Product Handbook

BO04K01KNX	Din Rail Actuator 4 Output
BO08K01KNX	Din Rail Actuator 8 Output
BO12K01KNX	Din Rail Actuator 12 Output

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Any information inside this manual can be changed without advice.

This handbook can be download freely from the website: *www.eelectron.com*

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

DISPOSAL : The crossed-out bin symbol on the equipment or packaging means the product must not be included with other general waste at the end of its working life. The user must take the worn product to a sorted waste centre, or return it to the retailer when purchasing a new one. An efficient sorted waste collection for the environmentally friendly disposal of the used device, or its subsequent recycling, helps avoid the potential negative effects on the environment and people's health, and encourages the re-use and/or recycling of the construction materials

1. General introduction

This manual is intended for use by KNX® installers and describes functions and parameters of DIN modules BOxxK01KNX and how you can change settings and configurations using the ETS software tool.

The BOxxK01KNX devices are EIB / KNX DIN rail actuators with xx 16A-230V AC relay outputs. This manual refers to the BO12K01KNX module; all the features and functions described here are also applicable to the BO04K01KNX and BO08K01KNX modules; in these cases, that the number of output functions is reduced.

2. Product overview

BO12K01KNX is designed to be installed in Home and Building installations (i.e. offices, hotels, private houses, etc...).

Main functions of outputs

The outputs can be configured as:
- 12 outputs for light / load control
- 6 channels for roller shutter / venetian control

The device includes manual buttons for switching local relays and LEDs to indicate operation.

3. Installation instructions

The device can be used for permanent internal installations in dry places and is intended for DIN rail mounting in LV distribution cabinets.

⚠️ **WARINING**

- Device must be installed at a minimum distance of 4 mm between electrical power line (mains) and input cables or red / black bus cable.
- The device must not be connected to 230V cables
- The device must be mounted and commissioned by an authorized installer.
- The applicable safety and accident prevention regulations must be observed
- The device must not be opened. Any faulty devices should be returned to manufacturer
- For planning and construction of electric installations, the relevant guidelines, regulations and standards of the respective country are to be considered.
- KNX bus allows you to remotely send commands to the system actuators. Do not lead to hazardous situations, and that the user always has a warning about which commands can be activated remotely.
- The relays of the device, leaving the factory, are configured as open; the contacts may close during transportation even if the device is not powered. It is advisable, upon the first power-up, to first connect the bus to ensure opening of the relays and only then the voltage to the loads.
- Before programming the device using ETS, the output channels are configured for shutter management to avoid improper control of this type of load. The frontal button is configured to switch the relay with logical interlock.

For further information please visit:
www.eelectron.com

4. General parameters

KNX PARAMETER	SETTINGS
Delay on Power up	3 ÷ 15 seconds
Through this parameter is possible to set the delay of transmission of telegrams after a power on by selecting the time by which the device is allowed to send telegrams. In large systems after a power failure or shutdown this delay avoids generating excessive traffic on the bus, causing slow performance or a transmission block. If there are different devices requiring sending telegrams on the bus after a reset, these delays must be programmed to prevent traffic congestion during the initialization phase. The input detection and the values of objects are updated at the end of the transmission delay time. At the end of ETS programming the device behaves like after a power on.	
Heartbeat (periodic alive notification)	nothing periodic on request
Through this parameter you can enable the object "<General> Heartbeat" for notification of the correct operation of the device. Setting "periodic" defines the interval and the message sent on the BUS for the notification of the status; setting "on request" the verification of the correct operation is done by reading the object "<General> Heartbeat".	
Telegram value	off on toggle
This parameter defines the telegram sent by the object "<General> Heartbeat". The value "toggle" is only available in case of periodic sending.	
Period – time unit	seconds minutes hours
This parameter defines the unit of measure of the heartbeat period. Available only in case of periodic sending.	
Period – time value	1 .. 255
This parameter defines the time interval for sending the "<General> Heartbeat" object. Available only in case of periodic sending.	

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The following parameters impact the consumption of the device on the bus. The highest consumption is found at power on (bus power on) and after relay switching; it is suggested to set a configuration that reduces the peak absorptions by limiting the high consumption to only devices on which it is strictly necessary to have simultaneous switching or to have immediate operation at power-up.

Permitted simoultaneous relay commutation	1 .. 12

Defines the maximum number of relays that can be switched simultaneously.

Maximum BUS current consumption after relay commutation	10 mA .. 30 mA

Defines the maximum current consumption from bus allowed for the device at power up or after relay switching; consider this parameter in designing the KNX lines.

Economy mode: switch OFF leds after inactivity	never switch OFF; 1 .. 15 min.

It defines the behavior of the front leds, it is possible to set them to turn off after a few minutes when no manual action is performed on the local buttons.

Local buttons	disabled/enabled

If this parameter is enabled, it is possible to activate the local relays by pressing the corresponding keys according to the configuration of the relays (single, shutters).

5. Outputs

Outputs can be set as single outputs or as shutters.

6. Block A – 1 Relay

Block A identifies the functions related to 1 single relay (generic load)

Single relay – general parameters

KNX PARAMETER	SETTINGS
Relay type, normally close or open	Normally open Normally close

With this parameter it is possible to set the operating mode of the relay. The relay can be used as "open contact" or "closed contact"; this distinction is only logical because the relay has only one pole and a terminal connected to the NC contact is not available.

Command (relay status)	Normally open	Normally closed
ON (activated)	contact closed	contact open
OFF (deactivated)	contact open	contact closed

KNX PARAMETER	SETTINGS
Command activation telegram	Activate with ON Activate with OFF

Determines whether the function is activated with a telegram "1" (i.e. off = "0") or is activated with telegram "0" (i.e. off = "1")

Relay state at power on	No Action Go ON GO OFF
Relay state at power off	

Set this parameter to determine the status that the relay must take when the bus voltage drops and when it is restored

Feedback enable/disable	Disabled Always On variation

Disabled:
the relay status is never sent
Always:
status is transmitted each time the relay receives an actuation command
On variation:
the relay status is only transmitted when its status changes

Counter Type	Nothing Instant Power Count energy Count ON or OFF time Count ON/OFF Toggles

The device allows to send on the bus one of the following counters:
Instant Power:
instantaneous power absorbed (presumed); it is not possible to measure the absorbed power but it is possible to send the presumed value (in Wh or KWh) based on the ETS parameter set as energy consumed in Watt or Kilowatt.
Count energy:
Energy consumed (presumed); it is not possible to measure the energy consumed but it is possible to send the presumed value based on the ETS parameter set as energy consumed in Watt or Kilowatt.
Count ON or OFF time:
counts the ON or OFF time of the relay in hours [2 bytes - dpt 7.007 time (h)]
Count ON/OFF Toggles:
counts the number of relay commutations [4 bytes – dpt 12.001 counter pulses]

Timing function type	No timing function On/off with timing and delay Continuous switching

No timing function:
no timed function
On/off with timing and delay:
this parameter enables an object dedicated to managing the timed output [<Output Ax | xx> Timing] with which to set a delay on activation, deactivation or the staircase lighting function.
Continuous switching:
function that switches the relay ON / OFF continuously

Single relay – on/off with timing-delay

On the ETS page [<Output Axx | xx> Timing] the following parameters are visible.

KNX PARAMETER	SETTINGS
Timing unit measure	seconds / minutes / hours

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Sets the unit of measure for the following timing parameters.	
Switch ON delay (0=no switch ON delay)	0..255
Sets the delay between receiving the ON command and activating the corresponding output (if set to 0 there will be no delays and execution will be immediate)	
ON state retention time (0=never switch OFF)	0..255
Sets the automatic switch-off time (staircase lights); if set = 0 it must be turned off by an OFF command	
Behaviour when receiving deactivation telegram during timing	Ignore command Go to retention end (switch off) Go to off state after time
Ignore command: the OFF command is ignored **Go to retention end (switch off):** the OFF command is executed immediately**. Go to off state after time:** The off command is executed after the time defined by the Switch OFF delay parameter	
Switch OFF delay, 0 = switch OFF immediately	0..255
Sets the delay between receiving the OFF command and activating the corresponding output (if set to 0 there will be no delays and execution will be immediate)	

Example 1: Set the staircase light to automatically switch off after 5 minutes without the possibility of manual switch-off	
PARAMETER	**VALUE**
Timing unit measure	minutes
Switch ON delay	0
ON state retention time	5
Behaviour when receiving deactivation telegram during timing	Ignore command

Example 2: Set the automatic staircase light off after 50 seconds with the possibility of manual switch-off	
PARAMETER	**VALUE**
Timing unit measure	seconds
Switch ON delay	0
ON state retention time	50
Behaviour when receiving deactivation telegram during timing	Go to retention end (switch off):
Switch OFF delay	

Example 3: Set light ON with 5 seconds delay and OFF with 60 seconds delay	
PARAMETER	**VALUE**
Timing unit measure	seconds
Switch ON delay	5
ON state retention time	0
Behaviour when receiving deactivation telegram during timing	Go to off state after time
Switch OFF delay	60

KNX PARAMETER	SETTINGS
Behaviour when receiving telegram during timing	Ignore Restart ON state retetntion timer Extend time
Sets the behavior of the device when ON command is received while the timing is running: **Ignore**: the reception of an ON command is ignored and the timing continues. **Restart ON state retention timer:** when an ON command is received, the device restarts the timing **Extend time:** Upon receiving an ON command, the device extends the timing	
Warning signal before switch OFF	Do not signal 15 seconds 30 seconds 1 minutes 2 minutes 5% of retention time 10% of retention time 15% of retention time
Set the warning time before the end of the timed function; the device signals the imminent end of the timing with a short power off. **Do not signal** No warning signal is executed **15 s / 30 s / 1 min / 2 min** Indicates how much time before the end of the timing the warning signal is executed **5% / 10% / 15% of retention time** Indicates how much time before the end of the timing (in percentage) takes place the prevision (if the timing is 60 seconds setting 10% of retention time the warning takes place 6 seconds before the end.	
Command during timing behaviuor	Actuate command and reset timing function Ignore command
Determines the behavior in case of receiving an ON or OFF command during the timing execution. **Actuate command and reset timing:** It executes the command received and cancels the timing in progress. **Ignore command**: Ignore the command received.	

Single relay – continuous switching

On the ETS page [<Output Axx | xx> Timing] the following parameters are visible.

KNX PARAMETER	SETTINGS
Timing unit measure	seconds / minutes / hours
Sets the unit measure for the following timing parameters.	
Continuous switching ON time	1..255
Relay ON time during continuous switching	
Continuous switching OFF time	1..255
Relay OFF time during continuous switching	

Single Relay – scenes

Enabling the scenario management, it is possible to associate up to 12 KNX scenarios and up to 64 dynamic scenarios to each output (see: Single relay – dynamic scenes)
You can send 2 commands to the scene object:
Recall scene: it is a command used to start execution of a scenario.
Save scene: it is a command used to save the current status of the relays (when the command is received), this status is restored when the "Recall scene" 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 objetcs
Do not use scene objects: scenes are disabled for this ouput **Enable local scene objects** for this output the scenese are enabled and are recalled by CO <Output Axx | xx> Scenes **Enable global scene objects** for this output the scenes are enabled and are called via global CO <Global All> Scene (see par: **Errore. L'origine riferimento non è stata trovata.**) **Enable global and local scene objects**: for this output the scenes are enabled both with local CO and with global CO.	

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

KNX PARAMETER	SETTINGS
Enable scene learning	disabled/enabled
If disabled, the output can not execute "Save Scenario" commands	
Enable dynamic scene learning	disabled/enabled
See par: Single relay – dynamic scenes	
Keep or override scene values after download	override/keep
Determines whether the scenarios saved with the "save scene" commands are restored at the value defined in the ETS or not when a download is performed.	
Scene counter	1..12
Defines how many KNX scenarios are associated with the output	
Scene x index	1..64
Defines which index is associated with the x scenario	
Scene x value	OFF/ON
Defines whether the status associated with the x scenario is ON or OFF after the first dowload, for subsequent dowloads check how the "Keep or override scenes values after download" parameter is set	

Single relay – 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 Axx \| 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 Axx \| 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 Axx \| 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 scenario is completed.
The scenario call operation works in the same way as the standard KNX scenario.

Single relay – additional functions

2 additional functions can be enabled:

KNX PARAMETER	SETTINGS
Additional object type	Do not use Use for logic function Use for locking function

LOGIC FUNCTION
This function allows to control the load, through the result of a logic operation, the logic function consists of two logical inputs: the operation is performed between the logic input and the relay command object.
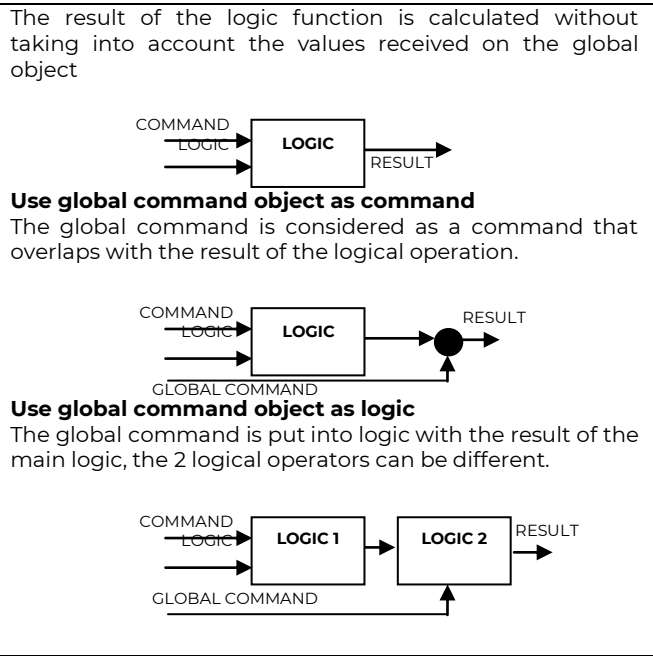
LOCK FUNCTION
Locks the relay in a specific position, this state is maintained until is received a specific command to exit the block status; any command received during the period in which the lock mode is active is not executed.

LOCK AND LOGIC are alternative functions, they can not be activated at the same time.

Single relay – logic

When the logic operation is enabled, the output command is the result of a logical operation between the communication object "<Output Axx | xx> Logic "and the object" "<Output Axx | xx> Command ".
Using ETS, you can select the logical operation: whenever a telegram is received on the logical object or command object, the logic operation is recalculated and the result is interpreted as a command for the relay.

KNX PARAMETER	SETTINGS	
Logic function for command and additional	AND	NAND
	OR	NOR
	XOR	XNOR
This allows you to select which logical operator to use.		
Additional command logic value after download	Start in ON state	
	Start in OFF state	
This parameter allows to select the initial value of the logical operator. By setting "Last received value" the last value before switching off is considered valid.		
Delay logic output (seconds)	0..7	
This parameter inserts a delay between the recalculation of the resulting logic function (which occurs after the objects "<Output Axx | xx> Logic" or the object "" <Output Axx | xx> Command) have been updated and the relay status update. The insertion of a delay allows to "filter" too frequent" updates on the status of the outputs due to the recalculation of the resulting logic. The delay is in seconds.		
Global command object	• Do not use global command object	
	• Use global command object as command	
	• Use global command object as logic	
This parameter refers to the management of global objects (see par: Global Objects) .		
Do not use global command object		

The result of the logic function is calculated without taking into account the values received on the global object

Use global command object as command
The global command is considered as a command that overlaps with the result of the logical operation.

Use global command object as logic
The global command is put into logic with the result of the main logic, the 2 logical operators can be different.

Single relay – lock function
When the lock function is enabled, it forces the relay to be switched into a defined state by a bus telegram and forces it to retain this status even if it receives bus commands on other switching objects.

When the lock function is active, the local keys, also if enabled, do not work.

KNX PARAMETER	SETTINGS
Lock sources	Do not use lock object [1]
	Enable local lock object [1]
	Enable global lock obj. [2]
	Enable local and global lock object [2]
[1] : visible only if additional object set for logic	
[2] : visible only if additional object set for lock	

This parameter refers to the management of global objects.
Do not use lock object
Lock function is not used
Enable local lock object
The block function is activated / deactivated only via the <Output Axx | object xx> Lock
Enable global lock obj
The block function is only activated / deactivated via the object the <Global All> Lock object
Enable local and global lock object
The block function is activated / deactivated via the <Output Axx | xx> Lock or the <Global All> Lock object

On the <Output Axx> Lock page, the following parameters are set

KNX PARAMETER	SETTINGS
Lock state after download	Locked / unlocked

Set the value of the block function after download	
Telegram for lock activation	Activate on OFF telegr. Activate on OFF telegr.
Defines which telegram is to lock and which one is to unlock.	
Automatic unlock after time (0 = never unlock automatically)	0..255
Lock can be set as a timed function, the lock function is deactivated at the end of the blocking time	
⊙ If the lock function is set with automatic deactivation, the timeout time is reloaded each time a new lock activation telegram is received.	
Output value when locked	Switch OFF / Switch ON
This parameter selects the state that the relay must assume when the "lock" function is activated.	
Output value when unlocked	Switch OFF Switch ON Switch to last value received Switch to last value before lock
Switch OFF Relay in OFF **Switch ON** Relay in ON. **Switch to last value received** The relay returns to the position corresponding to the last command received. **Switch to last value before lock** The relay returns to the position prior to activation of the lock.	

7. Block B – 2 Relays

Block B identifies the shutter function, 2 coupled relays.

Shutters – general parameters

The outputs can be configured as "combined" to control rolling shutters or blinds

Block B 2 Relays – Shutters with 2 switch limits					
B1	OUT1/2	OUT1	▲ (UP)	OUT2	▼ (DOWN)
B2	OUT3/4	OUT3	▲ (UP)	OUT4	▼ (DOWN)
B3	OUT5/6	OUT5	▲ (UP)	OUT6	▼ (DOWN)
B4	OUT7/8	OUT7	▲ (UP)	OUT8	▼ (DOWN)
B5	OUT9/10	OUT9	▲ (UP)	OUT10	▼ (DOWN)
B6	OUT11/12	OUT11	▲ (UP)	OUT12	▼ (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 parmeter 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 parmeter 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
This parameter indicates the number of seconds to add to the run time for all movements that bring the roller shutter to "up" position.	
Extra time for shutter travel down [s]	5 ÷ 30
This parameter indicates the number of seconds to add to the run time for all the movements that bring the roller shutter to "down" position.	
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.	
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 handling of the 1-bit up / down object and global objects (see par. 8) **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 object**
This parameter refers to the management of the 1 byte position % object and global objects	
Louvre % sources	**Do not use louvre object** **Enable local louvre object** **Enable global louvre obj** **Enable local and global louvre object**
This parameter refers to the management of the 1 byte louvres % object	

Feedback up/down	disabilita / abilita
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).	

Shutters – louvres parameters

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.	

Shutters – alarms

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 and 1 local object:

<Global Shutter> Alarm 1	Global object 1 - alarm
<Global Shutter> Alarm 2	Global object 2 – alarm
<Global Shutter> Alarm 3	Global object 3 - alarm
<Output Bx | xx> Alarm	Local object – 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.		

Shutters – scenes

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 objetcs
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 CO <Output Bx | xx> Scenes Enable global scene objects for this output the scenes are enabled and are recalled via global CO <Global All> Scene Enable global and local scene objects: for this output the scenes are enabled both with local CO and with global CO.	

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.

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Shutters – Lock

In the case of shutters, the block function has the same behavior seen for single relays. 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.

8. Global Objects

The following communication objects are available for global functions:

OBJECTS RELATED TO ALL OUTPUTS	
<Global All> Lock	1 bit – On/Off | CW
This object can be used to manage the block function for multiple outputs and then to subordinate the different blocks to this global function	
<Global All> Scene	1 Byte – 0-255 | CW
Object used to manage the scenarios for multiple outputs then going to subordinate the different blocks to this global function	
Global All> Dyn Scene	1 bit – En/Dis | CW
Object used to enable / disable dynamic scenarios	
OBJECTS RELATED TO SINGLE RELAY	
<Global Single> Command	1 bit – On/Off | CW
Object used to manage global On / Off commands on single relays; in the parameters it is possible to associate the received telegram on this object to the logic function (if enabled) or to the command.	
OBJECTS RELATED TO SHUTTERS	
<Global Shutter> Up/down	1 bit – Up/Dw | CW
Global up / down control for shutters / venetians	

<Global Shutter> Shutter %	1 Byte – 0-255 | CW
Global command position % for shutters / venetians	
<Global Shutter> Louvre %	1 Byte – 0-255 | CW
Global command louvres position % for venetians	
<Global Shutter> Alarm 1	1 bit | CW
Global alarm priority 1 for shutters / venetians	
<Global Shutter> Alarm 2	1 bit | CW
Global alarm priority 2 for shutters / venetians	
<Global Shutter> Alarm 3	1 bit | CW
Global alarm priority 3 for shutters / venetians	

9. Logics

In the device, 8 logics are available. Each logic can be set as:
- surveillance
- expression

For a description of the logics and how to use them, consult the Application Note on the website called "Logic Functions".

10. Wrong application download

If the wrong ETS application is downloaded, then KNX/EIB led starts blinking and device is not operative on the bus. A power reset must be done or the correct ETS application must be downloaded.