Data sheet

UFH (Underfloor Heating System) wireless Gateway operation manual

Wireless Gateway: G200
Wire Consoler serial : C100
Wireless Consoler serial: C130

System Brief :

The consoler is the programmable room consoler with program which controls each room zone of temperature by sensing the air temperature. It allows user to set ON and OFF time periods to suit the user home life. It switches on the heating when the air temperature falls below the thermostat setting (the icon displays : , and switches off upon the set temperature is reached (the icon displays:) .

The programmable consoler let user to choose what times you want the heating to be on, and what temperature it should reach while its on. Its allows user to select different temperatures in home at different times of the day, and the days of the week to meet user particular needs.

The programmable consoler allows user to program up to 6 events of setting per day, and each event include the set time and set temperature at which your heating will come on and go off each day. User can program on event setting for everyday of week with daily different event setting . User also can program on event setting for weekdays and another event setting for weekends. If user like the event setting last for whole week, he can program it by week base.

2.4G Zigbee network for heating

When power on the wireless gateway (same as programming consoler -- wireless consoler or wire consoler), the wireless gateway is automatically join the network of UFH system of community.

The programming setting data is transmitting from consolers to controller driver, a control device embedded with DIN rail switch, and to centralize the control of motorized valves and relays to be on and off, enable the hat water start or stop running through the rooms for heating up or cooling down.

Driver for central control of heating

A controller driver is a coordinator among zigbee network, a control device integrated with DIN rail switch. How many valves (motor valves) and the way of control depend on the installation plan. Each valve is assigned to particular room. To initiate the valves in driver, installer need to press each button on the switch to link (bind) with consoler.

Without Driver control

The programming consoler can directly control each independent valve to be ON or OFF by sensing the temperature data without controller driver. It depends on heating installation plan for the building or house.

Wireless gateway for internet access
G200

User can set the program for wireless consoler or wire consoler remotely from internet via a home gateway, and the setting data can be transmitted back and forth among each consoler node and gateway for user to review by internet. I.e. Wireless gateway is a portal for internet access to home enabling to control heating, security, and lighting appliances. Gateway is automatically joined the 2.4G zigbee network and acts as central management of home automation as per user consoler's schedule programming setting.

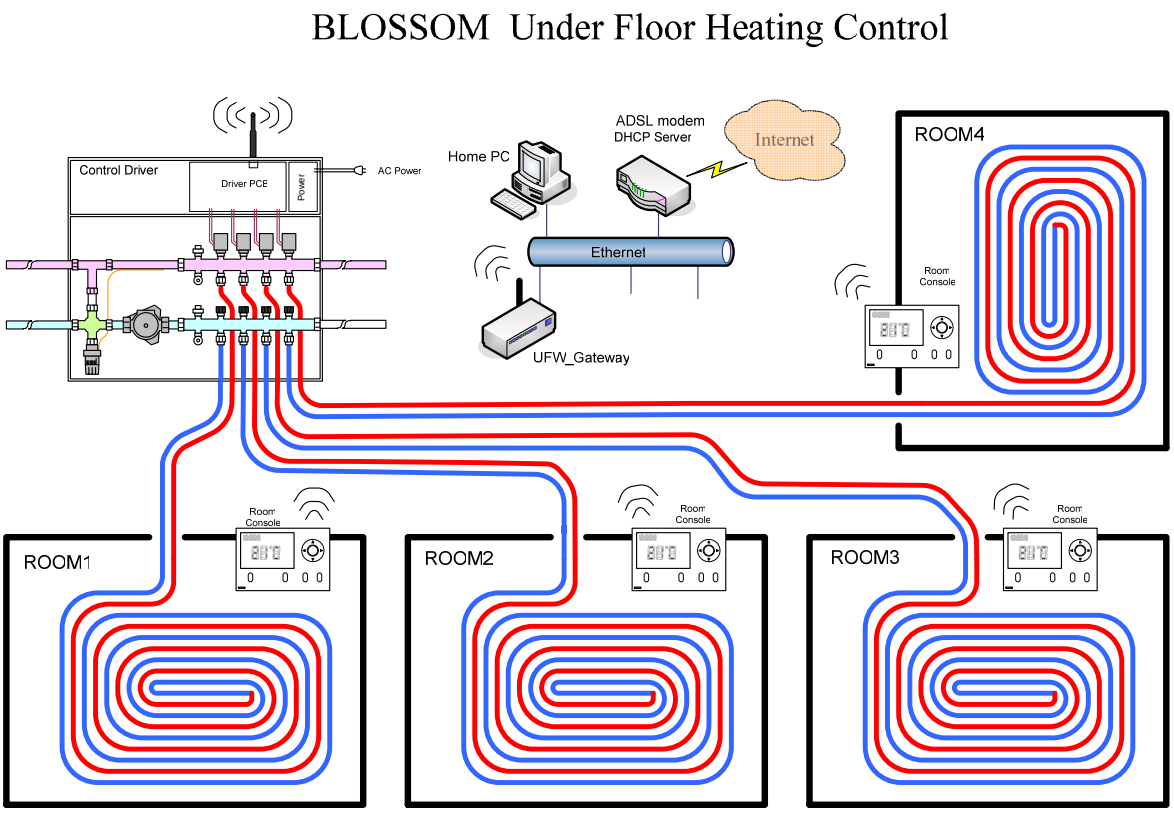
User use website to set the programming setting

The wireless gateway connects to user home broadband network. Each home user can be assigned a user name and password to access his home programming setting within his community via internet remotely. The each webpage operation is depicted as the next section.

Customize each own home automation with accessories

Its not only for user to browse the home heating programming setting and view the current setting and current temperature from web browser. The wireless gateway also provide the portal for the home management of add-on control in security, light appliance control with the same module embedded. Wireless consoler and wire consoler also act as the display panel for these add-on control accessory devices (for example, the light switches, the security sensor, the plug in light modules, etc .) Installer can customize the best life style (home automation) and appliances combination for personal installation.

The System application concept diagram : consolers (wireless /wire) – controller driver – gateway



Wireless Gateway Operation Menu :

Gateway keypad:

- **DEFAULT** key: by pressing DEFAULT key, the gateway reset to the factory default.

- **NETWORK** key: by pressing NETWORK key, the gateway join into UFH system. The default is without to press this key when gateway is power on.

- **REGISTER** key : by pressing REGISTER key, the gateway allows consolers to register with it within 30 seconds.

Gateway defaults with the following parameter:

Fix IP: 192.168.160.1, it depends on user to change into DHCP as user demand.

User Name: admin

Password: admin

User can change the gateway defaults as per demand.

Led Indicator

- Power led: the led is lighted upon power on.
- Internet led: when gateway join the network, the internet led is lighted on. And when gateway receive data from consolers, this led is flashing too.

Connector

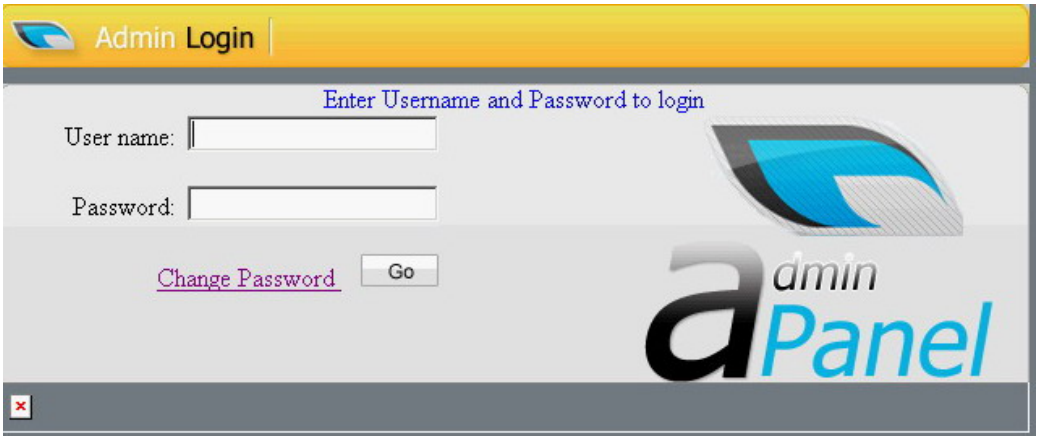
- Power Jack: this is to plug with power adaptor.
- LAN Jack :

The operation via internet

User goes to web page by the default IP address upon plug in the gateway with power adaptor, then he can start to set his program to each room consoler or to view each room consoler data via internet.

The steps are:

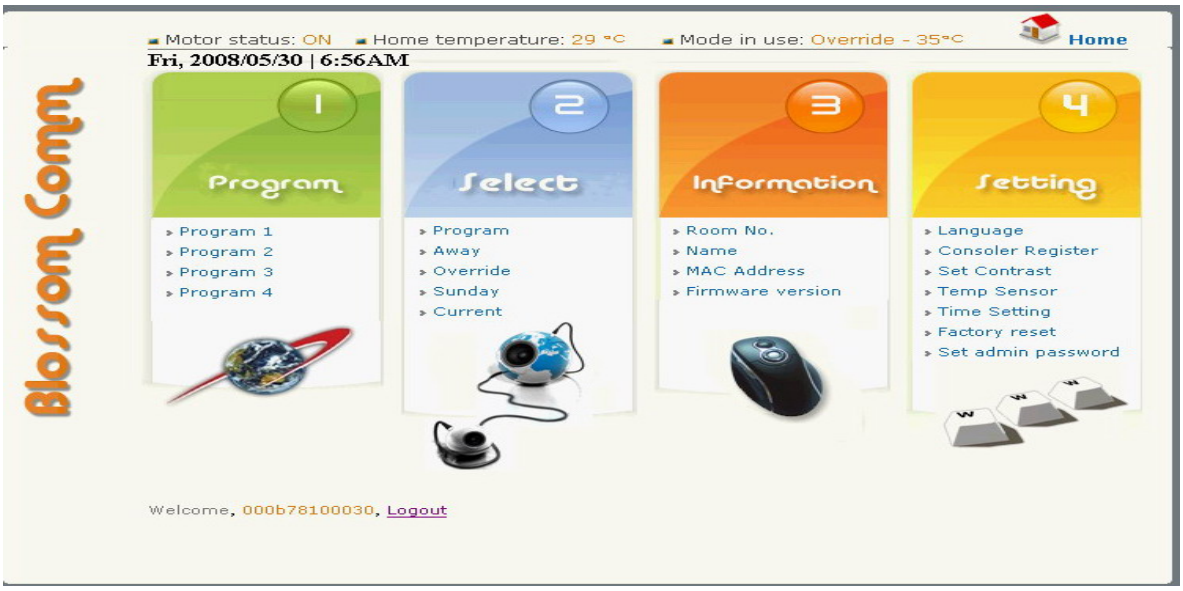
1. Fill in the defaulted user name and password, as below pages,



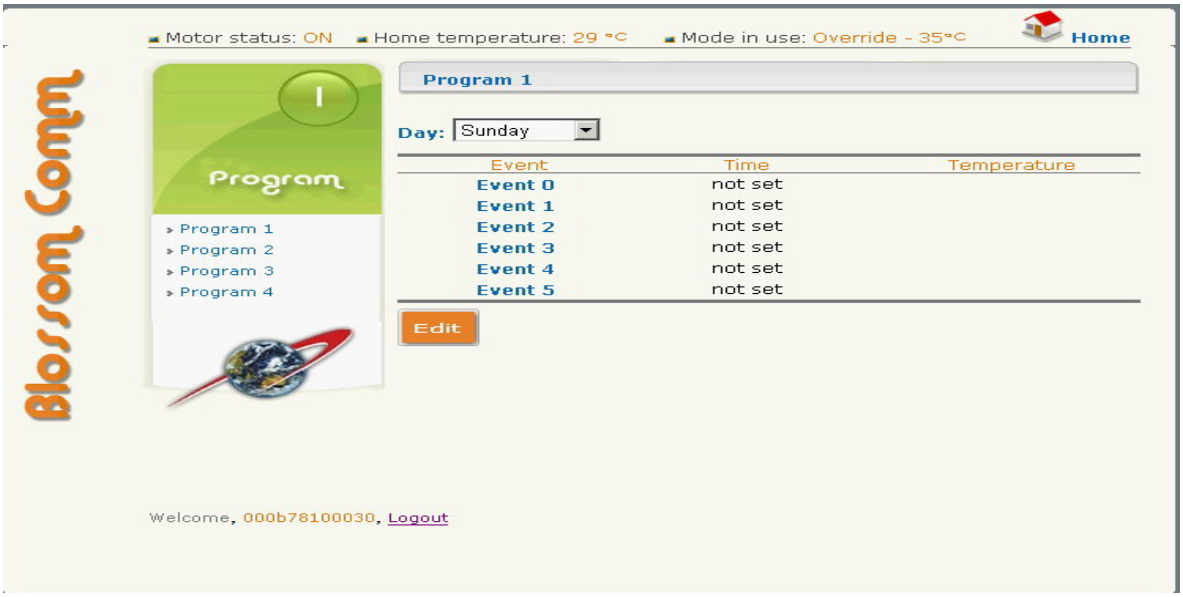
2. All the consolers in community displayed, click the consoler to enter,

3. To enter into the consoler user want to go,

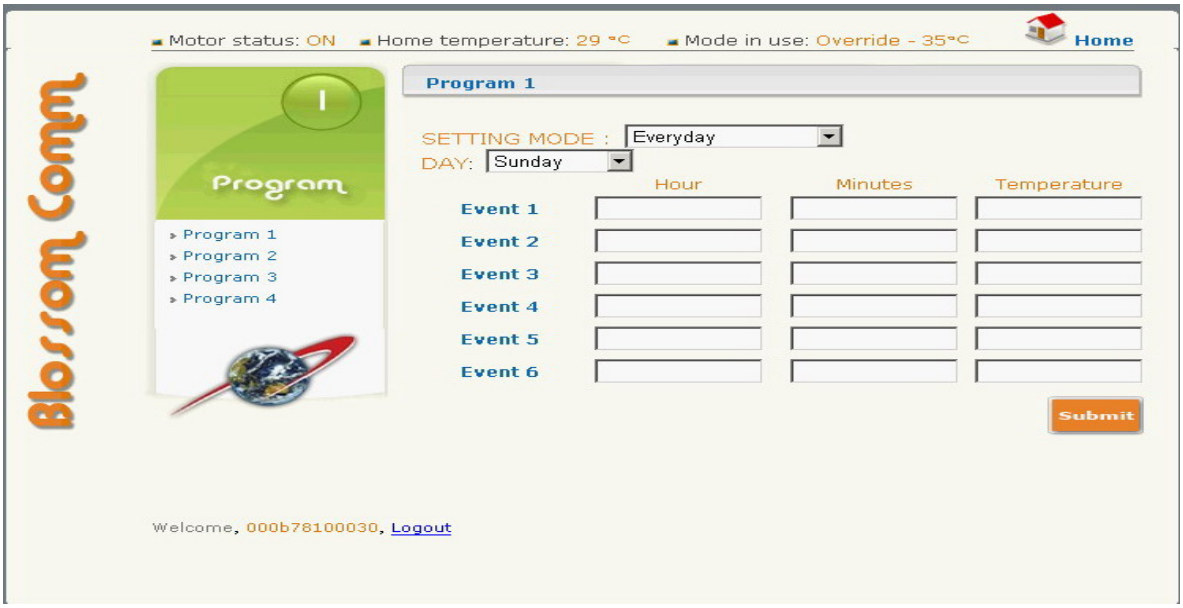
4. To choose the function from the consoler menu (front page),



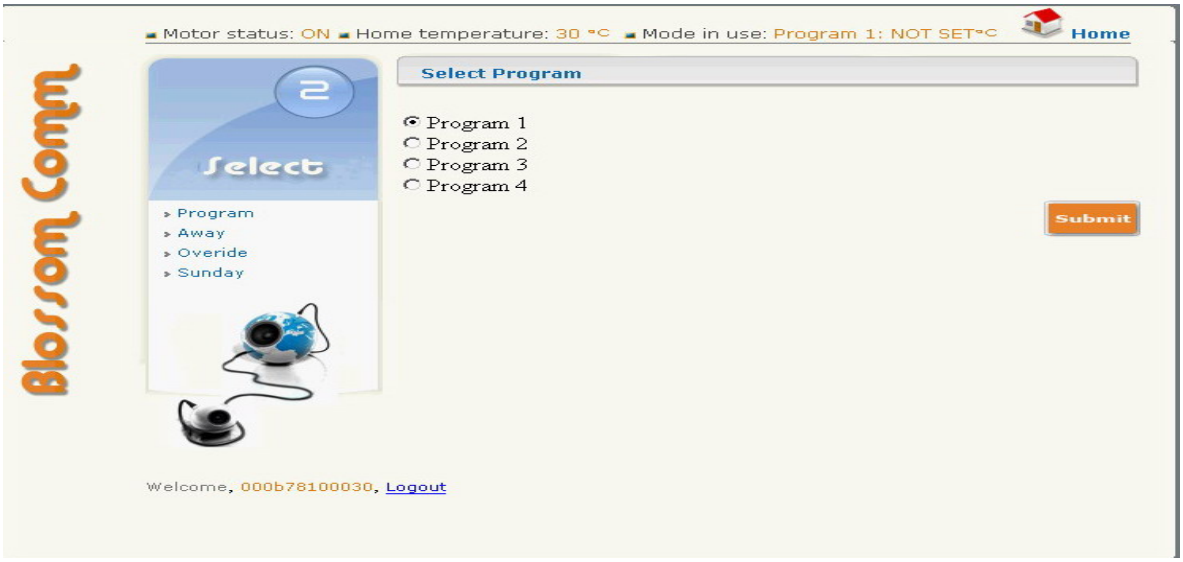
5. To set event data on the selected program



6. To fill in each event data (time and temperatures),

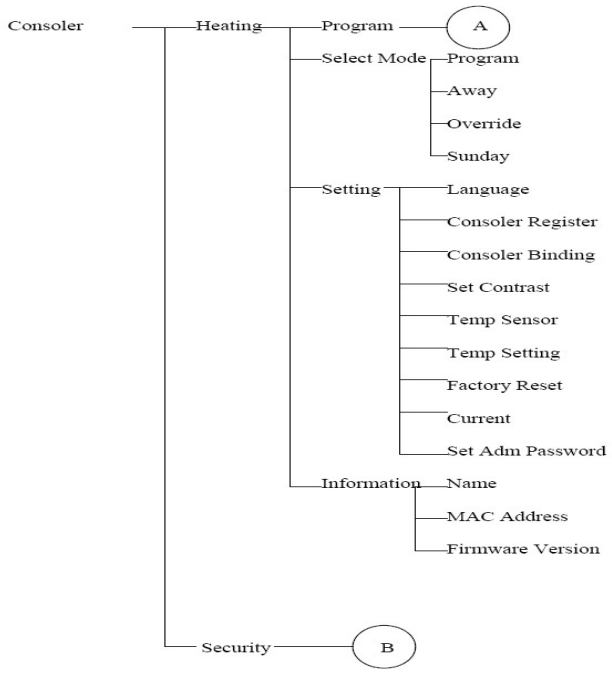


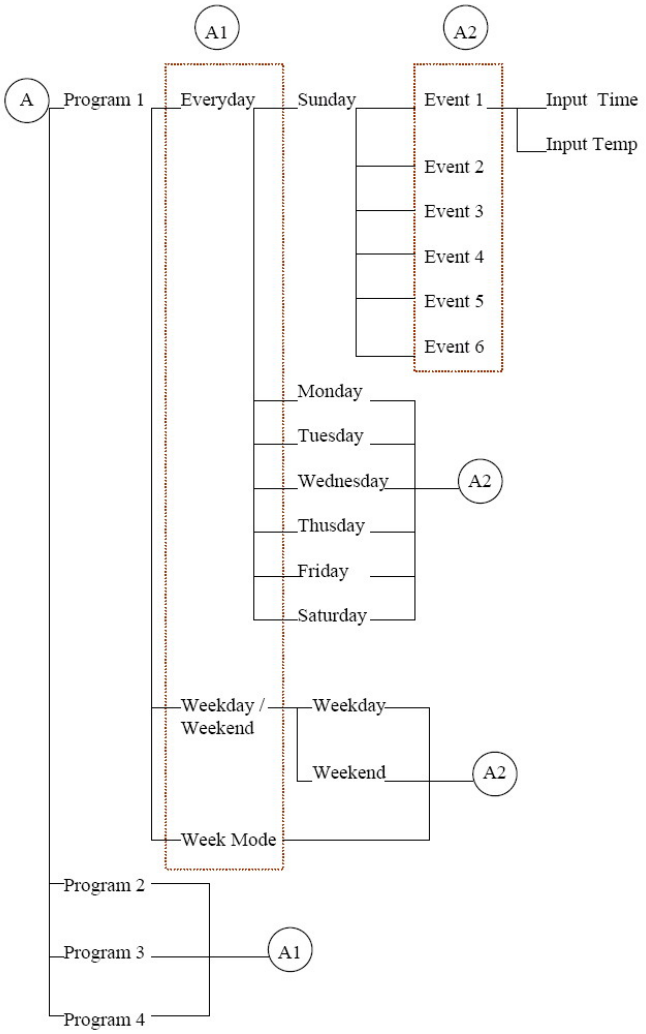
7. To run the saved program,

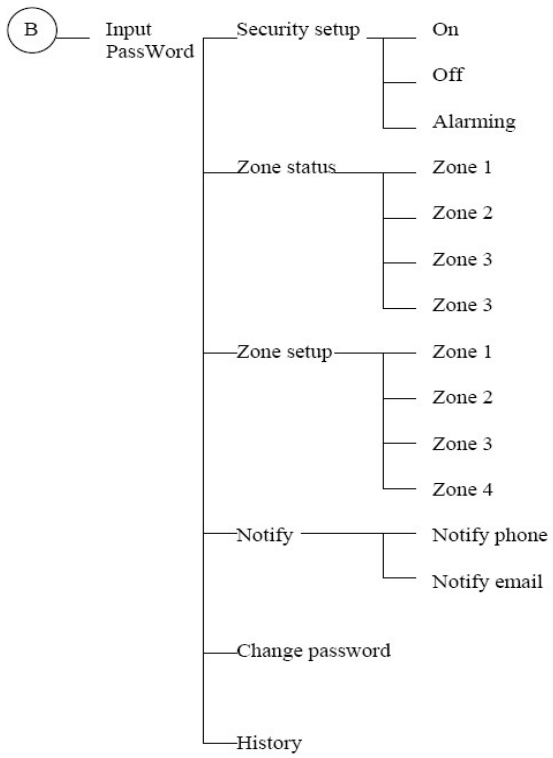


8. To run other function like AWAY mode,

The overall webpage menu structure are like below :







System Program Mode & Setting :

System program structure:

The consoler system program runs as week base, i.e., it runs setting program by week, and system repeat the setting program to the next week automatically unless user to change the setting.

System allows user to make and save up to 4 normal programs, depend on the outdoor whether /seasonal environment changes.

When the seasonal changes, you might feel to adjust the setting program to meet your indoor environment air temperature. You can save the adjusted setting program into another program, for example, save it into Program 2.

System program: there are as below, user can set below program:

0. **Normal Program 1**

1. **Normal Program 2**
2. **Normal Program 3**
3. **Normal Program 4**
4. **User Sunday mode (Sunday)**
5. **User Override mode (Override)**
6. **User Away mode (Away) :** system defaulted at 6 degree C.

When system is running the program, the consoler front page is displaying the heat running , the target temperature and current room air temperature.

The system also features several overrides of normal program. It allows user to change the normal program temporarily, adjusted by user on the moment as per his need. These are: User Sunday mode, User Override mode, User Away mode (frost protection). These are on top of normal programs until the system time out and it resume back to the normal program.

Normal Program :

User to set the normal program by 3 approaches. User choose one of approach from below:

- Everyday (7-day) set
- 5/2 set
- Week set

To choose the approach depends on user daily life with whether condition, either one of the three as below can be chosen,

1. By every day set (7-day set) : user make every day setting for the program.
2. By 5/2 day set: user make weekday and weekend setting.
3. By week set: user make one set for whole week.

Setting – each setting per day is allowed up to 6 events (time and temperature) to be saved :

- **EVENT 1**
- **EVENT 2**
- **EVENT 3**
- **EVENT 4**
- **EVENT 5**
- **EVENT 6**

Below is the example of the 6 events for everyday (7-day) setting in a week :

Program 1: Setting table: 7 -Day Setting

PR01	MO		TU		WE		TH		FR		SA		SU	
Event	Time	TempC	Time	Temp C	Time	Temp C	Time	Temp C	Time	Temp C	Time	Temp	Time	Temp
1	06:30	20	06:30	20	06:30	20	06:30	20	07:00	20	07:00	20	07:00	20
2	08:30	15	08:30	15	08:30	15	08:30	15	16:00	21	16:00	21	16:00	21
3	11:30	20	11:30	20	11:30	20	11:30	20	23:00	15	23:00	15	23:00	15
4	13:30	15	13:30	15	13:30	15	13:30	15	00:00	15	00:00	15	00:00	15
5	16:30	21	16:30	21	16:30	21	16:30	21	01:00	15	01:00	15	01:00	15
6	22:30	15	22:30	15	22:30	15	22:30	15	01:59	15	01:59	15	01:59	15

The 6 events per day setting can be made by everyday (daily) base, by weekday & weekend base, by week base.

The way to set and use programmable consoler is to find the temperature settings you are comfortable with at the different times you have chosen, and then leave it alone to do the job. There are 6 events of setting per day for user to set the temperature he need at his schedule time, and user can make different setting in everyday of week. User can make same setting in weekday and make another setting in weekend, or make all the same setting for whole week.

The consoler system runs as per event setting on a day. The system allows user to set 6 events maximum per day, of course, user can set less than 6 events per day.

System pre-set at Program 1

The system is pre-set the program 01 as the setting in above table. When user starts to use the consoler, he may use this setting or go to change the setting as his need. But most of case is user go changing the setting as per his need. Upon user has done the programming setting of the week, he has to save the setting into a program with a program indicator, for example, P1.

The way to set and use programmable consoler is to find the lowest temperature settings that you are comfortable with the time, and then turn up or down by one degree each day in a week until you are comfortable with the temperature, then you save into another program indicator, example P 2.

User Override Mode

The programmable consoler features the user overrides on top of the running normal program. The overrides allow user to temporarily change temperature running in the program, or to change the set time running in the program. The system resumes back to normal running program automatically once the override is due.

The User Override situation are like this:

1. Override Temperature: this is to temporarily increase or decrease the current programmed temperature until the next event start.

2. Override Time: this is to temporarily extend the current event to last all day.

User Sunday Mode

The programmable consoler features the User Sunday mode on top of the running normal program. It allows user to temporarily use Sunday(or weekend) setting program for the current time. The system resumes back to normal running program automatically at 2:00AM.

The User Sunday mode is like you have a day holiday or are off sick today and you want to use the normal Sunday setting program now.

User Away Mode

The User Away mode is to control the temperature at a constant low temperature, i.e., 6 degree C while user is away from home. There are two purposes for AWAY mode, one is for energy saving when user are not at home. The other purpose is frost protection.

The system is defaulted at 6 degree C. User can change the degree from setting of the program.

System standby:

the standby mode is without running the program, the consoler just displays current clock, air temperature, the set temperature if system have it, or set temperature isn't displayed if system haven't it.

User click off the program (the click icon, from the icon: ⊙, to become empty: ◯) from SELECT menu, then system is stopped to run the heating program.

The SELECT MENU (To run system program):

To run the system program,

1. user click SELECT on Menu (front page),
2. user click the program he want to run : Program 1, Program 2, Program 3, Program 4, Sunday mode, Override mode, Away mode, and SUSPEND (for temporarily stop

running any program).

3. While the system is running the program, user stop the program running by click off item from SELECT menu, the system heating is OFF and return to standby situation.

4. While the system is running the special program (override mode, away mode, Sunday mode), user stop the program before its time out by click off the OVERRIDE again (to stop override mode/Sunday mode) , or AWAY key (to stop AWAY mode).

To run the Overrides while in normal program

To run the overrides,

Under running program,

1. To click on the Override mode, the icon Override is displaying at consoler front page,
2. then pick up the one by click from : Override mode 1 / Override mode 2/ Sunday mode,
3. The system is time out for the override automatically.

To release the Overrides back to normal program

1. The override is automatically time out.
2. You can click off the Override again to release the override before its time out.

To Run the Sunday mode,

To run the Sunday mode,

Under running program,

1. to click on the Sunday mode, the icon Sunday is displaying at consoler front page,
2. The Sunday mode is automatically time out at 2:00 AM.

To release the Sunday mode back to normal program

3. The Sunday mode is automatically time out.
4. You can click off Sunday mode again to release Sunday before its time out.

To run Away mode

The Away mode is to control at a constant low temperatures for two purposes:

1. To maintain a constant low temperature for fronts protection purpose.

2. User are away from home (to the saving energy), returning to the normal program setting when he comes back.

Under running program,

1. To click on AWAY mode, the icon Away and 6 degree C is displaying at consoler front page,
2. the system runs constant low temperature at 6 degree C.
3. user can click off AWAY mode again to release Away .

To release the Away mode back to normal program

The Away mode can't be automatically resumed back to normal program until user to make it.

User click off AWAY mode to release AWAY and resume the normal program.

Consoler General Setting

The general setting for consoler includes:

- **Language**:
  English, Chinese , Spanish (as version 1), English simple Chinese, Spanish (as version 2).
- **Consoler register** :
  (1) this is to register the consoler with gateway (gateway is coordinator among zigbee network) . The current design is the consoler power on, it automatically registered with gateway.
  (2) The consoler ID is automatically assigned by zigbee network system.

- **Consoler Binding** :
  (1) this is the particular consoler to link or to pair with the particular valve of driver.
  (2) When installer to make binding between consolers and driver, click every consoler to binding menu,
  (3) Then Installer need to physically press each assigned button for the room (which is assigned to the particular valve control) from switch box (DIN rail switch) until the switch box led is lighted on.

- **Sensor ON/OFF :**
  (1) this is to set particular sensor ON or OFF
  (2) to click on sensor ON or OFF,

- **Temperature degree C/F:**
  (1) this is to set temperature degree C or degree F,
  (2) by click on degree C or degree F.

- **Factory Reset:**
  (1) this is to go back to original factory defaulted values.
  (2) To click Reset Yes or No.

- **Clock Set :**
  (1) This is to set date/week/hour/minutes/AM or PM,
  (2) Fill in the time data,

Note: When all the setting data are done, make sure to press NETWORK button from gateway.

Federal Communication Commission Interference Statement

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation.

This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

FCC Caution :To assure continued compliance, any changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate this equipment. (Example - use only shielded interface cables when connecting to computer or peripheral devices).

FCC Radiation Exposure Statement

This equipment complies with FCC RF radiation exposure limits set forth for an uncontrolled environment. This equipment should be installed and operated with a minimum distance of 20 centimeters between the radiator and your body.

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions:
(1) This device may not cause harmful interference, and (2) This device must accept any interference received, including interference that may cause undesired operation.