

LDM-1000 – LVDT/RVDT Signal Conditioning Module



- 10 to 30VDC operation
- Standard DIN rail form factor
- 4 to 20mA and VDC outputs
- Zero, span and phase adjustable
- 2.5, 5 and 10kHz excitation frequencies
- Low noise, 3-pole Butterworth filter
- Master/slave capability
- Compatible with 4, 5 & 6-wire LVDTs/RVDTs
- Works with very low input impedance LVDTs and RVDTs

DESCRIPTION

The **LDM-1000** is an extremely versatile and popular LVDT/RVDT signal conditioning module and the perfect choice for industrial applications requiring the DIN standard rail mount. The LDM-1000 provides everything you will need for accurately interfacing an AC operated Linear or Rotary Variable Differential Transformer to your industrial position control system.

The LDM-1000 was designed with maximum sensor/system compatibility in mind. A wide range of gains, excitation voltages and frequencies ensure compatibility with virtually all LVDT and RVDT type transducers. A full-wave synchronous demodulator eliminates quadrature and harmonics to maximize external noise rejection.

The LDM-1000 also provides several different input/output options to accommodate varying PLC and analog I/O requirements:

- ✓ Single-ended voltage outputs with the use of 100% zero suppression to maximize the sensor stroke utilization while simplifying programming (no need to deal with sign)
- ✓ Bipolar voltage output to maximize A/D bit usage with most PLC analog input modules, for applications requiring high resolution
- ✓ 4-20mA current output for applications requiring long signal runs or where noise immunity may be an issue. The 4-20mA loop is driven by an internal power supply, provided by the LDM-1000.

Finally, the frequency response is internally selectable and so is the master/slave function which allows synchronization of multiple LDM-1000 modules to prevent beat frequencies and cross talk between transducers.

Also see our other LVDT/RVDT signal conditioner models:

LVM-110	±15VDC supply, ±10 and 0 to 10VDC outputs, open circuit board
LiM-420	24VDC supply, 4-20mA (3-wire) output, open circuit board
ATA-2001	Line powered, DC voltage and current outputs, push-button programmable
IEM-422	Line powered, 4-20mA output, NEMA-13 rated enclosure
PML-1000	AC or DC supply, DC voltage, current and RS485 outputs, 1/8 th DIN panel meter,
MP-2000	Line-powered, analog DC & RS232 outputs, ¼ DIN, dual channel set point controller with bit-mapped display

Measurement Specialties, Inc. (NASDAQ MEAS) offers many types of sensors and signal conditioners. Data sheets can be downloaded from our web site at: <http://www.meas-spec.com/datasheets.aspx>

*Measurement Specialties acquired Schaevitz Sensors and the **Schaevitz™** trademark in 2000.*

LDM-1000 – LVDT/RVDT Signal Conditioning Module

FEATURES

- Standard DIN rail form factor
- Voltage and current output signals
- Phase correction
- Status LED's for power and loop integrity
- Multiple LVDT master/slave capability

APPLICATIONS

- Gas and steam turbine control systems
- Process control systems
- Reeler/dereeler control systems
- Automotive test track instrumentation
- Paper head box control

PERFORMANCE SPECIFICATIONS

ELECTRICAL SPECIFICATIONS	
Supply voltage	18 to 30VDC or 10 to 18VDC (<i>jumper selectable, 18 to 30VDC as shipped</i>)
Supply current	65mA maximum
Output types and ranges	±5VDC, 0 to 5VDC, 0 to 10VDC, and 4 to 20mA (<i>DIP switch selectable, ±5VDC as shipped</i>)
Temp. coefficient of output	±0.02% of FSO per °F [±0.036% of FSO per °C] over the operating temperature range
Voltage output noise & ripple	5mV RMS maximum
Current output noise & ripple	25µA RMS maximum
Current loop resistance	700Ω maximum (<i>with 18 to 30VDC supply voltage</i>)
Frequency response	250 or 1000Hz @ -3 dB (<i>3-pole Butterworth, DIP switch selectable, 250Hz as shipped</i>)
Non-linearity	±0.02% of FSO
Input sensitivity range	0.05 to 2.50 VRMS
Transducer excitation	
Voltage	1 or 3 VRMS (<i>DIP switch selectable; 3VRMS as shipped, with 18 to 30VDC supply voltage only</i>)
Current	25mA RMS
Frequency	2.5, 5 or 10kHz (<i>DIP switch selectable, 2.5kHz as shipped</i>)
Transducer requirements	
Transducer type	LVDT or RVDT with 4, 5 or 6 electrical connections
LVDT/RVDT input impedance	50Ω minimum @ 1 VRMS excitation ; 150Ω minimum @ 3 VRMS
LVDT/RVDT full scale output	0.05 to 2.50 VRMS
ENVIRONMENTAL AND MECHANICAL SPECIFICATIONS	
Operating temperature range	-13°F to +185°F [-25°C to 85°C]
Storage temperature range	-67°F to +257°F [-55°C to 125°C]
Mounting	Standard DIN-3 rail mount
Size	3.90 [99.0] high x 0.89 [22.5] wide x 4.51 [114.5] Deep
Wire terminal size	24 to 12 AWG [0.2 to 2.5mm]
IEC 60529 rating	IP60

Notes:

All values are nominal unless otherwise noted

Dimensions are in inch [mm]

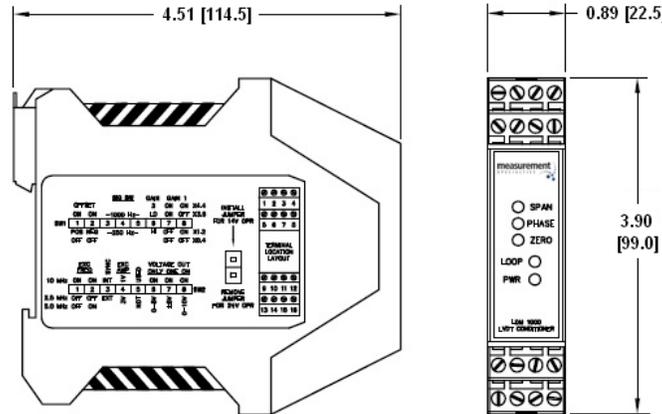
FSO (Full Scale Output) is the largest absolute value of the outputs measured at the range ends

WIRING

Download the operation manual at: <http://www.meas-spec.com/manuals.aspx>

LDM-1000 – LVDT/RVDT Signal Conditioning Module

DIMENSIONS AND INTERNAL VIEW



Dimensions are in inch [mm]

ORDERING INFORMATION

Description	Part Number
LDM-1000 Signal Conditioning Module	02291333-000
DC power supply (15VDC), Model PSD 40-15	02291339-000
Cable to connect HCA/HCI/GCA/R36AS to LDM-1000, 200°C [392°F] (PTO6A-10-6S to Stripped/Tinned) (1)	04290595-000
Extension cable to connect LBB (option -001) to LDM-1000 (PTO6A-10-6S to Stripped & Tinned) (1)	04290596-000

(1) All cables are shielded, 10 foot long, and rated 80°C [176°F] operating unless otherwise noted. Consult factory for other lengths.

Download the operation manual at: <http://www.meas-spec.com/manuals.aspx>

TECHNICAL CONTACT INFORMATION

NORTH AMERICA	EUROPE	ASIA
Measurement Specialties, Inc. 1000 Lucas Way Hampton, VA 23666 United States Phone: +1-800-745-8008 Fax: +1-757-766-4297 Email: sales@meas-spec.com Web: www.meas-spec.com	MEAS Deutschland GmbH Hauert 13 D-44227 Dortmund Germany Phone: +49-(0)231-9740-0 Fax: +49-(0)231-9740-20 Email: info.de@meas-spec.com Web: www.meas-spec.com	Measurement Specialties China Ltd. No. 26, Langshan Road High-tech Park (North) Nanshan District, Shenzhen 518057 China Phone: +86-755-33305088 Fax: +86-755-33305099 Email: info.cn@meas-spec.com Web: www.meas-spec.com

The information in this sheet has been carefully reviewed and is believed to be accurate; however, no responsibility is assumed for inaccuracies. Furthermore, this information does not convey to the purchaser of such devices any license under the patent rights to the manufacturer. Measurement Specialties, Inc. reserves the right to make changes without further notice to any product herein. Measurement Specialties, Inc. makes no warranty, representation or guarantee regarding the suitability of its product for any particular purpose, nor does Measurement Specialties, Inc. assume any liability arising out of the application or use of any product or circuit and specifically disclaims any and all liability, including without limitation consequential or incidental damages. Typical parameters can and do vary in different applications. All operating parameters must be validated for each customer application by customer's technical experts. Measurement Specialties, Inc. does not convey any license under its patent rights nor the rights of others.