



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.

FEATURES

- ◆ Microprocessor controlled & non-volatile 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

PERFORMANCE SPECIFICATIONS

| ELECTRICAL SPECIFICATIONS | |
|-----------------------------------|---|
| Line power requirements | 115VAC $\pm 10\%$, 50-400Hz; 220VAC $\pm 10\%$, 50-400Hz (<i>switch selectable</i>) |
| Line voltage regulation | $\pm 10\%$, with no change in output |
| Voltage output | |
| Unipolar voltage output range | 0 to 10VDC, with 10mA maximum current capability |
| Bipolar voltage output range | ± 10 VDC (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) | 1 Ω 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 (<i>32vdc MAX</i>) |
| Noise and ripple (current output) | 10 μ A rms (max) |
| Analog outputs frequency response | |
| Frequency response @ -3db | 250Hz @ 2.5kHz excitation 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 (<i>switch selectable</i>) |
| Input impedance | 100k Ω |
| Zero suppression range | $\pm 110\%$ of FSO |
| Phase shift compensation range | ± 120 degrees maximum |
| Non-linearity and hysteresis | $\pm 0.05\%$ of FSO, maximum |
| Stability | $\pm 0.05\%$ of FSO, maximum, after 20 minute warm up |
| Temperature coefficient of output | $\pm 0.02\%$ of FSO per $^{\circ}$ F [$\pm 0.036\%$ per $^{\circ}$ C] over the operating temperature range |
| Transducer excitation | |
| Voltage | 0.5 or 3.5 VRMS, sine wave (<i>switch selectable</i>) |
| Current | 45mA RMS maximum |
| Frequency | 2.5, 5 or 10kHz (<i>switch selectable</i>) |
| 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 |

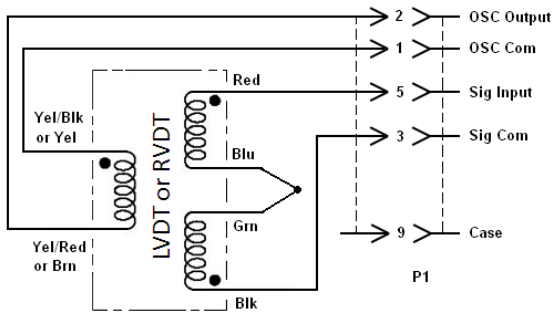
| ENVIRONMENTAL AND MECHANICAL SPECIFICATIONS | |
|---|--|
| Operating temperature range | -40°F to +104°F [-40°C to +40°C] |
| Storage temperature range | -40°F to +257°F [-40°C to +125°C] |
| Weight | 2.1lbs [950 grams] |
| Transducer electrical connections | DB-9S (See our transducer data sheets for 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:

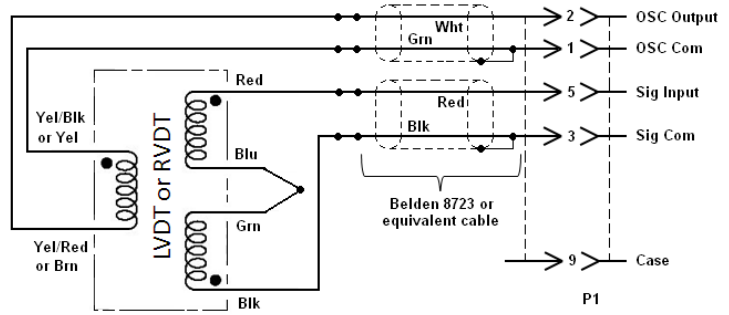
All values are nominal unless otherwise noted

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

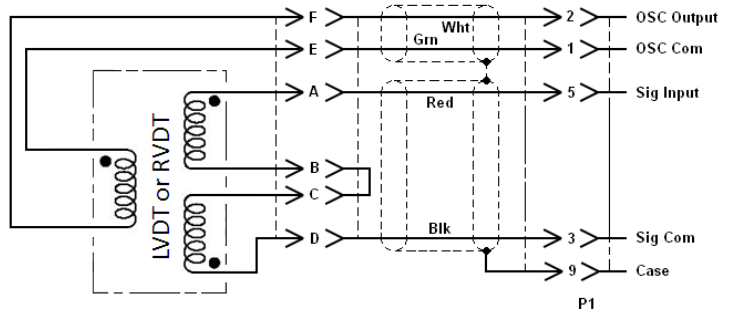
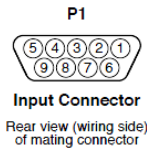
WIRING – INPUT (TRANSDUCER)



TRANSDUCER WITH LEADS OR CABLE

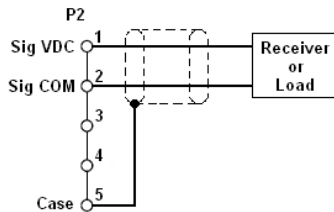


TRANSDUCER WITH LEADS AND SPliced CABLE

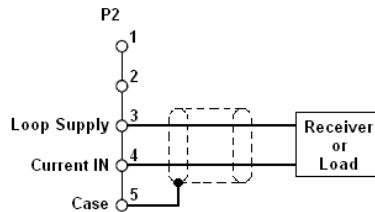


TRANSDUCER WITH CONNECTOR AND JUMPER CABLE

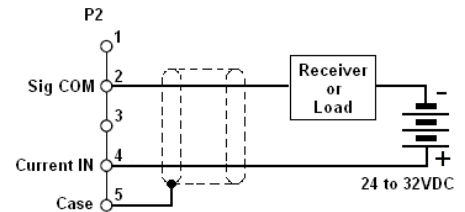
WIRING – OUTPUT



VOLTAGE OUTPUT



4.20mA OUTPUT USING THE INTERNAL LOOP SUPPLY

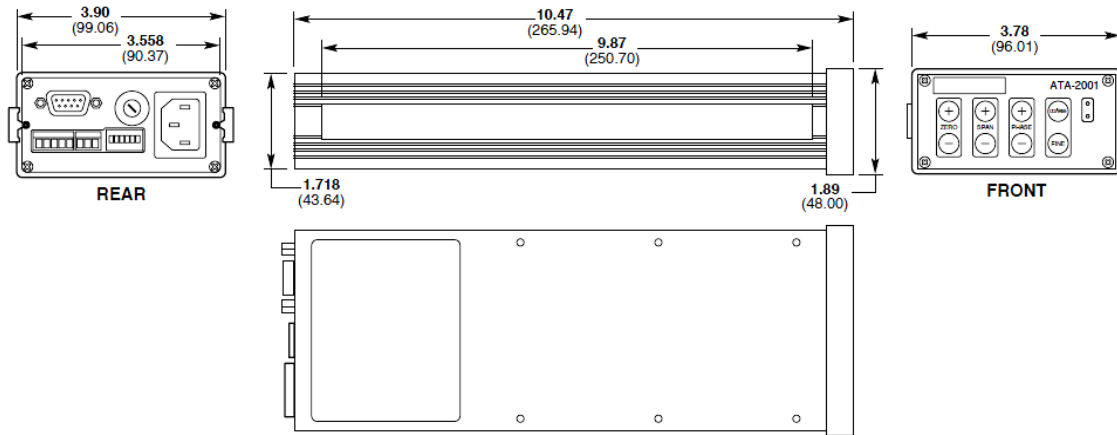


4.20mA OUTPUT USING AN EXTERNAL LOOP SUPPLY

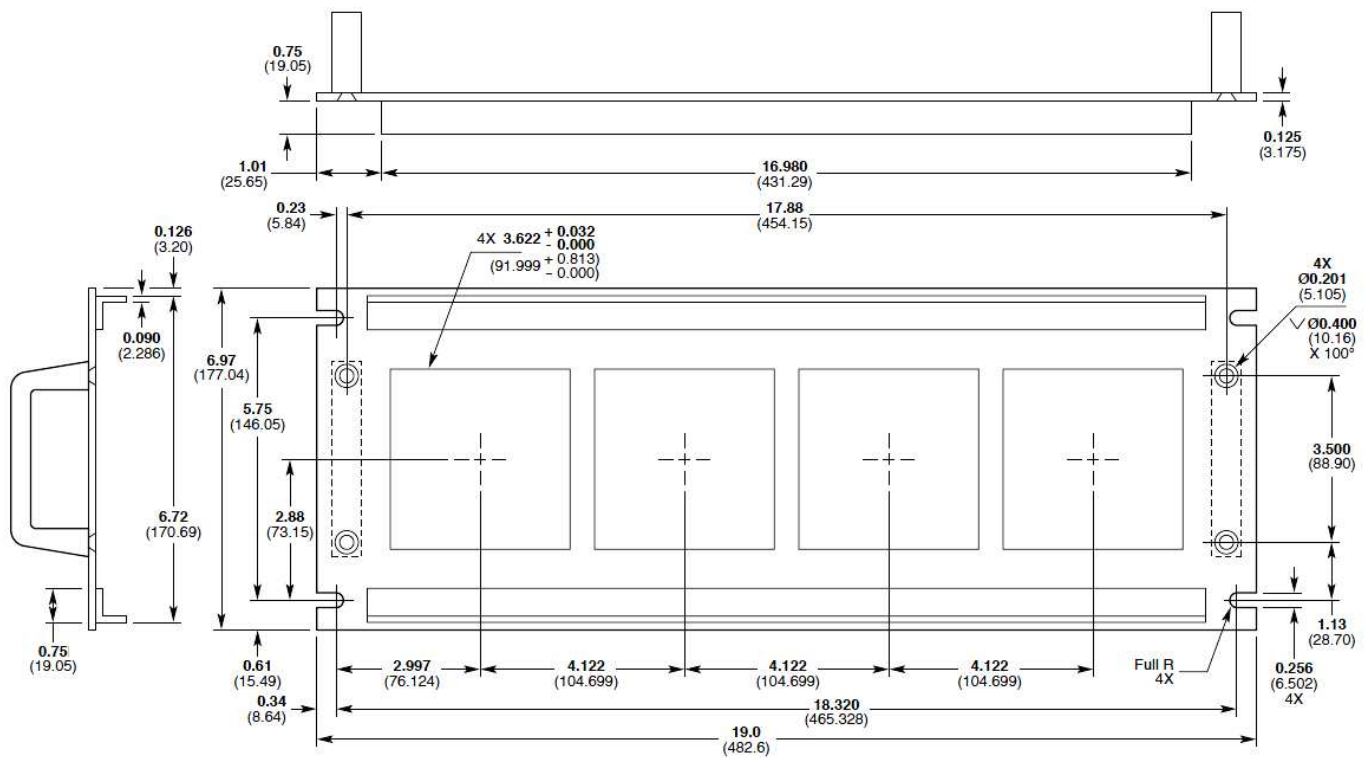
ATA-2001

Analog LVDT/RVDT Signal Conditioner with digital calibration

DIMENSIONS



DIMENSIONS - RACK ADAPTOR (sold separately)



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

ATA-2001

Analog LVDT/RVDT Signal Conditioner with digital calibration

ORDERING INFORMATION

| Description | Part Number |
|---|--------------|
| ATA-2001 LVDT/RVDT Signal Conditioner | 02291327-000 |
| Rack Adaptor for up to 8 signal conditioners <i>(ATA-2001 conditioners not included)</i> | 05290032-000 |
| Cable to connect HCA/HCI Series LVDTs, GCA Series Gage Heads, and R36AS RVDT to ATA-2001 (1) <i>(PTO6A-10-6S to DB-9P connector)</i> | 04290457-000 |
| Extension cable to connect LBB Series (option -004) Gage Heads to ATA-2001 (1) <i>(DB-9S to DB-9P connector)</i> | 04290565-000 |
| Extension Cable to connect LBB (option -001) to ATA-2001 (1) <i>(PTO6A-10-6S to DB-9P connector)</i> | 04290577-000 |

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

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.

中国大陆
西安鑫源宇通电子科技有限公司
陕西省西安市高新区锦业路70号航
天恒星园区1号厂房一层南
Tel: 400-780-9688
sales@senstechxyz.com

中国香港
深大实业有限公司
香港新界沙田安平街6号新贸易
中心B座13楼06室
Tel: +86 17792099916
info@caltropinstruments.com

新加坡
深大实业有限公司
香港新界沙田安平街6号新贸易
中心B座13楼06室
Tel: +86 17792099919
info@senstechxyz.com