## DWS1A - String Potentiometer

Measurement Range: 0-1500mm

Aluminum and Polycarbonate Enclosure

Compact Design

NEMA 4, IP65 Protection

# DWS1A

Industrial Grade · Voltage Divider Output

## SPECIFICATIONS

**SUMMARY**

| | |
|---|---|
| Full Stroke Range | 0 - 1500mm |
| Output Signal | Voltage Divider (Potentiometer) |
| Accuracy | see ordering information |
| Repeatability | ±0.02% full stroke |
| Resolution | essentially infinite |
| Measuring Cable | 0.48mm dia. nylon-coated stainless |
| Enclosure Material | ABS & blue cast aluminum |
| Sensor | precision potentiometer |
| Pot. Cycle Life | see ordering information |
| Max. Cable Accel. | see ordering information |
| Weight | 454 g (1 lb.) max. |

**ELECTRICAL**

| | |
|---|---|
| Input Resistance | see ordering information |
| Rated Power, watts | see ordering information |
| Rec. Max. Input Voltage | see ordering information |
| Output change over full stroke | 94% ±4% of input voltage |

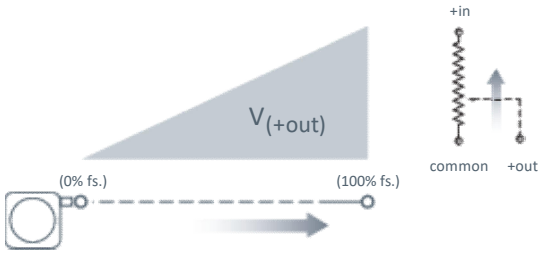
**ENVIRONMENTAL**

| | |
|---|---|
| Enclosure | NEMA 4,IP65 |
| Operating Temperature | 0° to 200°F (-17° to 90°C) |
| Vibration | up to 10 g to 2000 Hz max. |

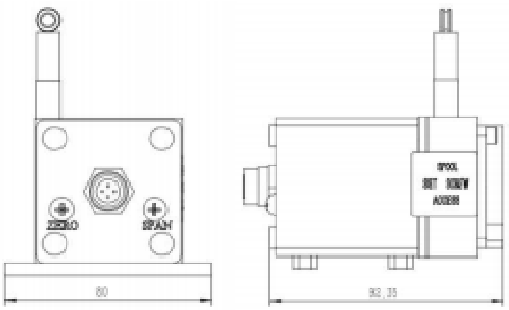


The DWS1A string potentiometer is ideal for use in tight installation spaces. Using a high-cycle plastic-hybrid potentiometer, it provides a precise voltage-divider feedback signal over the full 0 - 1500mm stroke. Where space and budget are limited, the DWS1A is the perfect choice. Features include 500 to 10K ohm pots, adjustable bridge circuit and multiple cable exits.

### Output Signal

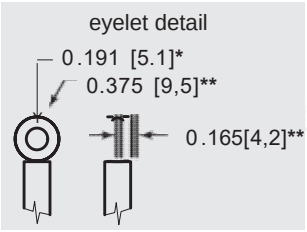



Bridge circuit options available.



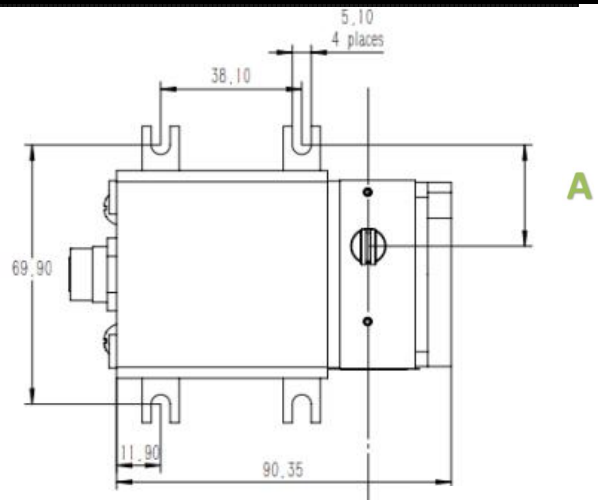
# DWS1A - String Potentiometer

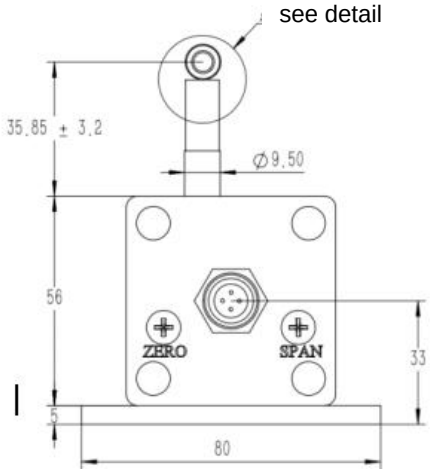
## Sensor Dimension Drawing:

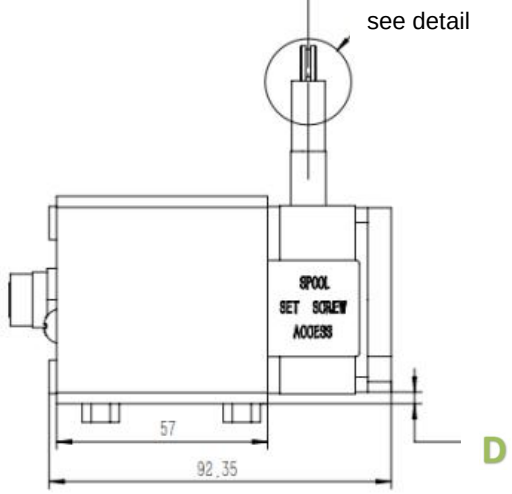



| Stroke | A |
|---|---|
| 50,250 | 27.5mm |
| 100,500,1000 | 18.9mm |
| 150,750,1500 | 11.8mm |

| Stroke | D |
|---|---|
| 50,250,100,500,1000 | 7.6mm |
| 150,750,1500 | 4.5mm |




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]

**Sample Model Number:**

**DWS1A - 50 - UP - 500 - MC4 - SG**
Ⓡ Ⓐ Ⓑ Ⓒ Ⓓ

Ⓡ 50 = 50mm range
Ⓐ UP = cable exit up
Ⓑ 500 = 500 ohms output
Ⓒ MC4 = 4-pin connector
Ⓓ SG = spring-loaded guide

## ORDERING INFORMATION

### Model Number:

**DWS1A - R range · A cable exit · B output signal · C electrical connection · D cable gui**

### Range:

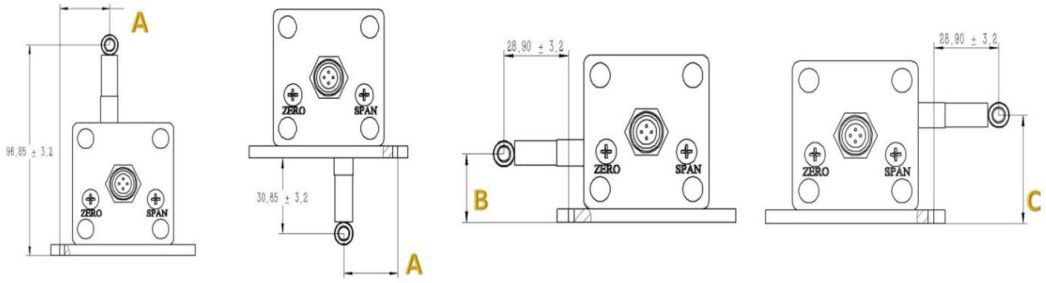
| R order code | 50 | 100 | 150 | 250 | 500 | 750 | 1000 | 1500 |
|---|---|---|---|---|---|---|---|---|
| stroke (mm) | 50 | 100 | 150 | 250 | 500 | 750 | 1000 | 1500 |
| accuracy (% of f.s.) | 0.28% | | | 0.18% | | | 0.15% | |
| cycle life (x10,000 cycles) | 250 | | | 50 | | | 25 | |
| cable tension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

## DWS1A - String Potentiometer

### 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: 500 1K 5K 10K

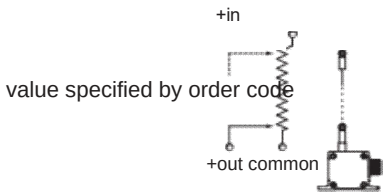
500 ohms* 1000 ohms* 5000 ohms* 10,000 ohms*

*tolerance = ±10%

Max. input voltage & rated power, circuit options (ohms): 500, 1K, 5K, 10K

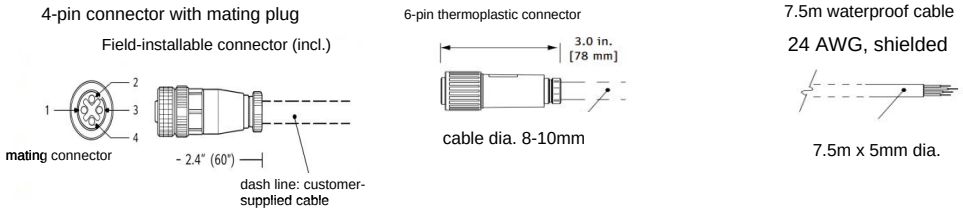
| | 50mm to 150mm range | 250mm to 1500mm range |
|---|---|---|
| 500 ohms: | 20 V AC/DC (1 W) | 30 V AC/DC (2 W) |
| 1K - 10K ohms: | 30 V AC/DC (1 W) | 30 V AC/DC (2 W) |

**circuit options (ohms): 500, 1K, 5K, 10K**




### Electrical Connection:

**C** order code: MP4 M6 C25




### Pin Definition:

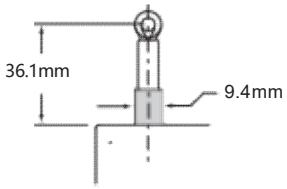
| | MP4 | M6 | C25 |
|---|---|---|---|
| +in (power supply) | 1 | A | RED |
| Common (ground) | 2 | B | BLACK |
| +out (signal output) | 3 | C | WHITE |
| | 4 | D | GREEN |
| | | E | |
| | | F | |

## DWS1A - String Potentiometer

### Cable Guide:

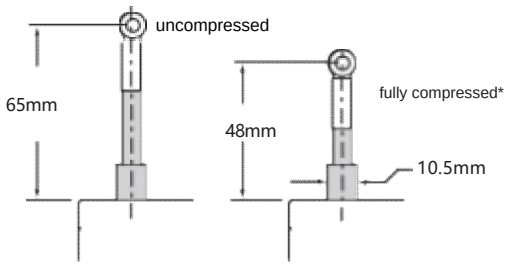
**D** order code: Blank SG

standard cable guide




spring-loaded guide

(cushions impact from accidental free release)




*note: full stroke range begins at full compression point (except 50mm and 1500mm ranges)