QR series

Family overview Rotation

Absolute & Incremental rotary encoders

rev3.3 20220208

Family	QR30	QR30N	QR40	QR46	QR40EMN	QR40EMN Redundant
Product life cycle status	released	released	released	released	released	released
Type	incremental A/B-pulse	absolute	absolute	absolute	absolute	absolute
Style	external magnet, no shaft	external magnet, no shaft	D-shaft, internal magnet	D-shaft, internal magnet	external magnet, no shaft	external magnet, no shaft
Magnet placing	rear (potting side)	front side	internal	internal	front side	front side
Magnet distance (Std magnet)	0 - 2 mm	0 - 7 mm	not applicable	not applicable	0 - 10mm	0 - 10mm
Centering function	no	no	no	no	no	no
Functional safety	no	no	no	no	no	full redundant
Measuring range	not applicable	90° 180° 360°	90° 180° 360°	90° 180° 360°	90° 180° 360°	90° 180° 360°
Supply Voltage	8 - 30 Vdc	10 - 32 Vdc / 5 Vdc	10 - 32 Vdc / 5 Vdc	10 - 32 Vdc / 5 Vdc	10 - 32 Vdc / 5 Vdc	10 - 30 Vdc / 5 Vdc
Output format	A/B pulse push pull	4-20mA / 0-5V Vcc=5V: 0-5V ratiometric	4-20mA / 0-5V Vcc=5V: 0-5V ratiometric	4-20mA / 0-5V Vcc=5V: 0-5V ratiometric	4-20mA / 0-5V Vcc=5V: 0-5V ratiometric	4-20mA / 0-5V Vcc=5V: 0-5V ratiometric
Output response time	< 30.000 rpm	4 ms, <100 rpm	4 ms, <15 rpm	4 ms, <15 rpm	4 ms, <100 rpm	4 ms, <100 rpm
Resolution	32/64/128/256/1024 PPR	12 bit (step 0,09°)	12 bit (step 0,09°) 11 bit	12 bit (step 0,09°) 11 bit	12 bit (step 0,09°) 11 bit	12 bit (step 0,09°) 11 bit
Non linearity	not applicable	< ±1°	< ± 1°	< ± 1°	< ± 1,0°	< ± 1,0°
Sensitivity-error	±0,5% typ @20°C ±1% typ. (full Temp. range)	±0,5% typ @20°C ±1% typ. (full Temp. range)	±0,5% typ @20°C ±1% typ. (full Temp. range)	±0,5% typ @20°C ±1% typ. (full Temp. range)	±0,5% typ @20°C ±1% typ. (full Temp. range)	±0,5% typ @20°C ±1% typ. (full Temp. range)
Repeatabliity	not applicable	0,12°	0,12° 0,27°	0,12° 0,27°	0,12° 0,27°	0,12° 0,27°
Housing material	Plastic	Plastic	Reinforced Plastic	Reinforced Plastic	Reinforced Plastic	Reinforced Plastic
Size	30x30x15mm	30x30x15mm	40x40x22mm, shaft excluded	40,5x63x28mm, shaft excluded	40x40x17mm	40x40x17mm
Temp. range	-25 . . +85°C	-25 . . +85°C	-25 . . +85°C	-25 . . +80°C	-40 . . +85°C	-40 . . +80°C
Protection class	IP67	IP67	IP66	IP66	IP67, IP69K	IP67
Certification	CE, optional UL	CE, optional UL	CE, optional UL	CE	CE, UL	CE, optional UL
Connection standard	PVC cable 2m	PVC cable 2m	PVC cable 2m	Pigtail 0,1m PUR with AMP Superseal 1.5 series	M12 5-pole	PUR cable 2m
Remarks				Mounting & shaft compatible with brands like Elobau		See Declaration of Conformity for functional safety figures
Options:	Different output formats (i.e. 0,5-4,5V, 0-10V etc), subranges, zero-point, cables, connectors etc.					

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