SLS320 LINEAR DISPLACEMENT SENSOR

The SLS320 range is designed to provide maximum performance benefits within a body diameter of 32mm, with stroke lengths from 250 to 1600mm. With a choice of mounting options and accessories, this sensor is ideally suited to a wide range of heavier duty industrial applications, for medium to long stroke linear position sensing.

PERFORMANCE

Electrical stroke E	**mm**	***250***	***300***	***350***	***400***	***450***	***500***	***550***	***600***	***650***	***700***	***750***	***800***	***850***	***900***
Resistance ±10%	**kΩ**	10	12	14	16	18	20	22	24	26	28	30	32	34	36
Power dissipation at 20˚C	**W**	5.0	6.0	7.0	8.0	9.0	10	11	12	13	14	15	16	17	18
Electrical stroke E	**mm**	***950***	***1000***	***1050***	***1100***	***1150***	***1200***	***1250***	***1300***	***1350***	***1400***	***1450***	***1500***	***1550***	***1600***
Resistance ±10%	**kΩ**	38	40	42	44	46	48	50	52	54	56	58	60	62	64
Power dissipation at 20˚C	**W**	19	20	21	22	23	24	25	26	27	28	29	30	31	32

Independent linearity		
guaranteed	**±%**	0.15
typical	**±%**	0.05
Applied voltage - maximum	**Vdc**	74
Electrical output		Minimum of 0.5% to 99.5% applied volts
Resolution		Virtually infinite
Hysteresis (repeatability)	**mm**	Less than 0.01
Operational temperature	**°C**	–30 to +100
Output smoothness		To MIL-R-39023 grade C 0.1%
Insulation resistance		Greater than 100MΩ at 500Vdc
Operating mode		Voltage divider only - see Circuit Recommendation below
Wiper circuit impedance		Minimum of 100 x track resistance or 0.5MΩ (whichever is greater)
Operating force - maximum		
sealed	**gf**	2000 in horizontal plane (break-out force 5000gf)
unsealed	**gf**	1500 in horizontal plane (break-out force 2000gf)
Life at 250mm per second		Typically in excess of 100 million operations (50 x 10^6 cycles) at 25mm stroke length
Dither life		200 million operations (100 x 10^6 cycles) at ±0.5mm, 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

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

Compact shaft	Compact shaft will reduce dimension D by 50mm
Integral shaft seal - IP 66	Designed to accept integral shaft seal to give IP66 rating
Cabled socket	1m or 10m cabled socket assemblies available
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 - SA59661
- Flange kit - SA59660

Protective sleeve - SA202988***/..... /.....***
- Shaft L = long, C = compact
- Electrical stroke (select to match SLS320 sensor)

AVAILABILITY

Up to 1100mm stroke - All configurations can be supplied within five days from the factory
1150 to 1600mm stroke - All configurations can be supplied within ten days from the factory

ORDERING CODES

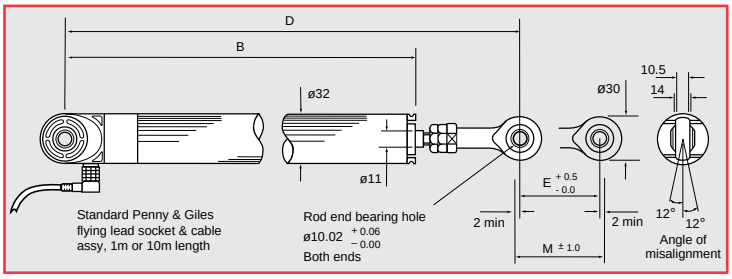
SLS320/...../...../...../...../...../.....

- Electrical stroke
- Shaft L = long, C = compact
- Protective sleeve N = None, P = Fitted
- Cabled socket 00 = None 01 = 1m 10 = 10m
- Sealing 50 = IP50, 66 = IP66

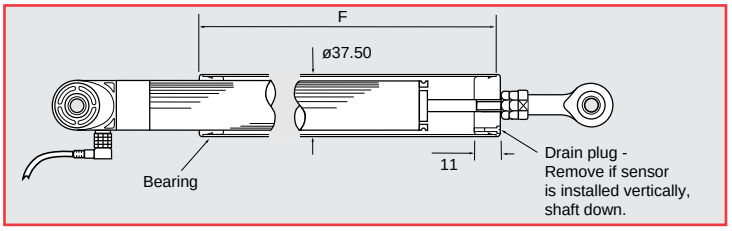
DIMENSIONS AND MOUNTING OPTIONS

Note: drawings not to scale

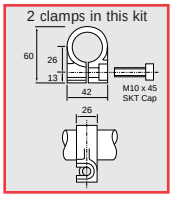
SELF ALIGNING BEARING MOUNTING



PROTECTIVE SLEEVE OPTION - P

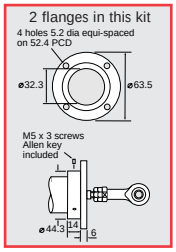


MOUNTING OPTIONS



Body clamp
SA59661

Flange mounting
SA59660



Mounting recommendations
For units 1150 to 1600mm stroke, we recommend the use of body clamp or flange mounting kits to support the sensor when horizontally mounted. Alternatively, use the protective sleeve kit with the self aligning bearing mountings to provide increased rigidity.

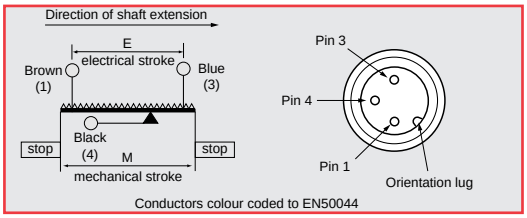
Electrical stroke E	**mm**	***250***	***300***	***350***	***400***	***450***	***500***	***550***	***600***	***650***	***700***	***750***	***800***	***850***	***900***
Mechanical stroke M	**mm**	***255***	***305***	***355***	***405***	***455***	***505***	***555***	***605***	***655***	***705***	***755***	***805***	***855***	***905***
Body length B	**mm**	366	416	466	516	601	651	701	751	801	851	901	986	1036	1086
Between centres D															
standard sensor (L)	**mm**	480	530	580	630	710	760	810	860	910	960	1010	1095	1145	1195
compact shaft sensor (C)	**mm**	430	480	530	580	660	710	760	810	860	910	960	1045	1095	1145
Sleeve length F															
standard sensor (L)	**mm**	372	422	472	522	607	657	707	757	807	857	907	992	1042	1092
compact shaft sensor (C)	**mm**	322	372	422	472	557	607	657	707	757	807	857	942	992	1042
Weight approximate (no sleeve)															
standard sensor (L)	**g**	590	673	756	839	922	1005	1088	1171	1254	1337	1420	1503	1586	1669
compact shaft sensor (C)	**g**	555	638	721	804	887	970	1053	1136	1219	1302	1385	1468	1551	1634

Electrical stroke E	**mm**	***950***	***1000***	***1050***	***1100***	***1150***	***1200***	***1250***	***1300***	***1350***	***1400***	***1450***	***1500***	***1550***	***1600***
Mechanical stroke M	**mm**	***955***	***1005***	***1055***	***1105***	***1155***	***1205***	***1255***	***1305***	***1355***	***1405***	***1455***	***1505***	***1555***	***1605***
Body length B	**mm**	1136	1186	1236	1286	1371	1421	1471	1521	1571	1621	1671	1721	1771	1821
Between centres D															
standard sensor (L)	**mm**	1245	1295	1345	1395	1480	1530	1580	1630	1680	1730	1780	1830	1880	1930
compact shaft sensor (C)	**mm**	1195	1245	1295	1345	1430	1480	1530	1580	1630	1680	1730	1780	1830	1880
Sleeve length F															
standard sensor (L)	**mm**	1142	1192	1242	1292	1377	1427	1477	1527	1577	1627	1677	1727	1777	1827
compact shaft sensor (C)	**mm**	1092	1142	1192	1242	1327	1377	1427	1477	1527	1577	1627	1677	1727	1777
Weight approximate (no sleeve)															
standard sensor (L)	**g**	1752	1835	1918	2000	2095	2190	2285	2380	2475	2570	2665	2760	2855	2950
compact shaft sensor (C)	**g**	1717	1800	1883	1965	2060	2155	2250	2345	2440	2535	2630	2725	2820	2915

ELECTRICAL CONNECTIONS

Right angled, cabled socket

E series M12 to IEC 60947-5-2 PUR jacket.
Conforms to DIN/VDE 0660 part 208A2

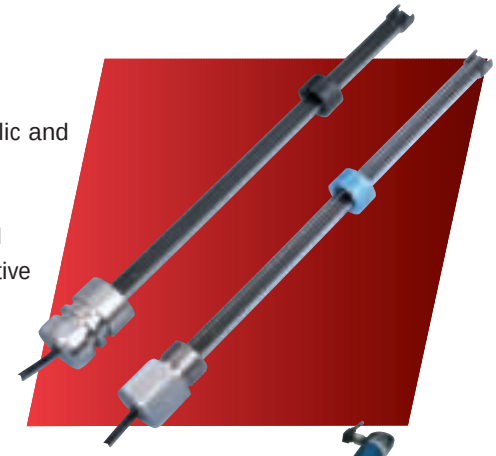


Cabled Socket
1 metre long No. x61-169-001
(Hirschmann No. 933 316-021/1m)
10 metres long No. x61-169-010
(Hirschmann No. 933 316-021/10m)

SPECIALISED DESIGNS

We have considerable experience in solving specific application problems by developing our standard designs to suit individual requirements. Custom-designed solutions are also provided where standard equipment does not fully meet our customer's needs.

ICS100 In-Cylinder Sensors

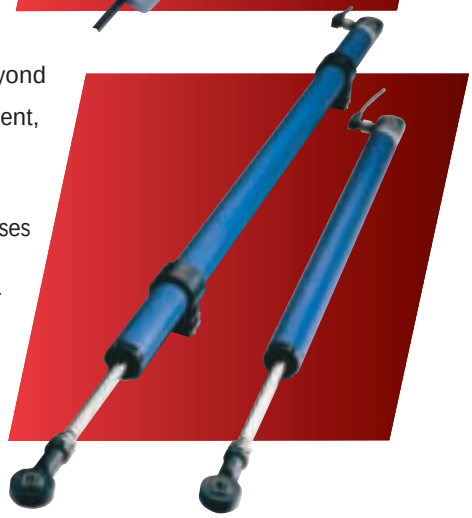


Suitable for actuator strokes up to 1600mm

A range of In-Cylinder linear position sensors designed for integration into hydraulic and pneumatic actuators where the sensor is fitted inside the pressurised environment. Using the proven benefits of Hybrid Track Technology and including a number of innovative design features, the ICS100 range is ideally suited to high volume OEM actuator manufacturers, where design engineers can specify an affordable alternative for applications where non-contacting technologies may prove too expensive.

Ask for our **ICS100 In-Cylinder Sensors** brochure for full details and designers guide. It can also be downloaded from our website at www.pennyandgiles.com

SLS320 for heavy duty-cycle dynamic applications



A number of specialist applications have demanded an enhanced operating life beyond that capable from the standard SLS320 sealed linear sensor. To meet this requirement, we have developed an oil-filled version of the SLS320, which provides optimum lubrication for the track and sliding mechanism for increased operating life.

Typically the sensors are mounted parallel to actuators fitted to hydraulic motion bases operating leisure ride cabins at amusement parks around the world. Typically the motion bases run a three minute cycle time for up to 12 hours per day. This sensor is ideally suited to similar applications subject to heavy duty dynamic movements.

SPECIFICATION SUMMARY

Refer to page 14 and 15 for full performance specification and dimensions

Electrical stroke E	**mm**	250 to 1100mm only
Sealing		IP66
Shaft seal life		20 million operations (10×10^6) - replaceable
Shaft velocity - maximum	**m/s**	10

OPTIONS

Compact shaft	Compact shaft will reduce dimension D (page 15) by 50mm
Cabled socket	1m or 10m cabled socket assemblies available
Mounting	Self aligning rod ends standard. Body clamp and flange kits available
Protective sleeve	For 250 to 1100mm stroke lengths - self aligning bearings only.

ACCESSORIES

Mounting kits
- Body clamp kit - SA59661
- Flange kit - SA59660

Protective sleeve - SA202988**/...../.....**
- Shaft L = long, C = compact
- Electrical stroke (select to match SLS320 sensor)

Clamp sleeve (to allow SLS320 to replace Penny+Giles HLP350 in existing installations) - P200863 (2 per sensor)

AVAILABILITY

Can be supplied within five days from the factory

ORDERING CODES

D45566/...../...../...../...../.....

- Electrical stroke
- Shaft L = long, C = compact
- Protective sleeve N=None, P=Fitted
- Cabled socket 00=None 01=1m 10=10m
- Sealing 50 = IP50, 66 = IP66