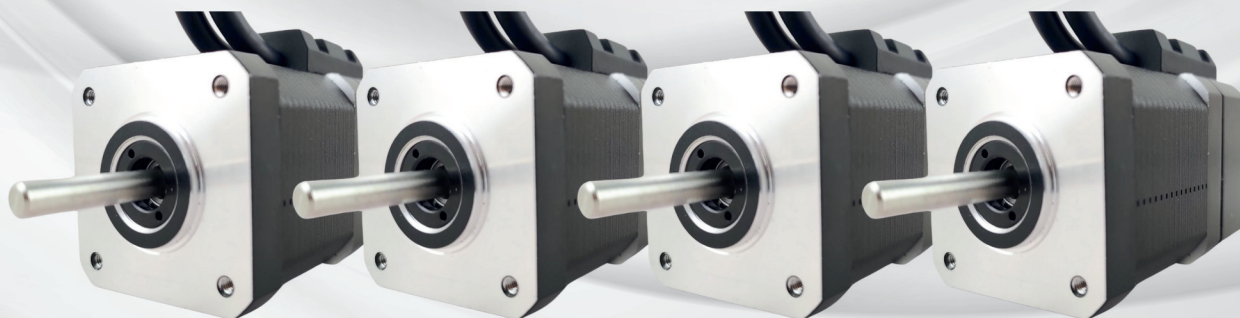




Taiwan Pulse Motion
Inspire New Automation

PRODUCT CATALOGUE



EtherCAT®



Taiwan Pulse Motion
Inspire New Automation



ABOUT TAIWAN PULSE MOTION

DEDICATED TO AUTOMATION | LEADING TECHNOLOGY | TAILORED SOLUTIONS

FOUNDED IN 2009, TAIWAN PULSE MOTION (TPM) IS A LEADING PROVIDER OF AUTOMATION SOLUTIONS, SPECIALIZING IN ETHERCAT® AND MOTIONNET MOTION CONTROL. WE OFFER A COMPREHENSIVE RANGE OF PRODUCTS, INCLUDING MOTION CONTROLLERS/CARDS, OPEN/CLOSED-LOOP MICRO-STEP DRIVERS, DIGITAL/ANALOG I/O, AND MORE, WITH CUSTOMIZED DESIGN SUPPORT. OUR SOLUTIONS SERVE A WIDE RANGE OF INDUSTRIES, INCLUDING INDUSTRIAL AUTOMATION, MACHINERY MANUFACTURING, SEMICONDUCTOR EQUIPMENT, AND AUTOMATED INSPECTION SYSTEMS.



INNOVATIVE R&D

Experienced and Professional R&D Team
Specializing in Applying Cutting-Edge
Technologies to Real-World Solutions



QUALITY & SERVICE

Compliant with International Quality
Management Systems

Providing Comprehensive Technical
Support and After-Sales Service



CUSTOMIZED PROJECT PLANNING

Hardware & Software System Planning
SDK and API Development Support

Product Solution



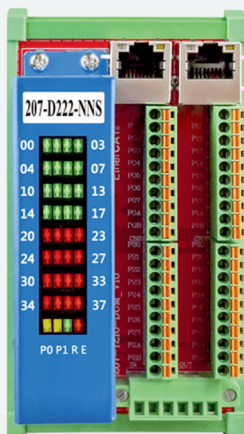
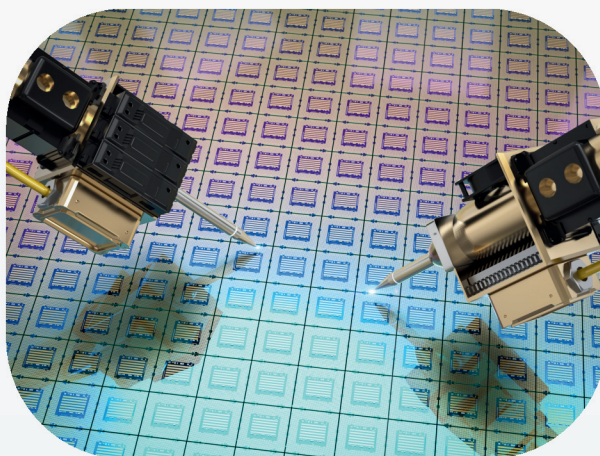
Industrial Application Integration



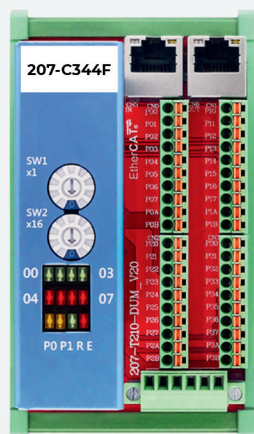
36-Axis Motion
Controller



Closed/Open Loop
Microstepping Drives



Digital / Analog
I/O



Position Comparison
& Trigger Module



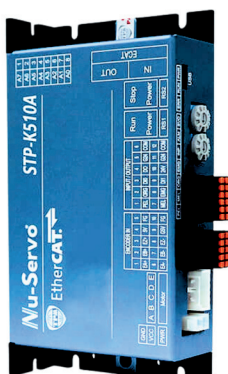
EtherCAT®

New Collection

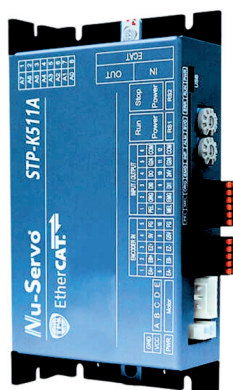
MOTION CONTROL SYSTEM SOLUTION



5-Phase Series



Current: 0.75A



Current: 1.4A

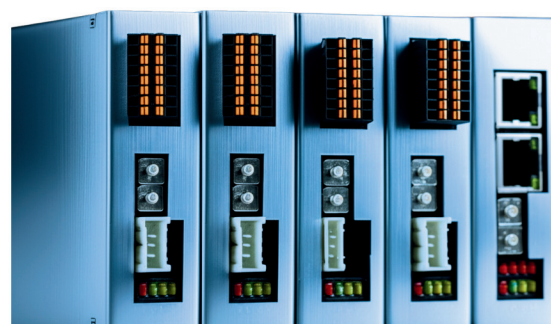


Current: 2.8A



3-Axis Edition

Current 1.4 A/Axis



4-Axis Edition

Current 1.4A/Axis

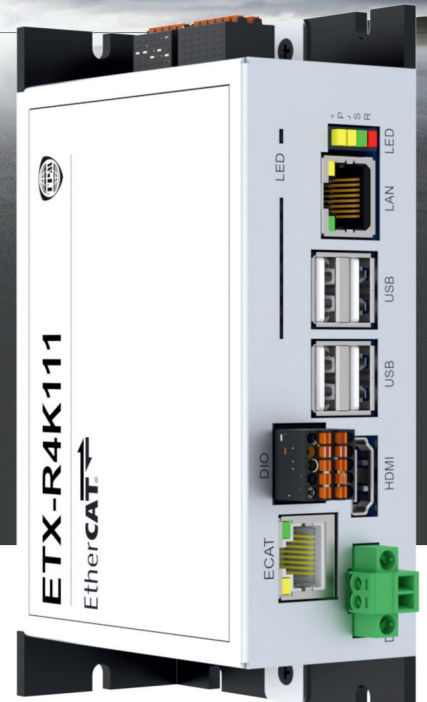


Taiwan Pulse Motion
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EtherCAT®

New Collection

MOTION CONTROLLER



- **Available Axis Control Configurations:** 6, 12, 18, 24, 30, 36 Axes
- **Cross-Platform Compatibility:** Supports both Windows and Linux for seamless integration
- **Powerful Programming Development Capabilities:** Supports C/C++ and C# development environments for enhanced flexibility.
- **Flexible Communication Interface:** Supports standard Ethernet and RS485 interfaces without occupying IPC slots.

- **2-Channel, 32-bit EA/EB Encoder Input:**
Supports CW/CCW and PULSE/DIR modes with a maximum frequency of 4 MHz.
- **Encoder Input** (2 Channels, 32-bit EA/EB): Includes CW/CCW and PULSE/DIR modes, with a maximum frequency of 4 MHz. Supports 4xAB Phase Mode at 9.8 MHz max.
- **Latch Input:** 2 Channels, 1024 Points per Channel, 10 KHz Frequency
- **Latch Input:** 2 Channels with 1024 points per channel, operating at a frequency of 10 KHz.



Trigger Modes

- **Automatic Trigger:** Maximum trigger frequency of 1 MHz with unlimited trigger counts.
- **Table Trigger:** Configurable with up to 4096 points for customized trigger sequences.
- **Toggle Trigger:** Supports configuration of up to 4096 points, offering flexible triggering options.



Taiwan Pulse Motion
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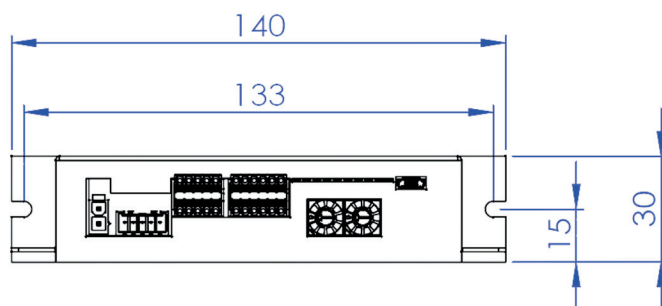
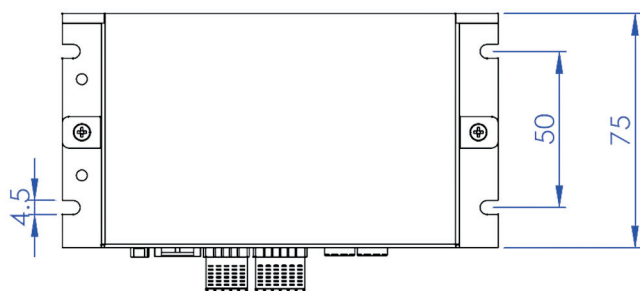
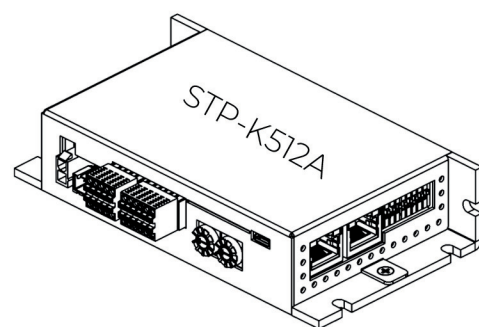
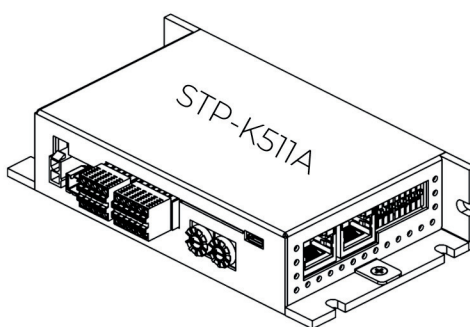
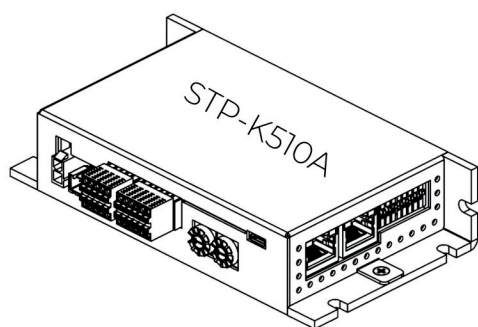
New Collection

5-PHASE STEPPER drives

Hardware Dimensions Coding Principles



S	T	P	-	K	5	1	0	A
Open-Loop Driver				EtherCAT	5-phase	1-Axis	0.75A	w. encoder in
							1	
							1.40A	
							2	
							2.80A	



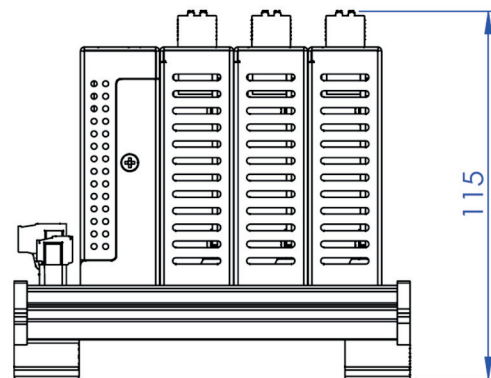
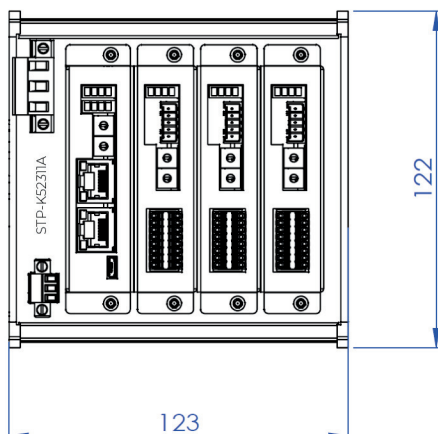
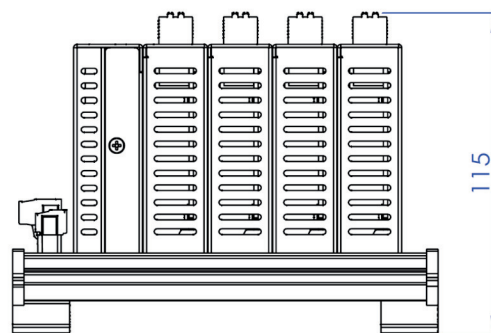
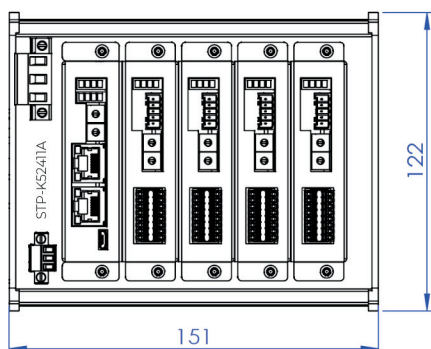
Taiwan Pulse Motion
Inspire New Automation

S-PHASE STEPPER DRIVES

Hardware Dimensions Coding Principles



S	T	P	-	K	5	2	3	1	A
Open-Loop Driver				EtherCAT	5-phase		3-Axis	1.5A	w/ encoder in
S	T	P	-	K	5	2	4	1	A
Open-Loop Driver				EtherCAT	5-phase		4-Axis	1.5A	w/ encoder in



S-PHASE STEPPER drives



	STP-K51xA (x=0,1,2)	STP-K5231A	STP-K5241A
Axis	1	3	4
Distributed Clock	0.5/1/2/4 ms	0.5/1/2/4 ms	0.5/1/2/4 ms
Current	0.75A, 1.4A, 2.8A	1.4A Max	1.4A Max
CiA402 Mode	PP/CSP/Home	PP/CSP/Home	PP/CSP/Home
Reset Mode	EL, ORG and EZ	EL, ORG and EZ	EL, ORG and EZ
Position Setting	8 bit SW or EEPROM	8 bit SW or EEPROM	8 bit SW or EEPROM
Mechanical I/O	PEL, MEL, ORG, EMG	PEL, MEL, ORG, EMG	PEL, MEL, ORG, EMG
General IO	2xDI, 1xDO(BRK)	3xDI, 3xDO(BRK)	4xDI, 4xDO(BRK)
Operating Software Tool	MyDrive	MyDrive	MyDrive

✦ Modular Multi-Axis Drive Design

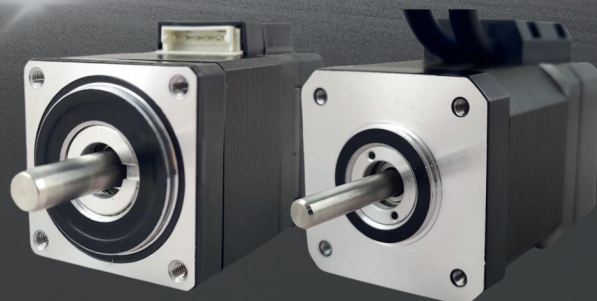
✦ Individual Axis Replacement for Fault Tolerance

✦ Exceptional Smooth Microstepping Control

✦ High Torque Output Stability



5-PHASE STEPPER MOTORS



Hardware Dimensions

PH5



Motor Phase
2: 2-Phase
5: 5-Phase

28



Motor Flange
28 : 28mm
42 : 42mm
56 : 56mm
60 : 60mm
86 : 60mm

M



Motor Length
S: Small
M: Medium
L: Large

D01



Encode Resolution
D01 : 4000 PPR
D10 : 10000 PPR

C



Blank :
Without
Z Phase

C :
With
Z Phase

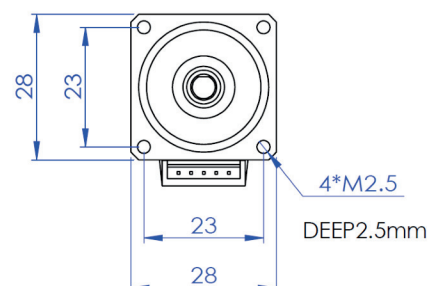
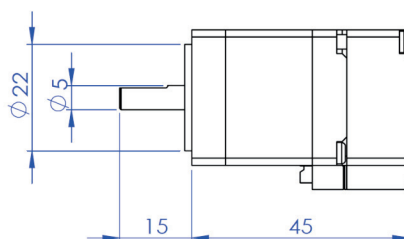
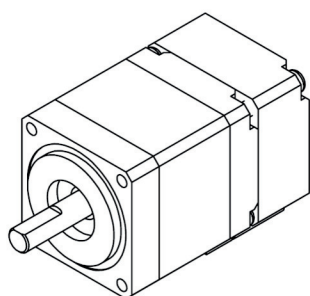
B



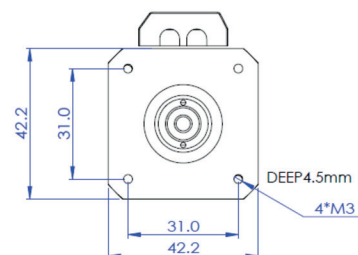
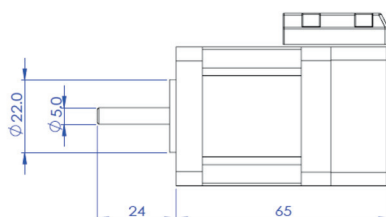
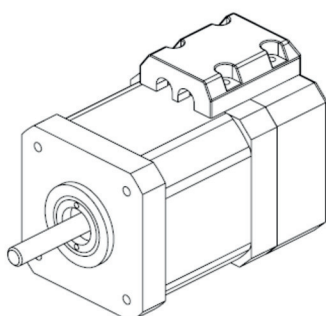
Blank :
Without
Break

B : With
Break

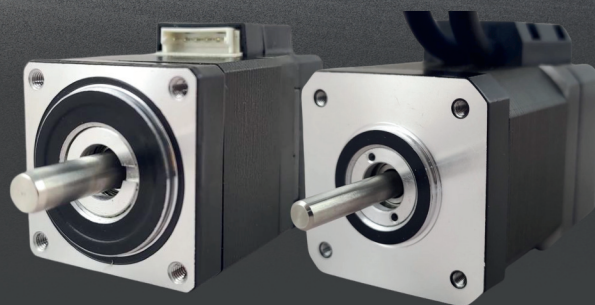
PH5-28S-D01C



PH5-42L-D10C



5-PHASE STEPPER MOTORS

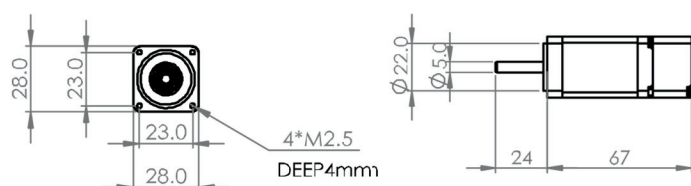


5-Phase Stepper Series

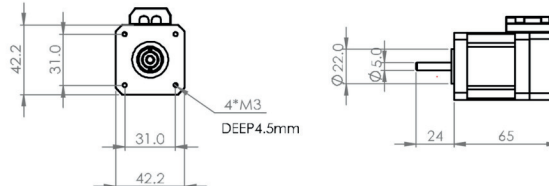
28S Flange & 42L Flange

★ Low Vibration,
Low Noise Design

PH5-28S-D01C

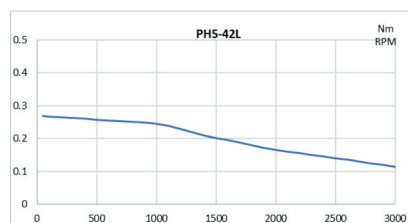
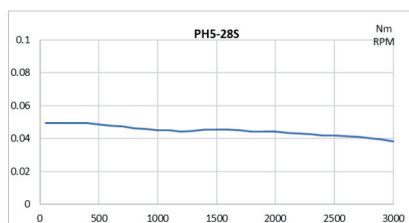


PH5-42L-D10C



5 Phase	Unit	PH5-28S-D01C	PH5-42L-D10C
Length	L-mm	46	68
Current	A/Ø	1.2	0.75
Resistance	Ω/Ø	0.56	1.9
Inductance	mH/Ø	1.8	1.6
Holding Torque	N.M	0.05	0.24
Rotor Inertia	g.cm2	9	68
Encoder	PPR	ABZ, 4000	ABZ, 10000

Torque Characteristics Diagram



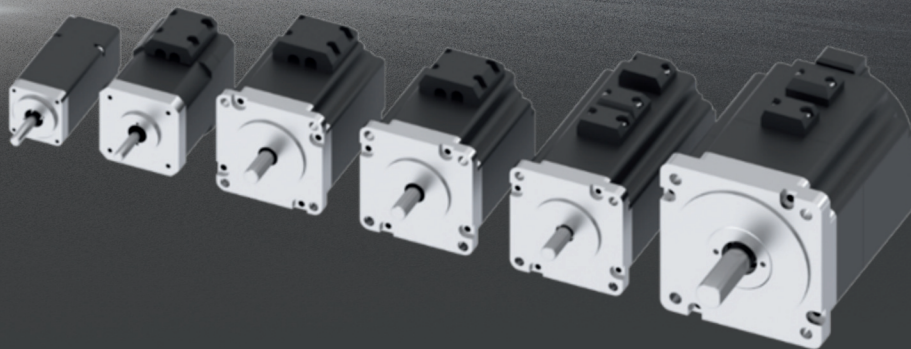
Taiwan Pulse Motion
Inspire New Automation



5-PHASE STEPPER drive SYSTEM COMPARISON TABLE

5-Phase	Unit	PH5-28S-D01C	PH5-42L-D10C
Length	L-mm	46	68
Current	A/Ø	1.2	0.75
Impedance	$\Omega/\emptyset$	0.56	1.9
Inductive Reactance	mH/Ø	1.8	1.6
Holding Torque	N.M	0.05	0.24
Rotational Inertia	g.cm ²	9	68
Encoder Resolution	PPR	ABZ, 4000	ABZ, 10000
Corresponding Driver Model		1-Axis STP-K510A (0.75A) 1-Axis STP-K511A (1.4A) 1-Axis STP-K512A (2.8A) 4-Axis STP-K5231A (1.4A/Axis) 4-Axis STP-K5241A (1.4A/Axis)	1-Axis STP-K510A (0.75A) 1-Axis STP-K511A (1.4A) 4-Axis STP-K5231A (1.4A/Axis) 4-Axis STP-K5241A (1.4A/Axis)
Wiring for Motor/Encoder		STP5 Motor Flex Cable, 3M STP2/5 Encoder Flex Cable (Open), 3M	STP5 Motor Flex Cable, 3M STP2/5 Encoder Flex Cable (Open), 3M

2-PHASE STEPPER MOTORS



PH2

|

Motor Phase
2: 2-Phase
5: 5-Phase

28

|

Motor Flange
28 : 28mm
42 : 42mm
56 : 56mm
60 : 60mm
86 : 60mm

M

|

Motor Length
S: Small
M : Medium
L : Large

D01

|

Encoder Resolution
D01 : 4000 PPR
D10 : 10000 PPR

C

|

Blank :
Without Z-Phase

C :
With Z-Phase

B

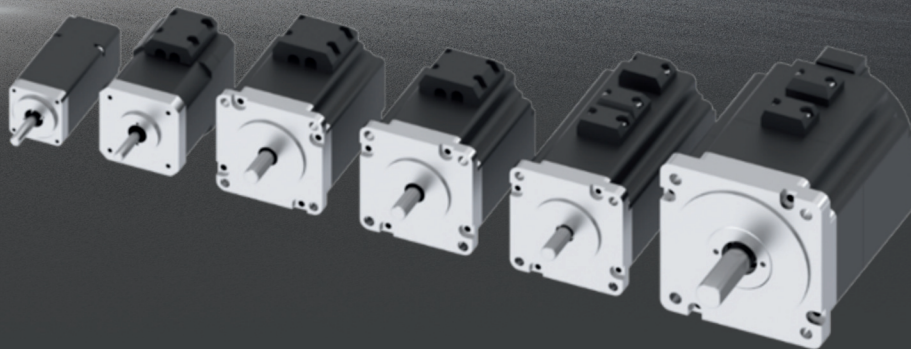
|

Blank :
Without Break

B :
With Break

2-Phase	Unit	PH2-28M-D10C	PH2-42M-D01C	PH2-42L-D10C	PH2-42L-D10C-B
Length	L-mm	68	58	68	100
Current	A/Ø	0.6	1.3	1.3	1.3
Impedance	Ω/Ø	9	2.5	3.2	3.2
Inductive Reactance	mH/Ø	7.2	5	5.5	5.5
Holding Torque	N.M	0.1	0.4	0.52	0.52
Rotational Inertia	g.cm ²	13	54	68	68
Encoder Resolution	PPR	ABZ, 4000	ABZ, 10000	ABZ 10000	ABZ, 10000

2-PHASE STEPPER MOTORS



PH2



Motor Phase
2: 2-Phase
5: 5-Phase

28



Motor Flange
28 : 28mm
42 : 42mm
56 : 56mm
60 : 60mm
86 : 60mm

M



Motor Length
S: Small
M : Medium
L : Large

D01



Encoder Resolution
D01 : 4000 PPR
D10 : 10000 PPR

C



Blank :
Without Z-Phase

C :
With Z-Phase

B

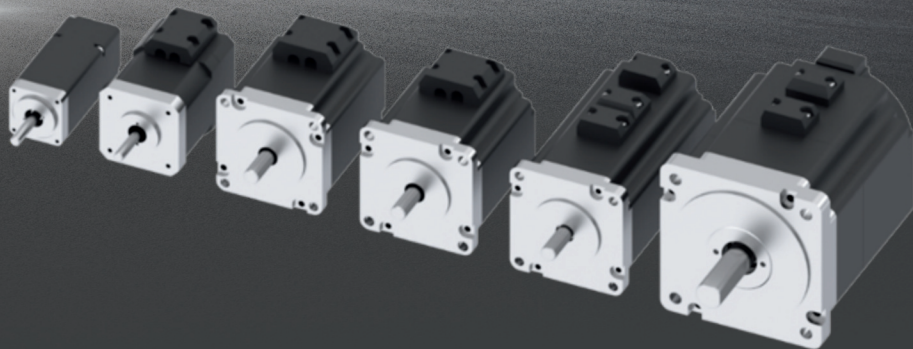


Blank :
Without Break

B :
With Break

2-Phase	Unit	PH2-56S-D10C	PH2-56M-D10C	PH2-56L-D10C	PH2-56M-D10C-B
Length	L-mm	68	72	94	110
Current	A/Ø	2.5	3	3	3
Impedance	Ω/Ø	1	0.8	1	0.8
Inductive Reactance	mH/Ø	2.2	2.4	3.5	2.4
Holding Torque	N.M	0.8	1.1	1.8	1.1
Rotational Inertia	g.cm2	190	280	440	280
Encoder Resolution	PPR	ABZ, 10000	ABZ, 10000	ABZ, 10000	ABZ, 10000

2-PHASE STEPPER MOTORS



PH2

|
Motor Phase
2: 2-Phase
5: 5-Phase

28

|
Motor Flange
28 : 28mm
42 : 42mm
56 : 56mm
60 : 60mm
86 : 60mm

M

|
Motor Length
S: Small
M : Medium
L : Large

D01

|
Encoder Resolution
D01 : 4000 PPR
D10 : 10000 PPR

C

|
Blank :
Without Z-Phase

C :
With Z-Phase

B

|
Blank :
Without Break

B :
With Break

2-Phase	Unit	PH2-60M-D10C	PH2-60M-D10C-B	PH2-60L-D10C	PH2-86M-D01C-B	PH2-86M-D01C-B
Length	L-mm	74	110	108	84	125
Current	A/Ø	4.2	4.2	4.2	5.6	5.6
Impedance	Ω/Ø	0.4	0.4	0.8	0.3	0.3
Inductive Reactance	mH/Ø	1.2	1.2	3	1.6	1.6
Holding Torque	N.M	1.6	1.6	2.6	3.1	3.1
Rotational Inertia	g.cm2	350	350	780	850	850
Encoder Resolution	PPR	ABZ, 10000	ABZ, 10000	ABZ, 10000	ABZ, 10000	ABZ, 10000

2-PHASE STEPPER drives



Microstepping Driver and Stepper Motor Selection Table

Model	STP-K111A	STP-K112A	STP-K221A	STP-K2231A	STP-K2241A	SVR-K2312
Axis	1	1	2	3	4	1
Control Mode	Open-loop	Open-loop	Open-loop	Open-loop	Open-loop	Closed-loop
Drive Current (MAX)	2.8A	4.2A	2.1A	1.5A/Axis	1.5A/Axis	4.2A/Axis

Model	PH2-28M-D10C	PH2-42M-D01C	PH2-42L-D10C	PH2-42L-D10C-B
Open-Loop 1-Axis	STP-K111A	STP-K111A	STP-K111A	STP-K111A
Open-Loop 2-Axis	STP-K221A	STP-K221A	STP-K221A	STP-K221A
Open-Loop 3-Axis	STP-K2231A	STP-K2231A	STP-K2231A	STP-K2231A
Open-Loop 4-Axis	STP-K2241A	STP-K2241A	STP-K2241A	STP-K2241A
Closed-Loop 1-Axis	SVR-K2312	SVR-K2312	SVR-K2312	SVR-K2312

2-PHASE STEPPER drives



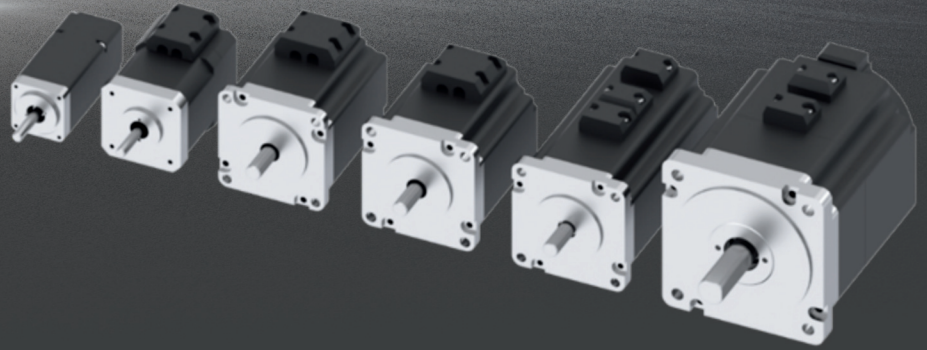
Microstepping Driver and Stepper Motor Selection Table

Model	STP-K111A	STP-K112A	STP-K221A	STP-K2231A	STP-K2241A	SVR-K2312
Axis	1	1	2	3	4	1
Control Mode	Open-Loop	Open-Loop	Open-Loop	Open-Loop	Open-Loop	Closed-loop
Drive Current(MAX)	2.8A	4.2A	2.1A	1.5A	1.5A	4.2A

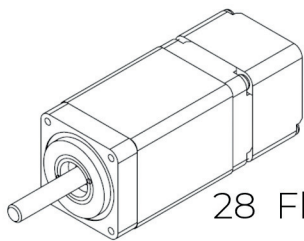
Motor Drive	PH2-56S-D10C	PH2-56M-D10C	PH2-56L-D10C	PH2-56M-D10C-B
Open-loop 1-Axis	STP-K111A	STP-K112A	STP-K112A	STP-K112A
Closed-loop 1-Axis	SVR-K2312	SVR-K2312	SVR-K2312	SVR-K2312

Motor Drive	PH2-60M-D10C	PH2-60M-D10C-B	PH2-60L-D10C	PH2-86M-D10C	PH2-86M-D01C-B
Open-loop 1-Axis	STP-K112A	STP-K112A	STP-K112A	STP-K112A	STP-K112A
Closed-loop 1-Axis	SVR-K2312	SVR-K2312	SVR-K2312	SVR-K2312	SVR-K2312

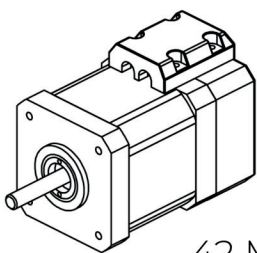
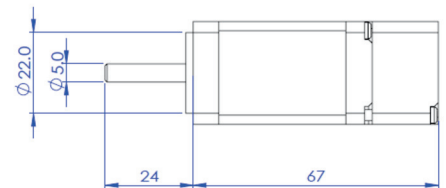
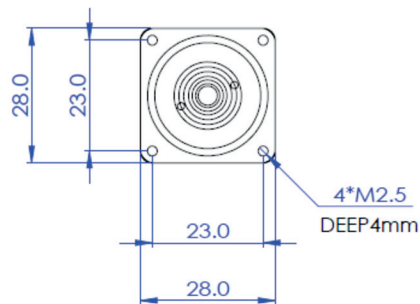
2-PHASE STEPPER MOTORS



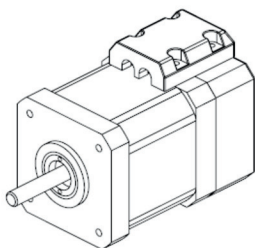
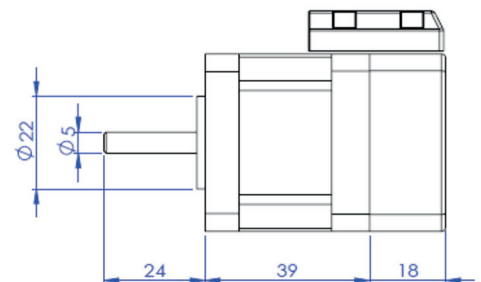
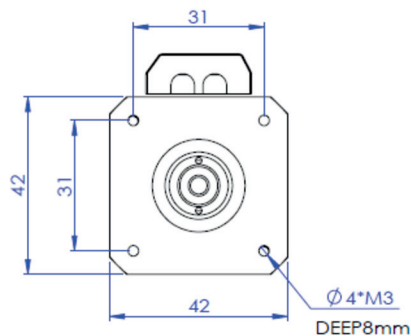
Dimensions



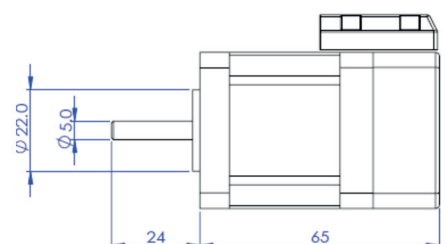
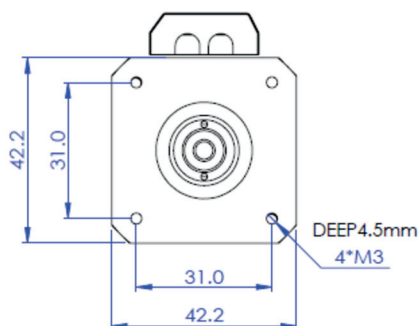
28 Flange



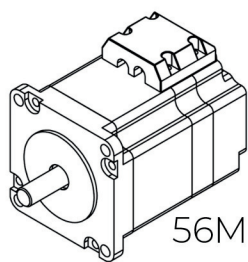
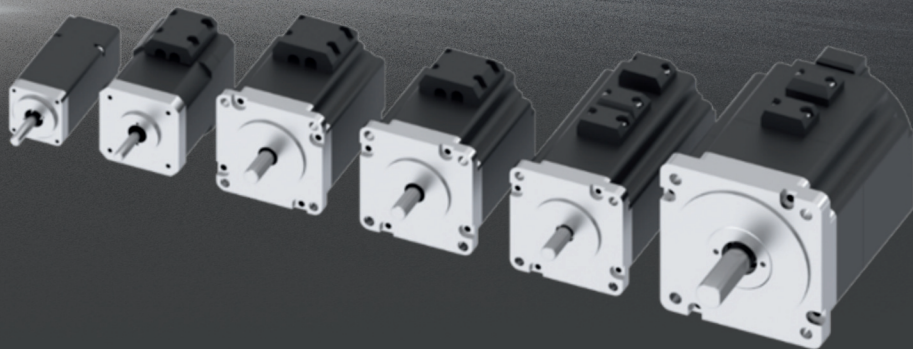
42 M Flange



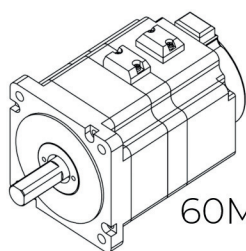
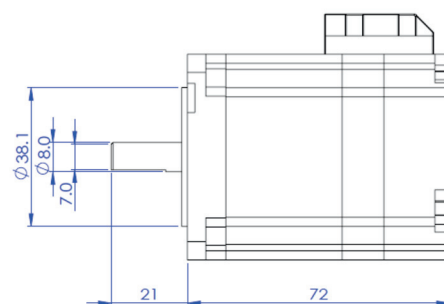
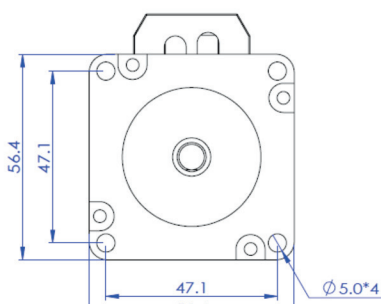
42 L Flange



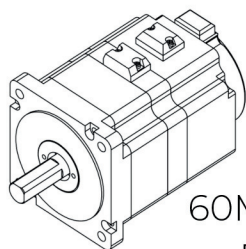
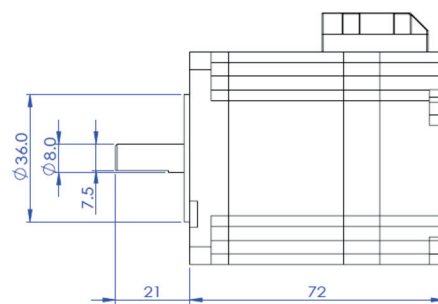
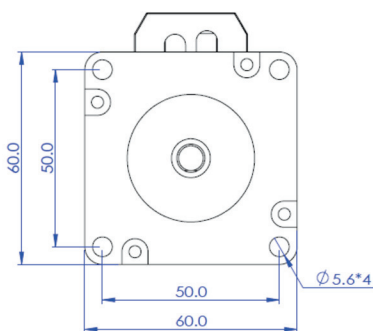
2-PHASE STEPPER MOTORS



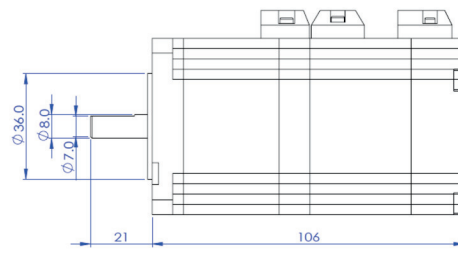
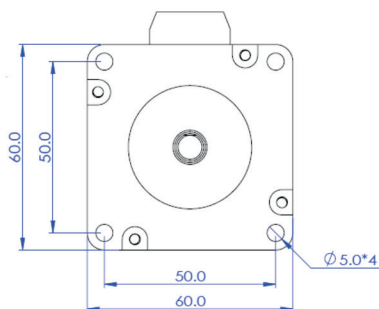
56M Flange



60M Flange



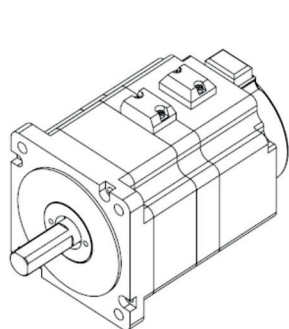
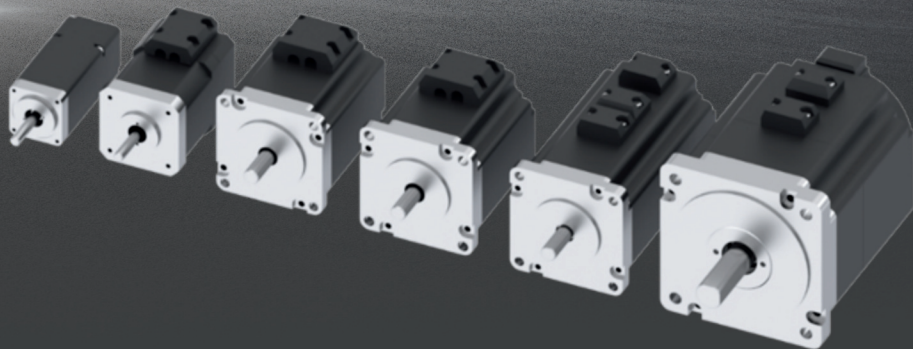
60M (Break)
Flange



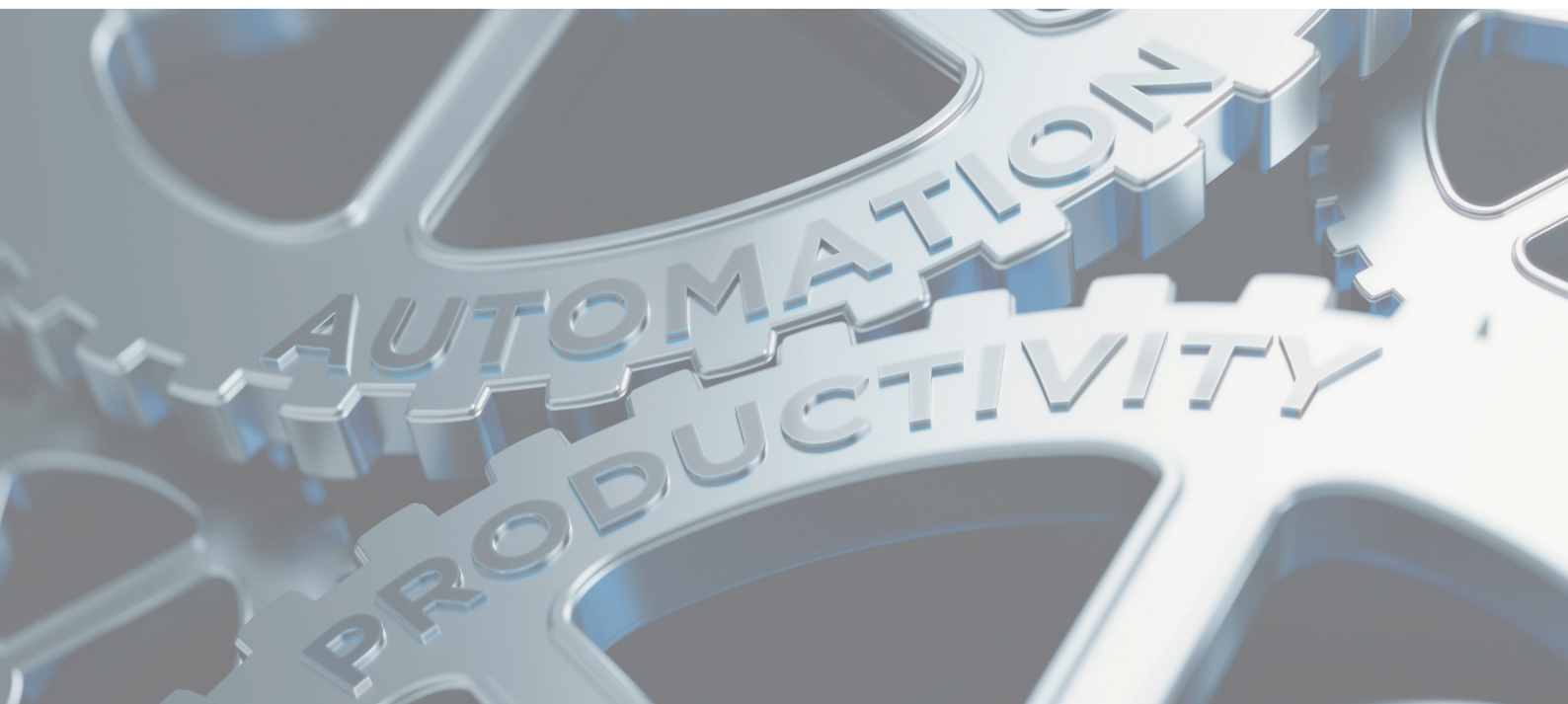
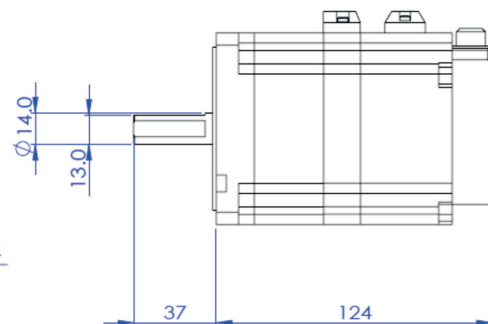
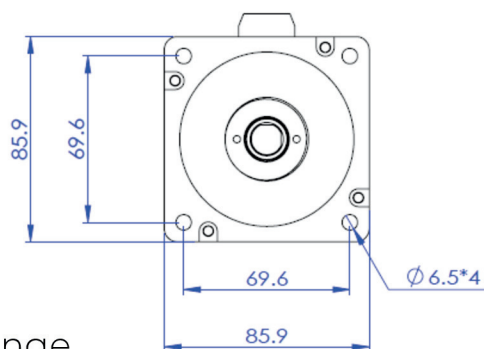
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2-PHASE STEPPER MOTORS

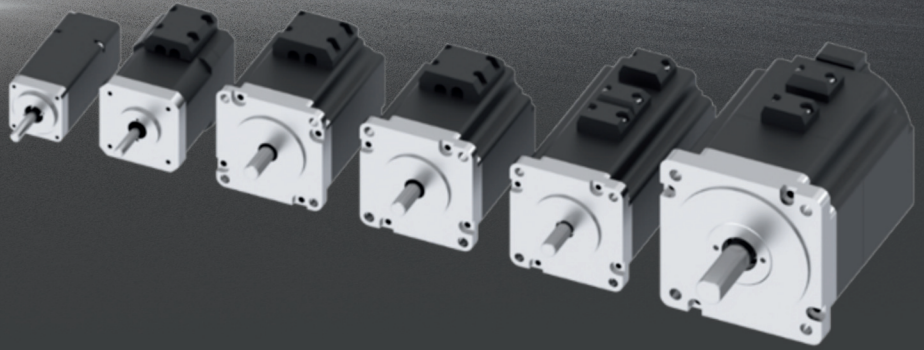


86 M (Break) Flange

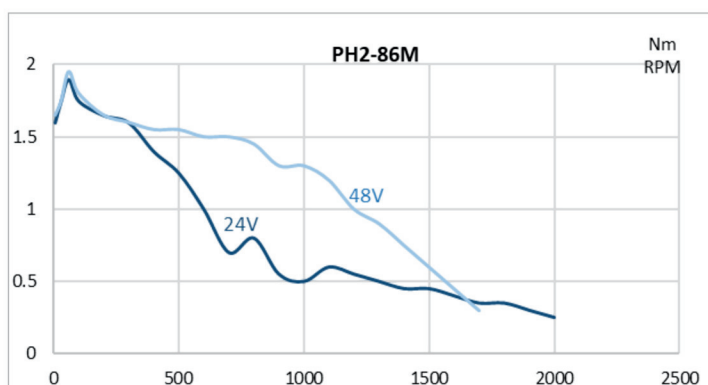
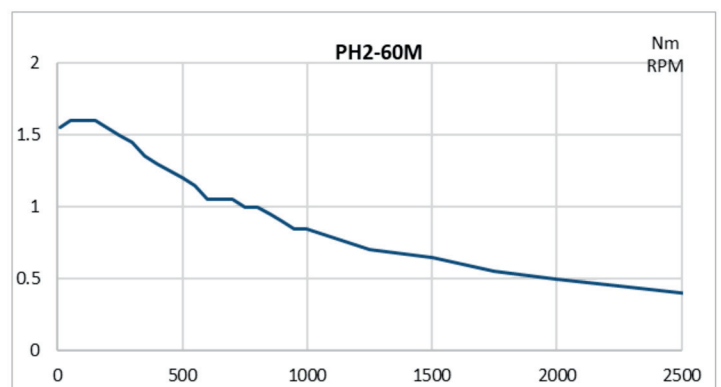
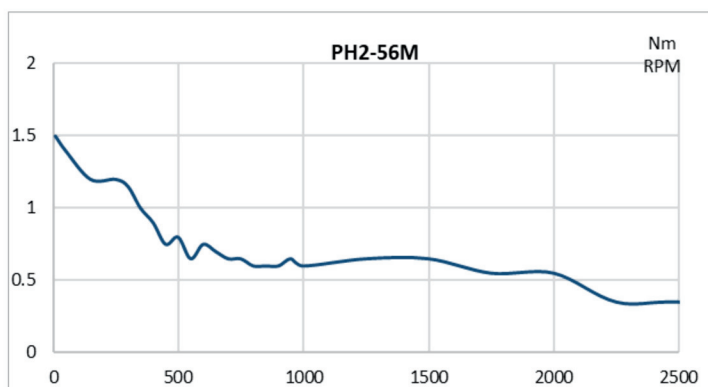
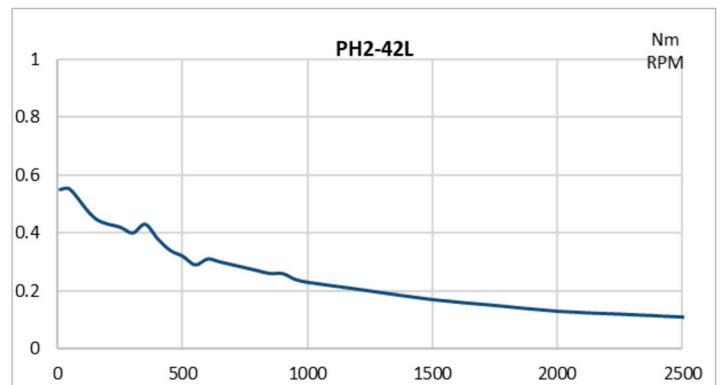
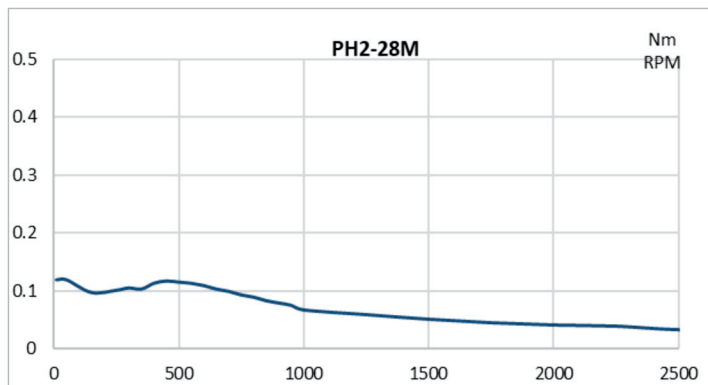


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2-PHASE STEPPER MOTORS



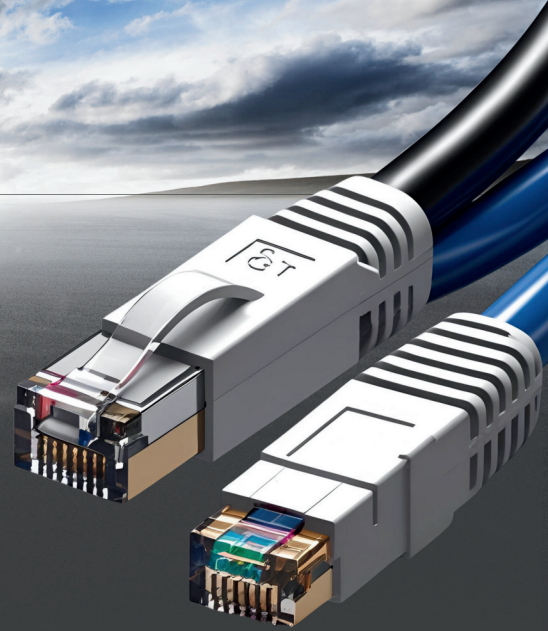
Torque Characteristics Curve



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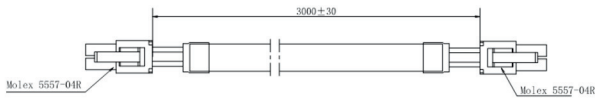
New Collection

ACCESSORIES

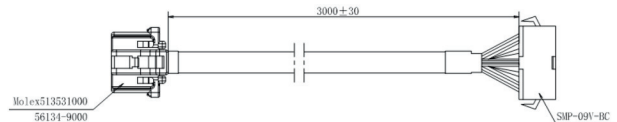


2-Phase Stepper Motor Wiring

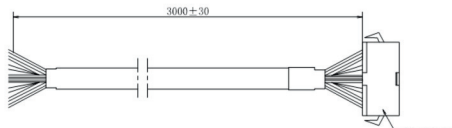
SVR/STP2 Motor Flex Cable – Motor Connection
Apply to STP-K111A, STP-K112A, STP-K221A, STP-K2241A, SVR-K2312



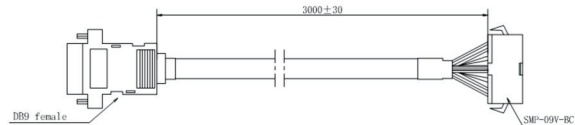
SVR2 Encoder Flex2 Cable – Encoder Connection
Apply to SVR-K2312



STP2 Encoder Flex Cable (Open) – Encoder Connection
Apply to STP-K2231A, STP-K2241A

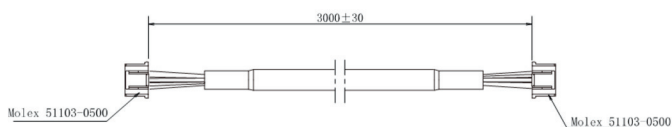


SVR2 Encoder Flex Cable (DB9) – Encoder Connection
Apply to STP-K111A, STP-K112A, STP-K221A

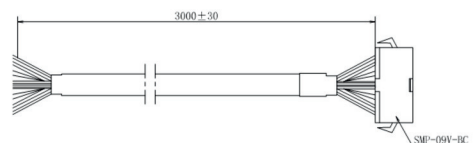


5-Phase Stepper Motor Wiring

STP5 Motor Flex Cable – Motor Connection

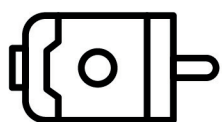


STP5 Encoder Flex Cable (Open) – Encoder Connection

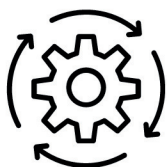


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precision positioning INTELLIGENT COMPENSATION



Closed-Loop Control: Achieves Real-Time Step Loss Compensation, Significantly Enhancing Positioning Accuracy and System Stability



Compatible with External Optical Scales (Incremental Type Supported), Enabling Feedback of Actual Mechanical Movement Position for Closed-Loop Control, Significantly Reducing Positioning Errors to Meet High Precision Requirements.



High-Speed Motion Stability, Precise Aerial Imaging

Suppressing Vibration and Positional Shifts to Ensure Stable Imaging During Motion, Significantly Enhancing Inspection Efficiency and Repeatability.



Note



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