MAXinBOX SHUTTER 4CH / 8CH v3

4-Channel / 8-Channel Shutter Actuator with KNX Secure

ZIOMBSH4V3
ZIOMBSH8V3

Application program version: [2.1]
User manual edition: [2.1]_a

www.zennio.com

USER MANUAL

CONTENTS

DOCUMENT UPDATES

Version	Modifications
[2.1]_a	**Change(s) in the application program:** • Sun tracking functionality is introduced
[1.13]_a	**Change(s) in the application program:** • Update of libraries and functional blocks • Possibility of having one individual output per channel
[1.10]_a	**Change(s) in the application program:** • First stable version derived from MAXinBOX 24

1 INTRODUCTION

1.1 MAXINBOX SHUTTER 4CH / 8CH V3

MAXinBOX SHUTTER 4CH v3 and **MAXinBOX SHUTTER 8CH v3** from Zennio are **KNX Secure** specific actuators (of 4 or 8 channels, respectively) for controlling motorised shutter / blind systems.

The most outstanding features are:

- **8 / 16 relay outputs**, configurable as up to 4 / 8 independent shutter channels (with or without slats) or individual outputs for dry stop contact.
- **20 customisable, multi-operation logic functions**.
- **2 master light control modules** for an easy, out-of-the-box control of a set of luminaires (or functionally equivalent devices) one of which acts as a general lamp and the others as secondary lamps.
- **Sun tracking module.**
- **Scene-triggered action control**, with an optional delay in the execution.
- **Manual operation / supervision** of the shutter channels through the on-board pushbuttons and LEDs.
- **Heartbeat** or periodic “still-alive” notification.
- **Relay Switches Counter**.
- **KNX Security**.
- For detailed information about the functionality and configuration of KNX security, consult the specific user manual “KNX Security”, available in the product section of the Zennio web portal (www.zennio.com).

1.2 START-UP AND POWER LOSS

During the start-up of the device, the Test/Prog. LED will blink in blue colour for a few seconds before the device is ready. External orders will not be executed during this time, but afterwards.

Depending on the configuration, some specific actions will also be performed during the start-up. For example, the integrator can set whether the output channels should switch to a particular state and whether the device should send certain objects to the bus after the power recovery. Please consult the next sections of this document for further details.

On the other hand, when a bus power failure takes place, the device will interrupt any pending actions and will save its state so it can be recovered once the power supply is restored.

For safety reasons, all **shutter channels** will be stopped (i.e., the relays will open) if a power loss takes place.

2 CONFIGURATION

2.1 GENERAL

After importing the corresponding database in ETS and adding the device to the desired project topology, the configuration process is started by accessing the device parameters tab.

ETS PARAMETERISATION

The only screen that can be parameterised by default is General. From this screen it is possible to activate/deactivate all the necessary functions.

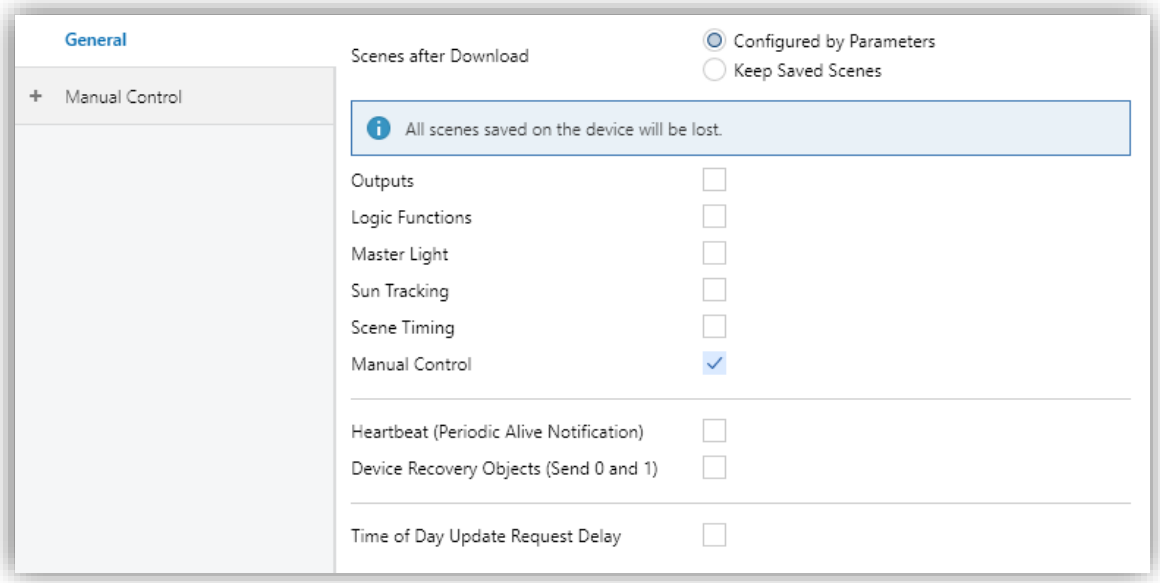

Figure 1. General tab

- **Scenes after Download** [*Configured by Parameters* / *Keep Saved Scenes*][1]: allows defining whether the value of the scenes is the configured by parameter or whether the previously saved value is kept after download.

  Note: *if "Keep Saved Scenes" option has been configured, but it is the first download of the device or a different version from the current one, the values configured by parameter will be adopted. If new scenes are added in successive*

[1] The default values of each parameter will be highlighted in blue in this document, as follows: [*default* / rest of options].

downloads, it will be necessary to perform a download by checking the option "Configured by Parameters" to ensure the correct operation of these scenes.

- **Outputs** [*disabled / enabled*]: enables o disables the "Outputs" tab on the left menu. See section 2.2 for more details.

- **Logic Functions** [*disabled / enabled*]: enables o disables the "Logic Functions" tab on the left menu. See section 2.3**¡Error! No se encuentra el origen de la r eferencia.** for more details.

- **Master Light** [*disabled / enabled*]: enables o disables the "Master Light" tab on the left menu. See section 2.4 for more details.

- **Sun Tracking** [*disabled / enabled*]: enables o disables the "Sun Tracking" tab on the left menu. See section 2.5 for more details.

- **Scene Timing** [*disabled / enabled*]: enables o disables the "Scene Timing" tab on the left menu. See section 2.6 for more details.

- **Manual Control** [*disabled / enabled]*: enables o disables the "Manual Control" tab on the left menu. See section 2.7 for more details.

- **Heartbeat (Periodic Alive Notification)** [*disabled / enabled*]**:** lets the integrator incorporate a one-bit object to the project ("**[Heartbeat] Object to Send '1'**") that will be sent periodically with value "1" to notify that the device is still working (*still alive*).

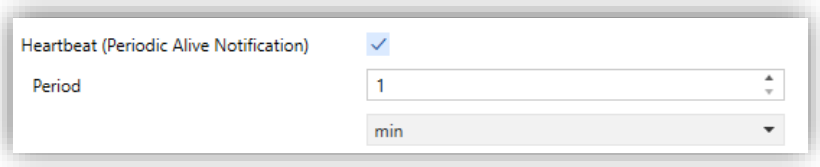

Figure 2. Heartbeat (Periodic Alive Notification)

Note: *the first sending after download or bus failure takes place with a delay of up to 255 seconds, to prevent bus overload. The following sendings match the period set.*

- **Device Recovery Objects (Send 0 and 1)** [*disabled / enabled*]: this parameter lets the integrator activate two new communication objects **("[Heartbeat] Device Recovery**"), which will be sent to the KNX bus with values "0" and "1" whenever the device begins operation (for example, after a bus power failure). It is possible to parameterise a certain **delay** [*0…255*] [*s*] to this sending.

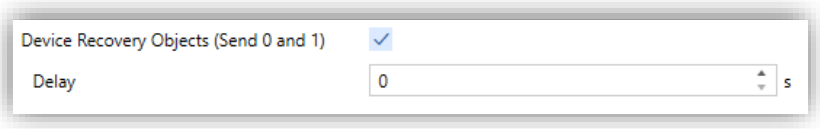

Figure 3. Device Recovery Objects

Note: *After download or bus failure, the sending takes place with a delay of up to 6,35 seconds plus the parameterised delay, to prevent bus overload.*

2.2 OUTPUTS

MAXinBOX SHUTTER 4CH / 8CH v3 incorporates **8 or 16 relay outputs**, respectively, configurable as up to **4 or 8 independent shutter channels**, each of which will operate one motorised shutter system.

For detailed information about the functionality and the configuration of the parameters related to the shutter channels, please refer to the specific manual "**Shutters**", available in the MAXinBOX SHUTTER 4CH / 8CH v3 product section at the Zennio homepage (www.zennio.com).

2.3 LOGIC FUNCTIONS

This module makes it possible to perform numeric and binary operations to incoming values received from the KNX bus, and to send the results through other communication objects specifically enabled for this purpose.

MAXinBOX SHUTTER 4CH / 8CH v3 can implement **up to 20 different and independent functions**, each of them entirely customisable and consisting of **up to 4 consecutive operations each one**.

The execution of each function can depend on a configurable **condition**, which will be evaluated every time the function is **triggered** through specific, parameterisable communication objects. The result after executing the operations of the function can also be evaluated according to certain **conditions** and afterwards sent (or not) to the KNX bus, which can be done every time the function is executed, periodically or only when the result differs from the last one.

Please refer to the specific "**Logic Functions in MAXinBOX SHUTTER**" user manual (available in the MAXinBOX SHUTTER 4CH / 8CH v3 product section at the Zennio

homepage, www.zennio.com) for detailed information about the functionality and the configuration of the related parameters.

2.4 MASTER LIGHT

MAXinBOX SHUTTER 4CH / 8CH v3 implements **two Master Light** which can be enabled and configured independently.

The Master Light function brings the option to monitor the state of up to 12 light sources (or even more, if the Master Light controls from multiple Zennio devices are linked together) or of any other elements whose state is transmitted through a binary object and, depending on those states, perform a ***master order*** every time a certain trigger signal (again, a binary value) is received through a specific object.

Such master order will consist in:

- A **general switch-off** order, if at least one of the up to twelve status objects is found to be on.
- A **courtesy switch-on** order, if none of the up to twelve status objects is found to be on.

Note that the above switch-off and switch-on orders are not necessarily a binary value being sent to the bus – it is up to the integrator the decision of what to send to the KNX bus in both cases: a shutter order, a thermostat setpoint or mode switch order, a constant value, a scene… Only the trigger object and the twelve status objects are required to be binary (on/off).

The most typical scenario for this Master Light control would be a hotel room with a master pushbutton next to the door. When leaving the room, the guest will have the possibility of pressing on the master pushbutton and make all the lamps turn off together. Afterwards, back on the room and with all the lamps off, pressing on the same master pushbutton will only make a particular lamp turn on (e.g., the closest lamp to the door) – this is the courtesy switch-on.

Besides, it is possible to concatenate two or more Master Light modules by means of a specific communication object which represents the general state of the light sources of each module. Thereby, it is possible to expand the number of light sources by considering the general state of one module as an additional light source for another.

ETS PARAMETERISATION

Once the Master Light function has been enabled, a specific tab will be included in the menu on the left. This new parameter screen contains the following options:

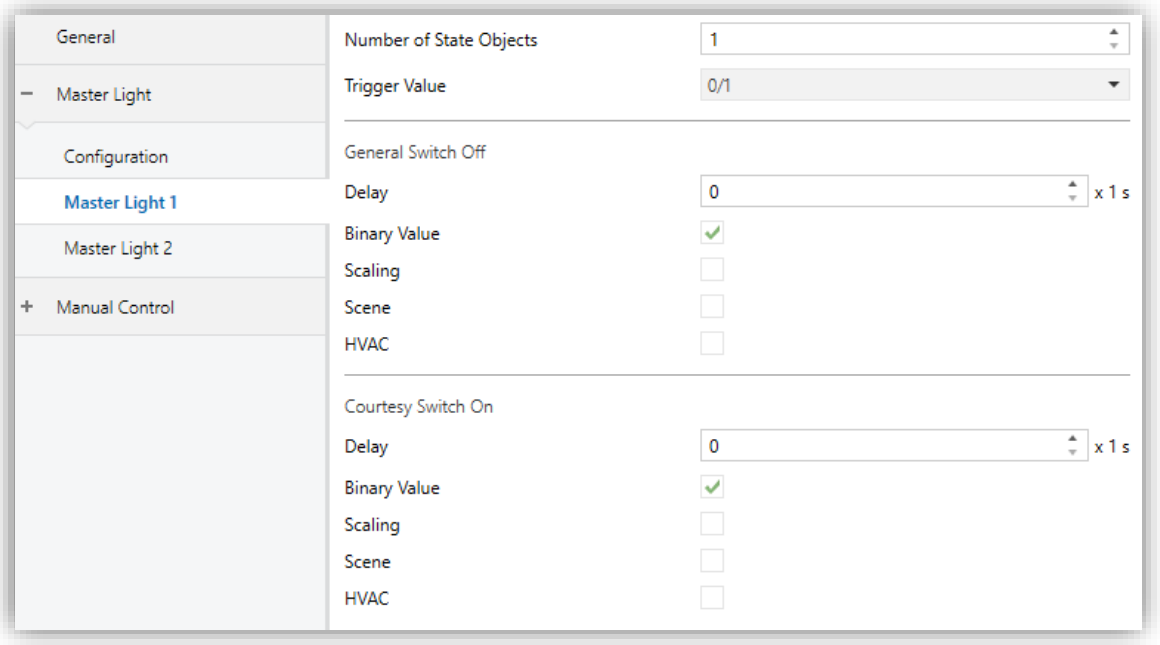

Figure 4. Master Light

- **Number of State Objects** [*1…12*]: defines the number of 1-bit status objects required. These objects are called "**[ML] Status Object *n***."

  In addition, the general status object ("**[ML] General status**") will always be available in the project topology. It will be sent to the bus with a value of "1" whenever there is at least one of the above state objects with such value. Otherwise (i.e., if none of them has a value of "1"), it will be sent with a value of "0".

- **Trigger Value** [*0 / 1 / 0/1*]: sets the value that will trigger, when received through "**[ML] Trigger**", the master action (the general switch-off or the courtesy switch-on).

- **General Switch-Off**.

  - **Delay** [*0…255*] [*x 1 s*]: defines a certain delay (once the trigger has been received) before the execution of the general switch-off. The allowed range is 0 to 255 seconds.

- **Binary Value** [*disabled / enabled*]: if checked, object "**[ML] General Switch-off: Binary Object**" will be enabled, which will send one "0" whenever the general switch-off takes off.

- **Scaling** [*disabled / enabled*]: if checked, object "**[ML] General Switch-off: Scaling**" will be enabled, which will send a percentage value (configurable in **Value** [*0…100*]) whenever the general switch-off takes off.

- **Scene** [*disabled / enabled*]: if checked, object "**[ML] General Switch-off: Scene**" will be enabled, which will send a scene run / save order (configurable in **Action** [*Run / Save*] and **Scene Number** [*1…64*]) whenever the general switch-off takes off

- **HVAC** [*disabled / enabled*]: if checked, object "**[ML] General Switch-off: HVAC mode**" will be enabled, which will send an HVAC thermostat mode value (configurable in **Value** [*Auto / Comfort / Standby / Economy / Building Protection*) whenever the general switch-off takes off.

Note: *the above options are not mutually exclusive; it is possible to send values of different nature together*.

- **Courtesy Switch-On**:

  The parameters available here are entirely analogous to those already mentioned for General Switch-Off. However, in this case the names of the objects start with "**[ML] Courtesy Switch-On (…)**." On the other hand, sending **scene save orders** is not possible for the courtesy switch-on (only orders to play scenes are allowed).

Note: *object "**[ML] Courtesy Switch-On: Binary Object**" sends the value "1" (when the courtesy switch-on takes place), in contrast to object "**[ML] General Switch-Off: Binary Object**", which sends the value "0" (during the general switch-off, as explained above)*.

2.5 SUN TRACKING

MAXinBOX SHUTTER 4CH / 8CH v3 incorporates **a sun tracking module**, which calculates solar positioning relative to a specific location and provides data such as solar azimuth and elevation angles and the times when both sunrise and sunset take place.

For detailed information about the functionality and the configuration of the parameters related to this functionality, please refer to the specific manual "**Sun Tracking**", available in the MAXinBOX SHUTTER 4CH / 8CH v3 product section at the Zennio homepage (www.zennio.com).

2.6 SCENE TIMING

The scene timing allows imposing **delays over the scenes of the outputs**. These delays are defined in parameters and can be applied to the execution of one or more scenes that may have been configured.

Please bear in mind that, as multiple delayed scenes can be configured for each shutter channel, in case of receiving an order to execute one of them when a previous temporisation is still pending for that channel, such temporisation will be interrupted and only the delay and the action of the new scene will be executed.

ETS PARAMETERISATION

Prior to setting the **scene timing**, it is necessary to have one or more scenes configured in some of the outputs. When entering the Configuration window under Scene Timming, all configured scenes will be listed, together with a few checkboxes to select which of them need to be temporised, as shown in Figure 5.

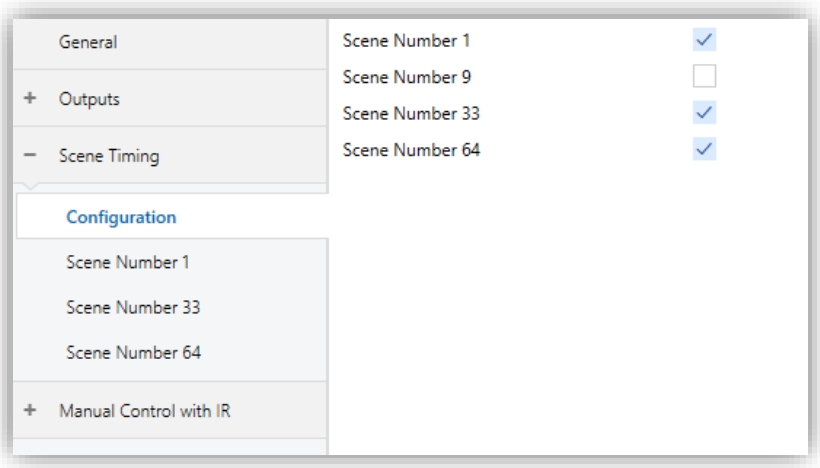

Figure 5. Scene timing

Enabling a certain scene number n brings a new tab with such name to the menu on the left, from which it is possible to configure the temporisation of that scene for each of the outputs where it has been configured.

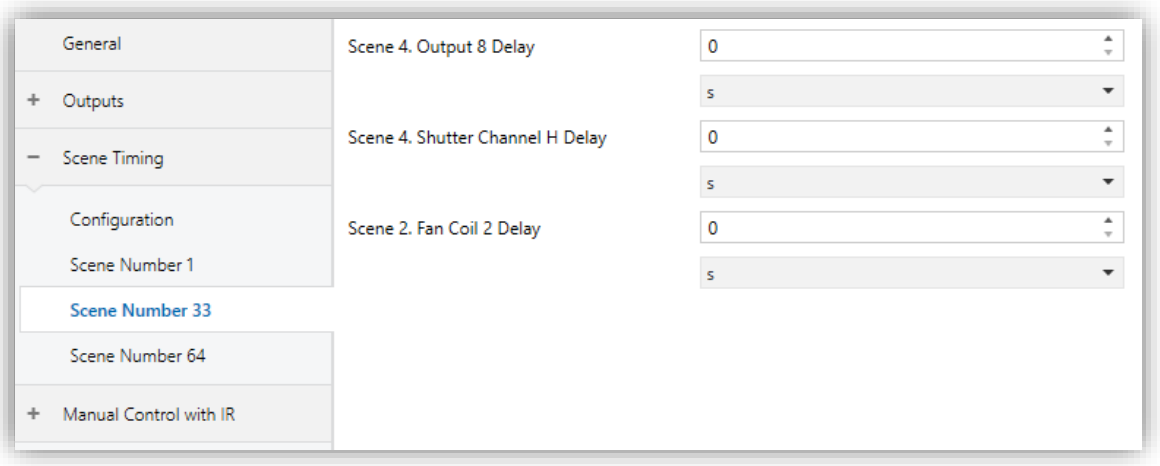

Figure 6. Configuration of Scene Timming

Therefore, parameter "**Scene m. Z Delay**" [*0…3600 [s] / 0…1440 [min] / 0…24 [h]*], defines the delay that will be applied to the action defined in Z for the execution of scene m (where Z may be a specific shutter channel).

Note: *in the configuration of a scene of an output / shutter channel it is possible to parameterize several scenes with the same scene number. This means that several delay parameters associated with the same output appear in the configuration tab of the delays of that scene. With this parameterization, the behaviour will be as follows: the action and delay of the first scene parameterized with the same scene number will always prevail, where the highest priority scene is 1 (the first in the scene configuration tab) and the lowest priority is the last.*

2.7 MANUAL CONTROL

The device allows manually switching the state of its output relays through the respective pushbuttons on the top of the device. A specific pushbutton is therefore available per output.

Manual operation can be done in two different ways, named as **Test On mode** (for testing purposes during the configuration of the device) and **Test Off mode** (for a normal use, anytime). Whether both, only one, or none of these modes should be accessible needs to be parameterised in ETS. Moreover, it is possible to enable a specific binary object for locking and unlocking the manual control in runtime.

Notes:

- *The **Test Off mode** will be active (unless it has been disabled by parameter) after a download or a reset with no need of a specific activation – the pushbuttons will respond to user presses from the start.*

- *On the contrary, switching to the **Test On mode** (unless disabled by parameter) needs to be done by long pressing the Prog/Test button (for at least three seconds), until the LED is no longer red and turns yellow. From that moment, once the button is released, the LED light will remain green to confirm that the device has switched from the Test Off mode to the Test On mode. After that, an additional press will turn the LED yellow and then off, once the button is released. This way, the device leaves the Test On mode. Note that it will also leave this mode if a bus power failure takes place* or if a manual control lock is sending from KNX bus.

Test Off Mode

Under the Test Off Mode, the outputs can be controlled through both their communication objects and the actual pushbuttons located on the top of the device.

When one of these buttons is pressed, the output will behave as if an order had been received through the corresponding communication object, depending on whether the output is configured as either an individual output or as a shutter channel.

- **Individual output**: a simple press (short or long) will make the output switch its on-off state, which will be reported to the KNX bus through the corresponding status object, if enabled.

- **Shutter Channel**: when the button is pressed, the device will act over the output according to the length of the button press and to the current state.

  - A **long press** makes the shutter start moving (upwards or downwards, depending on the button being pressed). The LED will light in green until the end of the motion. If the button gets pressed being the shutter already at the top or bottom positions, nothing will happen (the LED will not light).

  - A **short press** will make the shutter drive stop (if in motion), as it normally does when a step/stop order is received from the KNX bus. In case of not being the shutter in motion, pressing the button does not cause any action,

unless slats/lamellas have been parameterized – in such case, a step movement (up/down, depending on the button pressed) will take place. The status objects will be sent to the bus when corresponding.

- **Disabled output**: outputs disabled by parameter will not react to button presses under the Test Off mode.

Regarding the lock, timer, alarm and scene functions, the device will behave under the Test Off mode as usual. Button presses during this mode are entirely analogous to the reception of the corresponding orders from the KNX bus.

Test On Mode

After entering the Test On mode, it will only be possible to control the outputs through the on-board pushbuttons. Orders received through communication objects will be ignored, with independence of the channel or the output they are addressed to.

Depending on whether the output has been parameterized as an individual output or as part of a shutter channel, the reactions to the button presses will differ.

- **Individual output**: short or long pressing the button will commute the on-off state of the relay.

- **Shutter channel**: pressing the button will make the shutter drive move upward or downward (depending on the button) until the button is released again, thus ignoring the position of the shutter and the parameterized times. For safety reasons, only one closed relay per shutter channel is allowed.

  Note: *after leaving the Test On mode, the status objects will recover the values they had prior to entering Test On. As the device is never aware of the actual position of the shutter (as the shutter drive does not provide any feedback), these values may not show the real position. This can be solved by performing a complete move-up or move-down order, or by calibrating the shutter position in the Test On mode until it matches the status objects*.

- **Disabled output**: short and long presses will switch the state of the corresponding relay. In case this consists in closing the relay, then the remaining relays of its block will open, for safety reasons.

As described previously if the device is in Test On mode, any command sent from the KNX bus to the actuator will not affect the outputs and no status objects will be sent (only periodically timed objects such as Heartbeat, logic functions or master light will continue to be sent to the bus) while Test ON mode is active. However, in the case of the "Alarm" and "Block" objects, although in Test ON mode the actions received by each object are not considered, the evaluation of their status is carried out when exiting this mode, so that any change in the alarm status or blocking of the outputs while Test ON mode is active is taken into account when exiting this mode and is updated with the last status detected.

Important: *the device is delivered from factory with all the outputs disabled, and with both manual modes (Test Off and Test On) enabled*.

ETS PARAMETERISATION

After enabling 'Manual Control' on the General screen (see section 2.1), a new tab is added to the tree on the left.

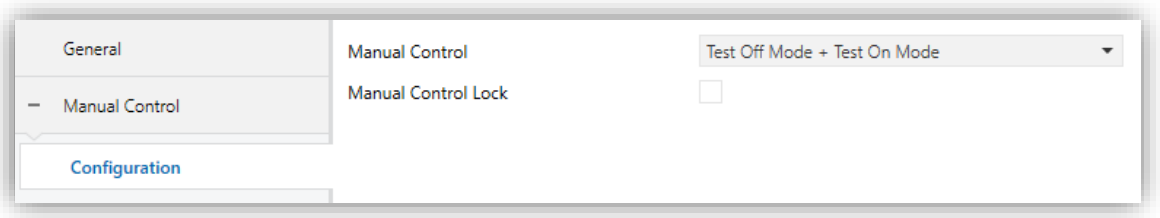

Figure 7. Manual Control

The only two parameters are:

- **Manual Control** [*Disabled / Only Test Off Mode / Only Test On Mode / Test Off Mode + Test On Mode*]. Depending on the selection, the device will permit using the manual control under the Test Off, the Test On, or both modes. Note that, as stated before, using the Test Off mode does not require any special action, while switching to the Test On mode does require long pressing the Prog/Test button.

- **Manual Control Lock** [*enabled / disabled*]: unless the above parameter has been "Disabled," the Lock Manual Control parameter provides an optional procedure for locking the manual control in runtime. When this checkbox is enabled, object "**Manual Control Lock**" turns visible, as well as two more parameters:

  - **Value** [*0 = Lock; 1 = Unlock / 0 = Unlock; 1 = Lock*]: defines whether the manual control lock/unlock should take place respectively upon the reception (through the aforementioned object) of values "0" and "1", or the opposite.

  - **Initialization** [*Unlocked / Locked / Last Value*]: sets how the lock state of the manual control should remain after the device start-up (after an ETS download or a bus power failure). "Last Value" (default; on the very first start-up, this will be Unlocked.

ANNEX I. COMMUNICATION OBJECTS

- "**Functional range**" shows the values that, with independence of any other values permitted by the bus according to the object size, may be of any use or have a particular meaning because of the specifications or restrictions from both the KNX standard or the application program itself.

- Please note that **the complete object table corresponds to MAXinBOX SHUTTER 8CH v3**, as this is the device with the highest number of instances.

Number	Size	I/O	Flags	Data type (DPT)	Functional Range	Name	Function
1	1 Bit	O	C R - T -	DPT_Trigger	0/1	[Heartbeat] Object to Send '1'	Sending of '1' Periodically
2	1 Bit	O	C R - T -	DPT_Trigger	0/1	[Heartbeat] Device Recovery	Send 0
3	1 Bit	O	C R - T -	DPT_Trigger	0/1	[Heartbeat] Device Recovery	Send 1
4	1 Bit	I	C - W - -	DPT_Enable	0/1	Lock Manual Control	0 = Lock; 1 = Unlock
	1 Bit	I	C - W - -	DPT_Enable	0/1	Lock Manual Control	0 = Unlock; 1 = Lock
5	3 Bytes	I	C - W T U	DPT_TimeOfDay	00:00:00 - 23:59:59	[General] Time of Day	Time of Day External Reference
6	3 Bytes	I	C - W T U	DPT_Date	01/01/1990 - 31/12/2089	[General] Date	Date External Reference
343	1 Byte	I	C - W - -	DPT_SceneControl	0-63; 128-191	[Shutter] Scenes	0 - 63 (Execute 1 - 64); 128 - 191 (Save 1 - 64)
344	2 Bytes	I	C - W T U	DPT_Value_Temp	-273.00º - 670433.28º	[Shutter] Outdoor Temperature Input	-30°C ... 60°C
345	1 Byte	I	C - W T U	DPT_Angle	0 – 360º	[Shutter] Azimuth	Azimuth External Reference [0° ... 360°]
346	2 Bytes	I	C - W T U	DPT_Rotation_Angle	-90 – 90º	[Shutter] Elevation	Elevation External Reference [-90° ... 90°]
347, 388, 429, 470, 511, 552, 593, 634	1 Bit	I	C - W - -	DPT_UpDown	0/1	[Cx] Shutter - Move Control	0 = Up; 1 = Down
348, 389, 430, 471, 512, 553, 594, 635	1 Bit	I	C - W - -	DPT_Step	0/1	[Cx] Shutter - Stop/Step Control	0 = Stop/Step Up; 1 = Stop/Step Down
	1 Bit	I	C - W - -	DPT_Trigger	0/1	[Cx] Shutter - Stop Control	0/1 = Stop
349, 390, 431, 472, 513, 554, 595, 636	1 Bit	I	C - W - -	DPT_Trigger	0/1	[Cx] Shutter - Switched Control	0/1 = Up, Down or Stop, Depending on the Last Move
350, 391, 432, 473, 514, 555, 596, 637	1 Bit	I	C - W - -	DPT_Trigger	0/1	[Cx] Shutter - Switched Control Up	0/1 = Up or Stop, Depending on the Last Move
351, 392, 433, 474, 515, 556, 597, 638	1 Bit	I	C - W - -	DPT_Trigger	0/1	[Cx] Shutter - Switched Control Down	0/1 = Down or Stop, Depending on the Last Move
352, 393, 434, 475, 516, 557, 598, 639	1 Bit	I	C - W - -	DPT_Enable	0/1	[Cx] Shutter - Lock	0 = Unlock; 1 = Lock
353, 394, 435, 476, 517, 558, 599, 640	1 Byte	I	C - W - -	DPT_Scaling	0% - 100%	[Cx] Shutter - Percentage Control	0% = Top; 100% = Bottom

354, 395, 436, 477, 518, 559, 600, 641	1 Byte	O	C R - T -	DPT_Scaling	0% - 100%	[Cx] Shutter - Percentage Status	0% = Top; 100% = Bottom
355, 396, 437, 478, 519, 560, 601, 642	1 Byte	I	C - W - -	DPT_Scaling	0% - 100%	[Cx] Shutter - Slats Percentage Control	0% = Open; 100% = Closed
356, 397, 438, 479, 520, 561, 602, 643	1 Byte	O	C R - T -	DPT_Scaling	0% - 100%	[Cx] Shutter - Slats Percentage Status	0% = Open; 100% = Closed
357, 398, 439, 480, 521, 562, 603, 644	1 Bit	O	C R - T -	DPT_Switch	0/1	[Cx] Shutter - Rising Relay Status	0 = Open; 1 = Closed
358, 399, 440, 481, 522, 563, 604, 645	1 Bit	O	C R - T -	DPT_Switch	0/1	[Cx] Shutter - Lowering Relay Status	0 = Open; 1 = Closed
359, 400, 441, 482, 523, 564, 605, 646	1 Bit	O	C R - T -	DPT_Switch	0/1	[Cx] Shutter - Move Status	0 = Stopped; 1 = Moving
360, 401, 442, 483, 524, 565, 606, 647	1 Bit	O	C R - T -	DPT_UpDown	0/1	[Cx] Shutter - Move Direction Status	0 = Upward; 1 = Downward
361, 402, 443, 484, 525, 566, 607, 648	1 Bit	O	C R - T -	DPT_Switch	0/1	[Cx] Shutter - Totally Up Status	0 = Other Positions; 1 = Up
362, 403, 444, 485, 526, 567, 608, 649	1 Bit	O	C R - T -	DPT_Switch	0/1	[Cx] Shutter - Totally Down Status	0 = Other Positions; 1 = Down
363, 404, 445, 486, 527, 568, 609, 650	1 Bit	I	C - W - -	DPT_Switch	0/1	[Cx] Shutter - Auto: On/Off	0 = On; 1 = Off
	1 Bit	I	C - W - -	DPT_Switch	0/1	[Cx] Shutter - Auto: On/Off	0 = Off; 1 = On
364, 405, 446, 487, 528, 569, 610, 651	1 Bit	O	C R - T -	DPT_Switch	0/1	[Cx] Shutter - Auto: On/Off Status	0 = On; 1 = Off
	1 Bit	O	C R - T -	DPT_Switch	0/1	[Cx] Shutter - Auto: On/Off Status	0 = Off; 1 = On
365, 406, 447, 488, 529, 570, 611, 652	1 Bit	I	C - W - -	DPT_UpDown	0/1	[Cx] Shutter - Auto: Move Control	0 = Up; 1 = Down
366, 407, 448, 489, 530, 571, 612, 653	1 Bit	I	C - W - -	DPT_Step	0/1	[Cx] Shutter - Auto: Stop/Step Control	0 = Stop/Step Up; 1 = Stop/Step Down
	1 Bit	I	C - W - -	DPT_Trigger	0/1	[Cx] Shutter - Auto: Stop Control	0/1 = Stop
367, 408, 449, 490, 531, 572, 613, 654	1 Byte	I	C - W - -	DPT_Scaling	0% - 100%	[Cx] Shutter - Auto: Percentage Control	0% = Top; 100% = Bottom
368, 409, 450, 491, 532, 573, 614, 655	1 Byte	I	C - W - -	DPT_Scaling	0% - 100%	[Cx] Shutter - Auto: Slats Percentage Control	0% = Open; 100% = Closed
369, 410, 451, 492, 533, 574, 615, 656	1 Bit	I	C - W T U	DPT_Scene_AB	0/1	[Cx] Shutter - Sunshine/Shadow Input	0 = Sunshine; 1 = Shadow
	1 Bit	I	C - W T U	DPT_Scene_AB	0/1	[Cx] Shutter - Sunshine/Shadow Input	0 = Shadow; 1 = Sunshine
370, 411, 452, 493, 534, 575, 616, 657	2 Bytes	I	C - W T U	DPT_Value_Lux	1 – 100.000	[Cx] Shutter - Sunshine/Shadow Input	1 Lux ... 100.000 Lux
371, 412, 453, 494, 535, 576, 617, 658	1 Bit	I	C - W T U	DPT_Heat_Cool	0/1	[Cx] Shutter - Cooling/Heating	0 = Cooling; 1 = Heating
	1 Bit	I	C - W T U	DPT_Heat_Cool	0/1	[Cx] Shutter - Cooling/Heating	0 = Heating; 1 = Cooling
372, 413, 454, 495, 536, 577, 618, 659	1 Bit	I	C - W T U	DPT_Occupancy	0/1	[Cx] Shutter - Presence/No Presence	0 = No Presence; 1 = Presence
	1 Bit	I	C - W T U	DPT_Occupancy	0/1	[Cx] Shutter - Presence/No Presence	0 = Presence; 1 = No Presence
	1 Bit	I	C - W - -	DPT_Alarm	0/1	[CA] Shutter - x	0 = No Alarm; 1 = Alarm

373, 374, 375, 376, 377, 378	1 Bit	I	C - W - -	DPT_Alarm	0/1	[CA] Shutter - x	0 = Alarm; 1 = No Alarm
379, 420, 461, 502, 543, 584, 625, 666	1 Bit	I	C - W - -	DPT_Ack	0/1	[Cx] Shutter - Unfreeze Alarm	Alarm1 = Alarm2 = ... = Alarm6 = No Alarm + Unfreeze (1) => End Alarm
380, 421, 462, 503, 544, 585, 626, 667	1 Bit	O	C R - T -	DPT_Alarm	0/1	[Cx] Shutter - General Alarm Status	0 = No Alarm; 1 = Alarm
	1 Bit	O	C R - T -	DPT_Alarm	0/1	[Cx] Shutter - General Alarm Status	0 = Alarm; 1 = No Alarm
381, 422, 463, 504, 545, 586, 627, 668	1 Bit	I	C - W - -	DPT_Scene_AB	0/1	[Cx] Shutter - Move Control (Reversed)	0 = Down; 1 = Up
382, 423, 464, 505, 546, 587, 628, 669	1 Bit	I	C - W - -	DPT_Ack	0/1	[Cx] Shutter - Direct Positioning 1	0 = No Action; 1 = Go to Position
383, 424, 465, 506, 547, 588, 629, 670	1 Bit	I	C - W - -	DPT_Ack	0/1	[Cx] Shutter - Direct Positioning 2	0 = No Action; 1 = Go to Position
384, 425, 466, 507, 548, 589, 630, 671	1 Bit	I	C - W - -	DPT_Ack	0/1	[Cx] Shutter - Direct Positioning 1 (Save)	0 = No Action; 1 = Save Current Position
385, 426, 467, 508, 549, 590, 631, 672	1 Bit	I	C - W - -	DPT_Ack	0/1	[Cx] Shutter - Direct Positioning 2 (Save)	0 = No Action; 1 = Save Current Position
386, 427, 468, 509, 550, 591, 632, 673	1 Bit	O	C R - T -	DPT_BinaryValue	0/1	[Cx] Shutter - External Contact - Stop Movement	0 = Open Relay; 1 = Close Relay
387, 428, 469, 510, 551, 592, 633, 674	1 Bit	I	C - W - -	DPT_Start	0/1	[Cx] Shutter - Start/Stop Rise and Fall Times Measurement	0 = Stop; 1 = Start
	1 Bit	I	C - W - -	DPT_Start	0/1	[Cx] Shutter - Start/Stop Rise and Fall Times Measurement	0 = Start; 1 = Stop
414, 415, 416, 417, 418, 419	1 Bit	I	C - W - -	DPT_Alarm	0/1	[CB] Shutter - x	0 = No Alarm; 1 = Alarm
	1 Bit	I	C - W - -	DPT_Alarm	0/1	[CB] Shutter - x	0 = Alarm; 1 = No Alarm
455, 456, 457, 458, 459, 460	1 Bit	I	C - W - -	DPT_Alarm	0/1	[CC] Shutter - x	0 = No Alarm; 1 = Alarm
	1 Bit	I	C - W - -	DPT_Alarm	0/1	[CC] Shutter - x	0 = Alarm; 1 = No Alarm
496, 497, 498, 499, 500, 501	1 Bit	I	C - W - -	DPT_Alarm	0/1	[CD] Shutter - x	0 = No Alarm; 1 = Alarm
	1 Bit	I	C - W - -	DPT_Alarm	0/1	[CD] Shutter - x	0 = Alarm; 1 = No Alarm
537, 538, 539, 540, 541, 542	1 Bit	I	C - W - -	DPT_Alarm	0/1	[CE] Shutter - x	0 = No Alarm; 1 = Alarm
	1 Bit	I	C - W - -	DPT_Alarm	0/1	[CE] Shutter - x	0 = Alarm; 1 = No Alarm
578, 579, 580, 581, 582, 583	1 Bit	I	C - W - -	DPT_Alarm	0/1	[CF] Shutter - x	0 = No Alarm; 1 = Alarm
	1 Bit	I	C - W - -	DPT_Alarm	0/1	[CF] Shutter - x	0 = Alarm; 1 = No Alarm
619, 620, 621, 622, 623, 624	1 Bit	I	C - W - -	DPT_Alarm	0/1	[CG] Shutter - x	0 = No Alarm; 1 = Alarm
	1 Bit	I	C - W - -	DPT_Alarm	0/1	[CG] Shutter - x	0 = Alarm; 1 = No Alarm
660, 661, 662, 663, 664, 665	1 Bit	I	C - W - -	DPT_Alarm	0/1	[CH] Shutter - x	0 = No Alarm; 1 = Alarm
	1 Bit	I	C - W - -	DPT_Alarm	0/1	[CH] Shutter - x	0 = Alarm; 1 = No Alarm
1038, 1039, 1040, 1041, 1042, 1043, 1044, 1045, 1046, 1047, 1048, 1049, 1050, 1051, 1052, 1053, 1054, 1055, 1056, 1057, 1058, 1059, 1060, 1061, 1062, 1063, 1064, 1065, 1066, 1067, 1068, 1069,	1 Bit	I	C - W - -	DPT_Bool	0/1	[LF] (1-Bit) Data Entry x	Binary Data Entry (0/1)

1070, 1071, 1072, 1073, 1074, 1075, 1076, 1077, 1078, 1079, 1080, 1081, 1082, 1083, 1084, 1085, 1086, 1087, 1088, 1089, 1090, 1091, 1092, 1093, 1094, 1095, 1096, 1097, 1098, 1099, 1100, 1101							
1102, 1103, 1104, 1105, 1106, 1107, 1108, 1109, 1110, 1111, 1112, 1113, 1114, 1115, 1116, 1117, 1118, 1119, 1120, 1121, 1122, 1123, 1124, 1125, 1126, 1127, 1128, 1129, 1130, 1131, 1132, 1133	1 Byte	I	**C - W - -**	DPT_Value_1_Ucount	0 - 255	[LF] (1-Byte) Data Entry x	1-Byte Data Entry (0-255)
1134, 1135, 1136, 1137, 1138, 1139, 1140, 1141, 1142, 1143, 1144, 1145, 1146, 1147, 1148, 1149, 1150, 1151, 1152, 1153, 1154, 1155, 1156, 1157, 1158, 1159, 1160, 1161, 1162, 1163, 1164, 1165	2 Bytes	I	**C - W - -**	DPT_Value_2_Ucount	0 - 65535	[LF] (2-Byte) Data Entry x	2-Byte Data Entry
	2 Bytes	I	**C - W - -**	DPT_Value_2_Count	-32768 - 32767	[LF] (2-Byte) Data Entry x	2-Byte Data Entry
	2 Bytes	I	**C - W - -**	9.xxx	-671088.64 - 670433.28	[LF] (2-Byte) Data Entry x	2-Byte Data Entry
1166, 1167, 1168, 1169, 1170, 1171, 1172, 1173, 1174, 1175, 1176, 1177, 1178, 1179, 1180, 1181	4 Bytes	I	**C - W - -**	DPT_Value_4_Count	-2147483648 - 2147483647	[LF] (4-Byte) Data Entry x	4-Byte Data Entry
1182, 1183, 1184, 1185, 1186, 1187, 1188, 1189, 1190, 1191, 1192, 1193, 1194, 1195, 1196, 1197, 1198, 1199, 1200, 1201	1 Bit	O	**C R - T -**	DPT_Bool	0/1	[LF] Function x - Result	(1-Bit) Boolean
	1 Byte	O	**C R - T -**	DPT_Value_1_Ucount	0 - 255	[LF] Function x - Result	(1-Byte) Unsigned
	2 Bytes	O	**C R - T -**	DPT_Value_2_Ucount	0 - 65535	[LF] Function x - Result	(2-Byte) Unsigned
	4 Bytes	O	**C R - T -**	DPT_Value_4_Count	-2147483648 - 2147483647	[LF] Function x - Result	(4-Byte) Signed
	1 Byte	O	**C R - T -**	DPT_Scaling	0% - 100%	[LF] Function x - Result	(1-Byte) Percentage
	2 Bytes	O	**C R - T -**	DPT_Value_2_Count	-32768 - 32767	[LF] Function x - Result	(2-Byte) Signed
	2 Bytes	O	**C R - T -**	9.xxx	-671088.64 - 670433.28	[LF] Function x - Result	(2-Byte) Float
1212, 1252	1 Bit	I	**C - W - -**	DPT_Trigger	0/1	[MLx] Trigger	Trigger the Master Light Function
	1 Bit	I	**C - W - -**	DPT_Ack	0/1	[MLx] Trigger	0 = Nothing; 1 = Trigger the Master Light Function
	1 Bit	I	**C - W - -**	DPT_Ack	0/1	[MLx] Trigger	1 = Nothing; 0 = Trigger the Master Light Function
1213, 1214, 1215, 1216, 1217, 1218, 1219, 1220, 1221, 1222, 1223, 1224, 1225, 1226, 1227, 1228, 1229, 1230, 1231, 1232, 1233, 1234, 1235, 1236,	1 Bit	I	**C - W - -**	DPT_Switch	0/1	[MLx] Status Object x	Binary Status

1237, 1238, 1239, 1240, 1241, 1242, 1253, 1254, 1255, 1256, 1257, 1258, 1259, 1260, 1261, 1262, 1263, 1264, 1265, 1266, 1267, 1268, 1269, 1270, 1271, 1272, 1273, 1274, 1275, 1276, 1277, 1278, 1279, 1280, 1281, 1282							
1243, 1283	1 Bit	O	**C R - T -**	DPT_Switch	0/1	[MLx] General Status	Binary Status
1244, 1284	1 Bit	O	**C - - T -**	DPT_Switch	0/1	[MLx] General Switch Off: Binary Object	Switch Off Sending
1245, 1285	1 Byte	O	**C - - T -**	DPT_Scaling	0% - 100%	[MLx] General Switch Off: Scaling	0-100%
1246, 1286	1 Byte	O	**C - - T -**	DPT_SceneControl	0-63; 128-191	[MLx] General Switch Off: Scene	Scene Sending
1247, 1287	1 Byte	O	**C - - T -**	DPT_HVACMode	1=Comfort 2=Standby 3=Economy 4=Building Protection	[MLx] General Switch Off: HVAC mode	Auto, Comfort, Standby, Economy, Building Protection
1248, 1288	1 Bit	O	**C - - T -**	DPT_Switch	0/1	[MLx] Courtesy Switch On: Binary Object	Switch On Sending
1249, 1289	1 Byte	O	**C - - T -**	DPT_Scaling	0% - 100%	[MLx] Courtesy Switch On: Scaling	0-100%
1250, 1290	1 Byte	O	**C - - T -**	DPT_SceneNumber	0 - 63	[MLx] Courtesy Switch On: Scene	Scene Sending
1251, 1291	1 Byte	O	**C - - T -**	DPT_HVACMode	1=Comfort 2=Standby 3=Economy 4=Building Protection	[MLx] Courtesy Switch On: HVAC mode	Auto, Comfort, Standby, Economy, Building Protection
1292	1 Bit	O	**C - - T -**	DPT_Ack	0/1	[Sun] Event at Sunrise	Send 0 at Sunrise
	1 Bit	O	**C - - T -**	DPT_Ack	0/1	[Sun] Event at Sunrise	Send 1 at Sunrise
1293	1 Bit	O	**C - - T -**	DPT_Ack	0/1	[Sun] Event at Sunset	Send 0 at Sunset
	1 Bit	O	**C - - T -**	DPT_Ack	0/1	[Sun] Event at Sunset	Send 1 at Sunset
1294	1 Byte	O	**C - - T -**	DPT_SceneControl	0-63; 128-191	[Sun] Scenes: Send	0-63 (Run Scene 1-64)
1295	1 Byte	O	**C - - T -**	DPT_Angle	0 – 360º	[Sun] Azimuth	Current Azimuth Value [0° ... 360°]
1296	2 Bytes	O	**C - - T -**	DPT_Rotation_Angle	-90 – 90º	[Sun] Elevation	Current Elevation Value [-90° ... 90°]

Join and send us your inquiries about Zennio devices:

https://support.zennio.com

Zennio Avance y Tecnología S.L.
C/ Río Jarama, 132. Nave P-8.11
45007 Toledo, Spain.

Tel. +34 925 232 002.

www.zennio.com
*info@*zennio*.com*