SC-100
LVDT Signal Conditioner

Smart Industrial AC-LVDT Signal Conditioner Module

Alliance Sensors Group’s new SC-100 DIN-rail-mounting smart LVDT signal conditioner module makes setting up and calibrating an AC-LVDT installation very easy by offering built-in null indicators and front panel pushbuttons to set zero and full scale output. Engineered to work with the widest range of LVDT and inductive half-bridge linear sensors, the SC-100 module offers a choice of 4 excitation frequencies, works over a 40 dB range of full scale sensor outputs, and features 8 analog DC outputs, including a bipolar voltage output for legacy systems. Using its 2-wire RS-485 digital communications port, a user can remotely set up and operate an SC-100 module from a personal computer, and can get information for data acquisition. The very reliable SC-100 module comes with a 2-year limited warranty and offers many additional features that make it the easiest to use and best value of any industrial single channel AC-LVDT signal conditioner currently available.

Features:
• Smart calibration setup with front panel push buttons --- no pots, no calculations
• Built-in null indication --- front panel LEDs and DC null voltage output
• 2.5 kHz, 5.0 kHz, 7.5 kHz, and 10.0 kHz nominal excitation frequencies
• Fail-safe excitation syncing by auto-mastering prevents cross talk in multiple units
• Works with LVDT full scale outputs ranging from 50 mV to 5000 mV
• Half-duplex digital communications via RS-485 2-wire multi-drop bus

Specifications:

- **Operating power**: +15 to +30 V DC (+24 V nom.), 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 (nom.) push-pull drive (factory default)
  - 4.5 Vrms (nom.) push-pull drive (via jumper change)
  - 1.5 Vrms (nom) single ended drive (for low impedance primary)
- **Excitation frequencies**: 2.5 kHz, 5 kHz, 7.5 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's 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**: ≤0.025% of Full Span Output (FSO)
- **-3 dB response**: 10% of excitation frequency minimum (normal setting);
  10 Hz (default) user adjustable (low noise setting)
Specifications (cont):

- **Noise and ripple**: \( \leq 2.5 \text{ mVRms (voltage output)} \); \( \leq 5 \text{ \uA rms (current loop output)} \)
- **Null indicators**: Front panel LEDs
- **Null output signal**: Up to \( \pm 3 \text{ V DC} \)
- **Operating temperature**: -20 to 75°C
- **Temperature coefficient**: \( \pm 0.002\% \text{ of FSO/°C} \) (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