

Connection and Operation

Names and Functions of Driver Parts

Indication

Displays the monitor contents, alarm, etc.

Dial

Changes the speed and parameters.
The value is set when the dial is pressed after changes are made.



Operating Switch

The motor is started by setting it to the "RUN" position.
Setting it to the "STAND-BY" position stops the motor.

Rotation Direction Switch

Changes the rotation direction of the motor.

Front Panel

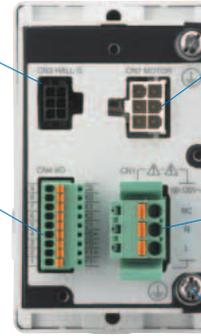
<Front side of the driver>

Sensor Connector (CN3)

Connects to the signal connector of the motor.

I/O Signal Connector (CN4)

Connects with the I/O signals.



Motor Connector (CN2)

Connects to the power connector of the motor.

Main Power Connector (CN1)

Connects to the main power supply.

Protective Earth Terminals (2 locations)

Ground either one of the protective earth terminals.

<Back side of the driver>

When Front Panel is Removed

MODE Key

Changes the operating mode.



FUNCTION Key

Changes the indication and functions for the operating mode.

Acceleration/deceleration Time Potentiometer

Sets the acceleration time for starting the motor and deceleration time for motor standstill.
Setting range: 0.1 s~15.0 s

Installation Holes (2 locations)

Extended Functions

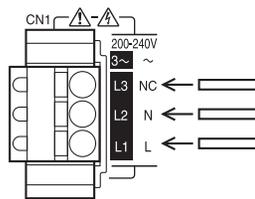
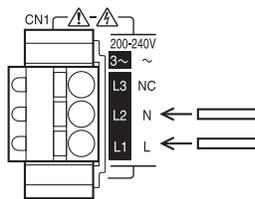
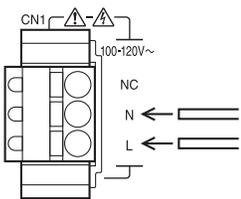
Remove the front panel to be able to perform various settings by operating the keys.

Operating Mode	Details
Monitoring	Speed, load factor, operating data number, alarm, warning, I/O monitor
Data	Data No. 0, No. 1, No. 2, No. 3 (4 points) Operating speed, acceleration time, deceleration time, reset
Parameters	Gear ratio, speed increasing ratio, initial panel indication, initial operation inhibition alarm, analog acceleration/deceleration, external operating signal input, input function selection, output function selection, overload alarm detection time except during axial lock, overload warning level, speed attainment width, parameter mode reset

Main Power Connector (CN1)

Connects to the main power supply. Connect a power supply that matches with the power supply voltage to be used.

- Single-Phase 100-120 VAC
- Single-Phase 200-240 VAC
- Three-Phase 200-240 VAC



Applicable Lead Wire Size

AWG18~14 (0.75~2.0 mm²)

Applicable Crimp Terminals

Use the following terminals for connection using crimp terminals.

Please note that the applicable crimp terminal varies depending on the size of the lead wire.

Manufacturer	Phoenix Contact
Product No.	AI 0.75-10 [AWG18 (0.75 mm ²)] AI 1-10 [AWG18 (0.75 mm ²)] AI 1.5-10 [AWG16 (1.25 mm ²)] AI 2.5-10 [AWG14 (2.0 mm ²)]

Operation with the Driver Only

Run/Stop

When the operating switch is set to the "RUN" position, the motor will start.

When it is returned to the "STAND-BY" position, the motor decelerates to a stop.

Speed Setting Method

Set the motor speed by using the dial.

Setting range: 80~4000 r/min

Turning the dial slowly to the right increases the speed by 1 r/min increments, while turning it to the left reduces the speed by 1 r/min increments.

Turning the dial fast produces a great variation in speed.

Pressing the dial sets the speed.



Operation with the operating switch

Setting the speed with the dial

Operating Switch

"STAND-BY" position

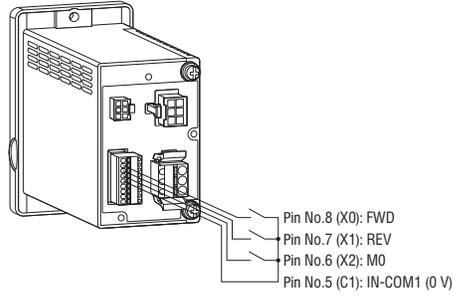


"RUN" position

● Operation by External Signals

◇ Operating Method

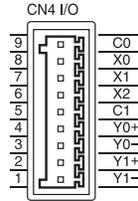
- Using the built-in power supply in the driver, the motor is operated through signals from external sources (switches, relays, etc.). Connect Pins No. 5~8 of the I/O signal connector (CN4) as in the figure to the right.
- When operating using external signals, change the parameter setting in the "External Operating Signal Input" to "on: Activated", and set the operating switch to the "RUN" position.



● I/O Signals Connector (CN4)

Pin No.	Terminal Name	Signal Name	Description
9	C0	IN-COM0	Input signal common
8	X0	FWD*	The motor rotates in the FWD direction.
7	X1	REV*	The motor rotates in the REV direction.
6	X2	M0*	Select the operating data.
5	C1	IN-COM1	Input signal common (0 V)
4	Y0+	SPEED-OUT*	For every rotation of the motor, 30 pulses are output.
3	Y0-		
2	Y1+	ALARM-OUT1*	It turns OFF when an alarm is generated. (Normally closed)
1	Y1-		

*These are initial settings. The allocation of values can be changed with the parameters.



● Applicable Lead Wire Size AWG26~20 (0.14~0.5 mm²)

● Applicable Crimp Terminals

Use the following terminals for connection using crimp terminals.

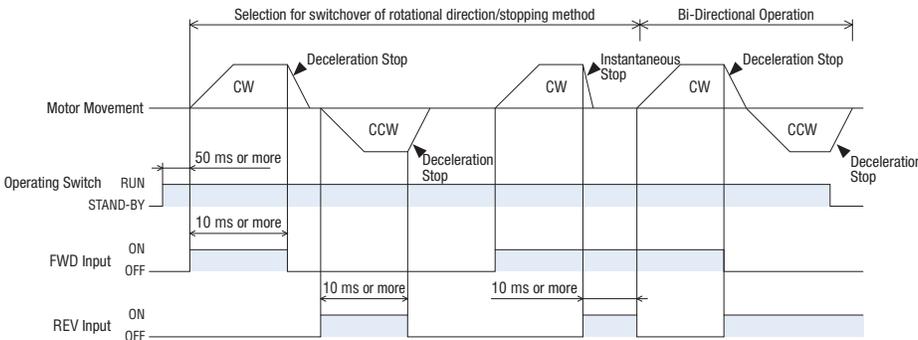
Please note that the applicable crimp terminal varies depending on the size of the lead wire.

Manufacturer	Phoenix Contact	
Product No.	A 0.25-7	[AWG24 (0.2 mm ²)]
	A 0.34-7	[AWG22 (0.3 mm ²)]
	A 0.5-8	[AWG20 (0.5 mm ²)]

◇ Timing Chart

This is a timing chart when operated via external signals.

When the rotation direction switch is set to "FWD".



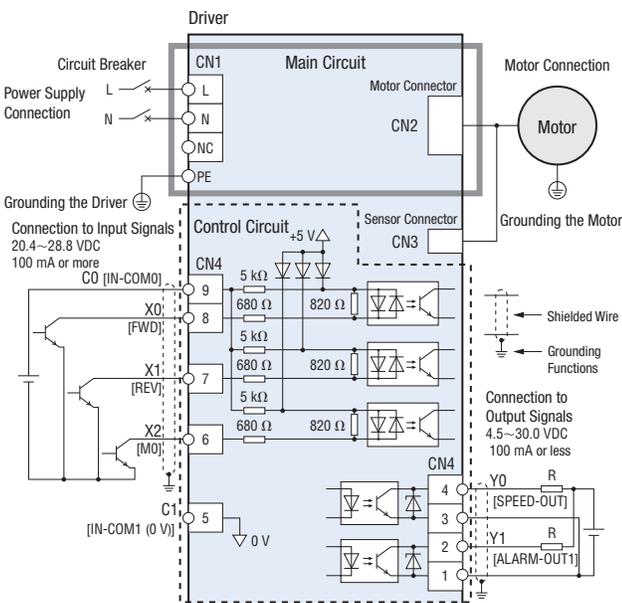
- Switching the FWD input to ON will cause the motor to turn clockwise as viewed from the motor shaft side, while switching the REV input to ON will cause the motor to turn counterclockwise. Turning it OFF decelerates the motor to a stop. If both the FWD input and REV input are turned ON simultaneously, the motor will stop instantaneously.

● With the combination type, the rotation direction varies according to the gear ratio of the gearhead.

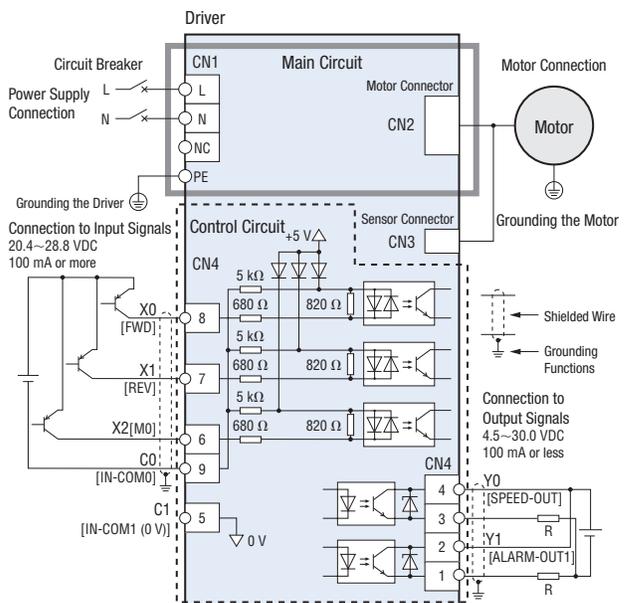
◇ Connection Diagram

The figure shows an example for a motor operated with sequence connection by a single-phase 100-120 VAC input-type transistor.

● Sink Logic



● Source Logic



● Connect a limiting resistor R that corresponds to the power supply used, so that the current that flows with the output signals does not exceed 100 mA.