

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 $\pm 10\%$	k Ω	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 $\pm 10\%$	k Ω	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	$\pm\%$	0.15													
typical	$\pm\%$	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 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	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 ± 0.5 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													

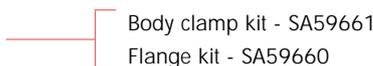
CIRCUIT RECOMMENDATION

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.

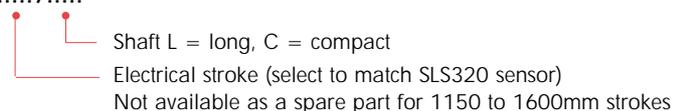
OPTIONS

Compact shaft	Compact shaft will reduce dimension D by 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 

Protective sleeve - SA202988/...../.....

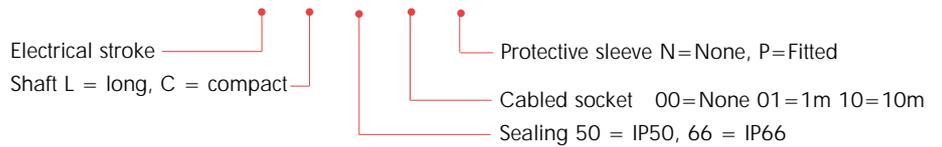

 Shaft L = long, C = compact
 Electrical stroke (select to match SLS320 sensor)
 Not available as a spare part for 1150 to 1600mm strokes

AVAILABILITY

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

ORDERING CODES

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



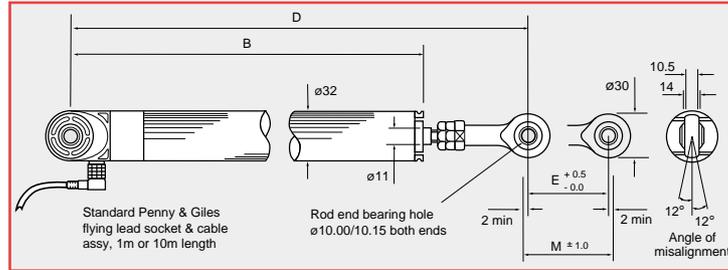
DIMENSIONS AND MOUNTING OPTIONS

Note: drawings not to scale

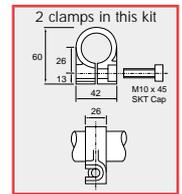
Mounting recommendations

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.

SELF ALIGNING BEARING MOUNTING



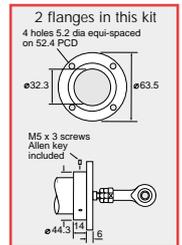
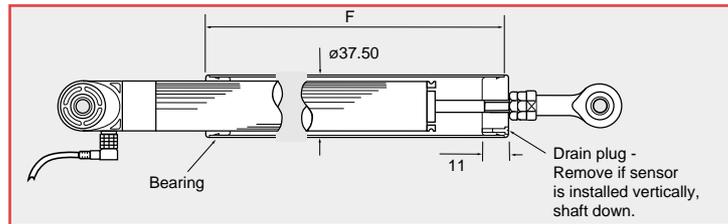
MOUNTING OPTIONS



Body clamp
SA59661

Flange mounting
SA59660

PROTECTIVE SLEEVE OPTION - P

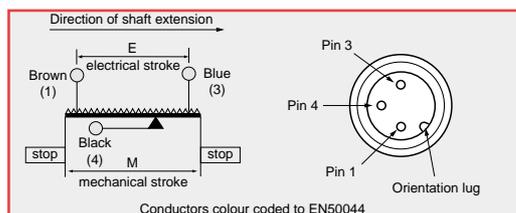


Electrical stroke E	mm	250	300	350	400	450	500	550	600	650	700	750	800	850	900
Mechanical stroke M	mm	255	305	355	405	455	505	555	605	655	705	755	805	855	905
Body length B	mm	366	416	466	516	601	651	701	751	801	851	901	986	1036	1086
Between centres D															
standard sensor (L)	mm	480	530	580	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
10 metres long No. x61-169-010

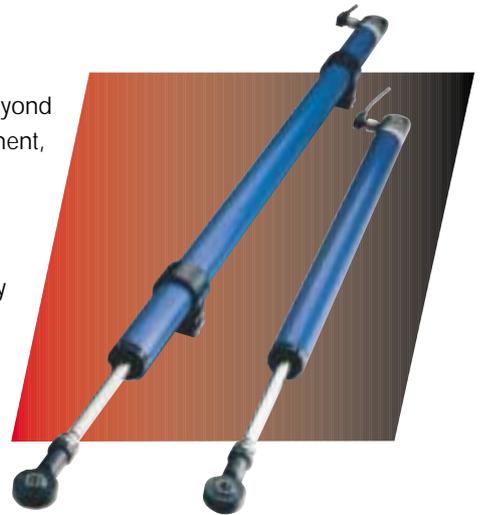
SPECIALISED DESIGNS

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.

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 a special 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	150 to 1600mm only
Sealing		IP66 or IP50
Shaft seal life		20 million operations (10 x 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 1600mm 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)
Not available as a spare part for 1150 to 1600mm strokes

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

AVAILABILITY

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

ORDERING CODES

D46273/...../...../...../...../.....

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



www.pennyandgiles.com

Penny & Giles

Position sensors, joysticks and solenoids for commercial and industrial applications.

15 Airfield Road
Christchurch
Dorset BH23 3TG
United Kingdom
+44 (0) 1202 409409
+44 (0) 1202 409475 Fax
sales@pennyandgiles.com

36 Nine Mile Point Industrial Estate
Cwmfelinfach
Gwent NP11 7HZ
United Kingdom
+44 (0) 1495 202000
+44 (0) 1495 202006 Fax
sales@pennyandgiles.com

665 North Baldwin Park Boulevard
City of Industry, CA 91746
USA
+1 626 480 2150
+1 626 369 6318 Fax
us.sales@pennyandgiles.com

Straussenlettenstr. 7b
85053 Ingolstadt,
Germany
+49 (0) 841 885567-0
+49 (0) 841 885567-67 Fax
info@penny-giles.de

3-1-A, Xiandai Square,
No 333 Xingpu Rd,
Suzhou Industrial Park, 215126
China
+86 512 6287 3380
+86 512 6287 3390 Fax
sales@pennyandgiles.com.cn

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