



FEATURES

- Microprocessor controlled & nonvolatile memory
- Phase shift compensation
- Auto fall-back synchronization
- Rugged extruded aluminum housing

APPLICATIONS

- Power-gen turbine control
- Head box slice lip position control
- Roller gap position feedback
- Precision metrology labs

ATA-2001

Analog LVDT/RVDT Signal Conditioner with digital calibration

SPECIFICATIONS

- 115 or 220 VAC line powered
- Microprocessor controlled calibration
- Superior digital filtering
- Selectable excitation frequencies & amplitudes
- Voltage and current outputs
- 250 to 1000Hz selectable frequency response
- Auto fallback synchronization
- Splash-proof front panel with status LEDs
- 1/8 DIN standard panel mounting

The ATA-2001 is a general purpose, AC line-powered, LVDT/RVDT analog signal conditioner with digital setup and calibration. The embedded microprocessor generates a PWM-shaped sine wave and handles all calibration functions. It also controls the demodulation, filtration and synchronization of the LVDT or RVDT transducer signal. All settings are stored in non-volatile memory for restoration on power up. Zero, Gain and Phase adjustments are accomplished via the use of splash-proof front panel pushbuttons and digital voltage dividers. Intended for the most demanding industrial applications, the ATA-2001 is CE certified, and has been rigorously tested to the highest industrial standards for EMI, RFI and ESD.

Designed for universal compatibility with 4, 5 and 6 electrical connection transducers, the ATA-2001 provides a wide range of oscillator frequencies, gains and two excitation voltages, affording maximum interface versatility. The very high drive current of 45mA allows operation with transducer input impedances as low as 12 Ohms (with 0.5 VRMS excitation). With high gain capability and low noise, the ATA-2001 provides measurement resolutions beyond most products currently available.

The unique 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.

The ATA-2001 is contained within a rugged, one-piece, extruded aluminum housing which 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. A pre-punched 19" rack adapter is also available to accommodate up to eight amplifiers per adapter installation.

PERFORMANCE SPECIFICATIONS

ELECTRICAL SPECIFICATIONS		
Line power requirements	115VAC ±10%, 50-400Hz; 220VAC ±10%, 50-400Hz (switch selectable)	
Line voltage regulation	±10%, with no change in output	
Voltage output		
Unipolar voltage output range	0 to 10VDC, with 10mA maximum current capability	
Bipolar voltage output range	±10VDC (using 100% zero suppression), with 10mA maximum current capability	
Noise and ripple (voltage output)	3mV RMS maximum @ 2.5KHz excitation frequency	
Output impedance (voltage output)	1Ω maximum	
Current output		
Current output range	4 to 20mA	
Internal loop supply voltage	18VDC	
Maximum loop resistance	700 Ω with internal loop supply; 1000 Ω with 24VDC external supply (32vdc MAX)	
Noise and ripple (current output)	10μA rms (max)	
Analog outputs frequency response		
	250Hz @ 2.5kHz excitation	
Frequency response @ -3db	500Hz @ 5.0kHz excitation	
	1000Hz @ 10kHz excitation	
Amplifier characteristics		
Transducer FSO for 10 VDC output	High gain: 0.04 to 0.9 VRMS; Low gain: 0.5 to 10 VRMS (switch selectable)	
Input impedance	100kΩ	
Zero suppression range	±110% of FSO	
Phase shift compensation range	±120 degrees maximum	
Non-linearity and hysteresis	±0.05% of FSO, maximum	
Stability	±0.05% of FSO, maximum, after 20 minute warm up	
Temperature coefficient of output	±0.02% of FSO per °F [±0.036% per °C] over the operating temperature range	
	Transducer excitation	
Voltage	0.5 or 3.5 VRMS, sine wave (switch selectable)	
Current	45mA RMS maximum	
Frequency	2.5, 5 or 10kHz (switch selectable)	
Transducer requirements		
Transducer type	LVDT or RVDT with 4, 5 or 6 electrical connections	
Input impedance (Primary)	12 Ω minimum with 0.5 VRMS excitation; 80 Ω minimum with 3.5 VRMS excitation	
Full scale output	High gain: 0.04 to 0.9 VRMS; Low gain: 0.5 to 10 VRMS	

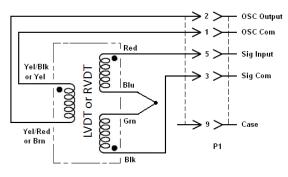
ENVIRONMENTAL AND MECHANICAL SPECIFICATIONS		
Operating temperature range	-40°F to +104°F [-40°C to +40°C]	
Storage temperature range	-40°F to +257°F [-40°C to +125°C]	
Weight	2.1lbs [950 grams]	
Transducer electrical connections	DB-9S (See our transducer data sheets for jumper cables or connector option)	
Output and sync connections	Barrier terminal strip	
Mounting	1/8 DIN standard panel mounting (19" rack adapter for 8-up available)	
IEC 60529 rating	IP61 (Front panel only)	

Notes:

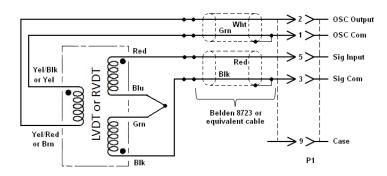
All values are nominal unless otherwise noted

FSO (Full Scale Output) is the largest absolute value of the outputs measured at the range ends

WIRING - INPUT (TRANSDUCER)

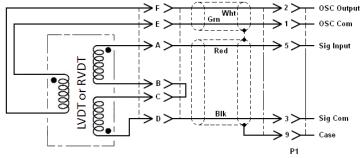


TRANSDUCER WITH LEADS OR CABLE



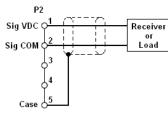
TRANSDUCER WITH LEADS AND SPLICED CABE



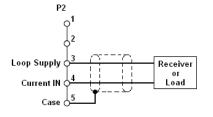


TRANSDUCER WITH CONNECTOR AND JUMPER CABLE

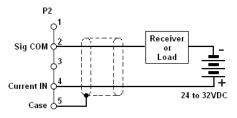
WIRING – OUTPUT



VOLTAGE OUTPUT

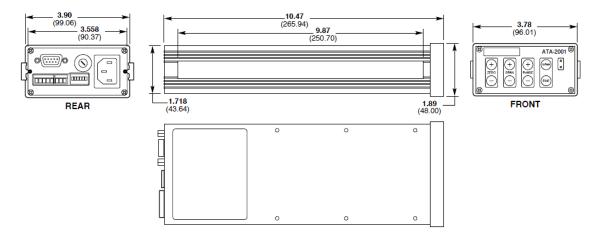


4-20mA OUTPUT USING THE INTERNAL LOOP SUPPLY

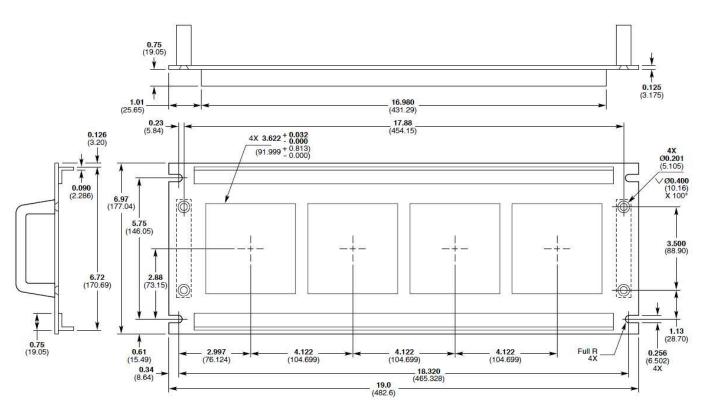


4-20mA OUTPUT USING AN EXTERNAL LOOP SUPPLY

DIMENSIONS



DIMENSIONS - RACK ADAPTOR (sold separately)



Accommodates up to eight ATA-2001 Amplifiers Dimensions are in inch (mm)

ORDERING INFORMATION

Description	
ATA-2001 LVDT/RVDT Signal Conditioner	
Rack Adaptor for up to 8 signal conditioners (ATA-2001 conditioners not included)	
Cable to connect HCA/HCI Series LVDTs, GCA Series Gage Heads, and R36AS RVDT to ATA-2001 (1) (PTO6A-10-6S to DB-9P connector)	
Extension cable to connect LBB Series (option -004) Gage Heads to ATA-2001 (1) (DB-9S to DB-9P connector)	
Extension Cable to connect LBB (option -001) to ATA-2001 (1) (PTO6A-10-6S to DB-9P connector)	

(1) All cables are shielded, 10 foot long, and are rated 80°C [176°F] operating. Consult factory for other lengths.

NORTH AMERICA

Measurement Specialties, Inc., a TE Connectivity Company Phone +1-800-522-6752 Email: customercare.pens@te.com

EUROPE

MEAS Deutschland GmbH(Europe) a TE Connectivity Company Phone: +49-800-440-5100 Email: <u>customercare.dtmd@te.com</u>

ASIA

Measurement Specialties (China), Ltd., a TE Connectivity Company Phone: +86-400-820-6015 Email: <u>customercare.shzn@te.com</u>

TE.com/sensorsolutions

Measurement Specialties, Inc., a TE Connectivity company.

Accustar, American Sensor Technologies, AST, ATEXIS, DEUTSCH, IdentiCal, TruBlue, KPSI, Krystal Bond, Microfused, UltraStable, Measurement Specialties, MEAS, Schaevitz, TE Connectivity, TE, and the TE connectivity (logo) are trademarks of the TE Connectivity Ltd. family of companies. Other logos, product and company names mentioned herein may be trademarks of their respective owners.

The information given herein, including drawings, illustrations and schematics which are intended for illustration purposes only, is believed to be reliable. However, TE Connectivity makes no warranties as to its accuracy or completeness and disclaims any liability in connection with its use. TE Connectivity's obligations shall only be as set forth in TE Connectivity's Standard Terms and Conditions of Sale for this product and in no case will TE Connectivity be liable for any incidental, indirect or consequential damages arising out of the sale, resale, use or misuse of the product. Users of TE Connectivity products should make their own evaluation to determine the suitability of each such product for the specific application.

