

ATA-2001 LVDT Amplifier

True Analog Conditioner with Digital Calibration

The **ATA-2001 LVDT Amplifier** is a general purpose, AC line-powered LVDT/RVDT conditioner featuring state-of-the-art design principles. The new SMT (Surface Mount Technology) design uses an embedded microprocessor to generate a PWM-shaped sine wave and control all calibration functions. The processor is also employed in the demodulation, filtration and synchronization of the LVDT signal. All settings are stored in non-volatile memory for restoration on power up. Zero, Span and Phase adjustments are accomplished via the use of splashproof front panel pushbuttons and digital voltage dividers, eliminating the need for drift-inducing screw adjust potentiometers. All amplifier controls are accessible outside of the rugged aluminum enclosure.

The new ATA 2001 is CE certified, and is intended for the most rigorous, industrial applications. The ATA 2001 has been tested to the highest industrial standards for EMI, RFI and ESD.

The ATA 2001 is designed for universal compatibility with all 4, 5 and 6 lead LVDTs. A wide range of oscillator frequencies combined with two excitation voltages, 3.5 and 0.5 Vrms, provide maximum versatility. The high power carrier amplifier has more than twice the drive capability of previous designs. Able to power low impedance LVDTs at higher amplitudes, the ATA 2001 provides measurement resolutions beyond any product currently available.

The ATA 2001 is contained within a rugged, extruded aluminum housing. The one-piece design provides optimal amplifier performance under the most rigorous EMI and RFI conditions. An integral panel mounting system provides for convenient 1/8 DIN standard, panel installation. Pre-punched 19" rack adapters are available from Schaevitz® to accommodate up to eight amplifiers per adapter installation.



An auto fall-back synchronization feature

allows reliable master/slave operation, for prevention of amplifier cross talk, without the worry of sync signal loss. If the internal processor in a slave amplifier detects an unstable or missing sync signal, the internal clock will take over, continuing at the pre-selected nominal frequency. Upon restoration of a normal sync pulse, the oscillator will return to the slave mode.

FEATURES

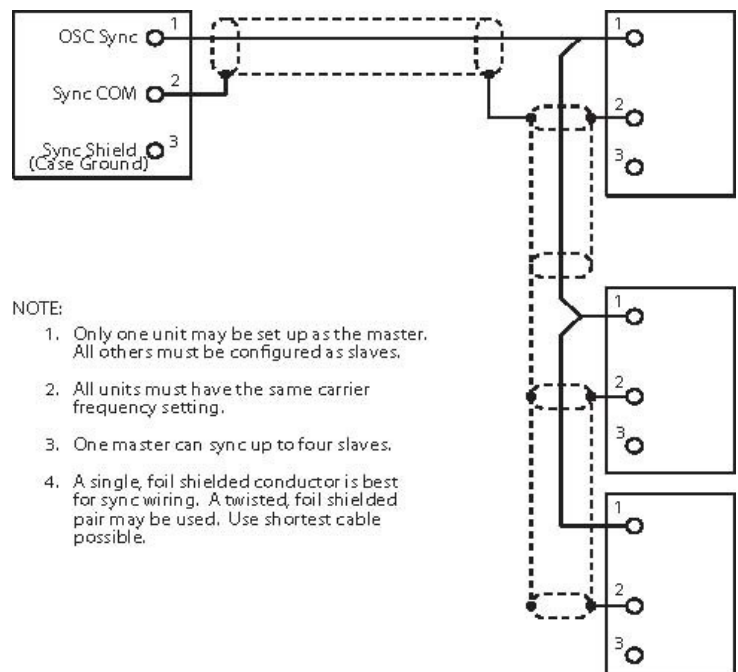
- 2.5, 5.0 and 10.0 kHz Switch Selectable Excitation
- Digital Filtering
- CE Certified
- Switch Selectable 115 or 220 VAC Operation
- Voltage and Current Outputs
- Microprocessor Controlled Calibration and Synchronization
- 1/8 DIN Standard Panel Mounting
- Splashproof Front Panel with Status LEDs

APPLICATIONS

- Control Valve Position Control
- Head Box Slice Lip Position Control
- Precision Metrology Labs
- Roller Gap Position Feedback

OPTIONS

- Rack adaptor holds up to 8 ATA's



ATA-2001 LVDT Amplifier

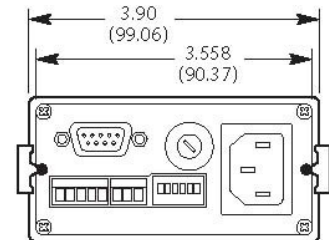
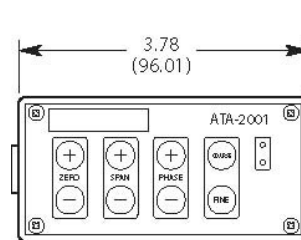
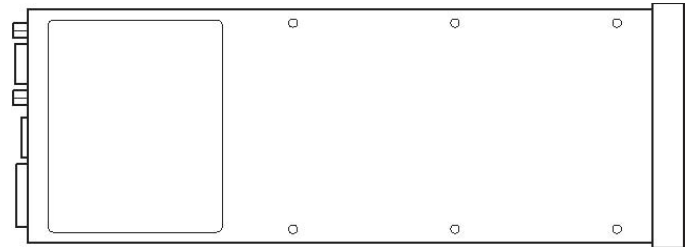
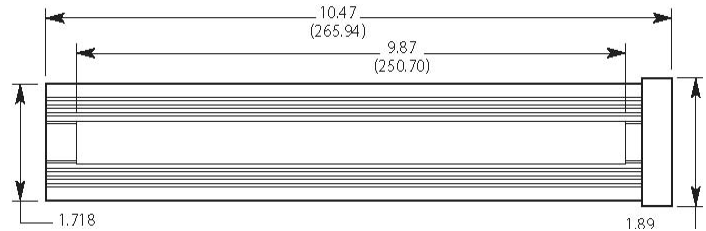
True Analog Conditioner with Digital Calibration

input schematics

output schematics

Electrical: in (mm)

Power Requirements	115 VAC $\pm 10\%$, 50-400 Hz; 220 VAC $\pm 10\%$, 50-400 Hz (switch selectable)
Line Voltage Regulation	$\pm 10\%$, no change in output
Transducer Excitation Voltage	3.5 V rms nominal (switch selectable for 0.5 V rms)
Frequency	2.5, 5.0 and 10.0 kHz
Current	45 mA rms (max)
Analog Output	
Voltage Output	
Bipolar	± 10 VDC max (10 mA max)
Unipolar	0-10 VDC max (10 mA max) (with 100% zero suppression)
Output Impedance	$< 1\Omega$
Noise and Ripple	< 3 mV rms at 2.5 kHz excitation
Current Output	4-20 mA
Maximum Loop Resistance	700 Ω (with internal loop supply); 1000 Ω (with 24 VDC external loop supply)
Noise and Ripple	10 μ A rms (max)
Frequency Response (nom)	
	-3 db at 250 Hz for 2.5 kHz excitation 500 Hz for 5.0 kHz excitation 1000 Hz for 10 kHz excitation
Amplifier Characteristics	
Sensitivity Range	
High Gain	0.040 to 0.9 VAC rms in = 10 VDC output
Low Gain	0.500 to 10.0 VAC rms in = 10 VDC output Note: -5 VDC output = 4.0 mA current output; +5 VDC output = 20 mA current output; 0 VDC output = 12 mA current output
Input Impedance	100k Ω
Zero Suppression	$\pm 110\%$ full scale output
Phase Shift	
Compensation	$\pm 120^\circ$ maximum
Non-linearity and Hysteresis	
	$< \pm 0.05\%$ of full scale output
Stability	Better than $\pm 0.05\%$ of full scale output (after 20 minutes)
Tempco (0.04%/°C)	$< \pm 0.02\%$ of full scale output/°F
Operating Temp. Range	-40° to 185°F (-40° to 85°C)
Weight	2.1 lbs (950 g)



The information in this sheet has been carefully reviewed and is believed to be accurate; however, no responsibility is assumed for inaccuracies. Furthermore, this information does not convey to the purchaser of such devices any license under the patent rights to the manufacturer. Measurement Specialties, Inc. reserves the right to make changes without further notice to any product herein. Measurement Specialties, Inc. makes no warranty, representation or guarantee regarding the suitability of its product for any particular purpose, nor does Measurement Specialties, Inc. assume any liability arising out of the application or use of any product or circuit and specifically disclaims any and all liability, including without limitation consequential or incidental damages. Typical parameters can and do vary in different applications. All operating parameters must be validated for each customer application by customer's technical experts. Measurement Specialties, Inc. does not convey any license under its patent rights nor the rights of others.

ordering information

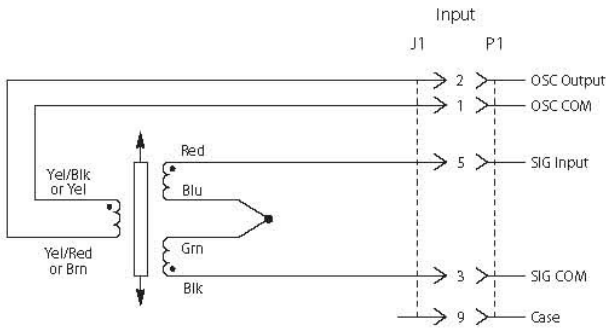
Specify ATA-2001 Model

ATA-2001
Optional rack adaptor (holds eight ATAs)

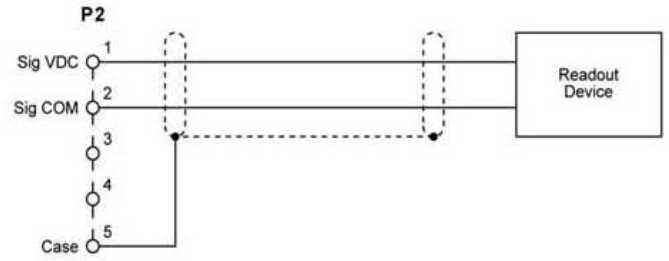
ATA-2001 LVDT Amplifier

True Analog Conditioner with Digital Calibration

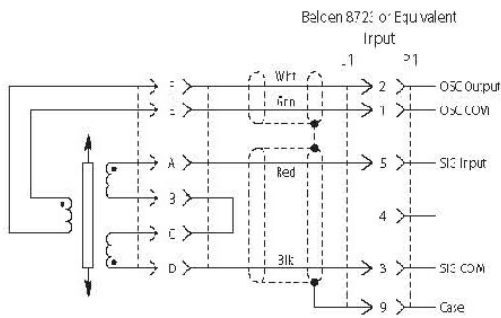
rack adaptor option



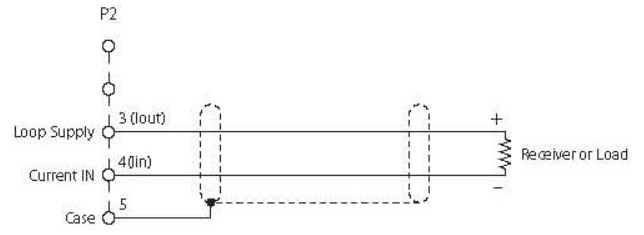
LVDT with Leads or Cable



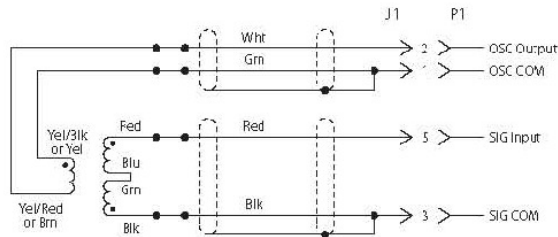
Voltage Output



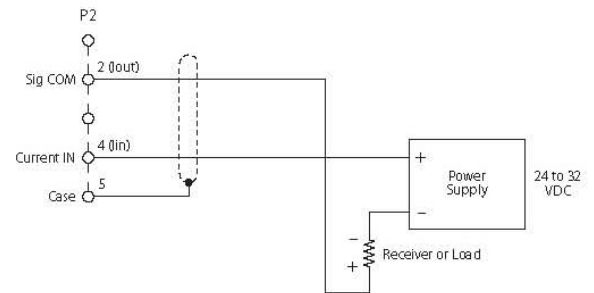
LVDT with Connector



4-20 mA Current Output Using the Internal Loop Supply



LVDT with Leads and Spliced Cable

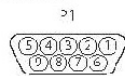


4-20 mA Current Output Using the External Loop Supply

Input Connections - LVDT with Connector

Connect to Input I1	Pin 1	Pin 2	Pin 3	Pin 5	Pin 9
LB8315PA-200 PCA-439	Blue	Red	White	Green	Shield
All other LBBs and color coded LVDT's	Yel / Blk or Yel	Yel / Red or Brn	Black	Red	Shield
Letter coded	E	F	D	A	

NOTE: Center tap must be tied at LVDT in all cases.



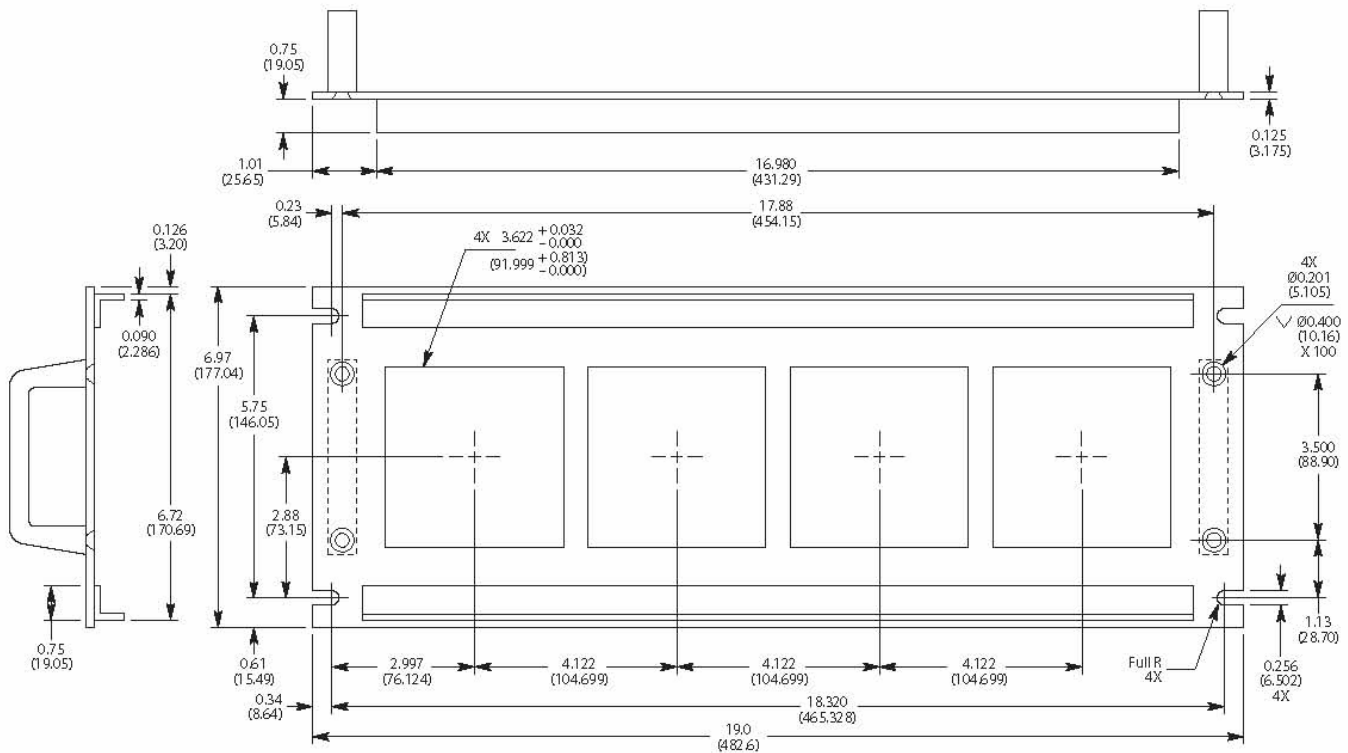
Input Connector
Rear view (wiring side)
of mating connector

Input Connections-LVDT
with Connector

ATA-2001 LVDT Amplifier

True Analog Conditioner with Digital Calibration

Accommodates up to eight ATA Amplifiers, eight PML 1000s, or four MP Series Readout/Controllers.



The information in this sheet has been carefully reviewed and is believed to be accurate; however, no responsibility is assumed for inaccuracies. Furthermore, this information does not convey to the purchaser of such devices any license under the patent rights to the manufacturer. Measurement Specialties, Inc. reserves the right to make changes without further notice to any product herein. Measurement Specialties, Inc. makes no warranty, representation or guarantee regarding the suitability of its product for any particular purpose, nor does Measurement Specialties, Inc. assume any liability arising out of the application or use of any product or circuit and specifically disclaims any and all liability, including without limitation consequential or incidental damages. Typical parameters can and do vary in different applications. All operating parameters must be validated for each customer application by customer's technical experts. Measurement Specialties, Inc. does not convey any license under its patent rights nor the rights of others.

ordering information

Order by model number

Model Number RACK ADAPTOR