DWXA950 - Linear Position Sensor With SSI/BiSS Communication

Linear Position Feedback

Range: 0-8000mm

Anodized Aluminum Enclosure

Compact Design

IP50 / NEMA 1 · Automation And Test Applications

DWXA950

Industrial Grade
SSI/BiSS Communication



The DWXA950 is a low-cost, compact and easy-to-use string potentiometer with a full stroke range up to 8000mm. It provides linear position feedback with SSI and BiSS protocol signals. Simply mount the sensor body to a fixed surface and attach the cable to the moving object.

SPECIFICATIONS

SUMMARY

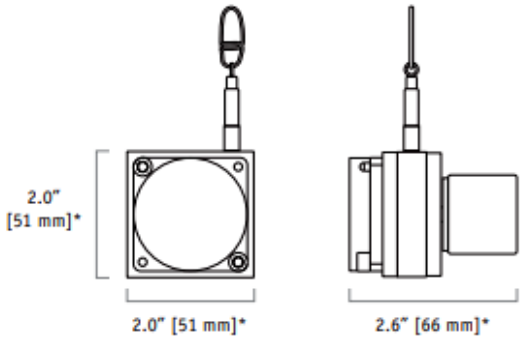
Full Stroke Range 0-8000mm
Output Signal ..... SSI·BISS
Accuracy ..... see ordering information
Repeatability ..... ±0.02% full stroke
Resolution ..... see ordering information
Measuring Cable ..... 0.48mm dia. nylon-coated stainless
Enclosure Material ..... anodized aluminum
Sensor ..... optical encoder
Max. Cable Accel. ..... see ordering information
Weight ..... 454 g (1 lb.) max.

ELECTRICAL

Input Voltage ..... see ordering information
Input Current ..... see ordering information
Permissible Load..... 30 mA max.
Driver Type..... clock and data signals / RS422
3 dB Cut-off Frequency..... 500 kHz
Alarm Output SSI: optional alarm bit; BiSS: warning and alarm bits

ENVIRONMENTAL

Enclosure IP50,NEMA 1
Operating Temperature ..... 0° to 160°F (-17° to 71°C)
Humidity ..... 98% RH, non-condensing
Vibration ..... 10 g to 58-500 Hz



Output Signal

SSI binary signal (+1 Vpp sine-cosine signal)
SSI binary signal
SSI Gray code signal (+1 Vpp sine-cosine signal)
SSI Gray code signal
BiSS-B (+1 Vpp sine-cosine signal)
BISS-B
BiSS-C (+1 Vpp sine-cosine signal)
BISS-C

· see ordering information for available channels

DWXA950 - Linear Position Sensor With SSI/BiSS Communication

ORDERING INFORMATION

Sample Model Number:

DWXA950 - 625 - 111 - BE - B - 00
Ⓡ Ⓐ Ⓓ Ⓔ

Ⓡ 625 = 625 mm stroke
Ⓐ 1 / 1 = mounting holes 8-32 x 6.25 mm
Ⓓ BE = BiSS-C output
Ⓔ B = 0.5 m cable, tangential exit

Model Number:

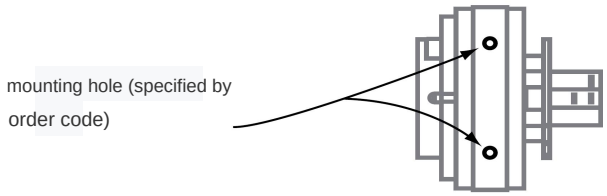
DWXA950 - R range ·A 1 ·B 1 ·C mounting holes
D output signal ·E electrical connection

Range:

R order code:	625	1250	2500	4000	5000	6000	7000	8000
Range Stroke:	625 mm	1250mm	2500mm	4000mm	5000mm	6000mm	7000mm	8000mm
acc. :	±0.25 mm	±0.50 mm	±1.00 mm	±1.50 mm	±2.00mm	±2.40mm	±2.80mm	±3.200mm
repeatability:	±0.12 mm	±0.25 mm	±0.50 mm	±0.75 mm	±1.00mm	±1.20mm	±1.40mm	±1.60mm
cable tension (±20%):	13 oz.	6 oz.	14 oz.	8 oz.	8 oz.	8 oz.	8 oz.	8 oz.
Resolution 12 bit:		0.062 mm/step				0.1043 mm/step		
22bit:		0.06 um/step				0.102 um/step		

Mounting Holes:

C order code:	1	2
Mounting Holes:	8-32 x 6.25 mm threaded holes	M6 x 6.25 mm threaded holes



Output Signal:

D

order code	SB	SD	SG	SC	BI	BC	BE	BV
signal output	SSI binary signal	SSI binary signal (+1 Vpp sine-cosine signal)	SSI Gray	SSI Gray code signal (+1 Vpp sine-cosine signal)	BISS-B	BiSS-B (+1 Vpp sine-cosine signal)	BISS-C	BiSS-C (+1 Vpp sine-cosine signal)
input voltage	5 VDC (±5%, +10%) / 7-30 VDC							
	Example: order code = BE = BiSS-C							

E order code:	0	2	A	B
	12-pin PCB connector, pre-fitted axial cable clamp	12-pin PCB connector, pre-fitted tangential cable clamp	with mating connector + 0.5 m cable, axial exit	with mating connector + 0.5 m cable, tangential exit
	for BC, BV, SD, SC interfaces only		all interfaces, custom cable length	

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12-pin PCB Connector Pin Definition:

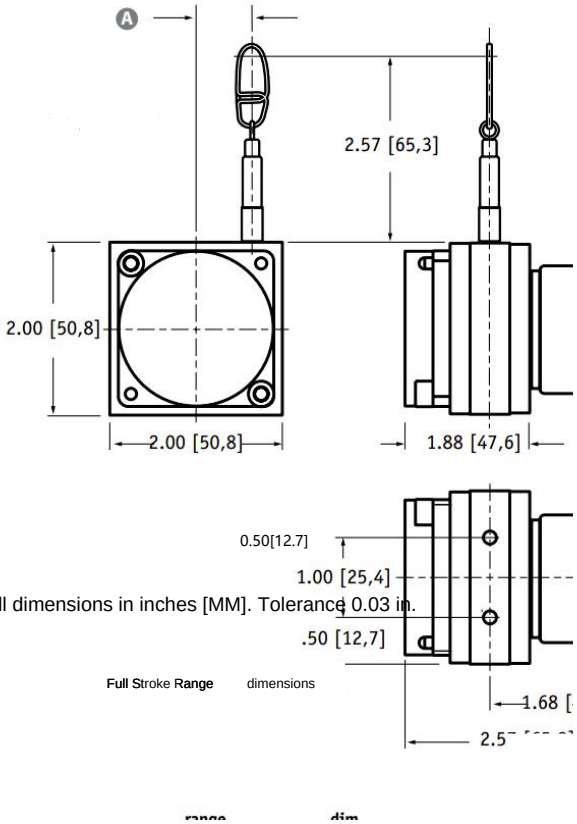
Color Code	pin no.	signal name
Grey	1a	Data
White/Green	2a	A+
Black	3a	sensor supply ground (0 V sensor)
Red/Blue	4a	B+
Green	5a	Clock
Violet	6a	5 V sensor
White	1b	main supply (DC 5 V / 7-30 V)
Yellow	2b	Clock
Grey/Pink	3b	B-
Brown	4b	supply ground (0 V)
Brown/Green	5b	A-
Pink	6b	Data

A/B type cable exit:

code	cable length
no code	0.5 m
-B5	1.5 m
-D0	3 m
-F0	5 m
-K0	10 m
-P0	15 m
-U0	20 m
-V0	25 m

Outline Drawing:

(drawing for 0-625, 0-1250 mm ranges)

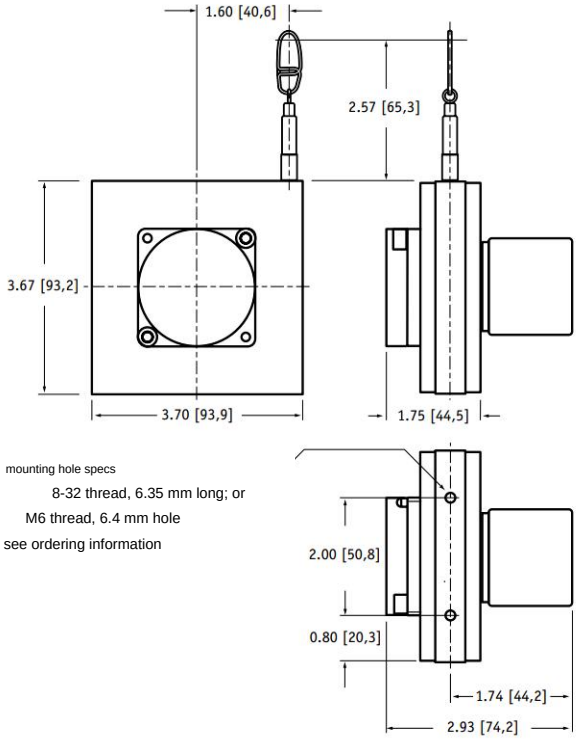


All dimensions in inches [MM]. Tolerance 0.03 in.

Full Stroke Range dimensions

range dim

(drawing for 0-2500, 0-4000 mm ranges)



mounting hole specs
8-32 thread, 6.35 mm long; or
M6 thread, 6.4 mm hole
see ordering information