

The **MHR0900 Series** magnetic hall rotary position sensor is designed with an aluminium synchro mounting case suitable for applications where temperature, severe shock and vibration are important considerations.

Available in either a single or dual channel output, they are manufactured to quality standards required for high performance measurement systems. To provide maximum reliability and assurance, the operating shaft is guided by two stainless steel, low friction ball-race bearings.

Specified extensively in industrial and automotive control measurement systems, they are fully encapsulated to be environmentally protected against the ingress of dust and water to IP68/IP69K.

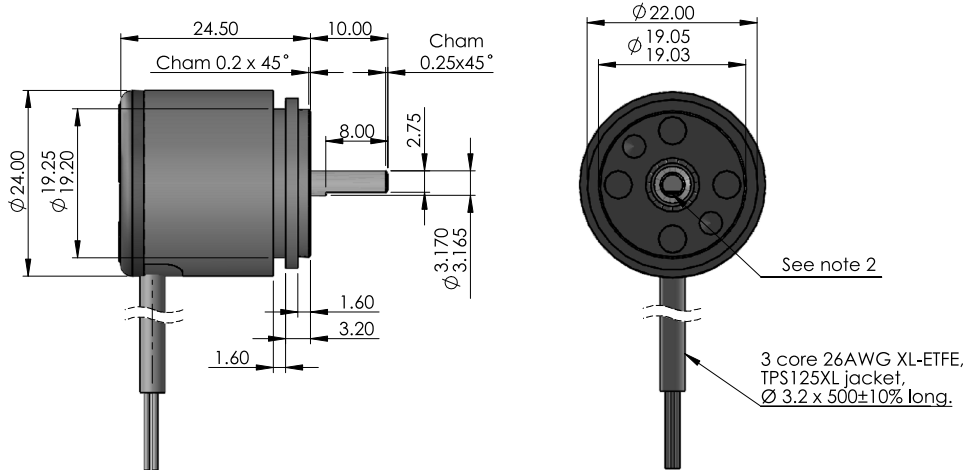
To ensure the sensors meet the exacting requirements of the customer, the measurement angle is factory programmed between 20° to 360° in 1° increments.

Key features and benefits

- Programmable measurement range available from 20° to 360° in 1° increments
- Maximum operating temperature 150°C (302°F)
- Suitable for high dither vibration applications
- Superior non-linearity of $\leq \pm 0.25\%$ FS
- Standard 0.9" synchro mounting case
- Sensor operates from either 5 VDC or 8 to 30 VDC
- Sealing to IP68/IP69K
- Dual output option available
- Custom outputs and designs available on request



MHR0911 – Synchro mounting, single output



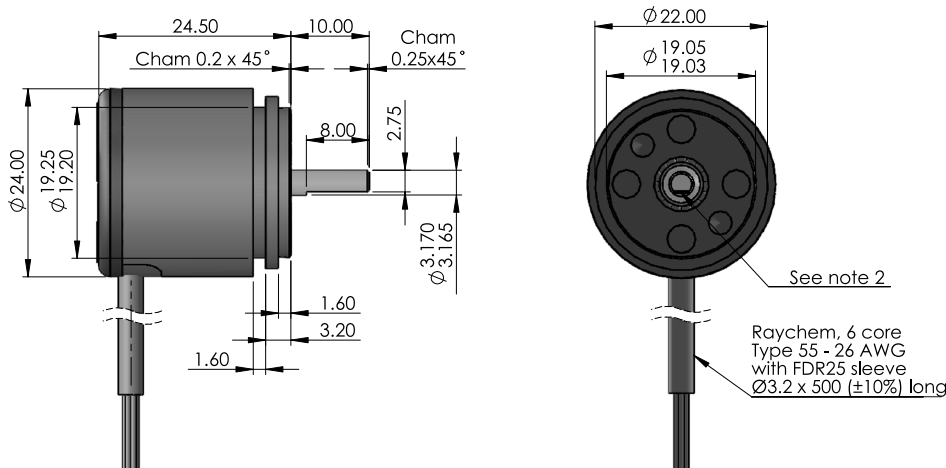
Ordering Information

MHR0911 XV-XXX

Output Direction (Viewed on shaft)
 C = Clockwise
 A = Anticlockwise

Electrical angle in degrees

MHR0921 – Synchro mounting, dual output



Ordering Information

MHR0921 XV-XXX

Output Direction (Viewed on shaft)
 C = Clockwise
 A = Anticlockwise
 D = Channel 1 output anticlockwise
 Channel 2 output clockwise

Electrical angle in degrees



Electrical and mechanical specification for MHR0911 and MHR0921

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 (+5)	0 - 5.0	VDC
Line regulation	Ratiometric with Vs	<0.01% FS	
Monotonic range	Linear Range (see note 5)		
Load resistance	>10K		Ohms
Output noise	<5		mV RMS
Performance Specification			
Measurement range	20 to 360 ±2 in 1° increments		°
Resolution	0.025		% of measurement range
Non-Linearity (see note 4)	<±0.25		%FS
Temperature coefficient (Vout)	<±0.003	<±0.011	%FS/°C
Update rate	500 Nom		Hz
Max operating speed	600		RPM
General Specification			
Weight (approx)	23		grams
Protection/sealing	Electronic housing IP68 and 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 - Stainless steel 316		

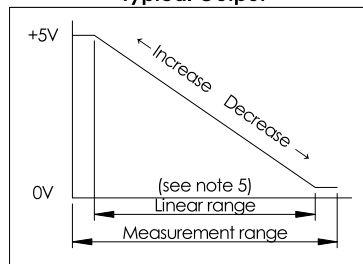
Notes:

1. Incorrect wiring may cause internal damage.
2. When shaft flat is facing cable exit, instrument is mid-travel (2.5V output).
3. Do not operate between 5.5V and 8V.
4. Sensitivity and non-linearity are calculated from least squares best fit method.
5. Linear Range = Measurement Range x 0.995 Nom.
6. Phasing on MHR0921-DV-XXX option is at mid travel only.
7. Due to hall effect technology used in this device, ferrous materials or magnetic fields close to the sensor may influence output.
8. General dimension tolerance is ±0.25mm.

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

Typical Output



Input voltage de-rating graph

