

Autonics

MOTOR DRIVER  
(5 PHASE STEPPING MOTOR DRIVER)  
KR-5MC / KR-5M

M A N U A L

KR-5MC



KR-5M



Thank you very much for selecting Autonics products.  
For your safety, please read the following before using.

Caution for your safety

- ※Please keep these instructions and review them before using this unit.
- ※Please observe the cautions that follow;
- Warning** Serious injury may result if instructions are not followed.
- Caution** Product may be damaged, or injury may result if instructions are not followed.
- ※The following is an explanation of the symbols used in the operation manual.
- caution:**Injury or danger may occur under special conditions.

Warning

- In case of using this unit with machineries(Nuclear power control, medical equipment, vehicle, train, airplane, combustion apparatus, entertainment or safety device etc), it requires installing fail-safe device, or contact us for information on type required.**  
It may result in serious damage, fire or human injury.
- Installation, connection, operation, control, maintenance should be carried on by person who has been qualified.**  
It may cause a fire or human injury, give electronic shock.
- Please use reinforcement insulated DC power for power of DC type input.**  
It may give electronic shock.
- Please install this unit after considering count plan against power failure.**  
It may cause human injury or damage to product by releasing holding torque of motor.
- Do not use this unit outdoors or place where there are flammable, corrosive gas, water, big vibration etc.**  
It may cause a fire or give electronic shock.
- Do not disassemble and modify this unit, when it requires, please contact us.**  
It may cause a fire or give electronic shock,damage to product.
- Please install board type product with protection equipment.**  
It may cause a fire.

Caution

- Power input voltage must be used within rating specification and power line should be over than AWG NO. 18(0.75mm<sup>2</sup> ).**  
It may cause a fire or give electronic shock.
- Please check the connection before power.**  
It may cause a fire or give electronic shock, damage to product.
- Please turn power off when power failure occurred.**  
It may cause human injury or damage to product due to sudden movement when recover power failure.
- Do not touch this unit during it is operating or after stopping.**  
It may cause a burn due to high temperature in surface.
- The emergency stop needed during operating.**  
It may cause human injury or damage to product.
- Please supply power after checking control input signal.**  
It may cause human injury or damage to product by sudden movement.
- Do not turn on the HOLD OFF signal input while it is maintaining vertical position.**  
It may cause human injury or damage to product by releasing holding torque of motor.
- Please install a safety device when need to remain the vertical position after turn off the power.**  
It may cause human injury or damage to product by releasing holding torque of motor.
- Please check if HOLD OFF signal input is ON when need to set the output manually.**  
It may cause human injury by sudden movement.
- Please stop this unit when mechanical trouble occurred.**  
It may cause a fire or human injury.
- Do not touch the terminal when test check pressure or insulation resistance.**  
It may give electronic shock.
- Please observe rating specification.**  
It may cause human injury or give electronic shock, damage to product.
- In cleaning the unit, do not use water or an oil-based detergent.**  
It may cause a fire or give electronic shock.
- Please separate as industrial scrapped material when disuse this unit.**

Features

- Bipolar constant current pentagon drive method.
- It is able to drive with single power supply(20~40VDC) as input.
- Various functions built-in, including an automatic current-down to suppress motor heating, etc.
- Realization of small, light and high speed/torque by a Custom IC.
- Convenient to adjust Run current by current volume.
- Photo coupler input insulation method to minimize the effects from external noise.

Characteristic of input pulse

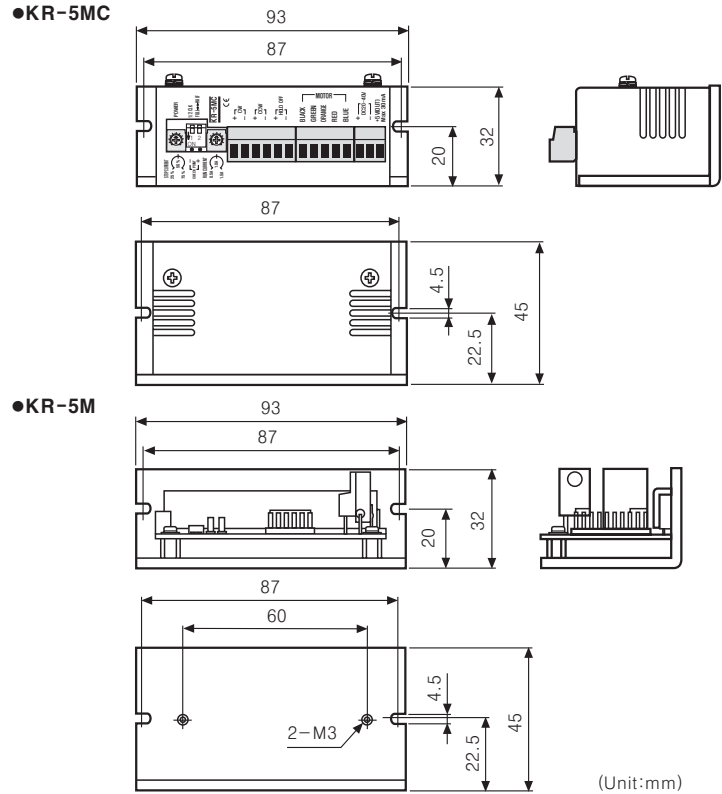
- pulse width : Min. 5μs ●Max. input pulse frequency : 50kpps
- pulse interval : Min. 5μs ●Pulse input voltage : [H]4V~8V, [L]0~0.5V
- Rising • Falling time : Max. 1μs ●Input resistor : 390Ω(CW, CCW, HOLD OFF)
- ※The above specification are changeable without notice anytime.

Specifications

Model	KR-5MC	KR-5M
Input power	20~40VDC(3A max.)	
Run current	1.4A/phase(Max.)	
Drive method	Bipolar constant current pentagon drive 0.72° (Full Step), 0.36° (Half Step)/1Step	
Ambient temperature	0 to 40℃	
Ambient humidity	35 to 85%RH	
Weight	Approx. 120g	Approx. 100g
Approval	CE	

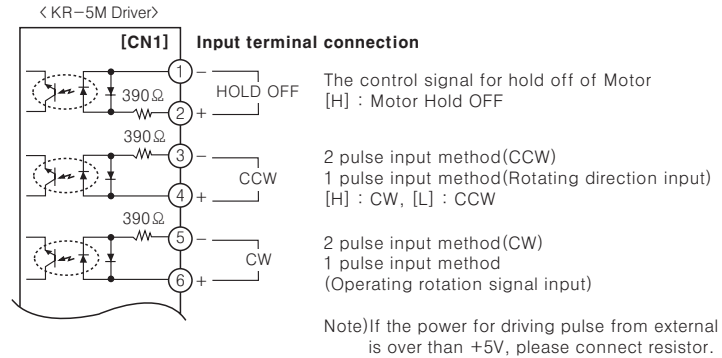
※There is torque difference by input power voltage.

Dimensions

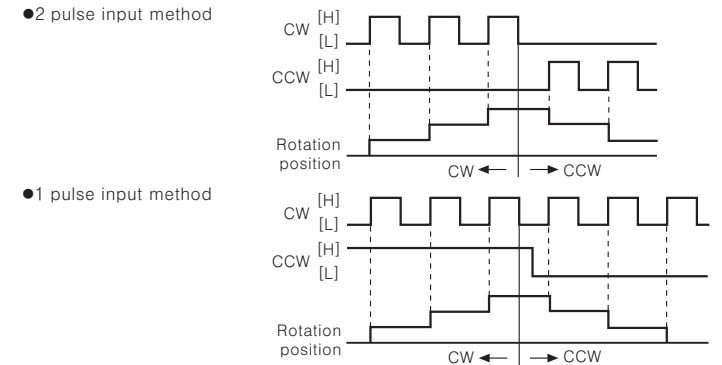


Signal Input • Output circuit and time charts

Signal input device



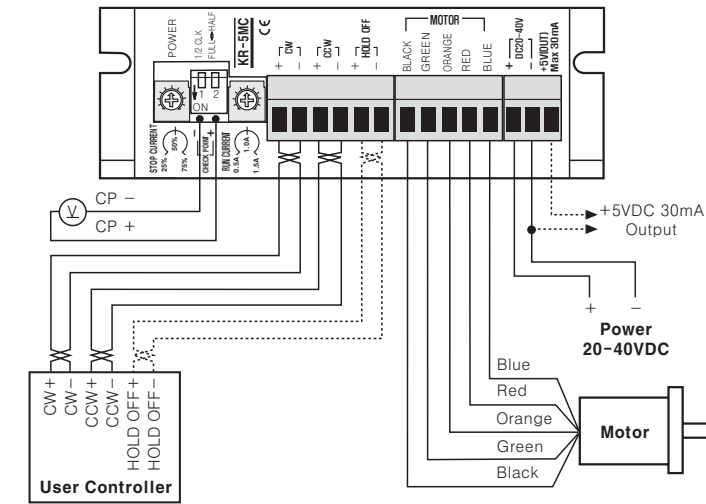
Input • Output time charts



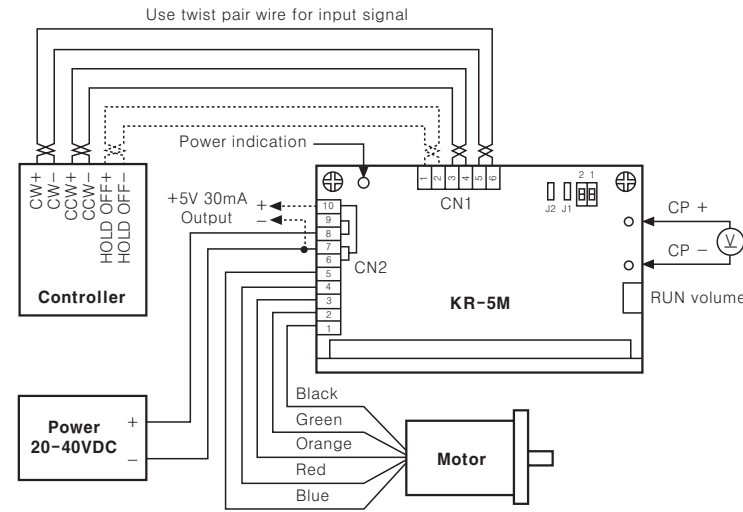
Note)When using the 2 pulse input method, do not input CW and CCW at the same time. When one of the CW and CCW signals is [ON], a signal input in another directions may not work normally.

Connections

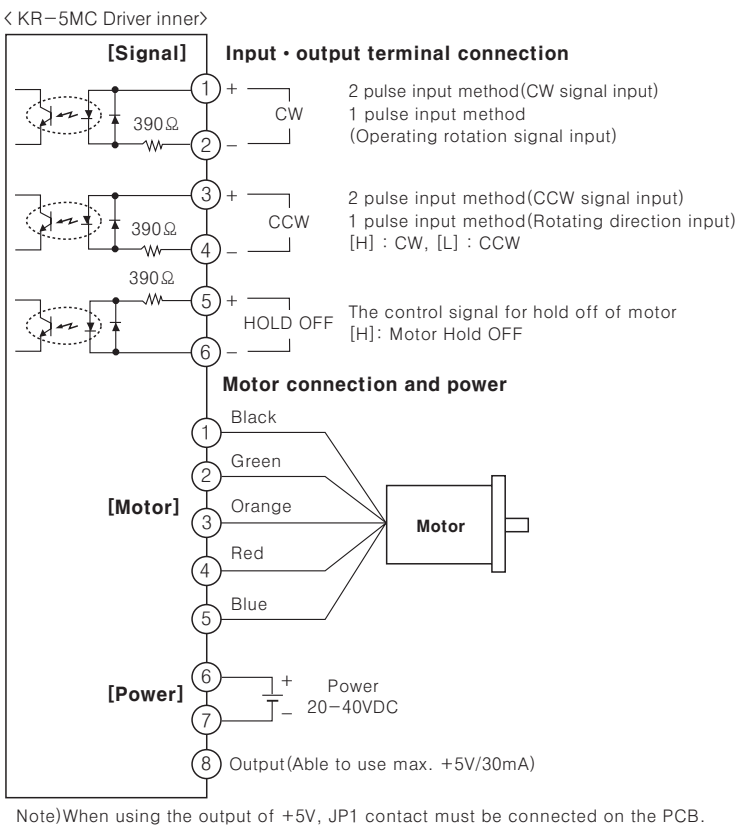
●KR-5MC



●KR-5M

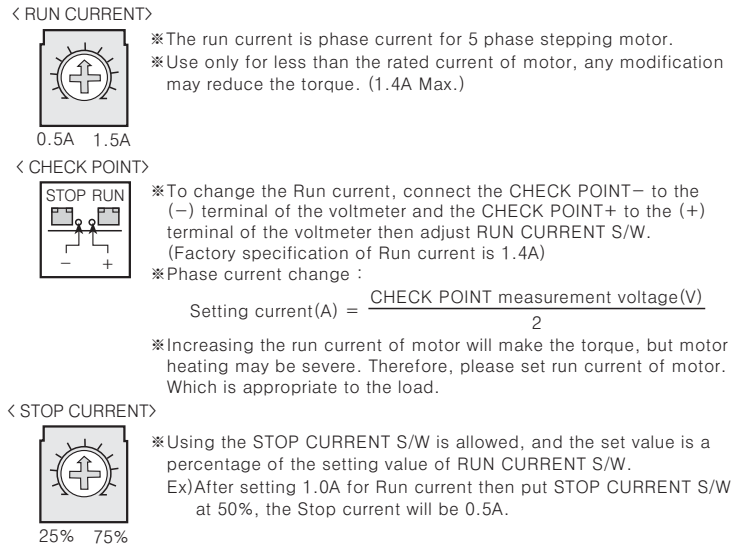


Input • Output diagram

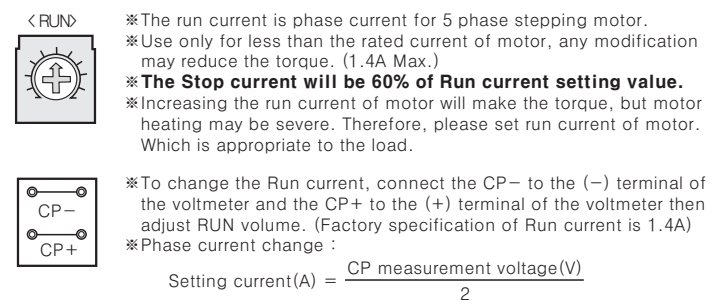


Note)When using the output of +5V, JP1 contact must be connected on the PCB.

RUN and STOP Current setting(KR-5MC)



RUN and STOP Current setting(KR-5M)



Function S/W

NO	Function	S/W position	
		ON	OFF
1	Select input method	1pulse input method	2pulse input method
2	Select rotation angle	0.72°/Full Step	0.36°/Half Step

Caution for using

- Caution for signal input
    - ①When using the 2 pulse input method, do not input CW and CCW at the same time. When one of the CW and CCW signals is [H], a signal input in another directions may not work normally.
    - ②Current of input power maximum current.
    - ③Please use enough power enables to supply for motor driving.
  - Caution for wiring
    - ①Use Twist pair(Over 0.2mm<sup>2</sup> ) for the signal wire should be shorter than 2m.
    - ②Please use over than AWG No.18(0.75mm<sup>2</sup> ) wire for motor wiring(when it needs to extend) and power line.
    - ③**Please check the polarity of power before driving it.**
  - Caution for installation
    - ①Please mount a heating panel on metal surface closely.
    - ②Please mount this product at well-ventilated place in order to increase the heating efficiency of heating panel.
  - Installation environment
    - ①It shall be used indoor
    - ②Altitude Max. 2000m
    - ③Pollution Degree 2
    - ④Installation Category II
- ※It may cause malfunction if above instructions are not followed.

Main products

- COUNTER
- TIMER
- TEMPERATURE CONTROLLER
- PANEL METER
- TACHOMETER/ LINE SPEED METER/ PULSE METER
- DISPLAY UNIT
- PROXIMITY SENSOR
- PHOTOELECTRIC SENSOR
- FIBER OPTIC SENSOR
- PRESSURE SENSOR
- ROTARY ENCODER
- SENSOR CONTROLLER
- POWER CONTROLLER
- STEPPING MOTOR & DRIVER & CONTROLLER

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