Shutters
and
Shutter 3 contacts

USER MANUAL

Translation of the original instructions

Version: **1.0**

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VERSION	DATE	CHANGES
1.0	28/06/2022	-

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. Shutters – General parameters

Communication objects involved:

“<Output Bx | xx> Up/Down”	1 Bit	CW
“<Output Bx | xx> Step/Stop”	1 Bit	CW
“<Output Bx | xx> Shutter %”	1 Byte	CW
“<Output Bx | xx> Up/Down Status”	1 Bit	CRT
“<Output Bx | xx> Shutter Status”	1 Byte	CRT
“<Output Bx | xx> Rising Status”	1 Bit	CRT
“<Output Bx | xx> Lowering Status”	1 Bit	CRT

The outputs can be configured as “combined” to control rolling shutters or blinds.

Block B 2 Relays – Shutters with 2 switch limits				
EXAMPLE	OUT1	▲ (UP)	OUT2	▼(DOWN)

KNX PARAMETER	SETTINGS
Shutter type	Shutter / Venetian
Select “Venetian blind” if the shutter has slats; otherwise select shutter.	
Shutter travel time [s]	0 ÷ 3000
This parameter sets the total travel time of the shutter	
Delay move up	disabled / enabled
This parameter enables the parameter Delay time move up [s] (5, 10, 20, 30 seconds) to set the delay for movements that bring the shutter upwards.	
Delay move down	disabled / enabled
This parameter enables the parameter Delay time move down [s] (5, 10, 20, 30 seconds) to set the delay for movements that bring the shutter downwards.	
Compact time [s]	0 ÷ 255
It sets the activation time to compact the roller shutter in descent.	
Extra time for shutter travel up [s]	5 ÷ 30
Questo parametro indica il numero di secondi da aggiungere al tempo di corsa per tutti i movimenti che portano la tapparella verso l’alto.	
Extra time for shutter travel down [s]	5 ÷ 30
This parameter indicates the number of seconds to add to the travel time for all the movements that bring the shutter upwards.	
Stop time between 2 same shutter movements	from 100 ms to 5 seconds
Defines the minimum stop time between 2 movements of the shutter in the same direction.	
Stop time between 2 opposite shutter movements	from 100 ms to 5 seconds
Defines the minimum stop time between 2 shutter movements in opposite directions.	
Scene sources	Do not use scene objects Enable local scene objetcs Enable global scene objects Enable global and local scene objects
With this parameter it is possible to manage the scenarios (see “5. Shutters – Scenes”)	
Up/down sources	Do not use up / down object Enable local up / down object Enable global up / down object Enable local and global up / down object
This parameter refers to the management of global objects. Refer to the device’s user manual for more information. **Do not use up/down object** The up / down object is not used **Enable local up/down object** The up / down object is only local: “<Output Bx | xx> Up / Down” **Enable global up/down obj** The up / down object is only global: “<Global Shutter> Up / Down” **Enable local and global up/down object** The up / down object is both local and global.	
Delay global up/down [s]	0 ÷ 15
This parameter, visible only if the global object is enabled, allows to insert a delay to the activation of the movement, this delay is generally used to avoid activating many shutters at the same time in case of automatic commands at pre-established times.	
Shutter % sources	Do not use shutter object Enable local shutter object Enable global shutter object Enable local and global shutter objects
This parameter refers to the management of global objects. Refer to the device’s user manual for more information.	
Feedback up/down	disabled / enabled
Enable the 1 bit object <Output Bx | xx> up / down status that sends on the bus the direction of the last movement	
Feedback shutter pos. %	disabled / enabled
Enable the 1-byte object <Output Bx | xx> shutter status that sends on the bus the position of the shutter	
Feedback louvre position %	disabled / enabled
Enable the 1-byte object <Output Bx | xx> louvre status that sends on the bus the position of the louvres	
Feedback rising / lowering	disabled / enabled
Enable the 1-bit objects <Output Bx | xx> Rising Status and <Output Bx | xx> lowering status that sends on the bus the indication if the shutter is in up / down movement respectively (1) or is stopped (0).	

2. Shutters – Louvres parameters

Communication object involved:

"<Output Bx | xx> Louvre %"	1 Byte	CW
"<Output Bx | xx> Louvre status"	1 Byte	CRT

If block B is configured as a blind, it is possible to manage the position % of the louvres.

KNX PARAMETER	SETTINGS
Louvre time for full revolution [0.1 s]	10 ÷ 255
Time for the complete rotation of the slats, ie time necessary for the slats to pass from totally open to totally closed. Value expressed in tenths of a second, enter 30 for 3 seconds, 40 for 4 seconds and so on.	
Number of steps for compete louvre rotation	2 ÷ 10
Indicate in how many steps you want to make a complete rotation of the lamellae.	
Louvre movement after up	Nothing keep Fixed position
At the end of a rising movement it is possible to set that the slats do not move or return to the position before the movement or that they are brought to a fixed position%.	
Louvre movement after down	Nothing keep Fixed position
Like the previous parameter, after a downward movement.	
Louvre % sources	Do not use louvre object Enable local louvre object Enable global louvre objec Enable local and global louvre object
This parameter refers to the management of global objects. Refer to the device's user manual for more information.	
Delay global louvre % [s]	0 ÷ 15
This parameter, visible only if the global object is enabled, allows to insert a delay to the activation of the movement, this delay is generally used to avoid activating many louvres at the same time in case of automatic commands at pre-established times.	

3. Shutters – Alarms

Communication object involved:

"<Output Bx | xx> Alarm"	1 Bit	CW

The alarm function must be enabled if the shutter / blind is controlled by weather sensors, usually rain and wind.

When the alarm function is activated, the shutter performs a defined action and can not be moved unless the block function with the highest priority is activated.

KNX PARAMETER	SETTINGS
Activation telegram	telegram 0 / telegram 1
Defines which value of the 1-bit telegram activates the alarm function for this block.	
Supervision time for alarm [min] (0=never switch off alarm automatically)	0 ÷ 120
This parameter selects the duration of the monitoring time for the alarm function. If this time is set to 30 min, the shutter must receive at least once in 30 min. a telegram from the sensor, even if the telegram indicates "No alarm". If this does not happen, the alarm will become active and a "No alarm" telegram will be required for the reset. For this reason, the sensor must be set to perform a cyclic sending and we recommend setting the supervision time greater than twice the cyclic sending period. The value 0 causes the shutter to not control the reception of the cyclic telegram.	

For the alarms, each shutter block has 3 global objects:

"<Global Shutter> Alarm 1"	Global object 1 - alarm
"<Global Shutter> Alarm 2"	Global object 2 – alarm
"<Global Shutter> Alarm 3"	Global object 3 - alarm

Global alarm objects have different priorities: Alarm 1 has higher priority than Alarm 2 and Alarm 3; Alarm 2 has higher priority than Alarm 3; so if two alarms are active at the same time, the action associated with the one with the highest priority will be performed.
Local alarm can be configured by the ETS parameter as "Type 1" or "Type 2" or "Type 3", in this way it will be associated with the corresponding priority (1 maximum, 3 minimum).

KNX PARAMETER	SETTINGS
Global alarm 1	disabled / enabled
Global alarm 2	disabled / enabled
Global alarm 3	disabled / enabled
Enables block B to be subordinated to the corresponding global alarm object and shows the related setting parameters.	
Local alarm type	None Type 1 Type 2 Type 3
If enabled local alarm is associated with the corresponding type (and priority).	
Shutter action on alarm *x* activation	Stop – no movement Move up Move down
Defines the action for the shutter on alarm activation.	
Louvre action on alarm *x* activation	None Keep Fixed
Defines the action for the louvres on alarm activation.	
Shutter action on alarm *x* deactivation	none Move up Move down Last value received Last value before alarm
Defines the action for the shutter on alarm deactivation.	
Louvre action on alarm *x* deactivation	none Keep Fixed Last value received Last value before alarm
Defines the action for the louvres on alarm deactivation.	

4. Shutters – Automatic movements

Communication objects involved:

"<Output Bx | xx> Auto Movement"	1 Bit	CW
"<Output Bx | xx> Presence / Sun"	1 Bit	CW

The automatic movements of the shutters are useful for managing situations connected to the presence / absence of people in the room (detected by presence sensors) or connected to the solar irradiation of the windows (an external brightness sensor is required). Actions in both cases may depend on the working mode of HVAC in the building: heating or cooling.
Enabling the Presence / Sun automatic movement parameter makes the "<Output Bx> Auto Movement" page available.

From the Global Objects management page, you can enable the object:

<Global All> Heat / Cool	1 Bit	CW

<Output Bx | xx> Auto Movement: enable / disable the management of automatic movement; for example, the automation can be disabled at night.

<Output Bx | xx> Presence / Sun: indicates to the shutter output block if there is a presence of people in the room (telegram 1) or absence (telegram 0).
If used for solar radiation management of building façades, it indicates whether the façade is irradiated (telegram 1) or unirradiated (telegram 0).

<Global All> Heat / Cool: this global object makes it possible to differentiate automatic actions based on the current season.
By closing the shutters in the summer when the façade of the building is irradiated by the sun, the rooms are prevented from overheating, saving energy in the air conditioning; in winter it is preferable, on the contrary, to let in the sun's rays to heat the rooms as much as possible.

KNX PARAMETER	SETTINGS
Telegram for atomatic movement activation	activate automatic movement on OFF telegram activate automatic movement on ON telegram
It defines which 1-bit telegram value activates the automatic movement function.	
On Presence/Sun telegram while manual mode	no action enable automatic movement
It defines the behaviour in manual mode in case of receiving of a telegram relating to the activation of the presence or light sensor. **No action** It ignores the telegram. **Enable automatic movement** it enables automatic movement as set in the ETS page.	
Time deactivation automatic mode (0=time unlimited)	0 ÷ 12 hours
It defines a possible deactivation period of the automatic movements set in the ETS page, for example because maintenance is required. By setting a time, the item appears below the drop-down menu **Action on reactivation**, which provides the following options. **No action** At the end of the deactivation time, if an automatic movement has been interrupted and the conditions that triggered it still exist, it cancels the relative command: the roller shutter will only be activated automatically when a subsequent telegram relating to Presence/Sun or manual action. **Automatic action** At the end of the deactivation time, if an automatic movement has been interrupted and the conditions that triggered it still exist, the execution of the related command resumes.	
Shutter in cool mode for command OFF	0-100% / all down / keep / all up
It defines the opening percentage of the roller shutter in case of an OFF command in cooling/conditioning mode.	
Louvre in cool mode for command OFF	0-100% / keep
It defines the opening percentage of the louvre in case of an OFF command in cooling/conditioning mode.	
Shutter in cool mode for command ON	0-100% / all down / keep / all up
It defines the opening percentage of the roller shutter in case of an ON command in cooling/conditioning mode.	
Louvre in cool mode for command ON	0-100% / keep
It defines the opening percentage of the louvre in case of an ON command in cooling/conditioning mode.	
Shutter in heat mode for command OFF	0-100% / all down / keep / all up
It defines the residual opening percentage of the shutter in the event of an OFF command in heating mode.	
Louvre in heat mode for command OFF	0-100% / keep
It defines the residual opening percentage of the louvre in the event of an OFF command in heating mode.	
Shutter in heat mode for command ON	0-100% / all down / keep / all up
It defines the residual opening percentage of the shutter in the event of an ON command in heating mode.	
Louvre in heat mode for command ON	0-100% / keep
It defines the residual opening percentage of the louvre in the event of an ON command in heating mode.	

Automatic movements are a function designed for installations where there is a presence sensor in a room that sends ON (presence) and OFF (absence) commands; in this case it is possible to take advantage of these commands to change the opening of the roller shutter automatically, differentiating its behaviour between the season in which the heating is active (cold) and that in which the cooling is active (summer).

5. Shutters – Scenes

Communication object involved:

"<Output Bx | xx> Scene"	1 Byte	CW

Enabling the scenario management, it is possible to assign up

to 12 KNX scenarios and up to 64 dynamic scenarios to each shutter block
You can send 2 commands to the scene object:
Recall scene: it is a command used to start execution of a given scene.
Save scene: it is a command used to save the current status of the relays (when the command is received), this status is reproduced when the "Recall scenario" telegram is received.

KNX PARAMETER	SETTINGS
Scene sources	Do not use scene objects Enable local scene objetcs Enable global scene objects Enable global and local scene objects

This parameter refers to the management of global objects. Refer to the device's user manual for more information.

Do not use scene objects:
the scenarios are disabled for this block

Enable local scene objects:
for this block the scenarios are enabled and are recalled by the object "<Output Bx | xx> Scenes".

Enable global scene objects:
for this output the scenes are enabled and are recalled via global object "<Global All> Scene".

Enable global and local scene objects:
for this output the scenes are enabled both with local object and with global object.

The <Output Ax> Scene page will show the following parameters:

KNX PARAMETER	SETTINGS
Enable scene learning	disabled/enabled
If disabled, the outputs can not execute "Save Scenario" commands	
Enable dynamic scene learning	disabled/enabled
See "Shutters – dynamic scenes"	
Keep or override scene values after download	override/keep
Determines whether the scenarios saved with the "save scene" commands are shown at the value defined in the ETS or not at download.	
Scene counter	1..12
Defines how many KNX scenarios are associated with the output	
Scene x index	1..64
Defines which index associated with the x scenario	
Scene x shutter position	0% .. 100%
Defines the position of the shutter associated with the x scenario after the first dowload, for subsequent dowloads check how the "Keep or override scenes values after download" parameter is set	
Scene x louvre position	0% .. 100%
Defines the position of the louvres associated with the x scenario after the first dowload, for subsequent dowloads check how the "Keep or override scenes values after download" parameter is set	

Shutters – dynamic scenes

DESCRIPTION
The dynamic scene function is compatible with the standard KNX scenario and the actuators can use both at the same time.
The dynamic scene function uses the same 1 byte communication object (DPT 18.001) of the standard KNX scenario while maintaining the same structure and meaning.
To activate the dynamic scene function, the "Global Dynamic Scene" parameter on the "Global Objects" page must be set as "enabled", in this way the "<Global All> Dyn Scene" object is visible. This 1-bit communication object, one for each actuator, is used to enable / disable runtime the saving of the dynamic scenario value according to the value received on the "<Output Bx | xx> Scene."

HOW IT WORKS
When the object value **"<Global All> Dyn Scene" is 0** the dynamic scene function is disabled, it is possible to learn and execute the standard KNX scenarios as set by the ETS parameter.
When the value of the object **"<Global All> Dyn Scene" is 1**, the dynamic scene function is enabled, during this condition any command sent to the relay is executed and also saved in memory.
When a learning command is sent on the object **1 byte "<Output Bx | xx> Scene"** the device saves the new status in memory and associates it with the number of the scenario just received.
If a learning command is sent to the 1 byte object "<Output Bx | xx> Scene" without having previously updated the output status, the actuators consider this as a command to "disconnect" this output to the scenario number "n" and from this moment onwards, after receiving a recall scenario for the number of scenario "n" output does not react.
In this way it is possible to associate up to 64 scene numbers on each actuator output channel.
When the object **"<Global All> Dyn Scene" returns to 0**, the learning of the dynamic scene is completed.
The scenario call operation works in the same way as the standard KNX scene.

6. Shutters – Lock

Communication object involved:

"<Output Bx | xx> Lock"	1 Bit	CW

The block function has the highest priority, even on alarms and as long as the shutter does not leave the blocking state no movement can be performed.

KNX PARAMETER	SETTINGS
Lock sources	Do not use lock object Enable local lock object Enable global lock object Enable global and local lock objects

This parameter refers to the management of global objects. Refer to the device's user manual for more information.

Do not use lock object
the lock are disabled for this block

Enable local lock object
for this block the lock is enabled and are recalled by object "<Global ll | xx> Lock"

Enable global lock object
for this output the scenes are enabled and are recalled via global object "<Global All> Lock"

Enable global and local lock objects:
for this output the scenes are enabled both with local object and with global object.

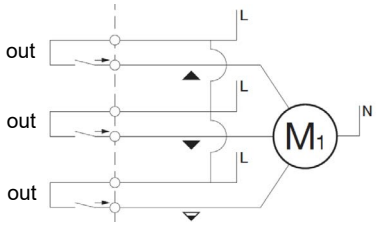
KNX PARAMETER	SETTINGS
Lock state after download	unlocked/locked
It allows you to enable the communication objects "<Output Bx | xx> Lock" after the download of the application.	
Telegram for lock activation	activate lock on OFF telegram activate lock on ON telegram
This parameter defines the telegram by which enable the lock object.	
Automatic unlocking time (0=never automatically unlock) [min]	0...120
The lock can be set as a time function, at the end of the lock time the lock function is disabled. If the lock function is set with automatic deactivation, the time-out time is reloaded each time a new lock telegram is receive	
Shutter action on lock	Stop - no movement Move up Move down
It defines how output Bx should behave in case of lock activation for this block. **Stop - no movement** The relays of the block stop/remain at rest. **Move up** The first relay of the block is activated to raise the roller shutter. **Move down** The second relay of the block is activated to lower the roller shutter.	
Louvre action on lock	None Keep Fixed
It defines the action for the louvres on lock activation. **None** no action **Keep** the louvre position remains a **Fixed** the louvre position is set by a parameter	
Louvre position on lock	0-100%
It defines the position of the louvre.	
Shutter action on unlock	None Move Up Move Down Last Value Received Last Value Before Lock
It defines the action for the shutter on unlock activation.	
Louvre action on unlock	None Keep Fixed Last Value Received Last Value Before Lock
It defines the action for the louvre on unlock activation.	

7. Shutter 3 contacts – General parameters

Communication objects involved:

<Output Cx | xx> Up/Down AB1	1 Bit	CW
<Output Cx | xx> Step/Stop AB1	1 Bit	CW

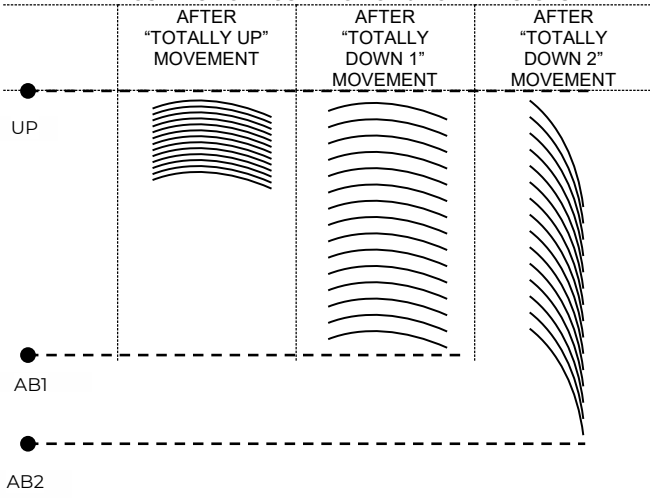
The outputs can be configured as "combined in groups of 3" to control rolling shutters or blinds with 3 limit switches (3 contacts shutters), the wiring diagram for this type of shutters is the one shown in the figure below.



In addition to the outputs that activate the up [▲] and down [▼] circuits there's a third output used to manage the down 1 movement [▼] which allows the shutter to stop before the limit switch established for the down movement, this do not close the louvres completely.

BlocK C – 3 Relays – shutters with 3 contacts				
EXAMPLE	OUT1	▲ (UP)	OUT3	(DOWN 1)
	OUT2	▼(DOWN 2)		

TYPICAL LOUVRES CONFIGURATION ON 3 CONTACTS SHUTTER



KNX PARAMETER	SETTINGS
Up/down AB1 sources	Enable local up/down object Enable local and global (if not used) up/down objects

This parameter refers to the management of global objects. Refer to the device's user manual for more information.

Enable Local Up / Down Object:
for this output the AB1 up / down command is enabled through the object "<Output Cx | xx> Up / Down AB1 ".

Enable local and global up / down object (if not used):
for this output the AB1 up / down command is enabled through the object "<Output Cx | xx> Up / Down AB1 "and the global one" <Global Shutters> Up / Down "if it is not used as a source for the up / down command.

Time between limit switches AB1 and AB2 [s]	0...255

Using this parameter it is possible to define the difference between the run time AB2 (defined by the parameter "Shutter run time [s]") and the run time AB1.

For example:
Run time AB2 = 60s
Travel time between limit switches AB1 and AB2 = 20 s
-> AB1 travel time = 40s

The position corresponding to 100% must be reached in correspondence with the second lower limit switch FC DOWN 2 (AB2) so the downward travel time inserted in ETS must correspond to a complete up to down travel: with <Output Cx | xx> Up / Down move the shutter all DOWN and then move it totally ON and count the travel time. This time must be set in ETS.

In the position corresponding to the first lower limit switch FC DOWN 1 (AB1) the position % of the shutter will be less than 100% because this value corresponds to the position of the second lower limit switch FC DOWN 2 (AB2).