DINGS'

Precision Motion Specialist

5-PHASE STEPPER MOTOR

PRODUCT CATALOG

Jiangsu DINGS' Intelligent Control Technology Co., Ltd.

dingsmotion.com

Founded in 2008, Jiangsu DINGS' Intelligent Control Technology Co., Ltd. is guided by the philosophy, **"Quality stems from responsibility, and details determine success."**

As a global leader in precision linear motion, DINGS' delivers a comprehensive portfolio of precision stepper, DC and BLDC motors, voice coil motors, lead and ball screw linear actuators, PMSM motors for eco-mobility, and advanced motion controllers — setting new benchmarks in the global motion control market.

SCALE

300+	Advanced Machining Equipment	
40+	Automated Assembly Lines	
100+	Precision Testing & Analysis Systems	
140+	Patents & Intellectual Properties	

GROWTH

2008	Company Founded & DINGS' Brand Established
2010	DINGS' Motion USA Established
2016	DINGS' Korea Established
2019	Joined LEILI Group
2021	Changzhou Intelligent Manufacturing Plant Established Listed on China NEEQ Market
2022	Korea R&D Center Established
2023	Listed on Beijing Stock Exchange [Stock Code: 920593] DINGS' Korea Converted to Corporate Entity DINGS' Japan Established
2024	New Headquarters & Plant Established DINGS' Motion Europe Established
2025	Thailand Manufacturing Facility Established

CERTIFICATIONS

- ISO 9001 — Quality
- ISO 14001 — Environmental
- ISO 45001 — Health & Safety
- ISO 13485 — Medical Device Quality
- ISO/IEC 17025 — Laboratory Accreditation
- IATF16949 — Automotive Quality
- IPMS — Intellectual Property
- CE — Safety Standards
- RoHS COMPLIANT — Environmental Standards - RoHS
- REACH NPS — Environmental Standards - REACH

PRODUCT WARRANTY

Warranty period: 1 year from shipment.

Free repair is provided for defects in materials or workmanship under normal use.

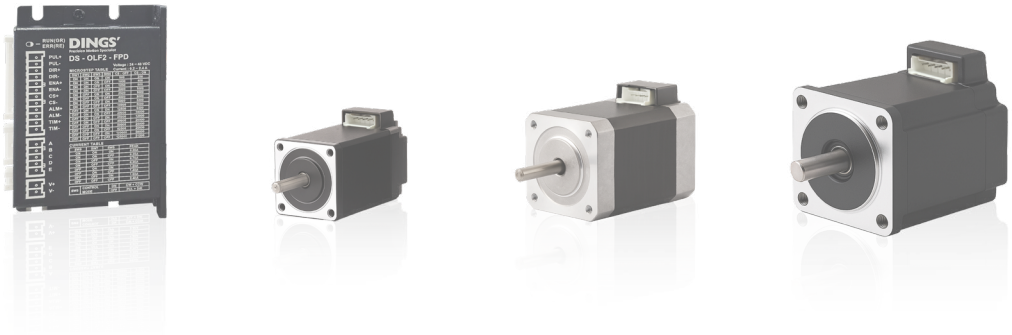
Warranty does not apply to:

- Warranty expiration or damaged/lost nameplates
- Improper installation or operating conditions
- Unauthorized disassembly or modification
- Repairs conducted outside of official service channels
- Force majeure, including natural disasters

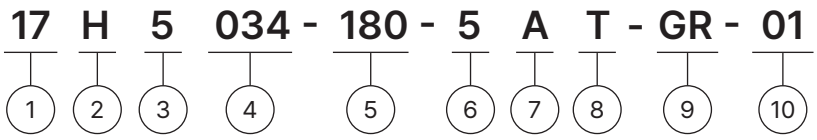
DINGS' is committed to quality, reliability, and responsibility
— delivering high-performance motion solutions built on precision engineering.

Contents

5-PHASE STEPPER MOTOR



Part Number Construction



① Motor Size

Motor Size (mm)	28	42	60
Motor Size (NEMA)	11	17	24

② Basic Structure

H = Normal

P = IP54

W = Enhanced

*For IP65, please contact DINGS' for more information

③ Motor Step Angle (°)

1 = 3°

2 = 1.8°

3 = 1.2°

4 = 0.9°

5 = 0.72°

6 = 0.36°

④ Motor Length (mm)

⑤ Rated Current

XXX = Rated current ×100 (A)

⑥ Wiring Number (3,4,5,6,8)

⑦ Shaft Configuration

A = Single shaft

B = Dual shaft

* Shaft dimension and D-Cut customization, please contact DINGS'

⑧ Wiring Method

L = Flying lead wire

T = Integrated connector

C = Cable

* If customer has special requirement for connector and cable, please inform DINGS'

⑨ Option

GR = Planetary gearbox ready

BR = Brake ready

ER = Encoder ready

PG = Planetary gearbox

Refers to the part number of gearbox with ratio

DG = DINGS' gearbox

FB = Power off brake, NB = Power on brake

EKX = Encoder [X = Encoder Resolution]

- DINGS' can customize shafts and covers to be ready to assemble Gearbox, Brake or Encoder by customers, according to customer's requirements by drawing.
- DINGS' has standard planetary gearbox options. Please see product details.
- Power-Off Brake is available for Motor size 28, 35, 42, 57 and 60mm

⑩ Customer Sequence Number

Example

Naming code	17H5034-180-5AT-GR-01
Description	Size 42 mm Normal structure Step angle 0.72° Motor body length 34 mm Rated current 1.8 A 5 wiring leads Single shaft Wiring method integrated connector Planetary gearbox ready Customization sequence code 01

Product Overview

Size	Part Number	Current (A [RMS])	Resistance (Ω)	Inductance (mH)	Holding Torque (N·m)	Rotor Inertia (g·cm²)	Motor Length (mm)	Mass (g)
28mm	11H5033	1.2	0.56	0.2	0.05	9	33	110
	11H5052	1.2	0.88	0.45	0.09	18	52	200
42mm	17H5034	1.8	0.34	0.35	0.22	35	34	240
	17H5041	1.8	0.45	0.55	0.3	54	41	300
	17H5049	1.8	0.5	0.7	0.37	77	49	360
	17H5061	1.8	0.65	1.1	0.5	110	61	500
60mm	24H5044	2.4	0.3	0.55	0.6	230	44	550

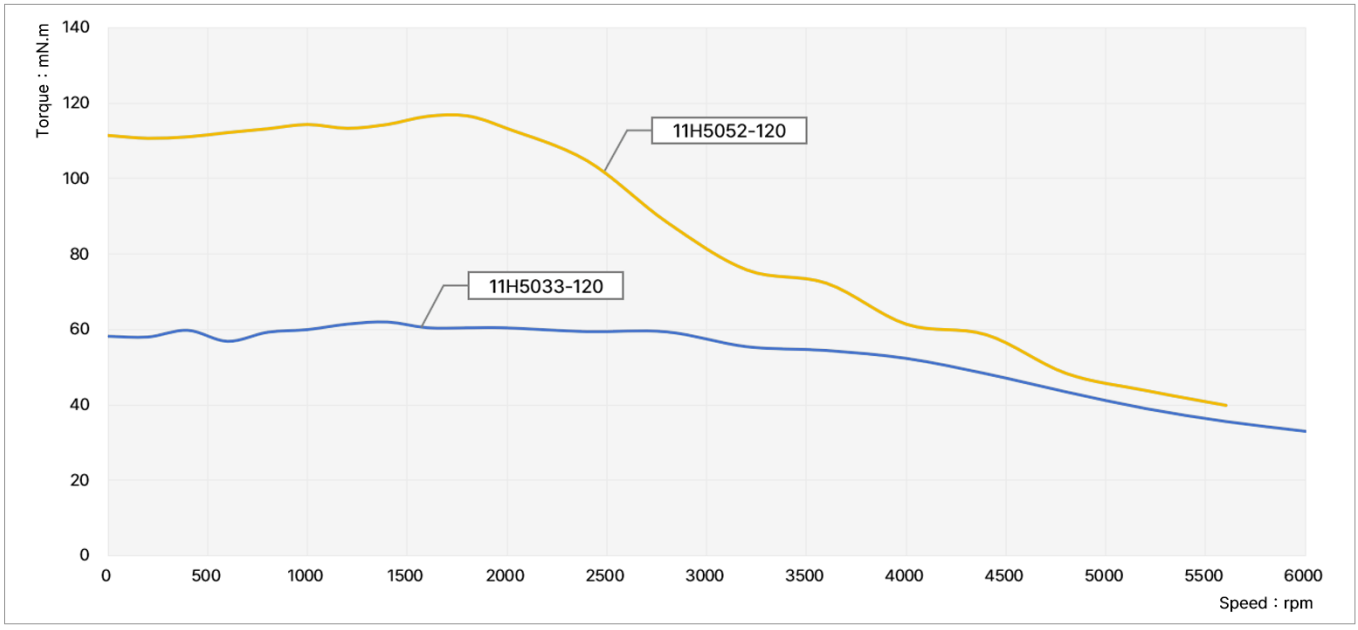
Size 11 (28mm) Series

Motor Characteristics

Model	Phase	Step angle (°)	Rated current (A)	Resistance (Ω)	Inductance (mH)	Holding torque (N.m)	Rotor inertia (g.cm²)	Length (mm)	Weight (kg)
11H5033-120-5AT	5	0.72	1.2	0.56	0.2	0.05	9	33	0.11
11H5052-120-5AT	5	0.72	1.2	0.88	0.45	0.09	18	52	0.2

Permissible radial load (5mm distance from mounting surface)	Permissible radial load (10mm distance from mounting surface)	Permissible radial load (15mm distance from mounting surface)	Permissible radial load (20mm distance from mounting surface)
50N	35N	25N	20N

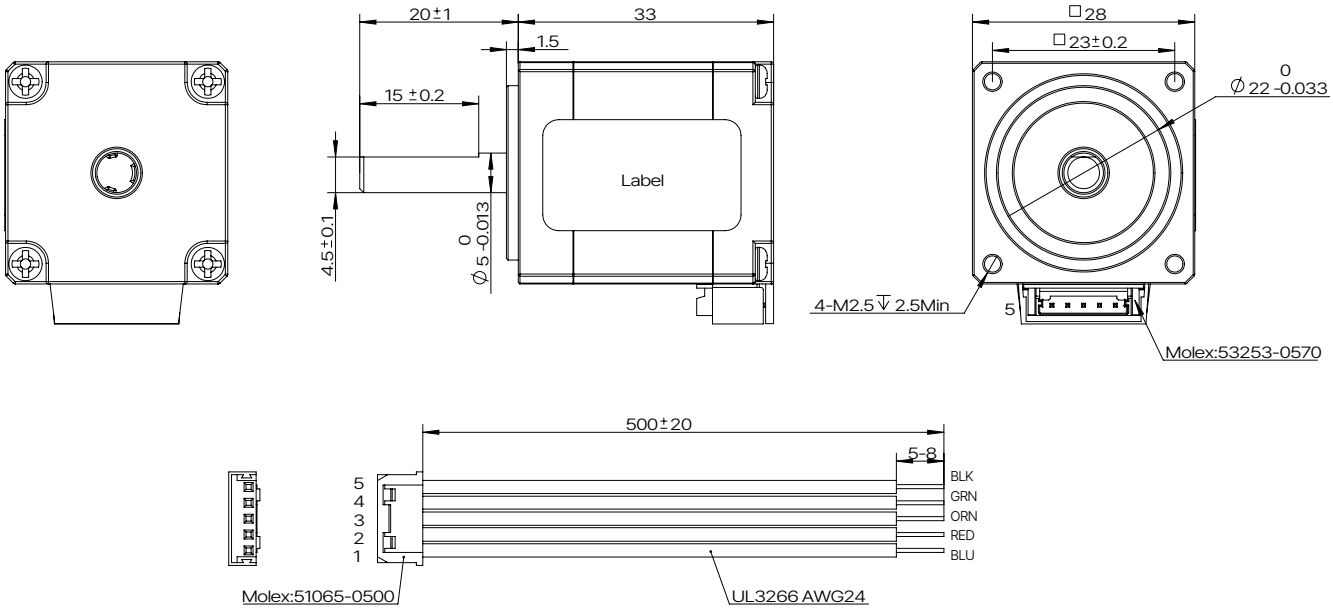
Torque Performance Curves



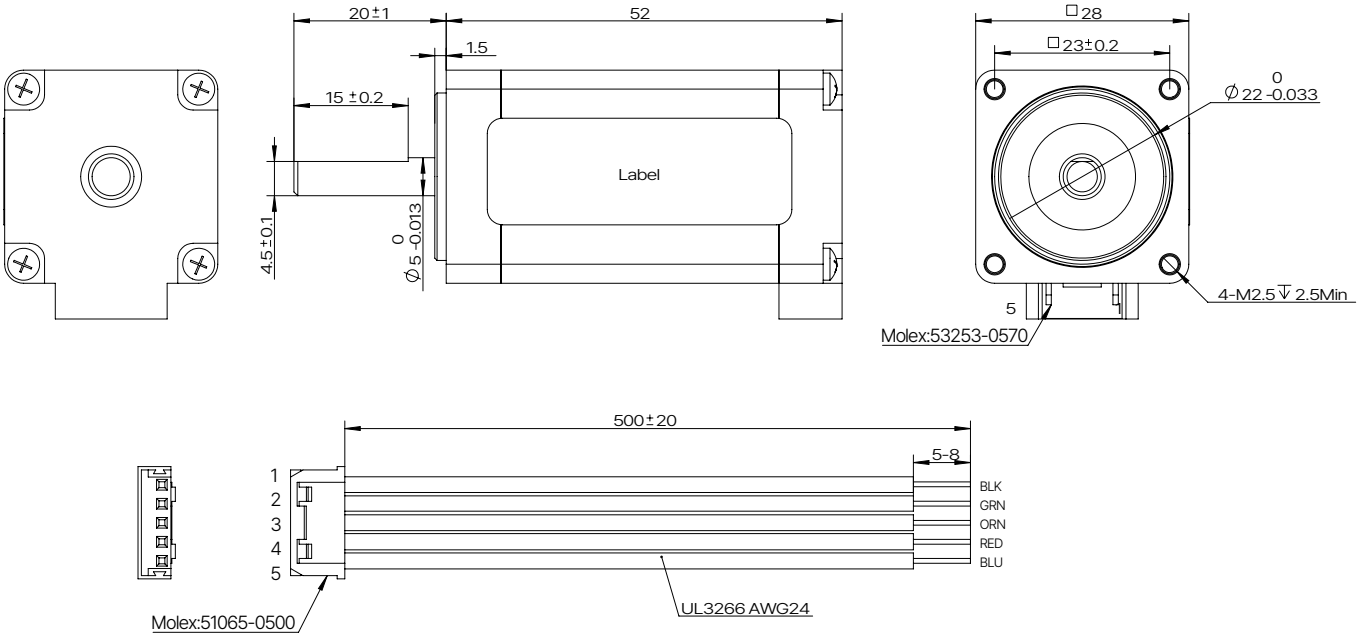
TEST CONDITION
Testing Voltage: 24Vdc, Driver Model: DS-OLF2-FPD, Rated Current 1.2A (rms)

Dimensional Drawings

11H5033-120



11H5052-120



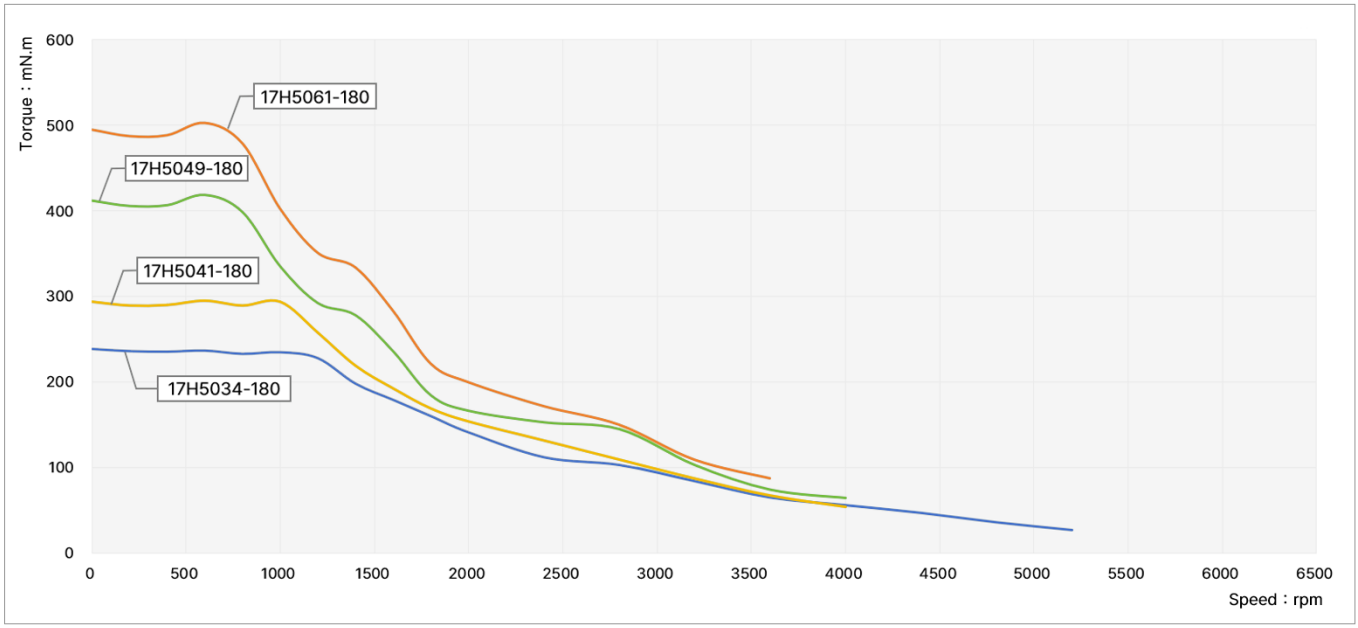
Size 17 (42mm) Series

Motor Characteristics

Model	Phase	Step angle (°)	Rated current (A)	Resistance (Ω)	Inductance (mH)	Holding torque (N.m)	Rotor inertia (g.cm²)	Length (mm)	Weight (kg)
17H5034-180-5AT	5	0.72	1.8	0.34	0.35	0.22	35	34	0.24
17H5041-180-5AT	5	0.72	1.8	0.45	0.55	0.3	54	41	0.3
17H5049-180-5AT	5	0.72	1.8	0.5	0.7	0.37	77	49	0.36
17H5061-180-5AT	5	0.72	1.8	0.65	1.1	0.5	110	61	0.5

Permissible radial load (5mm distance from mounting surface)	Permissible radial load (10mm distance from mounting surface)	Permissible radial load (15mm distance from mounting surface)	Permissible radial load (20mm distance from mounting surface)
50N	40N	25N	20N

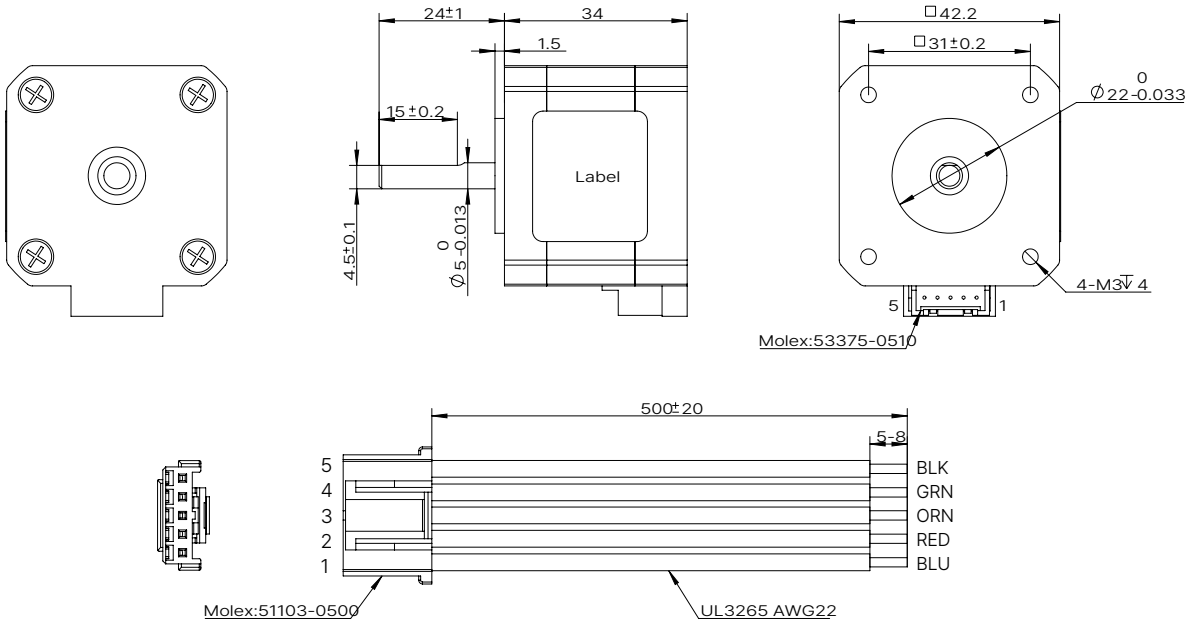
Torque Performance Curves



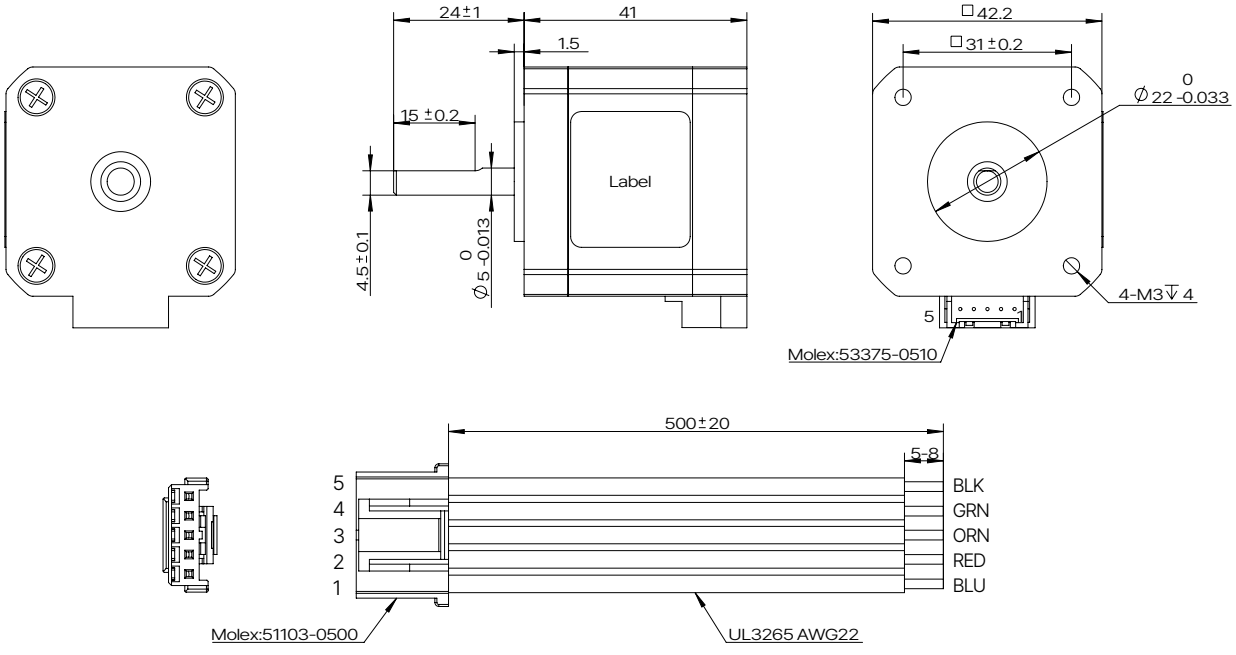
TEST CONDITION
Testing Voltage: 24Vdc, Driver Model: DS-OLF2-FPD, Rated Current 1.8A (rms)

Dimensional Drawings

17H5034-180



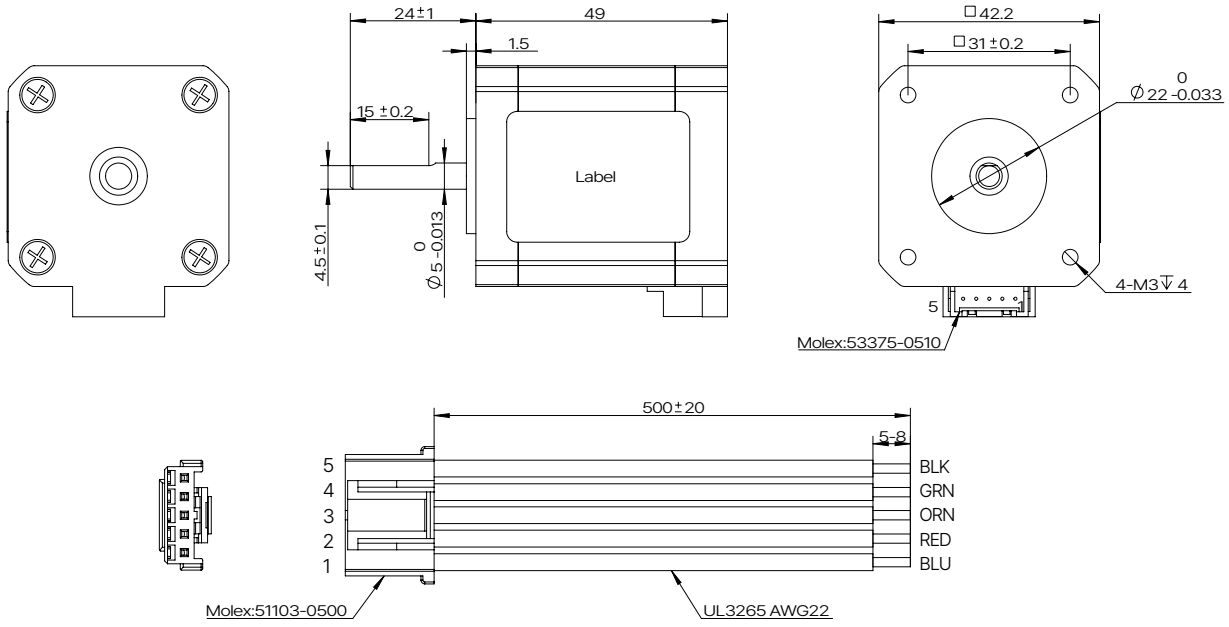
17H5041-180



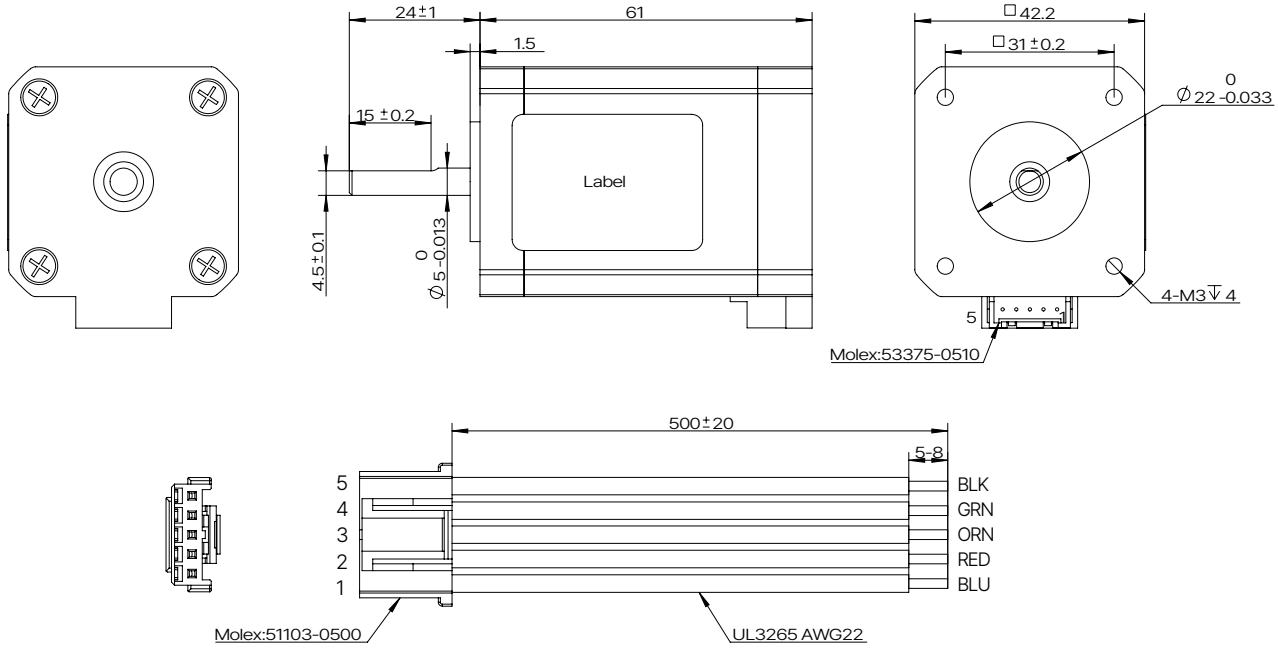
Size 17 (42mm) Series

Dimensional Drawings

17H5049-180



17H5061-180



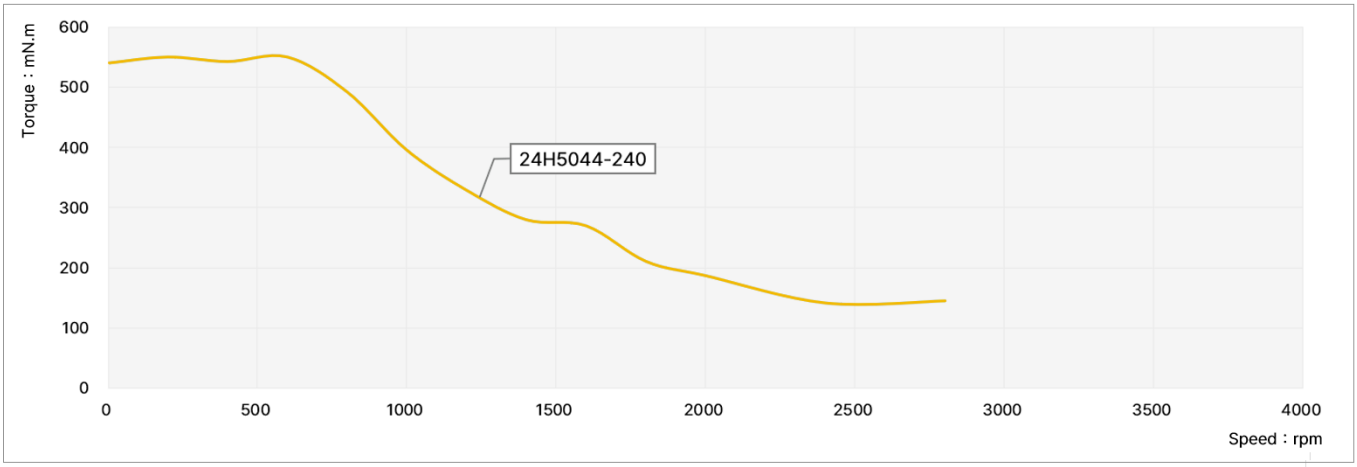
Size 24 (60mm) Series

Motor Characteristics

Model	Phase	Step angle (°)	Rated current (A)	Resistance (Ω)	Inductance (mH)	Holding torque (N.m)	Rotor inertia ($g.cm^2$)	Length (mm)	Weight (kg)
24H5044-240-5AL	5	0.72	2.4	0.3	0.55	0.6	230	44	0.55

Permissible radial load (5mm distance from mounting surface)	Permissible radial load (10mm distance from mounting surface)	Permissible radial load (15mm distance from mounting surface)	Permissible radial load (20mm distance from mounting surface)
210N	170N	140N	120N

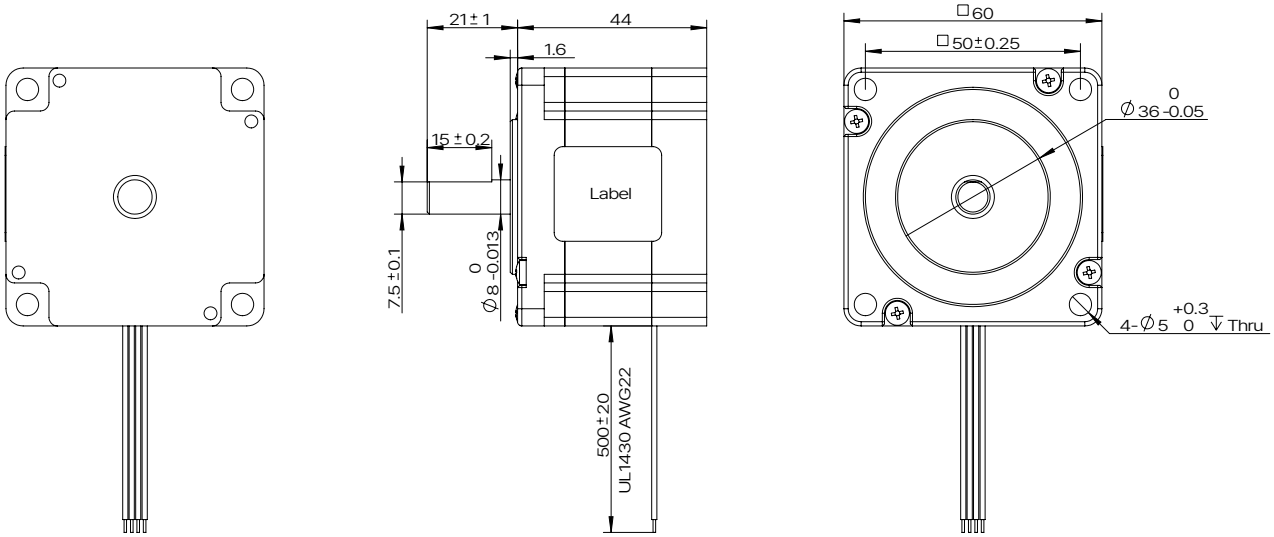
Torque Performance Curves



TEST CONDITION

Testing Voltage: 24Vdc, Driver Model: DS-OLF2-FPD, Rated Current 2.4A (rms)

Dimensional Drawings



5-phase Stepper Motor Driver

DS-OLF2-FPD Open-Loop Control - 5 Phase Pulse type

Features

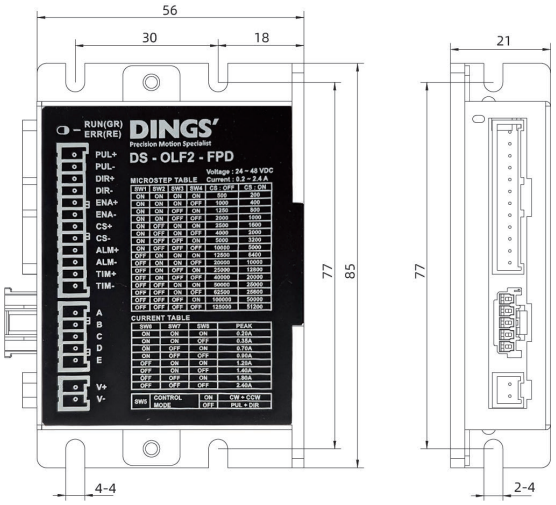
1. Input power : DC 24V - 36V
2. Output rated current: 0.2A - 2.4A (max.)
3. Compatible with 5-phase hybrid stepper motor
4. 4 inputs, 2 outputs
5. Supports 1 pulse, 2 pulse control
6. Microstepping drive (up to 125,000 pulses per revolution)

Specification

Adapted motor		5-phase hybrid stepper motor, max supported current : 2.4A (max.)
Power supply		24 - 36VDC
Output current		0.2A - 2.4A / phase (max.)
Driving method		Full-bridge bipolar PWM drive
Control method		Pulse-direction control
Encoder support		No
Input signal	Pulse signal	Opto-isolated input: H = 3.5–5V, L = 0–0.8V, input current 5–8mA
	Enable signal	
	Direction signal	
	Select signal	
Output signal	Alarm output	Opto-isolated output: max. voltage 30VDC, max. current 10mA
Size (excluding connector)		85 × 56 × 21 mm
Weight (excluding connector)		about 96g
Operating environment	Application	Avoid dust, oil mist and corrosive gas
	Humidity	< 85% RH, no condensation
	Temperature	0 ~ 40°C
	Heat dissipation	Install in a ventilated environment

Installation (unit : mm)

1. Consider terminal size and cooling space during installation.
2. Recommended temperatures: under 60°C (driver), under 80°C (motor).
3. Install the driver vertically for natural cooling. Add a fan if needed to maintain stable operation.



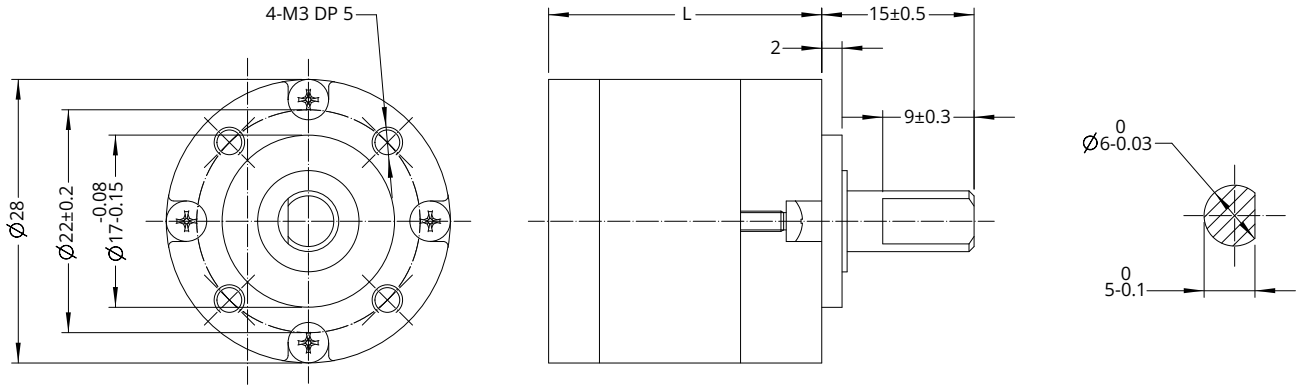
Accessories and Options

Planetary Gearbox

Overview

Frame size	Ratio	Rated torque (N·m)	Limit torque (N·m)	Stages	Efficiency (%)	Length (mm)	Mass (g)	Corresponding motor
28 mm	3.3	0.5	1.5	1	90	21.2	87	28 mm
	4.6							
	11.2	1	3	2	81	26.9	91	
	15.5							
	21.5							
	37.7	2.5	7.5	3	73	32.7	100	
	72							
42 mm	3.7	1	3	1	90	30.6	260	42 mm
	5.2							
	13.7	2	6	2	81	41.9	350	
	19.2							
	26.9							
	50.9	5	15	3	73	53.2	440	
	71.2							
	99.5							
60 mm	5	6	12	1	95	53	900	60 mm
	10							
	15	25	40	2	90	70	1200	
	20							
	25							

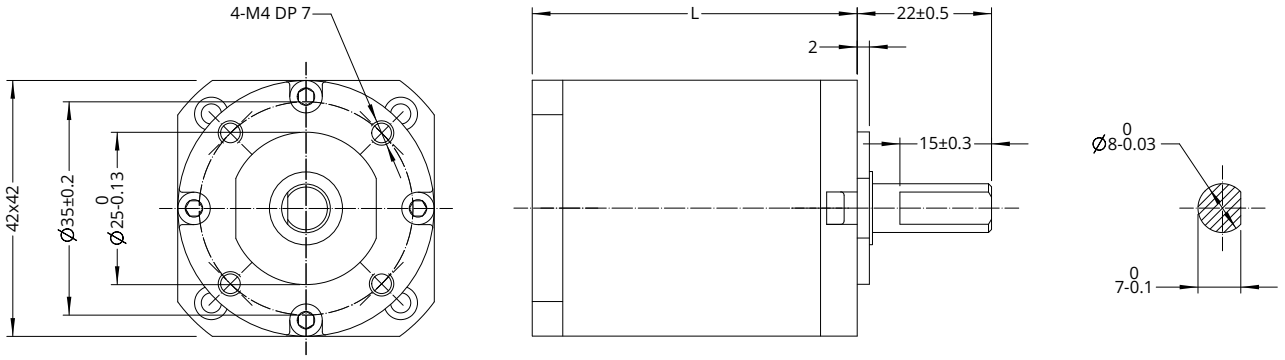
28mm Frame Planetary Gearbox



Housing material			Metal			
No load backlash			1°			
Bearing			Ball bearing			
Ratio	Rated torque (N·m)	Limit torque (N·m)	Stages	Efficiency (%)	Length (mm)	Mass (g)
3.3 4.6	0.5	1.5	1	90	21.2	87
11.2 15.5 21.5	1	3	2	81	26.9	91
37.7 72	2.5	7.5	3	73	32.7	100

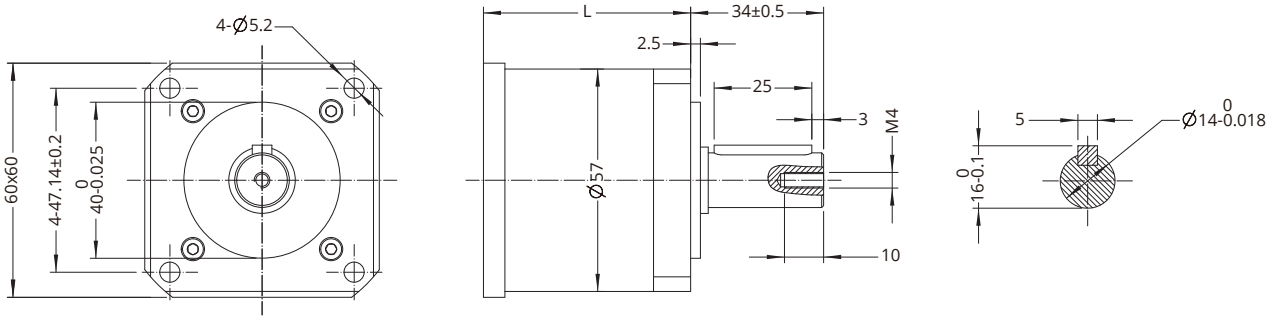
Accessories and Options

42mm Frame Planetary Gearbox



Housing material			Metal			
No load backlash			1.2°			
Bearing			Ball bearing			
Ratio	Rated torque (N·m)	Limit torque (N·m)	Stages	Efficiency (%)	Length (mm)	Mass (g)
3.7 5.2	1	3	1	90	30.6	260
13.7 19.2 26.9	2	6	2	81	41.9	350
50.9 71.2 99.5	5	15	3	73	53.2	440

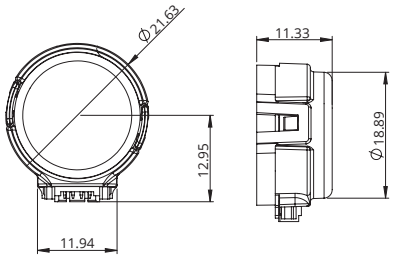
60mm Frame Planetary Gearbox



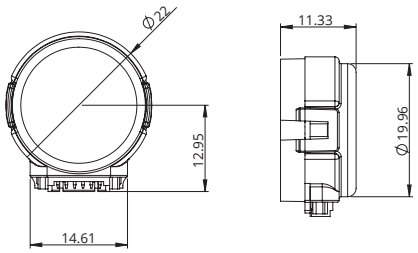
Housing material			Metal			
No load backlash			First stage 15 arcmin, second stage 25 arcmin			
Bearing			Ball bearing			
Ratio	Rated torque (N·m)	Limit torque (N·m)	Stages	Efficiency (%)	Length (mm)	Mass (g)
5 10	6	12	1	95	53	900
15 20 25	25	40	2	90	70	1200

Accessories and Options

Encoder



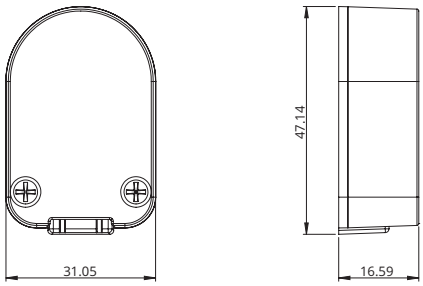
EK 1 Encoder - single ended output



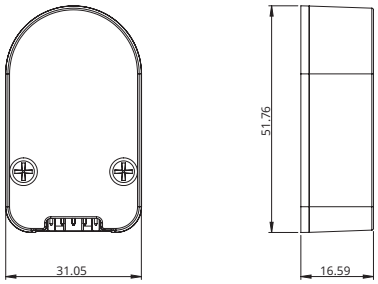
EK 1 Encoder - differential output

- **EK 1 Encoder (Used for size 11, 17 motors)** * No Index

Resolution (CPR)	100	108	120	125	128	200	250	256	300	360	400	500	1000	512	720	800
Single ended output	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Differential output	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P



EK 2 Encoder - single ended output

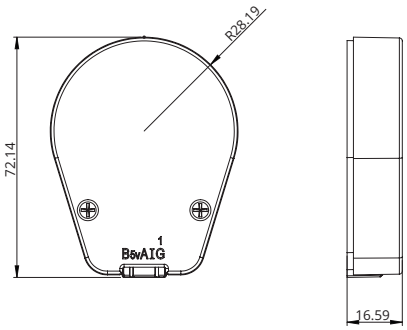


EK 2 Encoder - differential output

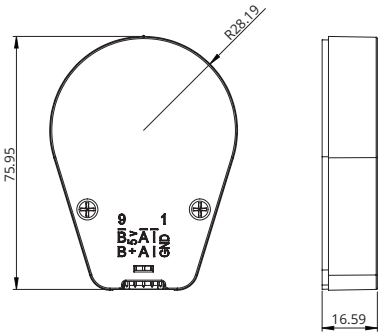
- **EK 2 Encoder (Used for size 17, 24 motors)**

Resolution (CPR)	50	100	192	200	250	256	360	400	500	720	900	1000	1250	2000	2500	4000	5000
Single ended output	0	1	2	3	4	5	6	7	8	9	10	11	12				
Differential output	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q

Accessories and Options



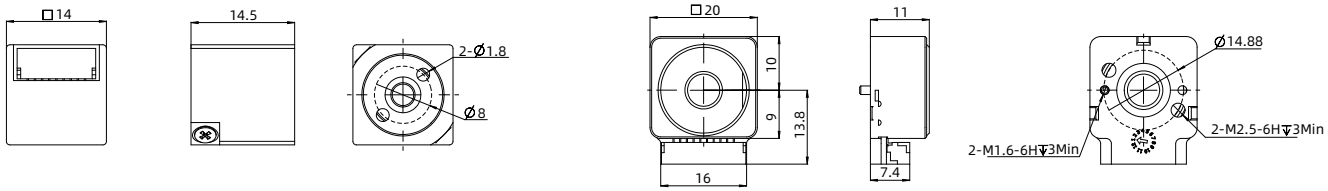
EK 3 Encoder - single ended output

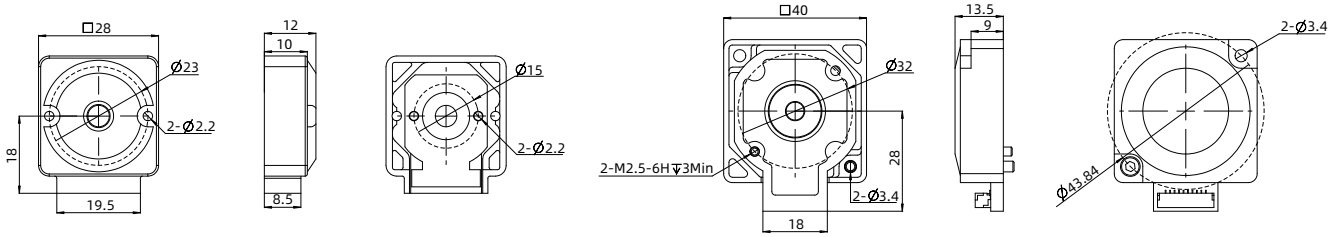


EK 3 Encoder - differential output

EK 3 Encoder (Used for size 24 motors)

Resolution (CPR)	64	100	200	500	1000	1800	2000	2500	3600	4000	5000	7200	8000	10000
Single ended output	0	1	2	3	4	5	6	7	8					
Differential output		A	B	C	D	E	F	G	H	I	J	K	L	M





EK 7 Encoder (Used for size 11, 17, 24 motors)

Resolution (CPR)	-	-	-	1000	-	-	2000	-	-	-
Single ended output	0	1	2	3	4	5	6	7	8	9
Differential output	A	B	C	D	E	F	G	H	I	J

Accessories and Options

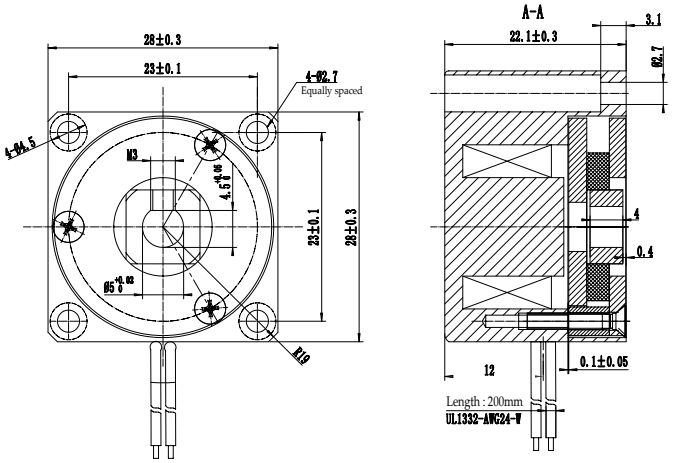
Power OFF Brake

Parameter

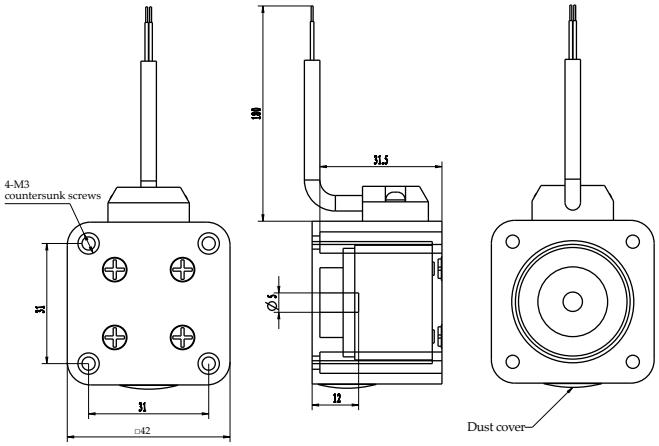
Series	11 (28mm)	17 (42mm)	24 (60mm)
Rated voltage	DC 24V±5%		
Resistance	143.7Ω±10%	145Ω±10%	141Ω±10%
Power	5.5W	5W	5W
Hold torque	>0.3N.M	>0.8N.M	>2N.m
Insulation	B		
Insulation resistance	>100MΩ (DC500V)		
Dielectric strength	AC 1000V for 1 sec		
Retraction time	50ms		
Release time	50ms		
Gyration gap	1°		
Emergency brake time	200		
Lifetime	2,000,000 times		
Noise level	<60 db		

Accessories and Options

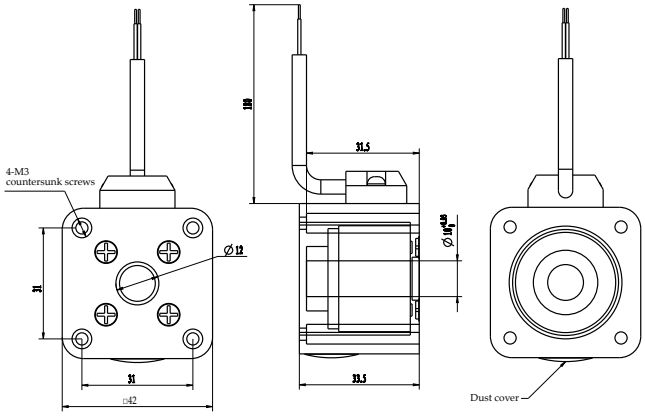
Dimensional Drawings



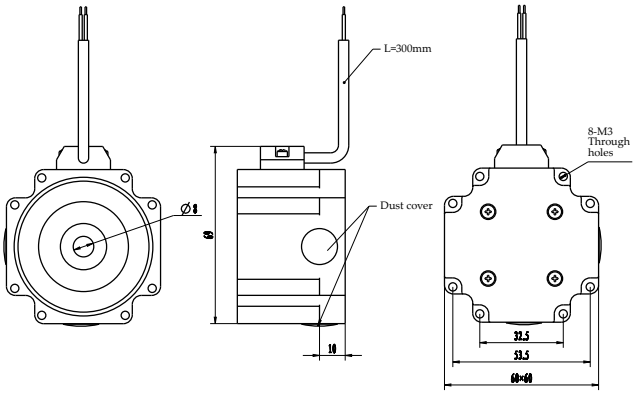
11 (28mm) Series



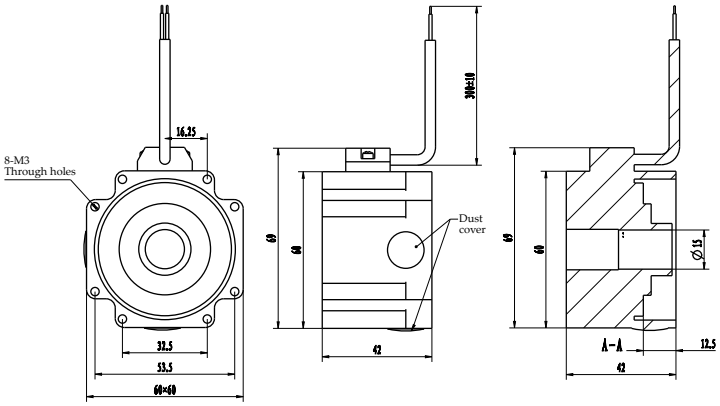
17 (42mm) Series : External



17 (42mm) Series : Non-Captive



24 (60mm) Series : External



24 (60mm) Series : Non-Captive

DINGS'
Precision Motion Specialist

ENG Web

Partners Web

YouTube

HEADQUARTERS

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