Driver card for MDR Brushless DC Motor for pallet handling

RoHS Conformity | CE Conformity | UL Conformity | UKCA Conformity

CBK-109

【Applicable MDR models】

PM570KT･PM605KT

【Driver card model】

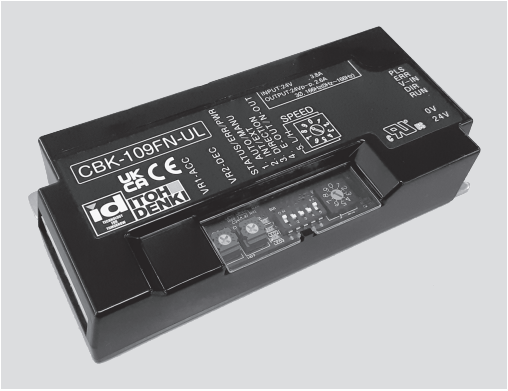
CBK-109FN-UL

N : NPN signal input and output
P : PNP signal input and output

F : Standard
B : With Brake function

Standard Accessories

- Power connector(CN 1) ——— 1pce
- Control connector(CN 2) ——— 1pce
- Mounting screws and nuts Screw M4×15 — 2pcs
  Nut M4 ——— 2pcs



■ Acceleration and deceleration time is adjustable.

Speed can be set for 0~2.5 sec with the VR on the driver card.
This reduces impact at starting/stopping Power Moller.

■ Stable speed function

Transfer speed is kept stable regardless of the load variation.
It helps improve transfer accuracy.

■ Motor pulse output is available

Motor pulse output is equipped on the driver card as a standard.
Enables Power Moller turning control.

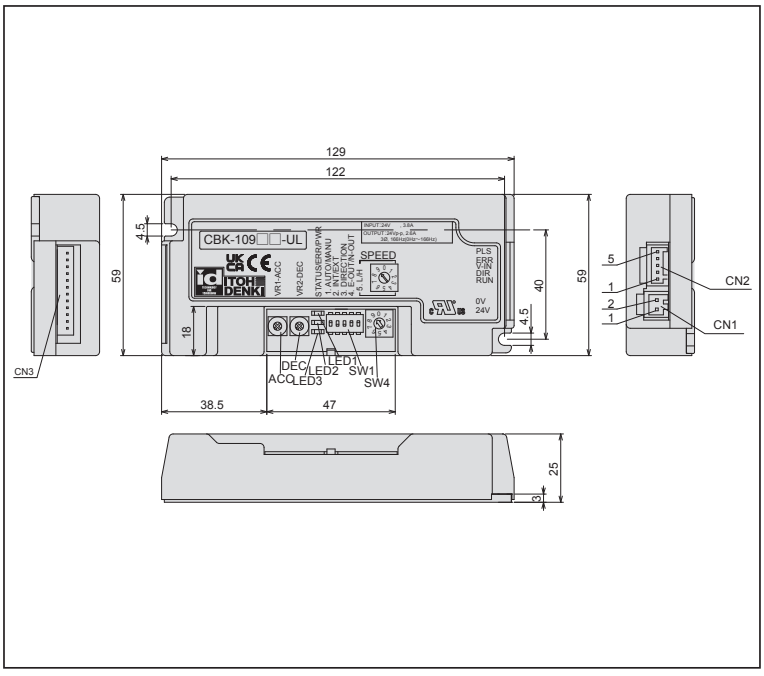
■ Speed can be set in 20 steps

Digital setting method makes easy speed adjustment for each driver card

■ Error types and history can be checked

LED can display thermal error / lock error / low voltage error, as well as error generation history.

【Dimensions】



● Dip switch (SW1)

SW1#1	Selection of manual or automatic thermal device recovery
SW1#2	Selection of internal or external speed change
SW1#3	Selection of motor turning direction; CW or CCW
SW1#4	Selection of error signal discharge mode
SW1#5	Speed range setting

● Connector (CN)

CN 1	Power connector (2P)
CN 2	Control connector (5P)
CN 3	Motorr connector (12P)<13P for brake motor>

● Potentiometer (VR)

ACC	Acceleration from Run signal
DEC	Deceleration from Stop signal

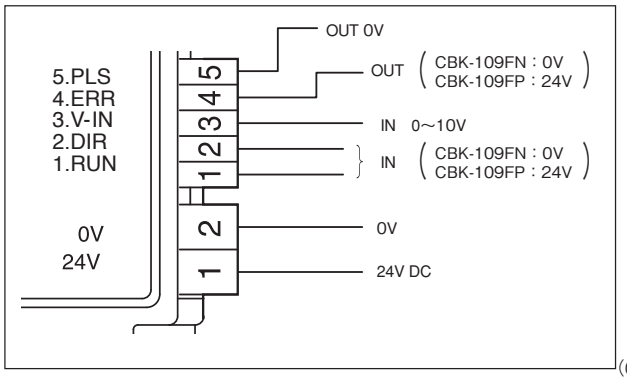
● LED

1	Powered and functions normally
2	Indicates type of error
3	Indicates number of error occurrence from thermister reaction, motor stall or under voltage

● Rotary switch(SW4)

Speed change in 20 steps by combining with SW1#5.

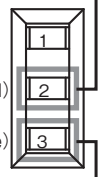
【Wiring diagram】



※Wiring should be made while the product is not powered.
※Switch for Run/stop or CW/CCW is an option and is not supplied.
※Relay contact or PLC output can be used instead of the above switch.

〔Error History〕

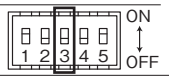
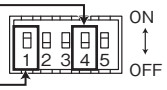
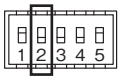
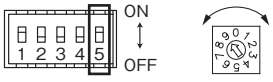
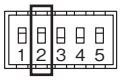
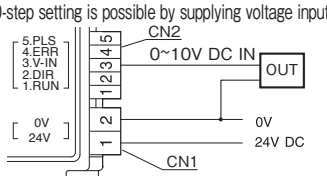
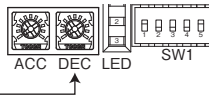
If thermister, motor stall or under voltage error arises while the power Moller is running, the error status and frequency of error occurrence are identified by LED 2 and LED 3.



	blinks at 1Hz	stall error
	blinks at 6Hz	under voltage error
	Illuminates	thermister error
	Blinks×2 at 6Hz → Off for 1.5sec	Back EMF error

	off	Error occurred at first time
	blinks at 1Hz	Error occurred at second time (same error as the first one)
	blinks at 6Hz	Error occurred at second time (different error as from the first one) Error occurred at third time (same error as the first or second one)
	Illuminates	Error occurred at third time (same error in series)

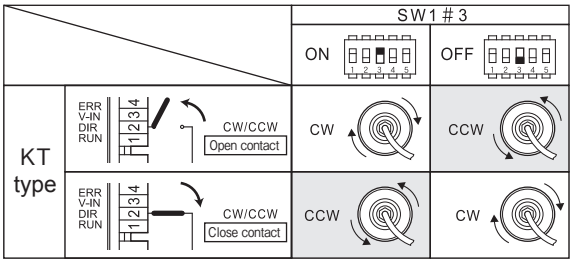
【Specitications】

Power voltage		24V DC±10%
Rated voltage		24V DC
Static current		0.06A
Starting current		7.0A
Wiring diameter	Power connector	0.8~1.5mm² (AWG:18~14)
	Control connector	0.08~0.5mm² (AWG:28~20)
Motor starts running from RUN signal		≦15msec
Thermister		95℃ on PCB or 105℃ in motor
Ambient temperature		0 to +40℃
Relative humidity		≦90%RH(no condensation)
Atmosphere		No corrosive gas
Vibration		≦0.5G
Installation		Indoor
Turning drection		Can be set with DIP SW1#3. 
Error signal		・Generated by thermal cutoff / Power Moller stall / low power supply voltage / connector disconnection / fuse blow-off / Back EMF error. ・SW1-4 allows the selection of the error signal discharge timing: discharge on normal status or dilscharge when error arises. ・Error signal is NPN/PNP open collector in cace of CBK-109FN/BN. ※Recovery from thermal cutoff error and low voltage error can be selected by DIP SW1#1 for manual recovery (ON) or auto recovery (OFF). 
Speed Variation	Internal	・Enabled by setting DIP SW1#2 to OFF.  ON (External speed change) / OFF (Internal speed change) ・Up to 20-step setting is possible by DIP SW1#5 and SW4. 
	External	・Enabled by setting DIP SW1#2 ON  ON (External speed change) / OFF (Internal speed change) ・Up to 20-step setting is possible by supplying voltage input (0~10V DC to CN2-3) 
	Acceleration	Integral potentiometer ACC allows the acceleration adjustment from 0 to 2.5 seconds.
	Deceleration	Integral potentiometer DEC allows the deceleration adjustment from 0 to 2.5 seconds. 
Motor pulse signal output		2 pulses/motor rotation
LED		Power (green) Error (red) Frequency (red/orange)
Type of brake		Servo lock brake, Mechanical brake (only when brake function)

Direction Setting

Reverse direction by external DIR signal can be permitted even while motor is running. Power Moller turning direction can be set or changed either internally by integral dip switch or externally by optional switch.

Setting for Turning Direction In case of use of CBK-109FN/BN



※Turning direction viewed from the Power Moller's power cable side.