



2-PH MICRO-STEPPING DRIVER SH-32215

Ordering Code: 001425

Constant-current Control, Smooth Operation

Features

- ◆ 80~220V power supply, adapt to power grid environments
- ◆ Bi-phase constant current subdivision control
- ◆ 16 kinds of subdivision operating modes available
- ◆ Input signal optoelectronic isolation
- ◆ Overvoltage , over-current protection
- ◆ Offline hold function
- ◆ Optional single / double-pulse mode
- ◆ Automatic semi-flow
- ◆ Maximum output current 15.3A/phase



Performance

Electrical performance (environment temperature $T_j=25^{\circ}\text{C}$)

Power Supply	Single-phase 80V~ 220VAC, 50Hz, 1.5KVA
Output Current	Effective value 15.3A/phase (Max) (current can be set by panel dial switch)
Drive Mode	Constant current PWM control
Excitation Mode (steps/rev)	400, 500, 600, 800, 1000, 1600, 2000, 3200, 4000, 5000, 6000, 6400, 7500, 8000, 10000, 30000
Insulation Resistance	At normal temperatures and pressures > 100MΩ
Dielectric Strength	At normal temperatures and pressures 1.5KV, 1Min

Operating Environment and Parameters

Cooling Model		Force-air cooling
Operating Environment	Situation	Try to avoid the dust, oil and corrosive gases
	Temperature	-5°C~ +40°C
	Humidity	<80%RH, no condensation and frosting
	Vibration	5.9m/s ² Max
Storage Conditions	Temperature	-40°C~ +55°C
	Humidity	<93%RH, no condensation and frosting
Dimension		200×166×90mm
Weight		2Kg

Function and Usage

◆ Outstanding Feature

Adopting unique flexible subdivision concept, no matter what kind of driver subdivision, the motor can maintain optimum operating performance, greatly improving the stability and noise. Even if the user can not use the higher subdivision selection due to the control of the limitations of the system output pulse frequency, and can also get low-speed stability and high-speed ways, thereby reducing the requirements for control system, help to reduce overall system cost, while improving properties.

◆ Power-off Memory

Before powering off and stopping pulse input, the drive can record the current motor position. To re-power on, it can automatically according to the original position information to control motor positioning, avoiding the motor shaft beating.

◆ Built-in Functions

The drive built in point control function. For customers using simple positioning can be provided by our host software for motion programming, downloading to the drive via the serial port, the offline will automatically execute. For some simple applications can remove the host controller intervention. (Need to contact the manufacturer special custom)

◆ Power Supply

Drive internal switching power supply design to adapt to a wide voltage range. Users can choose between 80 to 220VAC. Motor electromagnetic induction will cause the motor housing to produce a certain charge. To ensure the safety of users, be sure to use more than 3mm² diameter wire, and use isolation transformer as power supply for drive.

◆ Output Current Selection

The drive uses a bipolar constant current mode, the maximum output current value is 15.3A/phase (effective value). You can easily select 16 kinds of current values by different combinations of the seventh, the eighth, the ninth, the tenth on the drive panel, from 1.6A to 15.3A. (see the current selection table)

SW7	SW8	SW9	SW10	Current	SW7	SW8	SW9	SW10	Current
ON	ON	ON	ON	1.6A	ON	ON	ON	OFF	8.8A
OFF	ON	ON	ON	2.4A	OFF	ON	ON	OFF	9.6A
ON	OFF	ON	ON	3.2A	ON	OFF	ON	OFF	10.4A
OFF	OFF	ON	ON	4.0A	OFF	OFF	ON	OFF	11.2A
ON	ON	OFF	ON	5.7A	ON	ON	OFF	OFF	13.0A
OFF	ON	OFF	ON	6.5A	OFF	ON	OFF	OFF	13.7A
ON	OFF	OFF	ON	7.2A	ON	OFF	OFF	OFF	14.5A
OFF	OFF	OFF	ON	8.0A	OFF	OFF	OFF	OFF	15.3A

◆ Subdivision Selection

Users can choose 16 kinds of subdivision modes by the drive panel the first, the second, the third , the fourth four DIP switches.

SW1	SW2	SW3	SW4	Steps per motor revolution	SW1	SW2	SW3	SW4	Steps per motor revolution
ON	ON	ON	ON	30000	OFF	OFF	ON	OFF	3200
OFF	ON	ON	ON	10000	ON	ON	OFF	OFF	2000
ON	ON	ON	OFF	8000	OFF	ON	OFF	OFF	1600
ON	OFF	ON	ON	7500	OFF	ON	OFF	ON	1000
OFF	ON	ON	OFF	6400	ON	OFF	OFF	OFF	800
OFF	OFF	ON	ON	6000	ON	OFF	OFF	ON	600
ON	ON	OFF	ON	5000	OFF	OFF	OFF	ON	500
ON	OFF	ON	OFF	4000	OFF	OFF	OFF	OFF	400

◆ Single / Double Pulse Selection

You can select a single pulse mode (the 6th is 'ON') or double-pulse mode (the 6th is 'OFF') through the sixth DIP switch on the drive panel. In the single-pulse mode, stepper pulse by pulse port access, by the direction port with high low-level determines the motor direction of rotation. In the double-pulse mode, the drive receives forward pulse from the pulse port and reverse pulse from direction port. Whether it is a single pulse mode or double-pulse mode are turned to the optocoupler as a valid signal.

Note: single/double pulse mode selection must be set before power-on. The modification during operation must be powered off and on again to be effective.

◆ Automatic Semi-current

Through the fifth DIP switch on the drive panel choose whether to open the automatic semi-current function, switch to 'ON' it is effective. When you select this feature, if the drive works for one second and not receive new pulse, the drive will automatically enter semi-current state. Phase current is reduced to 50% of the standard value, to reduce power consumption purposes. When it receives new pulse, the drive will automatically exit the semi-current state.

Note: the semi-current must be set before power-on. The modification during operation should be powered off and on again to be effective.

◆ Offline Function

The drive is set the offline signal input port. It outputs offline level signal to drive through the control machine, then the drive will cut off the motor winding currents to make motor rotor in a free (offline) state.

◆ Overvoltage Protection

When the input voltage exceeds 260VAC, or regenerative braking cause the bus voltage exceeds 390VDC, the drive voltage protection circuit starts. Drive alarm lights, drive suspend drive motor, after the voltage returns to norma, the alarm can be automatically lifted.

Input Signal

Pulse Signal Input

The drive port built in optocoupler, the change which turned from off to on is a valid pulse instruction. For a common anode, the low level is effective (for common cathode, the high level is effective), at this point the drive will drive motor a step in accordance with timing sequence. The highest response frequency of the drive is 100KHz (influence by the controller port load capability), high input frequency may not be the

correct response.

Direction Signal Input

Under the single-pulse mode, the on and off of the optocoupler in the port is the two motor running direction. Changing the signal will change the direction of motor, the dangling end is considered to input high level. Note, make sure the direction signal ahead of the pulse signal input at least 10 μ s, thus avoiding error response.

Offline Signal Input

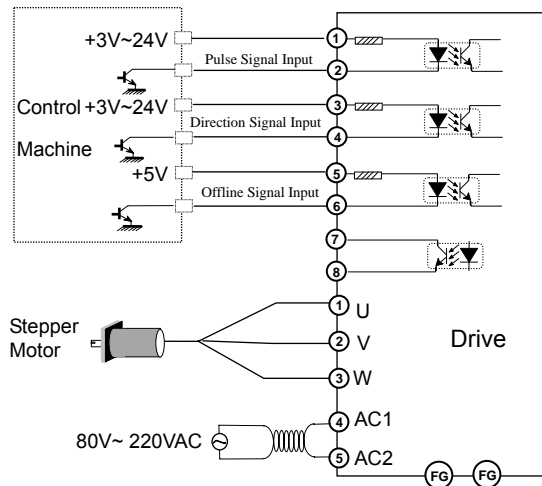
Drive signal input can use pluggable terminal, which can be unplugged, connect the cable and then plug. The drive input signal adopt double-ended interface which meet a variety of interfaces in the form of common cathode, common anode, differential, etc.

Output Signal

Fault Alarm Output

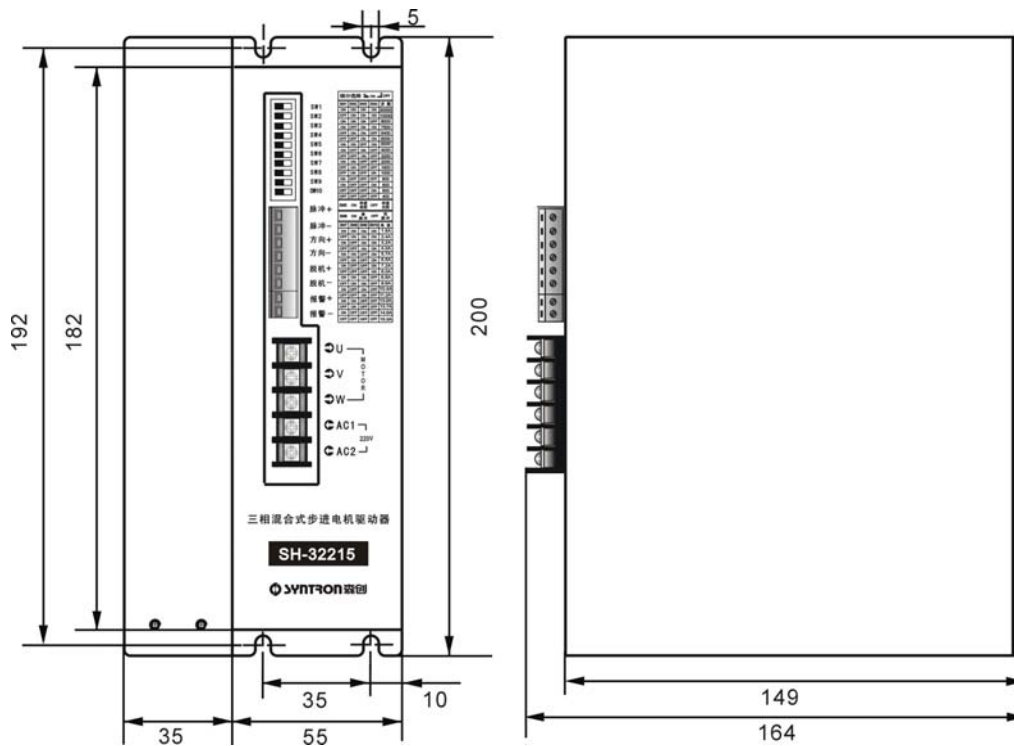
When the drive detects over-current, over-voltage fault, it will automatically cut off the motor current output. The maximum current is 50mA.

Wiring Diagram



Note: Connect the motor lead wire should be used cable with diameter more than 2~ 3mm². To ensure safety, you must make the drive FG terminal is grounded, and use isolation transformer to provide the drive power supply.

Dimension [Unit: mm]



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