



### SLU16CH052 SERIES

## SLU16CH052-24-G83-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>	16 mm
<b>Motor Type</b>	Motor + Encoder + Gearhead
<b>Weight</b>	102 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>	192 RPM
<b>No Load Current</b>	150 mA
<b>Nominal Speed</b>	166 RPM
<b>Nominal Torque (Max Cont. Torque)</b>	520 mNm
<b>Nominal Current (Max Cont. Current)</b>	1.19 A
<b>Rated Speed</b>	166 RPM
<b>Rated Torque</b>	520 mNm
<b>Rated Current</b>	0.53 A
<b>Stall Torque</b>	7400 mNm
<b>Stall Current</b>	7.6 A

<b>Max. Efficiency</b>	65.58%
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## MOTOR CHARACTERISTICS

<b>Terminal Resistance</b>	3.16 ohm
<b>Terminal Inductance</b>	0.253 mH
<b>Speed/Torque Gradient</b>	137 RPM/mNm
<b>Speed Constant</b>	643 RPM/V
<b>Mechanical Time Constant</b>	1.22 ms
<b>Rotor Inertia</b>	0.85 g-cm <sup>2</sup>

## MOTOR MECHANICAL DATA

<b>Axial play</b>	0 mm - 0.1 mm
<b>Radial play</b>	0.1
<b>Max. Radial Load</b>	50 N
<b>Distance From Flange For Radial Load</b>	5 mm
<b>Max Force For Press Fit</b>	40 N
<b>Max Speed (Mechanical)</b>	362 RPM

## MOTOR THERMAL DATA

<b>Ambient Temperature</b>	-40.00 °C to 85.00 °C
<b>Insulation Class</b>	F
<b>Max winding temperature</b>	155.00 °C
<b>Max winding temperature</b>	155.00 °C
<b>Thermal resistance (Housing-Ambient)</b>	17.60 °C/W
<b>Thermal resistance (Winding-Housing)</b>	1.80 °C/W
<b>Thermal time constant motor</b>	600 s
<b>Thermal time constant winding</b>	3.12 s

## GEARHEAD SPECIFICATIONS

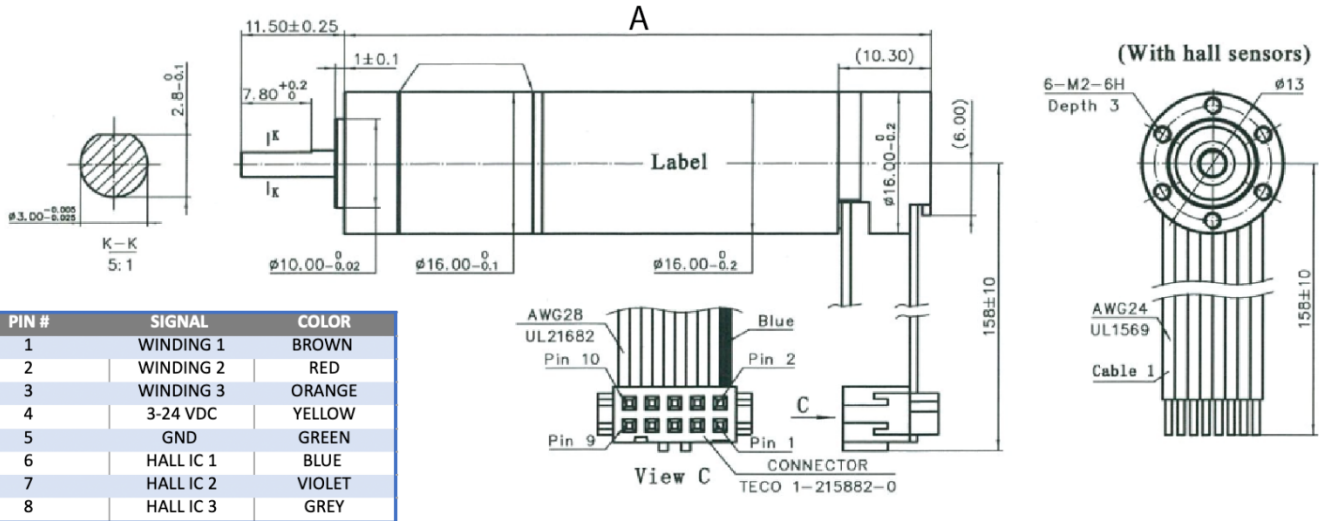
<b>Type Of Gearhead</b>	Planetary Gearhead
<b>Gearhead Reduction Ratio</b>	83
<b>Nominal Reduction Ratio</b>	82.7
<b>Absolute Reduction Ratio</b>	388125/4693
<b>Number Of Stages</b>	3
<b>Average Backlash (No Load)</b>	1.5

## ENCODER SPECIFICATIONS

<b>Counts Per Turn</b>	1024
<b>Number Of Channels</b>	3

# DIMENSIONS

<b>Model</b>	SLU16CH052-24-G83-M16-1024
<b>DIM. A (length) mm</b>	85.8 mm

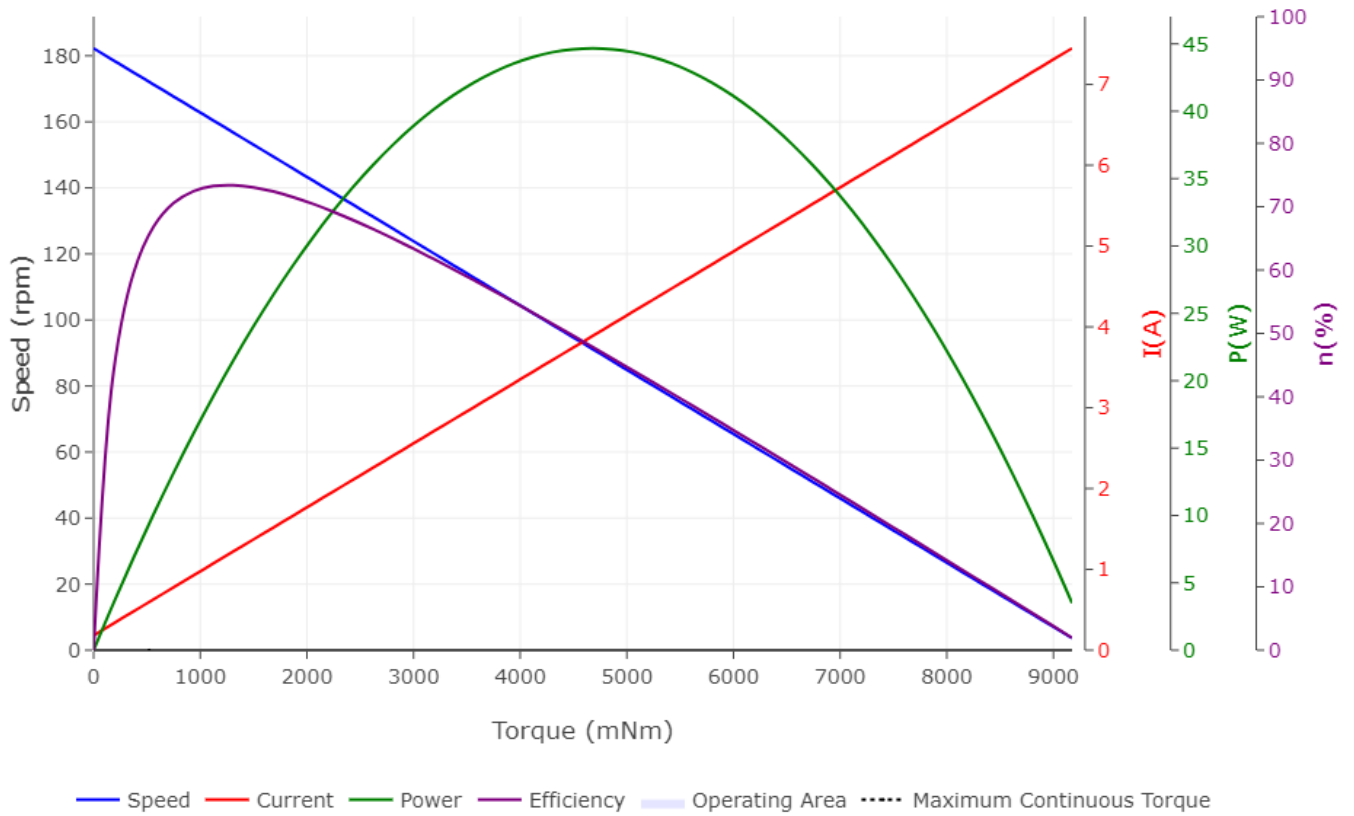


PIN #	SIGNAL	COLOR
1	WINDING 1	BROWN
2	WINDING 2	RED
3	WINDING 3	ORANGE
4	3-24 VDC	YELLOW
5	GND	GREEN
6	HALL IC 1	BLUE
7	HALL IC 2	VIOLET
8	HALL IC 3	GREY

## ENCODER PIN OUT

PIN #	SIGNAL
1	N.C
2	VCC 4.5-5.5 V
3	GND
4	N.C
5	CHANNEL A
6	CHANNEL A
7	CHANNEL B
8	CHANNEL B
9	CHANNEL T
10	CHANNEL I

## PERFORMANCE CURVE



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## Motor Engineering and Manufacturing



*Optimized For  
Your  
Applications*



*Quick Prototype  
Turnaround*



*Small Batch to  
OEM Volume  
Production*



*US Based  
Support &  
Manufacturing*