Nice

IBT4ZWAVE

BiDi-ZWave

EN - Instructions and warnings for installation and use

Nice

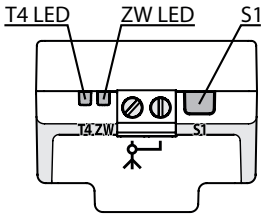
1 WARNINGS AND GENERAL PRECAUTIONS

- **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 the Nice Technical Assistance.
- **CAUTION! – Important instructions: keep this manual in a safe place to enable future product maintenance and disposal procedures.**
- **CAUTION! – All installation and connection operations must be performed exclusively by suitably qualified and skilled personnel with the unit disconnected from the mains power supply.**
- **Important! –** If the BUS T4 connection is used for the IBT4N interface, the BiDi-ZWave cannot be connected to the control unit.
- This product may only be used indoors or protected from weather conditions by control unit's housing.
- The product's packaging materials must be disposed of in full compliance with local regulations.
- Do not open the device protection housing as it contains non-serviceable electrical circuits.
- 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 experience and knowledge, unless they have been given supervision or instruction concerning the use of the product by a person responsible for their safety.
- Make sure that children do not play with the product.
- Check the warnings in the instruction manual for the motor that the product is connected to.
- Handle the product with care, being sure not to crush, knock or drop it in order to avoid damage.

2 PRODUCT DESCRIPTION

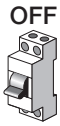
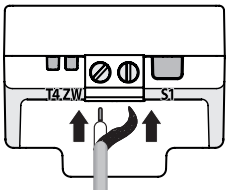
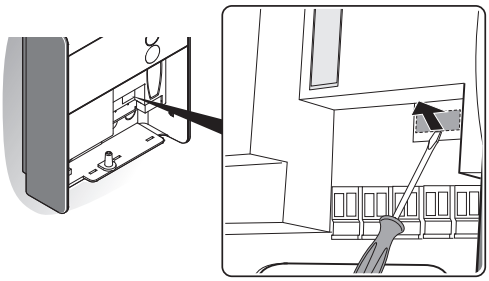
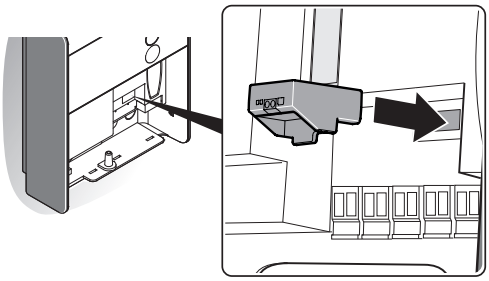
CAUTION! – Any use other than that specified herein or in environmental conditions other than those stated in this manual is to be considered improper and is strictly forbidden!

The **BiDi-ZWave** accessory is a device that – by means of Z-Wave™ communication – allows for controlling the movement and status of Gate&Door-type Nice automations compatible with the BUS T4 (Opera) protocol.



Before proceeding with the product's installation, make sure to have the following:
- 1 Nice automation control unit of the Gate&Door catalogue equipped with BUS T4 connector
- 1 Z-Wave smart home controller
- If you want to improve the BiDi-ZWave Z-Wave range: 1 antenna compliant with the technical specification (see chapter 10) – not included.

3 INSTALLATION

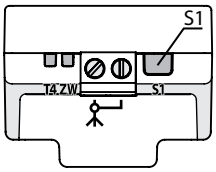
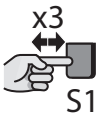
01.	Disconnect the power supply from the automation's control unit	
02.	All LEDs on the automation's control unit should be off before continuing	
03.	If you want to install the external antenna, you can do it now **⚠ Caution! Use only antennas and cables compliant with technical specification (see chapter 10)!**	
04.	If present, remove the plastic pre-cut element from BUS T4 connector and check that there are no burrs	
05.	Insert the BiDi-ZWave into the BUS T4 port of the connector unit **⚠ Caution! If the BiDi-ZWave is inserted incorrectly, it may permanently damage the control unit!**	

06.	Power the automation's control unit
07.	LEDs on the BiDi-ZWave will show adding and antenna status (Table 1)
08.	Wait for the BiDi-ZWave to finish initialization sequence (T4 LED flashing green)
09.	Add the device to the Z-Wave network; for the relevant procedure see Chapter 4

4 ADDING TO THE Z-WAVE NETWORK

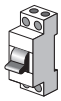
⚠ Install the external antenna before powering the device and adding to the Z-Wave network for the device to automatically detect and enable it (use only antennas and cables compliant with technical specification – see chapter 10).

4.1 - Adding manually

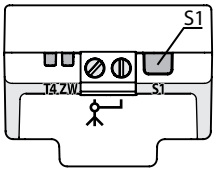
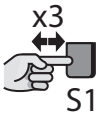
01.	Set the Z-Wave gateway into adding mode (see the Z-Wave gateway's manual)
02.	On the BiDi-ZWave press and release the S1 button 3 times  
03.	LEDs on the BiDi-ZWave will start slow flashing alternately
04.	If you are adding in Security S2 Authenticated, input the underlined part of the DSK (label on the box) **DSK: <u>XXXXX</u>-XXXXX-XXXXX-XXXXX XXXXX-XXXXX-XXXXX-XXXXX**
05.	When the adding process ends, the LEDs on the BiDi-ZWave will show adding and antenna status (Table 1)

4.2 - 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.

01.	To use SmartStart your Z-Wave gateway needs to support Security S2 (see the Z-Wave gateway's manual)
02.	Disconnect the power supply from the automation's control unit 
03.	Enter the full DSK string code to your Z-Wave gateway. If your controller is capable of QR scanning, scan the QR code placed on the label on the device and bottom of the box
04.	Power the automation's control unit
05.	LEDs on the BiDi-ZWave will start slow flashing alternately
06.	When the adding process ends, the LEDs on the BiDi-ZWave will show adding and antenna status (Table 1)

5 REMOVING FROM THE Z-WAVE NETWORK

01.	Set the Z-Wave gateway into remove mode (see the Z-Wave gateway's manual)
02.	On the BiDi-ZWave press and release the S1 button 3 times  
03.	LEDs on the BiDi-ZWave will start slow flashing alternately
04.	Wait for the removing process to end

6 EXTERNAL ANTENNA

The BiDi-ZWave is equipped with an internal antenna, but an external antenna can be connected to improve the Z-Wave network range, e.g. when the gate is far away from the house.

⚠ Check the technical specification to buy the correct antenna and cable (see chapter 10)!

6.1 - Checking and switching enabled antenna

External antenna will be detected and enabled automatically after powering the device (if not added to the Z-Wave network), but you can switch manually between antennas using the following procedure.

01.	Press and hold the S1 button	
02.	Wait 3 seconds	
03.	LEDs will show adding and antenna status (Table 1) for 3 seconds	
04.	LEDs will turn off for 3 seconds	
05.	When LEDs show the selected antenna, release the button: ZW LED (blue) for internal antenna, T4 LED (green) for external antenna (Table 2)	
06.	If you want to switch the antenna, press and release the S1 button	
07.	If the antenna was switched, the corresponding LED will flash 2 times: ZW LED (blue) for internal antenna, T4 LED (green) for external antenna (Table 2)	

7 OPERATION

To control the movement use Z-Wave gateway's interface or click the S1 button (works in Step-by-Step mode).

8 RESET

Reset procedure allows to restore the device back to its factory settings, which means all information about the Z-Wave gateway and user configuration will be deleted.
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.

01.	Press and hold the S1 button	
02.	Wait 3 seconds	
03.	LEDs will show adding and antenna status (Table 1) for 3 seconds	
04.	LEDs will turn off for 3 seconds	
05.	LEDs will show selected antenna (Table 2) for 3 seconds	
06.	When both LEDs light up simultaneously, release the button	
07.	Press and release the S1 button	
08.	Both LEDs will flash once at the end of the procedure	T4 ZW

9 LED SIGNALS

Table 1 - LEDs Z-Wave and antenna status

T4 LED (green)	ZW LED (blue)	Z-Wave adding status	External antenna
OFF	ON for 3 seconds	Not added	Not connected
OFF	2 flashes	Added (non-secure, S0, S2 Unauthenticated)	Not connected
OFF	4 flashes	Added successful (Security S2 Authenticated)	Not connected
ON	ON for 3 seconds	Not added	Connected
ON	2 flashes	Added (non-secure, S0, S2 Unauthenticated)	Connected
ON	4 flashes	Added successful (Security S2 Authenticated)	Connected

Table 2 - LEDs selected antenna

T4 LED (green)	ZW LED (blue)	Selected antenna
OFF for 3 seconds	ON for 3 seconds	Internal
ON for 3 seconds	OFF for 3 seconds	External

10 TECHNICAL SPECIFICATIONS

The product IBT4ZWAVE 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.

IBT4ZWAVE	
Type	control using Z-Wave network of devices fitted with connector compatible with BUS T4
Technology adopted	half duplex 19200 Bps serial connection on differential bus
Power supply	24V ⎓ supplied by the control unit to which the BiDi-ZWave is connected
Absorbed current	max 50 mA
Radio frequencies	EU: 868.0–868.6; 869.7–870.0 MHz AH: 915.0–928.0 MHz RU: 868.7–869.2 MHz
Internal antenna max. transmit power	EU: 10 dBm
External antenna max. peak gain	3 dBi
External antenna cable length	1 ... 3 m
Antenna connector screws rated torque	0.4 Nm
Casing protection rating	IP 40 (use indoors or in protected environments only)
Operating temperature	- 20 °C ... +50 °C
Dimensions (mm)	37 x 28 x h 21
Weight	10g

11 Z-WAVE SPECIFICATIONS

The device is a Security Enabled Z-Wave Plus™ product and a Security Enabled Z-Wave gateway must be used in order to fully utilize the product.
The 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.
The device 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).

Generic Device Type: GENERIC_TYPE_SWITCH_MULTILEVEL (0x11)
Specific Device Type: Not Used

Table 3 - Supported Command Classes

Command Class	Version	Secure
COMMAND_CLASS_ZWAVEPLUS_INFO [0x5E]	V2	
COMMAND_CLASS_MULTILEVEL_SWITCH [0x26]	V4	YES
COMMAND_CLASS_ASSOCIATION [0x85]	V2	YES
COMMAND_CLASS_MULTI_CHANNEL_ASSOCIATION [0x8E]	V3	YES
COMMAND_CLASS_ASSOCIATION_GRP_INFO [0x59]	V3	YES
COMMAND_CLASS_DEVICE_RESET_LOCALLY [0x5A]	V1	YES
COMMAND_CLASS_FIRMWARE_UPDATE_MD [0x7A]	V5	YES
COMMAND_CLASS_INDICATOR [0x87]	V3	YES
COMMAND_CLASS_MANUFACTURER_SPECIFIC [0x72]	V2	YES
COMMAND_CLASS_POWERLEVEL [0x73]	V1	YES
COMMAND_CLASS_SECURITY [0x98]	V1	
COMMAND_CLASS_SECURITY_2 [0x9F]	V1	
COMMAND_CLASS_SUPERVISION [0x6C]	V1	
COMMAND_CLASS_TRANSPORT_SERVICE [0x55]	V2	
COMMAND_CLASS_VERSION [0x86]	V3	YES
COMMAND_CLASS_NOTIFICATION [0x71]	V8	YES
COMMAND_CLASS_APPLICATION_STATUS [0x22]	V1	
COMMAND_CLASS_PROTECTION [0x75]	V2	YES
COMMAND_CLASS_CONFIGURATION [0x70]	V4	YES
COMMAND_CLASS_BASIC [0x20]	V2	YES

Table 4 - Association Command Class				
Group	**Group Name**	**Profile**	**Max. Nodes Supported**	**Description**
1	Lifeline	General: Lifeline (0x00: 0x01)	1	Reports the device status to the Z-Wave gateway

Table 5 - Multilevel Switch Command Class / Basic Command Class mapping	
Basic Command	**Mapped Command**
Basic Set (Value)	Multilevel Switch Set (Value)
Basic Report (Current Value, Duration)	Multilevel Switch Report (Value, Duration)

Table 6 - Multilevel Switch Command Class SET			
Value	**Duration**	**Level**	**Description**
0x00	Ignore	0%	Close
0x01-0x63	Ignore	100%	Open
0x64-0xFE	Ignore	reserved	
0xFF	Ignore	100%	Open

Table 7 - Multilevel Switch Command Class Report			
State	**Current Value**	**Target Value**	**Duration**
Open	0x63	0x63	0x00
Opening	0xFE	0x63	0xFE
Stopped	0xFE	0xFE	0x00
Closing	0xFE	0x00	0xFE
Close	0x00	0x00	0x00

Table 8 - Notification Command Class			
Notification Type	**Event**	**Event/State Parameter**	**Status**
Access Control (0x06)	Event: Barrier operation (open/close) force has been exceeded (Notification CC V4) (0x41) *	–	0xFF – enable (not changeable)
Access Control (0x06)	State: Barrier safety beam obstacle (Notification CC V4) (0x48) *	–	0xFF – enable (not changeable)
Access Control (0x06)	State: Barrier associated with non Z-Wave remote control (Notification CC V4) (0x4C)	–	0xFF – enable (not changeable)
System (0x09)	State: System hardware failure (Notification CC V2) [0x03]	0x05 - External device not detected	0xFF – enable (not changeable)

* Some control units might not support this feature.

Table 9 - Protection Command Class			
Type	**State**	**Description**	**Action**
Local	0	Unprotected - The device is not protected, and may be operated normally via the user interface.	S1 button controls gate state
Local	2	No operation possible – S1 button cannot change outputs state, any other functionality and control via gate controler unit's buttons is available.	S1 button doesn't control gate state
RF	0	Unprotected - The device accept and respond to all RF Commands.	Z-Wave requests can change gate state
RF	1	No RF control – command class basic and switch binary are rejected, every other command class will be handled	Z-Wave requests can't change gate state

Table 10 - Indicator Command Class		
Indicator ID	**Properties ID**	**Values and requirements**
Node Identify (0x50)	Toggling On/Off Periods (0x03)	This property is used to set the duration in tenth of seconds of an On/Off period. 0x00..0xFF represent 0..25,5 seconds
Node Identify (0x50)	Toggling On/Off Cycles 0x04	This property is used to set the number of On/Off periods to run - 0x00..0xFE represent 0..254 times - 0xFF MUST indicate to run On/Off periods until stopped
Node Identify (0x50)	Toggling On time within an On/Off period (0x05)	This property is used to set the length of the On time during an On/Off period. It allows asymetic On/Off periods. - The value 0x00 MUST represent symmetric On/Off period (On time equal to Off time) - Values in the range 0x01..0xFF MUST represent 0,1..25,5 seconds e.g. 300ms ON and 500ms OFF is achieved by using : On/Off period (0x03) = 0x08 and On time within an On/Off Period (0x05) = 0x03

Table 11 - Configuration Command Class	
30. Alarm configuration - 1st slot	
Description	This parameter determines to which alarm frames and how the device should react. The parameters consist of 4 bytes, three most significant bytes are set according to the official Z-Wave protocol specification.
Parameter size	4B
Default value	[0x00, 0x00, 0x00, 0x00] (disabled)
Available values	1B [MSB] – Notification Type 2B – Notification Status 3B – Event/State Parameters 4B [LSB] – action: 0x00 – no action, 0x01 – open, 0x02 – close
31. Alarm configuration - 2nd slot	
Description	This parameter determines to which alarm frames and how the device should react. The parameters consist of 4 bytes, three most significant bytes are set according to the official Z-Wave protocol specification.
Parameter size	4B
Default value	[0x05, 0xFF, 0x00, 0x00] (Water Alarm, any notification, no action)
Available values	1B [MSB] – Notification Type 2B – Notification Status 3B – Event/State Parameters 4B [LSB] – action: 0x00 – no action, 0x01 – open, 0x02 – close
32. Alarm configuration - 3rd slot	
Description	This parameter determines to which alarm frames and how the device should react. The parameters consist of 4 bytes, three most significant bytes are set according to the official Z-Wave protocol specification.
Parameter size	4B
Default value	[0x01, 0xFF, 0x00, 0x00] (Smoke Alarm, any notification, no action)
Available values	1B [MSB] – Notification Type 2B – Notification Status 3B – Event/State Parameters 4B [LSB] – action: 0x00 – no action, 0x01 – open, 0x02 – close
33. Alarm configuration - 4th slot	
Description	This parameter determines to which alarm frames and how the device should react. The parameters consist of 4 bytes, three most significant bytes are set according to the official Z-Wave protocol specification.
Parameter size	4B
Default value	[0x02, 0xFF, 0x00, 0x00] (CO Alarm, any notification, no action)
Available values	1B [MSB] – Notification Type 2B – Notification Status 3B – Event/State Parameters 4B [LSB] – action: 0x00 – no action, 0x01 – open, 0x02 – close
34. Alarm configuration - 5th slot	
Description	This parameter determines to which alarm frames and how the device should react. The parameters consist of 4 bytes, three most significant bytes are set according to the official Z-Wave protocol specification.
Parameter size	4B
Default value	[0x04, 0xFF, 0x00, 0x00] (Heat Alarm, any notification, no action)
Available values	1B [MSB] – Notification Type 2B – Notification Status 3B – Event/State Parameters 4B [LSB] – action: 0x00 – no action, 0x01 – open, 0x02 – close

The device does not support Configuration CC Bulk commands.

12 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 disposal, 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.

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