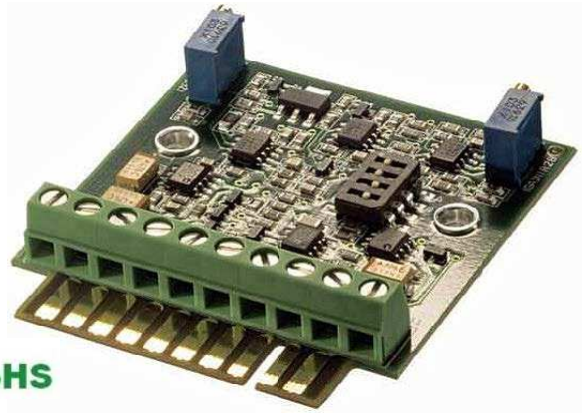
LiM-420 – Current Output, LVDT/RVDT OEM Signal Transmitter



- **Low cost OEM 4-20mA (3-wire) transmitter**
- **Very compact, open PC board design**
- **DIP switch selectable coarse gain**
- **Zero and span adjustment potentiometers**
- **18 to 30VDC supply voltage**
- **-25° to +85°C operating temperature range**
- **Card-edge or barrier strip connections**
- **Works with very low input impedance LVDTs and RVDTs**

DESCRIPTION

The **LiM-420** is an LVDT/RVDT signal conditioning transmitter specifically designed for the OEM marketplace. Operating on an 18 to 30VDC unipolar supply voltage, the LiM-420 delivers a low noise 4 to 20mA output signal. Compatible with many 5 and 6 electrical connection LVDT and RVDT transducers (see specifications), this compact transmitter provides excellent performance on a budget. A generous excitation drive current of 20mA, allowing operation with transducer input impedances as low as 175 Ohms.

The LiM-420 is designed for easy installation, plugged into a backplane-type connector, or with individual wires connected to the screw terminal barrier strip. Measuring less than 2.5x2.5 inches, the LiM-420 may be mounted or stacked using the permanently attached threaded standoffs, or card-edge guides. All six selectable gain ranges are easily accessed via DIP switches and two multi-turn potentiometers allow for fine zero and gain adjustments.

Also see our other LVDT/RVDT signal conditioner models:

LVM-110	±12 to ±15VDC supply, multiple uni-polar and bipolar selectable DC voltage outputs
LDM-1000	10 to 30VDC supply, DC voltage and 4 to 20mA outputs, DIN rail mountable
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, 1/8th 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 other types of sensors and signal conditioners. Data sheets can be downloaded from our web site at: http://www.meas-spec.com/datasheets.aspx

*MEAS acquired Schaevitz Sensors and the **Schaevitz**® trademark in 2000.*

FEATURES

- Low cost/high performance
- Wide operating temperature range
- Six selectable gain ranges
- 20-turn zero & gain adjustment potentiometers
- Threaded standoffs for panel/box mounting

APPLICATIONS

- Valve position feedback
- Roller gap sensing
- Paper head box position
- Coater knife gap
- Materials testing machines

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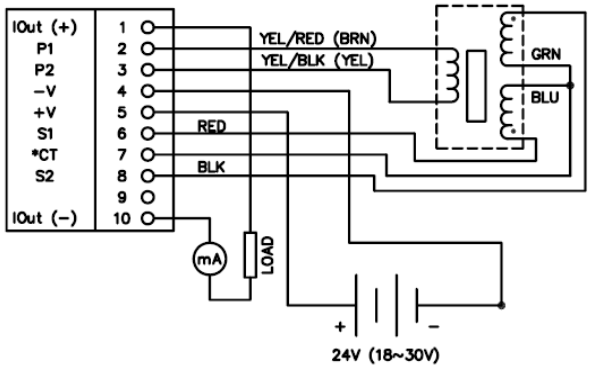
PERFORMANCE SPECIFICATIONS

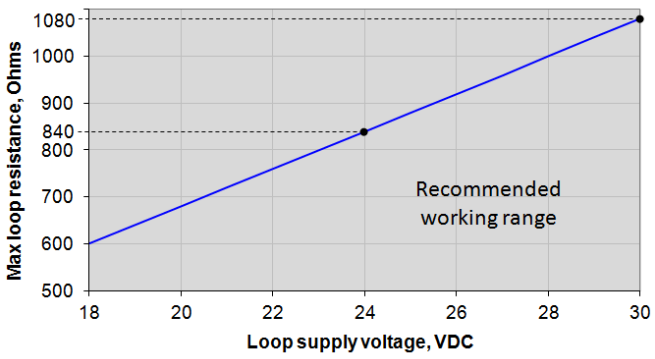
ELECTRICAL SPECIFICATIONS	
Supply voltage	18 to 30VDC (unipolar)
Supply current	50mA maximum
Output range	4 to 20mA
Temperature coefficient of output	±0.02% of FSO per ºF [±0.036% of FSO per ºC] over operating temperature range
Maximum loop resistance	500Ω (with 24VDC supply)
Output noise and ripple	25µA RMS maximum
Frequency response	50Hz @ -3 dB
Non-linearity	±0.05% of FSO
Stability	±0.05% of FSO maximum (after 30 minute warm-up)
Zero adjustment range	±2.5mA
Transducer excitation	
Voltage	3.5 VRMS ±10%, sine wave
Current	20mA RMS maximum
Frequency	2.5kHz
Transducer requirements	
Transducer type	LVDT or RVDT with 5 or 6 electrical connections
LVDT/RVDT input impedance	175Ω minimum
LVDT/RVDT output range	0.1 to 5.6 VRMS for 20mA full scale output

ENVIRONMENTAL AND MECHANICAL SPECIFICATIONS	
Operating temperature range	-13℉ to + 185℉ [- 25℃ to 85℃]
Storage temperature range	-40℉ to + 257℉ [- 40℃ to 125℃]
Gain adjustment	6 DIP switch selectable ranges; 20-turn fine adjustment potentiometer
Zero adjustment	20-turn fine adjustment potentiometer
Electrical connections	PC board edge (to backplane-type connector) or barrier terminal strip (accepts AWG 14 to 30 wire sizes)
Mounting	Use the attached threaded standoffs or card-edge guides

Notes:
All values are nominal unless otherwise noted
FSO (Full Scale Output) is the largest absolute value of the outputs measured at the range ends

WIRING SCHEMATIC & LOOP RESISTANCE (LOAD)





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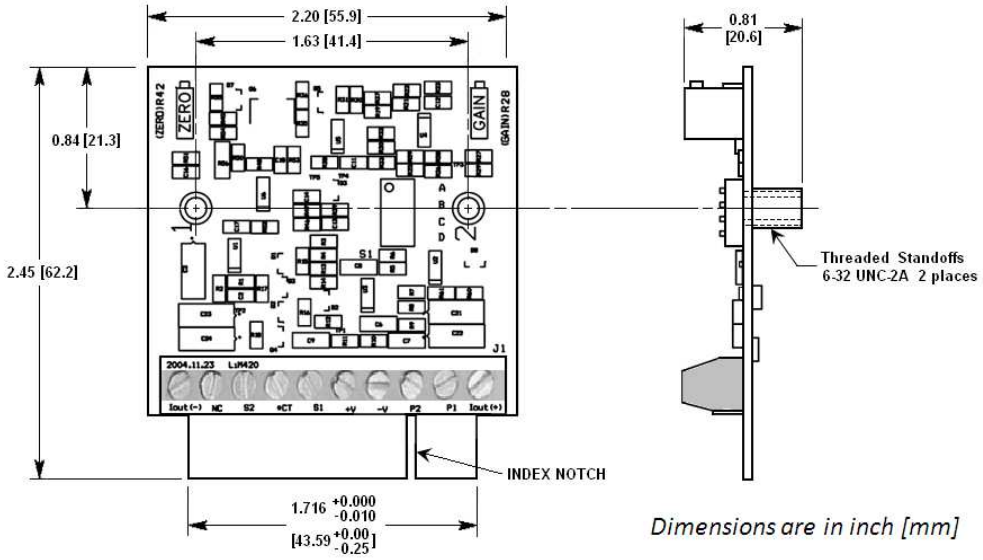
DIMENSIONS



Dimensions are in inch [mm]

ORDERING INFORMATION

Description	Model/Comments	Part Number
LVDT/RVDT 4-20mA Output, OEM Transmitter Module	LiM-420	72290000-000
Mating Connector *(sold separately)*	CINCH 5010A-20 PCB EDGE 1	62105012-000
Cable to connect HCA/HCI/GCA/R36AS to LiM4-20 *(1)*	PTO6A-10-6S to Stripped & Tinned	04290417-000
Extension cable to connect LBB (option -001) to LiM4-20 *(1)*	PTO6A-10-6S to Stripped & Tinned	04290582-000

(1) All cables are shielded, 10 foot long, and rated 80℃ [176℉]. Consult factory for other lengths.

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

TECHNICAL CONTACT INFORMATION

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