

Brushless DC Motor + Brake

Motor, DC Brushless
TS4374N800 Series

Description

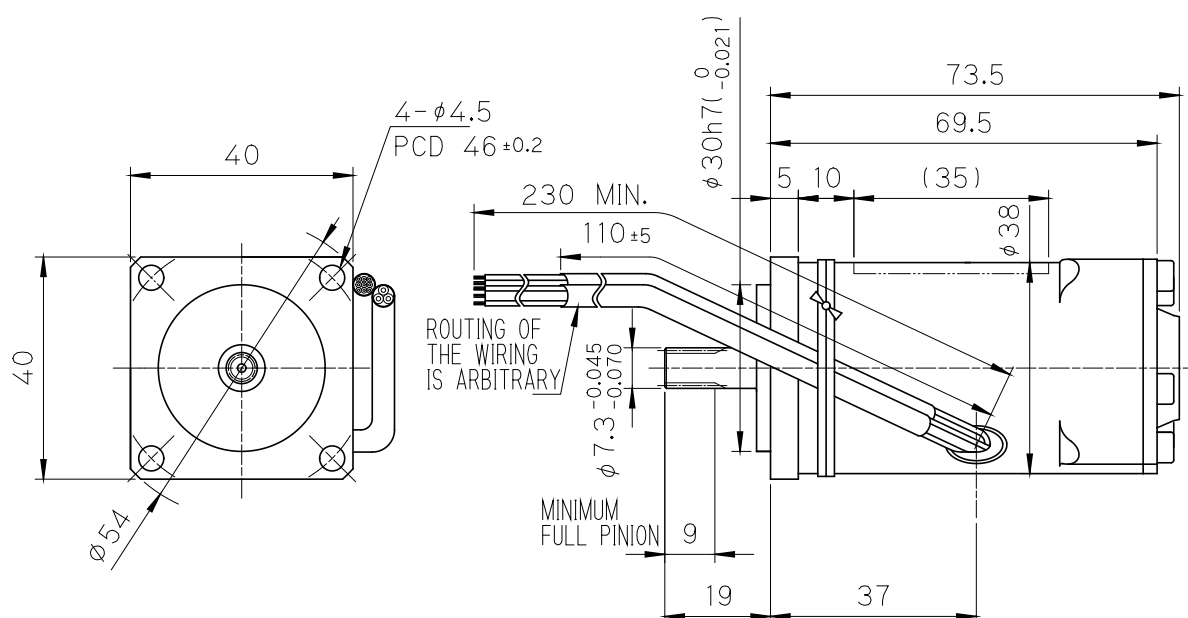
TAMAGAWA DC Brushless Motor + Brake integrates electric brake and feedback angular sensor like Hall IC or Resolver. Typical applications are for power drive unit and actuation and motion control systems. Tamagawa's feature is to offer such motor with electric brake, feedback sensor and control board, furthermore with gearbox and ball screws too.

Features

- 4-pole 3-phase Brushless DC motor
- Using rare earth magnets (Samarium-Cobalt type)
- Three Hall IC for magnetic pole detection use
- Robust configuration with a smaller number of parts
- Integrated electromagnetic brake
- High speed rotation
- Integrated temperature sensor for stator coil
- Custom designs for electrical characteristics & shape of input shaft



Outline



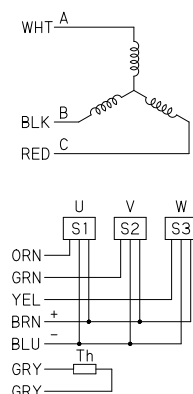
*Dimensions are in mm

Specifications

Motor Type	Brushless DC Motor, 4 pole, 3 phase
Peak Torque at 28 VDC	0.246 N-m
Peak Current at 28 VDC	29.3 AMPS
Torque Constant	0.0084 N-m/AMPS $\pm 10\%$
Voltage Constant	0.88 V/krpm $\pm 10\%$
Breakaway Torque	0.008 N-m MAX
Friction Torque	0.010 N-m MAX
Speed at 20 VDC	20,000 min ⁻¹ (rpm) MIN
Dielectric Strength	AC 750 Vrms, 2 mA, 1 MIN
Insulation Resistance	10 M Ω MIN, DC 500 V
Mass	380 g MAX
Temperature Range	-55 °C to +85 °C

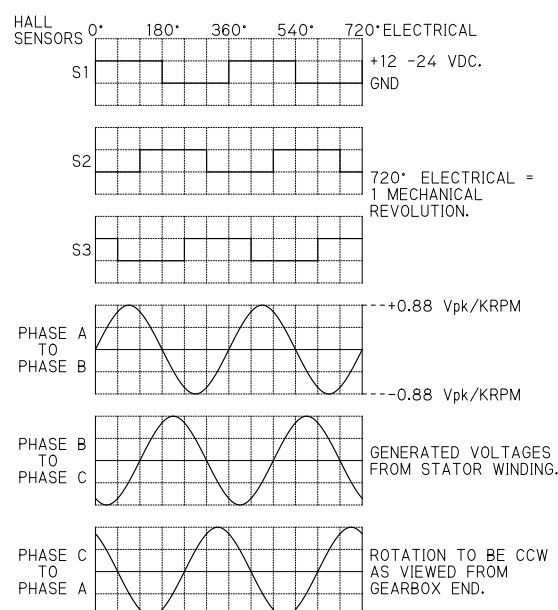
Schematic

Wiring Diagram



REF LEAD WIRE DATA		
LEAD	COLOR	DESCRIPTION
PHASE A	WHT	MOTOR WINDINGS 18AWG
PHASE B	BLK	
PHASE C	RED	
4.5-24V	BRN	HALL EFFECT SENSORS 26 AWG
GND	BLU	
S1	ORN	
S2	GRN	
S3	YEL	THERMAL SENSOR 26 AWG
TEMP	GRY	
BRAKE	YEL	BRAKE WINDINGS 26 AWG
	YEL	

Timing Diagram



Pinion Data

PINION DATA	
NUMBER OF TEETH	12
MODULE	0.5
PRESSURE ANGLE	20°
STD. PITCH DIAMETER	$\phi 6.3$
TOOTH FORM	FULL DEPTH INVOLUTE
AGMA CLASS	JIS 3級
OUTSIDE DIAMETER	$\phi 7.3_{-0.070}^{-0.045}$
ADDENDUM MODIFICATION COEFFICIENT	+0.3