

Micro step 5-phase Stepper Motor Driver



MD5-HD14-2X / MD5-HD14-3X 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

- Bipolar constant current pentagon drive method
- Various built-in functions including auto current down and self-diagnosis
- Isolated photocoupler input design minimizes influence from electrical noise

Product Components

- Product
- Instruction manual

Specifications

Model	MD5-HD14-2X	MD5-HD14-3X
Number of axes	2-axis	3-axis
Power supply ⁰¹⁾	20 - 35 VDC \pm \pm 10%	
Max. current consumption ⁰²⁾	5 A	7 A
RUN current ⁰³⁾	0.4 - 1.4 A / Phase	
Stop current	27 to 90% of RUN current (set by STOP current setting rotary switch)	
RUN method	Bipolar constant current pentagon drive	
Basic step angle	0.72° / Step	
Resolution	1, 2, 4, 5, 8, 10, 16, 20, 25, 40, 50, 80, 100, 125, 200, 250 division (0.72° to 0.00288° / Step)	
Pulse width	\geq 1 μ s (CW / CCW), \geq 1 ms (HOLD OFF)	
Duty rate	50% (CW / CCW)	
Rise, Fall time	\leq 130 ns (CW / CCW)	
Pulse input voltage	[H]: 4 - 8 VDC \pm , [L]: 0 - 0.5 VDC \pm	
Pulse input current	7.5 - 14 mA (CW / CCW), 10 - 16 mA (HOLD OFF, ZERO OUT)	
Max. input pulse freq.	\leq 500 kHz (CW / CCW)	
Input resistance	270 Ω (CW / CCW), 390 Ω (HOLD OFF), 10 Ω (ZERO OUT)	
Insulation resistance	Between all terminal and case: \geq 100 M Ω (500 VDC \pm megger)	
Dielectric strength	Between all terminal and case: 1,000 VAC \sim 50 / 60 Hz for 1 minute	
Noise immunity	\pm 500 VDC \pm square wave noise (pulse width: 1 μ s) by the noise simulator	
Vibration	1.5 mm double amplitude at frequency 5 to 60 Hz (for 1 minute) in each X, Y, Z direction for 2 hours	
Vibration (malfunction)	1.5 mm double amplitude at frequency 5 to 60 Hz (for 1 minute) in each X, Y, Z direction for 10 minutes	
Ambient temp.	0 to 40°C, storage: -10 to 60°C (no freezing or condensation)	
Ambient humi.	35 to 85% RH, storage: 35 to 85% RH (no freezing or condensation)	
Approval	CE ENEC	
Unit weight (packaged)	\approx 292 g (\approx 446 g)	\approx 411 g (\approx 597 g)

01) If a power supply is over 30 VDC \pm , the torque characteristics in the high speed range will improve, but the driver's temperature will increase as well. Install the unit in well-ventilated area. The torque may vary depending on power supply.

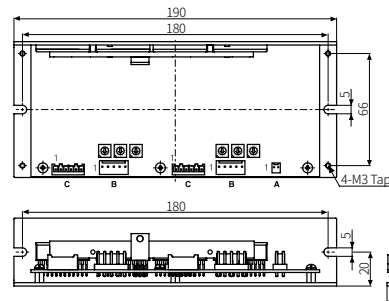
02) Based on ambient temp. 25°C, ambient humi. 55%RH

03) RUN current varies depending on the RUN frequency, and the max. instantaneous RUN current varies depending on load.

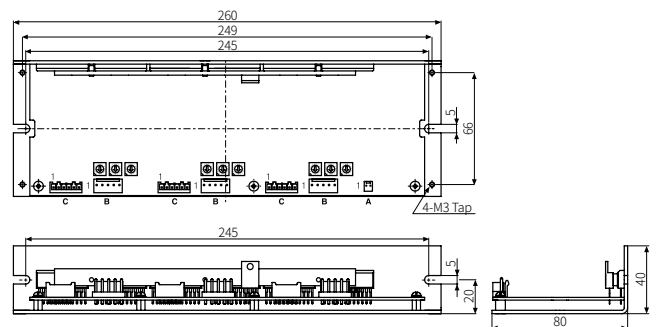
Dimensions

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

■ MD5-HD14-2X



■ MD5-HD14-3X



■ Connector spec.

Item	Connector		Quantity	
	Manufacture	Name	MD-HD14-2X	MD-HD14-3X
A Power 2-wire housing	JST	VHR-2N	1	1
B Motor 5-wire housing		VHR-5N	2	3
C Signal 6-wire housing		XAP-06V-1	2	3
- Power/Motor terminal pin		SVH-21T-P1.1	12	17
- Signal terminal pin		SXA-001T-P0.6	12	18