

- Electrically interchangeable with potentiometers
- More than 9x the life of a potentiometer
- Extremely low signal noise, for the life of the sensor
- Will operate from -40 to +140°C, with excursions to +170°C
- Sealed to withstand high pressure wash-downs (IP69K)
- Mechanically interchangeable with potentiometers on 32mm mountings
- Standard output is dual channel
- Configurable output direction, for left or right fitment
- Measurement range from 20 to 360° in 1° increments



TPS280DP is designed as the modern alternative throttle positioning sensor (TPS) to rotary potentiometers fitted on high-performance race car and motorcycle induction systems.

Replacing a potentiometer with the TPS280DP will eliminate premature failure due to electrical noise – caused by potentiometer wear. TPS280DP is life tested to 30-million cycles (60 million operations), more than NINE TIMES that of a potentiometer in this application.

TPS280DP is mechanically interchangeable with most existing throttle position sensors using 32mm mounting centers and is designed to interface with most common throttle body D-type spindles.

The sensor has a choice of 200 or 500mm cable lengths, with or without an MSS4P Mini Sure-Seal connector fitted to the FDR-25 sheathed spec 55A cable. With sealing to IP69K, it is also able to withstand high pressure wash-downs.

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	<25%
REVERSE POLARITY PROTECTION	yes
SHORT CIRCUIT PRETECTION	
OUTPUT TO GND	Yes
OUTPUT TO SUPPLY	In 5V regulated mode only
POWER-ON SETTLEMENT TIME	<1S
RESOLUTION	0.025% of measurement range (12 bit)
NON-LINEARITY	<±0.4%
TEMPERATURE COEFFICIENT	<±30 in 5V supply mode; <±90 in 9-30V supply mode

MECHANICAL

MECHANICAL ANGLE	360°, continuous
OPERATING TORQUE	10g-cm
MAXIMUM ROTATIONAL SPEED	3600°/sec
WEIGHT	<30g
MOUNTING	Use 2 x M4 socket head cap screws and M4 washer - maximum tightening torque 2Nm

ENVIRONMENTAL

PROTECTION CLASS	IP68 (to 2m depth for 1 hour) and IP69K
LIFE	60 million operations (30 x 106 cycles) of ±75°; Sensing element life is essentially infinite (contactless)
OPERATIONAL TEMPERATURE	-40 to +140°C (5V supply) and +170°C for 72 hours -40 to +135.7°C (9V supply option) Derate upper temperature limit by 1.7°C for every 1V increase in supply: e.g. -40 to +100 @30V
STORAGE TEMPERATURE	-55 TO +140°C
VIBRATION	BS EN 60068-2-64:1995 Sec 8.4 (31.4gn rms) 20 to 2000Hz Random
SHOCK	3m drop onto concrete and 2500g
EMC IMMUNITY LEVEL	BS EN 61000-4-3:1999, to 100V/m, 80MHz to 1GHz and 1.4GHz to 2.7GHz (2004/108/EC)