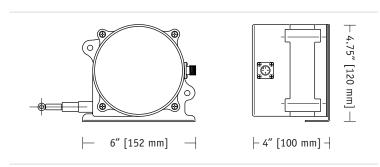
SR₁A

Industrial • Voltage Divider Output

Precision Potentiometric (Voltage Divider) Output 0-62, 0-125 and 0-175 inch Range Options **Designed for Outdoor & IP67 environments** In Stock for Quick Delivery!



SPECIFICATIONS

Measurement Range, SR1A-62	0-62 in. (0-1575 mm)
Measurement Range, SR1A-125	0–125 in. (0–3175 mm)
Measurement Range, SR1A-175	0–175 in. (0–4445 mm)
Accuracy	± 0.5% FS.
Sensor	plastic-hybrid precision potentiometer
Input Resistance	10K ohms
Maximum Input Voltage	30 volts AC/DC
Resolution	essentially infinite
Repeatability	± 0.1% FS.
Measuring Cable	.034-inch dia. nylon-coated stainless
Maximum Velocity	80 inches (2 meters) per second
Maximum Acceleration	10 g (retraction)
Measuring Cable Tension	23 oz. (6,4 N) ±30%
Cycle Life	250,000 (potentiometer)
Enclosure	polycarbonate
Electrical Connection	M12 Connector (mating plug included)
Environmental Suitability	NEMA 6, IP67
Operating Temperature	-40° to 185° F (-40° to 85° C)
Weight	2.5 lbs. (1.3 Kg)



175-inch model shown

SR1A is a rugged, low-cost, high performance string pot built for wet environments and outdoor applications. Originally designed for off-road construction equipment, the SR1A is the perfect low-cost solution for OEM and stocking distributors.

Available in 62-inch, 125-inch and 175-inch stroke ranges, the SR1A is constructed of a rugged polycarbonate enclosure designed to withstand impact from harsh environments and rugged conditions. Each sensor ships with a handy mounting bracket to make just about any installation very simple. Every SR1A ships with a field installable mating connector and optional cordsets are available.

ORDERING INFORMATION



mounting bracket included.





SR1A-62 62-inch stroke range, voltage divider output, 4-pin M12 mating plug &

SR1A-125

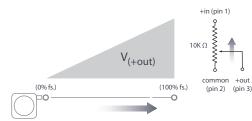
125-inch stroke range, voltage divider output, 4-pin M12 mating plug & mounting bracket included. SR1A-175 175-inch stroke range, voltage divider output, 4-pin M12 mating plug &

mounting bracket included.



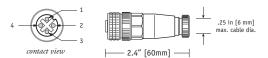
for short-run connections, a convenient optional 13-ft. cordset with a 4-pin M12

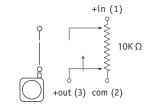
Output Signal:

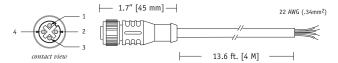




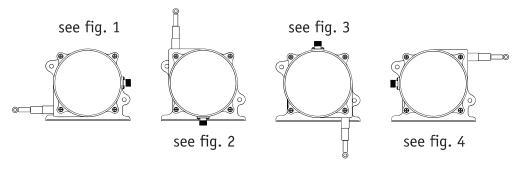
output signal	connector pin	colorcode (cordset)
+in	1	brown
common	2	white
+out	3	blue
n/c	4	black







Cable Exit Direction Options



Changing the Cable Exit

Changing Measuring Cable Exit

To change the direction of the measuring cable, remove the 4 mounting bracket screws and rotate bracket to one of four available positions. See figures 1 - 4 on the following pages for mounting dimensions.

Changing Electrical Connector Direction

To change the position of the electrical connector, remove the 4 rear cover screws and carefully separate rear cover from the sensor body.

Rotate the rear cover to desired position being careful to not tangle the wiring harness that runs to the connector.

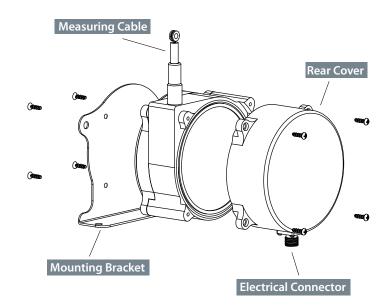




Fig. 1 - Outline Drawing (as shipped)

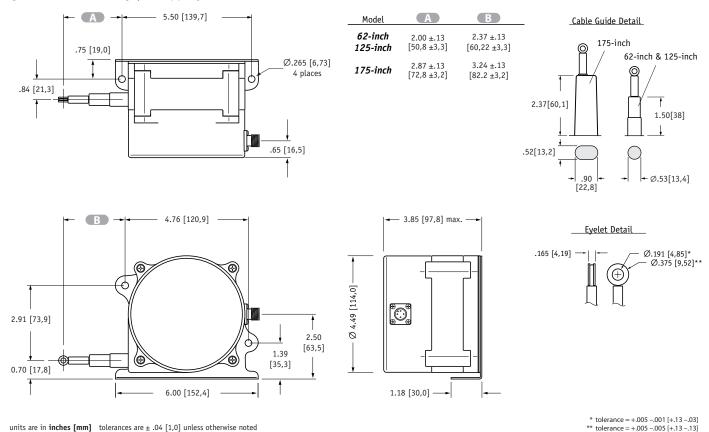
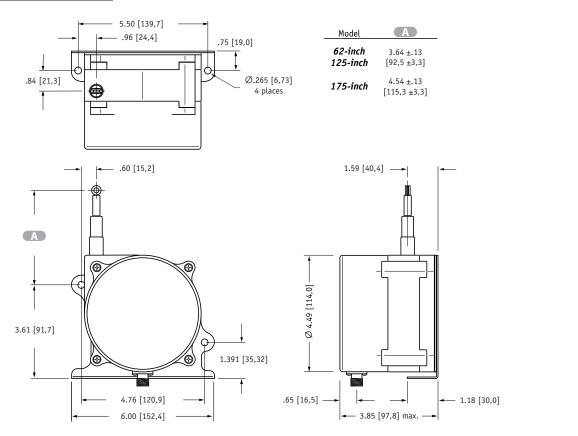
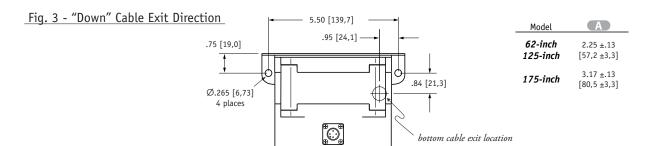
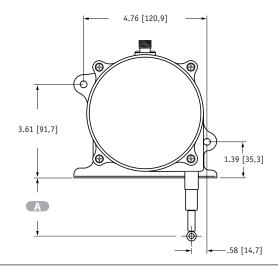


Fig. 2 - "Up" Cable Exit Direction



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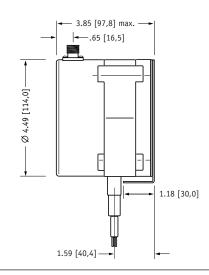
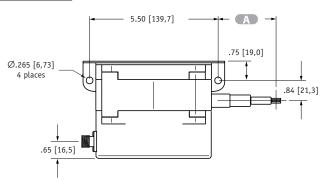
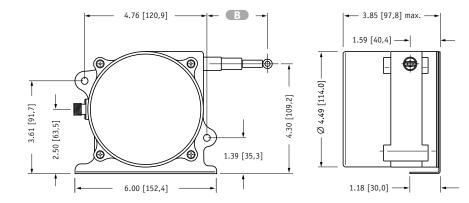


Fig. 4 - "Rear" Cable Exit Direction



Model	A	В
62-inch 125-inch	2.00 ±.13 [50,8 ±3,3]	2.37 ±.13 [60,22 ±3,3]
175-inch	2.87 ±.13 [72,8 ±3,2]	3.24 ±.13 [82.2 ±3,2]



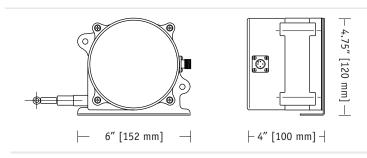
celesco

units are in **inches [mm]** tolerances are \pm .04 [1,0] unless otherwise noted tel: 800.423.5483 * +1.818.701.2750 * fax: +1.818.701.2799

SR₁M

Industrial • User Scalable 4–20mA Output

User Adjustable Stroke Range to 175 inches (3 meters) Easy Push-Button Zero and Span Adjust **Designed for Outdoor & IP67 environments** In Stock for Quick Delivery!



SPECIFICATIONS

Full Stroke Range, SR1M-125	125 inches (3175 mm), maximum
Full Stroke Range, SR1M-175	175 inches (4445 mm), maximum
Minimum Full Stroke Range	1 inches (25 mm)
Output Signal Settings	420mA, 204mA
Input Voltage	10-30 VDC
Accuracy, full stroke range ≥ 10 i	nches (254 mm) .5% FS.
Accuracy, full stroke range < 10 i	nches (254 mm) consult factory
Repeatability	.1% FS.
Resolution	.0015% FS.
Output Signal Update Rate	1 msec
Maximum Velocity	80 inches (2 meters) per second
Maximum Acceleration	10 g (retraction)
Measuring Cable Tension	23 oz. (6,4 N) ±30%
Sensor	plastic-hybrid precision potentiometer
Cycle Life	250,000 (potentiometer)
Enclosure	polycarbonate
Measuring Cable	.034-inch dia. nylon-coated stainless
Electrical Connection	M12 Connector (mating plug included)
Environmental Suitability	NEMA 6, IP67
Operating Temperature	-40° to 185° F (-40° to 85° C)
Weight	2.5 lbs. (1.3 Kg)



175-inch model shown

The SR1M is part of a series of rugged, low-cost, high performance string pots built for wet environments and outdoor applications. Designed for the rigors of outdoor construction equipment or the demands of a factory floor, the SR1M is the perfect low-cost solution for OEM and stocking distributors.

What sets this sensor apart from other string pots, is the internal programmable digital circuitry that gives the customer a one-size-fits-all approach for many applications. The SR1M ships factory calibrated to the full stroke range but the output signal can be easily re-scaled to match any stroke down to 1 inch (25 mm).

ORDERING INFORMATION



SR1M-125 SR1M-175

125-inch stroke range, 4-20mA output, 4-pin M12 mating plug & mounting bracket included.



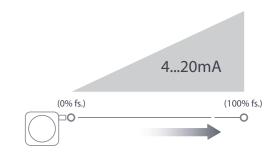
175-inch stroke range, 4-20mA output. 4-pin M12 mating plug & mounting bracket included.



9036810-0040

for short-run connections, optional 13-ft cordset with 4-pin M12 mating plua.

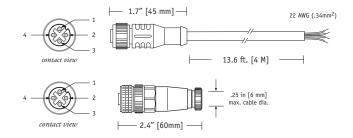
Output Signal:







i/o signal	connector pin	colorcode (cordset)
1030 vdc	1	brown
n/c	2	white
output signal	3	blue
n/c	4	black



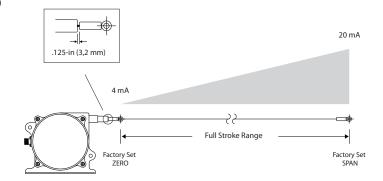
Factory Calibrated Stroke Range

The full scale output signal is set at the factory to the maximum full stroke range of the sensor. The ZERO point

(output = 4mA) is set at the beginning* of the stroke range (0 inches) and the SPAN point (output = 20mA) is set to the end of the range (125 inches or 175 inches depending on model).

*Important — The ZERO point is set at the factory with the measuring cable pulled out .125 inches from full retraction. If the measuring cable becomes fully retracted at any time when the sensor is under power, the output signal will begin to fluctuate. This is normal and fluctuation will stop as soon as the cable is extended greater than .125 inches.

This is for the factory setting only and the ZERO may be reprogrammed at full retraction at any time.



Changing the Cable Exit

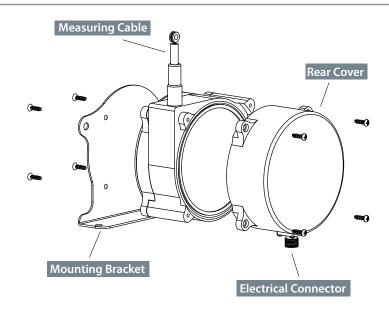
Changing Measuring Cable Exit

To change the direction of the measuring cable, remove the 4 mounting bracket screws and rotate bracket to one of four available positions. See figures 1 - 4 on the following pages for mounting dimensions.

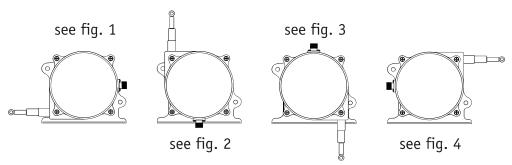
Changing Electrical Connector Direction

To change the position of the electrical connector, remove the 4 rear cover screws and carefully separate rear cover from the sensor body.

Rotate the rear cover to desired position being careful to not tangle the wiring harness that runs to the connector.

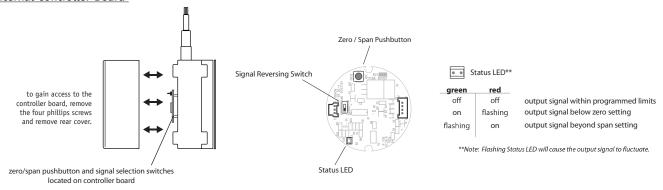


Cable Exit Direction Options





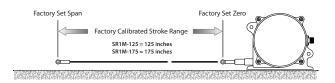
Internal Controller Board



Changing Output Signal

Reprogramming ZERO and SPAN:

The ZERO and SPAN points have been preset at the factory but can easily be changed to match any desired stroke within the full stroke limits of the sensor. To reprogram the SR1M to your own settings, remove the rear cover to gain access to the internal controller board. Locate the push-button on the circuit board and follow the instructions below.



Please note that ZERO and SPAN points can be set independently. You can set one without setting the other. This operation must be performed with the sensor under power. Important: when you are finished, disconnect power for at least 2 seconds to permanently set your new settings.

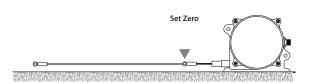
Setting Span:

Set the cable to the desired SPAN point then depress and hold the button until the STATUS LED begins to flash RED. Release the button when the LED begins to flash RED (not GREEN). The flashing will then slow down to about two-second intervals to indicate that the SPAN value is being set into memory. When completed, the STATUS LED will turn off.



Setting Zero:

Set the cable to the desired ZERO point and then depress and hold the button until the STATUS LED begins to flash GREEN. Release the button when the LED begins to flash GREEN (not RED). The flashing will then slow down to about two-second intervals to indicate that the ZERO value is being set into memory. When completed, the STATUS LED will turn off. Remove power for 2 seconds then reconnect.



Reversing the Output Signal:

20 off 20 on The SR1M leaves the factory set with a 4...20 mA full scale output signal. The signal can be reversed (see illustration) by simply changing a dipswitch located on the controller board.

This may be done without resetting the "zero" and "span" points.

Remove the rear cover to gain access to the board.

output signal options (mA)

Fig. 1 - Outline Drawing (as shipped)

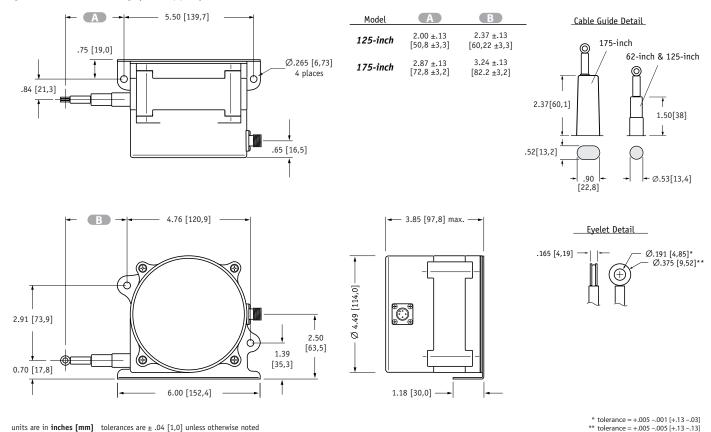
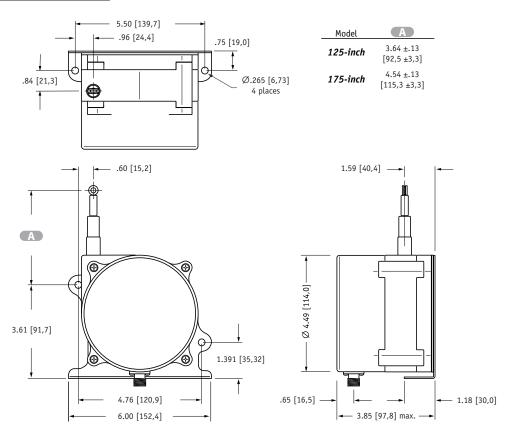
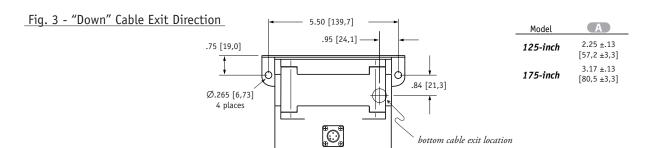
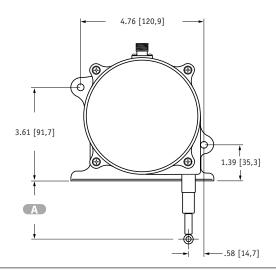


Fig. 2 - "Up" Cable Exit Direction



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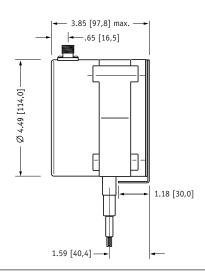
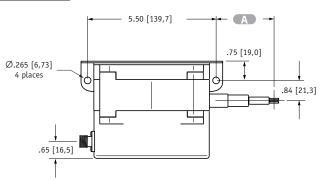
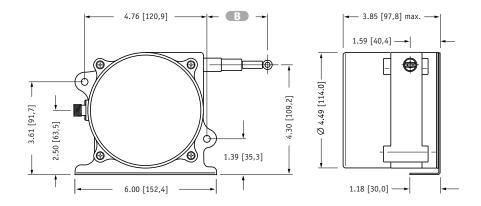


Fig. 4 - "Rear" Cable Exit Direction



Model	A	В
125-inch	2.00 ±.13 [50,8 ±3,3]	2.37 ±.13 [60,22 ±3,3]
175-inch	2.87 ±.13 [72,8 ±3,2]	3.24 ±.13 [82.2 ±3,2]



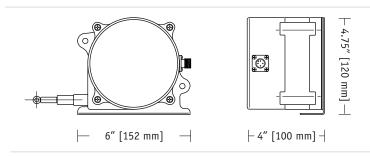
units are in **inches [mm]** tolerances are \pm .04 [1,0] unless otherwise noted



SR₁V

Industrial • User Scalable VDC Output Signal

User Adjustable Stroke Range to 175 inches (3 meters) User Selectable 0-5, 0-10, -5-+5, -10-+10 VDC Output **Designed for Outdoor & IP67 environments** In Stock for Quick Delivery!



SPECIFICATIONS

Full Stroke Range, SR1V-125	125 inches (3175 mm), maximum
Full Stroke Range, SR1V-175	175 inches (4445 mm), maximum
Minimum Full Stroke Range	1 inches (25 mm)
Output Signal Settings	0-5, 0-10, -5-+5, -10-+10 VDC
Input Voltage 15-	30 VDC (10-30 VDC for 0–5, ⁻ 5–+5 volt signal)
Input Current	50 mA, max.
Maximum Output Load	20 mA
Accuracy, full stroke range ≥	10 inches (254 mm) .5% FS.
Accuracy, full stroke range <	10 inches (254 mm) consult factory
Repeatability	.1% FS.
Resolution	.0015% FS.
Output Signal Update Rate	1 msec
Maximum Velocity	80 inches (2 meters) per second
Maximum Acceleration	10 g (retraction)
Measuring Cable Tension	23 oz. (6,4 N) ±30%
Sensor	plastic-hybrid precision potentiometer
Cycle Life	250,000 (potentiometer)
Enclosure	polycarbonate
Measuring Cable	.034-inch dia. nylon-coated stainless
Electrical Connection	M12 Connector (mating plug included)
Environmental Suitability	NEMA 6, IP67
Operating Temperature	-40° to 185° F (-40° to 85° C)
Weight	2.5 lbs. (1.3 Kg)

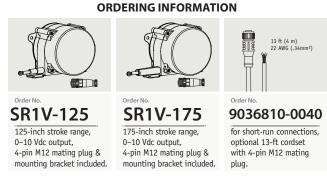


175-inch model shown

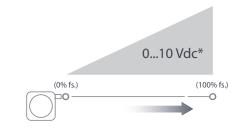
The SR1V is part of a series of rugged, low-cost, high performance string pots built for wet environments and outdoor applications. Designed for the rigors of outdoor construction equipment or the demands of a factory floor, the SR1M is the perfect low-cost solution for OEM and stocking distributors.

What sets this sensor apart from other string pots, is the internal programmable digital circuitry that gives the customer a one-size-fits-all approach for many applications. The SR1V ships factory calibrated to the full stroke range but the output signal can be easily re-scaled to match any stroke down to 1 inch (25 mm).

ORDERING INFORMATION



Output Signal:

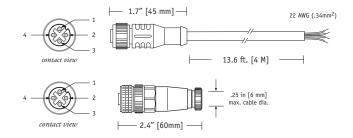


*Additional Output Options: 0...5, -5...+5, -10...+10 Vdc





output signal	connector pin	colorcode (cordset)
1530 vdc	1	brown
output signal	2	white
common	3	blue
n/c	4	black



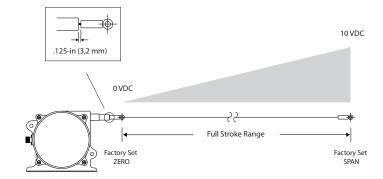
Factory Calibrated Stroke Range

The full scale output signal is set at the factory to the maximum full stroke range. The ZERO point (output = 0 Vdc) is

set at the beginning* of the stroke range (0 inches) and the SPAN point (output = 10 Vdc) is set to the end of the range (125 inches or 175 inches depending on model).

*Important — The ZERO point is set at the factory with the measuring cable pulled out .125 inches from full retraction.

This is for the factory setting only and the ZERO may be reprogrammed at full retraction at any time.



Changing the Cable Exit

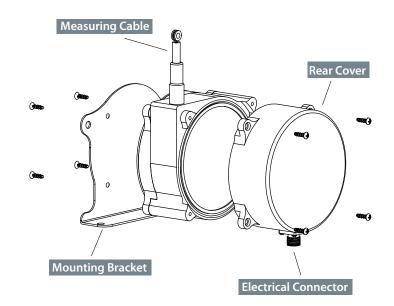
Changing Measuring Cable Exit

To change the direction of the measuring cable, remove the 4 mounting bracket screws and rotate bracket to one of four available positions. See figures 1 - 4 on the following pages for mounting dimensions.

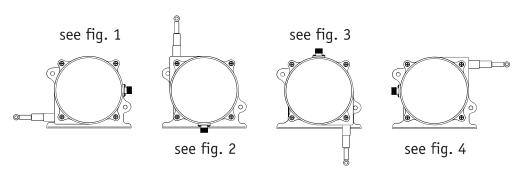
Changing Electrical Connector Direction

To change the position of the electrical connector, remove the 4 rear cover screws and carefully separate rear cover from the sensor body.

Rotate the rear cover to desired position being careful to not tangle the wiring harness that runs to the connector.

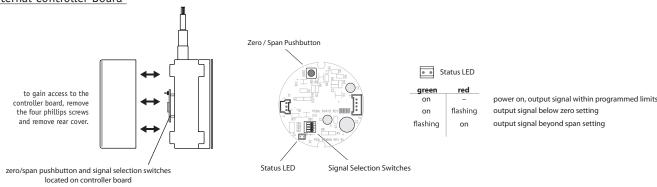


Cable Exit Direction Options





Internal Controller Board



Changing Output Signal

Reprogramming ZERO and SPAN:

Though ZERO and SPAN points have been preset at the factory, they can easily be changed to match any desired stroke within the full stroke limits of the sensor. To reprogram the SR1V to your own settings, remove the rear cover to gain access to the internal controller board. Locate the push-button on the circuit board and follow the instructions below.



Please note that ZERO and SPAN points can be set independently. You can set one without setting the other. This operation must be performed with the sensor under power. Important: when you are finished, disconnect power for a couple of seconds to permanently set your new settings.

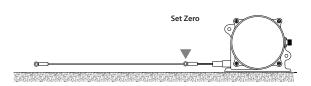
Setting Span:

Set the cable to the desired SPAN limit then depress and hold the button until the STATUS LED begins to flash RED. Release the button (when the LED is flashing RED, not GREEN) and the flashing will slow down to about two-second intervals which indicates the SPAN value is being set into memory. When completed, the STATUS LED will display solid GREEN.

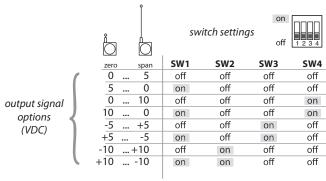


Setting Zero:

Set the cable to the desired ZERO limit and then depress and hold the button until the STATUS LED begins to flash GREEN. Release the button (when the LED is flashing GREEN, not RED) and the flashing will slow down to about two-second intervals which indicates the ZERO value is being set into memory. When completed, the STATUS LED will display solid GREEN. Remove power for 2 seconds then reconnect.



Changing the Output Signal:



The SR1V leaves the factory set with a 0...10 VDC full scale output signal. The signal can be reversed or changed to either 0...5, -5...+5 or -10...+10 VDC (see illustration) by simply changing a dipswitch located on the controller

If you wish to simply reverse the output signal or change it to a different voltage range, you may do so without resetting the "zero" and "span" points.

Remove the rear cover to gain access to the board.

Fig. 1 - Outline Drawing (as shipped)

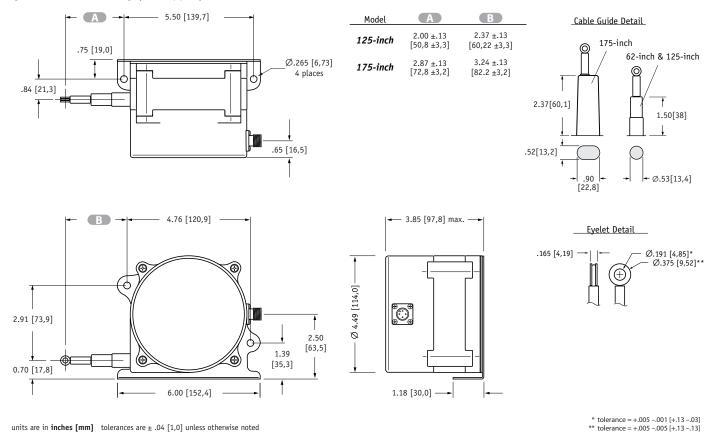
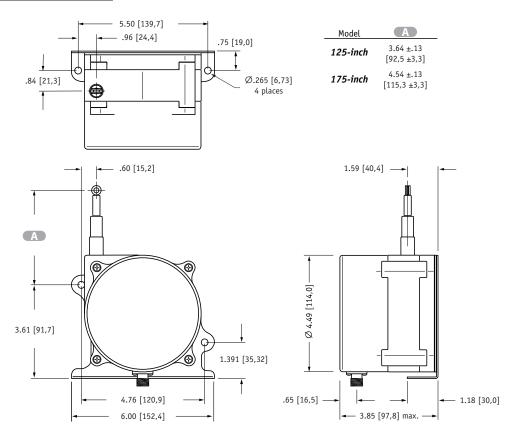
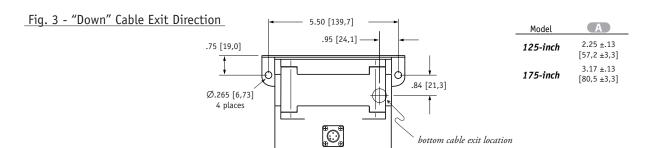


Fig. 2 - "Up" Cable Exit Direction



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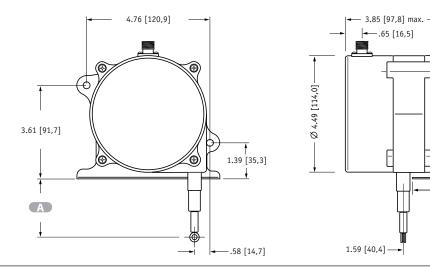
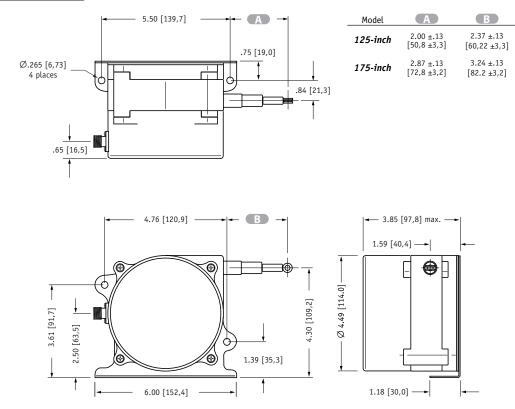


Fig. 4 - "Rear" Cable Exit Direction



units are in inches [mm] tolerances are \pm .04 [1,0] unless otherwise noted

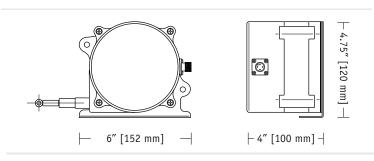


1.18 [30,0]

SR₁E

Industrial • Incremental Encoder Output

Linear Position up to 175 inches (3 meters) 0-125, 0-175 inch Full Stroke Range Options **Designed for Outdoor & IP67 environments** In Stock for Quick Delivery!



SPECIFICATIONS

Full Stroke Range, SR1E-125	125 inches (3175 mm)
Full Stroke Range, SR1E-175	175 inches (4445 mm)
Output Signal	incremental encoder
Resolution	101 ±2 pulses per inch
Accuracy	± .1% FS.
Repeatability	± .05% FS.
Input Voltage	5-30 VDC
Input Current	100 mA max., no load
Sensor	incremental encoder
Output Driver Type	push-pull (note: Vin = Vout)
Output Driver Current	20 mA max., source/sink
Maximum Velocity	80 inches (2 meters) per second
Maximum Acceleration	10 g (retraction)
Measuring Cable Tension	23 oz. (6,4 N) ±30%
Enclosure	polycarbonate
Measuring Cable	.034-inch dia. nylon-coated stainless
Electrical Connection	M12 Connector (mating plug included)
Environmental Suitability	NEMA 6, IP67
Operating Temperature	-4° to 185° F (-20° to 85° C)
Weight	2.5 lbs. (1.3 Kg)



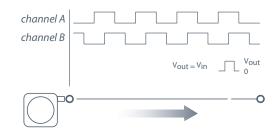
175-inch model shown

The SR1E is rugged, low-cost, high performance string pot built to withstand wet environments and outdoor applications. Designed for construction equipment and factory use, the SR1E is the perfect low-cost solution for OEM and stocking distributors.

At the heart of this sensor is a robust incremental encoder that delivers a linear resolution of 101 pulses per inch. The SR1E ships with an industry standard push-pull encoder driver that can be powered by 5-30 VDC. (Other resolutions and complimentary channels are available, please consult factory). Each sensor ships with a 4-pin, field installable, M12 connector and an additional 13 ft. (4 m) cordset is also available. Just like the rest of our SR1 series, the SR1E is in stock for quick delivery.

ORDERING INFORMATION

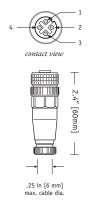




Consult factory for alternate resolution and differential output signals.

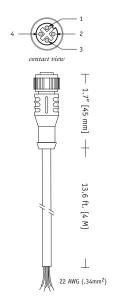


Field Installable Connector



_ pin	signal
1	530 VDC
2	common
3	channel A
4	channel B

Cord Set Connections



pin	conductor	signal
1	brown	530 VDC
2	white	common
3	blue	channel A
4	black	channel B

cable specifications		
length: 13 ft. (4m) wire size: 22 AWG (.34mm²) cable material: PVC cable color: gray		

Changing the Cable Exit

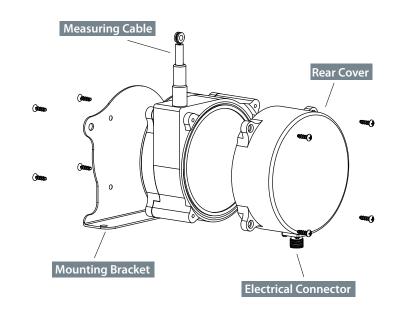
Changing Measuring Cable Exit

To change the direction of the measuring cable, remove the 4 mounting bracket screws and rotate bracket to one of four available positions. See figures 1 - 4 on the following pages for mounting dimensions.

Changing Electrical Connector Direction

To change the position of the electrical connector, remove the 4 rear cover screws and carefully separate rear cover from the sensor body.

Rotate the rear cover to desired position being careful to not tangle the wiring harness that runs to the connector.



Cable Exit Direction Options

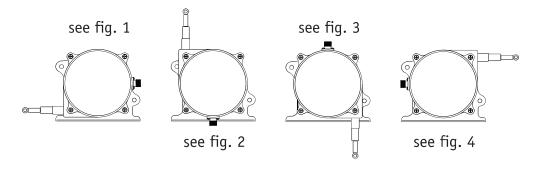




Fig. 1 - Outline Drawing (as shipped)

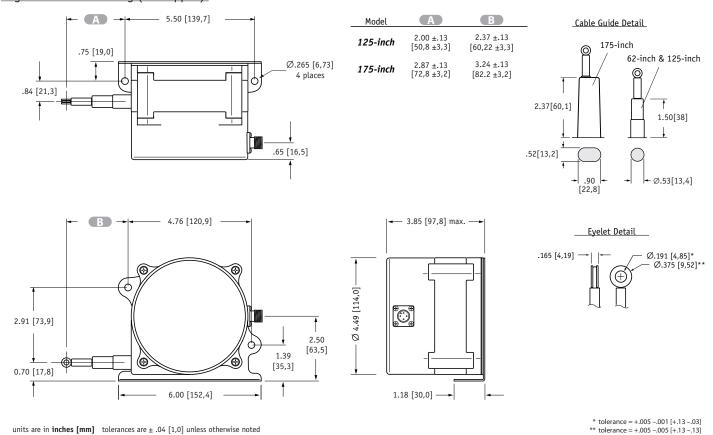
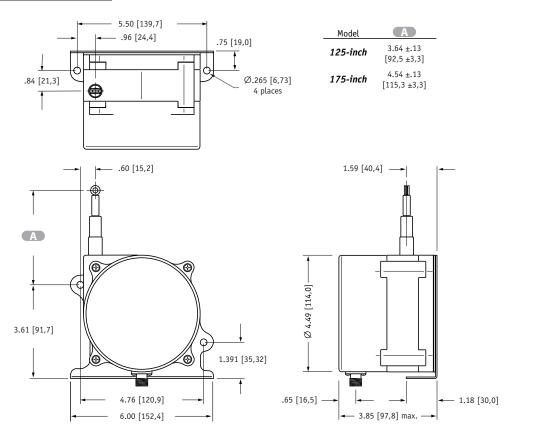
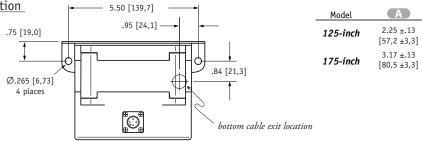


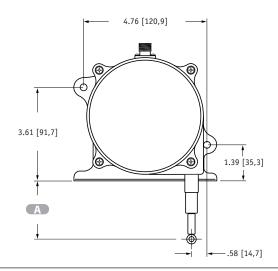
Fig. 2 - "Up" Cable Exit Direction



celesco







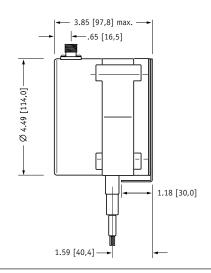
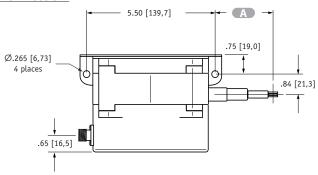
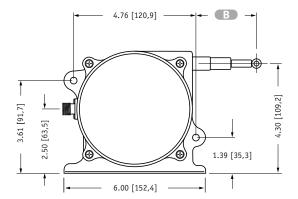
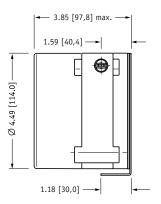


Fig. 4 - "Rear" Cable Exit Direction



Model	A	В
125-inch	2.00 ±.13 [50,8 ±3,3]	2.37 ±.13 [60,22 ±3,3]
175-inch	2.87 ±.13 [72,8 ±3,2]	3.24 ±.13 [82.2 ±3,2]





version: 3.0 last updated: March 5, 2013

units are in inches [mm] $\,$ tolerances are \pm .04 [1,0] unless otherwise noted