PMC-5523

5 PHASE STEP MOTOR DRIVER

USER'S MANUAL (V1.0)

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Index

1 FEATURES 2

2 SPECIFICATIONS 2

3 I/O FUNCTIONS 3

4 LED INDICATOR 4

5 CONTROL SIGNAL 4

6 WIRING DIAGRAMS 4

7 DIMENSION 5

1 Features

1.1 High torque and heavy load design

1.2 PWM constant current source

1.3 Full/ Half step selection

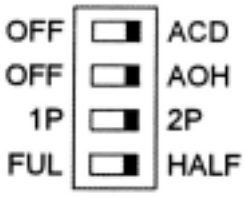
1.4 Build in overheat protection

1.5 Build in auto power down mode

2 Specifications

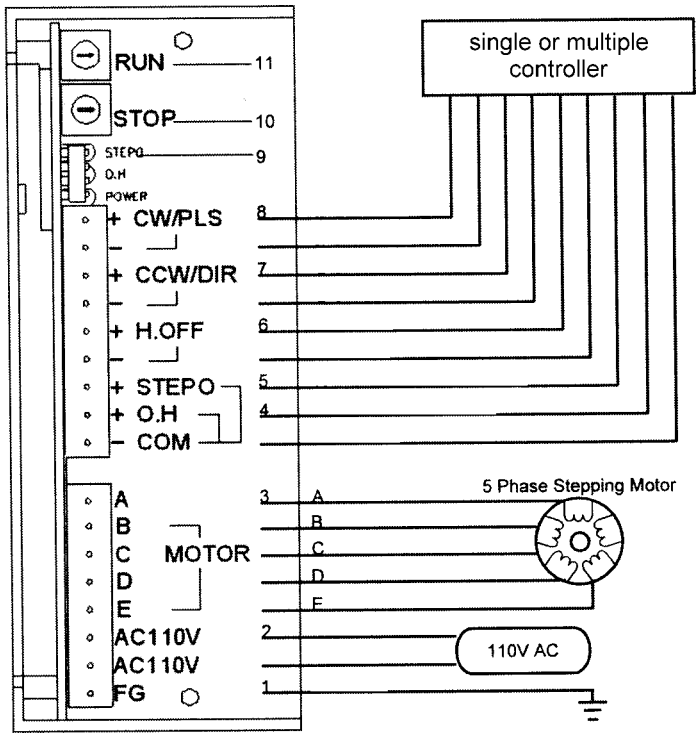
Model	PMC5523
Driving Mode	PWM Switching, Bipolar with Constant Current Driving
Maximum Current	2.3A/Phase
Resolution	Full Step : 0.72° /per step, Half Step : 0.36° /per step
Input Signal	Optically isolated, Voltage : H : +4V ~ + 24V, L : +0 ~ +5V. Resistance 220Ω, Current Under 20mA. CW and CCW Pulse Signal : Pulse Width : Above 5μSec. Direction Signal : LOW for CW, HIGH for CCW. Holding Current OFF Signal : HIGH for Release Holding.
Output Signal	Photo-Coupler Open Collector. Voltage : Under 24V, Current : Under 15mA. Step 0 Signal Overheat Signal
DIP Selectors	Auto-Current-Down Auto-Over-Heat Protection 1P / 2P signal Input Method Selector Full/Half Step Selector
LED Indicators	Step 0 Status LED Over-Heat Alarm LED Power LED
Operation Temperature	0 ~ 45℃
Operation Humidity	< 85% RH
Power source	110 VAC ± 10%, 60Hz

3 I/O Functions



DIP Selectors

Current Selectors



1- frame ground

2- 110V AC power inputr

3- output to step motor

4- over heat signal out

5- STEP0(excitation phase 0) signal out

6- input of Holding Current Off

7- CCW/DIR input

- CCW for dual pulse mode
- DIR for single pulse mode

8- CW/PLS input

- CW for dual pulse mode
- PLS for single pulse mode

9- User option mode

- ACD, auto current down

  Auto current down while no pulse in. Use this function to reduce the heat of step motor, but if you need to hold the torque while stand by , switch off to disable this function

- AOH, auto overheat protection

  Switch on to enable the auto overheat protection. While the driver case reaches 80 degree C, the AOH circuit will stop the driver and activate the AOH led.

- 1P /2P mode
  - 1P mode: Pulse (PLS) and direction (DIR) controls the motion operation.
  - 2P mode: Clockwise(CW) and counter- clockwise(CCW) controls the motion operation.
- FULL/HALF step mode
  - FULL step: 0.72 degree per step
  - HASLF step : 0.36 degree per step

10- STOP current adjustment

Only valid for ACD is enabled. While ACD function enabled and the pulse train is stopped for more than 0.5s, the motor current will decrease to the adjustment value.

11- RUN current adjustment

Motor current while running.

4 LED indicator

4.1 POWER: green LED, power OK will light.

4.2 O.H.: red LED, light for over heat while AOH is enabled.

4.3 STEP 0: yellow LED, light for excitation phase 0, in full step mode, it will light every 4 steps and for half step mode every 8 steps.

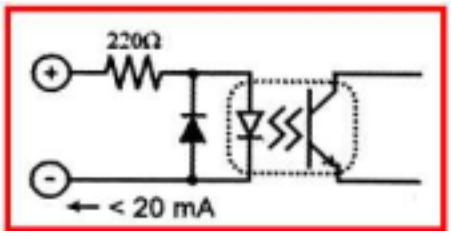
5 CONTROL SIGNAL

5.1 The control signal is isolated by photo-isolator and the external signal transit state from HIGH to LOW will drive one step.

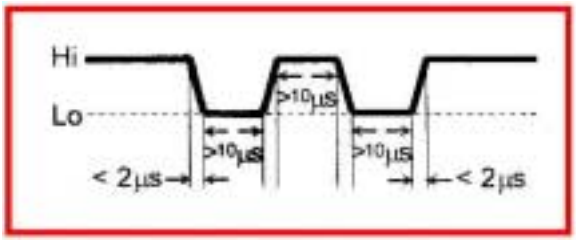
5.2 The minimum pulse width is 5 micro second, the transition time is less than2 micro second.

5.3 The input voltage range is from 5VDC to 24VDC and the current must limit to under 20ma.

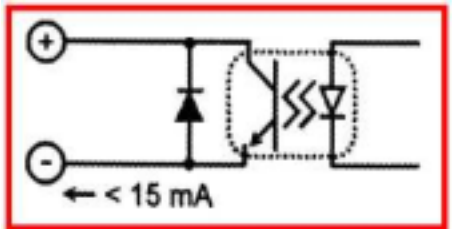
5.4 The driver output signal is limited to under 15ma.



Input Signal circuit



Pulse Width Diagram



Output Signal circuit

6 Wiring Diagrams

PMC-5523 is a bipolar constant driver, please refer the motor specifications and wirings from the motor supplier.

Notes on wiring:

*Be sure to power off while motor is being wired.

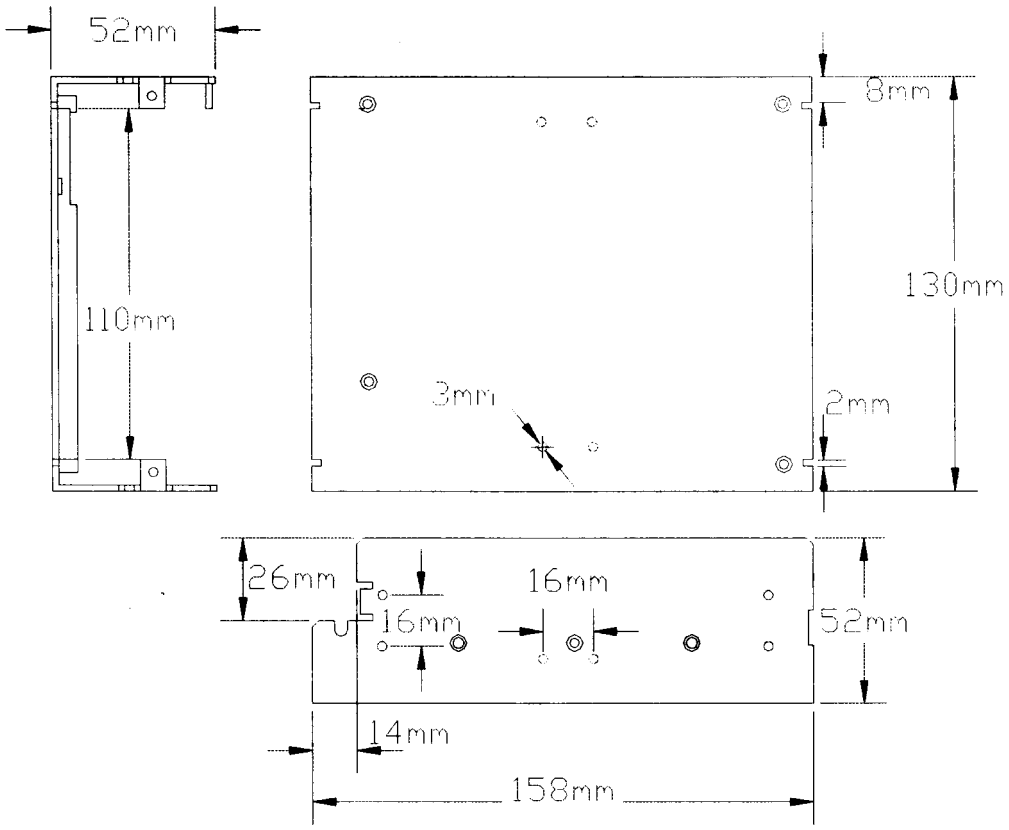
*Wrong wiring or wire may damage the driver.

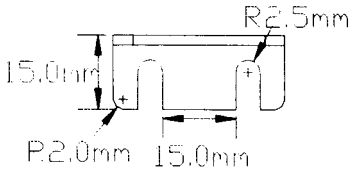
*The external force cooling is required, if you the driver case temperature is higher than 55 degree C at normal operation.

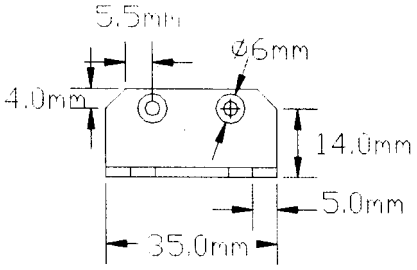
*Please use the driver at good ventilation environment.

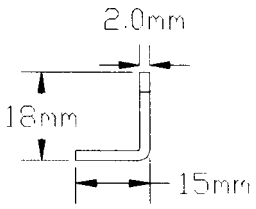
*Please do not use the driver at wet or the environment may have condensed water.

7 Dimension


52mm
110mm
8mm
130mm
3mm
2mm
26mm
16mm
16mm
52mm
14mm
158mm


R2.5mm
15.0mm
P2.0mm
15.0mm


5.5mm
Ø6mm
4.0mm
14.0mm
5.0mm
35.0mm


2.0mm
18mm
15mm