Leading the Way with Intelligent Motion Control

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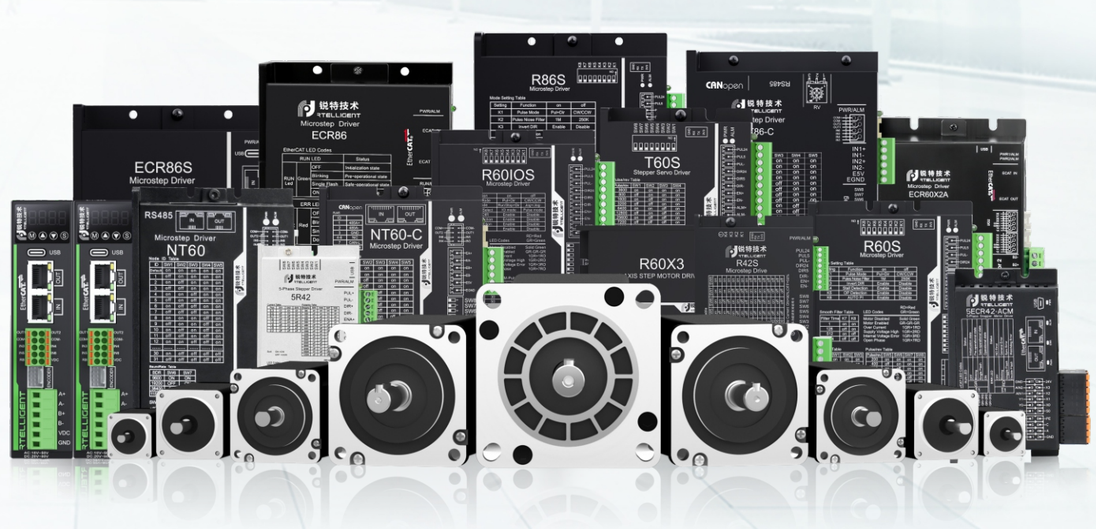
RTELLIGENT

MOTION CONTROL PRODUCTS CATALOGUE

RTELLIGENT

Leading the Way with Intelligent Motion Control

MOTION CONTROL PRODUCTS CATALOGUE (STEPPER SYSTEM)



MOTION CONTROL PRODUCTS CATALOGUE

Shenzhen Rtelligent Technology Co.,Ltd

About Us

Shenzhen Rtelligent Technology Co., Ltd., located in Shenzhen, China, is a national high-tech enterprise dedicated in R & D, marketing and sales of high performance motion control products based on latest control technologies.

Since its establishment in 2015, the management has been focusing on the field of industrial automation. Our main products include servo system, stepper system, motion control card, etc., which are widely used in high-end intelligent manufacturing indutries such as 3C electronics, new energy, logistics, semiconductor, medical , CNC laser processing , etc.

Rtelligent adheres to deeply understand and meet customer demand, always takes reliable quality and leading technology as its core competitiveness, attaches great importance to and continuously increases R&D investment. At present, it has more than 60 patents for invention, utility model, copyright, trademark information, etc; The products have passed CE and other product quality & safety certification.

Founded in **2015**

2 Major production bases

30+ Offices in China

60+
Core Technology Patents

70+
Sales Countries And Regions

100+
Distributors

10000+
Sales Customers

5million+
Stepper Servo Sales Volume

Management Idea

Strive for innovation and excellence

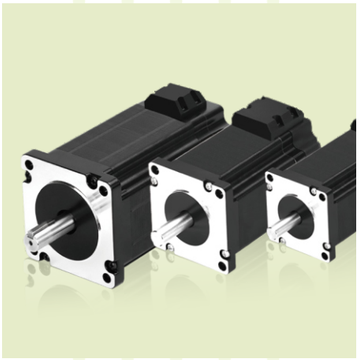
Talent Concept

Great virtue promotes growth, put people first

Quality Policy

Customer first, quality first, full participation, the pursuit of excellence

CONTENTS



| Motion Control System Solutions Map

Information

ROS · R-AI · SCADA · MES · ERP

Display

IPC · PC · HMI · TP · VTC

Motion Control


Medium and large bus PLC


Mini pulse type PLC


Motion controller

Coupler


IO module


Integrated I/O module

SIEMENS · KEYENCE · Rockwell Automation · BECKHOFF · OMRON · MITSUBISHI ELECTRIC

Compatible with most of control master stations from manufacturers around the world (PLC/PAC/Motion Controller)

Bus Communication

EtherCAT · EtherNet/IP · Modbus RTU · Modbus TCP · CANopen · PROFINET · IO

Stepper & Servo Drive



Stepper drive


AC servo drive


Low voltage servo drive

Stepper & Servo Motor



Stepper motor


AC servo motor


Low voltage servo motor

Transmission Products


Linear module


Hollow rotary actuator


Linear stage


Gear box


Electric screwdriver

Sensing


Encoder


Industrial Camera


Temperature Sensor


Limit Sensor

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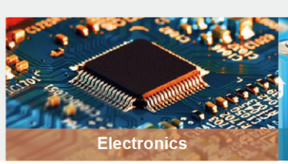
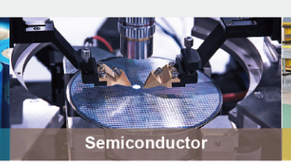
Application


Electronics


Lithium battery industry

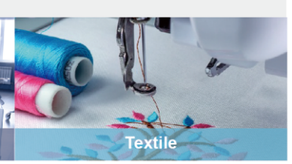

Semiconductor


Logistics & Warehousing


Photovoltaic industry


CNC laser processing


Biomedical


Textile

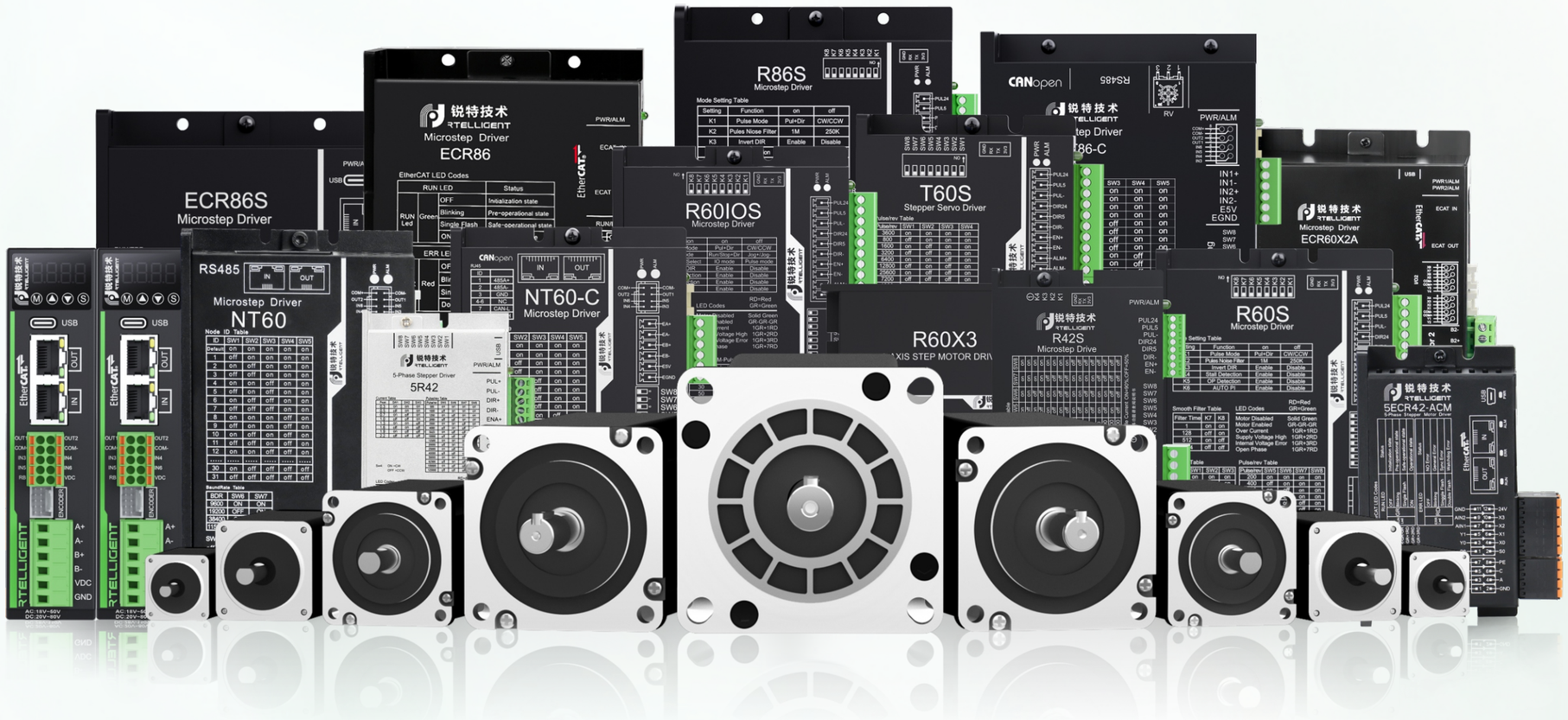
STEPPER SYSTEM

EtherCAT®

CANopen®

Modbus

EtherNet/IP™



ES Series

Bus-type Stepper Drive

EtherCAT

CANopen

EtherNet/IP

RTELLIGENT

Upgraded version

Naming Rule

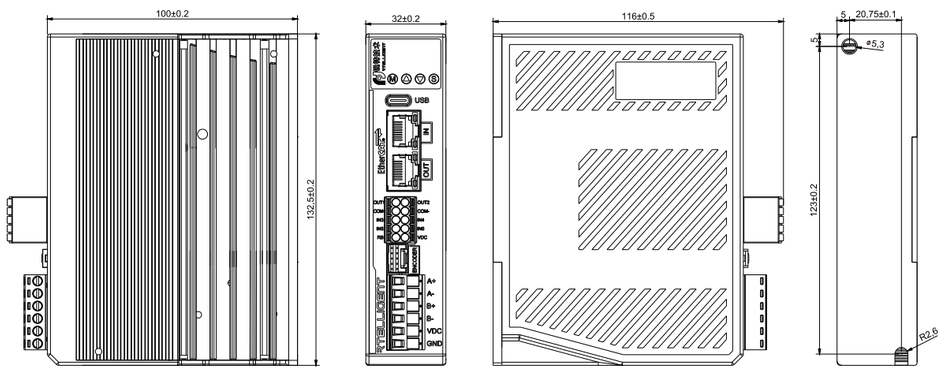
E	S	T	60
1	2	3	4

1 Bus-type	2 S upgraded version
3 T: closed loop	4 Matching motor frame size

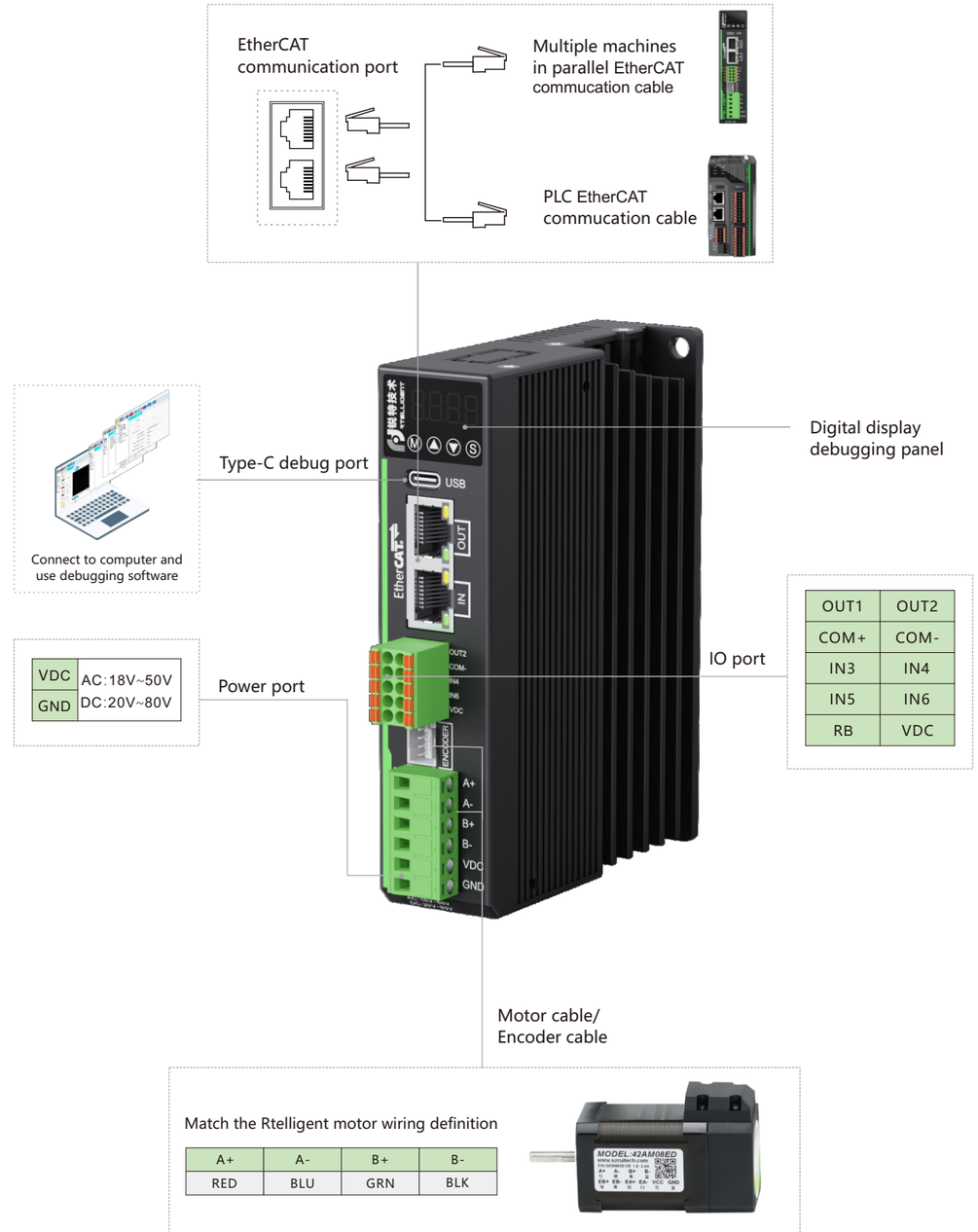
Product Parameter

Model	EST60
Bus protocol	EtherCAT CANopen EtherNet/IP available for option
Voltage range	20-80VDC，18-50VAC
Output current	0.5~6.0A
Matching motor	stepper motor below Nema 24
Photoisolated input	4 common-anode 24V inputs
Photoisolated output	2 photoelectric isolation output: alarm, in place and universal output
Encoder resolution	0-65535
Communication interface	double RJ45
Brake interface	No additional relay control is required
Debugging interface	Type-C

Installation Dimension



Port Distribution



VDC	AC:18V~50V
GND	DC:20V~80V

OUT1	OUT2
COM+	COM-
IN3	IN4
IN5	IN6
RB	VDC

EC Series Bus-type Stepper Drive

Rtelligent EC Series Economical EtherCAT Bus Stepper Drive, based on the CoE (CANopen over EtherCAT) standard framework, complies with the CiA402 standard. With a data transmission rate of up to 100 Mb/s, it supports linear, ring, and other network topologies. The product lineup includes single-axis, dual-axis, two-in-one, and multi-axis integrated types to meet the demands of various working conditions.

EtherCAT

01
matching motor frame below 86

02
Comply with the CiA402 specification

03
Support multiple internal homing

04
The synchronization period is 500μs

05
Support CSP/CSV/HM /PP/PV control mode

06
Support multi axis

Naming Rule

EC T 60 – □
1 2 3 4

1 Fieldbus type N: 485 communication EC: EtherCAT communication	2 Series code R: open loop T: closed loop
3 Matching motor frame size	4 Non-standard code

*Model naming rules are only used for model meaning analysis. For specific optional models, please refer to the details page.

Technical Specifications

Model	Peak current A	Weight kg	Input voltage	Dimensions mm	Input and output	Matching motor
ECR42	6.0	0.4	18-80VDC	132×82×29	Six inputs, two outputs	open loop below 42mm
ECR60	6.0	0.4	18-80VDC	132×82×29	Six inputs, two outputs	open loop below 60mm
ECR86	7.2	0.6	18-80VAC	151×97×35	Six inputs, two outputs	open loop below 86mm
ECT42	6.0	0.4	18-80VDC	132×82×29	Four inputs, two outputs	closed loop below 42mm
ECT60	6.0	0.4	18-80VDC	132×82×29	Four inputs, two outputs	closed loop below 60mm
ECT86	7.2	0.6	18-80VAC	151×97×35	Four inputs, two outputs	closed loop below 86mm
ECR60X2A	6.0	0.5	18-80VDC	175×98×33	Eight inputs, four outputs	open loop below 60mm
ECT60X2	6.0	0.5	18-80VDC	175×98×33	Eight inputs, four outputs	closed loop below 60mm

General Master Stations Supported

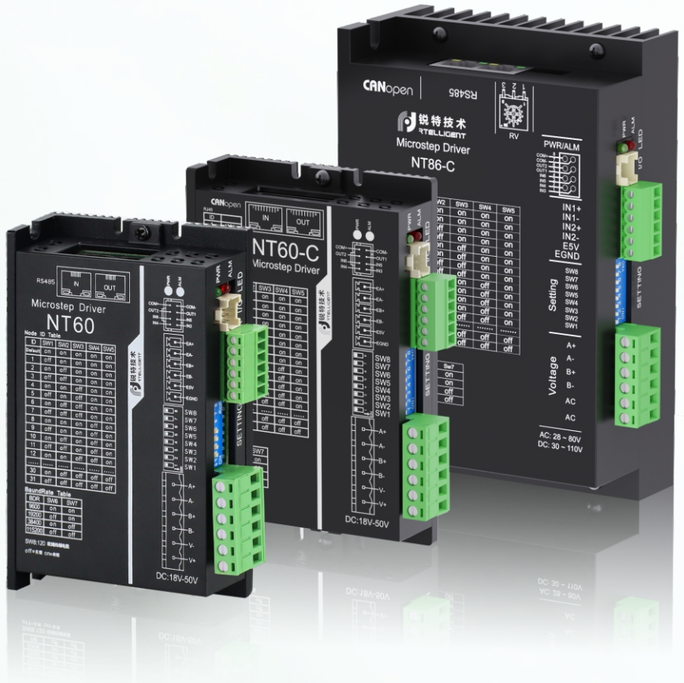
BECKHOFF · OMRON · KEYENCE 基恩士 · CODESYS · Zmotion 正运动技术 · INOVANCE · DELTA 台达 · XINJE · • • •

NT Series Integrated Stepper Drive

The NT series stepper drive integrates intelligent motion control functions. Combined with external IO control, it can achieve functions such as constant speed, positioning, multi-segment position, and automatic homing.

CANopen

Modbus RTU



01
Matching motor frame below 86

02
Integrates the function of motion controller

03
Communication control

04
Support multiple internal homing

05
Switch control

06
Supports up to 31 slave stations

Naming Rule

N T 60 – C

1 Fieldbus type
N: integrated drive & control

2 Series code
T: with encoder interface

3 Matching motor frame size

4 Non-standard code
C: CANopen

*Model naming rules are only used for model meaning analysis. For specific optional models, please refer to the details page.

Basic Spec of RS485 Communication Drive

Model	Peak current A	Weight kg	Power voltage	Dimensions mm	Communication mode	Maximum baud rate	Matching motor
NT60	6	0.3	18-50VDC	118×76×33	485	115200	Open loop or closed loop below 60mm
NT86	8	0.6	18-80VAC	151×97×52	485	115200	Open loop or closed loop below 86mm

Basic Spec of CAN Communication Drive

Model	Peak current A	Weight kg	Power voltage	Dimensions mm	Communication mode	Maximum baud rate	Matching motor
NT60-C	6	0.3	18-50VDC	118X76X25	CANopen	1Mbps	Open loop or closed loop below 60mm
NT86-C	8	0.6	24-110VDC	151X97.5X52	CANopen	1Mbps	Open loop or closed loop below 86mm

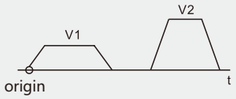
How to Use

PLC Master Station + NT Drive Slave Station

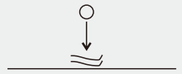
Touch Screen Master + NT Drive Slave

Automatic Programming Mode

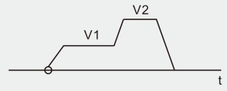
IO positioning operation
- IO forward and revers
- One or more target position
- Support torque homing



IO torque mode
- IO forward and reverse
- Target torque switching
- Support torque homing



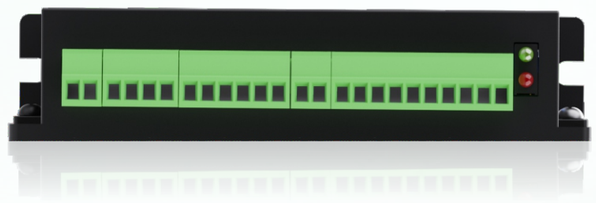
IO speed control operation
- IO forward and reverse
- One or more target position



IO torque mode
- IO forward and reverse
- Target torque and position switching
- Support torque homing

Upgraded version

New Generation of Stepper System S Series



Naming Rule

R	60	IO	S
1	2	3	4

1 R: open loop T: closed loop	2 Matching motor frame size
3 IO: switch control IR: potentiometer type Default: pulse type	4 Upgraded version

*Model naming rules are only used for model meaning analysis. For specific optional models, please refer to the details page.

T-S Series Closed Loop Pulse Control Stepper Drives

T-S series is an upgraded version of the closed-loop stepper driver launched by Rtelligent and the product design idea is derived from the company's accumulation in the field of stepper drive for many years. With a new architecture and algorithm, the new generation of stepper drive effectively reduces the low-speed resonance amplitude of the motor, has a stronger anti-interference ability, while supporting sensorless stall detection, phase alarm, lock output and other functions, support a variety of pulse command forms, multiple dip setting functions.

01
Auto tuning

02
Low speed vibration suppression

03
Sensorless stall detection

04
PUL+DIR/CW+CCW/QEP

05
Multiple dip setting

06
Brake output

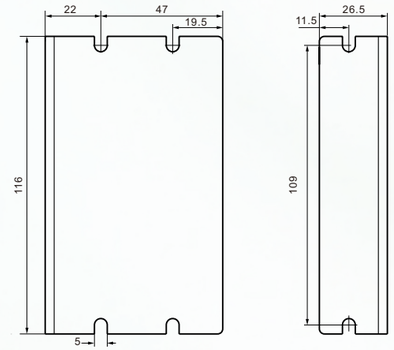
07
Missing phase alarm

08
5V/ 24V pulse command independent

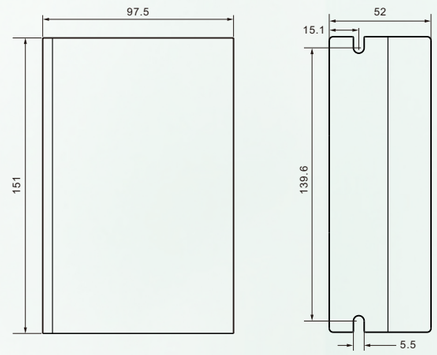
Product Parameter

Model No.	T42S	T60S	T86S
Product Photo			
Voltage range	18~50VDC	18~50VDC	28~110VDC
AC input	Non suport	Non suport	20~80VAC
Current range	2000mA	6000mA	8000mA
Matching motor	Closed loop motor below 42mm	Closed loop motor below 60mm	Closed loop motor below 86mm
Brake interface	Directly connect the brake wire		
Debugging interface	Serial port TTL3.3V		
Extended dip	8 Bit		
Alarm output	1		
Pulse command voltage	5V/24V independent port		
Pulse width setting	Software setting		
Direction inversion	Dip setting		
Instruction filter	Dip setting		
Pulse mode setting	PUL+DIR/CW+CCW dip setting		
working mode	Open loop/Closed loop dip setting		

Installation Dimension



T60S



T86S

Port Distribution

Debugging interface

Identification	Instructions
3V3	When the drive is running normally, this 3V3 port should not provide external power. Otherwise, the operation performance and reliability of the motor will be affected
TX	RXD port to be connected to the debug cable
RX	TXD port to be connected to the debug cable
GND	GND port that needs to be connected to the debug cable

Extended parameter dip switch

SW1	Pulse/rev
SW2	Pulse/rev
SW3	Pulse/rev
SW4	Pulse/rev
SW5	Motor dir
SW6	Pulse filter
SW7	Pulse mode
SW8	Run mode

LED indication

Pulse signal
Direction signal
Enable signal
Alarm output*

Encoder

EB+	Encoder difference B+
EB-	Encoder difference B-
EA+	Encoder difference A+
EA-	Encoder difference A-
+5V	RS485 B
GND	—

Motor cable

Motor brake

Power input interface

T60S	T86S	Name
V+	AC	Positive pole
V-	AC	Negative pole

Motor brake

BRK+	Brake positive
BRK-	Brake negative

Matching motor connection definition

A+	A-	B+	B-
RED	BLU	GRN	BLK

Note:
1. The polarity of the power supply of the T60S product cannot be reversed, otherwise the product will be damaged; T86S products can be connected to AC and DC.
2.+5V is only for encoder use, not for other loads, otherwise it may damage the driver, maximum output current 100mA.
3. Direct access to the driver without additional relay control, making the closed-loop control more reliable.

Micro-stepping Setting

Pulse/rev		SW1	SW2	SW3	SW4
T60S	T86S				
3600	400	on	on	on	on
800	800	off	on	on	on
1600	1600	on	off	on	on
3200	3200	off	off	on	on
6400	6400	on	on	off	on
12800	12800	off	on	off	on
25600	25600	on	off	off	on
7200	51200	off	off	off	on
1000	1000	on	on	on	off
2000	2000	off	on	on	off
4000	4000	on	off	on	off
5000	5000	off	off	on	off
8000	8000	on	on	off	off
10000	10000	off	on	off	off
20000	20000	on	off	off	off
40000	40000	off	off	off	off

Function Selection

Setting	Function	on	off
SW5	Motor dir	CW	CCW
SW6	Pulse filter	Enable	Disable
SW7	Pulse mode	CW/CCW	PUL/DIR
SW8	Run mode	Steeper	Servo

Control Signal Interface

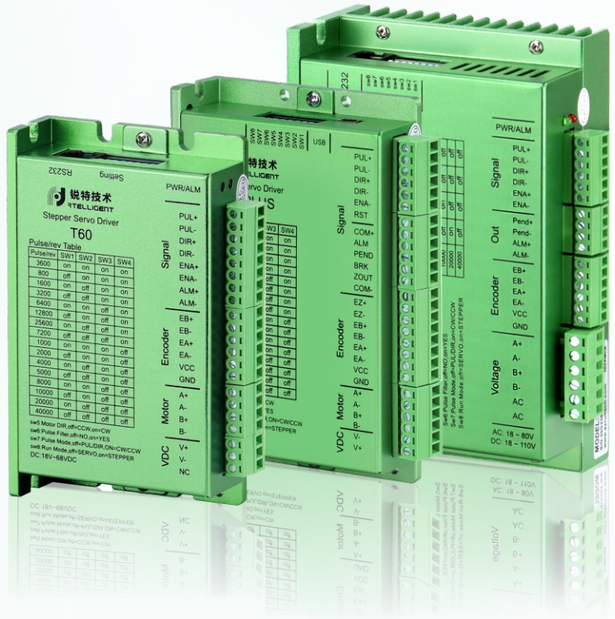
Identification	Name	Instructions
PUL24	24V pulse positive interface	1. Independent 5V and 24V pulse, direction control signal interface,The maximum voltage of the 24V interface is 28V, and the maximum voltage of the 5V interface is 7V. 2. EN+ and EN- are compatible with 5v to 24V 3.ALM+and ALM -: Optocoupler isolated collector open circuit output.
PUL5	5V pulse positive interface	
PUL-	Pulse negative	
DIR24	24V direction positive interface	
DIR5	5V direction positive interface	
DIR-	Direction negative	
EN+	Enabling positive	
EN-	Enabling negative	
ALM+	Alarm output positive	
ALM-	Alarm output negative	

LED Indication

LED status		Drive status	Fault handling
●	Steady green light	Drive not enabled	
●●	Flashing green light	Drive working properly	
●●	1 green 1 red	Drive overcurrent	Check wiring, repair drive
●●●	1 green 2 red	Drive input power supply overvoltage	Check the input supply voltage
●●●●	1 green 3 red	Drive internal voltage error	Drive failure
●●●●●	1 green 4 red	Encoder out of tolerance alarm	
●●●●●●	1 green 6 red	Parameter check error	
●●●●●●●	1 green 7 red	Motor missing phase alarm	Check the terminal, confirm the extension cable connector

Closed Loop Steppr Drive T Series

Rtelligent T series closed loop stepper driver, based on a brand-new DSP hardware platform, is designed using field-oriented (FOC) and weak magnetic control algorithms, offering performance that surpasses ordinary steppers in all aspects



01 **No loss of step**

02 **Fast response**

03 **Large torque**

04 **low heating**

Naming Rule

T 60 PLUS - □

1 2 3 4

1 Series Name	3 Multi-function upgrade
2 Matching motor frame size	4 Non-standard code

*Model naming rules are only used for model meaning analysis. For specific optional models, please refer to the details page.

Technical Specifications

Model	Peak current A	Weight kg	Input voltage	Dimension mm	Number of micro-stepping	Pulse level	Matching motor
T42	3.0	0.2	18-68VDC	116×69×26.5	800-51200	3.3-24V	closed loop below 42mm
T60	6.0	0.2	18-68VDC	116×69×26.5	800-51200	3.3-24V	closed loop below 60mm
T60PLUS	6.0	0.3	18-48VDC	118×76×25	200-25600	5-24V	closed loop below 60mm
T86	7.0	0.6	18-80VAC	151×97×52	400-51200	3.3-24V	closed loop below 86mm

Features

General-purpose T series

- Matching motor frame below 86mm
- PUL&DIR or CW&CCW
- Auto-tuning match motor function
- Smoothing filter function optional
- Debugging software to modify and monitor drive parameters and status

Functional PLUS series

- Matching motor frame below 86mm
- PUL&DIR or CW&CCW
- Auto-tuning match motor function
- Smoothing filter function optional
- Debugging software to modify and monitor drive parameters and status

R-S Series Open Loop Pulse Control Stepper Drives

The R-S series is an upgraded version of the open-loop stepper drive launched by Rtelligent, and the product design idea is derived from the company's accumulation in the field of stepper drive over the years. With a new architecture and algorithm, the new generation of stepper driver effectively reduces the low-speed resonance amplitude of the motor, has a stronger anti-interference ability, while supportingsensorless stall detection, phase alarm and other functions, support a variety of pulse command forms, multiple dip setting functions.

01
Auto tuning

02
Low speed vibration suppression

03
Sensorless stall detection

04
PUL+DIR/CW+ CCW/QEP

05
Multiple dip setting

06
Three inputs and one output

07
Missing phase alarm

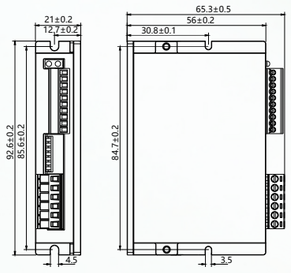
08
5V/ 24V pulse command independent

Product Parameter

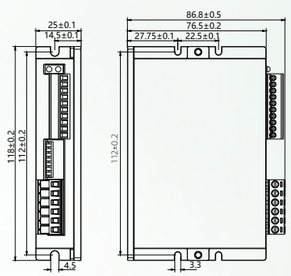
Model No.	R28S	R42S	R60S	R86S
Product photo				
Voltage range	12~24VDC	18~50VDC	18~50VDC	28~110VDC
AC input	Non support (1)	Non support (1)	Non support (1)	20~80VAC
Current range	0.3~1.0A	0.3~2.2A	1.4~5.6A	2.4~7.2A
Matching motor	Open loop motor below 28mm	Open loop motor below 42mm	Open loop motor below 60mm	Open loop motor below 86mm
Overcurrent self-recovery	Support (2)		Non support	
Debugging interface	Serial port TTL 3.3V			
Extended dip	2(SW8 Bit +k4 Bit)		2 (SW8 Bit + k8 Bit)	
Alarm output	Non support (3)		1	
Pulse command voltage	5V 24V independent port			
Pulse command form	PUL+DIR/CW+CCW/QEP			
Pulse mode setting	PUL+DIR/CW+CCW Dip setting			
Pulse width setting	200K/600K Dip setting			
Direction inversion	Dip setting			
Stall detection	Dip setting			
Phase missing detection	Software setting(4)		Dip setting	
Instruction filter	Software setting(4)		Dip setting	

1)Drive that does not support AC input will be damaged if it is connected to an AC power supply
2) Built-in self-restoring fuse for maximum protection of motor and drive
3)The R28S and R42S do not have this hardware port
4) The parameter can be set through the debugging interface and debugging software

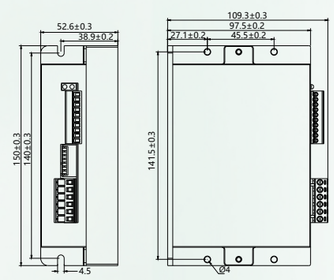
Installation Dimension



R28S/R42S



R60S



R86S

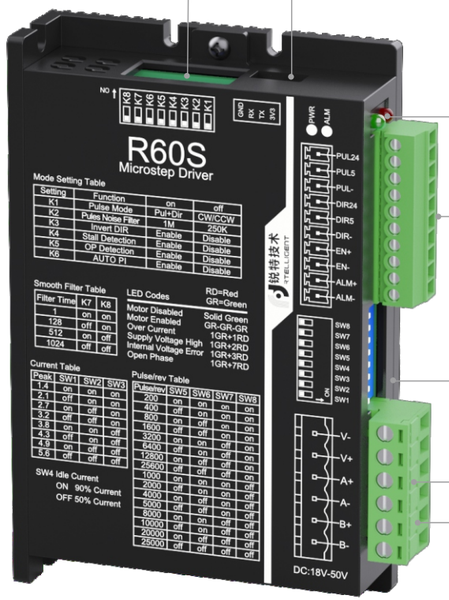
Ports Distribution

Debugging interface

Identification	Instructions
3V3	When the drive is running normally, this 3V3 port should not provide external power. Otherwise, the operation performance and reliability of the motor will be affected
TX	RXD port to be connected to the debug cable
RX	TXD port to be connected to the debug cable
GND	GND port that needs to be connected to the debug cable

Extended parameter dip switch*

K1	Pulse mode
K2	Pulse noise filter
K3	Invert DIR
K4	Stall detection
K5	OP detection
K6	Auto pi
K7	Smooth filter
K8	Smooth filter



LED indication

Pulse signal
Direction signal
Enable signal
Alarm output*

SW1	Operating current
SW2	Operating current
SW3	Operating current
SW4	Idle current
SW5	Micro-stepping setting
SW6	Micro-stepping setting
SW7	Micro-stepping setting
SW8	Micro-stepping setting

Power input interface

Motor cable

Matching motor connection definition

A+	A-	B+	B-
RED	BLU	GRN	BLK

Notes:
1.R28S and R42S do not have alarm output interfaces.
2. The R28S and R42S do not have the K5-K8 function.
3. The R86S supports AC ranges from 20 to 80V

Current Setting

Operating current (peak)/A				SW1	SW2	SW3
R28S	R42S	R60S	R86S			
0.3	0.3	1.4	2.4	on	on	on
0.4	0.5	2.1	3.1	off	on	on
0.5	0.7	2.7	3.7	on	off	on
0.6	1.0	3.2	4.4	off	off	on
0.7	1.3	3.8	5.1	on	on	off
0.8	1.6	4.3	5.8	off	on	off
0.9	1.9	4.9	6.5	on	off	off
1.0	2.2	5.6	7.2	off	off	off

Semi-/full Current Selection

SW4	
off	50% current
on	90% current

Micro-stepping Setting

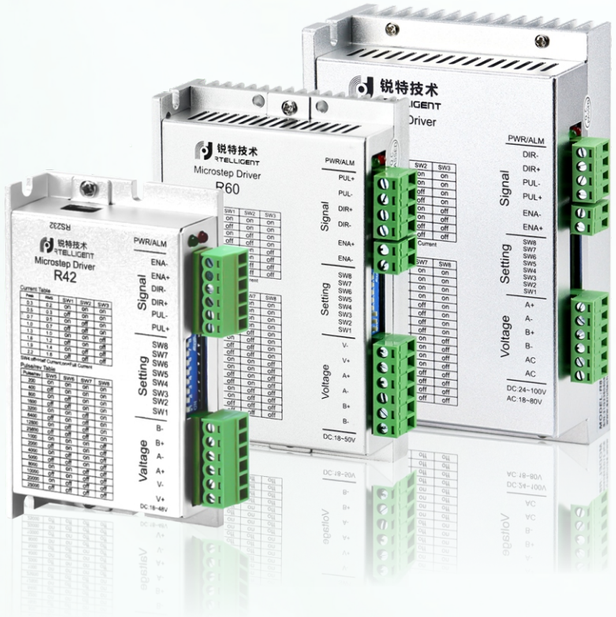
Pulse/rev				SW5	SW6	SW7	SW8
R28S	R42S	R60S	R86S				
200			400	on	on	on	on
400			800	off	on	on	on
800			1600	on	off	on	on
1600			3200	off	off	on	on
3200			6400	on	on	off	on
6400			12800	off	on	off	on
12800			25600	on	off	off	on
25600			51200	off	off	off	on
1000			1000	on	on	on	off
2000			2000	off	on	on	off
4000			4000	on	off	on	off
5000			5000	off	off	on	off
8000			8000	on	on	off	off
10000			10000	off	on	off	off
20000			20000	on	off	off	off
25000			40000	off	off	off	off

LED Indication

LED status		Drive status	Fault handing
🟢	Steady green light	Drive not enabled	The EN port has a high level input
🔴	Steady red light	Motor stalling	Insufficient current, excessive load, driver failure
🟢🟢	Flashing green light	Drive works fine	-
🔴🟢	1 green 1 red	Drive overcurrent	Check wiring, repair drive
🔴🔴🟢	1 green 2 red	Drive input power supply overvoltage	Check the input supply voltage
🔴🔴🔴🟢	1 green 3 red	Drive internal voltage error	Drive failure
🔴🔴🔴🔴🔴🔴🔴🟢	1 green 7 red	Missing phase alarm	The motor wire is not connected properly
🔴🔴🔴🔴🔴🔴🔴🔴🟢	1 green 8 red	Undervoltage alarm	The power supply voltage is too low

R Series Stepper Drive

Rtelligent R series stepper driver, based on 32-bit DSP hardware platform, using micro-division technology and PID current control algorithm design, has a comprehensive performance beyond the ordinary analog stepper drive.



01 **Adopt new micro-step algorithm**

02 **Eliminate vibaration**

03 **Reliable hardware platform**

04 **PID regulating parameter**

05 **Multiple bus communication**

06 **S-type command smoothing**

Naming Rule

3 R 110 PLUS – □

① ② ③ ④ ⑤

① 2 phase(omitted) 3: 3 phase 5: 5 phase		② Serial Name
③ Matching motor frame size	④ Upgraded version X2: Two axis X3: Three axis	⑤ Function code IO: Switch D: One-drive-two

*Model naming rules are only used for model meaning analysis. For specific optional models, please refer to the details page.

Technical Specifications

Model	Peak current A	Weight kg	Input voltage range	Dimension mm	Micro-stepping	Pulse level	Matching motor
R42	2	0.1	18-48VDC	92.6×56×21	200-25000	3.3-24V	Open loop below 42mm
R57	5.0	0.3	18-50VDC	118×76×33	400-25000	3.3-24V	Open loop below 57mm
R60	5.6	0.3	18-50VDC	118×76×33	200-25000	3.3-24V	Open loop below 60mm
R60-AL	5.6	0.2	18-50VDC	116×69×26.5	200-25000	24V/5V	Open loop below 60mm
R86	7.2	0.6	18-80VAC	151×97×52	400-40000	3.3-24V	Open loop below 86mm
R86mini	7.2	0.3	18-80VAC	119×77×35	400-40000	3.3-24V	Open loop below 86mm
R110PLUS	8.0	0.9	110-230VAC	178×109×68	400-25000	3.3-24V	Open loop below 110mm
R130	8.0	1.3	110-230VAC	203×147×78	400-60000	3.3-24V	Open loop below 130mm
3R60	8.0	0.3	18-50VDC	118×76×33	200-25000	3.3-24V	Open loop 3 phase below 60mm
3R110PLUS	7.2	0.9	110-230VAC	178×109×68	500-60000	3.3-24V	Open loop 3 phase below 110mm
3R130	8.0	1.3	110-230VAC	203×147×78	400-60000	3.3-24V	Open loop 3 phase below 130mm

Function Description

Input mode

- Pulse mode
  - Pulse + direction
  - Double pulse (compatible with the pulse level of 3.3-24V)
  - Orthogonal pulse
- IO mode
  - Fixed speed of IO
  - Fixed length of IO (compatible with the switch level of 3.3-24V)
  - Speed regulation with a potentiometer

Internal processing

- Digital filtering of input pulse --enhance anti-interference ability
- Pulse command smoothing-- making motor acceleration and deceleration smoother
- Anti-jittering of IO switching input-- making the IO command more stable and reliable
- Internal micro-stepping--enable the current to be controlled better
- Low speed anti-resonance-- reduce the low speed vibration of the motor
- Current loop PID control-- reduce heating and increase the high speed torque
- Parameter self-adaptation of the matching motor--enable the motor to perform better

Multi-axis Stepping System

Multi-axis automation equipment often demands space reduction and cost savings, giving rise to the Rtelligent multi-axis Series Drive. This product supports pulse control, switch control, and bus control, enabling independent or synchronized operation of multiple motors, making it suitable for various application scenarios. Compared with traditional drives, the multi-axis series can save 40%–60% of installation space, facilitating more flexible customer layouts.

01

A variety of control methods optional

02

Save space and facilitate customer design

03

Save labor and shorten debugging time

04

Save cost, improve equipment competitiveness

Step Extension Module based on EtherCAT protocol

Technical Specifications

		Model	Peak current A	Weight kg	Input voltage	Dimension mm	Matching motor
Multi-axis control series	Speed regulating	R42-D	2.2	0.2	18-50VDC	118×76×25	open loop below 42mm
		R60-D	5.6	0.3	18-50VDC	118×76×33	open loop below 60mm
	Pulse	R42X2	2.2	0.2	18-50VDC	118×76×25	open loop below 42mm
		R60X2	5.6	0.4	18-48VDC	132×82×29	open loop below 60mm
		R60X3	5.6	0.5	18-48VDC	155×98×33	open loop below 60mm
	Field bus	ECR60X2A	6.0	0.5	18-80VDC	155×98×33	open loop below 60mm
		ECT60X2	6.0	0.5	18-80VDC	175×98×33	closed loop below 60mm
		RE-T60M	4.0	0.15	24-50VDC	110×86×22	open loop/ closed loop below 60mm

IO Control and Potentiometer Speed Regulating Stepper System

The Rtelligent IO Series switch-type stepper drive internally generates pulse trains with S-curve acceleration/ deceleration, requiring only simple switch signals to trigger motor start/stop.

Product Features

- S-shaped acceleration and deceleration
- 8 current and 16 speed can be set
- Support open loop/closed loop
- Supports DIP switch between IO mode and pulse mode

Technical Specifications

		Model	Peak current A	Input voltage	Dimension mm	Matching motor
single-axis control series	switch type	R42IOS	2.2	18-48VDC	93X56X21	open loop below 42mm
		R60IOS	5.6	18-50VDC	118X77X25	open loop below 60mm
		R86IOS	7.2	28-110VDC	150X98X53	open loop below 86mm
		R110PLUS-IO	8.0	110-230VAC	178X97X52	open loop below 110mm
		R130-IO	8.0	110-230VAC	203X147X78	open loop below130mm
		T60IOS	6.0	18-50VDC	116X69X27	closed loop below 60mm
		T86IOS	8.0	28-110VDC	151X98X52	closed loop below 86mm
	potentiometer speed regulation type	R42IRS	2.2	18-48VDC	93X56X21	open loop below 42mm
		R60IRS	5.6	18-50VDC	118X77X25	open loop below 60mm
		R86IRS	7.2	28-110VDC	150X98X53	open loop below 86mm

Conveying equipment

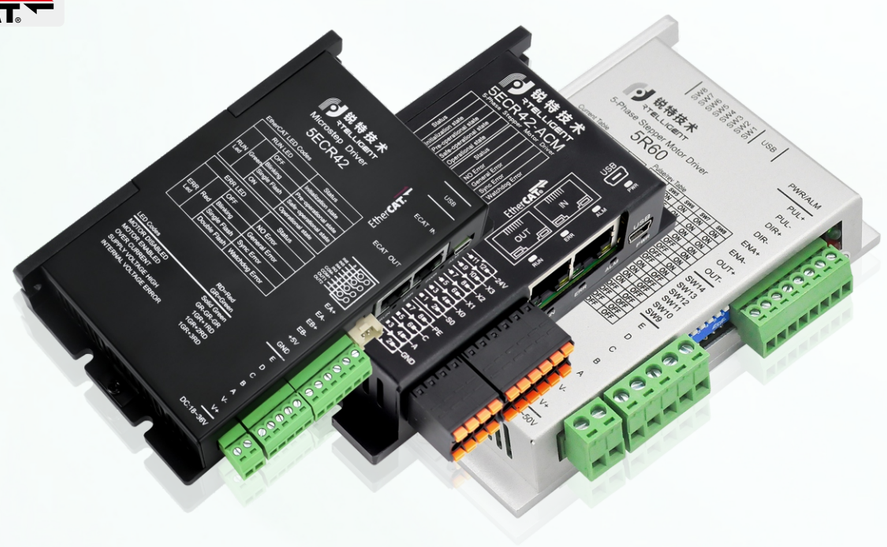
Inspection conveyor

PCB feeding machine

5 Phase Stepper System

The Rtelligent Five-Phase Stepper Drive is compatible with Japanese-style "new pentagon" connection motors, delivering exceptional performance. Built on a 32-bit DSP hardware platform, the drive incorporates micro-stepping technology and a PID current control algorithm, achieving all-around superior performance compared to conventional stepper drives.

EtherCAT



01 **High precision**

02 **Small torque ripple**

03 **Low vibration**

04 **High repeat positioning accuracy**

05 **High reliability**

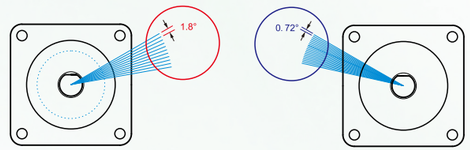
06 **Stable hardware platform**

Features

Two-phase Five-phase

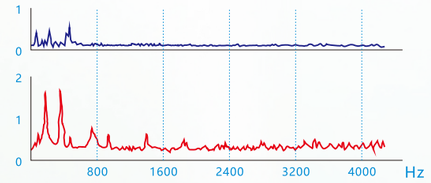
High precision

The step angle of the five-phase stepper motor is 0.72°, which has higher step angle accuracy than the two-phase/ three-phase stepper motor.



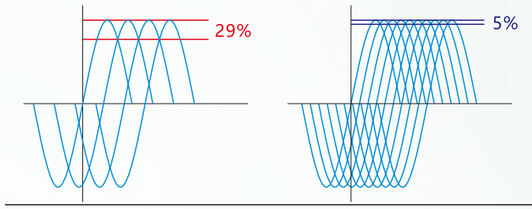
Low vibration

The stator of the five-phase stepper motor contains five pairs of windings. The decoupling algorithm of the drive makes the winding current of the five-phase stepper motor in a more reliable equilibrium state. The motor runs smoothly with little vibration.



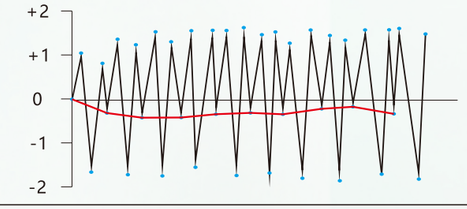
Small torque ripple

Because of its unique structure and current control algorithm, the five-phase stepper system has a smaller torque ripple in the same electrical cycle of the stepper motors. Therefore, the five-phase system has unique advantages in speed stability.



High repeat positioning accuracy

The step angle error of stepper motor depends on the manufacturing process, generally 3%-5% of the step angle. In each interval of 50 pairs of rotor cogging, the five-phase motor corresponds to 10 stable positions, which has better repeat positioning accuracy.



Technical Spec.

Model	5R42	5R60	5ECR42	5ECR42-ACM
Product picture				
Control mode	Pulse & direction, double pulse		EtherCAT	
Input voltage	18-50VDC	24-36VDC	18-36VDC	18-36VDC
Output current	0.3-2.2A	0.5-3.5A	0.1-2.5A	0.1-2.2A
dimension	93X56X21	118X76X25	134X82X29	100X58X26
Digital input	-		4 common-anode 24V inputs	4 optical isolation inputs
Digital output	1 photoelectric isolation output, default alarm output		2 optical isolation outputs	2 optical isolation outputs
Analog interface	-			2 channels, voltage range: 0~10V
Debugging port	Micro USB		Mini USB	
Matching motor	open loop below 42mm	open loop below 60mm	open loop below 42mm	open loop below 42mm

*Please refer to P56 for the matching motor.

Stepper Motor Series

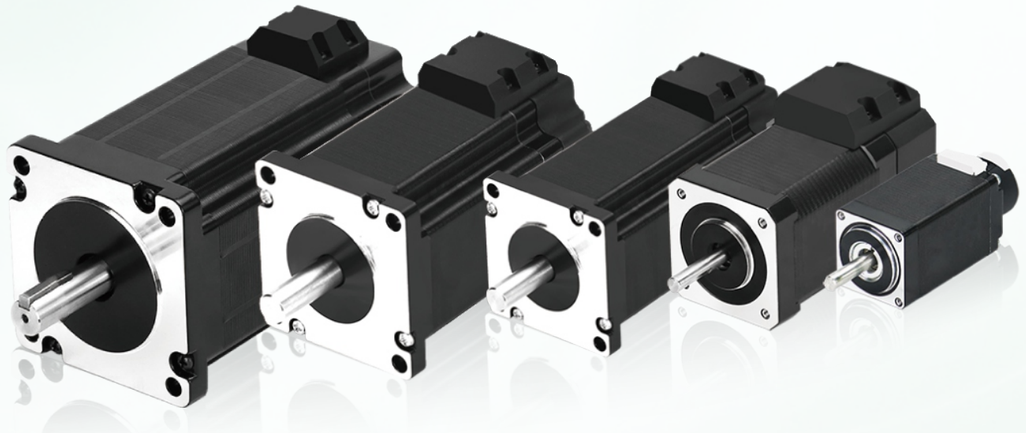
1.8°
2 phase

1.2°
3 phase

0.72°
5 phase

Closed Loop Stepper Motor Series

Rtelligent new closed loop stepper motor AM series is based on the Cz optimized magnetic circuit design and the latest compact M-type mold. The motor body adopts high magnetic density stator and rotor materials, featuring high energy efficiency.



Naning Rule

57 A M 23 E D Z – □

1 2 3 4 5 6 7 8

1 Base size	2 Step angle type code A: 1.8 degrees B: 1.2 degrees C: 0.72 degrees	3 Motor series code M: M series
4 Motor torque 0.6: 0.6N·m 30: 3.0N·m 120: 12.0N·m	5 Encoder type E: 1000 line photoelectric encoder	6 Type of plug C: Encoder AMP6 plug outlet D: Encoder DB9 plug outlet X: Encoder DB9/Motor AMP4 plug T: Encoder AMP6/Motor AMP4 plug H: Encoder AMP9/Motor AMP4 plug (high voltage)
7 Supplementary code Z:Encoder with Z signal	8 Non-standard code Z2: with brake	

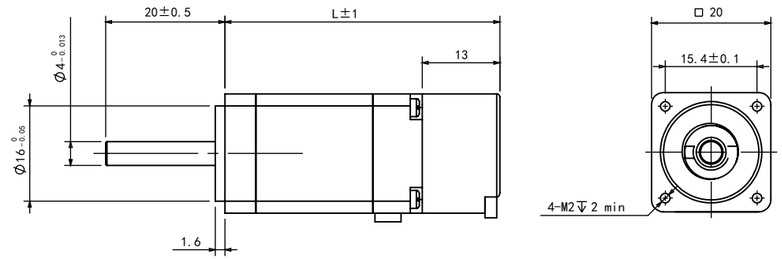
*Model naming rules are only used for model meaning analysis. For specific optional models, please refer to the details page

2-phase Stepper Motor 20/28mm Series Technical Specifications

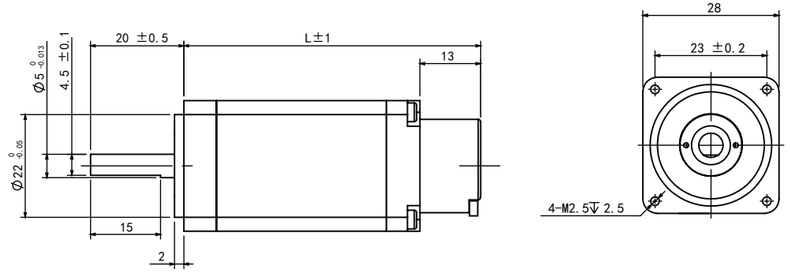
Model	Step angle (°)	Holding torque(N.m)	Rated current(A)	Resistance/ Phase(Ohm)	Inductance/ Phase(mH)	Rotor inertia (g.cm²)	Shaft diameter(mm)	Shaft length (mm)	Length (mm)	Weight (kg)
20AM003EC	1.8	0.03	0.6	5.7	2.6	3	4	20	46.0	0.09
28AM006EC	1.8	0.06	1.2	1.4	1.0	90	5	20	44.7	0.13
28AM013EC	1.8	0.13	1.2	2.2	2.3	180	5	20	63.6	0.22

*NEMA 8 (20mm)，NEMA 11 (28mm)

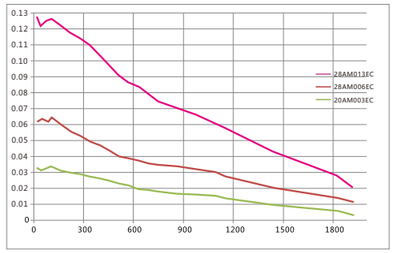
20 Series Dimension (mm)



28 Series Dimension (mm)



Torque-frequency Curve



Drive：T42　　Current：Rated
Voltage：24VDC　　Micro-stepping：1600

Wiring Definition

A+	A-	B+	B-
Red	Blue	Green	Black

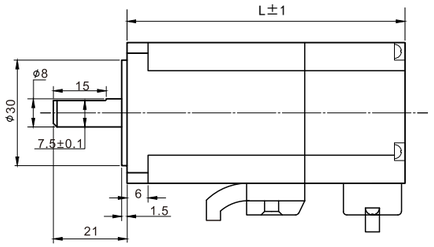
EB+	EB-	EA+	EA-	5V	GND
Yellow	Green	Black	Brown	Red	White

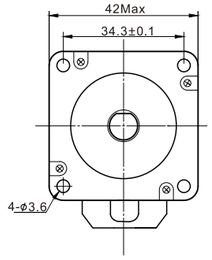
2-phase Stepper Motor 42mm Series Technical Specifications

Model	Step angle (°)	Holding torque(N.m)	Rated current(A)	Resistance/ Phase(Ohm)	Inductance/ Phase(mH)	Rotor inertia (g.cm²)	Shaft diameter(mm)	Shaft length (mm)	Length (mm)	Weight (kg)
42A03EC	1.8	0.3	2.0	1.6	1.9	77	8	21	69	0.5
42A08EC	1.8	0.8	2.8	2.7	2.3	115	8	21	85	0.6
42AM06ED	1.8	0.6	2.0	1.1	1.5	82	5	24	67	0.4
42AM08ED	1.8	0.8	2.0	1.9	5.0	114	5	24	79	0.6

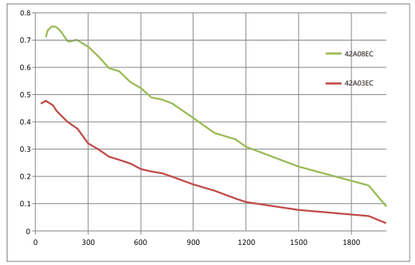
*NEMA 17 (42mm)

42A Series Dimension (mm)





Torque-frequency Curve



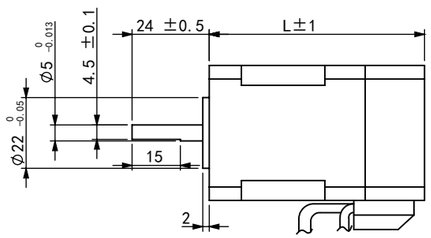
Drive: T42 Current: Rated
Voltage: 24VDC Micro-stepping: 1600

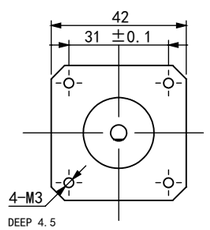
Wiring Definition

A+	A-	B+	B-
Red	Black	Yellow	Blue

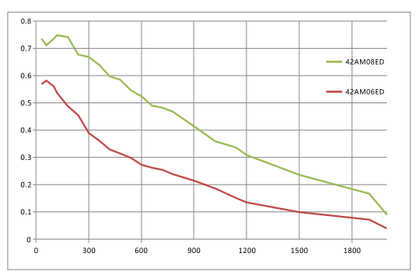
EB+	EB-	EA+	EA-	5V	GND
Green	Yellow	Brown	White	Red	Blue

42A Series Dimension (mm)





Torque-frequency Curve



Drive: T42 Current: Rated
Voltage: 24VDC Micro-stepping: 1600

Wiring Definition

A+	A-	B+	B-
Red	Blue	Green	Black

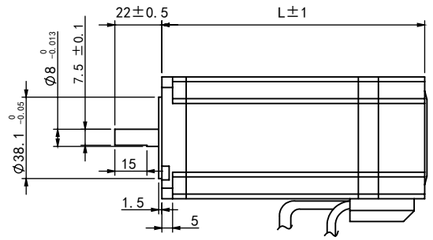
EB+	EB-	EA+	EA-	5V	GND
Green	Yellow	Brown	White	Red	Blue

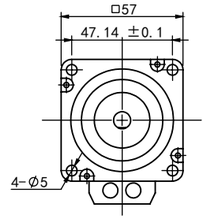
2-phase Stepper Motor 57mm Series Technical Specifications

Model	Step angle (°)	Holding torque(N.m)	Rated current(A)	Resistance/ Phase(Ohm)	Inductance/ Phase(mH)	Rotor inertia (g.cm²)	Shaft diameter(mm)	Shaft length (mm)	Length (mm)	Weight (kg)
57AM13ED	1.8	1.3	4.0	0.4	1.6	260	8	22	77	0.8
57AM23ED	1.8	2.3	5.0	0.6	2.4	460	8	22	98	1.2
57AM26ED	1.8	2.6	5.0	0.5	2.1	520	8	22	106	1.4
57AM30ED	1.8	3.0	5.0	0.8	3.7	720	8	22	124	1.5
D57AM30ED	1.8	3.0	5.0	0.5	2.2	690	8	22	107	1.5

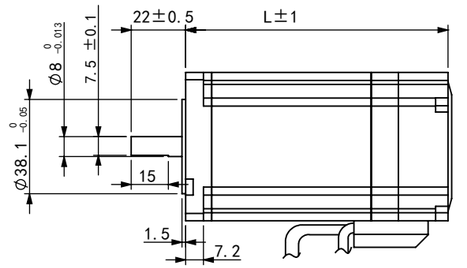
*NEMA 23 (57mm)

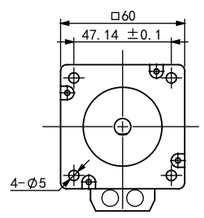
57 Series Dimension (mm)



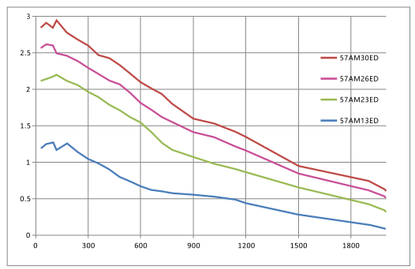


D57 Series Dimension (mm)





Torque-frequency Curve



Drive: T60 Current: Rated
Voltage: 36VDC Micro-stepping: 1600

Wiring Definition

A+	A-	B+	B-
Red	Blue	Green	Black

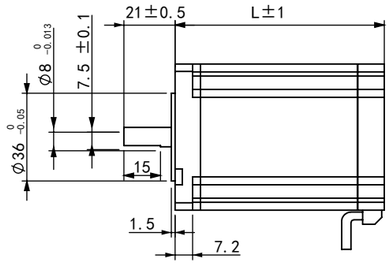
EB+	EB-	EA+	EA-	5V	GND
Green	Yellow	Brown	White	Red	Blue

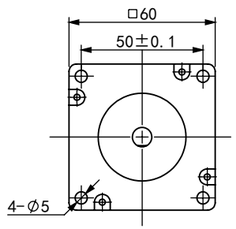
2-phase Stepper Motor 60mm Series Technical Specifications

Model	Step angle (°)	Holding torque(N.m)	Rated current(A)	Resistance/ Phase(Ohm)	Inductance/ Phase(mH)	Rotor inertia (g.cm²)	Shaft diameter(mm)	Shaft length (mm)	Length (mm)	Weight (kg)
60AM22ED	1.8	2.2	5.0	0.4	1.3	330	8	22	79	1.1
60AM30ED	1.8	3.0	5.0	0.5	2.2	690	8	22	107	1.5
60AM40ED	1.8	4.0	5.0	0.9	3.5	880	10	30	123	2.1

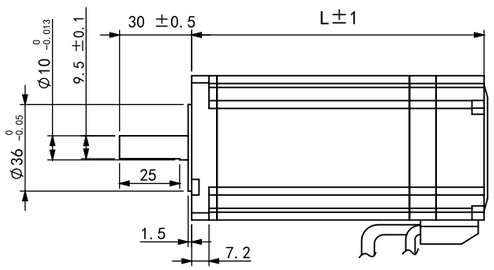
*NEMA 24 (60mm)

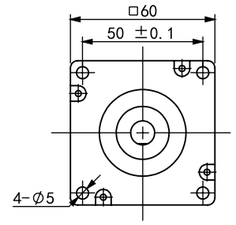
60 Series Dimension (mm)



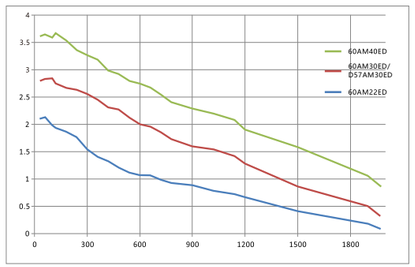


60AM40ED Dimension (mm)





Torque-frequency Curve



Drive：T60 Current：Rated
Voltage：48VDC Micro-stepping：1600

Wiring Definition

A+	A-	B+	B-
Red	Blue	Green	Black

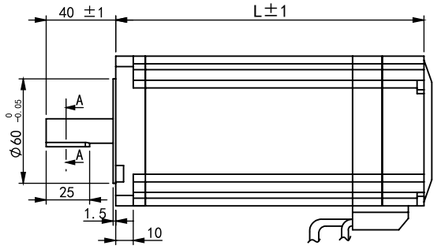
EB+	EB-	EA+	EA-	5V	GND
Green	Yellow	Brown	White	Red	Blue

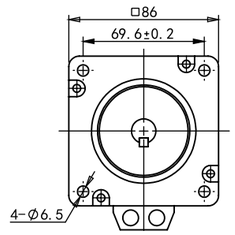
2-phase Stepper Motor 86mm Series Technical Specifications

Model	Step angle (°)	Holding torque(N.m)	Rated current(A)	Resistance/ Phase(Ohm)	Inductance/ Phase(mH)	Rotor inertia (g.cm²)	Shaft diameter(mm)	Shaft length (mm)	Length (mm)	Weight (kg)
86AM45ED	1.8	4.5	6.0	0.4	2.8	1400	14	40	105	2.5
86AM65ED	1.8	6.5	6.0	0.5	4.2	2300	14	40	127	3.3
86AM85ED	1.8	8.5	6.0	0.5	5.5	2800	14	40	140	3.9
86AM100ED	1.8	10	6.0	0.8	5.3	3400	14	40	157	4.3
86AM120ED	1.8	12	6.0	0.7	8.3	4000	14	40	182	5.3

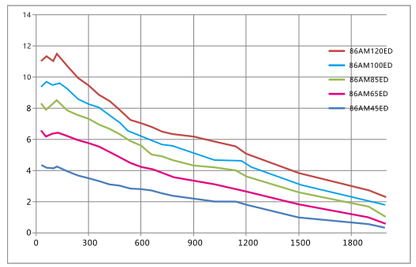
*NEMA 34 (86mm)

60 Series Dimension (mm)





Torque-frequency Curve



Drive：T86 Current：Rated
Voltage：60VAC Micro-stepping：1600

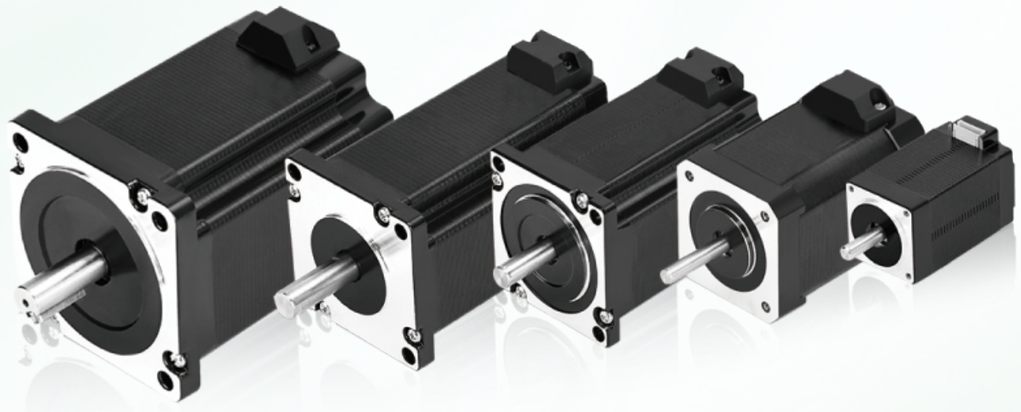
Wiring Definition

A+	A-	B+	B-
Red	Blue	Green	Black

EB+	EB-	EA+	EA-	5V	GND
Green	Yellow	Brown	White	Red	Blue

Open Loop Stepper Motor

Rtelligent open loop stepper motor, based on the Cz optimized magnetic circuit design and using high magnetic density stator and rotor materials, has a relatively high energy efficiency.



Naming Rule

57 A M 23 − □

1 2 3 4 5

1 Base size	2 Step angle type code A: 1.8 degrees B: 1.2 degrees C: 0.72 degrees	3 Motor series code M: M series
4 Motor torque 0.6: 0.6Nm 30: 3.0Nm 120: 12.0Nm	5 Non-standard code D: Double shaft Z2: With brake	

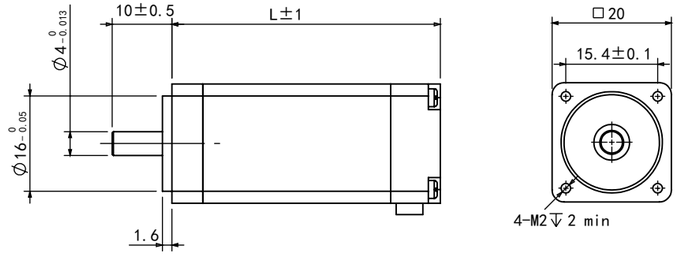
*Model naming rules are only used for model meaning analysis. For specific optional models, please refer to the details page.

2-Phase Stepper Motor 20/28mm Series Technical Specifications

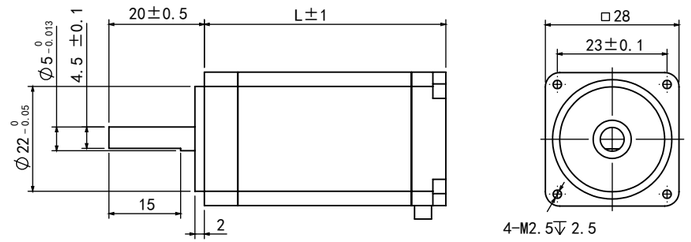
Model	Step angle (°)	Holding torque(N.m)	Rated current(A)	Resistance/ Phase(Ohm)	Inductance/ Phase(mH)	Rotor inertia (g.cm²)	Shaft diameter(mm)	Shaft length (mm)	Length (mm)	Weight (kg)
20AM003	1.8	0.03	0.6	5.7	2.6	3	4	10	33	0.07
20AM005	1.8	0.05	0.6	7.0	3.4	38	4	10	45	0.10
28AM006	1.8	0.06	1.2	1.4	1.0	90	5	20	32	0.11
28AM01	1.8	0.10	1.2	1.8	1.6	130	5	20	41	0.13
28AM013	1.8	0.13	1.2	2.2	2.3	180	5	20	51	0.18

*NEMA 8 (20mm), NEMA 11 (28mm)

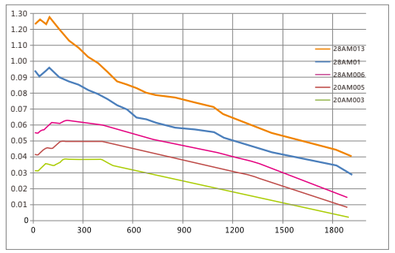
20AM Series Dimension (mm)



28AM Series Dimension (mm)



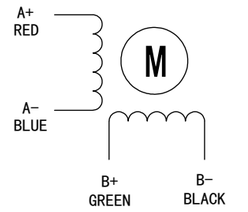
Torque-frequency Curve



Drive: R42
Voltage: 24VDC

Current: Rated
Micro-stepping: 1600

Wiring

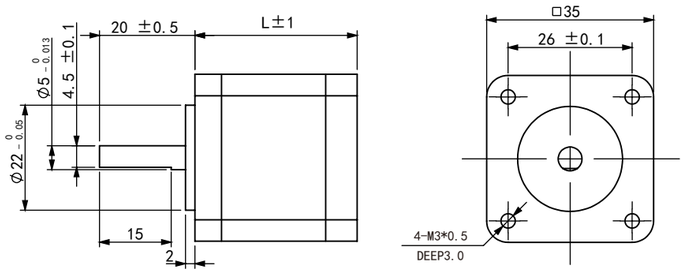


2-Phase Stepper Motor 35/39mm Series Technical Specifications

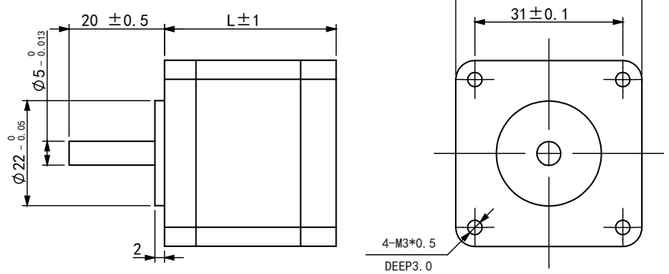
Model	Step angle (°)	Holding torque(N.m)	Rated current(A)	Resistance/ Phase(Ohm)	Inductance/ Phase(mH)	Rotor inertia (g.cm²)	Shaft diameter(mm)	Shaft length (mm)	Length (mm)	Weight (kg)
35A02	1.8	0.2	1.0	3.8	5.3	22	5	20	34	0.18
39A02	1.8	0.2	1.0	4.1	7.1	30	5	20	36	0.28

*NEMA 14 (35mm)， NEMA 16 (39mm)

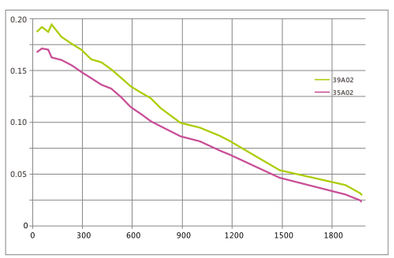
35A Series Dimension (mm)



39A Series Dimension (mm)

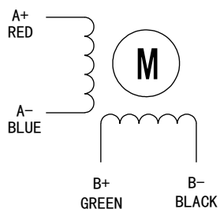


Torque-frequency Curve



Drive：R42　　Current：Rated
Voltage：24VDC　　Micro-stepping：1600

Wiring

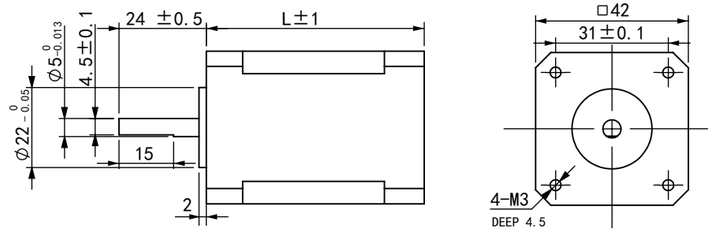


2-Phase Stepper Motor 42mm Series Technical Specifications

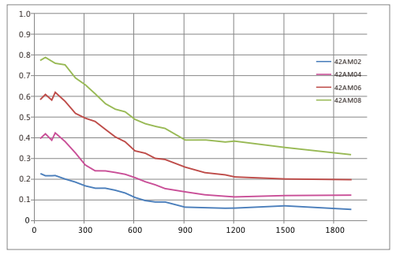
Model	Step angle (°)	Holding torque(N.m)	Rated current(A)	Resistance/ Phase(Ohm)	Inductance/ Phase(mH)	Rotor inertia (g.cm²)	Shaft diameter(mm)	Shaft length (mm)	Length (mm)	Weight (kg)
42AM02	1.8	0.2	1.5	1.3	1.9	41	5	24	34	0.23
42AM04	1.8	0.4	1.5	2.6	5.1	57	5	24	40	0.29
42AM06	1.8	0.6	2.0	1.8	3.8	82	5	24	47	0.37
42AM08	1.8	0.8	2.0	1.9	5.0	114	5	24	60	0.48

*NEMA 17 (42mm)

42AM Series Dimension (mm)

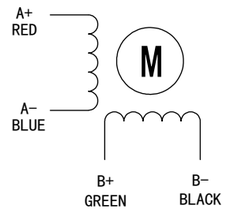


Torque-frequency Curve



Drive：R42　　Current：Rated
Voltage：24VDC　　Micro-stepping：1600

Wiring

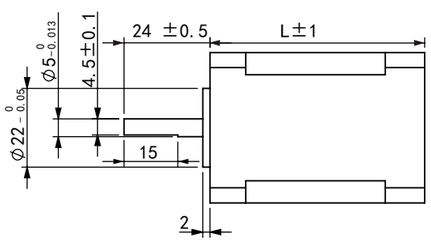


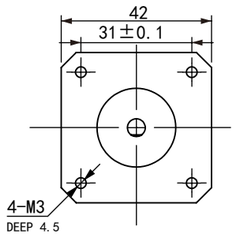
2-Phase Stepper Motor 42mm Series Technical Specifications

Model	Step angle (°)	Holding torque(N.m)	Rated current(A)	Resistance/ Phase(Ohm)	Inductance/ Phase(mH)	Rotor inertia (g.cm²)	Shaft diameter(mm)	Shaft length (mm)	Length (mm)	Weight (kg)
42A01	1.8	0.15	1.0	1.3	1.9	41	5	24	34	0.23
42A02	1.8	0.2	1.2	2.6	5.1	57	5	24	40	0.29
42A03	1.8	0.3	2.0	1.8	3.8	82	5	24	47	0.37
42A08	1.8	0.8	2.0	1.9	5.0	114	5	24	60	0.48

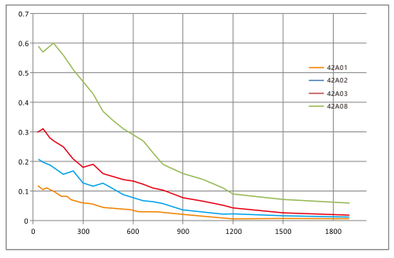
*NEMA 17 (42mm)

42A Series Dimension (mm)



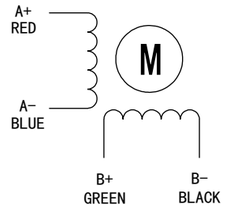


Torque-frequency Curve



Drive: R42 Current: Rated
Voltage: 24VDC Micro-stepping: 1600

Wiring

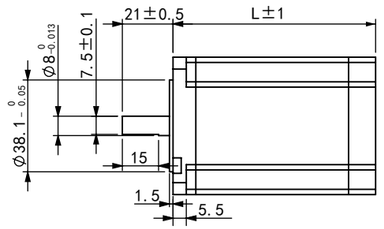


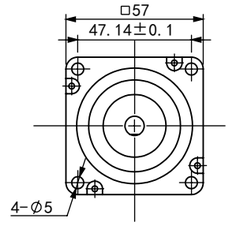
2-Phase Stepper Motor 57mm Series Technical Specifications

Model	Step angle (°)	Holding torque(N.m)	Rated current(A)	Resistance/ Phase(Ohm)	Inductance/ Phase(mH)	Rotor inertia (g.cm²)	Shaft diameter(mm)	Shaft length (mm)	Length (mm)	Weight (kg)
57AM13	1.8	1.3	3.0	0.42	1.5	260	8	21	55	0.67
57AM23	1.8	2.3	5.0	0.64	2.7	460	8	21	76	1.03
57AM24	1.8	2.4	5.6	0.41	2.0	460	8	21	80	1.11
57AM26	1.8	2.6	5.0	0.47	2.1	520	8	21	84	1.20
57AM30	1.8	3.0	5.0	0.82	3.7	720	8	21	102	1.48
D57AM30	1.8	3.0	5.0	0.50	2.2	690	8	21	86	1.39

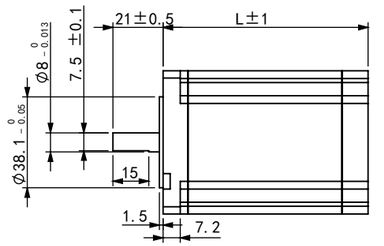
*NEMA 23 (57mm)

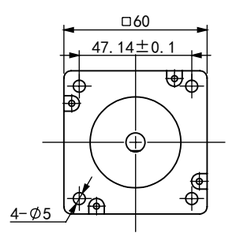
57AM Series Dimension (mm)



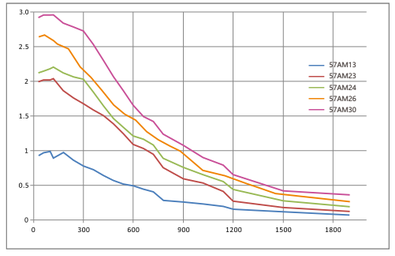


D57AM Series Dimension (mm)



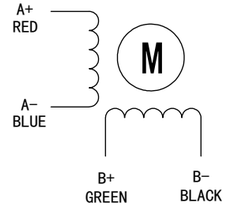


Torque-frequency Curve



Drive: R60 Current: Rated
Voltage: 36VDC Micro-stepping: 1600

Wiring

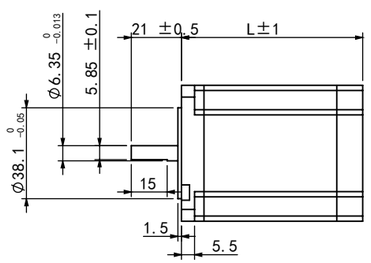


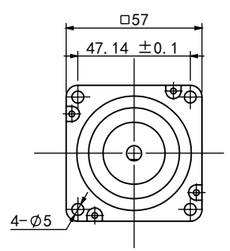
2-Phase Stepper Motor 57mm Series Technical Specifications

Model	Step angle (°)	Holding torque(N.m)	Rated current(A)	Resistance/ Phase(Ohm)	Inductance/ Phase(mH)	Rotor inertia (g.cm²)	Shaft diameter(mm)	Shaft length (mm)	Length (mm)	Weight (kg)
57A09	1.8	0.9	2.8	0.42	1.53	260	6.35	21	55	0.67
57A1	1.8	1.3	2.8	0.64	2.65	460	6.35	21	76	1.03
57A2	1.8	2.2	4.0	0.41	2.00	460	8.00	21	80	1.11
57A3	1.8	3.0	5.0	0.82	3.73	720	8.00	21	102	1.48

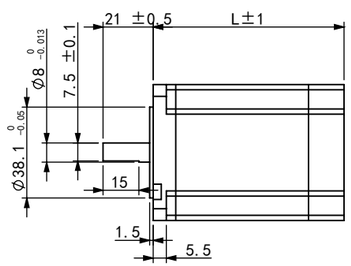
*NEMA 23 (57mm)

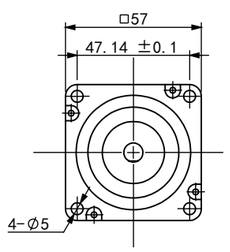
57A09/57A1 Dimension (mm)



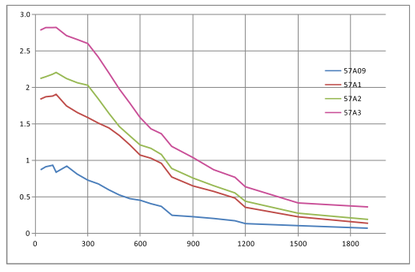


57A2/57A3 Dimension (mm)



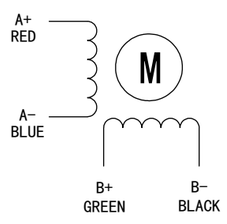


Torque-frequency Curve



Drive: R60 Current: Rated
Voltage: 36VDC Micro-stepping: 1600

Wiring

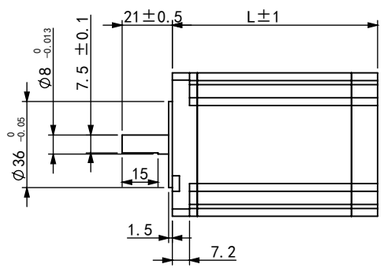


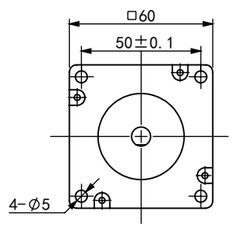
2-Phase Stepper Motor 60mm Series Technical Specifications

Model	Step angle (°)	Holding torque(N.m)	Rated current(A)	Resistance/ Phase(Ohm)	Inductance/ Phase(mH)	Rotor inertia (g.cm²)	Shaft diameter(mm)	Shaft length (mm)	Length (mm)	Weight (kg)
60AM21	1.8	2.1	5.0	0.35	1.3	330	8	21	58	0.87
60AM30	1.8	3.0	5.0	0.50	2.2	690	8	21	86	1.39
60AM40	1.8	4.0	5.0	0.86	3.5	880	10	30	102	2.05

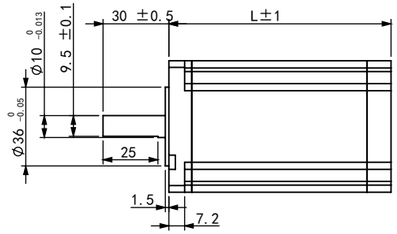
*NEMA 24 (60mm)

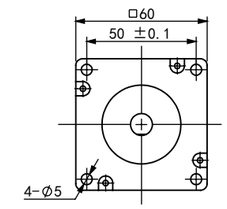
60AM21/60AM30 Dimension (mm)



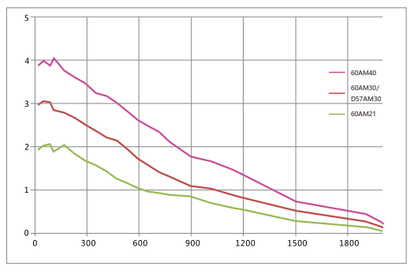


60AM40 Dimension (mm)



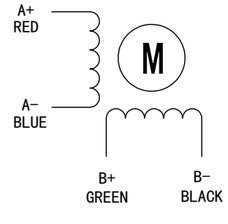


Torque-frequency Curve



Drive: R60 Current: Rated
Voltage: 48VDC Micro-stepping: 1600

Wiring

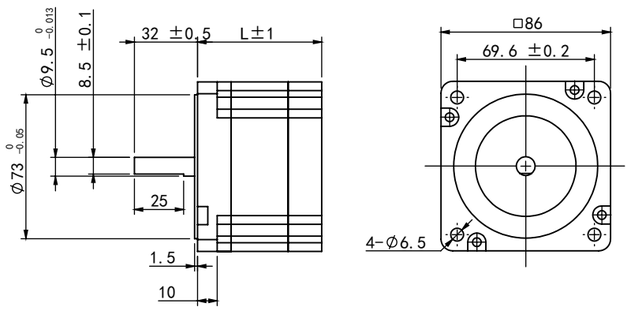


2-Phase Stepper Motor 86mm Series Technical Specifications

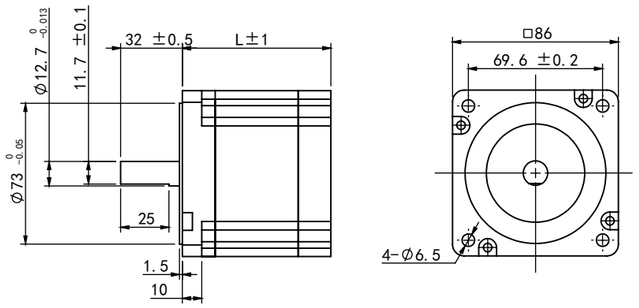
Model	Step angle (°)	Holding torque(N.m)	Rated current(A)	Resistance/ Phase(Ohm)	Inductance/ Phase(mH)	Rotor inertia (g.cm²)	Shaft diameter(mm)	Shaft length (mm)	Length (mm)	Weight (kg)
86AM35	1.8	3.5	4.0	0.81	3.87	800	9.5	32	64	1.70
86AM45	1.8	4.5	6.0	0.41	2.82	1400	12.7	32	78	2.25
86AM65	1.8	6.5	6.0	0.47	4.18	2300	12.7	32	98	2.95
86AM85	1.8	8.5	6.0	0.53	5.54	2800	12.7	32	112	3.67
86AM120	1.8	12	6.0	1.72	8.30	4000	15.875	32	155	5.10
86AM45-14	1.8	4.5	6.0	0.41	2.82	1400	14	32	78	2.25
86AM65-14	1.8	6.5	6.0	0.47	4.18	2300	14	32	98	2.95
86AM85-14	1.8	8.5	6.0	0.53	5.54	2800	14	32	112	3.67
86AM100	1.8	10	6.0	0.75	5.30	3400	14	32	128	4.10
86AM120-14	1.8	12	6.0	1.72	8.30	4000	14	32	155	5.10

*NEMA 34 (86mm)

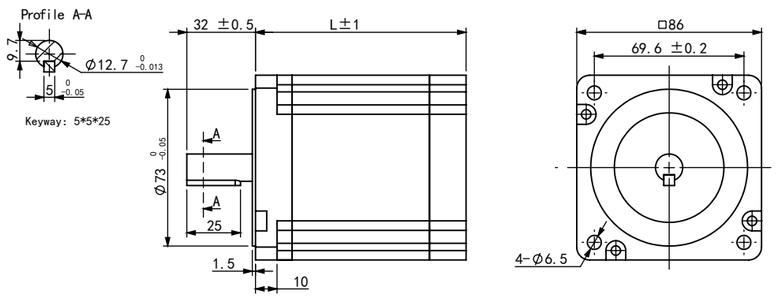
86AM35 Dimension (mm)



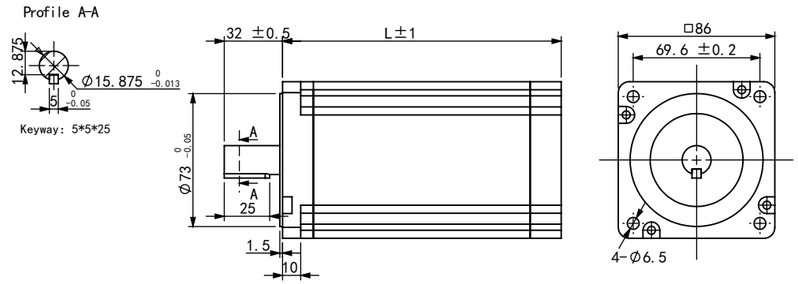
86AM45Dimension (mm)



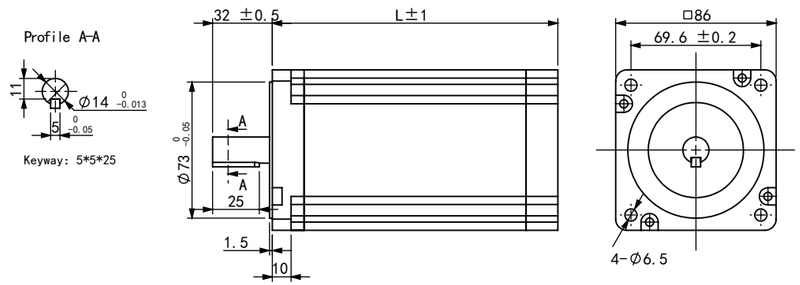
86AM65/86AM85 Dimension



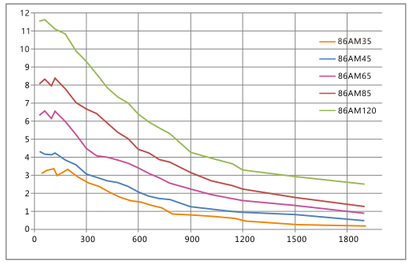
86AM120 Dimension (mm)



86AM-14 Dimension (mm)

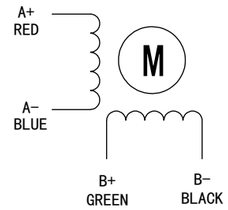


Torque-frequency Curve



Drive: R86 Current: Rated
Voltage: 60VDC Micro-stepping: 1600

Wiring

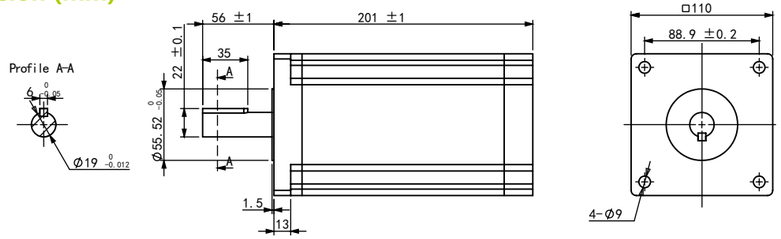


2-Phase Stepper Motor 110/130mm Series Technical Specifications

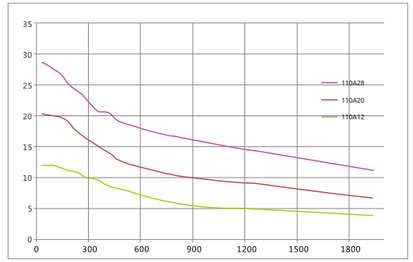
Model	Step angle (°)	Holding torque(N.m)	Rated current(A)	Resistance/ Phase(Ohm)	Inductance/ Phase(mH)	Rotor inertia (g.cm²)	Shaft diameter(mm)	Shaft length (mm)	Length (mm)	Weight (kg)
110A12	1.8	12	6.0	0.37	4.9	7200	19	56	115	6.0
110A20	1.8	20	6.0	0.80	15.0	11000	19	56	150	8.4
110A28	1.8	28	6.5	1.20	22.0	16200	19	56	201	11.7
130A27	1.8	27	6.0	0.65	13.8	35000	19	45	226	13.0
130A45	1.8	45	7.0	0.90	9.5	48400	19	45	283	19.0

*NEMA 42 (110mm), NEMA 52 (130mm)

110A series Dimension (mm)

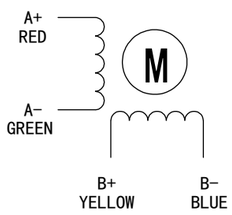


Torque-frequency Curve

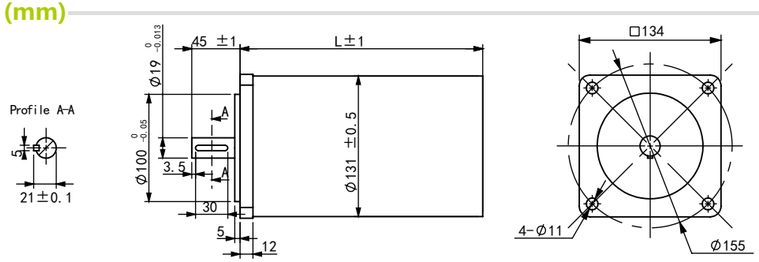


Drive: R110PLUS Current: Rated
Voltage: 220VDC Micro-stepping: 1600

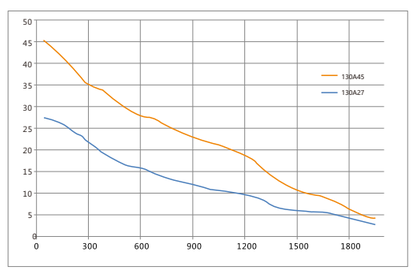
Wiring



130A Series Dimension (mm)

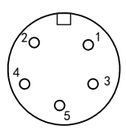


Torque-frequency Curve



Drive: R130 Current: Rated
Voltage: 220VAC Micro-stepping: 2000

Wiring



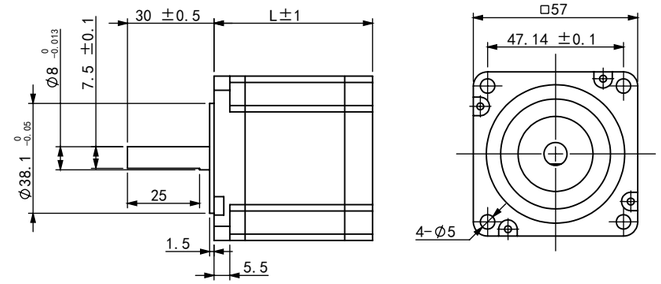
1	2	3	4	5
A+	A-	B+	B-	NC

3-Phase Stepper Motor 57mm Series Technical Specifications

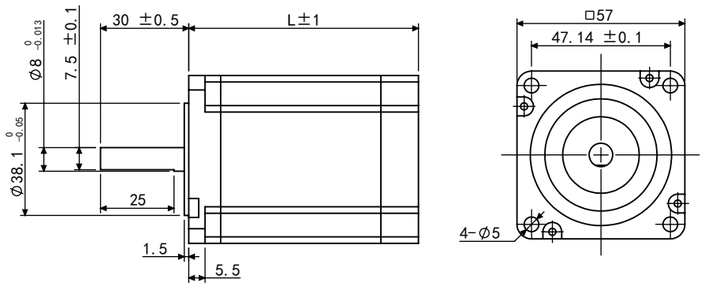
Model	Step angle (°)	Holding torque(N.m)	Rated current(A)	Resistance/ Phase(Ohm)	Inductance/ Phase(mH)	Rotor inertia (g.cm²)	Shaft diameter(mm)	Shaft length (mm)	Length (mm)	Weight (kg)
57BM09	1.2	0.9	3.5	0.50	1.2	260	8	30	55	0.67
57BM15	1.2	1.5	3.5	0.69	1.8	480	8	30	78	1.10

*NEMA 23 (57mm)

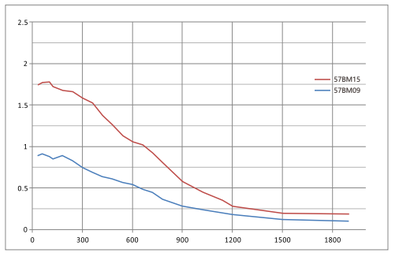
57BM09 Dimension (mm)



57BM15 Dimension (mm)

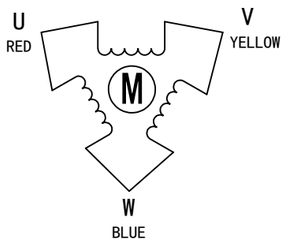


Torque-frequency Curve



Drive: 3R60 Current: Rated
Voltage: 36VDC Micro-stepping: 1600

Wiring

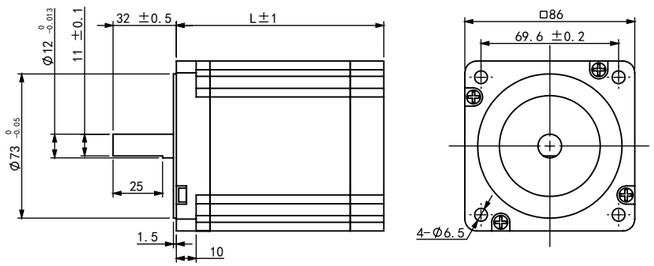


3-Phase Stepper Motor 86mm Series Technical Specifications

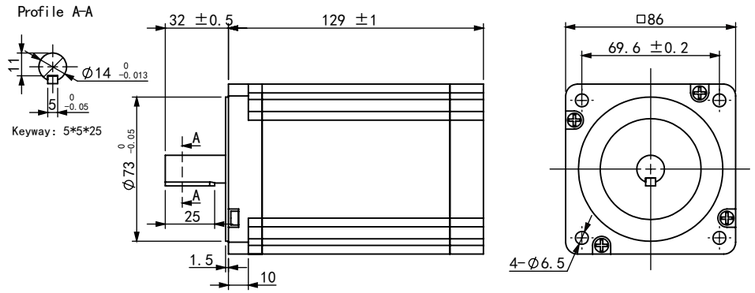
Model	Step angle (°)	Holding torque(N.m)	Rated current(A)	Resistance/ Phase(Ohm)	Inductance/ Phase(mH)	Rotor inertia (g.cm²)	Shaft diameter(mm)	Shaft length (mm)	Length (mm)	Weight (kg)
86BM20	1.2	2.3	3.0	2.1	7.7	1300	12	32	73	2.0
86BM40	1.2	4.3	4.5	1.1	4.5	2500	12	32	105	2.0
86BM70	1.2	7.0	3.0	4.4	20	3400	14	32	129	4.1
86BM90	1.2	9.0	3.0	5.7	29	4000	14	32	155	5.1

*NEMA 34 (86mm)

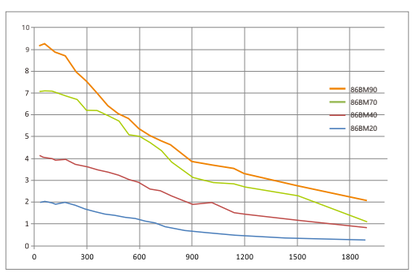
86BM20/86BM40尺寸(mm)



86BM70/86BM90尺寸(mm)

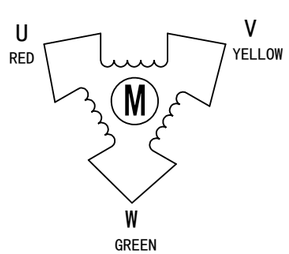


Torque-frequency Curve



Drive: 3R110PLUS V3.0 Current: Rated
Voltage: 220VAC Micro-stepping: 2000

Wiring

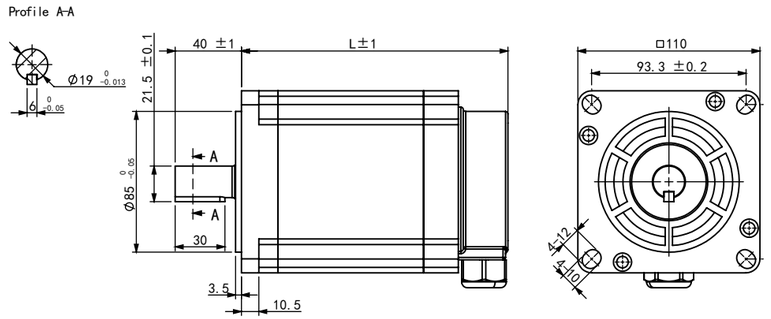


3-Phase Stepper Motor 110mm Series Technical Specifications

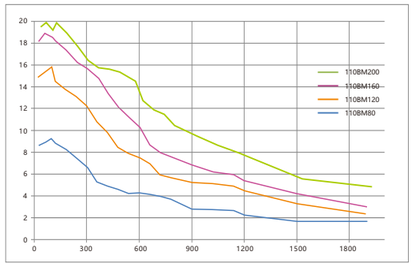
Model	Step angle (°)	Holding torque(N.m)	Rated current(A)	Resistance/ Phase(Ohm)	Inductance/ Phase(mH)	Rotor inertia (g.cm²)	Shaft diameter(mm)	Shaft length (mm)	Length (mm)	Weight (kg)
110BM80	1.2	8.0	4.3	1.0	11.9	8600	19	40	137	5.5
110BM120	1.2	12	6.0	1.1	12.4	11900	19	40	161	7.1
110BM160	1.2	16	6.5	1.3	19.0	14800	19	40	185	10.7
110BM200	1.2	20	7.0	1.7	22.0	19800	19	40	220	11.0

*NEMA 42 (110mm)

110BM Series Dimension (mm)

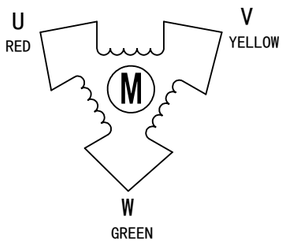


Torque-frequency Curve



Drive: 3R110PLUS Current: Rated
Voltage: 220VAC Micro-stepping: 2000

Wiring



PE: Yellow-Green

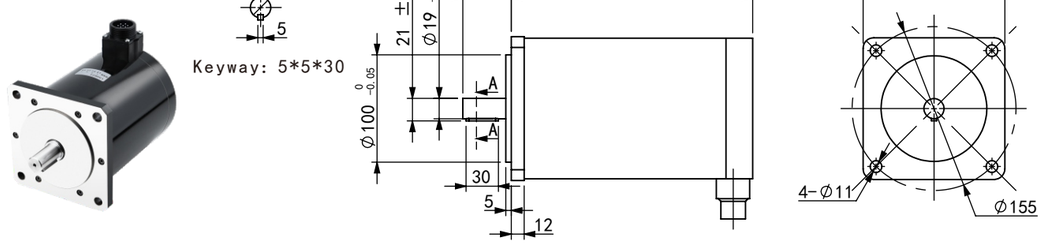
3-Phase Stepper Motor 130mm Series Technical Specifications

Model	Step angle (°)	Holding torque(N.m)	Rated current(A)	Resistance/ Phase(Ohm)	Inductance/ Phase(mH)	Rotor inertia (g.cm²)	Shaft diameter(mm)	Shaft length (mm)	Length (mm)	Weight (kg)
130B23	1.2	23	5.0	0.95	9.5	26800	19(K5)	45	170	13.7
130B36	1.2	36	5.0	1.30	13.1	35000	19(K5)	45	226	18.4
130B50**	1.2	50	5.0	1.70	18.0	45500	19(K5)	45	282	22.8
130B50**	1.2	50	6.0	0.99	18.3	42500	19(K6)	44	271	16.5

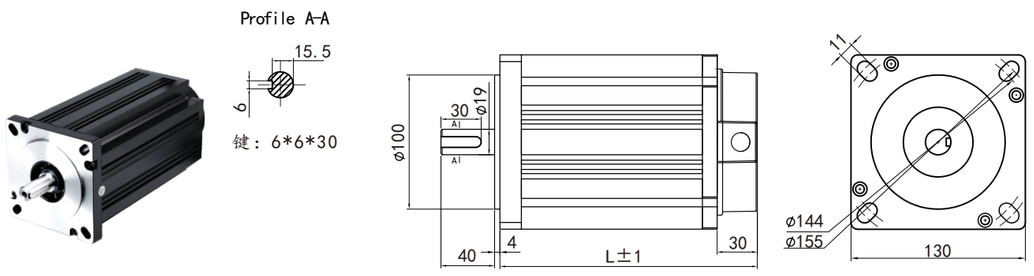
*NEMA 52 (130mm)

**We have two specifications of 130B50, Please confirm before ordering.

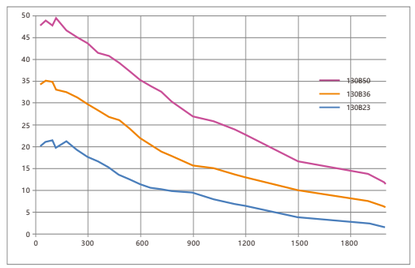
K5: 130B Series Dimension (mm)



K6: 130B50 Series Dimension (mm)

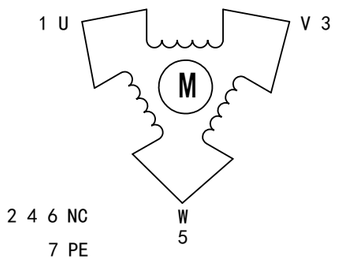


Torque-frequency Curve



Drive: 3R130 Current: Rated
Voltage: 220VAC Micro-stepping: 2000

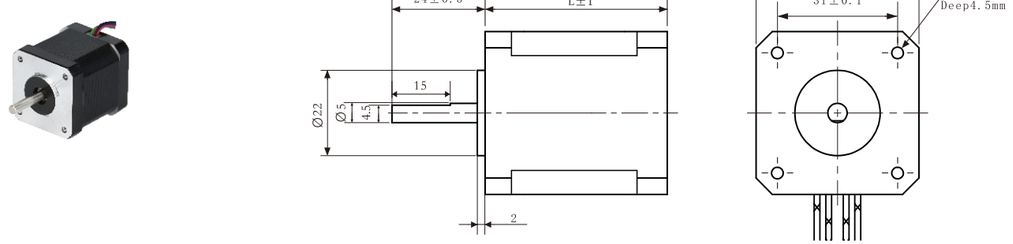
Wiring



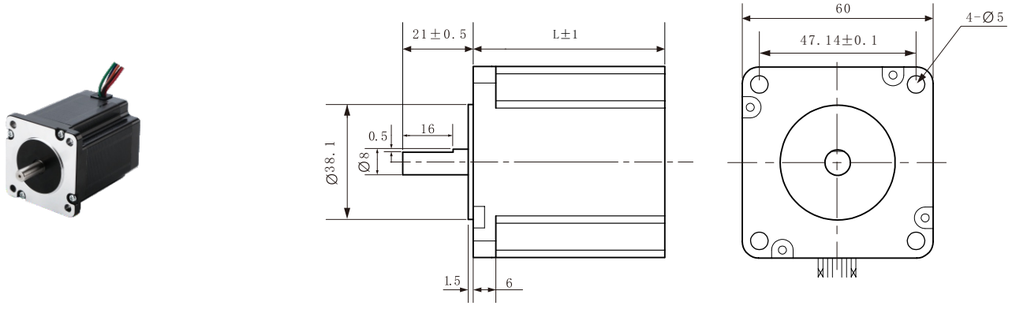
5-phase stepping motor

Model	Step angle (°)	Holding torque(N.m)	Rated current(A)	Resistance/ Phase(Ohm)	Inductance/ Phase(mH)	Rotor inertia (g.cm²)	Shaft diameter(mm)	Shaft length (mm)	Length (mm)	Weight (kg)
42C03	0.72	0.3	0.75	1.9	1.6	68	5	24	48	0.3
60C1	0.72	1.0	1.5	0.5	1.2	380	8	21	64	0.9
60C2	0.72	1.3	1.5	3.6	9.7	550	8	21	76	1.1

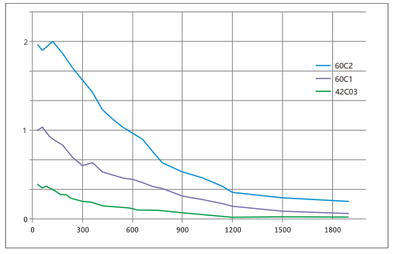
NEMA 17(42mm) Series Dimensions



NEMA 24(60mm) Series Dimensions (mm)

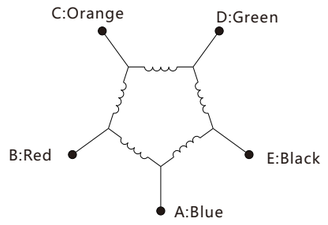


Torque-frequency Curve



Drive: 5R42/5R60 Current: Rated
Voltage: 36VDC Micro-stepping: 2000

Wiring



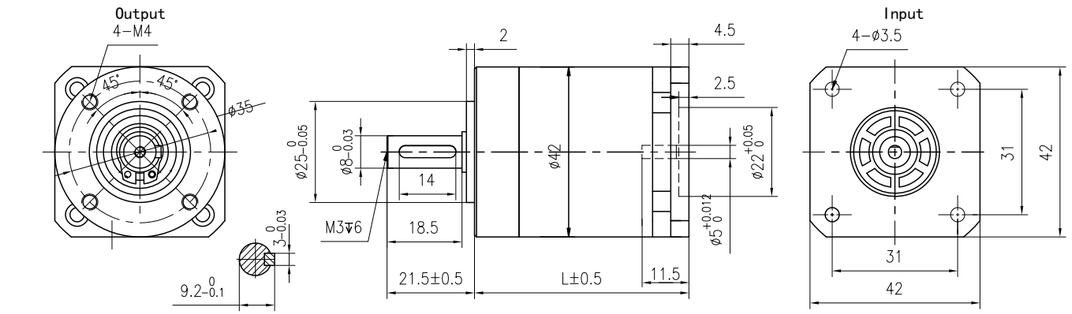
Reducer for Stepper Motor

Transmission Stepper Reducer

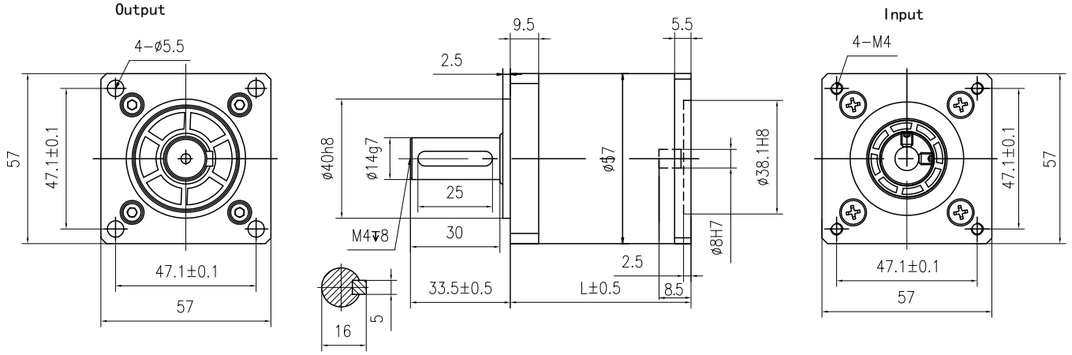
Model	Input dimension (Motor insertion end)				Output dimension (Client installation end)				Length	
	Shaft diameter	Boss diameter	Mounting hole distance	Mounting hole size	Shaft diameter	Boss diameter	Mounting hole distance	Mounting hole size	L1	L2
42PRF-□*	5	22	31.0	3.5	8	25	P.C.D.35	M4	43	53
57PLF-□*	8	38	47.1	M4	14	40	47.1	5.5	53	70
86PLF-□*	14	73	69.6	M6	14	73	69.6	M6	83	97

*PRF and PLF series reducer input terminal has size limitation, some stepper motors need to be cut shaft before assembly

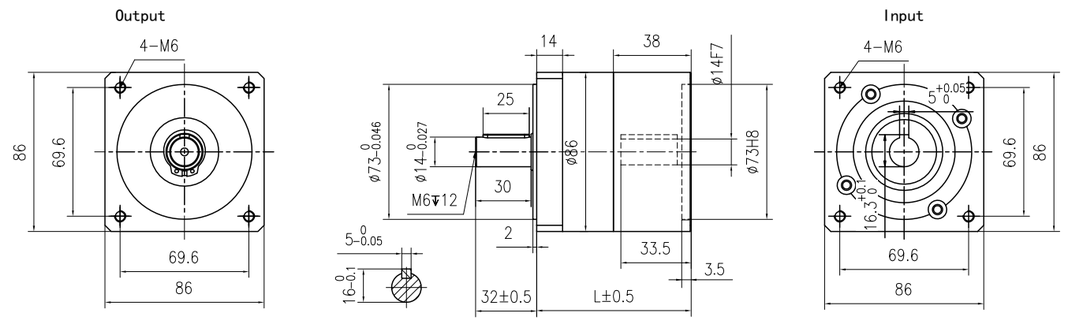
42PRF Series Dimensions (mm)



57PLF Series Dimensions (mm)



86PLF Series Dimensions (mm)

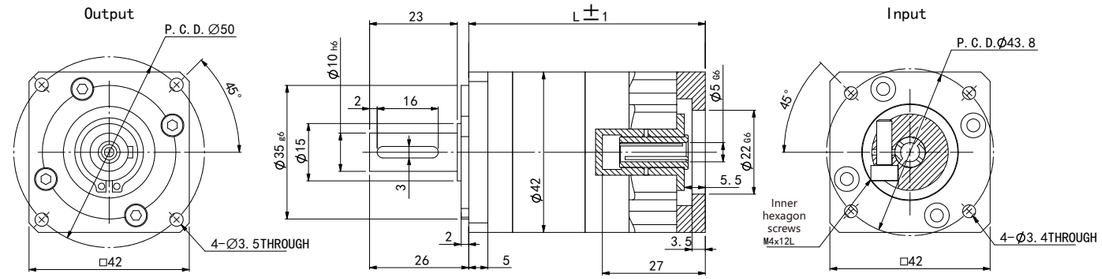


Precision Stepper Reducer

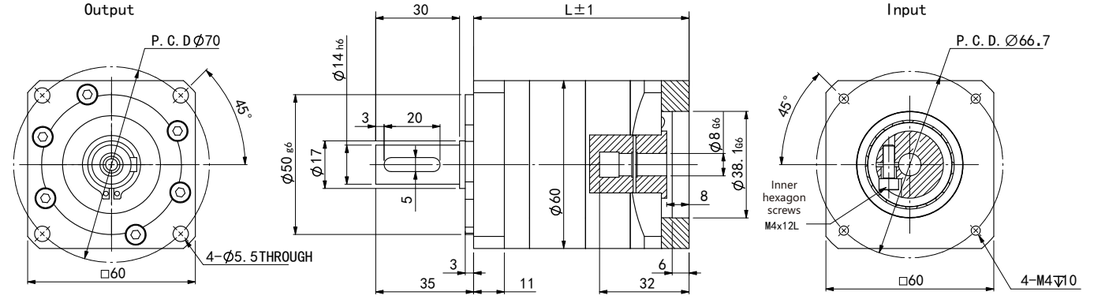
Model	Input dimension (Motor insertion end)				Output dimension (Client installation end)				Length	
	Shaft diameter	Boss diameter	Mounting hole distance	Mounting hole size	Shaft diameter	Boss diameter	Mounting hole distance	Mounting hole size	L1	L2
42PLX-□	5	22	31.0	3.5	10	35	P.C.D.50	3.5	62	77
60PLX-□	8	38	47.1	M4	14	50	P.C.D.70	5.5	77	95
90PLX-□	14	73	69.6	M6	20	80	P.C.D.100	6.5	110	130

*The L1 reducer can have a reduction ratio range of 3-10, the L2 reducer can have a reduction ratio range of 15-100.

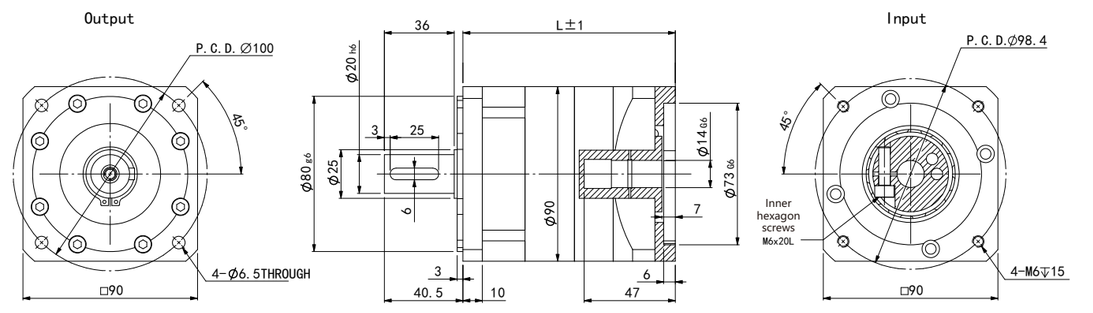
42PLX Series Dimensions (mm)



60PLX Series Dimensions (mm)



90PLX Series Dimensions (mm)



Integrated Stepper Motor IR/IT Series

The integrated stepper motor is a perfect combination of motor, encoder and drive. The product has multiple control methods, which not only saves installation space, but also makes wiring convenient and reduces labor costs.

EtherCAT CANopen RS485 Pulse command IO command

01
Three in one, motor, encoder, and driver

02
Low heat, high torque, high speed

03
Space saving and convenient wiring

Product Hightlights

The IR/IT series is an intelligent integrated stepper motor launched by Rtelligent. The existing products cover 42mm-86mm base motor. It not only supports external pulse and communication control, but also can achieve motion control through internal self-programming.

- Pulse control methods: pulse + direction, double pulse, orthogonal pulse
- Communication control mode: RS485/EtherCAT/CANopen
- Communication Settings: 5-digit dip code - 31 axis addresses; 2-digit dip code - 4 baud rates
- Motion direction setting: A 1-digit dip code is used to set the motor's running direction
- Control signal: 5V or 24V single-ended input, common anode connection method

Naming Rule

IT	42	AM	06	_	D	08	24	_	5V	_	M
①	②	③	④		⑤	⑥	⑦		⑧		⑨

① Series name IR: Integral open loop series IT: Integral closed loop series	② Motor base 20mm、28mm、42mm、57mm、60mm、86mm	③ Motor version AM CM
④ Motor torque 06：0.6N·m	⑤ Motor shaft type D: Single flat K: Keyed G: Plain shaft	⑥ Shaft diameter Unit: mm
⑦ Shaft length Unit: mm	⑧ IO signal level 5V、24V	⑨ Communication interface M：Modbus - RS485 C：Can – CanOpen E：EtherCAT

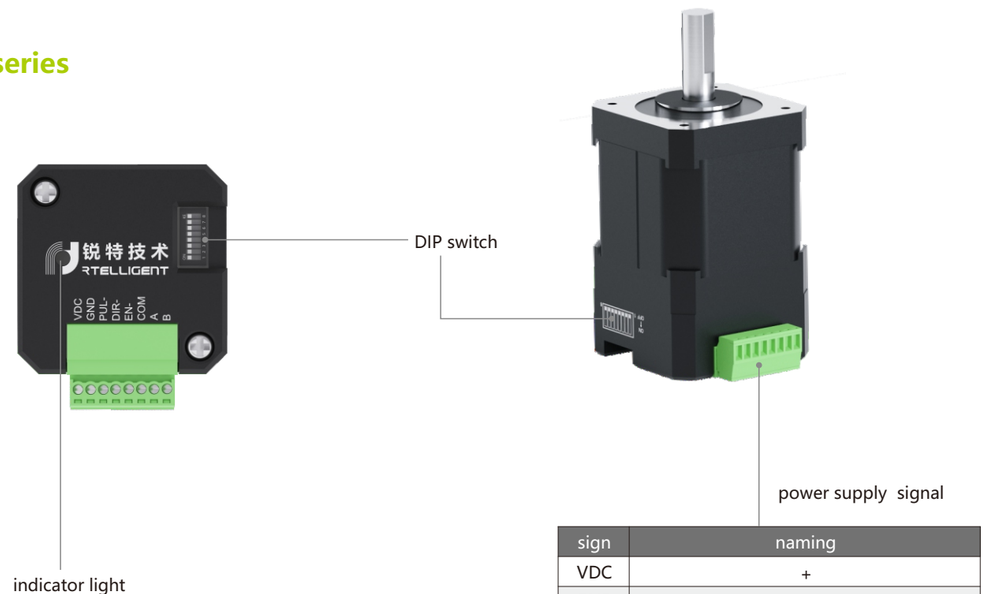
*注意：信号电平 5V 和 24V 的产品型号不同，选型时请核对无误。

Technical Specifications

Base	Model	Voltage(V)	Current(A)	Rated Torque (N·m)	Shaft Length (mm)	Shaft Diameter (mm)	Body Length L(mm)
42	IT42AM04-D0524-24V-M	12~24VDC	1.5	0.4	24	5	57
	IT42AM06-D0524-24V-M			0.6		5	64
	IT42AM08-D0524-24V-M			0.8		5	77
D57	ITD57AM30-D0821-24V-M	18~50VDC	5	3.0	21	8	112.5
	ITD57AM40-D1030-24V-M			4.0	30	10	128.5
60	IT60AM30-D0821-24V-M			3.0	21	8	112.5
	IT60AM40-D1030-24V-M			4.0	30	10	128.5
86	IT86AM45-K1440-24V-M		6	4.5	40	14	108.5
	IT86AM85-K1440-24V-M			8.5	40		142.5
	IT86AM120-K1440-24V-M			12.0	40		185.5

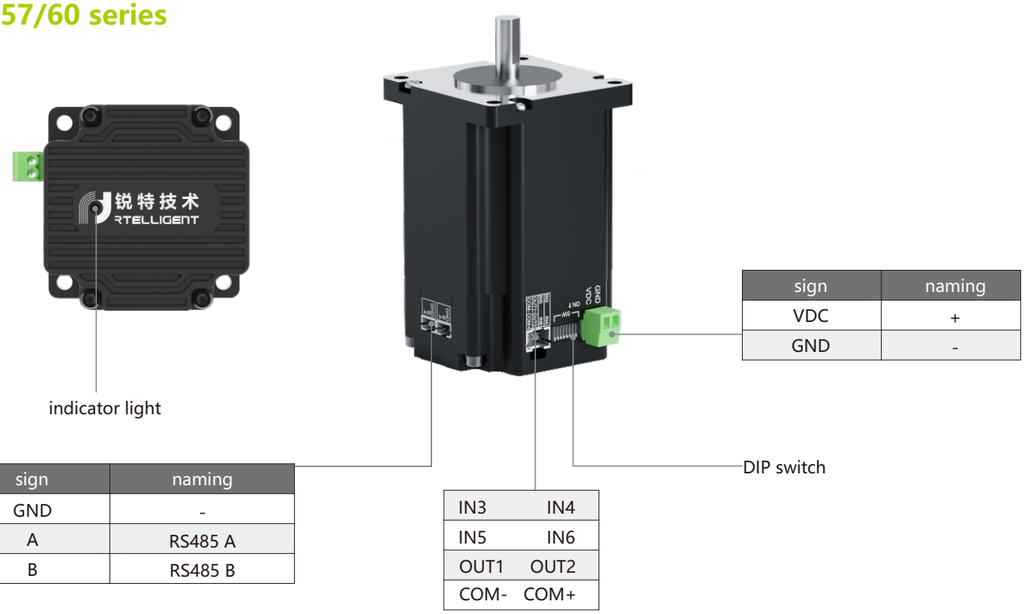
Drive Interface & Connection

• 42 series



sign	naming
VDC	+
GND	-
PUL-	Pulse signal interface
DIR-	direaction signal interface
EN-	enable signal
COM	common anode input common terminal
A	RS485 A
B	RS485 B

• D57/60 series

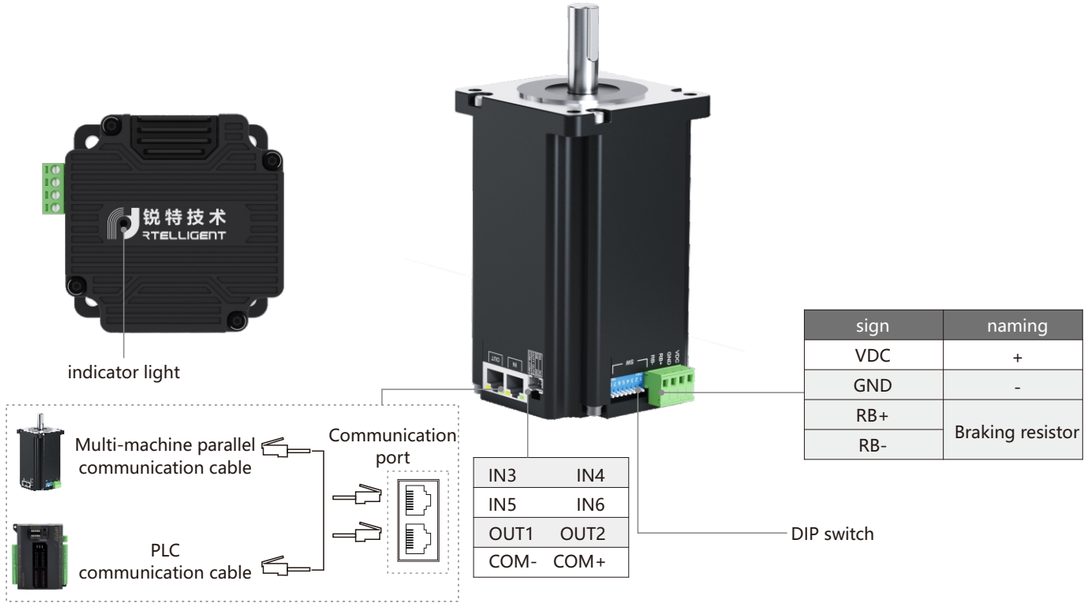


sign	naming
VDC	+
GND	-

sign	naming
GND	-
A	RS485 A
B	RS485 B

IN3	IN4
IN5	IN6
OUT1	OUT2
COM-	COM+

• 86 series

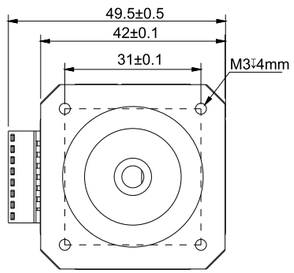


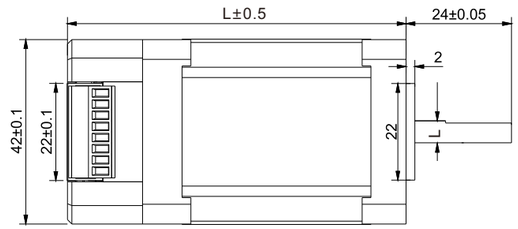
sign	naming
VDC	+
GND	-
RB+	Braking resistor
RB-	

IN3	IN4
IN5	IN6
OUT1	OUT2
COM-	COM+

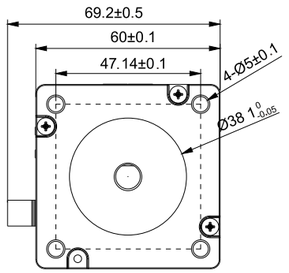
1. The working voltage range of the product shall be based on the actual identification, otherwise it will damage the product.
2. Users need to clearly know whether the connected signal level is 5V or 24V, otherwise it may damage the IO port.
3. RS485 communication interface, isn't isolated, using GND as the reference ground.

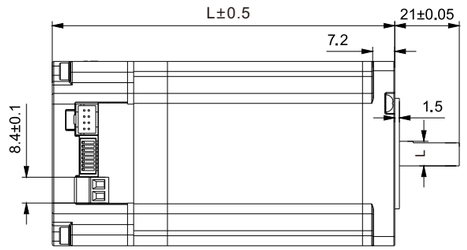
42mm Series Size



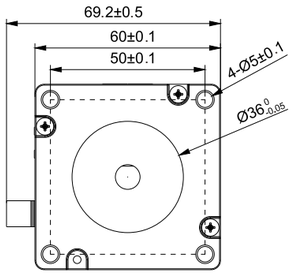


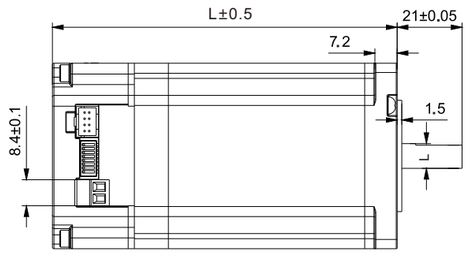
D57mm Sereis Size



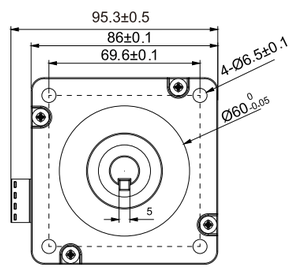


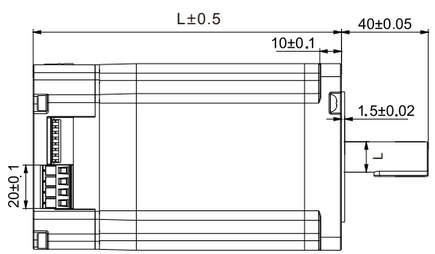
60mm Series Size





86mm Series Size





Slave Staion address

Slave Station	SW1	SW2	SW3	SW4	SW5
Default	ON	ON	ON	ON	ON
1	OFF	ON	ON	ON	ON
2	ON	OFF	ON	ON	ON
3	OFF	OFF	ON	ON	ON
4	ON	ON	OFF	ON	ON
.....	.....	.....	.....	.....	.....
30	ON	OFF	OFF	OFF	OFF
31	OFF	OFF	OFF	OFF	OFF

Baud Rate Setting

BDR	SW6	SW7
9600	ON	ON
19200	OFF	ON
38400	ON	OFF
115200	OFF	OFF

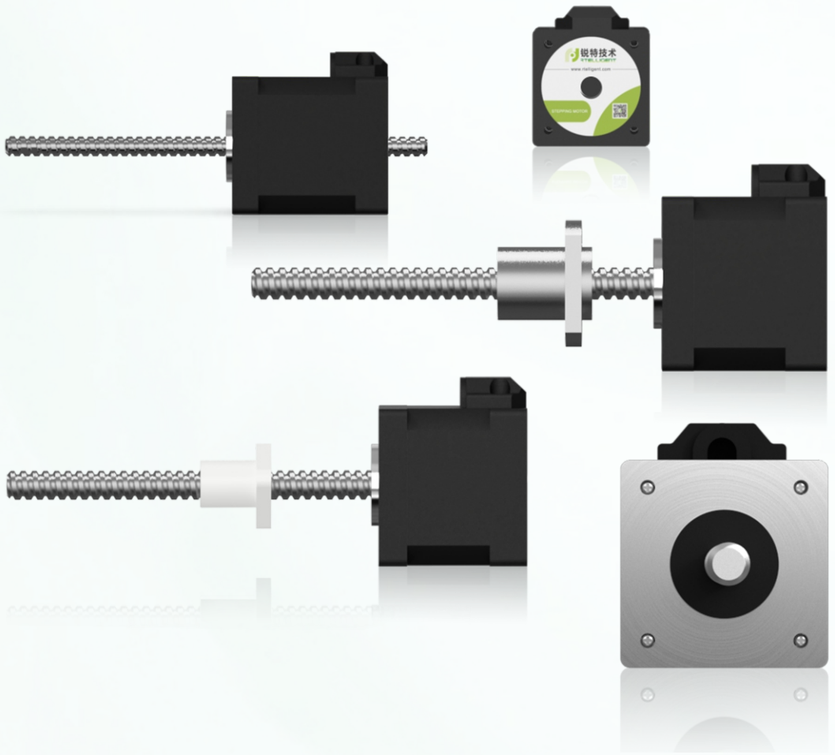
Direction Setting

SW8	
ON	By setting the ON or OFF state of SW8, the running direction of the motor can be changed. The factory defaults to the OFF state
OFF	

LED Indication

LED status		Drive status
	Steady green light	Drive is not enabled
	Flashing green light	Drive is working properly
	1 green、1 red	Drive overcurrent
	1 green、2 red	Drive input power supply overvoltage
	1 green、3 red	Drive internal voltage error
	1 green、4 red	Encoder out-of-tolerance alarm
	1 green、6 red	Parameter verification error
	1 green、7 red	Motor phase loss alarm

Linear Stepper Motor



01
External Nut ACME Screw
- Inch T-shape screw, anti-backlash nuts are optional
- Recommended speed range 300rpm
- Screw transmission efficiency 20-50%
- Brake and closed loop are optional

02
External Nut Ball Screw
- Rolling ball screw, C7 precision
- Recommended speed range 700rpm (closed loop 1500rpm)
- Screw transmission efficiency 90-98%
- Brake and closed loop are optional

03
Non-Captive ACME Screw
- Inch T-shape screw
- Recommended speed range 300rpm
- Screw transmission efficiency 20-50%
- Brake and closed loop are notoptional

Naming Rule

57A09 E C – Z – GZ1210 – 3 – 140 – 001

1 2 3 4 5 6 7 8

1 Motor model	2 Shaft mode N: Non-Captive E: External Nut	3 Encoder code C: With encoder None: Omitted	4 Break code Z: With break None: Omitted
5 Screw type & lead Gz1210: Ball screw, 10mm lead, 12mm diameter 5.08: ACME screw, 5.08mm lead, diameter omitted	6 Rated motor current Unit: mm	7 Screw length Unit: mm	8 Customized Code

*Model naming rules are only used for model meaning analysis. For specific optional models, please consult with our engineer.

Technical Specifications

Screw type	Motor frame	Optional motor body length				Optional diameter	Optional lead						
ACME	20	30	42			3.5	1	2	4	8			
	28	34	45			4.76	0.635	1.27	2.54	5.08	10.16		
	35	34	47			6.35	1.27	2.54	6.35	12.7	25.4		
	42	34	40	48	60	6.35	1.27	2.54	6.35	12.7	25.4		
	57	45	55	65	75	9.525	1.27	2.54	5.08	10.16	25.4		
	86	76	114			15.875	2.54	3.175	6.35	12.7	25.4		
Ball	20	30	42			6	1						
	28	34	45			8	1	2					
	35	34	47			8	1	2					
						12	2	5	10				
	42	34	40	48	60	8	1	2					
						12	2	5	10				
	57	45	55	65	75	12	2	5	10				
	86	76	114			16	5	10	16				

Concepts

Lead: The lead is the linear stroke of the screw when it rotates the nut for one circle.

Thrust: Thrust refers to the thrust generated by the motor in the shaft direction of screw. When selecting, the screw thrust should be greater than the sum of the external forces of the current load.

Thrust formula: $T \cdot 2\pi \cdot \eta = F \cdot B$

T: Effective torque
Q: Screw transmission efficiency
F: Thrust
B: Lead

Screw: The ball screw uses the cyclic movement of the ball between the nut and the screw to move the load. T-shape screw uses the oil film between the nut and the screw to generate relative sliding to move the load.

Screw type	Friction form	Friction coefficient	Transmission efficiency	Self-locking force	Motor speed
Ball screw	Rolling friction	Small	High	No	High
T-shape screw	Sliding friction	Large	Low	Has a certain selflocking force	Speed limit 300rpm

Model Selection

1. Determine the load specifications and stroke
   Dimension and weight of workpireces and loads, also the motion range of workpieces

2. Determine the static stress condition of the loads according to its installationEg.
   eg: Calculate gravity and friction if installed vertically.
   Calculate friction if installed horizontally.
   Other forces should be considered as well.

3. Select the proper size of linear screw motor based on speed and the screw specifications table.
   Estimate static torque based on static stress condition of the system.
   Estimate dynamic torque based on accelerated speed and inertia
   Approximately determine the condition of the motor body and screw lead.
   (Remarks: the transmission efficiency of ACME screw is 20%-60%)

4. Select the matching drive

	EtherCAT	Modbus RTU	CANopen
Fieldbus type			
Pluse type			
Switching type			

Matching Cables

Stepper Encoder Cable

B1-030

EB+	EB-	EA+	EA-	VCC	GND
GRN	YEL	BRN	WHT	RED	BLU

Matching products: ED series closed-loop stepper motor

C1-030

EB+	EB-	EA+	EA-	VCC	GND
GRN	YEL	BRN	WHT	RED	BLU

Matching products: EC series closed-loop stepper motor

Z Signal Encoder Extension Cable

CES8-030

EB+	EB-	EA+	EA-
GRN	GRN&BLK	BLU	BLU&BLK

VCC	GND	EZ+	EZ-
RED	BLK	YEL	YEL&BLK

Matching products: ECZ series closed-loop stepper motor

Stepper Motor Power Extension Cable

C2-030
(Optional)

A+	A-	B+	B-
RED	BLU	GRN	BLK

Matching products: Stepper series

RS232 Interface Tuning Cable

RS232
(Optional)

Matching products：T42,T60,T86,R60X3,R130,3R130

MiniUSB Interface Tuning Cable

MINI USB
(Optional)

Matching products: RS series, DRV series, T60PLUS

Network Cable (Short)

E0035
(Optional)

Matching products: EtherCAT series

Common Model Quick Selection Table

Open Loop Stepper Drive

Model	Matching motor*	Control mode	Power supply voltage	External debug interface	Notes
R28S	28 series open loop	Pulse control	18-48VDC	TTL	
R42S	42 series open loop	Pulse control	18-48VDC	TTL	
R57-HV	57 series open loop	Pulse control	20-80VAC/18-110VDC	-	
R60S	60 series open loop	Pulse control	18-50VDC	TTL	
R60-C	60 series open loop	Pulse control	18-50VDC	-	Economic type
R60-1M	60 series open loop	Pulse control	18-50VDC	-	Pulse bandwidth 1M
R60-AL	60 series open loop	Pulse control/IO control	18-50VDC	microUSB	24V pulse only
R60-AL-5V	60 series open loop	Pulse control/IO control	18-50VDC	microUSB	5V pulse only
R85	86 series open loop	Pulse control	20-60VAC/24–80VDC	-	
R86S	86 series open loop	Pulse control	20-80VAC/28–110VDC	TTL	
R86mini	86 series open loop	Pulse control/IO control	18-80VAC/24–100VDC	microUSB	
R110PLUS v3.0	86/110 series open loop	Pulse control/IO control	110-220VAC	TTL	Dial to match motor parameters
R130	130 series open loop	Pulse control	110-220VAC	RS232	
3R60	3 phase 60 series open loop	Pulse control	18-50VDC	-	
3R110PLUSv3.0	3 phase 86/110 series open loop	Pulse control	110-220VAC	TTL	Dial to match motor parameters
3R130	3 phase 130 series open loop	Pulse control	110-220VAC	RS232	
R42IOS	42 series open loop	Pulse control/IO control	18-50VDC	TTL	
R60IOS	60 series open loop	Pulse control/IO control	18-50VDC	TTL	
R86IOS	86 series open loop	Pulse control/IO control	20-80VAC/28–110VDC	TTL	
R110PLUS-IO	110 series open loop	IO control	110-220VAC	microUSB	
R130-IO	130 series open loop	IO control	110-220VAC	RS232	
R42IRS	42 series open loop	Potentiometer/IO/Pulse control	18-50VDC	TTL	Potentiometer speed regulation
R60IRS	60 series open loop	Potentiometer/IO/Pulse control	18-50VDC	TTL	
R86IRS	86 series open loop	Potentiometer/IO/Pulse control	20-80VAC/28–110VDC	TTL	
R42-D	42 series open loop	IO control	18-50VDC	-	One Drive Two
R60-D	60 series open loop	IO control	18-50VDC	-	
R60-IRD	60 series open loop	IO control	18-50VDC	-	
R42X2	42 series open loop	Pulse control	18-50VDC	-	Biaxial, 24V pulse only
R42X2-5V	42 series open loop	Pulse control	18-50VDC	-	Biaxial, 5V pulse only
R60X2	60 series open loop	Pulse control	18-50VDC	-	Biaxial, 24V pulse only
R60X2-5V	60 series open loop	Pulse control	18-50VDC	-	Biaxial, 5V pulse only
R60X3	60 series open loop	Pulse control	18-50VDC	-	Triaxial
NT60	60 series open loop	Pulse control/IO/RS485	18-50VDC	RS485	
NT86	86 series open loop	Pulse control/IO/RS485	18-80VAC/24–110VDC	RS485	
NT60-C	60 series open loop	CANopen	18-50VDC	RS485	
NT86-C	86 series open loop	CANopen	18-80VAC/24–110VDC	RS485	
EPR60	60 series open loop	TCP	18-50VDC	TCP/IP	
ECR42	42 series open loop	EtherCAT	18-80VDC	EtherCAT	
ECR60	57/60 series open loop	EtherCAT	18-80VDC	EtherCAT	
ECR60X2A	57/60 series open loop	EtherCAT	18-80VDC	EtherCAT	Biaxial
ECR60X2A-S	57/60 series open loop	EtherCAT	18-80VDC	EtherCAT	Dual axis synchronization
ECR86S	86 series open loop	EtherCAT	20-80VAC/28–110VDC	Type-C	

*The matching motor specification is for reference only, smaller motor is also compatible.

Open Loop Stepper Motor

Motor base	Model	Rated torque (N.M)	Rated current (A)	Matching drive	Shaft diameter* (mm)	Shaft length (mm)	Length (mm)	Notes
20	20AM003	0.03	0.6	R42	G4	10	33	
	20AM005	0.05	0.6		G4	10	45	
28	28AM006	0.06	1.2		D5	20	32	
	28AM01	0.10	1.2		D5	20	41	
	28AM013	0.13	1.2		D5	20	51	
35	35A02	0.2	1.0		D5	20	34	
39	39A02	0.2	1.0		D5	20	36	
42	42AM02	0.2	1.5		D5	24	34	
	42AM04	0.4	1.5		D5	24	40	
	42AM06	0.6	2.0		D5	24	47	
	42AM06-Z2	0.6	2.0		D5	24	78	Brake
	42AM08	0.8	2.0		D5	24	60	
	42AM08-Z2	0.8	2.0		D5	24	91	Brake
	42A01	0.15	1.0		D5	24	34	
	42A02	0.2	1.2		D5	24	40	
	42A03	0.3	2.0		D5	24	47	
	42A08	0.8	2.0		D5	24	60	
57	57AM13	1.3	3.0		D8	21	55	
	57AM13-6.35	1.3	3.0		D6.35	21	55	
	57AM23	2.3	5.0		D8	21	76	
	57AM23-6.35	2.3	5.0		D6.35	21	76	
	57AM24	2.4	5.6		D8	21	80	
	57AM24-Z2	2.4	5.6		D8	21	124	Brake
	57AM26	2.6	5.0		D8	21	84	
	57AM30	3.0	5.0		D8	21	102	
	57AM30-Z2	3.0	5.0		D8	21	146	Brake
	57A09	0.9	2.8	R60	D6.35	21	55	
	57A09-8	0.9	2.8		D8	21	55	
	57A1	1.3	2.8		D6.35	21	76	
	57A1-8	1.3	2.8		D8	21	76	
	57A1S8D	1.3	2.8		D8	21	76	Biaxial
	57A2	2.2	4.0		D8	21	80	
	57A3	3.0	5.0		D8	21	102	
D57	D57AM30	3.0	5.0		D8	21	86	
60	60AM21	2.1	5.0		D8	21	58	
	60AM30	3.0	5.0		D8	21	86	
	60AM30-Z2	3.0	5.0		D8	21	125	Brake
	60AM40	4.0	5.0		D10	30	102	

*G-Plain shaft, D-Single flat, K-Keyed

Open Loop Stepper Motor

Motor base	Model	Rated torque (N.M)	Rated current (A)	Matching drive	Shaft diameter* (mm)	Shaft length (mm)	Length (mm)	Notes
86	86AM35	3.5	4.0	R86	D9.5	32	64	
	86AM45	4.5	6.0		D12.7	32	78	
	86AM45-14	4.5	6.0		K14	32	78	
	86AM45-Z2	4.5	6.0		K14	32	123	Brake
	86AM65	6.5	6.0		K12.7	32	98	
	86AM65-14	6.5	6.0		K14	32	98	
	86AM85	8.5	6.0		K12.7	32	112	
	86AM85-14	8.5	6.0		K14	32	112	
	86AM85-Z2	8.5	6.0		K14	32	157	Brake
	86AM100	10	6.0		K14	32	128	
	86AM120	12	6.0		K15.875	32	155	
	86AM120-14	12	6.0		K14	32	155	
	86AM120-Z2	12	6.0		K14	32	199	Brake
110	110A12	12	6.0	R110PLUS	K19	56	115	
	110A20	20	6.0		K19	56	150	
	110A28	28	6.5		K19	56	201	
130	130A27	27	6.0	R130	K19	45	226	
	130A45	45	7.0		K19	45	283	

*G-Plain shaft, D-Single flat, K-Keyed

Closed Loop Stepper Drive

Model	Matching motor*	Control mode	Power supply voltage	External debug interface	Notes
T42S	42 series closed loop	Pluse control	18-50VDC	TTL	
T60S	57/60 series closed loop	Pluse control	18-50VDC	TTL	
T60-IO	60 series closed loop	IO control	18-50VDC	RS232	
T60-1M	60 series closed loop	Pluse control	18-50VDC	RS232	Pulse bandwidth 1M
T60PLUS v3.0	60 series closed loop	Pluse control	18-50VDC	mini USB	Z signal interface
T86S	86 series closed loop	Pluse control	18-80VAC/24-100VDC	TTL	
T86-IO	86 series closed loop	IO control	18-80VAC/24-100VDC	RS232	
3T60	3 phase 60 series closed loop	Pluse control	18-50VDC	RS232	
3T60PLUS v3.0	3 phase 60 series closed loop	Pluse control	18-50VDC	mini USB	Z signal interface
NT60	60 series closed loop	Pluse control/IO control/RS485	18-50VDC	RS485	
NT86	86 series closed loop	Pluse control/IO control/RS485	18-80VAC/24-100VDC	RS485	
NT60-C	60 series closed loop	CANopen	18-50VDC	RS485	
NT86-C	86 series closed loop	CANopen	18-80VAC/24-110VDC	RS485	
DS86	86 series closed loop	Pluse control	20-80VAC/24-110VDC	Type-C	
EPT60	60 series closed loop	TCP	18-50VDC	TCP/IP	
ECT42	42 series closed loop	EtherCAT	18-80VDC	EtherCAT	
ECT60	57/60 series closed loop	EtherCAT	18-80VDC	EtherCAT	
ECT60X2	57/60 series closed loop	EtherCAT	18-80VDC	EtherCAT	Biaxial
ECT60X2-S	57/60 series closed loop	EtherCAT	18-80VDC	EtherCAT	Dual axis synchronization
ECT86	86 series closed loop	EtherCAT	18-80VAC/24-100VDC	EtherCAT	

*The matching motor specification is for reference only, smaller motor is also compatible.

Closed Loop Stepper Motor

Motor base	Model	Rated torque (N.M)	Rated current (A)	Matching drive	Extension cord*	Shaft diameter* (mm)	Shaft length (mm)	Length (mm)	Notes
20	20AM003EC	0.03	0.6	T42	Encoder cable C1-030	G4	20	46	
28	28AM006EC	0.06	1.2			D5	20	45	
	28AM013EC	0.13	1.2			D5	20	64	
42	42A03EC	0.3	2.0		Power cable C2-030**	D8	21	69	
	42A08EC	0.8	2.8			D8	21	85	
	42AM06ED	0.6	2.0			D5	24	67	
	42AM06ED-Z2	0.6	2.0		Encoder cable B1-030	D5	24	98	Brake
	42AM06ED-8	0.6	2.0			D8	24	67	
	42AM08ED	0.8	2.0			D5	24	79	
	42AM08ED-Z2	0.8	2.0		Power cable C2-030**	D5	24	110	Brake
	42AM08ED-8	0.8	2.0			D8	24	79	
	42AM08ED-8-Z2	0.8	2.0			D8	24	110	Brake
57	57AM13ED	1.3	4.0	T60	Encoder cable B1-030	D8	22	77	
	57AM23ED	2.3	5.0			D8	22	98	
	57AM24ED-Z2	2.3	5.0			D8	22	142	Brake
	57AM26ED	2.6	5.0			D8	22	106	
	57AM30ED	3.0	5.0			D8	22	124	
	57AM30ED-Z2	3.0	5.0			D8	22	168	Brake
D57	D57AM30ED	3.0	5.0		Power cable C2-030**	D8	22	107	
60	60AM22ED	2.2	5.0			D8	22	79	
	60AM30ED	3.0	5.0			D8	22	107	
	60AM30ED-Z2	3.0	5.0			D8	22	150	Brake
	60AM40ED	4.0	5.0			D10	30	123	
86	86AM45ED	4.5	6.0	T86	Encoder cable B1-030	K14	40	105	
	86AM45ED-Z2	4.5	6.0			K14	40	151	Brake
	86AM65ED	6.5	6.0			K14	40	127	
	86AM85ED	8.5	6.0			K14	40	140	
	86AM85ED-Z2	8.5	6.0			K14	40	185	Brake
	86AM100ED	10	6.0		Power cable C2-030**	K14	40	157	
	86AM120ED	12	6.0			K14	40	182	
	86AM120ED-Z2	12	6.0			K14	40	228	Brake
42	42AM06ECZ	0.6	2.0	T60PLUS	Encoder cable CES8-030	D5	24	67	Z signal
	42AM08ECZ	0.8	2.0			D5	24	79	
57	51A1ECZ	1.3	4.0			D8	22	76	
	57A2ECZ	2.0	3.5			D8	22	98	
	57A3ECZ	3.0	5.0			D8	22	123	
60	60A3ECZ	3.0	5.0		Power cable C2-030**	D8	22	110	
86	86AM45ECZ	4.5	6.0	T86		K14	40	105	
	86AM100ECZ	10	6.0			K14	40	157	
	86A12ECZ	12	6.0			K14	40	176	

*The standard length of the extension cable is 3 meters, if you need other sizes, please specify when ordering

**Power cable C2 is an optional model, if necessary, please specify when ordering

***G-Plain shaft, D-Single flat, K-Keyed

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