LDM-1000

LVDT/RVDT Signal Conditioning Module

RoHS CE

SPECIFICATIONS

- **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**

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

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.

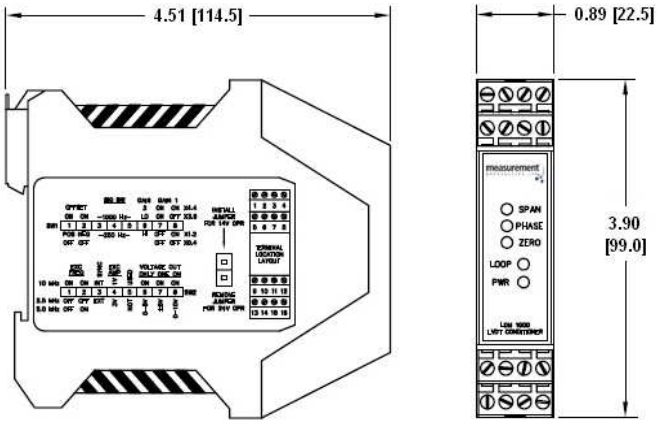
Finally, the frequency response is internally selectable and so is the master/slave function which allows synchronization of multiple LDM-1000 modules to prevent beat frequencies and cross talk between transducers.

PERFORMANCE SPECIFICATIONS

ELECTRICAL SPECIFICATIONS	
Supply voltage	18 to 30VDC or 10 to 18VDC *(jumper selectable, 18 to 30VDC as shipped)*
Supply current	65mA maximum
Output types and ranges	±5VDC, 0 to 5VDC, 0 to 10VDC, and 4 to 20mA *(DIP switch selectable, ±5VDC as shipped)*
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 *(with 18 to 30VDC supply voltage)*
Frequency response	250 or 1000Hz @ -3 dB *(3-pole Butterworth, DIP switch selectable, 250Hz as shipped)*
Non-linearity	±0.02% of FSO
Input sensitivity range	0.05 to 2.50 VRMS
Transducer excitation	
Voltage	1 or 3 VRMS *(DIP switch selectable; 3VRMS as shipped, with 18 to 30VDC supply voltage only)*
Current	25mA RMS
Frequency	2.5, 5 or 10kHz *(DIP switch selectable, 2.5kHz as shipped)*
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

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.

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