

PATLITE

■ PHE / 40mm



[PHE Installation Manual \(8072-G\)](#)
[PHE Limited Warranty](#)

The PHE-3FB Interface Converter can convert SERIAL RS232C to 3-LIGHT TOWER OPERATIONS. Connect this unit to the RS-232C port on your programmed personal computer to control the continuous, flashing and alarm functions on this tower.

SIZE:	<ul style="list-style-type: none"> - Tower diameter: 40mm - Overall dimensions: 100mm x 118mm x 259mm
INPUT VOLTAGE OPTIONS:	Adaptor (included) converts AC120V into DC24V (center-negative) to power the tower functions as well as the Interface Converter section
INPUT SIGNAL REQUIRED:	<ul style="list-style-type: none"> - RS-232C serial synchronous communications protocol - Uses TXD, RXD, RTS, CTS, SG connections via 9-pin DSub connector - Requires "straight-through" RS-232C communications cable purchased separately - Requires ASCII-code generating program purchased and installed separately
OUTPUT FUNCTIONS AVAILABLE:	<ul style="list-style-type: none"> - Total of 8 functions available: - Red, amber, green continuous light (3 functions) - Red, amber, green flashing light (3 functions) - Fast-beep alarm, slow-beep alarm (2 functions) - All 8 functions can be controlled in any combination - Reset pushbutton provided to reset all functions to the off state
BODY STYLE:	<p>Interface Converter:</p> <ul style="list-style-type: none"> - Low-profile steel casing - Bumper pads installed to protect surface finish <p>Tower:</p> <ul style="list-style-type: none"> - Pre-assembled, mounted to converter - LED modules are interchangeable
BODY COLOR:	<ul style="list-style-type: none"> - Interface Converter: Beige - Tower: Beige
TIERS:	3 tier only
MODULE COLORS:	Red / Amber / Green (only)
ALARMS	<ul style="list-style-type: none"> - Alarm 1: selectable, single-tone, intermittent (fast beep) alarm, 85dB (at 1m) - Alarm 2: selectable, single tone, intermittent (slow beep) alarm, 85dB (at 1m)
RATINGS:	None
PROTECTION:	None
CONTROL OPTIONS:	Commercially available products can be used with this converter for control from a USB port

PART NUMBER GUIDE

P H E - 3 F B - R Y G

1. Series

PHE, 100mm x 118mm x 259mm
Tower Diameter: 40mm

2. No. of Modules Stacked

3

4. Lens

R: Red
Y: Yellow
G: Green

3. Functions

Continuous / Flashing w/ Alarms

OPTIONAL PARTS

None Available

ACCESSORIES

None Available

Website subject to change without notice.

TOP

PC-control Signal Tower Light

I N S T R U C T I O N M A N U A L

[TYPE : PHE-3FB]

Thank you for purchasing the PC-control Signal Tower Light, PHE-3FB. To ensure proper operation, please read this instruction manual thoroughly before attempting to use the system. Also, when undertaking maintenance, inspection or repair work, be sure to refer to this manual. If you have any questions regarding this product, please feel free to contact us.

TO OPERATE THIS PRODUCT SAFELY, PLEASE OBSERVE THE FOLLOWING

NOTES TO BE OBSERVED FOR SAFE OPERATION

Note to be followed to prevent any damage to the user and other personnel or to assets are as follows

■ The indications for warning are divided into the following classes according to the degree of danger or damage incurred when the warning is not taken into consideration and the product is not correctly used.

<p>Warning [This symbol marks important instructions that, if ignored or incorrectly followed, could conceivably lead to death or serious injury.]</p>	<p>Caution [This symbol marks important instructions that, if ignored or incorrectly followed, could conceivably lead to injury or property damage.]</p>
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Warning

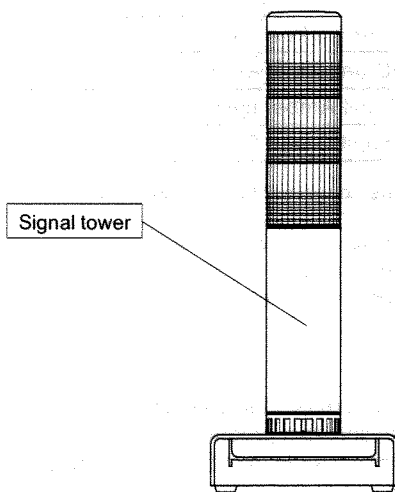
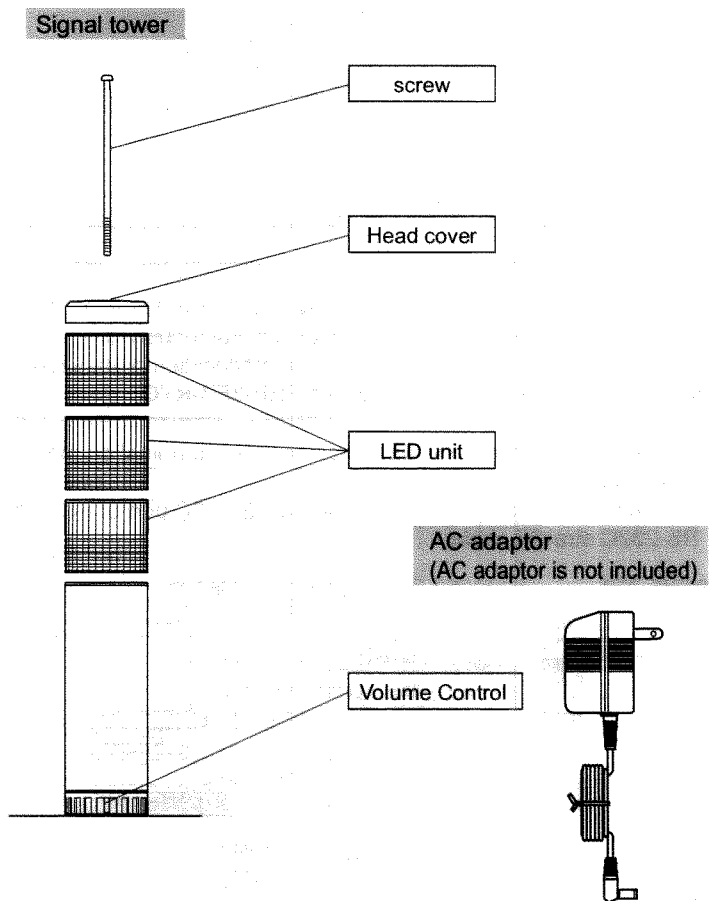
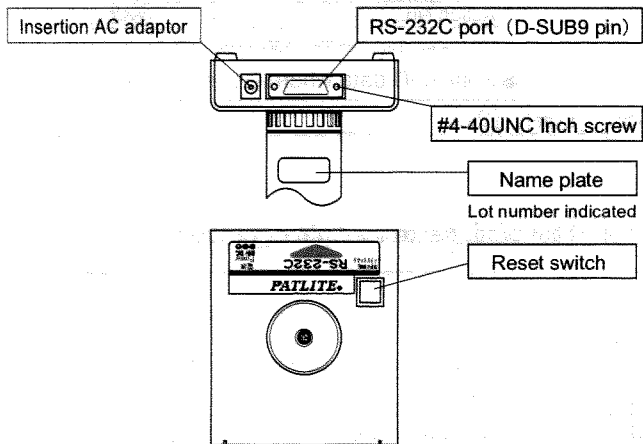
- Do not use this product without LED unit or with cracked lens. It may cause electric shock.
- This product is for indoor use only. It should be used in a place where it is protected from rain and water. Moisture in the unit could cause a breakdown of the unit or electric shock.

Caution

- Do not use this product in a corrosive gas atmosphere.
- To clean LED unit and head cover, wipe with water or glass cleaner and soaked soft cloth. Do not use thinner, benzene, gasoline, or oil as this causes color change or deform the surface.

1. PARTS NAME

Substance



2. REPLACEMENT PARTS

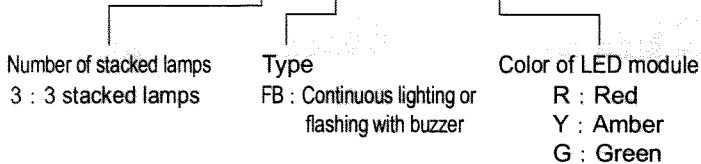
• Please ask your local distributor for availability.

- Head cover
- LEDunit Red
- Center screw
- LEDunit Amber
- AC adaptor
- LEDunit Green

※ If you have questions, please feel free to contact us about other parts.

3. MODEL NO. CONFIGURATION

PHE-3FB-RYG

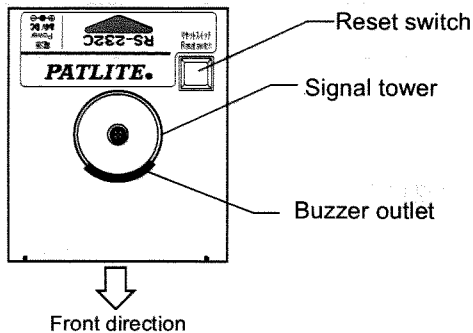


4. INSTALLATION (MOUNTING)

⚠ Caution

- This product is for indoor use only. It should be used in a place where it is protected from rain and water. Moisture in the unit may cause a breakdown of the unit or electric shock.
- Maximum buzzer sound come out at front face. Make sure of the direction when installing.
- Use the product on flat surface as the product may fall down.

• Place this product so that buzzer outlet faces front direction.

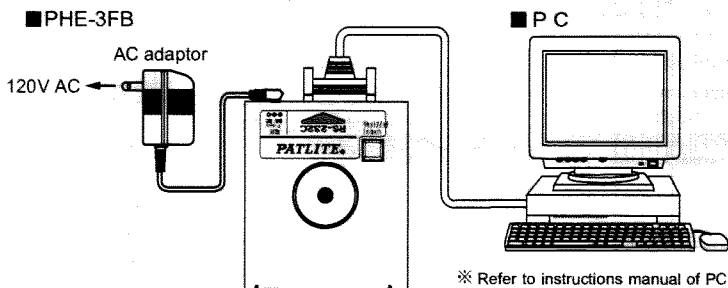


5. WIRING PROCEDURE

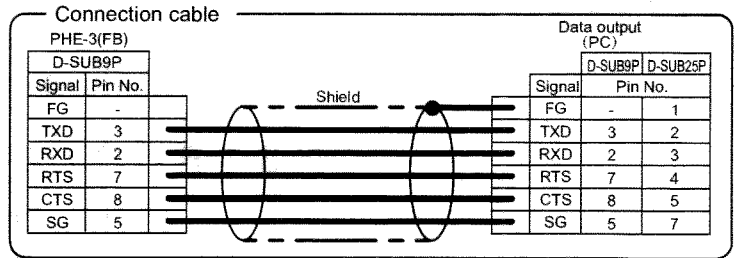
⚠ Caution

- Please connect this product to a device port with RS-232C 1 to 1. In case connected to other devices simultaneously, the devices connected to PC may result in malfunction or damage.
- RS-232C cable does not come with PHE-3FB-RYG.

- Connect the supplied adapter to power supply terminal on the main body.
- Connect DCE array D-SUB9P (male) to RS-232C port of PC with RS-232C straight cable.



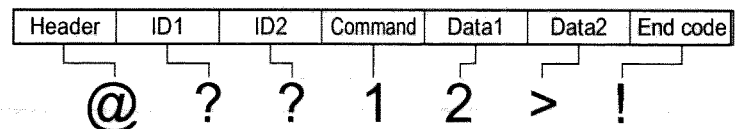
※ Refer to instructions manual of PC when connecting this product to PC with RS-232C straight cable.



6. HOW TO USE

- Software is not bundled with this product. Create a program after confirming communication condition and communication protocol as below. ID will not be cleared even if main power is turned off because that is stored in the internal ROM.

Communication protocol



Programming example as above executes the commands set set on No.6,4,3 and 2.

Header	1 bit	@ [40H]												
ID	2 bit	Use ??[3FH, 3FH] for the ID because ID of PHE-3FB type (default value: ??[3FH, 3FH]) can execute a command regardless of ID of PHE-3FB type.												
Command	1 bit	0 [30H] ...Action—OFF 1 [31H] ...Action—ON ? [3FH] ...Creation ID												
Data	2 bit	● Set a command of signal tower light that executes a command. <table border="1"> <tr> <td>Example input</td> <td>Data1</td> <td>Data2</td> </tr> <tr> <td>Letter(ASCII code)</td> <td>2 [32H]</td> <td>> [3EH]</td> </tr> <tr> <td>Bit data</td> <td>00110010</td> <td>00111110</td> </tr> <tr> <td>Action No.</td> <td>8765</td> <td>4321</td> </tr> </table> <p>The programming example as above executes a command of 6, 4, 3, 2.</p>	Example input	Data1	Data2	Letter(ASCII code)	2 [32H]	> [3EH]	Bit data	00110010	00111110	Action No.	8765	4321
Example input	Data1	Data2												
Letter(ASCII code)	2 [32H]	> [3EH]												
Bit data	00110010	00111110												
Action No.	8765	4321												
End code	1 bit	! [21H]												

Command list of signal tower light operation

No.	Action
1	LED unit Red continuous lighting
2	LED unit Amber continuous lighting
3	LED unit Green continuous lighting
4	Buzzer 1 (PiPiPiPi...)
5	Buzzer 2 (PeePee...)
6	LED unit Red flashing
7	LED unit Amber flashing
8	LED unit Green flashing

- ※ When buzzer 1 and buzzer 2 are connected to common at the same time, it prioritizes buzzer 1.
- ※ Do not make outer contact that can turn on continuous and flashing at the same time. Or all the LED units may be turned on. To avoid this, continuous and flashing must be switched from one to another.

Reset switch

All commands can be reset by pressing a reset switch. While the reset switch is pressed, this product does not accept any communication commands, and then, CTS line of RS-232C will be at low level.

Examples

To sound buzzer 1 (short beeps)

	Header	ID1	ID2	command	Data1	Data2	End code
ASCII code	@	?	?	1	0	8	!
HEX code	40H	3FH	3FH	31H	30H <small>00110000B</small>	38H <small>00111000B</small>	21H

To cancel all the commands

	Header	ID1	ID2	command	Data1	Data2	End code
ASCII code	@	?	?	0	?	?	!
HEX code	40H	3FH	3FH	30H	3FH <small>00111111B</small>	3FH <small>00111111B</small>	21H

To change ID of PHE-3FB from 23[32H*33H] to 46[34H*36H]

	Header	ID1	ID2	command	Data1	Data2	End code
ASCII code	@	2	3	?	4	6	!
HEX code	40H	32H	33H	3FH	34H	36H	21H

Serial communication specification

Communication specification	RS-232C compliant
Communication speed	9600bps
Data length	8 bit
Stop bit	1 bit
Parity	-
Flow control	-
Synchronous mode	synchronous mode
Transmission mode	Half-duplex mode
Transmission code	ASCII code
Reply code	ACK [06H] NACK [15H]

Reply code

Reply code	Transmission condition	Error contents
ACK [06H]	When data transmission is finished	
NACK [15H]	Command error	When a command, other than 0[30H], 1[31H] or ?[3FH], is set
	Data error	When data, other than 0[30H] - ?[3FH], is used
	Timeout	Reply interval between data is more than 5 seconds after receipt of header

※The product does not work if a command is sent before ACK(06H) is replied.

ASCII code

	Higher code					
	Hex	0	1	2	3	4
Lower code	0	NUL	DLE	Space	0	@
	1	SOH	DC1	!	1	A
	2	STX	DC2	"	2	B
	3	ETX	DC3	#	3	C
	4	EOT	DC4	\$	4	D
	5	ENQ	NAK	%	5	E
	6	ACK	SYN	&	6	F
	7	Bell	ETB	'	7	G
	8	BS	CAN	(8	H
	9	HT	EM)	9	I
	A	LF	SUB	*	:	J
	B	VT	ESC	+	;	K
	C	FF	FS	,	<	L
	D	CR	GS	-	=	M
	E	SO	RS	.	>	N
	F	SI	US	/	?	O

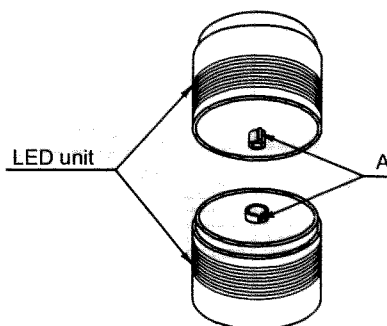
7. MAINTENANCE

Caution

- Do not remove a LED unit forcibly, as it may be damaged.
- Be sure to pull out an AC adapter from a wall socket when interchanging LED unit.
- Do not turn the volume control forcibly. It may damage it.
- The number of stack can not be increased.

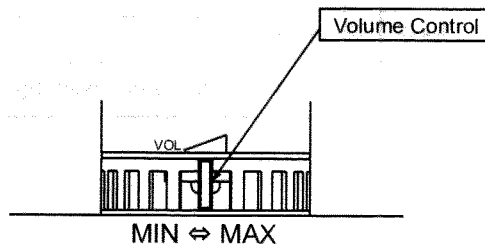
1. Re-configuration of LED unit color

- Turn the power OFF before performing color re-configuration.
- Unscrew the head cover and remove the LED unit.
- The LED modules of both upside and downside are designed to be positioned by the boss parts. (See A in the drawing below.) Therefore, please put the A parts of the both sides together to connect the up and down LED units.
- When decreasing the number of lights, install a new screw for each light. (See 1. Parts name)



2. Volume adjustment

- You can adjust the volume by turning the volume control at the bottom of Bracket to the left or right. (See 1. Parts name)



8. BEFORE REQUESTING SERVICE

- Please check the list shown below before requesting repairs. If the product still does not work, please contact us for repairs. Please feel free to contact our sales office with any questions concerning the product. For inquiry, you are required to identify the number indicated on the name plate of the product.

Problems	What to do
Power lamp stays turned off	<ul style="list-style-type: none"> • Confirm if supplied adapter is securely inserted to a wall socket. • Confirm if an adapter jack is securely inserted to the main body.
No reply (ACK, NACK)	<ul style="list-style-type: none"> • Confirm if straight cable is used • Confirm a communication condition and protocol • Set ID to ??[3FH, 3FH] • Confirm an end code "!"[21H] • Confirm if the reset switch is not being pressed

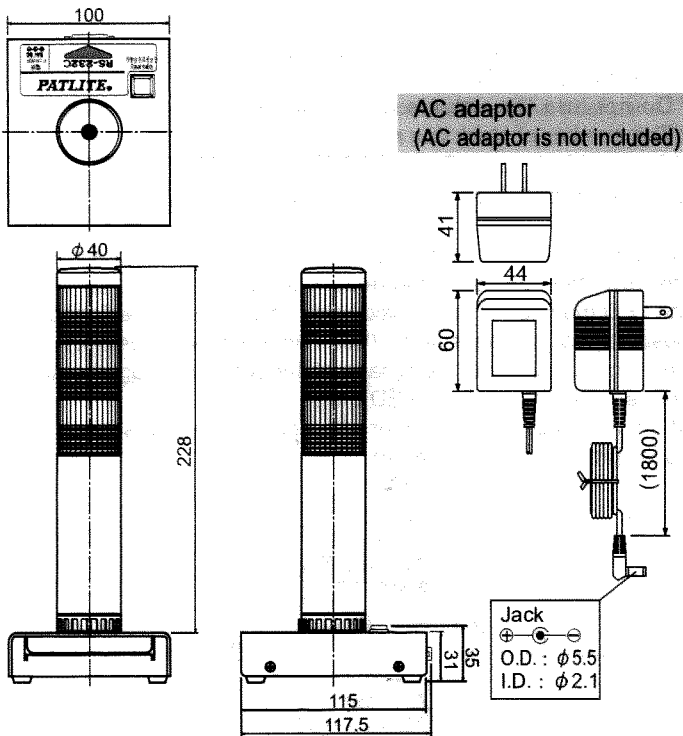
※ Please note that any malfunction or damage resulting from modification is not guaranteed under the warranty.

8072-G

9. SPECIFICATIONS

1. Dimensions

(mm)



2. Specifications

Model	PHE-3FB
Rated voltage	24V DC
Operative voltage range	108V AC ~ 132V AC (AC adaptor (bundled))
Power consumption	Approx. 6.5W (Signal tower 0.7W/1Stack)
Flash per minute	60 Flash Per Minute
Max volume level	Max.85dB (at 1m) Min.70dB (at 1m)
Tone	Buzzer 1 : PIPiPIPI / Buzzer 2 : PeePeePee
Operative temp. range	0°C ~ +40°C
Operative humidity range	85%RH
Insulation resistance	To be measured by an insulation measuring device of 500VDC between the power terminal and the case. More than 1MΩ
Dielectric strength	1000VAC being applied between the power terminal and the case for 1 minute. Not braking insulation
Anti-noise	1500Vp-p Puls range 1μsec, 100nsec
Vibration proof	19.6m/s ² JIS C 0911 II D4 compliant (X · Y direction 2h, Z direction 4h)
Mass	Substance:About 580g Supplied AC adaptor:About 160g
Serial communication	Serial interface: RS-232C compliant Transmission mode : Half-duplex mode , Transmission code : ASCII code Synchronous mode : synchronous mode , Communication speed : 9600bps Data length : 8 bit , Stop bit : 1 bit Parity : - , Flow control : -
Connector	D-SUB9P Male connector
Reset switch	Momentary switch with green power monitor LED On : Signal light and buzzer are all turned off. : All the communication command is invalid. Off: Usual operation. CTS line of RS-232C is on and switch LED is on.

※Specifications are subject to change without notice.

Caution

- PATLITE Corporation disclaims all liability for any malfunction or damage occurring as a result of handling contrary to the instructions, cautions and warnings mentioned in this manual.

PATLITE Corporation ^{E1P}

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