

XS-D Series

Long Stroke-to-Body Length LVDT

DESCRIPTION

The **XS-D Series** is particularly well suited for measuring relatively large displacements, but where installation space is limited. The XS-D has a substantially greater displacement range than standard LVDTs but without the accompanying increase in body length and weight. Special winding techniques permit linear range measurements up to 80 percent of the XS-D's housing length.

In cramped servo mechanisms, linear potentiometers are traditionally used because of their shorter length. However, the XS-D series LVDT will readily fit in such restricted space applications. In addition, LVDTs are superior to linear potentiometers, particularly in high-vibration environments. For example, dither, used to prevent static friction in servo systems, will rapidly consume a linear potentiometer. The LVDT, being a contactless device, experiences no wear whatsoever. Since a linear potentiometer's output impedance varies with wiper position, its linearity is impaired when a significant load is applied. Unlike the linear potentiometer, the LVDT has a constant low output impedance. The 400 series stainless steel housing provides magnetic shielding.

FEATURES

- ◆ Displacement Ranges Up to 10"
- ◆ Weighs Less Than Standard LVDTs Having Comparable Displacement Ranges
- ◆ 80% of Unit Length is Available For Linear Range Measurements
- ◆ Calibration Certificate Supplied with All Models
- ◆ Compatible with All Schaevitz® Signal Conditioners

APPLICATIONS

- ◆ For Applications Where Sensor Installation Length is Restricted
- ◆ Ideal Replacement For Linear Potentiometers

OPTIONS

- ◆ Metric Thread Core



specifications

Input Voltage	3 V rms (nominal)
Frequency Range	400 Hz to 3 kHz
Operating Temperature	-65°F to 300°F
Range	(-55°C to 150°C)
Null Voltage	<0.5% full scale output
Shock Survival	1,000 g for 11 msec
Vibration Tolerance	20 g up to 2 kHz
Coil Form Material	High density glass-filled polymer or laminated glass epoxy
Housing Material	AISI 400 series magnetic stainless steel
Lead Wires	28 AWG, stranded copper, Teflon®-insulated, 12 inches (300 mm) long (nominal)

XS-D Series

performance and electrical specifications @ 2.5 kHz¹

XS-D Series Model Number	Nominal Linear Range		Linearity (±% full range)	Sensitivity mV out/V in Per		Impedance Ohms		Phase Shift
	inches	mm		0.001 in	mm	Pri	Sec	Degrees
1002 XS-D	±1.000	±25.4	2.0	0.25	10	200	200	+50
2002 XS-D	±2.000	±50.8	2.0	0.18	7.2	454	390	+22
3002 XS-D	±3.000	±76.2	2.0	0.125	5.1	245	335	-18
5002 XS-D	±5.000	±127.0	2.0	0.14	5.5	280	250	+24
10002 XS-D	±10.0	±254	2.0	0.05	2.0	462	462	0

¹All calibration is performed at room ambient temperature.

ordering information

Specify the XS-D Model followed by the option number (if desired).

Ordering Example:

Model Number 5002 XS-D-006 is an XS-D Series LVDT with a ±5.0" range (5002 XS-D), with a Metric thread core (006).

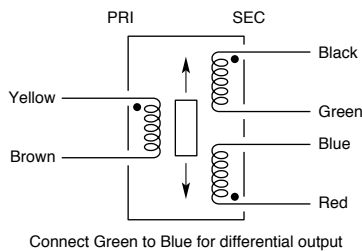
XS-D Model

1002 XS-D
2002 XS-D
3002 XS-D
5002 XS-D
10002 XS-D

options

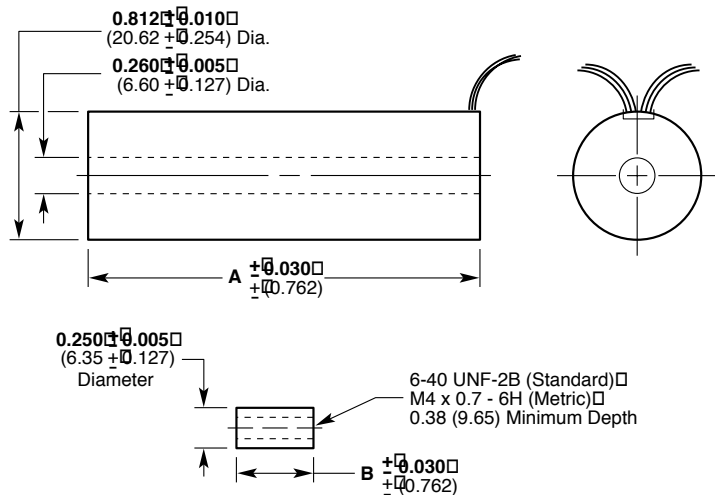
Number	Description
006	Metric Thread Core

wiring



dimensions

in (mm)



mechanical specifications

XS-D Series Model Number	Weight				Dimensions			
	Body		Core		A (Body)		B (Core)	
Number	oz	gm	oz	gm	in	mm	in	mm
1002 XS-D	2.29	65	0.09	2.5	2.50	63.5	0.45	11.4
2002 XS-D	4.06	115	0.28	8.0	5.75	146.1	1.5	38.1
3002 XS-D	4.94	140	0.24	6.8	7.50	190.5	1.3	33.1
5002 XS-D	7.59	215	0.44	12.5	12.50	317.5	2.4	61.0
10002 XS-D	16.59	470	0.88	23.0	25.00	635.0	4.0	101.6