DC BRUSHLESS MOTOR

泰映微信搜一搜
TROY WeChat

Tonet Network Communication

Intelligent Connect Operation

Positioning Type
Speed Control Motor

AIO
I/O Type

AIOM
Communication Type

PM S1 S2 S3 S4

CN1 P CN2 S1 S2

Ver. 2.1

TROY

"All IN ONE"
AIO
Positioning Type
Speed Control Motor

Motor and Controller 2 in 1
Reduce the size · Save space

Same characteristics as brushless motors:
Continuous Operation
Constant Torque
Speed Control

+

Same characteristics as stepper motors:
Positioning Function

TROY

Modbus

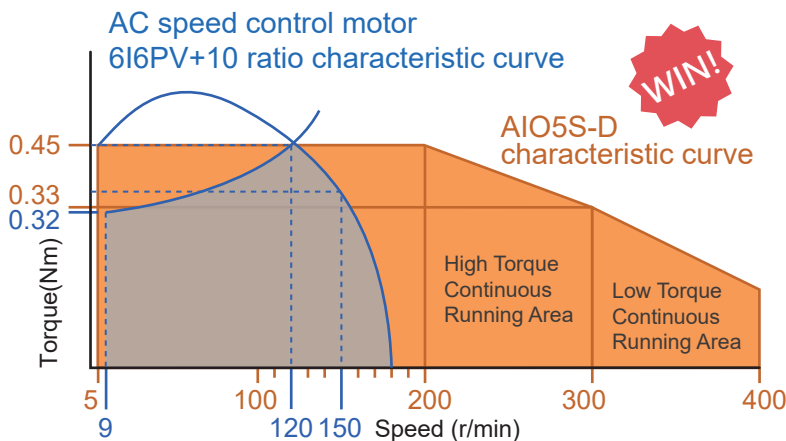### ◆ I/O Type • Communication Type

- Two modes of speed and positioning can be set according to needs.

- With positioning completion signal output function, it is easy to understand the current motor operating status.

- Fool-proof terminal design, easy to install and save time for locking screws.
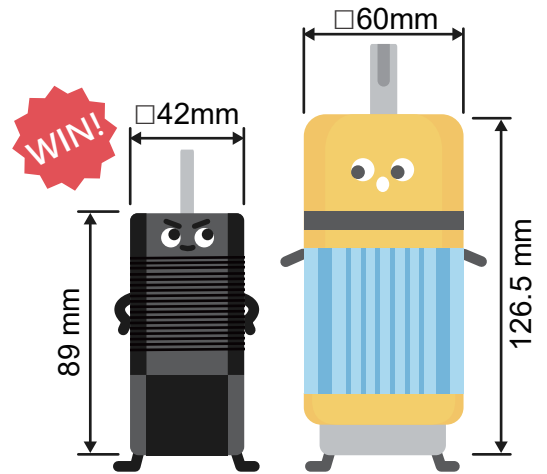
Network Communication Control-AIOM

- Compatible with Modbus RTU communication protocol, serially connected with USB TYPE-C for communication control, simplifying wiring.

- It can be connected with PC, PLC, HMI and other devices for Modbus communication.

The speed changes, the torque remains the same!

AC speed control motor
6I6PV+10 ratio characteristic curve

WIN!

AIO5S-D characteristic curve

Torque(Nm)

0.45
0.33
0.32

High Torque Continuous Running Area

Low Torque Continuous Running Area

5   9   100   120 150   200   300   400
Speed (r/min)

Small size, but high torque!
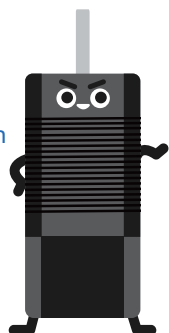
WIN!

□42mm

□60mm

89 mm

126.5 mm

AIO(M)5S-D   **V.S.**   6I6PV+10 ratio

Both permissible torque is 0.45Nm

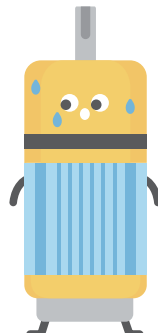## Comparison of temperature rise!

Continuous operation without heating up.

WIN!

AIO(M)

Continuous operation temperature is about 50°C

AC Speed Control Motor

Continuous operation temperature is about 70~80°C

Stepper Motor

Continuous operation temperature is about 100°C

Product Number Code

AIO	M	3	S	-	D
Product Series	Type	Power Output	Shaft Type		Power Input
Motor · Controller All IN ONE	None: I/O Type M: Communication Type (Modbus RTU)	3: 3W 5: 5W 10: 10W 15: 15W	S: Round Shaft Type		D: DC24V

CE RoHS 2.0✓

Motor Specification and Characteristics

Power Output				3W	5W	10W	15W
Motor Round Shaft Type		I / O Type		AIO3S-D	AIO5S-D	AIO10S-D	AIO15S-D
		Communication Type		AIOM3S-D	AIOM5S-D	AIOM10S-D	AIOM15S-D
Power Input	Rated Voltage		V	DC24 ± 10%			
	Max. Current		A	2			
	Rated Current		A	1.2		1.4	
Max. Torque			Nm	0.31	0.45	0.65	1.3
Rated Torque			Nm	0.25	0.33	0.5	0.7
Permissible Inertia Load GD^2			$kgcm^2$	2	4	12	30
Max. Speed			r/min	400			200
Rated Speed			r/min	300			150
Speed Control Range			r/min	【AIO】：5～400 【AIOM】：1～400			【AIO】：5～200 【AIOM】：1～200
Acceleration and Deceleration Time Setting			Sec	【AIO】：0.5～9 ；【AIOM】：0.3～15			
Positioning Angle Setting			°	【AIO】：0.9～3600；【AIOM】：0.1～65534			
Protection Rating	Dustproof / Waterproof			Motor：IP20			
Protection Mechanism	Power Input			Power input reverse connection protection			

* The torque, permissible inertia load and speed in the specification table are the actual values when the motor is not equipped with a gearbox.
* The permissible inertia load listed in the above table is the allowable value of the round shaft motor.
  Please pay attention to the relational expression of $GD^2=4J$ when selecting and calculating.
* Torque 1Nm=10.19716 kgcm.
* AIO Relative speed variation is ±2%；AIOM is ±1%.

AIOM Communication Specification

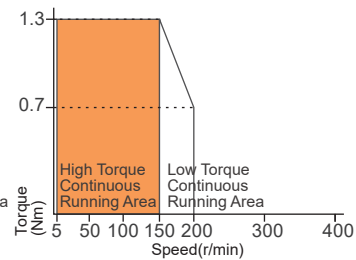| Electrical Characteristics	Comply with communication standards—EIA-485.
Transmission Mode	Synchronized half-duplex.
Communication Parameters	【Communication Rate】9600, 14400, 19200, 28800, 38400, 57600, 115200 bps [Factory default：19200 bps] 【Data Bit】8 bits 【Stop Bit】1 bit 【Parity Check】None
Communication Protocol	Modbus RTU
Connection Range	Number of connected machines：247 Machine number：[01~F7] (Theoretical Value) * The total connection distance of the work site, environmental conditions... etc. will affect the actual number of units that can be connected (recommended total connection distance <50m).
Connection Object	Connect to PC, PLC, HMI...., and other upper-level controllers with RS485 communication interface.
Connector Specifications	For USB TYPE C, please use a cable with a metal isolation net.

Speed-Torque Characteristic Diagrams

◆ AIO

AIO3S-D
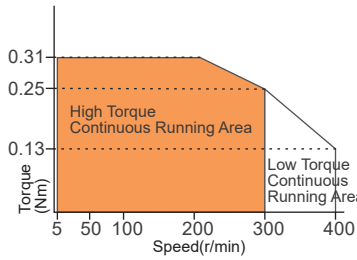
AIO5S-D
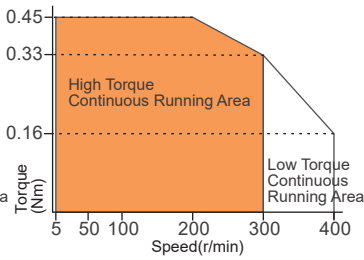
AIO10S-D
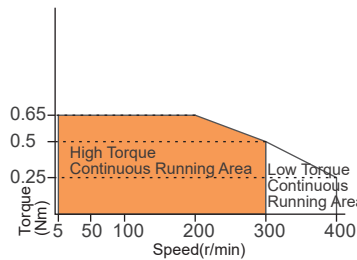
AIO15S-D

◆ AIOM

AIOM3S-D
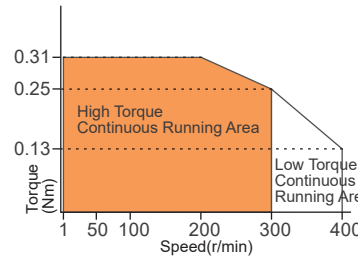
AIOM5S-D
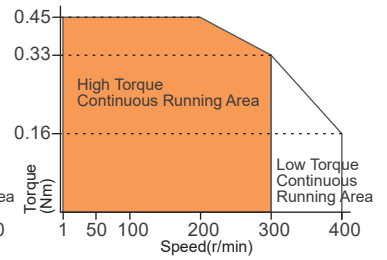
AIOM10S-D
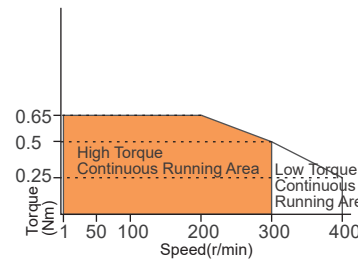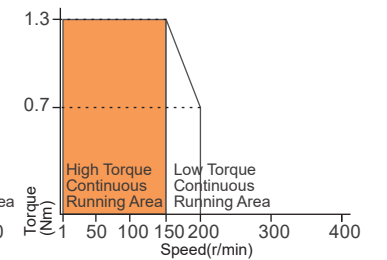
AIOM15S-D

Dimensions

◆ AIO(M)3S-D · AIO(M)5S-D

(Unit : mm)

4-M3*0.5P
4.5DP
□42.3 max.
31±0.1

Ø6-0.012
5.5±0.15
Axial side diagram

L   29
10   13
1
Ø22-0.052
43
24±1
2
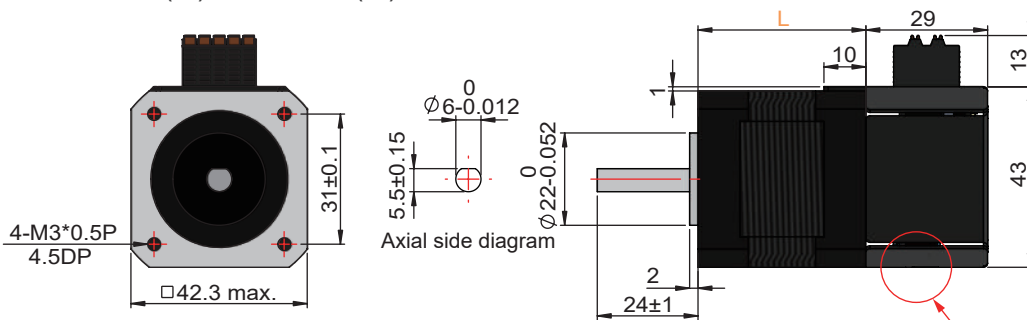
*The spec of AIO(M)□S-D length L as following:

Model	AIO(M)3S-D	AIO(M)5S-D
Length(mm)	40max.	60max.
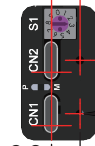
2-M2*0.4P
TYPE-C
Screw holes
6.8
AIOM□S-D
TYPE-C Screw holes diagram

◆ AIO(M)10S-D · AIO(M)15S-D

4- Ø4.6
50±0.15
□60

Ø8-0.013
7.5±0.1
Axial side diagram

L   29.5
7   12   13
1.5
Ø36±0.05
63
1.7
21±1
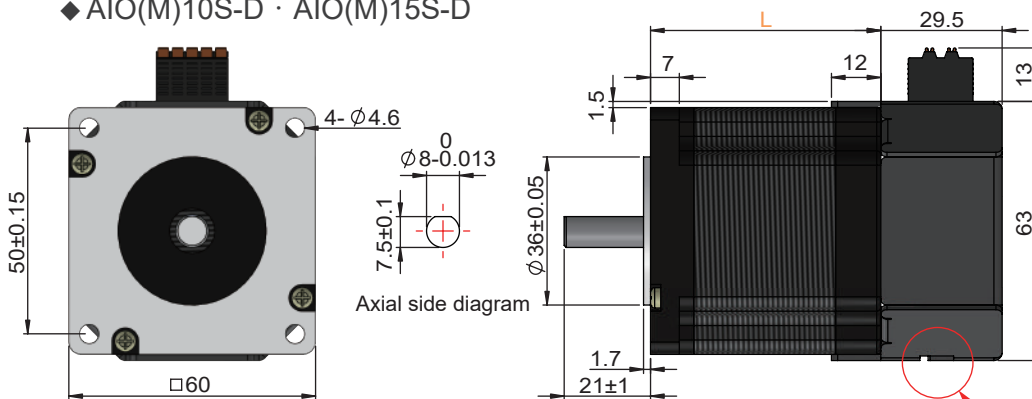
*The spec of AIO(M)□S-D length L as following:

Model	AIO(M)10S-D	AIO(M)15S-D
Length(mm)	56±1	87±1
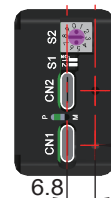
2-M2*0.4P
TYPE-C
Screw holes
6.8
AIOM□S-D
TYPE-C Screw holes diagram

◆ AIO□S-D series accessories "Variable Resistor(DBVR)" should order additionally，If you require any information please contact our distributors in various regions.