# SP1

## Compact String Pot • Voltage Divider

**Linear Position to 50 inches (1270 mm)**

**Rugged Polycarbonate Enclosure • IP67 Optional**

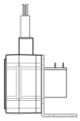
**Mounting Bracket & Optional Sensor Cover w/Connector**

**IN STOCK for Quick Delivery!**

This compact stringpot with "voltage divider" output, provides ease-of-use and flexibility for measurement ranges up to 50 inches. Made of rugged polycarbonate, the SP1 fits in small spaces, doesn't need perfect alignment and ships with a stainless steel mounting bracket to let the user easily orient this sensor in just about any direction imaginable.

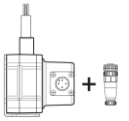
The SP1 is available with a connector, mating plug and sensor cover to protect against IP67 (wet) environments and a lower cost, "open" sensor version priced for both the budget conscious single piece user and the OEM alike.

## Ordering Information



*includes sensor & mounting bracket.*

| Part Number | full stroke range | accuracy | max. acceleration | measuring cable tension (± 25%) | cycle life |
|---|---|---|---|---|---|
| SP1-4 | 4.75 in (120 mm) | 1.00% | 15 g | 7oz. (1,9 N) | 2.5M |
| SP1-12 | 12.5 in (317 mm) | .25% | 15 g | 7oz. (1,9 N) | 500K |
| SP1-25 | 25 in (635 mm) | .25% | 15 g | 7oz. (1,9 N) | 500K |
| SP1-50 | 50 in (1270 mm) | .25% | 15 g | 7oz. (1,9 N) | 250K |



*includes sensor, mounting bracket & mating connector.*

| Part Number | full stroke range | accuracy | max. acceleration | measuring cable tension (± 25%) | cycle life |
|---|---|---|---|---|---|
| SP1-4-3 | 4.75 in (120 mm) | 1.00% | 11 g | 11.5 oz. (3,2 N) | 2.5M |
| SP1-12-3 | 12.5 in (317 mm) | .25% | 11 g | 13.9 oz. (3,7 N) | 500K |
| SP1-25-3 | 25 in (635 mm) | .25% | 11 g | 11.5 oz. (3,2 N) | 500K |
| SP1-50-3 | 50 in (1270 mm) | .25% | 11 g | 11.5 oz. (3,2 N) | 250K |

**Optional Cordset**

Part No. **9036810-0040** for all SP1-xx-3 versions, an optional 13-ft. cordset with 4-pin M12 connector

## Complete Specifications

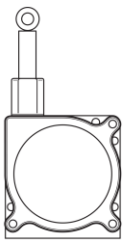
| | |
|---|---|
| **Available Stroke Ranges** | 0-4.75, 0-12.5, 0-25, 0-50 inches |
| **Output Signal** | voltage divider (potentiometer) |
| **Accuracy** | ±0.25 to ±1.00% (see ordering info) |
| **Repeatability** | ± 0.05% full stroke |
| **Resolution** | essentially infinite |
| **Measuring Cable** | 0.019-in. dia. nylon-coated stainless steel |
| **Measuring Cable Tension** | see ordering information |
| **Maximum Cable Acceleration** | see ordering information |
| **Enclosure Material** | Polycarbonate |
| **Sensor** | plastic-hybrid precision potentiometer |
| **Weight, max. (includes bracket)** | .4 lbs (.19 kg) |

### Electrical

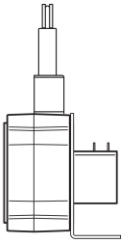
| | |
|---|---|
| **Input Resistance** | 10K ohms, ±10% |
| **Power Rating, Watts** | 2.0 at 70°F derated to 0 at 250° |
| **Recommended Maximum Input Voltage** | 30 V (AC/DC) |
| **Output Signal Change Over Full Stroke Range** | 94% ±4% of input voltage |
| **Electrical Connection, SP1-xx** | solder terminals |
| **Electrical Connection, SP1-xx-3** | 4-pin, M12 connector |

### Environmental

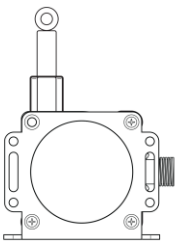
| | |
|---|---|
| **Enclosure** | IP 50 (SP1-xx), IP67 (SP1-xx-3) |
| **Operating Temperature, SP1-xx** | 0° to 160°F (-18° to 70°C) |
| **Operating Temperature, SP1-xx-3** | -40° to 160°F (-40° to 70°C) |
| **Vibration** | up to 10 g to 2000 Hz maximum |



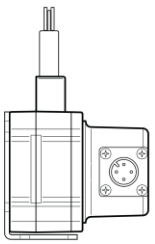
1.9" [48 mm]



1.9" [48 mm]

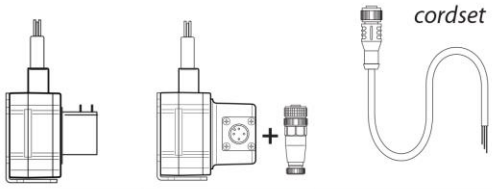


2.5" [64 mm]



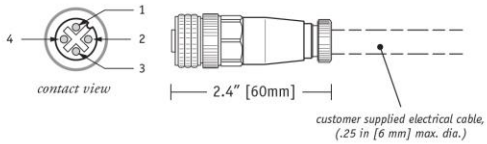
2.3" [59 mm]

## Electrical Connection

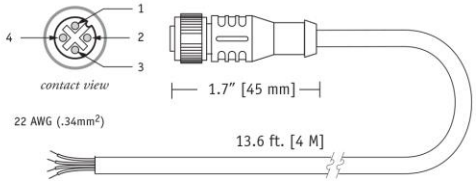



| Signals | solder terminals | pin | pin - colorcode |
|---|---|---|---|
| +in | #3 (cw) | 1 | 1 - brown |
| common | #1 (ccw) | 2 | 2 - white |
| +out | #2 (s) | 3 | 3 - blue |
| n/c | | 4 | 4 - black |

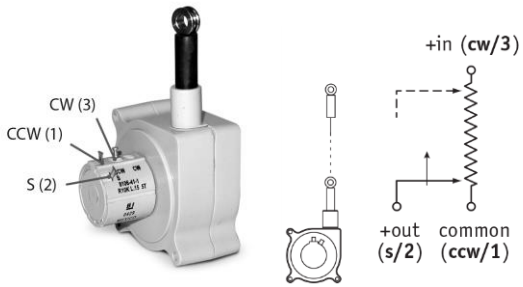
field installable connector (included)



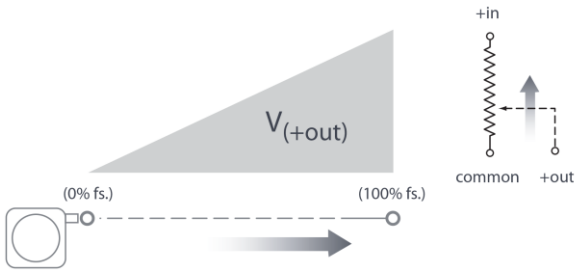

cordset, part no. 9036810-0040 (optional)



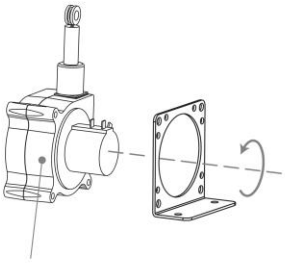

## Terminal/Pin Location (SP1-xx)



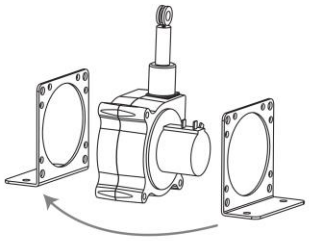
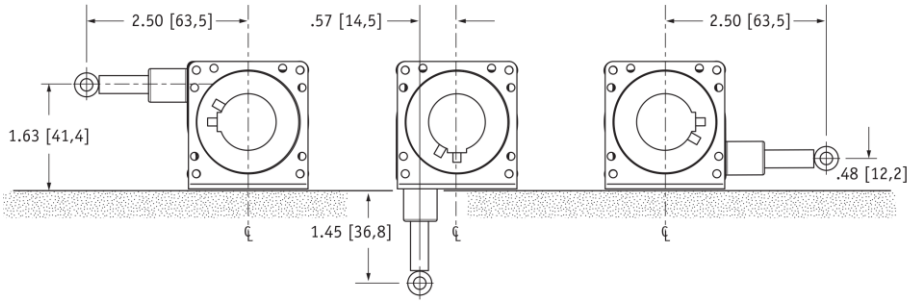

## Output Signal




## Mounting Options for SP1-xx:



*To change measuring cable direction simply remove the 3 bracket attaching screws and rotate sensor body to desired direction.*



*For added flexibilty, mounting bracket can easily be switched to the opposite side.*