QR series

QR30N-090HB-VK-5V

Absolute rotary encoder (contactless)

Output
0 - 5 V (ratiometric to 5 V supply voltage)

Supply voltage
5V dc

Measuring range
90° (out of 360°)



General specifications 12591, v20190401	
Housing	Quadro30: PBT black
Dimensions (indicative)	30x30x15 mm
Mounting	2x steel zinc plated M3x16 mm screws
Ingress Protection (IEC 60529)	IP67
Relative Humidity	0 - 95% (non condensing, fully potted)
Weight	approx 15 gr (excl. cable)
Magnet type	11,2 x 5,5 x 8 mm Neodymium/N35/nickel coated/remanention 1,2 T
Magnet distance to sensor	0 to 7 mm, magnet at front side, see magnet distance picture on page 2
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	5V dc
Polarity protection	No
Current consumption	≤ 25 mA
Operating temperature	-25 to 80°C
Storage temperature	-25 to 85°C
Measuring range	90° (out of 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° (in magnet alignment range)
Repeatability	0,13°
Response time	< 4 ms
Max speed	100 rpm
Output signal	0 - 5 V (ratiometric to 5 V supply voltage)
Short circuit protection	Yes (T<55°C), Max 10 s (T>55°C)
Output load resistor	≥ 20 kΩ
Connection (length ±10%)	Cable 2 m PVC/PVC Liyy, black Ø 4,6 mm, wires: 3x0,34 mm² Sensor colors (static usage)
Wire coding	Brown + Supply voltage Black Output Blue Gnd

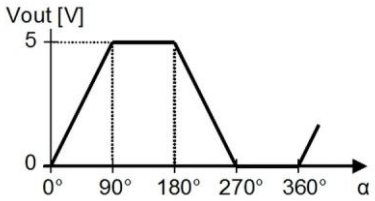
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QR series

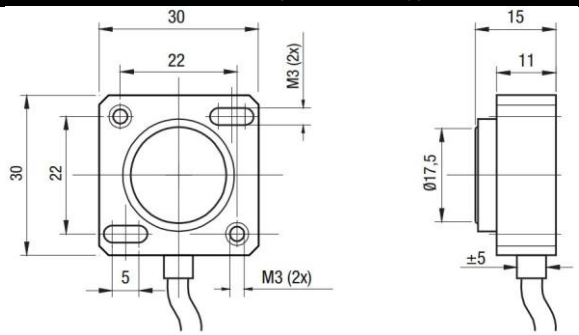
QR30N-090HB-VK-5V

Output approx. 0V when magnetic field outside specifications

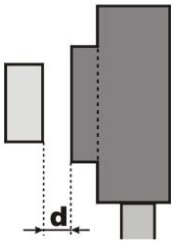
Transfer characteristic



Dimensions (indicative only)



Magnet distance (side view)



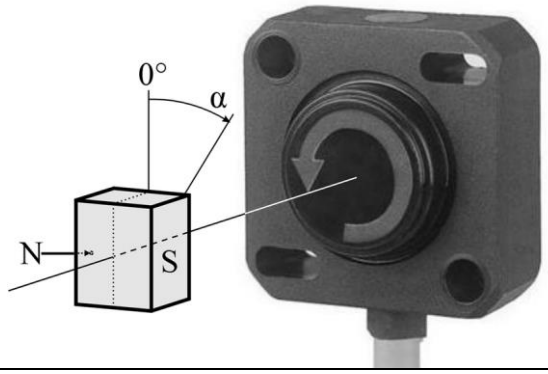
Magnet orientation

Front view

Magnet drawn in α=0° position
Magnet rotates clockwise: α increases

Magnet North pole is indicated

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



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