

Series AP5102

Input/Output Isolated DIN-Rail Amplifier for LVDTs



Description

The AP5102 Series is a DIN-rail mounted signal conditioner for use with LVDT's (linear variable differential transformer) requiring AC excitation and synchronous demodulation. The AP5102 produces outputs of 0-10 Vdc, ± 10 Vdc, or 4-20 mA. One of the key features of this DIN-rail amplifier is that it incorporates a DC-DC converter which ensures the output of the unit is isolated from the supply. The DIN mount housing is constructed of high-impact thermoplastic and has recessed screw-clamp terminals for all connections. Zero and span adjustments are made directly from the front panel with 25-turn trimpots. All other controls are internal including coarse gain and zero, zero input switch, jumper links for master/slave setting, and excitation frequency setting. All internal settings are easily accessible by disengaging the front panel and board assembly from the housing. The AP5102 is compatible with the complete range of Stellar Technology AC/AC LVDT transducers.

Standard Features

- Input/Output Isolation
- DIN Mount Construction
- Analog Outputs of 0-10 Vdc, ± 10 Vdc, 4-20 mA
- Compatible With Most Manufacturer's LVDTs
- Signal Inputs of 20 mV to 4V
- Easily Accessible Internal Settings
- Zero and Span Adjust From Front Panel
- Over-Range Indicator on Front Panel

AP5102

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Specifications

Baseline Configuration Specs Represented.
Modifications Encouraged - See Below
Custom Designs Available

Performance

Linearity

0.5% of FSO.

Bandwidth

0 - 250 Hz.

Noise

Voltage Output: 5mV RMS

Current Output: 20 μ A RMS typical

Zero Stability

Voltage Output: 0.001% of F.S. typical/ $^{\circ}$ F

Current Output: 0.003% of F.S. typical/ $^{\circ}$ F

Gain Stability

Voltage Output: 0.003% of F.S. typical/ $^{\circ}$ F

Current Output: 0.05% of F.S. typical/ $^{\circ}$ F

Mechanical Characteristics

Configuration

DIN-rail mounting.

Material of Construction

Durable thermoplastics enclosure.

Weight

Approximately 4.4 oz.

Seals

IP20 Specification. (NEMA ventilated)

Dimensions

4.51" deep x 0.89" wide x 3.90" high

Electrical Characteristics

Supply Voltage

9V to 36V dc, 250mA.

Outputs

0-10Vdc, 5mA (isolated).

\pm 10Vdc, 5mA (isolated).

4-20mA (isolated).

(Loop resistance 100 ohm - 500 ohm)

Transducer Excitation

1/3V (user selectable), 25mA.

3/5kHz (user selectable).

Signal Input Range

20mV to 4V.

Input Impedance

\pm 130k ohm.

Environmental Characteristics

Operating Temperature Range

+14 to +140 $^{\circ}$ F.

Temperature Coefficient

\pm 0.006% F.S./ $^{\circ}$ F minimum.

(Combined zero and span)

EMC Specification

When subjected to radiated electromagnetic energy (as IEC 801-3) an additional error can occur at certain frequencies:

Field Strength	Typical Maximum Error
10V/m	1.5%
3V/m	0.1%

Connections

Supply and output connection are made by 4 x 4-way screw-clamp terminals.

- 1 Excitation Hi
- 2 Excitation Lo
- 3 Signal Lo
- 4 Signal Hi
- 5 Screen
- 6 Master
- 7 Slave
- 8 m/s comm
- 9 Volts Out
- 10 Common
- 11 Common
- 12 Current Out
- 13 Supply +
- 14 Supply -
- 15 Screen
- 16 N/C



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MODIFICATIONS: We realize amplifier applications vary greatly and as such our designs are flexible. Specifications on this datasheet represent the standard configuration only. Product and company names listed are trademarks of their respective companies. Specifications subject to change without notice.

WARRANTY: Stellar Technology warrants that its product shall be free from defective workmanship and/or material for a twelve month period from the date of shipment, provided that Stellar Technology's obligation hereunder shall be limited to correcting any defective material FOB our factory. No allowance will be made for any expenses incurred for correcting any defective workmanship and/or material without written consent by Stellar Technology. This warranty is in lieu of all other warranties expressed or implied.

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Due to the nature of technology, changes are inevitable. For latest technical specifications, see our website.

237 Commerce Drive • Amherst, NY 14228 • USA

Tel: 716.250.1900 • Fax: 716.250.1909

Email: info@stellartech.com

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