Series 1000

Oscillator/Demodulator

The Series 1000 Oscillator/Demodulators provide complete electrical support for AC LVDTs. Working from an unregulated DC input, the modules generate a stable sinusoidal excitation voltage for the transducer. The LVDT's secondary voltages are converted into DC voltage by the module's phase sensitive demodulator. The demodulator has automatic phase synchronization which simplifies installation and setup by eliminating the need to make phase angle adjustments for each transducer. An active, three-pole filter in the final stage reduces output ripple while maximizing frequency response. Other features include zero and span controls, full encapsulation, threaded inserts for mounting, and self-locking terminal strips.
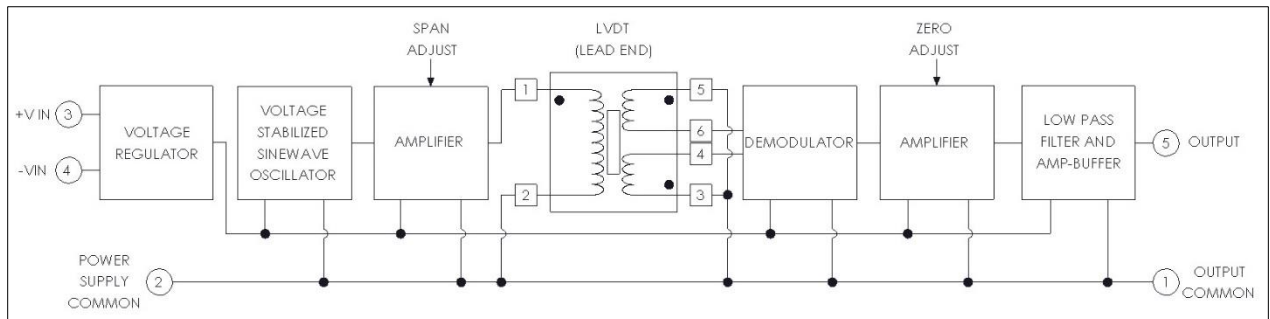

KEY FEATURES

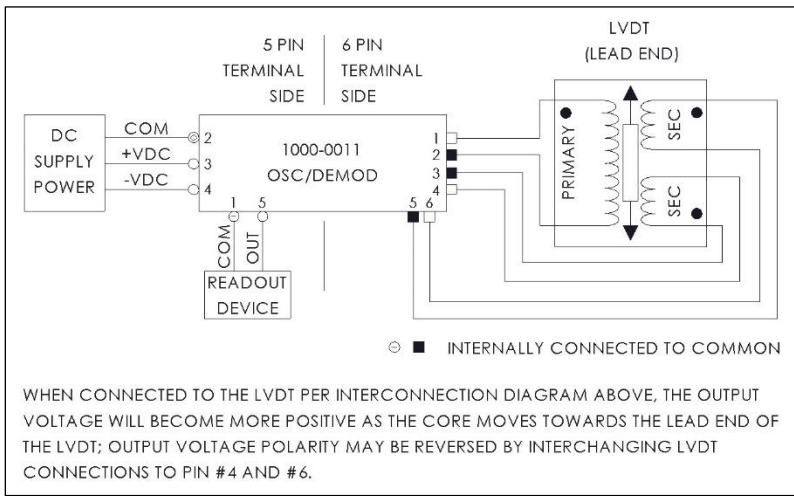| Works with 5 and 6 wire LVDTs	Internally Regulated
DC Voltage or 4-20mA Output	High Frequency Response

ELECTRICAL SPECIFICATIONS

INPUT POWER	Voltage	±14.5 to ±28VDC, Input polarity protected. NOTE: DUAL DC OUTPUT POWER SUPPLY REQUIRED.
	Current	±150mA MAX. plus LVDT current
OSCILLATOR OUTPUT TO LVDT	Voltage	4.25 to 5.75VRMS adjustable via 15 turn span control
	Current	Will drive LVDTs with primary impedance of 100Ω or greater. Short circuit and thermally protected
SIGNAL OUTPUT – VOLTAGE	Voltage	DC output is 2 times the RMS output of the LVDT. Output voltage is limited to ±12VDC.
MODELS 1000-0011, 1000-0012, 1000-0014	Current	±3mA without distortion
	Impedance	Less than 5Ω
	Ripple	0.015VRMS MAX.
SIGNAL OUTPUT – CURRENT	Current	4-20mA output with LVDT whose sensitivity is 0.5V/V (±10%). Min. Full Scale Output current: 2-22mA
MODELS 1000-0021, 1000-0022, 1000-0024	Load Impedance	>1x10^{10}Ω; Operation into loop impedance between 5 and 400Ω
ACCURACY	Non-Linearity	±0.05% MAX. over ±10VDC output
	Temp. Coefficient	< ±0.00025V/°F Zero, < ±0.01% output/°F Span
TEMPERATURE RANGE	Operating Temp.	+32°F to +158°F (0°C to +70°C)
	Storage Temp.	-67°F to +257°F (-55°C to +125°C)
ZERO ADJUSTMENT		±0.40 MIN. VDC via 15 turn zero control
TERMINAL CONNECTIONS		Friction terminals with self-locking screws, accepts up to #16 AWG wire

BLOCK DIAGRAM

TRANS·TEK INCORPORATED

INTERCONNECTION DIAGRAM

WHEN CONNECTED TO THE LVDT PER INTERCONNECTION DIAGRAM ABOVE, THE OUTPUT VOLTAGE WILL BECOME MORE POSITIVE AS THE CORE MOVES TOWARDS THE LEAD END OF THE LVDT; OUTPUT VOLTAGE POLARITY MAY BE REVERSED BY INTERCHANGING LVDT CONNECTIONS TO PIN #4 AND #6.
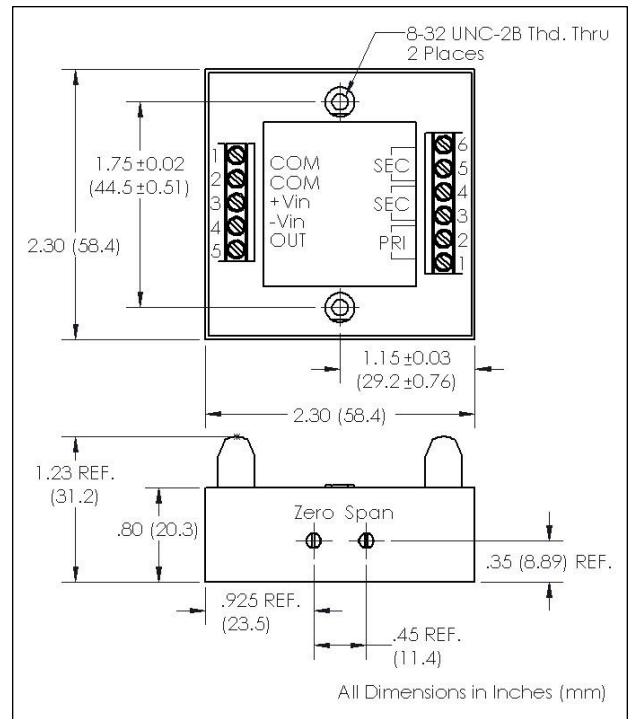
NOTE:
1. 4 wire LVDT connection requires access to the center connection of both secondaries. One wire from each of the secondaries and the primary will be tied together and attached to COMMON. The remaining three leads will be connected as shown in the connection.

DIMENSIONAL DIAGRAM

All Dimensions in Inches (mm)

VOLTAGE AND 4-20mA OUTPUT VERSIONS

The equivalent models for voltage and 4-20mA output are shown in the table below, along with frequency, phase angle and frequency response for each. All of these modules are physically identical and require the same dual bipolar voltage supply. The output pins 5 and 1 are used for the current output.

VDC MODEL	4-20mA MODEL	FREQUENCY, KHz ±10%	LVDT PHASE ANGLE	FREQUENCY RESPONSE, Hz
1000-0011	1000-0021	3	All	> 500
1000-0012	1000-0022	7	> 10 Degrees	> 1000
1000-0014	1000-0024	7	< 10 Degrees	> 1000

NOTE:
Current Loop impedance must be between 5 and 400Ω for linear operation.

SALES OPTION

OPTION #	DESCRIPTION
X0003	Provide special zero offset and/or sensitivity
X0005	Provide special cutoff frequency