BLACK NOVA

ARIA and ALBA KNX Keypad Panels

Operation and Maintenance Manual

Release 2.0

Index

Important Notes

To ensure fast installation and start-up of the units, we strongly recommend that the following information and explanations are carefully read and adhered to.

Legal Principles

Subject to Change

Black Nova reserves the right to make any alterations or modifications that serve to increase the efficiency of technical progress. Black Nova owns all rights arising from the granting of patents or from the legal protection of utility patents. Third-party products are always mentioned without any reference to patent rights. Thus, the existence of such rights cannot be excluded.

Copyright

Personnel Qualification

The use of the product described in this document is exclusively geared to specialists having qualifications in Black Nova System programming, electrical specialists or persons instructed by electrical specialists who are also familiar with the appropriate current standards. Black Nova assumes no liability resulting from improper action and damage to Black Nova products and third-party products due to non- observance of the information contained in this document.

Intended Use

For each individual application, the components are supplied from the factory with a dedicated hardware and software configuration. Modifications are only admitted within the framework of the possibilities documented in this document. All other changes to the hardware and/or software and the non-conforming use of the components entail the exclusion of liability on part of Black Nova.
Please send your requests for modified and new hardware or software configurations directly to Black Nova

Scope of Applicability

This application note is based on the stated hardware and software from the specific manufacturer, as well as the associated documentation. This application note is therefore only valid for the described installation. New hardware and software versions may need to be handled differently.
Please note the detailed description in the specific manuals.

Safety information

Important Information

Read these instructions carefully before trying to install, configure, or operate products.
The following special messages may appear throughout this bulletin or on the equipment to warn of potential hazards or to call attention to information that clarifies or simplifies a procedure.

	This is the safety alert symbol. It is used to alert you to potential personal injury hazards. Obey all safety messages that follow this symbol to avoid possible injury or death.
	The addition of either symbol to a “Danger” or “Warning” safety label indicates that an electrical hazard exists which will result in personal injury if the instructions are not followed.

⚠DANGER

DANGER indicates an imminently hazardous situation which, if not avoided, will result in death or serious injury.

⚠WARNING

WARNING indicates a potentially hazardous situation which, if not avoided, can result in death or serious injury.

⚠CAUTION

CAUTION indicates a potentially hazardous situation which, if not avoided, can result in minor or moderate injury.

NOTICE

NOTICE is used to address practices not related to physical injury. The safety alert symbol shall not be used with this signal word.

Please note

Electrical equipment should be installed, operated, serviced, and maintained only by qualified personnel. No responsibility is assumed by Black Nova for any consequences arising out of the use of this material.

A qualified person is one who has skills and knowledge related to the construction, installation, and operation of electrical equipment and has received safety training to recognize and avoid the hazards involved.

Safety precautions

⚠WARNING

HAZARD OF INCORRECT INFORMATION

Do not incorrectly configure the product, as this can lead to incorrect reports and/or data results.

Do not base your maintenance or service actions solely on messages and information displayed by the software.

Do not rely solely on software messages and reports to determine if the system is functioning correctly or meeting all applicable standards and requirements.

Consider the implications of unanticipated transmission delays or failures of communications links.

Failure to follow these instructions can result in death, serious injury, or equipment damage.

The information provided in this documentation contains general descriptions and/or technical characteristics of the performance of the products contained herein. This documentation is not intended as a substitute for and is not to be used for determining suitability or reliability of these products for specific user applications. It is the duty of any such user or integrator to perform the appropriate and complete risk analysis, evaluation and testing of the products with respect to the relevant specific application or use thereof.
Neither Black Nova nor any of its affiliates or subsidiaries shall be responsible or liable for misuse of the information that is contained herein.
If you have any suggestions for improvements or amendments or have found errors in this publication, please notify us.

All pertinent state, regional, and local safety regulations must be observed when installing and using this product.

For reasons of safety and to help ensure compliance with documented system data, only the manufacturer should perform repairs to components.
When devices are used for applications with technical safety requirements, the relevant instructions must be followed.
Failure to use Black Nova product may result in injury, harm, or improper operating results.
Failure to observe this information can result in injury or equipment damage.

Introduction

The ARIA® Collection

A Tribute to Minimalist Aesthetics of the 20th Century.

Its natural elegance elicits straight lines, simple shapes, vivid colors and perfect glass surfaces are a stylish match for any interiors.
Its bespoke look and precise performance create an experience of pure comfort and aesthetic pleasure.
The ARIA collection is available in different control configurations up to 12 touch buttons and a Thermostat control panel with built-in temperature and humidity sensor.

The ALBA® Collection

The Epitome of Elegance and Functionality.

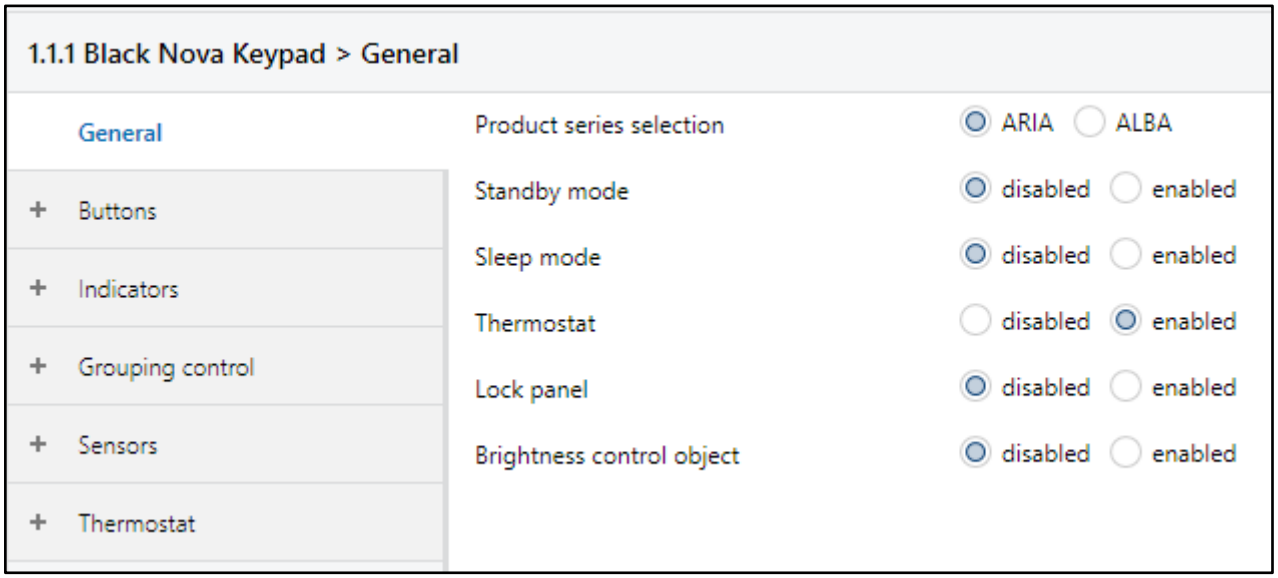
Its bespoke look and precise performance create an experience of pure comfort and aesthetic pleasure nicely matching a variety of interiors, from eclectic urban loft to a mid-century living room, from minimalist conference room to classical yacht suites.
Large, easy-to-use buttons are flush into the design frame creating a perfectly smooth surface.
A subtle click confirms user touch.
The ALBA Collection is available in 2, 4 and 8 buttons layouts and two stunning finishes - metal and glass.

This manual describes how to configure and take full advantage of all the available functions.

Programming the keypad

The KNX keypad panel version is configured using the KNX ETS commission application.

General parameters

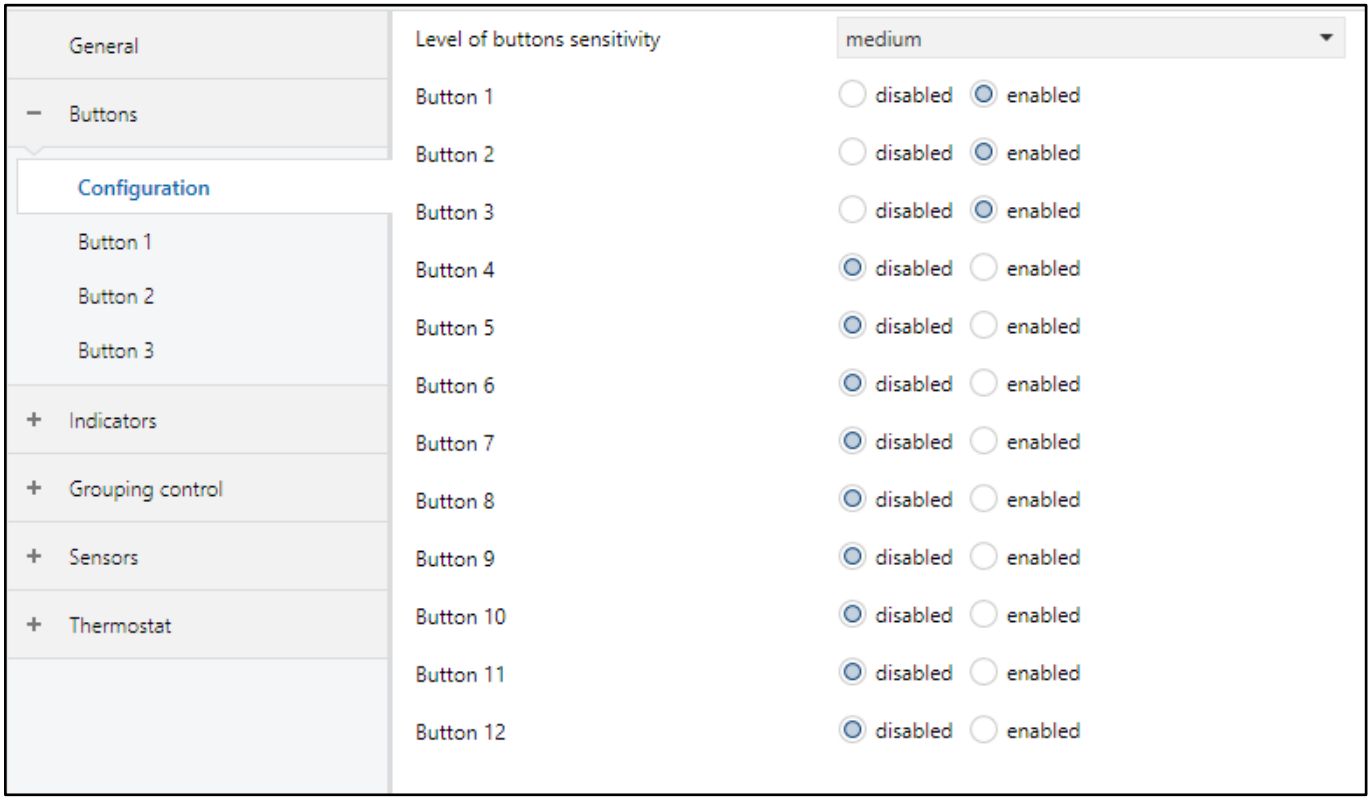


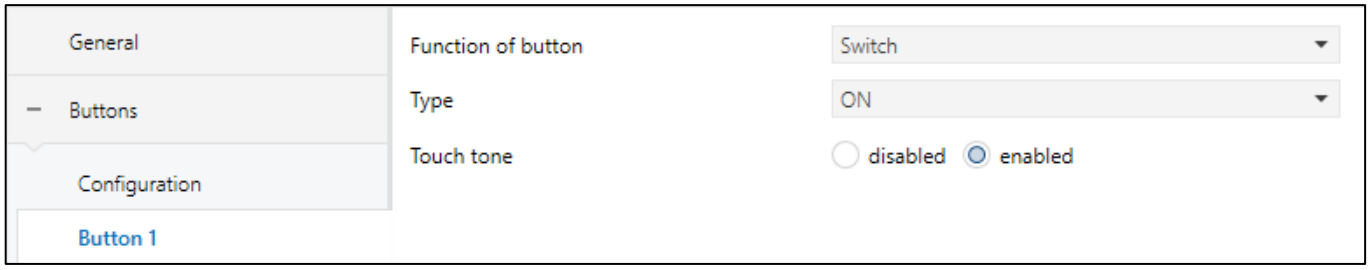
Parameter	*Description*	*Object*	*Depth*
Product series selection	Selection of the product series	N/A	
Standby mode	Enables the standby mode: once passed the specified amount of time set at “Standby Timeout” field the panel brightness is set to “Standby mode brightness coefficient” value. If enabled the Status object can control the standby mode remotely or sync with other devices	Status	1 bit
Sleep mode	Enables the sleep mode: once passed the specified amount of time set at “Sleep Timeout” field the panel brightness is set to “Sleep mode brightness coefficient” value. If enabled the Status object can control the sleep mode remotely or sync with other devices	Status	1 bit
Thermostat	Enables the thermostat control object for the keypads	Unit ON/OFF Auto/manual Fan speed 0-100% Fan speed: 0,1,2,3... Setpoint temperature Display °C/F Setpoint 0=Decrease, 1=Increase Speed 0=Decrease, 1=Increase Cooling/Heating Special mode: 0 - nothing on display, 1 - Eco Mode indicated on Display, 2 - Away mode indicated on display. Minimum setpoint temperature Maximum setpoint temperature Speed 1	1 bit 1 bit 1 byte 1 byte 2 bytes 1 bit 1 bit 1 bit 1 bit 1 byte 2 bytes 2 bytes 1 bit

		Speed 2 Speed 3 Digital valve Analog valve Analog proportional valve External temperature	1 bit 1 bit 1 bit 1 byte 1 byte 2 bytes
Lock Panel	Enables the “Lock panel” object used to disable all operations on the panel. Use case: when the key card is removed the controller turn off all the lights and lock all panels.	State	1 bit
Brightness control object	Control the brightness level of all indicators	Brightness Coefficient	1 byte

Button parameters

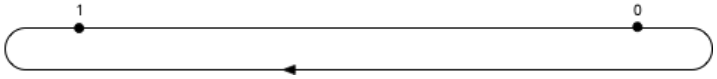
Each keypad panel button has its own individual parameters.
According to the keypad panel model the correct number of buttons will be available.
All the button groups are disabled by default; each button must be enabled in order to be configured with the desired function and parameters from the dropdown list

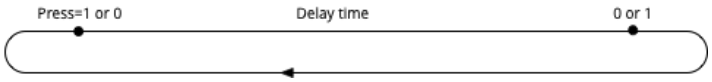
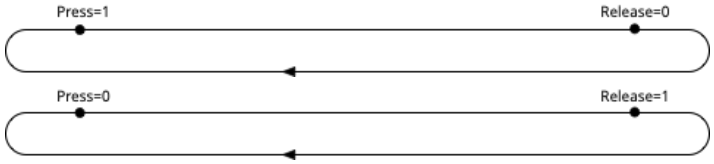
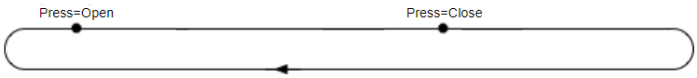
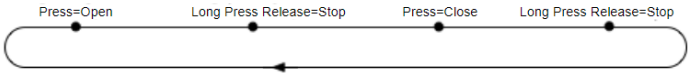
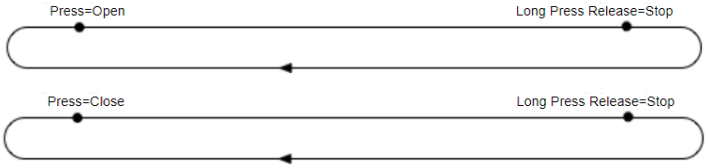




Please note: Level of buttons sensitivity feature is available only if the product series selected is ARIA

List of functions

Function	*Type*	*Description*	*Object*	*Depth*
Switch	ON	Send always the On command	Send ON	1 bit
	OFF	Send always the Off command	Send OFF	1 bit
	Toggle	Send alternating On/Off (1 bit) command 	Toggle	1 bit
	Time limited toggle	Send On/Off command within a delay time	Time limited toggle	1 bit

				
	Push button	Send On command when pressed, send Off command when button is released or vice versa. 	Push button	1 bit
Dimming	Increase / Decrease	Enable the operations: • Short press: toggle On/Off • Long press: cyclical increase/decrease dimming Additional long press parameter can be configured	Dimming On/Off Dimming	1 bit 4 bits
	ON / Increase	Enable the operations: • Short press: toggle On • Long press: increase dimming Additional long press parameter can be configured	Dimming On/Off Dimming	1 bit 4 bits
	OFF / Decrease	Enable the operations: • Short press: toggle Off • Long press: decrease dimming Additional long press parameter can be configured	Dimming On/Off Dimming	1 bit 4 bits
Shutters	One button operation	Controls the curtains/shutters up and down cyclically Option 1: Long press disabled  Option 2: Long press enabled 	Direction Enable	1 bit 1 bit
	Two button operation	Controls the curtains/shutters up or down Option 1: Long press disabled  Option 2: Long press enabled 	Direction Enable	1 bit 1 bit
Value	-	Sends a value to the bus as one byte or two bytes objects	Value unsigned: [0..255] Signed [-128..127]	1 byte 1 byte 1 byte

<table>
<tr><td></td><td></td><td></td><td>Persentase [0..100%]
Unsigned 2bytes [0..65535]
Signed 2 bytes [-32768..32767]</td><td>2 bytes

2 bytes</td></tr>
<tr><td>Scene</td><td>-</td><td>Control and store up to 64 scenes</td><td>Scene number
Store scene</td><td>1 byte
1 bit</td></tr>
<tr><td rowspan="2">Edges function</td><td>Normal (press, release)</td><td>Send values at press and release events to up to 2 objects</td><td rowspan="2">Object A
Object B

Different depths available
On/Off
Dimming
Value [0..255]
Value [0..100%]</td><td rowspan="2">

1 bit
4 bits
1 byte
2 bytes</td></tr>
<tr><td>Extended (+ short and long press operation)</td><td>Send values at short press, release after short press, long press and release after long press events to up to 2 objects</td></tr>
<tr><td rowspan="3">Grouping Control functions</td><td>Light selector</td><td>When “Group control” is enabled the function sets the button as light selector and additional are available</td><td>Light control ON/OFF

Light control Dimming

Light control value [0..100%]</td><td>1 bit

4 bits

1 byte</td></tr>
<tr><td colspan="3"><table>
<tr><td>Decrease press</td><td>• Short press: OFF
Long press: Decrease
• Short press: Decrease
Long press: OFF
• Long press decrease
• Short press decrease</td></tr>
<tr><td>Increase press</td><td>• Short press: ON
Long press: Increase
• Short press: Increase
Long press: ON
• Long press increase
• Short press increase</td></tr>
<tr><td>Step</td><td>Set step percentage value</td></tr>
<tr><td>Long pressing time</td><td>The long press is detected after the select amount of time</td></tr>
<tr><td>Stop telegram after release</td><td>Stop sending telegram if the button is released</td></tr>
<tr><td>Send dimming level cyclically</td><td>If long press is active the defined parameter set how often the command is sent</td></tr>
<tr><td>Value ON (%)</td><td>Set the value for ON command</td></tr>
<tr><td>Value OFF (%)</td><td>Set the value for OFF command</td></tr>
</table></td></tr>
<tr><td>Shutter selector</td><td>When “Group control” is enabled the function sets the button as curtain selector and additional are available</td><td>Shutter control direction

Shutters control stop</td><td>1 bit

1 bit</td></tr>
</table>

		<table><tr><td>Long pressing time</td><td>The long press is detected after the select amount of time</td></tr></table>	
	Light master	When "Group control" is enabled the button act as lights master control	N/A
	Shutters master	When "Group control" is enabled the button act as shutters master control	N/A
	Light decrease / Shutters close	When "Group control" is enabled ● Long press: decrease the value of the selected lights ● Short press: toggle the selected lights or close the selected curtains	N/A
	Light increase / Shutters open	When "Group control" is enabled ● Long press: increase the value of the selected lights ● Short press: toggle the selected lights or open the selected curtains	N/A
FCU functions	Setpoint increase	Increase the setpoint with button press	N/A
	Setpoint decrease	Decrease the setpoint with button press	N/A
	Fan speed cycle	Cycle the fan speed with button press	N/A
	Fan speed increase	Increase the fan speed with button press	N/A
	Fan speed decrease	Decrease the fan speed with button press	N/A
	Fan speed 1	Set the fan speed 1 with button press	N/A
	Fan speed 2	Set the fan speed 2 with button press	N/A
	Fan speed 3	Set the fan speed 3 with button press	N/A
	Fan speed AUTO	Set the fan speed Auto with button press	N/A
	FCU ON/OFF	Turn on or off the FCU with button press	N/A
	FCU cooling/ heating	Toggle the cooling / heating mode with button press	N/A
	Display mode C/F	Toggle the display C / F mode with button press	N/A
	FCU special mode	Short press cycles the values in the special mode object 0, 1, 2, 0 and so on, and send through this object to the KNX bus.	N/A
	FCU combined mode	Short press cycles values in the special mode object 0, 1, 2, 0 and so on, and send through this object to the KNX bus.	N/A

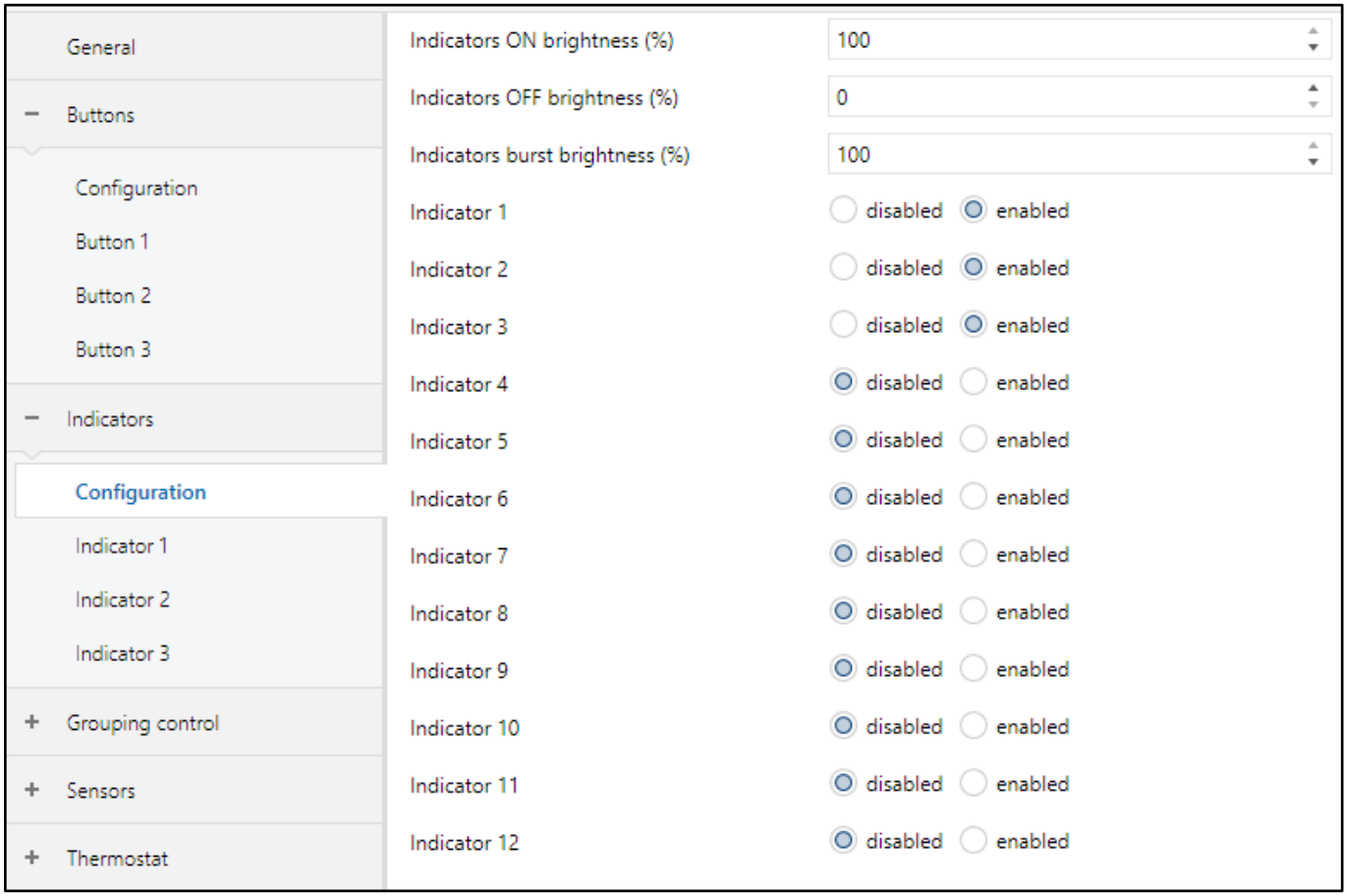
		Long press (More than 6 seconds) toggle the FCU mode Cool/Heat, and from 1bit Object (Cooling/Heating) device will transmit to the KNX Bus.		
Hospitality functions	DND	Toggle the DND address and turn Off MUR address if DND is enabled.	DND ON/OFF	1 bit
	MUR	Toggle the MUR address and turn Off DND address if MUR is enabled.	MUR ON/OFF	1 bit

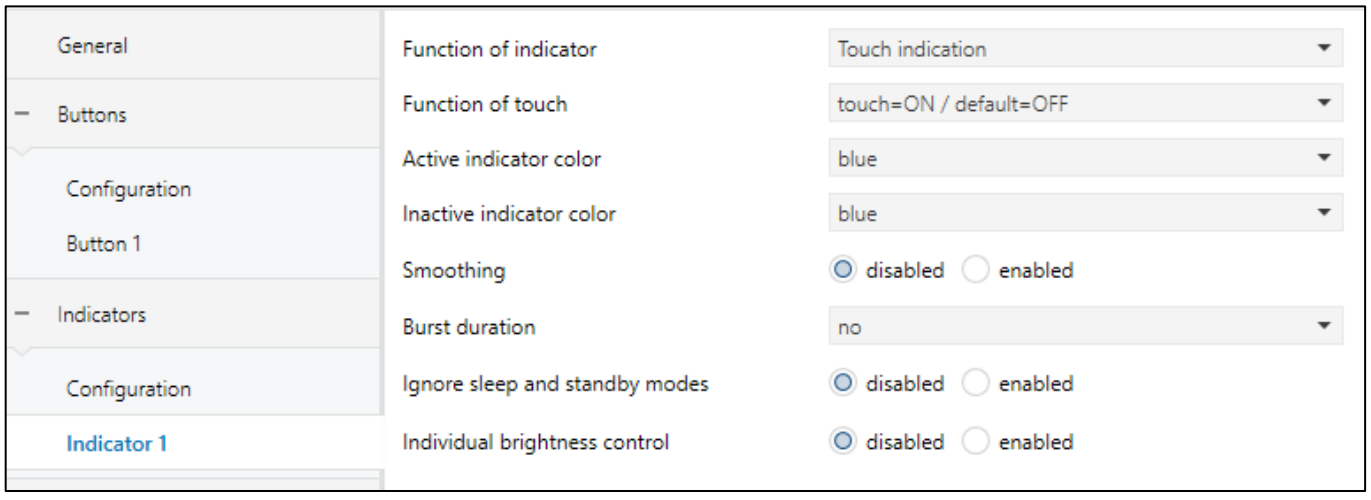
Common parameters

Touch tone	Enable or disable the button press sound

Indicator Parameters

Each backlight LED has its own individual parameters.
On the keypad up to 12 leds are available.
All the indicators are disabled by default; each indicator must be enabled in order to be configured with the desired function and parameters from the dropdown list.



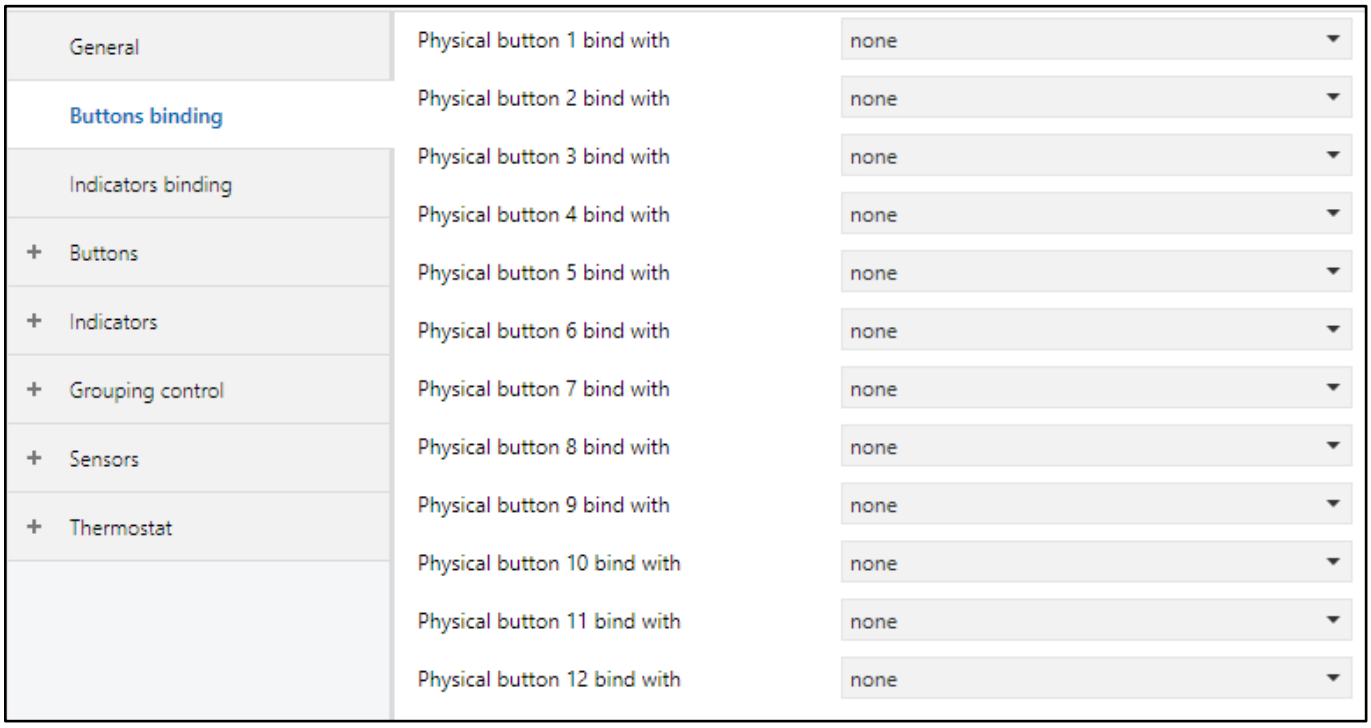


Parameter	*Description*
Function of LED	Set the LED function as • Status indication Enables 1 bit object for feedback management • Touch indication

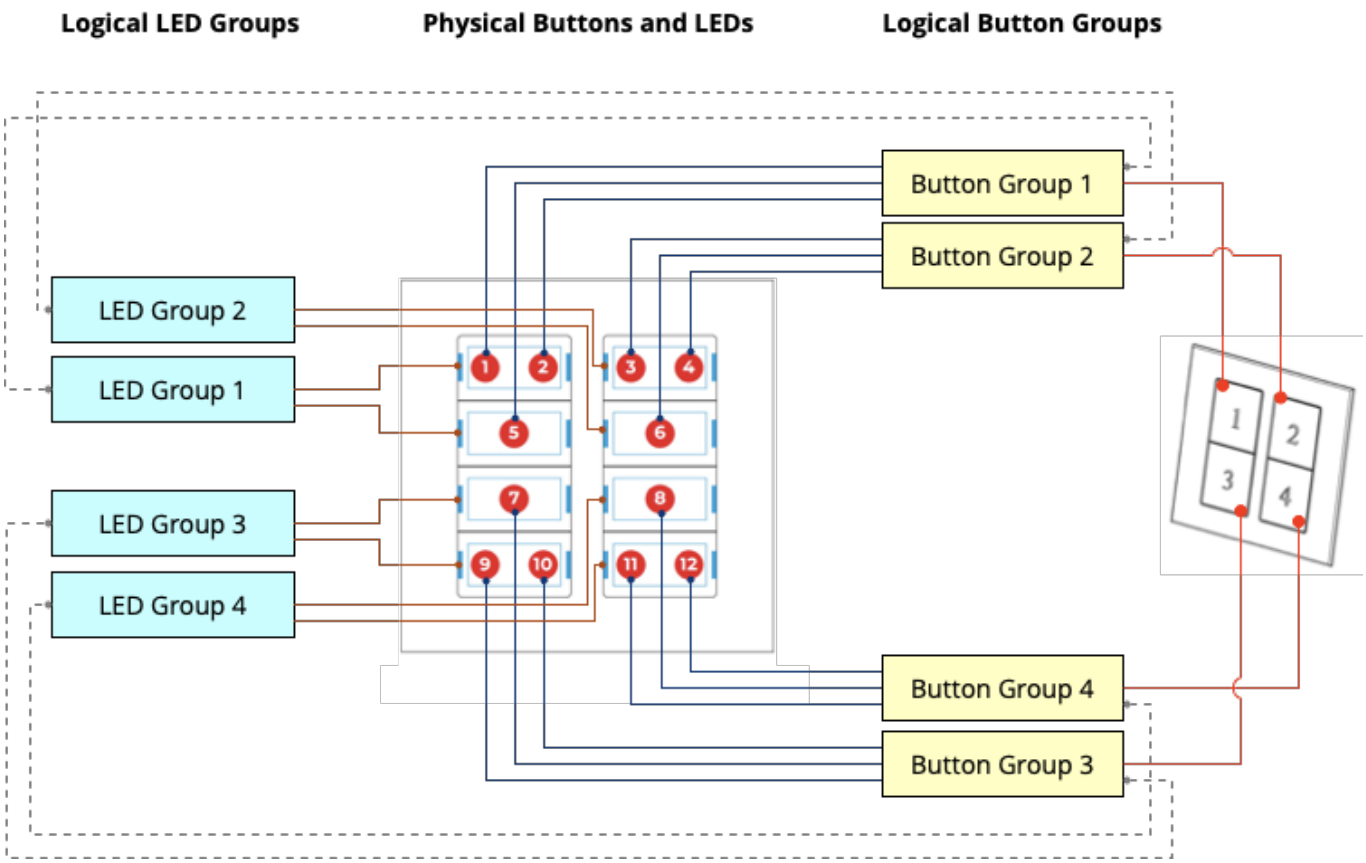
	Activate LED indication during touch according to the function status • Special function Links with DND and MUR objects Always ON or OFF Light selector Shutters selector Light master Shutters master Fan speed 1, 2, 3, or AUTO FCU ON/OFF
Function of status	Set the indicator status according to status value 0=OFF, 1=ON or 0=ON, 1=OFF
Action after power on	Sets the LED status after power on
Active LED color	Set the active LED color, a custom value can be specified using HEX color code
Inactive LED color	Set the inactive LED color, a custom value can be specified using HEX color code
Smoothing	Enables the smooth color change effect of the LED
Burst duration	Time interval of increased backlight after button press
Ignore sleep and standby modes	The button backlight will never go to sleep or standby mode if it is enabled
Individual brightness control	Individually adjust the brightness levels (On, Off, Burst, Standby, Sleep)

Buttons and Indicators binding (ALBA only)

Buttons binding and Indicators binding sections are available only if the product series selected is ALBA



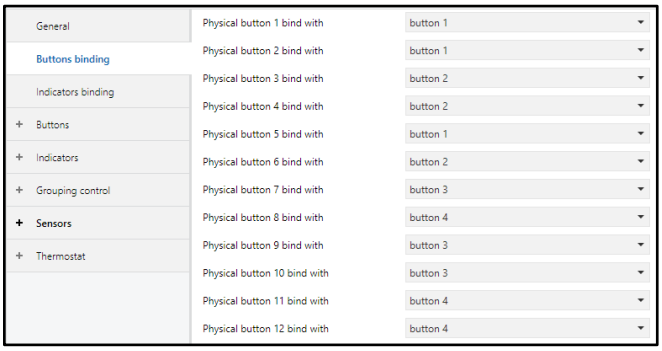
The following diagram explains the 4 buttons use case:



Physical button binding

Expand the “Buttons binding” tab to access the button binding page

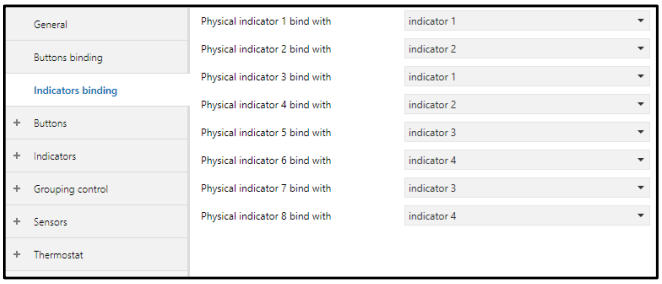
All the bindings are set as “none” by default; click on the “Button n bind with” dropdown list to select the button group to associate with the physical button.



Physical Indicators binding

Expand the “Indicators binding” tab to access the indicator binding page

All the bindings are selected as “none” by default; click on the “Indicator n bind with” dropdown list to select the led group to associate with the physical led.



Thermostat Parameters

Thermostat parameters are visible once thermostat is enabled in general parameters

Configuration section

Parameter	*Description*
Operation mode	Selection for operation mode In control unit mode control logic done by keypad
Default setpoint temperature (°C)	Default setpoint temperature when panel powered up
Maximum setpoint temperature (°C)	Maximum setpoint temperature can be set by keypad
Minimum setpoint temperature (°C)	Minimum setpoint temperature can be set by keypad
Correction value setpoint temperature	Increase or decrease setpoint value on the bus as correction value
Send setpoint temperature	Select the when setpoint going to be sent to bus
Setpoint step	Select setpoint step when setpoint increase or decrease command received
Fan speed 1 value (%)	Enter the % value for fan speed 1
Fan speed 2 value (%)	Enter the % value for fan speed 2
Fan speed 3 value (%)	Enter the % value for fan speed 3
Speed steps	Select the speed steps according to what thermostat unit support

Display section

Parameter	*Description*
Default Display Mode	Select display mode as Celsius or Fahrenheit when keypad powered up
Display brightness	Brightness level of display
Standby mode	Enables the standby mode: once passed the specified amount of time set at “Standby Timeout” field the display brightness is set to “Standby mode brightness coefficient” value.
Sleep mode	Enables the sleep mode: once passed the specified amount of time set at “Sleep Timeout” field the display brightness is set to “Sleep mode brightness coefficient” value.
Show real temperature	Enables the show real temperature mode: Once passed the specified amount of time set at “Delay time to show real temperature” field the display shows real temperature value. Show real temperature in FCU OFF mode: Enables the show real temperature when FCU is off.

Control unit section

Control unit section as available if operation mode selected as “control unit and thermostat”.

Parameter	*Description*
FCU type	Selection for FCU type 2-pipe: FCU with cooling **or** heating mode 4-pipe: FCU with cooling **and** heating mode
FCU default mode	Default mode when the keypad is powered up
Hysteresis for speed control	Select FCU speed according to differences between room and setpoint temperature when FCU running AUTO speed.
Speed transfer time	Specified amount of time to switch speed
Threshold temperature for speed 1	Threshold temperature to turn the fan speed to 1
Threshold temperature for speed 2	Threshold temperature to turn the fan speed to 2
Threshold temperature for speed 3	Threshold temperature to turn the fan speed to 3
Valve open value	Value to be sent to bus when valve is open
Valve close value	Value to be sent to bus when valve is close
Hysteresis for valve control	Defines when valve opens according to differences between room and setpoint temperature
Valve transfer time	Specified amount of time to switch valve status
Proportional regulation	Defines what % valve opens according to differences between room and setpoint temperature
Regulation time interval	Specified amount of time to calculate FCU logic again
Temperature sensor	Selection for temperature sensor (internal or external) going to be used with the FCU logic.

FAQ

Problem	Suggested solution
Key-pad panel is not turning on	Check the power supply voltage and the polarity of power connection
Key-pad panel is connected to the network but does not represent any activity	• Check that the cable connector is clean and not damaged • Check the cable termination pinout and polarity • Check the integrity of the cable • Check the keypad panel configuration in ETS project • Check that keypad panel has the proper address configured • Check that keypad panel received configuration from the network • Check that other devices in the network are not making the short circuit on the bus
Buttons are not working immediately after power up of the keypad panel	Wait until keypad panel application will start
The buttons sound is audible, but the LEDs are not indicating any event	Check the LEDs configuration
Only part of keypad panel buttons is working properly	Check the buttons configuration

Glossary

The following table describes the acronyms and defines the specific terms used in this document.

Abbreviation	Description
FCU	Fan Coil Unit
HVAC	Heating, ventilating, air-conditioning

Warranty exclusion

The Warranty does not apply in the following cases

- Damage caused by accident, flood, fire, earthquake, abuse, misuse, neglect, or other external causes.
- Damage caused by improper use or inappropriate operating conditions including unstable connection, poor grounding, external electromagnetic fields, exposure to direct sunlight, high humidity, or vibration.
- Damage caused by service, including the installation of updates or extensions, or repairs performed by anyone who is not authorized.
- Damage caused by connecting devices to the products of other manufacturers.
- Replacement of consumable parts, including cables, batteries, unless damage is caused by defects in materials or workmanship.
- Cosmetic damage including, but not limited to, scratches, dents, or broken plastic.
- Periodic maintenance and inspection of the device including, but not limited to, cleaning, adjusting, testing, or errors in programming.
- The warranty does not cover normal wear and tear caused by normal or excessive operation.