

SERIES 25L

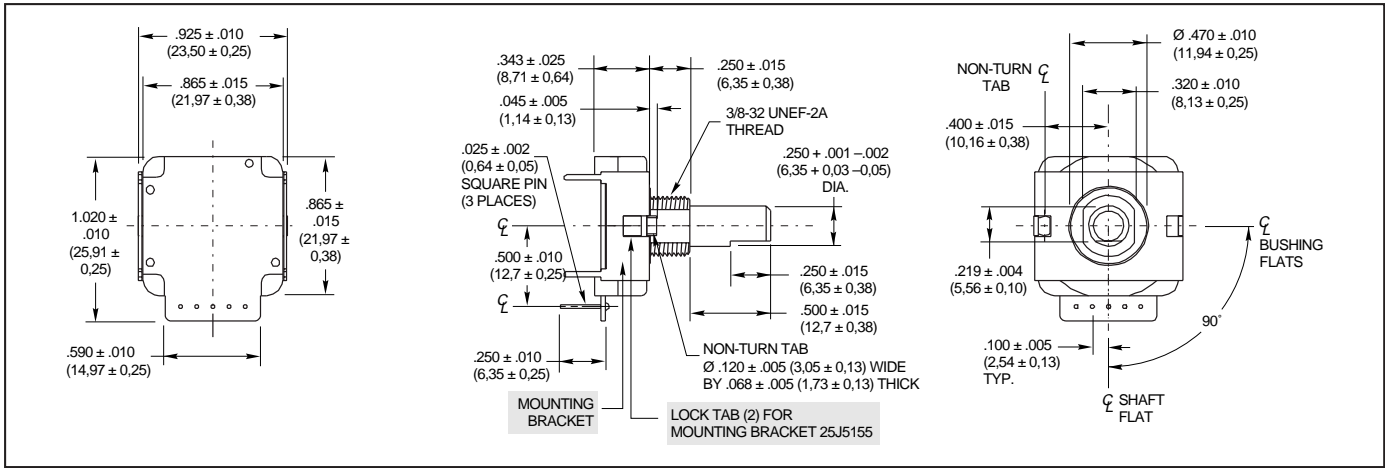
Hex, Gray and Quadrature Code

FEATURES

- Price Competitive to Similar Designs
- Quality Construction and Contact Materials
- Multiple Code and Indexing Choices
- 100,000 Life Cycles
- Less than 1.0" Square
- Manufactured to ISO 9001 Standards



DIMENSIONS In inches (and millimeters)



Optical and Mechanical Encoders

TRUTH TABLES

Clockwise Rotation					
4-Bit Gray Code-16 Position					
Switch Position	Code Position	1	2	4	8
1	0				
2	1	•			
3	2		•		
4	3			•	
5	4				•
6	5	•	•	•	
7	6		•	•	
8	7	•		•	
9	8			•	•
10	9	•	•	•	
11	10		•	•	•
12	11	•	•	•	
13	12		•	•	•
14	13	•	•	•	
15	14		•	•	•
16	15	•	•	•	

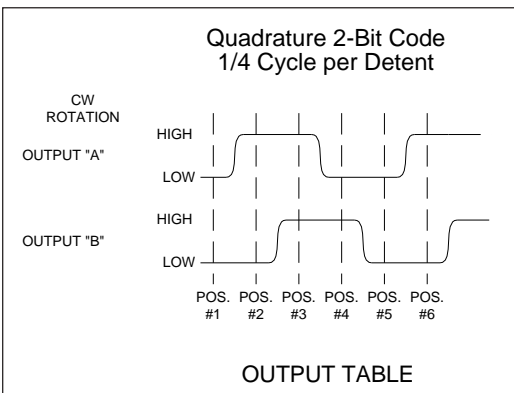
• Indicates closed circuit; blank indicates open circuit.

Clockwise Rotation					
4-Bit Binary Code Hexadecimal-16 Position					
Switch Position	Code Position	1	2	4	8
1	0				
2	1	•			
3	2		•		
4	3	•	•		
5	4			•	
6	5	•		•	
7	6		•	•	
8	7	•	•	•	
9	8				•
10	9	•			•
11	10		•		•
12	11	•	•		•
13	12			•	•
14	13	•	•	•	•
15	14		•	•	•
16	15	•	•	•	•

• Indicates closed circuit; blank indicates open circuit.

Clockwise Rotation		
Quadrature 2-Bit Code 1/4 Cycle per Detent		
Switch Position	Output "A"	Output "B"
1		
2	•	
3		•
4	•	•
5		
6	•	
7		•
8	•	•
9		
10	•	
11		•
12	•	•
13		
14	•	
15		•
16	•	•
17		
18	•	
19		•
20	•	•
21		
22	•	
23		•
24	•	•
25		
26	•	
27		•
28	•	•
29		
30	•	
31		•
32	•	•
33		
34	•	
35		•
36	•	•

• Indicates closed circuit; blank indicates open circuit. Code repeats every 4 positions.



SPECIFICATIONS

Electrical Ratings

Switching Loads: 1.5 mA at 115 Vac, resistive;
150 mA at 14 Vdc, resistive

Current Carrying Capacity: 250 mA
maximum at 28 Vdc, resistive load

Contact Resistance: 75 mΩ, typical

Insulation Resistance: 1000 mΩ minimum
between terminals

Voltage Breakdown: 1000 Vac minimum
between terminals

Life Expectancy: 100,000 cycles of operation at
rated loads. One cycle of operation is a rotation
through all of the active positions and a return to
the starting position.

Mechanical Ratings

Rotational Torque: 2 to 6 in-oz

Operating Temperature Range: -65°C to +85°C

Storage Temperature Range: -65°C to +85°C

Continuous Rotation: All standard switches
are continuous rotation. Desired stop locations
supplied upon request.

Anti-Rotation Device: Integral non-turn tab,
flatted bushing, .375" diameter, .320 double "D"
across flats.

Termination: Standard is PC style, parallel to
shaft, facing rear. Options include PC, parallel to
shaft, facing front; PC, perpendicular to shaft.

Panel Mounting Torque: 10 in-lbs maximum

Materials and Finishes

Bushing/Housing and Shaft/Rotor: Reinforced
thermoplastic

Detent Ball: Stainless steel, nickel-plated

Detent Spring: Tinned music wire

Contacts: Beryllium copper, gold plate over
nickel

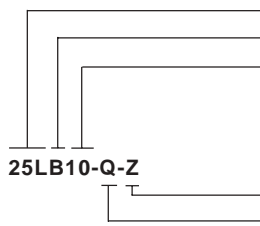
Terminals: Copper alloy, CDA #725, solder
plate over nickel

Output Board: FR-4, copper/nickel-plated

Mounting Hardware: Brass, cadmium-plated
hex nut

Mounting Bracket: Stainless Steel, tin-plated

ORDERING INFORMATION



25LB10-Q-Z

* Cadmium free

Series: 25L = Economical, single deck encoder

Housing Color: B = Black housing*; R = Red housing

Angle of Throw: 10 = 10°, 36 positions; 11 = 11.25°, 32 positions;
15 = 15°, 24 positions; 18 = 18°, 20 positions;
22 = 22.5°, 16 positions; 30 = 30°, 12 positions;
45 = 45°, 8 positions

Mounting Bracket: Z = with bracket, Blank = no bracket

Code Output: H = Hexadecimal available only in 22.5°

G = Gray available only in 22.5°

Q = Quadrature (2-bit)

Custom materials, styles, color and markings are available. Custom knobs available, see page I-57.

Available from your local Grayhill Distributor. For prices and discounts, contact a local Sales Office, an authorized local Distributor or Grayhill.