straightness measurement.

1. OT-301 Versatile Position Sensing Amplifier
2. OT-302 Display Module
3. PSM2-10 Position Sensing Module
4. Laptop Computer with BeamTrak software



Front Panel



- Gain:** Transimpedance gain 4×10^3 V/A to 4×10^6 V/A
Input current range 0.1 μ A to 1.5mA.
- H:** Input optical power exceeds range selected.
- L:** Input optical power lower than range selected. Set range switch at a position where both H/L indicators are off.

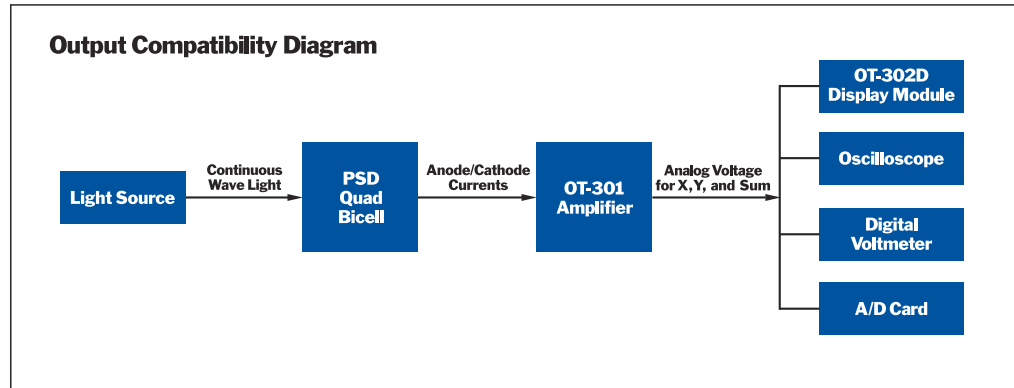
- On:** Power on Indicator.
- X,Y Cal:** Gain potentiometers to allow calibration of voltage output in terms of displacement ($\pm 10\%$ of reading).
- X,Y ZERO:** Enables the user to electronically move the zero to a relative position on the PSD (± 1 V each axis).
- PSD:** DB9 Position Sensing Detector Input.

Back Panel



- X Out:** Normalized X axis output (± 10 V).
- Y Out:** Normalized Y axis output (± 10 V).
- Sum:** Total amplified detector output proportional to light intensity (0-6V).

- CAL/ZERO:** CAL/ZERO "ON" allows use of the X, Y, Zero and X, Y CAL features. CAL/ZERO "OFF" disables these features.
- ON/OFF:** Power ON/OFF
- Power:** 12V DC 300mA AC adapter.



Specifications

Transimpedance Gain (V/A)	4×10^3 to 4×10^6
Input Current Range	0.1 μ A to 1.5 mA
Output Voltage	
Position X, Y	± 10 V
Sum	0 - 6V
Zero Offset (Offset Null)	± 1 V Each Axis
Calibration Adjust	$\pm 10\%$ of reading
Detector Bias	0V \pm 5V (depending on detector)
Linearity	$\pm 0.1\%$
Frequency Response	DC to 15 kHz (range dependent)
Gain-Bandwidth	G1 4×10^3 V/A 2.50×10^{-4} A/V 15 kHz G2 1.6×10^4 V/A 6.25×10^{-5} A/V 15 kHz G3 6.4×10^4 V/A 1.56×10^{-5} A/V 5 kHz G4 2.56×10^5 V/A 3.90×10^{-6} A/V 1.25 kHz G5 1.024×10^6 V/A 9.77×10^{-7} A/V 310 Hz G6 4×10^6 V/A 2.50×10^{-7} A/V 80 Hz
Output Connectors	BNC
Input Connector	9 Pin D Sub (DB9)
Power Requirement	± 12 V DC @ 300mA (AC Adapter)
Dimensions	1.5 x 5.5 x 6.00 inches (H x W x D)