

AC Power Input 2-Phase Closed-loop Stepper Motor Driver



AiSA-D Series CATALOG

For your safety, read and follow the considerations written in the instruction manual, other manuals and Autonics website.

The specifications, dimensions, etc. are subject to change without notice for product improvement. Some models may be discontinued without notice.

Features

- Closed-loop system with real-time position control
- High speed & high torque drive without missing steps
- Supports 200 - 240 VAC~ AC power
- Easy operation setting with external adjuster (Gain, Speed filter, In-position, Resolution)
- 7 segment display for alarm / status reading
- Supports torque mode
- Supports Auto Current Down mode
- Built-in brake type motors available (AiSA-D-B Series)

Ordering Information

This is only for reference, the actual product does not support all combinations.. For selecting the specified model, follow the Autonics website. Select a model that matches the ordering information of the motor and the driver.

AiSA - **D** - **①** **②** **A** - **③**

① Frame size

Number: Frame size (mm)

② Axial length

M: Medium

L: Long

③ Motor type

No mark: Standard type

B: Built-in brake type

Product Components

- Product
- Instruction manual
- Power connector
- I/O connector
- Brake connector (AiSA-D-B Series)

Specifications

Model	AiSA-D-60MA-□	AiSA-D-60LA-□	AiSA-D-86MA-□	AiSA-D-86LA-□
Main	Power supply	200 - 240 VAC ~ 50 / 60 Hz		
	Max. RUN power ⁰¹⁾	≤ 800 VA		
	Stop power ⁰²⁾	≤ 60 VA	≤ 65 VA	≤ 70 VA
AUX ⁰³⁾	Power supply	24 VDC≒		
	Input current	0.3 A	0.5 A	
Max. RUN current ⁰⁴⁾	2.0 A / Phase			
Stop current	20% to 100% of max. RUN current			
Resolution	500 (factory default), 1000, 1600, 2000, 3200, 3600, 5000, 6400, 7200, 10000 PPR			


01) When changing the load rapidly, instantaneous peak current may increase. The capacity of power supply should be over 1.5 to 2 times of max. RUN power.

02) Based on ambient temp. 25°C, ambient humi. 55%RH, stop current 50%

03) Auxiliary power is only available in built-in brake type and not available in standard type.

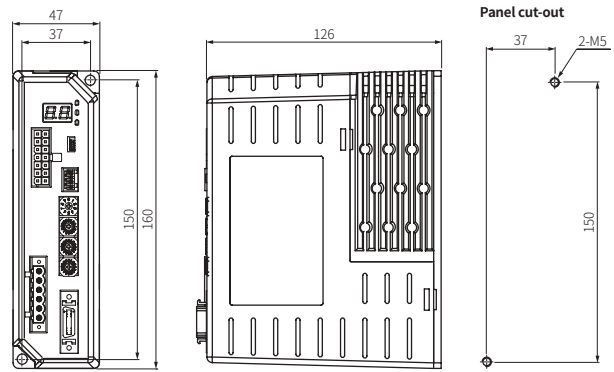
04) RUN current varies depending on the input RUN frequency and max. RUN current at the moment varies also.

Run method	2-phase bipolar closed-loop control method
Speed filter	Disable (factory default), 2, 4, 6, 8, 10, 20, 40, 60, 80, 100, 120, 140, 160, 180, 200 ms
Control Gain	Standard Gain: 0 to F, Inertia Gain: 0 to F
Max. rotation speed	3000 rpm
In-Position	Fast Response: 0 (factory default) to 7, Accurate Response: 0 to 7
Rotation direction	CW (factory default), CCW
Operation mode	Standard mode, Torque mode
Input	CW/CCW (RUN pulse), Servo ON/OFF, Alarm Reset (Photocoupler input)
Output	In-Position, Alarm Out (Photocoupler output), Encoder Signal (A, \bar{A} , B, \bar{B} , Z, \bar{Z} , Line driver output)
Pulse input method	1 pulse, 2 pulse (factory default)
Pulse input voltage	CW, CCW-[H]: 4 - 8 VDC≒, [L]: 0 - 0.5 VDC≒, Servo ON/OFF, Alarm Reset-[H]: 24 VDC≒, [L]: 0 - 0.5 VDC≒
Max. input pulse frequency	CW, CCW: 500 kHz
Pulse width	CW, CCW: Input pulse frequency duty 50% Servo ON/OFF: ≥ 1 ms Alarm Reset: ≥ 10 ms
Rise fall time	CW, CCW: < 0.5 μs

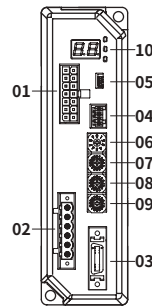
Input resistance	4.7 kΩ (Anode Pull-Up)
Insulation resistance	≥ 200 MΩ (500 VDC≒ megger)
Dielectric strength	1,500 VAC ~ 60 Hz for 1 minute
Vibration	1.5 mm double amplitude at frequency 10 to 55 Hz (for 1 minute) in each X, Y, Z direction for 2 hours
Shock	300 m/s ² (≈ 30 G) in each X, Y, Z direction for 3 times
Ambient temp.	0 to 50°C, storage: -10 to 60°C (no freezing or condensation)
Ambient humi.	35 to 85%RH, storage: 10 to 90%RH (no freezing or condensation)
Protection rating	IP20 (IEC standard)
Approval	CE  ENEC
Unit weight (packaged)	≈ 780 g (≈ 1,020 g)

Dimensions

• Unit: mm, For the detailed drawings, follow the Autonics website.



Unit Descriptions



01. Motor + Encoder connector
02. Power connector
03. I/O connector
04. Brake connector
05. Function selection DIP switch
06. Resolution setting rotary Switch
07. Control Gain setting rotary switch
08. Speed filter / Speed limit setting rotary switch
09. In-Position setting rotary switch
10. Status display part / indicators

Sold Separately

- Motor + Encoder cable: C1D14M-□ (fixed type), C1DF14M-□ (flexible type)
- I/O cable: CO20-MP□-R (specifications: AiS TAG)

Sold Separately : Motor + Encoder Cable

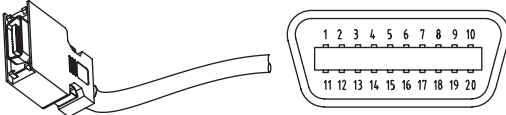
■ Fixed type: C1D14M-□, Flexible type: C1DF14M-□



- Recommended to use ferrite core at both ends of the cable.
- The model name is 1, 2, 3, 5, 7, 10, 15, 20 which indicates the cable length.
E.g.) C1DF14M-10: 10 m flexible type, Motor + Encoder cable

Sold Separately : I/O Cable

■ CO20-MP□-R (specifications: AiS TAG)



Pin	Function (Name TAG)	Cable color	Dot line color-number
1	CW+	Yellow	Black-1
2	CW-		Red-1
3	CCW+		Black-2
4	CCW-		Red-2
5	Servo ON/OFF+		Black-3
6	Servo ON/OFF-		Red-3
7	Alarm Out+		Black-4
8	Alarm Out-		Red-4
9	Alarm Reset+		Black-5
10	Alarm Reset-		Red-5
11	In-Position+	White	Black-1
12	In-Position-		Red-1
13	-		Black-2
14	-		Red-2
15	Encoder A		Black-3
16	Encoder \bar{A}		Red-3
17	Encoder B		Black-4
18	Encoder \bar{B}		Red-4
19	Encoder Z		Black-5
20	Encoder \bar{Z}		Red-5

- Recommended to use ferrite core at both ends of the cable.
- The model name is 010, 020, 030, 050, 070, 100, 150, 200 which indicates the cable length.
E.g.) CO20-MP070-R: 7 m I/O cable