

MP Series LVDT



- Operation in harsh environments
- Mounting flanges for easy installation
- Stroke ranges from ± 0.5 to ± 10 inches
- AC operation from 400Hz to 5kHz
- Anodized aluminum housing
- Screw terminal wiring
- Teflon® bore liner
- Imperial or metric threaded core

DESCRIPTION

The **MP Series** LVDTs provide classic precision performance in harsh industrial environments. The rugged, extruded anodized aluminum housing contains a 100% epoxy encapsulated LVDT, affording superior environmental, mechanical and EMI/RFI protection. The convenient heavy-duty terminal strip replaces multiple lead wires thereby simplifying electrical connection, while the mounting flanges ease mechanical installation. An integral Teflon® bore liner provides a smooth, low-friction bearing surface for the core and reduces diametrical clearance.

Available in a variety of stroke ranges from ± 0.5 to ± 10 inches, the MP Series is the ideal choice for industrial mill type applications, power turbines, or wherever aggressive environmental conditions are present. The MP Series is also available with a small diameter/low-mass core, for applications where excessive core weight could influence the motion. The lightweight core can also reduce mechanical stresses and help preserve the structural integrity of the core actuation assembly during high speed displacement or under high vibration. The MP Series is compatible with the full line of Measurement Specialties LVDT signal conditioners, readouts and controllers.

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

- Rugged aluminum housing
- 100% epoxy encapsulated
- $\pm 0.25\%$ linearity (100% stroke)
- Shock and vibration tolerant
- Screw terminals and mounting flanges
- Calibration certificate supplied with each unit

APPLICATIONS

- Paper mills
- Power turbine valve position
- Rolling mills
- Metal forming presses
- Steel mill “ton-dish” slide valve feedback
- Progressive rotary press Z-axis feedback

MP Series LVDT

PERFORMANCE SPECIFICATIONS

ELECTRICAL SPECIFICATIONS							
Parameter	500 MP	1000 MP	2000 MP	3000 MP	4000 MP	5000 MP	10000 MP
Stroke range	±0.5 [±12.7]	±1 [±25.4]	±2 [±50.8]	±3 [±76.2]	±4 [±101.6]	±5 [±127]	±10 [±254]
Sensitivity mV/V/.001in [mV/V/mm]	0.7 [28]	0.39 [15.3]	0.23 [9.1]	0.25 [9.8]	0.20 [7.9]	0.14 [5.5]	0.07 [2.8]
Output at stroke ends, mV/V (*)	350	390	460	750	800	700	700
Phase shift	-1°	-3°	-5°	-11°	-1°	-3°	-5°
Input impedance (PRIMARY)	460Ω	460Ω	330Ω	315Ω	275Ω	310Ω	550Ω
Output impedance (SECONDARY)	375Ω	320Ω	300Ω	830Ω	400Ω	400Ω	750Ω
Linearity	% of FS						
@ 50% stroke	0.15	0.15	0.15	0.15	0.15	0.15	0.15
@100% stroke (maximum)	0.25	0.25	0.25	0.25	0.25	0.25	0.25
@ 125% stroke	0.35	1.00	0.50**	0.50**	0.50**	1.00**	1.00**
@ 150% stroke	0.75	1.30**	1.00**	1.00**	1.00**	/	/
Input voltage	3Vrms sine wave						
Input freq. range	400Hz to 5kHz						
Test frequency	2.5kHz						
Null voltage (max)	0.5% of FSO						

ENVIRONMENTAL SPECIFICATIONS & MATERIALS	
Operating temperature	-65°F to +300°F [-55°C to 150°C]
Shock survival	1,000 g (11ms half-sine)
Vibration tolerance	20 g up to 2KHz
Housing material	Aluminum, anodized
Electrical termination	Six terminal barrier strip

Notes:

All values are nominal unless otherwise noted

Electrical specifications are for the test frequency indicated in the table

Dimensions are in inch [mm] unless otherwise noted

FS: Full Scale is 2X for ±X stroke

FSO: Full Scale Output is the output at X position for ±X stroke

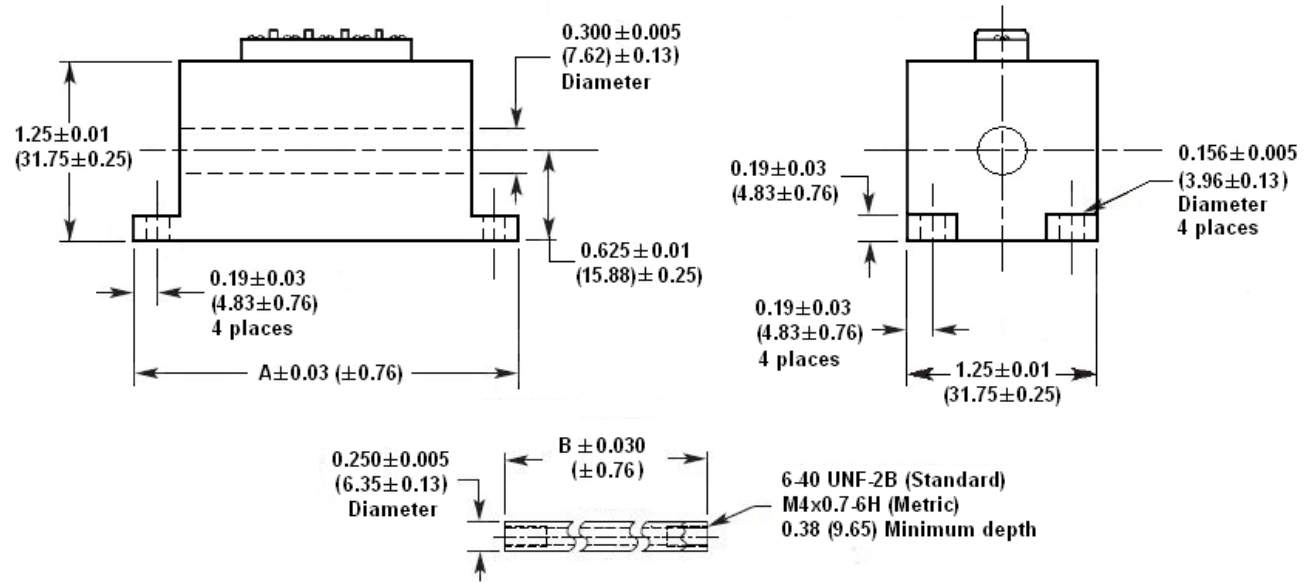
(*) Unit for output at stroke ends is millivolt per volt of excitation

** Requires special reduced core length

MP Series LVDT

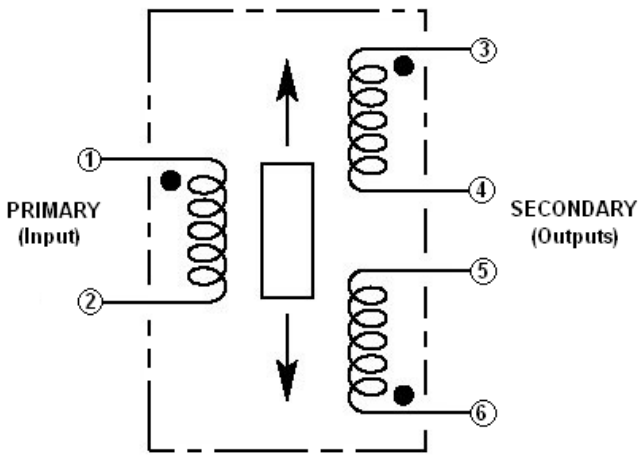
MECHANICAL SPECIFICATIONS

Parameter	500 MP	1000 MP	2000 MP	3000 MP	4000 MP	5000 MP	10000 MP
Body length "A"	6.50 [165.1]	7.64 [194.1]	11.01 [279.7]	13.85 [351.8]	16.68 [423.7]	18.92 [480.6]	31.90 [810.3]
Core length "B"	3.45 [87.6]	4.00 [101.6]	5.30 [134.6]	5.60 [142.2]	7.00 [177.8]	7.00 [177.8]	8.50 [215.9]
Body weight, oz [g]	12.36 [350]	16.59 [470]	21.00 [595]	26.12 [740]	31.77 [901]	36.18 [1026]	60.89 [1726]
Core weight, oz [g]	0.64 [18]	0.74 [21]	0.95 [27]	0.99 [28]	1.27 [36]	1.27 [36]	1.52 [43]



Dimensions are in inches (mm)

WIRING SCHEMATIC



Connect 4 to 5 for differential output

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ORDERING INFORMATION

Description	Model	Part Number	Description	Model	Part Number
±0.5 inch LVDT	500 MP	02560498-000	±4 inch LVDT	4000 MP	03560390-000
±1 inch LVDT	1000 MP	02560499-000	±5 inch LVDT	5000 MP	02560502-000
±2 inch LVDT	2000 MP	02560500-000	±10 inch LVDT	10000 MP	02560503-000
±3 inch LVDT	3000 MP	02560501-000			
Options					Part Number
5.0 KHz calibration (<i>Available on 500 MP only</i>)					XXXXXXXX-002
Metric threaded core (M4 x 0.7)					XXXXXXXX-006
Small-diameter/low-mass core (<i>consult factory for mass and dimensions</i>)					XXXXXXXX-020

*Note: Add multiple option dash numbers together to determine proper ordering suffix
Example: 1000 MP, ±1.0 inch, with 5 KHz calibration and metric core, P/N 02560499-008*

Accessories	Part Number
Core connecting rod, 6 inches long, 6-40 threads	05282947-006
Core connecting rod, 12 inches long, 6-40 threads	05282947-012
Core connecting rod, 24 inches long, 6-40 threads	05282947-024
Core connecting rod, 36 inches long, 6-40 threads	05282947-036
Core connecting rod, 6 inches long, M4x0.7 metric threads	05282978-006
Core connecting rod, 12 inches long, M4x0.7 metric threads	05282978-012

Refer to our "[Accessories for LVDT's](#)" brochure for our LVDT signal conditioning instrumentation and other accessories