

S1A

LVDT Signal Conditioner

Advanced Smart AC-LVDT Signal Conditioner Module



Use with LVDTs for:
 Steam Valve Position Feedback
 Governor and Throttle Valves
 Interceptor and Stop Valves
 Boiler Feedwater Pumps
 Turbine Control Systems

The S1A DIN-rail-mounting smart LVDT Signal Conditioner module from Alliance Sensors Group ends the difficulties that accompany AC-LVDT setup with built-in null indicators and front panel pushbuttons to set zero and full scale output. Engineered to work with the widest range of AC-LVDTs and inductive half-bridge LVDTs, the S1A module offers a choice of 4 excitation frequencies and 8 analog outputs, operates LVDT sensors with over a 40 dB dynamic range of AC output, indicates most common system failures, and incorporates a 2-wire RS-485 digital communications port. Along with color-coded plug-in screw terminal connectors and a 2 year warranty, these are just a few of the many advanced features that make Alliance Sensors Group's S1A module a truly superior smart LVDT signal conditioner.

Features:

- Smart setup with front panel push buttons --- no pots, no calculations
- Built-in null indication --- front panel LEDs and DC null voltage output
- Auto-mastering provides fail-safe excitation syncing for multiple units
- Self-diagnostics for LVDT failure or disconnect; open-collector output
- Half-duplex digital communications via RS-485 2-wire multi-drop bus
- Hot swapability --- setup can be saved and reloaded via RS-485 port

Specifications:

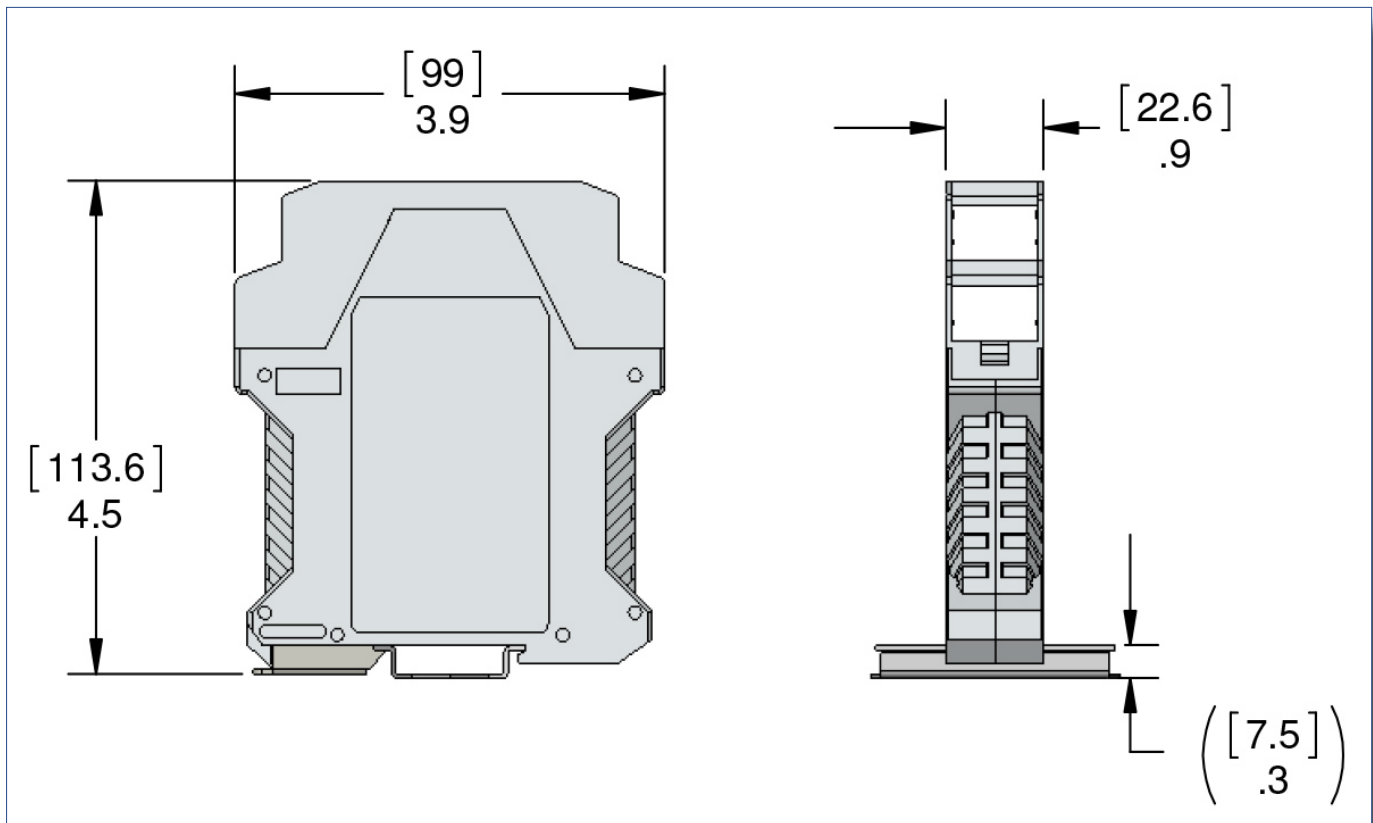
- Operating power:** +15 to +30 V DC (+24 V nominal), 60 mA max. at 24 V DC;
+15 V DC and -15 V DC needed for ± 10 V DC bipolar output
- Excitation voltage:** 3.0 Vrms (nominal) push-pull drive (factory default)
4.5 Vrms (nominal) push-pull drive (via jumper change)
1.5 Vrms (nom) single ended drive (for low impedance primary)
- Excitation frequencies:** 1 kHz, 3 kHz, 5 kHz, 10 kHz (nominal)
- Auto-master syncing:** Master output couples up to fifteen slave units; if master fails, new master is automatically generated for fail-safe excitation
- LVDT AC output range:** 50 mVrms to 5000 mVrms at LVDT is full scale position
- Analog DC outputs:** 0 - 5 V, 1 - 5 V, 0.5 - 4.5 V, 0.5 - 9.5 V, 0 -10 V, -10 to +10 V,
0 -20 mA sourcing, 4 -20 mA sourcing
- Loop resistance:** 850 Ohms max. with 24 V DC supply
- Output non-linearity:** $\pm 0.025\%$ of Full Span Output (FSO)
- 3 dB response:** 10% (minimum) of excitation frequency (normal setting);
10 Hz (default) user adjustable (low noise setting)
- Noise and ripple:** ≤ 2.5 mVrms (voltage output); ≤ 5 μ Arms (current loop output)
- Fault detection:** Open LVDT winding, cable disconnected, loss of excitation
- Failure indication:** Flashing LEDs; analog output out of range; open-collector switch

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Specifications (cont.):

- Null detection: Front panel LEDs
- Null output signal: Up to ± 3 V DC
- Operating temperature: 0 to 75 C
- Temperature coefficient: $\pm 0.002\%$ of FSO/C (combined zero and span shift)
- Zero set: Front panel push button or RS-485 command
- Full scale set: Front panel push button or RS-485 command
- Digital interface: RS-485 2-wire multi-drop network, 16 addresses



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