

MMT-

110/220DP06 -13BL SPECIFICATION

MMT-110/220DP06 -13BL 产品说明

PWM 系列 马达驱动器

PWM SERIES DC MOTOR DRIVES



Jinan Keya Electronic Co., Ltd

Instructions of MMT-110/220DP06 -13BL

Outline:

Jinan Keya MMT Series servo control system, PWM DC speed-regulating system are the high-precision electronic speed-adjusting devices with the latest international digital control speed regulation technology and special parts. The device adopts international standard technical specifications with the technical indicators which meet international requirements of similar products. The device has a simple structure, small size, light weight, and other advantages, which can be used for SZ series, ZYT series, Z2 Series with DC motor stepless speed regulation ranging from tens of Watts to 5KW. The product has multiple protection, security, stability and reliability. It can be fully compatible with similar international products, and has international quality and home-made prices.

Scope of application:

MMT series of DC speed governor are widely used in the machine tools, paper printing, textile printing and dyeing, fiber-optic cable equipment, packaging machinery, electrotechnical machinery, food processing machinery, rubber machinery, biological equipment, printed circuit board equipment, experimental equipment, welding cutting, light industry machinery, logistics transportation equipment, locomotives and rolling stock, medical equipment, communication equipment, and other industries.

I . Characteristics of products

1. PWM pulse width modulation technology, low noise
2. Speed regulation ratio 1:100 (open-loop)
3. The starting torque at low speed is big
4. Double closed loops PI regulation
5. Current settings, current limiting protection, over-current warning, output stop.
6. Setting function of soft starting. (0.3-10 seconds adjustable)
7. Torque compensation adjustment
8. The maximum output limit function
9. Short-circuit protection
10. Self-inspection alarm output function
11. Standard signal interface (After fitting signal isolator, the device can adapt to various D \ A signal, 0-5 V or 0-10 V or 4-20 mA)
12. With fast response and good following.
13. Function of enabling block control.

II . The main technical parameters

1. The input voltage: AC 110V/220V \pm 10%
2. The output voltage: DC 0 ~ 110V/220V or other voltage can be set
3. Rated output current: DC 6A 8A 10A
4. Rated excitation voltage / current: DC 220V(110)/3A
5. The output voltage accuracy: \leq 1%
6. The environment temperature: -10 ° C to +60 ° C
7. The environment Humidity: \leq 1% 80 RH relative humidity. (Non-condensing)

III. Product performance

1. The mechanical characteristics of hardness, static error rate of 1%.
2. A wide speed-regulating range (0 - max).
3. A rapid dynamic response process.
4. Automatic and smooth transition process during acceleration or deceleration.
5. Better excavator characteristics, can limit overload current to set value current.
6. High reliability and compact structure, high performance-price ratio.

IV. Instructions on adjustment of potentiometer

1. The maximum rotation speed setting adjustment MAX SPD (see figure W1)

With this potentiometer, the greatest output voltage of driver can be confirmed (the maximum motor rotation speed)

Clockwise adjustment -----to raise output voltage

Counterclockwise adjustment ----- to reduce the output voltage

Note: when it is not sure that the maximum output voltage of driver matches with the rated voltage of motor, "MAX SPD" potentiometer should be adjusted to the minimum (the largest anti-clockwise), then the external speed potentiometer should be adjusted to the largest, and then "MAX SPD" potentiometer will be regulated again until the output voltage of driver and rated voltage of motor matches (that is, the motor's rated rotation speed)

2. The lowest rotation speed setting adjustments: (Supplementary to the given signal) MIN SPD (see figure W2)

Adjust speed of potentiometer to the minimum, then adjust MIN SPD potentiometer, so you can determine the slowest rotation speed of motor.

Clockwise adjustment ----- to increase the auxiliary given signal

Anti-clockwise adjustment ----- to reduce the auxiliary given signal

Note: External signal is set as 0, if there are still certain requirements of motor's speed, it can be realized by adjustment of potentiometer (adjustment range 0 --- 30%) At this time, if given external given signal is increased, the rotation speed of motor will increase on the basis of "MIN SPD" setting value.

3. Soft-start time adjustment: ACCEL (see figure W3)

This adjustment of potentiometers ACCEL can make sure motor's rising slope from the initial velocity up to the highest velocity (that is rising time, set time adjustable during 0-10 seconds). See figure 1

Clockwise adjustment -----to increase soft-start time

Anti-clockwise adjustment ----- to reduce soft-start time

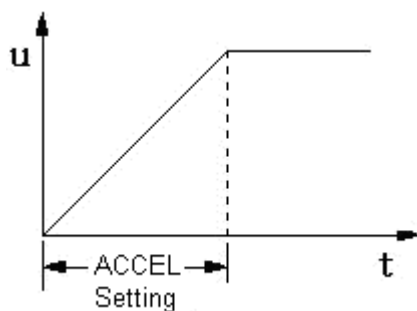


Figure 1

4. Soft-stop time adjustment (The interior has been fixed): DECEL

Adjustment of potentiometers DECEL can make sure motor's decline slope when speed

dropped from the highest to the lowest (that is falling time, set time adjustable during 0-10 seconds). See Figure 2

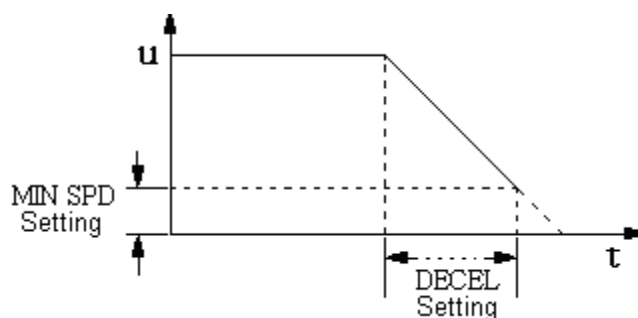


Figure 2

5. Current limit adjustment: TORQUE (see figure W4)

Adjustment of the potentiometer can restrict drive plate to a maximum output current.

Based on your selection of the motor's rated current, we can use this potentiometer to adjust driver output current to match the motor rated current.

Clockwise adjustment ----- to increase output current

Counterclockwise adjustment -----to reduce output current

Note: In the choice of driver, the driver's maximum output current should be 120% to 200% of motor rated current.

6. Torque compensation adjustments: IR COMP (see figure W5)

Adjustment of the potentiometer can keep a constant rotation speed when motor works in different load.

Clockwise adjustment----- to increase torque compensation value

Anti-clockwise adjustment----- to reduce torque compensation value

Note: If this potentiometer adjustment is in the best position, then it can achieve motor's constant speed, constant power operation (within the speed regulation ratio 1:100), but the rated current of the chosen driver should be more than motor's rated current's 200 % --- 300%.

7. The highest output voltage adjustment: MAX COMP (see figure W6) (factory has adjusted well, and it's usually not needed to adjust)

Adjustment of the potentiometer can be make sure driver's highest output voltage, adjustment range: 50% --- 110%

V. Instructions of terminal blocks

1. X1: Wiring diagram of Terminal, see Figure 3

(1): 1 2 ports: OUT + -: armature output (connected to motor armature)

(2): 3 4 ports: LC + -: excitation output (connected to motor excitation)

Note: excitation voltage options, see figure 3 left Tagging

(3): 5 6 ports: AC IN: access AC power source input terminal

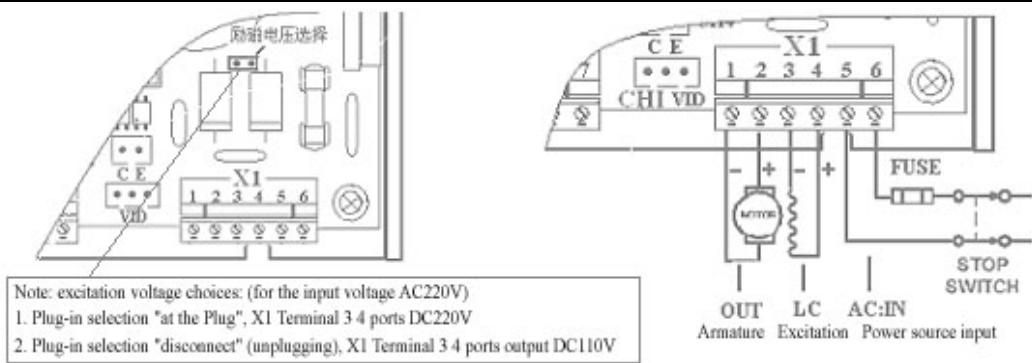


Figure 3

2. X2 control terminal wiring diagram: seen Figure 4

- (1): 1 2 ports: Analog access external analog signal input 0-5 or 0-10 V
 (Drive is equipped with internal signal isolators, effective this port)
- (2): 3 4 5 ports: SPEED access to external speed-regulating potentiometer
 port 3 for +5 V (5mA)
 port 4 for in signal input
 Port 5 for 0 V
 (Driver is equipped with internal signal isolators, this port invalid)
- (3): 6 7 ports: INHIBIT access to external enabling block

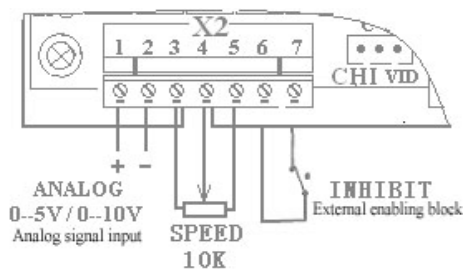


Figure 4

3. External enabling circuit block (INHIBIT): see figure 5

Enabling circuitry connecting - the control by a "enabling circuitry" to stop and open control (running when closed and stop when disconnected). Connect Switch to the terminal INHIBIT. See figure 4.

When the switch is closed, the motor starts, when the switch is off, the motor stopped sliding.

An Open Collector (NPN) can replace the switch to connect.

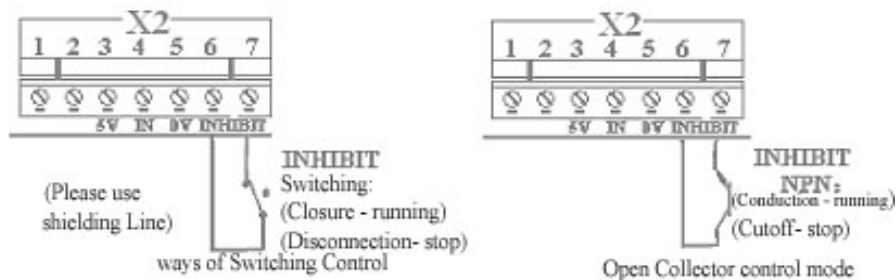


Figure 5

Note: When distance of transmission is long, please use conversion transmission (the nearest connection): see Figure 6

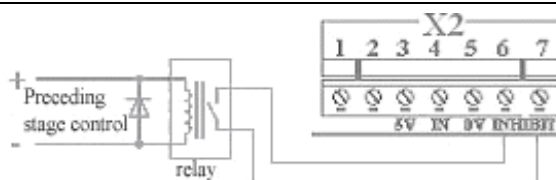


Figure 6

VI. Descriptions on interpolation interface and plug in-selection:

1. Descriptions of interpolation interface

CH1: Signal Isolators jack (three cores)

When signal isolator is required to install in the external of driver, this jack can be adopted to connect to the signal isolator output terminal.

(For example, when signal isolators has been installed in the interior of driver, the jack can't be used.)

CH2: Rotation speed sensor jack (four cores)

CH3: Rotation speed indicator jack (three cores)

When equipped with the company's " rotation speed indicator" and " rotation speed sensor", use these two jacks. See figure 7

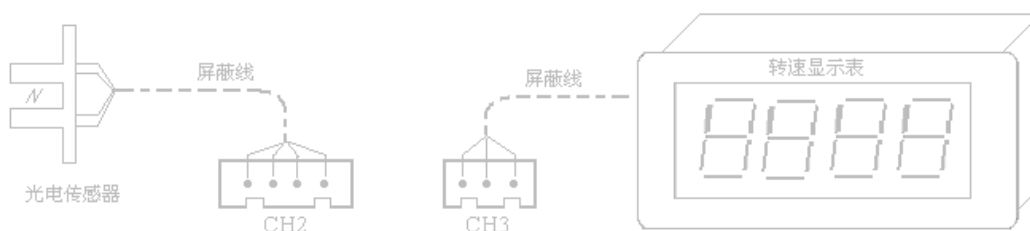


Figure 7

CH4: Fault alarm output jack (two cores)

When the over-load, over-current and short-circuit of driver output terminal appear, this jack's status can be changed. See figure 8

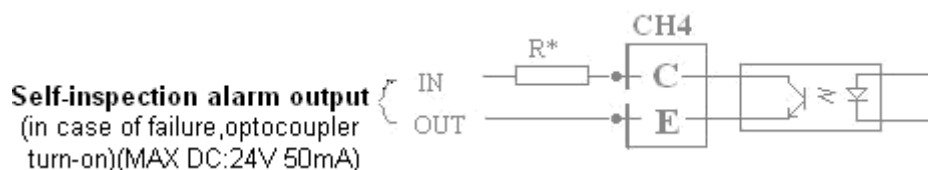


Figure 8

CH5: functional testing port (delivery test and debug)

3. Instructions on plug-in selections

1. The function expansion plate's signal choice.

A short needle DB1 to choose A- B (users do not have to choose):

2. Over current protection mode options:

short needle to DB2 A- B options:

A、 Short access to short-needle A: The driver output current reaches the set value, the driver will be automatically restricted in the current settings (TORQUE set value) to achieve protection purposes of the motor current limit. See figure 9

At the same time, self-inspection alarm output "CH4" jack always keep the alarm state.



Figure 9

B. Short access to B end of needle: The driver output current reaches the set value of 0.7 seconds, the driver will automatically stop output, and maintain the state. See figure 10
 At the same time, self-inspection alarm output “CH4” jack always maintains the warning state.

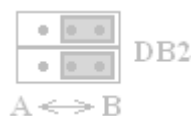


Figure 10

VII. Instructions of LED indicators:

- 1、 L1: Power normal instructions (Green)
- 2、 L2: over current / short circuit protection instructions (Red)

A、 When the output current of driver over "TORQUE" current set value (see the fifth item in the adjustment instructions of potentiometer), the light is on (whether the driver stops output, please refer to the “Instructions on interpolation interface and plug-in selection”

Ways of reset: After troubleshooting, reset "INHIBIT" port’s external enabling locking switch or reconnect driver’s power source.

B、 When the driver "+ OUT -" output terminal has the external short-circuit, the drivers will quickly stop exporting, at the same time light “L2 over current / short circuit protection indicator”.

Reasons of reset: After identify the reasons and troubleshooting, re-connect driver’s power source.

- 3、 L3: external enabling block state instructions (yellow)

When the external enabling locking switch "INHIBIT" port disconnect, the indicator light on

When the external enabling locking switch "INHIBIT" port connect, the indicator light off

- 4、 Instructions on the state of indicator lights

Indicator light	Bright state	Dark state
POWER(green) L1	Normal work power	without working power or drive is not normal
TORQUE (red) L2	Output current at the actual settings Or overload, short-circuit output	current settings within the allowable range.
INHIBIT (yellow) L3	External enabling control block disconnect (stop work)	connect the external enabling control block (normal work)

VIII. Dimensions and electrical wiring diagram

Dimensions: 150 X 115 X 60 --- 80 (mm)

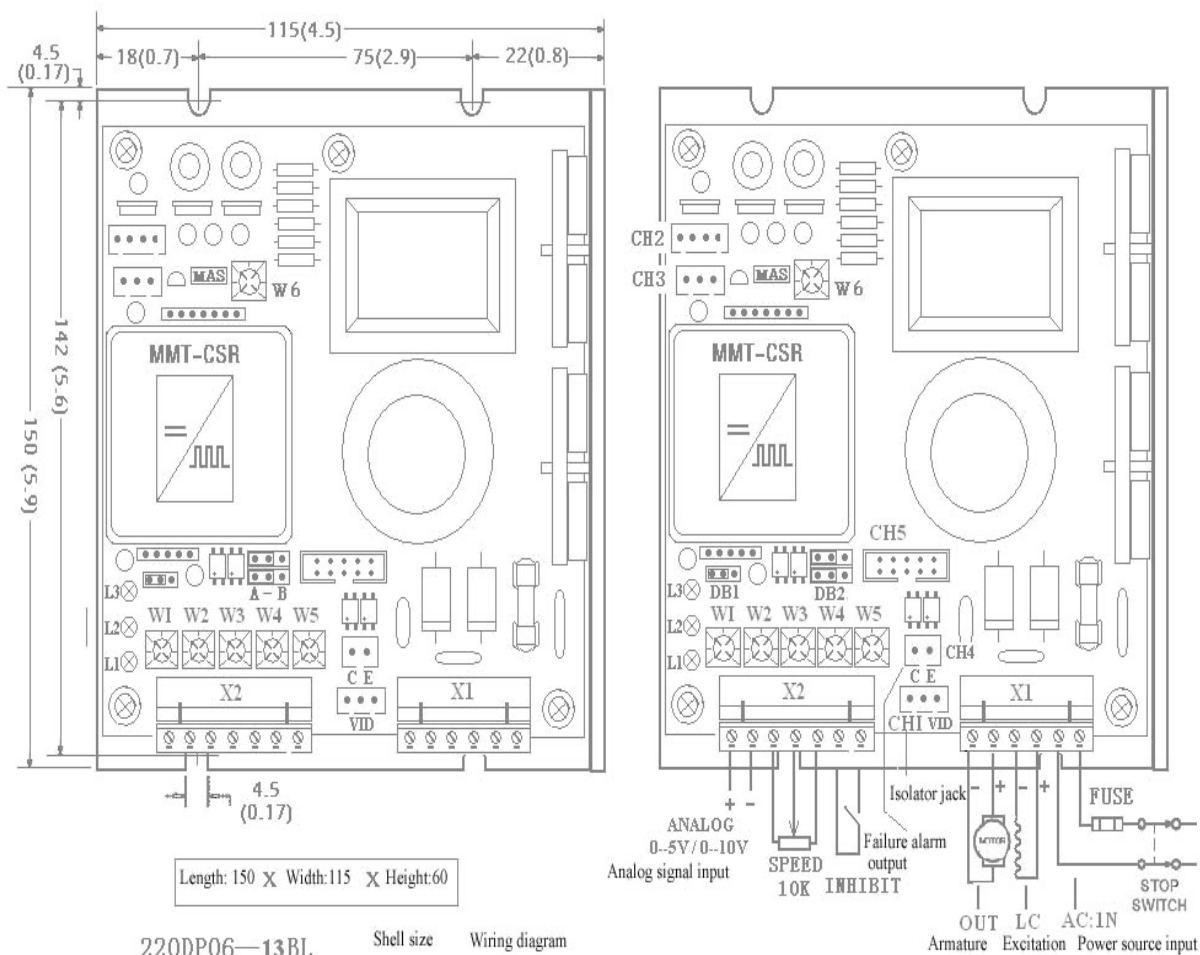


Figure 11

Note: When the current is over 6A, radiator must be installed.

Warning! When selecting non-isolated driver, all the external lead wires have high-voltage surge, please take insulation and other safety measures to avoid electric shock accidents!

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