

Stepper motor Kann34H2nnn-ccc-K24c000

KannMOTION series

Product description

- Stepper motor with built in controller
- Absolut position encoder ¹⁾
- Motor driver 12..60VDC/10A ²⁾
- Controller logic 12/24VDC
- Energy recovery with external resistor



Interfaces

- 4 digital inputs / with adjustable thresholds
- 2 digital output / configurable logic (PNP /NPN)
- 1 analogue input (0..10V)
- 1x RS232
- Recovery Resistor

Benefits / Software

- Closed or open loop operation
- Flexible configuration and programming via free configuration tool
- Build in PLC function
- Free programming tool
- Variety of software function
- Fully controllable over a terminal. Protocol is open and free to use
- Updates, Documents, Tutorials and Videos easy accessed at www.KannMOTION.de (in progress)

¹⁾ Absolut position on one turn

²⁾ Might be limited in time, restricted by losses! <Chip temperature>, take care about PCB cooling depending on application

Model	Holding torque [Nm]	Current [A/phase]	Resistance [Ohm]	Inductance [mH]	Rotor inertia [kgcm ²]	Length A [mm]
KANN34H2080-600-K24c000	4.4	6	0.37	3.2	1.6	80
KANN34H2120-600-K24c000	8.2	6	0.57	6.0	3.6	120

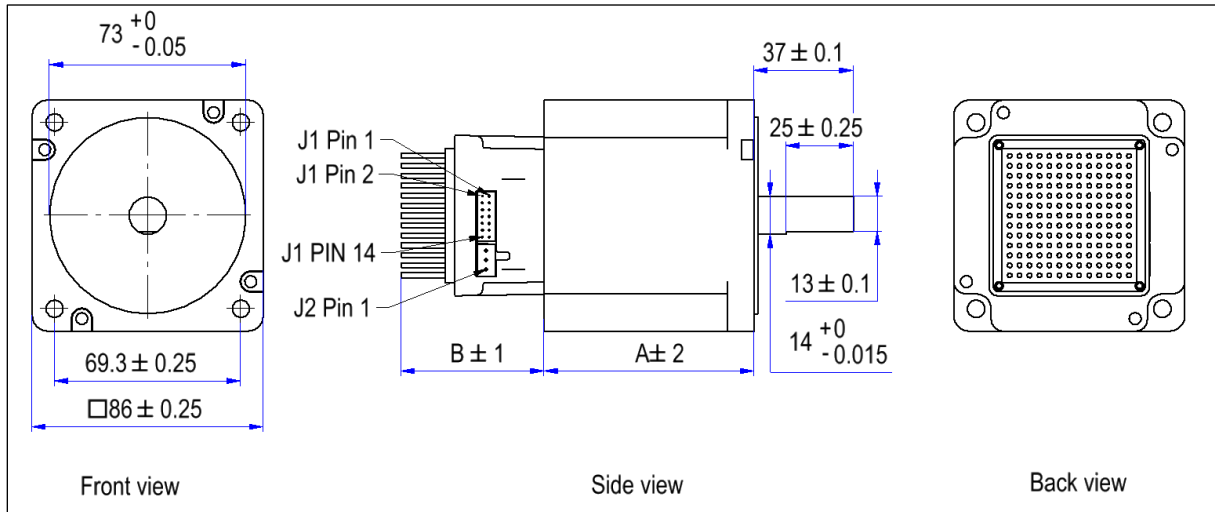
Length B is depending on the heat sink.

Technical data (Maximum ratings)

Rated supply voltage (motor drive)	12 to 60 VDC
Rated supply voltage (Logic)	12 to 24 VDC
Max. motor phase current ³⁾	10 A _{peak} / 5 A _{RMS}
Ambient temperature range	-10 to +40°C
Connection terminal power	3 pole / wire max. 1.0 mm ² / 10A per pin
Connection terminals	14 pole / wire max. 0.5 mm ² / 6A per pin
Position control accuracy	+/-1°
Motor control mode	Voltage / micro stepping up to 1/128 depending on speed and mode

³⁾ Might be limited in time, restricted by losses! <Chip temperature>, take care about PCB cooling depending on application

Dimensions (in mm)

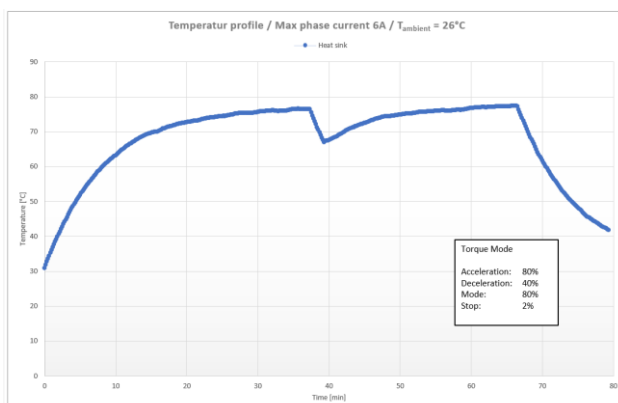


Torque curves



Soon to come

Temperatur profile



Ordering information

Part number	Description
100 500.000	Kann34H2080-600-K24c000
100 501.000	Kann34H2120-600-K24c000
200 933.000	J1 / 14 pole female 0.5mm ² max 6A
	J2 / 3 pole female power connector 1.0mm ² max 10A

Connection terminals J1 (Control interface)

Pin	Description	Nominal	Absolute max	Comment
1	GND	-	-	Reference
2	V _{in}	12 / 24 VDC	30V	Supply of PCB logic, also PCB output
3	Step In / Boot	0: Not connected	-15V/+30V	Update control input (Optional step signal)
4	A _{in}	0..10V	30V	Analog input
5	R _x	±5V	±15V	RS232
6	T _x	±5V	±15V	RS232
7	Out2 ⁴⁾	GND..V _{in} I _{max} : 10mA	V _{in}	- Short-circuit-proof - Capacitive load max. 100nF - Overload detection @ 15mA
8	Out1 ⁴⁾			
9	D _{In} 4 ⁵⁾	5V / 12V / 24V	30V	Thresholds defined in firmware
10	D _{In} 3 ⁵⁾		30V	
11	D _{In} 2 ⁵⁾		30V	
12	D _{In} 1 ⁵⁾		30V	
13	GND	-	-	Reference
14	V _{in}	12 / 24 VDC	30V	Supply of PCB logic, also PCB output

Connector J2 (Power interface)

Pin	Description	Nominal	Absolute Max	Comment
1	GND	-		Power input reference
2	V _{motor}	12/24/36/48/60 VDC	72 VDC	Power input
3	Chopper _{Out}	-	10A	Open drain output ⁶⁾

4): See section software configuration of outputs

5): See section software configuration of inputs

6): To connect a power resistor (deceleration resistor) to overtake some deceleration energy. Correct setting of load resistor will avoid damage of electronics, to avoid driver damage by overvoltage caused by motor

Software Configuration of Input Thresholds

Setting	V _{IH} (High level input voltage)	V _{IL} (Low level input voltage)
SPS_24V	>15.0	<5.0
SPS_12V	>7.5	<2.5
TTL_5V	>2.7	<1.5
TTL_3V3	>2.0	<1.0

Software Configuration of Outputs

Setting	V _{OH} (High level output voltage)	V _{OL} (Low level output voltage)
Push (PNP)	V _{in} – 0.5V @ 10mA	HiZ ¹
Pull (NPN)	HiZ ⁴	GND + 0.5V @ 10mA
Push Pull	V _{in} – 0.5V @ 10mA	GND + 0.5V @ 10mA

4): HiZ means high impedance, level is depending on load connected, level not maintained by KannMOTION

Proper use



Do not connect or disconnect motor during operation!

Motor cable and motor inductivity might lead to voltage spikes when the motor is disconnected / connected while energized. These voltage spikes might exceed voltage limits of the driver MOSFETs and might permanently damage them. Therefore, always disconnect power supply before connecting / disconnecting the motor



Keep the power supply voltage below the upper limit!

Otherwise the driver electronics will seriously be damaged! Especially, when the selected operating voltage is near the upper limit a regulated power supply is highly recommended.



Check your mechanical system, is it able to drive the motor, avoid motor being used as generator

Every motor could be operated as an voltage generator, so take care about generated voltage, this might damage your electronics by overvoltage. Add some voltage limiter units to keep supply voltage in range.

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