

RL-P300Q

Programmable Heavy Duty Shaft Encoder

DESCRIPTION

The RL-P encoder converts shaft rotation into quadrature square wave outputs A and B to provide an accurate and reliable means of digitizing position, rate, or length of travel. The number of counts per revolution is determined by setting configuration switches. Distance and direction of shaft rotation are indicated to any control device that accepts quadrature A/B inputs. A flexible shaft coupling or other means to resolve shaft to shaft misalignment is required, or a timing belt and sprocket can be used.

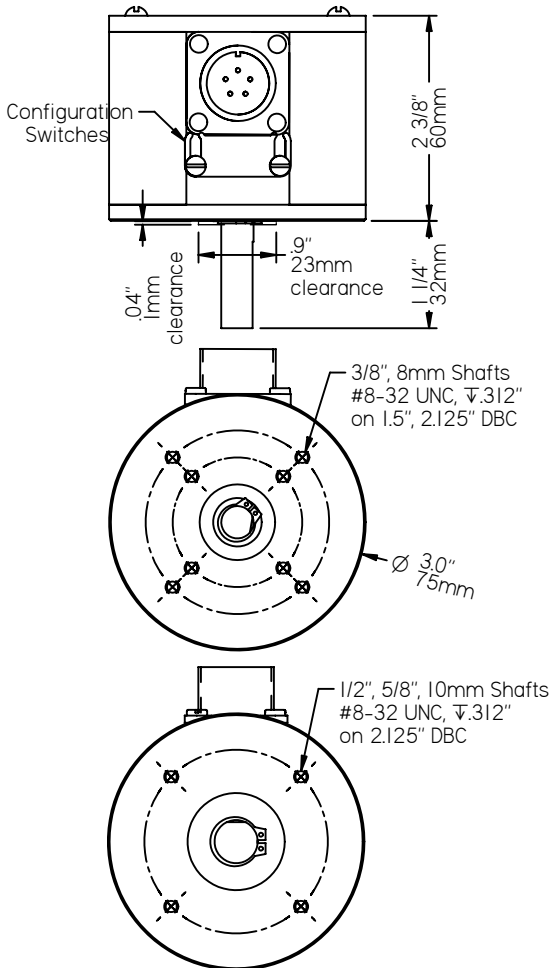
FEATURES

- Programmable Counts/Revolution
- Quadrature Outputs (A and B)
- ESD / Short Circuit / Reverse Voltage Protected

* CE marking requires Photocraft cable, and surge protection option if cable exceeds 100' (30m) or leaves the building.



DIMENSIONS



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SPECIFICATIONS

Electrical

Supply Voltages: (specify when ordering)

5 ± 5% vdc or 8 to 30 vdc

Supply Current: 50 ma max (no load)

Output Circuit: (specify when ordering)

Output voltage level is approximately the same as the input voltage level.

Single Ended:

- Push/Pull (50ma max source/sink)
- NPN open collector (30vdc/50ma max)
- PNP Current sourcing (50ma max)

Differential Line Driver:

- 7272 line driver (output same as supply volts)
- RS422 line driver (regulated 5vdc output)

Output Protection:

- Short Circuit
- ESD to 8KV direct and 25KV air

Operating Temperature: 0° to +70° C

Maximum Operating Speed: 3,000 rpm

Electrical Connections

Single Ended Outputs:

MS 5-Pin	Function	Wire Color
A	Supply Voltage	Red
B	Common	Black
C	Output A	White
D	Output B	Green
E	no connection	—

Differential Line Driver Outputs:

MS 6-Pin	Function	Wire Color
A	Common	Black
B	Supply Voltage	Red
C	Output +A	White
D	Output -A	Blue
E	Output +B	Green
F	Output -B	Brown

Mechanical

Weight: 16.8 oz (475 gm) without cable

Shaft Loading:

Shaft Diameter	Radial Lbs (kg)	Axial Lbs (kg)	Factor (BL)
3/8" / 8mm	40 (18.1)	30 (13.6)	32
1/2" / 10mm	45 (20.4)	35 (15.9)	37
5/8"	50 (22.7)	40 (18.1)	41

Bearing Life: BL x 1,000,000/rpm = hours

Materials:

- Case: 1/4" Aluminum, anodized
- Shaft: 303 Stainless steel
- Switch cover: ABS plastic

Outputs

Quadrature Outputs: Two outputs have the selected number of counts by setting the configuration switches. Output A leads output B by 90° for clockwise rotation when viewed from the shaft end.

Output Waveform: 50/50 square wave

- Pulse symmetry: 180° ± 30%
- Pulse interval jitter: 30% max
- Quadrature: 90° ± 30% max
- Phase jitter: 30% max

Configuration Switches

Switch	Counts per Revolution	Selection
1	2	30
2	3	50
3	4	60
4	5	75
5	10	100
6	15	150
7	20	300
8	25	

Switch definitions:
☐ Up (off)
☒ Down (on)

MODEL NUMBER

RL	P300Q				
Model Number	Program Name	Supply Voltage	Output Circuit	Modification Number	Accessories
blank for 3/8", .5 = 1/2", .625 = 5/8", M8 = 8mm, M10 = 10mm, D = 3/8" double ended	Call or see our website for information about other available programs for this encoder model.	5 = 5vdc, 8-30 = 8-30vdc	leave blank for push/pull, C = NPN open collector, P = PNP current sourcing, DH = 7272 line driver, DL = RS422 line driver	optional modification or special feature ID. Call or see our website.	leave blank for no accessories. Call or see our website for more information.

Example: **RL-P300Q/8-30** - 3/8" shaft, P300Q program, 8-30vdc, push/pull output, MS 5-pin connector