CG401S5-FCU
CG401S5V1-FCU
FAN COIL CONTROL SWITCH MODULE

USER MANUAL

CG401S5-FCU
Fan Coil Control Switch Module

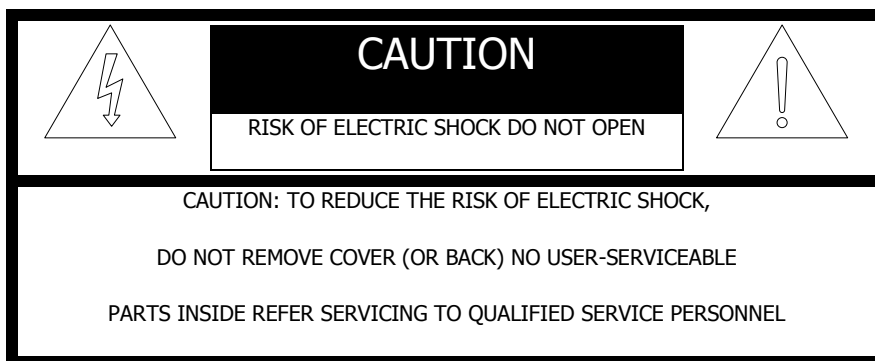VERSION 1.1

17 JANUARY, 2014

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.
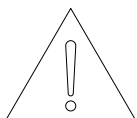
The exclamation point within an equilateral triangle is intended to alert the user to the presence of important operating and maintenance (servicing) instructions in the literature accompanying the product.

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.
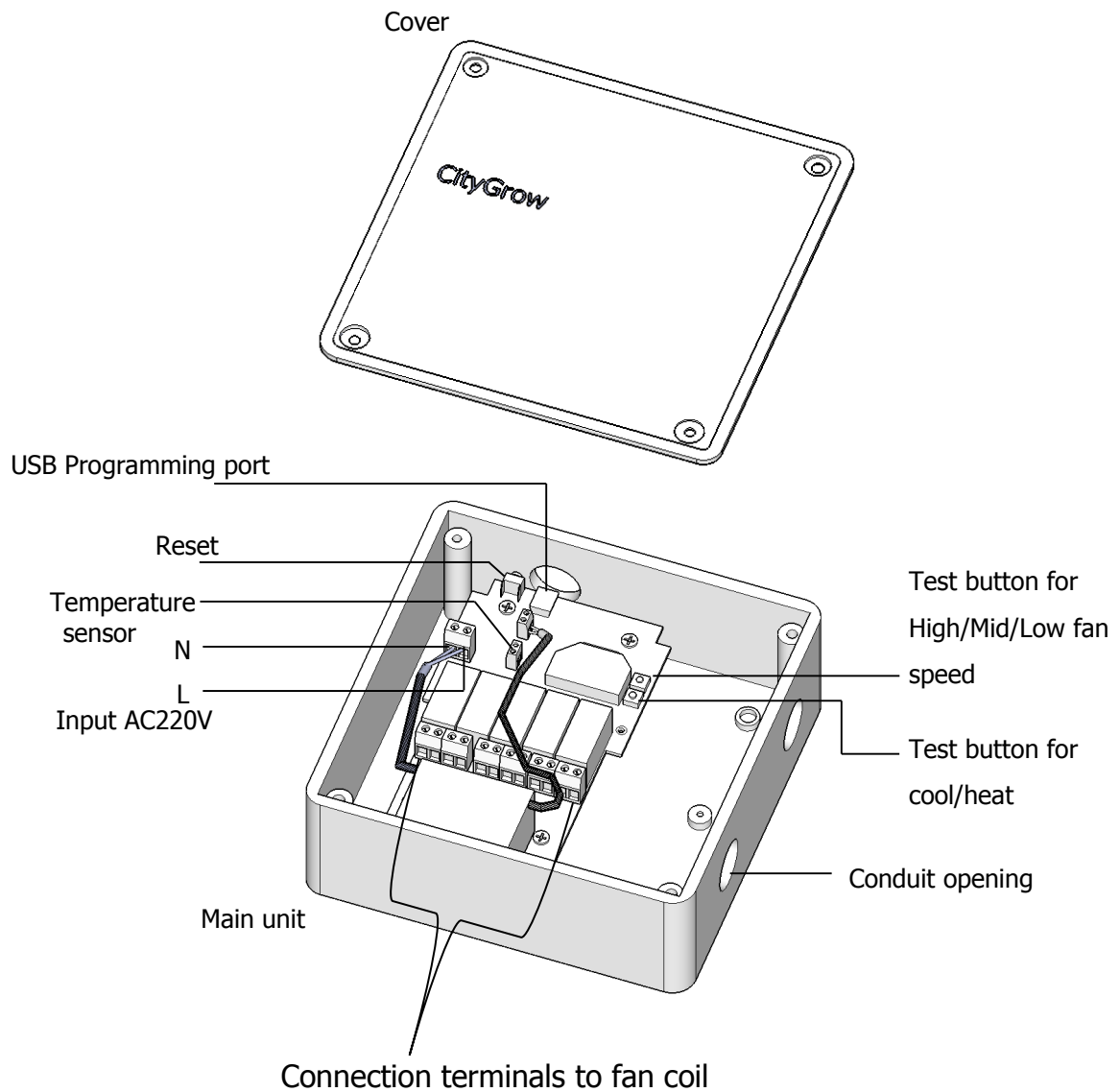
Table of content

1. Introduction

Thank you for buying Citygrow's product. CG401S5-FCU Fan Coil Control Switch Module. It is both powerful and easy to use and install.
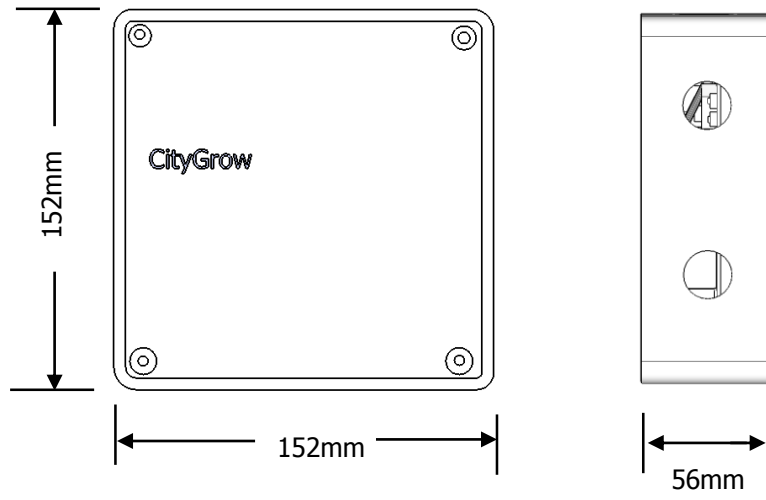
Description

1. ZigBee wireless remote control.

2. Based on IEEE 802.15.4.

3. 2.4GHz radio frequency.

4. Work with CG100HTH thermostat.

5. Built-in 5 independent relays for High, Mid, Low, Cool, Heat control.

6. Receive wireless signal from ZigBee system devices, such as CG100HTH thermostat.

7. Optional selection for local temperature sensor.

8. Openings for direct insert of conduits, good for on-site installation.

9. Fan coil control function can be configured to be included in scene setting.

10. Support iPhone, iPad and Android mobile control if CG102BS Base Station is purchased.

11. Enclosure by BS4607 cabinet.

12. Easy to install.

13. Operated by internal CG101AD mini power supply (included).

14. CG401S5V1-FCU is build-in with temperature sensor.

15. CG401S5-FCU is build-in without temperature sensor

2. Understanding of the product

Cover

USB Programming port

Reset

Temperature sensor

N

L

Input AC220V

Main unit

Test button for High/Mid/Low fan speed

Test button for cool/heat

Conduit opening

Connection terminals to fan coil

Pin number	Description
1, 2	Relay output for HEAT
3, 4	Relay output for COOL
5, 6	Relay output for FAN SPEED LOW
7,8	NC
9,10	Relay output for FAN SPEED MID
11,12	Relay output for FAN SPEED HIGH

3. Dimensions

152mm

152mm

56mm

3

4. Wiring

From AC 100 to 240V

5V
GND

N L

CG401S5-FCU PCB

Output   CG101AD   Input

On board Mini
Power Supply

Conduit

HEATER
LIVE
COOL
LIVE
LOW
LIVE
NC
NC
MID
LIVE
HIGH
LIVE

Fan coil unit
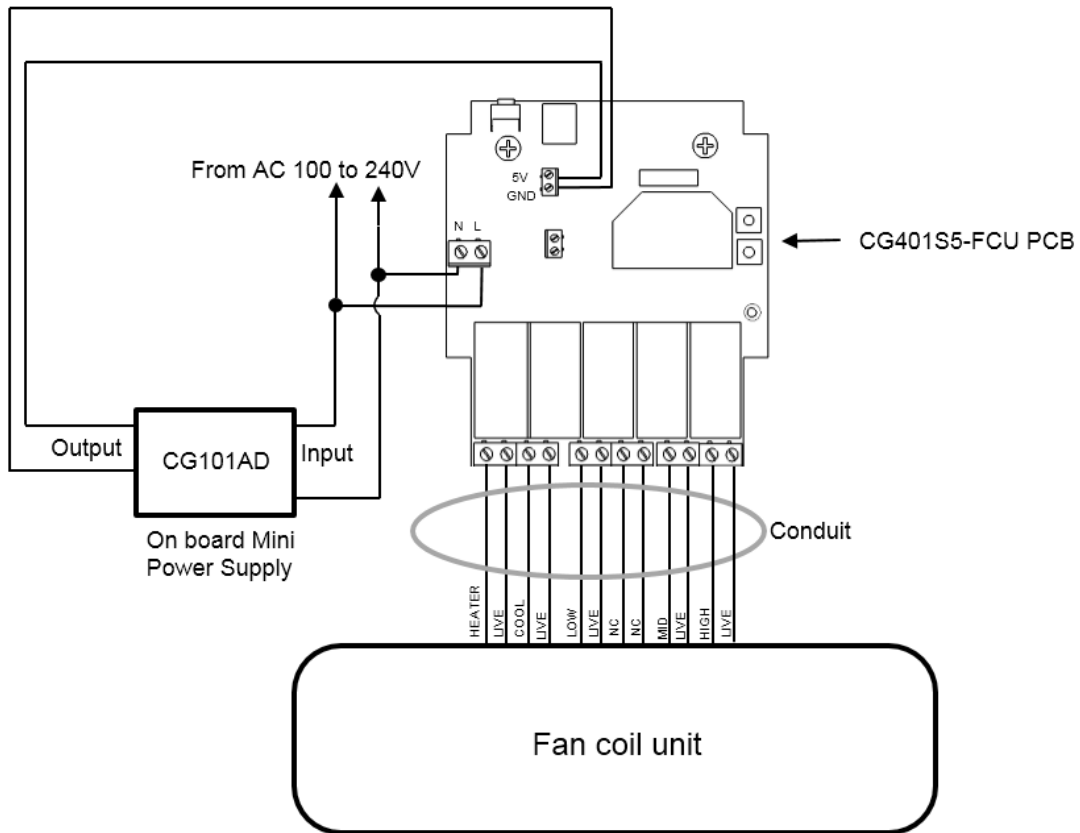
Before getting started

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.
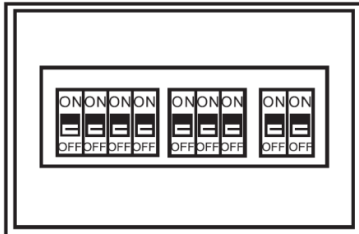
IMPORTANT! Pre-setup can only be done by a professional worker or manufacturer agent.
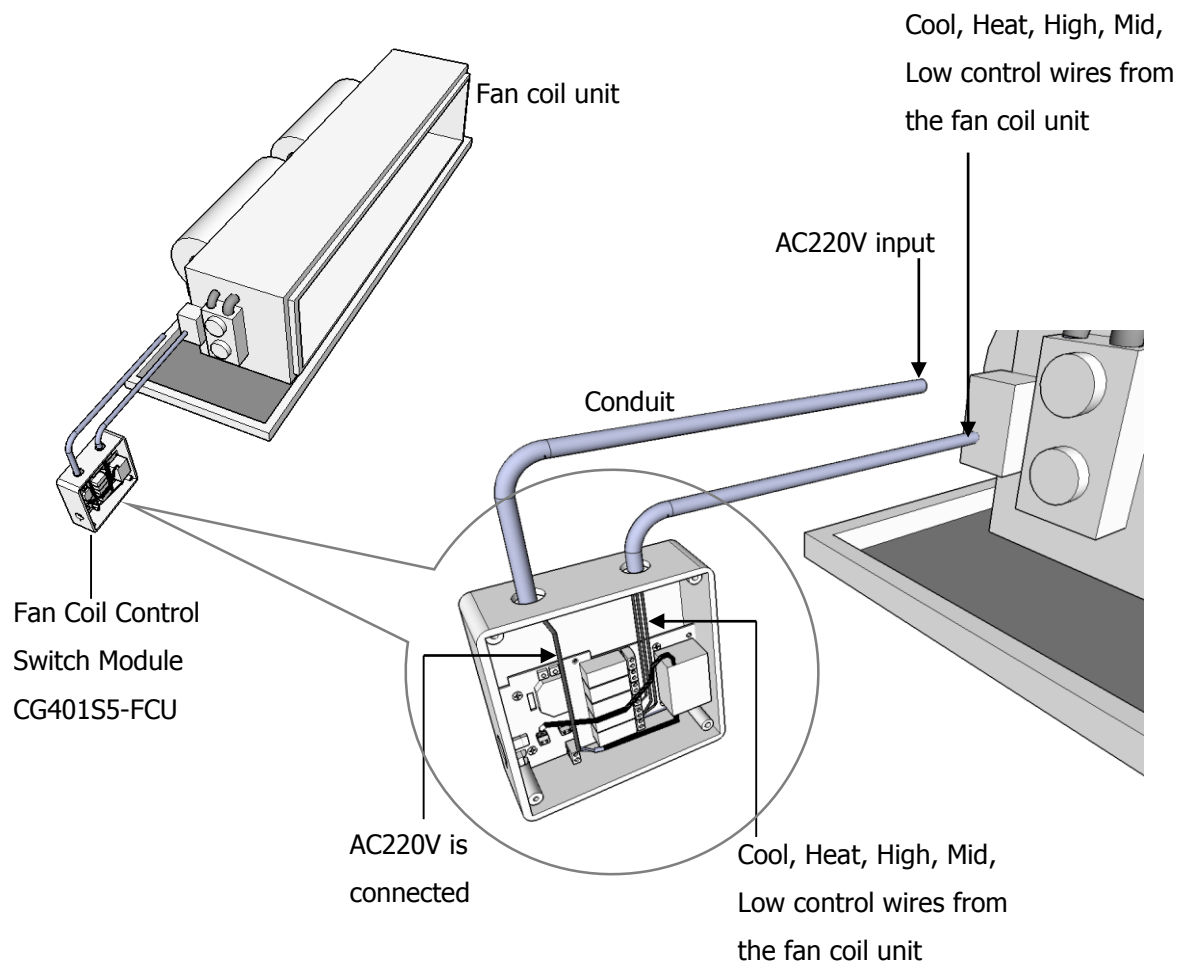
5. Installation

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: Select a location for installation that is nearby the fan coil. Then mount the CG401S5-FCU on the location and route the conduits.

Fan coil unit

Cool, Heat, High, Mid, Low control wires from the fan coil unit

AC220V input

Conduit

Fan Coil Control Switch Module CG401S5-FCU

AC220V is connected

Cool, Heat, High, Mid, Low control wires from the fan coil unit

STEP 3: Connect the wires from the fan coil to the CG401S5-FCU according to the following diagram.
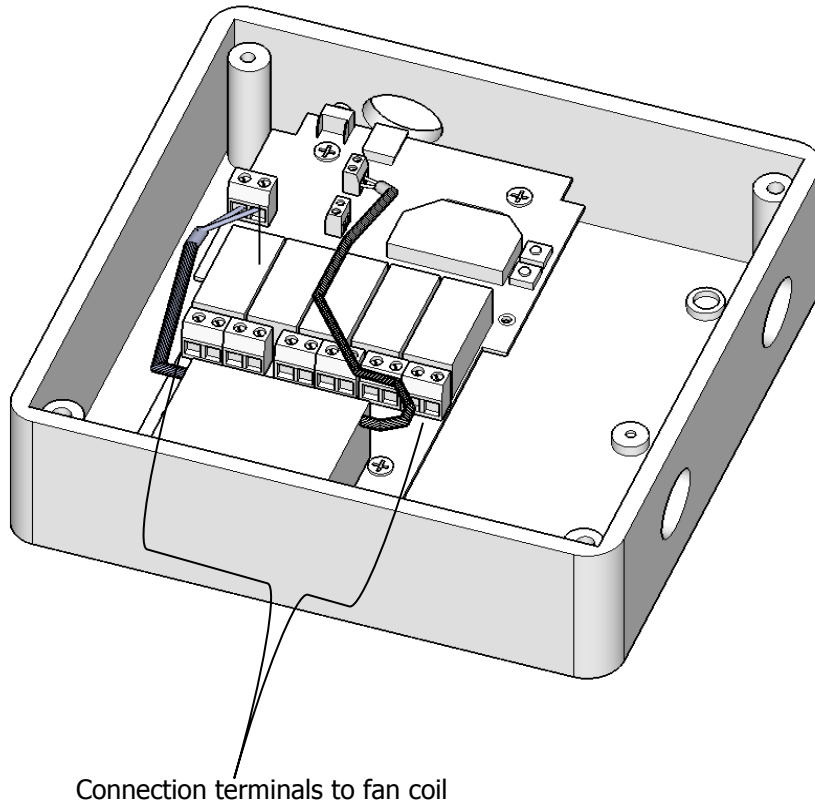
Connection terminals to fan coil

Pin number	Description
1, 2	Relay output for HEAT
3, 4	Relay output for COOL
5, 6	Relay output for FAN SPEED LOW
7,8	NC
9,10	Relay output for FAN SPEED MID
11,12	Relay output for FAN SPEED HIGH

Step 4: Fasten the screws of all wire connectors and ensure that the in and out wires are properly secured. Make sure to respect the marking on the module.

Step 5: Make sure once more that all connections are secure and turn the main power on at the main switch board.
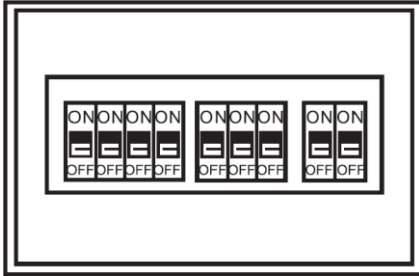
Step 6: The module is now powered up. Test the module by pushing the Test button as shown below.

Test button for High/Mid/Low fan speed

Test button for cool/heat
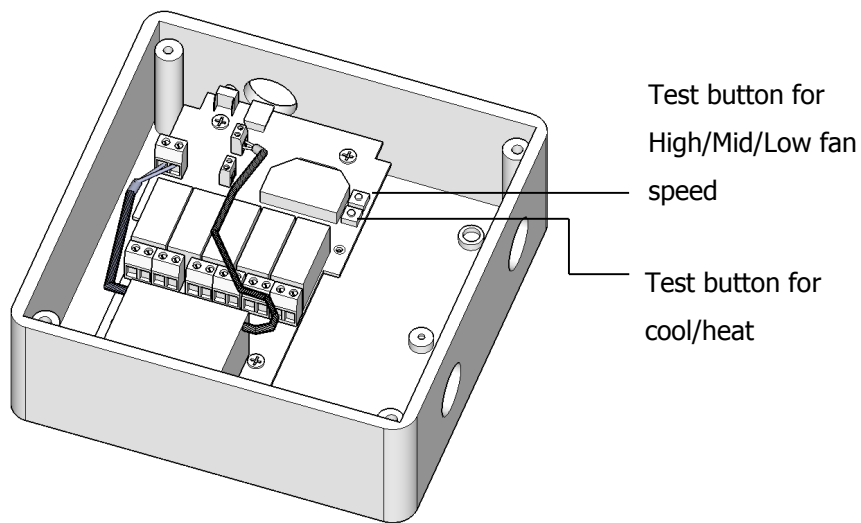
Step 7: Then, place the front cover back to the top of the main unit and fix it with the screws.

6. Application notes

CG401S5-FCU is a wireless product that the control panel/ thermostat can wirelessly send the control signal to CG401S5-FCU. So, the fan coil will not need to route long distance cables to the thermostat.

CG401S5-FCU should be installed nearby the fan coil. It works with other Citygrow's product. . For example….

6.1. Using single CG100HTH thermostat to control a single fan coil.

The remote control signal will be wirelessly sent to CG401S5-FCU to control the fan speed high, low or mid, or to control the on/off of cool/heat.

CG100HTH
Thermostat

CG401S5-FCU
Fan Coil Control Switch Module

The temperature sensor can be optionally selected to be located at:

A: Temperature sensor is located at the wall mounted thermostat location

ORDERING MODEL NUMBER:
CG401S5-FCU,
CG100HTH

B: Temperature sensor is located at CG401S5-FCU fan coil control switch module location. Such that the temperature sensing point will be exactly at the air return path of the fan coil.

ORDERING MODEL NUMBER:
CG401S5V1-FCU,
CG100HTHV1

6.1.1. Binding procedures

The following steps will guide you to link the CG100HTH thermostat and the CG401S5-FCU fan coil control switch module together.

1. Power-up the CG401S5-FCU by connecting Live and Neutral to the corresponding terminals. Connect the CG101UT5 cable from CG401S5-FCU to CG100HTH. Please note that you do not need to connect power to CG100HTH, as the CG101UT5 cable will supply power to CG100HTH from CG401S5-FCU.
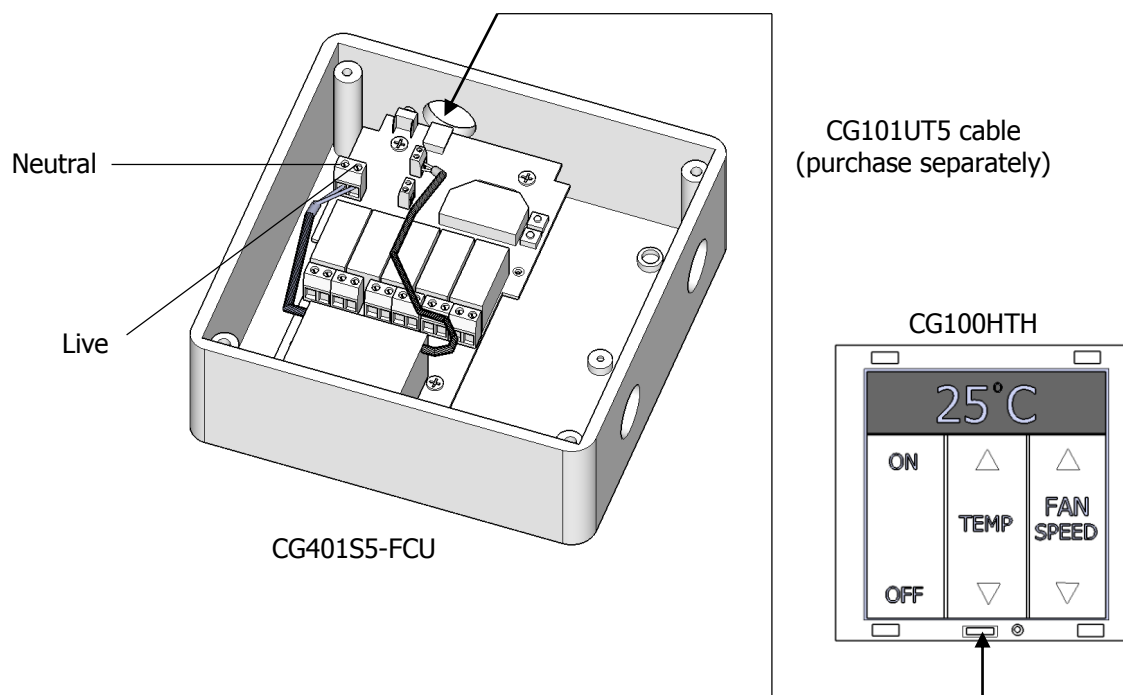
CG101UT5 cable
(purchase separately)

Neutral

Live

CG401S5-FCU

CG100HTH

2. Hold the "OFF" button of the CG100HTH.
3. Keep holding the "OFF" button, and then press and release the reset button of the CG100HTH.
4. Keep holding the "OFF" button until the 7-segment LED display of the CG100HTH shows "ok", and that means the binding process is completed.
5. If the display does not show "ok" within 2 seconds, which means the binding process is fail. Please check the power of the CG401S5-FCU and check the CG101UT5 cable. Repeat step 1 – 5 to retry again.

6.2. Using multiple CG100HTH thermostat to control single fan coil.

To control a single fan coil for fan speed high, low or mid, or to control the on/off of cool/heat.

Notes: Maximum 8 CG100HTH can be used to control a single CG401S5-FCU.

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| CG100HTH Thermostat | CG100HTH Thermostat | CG100HTH Thermostat | CG401S5-FCU Fan Coil Control Switch Module |
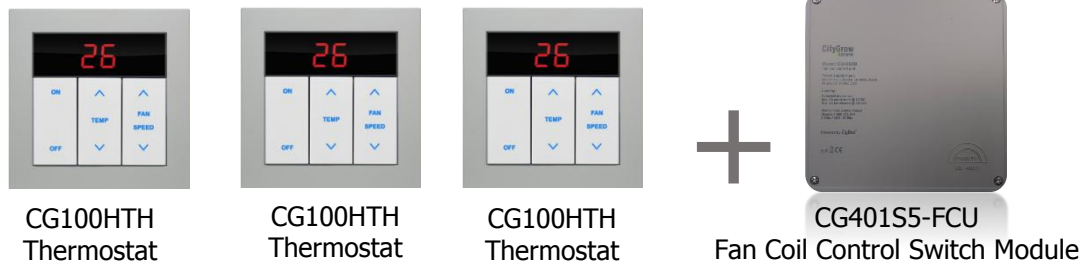
In this application, the temperature sensor should be ONLY located at the CG401S5-FCU. The ordering model number should be…

ORDERING MODEL NUMBER:
CG401S5V1-FCU,
CG100HTHV1

6.2.1. Binding procedures

Referring to section 6.1.1, repeat step 1 to step 5 to bind the rest of the CG100HTH Thermostat.

6.3. Using single CG100HTH thermostat to control multiple fan coils.

To control a single fan coil for fan speed high, low or mid, or to control the on/off of cool/heat.

CG100HTH
Thermostat

CG401S5-FCU
Fan Coil Control Switch Module

The temperature sensor can be optionally selected to be located at:

A: Temperature sensor is located at the wall mounted thermostat location

ORDERING MODEL NUMBER:

CG401S5-FCU,

CG100HTH

B: Temperature sensor is located at CG401S5-FCU fan coil control switch module location. Such that the temperature sensing point will be exactly at the air return path of the fan coil.

ORDERING MODEL NUMBER:

CG401S5V1-FCU,

CG100HTHV1

6.3.1. Binding procedures

Referring to section 6.1.1, repeat step 1 to step 5 to bind the rest of the CG401S5-FCU.

7. Adding the product to your Home Wireless ZigBee Network

STEP 1

Plug the CG101UTU cable into the USB program port of the product, and then plug the other end of the CG101UTU cable into the mini USB end of the CG101UTC cable.

STEP 2

Plug the CG101UTC cable into the USB port of a PC that is installed with Citygrow's HomeNET Planner Software.

STEP 3

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

8. Clear Memory

Since CG401S5-FCU is a working pair with CG100HTH thermostat, it is no need to clear the memory of CG401S5-FCU. You only need to clear the memory of CG100HTH in case you would like to restart everything settings of the system.

Memory clearing procedures for CG100HTH thermostat

In order to perform the Clear Memory function, please follow the below steps:

1. Power-up the CG100HTH
2. Hold the "OFF" button of the CG100HTH.
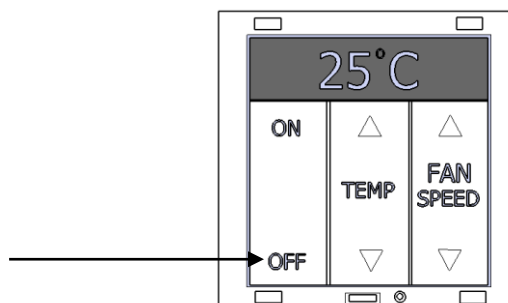
3. Keep holding the "OFF" button, and then press and release the reset button of the CG100HTH.
4. Keep holding the "OFF" button, and you may find the back light of the CG100HTH is blinking.
5. Keep holding the "OFF" button unit the blinking speed is changed to faster.
6. When the blinking speed is changed to faster, release the "OFF" button, press and release the "OFF" button again. The display of the CG100HTH will show "rSt", which means the memory of CG100HTH has been reset.
7. If the display of the CG100HTH does not show "rSt" after step six, please repeat step 1 – 6 to retry again.

9. Specification

Description	Fan Coil Control Switch Module
Power supply	100-240VAC, 50/60Hz @ 80mA
Loads	5 dry contacts Maximum 2A per channel @24VDC, or Maximum 4A per channel @240VAC
RF frequency	2.4GHZ
Remote control distance (M, line of sight)	100M
Dimensions mm (Length x Width x Depth)	152x152x56
Recommended operation temperature	0 to 50 degC