



## F459 – Driver for HVAC

HVAC indoor units management through MyHOME Temperature control system

# Features & Installing details

# 1 – The solution

## 1.1 – Object

To manage **HVAC** (Heating Ventilating (and) Air Conditioning) heating and cooling indoor units through MyHOME standard Temperature control system, solution based on Legrand **MYHOMESERVER1** device (or MyHOME 99zones Control unit), MyHOME probes and actuators (optional).

The solution allows the association of a MyHOME temperature zone to one (or a group) HVAC indoor unit in order to transfer the following settings :

- Set-point
- Operating mode and Power-ON
- Fan speed

by activating the operating status indicator of the probe.

Moreover, it is possible to gather MyHOME actuators (i.e. used for Radiant Panels, with ON/OFF valves management) and HVAC indoor units, to be managed through a single MyHOME temperature zone, in "combined" mode.



## 1.2 – Prerequisites

#### MyHOME system

Legrand MYHOMESERVER1 device (or MyHOME 99 zones Control unit), MyHOME probes, MyHOME actuators (if present); correctly installed, configured and ready to work.
 Standard rules of installation and configuration of the MyHOME Temperature control system, configuration values according to the typology of the system.
 It is matter of the System Integrator to achieve this part, with Legrand subsidiary local support.





• SCS Driver manager device (ref. Legrand **F459**), connected to the SCS BUS and to the Ethernet network.

Connection to the SCS BUS of the MyHOME Temperature control system (private riser) and to the LAN (settings of the own IP address). Standard rules of Ethernet network. It is matter of the System Integrator to achieve this part, with Legrand subsidiary local support.

• (Optional) Modbus-IP/Modbus-RTU converter (ref. BTicino **PM1AC** or Legrand **004689**), connected to the Ethernet network.

Only if required by the solution. Connected to the LAN (settings of the own IP address) and to the Modbus-RTU line. Standard rules of Serial-RTU line (RS485). It is matter of the System Integrator to achieve this part.

#### **HVAC** installation

• The HVAC system has to be arranged to be managed by a BMS controller (Legrand MyHOME).

HVAC system arrangement according to the rules of installation defined by the HVAC producer. The MyHOME temperature control system will be the end-user interface for zone management, therefore the HVAC thermostats are no longer needed. The operating temperature will be measured by the MyHOME probe placed on field, cause it the value may differ from the one measured by the HVAC probe (built-in the indoor unit). If the difference of the two values is over +/-4°C (i.e. in cases of ducted and/or flush-mounted HVAC indoor units), it is advisable to adopt the remote HVAC probes placed close to the MyHOME probes on field.

It is matter of the HVAC installer to check this part and define the correct solution to adopt.

 HVAC heating and cooling indoor units, correctly installed, configured and ready to work. Connection to the HVAC system and configuration, according to the rules of installation defined by the HVAC producer.
 It is matter of the HVAC installer to check this part and define the correct colution to adopt

It is matter of the HVAC installer to check this part and define the correct solution to adopt.

• HVAC IP gateway or Modbus-IP gateway or Modbus interface, proper quantity to the number of units to be controlled, connected to the Ethernet network.

*Connection to the HVAC system and configuration, according to the rules of installation defined by the HVAC producer.* 

Some solutions give possibility to use different references as per HVAC gateway, it is matter of the HVAC installer to check in advance the number and type of the necessary HVAC gateways and/or interfaces in relation to the topology of the system, therefore connect and configure them accordingly.

• HVAC wired thermostat and/or IR remote controllers must be disconnected or inactive.

#### **Infrastructure**

 Ethernet network configured to connect the SCS Driver manager device and the HVAC IP gateway or Modbus-IP gateway or Modbus interface, with univocal IP addresses (static IP function, or predefined values inside DHCP router function. *Standard rules of Ethernet network.*

It is matter of the System Integrator (and/or Network manager) to achieve this part.

• (Commissioning service) (Optional) Active and powerful Internet connection, configured to allow the remote connection with the plant and/or a PC connected to the same LAN of the system integrated. *Standard rules of Ethernet network.* 

It is matter of the System Integrator (and/or Network manager) to achieve this part.





## **1.3 – Installation scheme**

Examples of a single-apartment application with 2 controlled zones :





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## 1.4 – Features

The proposed implementation is based on Driver Framework for SCS Driver manager device (ref. Legrand **F459**) and it consists in the release of a Driver that communicate with the MyHOME Temperature control system and allows, through a web pages interface, to define for every controlled zone :

- Address of the associated HVAC indoor unit.
- Type of probe available (with or without FAN adjustment).
- Configuration of the supported operating modes (Heating, Cooling or both).
- Management of the operating status indicator of the probe.
- Air flow direction adjustment: Automatic (no Driver intervention) or Pre-defined (different position for Heating and Cooling operating modes).

In addition, general options of :

- Temperature range within which modulate the fan speed, of the available ones on HVAC, when the probe is set to the "Automatic speed" mode.
- Operating mode when the MyHOME probe is set to the "Thermal protection" mode (Switch-OFF the unit or activation of the automatic mode with thermal protection as a set-point value).
- Operating mode when the set-point is reached (turn OFF the unit, set AUTO mode, set LOW fan speed, no action).

The Driver will communicate through the network, in standard protocols (preferential Modbus), with one HVAC gateway or "Modbus-IP/Modbus-RTU converter".

The MyHOME Temperature control system will be the end-user interface for zone management and so HVAC controllers (wired thermostats or IR controllers) are no longer needed.

The proposed management works in the way that all the settings/commands (mode, set-point, fan speed) of the MyHOME Temperature control system are periodically sent to the HVAC system, therefore any setting/command sent from the local HVAC controllers (if still present) will be over-written in the next MyHOME sending.

The operating temperature will be measured by the MyHOME probe placed on field and so the value may differ from the one measured by the HVAC probe (built-in the HVAC indoor unit). If the difference of the two values is over +/-4°C (i.e. in cases of ducted and/or flush-mounted HVAC indoor units), it is advisable to adopt the remote HVAC probes placed close to the MyHOME probes on field. The Driver will compare the two measurements in order to compensate the set-point value.

The operating status indicator (colored LED or graphic icon) of the MyHOME probe is managed by the Driver through configuration of the zone operating mode as "gateway". The operating status indicator will be aligned to the achievement of the set-point and not to real indoor unit working condition.

Two working modes available, also different for Heating and Cooling functions if required:

- "Only Driver": Heating and/or Cooling functions only through HVAC indoor units.
- "Driver & MyHOME": HVAC indoor units used to support another system, in example Radiant Panels (ON/OFF Valves) (Refer to the chapter 2.4 Example 4).

In "Driver & MyHOME" mode the Driver manages automatically the two systems involved, with functional features as follow :

- **1.** If required a new set-point: both systems (HVAC and Radiant Panels) start immediately.
- **2.** Close to the reaching of the set-point: the HVAC decreases its support (decreasing the fan-speed), meanwhile the Radiant Panels continues to work.
- **3.** Reaching the set-point: the HVAC turns off, to leave at the Radiant Panels the maintenance of the required temperature level.





Advantages of this combined mode, in terms of Comfort :

- Quick reaction of the system to speed up the reaching of the set-point.
- Noiseless system in maintenance condition.

#### And, in terms of Saving :

- The HVAC is more performance in transitory condition.
- The Radiant Panels are more performance in static condition.

### **1.5 – Solution components**

The proposed solution consists of the following items, all included in a package to install on the SCS Driver manager device (ref. Legrand **F459**) :

- XML system file containing all the parameters mentioned in the proposal.
- Web pages interface for XML configuration.

### 1.6 – Additional details

This solution DOES NOT MANAGE anything not specifically mentioned in the previous chapters, in detail :

- The local commands sent by HVAC wired or IR controllers (if present).
- The HVAC operating modes VENTILATION, DRY, AUTO (if available).

Moreover, as regards the HVAC system :

 According to HVAC system operating features, in some cases the HVAC indoor unit needs to work (fan only) after the set-point achievement also. Through variable settings of the "set-point reached" operating mode, it is possible to manage all the HVAC system conditions.





# **2** – MyHOME configuration settings

## 2.1 – EXAMPLE 1 - Single apartment, two controlled zones

#### 2.1.1) Required management functions

#### Heating function : Not required

<u>Cooling function</u> : HVAC indoor units



### 2.1.2) Summing up table

	Probe		Actuators									
Zone	Za - Zb	Item code	Status	Za - Zb	N°	Type of load	Function	Description				
Living room	0-1	None	Virtual	0-1	1	Gateway	Cooling	Actuator emulated by the Driver on F459				
Bedroom	0-2	None	Virtual	0-2	1	Gateway	Cooling	Actuator emulated by the Driver on F459				

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## 2.1.3) Probes

#### *If present MyHOMEServer1*

Configure probes by MyHOME\_Up App.

- Add into the desired room a "Thermostat object"
- Start the procedure "Wizard Thermo"
- Select the type of system  $\rightarrow$  Cooling
- Associate the thermostat  $\rightarrow$  Live procedure
- Cooling / Select the type of load to control  $\rightarrow$  Gateway
- Pump Cooling  $\rightarrow$  NO selection

Za-Zb values (SCS addressing of the Temperature zone) has been automatically defined by the MyHOME Server. To know them it is mandatory to connect a PC to the network where is present the MYHOMESERVER1 device, using a browser type the MyHOMEServer1 IP address and indicate the 3443 connection port (e.g. 192.168.0.158:3443). In alternative, use MyHOME\_Suite software, "BUS scanner" function.

#### *If present 99zones Control unit*

Configure the probes by MyHOME\_Suite or with physical configurators.

- Probe in the Living room  $\rightarrow$  0-1 (Za-Zb)
- Probe in the Kitchen  $\rightarrow$  0-2 (Za-Zb)

In the picture a MyHOME\_Suite example of a "Thermostat with display" probe configuration.

Configuration			¢ ×				
Advanced confi	guration						
Description	Living ro	om	ID				
Module enabled	Yes	•					
Function	Master p	robe 🔹	Zone 1				
Plant type	Cooling	•	Number of slave probes				
Plant settings	Set point	Loads and pumps	Regulation band Contact management User interface				
Heating ON/C	System DFF	type	Cooling System type Gateway				
Actuators Add C Function Cooling only		Delete 🐼	Pumps Add  Delete  Function N°				
Configuration	Bus Scanne	er Network search					

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### 2.1.4) 99zones Control unit

Configure the zones in the 99zones Control unit using MyHOME\_Suite or its own menu.

- Both zones have only Actuator "N° 1"
- Cooling Function
- Type of Load for Heating and Cooling is "Gateway"

System		Add zone	Copy zone Cancel zone	
Living room	Θ	Actuators		
Pumps		Actuator No. 1	Cooling function	
Bedroom		Actuator No. 2	No	
Pumps		Actuator No. 3	No	
		Actuator No. 4	No	-
		Actuator No. 5	No	-
		Actuator No. 6	No	=
Control unit		Actuator No. 7	No	-
Sensors		Actuator No. 8	No	-
Automations Programs		Actuator No. 9	No	-
Weekly programs     Scenarios	Θ	Types of load		
Holiday/weekend progr.		Type of load for heating	Gateway	
		Type of load for cooling	Gateway	~
	Zor	e 1 - Living room		

#### 2.1.5) Notes

- The HVAC addressing of the unit/zone has to be defined by the HVAC designer/installer.
- A virtual actuator must be always the first, so actuator "N° 1".
- The Driver manages **Cooling** functions.





2.2 – EXAMPLE 2 - Single apartment, two controlled zones

#### 2.2.1) Required management functions

Heating function : HVAC indoor units

**<u>Cooling function</u>** : HVAC indoor units



#### 2.2.2) Summing up table

	Probe		Actuators									
Zone	Za - Zb	Item code	Status	Za - Zb	N°	Type of load	Function	Description				
Living room	0-1	None	Virtual	0-1	1	Gateway	Heating Cooling	Actuator emulated by the Driver on F459				
Bedroom	0-2	None	Virtual	0-2	1	Gateway	Heating Cooling	Actuator emulated by the Driver on F459				

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### 2.2.3) Probes

#### If present MyHOMEServer1

Configure probes by MyHOME\_Up App.

- Add into the desired room a "Thermostat object"
- Start the procedure "Wizard Thermo"
- Select the type of system → Heating and cooling
- Associate the thermostat  $\rightarrow$  Live procedure
- Heating and cooling / Select operating mode of the actuator (...)  $\rightarrow$  Heating and cooling load
- Heating and cooling / Select the type of load to control  $\rightarrow$  Gateway
- Pump Heating and cooling  $\rightarrow$  NO selection

Za-Zb values (SCS addressing of the Temperature zone) has been automatically defined by the MyHOME Server. To know them it is mandatory to connect a PC to the network where is present the MYHOMESERVER1 device, using a browser type the MyHOMEServer1 IP address and indicate the 3443 connection port (e.g. 192.168.0.158:3443). In alternative, use MyHOME\_Suite software, "BUS scanner" function.

#### *If present 99zones Control unit*

Configure the probes by MyHOME\_Suite or with physical configurators.

- Probe in the Living room  $\rightarrow$  0-1 (Za-Zb)
- Probe in the Kitchen  $\rightarrow$  0-2 (Za-Zb)

In the picture a MyHOME\_Suite example of a "Thermostat with display" probe configuration.

Configuration							φ×
Advanced config	guration						
Description	Living ro	om	ID				
Module enabled	Yes	•					
Function	Master p	robe 🔻				Zone	1
Plant type	Heating &	& cooling 🔹 👻			Numbe slave p	er of probes	0
Plant settings	Set point	Loads and pumps	Regula	ation band	Contact man	agement	User interface
Heating			Cooling				
	System	type	System type				
Gate	way	•	Gateway -				
Actuators				Pumps			
Add 🤅		Delete 🐼		Ade	d 🕒	Dele	ete 🔕
Function		N°		Function		N°	
Heating and	Heating and cooling 1						
							]
							<b>«</b>
Configuration E	Bus Scanne	er Network search					





### 2.2.4) 99zones Control unit

Configure the zones in the 99zones Control unit using MyHOME\_Suite or its own menu.

- Both zones have only Actuator "N° 1"
- Heating and Cooling Function
- Type of Load for Heating and Cooling is "Gateway"

System 🔺		Add zone	Copy zone Cancel zone							
Zone		Actuators	Actuators							
Pumps		Actuator No. 1	Heating function + cooling							
Bedroom     Actuators		Actuator No. 2	No							
Pumps		Actuator No. 3	No							
		Actuator No. 4	No							
		Actuator No. 5	No							
Control unit		Actuator No. 6	No	≡						
Parameters		Actuator No. 7	No							
<ul> <li>Sensors</li> <li>Automations</li> </ul>		Actuator No. 8	No							
Programs		Actuator No. 9	No							
Weekly programs     Scenarios	Θ	Types of load								
🗄 🖷 🙀 Holiday/weekend progr.		Type of load for heating	Gateway							
		Type of load for cooling	Gateway	~						
	Zon	e 1 - Living room								

#### 2.2.5) Notes

- The HVAC addressing of the unit/zone has to be defined by the HVAC designer/installer.
- A virtual actuator must be always the first, so actuator "N° 1".
- The Driver manages **Cooling** and **Heating** functions.





## 2.3 – EXAMPLE 3 - Single apartment, two controlled zones

#### 2.3.1) Required management functions

Heating function : Floor Heating (ON/OFF valves)

**Cooling function** : HVAC indoor units



#### 2.3.2) Summing up table

	Probe		Actuators								
Zone	Za - Zb	Item code	Status	Za - Zb	N°	Type of load	Function	Description			
Living	0.1	None	Virtual	0-1	1	Gateway	Cooling	Actuator emulated by the Driver on F459			
room	0-1	F430/x	Physical	0-1	2	ON/OFF	Heating	ON/OFF valve management			
Podroom	0.2	None	Virtual	0-2	1	Gateway	Cooling	Actuator emulated by the Driver on F459			
Bedroom	0-2	F430/x	Physical	0-2	2	ON/OFF	Heating	ON/OFF valve management			

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## 2.3.3) Probes & Actuators

#### If present MyHOMEServer1

Configure probes by MyHOME\_Up App.

- Add into the desired room a "Thermostat object"
- Start the procedure "Wizard Thermo"
- Select the type of system → Heating and cooling
- Associate the thermostat  $\rightarrow$  Live procedure
- Heating / Select the type of load to control  $\rightarrow$  ON/OFF value
- Heating / Associate the actuator (...)  $\rightarrow$  Live procedure
- Pump Heating  $\rightarrow$  Follow the procedure to configure the Pump, if required
- Cooling / Select the type of load to control  $\rightarrow$  Gateway
- Pump Cooling  $\rightarrow$  NO selection

<u>ATTENTION</u>: It is now required to modify some actuator parameters, procedure feasible with use of MyHOME\_Suite software only, in detail :

- Use the "BUS scanner" to upload configuration of the probe (Picture 1)
- Modify actuators parameters "N°" <u>only</u> (Cooling = 1 Heating = 2) (Picture 2)
- Send the new configuration to the probe
- Use the "BUS scanner" to upload configuration of the actuator (Picture 3)
- Modify actuator parameter "Device number" only (Device number = 2) (Picture 4)
- Send the new configuration to the actuator

	4 X	Configuration	ΨA
Advanced configuration		Advanced configuration	
Description Living room	ID	Description Living room	ID
Module enabled Yes -		Module enabled Yes	
Function Hotel thermostat	Zone 1	Function Hatal thermestat	7000 1
	Number of		Number of
Plant type Heating & cooling +	slave probes 0	Plant type Heating & cooling -	slave probes
Plant settings Set point Loads and pumps R	Regulation band Contact management User interface	Plant settings Set point Loads and pumps Regulation band Co	ontact management User interface
Heating	Cooling	Heating Cooling	
System type	System type	System type	System type
ON/OFF •	Gateway	ON/OFF Ga	teway 🔹
	Automatic changeover	Automatic cha	ngeover
Actuators	Pumps	Actuators Pumps	
Add 🛟 Delete 🔕	Add 🕣 🛛 Delete 🐼	Add 🛟 Delete 🔕 Add	Delete 🔕
	Eustion Nº		NIR
Hunction N°		Function Nº	
Leating only 1 Cooling only 2		Looling only 1 Heating only 2	
Configuration Rus Scanner, Network search		Configuration Pus Scapper Network search	<b>I</b>
Configuration Bus Scanner Network search		Configuration Bus Scanner Network search	
Configuration Bus Scanner Network search	<b>₽</b> ×	Configuration Bus Scanner Network search	€ ×
Configuration Bus Scanner Network search Configuration	₽ × Module 1 ■ Module 2	Configuration Bus Scanner Network search Configuration	₽ x uie 2
Configuration Bus Scanner Network search Configuration	A X Module 1 Module 2	Configuration Bus Scanner Network search Configuration	₽ × ule 2
Configuration Bus Scanner Network search	A X Module 1 Module 2	Configuration Bus Scanner Network search Configuration Advanced configuration Module 1 Module 1	₽ × ule 2
Configuration Bus Scanner Network search	A X Module 1 Module 2	Configuration Bus Scanner Network search Configuration Advanced configuration Module 1 Module 1 Module 1 Module enabling Yes	₽ × ule 2
Configuration Bus Scanner Network search Configuration Advanced configuration	A × Module 1 Module 2	Configuration Bus Scanner Network search Configuration Advanced configuration Module 1 Module 1 Module 1 Module enabling Yes Function type Temperature control on/off act	₽ × ule 2
Configuration Bus Scanner Network search Configuration Advanced configuration Module 1 Module enabling Yes Function type Temperature Custom name Living room		Configuration Bus Scanner Network search Configuration Advanced configuration Module 1 Module 1 Module enabling Yes Function type Temperature control on/off actu Custom name Living room	₽ × uie 2
Configuration Bus Scanner Network search Configuration Advanced configuration 17 Module 1 Module enabling Yes Function type Temperature Custom name Luving room Room None		Configuration Bus Scanner Network search Configuration Advanced configuration Module 1 Module 1 Module enabling Yes Function type Temperature control on/off actu Custom name Living room Room None	4 × ule 2
Configuration Bus Scanner Network search Configuration Advanced configuration Module 1 Module enabling Yes Function type Temperature Custom name Living room Room None Zone 01	A X Module 1 Module 2	Configuration       Bus Scanner       Network search         Configuration       Advanced configuration       Module 1         Module enabling       Yes         Function type       Temperature control on/off actu         Custom name       Living room         Room       None	A × ule 2
Configuration Bus Scanner Network search Configuration Advanced configuration Module 1 Module enabling Yes Function type Temperature Custom name Living room Room None Zone 01 Device number 1	A X Module 1 Module 2	Configuration Bus Scanner Network search Configuration Advanced configuration Module 1 Mod Module 1 Module enabling Yes Function type Temperature control on/off.actu Custom name Living room None Device number 2	A X ule 2
Configuration       Bus Scanner       Network search         Configuration       Advanced configuration       I         Module 1       Module enabling       Yes         Function type       Temperature       Custom name         Living room       None       Zone         Zone       D1       Device number	A X Module 1 Module 2	Configuration       Bus Scanner       Network search         Configuration       Advanced configuration       Module 1         Module 1       Module enabling       Yes         Function type       Temperature control on/off actu         Custom name       Living room         Room       None         Device number       2	A X ule 2
Configuration Bus Scanner Network search Configuration Advanced configuration Module 1 Module enabling Yes Function type Temperature Custom name Living room Room None Zone 01 Device number 1	A X Module 1 Module 2 e control on/off actuator	Configuration       Eus Scanner       Network search         Configuration       Advanced configuration       Module 1         Module 1       Module 1       Mod         Module enabling       Yes       Yes         Function type       Temperature control on/off actu         Custom name       Living room         Room       None         Device number       2	A X ule 2
Configuration Bus Scanner Network search Configuration Advanced configuration Module 1 Module enabling Yes Function type Temperature Custorn name Living room Room None Zone 01 Device number 1	A X Module 1 Module 2	Configuration       Bus Scanner       Network search         Configuration       Advanced configuration       Module 1         Module 1       Module 1       Mod         Module enabling       Yes       Yes         Function type       Temperature control on/off actu         Custom name       Living room         Room       None         Device number       2	
Configuration Bus Scanner Network search Configuration Advanced configuration Module 1 Module enabling Yes Function type Temperature Custom name Living room Room None Zone 01 Device number 1	A X Module 1 Module 2	Configuration       Bus Scanner       Network search         Configuration       Advanced configuration       Module 1         Module 1       Module 1       Mod         Module enabling Yes       Function type       Temperature control on/off actu         Custom name       Living room       None         Device number       2       Image: Custom name       Image: Custom name	

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#### *If present 99zones Control unit*

Configure the probes by MyHOME\_Suite or with physical configurators.

- Probe in the Living room  $\rightarrow$  0-1 (Za-Zb)
- Probe in the Kitchen  $\rightarrow$  0-2 (Za-Zb)

In the picture a MyHOME\_Suite example of a "Thermostat with display" probe configuration.

Configuration					φ×		
Advanced config	guration						
Description	Living ro	om	ID				
Module enabled	Yes	•					
Function	Master p	robe 🔹		Zone	1		
Plant type	Heating	& cooling 🔹 🔻		Number of slave probes	0		
Plant settings	Set point	Loads and pumps	Regulation band	Contact management	User interface		
Heating			Cooling		^		
	System t	ype	System type				
ON/OF	F	•	Gate	eway	•		
Actuators			Pumps				
Add		Delete 🚫	Add	Delete	• 🔕 📲		
Function		N°	Function	N°			
Cooling only		1					
Heating only		2					
Configuration	Bus Scanne	er Network search					

#### 2.3.4) 99zones Control unit

Configure the zones in the 99zones Control units using MyHOME\_Suite or its menu.

- Both zones have
  - Actuator "N° 1" for Cooling
  - Actuator "N° 2" for Heating
- Type of Load for Cooling is "Gateway"
- Typo of Load for Heating is "ON/OFF"

System		Add zone	Copy zone Cancel zone	
	Θ	Actuators		
Pumps		Actuator No. 1	Cooling function	
E Bedroom		Actuator No. 2	🜻 Heating function	
Pumps		Actuator No. 3	No	
		Actuator No. 4	No	
		Actuator No. 5	No	
		Actuator No. 6	No	≡
Control unit		Actuator No. 7	No	
Sensors		Actuator No. 8	No	
Programs		Actuator No. 9	No	
Weekly programs     Scenarios	Θ	Types of load		
Holiday/weekend progr.		Type of load for heating	ON/OFF	
		Type of load for cooling	Gateway	~
	Zor	e 1 - Living room		





## 2.3.5) Notes

- The HVAC addressing of the unit/zone has to be defined by the HVAC designer/installer.
- A virtual actuator must be always the first, so actuator "N° 1".
- The Driver manages **Cooling** function.





## 2.4 – EXAMPLE 4 - Single apartment, two controlled zones

#### 2.4.1) Required management functions

Heating function : Floor Heating (ON/OFF valves) & HVAC indoor units

**Cooling** function : HVAC indoor units



### 2.4.2) Summing up

Zone Za - Zb			Actuators									
		Item code	Status	Za - Zb	N°	Type of load	Function	Description				
Living	0.1	None	Virtual	0-1	1	Gateway	Cooling	Actuator emulated by the Driver on F459				
room	0-1	F430/x	Physical	0-1	2	ON/OFF	Heating	ON/OFF valve management				
Deducers	0.2	None	Virtual	0-2	1	Gateway	Cooling	Actuator emulated by the Driver on F459				
Bedroom	0-2	F430/x	Physical	0-2	2	ON/OFF	Heating	ON/OFF valve management				

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## 2.4.3) Probes & Actuators

#### If present MyHOMEServer1

Configure probes by MyHOME\_Up App.

- Add into the desired room a "Thermostat object"
- Start the procedure "Wizard Thermo"
- Select the type of system → Heating and cooling
- Associate the thermostat  $\rightarrow$  Live procedure
- Heating / Select the type of load to control  $\rightarrow$  ON/OFF value
- Heating / Associate the actuator (...)  $\rightarrow$  Live procedure
- Pump Heating  $\rightarrow$  Follow the procedure to configure the Pump, if required
- Cooling / Select the type of load to control  $\rightarrow$  Gateway
- Pump Cooling  $\rightarrow$  NO selection

<u>ATTENTION</u>: It is now required to modify some actuator parameters, procedure feasible with use of MyHOME\_Suite software only, in detail :

- Use the "BUS scanner" to upload configuration of the probe (Picture 1)
- Modify actuators parameters "N°" <u>only</u> (Cooling = 1 Heating = 2) (Picture 2)
- Send the new configuration to the probe
- Use the "BUS scanner" to upload configuration of the actuator (Picture 3)
- Modify actuator parameter "Device number" only (Device number = 2) (Picture 4)
- Send the new configuration to the actuator

Configuration	t ×	Configuration	\$ ×
Advanced configuration		Advanced configuration	
Description Living room	ID	Description Living room	ID
Module enabled Yes 🔹		Module enabled Yes -	
Function Hotel thermostat	Zone 1	Function Hotel thermostat	Zone 1
Plant type Heating & cooling •	Number of	Plant type Heating & cooling	Number of 0
			siave probes
Heating	Cooling	Heating Set point Loads and pumps Reg	Cooling
System type	System type	System type	System type
ON/OFF •	Gateway	ON/OFF •	Gateway
	Automatic changeover		Automatic changeover
Actuators	Pumps	Actuators	Pumps
Add 🛟 Delete 🐼	Add 🕒 Delete 🐼	Add 🛟 Delete 🐼	Add 🛟 Delete 🐼
Function N°	Function N°	Function N°	Function N°
Heating only 1		Cooling only 1	
Cooling only 2		Heating only 2	
Configuration Bus Scanner Network search		Configuration Bus Scanner Network search	PIC.
Configuration	ŧ ×	Configuration	t ×
Advanced configuration	Module 1 Module 2	Advanced configuration 📃 Mod	lule 1 🔲 Module 2
Module 1		Module 1	
Module enabling Yes	•	Module enabling Yes	•
Function type Temperat	ure control on/off actuator	Function type Temperature of	ntrol on/off actuator
Room None		Room None	-
Zone 01	-		
Device number 1		Device number 2	
Pic.3 Configuration Bus Scanner	Network search	Configuration Bus Scanner Net	vork search Pic.4





#### *If present 99zones Control unit*

Configure the probes by MyHOME\_Suite or with physical configurators.

- Probe in the Living room  $\rightarrow$  0-1 (Za-Zb)
- Probe in the Kitchen  $\rightarrow$  0-2 (Za-Zb)

In the picture a MyHOME\_Suite example of a "Thermostat with display" probe configuration.

Configuration					φ×
Advanced config	guration				
Description	Living ro	om		ID	
Module enabled	Yes	•			
Function	Master p	robe 🔹		Zone	1
Plant type	Heating (	& cooling 🔹 🔻		Number of slave probes	0
Plant settings	Set point	Loads and pumps	Regulation band	Contact management	User interface
Heating			Cooling		A
System type				System typ	e
ON/OFF •			Gateway		
Actuators			Pumps		
Add 🤅		Delete 该	Add	Delete	• 🔕 📲
Function		N°	Function	N°	
Cooling only		1			
Heating only		2			
L				B	
Configuration E	Bus Scanne	r Network search			

#### 2.4.4) 99zones Control unit

Configure the zones in the 99zones Control units using MyHOME\_Suite or its menu.

- Both zones have
  - Actuator "N° 1" for Cooling
  - Actuator "N° 2" for Heating
- Type of Load for Cooling is "Gateway"
- Typo of Load for Heating is "ON/OFF"

System		Add zone	Copy zone Cancel zone	
Living room	Θ	Actuators		
		Actuator No. 1	Cooling function	
E Bedroom		Actuator No. 2	🜻 Heating function	
Pumps		Actuator No. 3	No	
		Actuator No. 4	No	
		Actuator No. 5	No	
		Actuator No. 6	No	≡
Control unit		Actuator No. 7	No	
Sensors		Actuator No. 8	No	
Programs	∍	Actuator No. 9	No	
E B Weekly programs		Types of load		
Holiday/weekend progr.		Type of load for heating	ON/OFF	
		Type of load for cooling	Gateway	~
	Zor	e 1 - Living room		

# La legrand<sup>®</sup>



## 2.4.5) Notes

- The HVAC addressing of the unit/zone has to be defined by the HVAC designer/installer.
- A virtual actuator must be always the first, so actuator "N° 1".
- The Driver manages Cooling.
- The Driver manages also a part of Heating :
  - Probes manage ON/OFF actuator
  - The Driver manages the HVAC Units just to speed up the room heating following the parameters configured in Preferences Page.
     The main system for heating is the Floor Heating system, HVAC is a sort of slave system

that speed up the warming up of the room and stops before that the set point in the room is reached.

• Because of this "combined" management, the zone must be considered as ON/OFF with automatic management of the HVAC indoor unit (Fan-Speed included).





# **3 – HOW TO SET UP THE MYHOME PART**

To quote the Legrand part of the integrated system, it must be considered :

- n°1 Legrand MYHOMESERVER1 device or 99zones Temperature Control Unit

- n°1 SCS temperature probe each temperature zone to manage through MyHOME
- SCS temperature control actuators (\*)
- n°1 Legrand F459 (\*\*) Driver manager device

- SCS BUS Power supply (use the MyHOME Automation BUS, if already present and correctly dimensioned in terms of consumption)

- "Driver License" + "Commissioning" costs (\*\*\*)

(\*) Only if required the combined management of other temperature systems (i.e. Floor Heating or Radiant Panels, etc...) (Picture 1). If required only management of the HVAC system (for heating and/or cooling function), NO actuators are needed.

(\*\*) In case of huge systems could be necessary to use more than one F459 Driver manager device. One F459 for every 50 controlled zones. One F459 is able "to talk" with only one "third party" gateway.

(\*\*\*) To quote as independent price.



