

# QUADRO-R<sup>®</sup>

## Angle sensor for 360° rotation

The Quadro-R is a non-contact magnetic encoder over a full turn of 360 degrees.

It has a round sensing head and is mounted in a compact square polycarbonate housing with a well secured cable or connector.

Thanks to its right-angled sides, it has a very high rigidity. The vulnerable electronics is protected by a flexible filling compound. As a result, the sensor is highly resilient to shock and vibration.

The Quadro-R sensor can be customized to your specific requirements. Options are:

- Measuring range from 1...359° absolute
- Or as incremental .....
- Output configuration: Analog, digital or PWM
- Programmable zero position (factory or customer)
- Magnet position indication signals
- Specific cable or connector
- Power-on Led



### APPLICATIONS

#### Industrial:

- Motion control
- Robotics

#### Automotive:

- Steering wheel sensing
- Gas pedal control
- Seat adjustment

### FEATURES

- Non contact full turn 360° encoder
- Very compact, robust housing
- Programmable zero / indexing
- Analog, digital or PWM output
- Failure detection
- Speed up to 10.000 rpm
- Detects magnet position in Z-axis
- Temperature range -40 to 125°C
- Secure cable entry
- IP68

## Technical data

### Functional

Measuring range	1 ...359°
Mechanical range	Continual
Resolution	0,09° (12 bit) or 0,35° (10 bit)
Linearity error	+/- 1%
Response time	Analog <10 ms
Highest speed	10.000 rpm (only at incremental A/B outputs)

### Electrical

Power supply	10...30 Vdc (5 Vdc as option)
Current consumption	Typical 20 mA (excl. LED) Max. 25 mA (excl. LED)
Output (depends on configuration)	0...5 V 4..20 mA (only with 24Vdc supply) PWM Incremental A/B (10 bit: 256 pulses, 12 bit: 1024 pulses)



## Technical data

### Environmental conditions

Operating temperature range	0 to 85 °C
Storage temperature range	-40 to 85 °C
Protection	IP68

### Mechanical

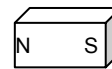
Material housing	Polycarbonate black
Dimensions	30 x 30 x 15 mm

### Connection

Cable (not shielded)	PVC 3*0,34 mm <sup>2</sup> (3-wire)
	PVC 4*0,34 mm <sup>2</sup> (4-wire)
	Standard length 2 m, others on request
	Optional connector

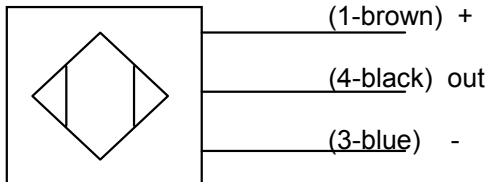
### Magnet

Material/quality/coating	Neodymium/N35/nickel
Dimensions	11,2 x 5,5 x 8 mm (rectangular)
Direction of magnetization	Axial in 8 mm (marked black)
Distance to sensor	0,6 – 3 mm
Max operating temperature	85 °C
Remanention	1,16 – 1,24 T

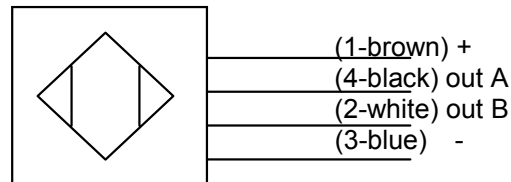


## Connection diagram

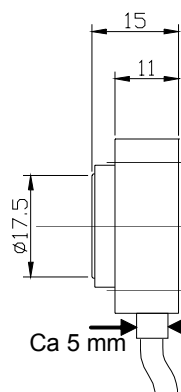
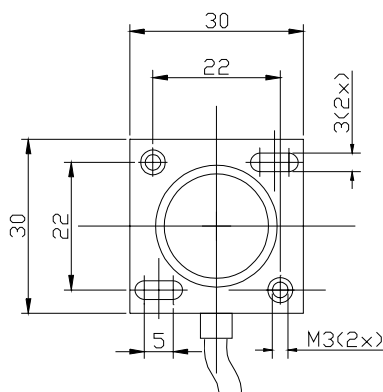
### 3-wire analog/pwm



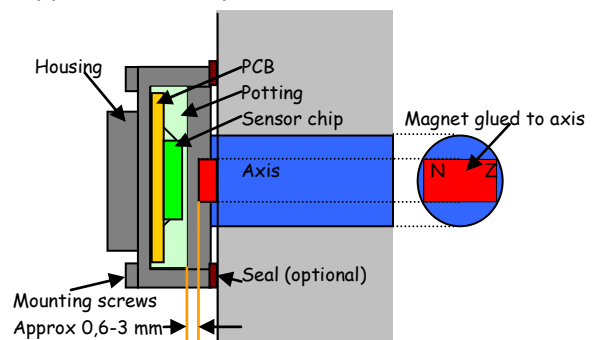
### 4-wire incremental



## Dimensions

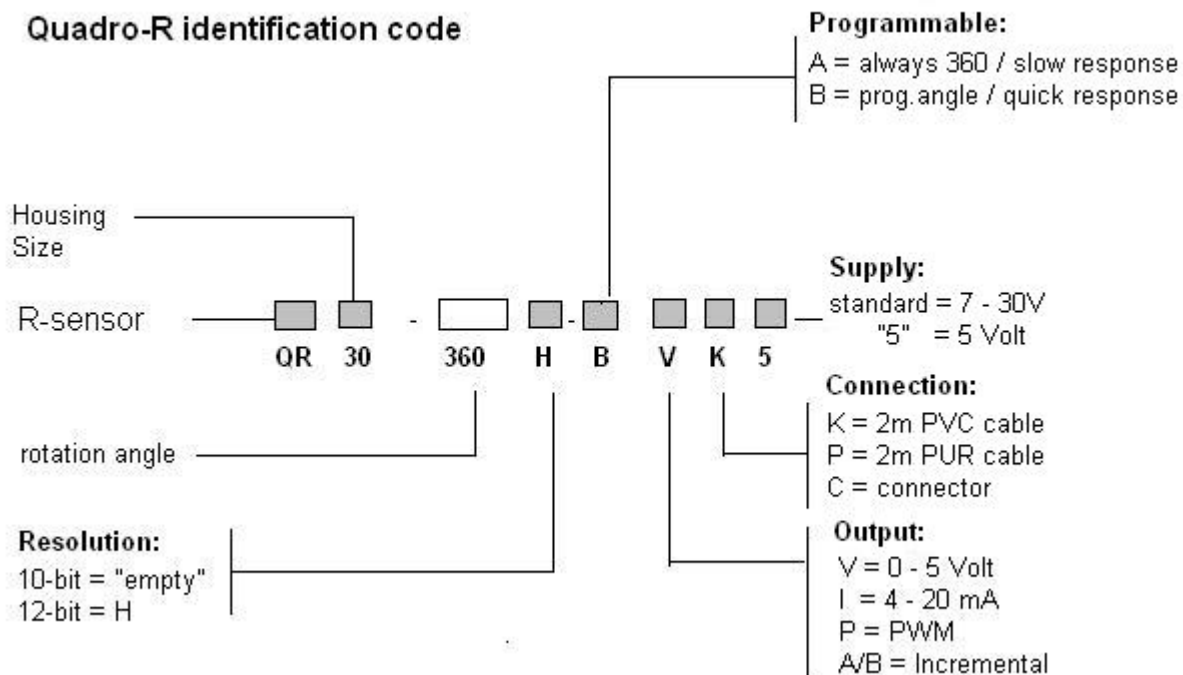


### Application example:



## Order information

### Quadro-R identification code



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