

# QR series



QR40EMN-360HB-2V-PT
<b>Absolute rotary encoder (contactless), Full Redundant</b>
Output 0 - 5 V / 5 - 0 V
Supply voltage 10 - 30 Vdc
Measuring range 360°



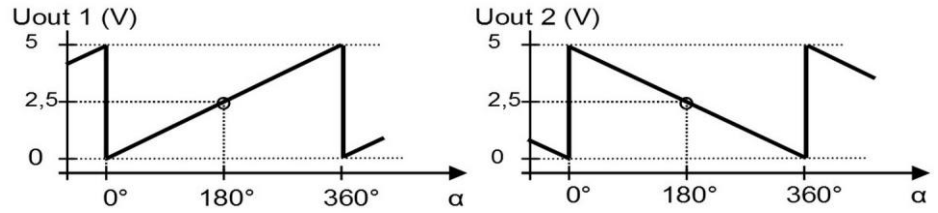
General specifications 11905, v20200323	
Housing	Reinforced plastic injection molded (Celanex 2300 GV3/30 - glass filled PBT, black)
Dimensions (indicative)	40x40x17 mm
Mounting	Included: 2x M4x25 stainless steel pozidrive pan head screws, self-tapping (PZ DIN7500CZ)
Ingress Protection (IEC 60529)	IP67
Relative Humidity	0 - 95% (non condensing, fully potted)
Weight	approx 50 gr (excl. Cable)
Magnet type	11,2 x 5,5 x 8 mm Neodymium/N35/nickel coated/remanention 1,2 T included
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)
Supply voltage	10 - 30 Vdc
Polarity protection	Yes
Current consumption	≤ 50 mA
Operating temperature	-40 to 80°C (fixed, flex -25 to 80°)
Storage temperature	-40 to 85°C
Measuring range	360°
Programmable center position	No
Accuracy	
Resolution	12 bit over 360° (min. step 0,09°)
Sensitivity error	±0.5% typ. (@20°C), ±1% typ. (full Temp. range)
Offset error	Magnet + Sensor: <3° typ. (with perfect external magnet positioning)
Non linearity	< ± 1,5° in magnet alignment range (both outputs individual)
Repeatability	0,13°
Response time	< 4 ms
Max speed	100 rpm
Output signal	0 - 5 V / 5 - 0 V
Short circuit protection	Yes (T<55°C), Max 10 s (T>55°C)
Output load resistor	≥ 20 kΩ
Connection (length ±10%)	2 m PUR/TPE Li12y11y, black Ø 5,1 mm, wires: 6x0,34 mm² DIN colors
Wire coding	Green Gnd 1 Brown + Supply voltage 1 Grey Output 1 White Gnd 2 Yellow + Supply voltage 2 Pink Output 2

## QR40EMN-360HB-2V-PT

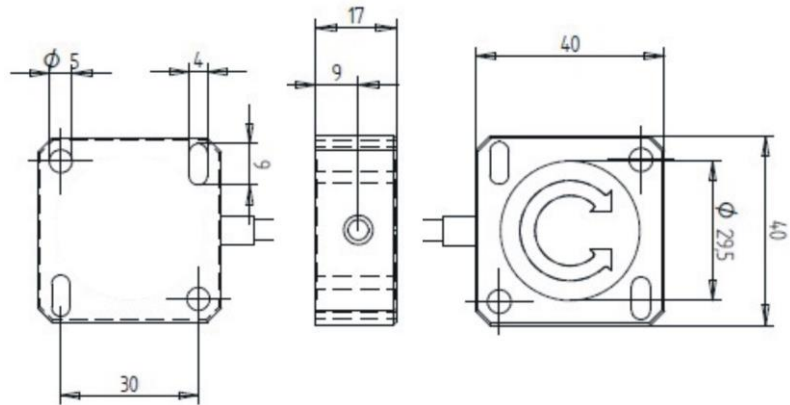
### Transfer characteristic

Output approx. 0V when magnetic field outside specifications

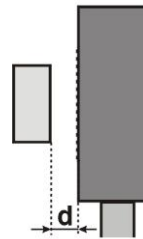
Differences between the outputs <math>< 3^\circ</math>



### Dimensions (indicative only)



### Magnet distance (side view)



### Front view

Magnet drawn in  $\alpha=0^\circ$  position  
Magnet rotates clockwise:  $\alpha$  increases

Magnet North pole is indicated

Magnet surface to sensor: 11,2 x 8mm  
Magnet height: 5,5mm

### Magnet orientation

