

# Interface Converter Installation Manual [ MODEL : PHC-D08 ]

Thank you very much for purchasing our Patlite products. Read this installation manual thoroughly before using this product to ensure correct use, and store this manual for future reference. Read this manual again in case of maintenance/inspection or repair.

- This product requires installation, wiring and other setup work. Always have installation work performed by a professional contractor.
- Prior to installation, read this manual thoroughly before using this product to ensure correct use.
- Reread this manual when maintenance, inspection, repair or other work is required. If there are any questions concerning this product, refer to the contact information at the end of this document and contact your nearest PATLITE Sales Representative.
- For more details on installation, settings or wiring, download the Complete Instruction Manual from our homepage.

Homepage address	<a href="http://www.patlite.com/">www.patlite.com/</a>
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Always check the URL above, as it also includes information required for products and notifications about version upgrades.

- To the Contractor
- Read this manual carefully prior to installation.
- If there are any questions concerning this product, refer to the contact information at the end of this document and contact your nearest PATLITE Sales Representative.

## - Safety Precautions -

The following symbols classifies the following into different categories and explains the level of harm inflicted if the cautions are disregarded.

- Warning** Indicates an imminently dangerous condition: failure to follow the instructions may lead to death or serious injury.
  - Request the installation and wiring to be accompanied by a professional contractor. If installation is done improperly, it may result in fire, electric shock, falling, or malfunction.
- Caution** Indicates a potentially dangerous condition: failure to follow the instructions may lead to slight injury or property damage.
  - Use a soft cloth dampened with water to clean the product. (Do not use thinner, benzene, gasoline or oil.)
- Note** Indicates helpful information to be used prior to using this product.

## 1 For safe application, observe the following

- Warning**
  - Do not modify or disassemble the product. Doing so may result in fire, electric shock, and failure.
  - Be sure the wiring is carried out correctly. Incorrect wiring may result in fire and damage to the internal circuit.
  - Be sure to use this product within the operating voltage range. Using this product outside the operating voltage range may result in damage and possible fire.
- Caution**
  - Be sure the power is turned off before performing any electric wiring or installation. Leaving the power on while performing wiring or installation may result in damage to the circuitry.
  - Do not use this product in an environment where corrosive gas is present. Doing so may result in failure.
  - This product is designed for indoor use. Use in a location where this product is not exposed to rain and water.

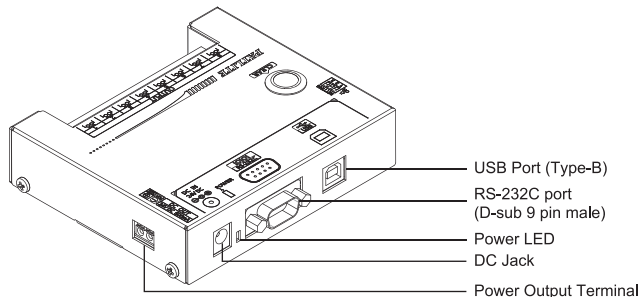
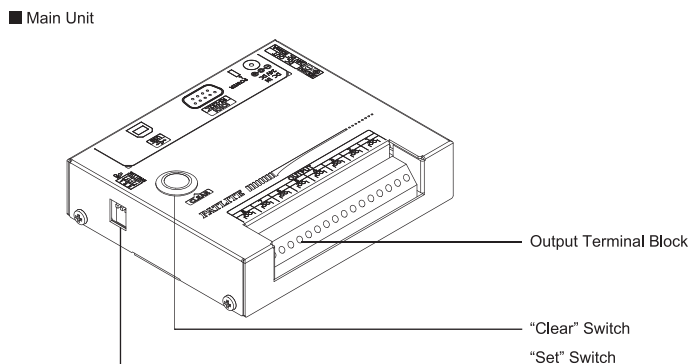
It is not the responsibility of Patlite for any failure or damage from natural disasters, mishandling and disassembly, or modifications that deviate from the cautions and warnings provided in this manual. It is recommended to avoid the use of this product for purposes other than described in this manual.

## 2 Model Number Configuration

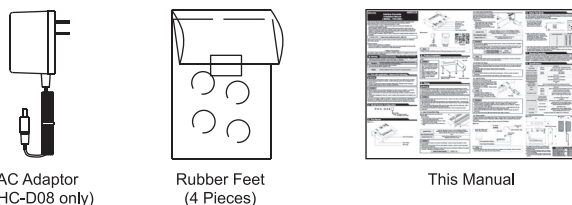
PHC-D08

- AC Adaptor
- Blank : AC Adaptor included
- N : AC Adaptor not included

## 3 Part Names



### ■ Accessories

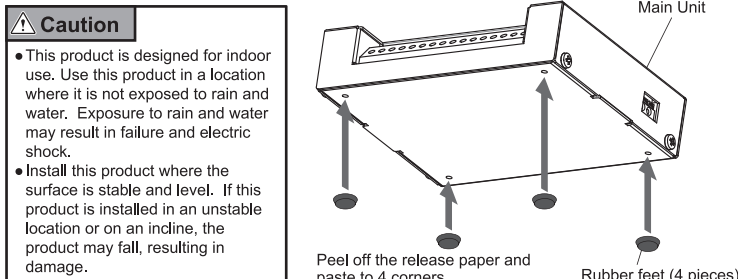


### Note

- Please purchase the RS-232C cable and USB cable separately, since they are not included.

## 4 Product Installation

Prior to installing this product, attach the enclosed rubber feet (4 pieces) to the bottom surface of this product.



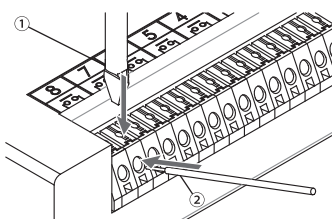
## 5 Wiring

- Warning**
  - Screw-less terminal blocks are used in this product; use wires which characteristics such as wire type, wire diameter, and strip length are observed as described in this manual. Failure to do so may cause contact failure, heat generation, and loose wires since the wire is not securely connected.
  - Insert the entire conductive part of wire. If the stranded wire is sticking out from the slot inlet, or a bare wire touches the case, it may cause damage to the main unit by short circuit, or fire.
- Caution**
  - Do not push the actuator part of terminal block too hard. Doing so may result in the damage to the Terminal Block and Main Unit.
  - Use a straight RS-232C cable when connecting to the connection devices (PC). This product may malfunction and cause failure to the Main Unit and other connected devices if they are used together with other devices.
  - Do not bundle the RS-232C and the USB cable with power supply cords when being used. Failure to comply may result in malfunction from power line noise.
  - Do not connect the RS-232C and USB cables simultaneously. Failure to comply may result in malfunction.

### 5.1. Output Terminal Block Wiring

Wire the output terminal block according to the following steps.

- [Wiring Method]
1. Use a minus driver to push in the tab of the control unit's output terminal block.
  2. Insert a signal line lead wire into the slot. (Keep pushing the tab while inserting)
  3. Release the minus driver to lock the lead wire in place.



Applicable Wires	Solid wire: Diameter 0.4 mm to 1.2 mm (AWG26 to AWG18) Stranded wire: Diameter 0.2 mm <sup>2</sup> to 0.75 mm <sup>2</sup> (AWG24 to AWG20) <small>*Single wire diameter shall be 0.18 mm or more for stranded wire.</small>
Wire Coating Strip Length	9mm
Suitable Actuator Tool	Width of flathead screwdriver bit: 4.5 mm, Thickness of bit: 0.5 to 0.7 mm

### Caution

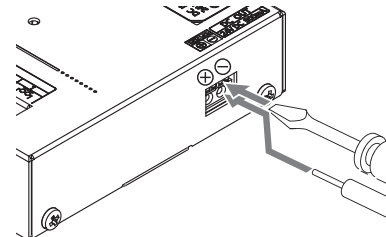
- Do not connect AC power to the Output Terminal Block. Failure to comply may result in a short circuit and fire.
- Use the output terminal block within the rated capacity of contacts. Failure to comply may result in malfunction and possible fire.
- If the inrush load current exceeds the contact's rated capacity, scorching and welding of the contacts may occur. Therefore, do not apply such a load.

Rated Contact Capacity	30VDC / 3A
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### 5.2. Power Output Terminal Wiring

The Power Output Terminal can be used to control an external load when an AC Adaptor is used. When using the Power Supply Output Terminal, wire in accordance to the directions indicated below.

- [Wiring Method]
1. Use a minus driver to push in the tab of the control unit's Power Output Terminal.
  2. Insert a lead wire into the slot. (Keep pushing the tab while inserting)
  3. Release the minus driver to lock the lead wire in place.



Applicable Wires	Solid wire: Diameter 0.4 mm to 1.2 mm (AWG26 to AWG18) Stranded wire: Diameter 0.2 mm <sup>2</sup> to 1.25 mm <sup>2</sup> (AWG24 to AWG16) <small>*Single wire diameter shall be 0.18 mm or more for stranded wire.</small>
Wire Coating Strip Length	11mm
Suitable Actuator Tool	Width of flathead screwdriver bit: 2.6 mm, Thickness of bit: 0.5 to 0.7 mm

### Caution

- Do not connect any voltage to the Power Output Terminal. Failure to comply will result in damage to the product and possible fire.
- Maintain the consumption current of the equipment linked to the Power Output Terminal so as to not exceed the ratings indicated below. Do not connect any equipment which consumes more current than the rated capacity. Failure to comply may result in malfunction or damage.

Power Output Voltage	24VDC
Power Output Current	500mA or less

### Note

- The power output terminal cannot be used if AC Adaptor is not connected. Be sure to connect the AC Adaptor if you want to use the Power Output Terminal.

### 5.3. RS-232C Port Wiring

By connecting to the RS-232C (male) of this product and the RS-232C port of a PC with a D-sub 9 pin female-to-female type cable with straight wire connection, this product can be controlled via RS-232C transmission.

\* The RS-232C cable is not included. Please purchase it separately.

### Caution

- Do not connect the RS-232C and USB cables simultaneously. Failure to comply may result in malfunction.
- Do not pull out or insert the RS-232C cable while the power supply is turned on.

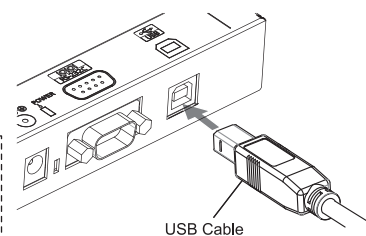
### 5.4. USB Port Wiring

This product can be controlled by USB transmission by connecting a USB (Type B) cable from the Main Unit to the USB port of a PC. Since this product can operate on USB bus power, it can be used without an AC adapter.

\* The USB cable is not included. Please purchase it separately.

### Note

- This product requires installation of a specialized driver for the PC before being connected to a PC via the USB. Go to our PATLITE homepage to download the installer.



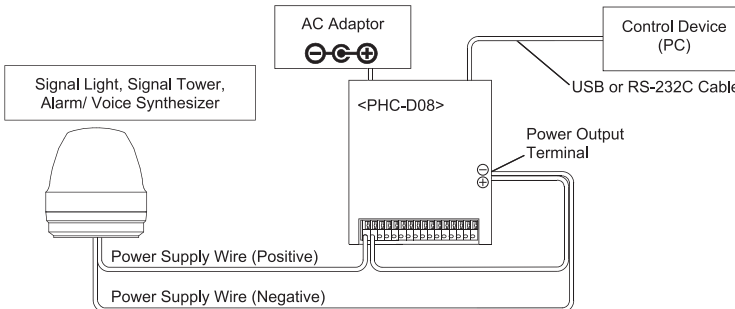
### Caution

- Depending on the feeding power capability of the Main Unit or the USB port of the personal computer, operation may become unstable. Use an AC Adaptor if this condition occurs.
- Use this product by connecting the USB cable directly, without the use of a USB hub. Failure to comply may cause unstable operation.
- It is recommended to use a USB cable with a length of 2m or less. A cable longer than 2m may cause unstable operation due to noise from the surrounding environment.
- Do not connect the USB and RS-232C cables simultaneously. Failure to comply may result in malfunction.
- Do not insert or pull out the USB cable while the power supply is turned on.

### 5.5. Wiring Example

The internal contacts are non-voltage relay contacts. Operate it below a contact capacity of 30VDC/3A. In addition, since each contact is independent, different voltages can be connected to the product for each contact. The power output terminal can supply a maximum current of 24VDC/500mA.

### ■ DC Load Products



### Note

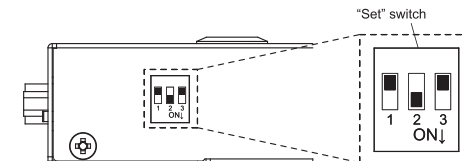
- The Power Output Terminal cannot be used if an AC Adaptor is not connected. Be sure to connect the AC Adaptor when using the Power Output Terminal.

## 6 Setup Test Mode

The Setup Test Mode can be used to control the Output Terminal only by this product, to verify wiring, etc. With the use of the Setup Test Mode, the operation of the link between the Output Terminal Block and the equipment can be checked from this product.

The following is an explanation on the use of the Setup Test Mode:

1. The "Set" switch, located on the side of this product, has Switch 1 turned OFF, Switch 2 turned ON and Switch 3 turned OFF before the power is switched on.



2. Refer to the table below for the Output Terminal Block number to operate when selecting the "Set" switch. The Power LED turns on when the selected Output Terminal Block is ON and turns off when the selected Output Terminal Block is OFF.

Output Terminal Block	Set switch		
	1	2	3
1	OFF	OFF	OFF
2	OFF	OFF	ON
3	OFF	ON	OFF
4	OFF	ON	ON
5	ON	OFF	OFF
6	ON	OFF	ON
7	ON	ON	OFF
8	ON	ON	ON

3. If the "Clear" switch is pushed, in cases where the Output Terminal selected with the Mode Switch is OFF, it will change to ON, and in case it's ON, will change to OFF.
4. To exit the Setup Test Mode, set all "Set" Switches in the OFF position to return to the "Normal Operation Mode" configuration and reapply the power.

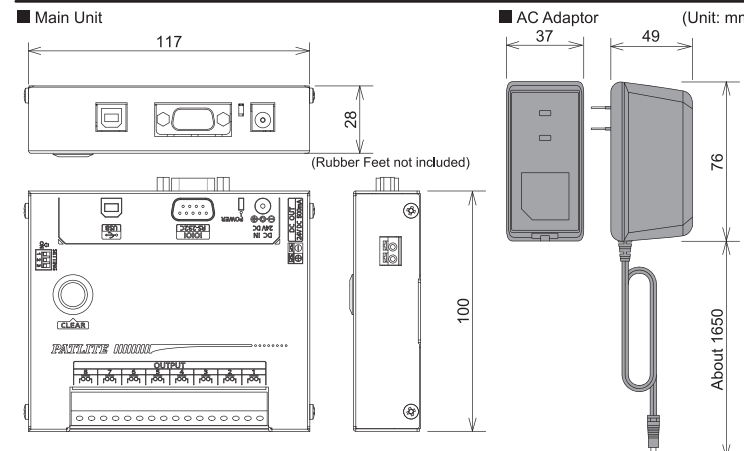
## 7 Standard Operation

Turn on the power supply after confirming that all the set switches are off for normal operation. The specification contents, protocols, and transmission commands are described in the instruction manual. Use this product after downloading the instruction manual from the product web page and reading it thoroughly. It is necessary to create your own software, since the control software for this product is not included. The specialized driver needs to be installed if this product is to be control via USB.

## 8 Specifications

Items	Specifications	
Rated Voltage	Main Unit	24VDC (Main Unit) 5VDC (USB Bus Power)
	AC Adaptor	Input: 100VAC - 240VAC (50/60Hz) Output: 24VDC
Operating Voltage Range	90VAC - 264VAC (AC Adaptor)	
	Standby	0.4W (100VAC)
Rated Power Consumption	16W (100VAC)	
	Maximum	16W (100VAC)
Operating Ambient Temperature	0°C to +40°C	
Operating Ambient Humidity	20% to 85% RH (No Dew or Condensation)	
Storage Ambient Temperature	-10°C to +60°C	
Storage Ambient Humidity	20% to 85% RH (No Dew or Condensation)	
Mounting Location and Direction	Indoors, Upright	
Protection Rating	IP20	
Insulation Resistance	More than 10MΩ at 500VDC between the terminals and the chassis	
Withstand Voltage	1500VAC applied for 1min (10mA or less) between terminals and chassis without breaking insulation	
Mass	370g (±10%)	
Interface	USB Port	USB 2.0 Conformity (Bus Powered) Standard Type B (Female)
	Serial Port	RS-232C Conformity D-Sub 9 pin (Male)
Communication method	USB Port	CDC (Communication Device Class) protocol
	Serial Port	Asynchronous (Baud Rate: 9600bit/s, No Parity, Stop bit= 1bit, Data Length: 8bit, No flow control)
External Contact Output	Number of Contacts	8
	Contact Specifications	Non-Voltage Normally Open Contact
	Rated Voltage and Current	30VDC/3A
	Failure Rate P Level	5VDC/10mA (At a switching rate of 120 operations per minute)
Power Output	Rated Power Output	24VDC/500mA or less
	Applicable Wire	Solid Wire: Ø0.4mm-Ø1.2mm (AWG26-AWG18) Stranded Wire: 0.2mm <sup>2</sup> -0.75mm <sup>2</sup> (AWG24-AWG20) Element Wire Diameter: Ø0.18mm or more
Accessories	AC Adaptor (PHC-D08 Only), Installation Manual, Rubber Feet	

### 8.1. Outer Dimensional Drawing



- The images in this manual may vary in comparison to the actual product and are only for the purpose of illustration.
- Specifications may change without notice due to continual product improvement.
- Despite the cautions and warnings provided in this manual, it is not the responsibility of PATLITE for any failure or damage occurred from mishandling.
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