

The **MHR0500** Series magnetic hall rotary position sensor is designed with an ultra-compact Ø12.70mm aluminium case suitable for applications where temperature, severe vibration, high cycling and fluid contamination are important considerations.

Specified where size, weight and performance are important, they are available with the option of either a synchro or flange mounting. To provide maximum reliability and assurance, the operating shaft is guided by two stainless steel, low friction ball-race bearings.

They are designed to be environmentally protected against the ingress of dust and water to IP68/IP69K.

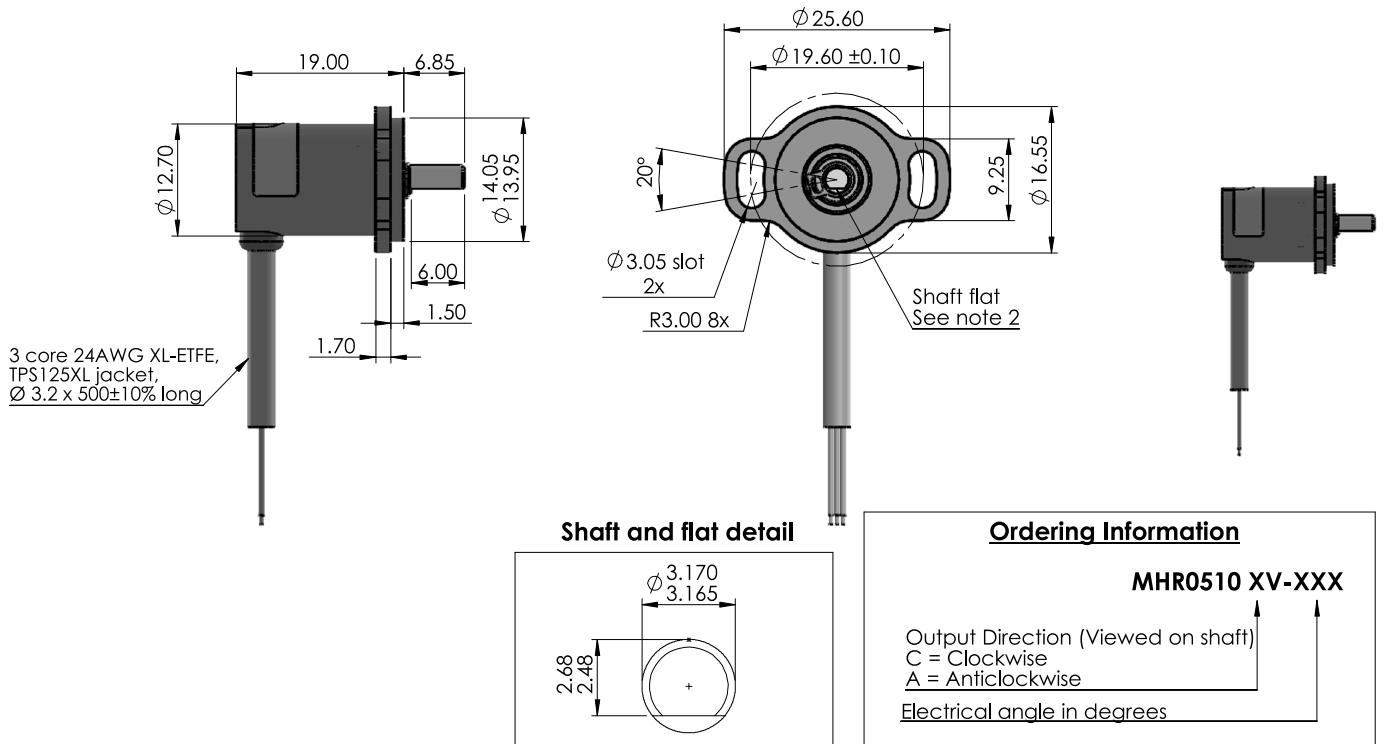
To ensure the sensors meet the exacting requirements of the customer, the measurement angle is factory programmed between 20° to 360° in 1° increments.

Key features and benefits

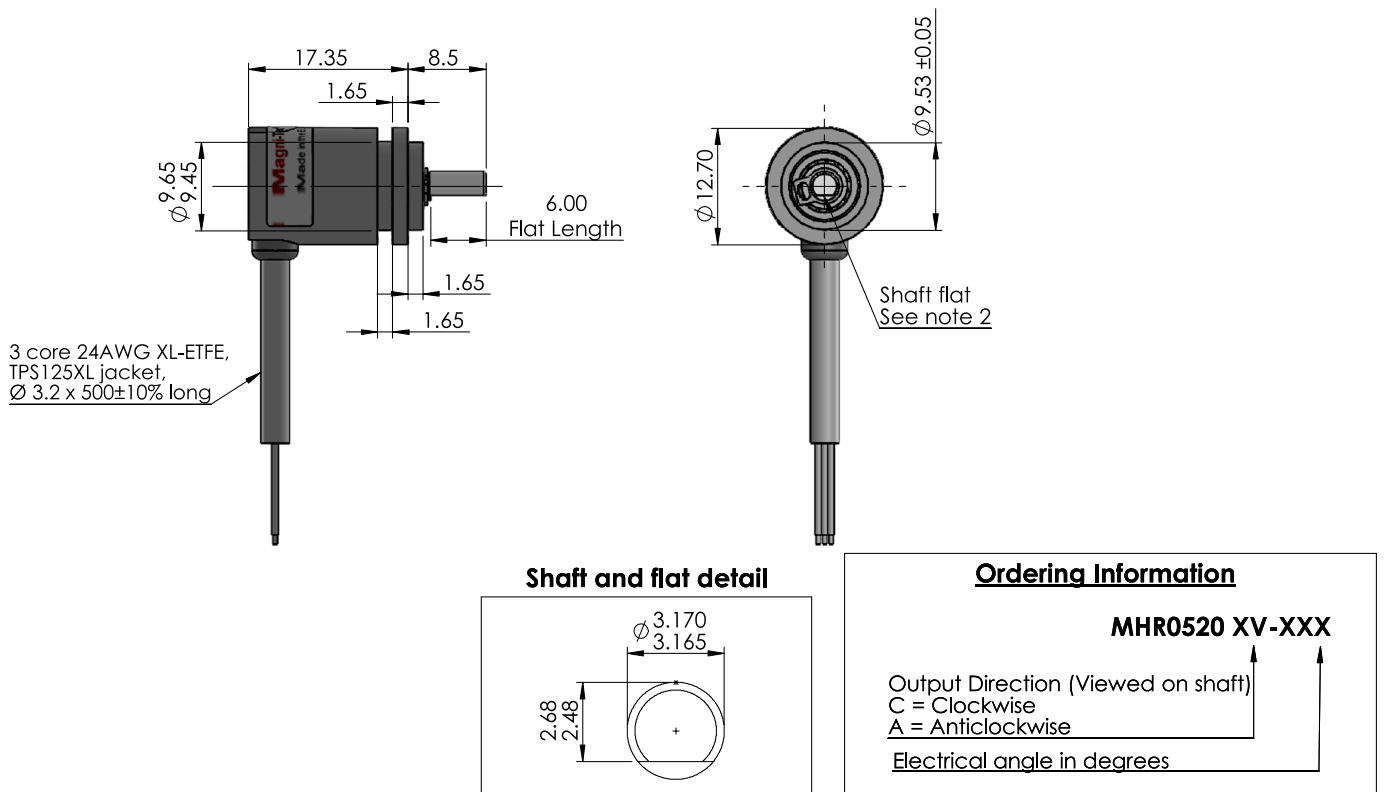
- Ultra compact Ø12.70mm aluminium case
- Very lightweight design
- Programmable measurement range available from 20° to 360° in 1° increments
- Maximum operating temperature 150°C (302°F)
- Suitable for high dither vibration applications
- Superior non-linearity of $<\pm 0.25\%$ FS
- Choice of standard 0.5" synchro or flange mounting
- 5 VDC operation
- Sealing to IP68/IP69K
- Custom outputs and designs available on request



MHR0510 – Flange mounting



MHR0520 – Synchro mounting



Electrical and mechanical specification for MHR0510 and MHR0520

Input Specification		
Supply voltage (Vs)	5.0±10% regulated	VDC
Over voltage protection	Up to +20	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)	VDC
Monotonic range	Linear range (see note 4)	
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 3)	<±0.25	%FS
Temperature coefficient (Vout)	<±0.003	%FS/°C
Update rate	500 Nom	Hz
Max operating speed	600	RPM
General Specification		
Weight (approx)	22	grams
Protection	IP68 and IP69K	
Life (shaft bearing)	500 million cycles	dependant on environment
Dither life	Contactless - no degradation due to shaft dither	
Operational temperature	-40 to +150	°C
Storage temperature	-55 to +150	°C
Materials	Case - Aluminium 6026 Shaft - Stainless steel 316	

Notes:

1. Incorrect wiring may cause internal damage.
2. When shaft marking is facing cable exit, instrument is mid-travel (2.5 output).
3. Non-linearity is calculated from Least Squares Best Fit method.
4. Linear Range = Measurement Range x 0.995 Nom.
5. Due to hall effect technology used in this device, ferrous materials or magnetic fields close to the sensor may influence output.
6. General dimension tolerance is ±0.25mm.

Electrical Connection (see note 1)

Wire Colour	Function
Red	Supply Voltage (Vs)
White	Output Voltage (Vout)
Black	Ground

Typical Output

