

## SERIES 25L

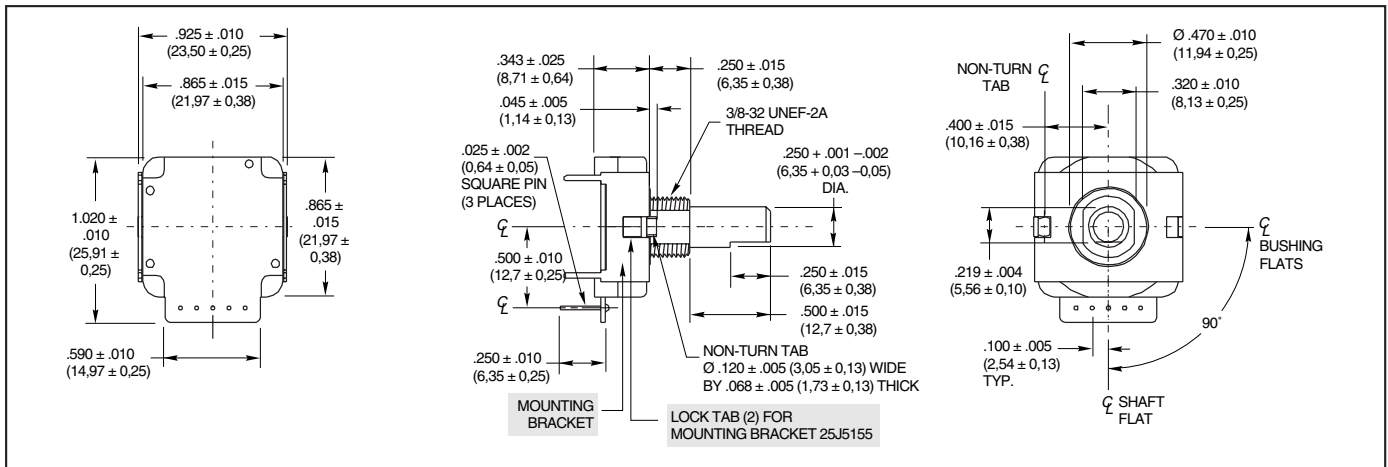
### Hex, Gray and Quadrature Code

#### 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)



#### TRUTH TABLES

| Clockwise Rotation          |               |        |   |   |   |
|-----------------------------|---------------|--------|---|---|---|
| 4-Bit Gray Code-16 Position |               |        |   |   |   |
| Switch Position             | Code Position | Output |   |   |   |
|                             |               | 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            |        |   |   | • |

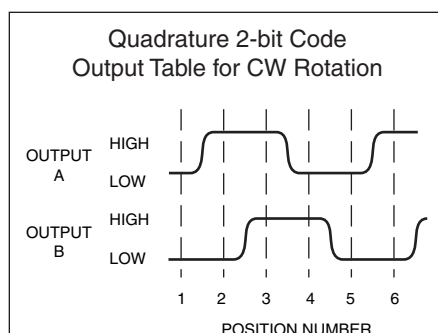
- Indicates closed circuit; blank indicates open circuit.

| Clockwise Rotation                        |               |        |   |   |   |
|-------------------------------------------|---------------|--------|---|---|---|
| 4-Bit Binary Code Hexadecimal-16 Position |               |        |   |   |   |
| Switch Position                           | Code Position | Output |   |   |   |
|                                           |               | 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"    | "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:** -40 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.

**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

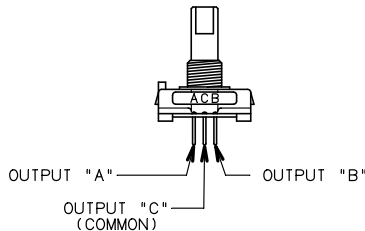
**Terminals:** Copper alloy, #725, 100% tin plate over nickel plate

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

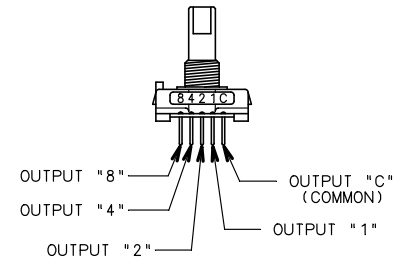
**Mounting Nut:** Brass, tin/zinc-plated hex nut

**Mounting Bracket:** Stainless Steel, tin-plated

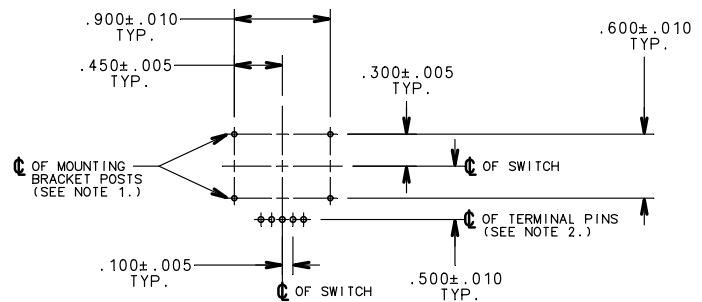
QUADRATURE CODE  
TERMINAL I.D.



HEXADECIMAL & GRAY CODE  
TERMINAL I.D.



PCB MOUNTING PATTERN



#### NOTES:

1. MOUNTING BRACKET POSTS: .035±.002 WIDE X .020±.004 THICK (4 PLACES).
2. TERMINAL PINS: .025±.002 SQUARE (3 OR 5 PLACES).

## ORDERING INFORMATION



**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.

**Available from your local Grayhill Distributor.** For prices and discounts, contact a local Sales Office, an authorized Distributor or Grayhill.  
**For Custom codes. Termination, Torque, Angles of Throw, call Grayhill for more information.**

## Данный компонент на территории Российской Федерации

**Вы можете приобрести в компании MosChip.**

Для оперативного оформления запроса Вам необходимо перейти по данной ссылке:

<http://moschip.ru/get-element>

Вы можете разместить у нас заказ для любого Вашего проекта, будь то серийное производство или разработка единичного прибора.

В нашем ассортименте представлены ведущие мировые производители активных и пассивных электронных компонентов.

Нашей специализацией является поставка электронной компонентной базы двойного назначения, продукции таких производителей как XILINX, Intel (ex.ALTERA), Vicor, Microchip, Texas Instruments, Analog Devices, Mini-Circuits, Amphenol, Glenair.

Сотрудничество с глобальными дистрибьюторами электронных компонентов, предоставляет возможность заказывать и получать с международных складов практически любой перечень компонентов в оптимальные для Вас сроки.

На всех этапах разработки и производства наши партнеры могут получить квалифицированную поддержку опытных инженеров.

Система менеджмента качества компании отвечает требованиям в соответствии с ГОСТ Р ИСО 9001, ГОСТ РВ 0015-002 и ЭС РД 009

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