

SLS190 LINEAR DISPLACEMENT SENSOR

The SLS190 range is designed to provide maximum performance benefits within a compact package in stroke lengths from 25 to 350mm. With a choice of mounting options and accessories, this sensor is ideally suited to a wide range of general purpose industrial applications, for medium stroke linear position sensing.

PERFORMANCE

| | | 25 | 50 | 75 | 100 | 125 | 150 | 175 | 200 | 225 | 250 | 275 | 300 | 325 | 350 | |
|----------------------------|------------|---|------|------|------|------|------|------|------|------|------|------|------|------|------|--|
| Electrical stroke E | mm | 25 | 50 | 75 | 100 | 125 | 150 | 175 | 200 | 225 | 250 | 275 | 300 | 325 | 350 | |
| Resistance $\pm 10\%$ | k Ω | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | |
| Independent linearity | | | | | | | | | | | | | | | | |
| guaranteed | $\pm\%$ | 0.25 | 0.25 | 0.15 | 0.15 | 0.15 | 0.15 | 0.15 | 0.15 | 0.15 | 0.15 | 0.15 | 0.15 | 0.15 | 0.15 | |
| typical | $\pm\%$ | 0.15 | 0.15 | 0.15 | 0.10 | 0.10 | 0.07 | 0.07 | 0.07 | 0.07 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | |
| Power dissipation at 20°C | W | 0.5 | 1.0 | 1.5 | 2.0 | 2.5 | 3.0 | 3.5 | 4.0 | 4.5 | 5.0 | 5.5 | 6.0 | 6.5 | 7.0 | |
| Applied voltage maximum | Vdc | 22 | 44 | 67 | 74 | 74 | 74 | 74 | 74 | 74 | 74 | 74 | 74 | 74 | 74 | |
| Electrical output | | Minimum of 0.5% to 99.5% applied volts | | | | | | | | | | | | | | |
| Resolution | | Virtually infinite | | | | | | | | | | | | | | |
| Hysteresis (repeatability) | | Less than 0.01mm | | | | | | | | | | | | | | |
| Operational temperature | °C | -30 to +100 (tested to +130 for 12 hours duration) | | | | | | | | | | | | | | |
| Output smoothness | | To MIL-R-39023 grade C 0.1% | | | | | | | | | | | | | | |
| Insulation resistance | | Greater than 100M Ω at 500Vdc | | | | | | | | | | | | | | |
| Operating mode | | Voltage divider only - see Circuit Recommendation below | | | | | | | | | | | | | | |
| Wiper circuit impedance | | Minimum of 100 x track resistance or 0.5M Ω (whichever is greater) | | | | | | | | | | | | | | |
| Operating force maximum | | | | | | | | | | | | | | | | |
| sealed | gf | 500 in horizontal plane | | | | | | | | | | | | | | |
| unsealed | gf | 250 in horizontal plane | | | | | | | | | | | | | | |
| Life at 250mm per second | | Typically greater than 100 million operations (50 x 10 ⁶ cycles) at 25mm stroke length | | | | | | | | | | | | | | |
| Dither life | | 200 million operations (100 x 10 ⁶ cycles) at ± 0.5 mm, 60Hz | | | | | | | | | | | | | | |
| Sealing | | IP50 standard - IP66 see options | | | | | | | | | | | | | | |
| Shaft seal life | | 20 million operations (10 x 10 ⁶ cycles) - replaceable | | | | | | | | | | | | | | |
| Shaft velocity maximum | m/s | 10 | | | | | | | | | | | | | | |
| Vibration | | RTCA 160D 10Hz to 2kHz (random) @ 12.6g (rms) - all axes | | | | | | | | | | | | | | |
| Shock | | Less than 0.04% output change @ 2500g - all axes | | | | | | | | | | | | | | |

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 0.5M Ω (whichever is greater). Operation with wiper circuits of lower impedance will degrade the output smoothness and affect the linearity.

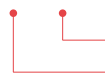
OPTIONS

| | |
|-----------------------------|---|
| Compact shaft | Compact shaft will reduce dimension D by 25mm |
| Integral shaft seal - IP 66 | Designed to accept integral shaft seal to give IP66 rating |
| Extended cable length | 10m output cable can be specified |
| Mounting | Body clamp or flange mounting kits can be supplied |
| Protective sleeve | For all stroke lengths - self aligning bearings only. See ordering code |

ACCESSORIES

Mounting kits ————  Body clamp kit - SA59019
Flange kit - SA59020

Protective sleeve - SA202986/...../.....

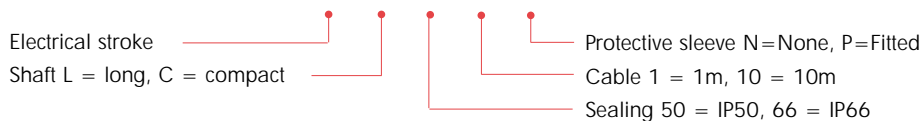
 Shaft L = long, C = compact
Electrical stroke (select to match SLS190 sensor)

AVAILABILITY

All standard configurations can be supplied rapidly from the factory - check with your local supplier for more details

ORDERING CODES

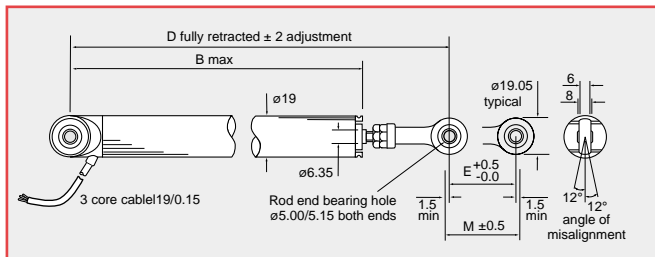
SLS190/...../...../...../...../.....



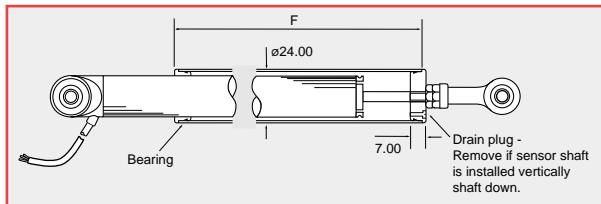
DIMENSIONS AND MOUNTING OPTIONS

Note: drawings not to scale

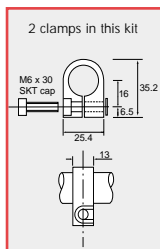
SELF ALIGNING BEARING MOUNTING



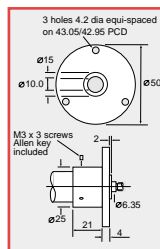
PROTECTIVE SLEEVE OPTION - P



MOUNTING OPTIONS



Body clamp
SA59019

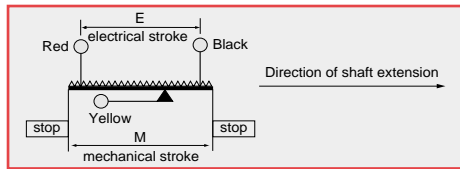


Flange mounting
SA59020

| | | | | | | | | | | | | | | | |
|--------------------------|----|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| Electrical stroke E | mm | 25 | 50 | 75 | 100 | 125 | 150 | 175 | 200 | 225 | 250 | 275 | 300 | 325 | 350 |
| Mechanical stroke M | mm | 29 | 54 | 79 | 104 | 129 | 154 | 179 | 204 | 229 | 254 | 279 | 304 | 329 | 354 |
| Body length B | mm | 110.5 | 135.5 | 160.5 | 210.5 | 235.5 | 260.5 | 285.5 | 310.5 | 333.5 | 360.5 | 385.5 | 435.5 | 460.5 | 485.5 |
| Between centres D | | | | | | | | | | | | | | | |
| standard sensor (L) | mm | 173.6 | 198.6 | 223.6 | 273.6 | 298.6 | 323.6 | 348.6 | 373.6 | 398.6 | 423.6 | 448.6 | 498.6 | 523.6 | 548.6 |
| compact shaft sensor (C) | mm | 148.6 | 173.6 | 198.6 | 248.6 | 273.6 | 298.6 | 323.6 | 348.6 | 373.6 | 398.6 | 423.6 | 473.6 | 498.6 | 523.6 |
| Sleeve length F | | | | | | | | | | | | | | | |
| standard sensor (L) | mm | 100 | 125 | 150 | 200 | 225 | 250 | 275 | 300 | 325 | 350 | 375 | 425 | 450 | 475 |
| compact shaft sensor (C) | mm | 75 | 100 | 125 | 175 | 200 | 225 | 250 | 275 | 300 | 325 | 350 | 400 | 425 | 450 |
| Weight approximate | | | | | | | | | | | | | | | |
| standard sensor (L) | g | 109 | 126 | 144 | 161 | 179 | 196 | 214 | 231 | 249 | 266 | 284 | 301 | 319 | 336 |
| compact shaft sensor (C) | g | 103 | 120 | 138 | 155 | 173 | 190 | 208 | 225 | 246 | 260 | 278 | 295 | 316 | 330 |

ELECTRICAL CONNECTIONS

3 core cable: PUR sheathed 1m long with ETFE insulated 19/0.15 cores.





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