



SERIE MRH

MAGNETIC INCREMENTAL ENCODER

- Resolution up to 4096 pulses per turn
- Non-contacting measuring system
- Easy assembly
- High protection class IP67
- Compact dimensions
- For applications under possible adverse ambient conditions (vibrations, humidity, dust, etc.)



Magnetic Encoder



Incremental Encoder



Vibration and shock resistant



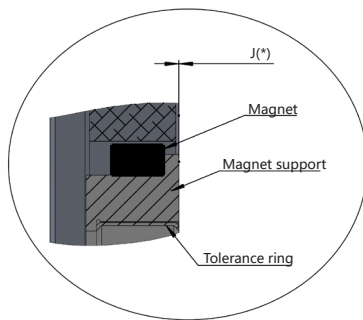
Compact



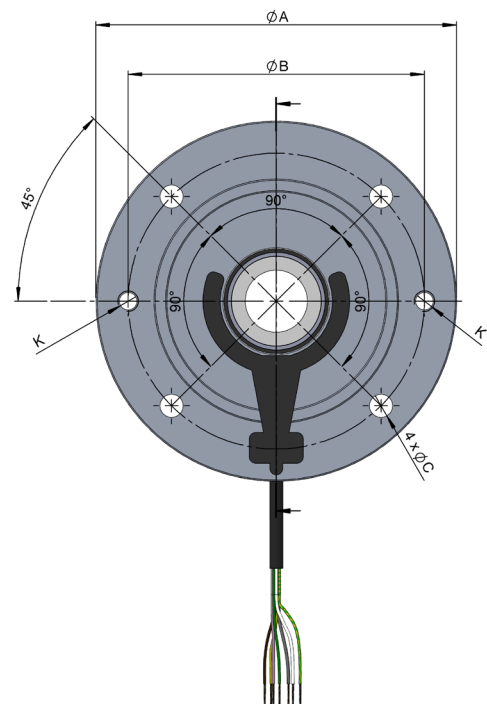
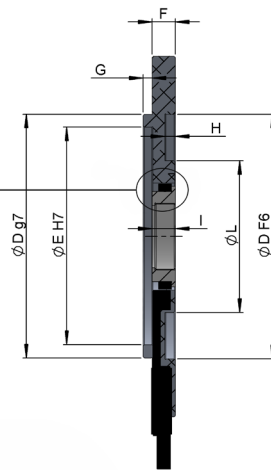
IP67



Express Delivery



J(*) Mounting distance between support of magnet and surface to fix the sensor.
Mounting tolerance: $\pm 0.5\text{mm}$



DIMENSIONS

Ø A	Ø Shaft	Ø B	Ø C	Ø D	Ø E	F	G	H	I	J	K	Ø L
105	9 14	85	7	70	65	7	2,5	3	7	0	M6	59
120	9 11 19	100	7	80	74	7	3	3,5	7	0	M6	59
140	11 14 24	115	9	95	85	7 9	3,5	4	7 9	0	M8	59
160	14 19 24 28	130	9	110	100	7 9	3,5	4	7 9	0	M8	59
200	19 24 28	165	11	130	120	9	3,5	4	9	0	M10	59
250	28	215	13,5	180	170	12	4	5	12	0	M12	59



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REFERENCE

Reference example: MRH-140-24-01-2048

Serie	External diameter / Shaft diameter	Power Supply / Electronic output	Connection	Resolution	Special Customer
MRH -	- -		-		
105-09. Ø 105 mm / Ø 9 mm	160-14. Ø 160 mm / Ø 14 mm	0. 5...30 VDC / RS422 5 VDC (compatible TTL)	1. 1m cable	(**)	
105-14. Ø 105 mm / Ø 14 mm	160-19. Ø 160 mm / Ø 19 mm	1. 5...30 VDC / Line driver	2. 30cm cable + connector M12		
120-09. Ø 120 mm / Ø 9 mm	160-24. Ø 160 mm / Ø 24 mm	differential Push-Pull 5...30 VDC	8P CCW		
120-11. Ø 120 mm / Ø 11 mm	160-28. Ø 160 mm / Ø 28 mm				
120-19. Ø 120 mm / Ø 19 mm	200-19. Ø 200 mm / Ø 19 mm				
140-11. Ø 140 mm / Ø 11 mm	200-24. Ø 200 mm / Ø 24 mm				
140-14. Ø 140 mm / Ø 14 mm	200-28. Ø 200 mm / Ø 28 mm				
140-24. Ø 140 mm / Ø 24 mm	250-28. Ø 250 mm / Ø 28 mm				

Order your reference Step
file 3D

info@encoderhohner.com
service available in 24 h

(*) Other options available, upon request.

(**) From 16 ppr to 4096 ppr, in steps of 16 pulses (16, 32, 48, 64...).

MECHANICAL SPECIFICATIONS

Materials	Housing: Aluminium Magnet support: Stainless Steel Magnet: Elastomer
Maximum number of revolutions permitted mechanically	6000 rpm
Shaft diameter	9, 11, 14, 19, 24, 28 mm
Housing fixing	4 holes (see dimensions table Ø B - Ø C)
Motor shaft tolerance	±0.5 mm axial, 0.05 mm radial
Protection against dust and splashes according to DIN EN 60529	IP67
Weight aprox.	Min.. 0.25 Kg Max. 1.4 Kg
Operating temperature range	-20 to +85°C
Vibration according to DIN EN 60068-2-6	100 m/s ² (10Hz...2000Hz)
Shock according to DIN EN 60068-2-27	1000 m/s ² (6ms)
Radial connection	1 meter cable

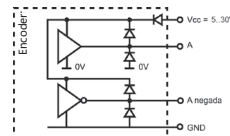
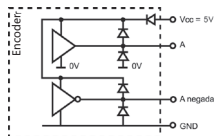
ELECTRICAL SPECIFICATIONS

Measuring range	0...360°
Resolution	From 16 ppr to 4096 ppr, in steps of 16 pulses (16, 32, 48, 64...)
Power supply	5...30 VDC
Consumption	< 60 mA (without load)
Reverse polarity protection of power supply	Yes
Insulation test	500 V
Insulation resistance	200 MΩ
Impulse sequence	A 90° B Tolerance ± 25° el.
Motor shaft tolerance	According to IEC Dimensions B5 and B14

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OUTPUT SIGNALS



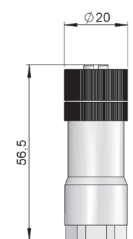
OUTPUT CIRCUIT	RS422 (TTL compatible)	Push-Pull Differential
Reference code	0	1
Electronic Output voltage	5V TTL (RS422 compatible)	5...30 VDC
"High" signal level	> 2.5 V	> VCC - 3 VDC
"Low" signal level	< 0.5 V	< 2.5 VDC
Frequency	≤ 100 kHz	≤ 100 kHz
Duty cycle signal	180° ± 18° el.	180° ± 18° el.
Length of cable allowed	50 m	100 m
Max. load capability / channel	10 mA	40 mA
Output channels	Square wave-Impulse, (4-channel) A+B+ $\bar{A}$ + $\bar{B}$	Square wave-Impulse, (4-channel) A+B+ $\bar{A}$ + $\bar{B}$
Short circuit protection	Yes	Yes

CONNECTION

Female connector not included



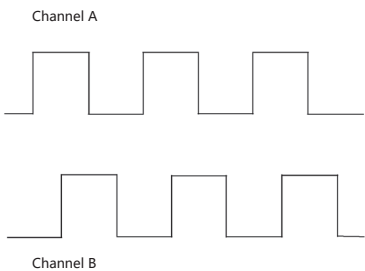
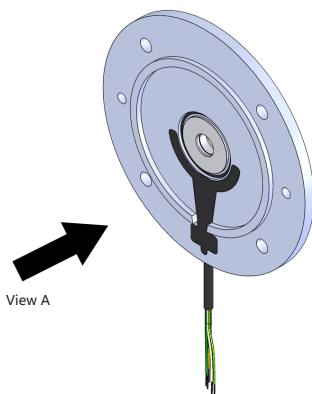
	Cable 8x0.14 95.0008052	Connector M12 8p CCW
GND	White (WH)	1
+UB	Brown (BN)	2
A	Green (GN)	3
B	Grey (GY)	4
$\bar{A}$	Yellow (YE)	5
$\bar{B}$	Pink (PK)	6
Case	Shield	Case



Female connector
95.0007152



Pre-assembled cable
89.003.02.000.XX
Length in meters

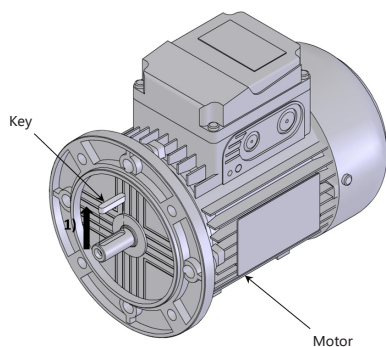


Channel A leads (90° electric) channel B, seen from view A, shaft rotating clockwise.

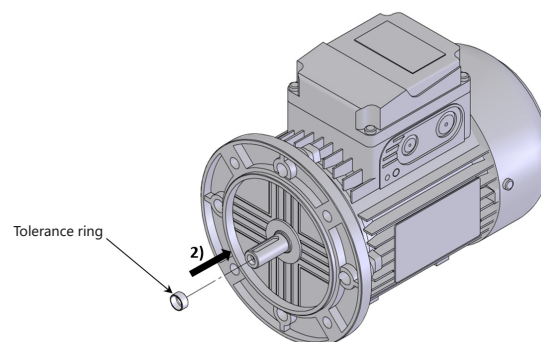
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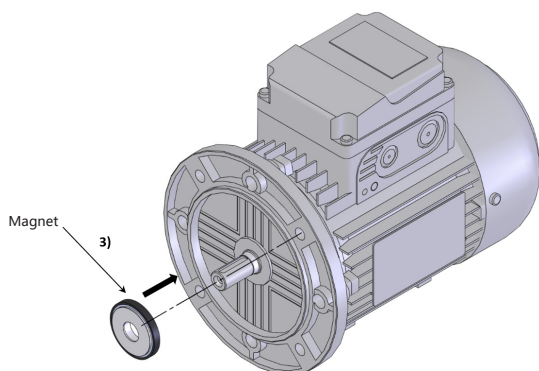
ASSEMBLY INSTRUCTIONS



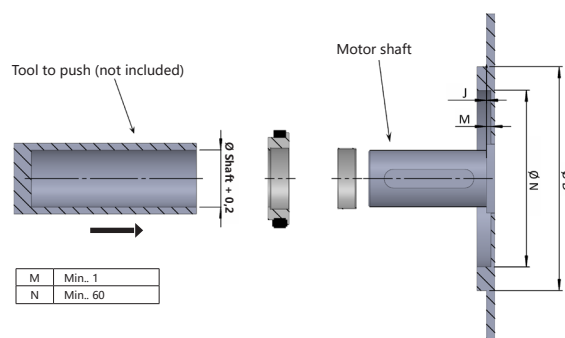
1) Dismount the key.



2) Push tolerance ring up to the shoulder of the shaft.

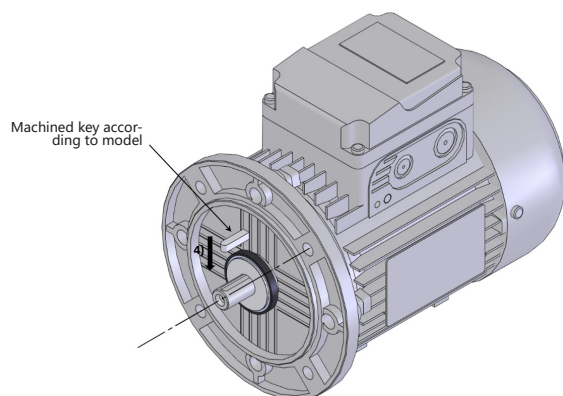


3) Mount magnet embedded with tolerance ring.

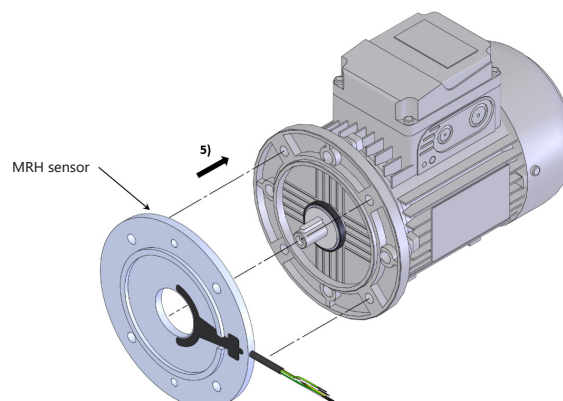


3.1) Recommendation for assembly:

⚠ Insert the magnet with the tool by pressing on the magnet support, not on magnet.



4) Push machined key according to MRH model.



5) Mount MRH sensor.