

Model 301-DIV Position Sensing Amplifier

PRODUCT SUMMARY

The Model 301-DIV amplifier links position-sensing photodetectors with your indicators or controls.

This versatile system works with bi-cell detectors for nulling and centering operations, or with single-axis lateral-effect detectors for continuous position measurement. It also can normalize the differential output of two discrete detectors.

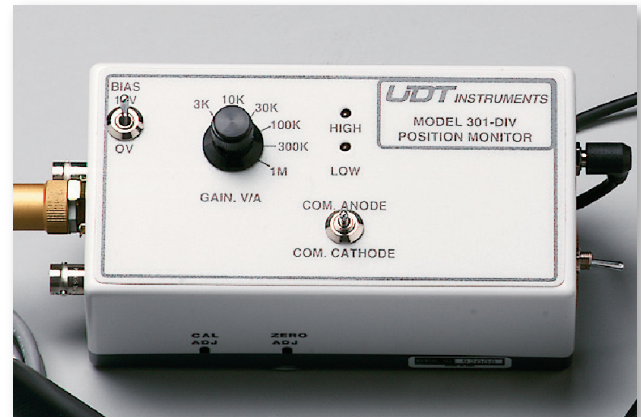
With two 301-DIVs you may perform dual-axis position sensing, since each amplifier accepts two input signals.

The Model 301-DIV's transimpedance amplifiers condition the detector signals, and the differential amplifiers generate an analog output proportional to position. Two Model 301-DIVs are required for quadrant or tetra-lateral detectors (the amplifier is incompatible with duo-lateral detectors).

The system does more than provide a differential output related to position. It also divides the output by the sum of the detector signals. This step cancels the effects of intensity variations in incident light.

The amplifier's six selectable input ranges accept detector signals from 3 μ A to 2 mA, and LED indicators display the selected range setting. User-adjustable output signals range to 10V maximum.

The Model 301-DIV has a frequency range of DC to 30 kHz.



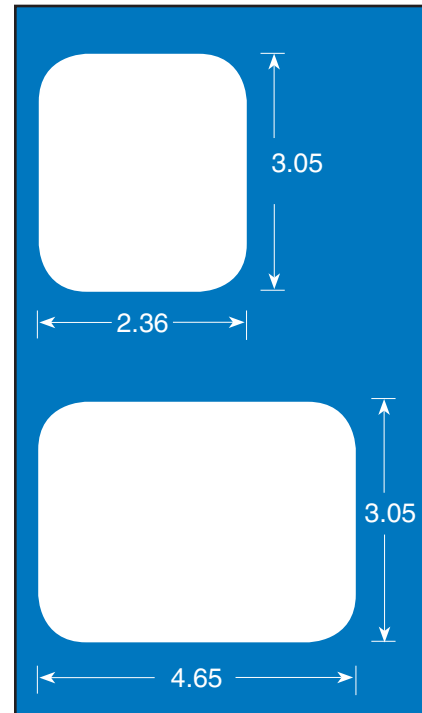
UDT INSTRUMENTS

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Phone (858) 279-8035 Fax (858) 576-9286
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SPECIFICATIONS

Input Current Range	Gain at sum output (V/A)
1 mA to 3 mA	3K
300 μ A to 1mA	10K
100 μ A to 300 μ A	30K
30 μ A to 100 μ A	100K
10 μ A to 30 μ A	300K
3 μ A to 10 μ A	1000K
Range Selector	6-position rotary switch
Detector Bias	Selectable 0 VDC (photovoltaic) or 15 VDC (photoconductive)
Detector Polarity	Selectable common anode or common cathode
Output Voltage	
Sum	$GAIN \times (I_D + I_E)$
Position	$\frac{(I_D - I_E)}{(I_D + I_E)} \times 10V$
Output Voltage Range	
Sum	0 to 10 V
Position	$\pm 10 V$
Output Connectors	BNC
Frequency Bandwidth	DC to 30 kHz
DC drift	10 mV/C $^\circ$ for 10V full scale
Noise, rms	2 mV for 10 V full scale
Output Impedance	100 ohm
Range Indicators	HI/LO signal-level LEDs aid in setting range switch to proper value
Output Adjustments	
CAL	Adjustable scale factor for position
Zero	Provides $\pm 2.5V$ zero offset
Operating Temperature	0 to 50 $^\circ$ C
Power Supply	CE-marked external supply
Accessories Supplied	Corrugated cardboard case



Model 301-DIV overall dimensions

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