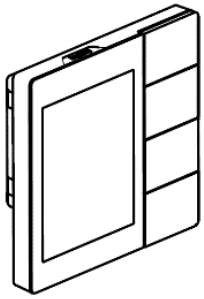
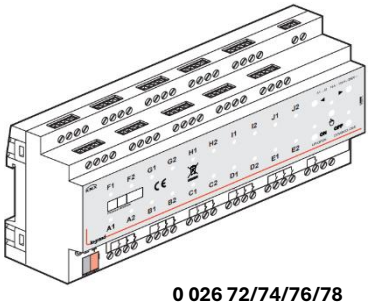
4-pipes temperature control
2-ON/OFF valves with automatic change over
3-ON/OFF speed ventilation

Cat. No(s): 281027BB
0 026 72/74/76/78



281027BB



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CONTENTS **PAGE**

1. USAGE SCENARIO

Meeting room, hotel, home

2.Description

The thermostat combined with an RCU actuator is used to control a fan coil equipped with 4 pipes, 2-ON/OFF valves and 3 - ON/OFF fan.

Manual change over to switch between Heating/Cooling mode.

The system will regulate the temperature of an office around the set point.

Using the thermostat's touch-sensitive buttons, the user can:
- Change the temperature setpoint.
- Adjust the fan speed.
- Change the mode (Comfort, Eco, Standby and protection).

Using the thermostat's push buttons, the user can:
- Send Lighting commands (Switching, Dimming, Blind and value).
- Launch scenario (i.e.: Welcome, Exit , Master OFF ...).

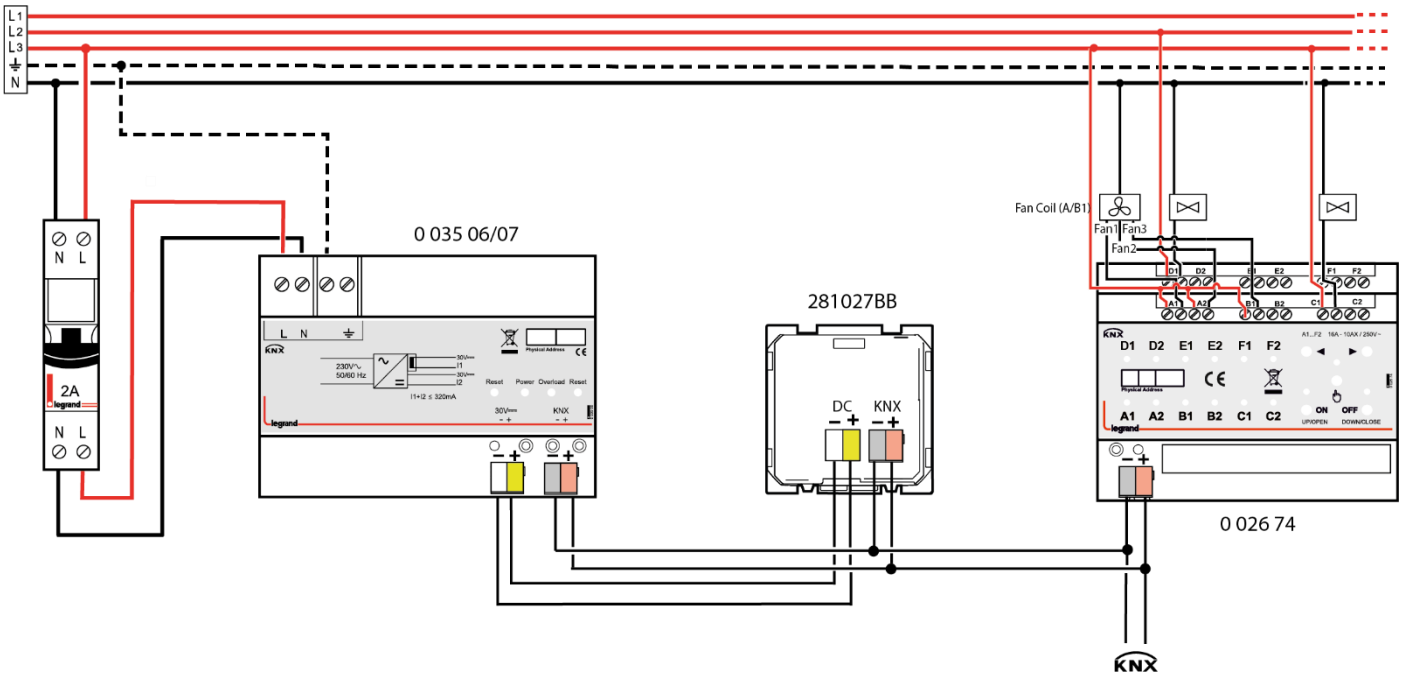
Here is a table of compatible Malia thermostats.

LG-281027MW	KNX-Mallia Senses command 4 push with thermostat white
LG-281028MW	KNX-Mallia Senses command 6 push with thermostat white
LG-281029MW	KNX-Mallia Senses command 8 push with thermostat white
LG-281027DS	KNX-Mallia Senses command 4 push with thermostat silver
LG-281028DS	KNX-Mallia Senses command 6 push with thermostat silver
LG-281029DS	KNX-Mallia Senses command 8 push with thermostat silver
LG-281027BB	KNX-Mallia Senses command 4 push with thermostat black
LG-281028BB	KNX-Mallia Senses command 6 push with thermostat black
LG-281029BB	KNX-Mallia Senses command 8 push with thermostat black

4-pipes temperature control
2-ON/OFF valves with automatic change over
3-ON/OFF speed ventilation

Cat. No(s): 281027BB
0 026 72/74/76/78

3. WIRING DIAGRAM



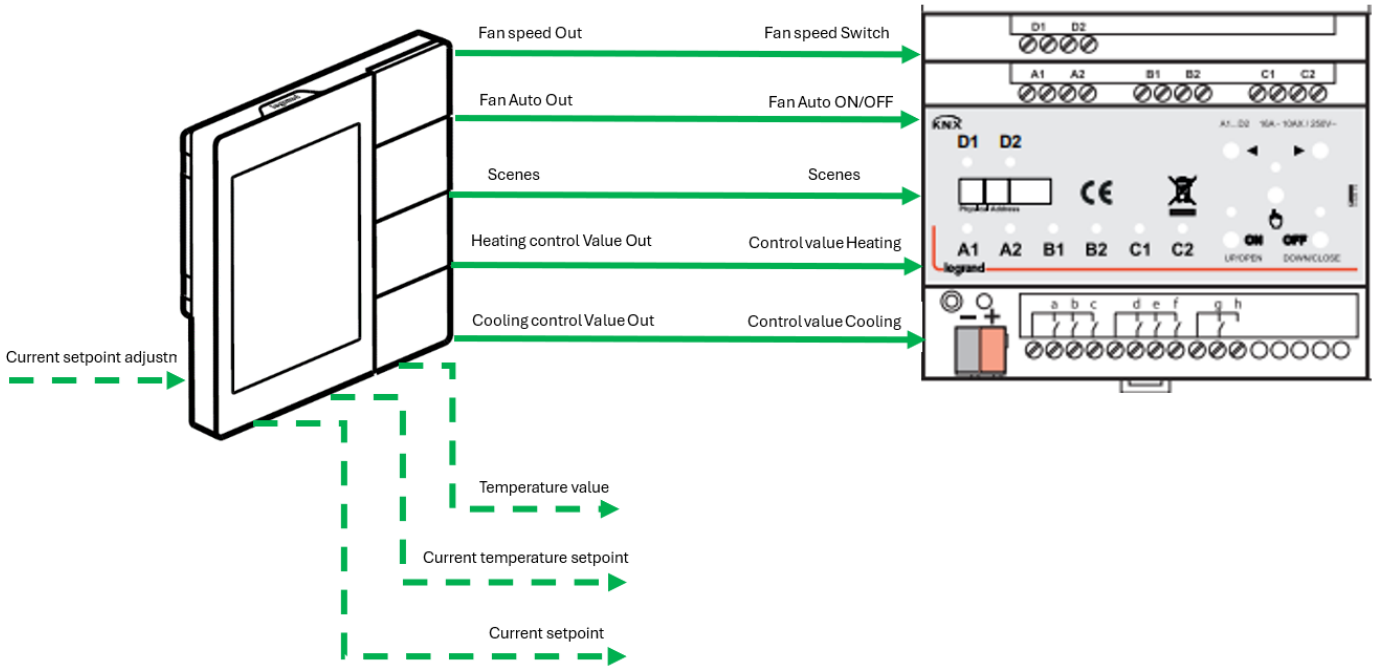
NB:
For more information about wiring each device, refer to the instructions on site.

www.legrand.com

4-pipes temperature control
2-ON/OFF valves with automatic change over
3-ON/OFF speed ventilation

Cat. No(s): 281027BB
0 026 72/74/76/78

4. KNX DIAGRAM



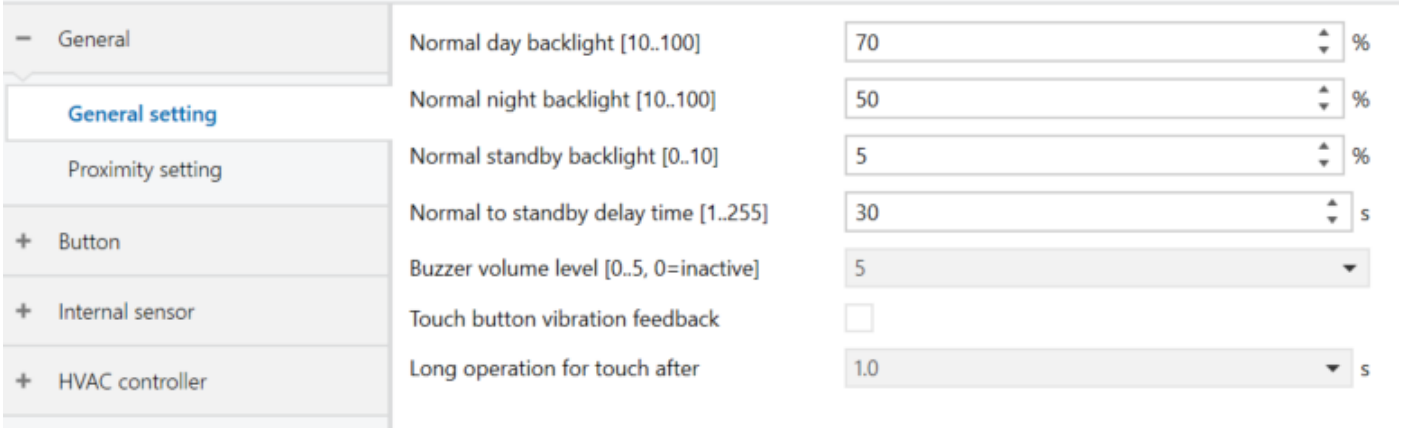
5. KNX PROJECT

This project **002674-Malia_Thermoregulation 4 pipes ON-OFF** is available on www.legrand.com and can be imported into ETS5.

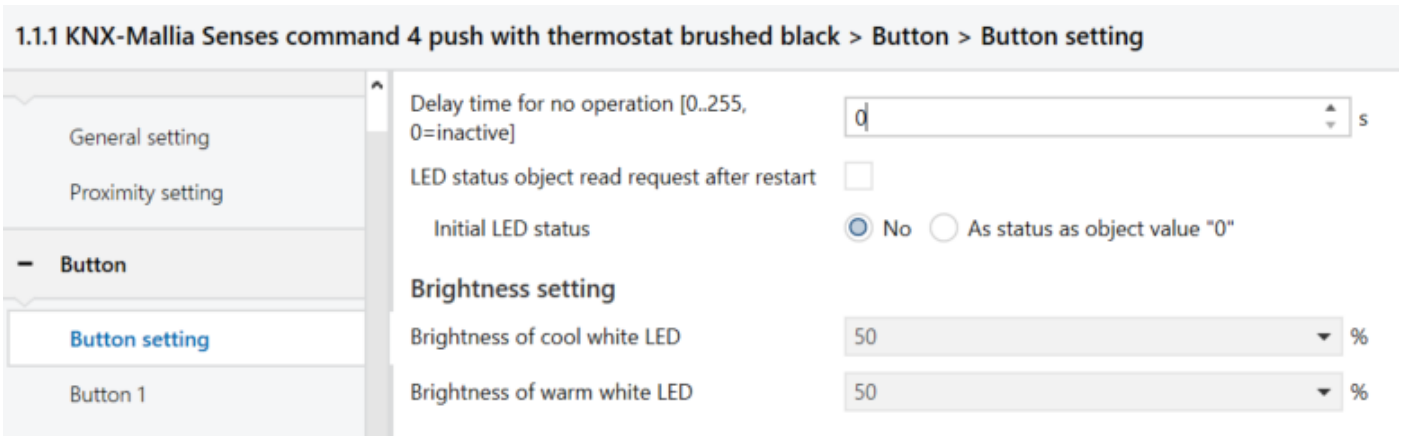
6. DEVICE PARAMETERS WITH ETS5

6.1 Thermostat 281027BB

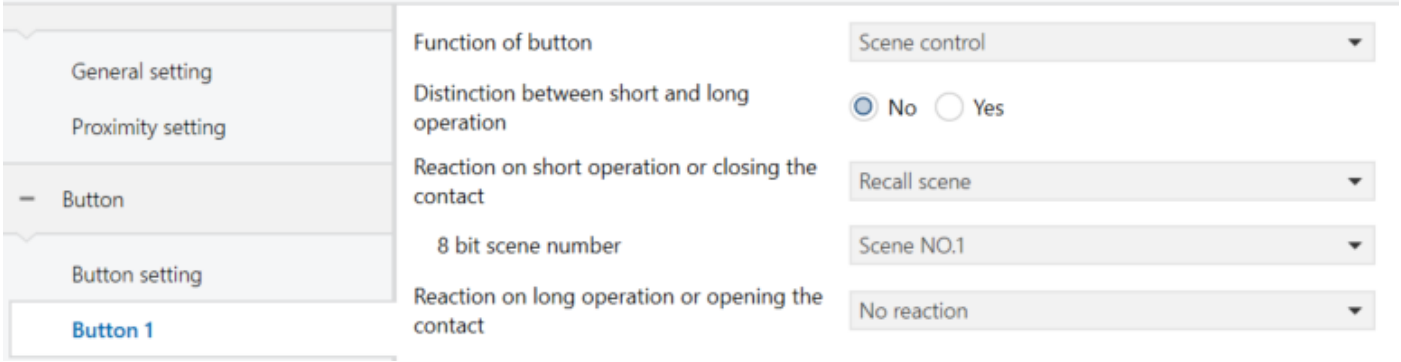
1.1.1 KNX-Mallia Senses command 4 push with thermostat brushed black > General > General setting



1.1.1 KNX-Mallia Senses command 4 push with thermostat brushed black > Button > Button setting



1.1.1 KNX-Mallia Senses command 4 push with thermostat brushed black > Button > Button 1



6. DEVICE PARAMETERS WITH ETS5 (continued)

6.1 Thermostat 281027BB (continued)

1.1.1 KNX-Mallia Senses command 4 push with thermostat brushed black > HVAC controller > Controller setting

- General
  - General setting
  - Proximity setting

Room temperature control function as	FCU control
Ventilation function	☐
Floor heating function	☐

1.1.1 KNX-Mallia Senses command 4 push with thermostat brushed black > HVAC controller > FCU setting

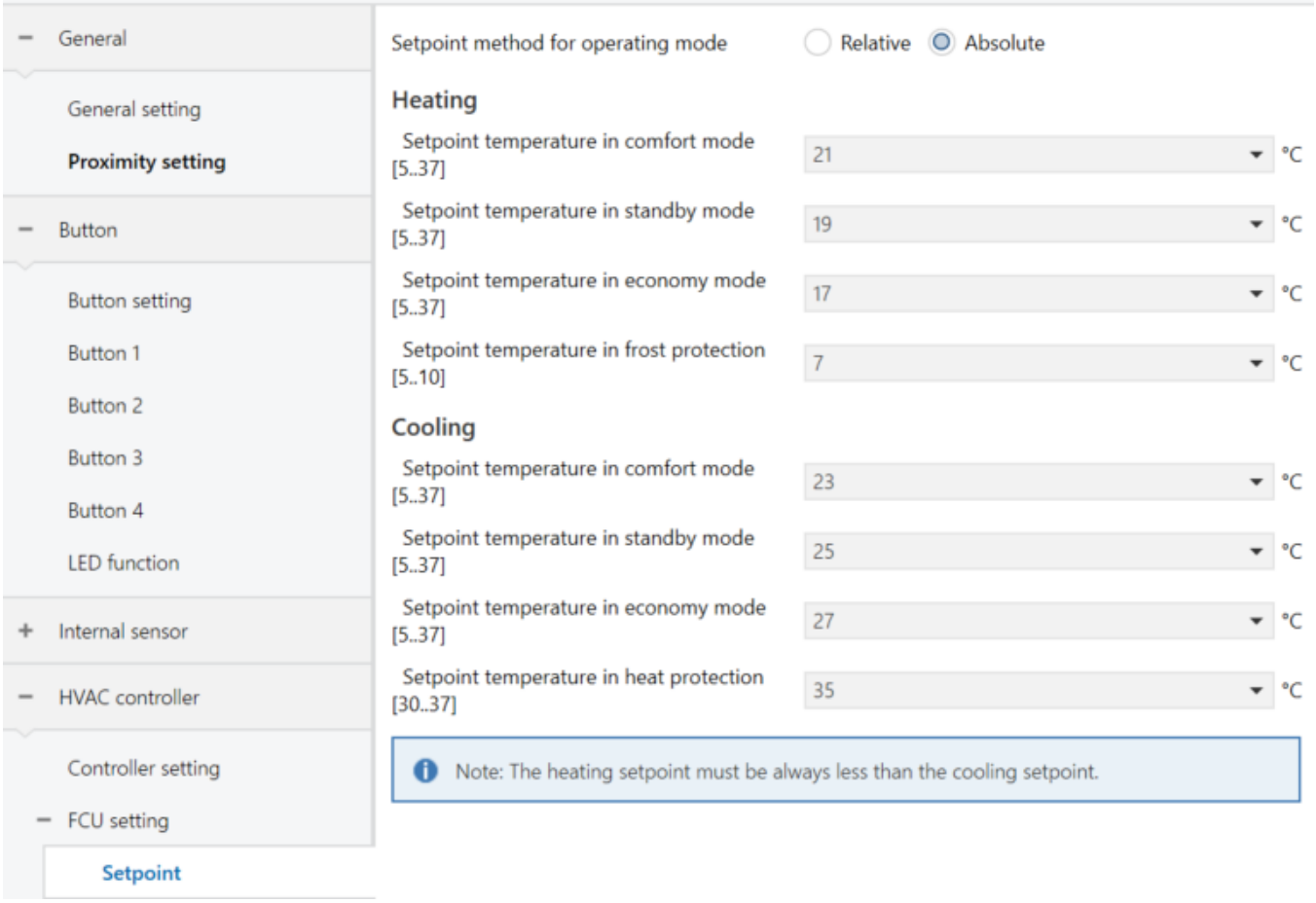
- General
  - General setting
  - Proximity setting
- Button
- Internal sensor
- HVAC controller
  - Controller setting
  - FCU setting
    - Setpoint
    - Heating/Cooling control
    - Fan

Work mode	Master / Slave
Room temperature reference from	Internal sensor / External sensor
Control value after temp. error [0..100] (if 2-point control, set value '0'=0, set value '>0'=1)	0 %
Interface display temperature	Setpoint temperature / Actual temperature
Setpoint temperature adjustment step	0.5K / 1K
Min. setpoint temperature [5..37]	16 °C
Max. setpoint temperature [5..37]	32 °C
Power on/off status after download	OFF / ON
Power on/off status after voltage recovery	As before voltage failure
Low temperature protection when power off	☐
Room temperature control mode	Heating and Cooling
Heating/Cooling switchover	Only via object / Automatic changeover
Heating/Cooling status after download	Heating / Cooling
Heating/Cooling status after voltage recovery	As before voltage failure
Room temperature control system	2 pipes system / 4 pipes system
Room temperature operation mode	☑
Controller status after download	Standby mode
Controller status after voltage recovery	As before voltage failure
Extended comfort mode [0..255,0=inactive]	0 min
Window contact input function	☐
Bus presence detector function	☐

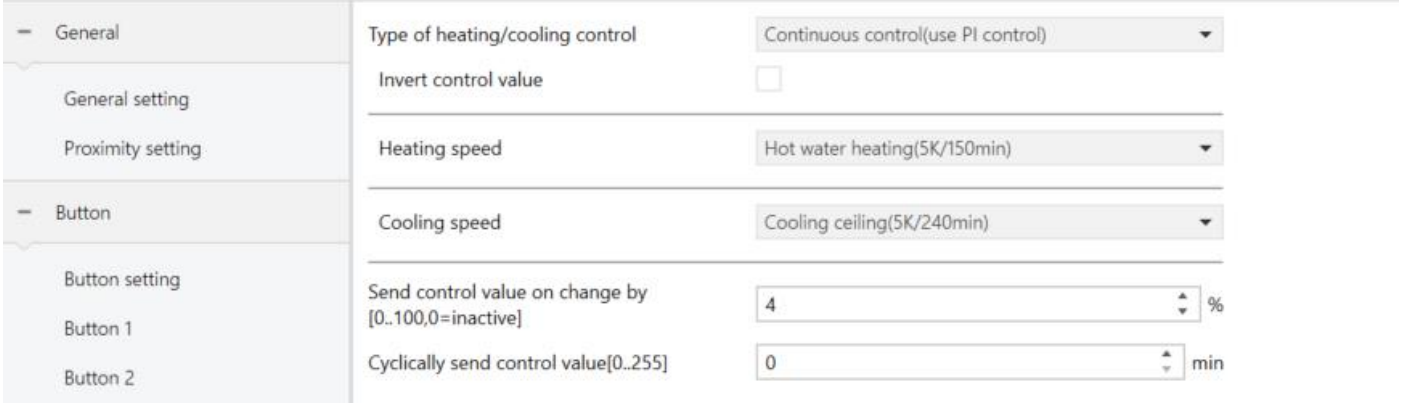
6. DEVICE PARAMETERS WITH ETS5 (continued)

6.1 Thermostat 281027BB (continued)

1.1.1 KNX-Mallia Senses command 4 push with thermostat brushed black > HVAC controller > FCU setting > Setpoint



1.1.1 KNX-Mallia Senses command 4 push with thermostat brushed black > HVAC controller > FCU setting > Heating/Cooling control



6. DEVICE PARAMETERS WITH ETS5 (continued)

6.2 Actuator 0 026 74

1.1.2 LG-002674 Room Control Unit, 12 Output > General

- General
- Enable Output A...J
- A/B1 - Fan
- A/B1 - Status Message
- A/B1 - Automatic Operation
- A/B1 - Direct Mode
- C/D - Control Input

Enable manual operation	○ disable ◉ enable
Reset manual operation to KNX operation	◉ via push button ○ automatically and via push button
Device alive operation active	○ yes ◉ no
First telegram send time in s[2...255]	2
Telegram limit active	○ yes ◉ no
Activate scene	◉ yes ○ no
Weather alarm function	○ yes ◉ no

1.1.2 LG-002674 Room Control Unit, 12 Output > Enable Output A...J

- General
- Enable Output A...J
- A/B1 - Fan
- A/B1 - Status Message

Output group A and B	fan coil
Output group C and D	valve control
Output group E and F	individually
Output group E	○ shutter/blind AC ◉ 2 x switch
Output group F	○ shutter/blind AC ◉ 2 x switch

6. DEVICE PARAMETERS WITH ETS5 (continued)

6.2 Actuator 0 026 74

1.1.2 LG-002674 Room Control Unit, 12 Output > A/B1 - Fan

- General
- Enable Output A...J
- A/B1 - Fan
- A/B1 - Status Message
- A/B1 - Automatic Operation
- A/B1 - Direct Mode
- C/D - Control Input
- C - Valve General
- C - Function
- D - Valve General
- D - Function
- E1 - General

Select valve with working	valve C/D
Number of fan levels	3
Controlling the fan levels	○ only one fan output ◉ fan hierarchically
Fan operation mode	◉ changeover switch ○ step switch
Delay between fan speed switching in ms[50...5000]	500
Fan speed on bus voltage failure	fan off
Fan speed on bus voltage recovery	fan off
Enable forced operation	◉ yes ○ no
Forced operation on object value	◉ 0 ○ 1
Limitation on forced operation	3, 2, 1, OFF
Enable automatic operation	◉ yes ○ no
Enable direct operation	◉ yes ○ no
Starting characteristic of fan	○ yes ◉ no

1.1.2 LG-002674 Room Control Unit, 12 Output > A/B1 - Direct Mode

- General
- Enable Output A...J
- A/B1 - Fan
- A/B1 - Status Message
- A/B1 - Automatic Operation
- A/B1 - Direct Mode

Enable communication object "Switch speed "Â 1 bit	○ yes ◉ no
Enable communication object "Fan speed UP/DOWN"Â 1 bit	○ yes ◉ no
Enable communication object "Fan speed switch"Â 1 byte	◉ yes ○ no

6. DEVICE PARAMETERS WITH ETS5 (continued)

6.2 Actuator 0 026 74

1.1.2 LG-002674 Room Control Unit, 12 Output > C/D - Control Input

- General
- Enable Output A...J
- A/B1 - Fan
- A/B1 - Status Message
- A/B1 - Automatic Operation
- A/B1 - Direct Mode
- C/D - Control Input

HVAC system	two control two pipe with switch
Operation HEATING/COOLING after bus voltage recovery	unchanged bus return
Object value for HEATING the object "Toggle HEATING/COOLING"	0 / 1
Monitoring control valves	yes / no

1.1.2 LG-002674 Room Control Unit, 12 Output > C - Valve General

- General
- Enable Output A...J
- A/B1 - Fan
- A/B1 - Status Message
- A/B1 - Automatic Operation
- A/B1 - Direct Mode
- C/D - Control Input
- C - Valve General

Valve control	two point on/off / three point open/close
Valve contact type	normally closed / normally open
Valve position after bus voltage return	unchanged / selected
Valve limitation	yes / no

1.1.2 LG-002674 Room Control Unit, 12 Output > E1 - Scene

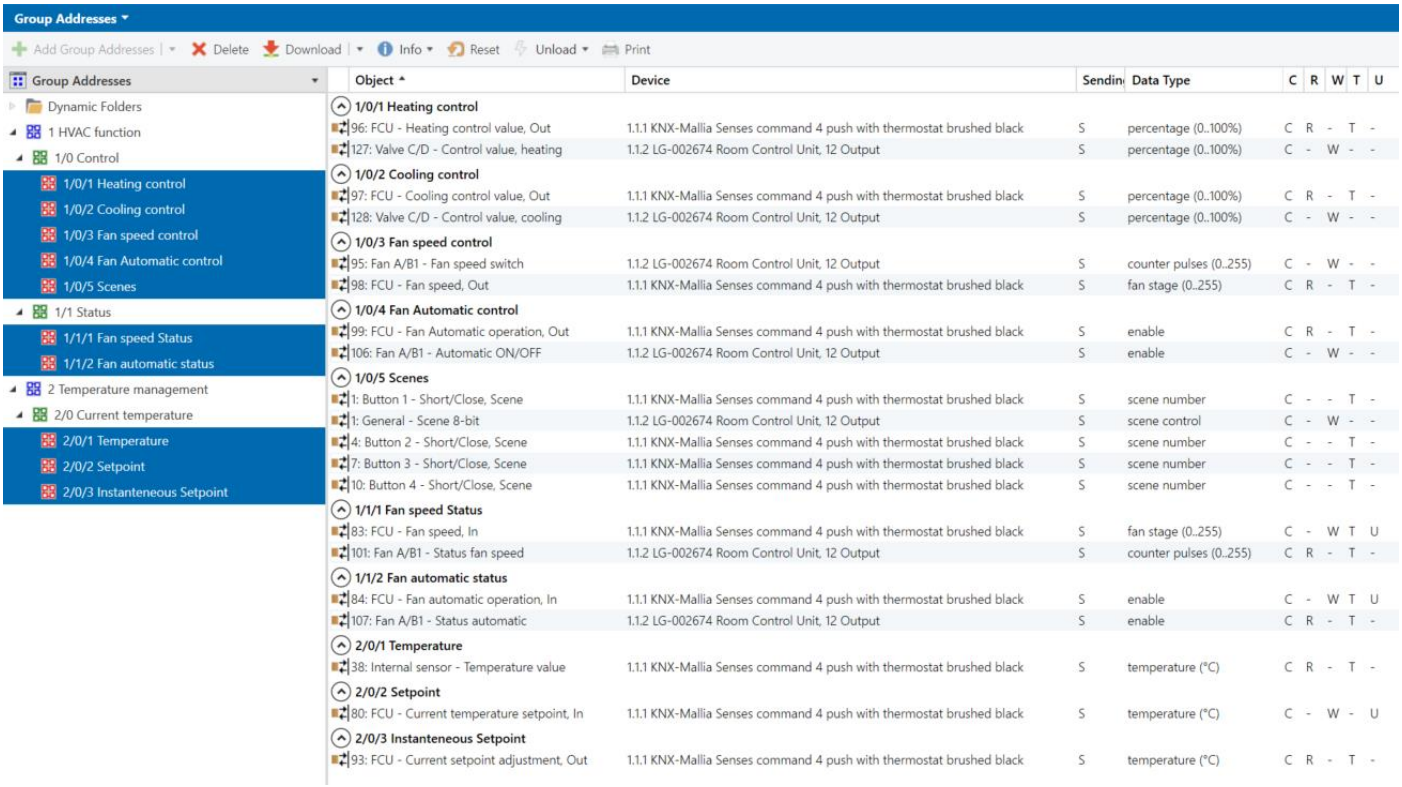
- General
- Enable Output A...J
- A/B1 - Fan
- A/B1 - Status Message
- A/B1 - Automatic Operation
- A/B1 - Direct Mode
- C/D - Control Input

Overwrite scene on download	yes / no
1...64 scene number (0 = no assignment)	1
Value	OFF / ON
1...64 scene number (0 = no assignment)	2
Value	OFF / ON
1...64 scene number (0 = no assignment)	3
Value	OFF / ON
1...64 scene number (0 = no assignment)	4

4-pipes temperature control
2-ON/OFF valves with automatic change over
3-ON/OFF speed ventilation

Cat. No(s): 281027BB
0 026 72/74/76/78

7. GROUP ADDRESSES



Object	Device	Sendin	Data Type	C	R	W	T	U
1/0/1 Heating control								
96: FCU - Heating control value, Out	1.1.1 KNX-Mallia Senses command 4 push with thermostat brushed black	S	percentage (0..100%)	C	R	-	T	-
127: Valve C/D - Control value, heating	1.1.2 LG-002674 Room Control Unit, 12 Output	S	percentage (0..100%)	C	-	W	-	-
1/0/2 Cooling control								
97: FCU - Cooling control value, Out	1.1.1 KNX-Mallia Senses command 4 push with thermostat brushed black	S	percentage (0..100%)	C	R	-	T	-
128: Valve C/D - Control value, cooling	1.1.2 LG-002674 Room Control Unit, 12 Output	S	percentage (0..100%)	C	-	W	-	-
1/0/3 Fan speed control								
95: Fan A/B1 - Fan speed switch	1.1.2 LG-002674 Room Control Unit, 12 Output	S	counter pulses (0..255)	C	-	W	-	-
98: FCU - Fan speed, Out	1.1.1 KNX-Mallia Senses command 4 push with thermostat brushed black	S	fan stage (0..255)	C	R	-	T	-
1/0/4 Fan Automatic control								
99: FCU - Fan Automatic operation, Out	1.1.1 KNX-Mallia Senses command 4 push with thermostat brushed black	S	enable	C	R	-	T	-
106: Fan A/B1 - Automatic ON/OFF	1.1.2 LG-002674 Room Control Unit, 12 Output	S	enable	C	-	W	-	-
1/0/5 Scenes								
1: Button 1 - Short/Close, Scene	1.1.1 KNX-Mallia Senses command 4 push with thermostat brushed black	S	scene number	C	-	-	T	-
1: General - Scene 8-bit	1.1.2 LG-002674 Room Control Unit, 12 Output	S	scene control	C	-	W	-	-
4: Button 2 - Short/Close, Scene	1.1.1 KNX-Mallia Senses command 4 push with thermostat brushed black	S	scene number	C	-	-	T	-
7: Button 3 - Short/Close, Scene	1.1.1 KNX-Mallia Senses command 4 push with thermostat brushed black	S	scene number	C	-	-	T	-
10: Button 4 - Short/Close, Scene	1.1.1 KNX-Mallia Senses command 4 push with thermostat brushed black	S	scene number	C	-	-	T	-
1/1/1 Fan speed Status								
83: FCU - Fan speed, In	1.1.1 KNX-Mallia Senses command 4 push with thermostat brushed black	S	fan stage (0..255)	C	-	W	T	U
101: Fan A/B1 - Status fan speed	1.1.2 LG-002674 Room Control Unit, 12 Output	S	counter pulses (0..255)	C	R	-	T	-
1/1/2 Fan automatic status								
84: FCU - Fan automatic operation, In	1.1.1 KNX-Mallia Senses command 4 push with thermostat brushed black	S	enable	C	-	W	T	U
107: Fan A/B1 - Status automatic	1.1.2 LG-002674 Room Control Unit, 12 Output	S	enable	C	R	-	T	-
2/0/1 Temperature								
38: Internal sensor - Temperature value	1.1.1 KNX-Mallia Senses command 4 push with thermostat brushed black	S	temperature (°C)	C	R	-	T	-
2/0/2 Setpoint								
80: FCU - Current temperature setpoint, In	1.1.1 KNX-Mallia Senses command 4 push with thermostat brushed black	S	temperature (°C)	C	-	W	-	U
2/0/3 Instanteneous Setpoint								
93: FCU - Current setpoint adjustment, Out	1.1.1 KNX-Mallia Senses command 4 push with thermostat brushed black	S	temperature (°C)	C	R	-	T	-

8. NOTES

The whole HVAC system is managed by thermostat 281027BB (heating/cooling regulation, setpoint mode and automatic ventilation).

When the customer arrives in the room, can set the temperature to comfort mode, and when they leave the temperature returns t o economy mode or standby mode. (**touch “M” button on the thermostat 281027BB to switch each mode**)

The HVAC and FAN valve is connected to controller 0 026 74 (A, B1, C and D connectors), The room controller 0 026 74 provide ON/OFF to switch or shut valve.

The setpoint value can be altered on thermostat 281027BB by touching the buttons “+” and “-”.

The fan speed can be altered by touching the button on the bottom of the thermostat. There are 3 manual fan speed levels and an automatic mode run by the thermostat.