DWSM1 - Linear Position Sensor with 4-20mA

Absolute Linear Position Feedback

Output Signal: 4...20mA

Range: 0-1500mm

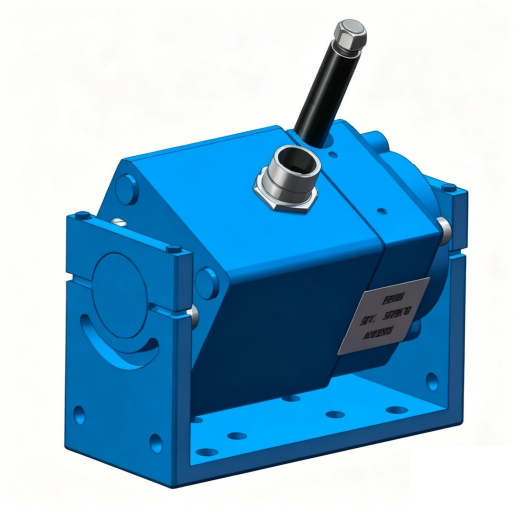
Aluminum And Polycarbonate Enclosure

Compact Design

IP65 · NEMA 4 protection

DWSM1

Industrial Grade
4...20mA Output Signal



The DWSM1 is the solution for low-acceleration test applications in potentially humid environments and also industrial compact space applications. It offers eight different full stroke ranges, designed specifically for flight and automotive crash test requirements, and comes with an easy-to-use dual-axis 360° rotating mounting bracket for installation in hard-to-reach areas.

SPECIFICATIONS

SUMMARY

Full Stroke Range 0-1500mm
Output Signal ..... 4...20 mA (2-wire)
Accuracy ..... see ordering information
Repeatability ..... ±0.05% full stroke
Resolution ..... essentially infinite
Measuring Cable ..... 0.48mm dia. nylon-coated stainless
Enclosure Materials ..... blue anodized aluminum
Sensor ..... plastic-hybrid precision potentiometer
Pot. Cycle Life ..... see ordering information
Max. Cable Accel. ..... see ordering information
Weight ..... 454 g (1 lb.) max.

ELECTRICAL

Input Voltage ..... see ordering information
Input Current ..... 20 mA max.
max. loop resistance (load) .... (loop supply voltage - 8)/0.020
Circuit Protection ..... 38 mA max.
Impedance ..... 100 M ohm @ 100 VDC min.

Output Signal Adjustment

Zero Adjustment ..... from factory zero to 50% FS
Full Stroke Adjustment ..... to 50% of factory-set full stroke

thermal effect

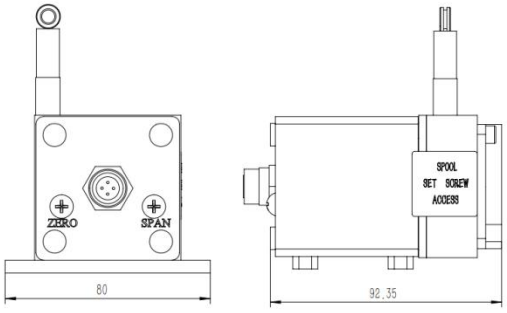
Zero ..... 0.01% f.s./°F max.
Full Stroke..... 0.01% f.s./°F max.

ENVIRONMENTAL

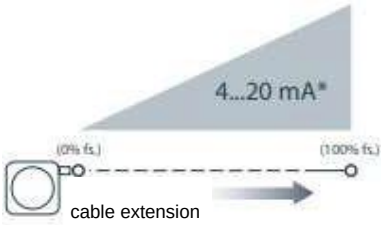
Enclosure NEMA4,IP65
Operating Temperature ..... 0° to 200°F (-17° to 90°C)
Vibration ..... up to 10 g to 2000 Hz max.

EMC certified 89/336/EEC

Emissions / Immunity ..... EN50081-2 / EN50082-2



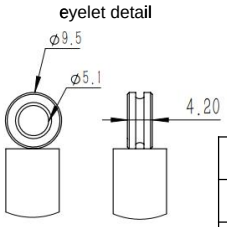
Output Signal



*optional 3-wire 0...20 mA output signal

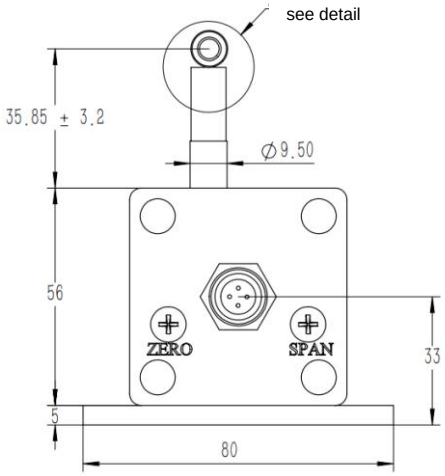
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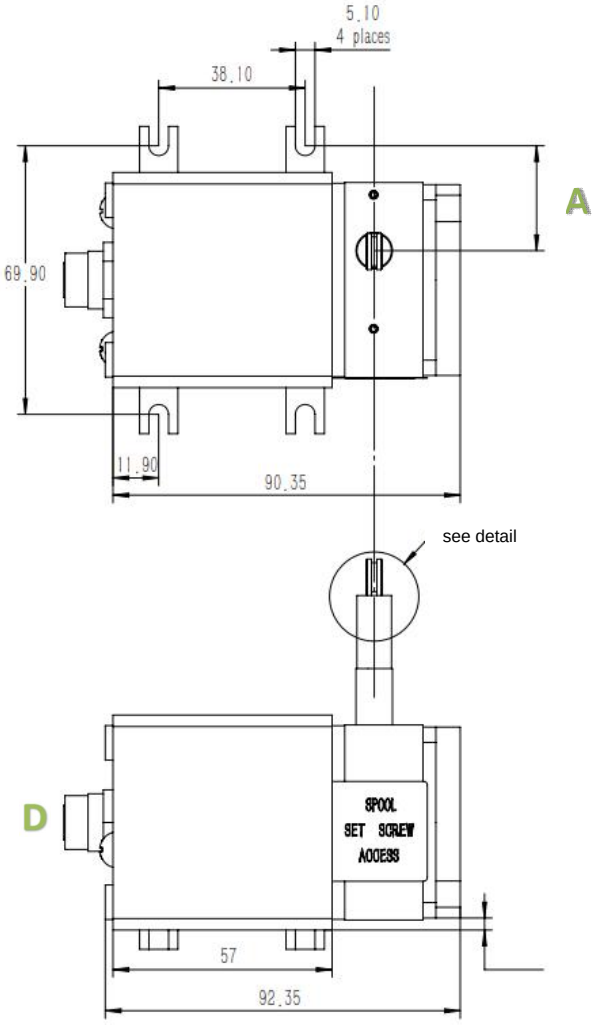
Outline Drawing:



Full Stroke Range	A
50,250	27.5mm
100,500,1000	18.9mm
150,750,1500	11.8mm

Full Stroke Range	D
50,100,250,500,1000	7.6mm
150,750,1500	4.5mm





Model Number:

DWSM1 · R range · A cable exit · B output signal · C electrical connection · D cable guide

Sample Model Number:

Ⓡ Ⓐ Ⓑ Ⓒ Ⓓ

DWSM1-50-UP-420E-MP4-SG

R range stroke
A cable exit up
B output signal 4...20mA
C electrical connection 4-pin connector
D cable guide spring-loaded guide

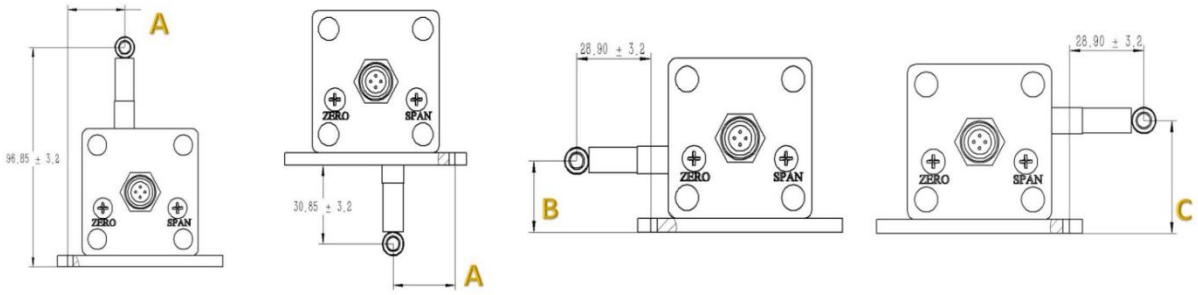
Range:

R order code	50	100	150	250	500	750	1000	1500
stroke (mm)	50	100	150	250	500	750	1000	1500
accuracy (% of f.s.)	0.28%			0.18%			0.15%	
cycle life (x10,000 cycles)	250			50			25	
cable tension (20%) (oz.):			12	12	6	4	6	4
max. cable acceleration (g):			11	11	4	3	4	3

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Cable Exit:

A order code:	UP	DN	FR	BK
Direction:	up	down	front	back



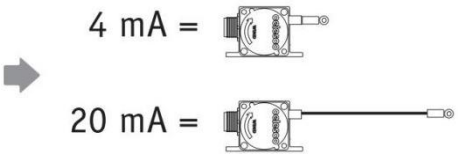
stroke (mm)	50	100	150	250	500	750	1000	1500
A (mm)	27.5	18.9	11.8	27.5	18.9	11.8	18.9	11.8
B (mm)	25.1	16.9	9.7	25.1	16.9	9.7	16.9	9.7
C (mm)	40.7	49.2	56.3	40.7	49.2	56.3	49.2	56.3

Output Signal:

B order code:	420E	420R
Signal Output:		
acc. range:	16 mA/full stroke ±0.25%	
Wiring Configuration:	2-wire	
Input Voltage:	8 – 34 vdc	

Example:

order code = 420E = 4...20 mA

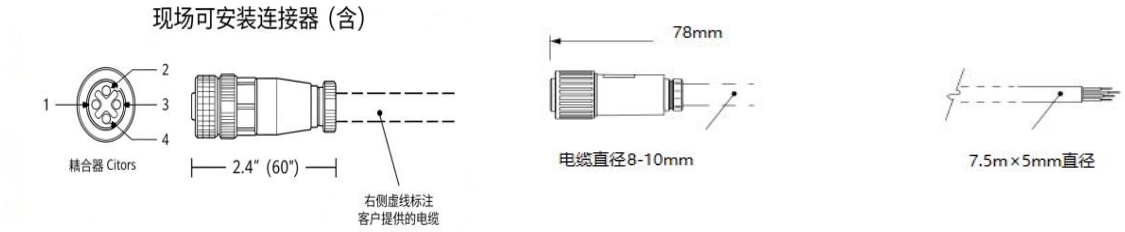


DWSM1 - Linear Position Sensor with 4-20mA

Electrical Connection:

C order code: MP4 M6 C25

MP4	M6	C25
4-pin connector with mating plug	6-pin plastic connector with mating plug	24 AWG 7.5m shielded instrument cable

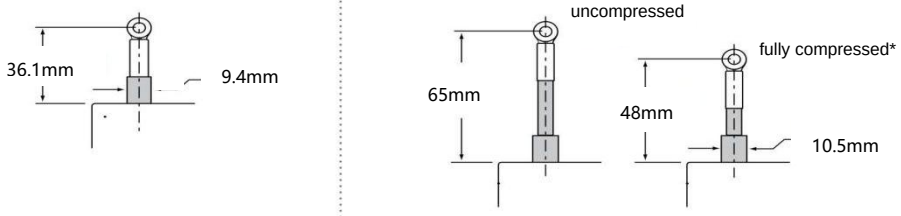


4-pin connector with mating plug					6-pin plastic connector with mating plug				7.5m (25 ft.) cable		
	pin	color code	2-wire	3-wire		pin	2-wire	3-wire	color code	2-wire	3-wire
contact view	1	RED-BLK TR.	8-34vdc	14-29vdc	contact view	1	8-34vdc	14-29vdc	RED	8-34vdc	14-29vdc
	2	RED-WHT TR.	4...20mA	common		2	4...20mA	common	BLACK	4...20mA	common
	3	RED	-	0...20mA		3		0...20mA	WHITE	-	-
	4	GREEN	-			4			GREEN		0...20mA

Cable Guide:

D order code: blank SG

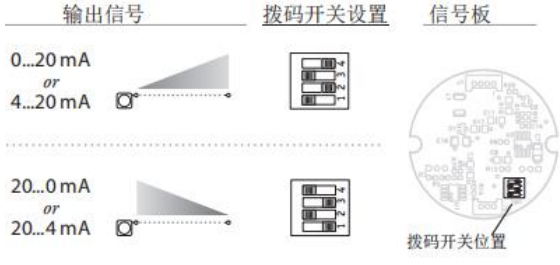
blank	SG
standard cable guide	spring-loaded guide (cushions impact from accidental free release)

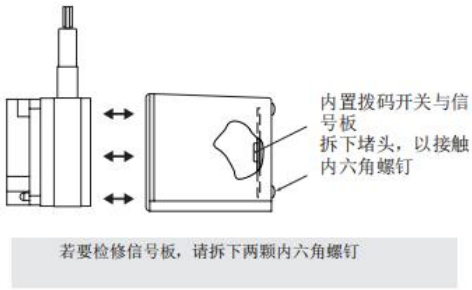


*note: full stroke begins at full compression point (except 50mm and 100mm ranges)

Output Signal Selection

By simply changing the DIP switch settings on the internal signal board, the output signal direction can be reversed at any time. After changing the settings, zero and full stroke should be adjusted so that the signal matches the start and end points of travel.





To access the signal board, remove the two socket-head screws and the end cap.

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Mounting Bracket Outline Drawing:

