NEW PRODUCT

Penny+Giles

YOUR PARTNERS
In Control

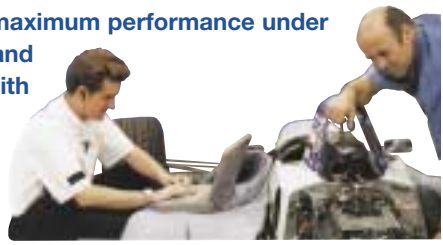
SRS 280
Sealed Rotary Sensor

Creative solutions
for position measurement and control

Hybrid Technology ROTARY SENSORS

The SRS280 sealed rotary sensor has been specially developed to meet the harsh operating requirements of today's automotive, motorsport and industrial position sensing applications.

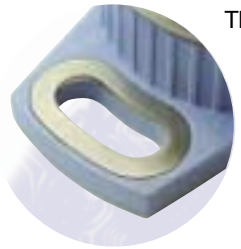
Several innovative design features have been included with this new model to offer users with a sensor that will provide maximum performance under extremes of temperature, humidity, vibration and shock, and it is completely interchangeable with similar devices already in service using the standard 38mm fixing centres format.



Hybrid Track

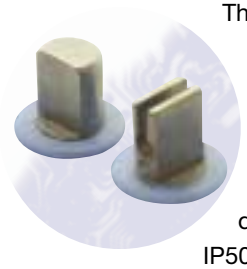
The SRS280 uses the proven long life Penny & Giles hybrid potentiometer track technology (conductive plastic on wire), providing high stability under extremes of temperature and humidity, with virtually infinite resolution and a life in excess of 100 million operations.

Crush-proof inserts



The sensor housing is a high strength glass-filled engineering polymer that has the added feature of stainless steel inserts around the mounting screw area. This allows the sensor to be re-used after installation and allows minute adjustments to be easily made without damage to the flange by over-tightening the fasteners.

Shaft attachment



The sensor shaft has the option of two attachment formats that are interchangeable with existing installations. The sprung shaft style is a one-piece design that eliminates failures caused by more common two-piece designs. The shaft can be specified with IP50 or IP66 sealing by the addition of a high performance rotary shaft seal (see ordering code).

Cable outlet

The sensor rear housing has an integrally moulded cable that is fully sealed to IP66 as standard. This effectively eliminates the need to over-fit a moulded boot to improve sealing, saving the user time and cost. For those users who wish to add supplementary heatshrink sleeving over the cable, we have included a small lip to the moulding to assist with attachment at the sensor housing. Cable lengths of 0.5m and 2m can be specified. (see ordering code).

HYBRID TECHNOLOGY ROTARY SENSORS

Rapid despatch

280 different sensor configurations available faster than our competitors.

SRS 280

Features	Benefits
• Electrical angles from 10 to 350°	Maximum sensitivity in all applications
• Crush-proof mounting flange	Allows re-use without damage
• Choice of two shaft attachments	Interchangeable with existing installations
• Duplex shaft bearing support	Optimum performance under vibration
• Sealing to IP66	Operation in hostile environments
• Cable integrally moulded	Secure sealing with excellent strain relief
• Rapid despatch of any option	Eliminates customer inventory
• CE approved	Confidence in EMC performance

EMC
The products detailed in this document have been tested to the requirements of EN50081-1 (Emissions) and EN50082-2 (Immunity).

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.
For variable resistor applications Penny & Giles wirewound potentiometers should be used. Please ask for technical literature.

PERFORMANCE

ELECTRICAL

Electrical angle ±2	°	10 to 350 in 10° steps
Resistance ±20%	Ω	14.3 per degree
Hysteresis (repeatability)	°	< 0.03
Accuracy		< 1 degree (e.g. ±0.3% over 330°, ±1% over 100°)
Power dissipation at 20°C	**W**	0.003 W per angular degree
Applied voltage maximum	**Vdc**	0.2 per angular degree
Resolution		Virtually infinite
Output smoothness		To MIL-R-39023 grade C 0.1%
Insulation resistance		Greater than 100MΩ at 500V d.c.
Operating mode		Voltage divider only - see Circuit Recommendations on page 2
Wiper circuit impedance		Minimum of 0.5MΩ

MECHANICAL

Mechanical angle	°	360, continuous
Mounting		Use 2 x M4 socket head cap screws and M4 washer - maximum tightening torque 2Nm
Operating torque maximum		
unsealed shaft IP50	**gm cm**	100
sealed shaft IP66	**gm cm**	120
Shaft velocity maximum	**°/sec**	3000
Weight	**g**	32 (cable option A), 64 (cable option B)
Phasing		When shaft flat or shaft ident mark is in line with cable exit, wiper is at mid travel

ENVIRONMENTAL

Life		
unsealed shaft IP50		Exceeds 20 million operations (10 x10^6 cycles) of ±75°
sealed shaft IP66		20 million operations (10 x10^6 cycles) of ±75°
Dither life		200 million operations (100 x 10^6 cycles) of ±3°, 60Hz
Operational temperature	**°C**	-40 to +130 (continuous)
Vibration		RTCA-DO160D, 10Hz to 2000Hz (random), 12.61g rms - all axes
Shock		Survival to 2500g - all axes

OPTIONS

Electrical angle	Can be supplied from 10° to 350° in 10° steps
Shaft style	D or sprung shaft
Shaft sealing	IP50 or IP66
Cable length	0.5m or 2m

AVAILABILITY

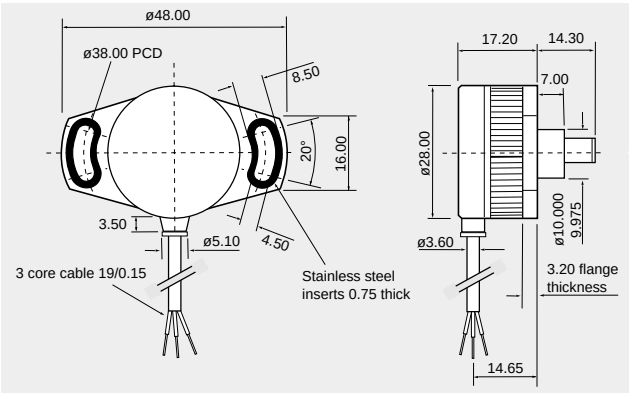
All configurations can be supplied within 5 days from the factory

ORDERING CODES

SRS 280/...../...../...../.....

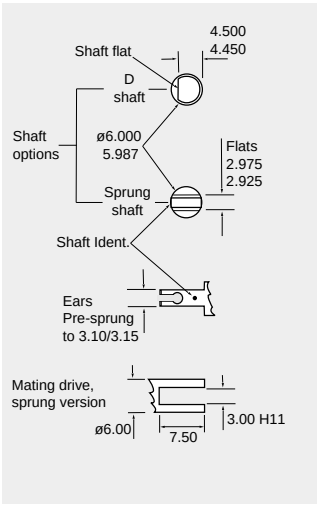
Electrical angle
Shaft style D = D shaft
S = Sprung shaft
Cable A = 0.5m, B = 2m
Shaft sealing 50 = IP50
66 = IP66

DIMENSIONS



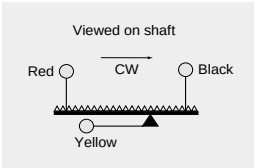
Note: Drawings not to scale

SHAFT OPTIONS



ELECTRICAL CONNECTIONS

3 core cable: PUR sheathed, with PTFE insulated 19/0.15 cores.



Available from Penny+Giles

A wide range of instrumentation for measurement and control solutions in industrial and aerospace applications. Please ask for more details.

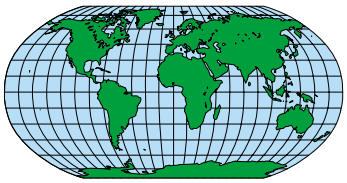
Penny+Giles quality systems meet the requirements of ISO9001, the Civil Aviation Authority and numerous customer's certification standards.

Quality is at the heart of all our systems ensuring the reliability of our products from initial design to final despatch.

Registered No. 924881

■ VRVTs ■ LVDTs - *industrial/aerospace* ■ Hybrid Linear Potentiometers
■ Solenoids ■ Rotary Potentiometers ■ Joystick Controllers ■ In-Cylinder Transducers

Contact Worldwide



WEB SITE
www.pennyandgiles.com

UNITED KINGDOM
Penny+Giles Controls Ltd
15 Airfield Road
Christchurch
Dorset BH23 3TJ
Telephone: +44 (0) 1202 409409
Fax: +44 (0) 1202 409410
Email: xsales@pennyandgiles.com

GERMANY
Penny+Giles GmbH
Straussenlettenstr. 7b
85053 Ingolstadt
Telephone: +49 (0) 841 61000
Fax: +49 (0) 841 61300
Email: info@penny-giles.de

USA
Penny+Giles Controls Inc
12701 Schabarum Avenue
Irwindale CA 91706
Telephone: +1 626 337 0400
Fax: +1 626 337 0469
Email: us.sales@pennyandgiles.com

Penny+Giles products are in service with these industries throughout the world.

Aerospace
Automotive
Construction
Defence
Leisure
Marine
Material handling
Mining
Motorsport
Off-highway
Petrochemical
Plastics and Rubber
Power generation
Process control
Transportation
Timber and Forestry

Penny+Giles
A Curtiss-Wright Company

Doc Ref: SRS280/08/03