Button

USER MANUAL

Translation of the original instructions

Version: **1.0**

Date: **10/01/2023**

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VERSION	DATE	CHANGES
1.0	10/01/2023	-

Any information inside this manual can be changed without advice.

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Exclusion of liability:
Despite checking that the contents of this document match the hardware and software, deviations cannot be completely excluded. We therefore cannot accept any liability for this.
Any necessary corrections will be incorporated into newer versions of this manual.

Symbol for relevant information

Symbol for warning

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1. Button

Each button from can be configured to perform one of the following functions available in the drop-down menu on the corresponding page:

- nothing (inactive and therefore ignored even if connected and receiving signals);
- activation on press;
- activation on press / release;
- activation on short and long press;
- dimming;
- shutters and blinds;
- scene;
- command sequences (short and long press);
- command sequences (toggle function);
- commands sequences (1 bit);
- set RGB color;
- MUR/DND (make room/do not disturb);
- Loop among values (1 Byte).

The setting is performed separately for each button from the page ETS Digital Buttons, by clicking on the corresponding name. Each mode has a specific ETS page, as described below.

For each button in the respective ETS page it is possible, by typing it in the Button name box, to assign a name to the button itself, which can mnemonically facilitate identification in the building (for example “entrance light button”). This box is present for all the modes associated with the digital buttons.

Object enable

The “enable/disable” communication object allows you to activate/deactivate the reading of the button.

“<Button x> Enable Input”	1 Bit	CW

Regardless of the function chosen, for each button the relative ETS page makes the Object enable/disable parameter available; the setting allows the activation of the <Button x> Enable Input object, 1 bit, which allows the enabling of the button selected within the scenario.

KNX PARAMETER	SETTINGS
Object enable	disabled/enabled
If enabled, this parameter makes available on the ETS page, below it, the items Initial state for enable and Activation telegram for enable. Initial state for enable disabled = after downloading the configuration, the initial state is “disabled” enabled = after downloading the configuration, the initial state is “enabled” Activation telegram for enable telegram “0” = activation occurs at telegram “0” telegram “0” = activation occurs in correspondence with telegram “1”	

Activation on press

Communication objects involved:

“<Button x> Press”	1 Bit	CRWT
“<Button x> Press”	1 Byte	CRT
“<Button x> Feedback”	1 Bit	CW

Allows you to configure the sending of telegrams when the button is pressed; the device can also be configured to send periodic messages with repetition.

In the Button Name box it is possible to assign a name that will identify the button in the system: for example “light button”. This box is present for all modes associated with the digital inputs.

The telegram transmitted following activation of the button is set with the Associated telegram option, according to the following table.

KNX PARAMETER	SETTINGS
Telegram associated	1 bit 1 byte
1 bits The logical status 0 or 1 is transmitted. **1 byte** 1 byte is transmitted containing the value that can be selected from the drop-down menu that appears under this option when selected, i.e.: • value 0÷255 (generic unsigned int) • value 0÷100% (percentage in steps of 5%) • HVAC mode (DPT_HVACMode 20.102)	

For each item in the drop-down menu, the value associated with pressure appears under the ETS page; in all cases the drop-down menu offers alternatives related to the setting made in the associated Telegram, according to the table.

KNX PARAMETER	SETTINGS
Value associated with press	
Value 0÷255	0÷255
Value 0÷100%	0÷100 %
HVAC mode	Auto comfort standby economy building protection

From the ETS page, in the event of a 1-bit telegram, it is possible to define, with the setting Command associated with pressure, the action that the activation of the corresponding button determines.

KNX PARAMETER	SETTINGS
Comand associated with press	Off on toggle

on Invia un telegramma di attivazione. **off** Invia un telegramma di disattivazione **toggle** Invia un telegramma che ordina l'inversione dello stato dell'utilizzatore associato.

By choosing the toggle option, the **Feedback object** parameter described in the following table becomes available on the ETS page.

KNX PARAMETER	SETTINGS
Feedback object	disabled enabled
If enabled, this parameter displays an additional communication object (<Button x> Feedback) which causes the actuator receiving the command to send a feedback telegram to check whether it has performed the requested operation or not. The telegram transmits the status of the actuator.	

It is also possible to assign the cyclical (periodic) sending of telegrams to the buttons when they are active; as long as the button is pressed, the telegram with size and value selected on the same ETS page is sent cyclically. The setting of the parameter defines the time interval between two consecutive sendings according to the following table.

KNX PARAMETER	SETTINGS
Cyclic sending when button pressed	Mai 0.3 s. 0.4 s. 0.5 s. 0.8 s. 1.0 s. 1.2 s. 1.5 s. 2.0 s. 3.0 s. 5.0 s. 8.0 s. 10 s.

Activation on press / release

Communication objects involved:

"<Button x> Press - Release Action"	1 Bit	CRWT
"<Button x> Press - Release Action"	1 Byte	CRT
"<Button x> Press Action"	1 Bit	CRWT
"<Button x> Press Action"	1 Byte	CRT
"<Button x> Release Action"	1 Bit	CRWR
"<Button x> Release Action"	1 Byte	CRT
"<Button x> Feedback"	1 Bit	CW

It is used to configure the sending of telegrams when the button is active, on both "release" and "press" conditions and therefore following changes in state.
The parameters are identical to the choice "Activation on closing contact"; "Contact type" is missing and the "Command associated with press" and "Command associated with opening" settings are simultaneously present because activation will occur following the occurrence of both conditions. For the settings, what has already been explained applies.
The page also makes available the parameter Feedback object already explained in "Activation on closing contact" and parameter Communication object on opening described as follows.

KNX PARAMETER	SETTINGS
Communication object on opening	disabled enabled
If enabled, this parameter allows to send press and opening command with two different objects, respectively "<Button x> Press Action" and "<Button x> Opening Action".	

Activation on short and long contact press

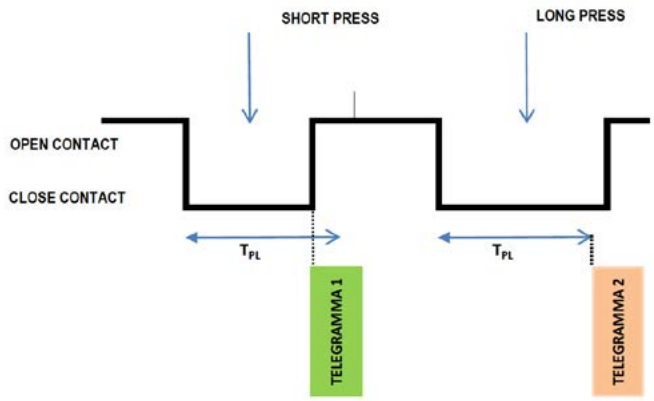
Communication objects involved:

"<Button x> Short Press"	1 Byte	CRT
"<Button x> Short Press"	1 Bit	CRWT
"<Button x> Short - Long Press"	1 Byte	CRT
"<Button x> Short - Long Press"	1 Bit	CRWT
"<Button x> Long Press"	1 Byte	CRT
"<Button x> Long Press"	1 Bit	CRWT
"<Button x> Feedback"	1 Bit	CW

With this button mode of operation, it is possible to differentiate the actions based on the activation duration of the button itself. The distinction between "short press" and "long press" is defined by the parameter **Minimum time long pressure**, according to the following table.

KNX PARAMETER	SETTINGS
Minimum time long press	0.3 s 0.4 s 0.5 s 0.8 s 1 s 1.2 s 1.5 s 2 s 3 s 5 s 8 s 10 s
The time set from the drop-down menu is the time after which the device believes that activation is to be considered long.	

It is possible to set the sending of telegrams with different values on the short and long print or to decide to send commands only on one of these events.



When the button is closed, the time count starts; if the button is opened before the time exceeds the time TPL, the device executes the command associated with the “short press” event and if, instead, the timeout TPL expires and the button is still being closed, the command associated with the “long press” event is executed.
The parameters and transmission modes of the telegrams that can be managed through the “Command associated with short press” and “Command associated with long press” settings are the same as those relating to the “activation on closing/opening contact” configuration except for the cyclical send function, which is not foreseen here.

Dimming

Communication objects involved:

“<Button x> Dimming On/Off”	1 Bit	RWCT
“<Button x> Dimming Control”	1 Bit	CRT
“<Button x> Feedback”	1 Bit	CW

With this mode of operation of the buttons it is possible to control adjustment of the light through a dimmer module using the short and long press of buttons connected to the button itself.
Each button uses 2 communication objects:
1-bit objects for ON/OFF commands associated with short pressing.
4-bit objects for brightness adjustment associated with long pressing.
The **“Minimum time long press”** parameter is the same as explained for “Activation on short and long contact press” and for it and for the setting “Feedback object” what has already been explained applies. Two further settings are available on the page. According to the table, set the minimum duration of the prolonged pressing. “Dimming mode” and “Dimming step” define the behaviour associated with the prolonged pressing.

KNX PARAMETER	SETTINGS
Dimming mode	brighter darker brighter/darker

brighter Each time the button is activated, the dimmer controls the increase in brightness according to the setting of Dimming step. **darker** Each time the button is activated, the dimmer controls the decrease in brightness according to the setting of Dimming step. **brighter/darker** Each time the button is activated, the dimmer reverses the progression of brightness by one step or in full according to the parameter setting	
Dimming step	Minimum/maximum brightness 1/2 brighter/darker ÷ 1/64 brighter/darker
Minimum/maximum brightness It sets the progressive adjustment from minimum to maximum and vice-versa depending on whether “Dimming mode” is “brighter” or “darker”. **1/2 brighter/darker ÷ 1/64 brighter/darker** It sets the precision of the variation, which will occur depending on whether “Dimming mode” is “brighter” or “darker”.	

Example 1: **Set the dimmer control so that when the button is pressed the brightness gradually goes from minimum to maximum.**	
PARAMETER	**VALUE**
Dimming mode	brighter
Dimming step	Minimum/maximum brightness

Example 2: **Set the dimmer control so that when the button is pressed, the brightness increases by 1/4.**	
PARAMETER	**VALUE**
Dimming mode	brighter
Dimming step	1/4 brighter/darker

Shutters and Blinds

Communication objects involved:

“<Button x> Shutter - Up/Down”	1 Bit	RWCT
“<Button x> Shutter - Step/Stop”	1 Bit	CRT
“<Button x> Feedback”	1 Bit	CW

Through this function it is possible to control motorised roller shutters using the short and long press of the buttons. Each button uses 2 communication objects:

- **1-bit STEP/STOP** objects associated with short pressing;
- **1-bit UP/DOWN** objects associated with long pressing.

For the settings common to all the other button operating modes, what has already been explained applies. The following table applies to the Command drive shutter parameter.

KNX PARAMETER	SETTINGS
Command drive shutter	move up move down move up/move down

It defines the movement direction of the roller shutter associated with the prolonged closing of the button. **move up** Each time the button is activated, the module commands the total opening of the roller shutter. **move down** Each time the button is activated, the module commands the roller shutter to close. **move up/move down** Each time the button is activated, the module moves the roller shutter in the direction preceding the one performed following the last activation: if the previous closing of the button raised the roller shutter, further activation will lower it and vice-versa.

Scene

Communication objects involved:

“<Button x> Recall/Learn Scene”	1 Byte	CRT
“<Button x> Send Learn Scene Trigger”	1 Bit	WC

In this configuration page it is possible to set the button for the management of the scenarios: storage and execution of the scenarios.
These two behaviours (storage and execution) are performed through two different actions: short closing and long closing of the button.
Saving by long closing can be enabled through the parameter **Minimum time long press** and the related drop-down menu common to the other modes that is used to set the minimum activation duration of the button to be considered as long press (activation).
The following table applies to the scenario settings.

KNX PARAMETER	SETTINGS
Scene number	1 ÷ 64
This parameter sets the value of the scene to be stored/executed (one per channel). As the output devices (i.e. the actuators, etc.) can generally manage different scenes, each identified by a value (which varies from 0 to 63) it is crucial to set this parameter correctly so that it corresponds to the number set on the actuators.	
Store scene on long press	disabled/enabled
If disabled, the long press is ignored and no telegram is sent on the bus; if enabled, when long press occurs, a scene storage telegram is sent on the bus.	
Object enable scene learning from bus	disabled/enabled
If this parameter is enabled, there is a communication object (size = 1 bit) in order to enable/disable runtime from bus the sending of the “learn scene telegram”. When this object receives a telegram “1”, the function associated with the long press of the button (sending of telegram for scenario storage) is enabled, while when it receives a telegram “0” with prolonged closing no command is sent.	

Commands Sequences

Communication objects involved:

“<Button x> Sequence Command A 0-255”	1 Byte	CRT
“<Button x> Sequence Command A 0-100%”	1 Byte	CRT
“<Button x> Sequence Command A HVAC Mode”	1 Byte	CRT
“<Button x> Sequence Command A Off/On”	1 Bit	CRT
“<Button x> Sequence Command B 0-255”	1 Byte	CRT
“<Button x> Sequence Command B 0-100%”	1 Byte	CRT
“<Button x> Sequence Command B HVAC Mode”	1 Byte	CRT
“<Button x> Sequence Command B Off/On”	1 Bit	CRT
“<Button x> Sequence Command C 0-255”	1 Byte	CRT
“<Button x> Sequence Command C 0-100%”	1 Byte	CRT
“<Button x> Sequence Command C HVAC Mode”	1 Byte	CRT
“<Button x> Sequence Command C Off/On”	1 Bit	CRT
“<Button x> Sequence Command A 0-255 - Toggle”	1 Byte	CRT
“<Button x> Sequence Command A 0-100% - Toggle”	1 Byte	CRT
“<Button x> Sequence Command A HVAC Mode - Toggle”	1 Byte	CRT
“<Button x> Sequence Command A Off/On - Toggle”	1 Bit	CRT
“<Button x> Sequence Command B 0-255 - Toggle”	1 Byte	CRT
“<Button x> Sequence Command B 0-100% - Toggle”	1 Byte	CRT
“<Button x> Sequence Command B HVAC Mode - Toggle”	1 Byte	CRT
“<Button x> Sequence Command B Off/On - Toggle”	1 Bit	CRT
“<Button x> Sequence Command C 0-255 - Toggle”	1 Byte	CRT
“<Button x> Sequence Command C 0-100% - Toggle”	1 Byte	CRT
“<Button x> Sequence Command C HVAC Mode - Toggle”	1 Byte	CRT
“<Button x> Sequence Command C Off/On - Toggle”	1 Bit	CRT

This function is used to associate sequences of different commands on the bus.
For each button, this function can be associated with the combination **“short and long press”** or with the **“toggle”** function.
The sequence consists of 3 commands (A-B-C) which can each be sized as 1 bit or 1 byte. Once the size (1 bit/1 byte) of elements in the sequence has been defined, it is possible to associate different values to each element of the sequence or to decide to send commands only on one of the two events. The waiting time between one command and the next is defined through parameter **Delay between commands**.
Each communication object can be linked to a different group address.
For example, it is possible to define a sequence as proposed in the following table.

object	dimension	short press (switching 1)	long press (switching 2)
A	1 bit	ON (towards actuators)	OFF (towards actuators)
B	1 byte	100% (towards dimmer)	0% (towards dimmer)
C	1 byte	COMFORT (towards thermostats)	ECONOMY (towards thermostats)

Command Sequences (1 bit)

Communication objects involved:

“<Button x> Object A”	1 Bit	CRT
“<Button x> Object B”	1 Bit	CRT
“<Button x> Object C”	1 Bit	CRT

This function is used to send 1-bit command sequences on multiple objects. The sequence can be defined on 2 or 3 objects. Each time the button connected to the button is pressed, the next step of the defined sequence is sent.

KNX PARAMETER	SETTINGS
Number of objects	2, 3
This parameter sets and defines the number of 1-bit objects that will be visible and that will send the values 0 or 1 on the bus	
Number of steps in the sequence	2 ÷ 4 for 2 objects 2 ÷ 8 for 3 objects
It indicates the number of steps that compose the sequence.	
Long press to restart sequence	disabled/enabled
It is used to associate the restart of the sequence at step zero with the long press of the button	
Restart function	Restart and send first Send long step and restart
Restart and send first The long press determines the sending of step 1 **Send long step and restart** The long press causes the next step to be sent and brings the sequence to the initial step.	
Value step long	<Different combinations of values of objects a, b, c>
It defines what happens when a long press is performed (it depends on the “Restart function” parameter)	
Send only changed objects	disabled/enabled
This parameter defines whether, in the passage from one step to the next, all the values associated with one-bit objects must always be sent or only those that change.	
Value step <x>	Combinations of on and off on 2 or 3 1-bit objects
It determines the combination associated with a step in the sequence using 2 or 3 1-bit objects.	

Counter button

Please verify whether this function is available on the device.

With this function it is possible to use the events at the corresponding button as a trigger for a counter and then to count them, for example to activate functions and send telegrams when a certain number of them occur.

Using the **Counter Button function,** it is possible to count the pulses of a contact connected to the button for which the function was activated.

The corresponding ETS page offers the options and parameters described below.

The Software filter frequency parameter is used to manage a software filter to count 2 pulses that are too close together as a single pulse; this is necessary when the contact connected to the button has a bounce for a certain time. The parameter is therefore used to introduce and customise any debouncing at the button for which the counter Button function is activated.

KNX PARAMETER	SETTINGS
Software filter frequency	No filter 20Hz ÷ 1 kHz
Allows software events to be filtered according to the specified frequency. **No filter** it does not activate the filter via software, while by choosing one of the values from the drop-down menu it is possible to choose a filter frequency of: 20 Hz 50 Hz 100 Hz 200 Hz 500 Hz 1 kHz	

Using the **Counter button size** parameter it is possible to define the counter button size (1, 2 or 4 Bytes), the initial value and the final value; in particular, the final value, i.e. the maximum number of events that can be counted before the overflow, depends on the choice made in the Counter Button Size drop-down menu.

KNX PARAMETER	SETTINGS
Counter button size	1 bytes 2 bytes 4 bytes
It is used to choose the counter button size, i.e. the maximum number of events that can be counted.	

The possibility of configuring the counter with a size from 1 to 4 bytes enables counting from a few to numerous events, therefore from short periods of time to whole days, offering maximum versatility for the monitoring of all types of events.

KNX PARAMETER	SETTINGS
End counter value	1÷255 1÷65535 1÷4294967295
It is used to decide at which value the counter should stop.	

The initial value can be set starting from 0 and up to one unit less than the final one.

Using the parameter “Condition of increase counter” it is possible to define whether to count only the rising and falling edges or both.

It is possible to associate the sending on the bus of a 1 bit or 1 Byte value each time the counter reaches the final value (overflow).

The counter can be reset via a 1-bit button object.

Set RGB colour

Communication objects involved:

“<Button x> RGB”	3 Bytes	CRT
“<Button x> Red”	1 Byte	CRT
“<Button x> Green”	1 Byte	CRT
“<Button x> Blue”	1 Byte	CRT

This function is used to briefly press the button connected to the corresponding button with a command on the bus to set an RGB

colour through an RGB driver for LED lighting.

KNX PARAMETER	SETTINGS
Set Value	red/orange / yellow / green-yellow / green / green-cyan / cyan blue cyan / blue / blue-magenta magenta / red-magenta / white
With this parameter it is possible to set the RGB colour.	
Long press to change color	long press disabled 0.5 s / 1 s / 1.5 s / 2 s
With this parameter it is possible to enable a function associated with the long press that is used to change the colour associated with the short press. During the long press, a colour transition takes place which is sent on the bus and upon release the selected colour is stored; this means that from now on, every time a short press is performed, the new colour is sent on the bus. When the device is turned off, the last selected colour is kept in memory.	
Enable sending colors during transitions	enabled / disabled
With this parameter is possible to send all colour transitions during a long press so that each colour can be viewed on another device.	
RGB objects type	3 objects of 1 byte 1 object of 3 bytes
It defines whether the command is sent with a single 3-byte object or with 3 1-byte objects.	

MUR/DND

Communication objects involved:

“<Button x> Make Up Room”	1 Bit	RWCT
“<Button x> Do not Disturb”	1 Bit	RWCT
“<Button x> Additional Object RGB”	3 Bytes	CRT

This function is used to configure an button to send 1-bit commands with DND (do not disturb), MUR (make up room) or to restore both base signals. The action is set through the drop-down menu **Associated command** which is made available on the ETS page.
The choice of the “Associated command” parameter (“cmd” column of the following table) defines which values are sent on the 2 1-bit objects.

KNX PARAMETER	SETTINGS
Condition of increase counter	Rising edge Falling edge Rising and falling edge
It is used to set at which event the counter will be triggered.	

cmd	Action	DND	MUR	Note
MUR	enable	0	1	Obj. MUR send “1” Obj. DND send “0”
MUR	disab.	-	0	Obj. MUR send “0”
MUR	toggle	MUR enab./disab. In sequence		
DND	enable	1	0	Obj. MUR send “0” Obj. DND send “1”
DND	disab.	0	-	Obj. DND send “0”
DND	toggle	DND enab./disab. In sequence		
Loop 1 0		0 0 0	1	Loop in sequence between these 3 sets of values.

The setting **Reset all** (default) sends a reset command to the related actuators.
The parameter is also available on the ETS page **Additional object** which is used to associate a colour to each of the 3 states (active DND, active MUR, inactive MUR and DND); this colour is sent on the bus using a 3Byte DPT 232.600 RGB value 3x object (0...255) and will be reproduced by RGB lighting bodies associated with the device.
The following table summarises the parameter setting.

KNX PARAMETER	SETTINGS
Additional object	None RGB
None does not activate any additional objects while clicking on **RGB** the setting appears on the page **Colour associated with…** in whose box it is possible to write the hexadecimal equivalent of the colour to be associated with the action for which the additional object has been enabled (MUR, DND, loop) or to select the colour from the palette that appears by clicking on the button with the four coloured squares. The setting **Colour associated with “reset all”** is also made available where, in the same way as those just described, the colour of the light displayed following the reset command is set.	

Loop among values

Communication objects involved:

“<Button x> Loop Value Output”	1 Byte	CRT
This object is dedicated to sending the step-by-step sequence.		
“<Button x> Loop Value Feedback”	1 Byte	CW
This object is made to receive a value from the bus; if it corresponds to a value set in the sequence, it takes it to the corresponding step.		
“<Button x> Enable Button”	3 Bit	CW

This behavior stems from the fact that if **Use device as fan-coil with internal connections** is set, the thermostat module associated with the Temperature 1 Function is reserved for the “internal” Fan coil management.
With this function it is possible to configure an button to send a 1-byte value in sequence.

KNX PARAMETER	SETTINGS
Active edge	Send on closing Send on opening
It defines whether to enable the button on closing or opening.	
Number of values	3,4,5,6,7,8,9
It defines the number of values sent.	
Value A..I	0...255
Each time the button is activated (according to the “active front” setting), a value is sent following the order set in ETS: from the first (A) to the last (I).	