



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
- 220°C operation (Option; call factory)
- Calibration certificate supplied with all units

XS-B SERIES

Subminiature AC LVDT

SPECIFICATIONS

- 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

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 $[\pm 2.54mm]$ or ± 0.25 inch $[\pm 6.35mm]$, 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).

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

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]		
Test input frequency	2.5kHz	5kHz	10kHz	2.5kHz	5kHz	10kHz	5kHz	
Sensitivity V/V/inch	1.5	2.7	4.0	1.4	1.7	1.85	5.25	
[mV/V/mm]	[59.1]	[106]	[157]	[55.1]	[66.9]	[72.8]	[207]	
Output at stroke ends (*), mV/V	150	270	400	350	425	462	525	
Phase shift	+69°	+55°	+38°	+35°	20°	12°	+3°	
Input impedance (PRIMARY), ohms	30	40	50	110	160	210	960	
Output impedance (SECONDARY), ohms	45	60	75	135	160	200	2150	
Non-linearity, maximum	±0.5% of FR		±0.5% of FR			±0.2% of FR		
Input voltage, sine wave	1 VRMS		1 VRMS		3.5 VRMS			
Input frequency range	2.5 to 20kHz (Standard test frequency is 2.5kHz) 2.5 to 20kHz		2.5 to 20kHz					
Null voltage, maximum	0.5% of FRO							

ENVIRONMENTAL SPECIFICATIONS & MATERIALS						
Parameter	XS-B 099 and XSB 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 (**)				
IEC	IP61	IP61				

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)

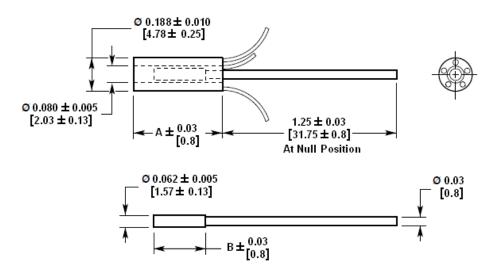
(**): Adapter provided for radial exiting of cable

FR: Full Range is the stroke range, end to end; FR=2xS for $\pm S$ stroke range

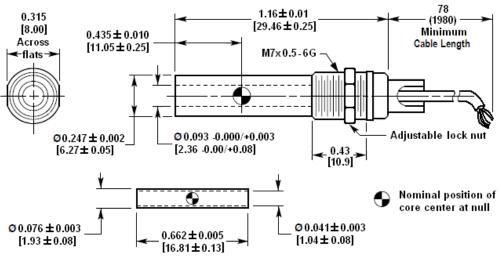
FRO (Full Range Output): Algebraic difference in outputs measured at the ends of the range

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]



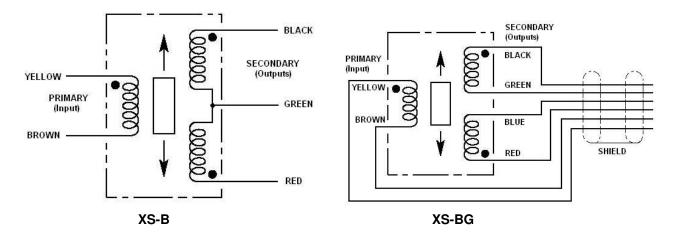
XS-B (Supplied with extension rod already attached to core)



100 XS-BG

Dimensions are in inches [mm]

WIRING INFORMATION



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

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