

#### SLU22CH048 SERIES

### SLU22CH048-24-G16-M16-1024

SLOTLESS BLDC MOTOR

#### FEATURES AND BENEFITS

- **Extremely quick response and high acceleration**
- **Quiet Operation**
- **High power density**

## MOTOR SPECIFICATIONS

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|                         |                            |
|-------------------------|----------------------------|
| <b>Frame Size</b>       | 22 mm                      |
| <b>Motor Type</b>       | Motor + Encoder + Gearhead |
| <b>Weight</b>           | 184.6 g                    |
| <b>Number of pole</b>   | 2                          |
| <b>Number of Phases</b> | 3                          |
| <b>Certification</b>    | RoHS                       |

### MOTOR VALUES (AT NOMINAL SPEED)

|                                            |          |
|--------------------------------------------|----------|
| <b>Nominal Voltage</b>                     | 24 VDC   |
| <b>No Load Speed</b>                       | 770 RPM  |
| <b>No Load Current</b>                     | 285 mA   |
| <b>Nominal Speed</b>                       | 676 RPM  |
| <b>Nominal Torque (Max Cont. Torque)</b>   | 446 mNm  |
| <b>Nominal Current (Max Cont. Current)</b> | 2.94 A   |
| <b>Rated Speed</b>                         | 575 RPM  |
| <b>Rated Torque</b>                        | 290 mNm  |
| <b>Rated Current</b>                       | 1.67 A   |
| <b>Stall Torque</b>                        | 2650 mNm |
| <b>Stall Current</b>                       | 15.96 A  |

|                 |       |
|-----------------|-------|
| Max. Efficiency | 70.9% |
|-----------------|-------|

MOTOR CHARACTERISTICS

|                          |                        |
|--------------------------|------------------------|
| Terminal Resistance      | 0.94 ohm               |
| Terminal Inductance      | 0.104 mH               |
| Speed/Torque Gradient    | 58 RPM/mNm             |
| Speed Constant           | 770 RPM/V              |
| Mechanical Time Constant | 2.36 ms                |
| Rotor Inertia            | 3.64 g-cm <sup>2</sup> |

MOTOR MECHANICAL DATA

|                                      |               |
|--------------------------------------|---------------|
| Axial play                           | 0 mm - 0.1 mm |
| Radial play                          | 0.1           |
| Max. Radial Load                     | 60 N          |
| Distance From Flange For Radial Load | 10 mm         |
| Max Force For Press Fit              | 100 N         |
| Max Speed (Mechanical)               | 30000 RPM     |

MOTOR THERMAL DATA

|                                      |                        |
|--------------------------------------|------------------------|
| Ambient Temperature                  | -40.00 °C to 100.00 °C |
| Insulation Class                     | F                      |
| Max winding temperature              | 155.00 °C              |
| Max winding temperature              | 155.00 °C              |
| Thermal resistance (Housing-Ambient) | 9.00 °C/W              |
| Thermal resistance (Winding-Housing) | 1.75 °C/W              |
| Thermal time constant motor          | 510 s                  |
| Thermal time constant winding        | 1.59 s                 |

GEARHEAD SPECIFICATIONS

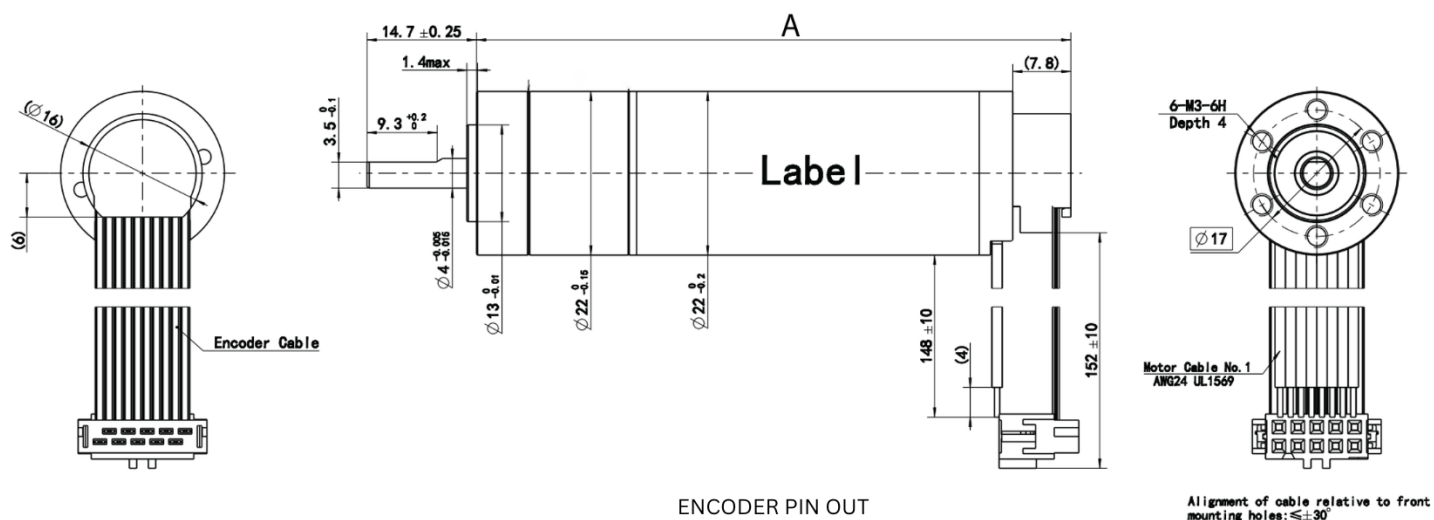
|                            |                    |
|----------------------------|--------------------|
| Type Of Gearhead           | Planetary Gearhead |
| Gearhead Reduction Ratio   | 16                 |
| Nominal Reduction Ratio    | 15.58              |
| Absolute Reduction Ratio   | 5625/361           |
| Number Of Stages           | 2                  |
| Average Backlash (No Load) | 1.05               |

ENCODER SPECIFICATIONS

|                    |      |
|--------------------|------|
| Counts Per Turn    | 1024 |
| Number Of Channels | 3    |

## DIMENSIONS

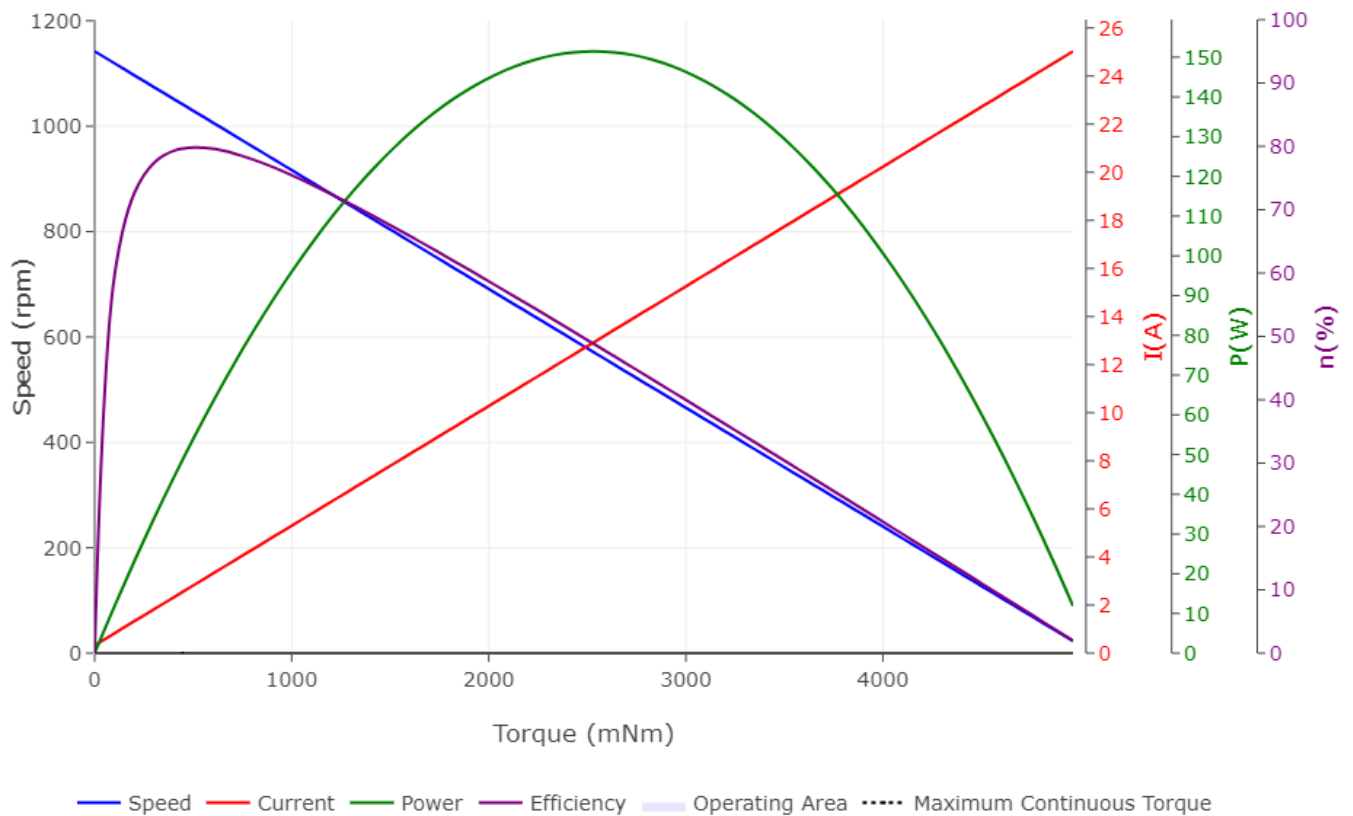
|                           |                            |
|---------------------------|----------------------------|
| <b>Model</b>              | SLU22CH048-24-G16-M16-1024 |
| <b>DIM. A (length) mm</b> | 86.8 mm                    |



| PIN # | SIGNAL    | COLOR  |
|-------|-----------|--------|
| 1     | WINDING 1 | BROWN  |
| 2     | WINDING 2 | RED    |
| 3     | WINDING 3 | ORANGE |
| 4     | 3-24 VDC  | YELLOW |
| 5     | GND       | GREEN  |
| 6     | HALL IC 1 | BLUE   |
| 7     | HALL IC 2 | VIOLET |
| 8     | HALL IC 3 | GREY   |

| PIN # | SIGNAL            |
|-------|-------------------|
| 1     | N.C               |
| 2     | VCC 4.5-5.5 V     |
| 3     | GND               |
| 4     | N.C               |
| 5     | CHANNEL $\bar{A}$ |
| 6     | CHANNEL A         |
| 7     | CHANNEL B         |
| 8     | CHANNEL B         |
| 9     | CHANNEL $\bar{I}$ |
| 10    | CHANNEL I         |

## PERFORMANCE CURVE



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Your  
Applications*



*Quick Prototype  
Turnaround*



*Small Batch to  
OEM Volume  
Production*



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