

## Integrated stepper motor Kan17Hxxxx-K17i

## CANOPEN - NEMA 17 - Gen 2

### Product description

The Kann17Hxxx-K17i is a versatile high-power stepper motor with an integrated controller. It achieves ultra-smooth and quiet operation with up to 1/256 micro-stepping, optimizing efficiency with its standstill power-saving option. Safety features include stall detection, undervoltage detection, dual power inputs, overcurrent protection, and thermal shutdown. Its integrated magnetic position encoder serves as a single-turn absolute position sensor, and automatic position saving converts it into a multi-turn absolute system. Additionally, the integrated PLC enables various standalone applications.



### Interfaces

- CANOPEN CIA 301 & CIA402 – [Link](#)
- 1 analog input (0..10V)
- Break interface

### Benefits / Software

- Closed loop operation
- Build in PLC functions
- Variety of software functions and error handling possibilities
- Fully controllable over CANopen.
- DIP Switches (Factory setting, Adress setting, ..)
- Updates, documents, tutorials and videos at [www.KannMOTION.com](http://www.KannMOTION.com)

## Technical data

<b>Rated supply voltage</b>	12 to 48 VDC $\pm 10\%$
<b>Max. motor phase current <sup>1)</sup></b>	3 A
<b>Ambient temperature range</b>	-10 to +40°C
<b>Position control accuracy</b>	$\pm 1^{\circ 2)}$
<b>Motor control mode</b>	Micro stepping 256

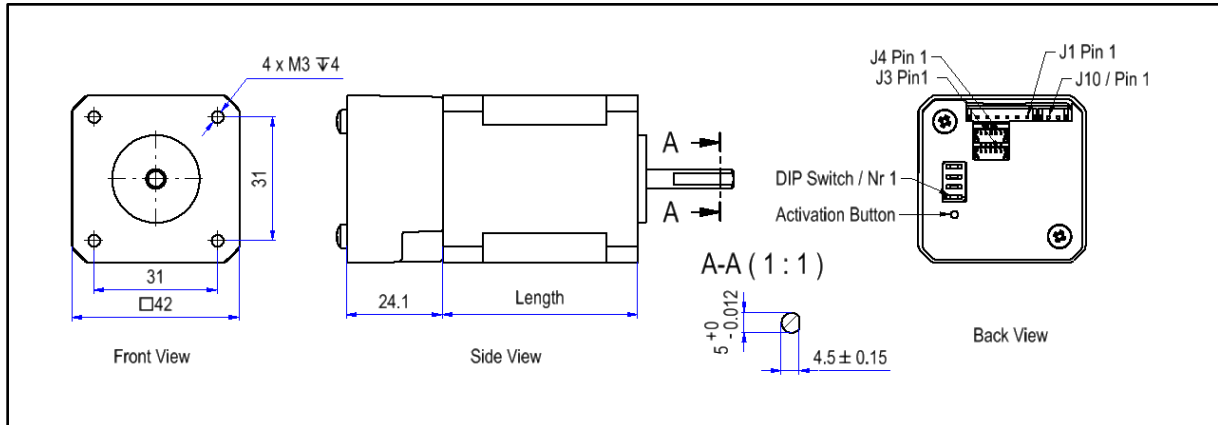
## Connector

<b>Connector J1</b>	JST 6 pole type B6B-EH
<b>Connector J3,J4</b>	1.25 mm Pitch 5 pole

1) The maximum current is limited due to the maximum temperature caused by losses. Sufficient cooling is advised

2) Depending on mechanical positioning of the magnet

## Dimensions (in mm)



## Ordering information

Part number	Description	Holding torque [Nm]	Length [mm]
300 562. xxx	Kann17H2034-120-K17i-JST	0.25 Nm	34
300 563. xxx	Kann17H2041-200-K17i-JST	0.4 Nm	41
300 564. xxx	Kann17H2049-240-K17i-JST	0.48 Nm	49
300 519. xxx	Kann17H2061-150-K17i-JST	0.72 Nm	61

## Ordering information accessories

Part number	Description	Accessories
100 732. xxx	USB - CAN converter isolated, with housing	X
300 065. xxx	Cable harness / converter modules K17c-JST	X
300 535. xxx	Interface cable CAN for K17i daisy-chain	X
300 534. xxx	Power cable K17c/K17i (without CAN interface)	X

## Connection terminals J1

Pin <sup>3)</sup>	Description	Nominal	Absolute max	Comment
1	V <sub>motor</sub>	48 VDC	54 VDC	Supply of motor drive (Power)
2	V <sub>in</sub> <sup>3)</sup>	48 VDC	54 VDC	Supply of PCB logic, also for logic outputs
3	CAN-H <sup>3)</sup>	3.5 V	±24V	CAN bus signal (not terminated)
4	CAN-L <sup>3)</sup>	1.5 V	±24V	CAN bus signal (not terminated)
5	AIN	0-10 VDC	54 V	Analog Input
6	GND <sup>3)</sup>	-	-	Reference

## Connection terminals J3 & J4

Pin <sup>3)</sup>	Description	Nominal	Absolute max	Comment
1	V <sub>in</sub> <sup>3)</sup>	48 VDC	54 VDC	Supply of PCB logic, also for logic outputs
2	Earth			
3	CAN-L <sup>3)</sup>	1.5 V	±24V	CAN bus signal (not terminated)
4	CAN-H <sup>3)</sup>	3.5 V	±24V	CAN bus signal (not terminated)
5	GND <sup>3)</sup>	-	-	Reference

3) J1 Vin, J3 Vin and J4 Vin are internally connected. As is with GND, CAN-H and CAN-L

## Connection terminals J10 / Break

Pin <sup>3)</sup>	Description	Nominal	Absolute max	Comment
1	Out+	8 – 52 VDC	54 VDC	I <sub>max</sub> 0.2A RMS
2	Out-			

## DIP Switch & Activation Button

The K17i features a 4-DIP switch and an activation button. Depending on the setting, the node address can be altered, or the factory setting can be restored. To activate the designated DIP switch configuration, you must press the activation button in a certain order.

Dip 1	Dip 2	Dip 3	Dip 4	Comment
0	x	x	x	Set Node Address (Base-Address + xxx)
1	0	0	0	Restore CAN communication settings to factory default
1	0	0	1	Restore CAN application settings to factory default
1	0	1	0	Restore KANN driver settings to factory default
1	1	x	x	Reserved

Note: All 'Restores' can also be performed sequentially before a Power On/Off activates them.

### Factory setting

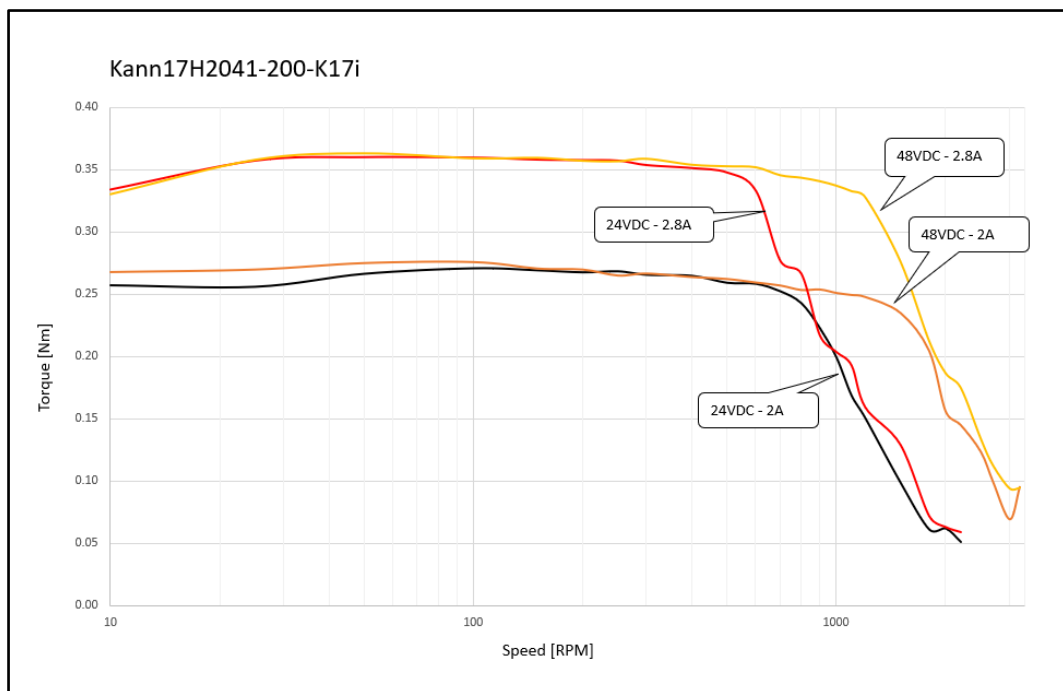
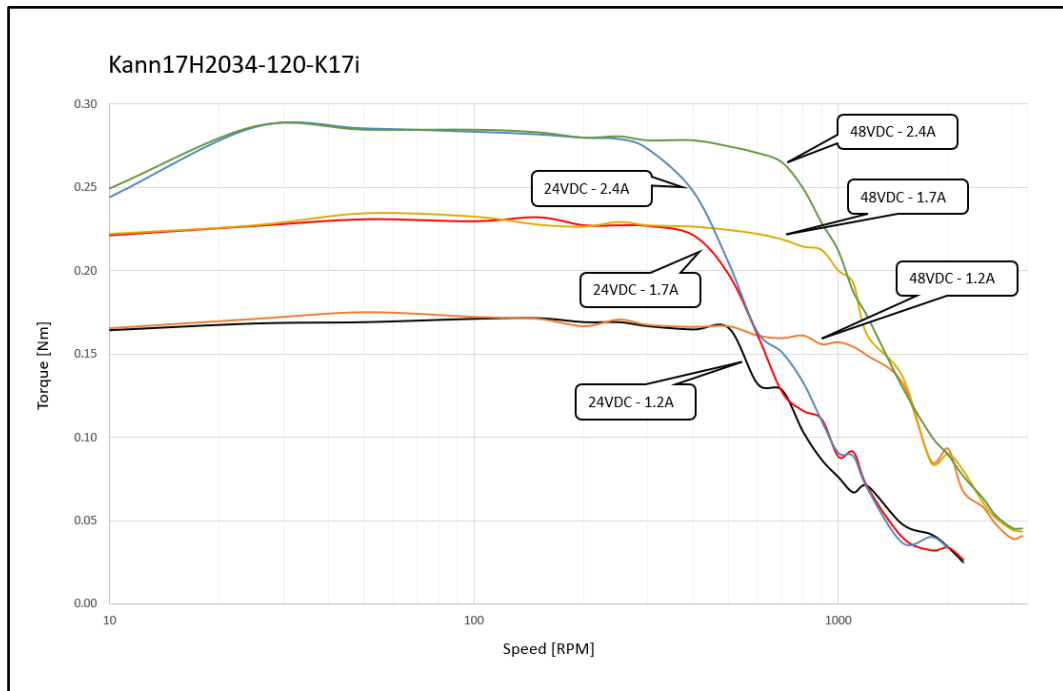
Factory node address = 0x7F (127)

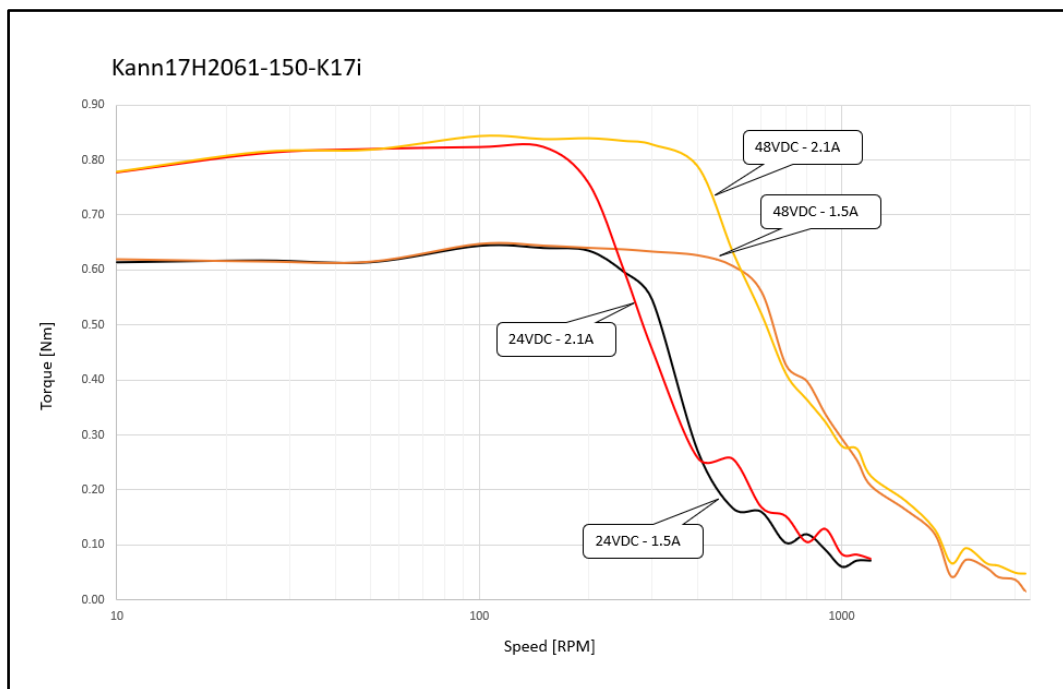
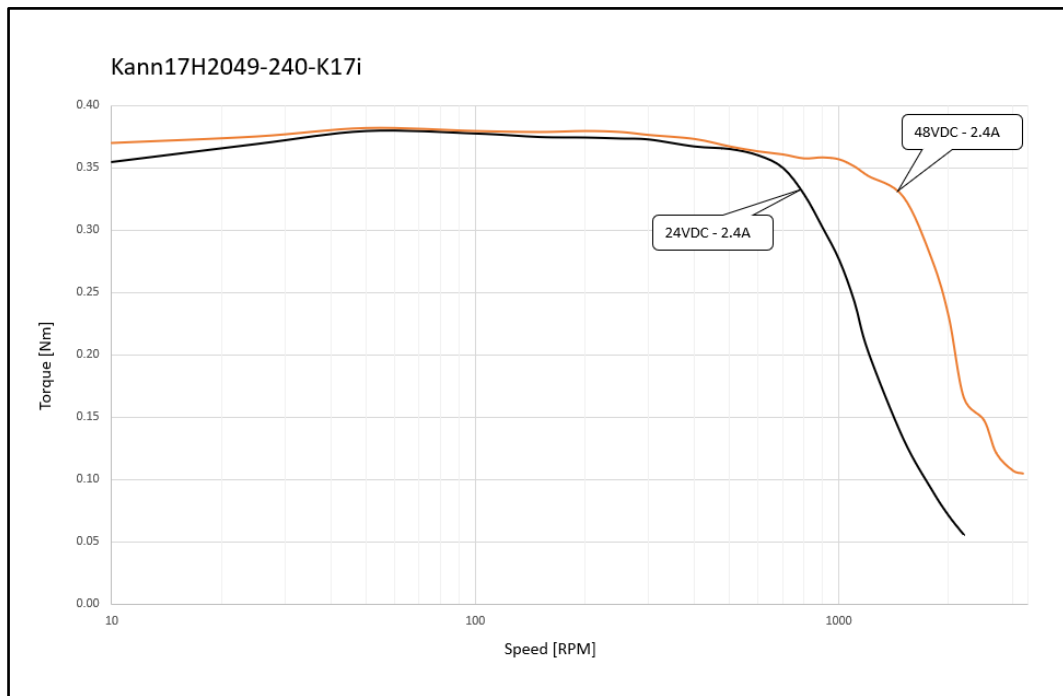
Factory base address = 0x08 the base address can be adjusted with CANopen

### Activation sequence:

1. Set the desired code on the DIP switch.
2. Press and hold the activation button for 3 seconds until the green LED stays on continuously.
3. Release the activation button within 2 seconds; the LED will turn off, indicating that the new settings are now active. If the attempt to save a setting fails, the red LED will briefly light up.
4. Settings are active after restart (Power OFF/ON).

### Torque Performance Curves





## Tools, further documents

Adlos provides its customers with supportive tools and resources for design integration.

### Communication Description (100570)

Document on Serial Protocol Description, reference number 100570.

### KannMotion Manager tool (190081), manage your drives



The KannMOTION Manager serves as the comprehensive software suite for our Generation 2 (GEN2) drives, featuring an integrated C-coder alongside a user-friendly visual drag-and-drop interface for personalized drive customization. Access to the tool is available in the download section. <https://www.kannmotion.com/en/downloads/>

### ComWatch Communication Tool (190077), for Life values



ComWatch is a free, specialized tool for engineers and technicians to check device details, get tracking data and settings, and update firmware. It's designed for kannMOTION customers and best for those familiar with Windows software. Users should have some technical knowledge.

For access, please refer to the download section. <https://www.kannmotion.com/en/downloads/>

## Additional Documentation and important information

The document Security Manual KannMOTION (you find the document in the download section of <https://www.kannmotion.com/en/downloads/>) specifies the intended use of the KannMOTION. It also has useful information related to all KannMOTION products and defines the laws and standard the KannMOTION is designed for and with. Please read this document carefully and comply with the information given in this document.

## Proper use



### **Do not connect or disconnect motor during operation**

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



### **Ensure the power supply voltage remains below the upper limit**

If the supply voltage exceeds the upper limit, the driver electronics can be seriously damaged. Especially when operating near the upper voltage limit, using a regulated power supply is strongly recommended.



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

Every motor can operate as a voltage generator; therefore, be mindful of the generated voltage, as this might damage your electronics through overvoltage. Incorporate voltage limiter units to maintain the supply voltage within the acceptable range.



### **Back-EMF**

Back-EMF occurs when a motor rapidly decelerates, acting like a generator and sending a reverse current back to the power source. If the power source cannot absorb this surplus current, it could damage the motor's power supply and output pins. To prevent such damage, it is crucial to incorporate back-EMF considerations into the system's design.



### **Do not Powerup without GND connection / Do not remove GND connection before Vin/Vmot**

Only switch on your supply when you are certain that GND is correctly connected. Do not remove GND while the system is running; in both situations, you risk damaging your electronics.



### **Aout shall be connected with minimum output impedance of 50 Ω**

Aout must be connected with a minimum output impedance of over 50Ω to ensure safe operation. Directly connecting Aout to GND, especially when combined with 'hot-plugging' or incorrect GND connections, can damage the output under certain conditions. To prevent damage to the Aout output circuit, maintaining an impedance of at least 50Ω on the analog output is crucial.



### **Wiring Materials / Fuse**

Use a wire size appropriate for the rated output current of the Power Supply. Extra caution is necessary if the output current from one Power Supply is distributed among multiple loads, as the Power Supply's overload protection circuit may not function properly in such cases. Therefore, incorporating a fuse in the line or other protective measures should be considered.

## Contact information

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