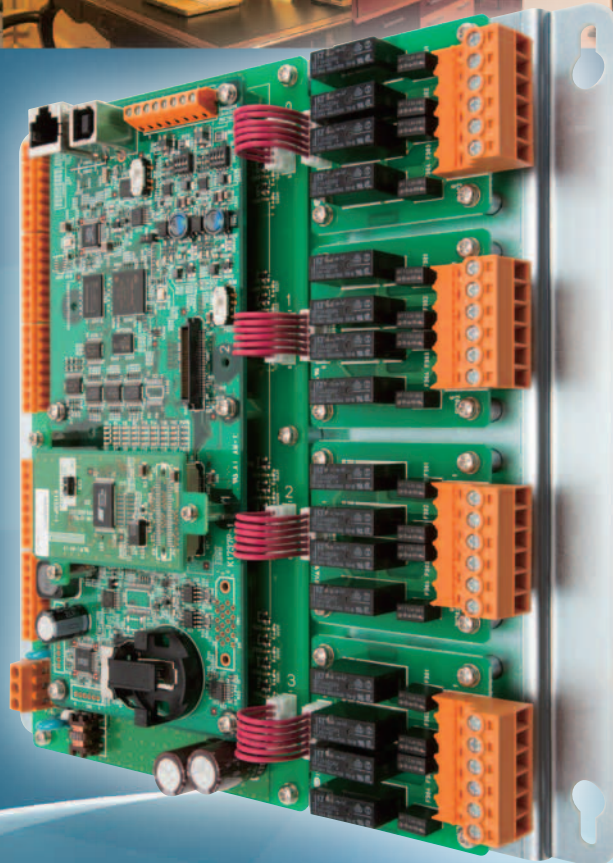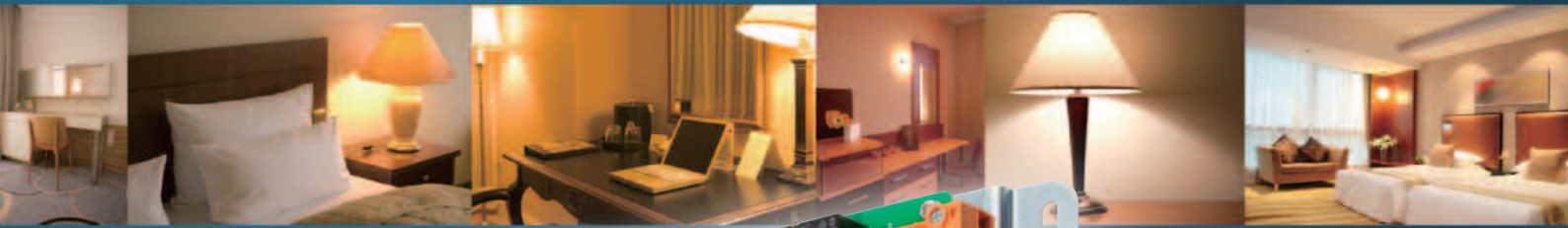# Panasonic
ideas for life

NEW

Green Room System
Controller Board

GR-C SERIES

Making Guest Rooms More Comfortable!

2012.09

3 Year Warranty

Ethernet compatible

Capable of central management, control, and remote program changing

Power consumption monitoring available

Use in combination with Eco-POWER METER allows for visualization of power consumptions in hotel rooms, which will raise guests' awareness regarding energy saving.
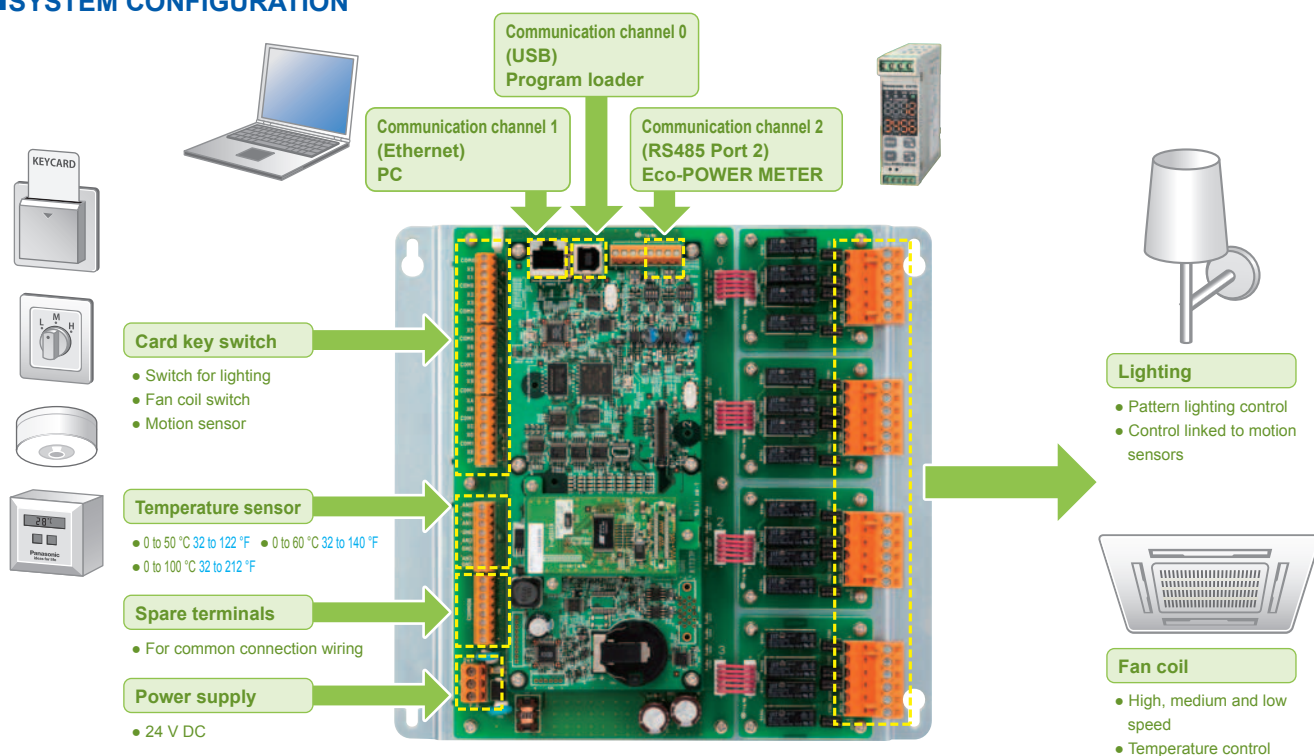
Easy maintenance

The Y04R Relay output units have a removable connector that eliminates the need for rewiring work.

Equipped with 16 relay outputs as standard

Built-in overcurrent protection fuse ensure safe use.

■SYSTEM CONFIGURATION

Communication channel 0 (USB)
Program loader

Communication channel 1 (Ethernet)
PC

Communication channel 2 (RS485 Port 2)
Eco-POWER METER

Card key switch
● Switch for lighting
● Fan coil switch
● Motion sensor

Temperature sensor
● 0 to 50 ℃ 32 to 122 °F   ● 0 to 60 ℃ 32 to 140 °F
● 0 to 100 ℃ 32 to 212 °F

Spare terminals
● For common connection wiring

Power supply
● 24 V DC

Lighting
● Pattern lighting control
● Control linked to motion sensors

Fan coil
● High, medium and low speed
● Temperature control

*A separate program is required to operate this controller board. Please contact us for information about the program.

■PRODUCT TYPE

Type	Product name	Contents of set	Model No.
Controller board set (all-in-one type)	**GR-C1** Controller board set	CPU unit × 1, Input unit × 1, **Y04R** Relay output unit × 4, **MRTC** Master memory board with real-time clock × 1 and Mounting plate × 1	**UGRC1S001**

■MAINTENANCE PARTS AND OPTIONS

Product name	Specifications		Model No.
Y04R Relay output unit	4-point relay output unit, harness and connector (one set each) The 4-point relay output unit to be connected to the input unit with a harness		**UGRC1Y04R**
SD01 Serial data board	RS232C, 4 channels, Three-wire system (non-insulated), 115.2 kbps (Mounting spacer and screws supplied)		**ABXSD01**
AD02 Analog input board	2 channels, 12 bits, non-insulated, 0 to 10 V / 0 to 20 mA switchable, Accuracy: ±1 % F.S. (Mounting spacer and screws supplied)		**ABXAD02**
Backup battery	CR2450-equivalent button battery Required for backup of the data register and use of the real-time clock function as a backup battery		**AFC8801**
Discrete-wire press socket	For connecting the **AD02** Analog input board (add-on function board)		**AFP0807** (2 pieces)
Connector set for flat cable (10 leads)	For simple connection using a flat cable		**AFP0808** (4 pieces)
I/O cable for MIL connector type (10 leads)	Discrete-wire cable (10 leads) with connectors attached at one end, AWG22, 0.3 mm², 1 set: 2 cables (blue and white), For MIL connector type I/O cable	Length: 1 m 3.3 ft	**AFP0521** (2 cable set)
		Length: 3 m 9.8 ft	**AFP0523** (2 cable set)

■CONTROLLER BOARD SET SPECIFICATIONS

General specifications

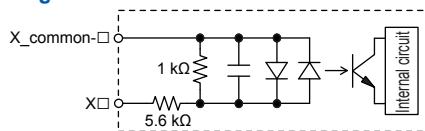| Item	Specifications
Operating environment	Temperature: 0 to 40 °C 32 to 104 °F Storage temperature: −40 to 70 °C −40 to 158 °F Humidity: 10 to 95 % RH (at 25 °C 77 °F, no condensation) Atmospheric pressure: 86 to 106 kPa
Breakdown voltage	500 V AC for 1 minute, Cutoff current: 10 mA [except capacitor for protection (initial value at shipment)] • Input terminals, relay output terminals and RS485 terminals ↔ DC power and Functional ground (F.G.) terminals • Input terminals, relay output terminals and analog input terminals ↔ RS485 terminals • RS485 Port 1 terminals ↔ RS485 Port 2 terminals • DC power ↔ Functional ground (F.G.) terminals
	1,500 V AC for 1 minute, Cutoff current: 10 mA • Relay output terminals ↔ Other terminals (except RJ45 connector) • Between COM terminals of relay output unit
Insulation resistance	100 MΩ or more (500 V DC using an insulation resistance meter) (Measurement location is the same as breakdown voltage.)
Vibration resistance	Frequency: 5 to 9 Hz (single amplitude: 3.5 mm 0.14 in), Frequency: 9 to 150 Hz (constant acceleration: 9.8 m/s²), Sweep time: 1 octave/min, X, Y and Z directions: 10-sweep each (98 minutes)
Shock resistance	147 m/s² or more, 3 times each in 6 directions
Noise immunity	1,000 V (p-p) with pulse widths 50 ns and 1 μs (at DC power terminal), 1,500 (p-p) with pulse widths 50 ns and 1 μs (at relay output terminal) (using noise simulator)
Dimensions (W × H × D)	225 × 215 × 50 mm 8.86 × 8.46 × 1.97 in
Weight (Packing weight)	1.1 kg approx. (1.4 kg approx.)

Power supply specifications

Item	Specifications
Rated voltage	24 V DC
Voltage fluctuation range	21.6 to 26.4 V DC
Current consumption	400 mA or less (at 24 V DC, 25 °C 77 °F) (Note)
Inrush current	20 A or less (at 24 V DC, 25 °C 77 °F)
Allowable momentary power off time	5 ms (at 24 V DC, 25 °C 77 °F)
Insulation system	Not isolated from the internal control circuit
Fuse	Built-in (not replaceable)
Input terminal	Terminal block: Weidmuller LM 5.00/03/90 3.5SN OR BX

Note: Without the function board mounted (with **ABXMRTC** mounted)

Input specifications

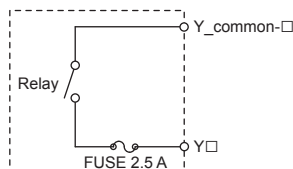| Item	Specifications
Number of points	16 points
Insulation method	Isolated from the internal control circuit by a photocoupler
Operating voltage range	External input: 21.6 to 26.4 V DC/AC (50 Hz/60 Hz)
Rated input current	4.3 mA approx.
Input points per common	8 points/common (Either the positive or negative of the input voltage can be connected to the common terminal.)
Min. ON voltage/Min. ON current	19.2 V DC/3 mA (Between common and input)
Max. OFF voltage/Max. OFF current	2.4 V DC/1 mA (Between common and input)
Input impedance	5.6 kΩ approx.
Response time	25 ms or less
Input terminal	Terminal block: Weidmuller PS 3.50/08/90 3.5SN OR BX

Input circuit diagram

Relay output specifications

Item	Specifications
Number of points	16 points (4 points × 4 units, connected to the input unit with a harness for the relay output unit)
Output type	1 Form A relay output (Not replaceable)
Maximum control capacity	250 V AC/2 A resistive load Fluorescent bulb of 22 W or below: Up to two fluorescent bulbs per one output (Note)
Minimum control capacity	100 mA 5 V DC
Switching life	100,000 operations or more (250 V AC/2 A: Resistive load)
Output points per common	1 common every 2 points, 8 common in total (The common terminals are isolated from one another.) 1 terminal per common connection
Protection	Equipped with a fuse for overcurrent protection (Not replaceable)
Operating indicator	LED indicator
Output terminal	Removable terminal block: Weidmuller BLZP 5.08/06/180SN OR BX

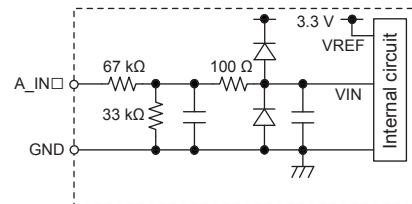Note: If more than two bulbs need to be controlled, add relays externally.

Output circuit diagram

Analog specifications input of main unit

Item	Specifications
Number of points	4 points
Input type	Voltage input: 0 V to 10 V, Absolute maximum input voltage: 10 V
Input impedance	100 kΩ
Resolution	10 bits (K0 to K1000)
Input precision range	0.1 to 9.9 V
Precision	±2.5 % F.S. (F.S. = 10 V)
Insulation method	Not isolated from the internal control circuit
Input points per common	Common (GND), 1 terminal per common connection (4 terminals in total)
Input terminal	Terminal block: Weidmuller PS 3.50/08/90 3.5SN OR BX

Analog input circuit diagram of main unit

Communication specifications

	Item	Specifications
Communication channel 0 (USB / RS485 Port 1)	Communication standard	USB / RS485 (Switch selectable)
	Communication function	MEWTOCOL* / General-purpose communication
	Communication speed	USB / RS485 Port 1: 2,400 bps to 115.2 kbps
	Insulation method	USB: Not isolated from the internal control circuit RS485: Isolated from the internal control circuit by a photocoupler
	Communication terminal	USB: B connector RS485 Port 1: Terminal block Weidmuller PS 3.50/08/90 3.5SN OR BX [Connected to Communication Channel 2 (RS485 Port 2)]
Communication channel 1 (Ethernet)	Communication standard	IEEE802.3u
	Communication function	MEWTOCOL* / General-purpose communication / PC (PLC) link / Modbus RTU Internet protocol (IP): Compatible with version 4 (IPv4) only
	Communication speed	10 Mbps / 100 Mbps
	Insulation method	Isolated from the internal control circuit by a pulse transformer
	Communication terminal	RJ45 connector
Communication channel 2 (RS485 Port 2)	Communication standard	RS485
	Communication function	MEWTOCOL* / General-purpose communication / Modbus RTU
	Communication speed	9,600 bps / 19,200 bps / 115.2 kbps
	Insulation method	Isolated from the internal control circuit by a photocoupler
	Communication terminal	Terminal block: Weidmuller PS 3.50/08/90 3.5SN OR BX [Connected to Communication Channel 0 (RS485 Port 1)]

*MEWTOCOL: Our company's dedicated communication protocol. Use for communication with the Eco-POWER METER.
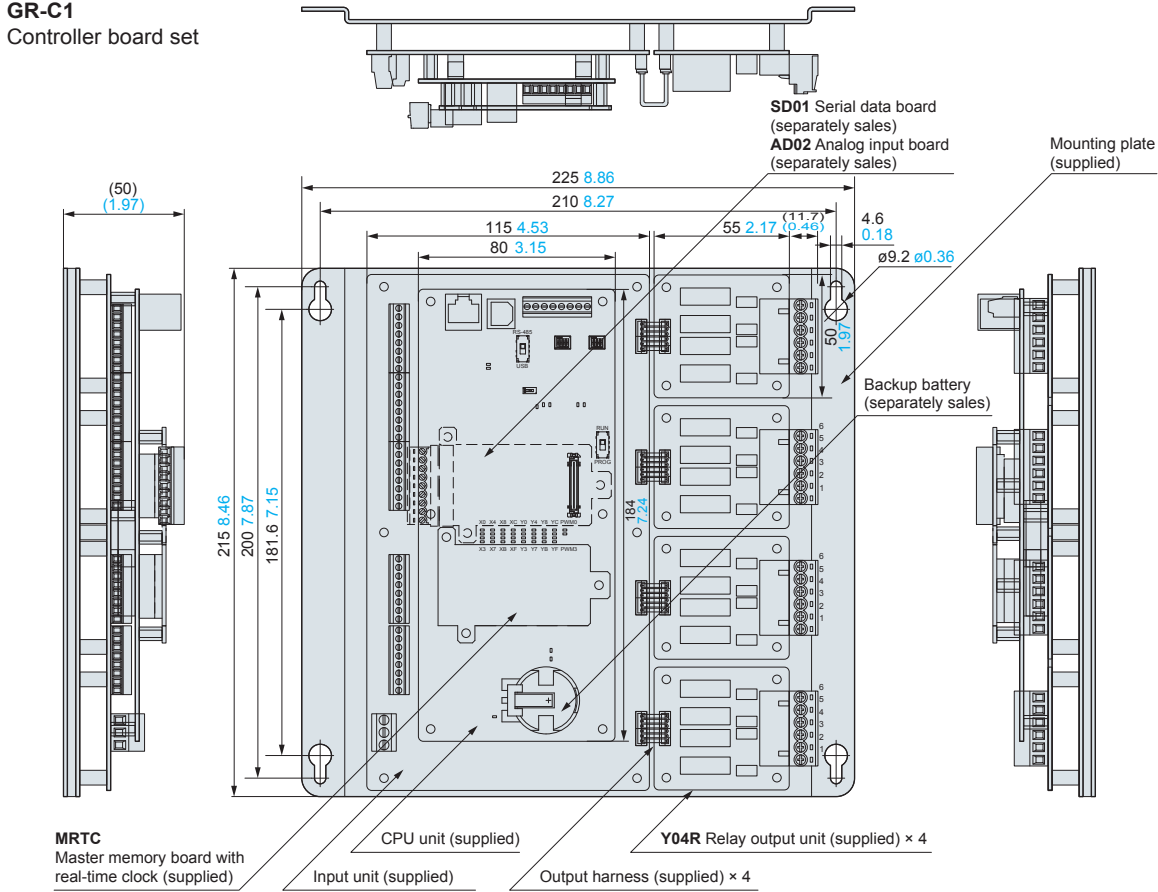
Add-on functions

Item	Specifications
Function boards	Function board: Up to two boards can be mounted. (Note 1) Usable function boards **AD02** Analog input board (Model No.: **ABXAD02**) **MRTC** Master memory board with real-time clock (Note 2) (Model No.: **ABXMRTC**) **SD01** Serial data board (Model No.: **ABXSD01**)

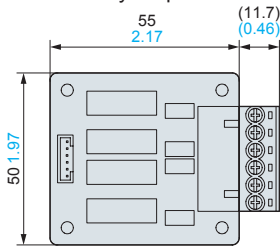Notes: 1) One **ABXMRTC** board has already been mounted on the board set.
2) With regard to **ABXMRTC**, only one board can be mounted.
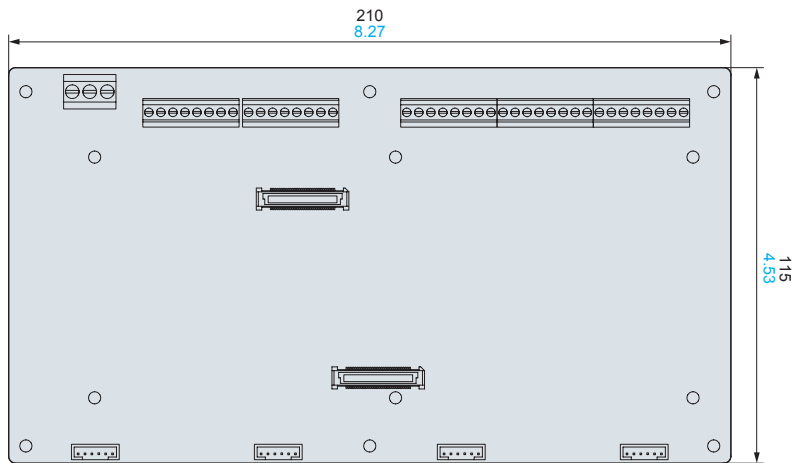
■ NAME AND DIMENSIONS (Unit: mm in)

GR-C1
Controller board set

SD01 Serial data board
(separately sales)
AD02 Analog input board
(separately sales)

Mounting plate
(supplied)

225 8.86
210 8.27
115 4.53
80 3.15
55 2.17
(11.7)
(0.46)
4.6
0.18
ø9.2 ø0.36
50
1.97

(50)
(1.97)

215 8.46
200 7.87
181.6 7.15

184
7.24

Backup battery
(separately sales)

MRTC
Master memory board with
real-time clock (supplied)

CPU unit (supplied)

Input unit (supplied)

Y04R Relay output unit (supplied) × 4

Output harness (supplied) × 4

Y04R Relay output unit

55
2.17
(11.7)
(0.46)

50 1.97

Input unit

210
8.27

115
4.53

CPU unit

184
7.24

80
3.15