

TP5F Torque Controller

Torque Motor Power Controller

User's Manual



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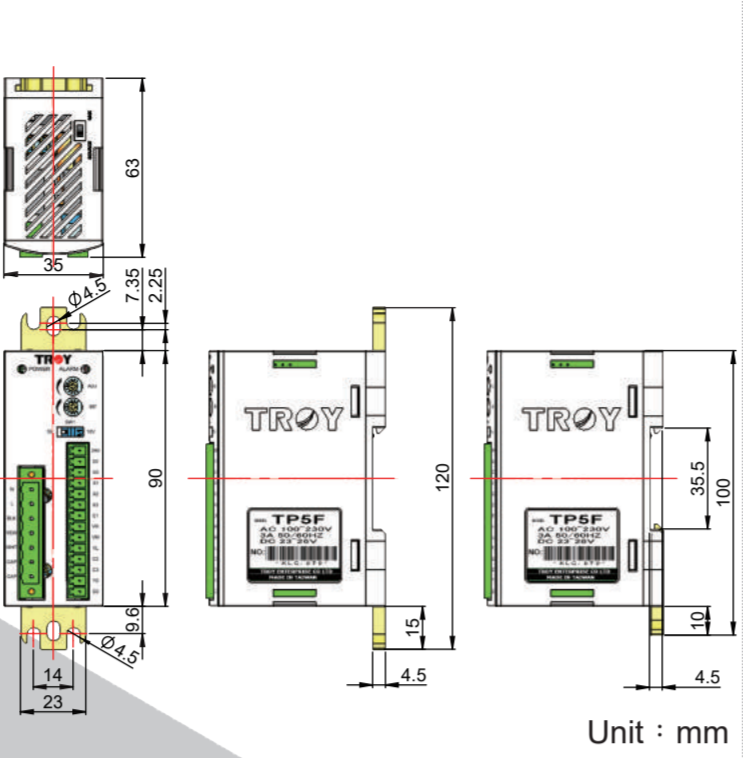
- Easy operating
- Corresponds to full voltage
- No contact controlling
- Having three torque setting modes to choose
- Overheat protection detection ALARM output

1. Specs

Controller model	TP5F
AC power input (V)	Single phase AC100~230V
DC power input (V)	DC23~26V
Power frequency (Hz)	50 60
Drive current(A)	3
Drive power	Max. 20W
Function	<ul style="list-style-type: none"> CW/CCW Operation Torque fine-tune setting ALARM-RESET Internal /External torque setting Motor overheat protection detection (ALARM output)
Ambient temperature	0~+40°C
Ambient humidity	Max. 85%
Dimension (mm)	90(L)X35(W)X63(H)
Weight (G)	120

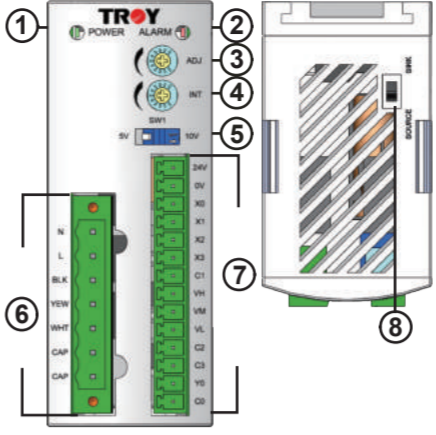
According to the Motor input power specification, please select the input power.

2. Dimension



Unit : mm

3. Function Instruction



NO.	Name	Default value	Description
1	POWER lamp (Green)		When supplying AC Power to torque controller, the lamp lights up.
2	ALARM lamp (Red)		The lamp lights up when ALARM actuates. ALARM outputs from high to low.
3	Fine-tuning setting (Adjust)	mid	Motor torque fine-tuning.
4	Internal torque setting (Interior)	0	Set motor torque.
5	External voltage selection	10V	Use external DC voltage to set torque. Choose 5V or 10V input.
6	Power circuit terminals		Connect AC power, motor, capacitor.
7	Control circuit terminals		Connect DC power, input / output signal cable.
8	SINK/SOURCE switch	SINK	It can switch the SINK / SOURCE to control signal input.

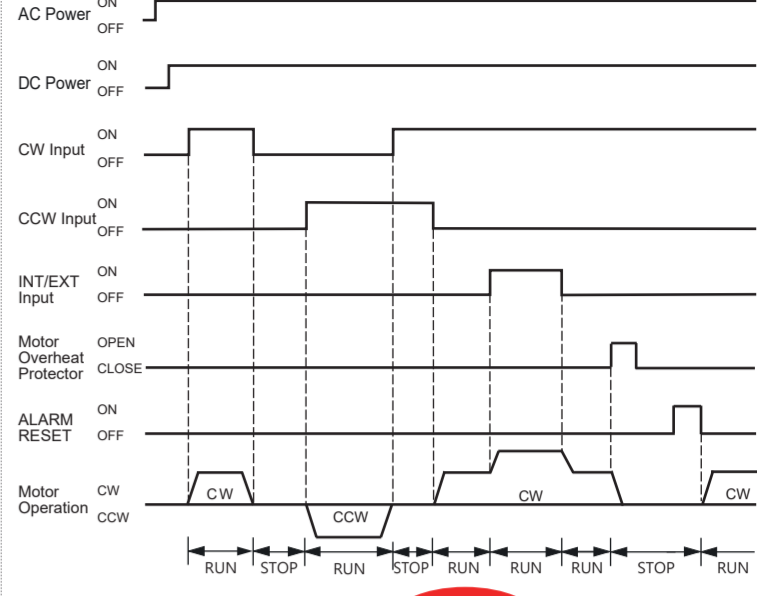
6. Power circuit terminal

Terminal No.	Name	Description
N	AC Power connection terminal	Connect AC power (N:Neutral)
L	AC Power connection terminal	Connect AC power (L:Live)
BLK	Motor connection terminal	Connect motor (BLK:Black line)
YEW	Motor connection terminal	Connect motor (YEW:Yellow)
WHT	Motor connection terminal	Connect motor (WHT:White)
CAP	Capacitor connection terminal	Connect motor capacitor

7. Control circuit terminal

Terminal No.	Name	Description
24V	+DC24V	Connect DC power supply for circuit controlling (24V).
0V	0V	
X0	CW Input	Control motor operation direction and RUN/STOP. If switching to "ON" simultaneously, it will stop.
X1	CCW Input	
X2	INT/EXT Input	Switch external/internal torque setter.
X3	ALARM-RESET Input	Relieve ALARM condition.
C1	IN-COM 0	According to Sink / Source switch to decide. (Sink: 0V/Source: 24V)
VH	VH Input	It could set the torque by external torque setter or external DC voltage.
VM	VM Input	
VL	VL Input	
C2	IN-COM 1	According to Sink / Source switch to decide. (Sink: 0V/Source: 24V) The same as IN-COM 0.
C3		
Y0	ALARM Output	Adopt open collector output mode, it need to supply external DC voltage to it and keep the voltage value below 26V. Connect limiting resistor in series to keep the voltage value below 40VmA.
C0	OUT-COM	

4. Timing Chart



Operation Precaution

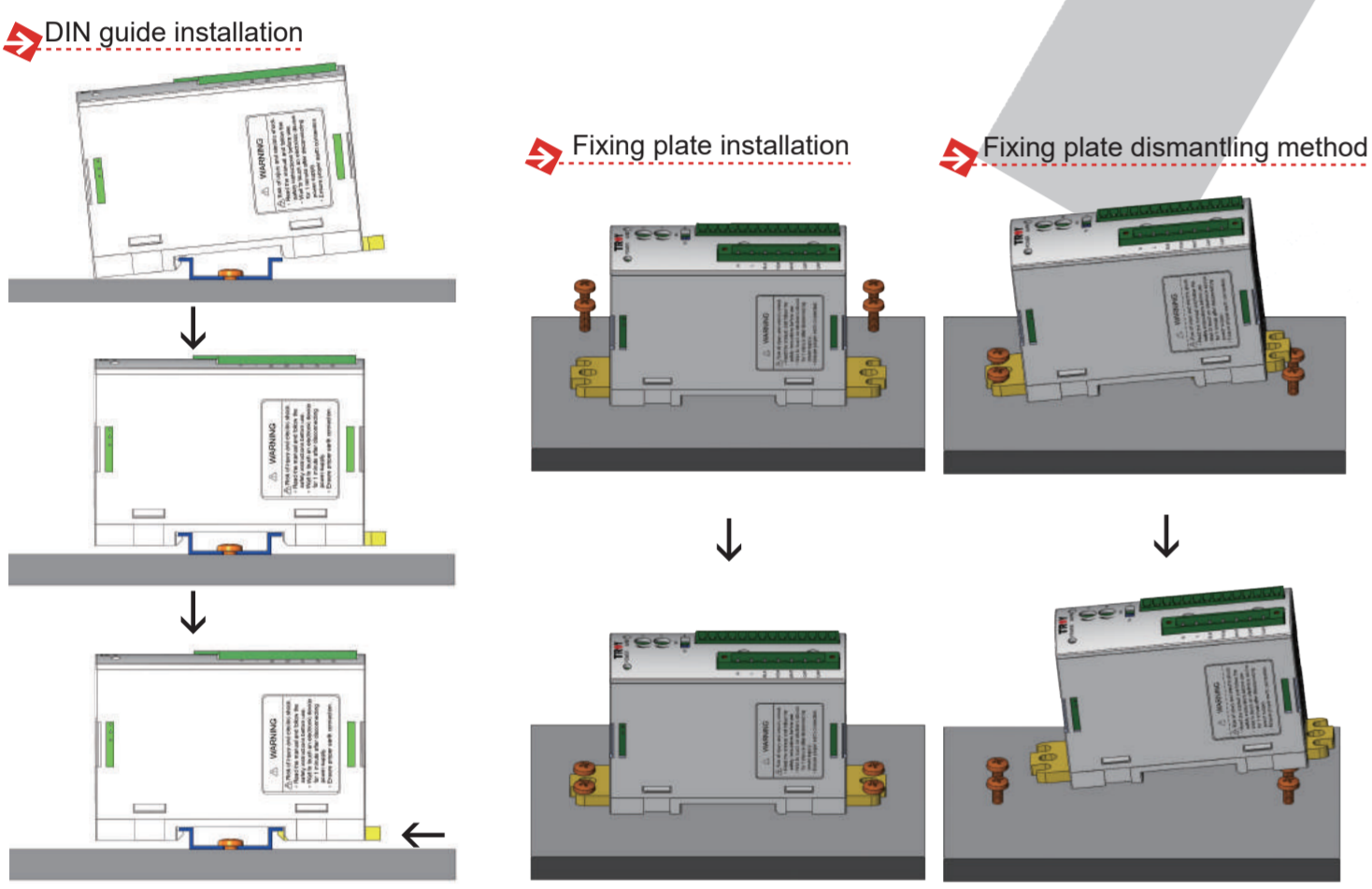
It must pay attention to the motor rating time for applications, cause it will have difference due to the different voltage outputting of controller.

Motor Specifications	Controller output voltage	
-1(110V)	< 60V	110V
-2(220V)	< 115V	220V

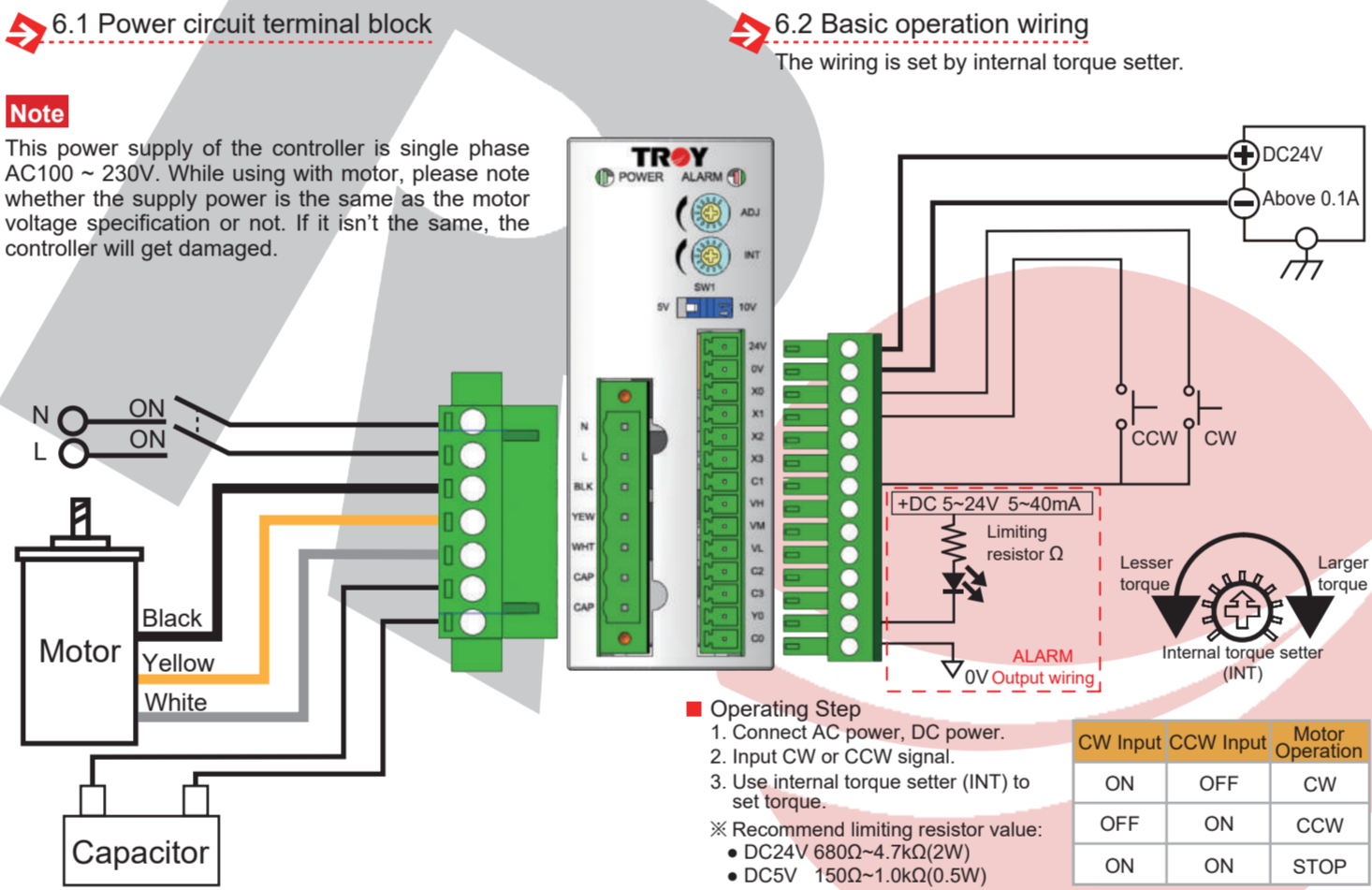
Operation rating time: Continuous operation for long time (continuous rating), Operation rating time is 5 minutes (5 minutes rating)

Using rating : 5 minutes
The rated time was determined by the motor allowable temperature.
Using rating : Continuous
The voltage setting for long time continuous operation will have slight difference with different motor, and it is dominated by motor allowable temperature.

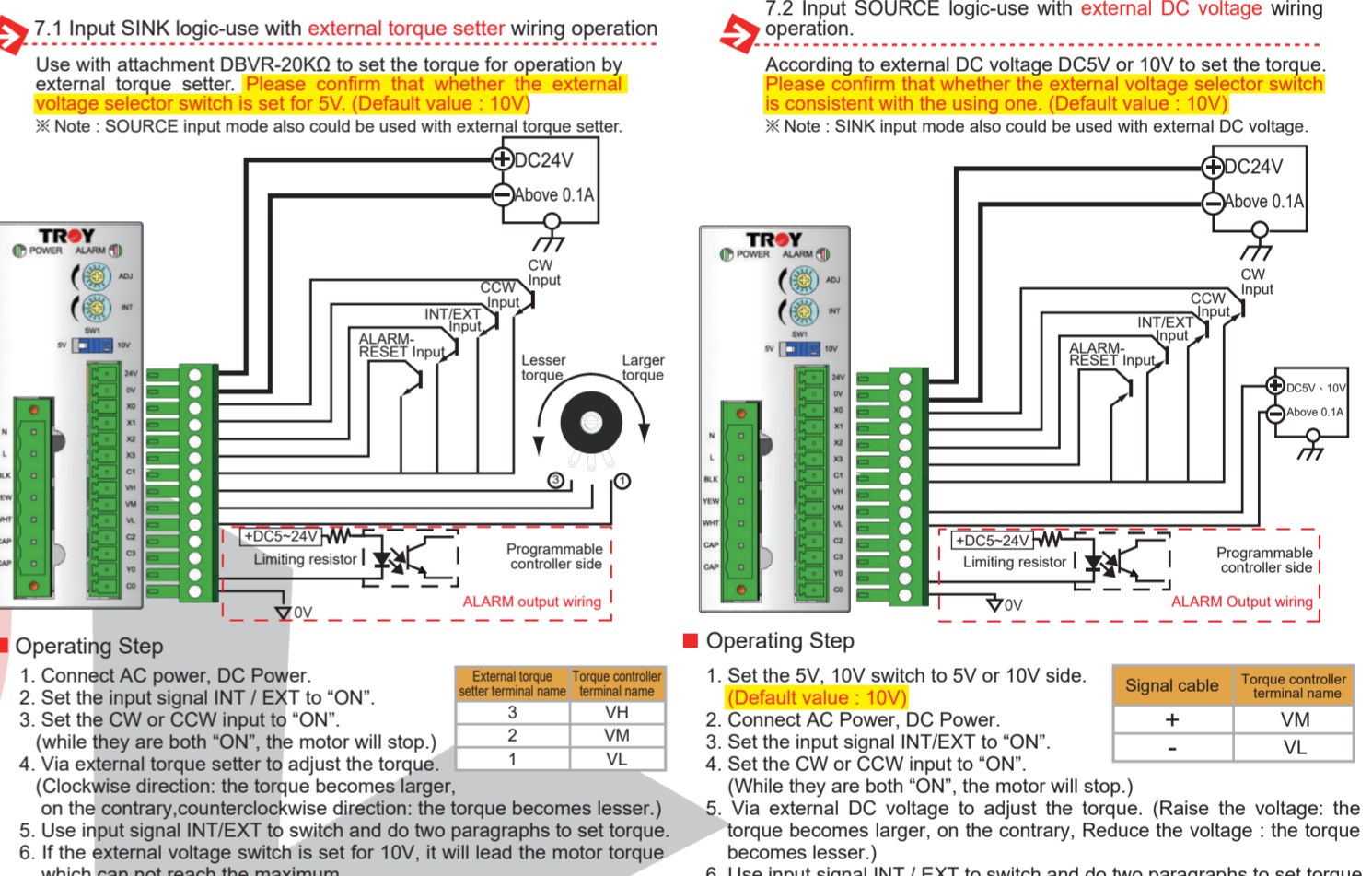
5. Installation



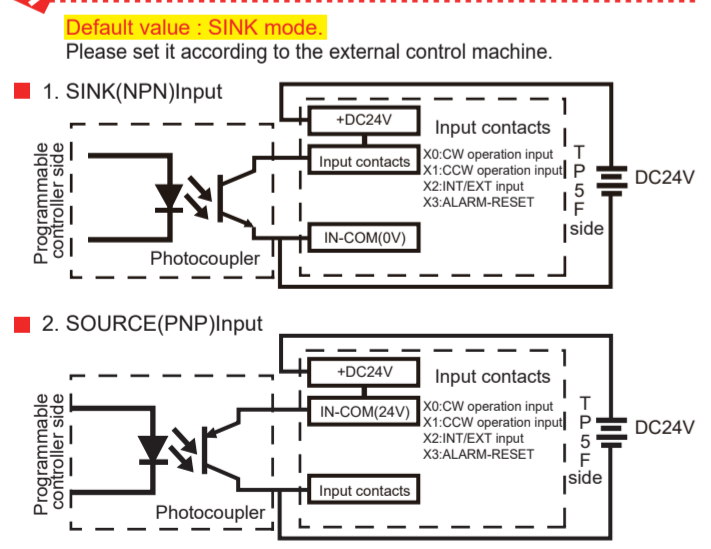
6. Power Circuit Terminal Wiring



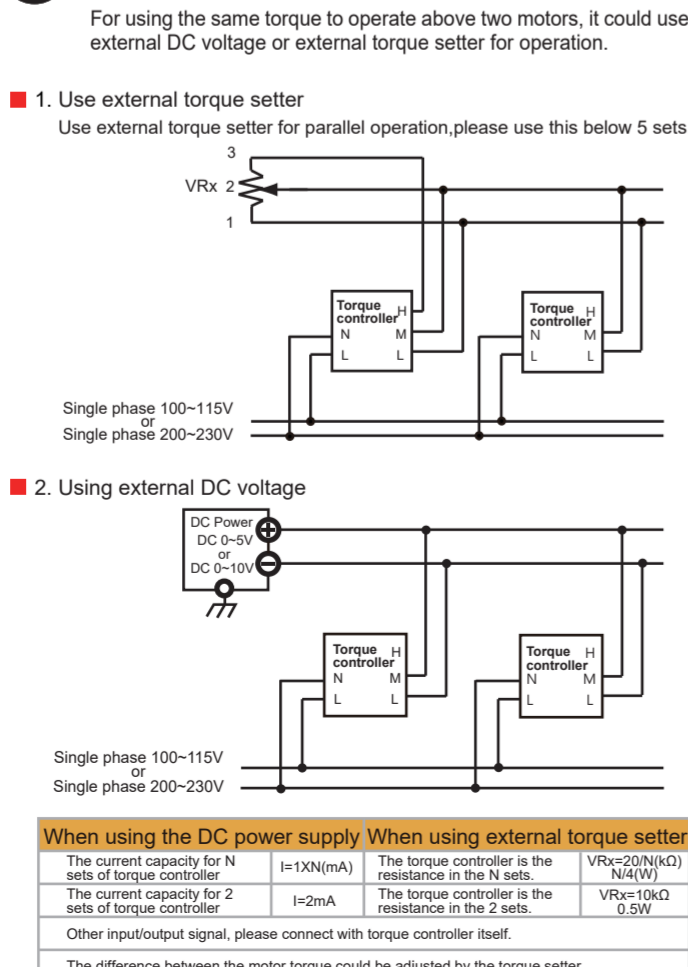
7. Input Logic Wiring



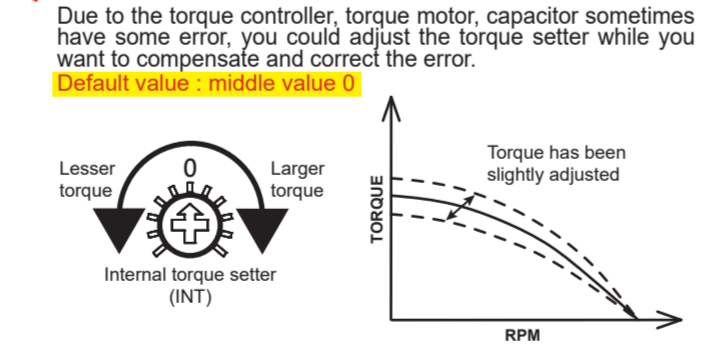
7.3 Input signal logic-SINK/SOURCE mode setting introduction



8. Parallel Operation Introduction



Torque fine-adjusting setter operation introduction



9. ALARM Protection Instruction

ALARM - OUTPUT	
1	Motor overheat protection action.
2	AC Power cable, motor cable poor connection, disconnection.

ALARM - RESET	
1	When relieving the ALARM status, please remove the ALARM reasons and make sure it is safe first then operate it again. Please set the input signals for "OFF" and then set ALARM-RESET to "ON" for at least 60ms seconds and set ALARM-RESET to "OFF".
2	Please set the input signal to "OFF" and it could relieve the ALARM status by reconnecting the power.

WARNING

May cause dead or serious injury etc.

- Take protective device of over current, instant stop, over temperature, ground fault interrupter. Prevent fire, injury, electric shock.
- Don't use product near explosive, water, corrosive gas, or combustible material. It may cause fire.
- Don't forcibly put stress, or lead a heavy article on or stuff foreign matter into it. It may cause electric shock, trouble, and damage.
- Avoid damage caused by earthquake, fire, artificial accident, please set and fix it for confirmation. Prevent electric shock, injury, fire, trouble and damage.
- Install an external emergency stop circuit to turn the power off in the instant halt of operation. Prevent electric shock, injury, fire, trouble and damage.
- Connect the controller and motor to ground. Prevent electric shock.
- Neither reach nor touch the torque controller terminals while power is on. It may cause electric shock.
- Execute safety examination after earthquake. Prevent fire, injury, electric shock.
- Have a professional expert set the wiring construction accurately. Prevent electric shock, injury, fire and trouble.
- Don't work for moving, wiring or inspection with the power on. Prevent electric shock, injury, fire and trouble.
- Don't touch the internal parts of the torque controller. It may cause electric shock, scald.
- Don't stand / sit on product or put heavy article on it. It may cause electric shock, trouble, damage.
- Ensure that wiring has been correctly done. Prevent injury trouble, damage.

Please dealing according to industry littering as discarding the product.

ATTENTION

May cause injury or product damage.

- When conducting trial operation, make Motor fixed. Confirm motor before composing machine system. Prevent injury.
- When temperature of torque controller or motor is rising, please don't touch it. It may cause scald.
- Don't reform, assemble or repair. It may cause electric shock, injury, fire.
- Move the product with a great care so as to prevent from the danger such as tumble or turnover. It may cause injury, damage.
- When power recovers after interruption, don't approach devices since it may restart operation suddenly. It may cause injury.
- Please follow the appointed voltage. Prevent injury, fire, electric shock.
- Don't cut-in or off the power frequently. It may cause trouble.
- Don't use damaged torque controller or motor. It may cause injury, fire.
- Don't put obstacle around torque controller and motor or it'll be airless. It may cause scald, fire.
- Please have the cause troubleshooting as tripping, and restart after safety confirming. Prevent injury.
- Have an expert execute maintenance and inspection. Prevent injury and electric shock.
- Neither block nor stuff the aspiration/exhaust vent with foreign particle. It may cause electric shock, trouble, fire.
- Use torque controller and motor in designed combination. Prevent fire.
- Don't put a heavy impact on shaft of motor and torque controller. It may cause trouble.
- Please turn power off as stop using for a long period. It may cause injury from wrong operating.
- Mount the product on an incombustible material such as metal. Prevent fire.
- Don't set magnetic contactor in main power during motor rotating or stopping. It may cause trouble.
- Don't drive motor axis from external. It may cause fire, trouble, electric shock.

Trouble Shooting

If the Motor running condition can't operate normally, please refer to the instruction below to deal with.

Situation	Solution
ALARM lamp lights up	<ul style="list-style-type: none"> Please remove the reasons of the ALARM output reasons. The action of the motor overheat protector. Please remove the motor overheat reasons first and then relieve ALARM after motor cooling.
Motor · No rotation · Unstable operation	<ul style="list-style-type: none"> Please confirm whether the AC cable, motor connector is in a bad connection, disconnected. Please confirm whether the capacitor is consistent with the motor splicing. Please confirm whether there is external noise interference. Please confirm the input state and wiring of contact X0, X1, X2. Please confirm the input state and wiring of contact X0, X1 and also need to make sure whether the gearbox has the opposite direction condition.

Motor running direction is opposite to the specified direction.

※If the operation condition is still abnormal condition through treatment, please contact with the salesman.

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