

# SLS095 LINEAR DISPLACEMENT SENSOR

SLS095 is designed to provide maximum performance benefits within an extremely compact body diameter of 9.5mm, with stroke lengths from 10 to 100mm. The miniature size of this sensor makes it ideal for applications in robotics, animatronics, medical equipment and motorsport data acquisition.

## PERFORMANCE

<b>Electrical stroke E</b>	<b>mm</b>	<b>10</b>	<b>20</b>	<b>30</b>	<b>40</b>	<b>50</b>	<b>75</b>	<b>100</b>	
<b>Resistance ±10%</b>	<b>kΩ</b>	0.4†	0.8	1.2	1.6	2.0	3.0	4.0	†±15% for SLS 095/10
<b>Independent linearity</b>	<b>±%</b>	0.5	0.35	0.25	0.25	0.25	0.15	0.15	
<b>Power dissipation at 20°C</b>	<b>W</b>	0.2	0.4	0.6	0.8	1.0	1.5	2.0	
<b>Applied voltage maximum</b>	<b>Vdc</b>	8.9	17.9	26	40	44	67	74	
<b>Resolution</b>		Virtually infinite							
<b>Hysteresis (repeatability)</b>		Less than 0.01mm							
<b>Operational temperature</b>	<b>°C</b>	-30 to +100							
<b>Output smoothness</b>		To MIL-R-39023 grade C 0.1%							
<b>Insulation resistance</b>		Greater than 100MΩ at 500Vdc							
<b>Operating mode</b>		Voltage divider only - see Circuit Recommendation below							
<b>Wiper circuit impedance</b>		Minimum of 100 x track resistance or 0.5MΩ (whichever is greater)							
<b>Operating force maximum</b>									
<b>sealed</b>	<b>gf</b>	300 in horizontal plane							
<b>unsealed</b>	<b>gf</b>	100 in horizontal plane							
<b>Life at 250mm per second</b>		Typically greater than 100 million operations (50 x 10 <sup>6</sup> cycles) at 25mm stroke length							
<b>Dither life</b>		200 million operations (100 x 10 <sup>6</sup> cycles) at ±0.5mm, 60Hz							
<b>Sealing</b>		IP50 standard - IP66 see options							
<b>Shaft seal life</b>		20 million operations (10 x 10 <sup>6</sup> cycles)							
<b>Shaft velocity maximum</b>	<b>m/s</b>	2.5							
<b>Vibration</b>		RTCA 160D 10Hz to 2kHz (random) @ 4.12g (rms) - all axes							
<b>Shock</b>		40g 6mS half sine							

## CIRCUIT RECOMMENDATION

Hybrid track potentiometers feature a high wiper contact resistance, therefore operational checks should be carried out only in the voltage divider mode. Hybrid track potentiometers should be used only as voltage dividers, with a minimum wiper circuit impedance of 100 x track resistance or 0.5MΩ (whichever is greater). Operation with wiper circuits of lower impedance will degrade the output smoothness and affect the linearity.

## OPTIONS

**IP 66 sealing**  
**Mounting**

Designed to accept integral shaft seal to give IP66 rating  
Can be supplied with self aligning bearings or a plain body for use with body clamps or flange mounting kit.

## ACCESSORIES

Mounting kits ———— Body clamp kit - SA200841  
Flange kit - SA200842

## AVAILABILITY

All configurations can be supplied within five days from the factory

## ORDERING CODES

**SLS095/...../...../...../.....**

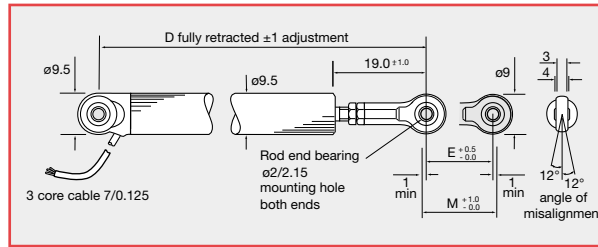
Electrical stroke ———— Resistance

Sealing 50 = IP50, 66 = IP66  
Mounting option R = Self aligning bearing  
P = Plain

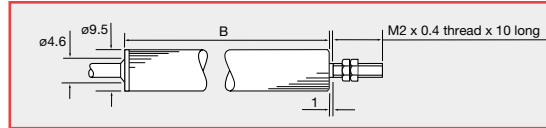
## DIMENSIONS AND MOUNTING OPTIONS

Note: drawings not to scale

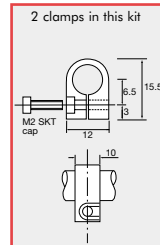
### SELF ALIGNING BEARING MOUNTING



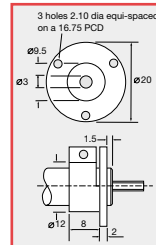
### PLAIN BODY MOUNTING



### MOUNTING OPTIONS



**Body clamp**  
SA200841

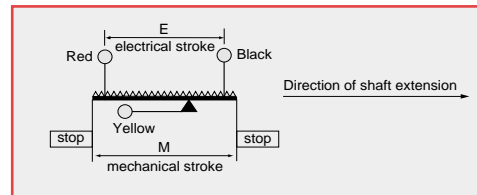


**Flange mounting**  
SA200842

<b>Electrical stroke E</b>	<b>mm</b>	<b>10</b>	<b>20</b>	<b>30</b>	<b>40</b>	<b>50</b>	<b>75</b>	<b>100</b>
<b>Mechanical stroke M</b>	<b>mm</b>	<b>12.5</b>	<b>22.5</b>	<b>32.5</b>	<b>42.5</b>	<b>52.5</b>	<b>77.5</b>	<b>102.5</b>
<b>Body length B</b>	<b>mm</b>	45.5	55.5	65.5	75.5	85.5	110.5	135.5
<b>Between centres D</b>		70	80	90	100	110	135	160
<b>Weight approximate (mounting option R)</b>	<b>g</b>	11	13	14.5	16	17.5	21.5	25.5

### ELECTRICAL CONNECTIONS

3 core cable: PUR sheathed 0.3m long with PTFE insulated 7/0.125 cores.





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