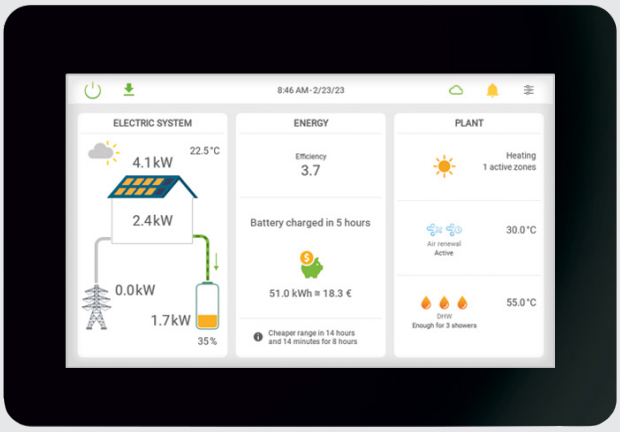
CONTROL4 NRG

Interfacing with KNX gateway

Installation manual



PD25D075GB-00
04/2025

Summary

1. General 3
1.1 System architecture 3
1.2 Gateway setup 3
2. List of registers 4
2.1 States 4
2.2 Controls 4
3. List of registers 5
3.1 States 5
3.2 Controls 5
3.3 Thermostat setup on Control4 NRG 6
3.4 Post-installation operations 8

The original instructions are written in Italian.
All other languages are translations of the original instructions.

1. General

The purpose of the mode is to enable a KNX gateway to interface with Control4 NRG (C4NRG), allowing one or more thermostats in the KNX network to be managed, similar to terminals connected via Modbus directly to Control4 NRG.

1.1 System architecture

The connection between the two systems is made via a KNX-Modbus gateway. The module takes care of creating the interface that enables communication between the Modbus RTU protocol on RS485 serial communications used by C4NRG and the KNX network.
C4NRG is a Modbus RTU “Master” device, and therefore does not allow other Master devices to be used on its network.
The gateway then takes care of creating a Slave-to-Slave interface with the thermostats in the KNX network.
This document describes the registers required by the protocol.
At present, the Control4 NRG is only able to manage KNX thermostats.

1.2 Gateway setup

To enable communication with the Control4 NRG, the KNX-Modbus gateway must be configured as follows.

- Baudrate: 9600 bit/s
- Parity: None
- Stop bit: 1 bit
- Order of bits: MSB (most significant bit)
- Register address: 0
- Modbus address of the gateway: 200

2. List of registers

Listed below are the statuses and commands managed within the Control4 NRG.
The Modbus addresses given refer to the first thermostat only. The second thermostat will start from address 16, the third from 32, and so on.
It is of paramount importance for the correct operation of Control4 NRG to map all registers reported even if the thermostats do not provide the required mode.

2.1 States

Modbus address	Name	KNX data type	Modbus function	Maximum register value	Maximum KNX value
0	Air temperature	DPT_Value_Temp	04	1000	100
1	Humidity	DPT_Value_Humidity	04	1000	100
2	Setpoint	DPT_Value_Temp	04	1000	100
3	Mode	DPT_HVACMode	04	-	-
4	Ventilation type	DPT_FanMode	04	-	-
5	Seasonality	DTP_Heat/Cool	02	-	-
6	Heating valve	DPT_Switch	02	-	-
7	Cooling valve	DPT_Switch	02	-	-
8	Reserved				
9	Reserved				

If the thermostat only provides a unified object for managing the status of the valves, simply assign a register of your choice between 6 and 7 (heating valve/cooling valve).

2.2 Controls

Modbus address	Name	KNX data type	Modbus function	Maximum register value	Maximum KNX value
10	Heating setpoint	DPT_Value_Temp	06/16	1000	100
11	Cooling setpoint	DPT_Value_Temp	06/16	1000	100
12	Mode	DPT_HVACMode	06/16	-	-
13	Ventilation type	DPT_Switch	05/15	-	-
14	Seasonality	DPT_Heat/Cool	05/15	-	-
15	Thermostat lock	DPT_Switch	05/15	-	-

3. List of registers

Listed below are the statuses and commands managed within the Control4 NRG.
The Modbus addresses given refer to the first thermostat only. The second thermostat will start from address 16, the third from 32, and so on.
It is of paramount importance for the correct operation of Control4 NRG to map all registers reported even if the thermostats do not provide the required mode.

3.1 States

Modbus address	Name	KNX data type	Modbus function	Maximum register value	Maximum KNX value
0	Air temperature	DPT_Value_Temp	04	1000	100
1	Humidity	DPT_Value_Humidity	04	1000	100
2	Setpoint	DPT_Value_Temp	04	1000	100
3	Mode	DPT_HVACMode	04	-	-
4	Ventilation type	DPT_FanMode	04	-	-
5	Seasonality	DTP_Heat/Cool	02	-	-
6	Heating valve	DPT_Switch	02	-	-
7	Cooling valve	DPT_Switch	02	-	-
8	Reserved				
9	Reserved				

If the thermostat only provides a unified object for managing the status of the valves, simply assign a register of your choice between 6 and 7 (heating valve/cooling valve).

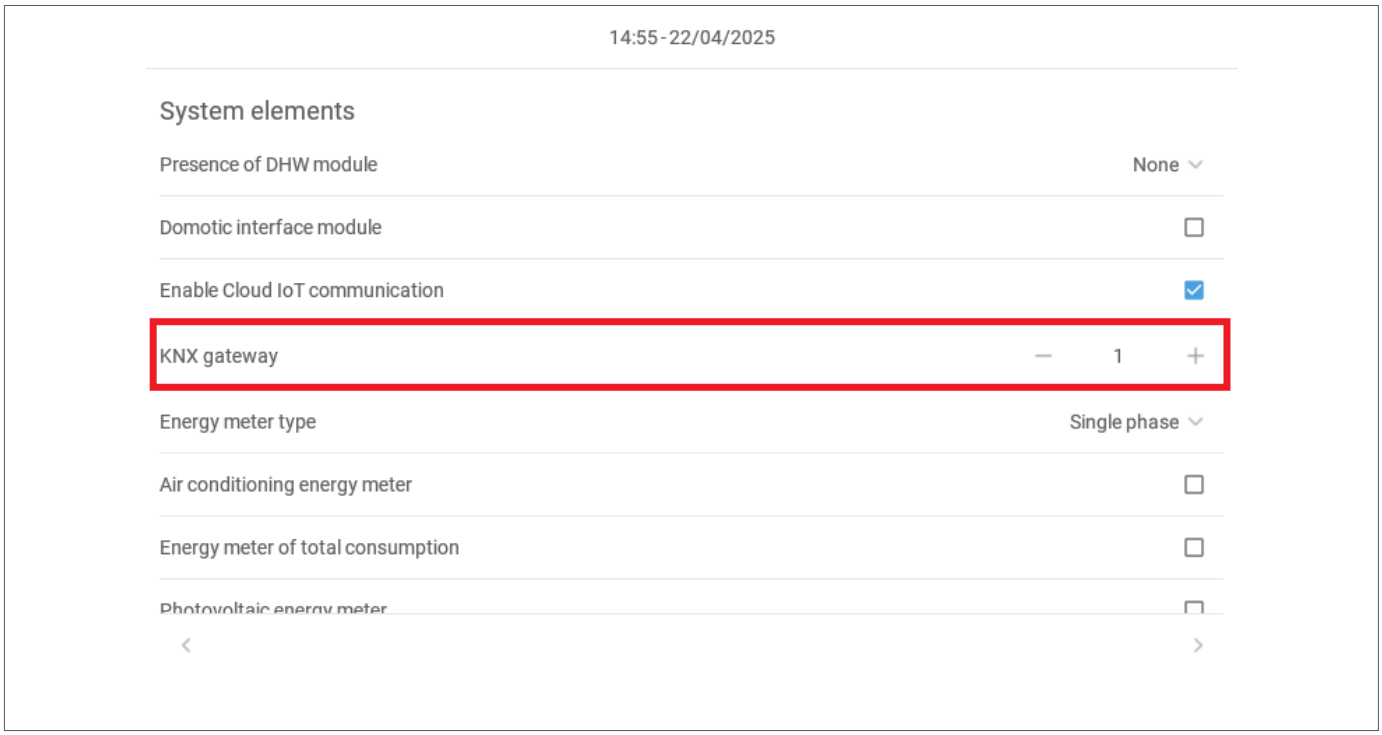
3.2 Controls

Modbus address	Name	KNX data type	Modbus function	Maximum register value	Maximum KNX value
10	Heating setpoint	DPT_Value_Temp	06/16	1000	100
11	Cooling setpoint	DPT_Value_Temp	06/16	1000	100
12	Mode	DPT_HVACMode	06/16	-	-
13	Ventilation type	DPT_Switch	05/15	-	-
14	Seasonality	DPT_Heat/Cool	05/15	-	-
15	Thermostat lock	DPT_Switch	05/15	-	-

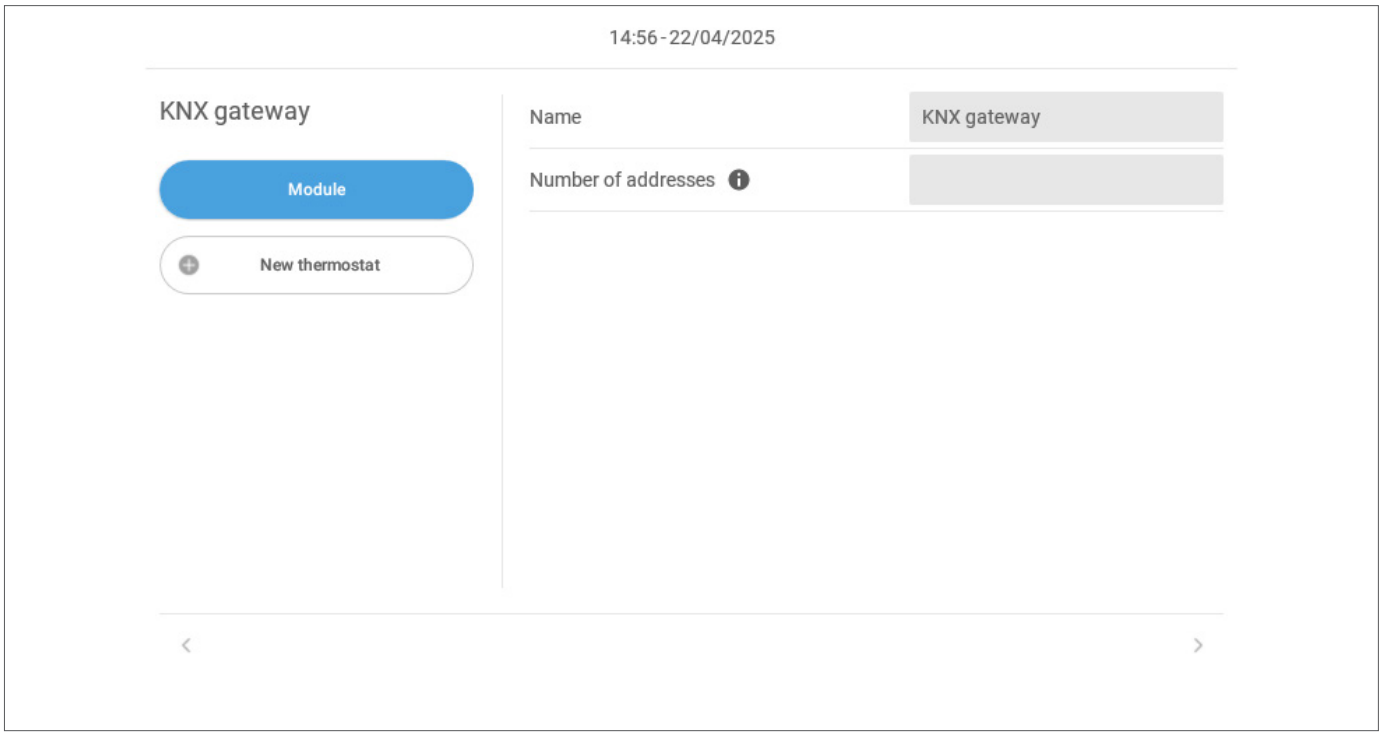
3.3 Thermostat setup on Control4 NRG

Once the KNX-side setup is done, the gateway and Control4 NRG can be connected via RS485 serial communications. You can proceed to configure the equipment via the wizard. To access the setup wizard, follow the procedure given in the Control4 NRG manual.

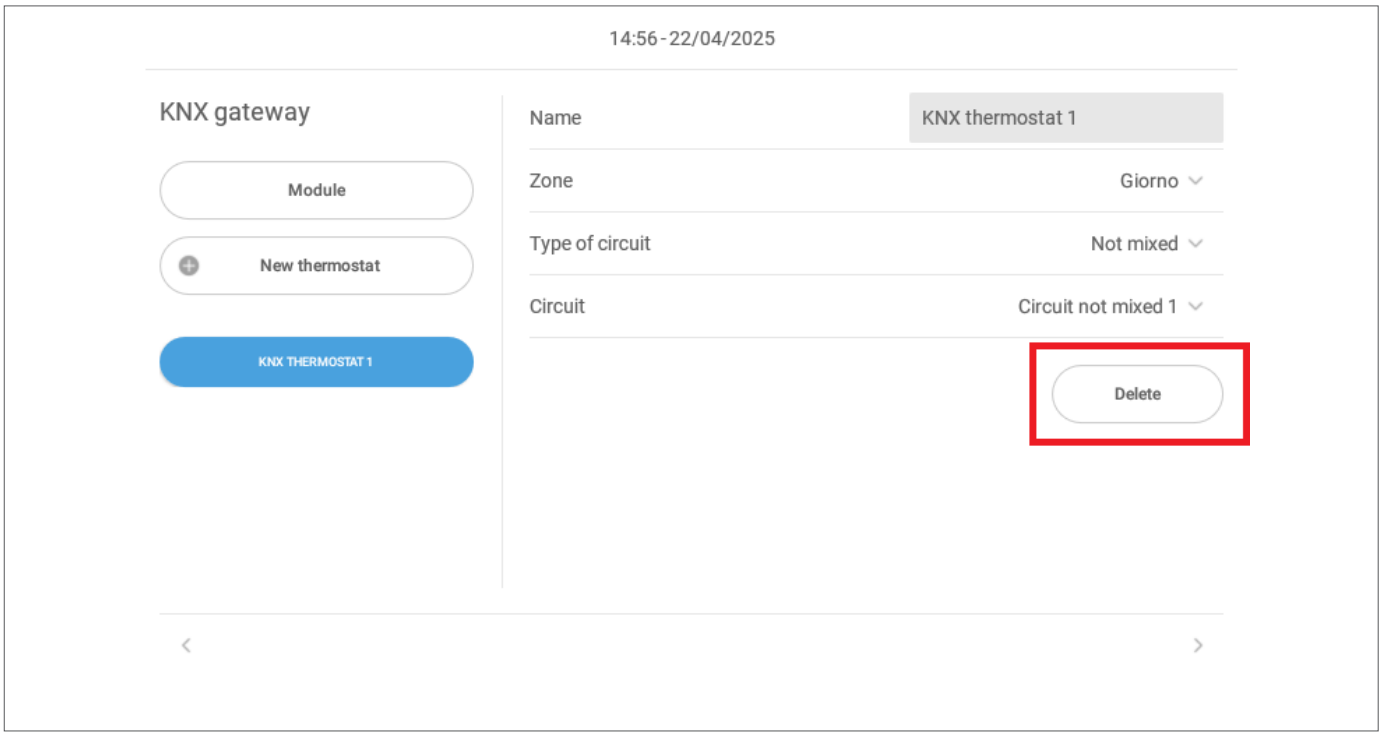
- In the “Equipment elements” section, add the KNX gateway.



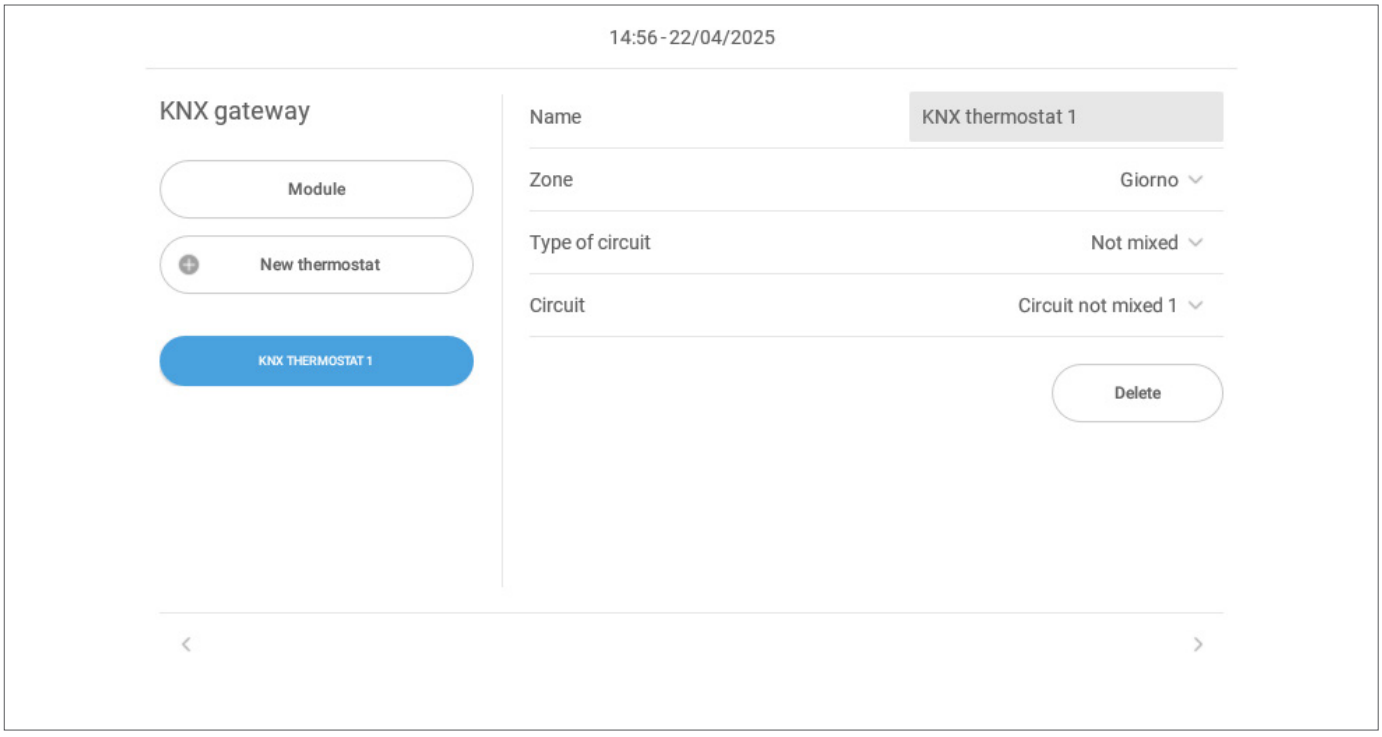
- Add the number of registers managed by the gateway (and rename if desired). Tap the “New Thermostat” button to add a thermostat.

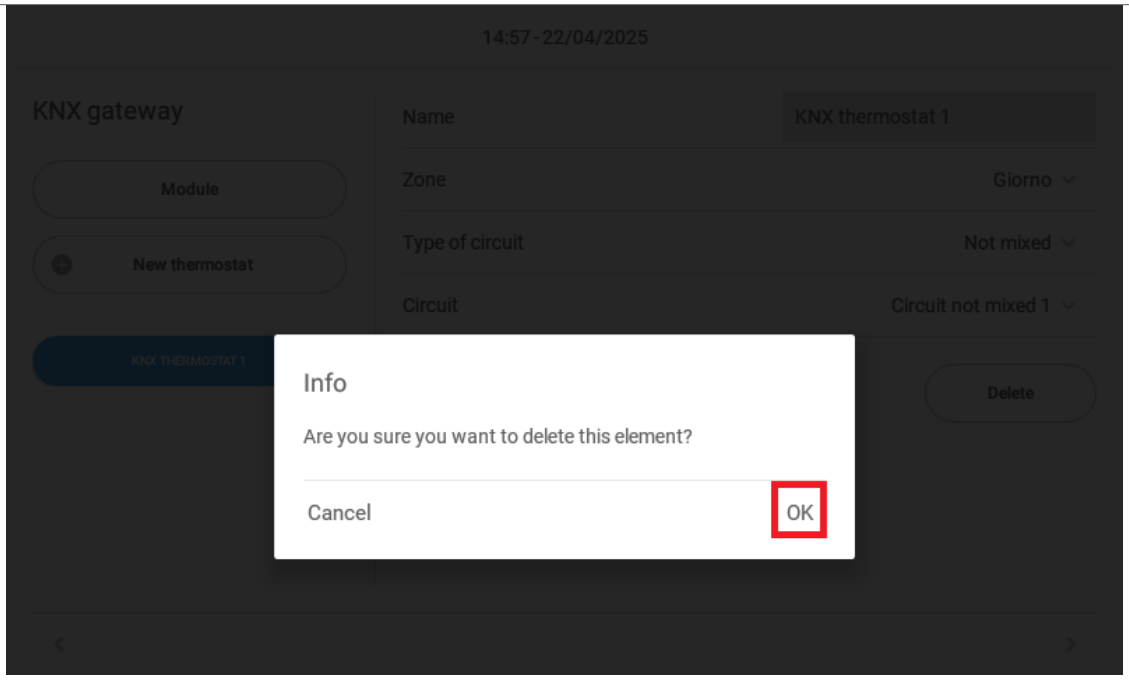


- Configure individual thermostats by selecting the area they belong to and the associated circuit.



- To delete a thermostat, press the “Delete” button and confirm.





3.4 Post-installation operations

After connecting the KNX gateway with the Control4 NRG and configuring the devices via the wizard, there may be a mismatch between the operating mode of the Control4 NRG and the thermostats. To force synchronisation, press and hold the KNX button on the gateway until the LEDs flash orange. Then release the button and check that the operation mode settings (mode, seasonality, etc.) are aligned between Control4 NRG and the connected thermostats.
Should the synchronisation fail, it is recommended to change the operation parameters manually from the Control4 NRG in order to overwrite the data in the gateway registers.

Notes

FOR OVER 35 YEARS WE HAVE BEEN
OFFERING SOLUTIONS FOR SUSTAINABLE
COMFORT AND THE WELL-BEING OF PEOPLE
AND THE ENVIRONMENT

Info & Contacts: www.clivet.com

CLIVET