

LVDT-ASC

Industrial AC-LVDT Signal Conditioner

DIN-Rail Mounted Signal Conditioning Module for AC LVDT Sensors

The LVDT-ASC is a DIN-rail mounted industrial signal conditioner for AC-excited LVDT sensors. The module provides sine-wave excitation to the LVDT primary, conditions the differential secondary signal using synchronous phase-sensitive demodulation, and provides simultaneous voltage and current outputs for PLC, DAQ, control, and monitoring systems.



FEATURES

- DIN-rail mounted industrial AC-LVDT signal conditioner
- Wide excitation support: 1 Vrms to 7 Vrms, up to 25 mA drive
- Selectable excitation frequencies: 2.5 / 5 / 7.5 / 10 kHz
- Simultaneous PLC/DAQ outputs: ± 10 V, ± 5 V, (0–10 V or 0–5 V), 4–20 mA
- Differential input with synchronous demodulation for noise-immune displacement measurement
- 3 kV DC I/O isolation with front-panel zero, span adjustment
- UL94-V0 graded enclosure with IP20 rating

USER SELECTABLE FEATURES

- Excitation frequency selection by DIP switches: 2.5 kHz / 5 kHz / 7.5 kHz / 10 kHz
- Front-panel zero adjustment
- Front-panel span/gain adjustment
- On board - phase adjustment
- Power LED indication
- Operational status LED indication

TECHNICAL SPECIFICATIONS

Feature	Specification
Input supply	24 VDC / 24 VAC $\pm 10\%$, 45 Hz to 65 Hz
Maximum power consumption	≤ 6 W
Isolation	3 kV DC I/O isolation, overvoltage and transient protected
Sensor type	AC-excited LVDT
Supported wiring	Common LVDT wire configurations using external wiring method
Excitation waveform	Sine wave
Excitation voltage	1 Vrms to 7 Vrms max (3 Vrms nominal)
Excitation current drive	Up to 25 mA
Excitation frequency	2.5 kHz, 5 kHz, 7.5 kHz, 10 kHz

Feature	Specification
Input signal	Differential AC secondary signal
Filter cut-off	Approx. 84 Hz
Voltage outputs	± 10 V, ± 5 V, 0–10 V, 0–5 V
Current output	4–20 mA
Output availability	All outputs available simultaneously except 0–5V
Voltage output load	≥ 2 k Ω
Current output load	≤ 500 Ω
Overall accuracy	$\leq \pm 0.15\%$ FS
Operating temperature	-40 °C to +85 °C
Relative humidity	0–90% RH, non-condensing
Mounting	35 mm DIN rail
Terminal count	16 terminals
Enclosure material	PC / flame-retardant UL94-V0 graded
Flammability rating	UL94-V0
IP rating	IP20
Weight	≤ 250 g

SENSOR COMPATIBILITY DATA

Supported full-stroke secondary output by excitation voltage:

Excitation Voltage	Supported Full-Stroke Secondary Output
1 Vrms	0.55 Vrms to 1.76 Vrms
3 Vrms	0.18 Vrms to 0.589 Vrms
5 Vrms	0.11 Vrms to 0.353 Vrms
7 Vrms	0.078 Vrms to 0.25 Vrms

MINIMUM LVDT PRIMARY IMPEDANCE

Excitation Voltage (Vrms)	Minimum Primary Impedance
1 Vrms	≥ 100 Ω
3 Vrms	≥ 200 Ω
5 Vrms	≥ 330 Ω
7 Vrms	≥ 470 Ω

MECHANICAL DIMENSIONS

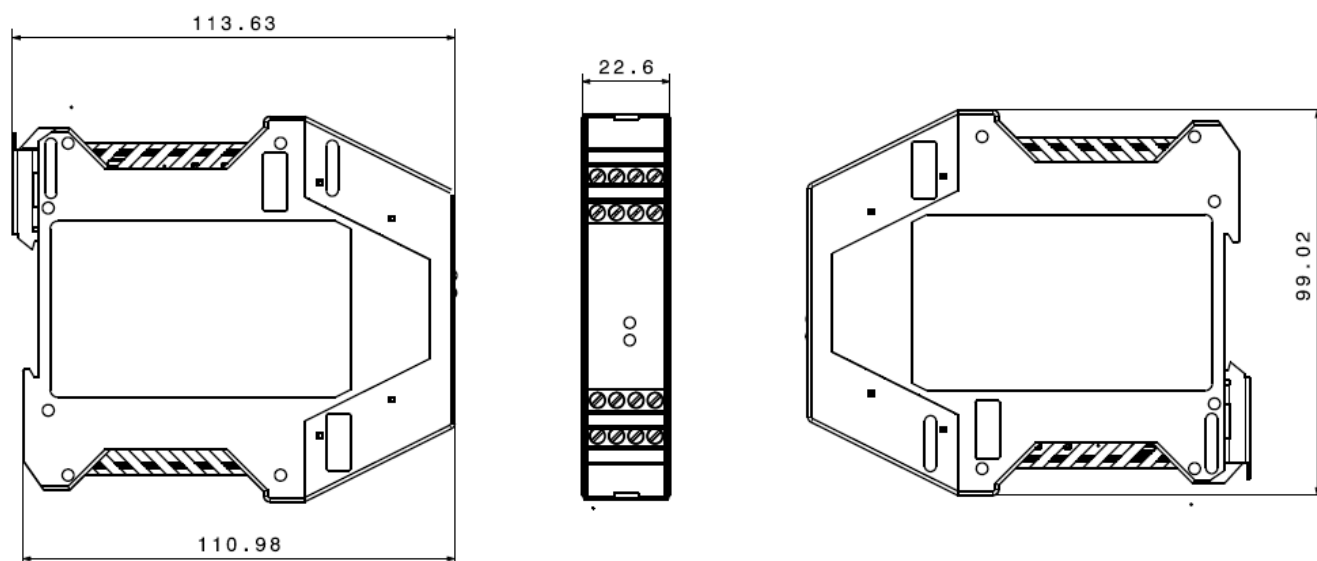
Width	22.6 mm (approx. 22.5 mm)
Body height	99 mm
Height with 35 mm DIN rail	Approx. 114.5 mm
Mounting	35 mm DIN rail

Terminal count	16 terminals
IP rating	IP20
Enclosure	UL94-V0 graded

DESIGNED FOR COMPLIANCE

- IEC 61010-1 — Safety requirements
- IEC 61326-1 — EMC requirements
- IEC 60529 — Ingress protection rating, IP20 enclosure target
- IEC 60715 — 35 mm DIN-rail mounting compatibility
- IEC 60068-2-6 — Vibration test target
- IEC 60068-2-27 — Mechanical shock test target
- RoHS 2011/65/EU — Intended restriction of hazardous substances compliance

TERMINAL ASSIGNMENT



No.	Signal	No.	Signal
1	0-10V or 0-5V DC Output	9	NC
2	±5V DC Output	10	Secondary_01
3	±10V DC Output	11	Secondary_common
4	Voltage Ground	12	Secondary_02
5	Cal_Purpose +	13	Excitation -
6	Cal_Purpose -	14	Power -
7	4-20mA Output (+)	15	Excitation +
8	Current Ground (-)	16	Power +