DWS5MA - Industrial 4-20mA Output

Absolute Linear Position Feedback

0...20 mA, 4...20 mA output signal

Range: 0 - 6500mm

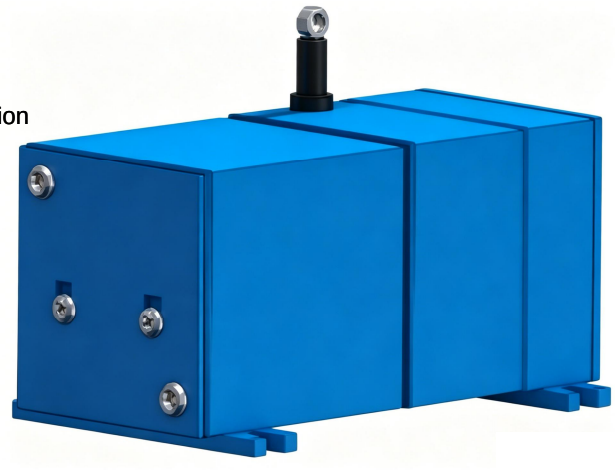
Aluminum and Polycarbonate Enclosure

long service life

IP67 · NEMA 6 protection

DWS5MA

Industrial Grade



SPECIFICATIONS

SUMMARY

Full Stroke Range 0-6500mm
Output Signal ..... 4...20 mA (2-wire) and 0...20 mA (3-wire)
Accuracy ..... ±0.75% to ±0.18% of full stroke, see ordering information
Repeatability ..... see ordering information
Resolution ..... essentially infinite
Measuring Cable ..... stainless steel or thermoplastic
Enclosure Material ... aluminum and polycarbonate enclosure
Sensor ..... plastic-hybrid precision potentiometer
Pot. Cycle Life ..... see ordering information
Max. Cable Accel. ..... see ordering information
Weight ..... 2270 g (5 lb.) max.

ELECTRICAL

Input Voltage ..... see ordering information
Input Current ..... 20 mA 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% full stroke
Full Stroke Adjustment ..... to 50% of factory-set full stroke

ENVIRONMENTAL

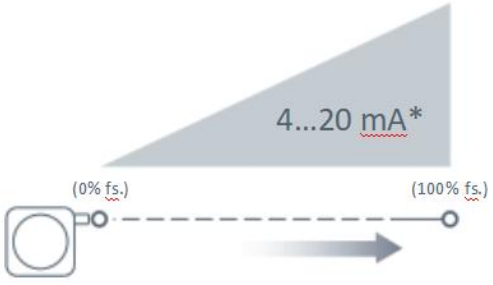
Enclosure NEMA4/6,IP65/67
Operating Temperature ..... -40° to 200°F (-17° to 90°C)
Vibration ..... up to 10 g to 2000 Hz max.

EMC certified 89/336/EEC

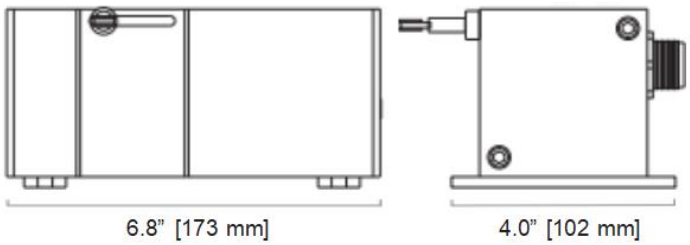
Emissions / Immunity ..... EN50081-2 / EN50082-2

The DWS5MA sensor uses a unique thermoplastic cable with a long service life. This cable, designated V62, combines superior performance and long life with a rugged enclosure. Like other sensors, the DWS5MA installs in minutes, works without perfect parallel alignment and fits easily into small spaces. The DWS5MA offers extra mounting flexibility because its cable exit can be rotated relative to the mounting surface, providing four different cable exit directions.

Output Signal

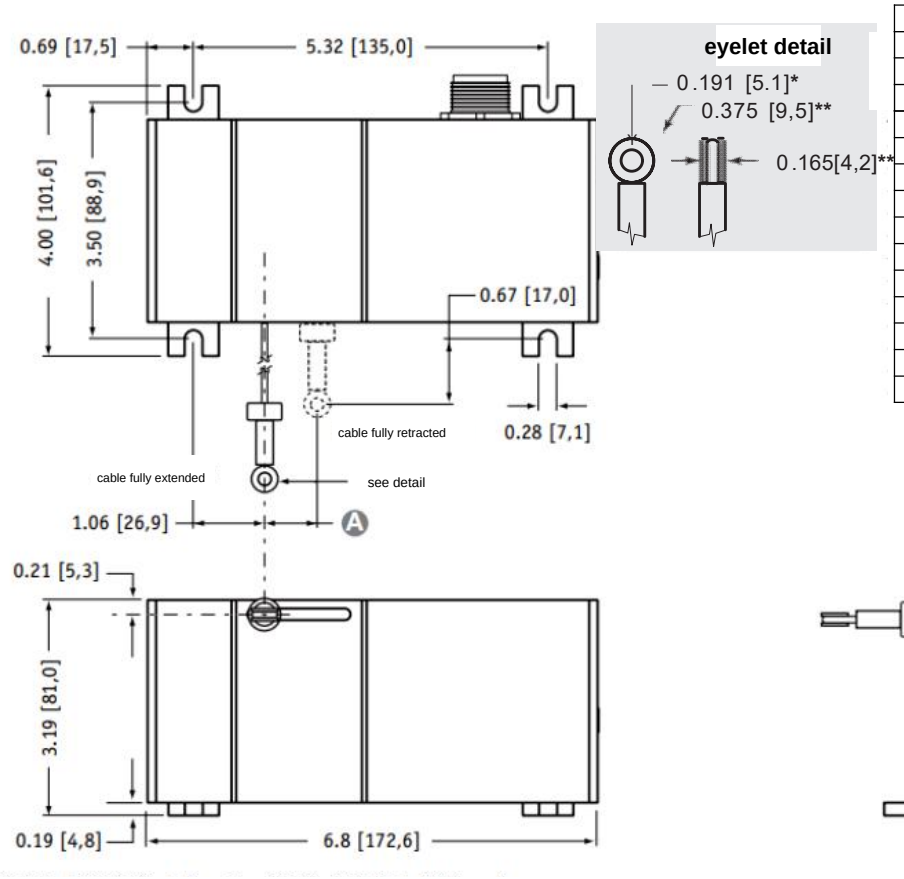


*optional 3-wire 0...20 mA output signal

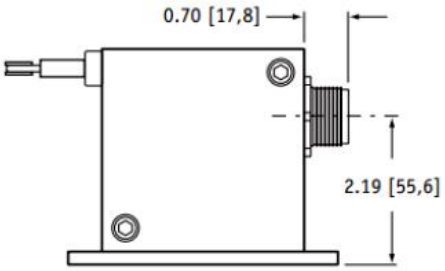


DWS5MA - Industrial 4-20mA Output

Outline Drawing:



A dimension (measuring cable) (mm)		
Full Stroke Range	N34 measuring cable	S47 & V62 measuring cable
250	1.2	2.0
350	1.8	3.0
500	2.29	4.06
750	3.56	5.84
1000	4.82	7.87
1300	5.84	9.90
1500	7.11	11.93
2000	9.40	15.74
2500	11.68	19.81
3000	14.73	24.64
4000	17.53	40.89
5000	23.37	n/a
6500	29.46	n/a



Dimensions are in inches [mm]. Tolerances are 0.03 in. [0.5 mm] unless otherwise noted.

* tolerance = +.005 ·.001 [+.13 ·.03]

** tolerance = +.005 ·.005 [+.13 ·.13]

DWS5MA - Industrial 4-20mA Output

ORDERING INFORMATION

Model Number:

DWS5MA - R range ·A cable material ·B cable exit
C output signal ·D electrical connection

Sample Model Number:

DWS5MA - 2000 - N34 - FR - 420E - M6
Ⓡ Ⓐ Ⓑ Ⓒ Ⓓ

Ⓡ 2000 = 2000 mm range
Ⓐ N34 = 0.86 mm nylon-coated ss
Ⓑ FR = front cable exit
Ⓒ 420E = 4...20 mA output
Ⓓ M6 = 6-pin connector w/ plug

Range:

R order code	250	350	500	750	1000	1300	1500	2000	2500	3000	4000	5000	6500
stroke (mm)	250	350	500	750	1000	1300	1500	2000	2500	3000	4000	5000	6500
accuracy (% of f.s.)					0.75			0.25			0.18		
repeatability (± of f.s.)		0.1				0.05					0.02		
cycle life (10,000 cycles)	250				50						25		
cable tension (20%) (oz.)	41											21	
max. cable velocity (mm/s)	7620											3048	
acceleration (g)	5											2	

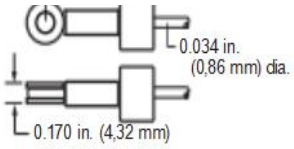
Cable Material:

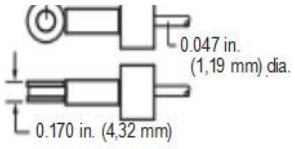
A order code: N34 — S47 — V62

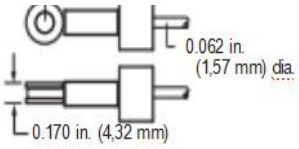
cable construction: 0.86 mm nylon-coated stainless for all ranges

1.19 mm stainless steel for ranges · 4000mm

1.57 mm thermoplastic for ranges · 4000mm



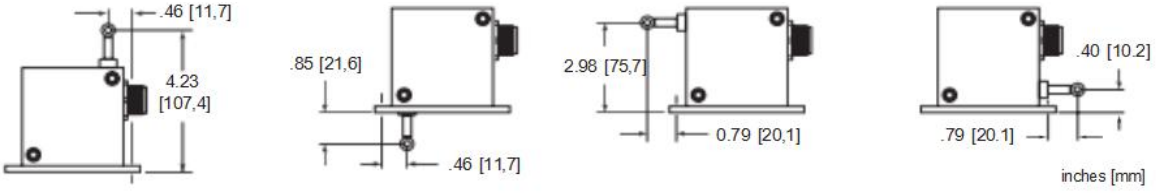




Cable Exit:

B order code: UP — DN — FR — BK

Direction: up — down — front — back



DWS5MA - Industrial 4-20mA Output

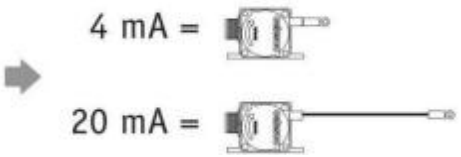
Output Signal:

C order code: 420E 420R 020E 020R

Signal Output:	4...20mA	20...4mA	0...20mA	20...0mA
	4 → 20	20 → 4	0 → 20	20 → 0
acc. range:	16 mA/full stroke ±0.25%		20 mA/full stroke ±0.25%	
Wiring Configuration:	2-wire		3-wire	
Input Voltage:	8 – 34 vdc		14-29vdc	

Example:

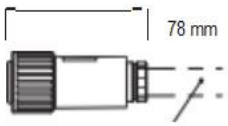
order code = 420E = 4...20 mA



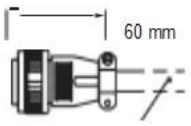
Electrical Connection:

D order code:

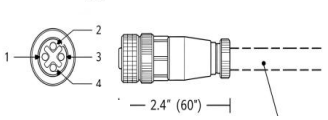
M6	M6M	MP4	C25
6-pin thermoplastic connector with mating plug	6-pin metal connector with mating plug	connector with mating plug	7.5 m waterproof cable



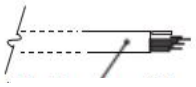
Dimension: 78 mm
Suitable cable: 8-10 mm
Max wire gauge: 16 (AWG)
Mating plug: MS3102E-14S-6P
Mating receptacle: MS3106E-14S-6S



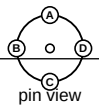
Dimension: 60 mm
Suitable cable: 9 mm
Max wire gauge: 16 (AWG)
Mating plug: MS3102E-14S-6P
Mating receptacle: MS3106E-14S-6S



M12 plug 4pin



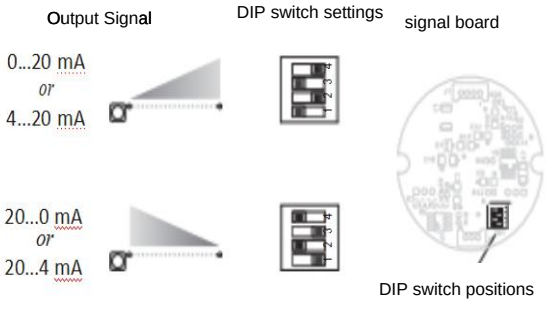
Spec: 7.5 m x 5 mm dia.
Construction: 6 conductors, 24 AWG, shielded

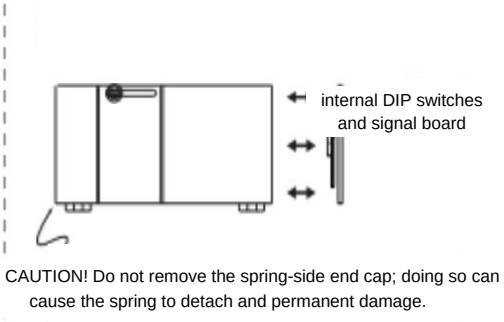
	6-pin mating plug & cable assembly				4-pin mating plug & cable assembly				7.5 m cable		
	pin	**2-wire**	**3-wire**		**pin**	**color code**	**2-wire**	**3-wire**	**color code**	**2-wire**	**3-wire**
	A	8-34vdc	14-29vdc		**A**	RED-BLK TR.	8-34vdc	14-29vdc	RED	8-34vdc	14-29vdc
	**B**	4...20mA	common		**B**	RED-WHT TR.	4...20mA	0...20mA	BLACK	4...20mA	common
pin view	**C**	-	0...20mA		**C**	RED	-	common	WHITE	-	-
contact view	**D**	case ground	-		**D**	GREEN	case ground	-	GREEN	case ground	0...20mA

DWS5MA - Industrial 4-20mA Output

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.





CAUTION! Do not remove the spring-side end cap; doing so can cause the spring to detach and permanent damage.