

# INSTRUCTION MANUAL

POWER SUPPLY FOR HALOGEN SPOT HEATER

## HLC Power Supply Series

Model:HLC- HN/10

Thank you very much for purchasing our company's Power Supply for Halogen Spot Heater.  
Please be sure to read this manual prior to the usage in order to use this product safely.

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## [Precautions for safety]

### Warning

- The product is designed as the power supply for halogen heater. Please avoid to use it as the power source for the other device.
- Please do not change the structure of the product and dismantle it.
- Be sure to secure grounding.

### Cautions

- Please do not drop the product, hit it with a thing and apply excessive unusual force.
- Please use the product within the rated values of power supply voltage, capacity of the connected lamp and applied voltage to the lamp.

**Be sure to use a 100V rated heater at an input voltage of 100V. (HSH spot heater)**

**Be sure to use a 200V rated heater with an input voltage of 200V. (LHW line heater)**

- Be sure to remove the power supply cable when you do the wiring work for terminal blocks, clean the power source or replace the lamp.
- Please use electric wires and cables under such a condition that they are do not pull them.
- Please be sure to connect the cable firmly so that it will not loosen or come off.
- Please be sure to use the product with the cover for terminal block mounted after the wiring.

[Cautions for the conditions (Please avoid to use the product in the following place and conditions.)

### Cautions

- Use in the environment where the temperature is -10°C or less and +40°C or more.
- Place where the ambient temperature changes greatly.
- Place where the magnetic field is strong.
- Place where the humidity is extremely high. (85% RH or more)(Condensation should not be produced.)
- Place where there is a violent vibration or impact or dust and water may be splayed on.
- Use in the outdoor.

## [About warranty]

### 1: Warranty period

The period of warranty for the delivered product is 1 year from the date of delivery to the designated place.

### 2: Scope of warranty

Our company shall replace or repair the defective part of the product for free in case that the malfunction caused by our company's responsibility occurred within the period of warranty mentioned above.

However, cases that fall under the following shall be excluded from the scope of warranty.

- 1) Malfunction or damage caused by misuse, modification or improper repair.
- 2) Malfunction or damage caused by improper conditions (excessive impact)/environment, handling, transportation or etc.
- 3) Malfunction or damage caused by another reason such as natural disaster or casualty for which our company is not responsible.

Further, the warranty described here means the warranty for the delivered product itself and our company shall not be responsible for the damage arising from the malfunction of the product

(including loss of business profit, interruption of business, loss of business information and the damage to the other device or other damage and monetary loss arising from the malfunction of the product and carelessness in use)

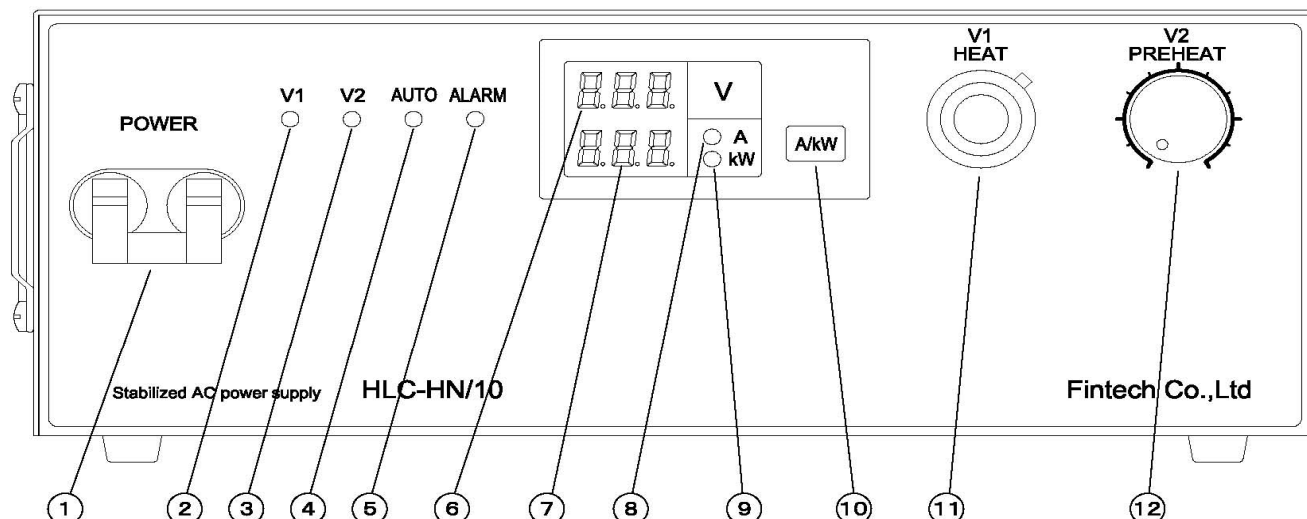
1) General

The power source is designed for halogen heater and classified by the rated voltage of lamp (100V, 200 V).

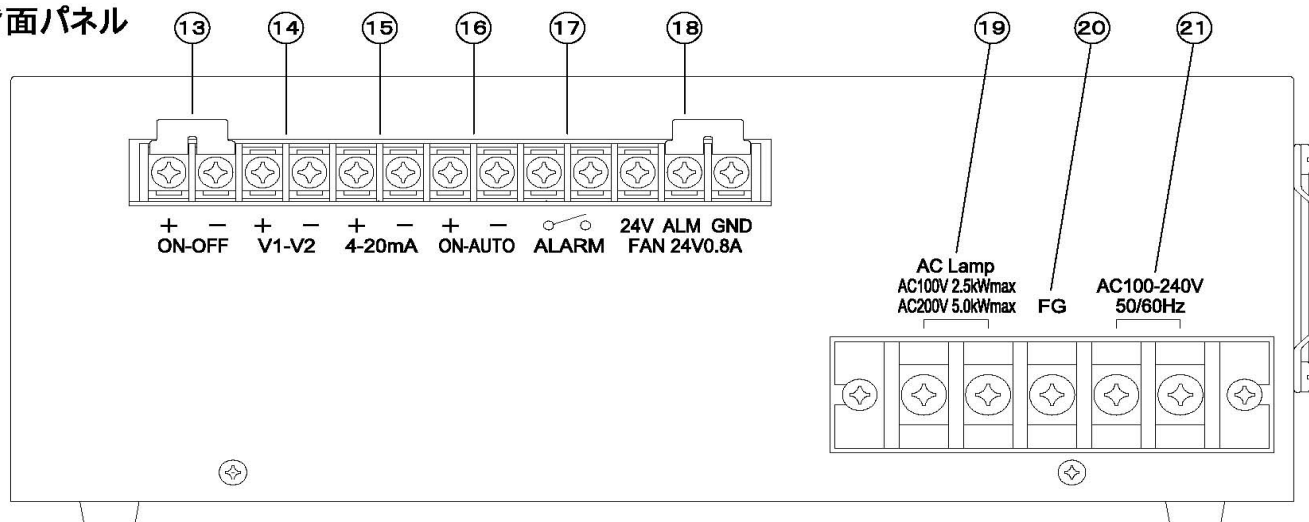
2) Specifications

· Model	HLC-HN/10		
· Power source voltage	100 VAC to 240 VAC		
· Lamp voltage	100 V	200V	
· Lamp capacity	2500 W max	5000 W maximum	
· Outside start	Yes	Yes	*Short bar is mounted when shipped
· V1 V2 output switch-over	Yes	Yes	*Secondary set function
· Output setting	Volume	Volume	Scale is a guide
· Indication of voltage	LED	LED	Lights up when the lamp is turned on
· Soft start	4.5 sec	4.5 sec	
· Cooling method	Water cooling OR Forced air cooling		Fan
· Alarm	Yes (Heater burnout)		
· 7 segment display Display content	Upper: Voltage (V) Lower: Current / Power switching (A / kW)		
· Operation monitor lamp			
V1	Yellow LED V1 lights when operating		
V2	Green LED lights when V2 is operating		
AUTO	Blue LED Lights up during AUTO		
ALARM	Red LED lights when an error occurs		
· 4-20 mA input	Yes	Yes	
· Power source cable	No	No	
· General specifications			
cooling method	Forced air cooling by air cooling fan		
Temperature and humidity range	-10 to + 40 / 35 to 85% RH (no condensation)		
· Dimensions	W260 X D226 X H102 mm		
· Weight	3.3 kg		

前面パネル



背面パネル



	Power source switch (circuit protector)
	V1 monitor yellow LED
	V2 monitor green LED
	Outside control monitor blue LED
	Alarm monitor red LED
	Voltage indicator
	Current / power indicator
	Current indication monitor LED
	Power indication monitor LED
	Current/Power indication selecting switch
	V1 output voltage adjustment volume (10 rotation potentiometer)

	V2 output voltage adjusting volume
	Lamp output control terminal (ON / OFF)
	Output switching terminal (V1 / V2)
	Outside control 4-20 mA input terminal
	External control / volume control switching terminal
	Alarm output terminal
	Air-cooled fan and alarm output terminal
	Lamp output terminal
	Frame ground
②	AC power input terminal

## [Wiring method] Turn-on and turn-off of heater

### **Caution**

- Please confirm that the power source switch on the front panel is turned off before connecting heater to the terminal.
- Please confirm that the scale of V1 and V2 adjusting volume on the front panel No. and is 0.

1. Please connect the frame ground to the terminal to the rear panel No. .
2. Please connect the heater lead wire to the terminal on the rear panel No. .
3. Please connect the power source cable to the rear panel No. ②1.
4. Turn on the power switch on the front panel . To set the heater output to 0
  - Set the scale of each control volume to 0, and turn off the power switch to turn it off.
5. The heater can be turned on / off by turning ON / OFF the rear panel terminal .  
(It is always lit in the ON (short circuit) state. Jumpers are used when the product is shipped.)
6. Adjust the heater output with the V1 adjustment volume on the front panel .

At this time, the monitor lamp LED (yellow) on the front panel lights up.

When the heater is disconnected, the alarm display LED (red) in lights up. (Signal output terminal is )

### \* **When using AUTO SHIFT (switching from V1 to V2)**

- Installed the jumper bracket on the rear panel Please use as is.
- Set to ON (dry
- At this time, the V2 monitor lamp LED (green) on the front panel lights up.

### \* **About halogen heater wiring method for air cooling and cooling**

The Remove the jumper bracket from the air-cooled fan output and alarm output terminal and wire the red cord to 24V and the black cord to the GND side.

If there is a yellow or orange alarm code Connect to ALM.

When using an air-cooled fan without an alarm code Connect (short-circuit) the negative side terminal-, , or to the ALM terminal.

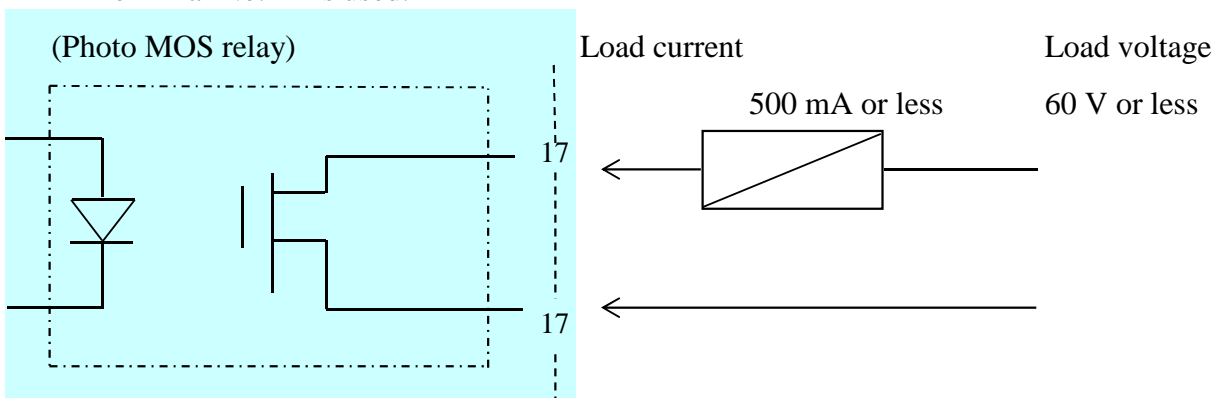
If there is polarity, the left terminal will be + and the right terminal will be-.

### **Caution Input will become no-voltage contact or open collector.**

Please do not apply voltage to the terminal.

Output) Output for heater burnout (becomes ON when the heater is burned out)

Terminal No. is used.



(Current control function)

1) Adjustment of heater output by outside input signal.

Control heater output by using 4 - 20 mA outside signal.

Use terminals No.⑮ and ⑯ for current control on the rear panel.

Use the terminal No.⑮ in case of 4 - 20 mA input.

You can vary 4 -20 mA by making the Outside control/Volume control selecting terminal of terminal No.⑯ ON (dry contact).

In this case, the AUTO monitor lamp LED (blue) on the front panel ④ lights up.

**Caution**

**When using the external current control function (4 mA to 20 mA)**

**Output adjustment by ⑪ and ⑫ volume is not possible.**

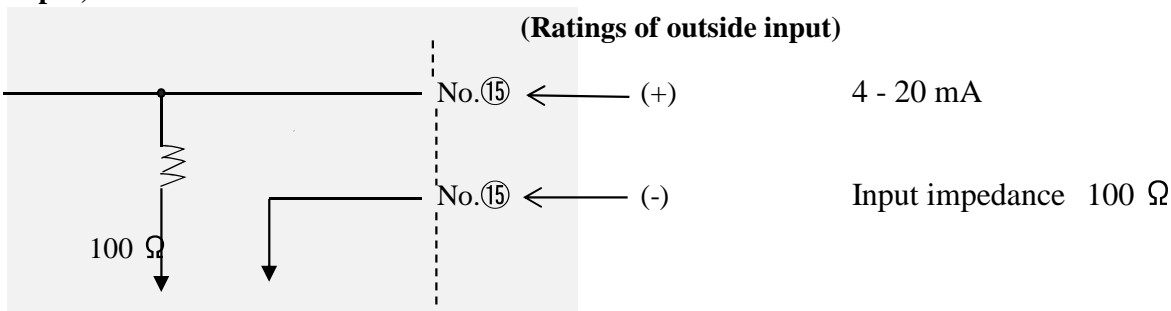
**Caution:**

**When using external current control and ⑪、⑫volume switching,**

**⑬terminal set to ON (dry contact).**

**Specification for the connection of outside terminal]**

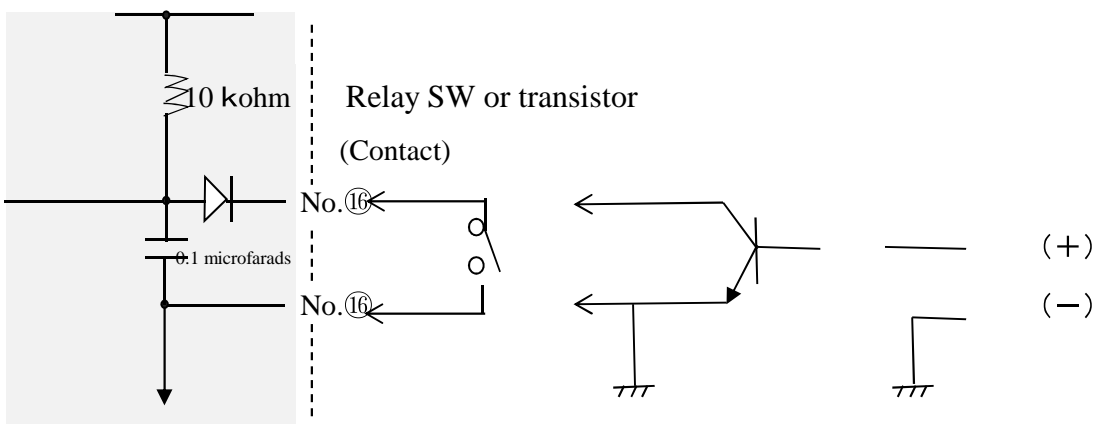
**Input) 4 - 20 mA**



Please short circuit (ON) ON-AUTO No.⑯ in case of using the above control.

(Manual will be preceded when the input is negate.)

**Input) ON-AUTO**



## Error code type

This unit displays an error code on the voltage display when an error occurs.

Error code	Error contents	Cause of error code	Counter-measure
E01	over current (OCP)	In the case of incorrect wiring or lamp wiring short-circuit (continuous 30 amperes for 2 seconds)	Check the wiring and replace the lamp if the lamp wiring is short
E02	Lamp breakage	Broken filament inside the lamp bulb	Lamp replacement
E03	Over heating in power supply(OHP)	When the temperature of the radiator in the housing detects 80 °C	If the ambient temperature is 40 ° C or higher, reconsider the installation location. If the ambient temperature is 40 ° C or less, replace the main unit.
E04	Internal temperature sensor disconnection	When the temperature sensor in the housing is disconnected or the ambient temperature is -10 ° C or lower	Replacing the main unit (However, if the ambient temperature is -10 ° C or less, reconsider the installation location)
E05	Halogen heater fan stop	When the air cooling fan attached to the halogen heater stops rotating	Replacing the air cooling fan
E06	Power regulator alarm	When the power controller in the housing outputs an alarm	Check the error display on the power controller.

※ In the case of the above error, output is stopped and the error display is held until the power is turned off.

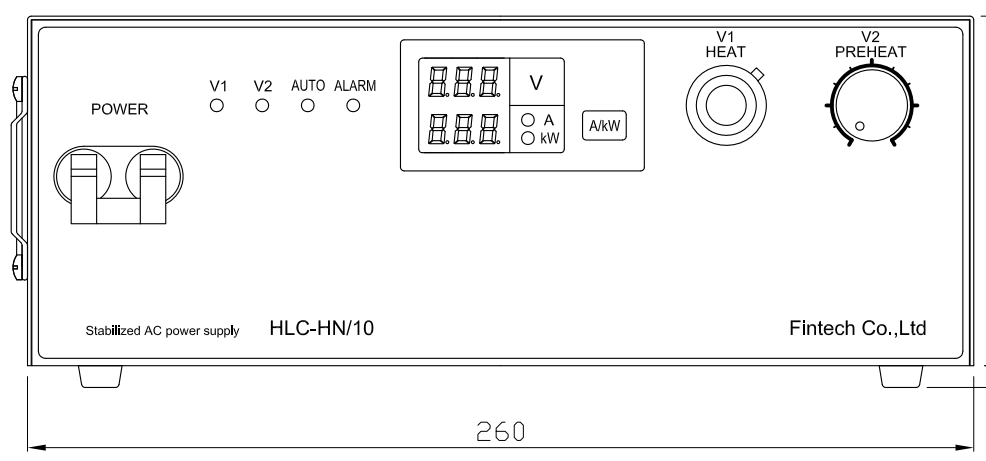
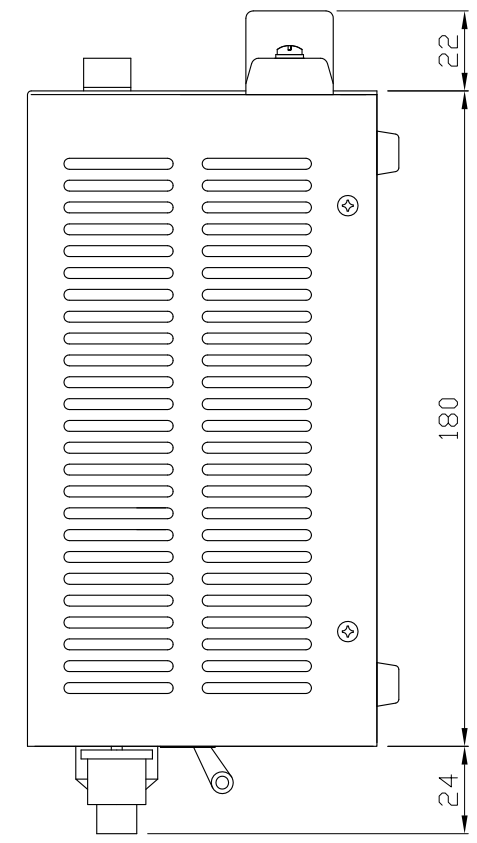
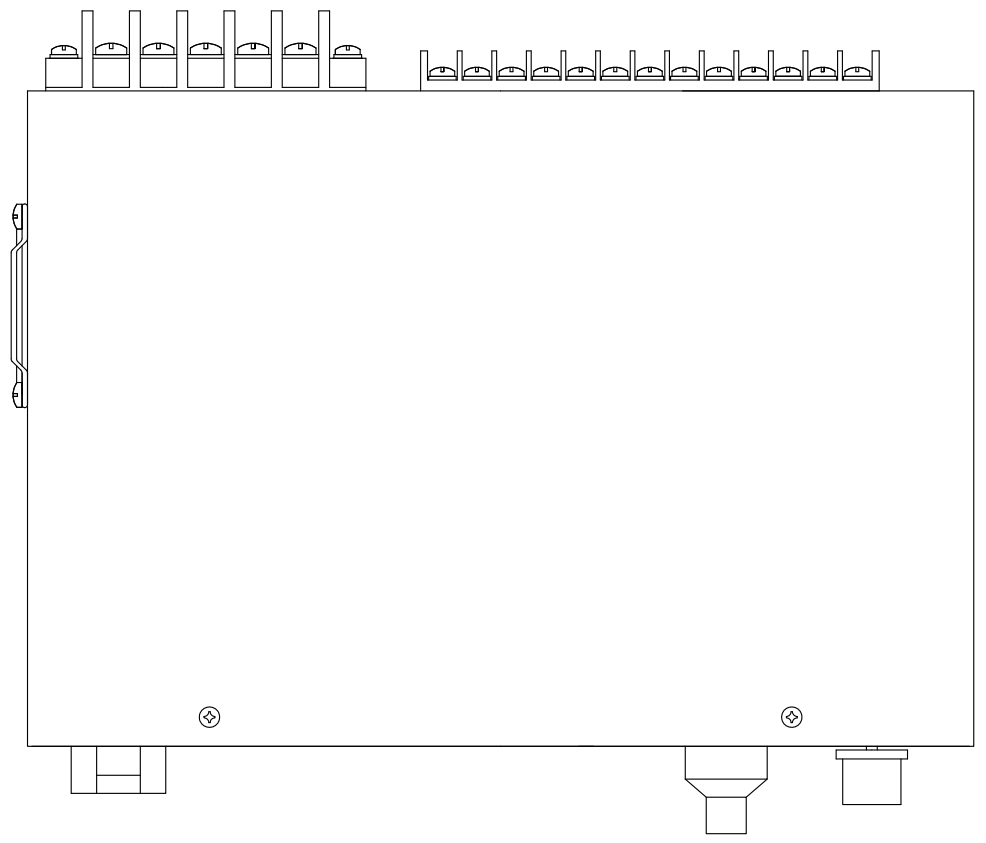
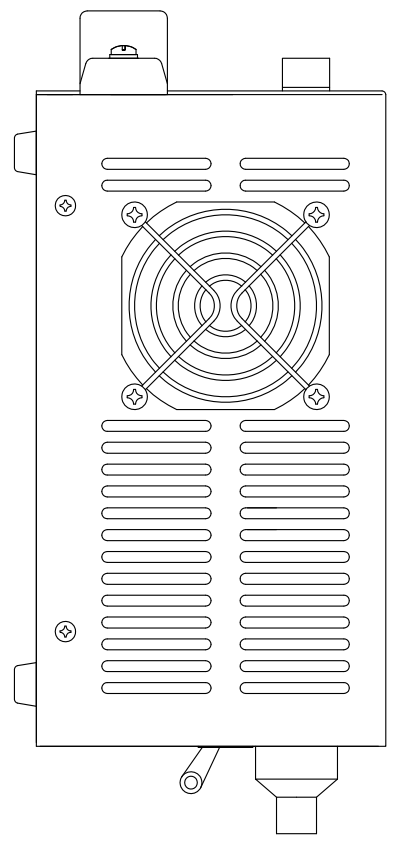
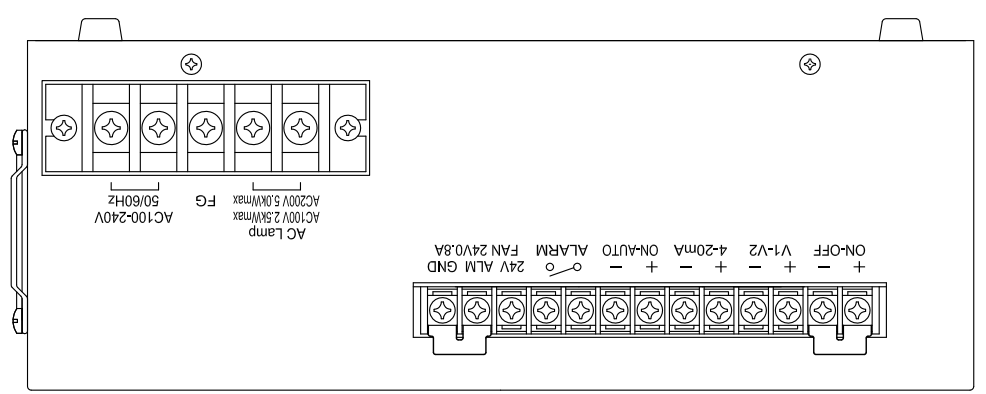
For this reason, after turning off the power, take action according to each error code and check again if an error code occurs.

• E03 is an error code that occurs due to the high temperature environment inside the power supply cabinet.

For this reason, foreign matter adhering to the radiating fins or the location of the power supply and the wall are not close, or the ambient temperature is check if the temperature is over 40 °C.

1 2 3 4 5 6 7 8

A  
B  
C  
D  
E  
F



△	- -			Draft	Design	Inspect	Product Name Stabilized AC power supply HLC-HN/10 External view	Scale 1/1
△	- -			18/03/15	18/03/15			
△	- -			Fintech Co., Ltd.			Drawing Number	
△	- -			Change	Date	Correction		Sign

1 2 3 4 5 6 7 8