# The motion platform KannMOTION

Product description

- Stepper motor driver for bipolar motors
- Integrated magnetic position encoder
- Motor drive up to 36V / 2.8A [1]
- Capable for different motor and control voltages

Interfaces

- CANOPEN

Benefits / Software

- Closed loop operation
- Fully controllable over CANopen
- Updates, documents, tutorials and videos easy accessed at www.kannmotion.com
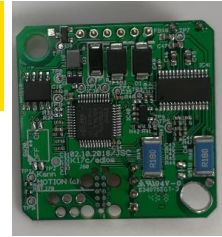
Technical data (Maximum ratings)

Rated supply voltage (Motor)	12 to 36 VDC
Rated supply voltage (Logic)	6 to 30 VDC
Max. motor phase current [1]	2.8 A
Ambient temperature range	-10 to +40°C
Connection interface	JST 6 pole type B6B-EH or M8 6 pole Coded A
Connection motor	JST 4 pole type B4B-EH
Position control accuracy	±1°[2]
Motor control mode	Micro stepping

Ordering information

Part number	Description	Accessories
300 169 . xxx	Kann-K17f motor driver PCB <CANopen> ta=85° / AI 4-20mA	
100 732 . xxx	USB - CAN Konverter isoliert	x
300 065 . xxx	Verbindungskabel Konvertermodule K17c-JST	X

1) Might be limited in time, restricted by losses! <Chip temperature>, take care about PCB cooling depending on application
2) Depending on mechanical positioning of the magnet

Dimensions (in mm)
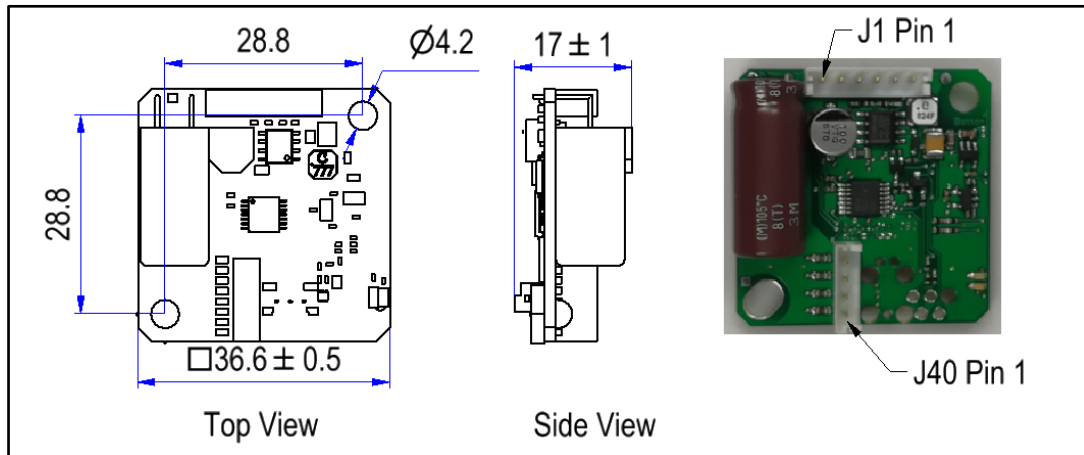
Connection terminals J1

Pin[3]	Description	Nominal	Absolute max	Comment
1	V_{motor}	24 VDC	36 VDC	Supply of motor drive (Power)
2	V_{in}	24 VDC	30 VDC	Supply of PCB logic, also for logic outputs
3	CAN-H	3.5 V	±24V	CAN bus signal (not terminated)
4	CAN-L	1.5 V	±24V	CAN bus signal (not terminated)
5	AIN[4]	4-20mA	22mA/30V	Analog Input
6	GND	-	-	Reference

3) The pining is identical for J1 and M8 connector. -> Pin 1 on the J1 is equal to Pin 1 at the M8 connector
4) Refer to order information in this document

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

Connection terminals J40

Pin	Description	Comment
1	A-	Motor phase A+
2	A+	Motor phase A-
3	B+	Motor phase B+
4	B-	Motor phase B-

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.

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