

QR series

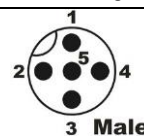


QR40EMN-360HB-I-CM-UL
Absolute rotary encoder (contactless)
Output 4 - 20 mA
Supply voltage 10 - 30 Vdc
Measuring range 360°



General specifications v20170627											
Housing	Quadro40: PBT black										
Dimensions (indicative)	40x40x17 mm										
Mounting	2x stainless M4x25 mm screws										
Ingress Protection (IEC 60529)	IP67										
Weight	approx 50 gr										
Magnet type	11,2 x 5,5 x 8 mm Neodymium/N35/nickel coated/remanention 1,2 T										
Magnet distance to sensor	0 to 10 mm, magnet at front side										
Max. radial magnet misalignment	1 mm Radial Off Axis (< 0,3 mm for minimum non-linearity)										
Direction of magnetization	Axial in 8 mm (Northpole marked with red dot)										
Supply voltage	10 - 30 Vdc										
Polarity protection	Yes										
Current consumption	≤ 25 mA (excluding output signal)										
Operating temperature & humidity	-25 to 85°C, 0 to 100% RH										
Storage temperature	-40 to 85°C										
Measuring range	360°										
Programmable center position	No										
Accuracy (2σ)											
Resolution	11 bit over 360° (min. step 0,18°)										
Max offset error	Not applicable										
Non linearity	< ± 1° in magnet alignment range (both outputs individual)										
Repeatability	0,26°										
Response time	< 4 ms										
Max speed	30 rpm										
Output signal	4 - 20 mA										
Short circuit protection	Yes (max 10 s)										
Output load resistor	Rload ≤ 50*Vs - 250 [Ω] (Eg: Vs = 24 V: Rload ≤ 950 Ω)										
Connection (length ±10%)	M12 5p male connector (Glass fibre reinforced grade, contacts CuZn pre-nickelated galv. Au)										
Pinout M12 connector	<table border="0"> <tr> <td>Pin 1:</td> <td>+ Supply voltage</td> </tr> <tr> <td>Pin 2:</td> <td>not connected</td> </tr> <tr> <td>Pin 3:</td> <td>Gnd</td> </tr> <tr> <td>Pin 4:</td> <td>Output 1</td> </tr> <tr> <td>Pin 5:</td> <td>not connected</td> </tr> </table>	Pin 1:	+ Supply voltage	Pin 2:	not connected	Pin 3:	Gnd	Pin 4:	Output 1	Pin 5:	not connected
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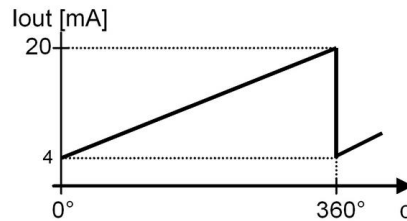
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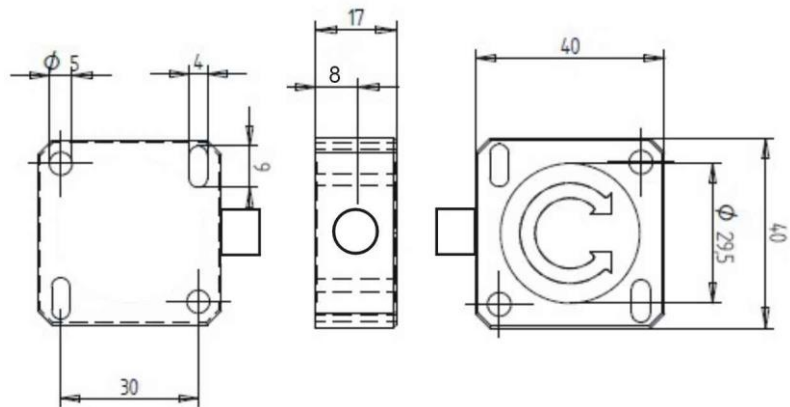
Output approx. 22mA when magnetic field outside specifications

Transfer characteristic



QR40EMN-360HB-I-CM-UL

Dimensions (indicative only)



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Intended use & UL

Intended use:

QR series sensors are intended to measure rotation after installing in machines, equipment and systems. Flawless function in accordance with the specifications is ensured only when the device is used within its specifications.

This device is not a safety component according to the EU Machine Directive (ISO13849). Modifications or non-approved use are not permitted and will result in loss of warranty and void any claims against the manufacturer.

UL:

UL certificate: UL File number: E312057

UL & c-UL listed product (standards UL60947-5-2 & CSA-C22,2 No. 14)

Product Identity / Category Code Number (CCN): Industrial Control Equipment / NRKH & NRKH7

Enclosure / Temperature rating: Enclosure type 1 / Temperature -25° .. $+85^{\circ}$ C

Electrical rating: Intended to be used with a Class 2 power source in accordance with UL1310

Electrical ratings: max. input Voltage 30V dc, max. current 50mA

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Magnet orientation

Magnet drawn in $\alpha=0^{\circ}$ position.

While rotating the magnet clockwise α increases.

The magnet's north pole (N) is indicated with a red dot on the magnet.

