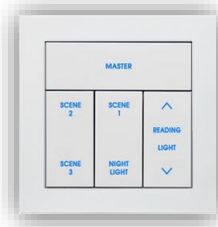# CG100H-SKY SERIES

SKYNET 2000 CONTROL PANEL

USER MANUAL

CG100HHB-SKY
Doorbell Switch

CG100H4-SKY
4 Button Mood Control Panel

CG100HTH-SKY
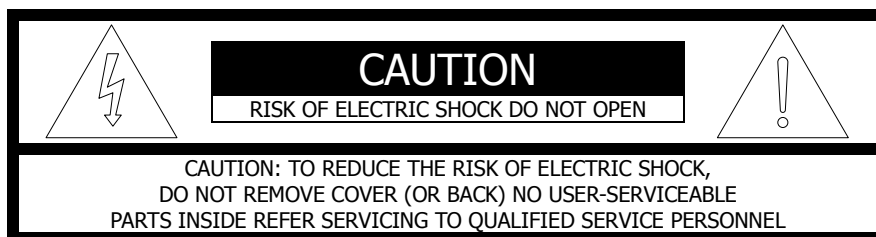Thermostat

VERSION 02
30 JAN, 2015

CityGrow E Systems

Disclaimers and Copyright

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┌─────────────────────────────────────────────────────────────┐
│  ╱╲         ┌─────────────────────────────────┐        ╱╲    │
│ ╱ ⚡╲       │         CAUTION                  │       ╱ ! ╲  │
│╱____╲      │ RISK OF ELECTRIC SHOCK DO NOT OPEN│      ╱____╲ │
│             └─────────────────────────────────┘              │
├─────────────────────────────────────────────────────────────┤
│             CAUTION: TO REDUCE THE RISK OF ELECTRIC SHOCK,    │
│            DO NOT REMOVE COVER (OR BACK) NO USER-SERVICEABLE  │
│         PARTS INSIDE REFER SERVICING TO QUALIFIED SERVICE     │
│                           PERSONNEL                           │
└─────────────────────────────────────────────────────────────┘
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The lightning flash with arrowhead symbol within an equilateral triangle is intended to alert the user to the presence of uninsulated "dangerous voltage" within the product's enclosure that may be of sufficient magnitude to constitute a risk of electric shock to persons.
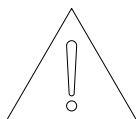
The exclamation point within an equilateral triangle is intended to alert the user to the presence of important operating and maintenance (servicing) instructions in the literature accompanying the product.

IMPORTANT SAFETY INSTRUCTIONS
READ BEFORE OPERATING EQUIPMENT

This product was designed and manufactured to meet strict quality and safety standards.

There are, however, some installation and operation precautions which you should be particularly aware of.

1. Read these instructions.
2. Keep these instructions.
3. Heed all warnings.
4. Follow all instructions.
5. Do not use this apparatus near water.
6. Clean only with dry cloth.
7. Do not block any ventilation openings. Install in accordance with the manufacturer's instructions.
8. Do not install near any heat sources such as radiators, heat registers, stoves, or other apparatus that produce heat.
9. Do not defeat the safety purpose of the polarized or grounding-type plug. If the provided plug does not fit into your outlet, consult an electrician for replacement of the outlet.
10. Protect the power cord from being walked on or pinched particularly at plugs, convenience receptacles, and the point where they exit from the apparatus.
11. Only use attachments/accessories specified by the manufacturer.
12. Use only with the cart, stand, tripod, bracket, or table specified by the manufacturer, or sold with the apparatus. When a cart is used, use caution when moving the cart/apparatus combination to avoid injury from tip-over.
13. Unplug this apparatus during lightning storms.
14. Refer all servicing to qualified service personnel. Servicing is required when the apparatus has been damaged in any way, such as power-supply cord or plug is damaged, liquid has been spilled or objects have fallen into the apparatus, the apparatus has been exposed to rain or moisture, does not operate normally, or has been dropped.
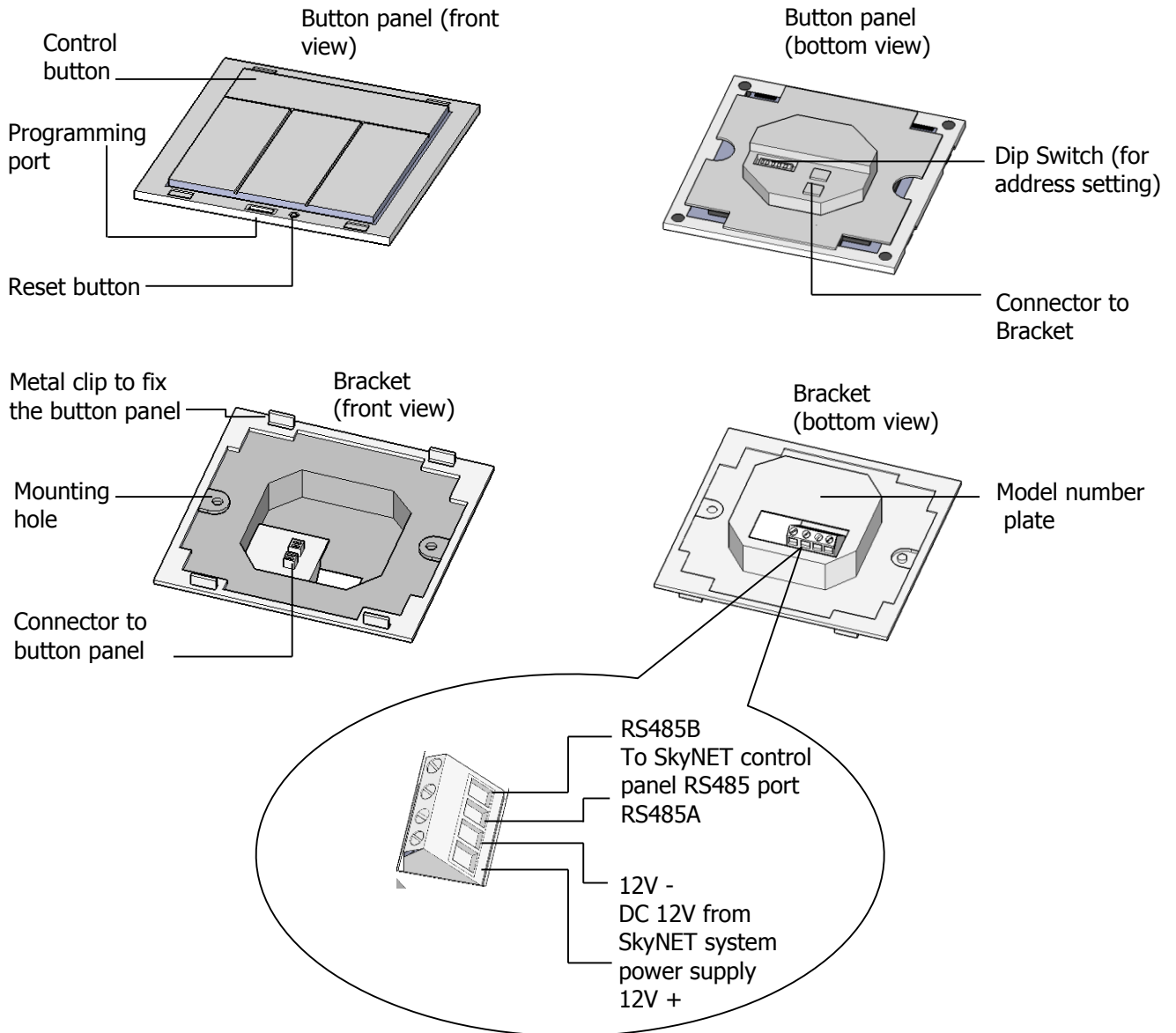
Table of Content

1. Introduction

Thank you for buying Citygrow's product. CG100H-SKY Series is both powerful and easy to use and install.

Description

1. Wall mount control panel for SkyNET2000

2. Data communicates through RS485 bus and running on Citygrow's SmartBus protocols.

3. LED indicator for on/off status.

4. CG100H4-SKY main function is to preset lighting scenes for SkyNET 2000.

5. CG100HTH-SKY is a thermostat to preset room temperature and send signals to SkyNET 2000 to control A/C.

6. Control button can be configured to become two way function.

7. Control button can be configured to become scene function.

8. Control button graphics can be tailor-made per customer requirement.

9. Mounted in a standard UK wall box.

10. Easy to install.

11. Power supply by external DC12V. (powered by SkyNET 2000 system power supply)

2. Understanding of the product-CG100H4-SKY

Control button

Button panel (front view)

Programming port

Reset button

Button panel (bottom view)

Dip Switch (for address setting)

Connector to Bracket

Metal clip to fix the button panel

Bracket (front view)

Bracket (bottom view)

Mounting hole

Model number plate

Connector to button panel

RS485B
To SkyNET control panel RS485 port
RS485A

12V -
DC 12V from SkyNET system power supply
12V +

3. Understanding of the product-CG100HTH-SKY

Control button

Programming port

Button panel (front view)

Reset button

Button panel (bottom view)

Dip Switch (for address setting)

Connector to Bracket

Metal clip to fix the button panel

Bracket (front view)

Bracket (bottom view)

Model number plate

Mounting hole

Connector to button panel

RS485B
To SkyNET control panel RS485 port
RS485A

12V -
DC 12V from SkyNET system power supply
12V +

4. Understanding of the product-CG100HHB-SKY

Frame

Button panel (front view)

Doorbell button

Programming port

Reset button

Button panel (bottom view)

Dip Switch (for address setting)

Connector to Bracket

Metal clip to fix the button panel

Bracket (front view)

Mounting hole

Connector to button panel

Bracket (bottom view)

Model number plate

BELL- , dry contact, max. 1A, 24Vac/dc
BELL+
RS485B
RS485A
12V -
12V +
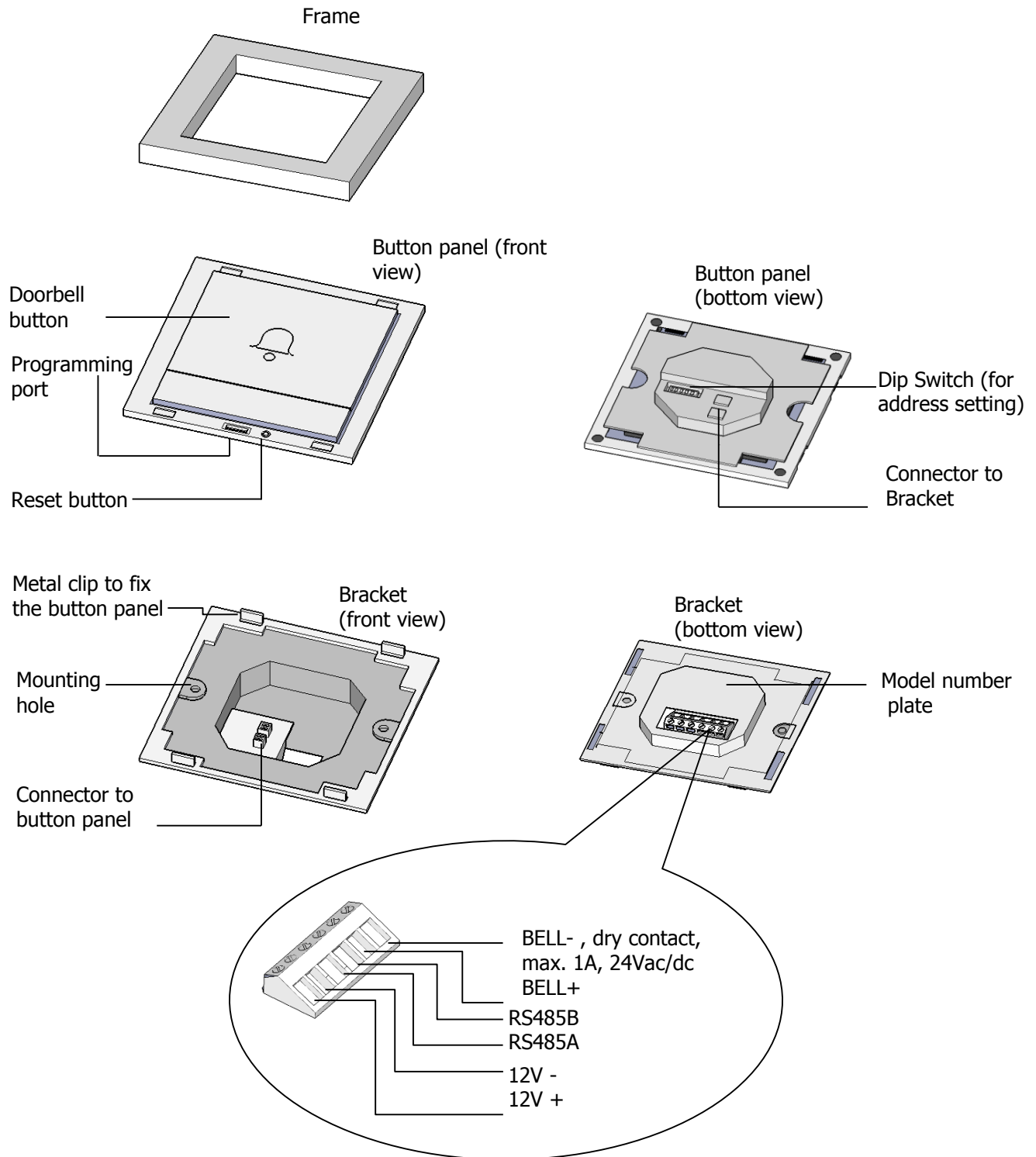
5. Dimensions

CG100H4-SKY, CG100HTH-SKY, CG100HHB-SKY

85mm

85mm

28mm
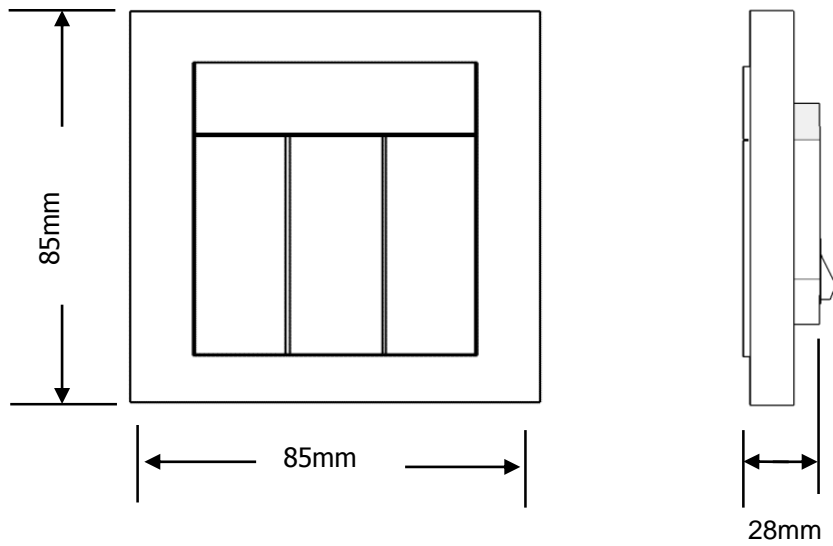
6. Wiring

Before getting started

WARNING! It must be installed by a qualified electrician in accordance with all applicable regulations and building codes. Improper wiring can result in personal injury or damage to control units or other equipment. Always turn off circuit breaker or remove main fuse from power line before doing any work. To avoid overheating and possible damage to equipment.

WARNING! Do not operate when any lamps removed or burned out; replace any burned out lamps immediately; use only transformers that incorporate thermal protection or fused primary windings. **!** This product is designed for residential and commercial use, for indoor use only.
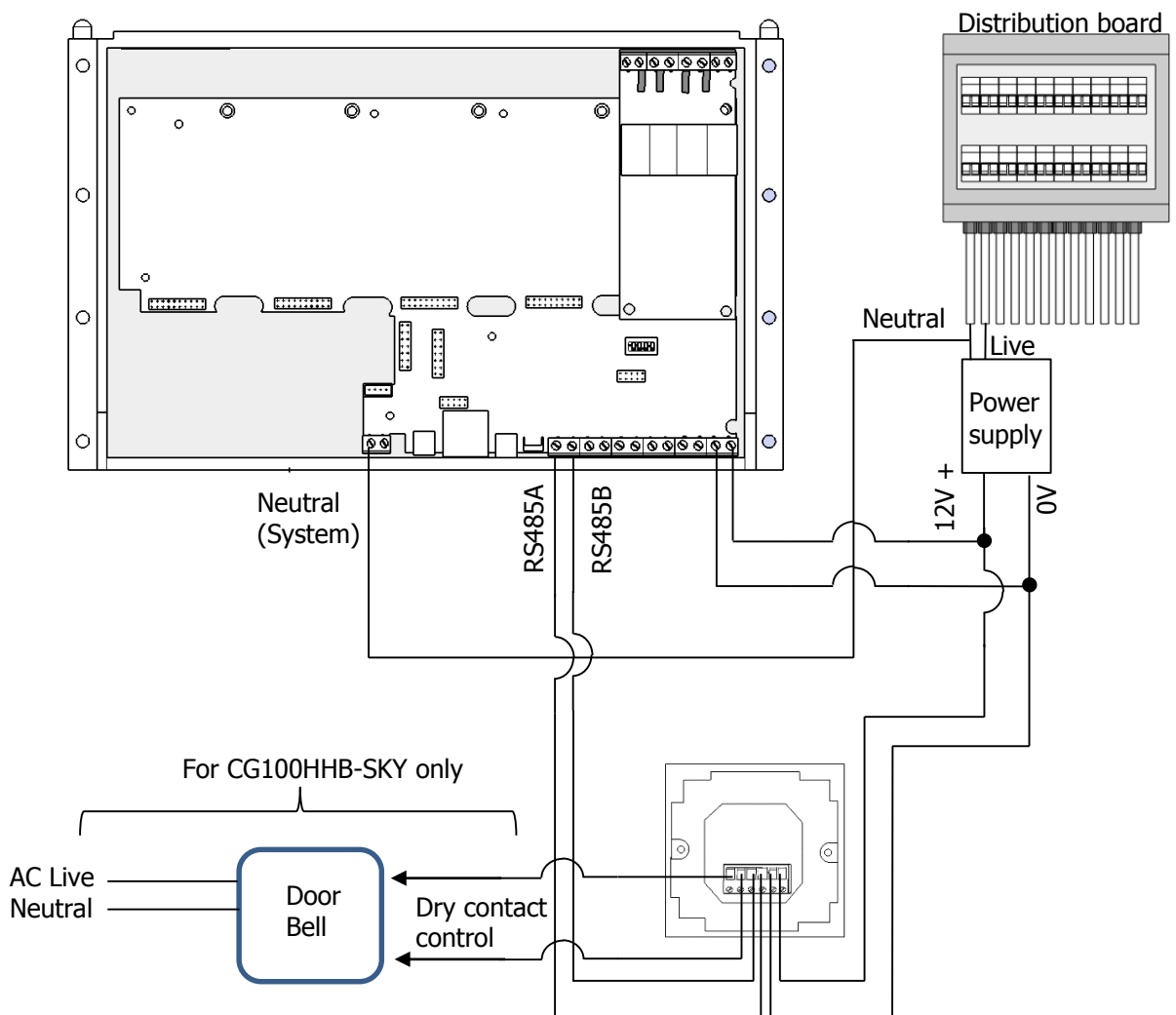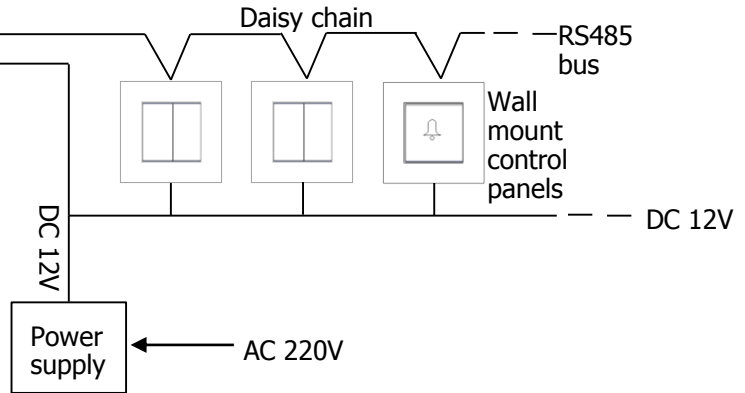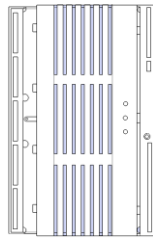
WARNING! Install in accordance with all national and local electrical codes.

IMPORTANT! Citygrow® is not liable for any damage incurred with the misuse of this product.

Wiring Diagram

CG801SKN-M
SkyNET 2000
Main Unit

Daisy chain — RS485 bus

Wall mount control panels

DC 12V

DC 12V

Power supply ← AC 220V

Distribution board

Neutral

Live

Power supply

12V +

0V

Neutral (System)

RS485A

RS485B

For CG100HHB-SKY only

AC Live
Neutral

Door Bell

Dry contact control
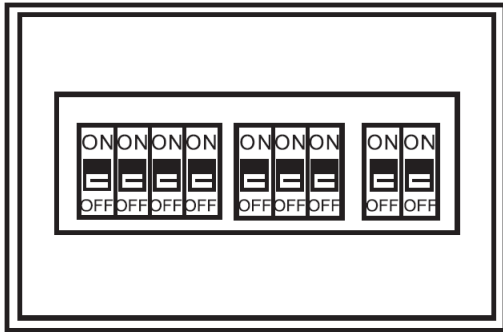
7. Installation

In order to install the product correctly, please follow the below steps:

STEP 1: **IMPORTANT!** Turn off main power at the main switch board.

STEP 2: Loosen the screws of the original wall switch. Remove the switch and the wiring.

STEP 3: Pull the Belden 8723 cable and 1 pair of Dia. 1.5mm copper wire power cable (black and red color) from the location of the SkyNET 2000 main unit to the wall box location.
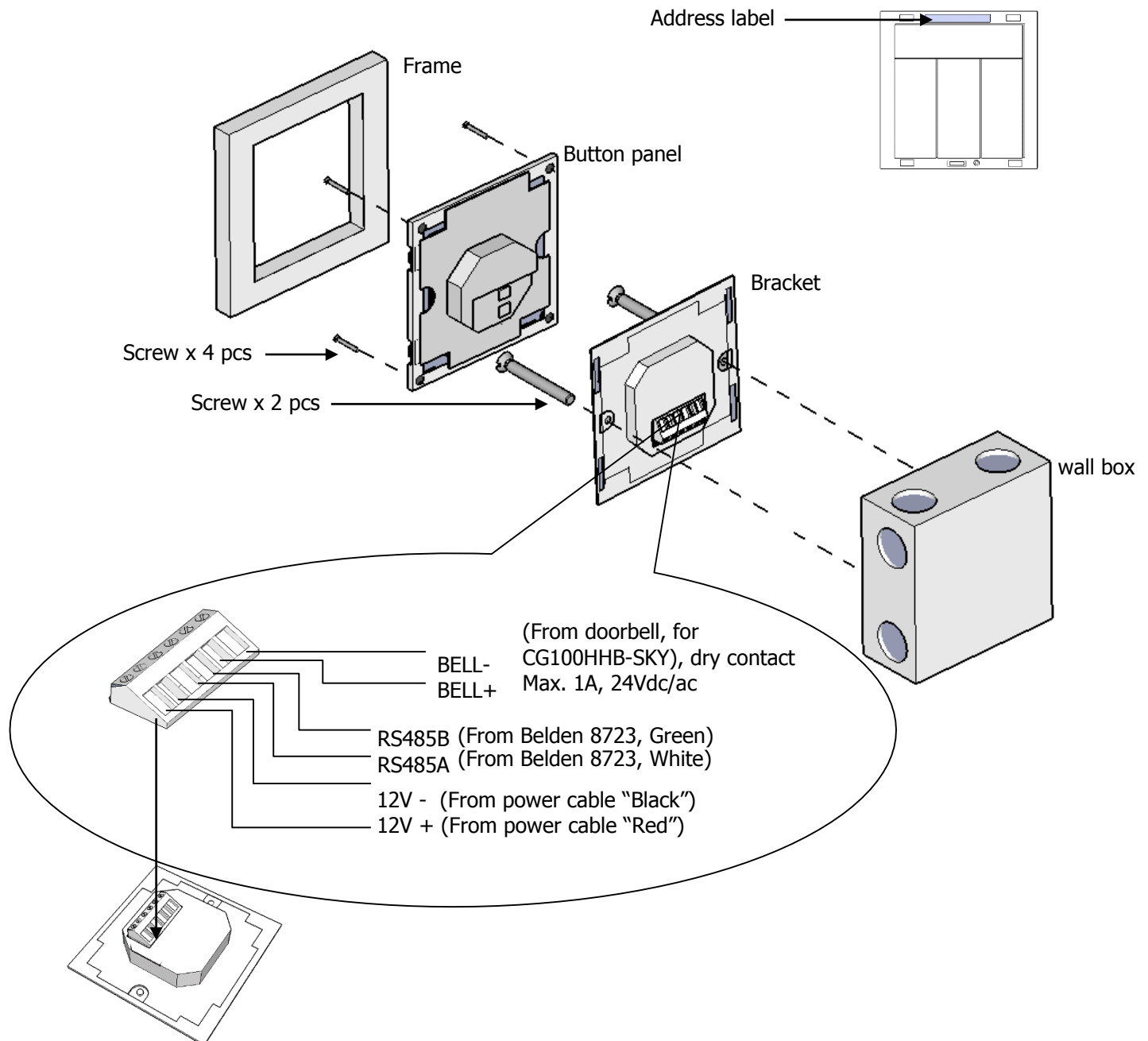
Please note if you have more than 1 wall box location to install CG100H4-SKY panel, the Belden 8723 cable and the power cable should be ready at each of the wall box location. The cables at the second wall box location should be pulled from the first wall box location such that they are in daisy chain configuration.
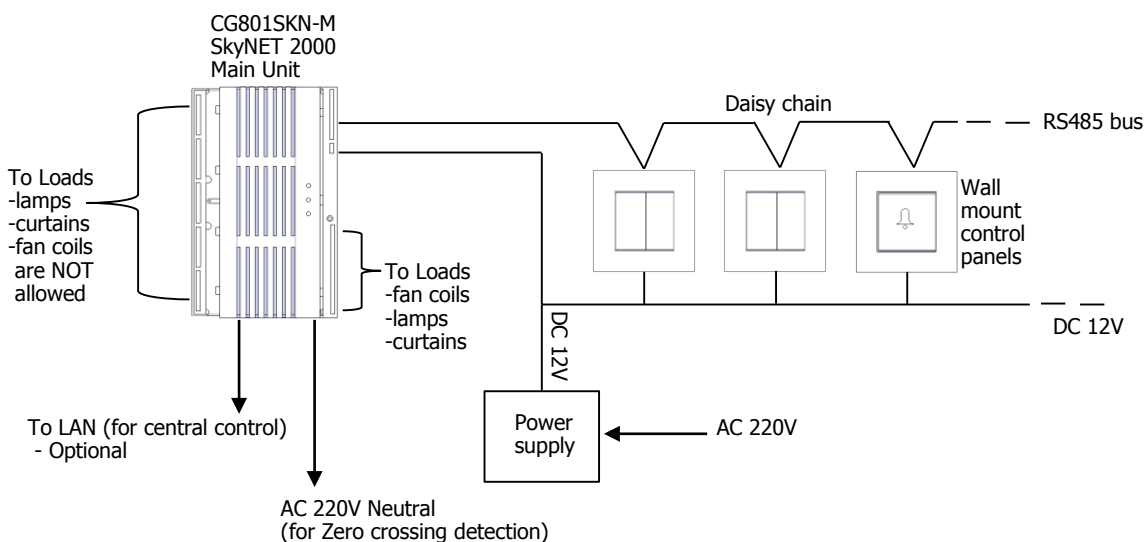
STEP 4: Connect the Belden 8723 cable wires and the power wires, and then fix the product on the wall box according to the following diagram.

Important!

Before plugging the Button panel onto the Bracket, double check the Dip Switch located at the back of the Button panel to see whether the address is equal to the label located at the front of the button panel. If there is no address label at the front of the Button panel, please add an address label to it. This address label will be for future use during the SkyNET Planner programming.

Address label

Frame

Button panel

Bracket

Screw x 4 pcs

Screw x 2 pcs

wall box

BELL-
BELL+

(From doorbell, for CG100HHB-SKY), dry contact Max. 1A, 24Vdc/ac

RS485B (From Belden 8723, Green)
RS485A (From Belden 8723, White)

12V - (From power cable "Black")
12V + (From power cable "Red")

STEP 5: At the last panel of the RS485 bus (the last one of the daisy chain), add a termination resistor of 120ohm 1/4W across the RS485A and RS485B terminals to terminate the data transmission impedance.
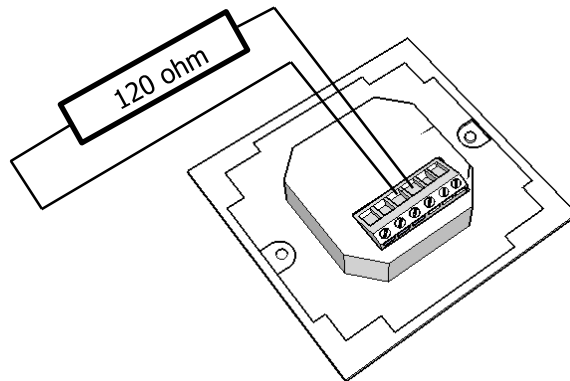
STEP 6: For the SkyNET 2000 main unit, connection of cable and power wires, please refer to the SkyNET 2000 User Manual.

STEP 7: Double check if all wiring is correct, then power up the main switch board, the LED indicators on CG100H-SKY series will be lighted up for one second if you push the button once. Since the CG100H-SKY is not programmed and setup by SkyNET Planner Software at this moment, the product buttons will not function at this stage.
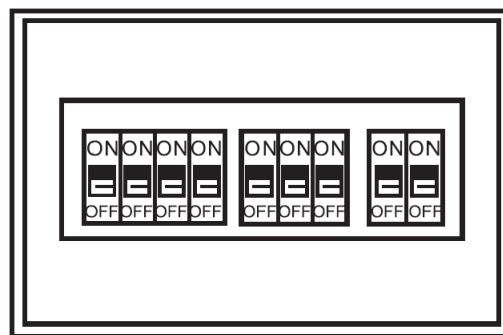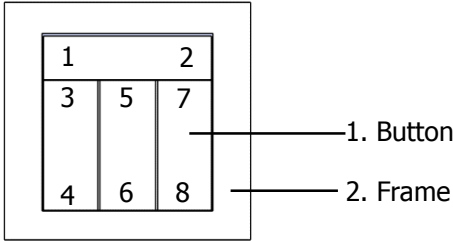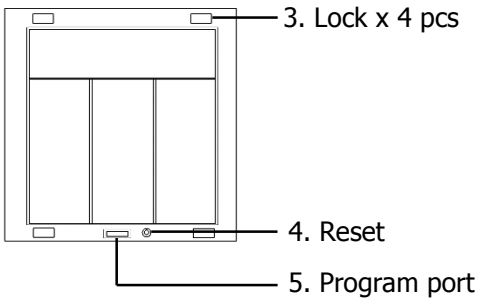

Notes:
- Use standard UK wall box BS4662; minimum 35mm deep. During installation of the wall box, it is recommended to embed the wall box deeper inside the wall in order to give more room to install the product. The room inside is recommended to have 50mm deep.

8. Operation instruction

8.1 CG100H4-SKY, 4 Button Mood Control Panel

COVER PLATE	
 1. Button 2. Frame	1. 1, 2, 4, 4, 5, 6, 7, 8 are buttons location. 2. Frame
MAIN UNIT	
 3. Lock x 4 pcs 4. Reset 5. Program port	3. 4 pcs Locks to fix the main unit onto the wall bracket. 4. Reset button 5. Program port

Button 1, 2, 3, 4, 5, 6, 7, 8 can be programmed to be ON/OFF function, or Dim up/ Dim Down or Scene function. It can be programmed via SkyNET Planner Software.

Push these button to activate the function.
The backlit icons on the button will light up
- LED **ON** indicates the Function is ON.
- LED **OFF** indicates the Function is OFF.

8.2 CG100HHB-SKY, Doorbell switch

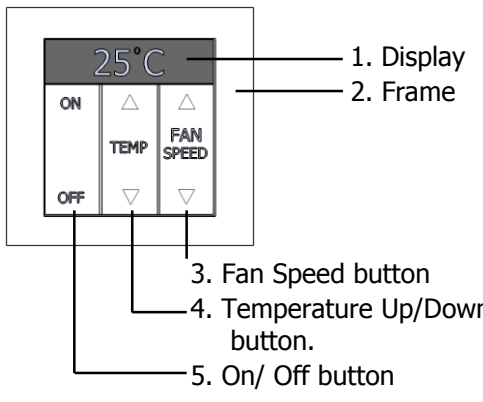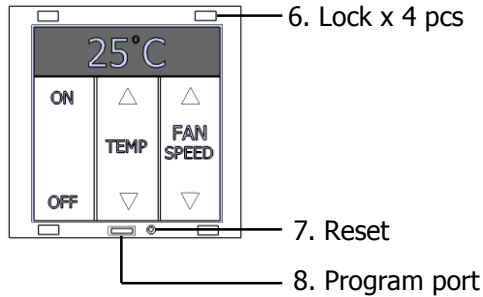| COVER PLATE	
 1. Button 2. Frame 4. Do Not Disturb 3. Clean Room	1. Doorbell button. 2. Frame. 3. Clean Room Indicator (For Hotel Only) 4. Do Not Disturb (For Hotel Only)
MAIN UNIT	
 5. Lock x 4 pcs 6. Reset 7. Program port	5. 4 pcs Locks to fix the main unit onto the wall bracket. 6. Reset button 7. Program port
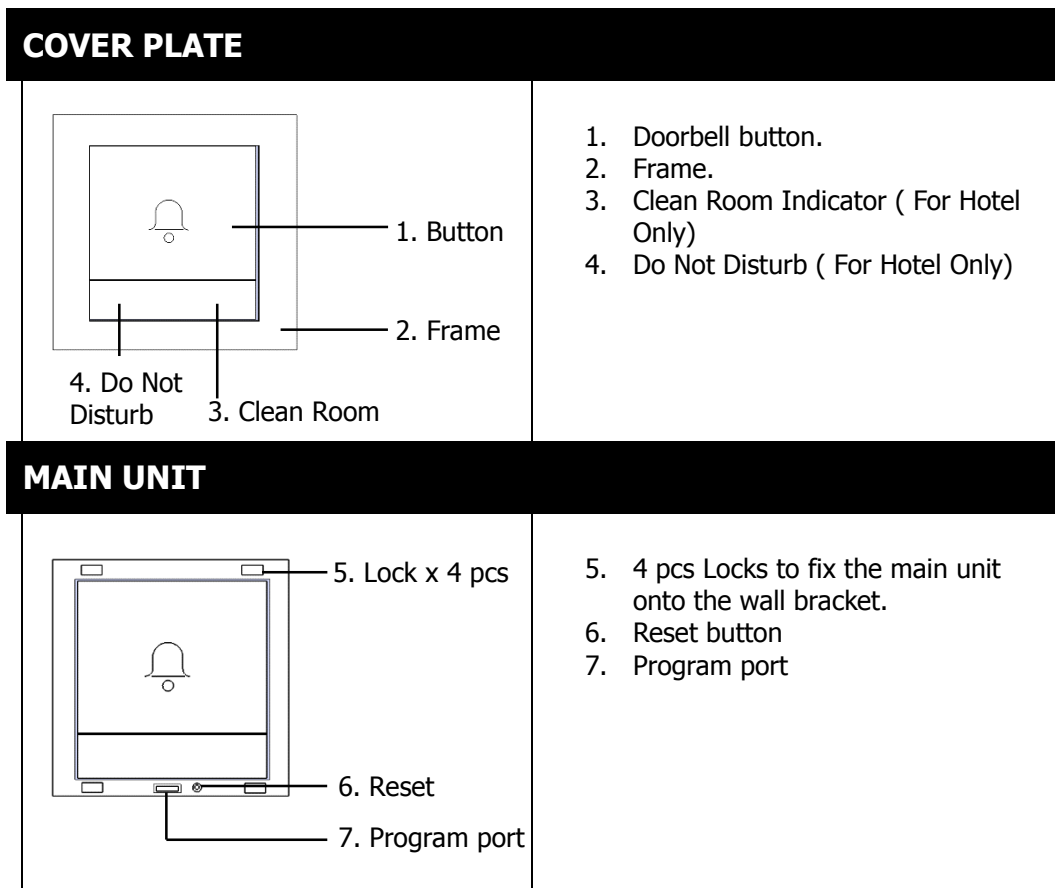
When Doorbell button is pressed, the dry contact output for bell will be momentary on for 1 seconds, during this 1 second duration, the bell will be driven on and doorbell will ring for 1 second.

If CG100HHB-SKY is selected to be used for hotel project, see diagram above, the Do Not Disturb or Clean Room LED indicator cab be programmed to be switched on when the preselected button on a CG100H4-SKY panel is being pressed down.

Push the Doorbell button to activate the doorbell function, the backlit icons on the button will light up
- LED **ON** indicates the Function is ON.
- LED **OFF** indicates the Function is OFF.

8.3 CG100HTH-SKY, Thermostat

COVER PLATE	
3. Fan Speed button 4. Temperature Up/Down button. 5. On/ Off button 1. Display 2. Frame	1. Display window to show temperate readings and settings. 2. Frame 3. Up / Down control fan speed High / Mid / Low 4. Up/ Down preset room temperature 5. On/off control of A/C
MAIN UNIT	
6. Lock x 4 pcs 7. Reset 8. Program port	6. 4 pcs Locks to fix the main unit onto the wall bracket. 7. Reset button 8. Program port

Display Window:

When no button is being pressed, the display window will show the set temperature.

Temp Up/Down button:

Press Up or Down to change the preset temperature.

Fan Speed Up/Down button:

Press Fan Speed Up/ Down button will change the fan speed of the A/C, the fan speed will change in High -> Mid -> Low order. The display window will show the settings.
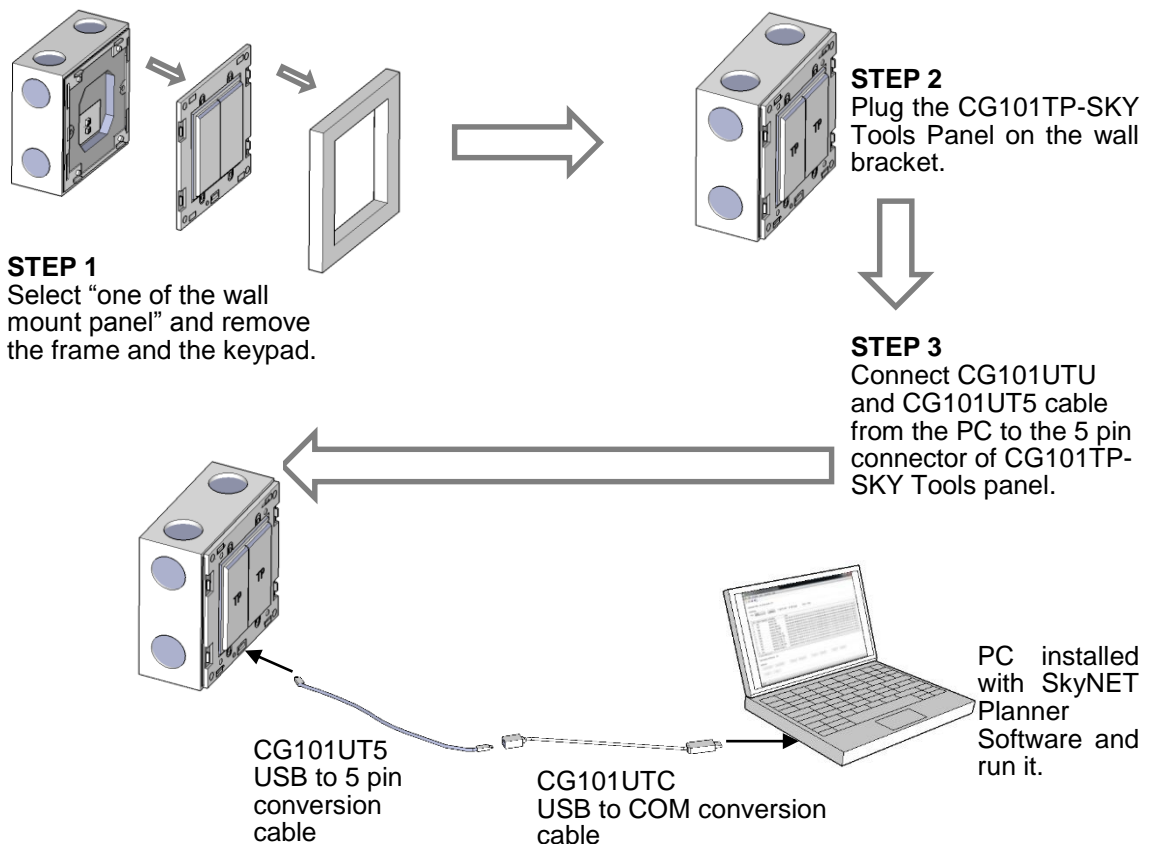
On/Off button:

Press the On/Off button will switch the A/C from On to Off, or Off to On. When A/C is off, the display window will be off.

9. Programming the SkyNET system

Remove one of the button panel from the wall, then you will see the wall bracket is still fixed on the wall box. Then prepare a PC with SkyNET Planner Software installed and run it with the CG101UT5 and CG100UTC cable connected from PC to the CG101TP-SKY Tools Panel.

See following diagram….

STEP 2
Plug the CG101TP-SKY Tools Panel on the wall bracket.

STEP 1
Select "one of the wall mount panel" and remove the frame and the keypad.

STEP 3
Connect CG101UTU and CG101UT5 cable from the PC to the 5 pin connector of CG101TP-SKY Tools panel.

PC installed with SkyNET Planner Software and run it.

CG101UT5
USB to 5 pin conversion cable

CG101UTC
USB to COM conversion cable

STEP 4

Refer to the user manual of "SkyNET Planner" Software to program and set the address of the product.

10. Specification

	CG100H4-SKY	CG100HTH	CG100HHB
Description	4 button mood control panel for SkyNET 2000	Thermostat for SkyNET 2000	Doorbell switch for SkyNET 2000
Function	1. 8 preset lighting scenes. 2. Lighting scenes is able to include IR control. (IR device purchase separately) 3. Lighting scenes is able to include curtain control. 4. Max. 150 devices included in a scene. 5. Minimum dimming level preset. 6. Memory dim function. 7. Two way control function. 8. LED backlight.	1. High, Mid, Low, cool, heat control. 2. Temperature preset. 3. Room temperature display. 4. C /F selectable. 5. Built-in temperature sensor. 6. Work with CG801SW8 to implement fan coil Control. 7. LED backlight. 8. Support two way function, ie multiple CG100HTH-SKY control of single Fan Coil.	1. Build-in contactor to drive AC door bell. Dry contact max. 1A, 24Vdc/ac. 2. LED backlight 3. Support two way function, ie different doorbell switch can be located at different locations.
	Remarks: 1. When up button is used for dimming up function, the down button cannot be programmed as scene function. 2. Maximum number of devices programmed into the whole product is limited to 150 devices.		Remarks: 1. For hotel customer, DND and Clean room LED indicator is provided on CG100HHB-SKY.
Maximum current consumption	200mA max.	200mA max.	200mA max.
Power supply	DC12V Powered by SkyNET 2000 system power supply	DC12V Powered by SkyNET 2000 system power supply	DC12V Powered by SkyNET 2000 system power supply

	CG100H4-SKY	CG100HTH	CG100HHB
Dimensions mm (Length x Width x Depth)	85x85x28	85x85x28	85x85x28
Recommended operation temperature	0 to 40 degC	0 to 40 degC	0 to 40 degC
RS485 A & RS485B to SkyNET 2000	1. Panels should be connected in daisy chain configuration. Maximum 32 control panels can be connected. 2. Connect RS485 A and RS485 B to the corresponding connector in Main unit. 3. It is recommended to use Belden 8723 cable. 4. RS485 terminator 120ohm resistor is needed to be added to end the cable. See wiring diagram – SkyNET 2000.		
Address setting	1. Dip switch 1 to 8 for setting the panel address. 2. Normally, the main unit CG801SKN-M should be set to 00000000. 3. In case Circuit Extender CG801SKN-E is added, the Circuit Extender can be set to 00000001, 00000010……etc. 4. Control panel addresses can be 00000100, 00000111, 00000101……etc.. 5. Please refer the SkyNET Planner user manual for details.		