

DMI-A1 Series

Single Channel AC-LVDT Indicator



Description

The DMI-A1 Series AC LVDT Indicator is an accurate, high performance, programmable single channel AC LVDT indicator that delivers precise measurement for applications using AC LVDT (Linear Variable Differential Transformer) inputs. The 5-digit alphanumeric LED display provides easy-to-follow setup prompts for all LVDT parameters using the intuitive text configuration menus.

Used in conjunction with AC LVDTs, DMI-A1 Series Indicators make up a comprehensive, reliable, measurement system. The combination can be applied to a wide variety of demanding measurement applications, such as in process gaging in automated assembly machinery, differential measurements in thickness gaging, and other comparative measurements. Utilize the unit's optional relays and you have an economical solution when you need control functions for comparative and direct measurements in smaller automated systems.

The DMI-A1 Series AC LVDT Indicator is designed to be upgradeable for expansion of capabilities. You can order this as an indicator only and if you

Standard Features

- 120-220 VAC operation
- Four independently programmable set points
- Supports all standard LVDTs

Options

- 0-10VDC analog output
- 4-20 mA or 0-20 mA sourcing
- 24VDC operation
- Four 5.0A relays and 115 VAC operation
- Four 5.0A relays and 24 VAC operation
- RS-232 serial output
- Ethernet

decide later to add an option like RS-232, to utilize the remote utility software package or to add communication to data acquisition software, it can be done at the factory.

The AC LVDT input module of the DMI-A1 Series AC LVDT Indicator is designed to drive and condition the signal from an LVDT transducer. The module contains 2 high-speed micro controllers and a 16-bit A/D converter. One of the micro controllers generates the sine wave for the AC LVDT excitation frequency. These frequencies are produced as multiples of the line frequency (either 50 Hz or 60 Hz that are selectable via the scrolling text menus).

The 16-bit A/D converter has over 130 dB noise rejection at the excitation frequencies and is capable of 40 Hz averaged output on 45 samples. Scrolling text menus provide quick access to a range of configuration modes for easy AC LVDT application setup.

If you require 2 sensor channels we also offer the DMC-A2 Dual Channel LVDT Controller.

Specifications

General

Digital Display:	7-segment, 0.56" (14.2 mm) LEDs
Display Color:	Red
Display Range:	-19999 to 99999
Display Update Rate:	10 times per second
Display Dimming:	8 brightness levels. Front panel selectable
Polarity:	Assumed positive. Displays – negative
Annunciators:	6 red LEDs on front panel
Front Panel Controls:	PROGRAM, UP, and DOWN buttons
Power Supplies:	Standard high voltage AC / DC power supply 85-265 VAC / 95-370 V DC, or optional low voltage AC / DC power supply 18-48 VAC / 10-72 V DC

Environmental

Operating Temp:	0 to 50°C (32°F to 122°F)
Storage Temp:	-20°C to 70°C (-4°F to 158°F)
Relative Humidity:	95% (non-condensing) at 40°C (104°F)

Mechanical

Case Dimensions:	1/8 DIN, 96x48 mm (3.78" x 1.89")
Case Depth:	137 mm maximum (5.39")
Case Material:	94V-0 UL rated self-extinguishing polycarbonate
Weight:	11.5 oz (0.79 lbs.), 14 oz. (0.96 lbs.) when packed

Approvals

CE:	As per EN-61000-3/4/6 and EN-61010-1
------------	--------------------------------------

Ordering Information

Optional power, analog output, communication and calibration configuration suffixes

- -2xx for operating on 24 V DC
- -9xx for 4 5A relays and 24 V DC operation
- -8xx for 4 5A relays and 115 V AC operation
- -x1x 0-10VDC analog output
- -x3x 4-20 mA sourcing
- -xx1 for serial ASCII RS-232
- -xx2 for Ethernet communications
- System Calibration (call for details)

Example: DMI-A1-212 is equipped with the following: 1. -2xx 24 V DC Operation; 2. -x1x 0-10 VDC analog output; 3. -xx2 Ethernet Communication

For specifications on other Macro Sensors LVDT signal conditioners, please visit our website at www.macrosensors.com.

LVDT Input Module

Excitation Voltage:	3 V RMS sine wave, zero DC component THD <2% (1.2 kHz).
Excitation Frequency:	x 16 selectable frequencies available (1.2 kHz to 11.5 kHz). Crystal locked, software driven
Temperature Coefficient:	± 50 ppm/ °C of full scale (typ.)
LVDT Input:	30 kΩ input impedance. Synchronous demodulation of excitation carrier. >130 dB rejection of excitation carrier.
Frequency Response:	500 Hz (-3 dB) low-pass filter
Analog to Digital:	Single channel $\Sigma\Delta$ A/D converter approaching 19-bit resolution. Ratiometric operation relative to excitation voltage magnitude.
Output Rate:	10 Hz averaged response output
Line Frequency Rejection:	50 or 60 Hz noise rejection

Relay Output Modules

Plug into carrier board from rear:

Four Relay Module:	Available with four 5 A Form A Relays*
*Form A Relay Specifications:	5 A 240 V AC. Isolation 3000 V. UL and CSA listed



7300 US Route 130 North, Bldg. 22
 Pennsauken, NJ 08110-1541 USA
 tel: 856-662-8000
 fax: 856-661-8000
www.macrosensors.com
lvdts@macrosensors.com



Innovators in Position Sensing

All specifications subject to change without notice.
 © 2005 Macro Sensors 08/11/05