Brushless DC Motor + Gearhead

Motor, DC Brushless
TSM8001N800

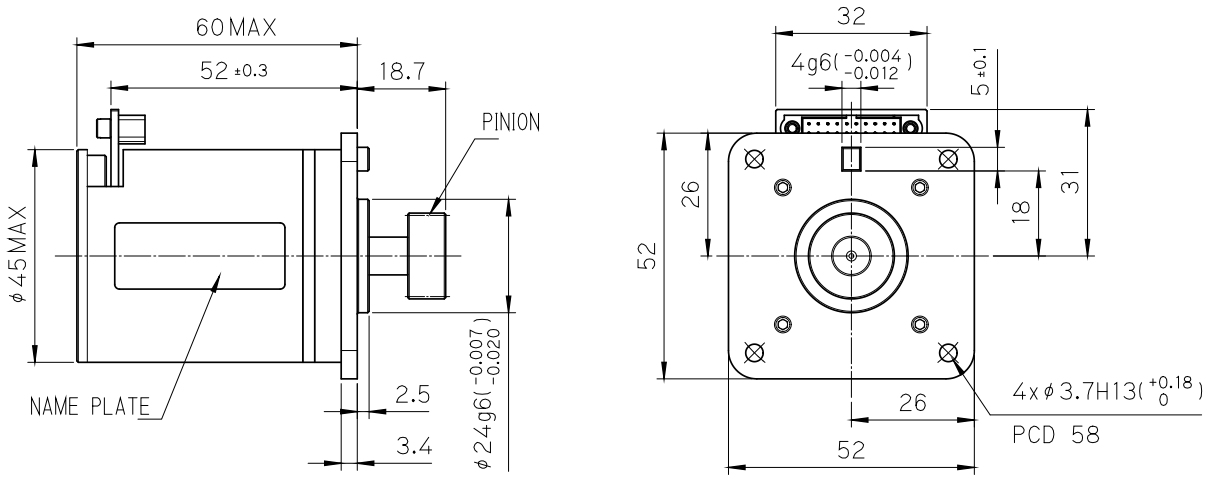
Description

Combination of high-efficiency Gearhead and Brushless DC Motor enables small-sized but high output torque. Integrated Hall IC functions as a feedback sensor. All-metallic gearhead is perfectly fit for high torque use by grease lubricating. Reduction ratio, lubricating grease and winding specifications can be customized according to customer's needs.

Features

- 16-pole 3-phase Brushless DC Motor with Planetary Gearhead
- Using rare earth magnets (Neodymium-Iron-Boron type)
- Three Hall IC for magnetic pole detection use
- Robust configuration with a smaller number of parts
- High efficiency & low backlash Planetary Gearhead
- Combination with compact Gearhead enables high output torque
- Custom reduction gear ratio available
- Custom designs for electrical characteristics & shape of output shaft

Outline



*Dimensions are in mm

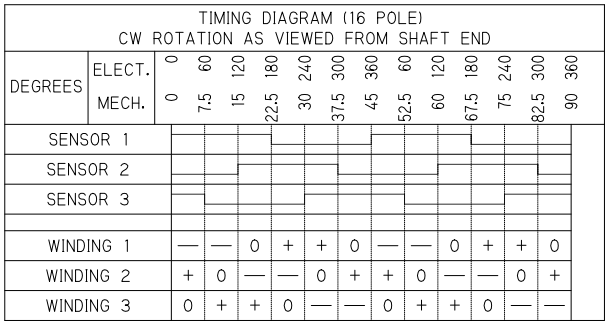
TAMAGAWA SEIKI CO., LTD.
1879 Ohyasumi, Iida, Nagano Prefecture, 395-8515 Japan
Phone +81 265 21 1814 | Fax +81 265 56 4108

Specifications

Motor Type	Brushless DC Motor, 16 pole, 3 phase
Input Voltage	9 to 29.5 VDC
Peak Torque at 9 VDC	1.77 N-m MIN
Speed at Peak Torque	31.43 rpm MIN
Maximum Current	2 AMPS MAX
Back EMF Constant	2.63 V/krpm ±10 % (without Gearhead)
Torque Sensitivity	0.0251 N-m/AMPS ±10 % (without Gearhead)
Terminal Resistance	0.72 Ω ±10 %
Terminal Inductance	0.35 mH ±30 %
Dielectric Strength	AC 750 Vrms, 2 mA, 1 MIN
Insulation Resistance	100 MΩ MIN, DC 500 V
Mass	360 g MAX
Gear train Material	Steel
Backlash at No-Load	1 degree MAX
Number of Gear Stage	2
Gear Ratio	1/64
Temperature Range	-55 °C to +85 °C

Schematic

Timing Diagram



Connector Pin Description

CONNECTOR PIN DESCRIPTION	
DESCRIPTION	PIN
winding 1	1
winding 2	2
winding 3	3
not connected	4
not connected	5
GND hall	6
Hall sensor 2	7
not connected	8
not connected	9
not connected	10
winding 1	11
winding 2	12
winding 3	13
not connected	14
VCC hall	15
Hall sensor 1	16
Hall sensor 3	17
not connected	18
not connected	19
not connected	20

Pinion Data

PINION DATA	
NUMBER OF TEETH	34
MODULE	0.5
PRESSURE ANGLE	20°
TOOTH FORM	INVOLUTE
NOMINAL PITCH DIAMETER	17
ADDENDUM MODIFICATION FACTOR	+0.1817
SPAN MEASUREMENT OF 5 TEETH	6.919 / 6.895
PIN DIAMETER	0.895
MEASUREMENT OVER 2 PINS	18.413 / 18.354
TOOTH TO TOOTH COMPOSITE DEVIATION	13 μm
RUNOUT DEVIATION	18 μm

NOTES : VALUES WITH * MARK ARE INSPECTION ITEM

TAMAGAWA SEIKI CO., LTD.
1879 Ohyasumi, Iida, Nagano Prefecture, 395-8515 Japan
Phone +81 265 21 1814 | Fax +81 265 56 4108