

XS-D Series



- Excellent stroke-to-length ratio
- Lower weights than standard LVDTs with comparable displacement ranges
- Stroke ranges from ± 1 to ± 10 inches
- Shock and vibration tolerant
- Stainless steel housing
- Magnetically shielded
- Imperial or metric threaded core

DESCRIPTION

The **XS-D Series** of LVDTs are specifically designed for measuring relatively large displacements where installation space is limited. The XS-D Series have a substantially greater displacement range than standard LVDTs but without the accompanying increase in body length and weight. Using special coil winding techniques, the XS-D permits linear range measurements of up to 80% of the housing length.

Compact, shock and vibration tolerant, and featuring infinite resolution and repeatability, the XS-D Series are the perfect choice for servo mechanisms, linear potentiometer replacement, or wherever precise displacement measurements are required in space restrictive applications. All models are supplied with a calibration certificate, and are available with either an imperial or metric threaded core. The XS-D Series are compatible with all Measurement Specialties LVDT signal conditioners, controllers and readouts.

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

- Superior stroke-to-length ratio
- Stroke ranges from ± 1 to ± 10 inches
- Smooth transfer function
- AISI 400 Series stainless steel housing
- Calibration certificate supplied with all units

APPLICATIONS

- Servo mechanisms
- Hydraulic actuators
- Linear potentiometer replacement
- Space restrictive installations
- Weight sensitive applications

XS-D Series

PERFORMANCE SPECIFICATIONS

ELECTRICAL SPECIFICATIONS					
Parameter	1002 XS-D	2002 XS-D	3002 XS-D	5002 XS-D	10002 XS-D
Stroke range	±1.0 [±25.4]	±2.0 [±50.8]	±3.0 [±76.2]	±5.0 [±127]	±10.0 [±254]
Sensitivity mV/V/0.001in [mV/V/mm]	0.28 [11.0]	0.16 [6.3]	0.12 [4.7]	0.13 [5.1]	0.05 [2.0]
Output at stroke ends (*)	0.28mV/V	0.32mV/V	0.36mV/V	0.65mV/V	0.50mV/V
Phase shift	+30°	+25°	-22°	+28°	0°
Input impedance (PRIMARY)	175Ω	243Ω	306Ω	240Ω	462Ω
Output impedance (SECONDARY)	230Ω	103Ω	234Ω	500Ω	462Ω
Linearity	±2.0% of FS, maximum				
Input voltage	3Vrms sine wave				
Test input frequency	2.5KHz				
Input frequency range	400Hz to 3kHz				
Null voltage	0.5% of FSO, maximum				

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	AISI 410 Series stainless steel
Lead type/length	Six lead-wires, stranded 28 AWG, PTFE insulated, 1 foot [0.3m] long

Notes:

Dimensions are in inch [mm]

All values are nominal unless otherwise noted

Electrical specifications are for the test frequency indicated in the table

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

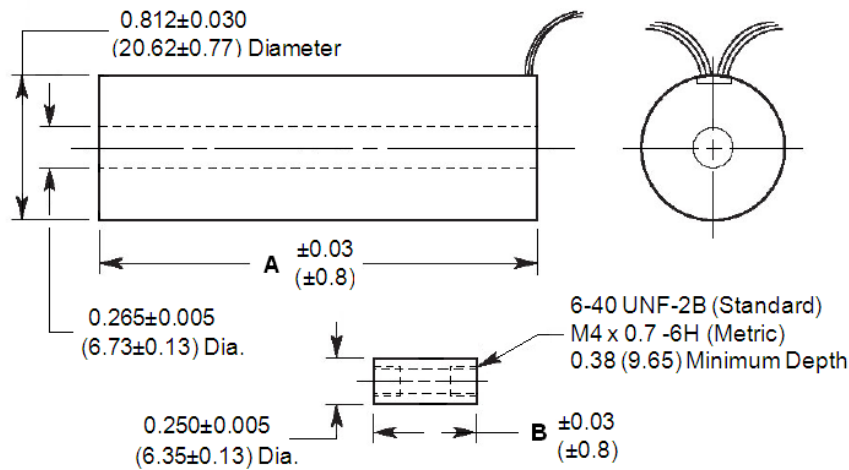
FS: Full Scale is 2X for ±X stroke

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

XS-D Series

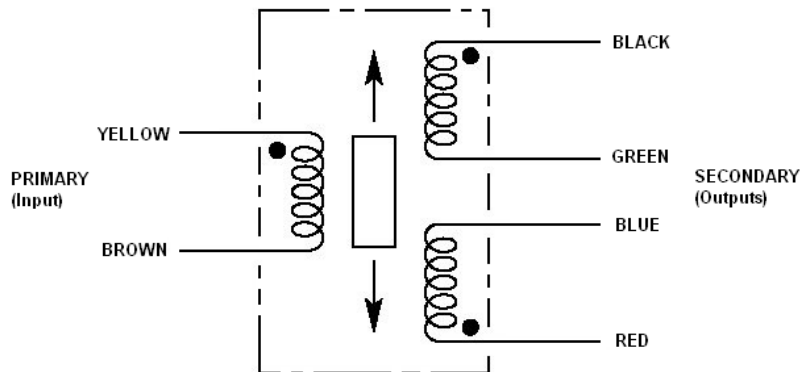
MECHANICAL SPECIFICATIONS

Parameter	1002 XS-D	2002 XS-D	3002 XS-D	5002 XS-D	10002 XS-D
Main body length "A"	2.57 [65.2]	5.76 [146.3]	7.50 [190.5]	12.52 [318.0]	25.06 [636.5]
Core length "B"	0.45 [11.4]	1.50 [38.1]	1.25 [31.8]	2.40 [61.0]	4.00 [101.6]
Body weight, oz [g]	2.3 [65]	4.1 [115]	4.9 [140]	7.6 [215]	16.6 [470]
Core weight, oz [g]	0.09 [2.5]	0.28 [8.0]	0.24 [6.8]	0.44 [12.5]	0.88 [25.0]



Dimensions are in inches (mm)

WIRING SCHEMATIC



Connect Green to Blue for differential output

XS-D Series

ORDERING INFORMATION

Description	Model	Part Number
±1.0 inch	1002 XS-D	02560567-000
±2.0 inch	2002 XS-D	02560568-000
±3.0 inch	3002 XS-D	02560569-000
±5.0 inch	5002 XS-D	02560571-000
±10.0 inch	10002 XS-D	02560572-000
Options		
Metric threaded core option (M4x0.7-6H threads)	All	XXXXXXXX-006
Accessories		
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
Mounting block		04560952-000

Note:

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