XS-B Series - Subminiature AC LVDT

- **Micro size**
- **Low mass core**
- **3/16 or 1/4 inch housing diameter**
- **Stroke ranges ±0.1 and ±0.25 inch**
- **Operating frequency up to 20kHz**
- **Standard or threaded bulkhead mount**
- **Stainless steel housing**
- **Magnetically shielded**

DESCRIPTION

The XS-B Series of subminiature LVDTs were specifically designed for micro applications, where small physical size is the prime requirement. Featuring an extremely low core weight, the XS-B Series are the perfect choice for high speed displacement measurements, measurement of delicate materials and films, or where heavier cores would influence the measurement result.

The XS-B Series are available in stroke ranges of ±0.1 inch [±2.54mm] or ±0.25 inch [±6.35mm], standard or threaded mounting configurations, and in flying lead or polyurethane jacketed lead termination (all model dependent). All models incorporate a ferromagnetic stainless steel housing providing electromagnetic and electrostatic shielding. The XS-B Series is compatible with most Measurement Specialties LVDT signal conditioners, controllers and readouts *(consult factory)*.

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

- 0.250” [6.35mm] max diameter
- Threaded mount version available (XS-BG)
- Lead-wires (XS-B) or cable (XS-BG)
- Axial and radial cable exit (XS-BG)
- Electromagnetic shielding
- Stainless steel housing
- 220ºC operation *(Option; call factory)*
- Calibration certificate supplied with all units

APPLICATIONS

- Servomechanisms
- Robotics
- Surfometers
- Measurement of films/delicate materials
- Space restrictive applications
- Multi-point measurement of small components
- Multi-finger calipers for pipe contour inspection
- Measurements at high displacement speeds

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PERFORMANCE SPECIFICATIONS

ELECTRICAL SPECIFICATIONS			
Parameter	**XS-B 099**	**XS-B 249**	**XS-BG 100**
Stroke range	±0.10 [±2.54]	±0.25 [±6.35]	±0.10 [±2.54]
Sensitivity V/V/inch [mV/V/mm]	1.5 [59.1]	1.4 [55.1]	5.25 [207]
Output at stroke ends (*)	150mV/V	350mV/V	525mV/V
Phase shift	+50°	+36°	+3°
Input impedance (PRIMARY)	30Ω	135Ω	960Ω
Output impedance (SECONDARY)	48Ω	320Ω	2150Ω
Non-linearity, % of FR, Maximum	±0.5	±0.5	±0.2
Input voltage, sine wave	1 VRMS	1 VRMS	3.5 VRMS
Test input frequency	2.5kHz	2.5kHz	5.0kHz
Input frequency	2.5 to 20kHz		
Null voltage, maximum	1% of FSO		

ENVIRONMENTAL SPECIFICATIONS & MATERIALS		
Parameter	**XS-B 099 and 249**	**XS-BG 100**
Operating temperature	-67°F to +302°F [-55°C to +150°C]	-40°F to +140°F [-40°C to +60°C]
Shock survival	1, 000 g (11ms half-sine)	1, 000 g (11ms half-sine)
Vibration tolerance	20 g up to 2KHz	20 g up to 2KHz
Housing material	Kovar	AISI 430 Series stainless steel
Electrical connection	Five lead-wires Stranded 36 AWG PTFE insulated 1 foot [0.3m] long Axial exit	Shielded cable with Polyurethane jacket Six conductors, stranded 32 AWG, PTFE insulated 6.5 feet [2m] long Axial and radial exit (**)

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 (input voltage)
(**): Adapter provided for radial exiting of cable
FR: Full Range is the stroke range, end to end; FR=2xS for ±S stroke range
FSO (Full Scale Output): Largest absolute value of the outputs measured at the ends of the range

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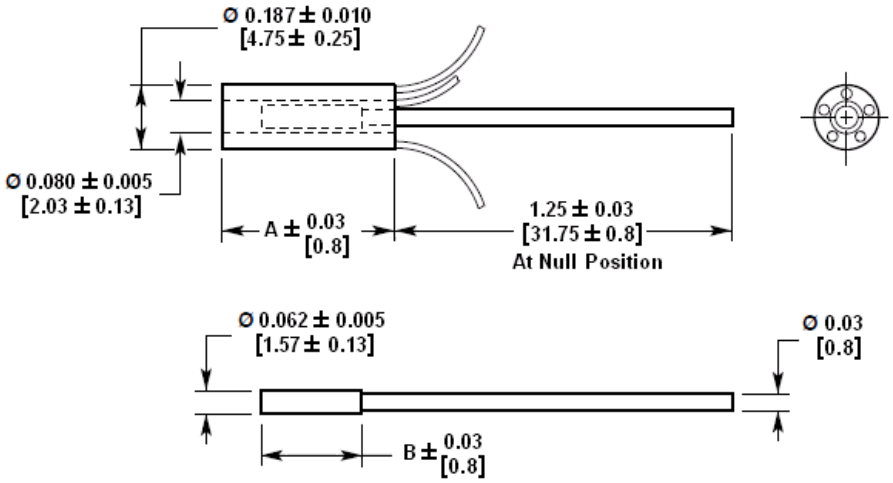
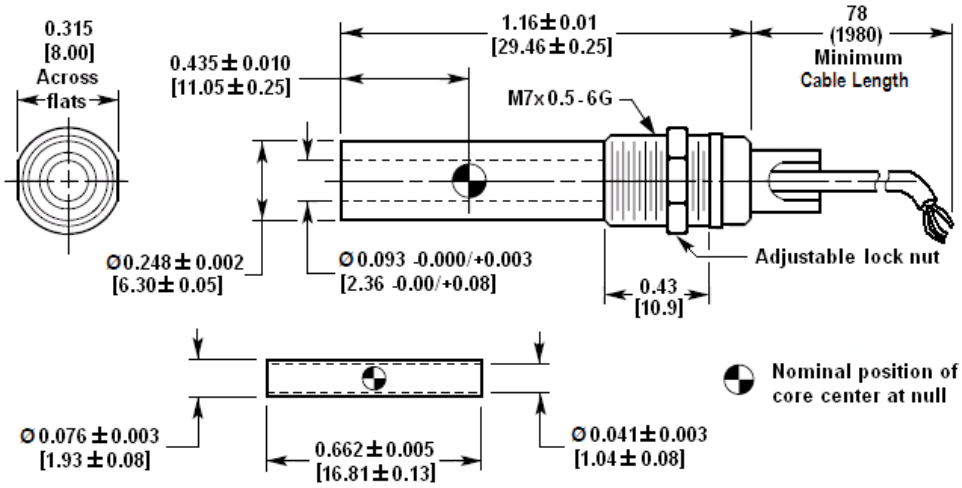
MECHANICAL SPECIFICATIONS

Parameter	XS-B 099	XS-B 249
Main body length “A”	0.88 (22.35)	1.88 (47.75)
Core length “B”	0.50 (12.7)	1.25 (31.75)
Body weight, oz [g]	0.14 [4.0]	0.31 [8.8]
Core weight, oz [g]	0.013 [0.37]	0.021 [0.60]



XS-B

(Supplied with extension rod already attached to core)



100 XS-BG

Dimensions are in inches [mm]

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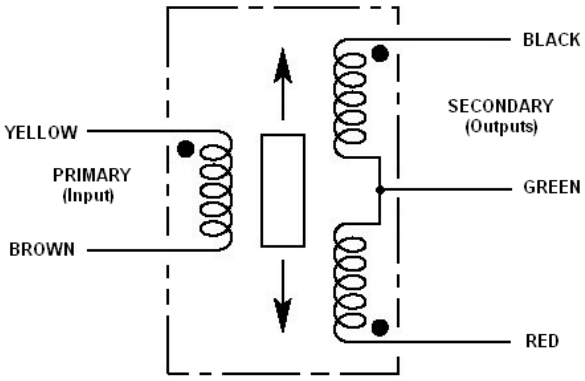
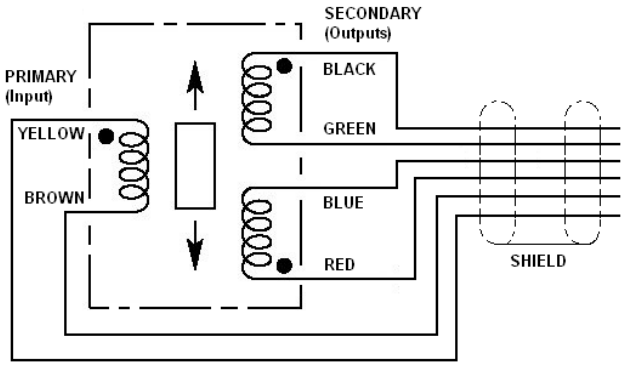
WIRING INFORMATION



XS-B



XS-BG

ORDERING INFORMATION

Description	Model	Part Number
±0.1 inch LVDT	XS-B 099	02560629-000
±0.25 inch LVDT	XS-B 249	02560630-000
±0.1 inch LVDT	XS-BG 100	02560997-000

Refer to our " Accessories for LVDTs" data sheet for our LVDT signal conditioning instrumentation and other accessories.

TECHNICAL CONTACT INFORMATION

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