Nice IS0846A00EN Smart Control Instructions

Contents

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Product Information

The Nice Smart-Control is a device that allows you to enhance the functionality of wired sensors and other devices by adding Z-Wave network communication. It can connect binary sensors, analog sensors, DS18B20 temperature sensors or DHT22 humidity and temperature sensor to report their readings to the Z-Wave controller. It can also control devices by opening/closing output contacts independently of the inputs.

WARNINGS AND GENERAL PRECAUTIONS

- CAUTION! – This manual contains important instructions and warnings for personal safety. Carefully read all parts of this manual. If in doubt, suspend installation immediately and contact Nice Technical Assistance.
- CAUTION! – Important instructions: keep this manual in a safe place to enable future product maintenance and disposal pro-cedures.
- CAUTION! – All installation and connection operations must be performed exclusively by suitably qualified and skilled person-nel with the unit disconnected from the mains power supply.
- CAUTION! – Any use other than that specified herein or in environmental conditions other than those stated in this manual is to be considered improper and is strictly forbidden!
- The product’s packaging materials must be disposed of in full compliance with local regulations.
- Never apply modifications to any part of the device. Operations other than those specified may only cause malfunctions. The manufacturer declines all liability for damage caused by makeshift modifications to the product.
- Never place the device near to sources of heat and never expose to naked flames. These actions may damage the product and cause malfunctions.
- This product is not intended for use by people (including children) with reduced physical, sensory or mental capabilities or who lack experi-ence and knowledge, unless they have been given supervision or instruction concerning the use of the product by a person responsible for their safety.
- The device is powered with a secure voltage. Nevertheless, the user should be careful or should commission the installation to a qualified person.

- Connect only in accordance with one of the diagrams presented in the manual. Incorrect connection may cause risk to health, life or material damage.
- The device is designed for installation in a wall switch box of depth not less than 60mm. The switch box and electrical connectors must be compliant with the relevant national safety standards.
- Do not expose this product to moisture, water or other liquids.
- This product is designed for indoor use only. Do not use outside!
- This product is not a toy. Keep away from children and animals!

PRODUCT DESCRIPTION

Smart-Control allows to enhance the functionality of wired sensors and other devices by adding Z-Wave™ network communication. You can connect binary sensors, analog sensors, DS18B20 temperature sensors or DHT22 humidity and temperature sensor to report their readings to the Z-Wave controller. It can also control devices by opening/closing output contacts independently of the inputs.

Main features

- Allows for connecting sensors:
  - 6 DS18B20 sensors,
  - 1 DHT sensor,
  - 2 2-wire analog sensor,
  - 2 3-wire analog sensor,
  - 2 binary sensors.
- Built-in temperature sensor.
- Supports Z-Wave™ network Security Modes: S0 with AES-128 encryption and S2 Authenticated with PRNG-based encryption.
- Works as a Z-Wave signal repeater (all non-battery operated devices within the network will act as repeaters to increase reliability of the network).
- May be used with all devices certified with the Z-Wave Plus™ certificate and should be compatible with such devices produced by other manufacturers.

Smart-Control is a fully compatible Z-Wave Plus™ device.
This device may be used with all devices certified with the Z-Wave Plus certificate and should be compatible with such devices produced by other manufacturers. All non-battery operated devices within the network will act as repeaters to increase reliability of the network. The device is a Security Enabled Z-Wave Plus product and a Security Enabled Z-Wave Controller must be used in order to fully utilize the product. The device supports Z-Wave network Security Modes: S0 with AES-128 encryption and S2 Authenticated with PRNG-based encryption.

Installation

Connecting the device in a manner inconsistent with this manual may cause risk to health, life or material damage.

- Connect only in accordance with one of the diagrams,
- The device is powered with secure voltage; nevertheless, the user should be extra careful or should commission the installation to a quali-fied person,
- Do not connect devices which are not compliant with the specification,

- Do not connect other sensors than DS18B20 or DHT22 to SP and SD terminals,
- Do not connect sensors to SP and SD terminals with wires longer than 3 meters,
- Do not load the device outputs with a current exceeding 150mA,
- Every connected device should be compliant with the relevant safety standards,
- Unused lines should be left insulated.

Tips for arranging the antenna:

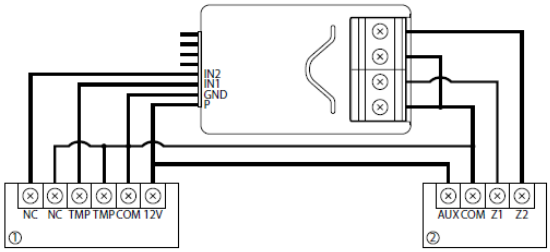
- Locate the antenna as far from metal elements as possible (connecting wires, bracket rings, etc.) in order to prevent interferences,
- Metal surfaces in the direct vicinity of the antenna (e.g. flush mounted metal boxes, metal door frames) may impair signal reception!
- Do not cut or shorten the antenna – its length is perfectly matched to the band in which the system operates.
- Make sure no part of the antenna sticks out of the wall switch box.

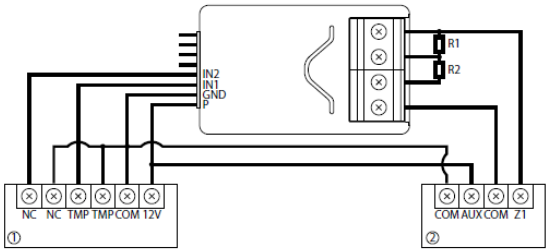
Notes for the diagrams

- ANT (black) – antenna
- GND (blue) – ground conductor
- SD (white)– signal conductor for DS18B20 or DHT22 sensor
- SP (brown) – power supply conductor for DS18B20 or DHT22 sensor (3.3V) IN2 (green) – input no. 2
- IN1 (yellow) – input no. 1
- GND (blue) – ground conductor
- P (red) – power supply conductor
- OUT1 – output no. 1 assigned to input IN1
- OUT2 – output no. 2 assigned to input IN2
- B – service button (used to add/remove the device)

Connection with an alarm line

1. **Step 1:** Turn off the alarm system.
2. **Step 2:** Connect the device with an alarm line using one of the diagrams provided in section 3.2.
3. **Step 3:** Verify correctness of connection.
4. **Step 4:** Arrange the device and its antenna in the housing.
5. **Step 5:** Power the device.
6. **Step 6:** Add the device to the Z-Wave network.
7. **Step 7:** Change values of parameters:
    - **Connected to IN1:**
        - Normally close: change parameter 20 to 0
        - Normally open: change parameter 20 to 1
    - **Connected to IN2:**
        - Normally close: change parameter 21 to 0
        - Normally open: change parameter 21 to 1





Connection with DHT22

1. **Step 1:** Disconnect power.
2. **Step 2:** Connect the DHT22 sensor according to the diagram provided in section 3.5.
3. **Step 3:** Verify correctness of connection.
4. **Step 4:** Power the device.
5. **Step 5:** Add the device to the Z-Wave network.

Connection with 3-wire 0-10V sensor

1. **Step 1:** Disconnect power.
2. **Step 2:** Connect the 3-wire analog sensor according to the diagram provided in section 3.7.
3. **Step 3:** Verify correctness of connection.
4. **Step 4:** Power the device.
5. **Step 5:** Add the device to the Z-Wave network.
6. **Step 6:** Change values of parameters according to the instructions provided in the manual.

Connection with button

1. **Step 1:** Disconnect power.
2. **Step 2:** Connect monostable or bistable switches to IN1/IN2 terminals according to the diagram provided in section 3.9.
3. **Step 3:** Verify correctness of connection.
4. **Step 4:** Power the device.
5. **Step 5:** Add the device to the Z-Wave network.
6. **Step 6:** Change values of parameters according to the instructions provided in the manual.

Connection with gate opener

1. **Step 1:** Disconnect power.
2. **Step 2:** Connect the device to a gate opener with impulse input according to the diagram provided in section 3.9.
3. **Step 3:** Verify correctness of connection.
4. **Step 4:** Power the device.
5. **Step 5:** Add the device to the Z-Wave network.
6. **Step 6:** Change values of parameters according to the instructions provided in the manual.

Connection with DS18B20

The DS18B20 sensor may easily be installed wherever very precise tempera-ture measurements are required. If proper protective measures are undertaken, the sensor may be used in humid environments or under water, it may be embedded in concrete or placed under the floor. You can connect up to 6 DS18B20 sensors in parallel to SP-SD terminals.

1. Disconnect power.
2. Connect according to the diagram on the right.
3. Verify correctness of connection.
4. Power the device.
5. Add the device to the Z-Wave network.

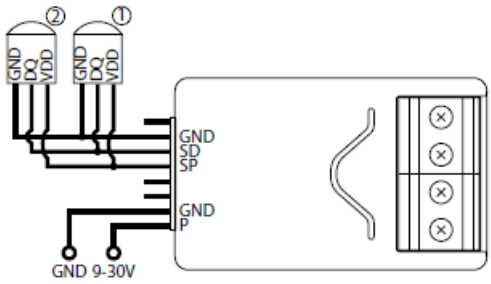


Diagram 3: Example connection with 2 DS18B20 sensors (1,2 – DS18B20 sensor)

Connection with DHT22

The DHT22 sensor may easily be installed wherever humidity and temperature measurements are required. **You can connect only 1 DHT22 sensor to TP-TD terminals.**

1. Disconnect power.
2. Connect according to the diagram on the right.
3. Verify correctness of connection.
4. Power the device.
5. Add the device to the Z-Wave network.

Connection with 2-wire 0-10V sensor

The 2-wire analog sensor requires pull-up resistor. You can connect up to 2 analog sensors to IN1/IN2 terminals. The 12V supply is required for these type of sensors.

1. Disconnect power.
2. Connect according to the diagram on the right.
3. Verify correctness of connection.
4. Power the device.
5. Add the device to the Z-Wave network.
6. Change values of parameters:
    - Connected to IN1: change parameter 20 to 5
    - Connected to IN2: change parameter 21 to 5

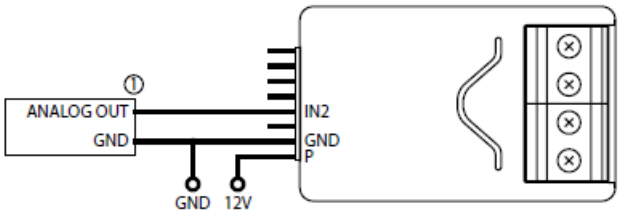


Diagram 5: Example connection with 2-wire analog sensor to IN2 input (1 – 2-wire analog sensor)

Connection with 3-wire 0-10V sensor

You can connect up to 2 analog sensors IN1/IN2 terminals.

1. Disconnect power.
2. Connect according to the diagram on the right.
3. Verify correctness of connection.
4. Power the device.
5. Add the device to the Z-Wave network.
6. Change values of parameters:
    - Connected to IN1: change parameter 20 to 4
    - Connected to IN2: change parameter 21 to 4

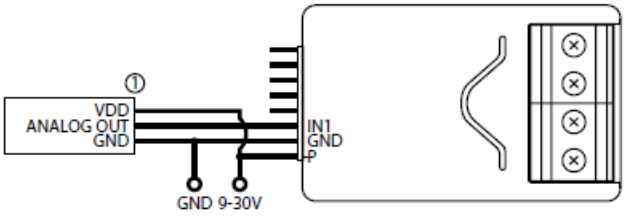


Diagram 6: Example connection with 3-wire analog sensor to IN1 input (1 – 3-wire analog sensor)

Connection with binary sensor

You connect normally opened or normally binary sensors to IN1/IN2 terminals..

1. Disconnect power.
2. Connect according to the diagram on the right.
3. Verify correctness of connection.
4. Power the device.
5. Add the device to the Z-Wave network.
6. Change values of parameters:
    - Connected to IN1:
        - Normally close: change parameter 20 to 0

    - Normally open: change parameter 20 to 1
- Connected to IN2:
    - Normally close: change parameter 21 to 0
    - Normally open: change parameter 21 to 1

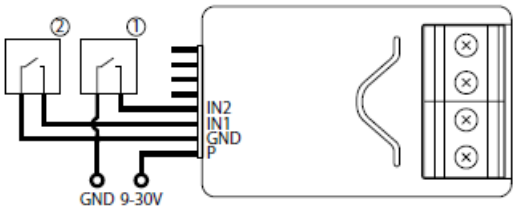


Diagram 7: Example connection with 2 binary sensors (1,2 – binary sensor).

Connection with button

You can connect monostable or bistable switches to IN1/IN2 termi-nals to activate scenes.

1. Disconnect power.
2. Connect according to the diagram on the right.
3. Verify correctness of connection.
4. Power the device.
5. Add the device to the Z-Wave network.
6. Change values of parameters:
    - Connected to IN1:
        - Monostable: change parameter 20 to 2
        - Bistable: change parameter 20 to 3
    - Connected to IN2:
        - Monostable: change parameter 21 to 2
        - Bistable: change parameter 21 to 3

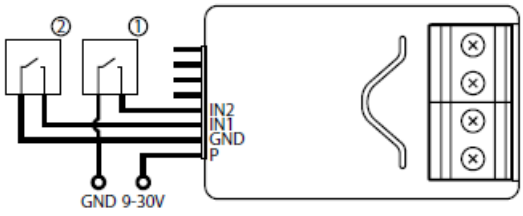


Diagram 8: Example connection with 2 buttons (1,2 – button).

Connection with gate opener

Smart-Control can be connected to different devices to control them. In this example it is connected to gate opener with impulse input (every impulse will start and stop the gate motor, alternately opening/closing)

1. Disconnect power.

2. Connect according to the diagram on the right.
3. Verify correctness of connection.
4. Power the device.
5. Add the device to the Z-Wave network.
6. Change values of parameters:
    - Connected to IN1 and OUT1:
        - Change parameter 20 to 2 (monostable button)
        - Change parameter 156 to 1 (0.1s)
    - Connected to IN2 and OUT2:
        - Change parameter 21 to 2 (monostable button)
        - Change parameter 157 to 1 (0.1s)

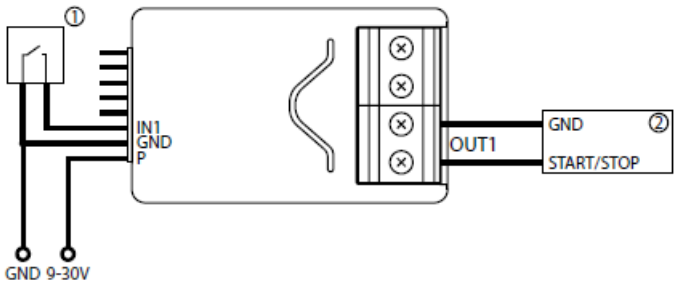


Diagram 9: Example gate opener (1 – monostable button, 2 – gate opener controller)

ADDING THE DEVICE

- Full DSK code is present only on the box, make sure to keep it or copy the code.
- In case of problems with adding the device, please reset the device and repeat the adding procedure.

Adding (Inclusion) – Z-Wave device learning mode, allowing to add the device to existing Z-Wave network. 4.1 – Adding manually

To add the device to the Z-Wave network manually:

1. Power the device.
2. Set the main controller in (Security/non-Security Mode) add mode (see the controller's manual).
3. Quickly, triple click button on the device housing or switch connected to IN1 or IN2.
4. If you are adding in Security S2 Authenticated, scan the DSK QR code or input the 5-digit PIN code (label on the bottom of the box).
5. LED will start blinking yellow, wait for the adding process to end.
6. Successful adding will be confirmed by the Z-Wave controller's message.

Adding using SmartStart

SmartStart enabled products can be added into a Z-Wave network by scanning the Z-Wave QR Code present on the product with a controller providing SmartStart inclusion. SmartStart product will be added automatically within 10 minutes of being switched on in the network range.

To add the device to the Z-Wave network using SmartStart:

1. Set the main controller in Security S2 Authenticated add mode (see the controller's manual).
2. Scan the DSK QR code or input the 5-digit PIN code (label on the bottom of the box).
3. Power the device.
4. LED will start blinking yellow, wait for the adding process to end.
5. Successful adding will be confirmed by the Z-Wave controller's message.

REMOVING THE DEVICE

Removing (Exclusion) – Z-Wave device learning mode, allowing to remove the device from existing Z-Wave network.

To remove the device from the Z-Wave network:

1. Power the device.
2. Set the main controller into remove mode (see the controller's manual).
3. Quickly, triple click button on the device housing or switch connected to IN1 or IN2.
4. LED will start blinking yellow, wait for the removing process to end.
5. Successful removing will be confirmed by the Z-Wave controller's message.

Notes:

- Removing the device restores all the default parameters of the device, but does not reset power metering data.
- Removing using switch connected to IN1 or IN2 works only if parameter 20 (IN1) or 21 (IN2) is set to 2 or 3 and parameter 40 (IN1) or 41 (IN2) does not allow sending scenes for triple click.

OPERATING THE DEVICE

Controlling the outputs

It is possible to control the outputs with the inputs or with the B-button:

- single click – switch OUT1 output
- double click – switch OUT2 output

Visual indications

The built-in LED light shows current device status. After powering the device:

- Green – device added to a Z-Wave network (without Security S2 Authenticated)
- Magenta – device added to a Z-Wave network (with Security S2 Authenticated)
- Red – device not added to a Z-Wave network

Update:

- Blinking cyan – update in progress
- Green – update successful (added without Security S2 Authenticated)

- Magenta – update successful (added with Security S2 Authenticated)
- Red – update not successful

Menu:

- 3 green blinks – entering the menu (added without Security S2 Authenticated)
- 3 magenta blinks – entering the menu (added with Security S2 Authenticated)
- 3 red blinks – entering the menu (not added to a Z-Wave network)
- Magenta – range test
- Yellow – reset

Menu

Menu allows to perform Z-Wave network actions. In order to use the menu:

1. Press and hold the button to enter the menu, device blinks to signal adding status (see 7.2 – Visual indications).
2. Release the button when device signals desired position with colour:
    1. MAGENTA – start range test
    2. YELLOW – reset the device
3. Quickly click the button to confirm.

Resetting to factory defaults

Reset procedure allows to restore the device back to its factory settings, which means all information about the Z-Wave controller and user configuration will be deleted.
Note. Resetting the device is not the recommended way of removing the device from the Z-Wave network. Use reset procedure only if the primary controller is missing or inoperable. Certain device removal can be achieved by the procedure of removing described.

1. Press and hold the button to enter the menu.
2. Release button when the device glows yellow.
3. Quickly click the button to confirm.
4. After few seconds the device will be restarted, which is signalled with the red colour.

Z-WAVE RANGE TEST

The device has a built in Z-Wave network main controller's range tester.

- To make Z-Wave range test possible, the device must be added to the Z-Wave controller. Testing may stress the network, so it is recom-mended to perform the test only in special cases.

To test the main controller's range:

1. Press and hold the button to enter the menu.
2. Release button when the device glows magenta.

3. Quickly click the button to confirm.
4. Visual indicator will indicate the Z-Wave network's range (range signaling modes described below).
5. To exit Z-Wave range test, press the button briefly.

Z-Wave range tester signalling modes:

- Visual indicator pulsing green – the device attempts to establish a direct communication with the main controller. If a direct communication attempt fails, the device will try to establish a routed communication, through other modules, which will be signalled by visual indicator pulsing yellow.
- Visual indicator glowing green – the device communicates with the main controller directly.
- Visual indicator pulsing yellow – the device tries to establish a routed communication with the main controller through other modules (repeaters).
- Visual indicator glowing yellow – the device communicates with the main controller through the other modules. After 2 seconds the device will retry to establish a direct communication with the main controller, which will be signalled with visual indicator pulsing green.
- Visual indicator pulsing violet – the device does communicate at the maximum distance of the Z-Wave network. If connection proves suc-cessful it will be confirmed with a yellow glow. It's not recommended to use the device at the range limit.
- Visual indicator glowing red – the device is not able to connect to the main controller directly or through another Z-Wave network device (repeater).

Note. Communication mode of the device may switch between direct and one using routing, especially if the device is on the limit of the direct range.

ACTIVATING SCENES

The device can activate scenes in the Z-Wave controller by sending scene ID and attribute of a specific action using Central Scene Command Class. In order for this functionality to work connect monostable or bistable switch to the IN1 or IN2 input and set parameter 20 (IN1) or 21 (IN2) to 2 or 3. By default scenes are not activated, set parameters 40 and 41 to enable scene activation for selected actions.

Table A1 – Actions activating scenes			
Switch	**Action**	**Scene ID**	**Attribute**
Switch connected to IN1 terminal	Switch clicked once	1	Key Pressed 1 time
	Switch clicked twice	1	Key Pressed 2 times
	Switch clicked thrice*	1	Key Pressed 3 times
	Switch held**	1	Key Held Down
	Switch released**	1	Key Released
Switch connected to IN2 terminal	Switch clicked once	2	Key Pressed 1 time
	Switch clicked twice	2	Key Pressed 2 times
	Switch clicked thrice*	2	Key Pressed 3 times
	Switch held**	2	Key Held Down
	Switch released**	2	Key Released

* Activating triple clicks will disallow removing using input terminal. ** Not available for toggle switches.

ASSOCIATIONS

Association (linking devices) – direct control of other devices within the Z-Wave system network e.g. Dimmer, Relay Switch, Roller Shutter or scene (may be controlled only through a Z-Wave controller). Association ensures direct transfer of control commands between devices, is performed without participation of the main controller and re-quires associated device to be in the direct range.

The device provides the association of 3 groups:

1. 1st association group – “Lifeline” reports the device status and allows for assigning single device only (main controller by default).
2. 2nd association group – “On/Off (IN1)” is assigned to IN1 input terminal (uses Basic command class).
3. 3rd association group – “On/Off (IN2)” is assigned to IN2 input terminal (uses Basic command class).

The device in 2nd and 3rd group allows to control 5 regular or multichannel devices per an association group, with the exception of “Lifeline” that is reserved solely for the controller and hence only 1 node can be assigned.

Z-WAVE SPECIFICATION

Table A2 – Supported Command Classes			
	Command Class	**Version**	**Secure**
1.	COMMAND_CLASS_ZWAVEPLUS_INFO [0x5E]	V2	
2.	COMMAND_CLASS_SWITCH_BINARY [0x25]	V1	YES
3.	COMMAND_CLASS_ASSOCIATION [0x85]	V2	YES
4.	COMMAND_CLASS_MULTI_CHANNEL_ASSOCIATION [0x8E]	V3	YES
5.	COMMAND_CLASS_ASSOCIATION_GRP_INFO [0x59]	V2	YES
6.	COMMAND_CLASS_TRANSPORT_SERVICE [0x55]	V2	
7.	COMMAND_CLASS_VERSION [0x86]	V2	YES
8.	COMMAND_CLASS_MANUFACTURER_SPECIFIC [0x72]	V2	YES
9.	COMMAND_CLASS_DEVICE_RESET_LOCALLY [0x5A]	V1	YES
10.	COMMAND_CLASS_POWERLEVEL [0x73]	V1	YES
11.	COMMAND_CLASS_SECURITY [0x98]	V1	
12.	COMMAND_CLASS_SECURITY_2 [0x9F]	V1	
13.	COMMAND_CLASS_CENTRAL_SCENE [0x5B]	V3	YES
14.	COMMAND_CLASS_SENSOR_MULTILEVEL [0x31]	V11	YES
15.	COMMAND_CLASS_MULTI_CHANNEL [0x60]	V4	YES
16.	COMMAND_CLASS_CONFIGURATION [0x70]	V1	YES
17.	COMMAND_CLASS_CRC_16_ENCAP [0x56]	V1	
18.	COMMAND_CLASS_NOTIFICATION [0x71]	V8	YES
19.	COMMAND_CLASS_PROTECTION [0x75]	V2	YES
20.	COMMAND_CLASS_FIRMWARE_UPDATE_MD [0x7A]	V4	YES
21.	COMMAND_CLASS_SUPERVISION [0x6C]	V1	
22.	COMMAND_CLASS_APPLICATION_STATUS [0x22]	V1	
23.	COMMAND_CLASS_BASIC [0x20]	V1	YES

Table A3 – Multichannel Command Class	
MULTICHANNEL CC	
ROOT (Endpoint 1)	
Generic Device Class	GENERIC_TYPE_SENSOR_NOTIFICATION
Specific Device Class	SPECIFIC_TYPE_NOTIFICATION_SENSOR
Command Classes	COMMAND_CLASS_ZWAVEPLUS_INFO [0x5E]
	COMMAND_CLASS_ASSOCIATION [0x85]
	COMMAND_CLASS_MULTI_CHANNEL_ASSOCIATION [0x8E]
	COMMAND_CLASS_ASSOCIATION_GRP_INFO [0x59]
	COMMAND_CLASS_NOTIFICATION [0x71]
	COMMAND_CLASS_SUPERVISION [0x6C]
	COMMAND_CLASS_APPLICATION_STATUS [0x22]
	COMMAND_CLASS_SECURITY [0x98]
	COMMAND_CLASS_SECURITY_2 [0x9F]
Description	Input 1 – Notification
Endpoint 2	
Generic Device Class	GENERIC_TYPE_SENSOR_NOTIFICATION
Specific Device Class	SPECIFIC_TYPE_NOTIFICATION_SENSOR
Command Classes	COMMAND_CLASS_ZWAVEPLUS_INFO [0x5E]
	COMMAND_CLASS_ASSOCIATION [0x85]
	COMMAND_CLASS_MULTI_CHANNEL_ASSOCIATION [0x8E]
	COMMAND_CLASS_ASSOCIATION_GRP_INFO [0x59]
	COMMAND_CLASS_NOTIFICATION [0x71]
	COMMAND_CLASS_SUPERVISION [0x6C]
	COMMAND_CLASS_APPLICATION_STATUS [0x22]
	COMMAND_CLASS_SECURITY [0x98]
	COMMAND_CLASS_SECURITY_2 [0x9F]
Description	Input 2 – Notification

Endpoint 3	
Generic Device Class	GENERIC_TYPE_SENSOR_MULTILEVEL
Specific Device Class	SPECIFIC_TYPE_ROUTING_SENSOR_MULTILEVEL
	COMMAND_CLASS_ZWAVEPLUS_INFO [0x5E]

Command Classes	COMMAND_CLASS_ASSOCIATION [0x85]
	COMMAND_CLASS_MULTI_CHANNEL_ASSOCIATION [0x8E]
	COMMAND_CLASS_ASSOCIATION_GRP_INFO [0x59]
	COMMAND_CLASS_SENSOR_MULTILEVEL [0x31]
	COMMAND_CLASS_SUPERVISION [0x6C]
	COMMAND_CLASS_APPLICATION_STATUS [0x22]
	COMMAND_CLASS_SECURITY [0x98]
	COMMAND_CLASS_SECURITY_2 [0x9F]
Description	Analog Input 1 – Voltage Level
Endpoint 4	
Generic Device Class	GENERIC_TYPE_SENSOR_MULTILEVEL
Specific Device Class	SPECIFIC_TYPE_ROUTING_SENSOR_MULTILEVEL
Command Classes	COMMAND_CLASS_ZWAVEPLUS_INFO [0x5E]
	COMMAND_CLASS_ASSOCIATION [0x85]
	COMMAND_CLASS_MULTI_CHANNEL_ASSOCIATION [0x8E]
	COMMAND_CLASS_ASSOCIATION_GRP_INFO [0x59]
	COMMAND_CLASS_SENSOR_MULTILEVEL [0x31]
	COMMAND_CLASS_SUPERVISION [0x6C]
	COMMAND_CLASS_APPLICATION_STATUS [0x22]
	COMMAND_CLASS_SECURITY [0x98]
	COMMAND_CLASS_SECURITY_2 [0x9F]
Description	Analog Input 2 – Voltage Level
Endpoint 5	
Generic Device Class	GENERIC_TYPE_SWITCH_BINARY
Specific Device Class	SPECIFIC_TYPE_POWER_SWITCH_BINARY
	COMMAND_CLASS_ZWAVEPLUS_INFO [0x5E]
	COMMAND_CLASS_SWITCH_BINARY [0x25]
	COMMAND_CLASS_ASSOCIATION [0x85]
	COMMAND_CLASS_MULTI_CHANNEL_ASSOCIATION [0x8E]
	COMMAND_CLASS_ASSOCIATION_GRP_INFO [0x59]
	COMMAND_CLASS_PROTECTION [0x75]
	COMMAND_CLASS_SUPERVISION [0x6C]
	COMMAND_CLASS_APPLICATION_STATUS [0x22]

Command Classes	COMMAND_CLASS_SECURITY [0x98]
	COMMAND_CLASS_SECURITY_2 [0x9F]
Description	Output 1

Endpoint 6	
Generic Device Class	GENERIC_TYPE_SWITCH_BINARY
Specific Device Class	SPECIFIC_TYPE_POWER_SWITCH_BINARY
Command Classes	COMMAND_CLASS_ZWAVEPLUS_INFO [0x5E]
	COMMAND_CLASS_SWITCH_BINARY [0x25]
	COMMAND_CLASS_ASSOCIATION [0x85]
	COMMAND_CLASS_MULTI_CHANNEL_ASSOCIATION [0x8E]
	COMMAND_CLASS_ASSOCIATION_GRP_INFO [0x59]
	COMMAND_CLASS_PROTECTION [0x75]
	COMMAND_CLASS_SUPERVISION [0x6C]
	COMMAND_CLASS_APPLICATION_STATUS [0x22]
	COMMAND_CLASS_SECURITY [0x98]
	COMMAND_CLASS_SECURITY_2 [0x9F]
Description	Output 2
Endpoint 7	
Generic Device Class	GENERIC_TYPE_SENSOR_MULTILEVEL
Specific Device Class	SPECIFIC_TYPE_ROUTING_SENSOR_MULTILEVEL
Command Classes	COMMAND_CLASS_ZWAVEPLUS_INFO [0x5E]
	COMMAND_CLASS_ASSOCIATION [0x85]
	COMMAND_CLASS_MULTI_CHANNEL_ASSOCIATION [0x8E]
	COMMAND_CLASS_ASSOCIATION_GRP_INFO [0x59]
	COMMAND_CLASS_NOTIFICATION [0x71]
	COMMAND_CLASS_SENSOR_MULTILEVEL [0x31]
	COMMAND_CLASS_SUPERVISION [0x6C]
	COMMAND_CLASS_APPLICATION_STATUS [0x22]
	COMMAND_CLASS_SECURITY [0x98]
	COMMAND_CLASS_SECURITY_2 [0x9F]
Description	Temperature – internal sensor
Endpoint 8-13 (when DS18S20 sensors connected)	

Generic Device Class	GENERIC_TYPE_SENSOR_MULTILEVEL
Specific Device Class	SPECIFIC_TYPE_ROUTING_SENSOR_MULTILEVEL
Command Classes	COMMAND_CLASS_ZWAVEPLUS_INFO [0x5E]
	COMMAND_CLASS_ASSOCIATION [0x85]
	COMMAND_CLASS_MULTI_CHANNEL_ASSOCIATION [0x8E]
	COMMAND_CLASS_ASSOCIATION_GRP_INFO [0x59]
	COMMAND_CLASS_NOTIFICATION [0x71]
	COMMAND_CLASS_SENSOR_MULTILEVEL [0x31]
	COMMAND_CLASS_SUPERVISION [0x6C]
	COMMAND_CLASS_APPLICATION_STATUS [0x22]
	COMMAND_CLASS_SECURITY [0x98]
	COMMAND_CLASS_SECURITY_2 [0x9F]
Description	Temperature – external sensor DS18B20 No 1-6

Endpoint 8 (when DHT22 sensor connected)	
Generic Device Class	GENERIC_TYPE_SENSOR_MULTILEVEL
Specific Device Class	SPECIFIC_TYPE_ROUTING_SENSOR_MULTILEVEL
Command Classes	COMMAND_CLASS_ZWAVEPLUS_INFO [0x5E]
	COMMAND_CLASS_ASSOCIATION [0x85]
	COMMAND_CLASS_MULTI_CHANNEL_ASSOCIATION [0x8E]
	COMMAND_CLASS_ASSOCIATION_GRP_INFO [0x59]
	COMMAND_CLASS_NOTIFICATION [0x71]
	COMMAND_CLASS_SENSOR_MULTILEVEL [0x31]
	COMMAND_CLASS_SUPERVISION [0x6C]
	COMMAND_CLASS_APPLICATION_STATUS [0x22]
	COMMAND_CLASS_SECURITY [0x98]
	COMMAND_CLASS_SECURITY_2 [0x9F]
Description	Temperature – external sensor DHT22
Endpoint 9 (when DHT22 sensor connected)	
Generic Device Class	GENERIC_TYPE_SENSOR_MULTILEVEL
Specific Device Class	SPECIFIC_TYPE_ROUTING_SENSOR_MULTILEVEL
	COMMAND_CLASS_ZWAVEPLUS_INFO [0x5E]
	COMMAND_CLASS_ASSOCIATION [0x85]
	COMMAND_CLASS_MULTI_CHANNEL_ASSOCIATION [0x8E]
	COMMAND_CLASS_ASSOCIATION_GRP_INFO [0x59]
	COMMAND_CLASS_NOTIFICATION [0x71]
	COMMAND_CLASS_SENSOR_MULTILEVEL [0x31]
	COMMAND_CLASS_SUPERVISION [0x6C]
	COMMAND_CLASS_APPLICATION_STATUS [0x22]
	COMMAND_CLASS_SECURITY [0x98]
	COMMAND_CLASS_SECURITY_2 [0x9F]
Description	Humidity – external sensor DHT22

The device uses Notification Command Class to report different events to the controller (“Lifeline” group):

Table A4 – Notification Command Class		
ROOT (Endpoint 1)		
Notification Type	Event	
Home Security [0x07]	Intrusion Unknown Location [0x02]	
Endpoint 2		
Notification Type	Event	
Home Security [0x07]	Intrusion Unknown Location [0x02]	
Endpoint 7		
Notification Type	Event	Event /State Param- eter
System [0x09]	System hardware failure with manufac- turer pr oprietary failure code [0x03]	Device Overheat [0x03]
Endpoint 8-13		
Notification Type	Event	
System [0x09]	System hardware failure [0x01]	

Protection Command Class allows to prevent local or remote control of the outputs.

Table A5 – Protection CC:			
Type	**State**	**Description**	**Hint**
Local	0	Unprotected – The device is not protected, and may be operated normally via the user interface.	Inputs connected with outpu ts.
Local	2	No operation possible – state of output cannot be chang ed by the B-button or corresponding Input	Inputs disconnected from ou tputs.
RF	0	Unprotected – The device accept and respond to all RF Commands.	Outputs can be con- trolled via Z-Wave.
RF	1	No RF control – command class basic and switch binary are rejected, every other command class will be handled	Outputs cannot be con- troll ed via Z-Wave.

Table A6 – Assocation groups mapping		
Root	**Endpoint**	**Association group in end- point**
Association Group 2	Endpoint 1	Association Group 2
Association Group 3	Endpoint 2	Association Group 2

Table A7 – Basic commands mapping					
		Endpoints			
Command	**Root**	**1-2**	**3-4**	**5-6**	**7-13**
Basic Set	= EP1	Application Rejected	Application Rejected	Switch Binary Set	Application Rejected
Basic Get	= EP1	Notification Get	Sensor Multi- level Get	Switch Binary Get	Sensor Multi- level Get
Basic Report	= EP1	Notification Report	Sensor Multi- level Report	Switch BInary Report	Sensor Multi- level Report

Table A8 – Other Command Class mappings	
Command Class	**Root mapped to**
Sensor Multilevel	Endpoint 7
Binary Switch	Endpoint 5
Protection	Endpoint 5

ADVANCED PARAMETERS

The device allows to customize its operation to user's needs using configurable parameters. The settings can be adjusted via Z-Wave controller to which the device is added. The way of adjusting them might differ depending on the controller. Many of the parameters are relevant only for specific input operating modes (parameters 20 and 21), consult the tables below:

Table A11 - Smart-Control - Available parameters			
Parameter:	20. Input 1 - operating mode		
Description:	This parameter allows to choose mode of 1st input (IN1). Change it depending on connected device.		
Available settings:	0 – Normally closed alarm input (Notification) 1 – Normally open alarm input (Notification) 2 – Monostable button (Central Scene) 3 – Bistable button (Central Scene) 4 – Analog input without internal pull-up (Sensor Multilevel) 5 – Analog input with internal pull-up (Sensor Multilevel)		
Default setting:	2 (monostable button)	Parameter size:	1 [byte]
Parameter:	21. Input 2 - operating mode		
Description:	This parameter allows to choose mode of 2nd input (IN2). Change it depending on connected device.		
Available settings:	0 – Normally closed alarm input (Notification CC) 1 – Normally open alarm input (Notification CC) 2 – Monostable button (Central Scene CC) 3 – Bistable button (Central Scene CC) 4 – Analog input without internal pull-up (Sensor Multilevel CC) 5 – Analog input with internal pull-up (Sensor Multilevel CC)		
Default setting:	2 (monostable button)	Parameter size:	1 [byte]
Parameter:	24. Inputs orientation		
Description:	This parameter allows reversing operation of IN1 and IN2 inputs without changing the wiring. Use in case of incorrect wiring.		
Available settings:	0 – default (IN1 - 1st input, IN2 - 2nd input) 1 – reversed (IN1 - 2nd input, IN2 - 1st input)		
Default setting:	0	Parameter size:	1 [byte]
Parameter:	25. Outputs orientation		
Description:	This parameter allows reversing operation of OUT1 and OUT2 inputs without changing the wiring. Use in case of incorrect wiring.		
Available settings:	0 – default (OUT1 - 1st output, OUT2 - 2nd output) 1 – reversed (OUT1 - 2nd output, OUT2 - 1st output)		
Default setting:	0	Parameter size:	1 [byte]
Parameter:	40. Input 1 - sent scenes		
Description:	This parameter defines which actions result in sending scene ID and attribute assigned to them (see 9: Activating scenes). Parameter is relevant only if parameter 20 is set to 2 or 3.		

Table A10 – Parameter dependency – Parameter 21

Parameter 21	No. 41	No. 52	No. 54	No. 151	No. 153	No. 63	No. 64
0 or 1		✓	✓	✓	✓		
2 or 3	✓						
4 or 5						✓	✓

Table A11 – Smart-Control – Available parameters			
Parameter:	20. Input 1 – operating mode		
Description:	This parameter allows to choose mode of 1st input (IN1). Change it depending on connect ed device.		
Available settings:	0 – Normally closed alarm input (Notification) 1 – Normally open alarm input (Notification) 2 – Monostable button (Central Scene) 3 – Bistable button (Central Scene) 4 – Analog input without internal pull-up (Sensor Multilevel) 5 – Analog input with internal pull-up (Sensor Multilevel)		
Default setting:	2 (monostable button)	Parameter size:	1 [byte]
Parameter:	21. Input 2 – operating mode		
Description:	This parameter allows to choose mode of 2nd input (IN2). Change it depending on connected device.		
Available settings:	0 – Normally closed alarm input (Notification CC) 1 – Normally open alarm input (Notificati on CC) 2 – Monostable button (Central Scene CC) 3 – Bistable button (Central Scene CC) 4 – Analog input without internal pull-up (Sensor Multilevel CC) 5 – Analog input with inter nal pull-up (Sensor Multilevel CC)		
Default setting:	2 (monostable button)	Parameter size:	1 [byte]
Parameter:	24. Inputs orientation		
Description:	This parameter allows reversing operation of IN1 and IN2 inputs without changing the wiri ng. Use in case of incor- rect wiring.		
Available settings:	0 – default (IN1 – 1st input, IN2 – 2nd input) 1 – reversed (IN1 – 2nd input, IN2 – 1st input)		
Default setting:	0	Parameter size:	1 [byte]
Parameter:	25. Outputs orientation		
Description:	This parameter allows reversing operation of OUT1 and OUT2 inputs without changing the wiring. Use in case of incorrect wiring.		
Available settings:	0 – default (OUT1 – 1st output, OUT2 – 2nd output) 1 – reversed (OUT1 – 2nd output, OUT2 – 1st output)		
Default setting:	0	Parameter size:	1 [byte]
Parameter:	40. Input 1 – sent scenes		
Description:	This parameter defines which actions result in sending scene ID and attribute assigned to t hem (see 9: Activating scenes). Parameter is relevant only if parameter 20 is set to 2 or 3.		

Available settings:	1 – Key pressed 1 time 2 – Key pressed 2 times 4 – Key pressed 3 times 8 – Key hold down and key released		
Default setting:	0 (no scenes sent)	Parameter size:	1 [byte]
Parameter:	41. Input 2 – sent scenes		
Description:	This parameter defines which actions result in sending scene ID and attribute assigned to t hem (see 9: Activating scenes). Parameter is relevant only if parameter 21 is set to 2 or 3.		
Available settings:	1 – Key pressed 1 time 2 – Key pressed 2 times 4 – Key pressed 3 times 8 – Key hold down and key released		
Default setting:	0 (no scenes sent)	Parameter size:	1 [byte]
Parameter:	47. Input 1 – value sent to 2nd association group when activated		
Description:	This parameter defines value sent to devices in 2nd association group when IN1 input is tri ggered (using Basic Command Class). Parameter is relevant only if parameter 20 is set to 0 or 1 (alarm mode).		
Available settings:	0-255		
Default setting:	255	Parameter size:	2 [bytes]
Parameter:	49. Input 1 – value sent to 2nd association group when deactivated		
Description:	This parameter defines value sent to devices in 2nd association group when IN1 input is d eactivated (using Basic Command Class). Parameter is relevant only if parameter 20 is set to 0 or 1 (alarm mode).		
Available settings:	0-255		
Default setting:	0	Parameter size:	2 [bytes]
Parameter:	52. Input 2 – value sent to 3rd association group when activated		
Description:	This parameter defines value sent to devices in 3rd association group when IN2 input is tri ggered (using Basic Command Class). Parameter is relevant only if parameter 21 is set to 0 or 1 (alarm mode).		
Available settings:	0-255		
Default setting:	255	Parameter size:	2 [bytes]

Parameter:	54. Input 2 – value sent to 3rd association group when deactivated		
Description:	This parameter defines value sent to devices in 3rd association group when IN2 input is deactivated (using Basic Command Class). Parameter is relevant only if parameter 21 is set to 0 or 1 (alarm mode).		
Available settings:	0-255		
Default setting:	10	Parameter size:	1 [byte]
Parameter:	150. Input 1 – sensitivity		
Description:	This parameter defines the inertia time of IN1 input in alarm modes. Adjust this parameter to prevent bouncing or signal disruptions. Parameter is relevant only if parameter 20 is set to 0 or 1 (alarm mode).		
Available settings:	1-100 (10ms-1000ms, 10ms step)		
Default setting:	600 (10min)	Parameter size:	2 [bytes]
Parameter:	151. Input 2 – sensitivity		
Description:	This parameter defines the inertia time of IN2 input in alarm modes. Adjust this parameter to prevent bouncing or signal disruptions. Parameter is relevant only if parameter 21 is set to 0 or 1 (alarm mode).		
Available settings:	1-100 (10ms-1000ms, 10ms step)		
Default setting:	10 (100ms)	Parameter size:	1 [byte]
Parameter:	152. Input 1 – delay of alarm cancellation		
Description:	This parameter defines additional delay of cancelling the alarm on IN1 input. Parameter is relevant only if param- eter 20 is set to 0 or 1 (alarm mode).		
Available settings:	0 – no delay 1-3600s		
Default setting:	0 (no delay)	Parameter size:	2 [bytes]
Parameter:	153. Input 2 – delay of alarm cancellation		
Description:	This parameter defines additional delay of cancelling the alarm on IN2 input. Parameter is relevant only if param- eter 21 is set to 0 or 1 (alarm mode).		
Available settings:	0 – no delay 0-3600s		

Default setting:	0 (no delay)	Parameter size:	2 [bytes]
Parameter:	154. Output 1 – logic of operation		
Description:	This parameter defines logic of OUT1 output operation.		

Available settings:	0 – contacts normally open / closed when active 1 – contacts normally closed / open when active		
Default setting:	0 (NO)	Parameter size:	1 [byte]
Parameter:	155. Output 2 – logic of operation		
Description:	This parameter defines logic of OUT2 output operation.		
Available settings:	0 – contacts normally open / closed when active 1 – contacts normally closed / open when active		
Default setting:	0 (NO)	Parameter size:	1 [byte]
Parameter:	156. Output 1 – auto off		
Description:	This parameter defines time after which OUT1 will be automatically deactivated.		
Available settings:	0 – auto off disabled 1-27000 (0.1s-45min, 0.1s step)		
Default setting:	0 (auto off disabled)	Parameter size:	2 [bytes]
Parameter:	157. Output 2 – auto off		
Description:	This parameter defines time after which OUT2 will be automatically deactivated.		
Available settings:	0 – auto off disabled 1-27000 (0.1s-45min, 0.1s step)		
Default setting:	0 (auto off disabled)	Parameter size:	2 [bytes]
Parameter:	63. Analog inputs – minimal change to report		
Description:	This parameter defines minimal change (from the last reported) of analog input value that r esults in sending new report. Parameter is relevant only for analog inputs (parameter 20 or 21 set to 4 or 5). Setting too high value may result in no reports being sent.		
Available settings:	0 – reporting on change disabled 1-100 (0.1-10V, 0.1V step)		
Default setting:	5 (0.5V)	Parameter size:	1 [byte]
Parameter:	64. Analog inputs – periodical reports		
Description:	This parameter defines reporting period of analog inputs value. Periodical reports are inde pendent from changes in value (parameter 63). Parameter is relevant only for analog inputs (parameter 20 or 21 s et to 4 or 5).		
Available settings:	0 – periodic reports are disabled 30-32400 (30-32400s) – report interval		

Default setting:	0 (periodical reports disabled)	Parameter size:	2 [bytes]
Parameter:	65. Internal temperature sensor – minimal change to report		
Description:	This parameter defines minimal change (from the last reported) of internal temperature se nsor value that results in sending new report.		
Available settings:	0 – reporting on change disabled 1-255 (0.1-25.5°C)		
Default setting:	5 (0.5°C)	Parameter size:	2 [bytes]

Parameter:	66. Internal temperature sensor – periodical reports		
Description:	This parameter defines reporting period of internal temperature sensor value. Periodical re ports are independent from changes in value (parameter 65).		
Available settings:	0 – periodical reports disabled 60-32400 (60s-9h)		
Default setting:	0 (periodical reports disabled)	Parameter size:	2 [bytes]
Parameter:	67. External sensors – minimal change to report		
Description:	This parameter defines minimal change (from the last reported) of external sensors values (DS18B20 or DHT22) that results in sending new report. Parameter is relevant only for connected DS18B20 or D HT22 sensors.		
Available settings:	0 – reporting on change disabled 1-255 (0.1-25.5 units, 0.1)		
Default setting:	5 (0.5 units)	Parameter size:	2 [bytes]
Parameter:	68. External sensors – periodical reports		
Description:	This parameter defines reporting period of analog inputs value. Periodical reports are inde pendent from changes in value (parameter 67). Parameter is relevant only for connected DS18B20 or DHT22 sen sors.		
Available settings:	0 – periodical reports disabled 60-32400 (60s-9h)		
Default setting:	0 (periodical reports disabled)	Parameter size:	2 [bytes]

TECHNICAL SPECIFICATIONS

The product Smart-Control is produced by Nice S.p.A. (TV). Warnings: – All technical specifications stated in this section refer to an ambient temperature of 20 °C (± 5 °C) – Nice S.p.A. reserves the right to apply modifications to the product at any time when deemed necessary, while maintaining the same functionalities and intended use.

Smart-Control	
Power supply	9-30V DC ±10%
Inputs	2 0-10V or digital inputs. 1 serial 1-wire input
Outputs	2 potential-free outputs
Supported digital sensors	6 DS18B20 or 1 DHT22
Maximum current on outputs	150mA
Maximum voltage on outputs	30V DC / 20V AC ±5%
Built-in temperature sensor measurement range	-55°C–126°C
Operating temperature	0–40°C
Dimensions (Length x Width x Height)	29 x 18 x 13 mm (1.14” x 0.71” x 0.51”)

- Radio frequency of individual device must be same as your Z-Wave controller. Check information on the box or consult your dealer if you are not sure.

(*) The transceiver range is strongly influenced by other devices operating at the same frequency with continuous transmission, such as alarms and radio headphones which interfere with the control unit transceiver.

Radio transceiver	
Radio protocol	Z-Wave (500 series chip)
Frequency band	868.4 or 869.8 MHz EU 921.4 or 919.8 MHz ANZ
Transceiver range	up to 50m outdoors up to 40m indoors (depending on terrain and building structure)
Max. transmit power	EIRP max. 7dBm

PRODUCT DISPOSAL

This product is an integral part of the automation and therefore must be disposed together with the latter. As in

installation, also at the end of product lifetime, the disassembly and scrapping operations must be performed by qualified personnel. This product is made of various types of material, some of which can be recycled while others must be scrapped. Seek information on the recycling and disposal systems envisaged by the local regulations in your area for this product category.

Caution! – some parts of the product may contain pollutant or hazardous substances which, if disposed of into the environment, may cause serious damage to the environment or physical health. As indicated by the symbol alongside, disposal of this product in domestic waste is strictly prohibited. Separate the waste into categories for dis-posal, according to the methods envisaged by current legislation in your area, or return the product to the retailer when purchasing a new version.
Caution! – local legislation may envisage serious fines in the event of abusive disposal of this product.

DECLARATION OF CONFORMITY

Hereby, Nice S.p.A., declares that the radio equipment type Smart-Control is in compliance with Directive 2014/53/EU. The full text of the EU declaration of conformity is available at the following internet address: **http://www.niceforyou.com/en/support**

Nice SpA
Oderzo TV Italia
info@niceforyou.com
www.niceforyou.com
IS0846A00EN_01-04-2022

Documents / Resources

	**Nice IS0846A00EN Smart Control** [pdf] Instructions IS0846A00EN Smart Control, IS0846A00EN, Smart Control, Control

References

- **Nice North America - Home Automation Systems**
- **Support | Nice**