

- **Contactless - Hall-effect technology**
- **Single output channel**
- **5Vdc or 9-30Vdc supply**
- **Total sensor measurement range from 0-20° to 0-360°**
- **Analogue or Digital (PWM) output**
- **12-bit resolution over selected measuring range**
- **Low noise level (1mVrms) on output signal**
- **Rugged 88mm housing design, available in aluminium or stainless steel**
- **Operating temperature -40 to +120°C**



The SRH880P sensor operates from 9-30Vdc unregulated or 5Vdc regulated supply and is available with analog (0.5-4.5Vdc) or digital (PWM) output signals. The sensor is factory programmable, allowing you to specify the output signal type, the measurement range (0-20° to 0-360° in 1° increments) and the output direction (clockwise or anticlockwise).

The sensor has a 12-bit resolution (0.025%) over the selected measuring range, and operates from -40° to +120°C when powered at 5 or 9Vdc.

The NRH/TPS/SRH series use a high performance, factory programmable 12 bit magnetic rotary sensor IC that includes integrated Hall elements and digital signal processing. The angular position information is provided by a magnet integrated with the sensor's shaft, or supplied separately. The sensor provides a pulse width modulated signal or an absolute analog voltage signal. Most models are designed to operate from either a 5Vdc regulated or 9-30Vdc unregulated supply, with a high stability circuit and EMC immunity to 100V/m.

SPECIFICATIONS

ELECTRICAL

MEASUREMENT RANGE	20 to 360 in 1° increments
SUPPLY VOLTAGE	9 to 30Vdc (unregulated) and 5 ±0.5 (regulated)
OVER VOLTAGE PROTECTION	Up to 40Vdc (-40 to +60°C)
MAXIMUM SUPPLY CURRENT	<12.5mA
REVERSE POLARITY PROTECTION	yes
SHORT CIRCUIT PROTECTION	Yes
OUTPUT TO GND	In 5V regulated mode only
OUTPUT TO SUPPLY	
POWER-ON SETTLEMENT TIME	<1S
RESOLUTION	0.025% of measurement range
NON-LINEARITY	<±0.4%
TEMPERATURE COEFFICIENT	<±50PPM/°c

MECHANICAL

MECHANICAL ANGLE	Electrical stroke +3mm overstroke at each end
OPERATING TORQUE	1000g-cm
MAXIMUM ROTATIONAL SPEED	3600°/sec
WEIGHT	500g
MOUNTING	Use 3 x M6 threaded holes in front face or 3 x M6 clearance holes through the body - see dimensions for details
PHASING	When the shaft flat is facing the scribed mark on the front face (as shown in the diagram), sensor output is at mid travel (±5°)

ENVIRONMENTAL

PROTECTION CLASS	IP68
LIFE	20 million operations (10 x 10 ⁶ cycles) of ±75° Sensing element life is essentially infinite (contactless), but the SRH880P life figures refer to the shaft seal. Mechanical load (axial and radial) on the shaft should also be considered.
DITHER LIFE	Contactless - no degradation due to shaft dither
OPERATIONAL TEMPERATURE	-40 to +120°C (5V and 9V supply) -40 to +90°C (30V supply)
STORAGE TEMPERATURE	-55 TO +125°C
VIBRATION	10 to 2000Hz Random – 12.6gn rms – all axes
SHOCK	Survival to 2500g – all axes
EMC IMMUNITY LEVEL	BS EN 61000-4-3:1999 to 100V/m, 80MHz to 1GHz and 1.4GHz to 2.7GHz (2004/108/EC)