

RL-P270AJB Programmable Heavy Duty Shaft Encoder

DESCRIPTION

The RL-P encoder converts shaft rotation into square wave output pulses 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. A direction output indicates the shaft rotation direction, clockwise (CW) or counter-clockwise (CCW), as viewed from the shaft end. A flexible shaft coupling or other means to resolve shaft to shaft misalignment is required, or a timing belt and sprocket can be used.

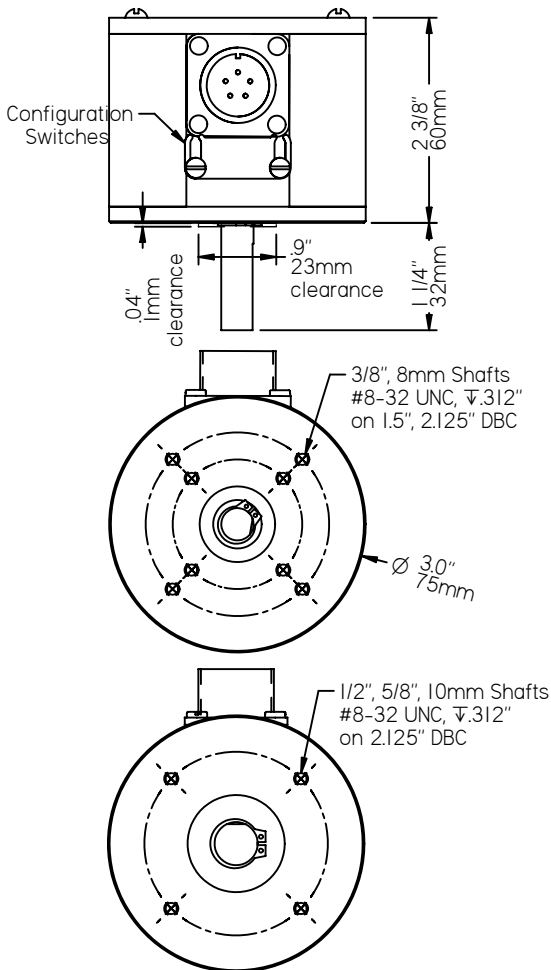
FEATURES



- Programmable Counts/Revolution and Direction Output
- ESD / Short Circuit / Reverse Voltage Protected
- Exclusive "Anti-Jitter" Circuit for Conveyor Applications

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

DIMENSIONS



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)

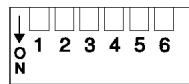
Output Protection:

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

Operating Temperature: -25° to +85° C

Maximum Operating Speed: 2,500 rpm

Configuration Switches



Counts per Revolution Selection

2	3	4	5	6	8	2	3	4	5	6	18	2	3	4	5	6
2	3	4	5	6	8	2	3	4	5	6	18	2	3	4	5	6
3	4	5	6	8	2	3	4	5	6	8	20	3	4	5	6	8
4	5	6	8	2	3	4	5	6	8	10	24	4	5	6	8	10
5	6	8	2	3	4	5	6	8	10	12	30	5	6	8	10	12
6	8	2	3	4	5	6	8	10	12	15	54	6	8	10	12	15
7	8	2	3	4	5	6	8	10	12	16	60	7	8	10	12	16

Direction Output Selection

- 1 ☐ Output is "low" for CW rotation
"high" for CCW rotation
- ☒ Output is "high" for CW rotation
"low" for CCW rotation

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

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

Counts per Revolution: Selectable by setting switches 2 to 6 (see configuration switches), on Output A. "Low" when initially powered.

Anti-Jitter: Increases pulse hysteresis to 1/2 of a pulse width eliminating the effects of mechanical vibration and the possible dither that results in false pulses.

Direction Output: Output B indicates the direction of rotation by setting configuration switch 1, and is updated at each 1/540th of a revolution. "Low" when initially powered.

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

MODEL NUMBER

RL	P270AJB				
Model Number	Program Name	Supply Voltage: 5=5vdc, 8-30=8-30vdc	Output Circuit: leave blank for push/pull, C=NPN open collector, P=PNP current sourcing, DH=7272 line driver, DL=RS422 line driver	Modification Number: optional modification or special feature ID. Call or see our website.	Accessories: leave blank for no accessories. Call or see our website for more information.
Shaft Diameter: 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.				

Example: RL-P270AJB/8-30 - 3/8" shaft, P270AJB program, 8-30vdc, push/pull output, MS 5-pin connector



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