PATLABOR™

INSTRUCTION MANUAL

CC-Link Tower Light
(60 mm dia., 4 layers)

MODEL **IT60RC**

BEFORE USE ....

Thank you for choosing us. Before use, please check contents of the package you received as outlined below.
If you have any problems or questions with the product, please contact our sales office or representatives.

■ PACKAGE INCLUDES:

Tower Light ....(1)

■ MODEL NO.

Confirm Model No. marking on the product to be exactly what you ordered.

■ INSTRUCTION MANUAL

This manual describes necessary points of caution when you use this product, including installation, connection and basic maintenance procedures.

POINTS OF CAUTION

■ POWER INPUT RATING & OPERATIONAL RANGE

- Locate the power input rating marked on the product and confirm its operational range as indicated below:
  100 – 240 V AC rating: 85 – 264 V, 47 – 66 Hz,
  approx. 5.5 VA at 100 V AC
  approx. 7 VA at 200 V AC
  approx. 8 VA at 240 V AC
  24 V DC rating: 24 V ±10 %, approx. 3 W

■ GENERAL PRECAUTIONS

- Before you remove the unit or mount it, turn off the power supply for safety.
- The unit must not be subjected to external force.
- Do not rub the unit with organic solvent like paint thinner.

■ ENVIRONMENT

- Indoor use.
- Do not install the unit where it is subjected to continuous vibration. Do not subject the unit to physical impact.
- Environmental temperature must be within -10 to +55°C (14 to 131°F) with relative humidity within 30 to 90% RH in order to ensure adequate life span and operation.
- Mount the unit on a flat and robust plate.
- Lamps are omnidirectional.
- The buzzer sound is directional in front of the unit.

■ INGRESS PROTECTION (IP65)

- The IP code is conformable when the unit is mounted vertically, dummy antennae are installed if it is Design Type 2, and the control panel cover is locked. The compartment, where connectors are located, is not protected.
- Before close the control panel cover, make sure that dust is not on the gasket, and lock tightly. When opening the cover, be careful that moisture does not attach. If moisture attaches, dry it up before close the cover.
- When the unit is Design Type 2, tighten the nuts of dummy antennae surely.
- In order to protect ingress of water or dust into the bottom compartment, mount the unit on the flat plane, and be sure that the gasket does not roll back or dust is not on the gasket.

■ WIRING

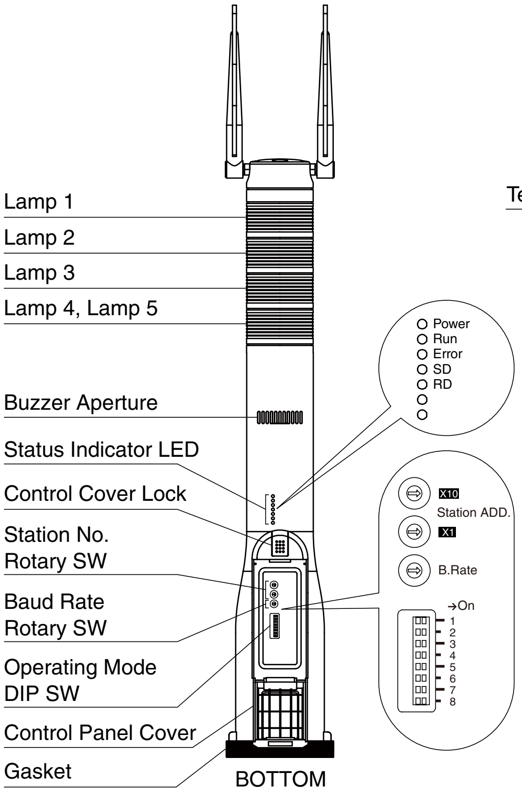
- Do not install cables close to noise sources (relay drive cable, high frequency line, etc.).
- Do not bind these cables together with those in which noises are present. Do not install them in the same duct.
- Protect wires to prevent scratching them at the edge of the compartment.
- When cross wiring is necessary, use a relay terminal connected to the CC-Link connector.

■ AND ....

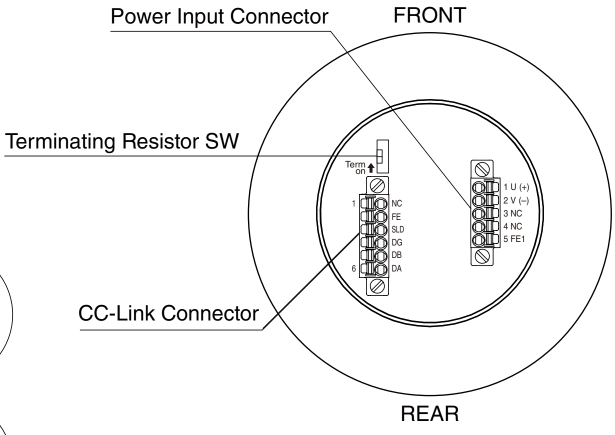
- The unit is designed to function as soon as power is supplied, however, a warm up for 10 minutes is required for satisfying complete performance described in the data sheet.

COMPONENT IDENTIFICATION

■ FRONT VIEW

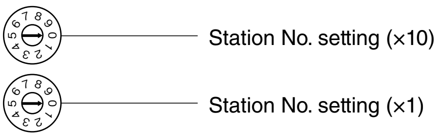

Lamp 1
Lamp 2
Lamp 3
Lamp 4, Lamp 5
Buzzer Aperture
Status Indicator LED
Control Cover Lock
Station No. Rotary SW
Baud Rate Rotary SW
Operating Mode DIP SW
Control Panel Cover
Gasket
BOTTOM
Power
Run
Error
SD
RD
X10
Station ADD.
X1
B.Rate
→On
1
2
3
4
5
6
7
8

■ BOTTOM VIEW


Power Input Connector
FRONT
Terminating Resistor SW
Term on
1
NC
FE
SLD
DG
DB
6
DA
1 U (+)
2 V (–)
3 NC
4 NC
5 FE1
CC-Link Connector
REAR

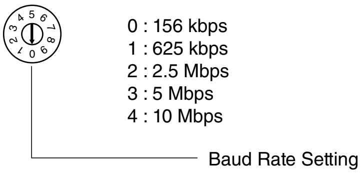
■ STATION NO.

Station No. is selected between 1 and 64 in decimal. The left switch determines the tenth place digit, while the right switch does the ones place digit of the address.


Station No. setting (×10)
Station No. setting (×1)

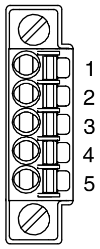
■ BAUD RATE

Baud Rate is selected with the rotary switch.


Baud Rate Setting

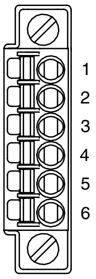
0 : 156 kbps
1 : 625 kbps
2 : 2.5 Mbps
3 : 5 Mbps
4 : 10 Mbps

■ POWER CONNECTOR



1. U (+)	POWER INPUT (+)
2. V (–)	POWER INPUT (–)
3. NC	Unused
4. NC	Unused
5. FE1	FUNCTIONAL EARTH

■ CC-Link CONNECTOR



1. NC	NC
2. FE	FE
3. SLD	SHLD
4. DG	Yellow
5. DB	White
6. DA	Blue

■ OPERATING MODE

(*) Factory setting

• Lamp blinking frequency

SW1-1	LAMP BLINKING FREQUENCY
OFF	Approx. 2 Hz (*)
ON	Approx. 10 Hz

• Buzzer intermittent frequency

SW1-2	BUZZER INTERMITTENT FREQUENCY
OFF	Approx. 2 Hz (*)
ON	Approx. 10 Hz

• Buzzer volume

SW1-3	SW1-4	BUZZER VOLUME
OFF	OFF	Quiet (*)
OFF	ON	Middle
ON	OFF	Loud
ON	ON	Maximum

• Output at the loss of communication

SW1-6	OUTPUT AT THE LOSS OF COMMUNICATION
OFF	Reset the output (turned off) (*)
ON	Hold the output (maintains the last data received normally)

Note 1: Blinking of lamps and buzzer intermittences are not synchronized.

Note 2: Be sure to set unused SW1-5, 1-7 and 1-8 to OFF.

■ TERMINATING RESISTOR

To use the terminating resistor, turn the switch ON, and OFF to invalidate. (Factory setting OFF)

INDICATOR LED

■ STATUS INDICATOR LED

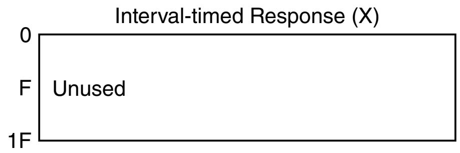
Power	Run	Error	SD*1	RD	STATUS*2
ON	ON	BL	BL	ON	Communicates normally with occasional CRC errors due to noise interference.
ON	ON	BL	BL	ON	Communicates normally but the Baud Rate and/or Station Address switches failed. Error indicator blinks approximately in 0.5 seconds intervals.
ON	ON	BL	BL	OFF	----
ON	ON	BL	OFF	ON	CRC error found in the received data. Unable to respond.
ON	ON	BL	OFF	OFF	----
ON	ON	OFF	BL	ON	Normal communication
ON	ON	OFF	BL	OFF	----
ON	ON	OFF	OFF	ON	Unable to receive data addressed to the station.
ON	ON	OFF	OFF	OFF	----
ON	OFF	BL	BL	ON	Performs the interval-timed responses but CRC error found in receiving the refresh data.
ON	OFF	BL	BL	OFF	----
ON	OFF	BL	OFF	ON	CRC error found in the data addressed to the station.
ON	OFF	BL	OFF	OFF	----
ON	OFF	OFF	BL	ON	Link is not started.
ON	OFF	OFF	BL	OFF	----
ON	OFF	OFF	OFF	ON	No data addressed to the station. Or unable to receive data addressed to the station due to noise interference. (Missing parts of the data sent from the master)
ON	OFF	OFF	OFF	OFF	Unable to receive data due to wire breakdown
ON	OFF	ON	OFF	ON/OFF	Faulty Baud Rate and/or Station Address setting
OFF	OFF	OFF	OFF	OFF	Power input removed. Or power supply failure.

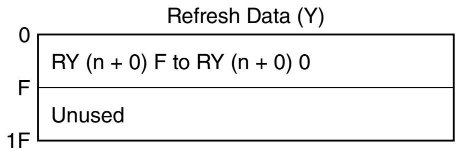
OFF = OFF, ON = ON, BL = Blinking

*1. SD LED may look not blinking but ON with high baud rate and fewer connected modules.

*2. LEDs indicated with “----” in STATUS rarely occurs in normal operation. (LED failure or the like as possible cause).

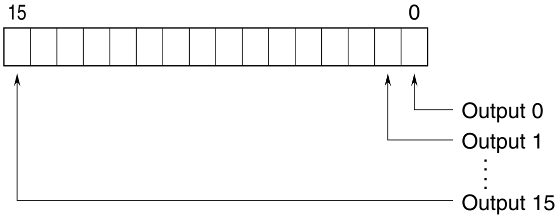
DATA ALLOCATION


Interval-timed Response (X)
0
F
1F
Unused


Refresh Data (Y)
0
F
1F
RY (n + 0) F to RY (n + 0) 0
Unused

I/O DATA DESCRIPTIONS

■ OUTPUT DATA


15
0
Output 0
Output 1
Output 15

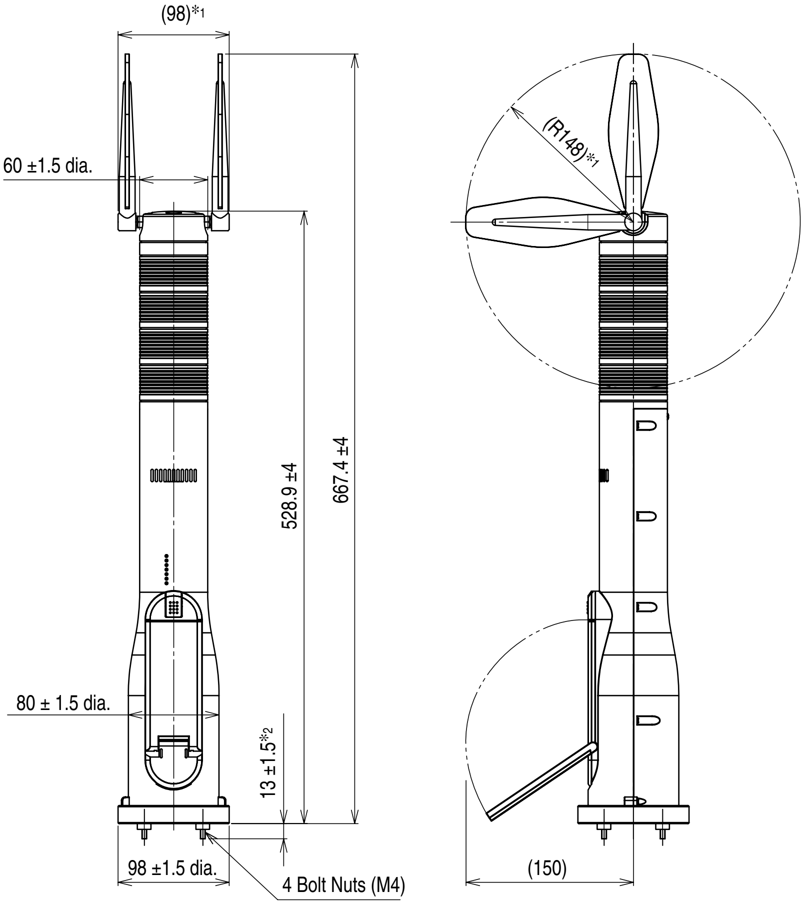
Output	0	Lamp 1	0: Off, 1: On
Output	1	Lamp 2	0: Off, 1: On
Output	2	Lamp 3	0: Off, 1: On
Output	3	Lamp 4	0: Off, 1: On
Output	4	Lamp 5	0: Off, 1: On
Output	5	Buzzer	0: Off, 1: Continuous
Output	6		
Output	7		
Output	8	Lamp 1	0: Off, 1: Blinking
Output	9	Lamp 2	0: Off, 1: Blinking
Output	10	Lamp 3	0: Off, 1: Blinking
Output	11	Lamp 4	0: Off, 1: Blinking
Output	12	Lamp 5	0: Off, 1: Blinking
Output	13	Buzzer	0: Off, 1: Intermittent
Output	14		
Output	15		

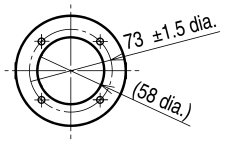
Note: If “On” (Continuous) and “Blinking” (Intermittent) are set simultaneously for a single lamp (buzzer), “Blinking” (Intermittent) is disabled.

TERMINAL CONNECTIONS

Connect the unit as in the diagram below.

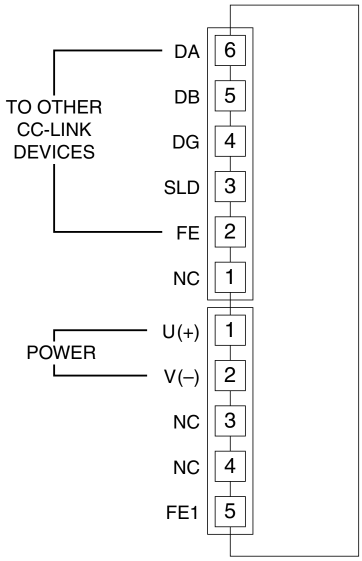
■ EXTERNAL DIMENSIONS unit: mm


(98)*1
60 ±1.5 dia.
528.9 ±4
667.4 ±4
(R148)*1
80 ± 1.5 dia.
13 ±1.5*2
98 ±1.5 dia.
4 Bolt Nuts (M4)
(150)


73 ±1.5 dia.
(58 dia.)

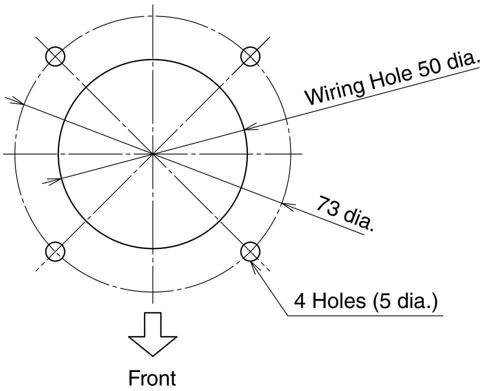
*1. Only for DESIGN TYPE option code 2.
*2. Consult us for other bolt length.

■ CONNECTION DIAGRAM



TO OTHER CC-LINK DEVICES
DA 6
DB 5
DG 4
SLD 3
FE 2
NC 1
POWER
U(+) 1
V(–) 2
NC 3
NC 4
FE1 5

■ MOUNTING REQUIREMENTS unit: mm

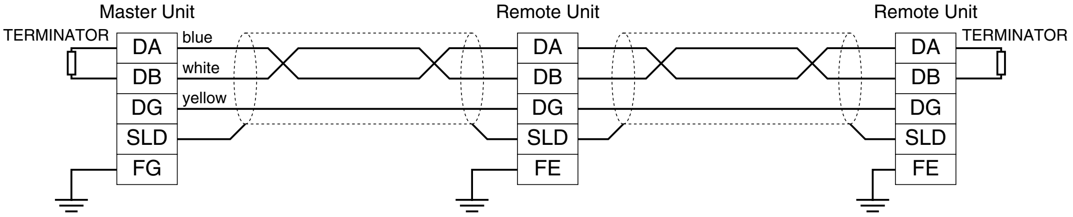


Wiring Hole 50 dia.
73 dia.
4 Holes (5 dia.)
Front

*Protect wires to prevent scratching them at the edge of the compartment.

COMMUNICATION CABLE CONNECTIONS

■ MASTER CONNECTION



Master Unit
Remote Unit
Remote Unit
TERMINATOR
TERMINATOR
DA
DB
DG
SLD
FG
FE
blue
white
yellow

Be sure to connect the terminating resistor across DA and DB at both ends of communication line.
When this unit is located at an end, turn the terminating resistor SW ON.
The Master Unit can be located at not only both ends but also any node of the of communication line.

WIRING INSTRUCTIONS

■ TENSION-CLAMP TERMINAL

Applicable wire size: 0.2 to 1.5 mm^2
Stripped length: 10 mm
Recommended solderless terminal
- AI0,5–10WH 0.5 mm^2 (Phoenix Contact)
- AI0,75–10GY 0.75 mm^2 (Phoenix Contact)