

The **MHR5450** magnetic hall **dual output** rotary sensor is specifically designed for critical throttle position (TPS) applications, where signal error detection is an important consideration.

Available with an aluminium flange case, the sensor is mounted directly on to the throttle body with a D-type socket, to provide close positional feedback.

Manufactured to quality standards required for high performance systems, they are fully encapsulated to be environmentally protected against the ingress of dust and water to IP68/IP69K.

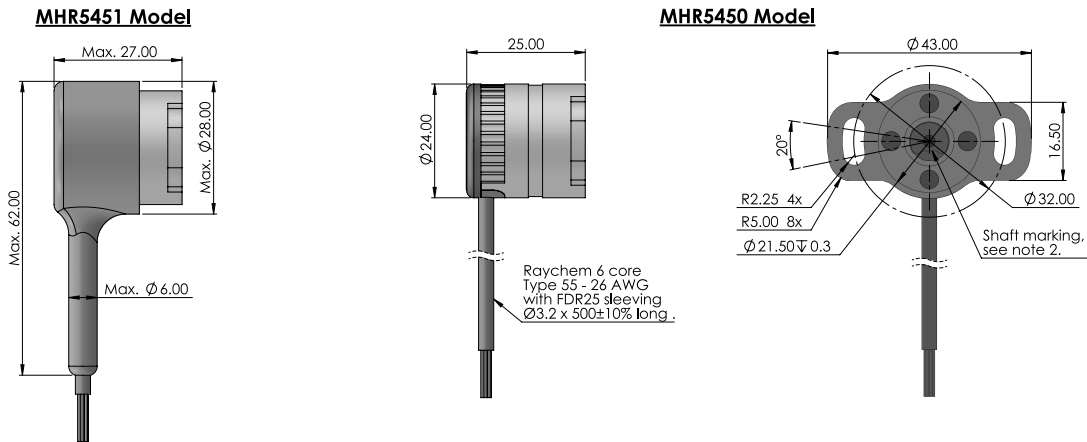
To ensure the sensors meet the exacting requirements of the customer, the measurement angle is factory programmed between 20° to 360° in 1° increments.

### Key features and benefits

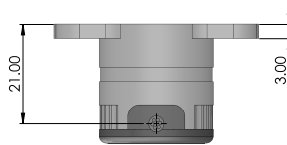
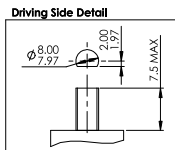
- Dual channel with three different standard output options
- Electrically isolated redundant outputs
- Programmable measurement range available from 20° to 360° in 1° increments
- D-type socket
- Maximum operating temperature 150°C (302°F)
- Suitable for high dither vibration applications
- Superior non-linearity  $<\pm 0.25\%$  FS
- Sensor operates from either 5 VDC or 8 to 30 VDC
- Sealed to IP68/IP69K
- Optional heat shrink boot
- Custom outputs and designs available on request



# MHR5450 and MHR5451 - Flange mounting with a D-type socket



Ordering Information	
<b>MHR545X XV-XXX</b>	
0 = Unbooted	1 = Heatshrink boot
Output Direction (Viewed on shaft)	
C = Clockwise	A = Anticlockwise
D = Channel 1 output anticlockwise	Channel 2 output clockwise
Electrical leads in degrees	



Input Specification			
Supply voltage (Vs)	5.0±10% regulated	8 to 30 unregulated	VDC
Over voltage protection	Up to 50		VDC
Supply current	<15		mA
Reverse polarity protection	Up to -10		VDC
Power on settlement time	<100		ms
Input voltage rise time	0.25 minimum		V/ms
Output Specification			
Output type	Analogue voltage		
Output direction	Clockwise or Anticlockwise (specified at time of order)		
Voltage output (Vout)	0-Vs (+5v)	0 - 5.0	VDC
Line regulation	Ratiometric with Vs	<0.01	%FS
Monotonic range	Linear Range (see note 6)		
Load resistance	>10K		Ohms
Output noise	<5		mV RMS
Performance Specification			
Measurement range	20 to 360 in 1° increments		
Resolution	0.025		% of measurement
Non-Linearity (see note 4)	<±0.25		%FS
Phasing (see note 5)	<0.5		%FS
Temperature coefficient (Vout)	<±0.003	<±0.011	FS/°C
Update rate (nominal)	500		Hz
Max operating speed	600		rpm
General Specification			
Weight (approx.)	28.0		grams
Protection/sealing	Electronic housing IP68 & IP69K		
Life (shaft bearing)	>500 million cycles		(dependent on environment)
Dither life	Contactless - no degradation due to shaft dither		
Operational temperature	-40 to +150	See de-rating graph	°C
Storage temperature	-55 to +150		°C
Materials	Case - Aluminium 6082 Top Cap - GF polymer Shaft - Peek		

- Notes:
1. Incorrect wiring may cause internal damage.
  2. When shaft marking is facing cable exit, instrument is mid-travel (2.5 output).
  3. Do not operate between 5.5V and 8V.
  4. Non-linearity is calculated from Least Squares Best Fit method over the Linear Range.
  5. Phasing for the MHR545X DV-XXX option is at mid-travel only.
  6. Linear Range = Measurement Range x 0.995 Nom.
  7. General dimension tolerance is ±0.25

Electrical connection (see note 1)		
Wire Colour	Function	
Channel 1	Red	Supply Voltage (Vs)
	White	Output Voltage (Vout)
	Black	Ground
Channel 2	Blue	Supply Voltage (Vs)
	Yellow	Output Voltage (Vout)
	Green	Ground

