blumotix
TOUCH YOUR WORLD

**Technical Manual
Multifunction actuators
BX-RO24**

Rev.	Data	Descrizione	Redazione
01	13/12/2023	1st Release	A. Fato

KNX

	Blumotix s.r.l.	BX-RO24
	Via Bedazzo 2, 48022 Lugo (RA) – Italy	Technical manual
	+3905451895254 – www.blumotix.it	
		Rev.: 01 - 13/12/2023

Table of Contents

	Blumotix s.r.l.	BX-RO24
blumotix	Via Bedazzo 2, 48022 Lugo (RA) – Italy	Technical manual
	+3905451895254 – www.blumotix.it	Rev.: 01 - 13/12/2023

	Blumotix s.r.l.	BX-RO24
blumotix	Via Bedazzo 2, 48022 Lugo (RA) – Italy	Technical manual
	+3905451895254 – www.blumotix.it	Rev.: 01 - 13/12/2023

	Blumotix s.r.l.	BX-RO24
blumotix	Via Bedazzo 2, 48022 Lugo (RA) – Italy	Technical manual
	+3905451895254 – www.blumotix.it	Rev.: 01 - 13/12/2023

1 Introduction

BX-RO24 is a 24-channel multifunction actuator for DIN rail mounting for independent switching of loads via make contacts. The 230 Vac switching output can be managed by the buttons placed on the front. A green LED indicates the channel status. It is equipped with 16 A bistable relays with contacts connected directly on the terminals, without phase sharing. The screw terminals are capable of receiving cable sections up to 5 mm2. The relays support an inrush current of up to 320 A in the first 2 ms, therefore they are particularly suitable for driving inductive loads typical of fluorescent or neon lamps.

The device provides the switching functions with status notification, block command, forcing, timing, delays, scenarios and further functions for opening and closing rolling shutters, regulating blinds, controlling valves with PWM algorithm and piloting several Fancoil devices (2 or 4 tubes). It also has a set of logic functions consisting of 16 freely configurable inputs for each channel (OR, AND, XOR and GATE between the various channels). The outputs are individually parameterizable with ETS.

The versatility of this device makes it particularly suitable for distributed planning, since all the actuations of an entire home and service sector can be implemented with a single module. Of all the functions mentioned above, it is possible to find an innumerable combination between them, so as to optimize all the possible outputs.

2 Applications

2.1 Functions associated with channels

Operation time setting
- Setting of the time required for roller blind or Venetian blind motor control

Slat adjustment
- Slat adjustment time in case of Venetian blind

Block function
- Parameterization of the activation value of load block. Behaviour with block enabled and with block disabled

	Blumotix s.r.l.	BX-RO24
blumotix	Via Bedazzo 2, 48022 Lugo (RA) – Italy	Technical manual
	+3905451895254 – www.blumotix.it	Rev.: 01 - 13/12/2023

Forcing function
- It forces a specific action for the target contact

Scenarios
- Configuration of up to 8 scenarios

Alarms
- Weather alarm enabling (wind, rain, ice). Setting of execution priority among the various alarms and load position in case of alarm and alarm reset

Interlock function
- Up to 6 interlocked channels for each group

Fancoils
- Specific functions for fancoil control

Independent outputs
- Timing, flashing and logic functions can be associated to the specific channel

Electrovalves
- Each output can work with PWM in order to control electrovalves

3 Global structure

3.1 Channel configuration

The Channel configuration menu shows the configurable groups of channels.
Each group is composed by 6 configurable channels. The legend at the top of the page specifies the available possibilities of configuration. Each group follows the following format;

<div align="center">aRxb</div>

Where "a" is the number of channels belonging to a subgroup and "b" is the number of that specific subgroup inside the main 6 channel group.

Ex. A-F 1Rx6 means 6 subgroups of 1 channel inside the main group A-F.

	Blumotix s.r.l.	BX-RO24
	Via Bedazzo 2, 48022 Lugo (RA) – Italy	Technical manual
	+3905451895254 – www.blumotix.it	Rev.: 01 - 13/12/2023

3.2 X-Y: Channels group

According to the settings done in the "Channel configuration" page, specific pages for each group X-Y of channels will appear.

In these pages it is possible to configure the specific function for each subgroup of channels.

	Blumotix s.r.l.	BX-RO24
	Via Bedazzo 2, 48022 Lugo (RA) – Italy	Technical manual
	+3905451895254 – www.blumotix.it	Rev.: 01 - 13/12/2023

The following chapters will explain each possible function which can be associated with a subgroup of channels and its parameters.

4 Shutter/Blinds

The Shutter/Blinds function is dedicated to control the up/down movement of the Shutter motor.

Up to 3 Shutter/Blinds can be associated to a main group of 6 channels. Up to 12 Shutter/Blinds function are available on the BX-RO24.

Here follows the list and description of the Shutter/Blinds parameters.

4.1 Shutter/Blinds generic

In this page the user is allowed to configure generic parameters for all the Shutter/Blinds channels.

4.1.1 Enable alarms

Enable alarms parameter is used to enable weather alarms for channels associated to Shutter/Blinds functions.

	Blumotix s.r.l.	BX-RO24
blumotix	Via Bedazzo 2, 48022 Lugo (RA) – Italy	Technical manual
	+3905451895254 – www.blumotix.it	Rev.: 01 - 13/12/2023

4.1.2 Shutter/Blinds position on ETS download

Within this parameter it is possible to decide the slat positions and how to program them once the ETS application has been downloaded.

Shutter/Blinds position on ETS download ⦿ All the way up ◯ Maintain the position

By selecting "All the way up", at each download of the application program, the position will be reset to 0%.
If "Maintain the position" is selected, each time the application program is downloaded, the device will keep the position values of the roller blinds and slats prior to the download.

4.1.3 Enable time movement objects for tuning

With this parameter, a communication object is available for each channel, which has the function of facilitating the detection of the running time of the roller shutter and also of the slats. These commands are useful during the start-up phase of the system, when it is necessary to measure up/down movement times, slat rotation and any dead times defined by the specific mechanics of the window. With the help of these commands, it will be easier to determine the values of the functional parameters to be set.
Via the ETS bus monitor it is possible to give a movement command expressed in time (milliseconds). Positive values represent a movement command in the down direction (towards 100%), while negative values set a movement in the up direction (towards 0%). Movements made in response to these commands are not considered in the position calculation, so after commanding a movement with these communication objects, the physical position will have to be realigned with the position maintained by the module (see calibration commands).
This command has the same priority as a movement command; it will not be executed if the channel is in Block or Weather Alarm condition

Enable time movement objects for tuning ◯ No ⦿ Yes

	Blumotix s.r.l.	BX-RO24
blumotix	Via Bedazzo 2, 48022 Lugo (RA) – Italy	Technical manual
	+3905451895254 – www.blumotix.it	Rev.: 01 - 13/12/2023

By selecting Enable, the communication object will appear for the respective channels and for movement tests.

1161	A-B: Shutter/Blinds	Calibration movement	2 bytes

4.2 Alarms generic

By enabling the Alarm functions from "Shutter/Blinds generic", the following sub-menu will appear.

Four different alarm levels are available with the possibility of managing them individually. This function was created to prevent damage to the load connected to the individual device channel (e.g. roller blinds, Venetian blinds, shutters); alarm signals are normally a consequence of atmospheric events detected and sent on the bus by other devices connected to the system.

The alarm priorities are as follows:

Alarm 4 has priority over 3
Alarm 3 has priority over 2
Alarm 2 has priority over 1

	Blumotix s.r.l.	BX-RO24
blumotix	Via Bedazzo 2, 48022 Lugo (RA) – Italy	Technical manual
	+3905451895254 – www.blumotix.it	Rev.: 01 - 13/12/2023

Alarm 1

The behaviour of disabling a lower priority alarm is actually implemented only if a higher priority alarm is not active.

It is possible to 'rename the alarm' within the respective field. The communication object will take the new name entered. The priority alarm logic will not change.

4.2.1 Name (Alarm 1-2-3-4)

It is possible to edit the text inside "Alarm 1 name".

Alarm 1 name	Ice alarm

The communication object will take the newly assigned name.

The communication objects made available are shown below:

800	Ice alarm	Alarm 1	1 bit	C	-	W	-	-	1-bit, alarm
801	Rain alarm	Alarm 2	1 bit	C	-	W	-	-	1-bit, alarm
802	Wind alarm	Alarm 3	1 bit	C	-	W	-	-	1-bit, alarm
803	Strong wind alarm	Alarm 4	1 bit	C	-	W	-	-	1-bit, alarm
804	Ice alarm	Alarm 1 status	1 bit	C	R	-	T	-	1-bit, switch
805	Rain alarm	Alarm 2 status	1 bit	C	R	-	T	-	1-bit, switch
806	Wind alarm	Alarm 3 status	1 bit	C	R	-	T	-	1-bit, switch
807	Strong wind alarm	Alarm 4 status	1 bit	C	R	-	T	-	1-bit, switch

By using the individual communication objects, it will be possible to interface with weather sensors (rain sensor, wind sensor, etc.), allowing preventive movements of the load to be automated in order to preserve the functioning.

4.2.2 Activation value (Alarm 1-2-3-4)

The "Alarm n value" item allows defining the enabling value of the communication object associated with alarm x.
The settable values are:
Active with 0 - the relative alarm is active with value 0.
Active with 1 - the relative alarm is active with value 1, which is the default value.

	Blumotix s.r.l.	BX-RO24
blumotix	Via Bedazzo 2, 48022 Lugo (RA) – Italy	Technical manual
	+3905451895254 – www.blumotix.it	Rev.: 01 - 13/12/2023

Alarm 1 value	○ Active with 0 ◉ Active with 1

The behaviour in case of KNX bus control of individual alarms, such as the possibility to disable and enable individual channels, can be found within the parameters of each channel.

4.3 X-Y: Shutter/Blinds

Enabling a subgroup of two relays as Shutter/Blinds will show a new subpage for Shutter/Blinds specific configurations for that channel.

The menu for Shutter/Blinds is composed by the following parameters:

	Blumotix s.r.l.	BX-RO24
	Via Bedazzo 2, 48022 Lugo (RA) – Italy	Technical manual
	+3905451895254 – www.blumotix.it	Rev.: 01 - 13/12/2023

1.1.- BX-RO24 > A-F: Channels group > A-B: Shutter/Blinds

Channels configuration	**Enable front button** ○ Disable ● Enable
Shutter/Blinds generic	
— A-F: Channels group	**Consider movement with button** ● Disable ○ Enable
A-B: Shutter/Blinds	**Type of timers** ● Single ○ Double
+ G-L: Channels group	**Up/down time [sec]** 30
+ M-R: Channels group	**Up/down extra time [sec]** 0
+ S-X: Channels group	**Delay between direction changes** 500 ms
	Movement msg ● No ○ Yes
	Limit msg ● No ○ Yes
	Shutter/Blinds ● Shutter ○ Blinds
	Forcing function ● No ○ Yes
	Enable lock ● No ○ Yes
	Enable scenes ● No ○ Yes
	General functions ● No ○ Yes
	Calibration function ● No ○ Yes

Position at startup   No action

4.3.1 Enable front button

A button is located on the front of the device, which can be used to directly control the load related to the relay of each channel. The command given using these buttons is separate from the commands received via the KNX Bus. The local buttons can be disabled or not. The available settings are:

blumotix	Blumotix s.r.l.	BX-RO24
	Via Bedazzo 2, 48022 Lugo (RA) – Italy	Technical manual
	+3905451895254 – www.blumotix.it	
		Rev.: 01 - 13/12/2023

Enable front button   ○ Disable ● Enable

The local keys work with the KNX bus powered.

4.3.2 Consider movement with button

By enabling this parameter, it is possible to consider the command given to the local keys according to the settings dedicated to the individual channel and to the runtime. Available settings are:

Consider movement with button   ● Disable ○ Enable

By leaving the setting on "disable", the commands given by the local keys will not be considered by the device with respect to runtime. The alignment between the physical position and the logical position saved in the module's memory will be lost and it will then be necessary to recalibrate.

4.3.3 Type of timers

The user can decide to enable two timers instead of one. By doing this, it is possible to differentiate times for up and down Shutter/Blinds directions.

Type of timers   ● Single ○ Double

4.3.4 Up time [sec] – Down time [sec]

This parameter makes it possible to establish, within the device, the calculation of the position as a percentage, in order to be able to perform, on the proportion of total time base, its movement in proportion to the time measured in the actual field. With the blind/shutter raised, the value will be 0%, while if it is lowered, the value will be 100% and vice versa. If required, different up and down times can be set. The settings themselves will give the proportion to the command from fully closed to fully open. The value to be indicated refers to the actual Roller blind/Venetian blind runtime.

	Blumotix s.r.l.	BX-RO24
	Via Bedazzo 2, 48022 Lugo (RA) – Italy	Technical manual
	+3905451895254 – www.blumotix.it	Rev.: 01 - 13/12/2023
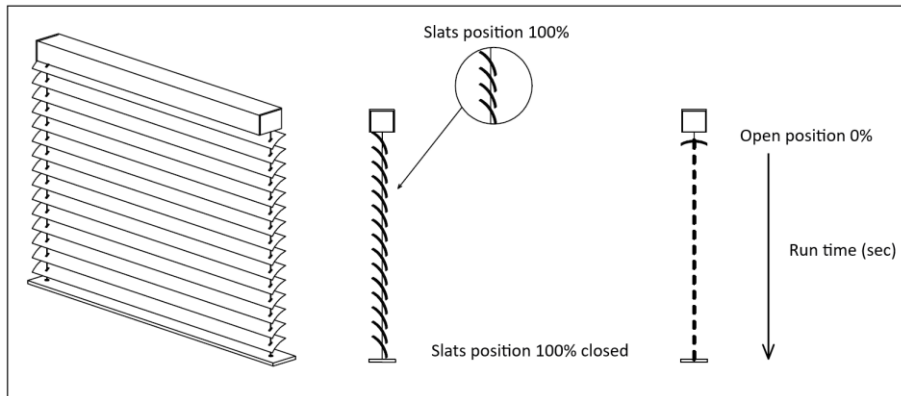
4.3.5 Up extra time [sec] – Down extra time [sec]

This parameter allows an additional control time value to be set for the channel relay. Over time, the Roller blind/Venetian blind could undergo a change in the movement run both upwards and downwards; a slowing of the movement due to wear of the mechanical parts or even particular weather conditions such as wind can change the mechanical behaviour. To ensure that the limit switch is always reached, it is possible to set a value (seconds) of overrun which is added to the run time.

4.3.6 Delay in direction change from up to down - Delay in direction change from down to up

This parameter allows setting a delay time (milliseconds) between the switching of the up and down relays. It will be necessary to have the manual with the technical specifications of the Roller blind/Venetian blind to be controlled. The delay time must then be indicated so as not to damage the Roller blind/Venetian blind motor during reversal. This parameter sets the time interval between the interruption of the command in one direction and the start of the command in the other direction.

4.3.7 Movement msg

Enabling this parameter allows to receive from the device a value which is determined during the movement of the Roller blind/Venetian blind.

	Blumotix s.r.l.	BX-RO24
blumotix	Via Bedazzo 2, 48022 Lugo (RA) – Italy +3905451895254 – www.blumotix.it	Technical manual
		Rev.: 01 - 13/12/2023

Movement msg   ◯ No ◉ Yes

If enabled, it will send a telegram with value 0 or 1 (see parameter description below). This communication object has a 1-bit value and will be sent when the relay changes status/switching either up or down with values of 0 open and 1 closed or vice versa. Below are the available communication objects:

1152	A-B: Shutter/Blinds	Upward movement status	1 bit
1153	A-B: Shutter/Blinds	Downward movement status	1 bit

Two distinct Movement communication objects are available, so that both up (Movement up) and down (Movement down) can be distinctly identified.

The above values can be "reversed" as per the "Movement up/down telegram type" parameter. This can facilitate KNX bus transmissions for statuses with different and easily customisable values.

Up movement msg type   ◯ Telegram msg 0 ◉ Telegram msg 1

Down movement msg type   ◯ Telegram msg 0 ◉ Telegram msg 1

4.3.8 Limit msg

Enabling this parameter allows to receive a value which is determined and sent only when the Roller blind/Venetian blind has reached the upper or lower limit switch. If enabled, it will send a telegram with value 0 or 1. This communication object has a value of 1 bit.

Limit msg   ◯ No ◉ Yes

The values of the 1-bit communication objects can be defined inside the "Up/down limit msg" parameter. This will facilitate KNX bus transmissions for statuses with different and easily customisable values.

	Blumotix s.r.l.	BX-RO24
blumotix	Via Bedazzo 2, 48022 Lugo (RA) – Italy	Technical manual
	+3905451895254 – www.blumotix.it	Rev.: 01 - 13/12/2023

Up limit msg	◯ Telegram msg 0	◉ Telegram msg 1
Down limit msg	◯ Telegram msg 0	◉ Telegram msg 1

The available communication objects are shown below:

	1154	A-B: Shutter/Blinds	Up limit status	1 bit	C	R	-	T	-	1-bit, boolean
	1155	A-B: Shutter/Blinds	Down limit status	1 bit	C	R	-	T	-	1-bit, boolean

Two distinct objects are available, so as to be able to identify both the reaching of the upper and the lower limit switch.

4.3.9 Shutter/Blinds

Enabling this parameter makes it possible to determine the presence of a blind and to add further criteria and communication objects to the device within the blind menu. Some of these 'values' will take on different commands/statuses. See relevant shutter/blinds chapter.

4.3.10 Forcing function

Forcing function	◯ No	◉ Yes

This parameter enables a two-bit group object for that channel, which is dedicated to forcing commands. This allows to force a priority movement upward or downward.

	1157	A-B: Shutter/Blinds	Forcing function command	2 bit	C	-	W	-	-	1-bit controlled, direction control 1

KNX

	Blumotix s.r.l.	BX-RO24
blumotix	Via Bedazzo 2, 48022 Lugo (RA) – Italy	Technical manual
	+3905451895254 – www.blumotix.it	Rev.: 01 - 13/12/2023

A subpage called "Forcing function" will appear under the specific channel.

Here, it is possible to configure the channel behaviour when a forcing command comes from the bus.

4.3.11 Position at the end of the forcing

Position at the end of the forcing	None ▼
	None ✓
	Up
Forcing status at power on	Down
	Stop
	Move to position
	Previous state
	Last command

This parameter specifies the behaviour of the channel at the end of the forcing command.

4.3.12 Forcing status at power on

Forcing status at power on   ◯ Deactivated   ⦿ Previous state

When this parameter is set to "Previous state", the last state of the forcing command is maintained at the power on of the device.

4.3.13 Enable lock

By enabling the lock function, two communication objects become visible – the first, command and the second, status. These feature on each individual actuator channel. The available communication objects are shown below:

	Blumotix s.r.l.	BX-RO24
blumotix	Via Bedazzo 2, 48022 Lugo (RA) – Italy	Technical manual
	+3905451895254 – www.blumotix.it	Rev.: 01 - 13/12/2023

1158	A-B: Shutter/Blinds	Lock command	1 bit	C	-	W	-	-	1-bit, switch
1159	A-B: Shutter/Blinds	Lock status	1 bit	C	R	-	T	-	1-bit, switch

By writing a value via the KNX bus to the communication object 'Lock command', the lock function can be enabled or disabled. With this parameter it is possible to set and block the device in a certain condition. This condition is maintained until it is disabled. In this condition the device will not execute any commands received via the bus.

Following the lock command, the device will respond with the corresponding 'Lock status' communication object.

4.3.14 Behaviour when lock is active

This parameter allows to set the channel during the block of a certain condition. The available settings are:

None - When the block is enabled, this setting results in no action on the channel.

Stop - When the block is enabled, this setting causes channel stop

Go to position - By selecting this parameter, a new setting appears – if the blind function is enabled.

Shutter go to position	50	▼
Slats go to position	50	▼

This setting can be made according to the roller blind/Venetian blind % position value to be achieved. If the device is also used in Venetian blind configuration, when the device is in roller blind configuration, the position of the slats can also be defined. If this is not used, the set value will not be considered.

4.3.15 Enable scenes

By enabling this parameter, the roller blind menu will be applied in the window dedicated to the scenarios. See chapter about Scenarios.

4.3.16 General functions

By enabling this parameter, the channel will be part of the general controls. General controls have the same group object for all channels in the device. This allows greater simplicity during configuration on the ETS software for the general controls to be sent to those channels enabled in this function. The communication objects to be used are as follows:

796	All shutters/blinds	Up/Down command	1 bit	C	-	W	-	-	1-bit, up/down
797	All shutters/blinds	Shutter percentage command	1 byte	C	-	W	-	-	8-bit unsigned value, percentage (0..100%)
798	All shutters/blinds	Stop/Step	1 bit	C	-	W	-	-	1-bit, step
799	All shutters/blinds	Slats percentage command	1 byte	C	-	W	-	-	8-bit unsigned value, percentage (0..100%)

blumotix	Blumotix s.r.l.	BX-RO24
	Via Bedazzo 2, 48022 Lugo (RA) – Italy	Technical manual
	+3905451895254 – www.blumotix.it	
		Rev.: 01 - 13/12/2023

General up/down commands, shutter percentage command, stop/step commands, slats percentage command can be sent via the KNX bus to the device (if the device is also used in the Venetian blind configuration).

4.3.17 Calibration function

This parameter makes a communication object available for each channel, which has the function of realigning the physical position of the frame with the logical position held in memory by the actuator module. The calibration command object triggers an up or down movement with an activation time equal to the sum of all times set in the parameters for the direction chosen by the command. The set times for run, overrun, slats (if any) and any dead times are considered.

This command ensures that the mechanical position and the logical position maintained by the actuator module are consistent.

Calibration function	○ No ◉ Yes

If the Enable value is selected, the single communication objects will appear for the respective channels. The available communication objects are shown below:

1160	A-B: Shutter/Blinds	Calibration function	1 bit	C	-	W	-	-	1-bit, up/down

4.3.18 Behaviour at end of calibration

With this parameter, after enabling the Calibration Function, the position of the slats at the end of the calibration test can be defined.

"Maintain the position" means the Roller blind/Venetian blind will stay fully up or down depending on the command given on the communication object (Up/down calibration movements).

"Go to previous position" means that after being moved fully up or down, the Roller blind/Venetian blind, will then return to the position it started from.

	Blumotix s.r.l.	BX-RO24
	Via Bedazzo 2, 48022 Lugo (RA) – Italy	Technical manual
	+3905451895254 – www.blumotix.it	
		Rev.: 01 - 13/12/2023

Behavior at the end of the calibration   ◉ Maintain the position
                                          ○ Go to the preavious position

4.3.19 Position at startup

This parameter makes it possible to determine in which state the Roller blind/Venetian blind has to be placed when the device is switched on again. The cases that lead to possible reactivation are: in the absence of power supply from the KNX Bus, in the event of a fault on the Bus network and because of possible system restart. As with switching, it is possible to define the desired state at the end of device initialisation. The available choice is shown below.

Position at startup	No action ▼
	Move down
	Move up
	No action ✔
	Go to position
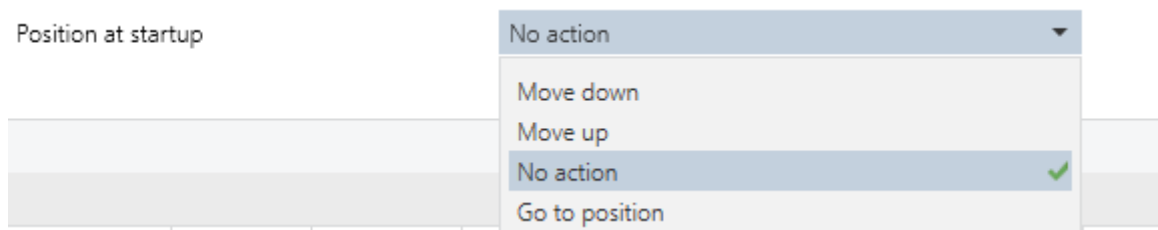
By selecting "Go to position", a % value can be set of the desired roller blind/Venetian blind position. If the device is also used in the Venetian blind configuration, when programming the device in roller blind, the position of the slats can also be defined. If this is not used, the set value will not be considered.

Position at startup	Go to position ▼
Shutter position at startup	50 ▼
Slats position at startup	50 ▼

blumotix	Blumotix s.r.l.	BX-RO24
	Via Bedazzo 2, 48022 Lugo (RA) – Italy	Technical manual
	+3905451895254 – www.blumotix.it	Rev.: 01 - 13/12/2023

4.4 Scenarios

Enabling this parameter will extend the roller blind menu in the "Scene" window. The operating principle of the scenario is based on the recall of a status, which can be pre-set with % values or stored on the enable scenario memo X. The device is programmed to store and execute a maximum of 8 scenarios. The parameters are visible and settable, so that their status can be determined - whether fixed or stored. Available settings are:

4.4.1 Number of scenes

It specifies the number of scenes to enable for that specific channel, a correspondent number of subpages called "Scene x" will appear under "Scenes".

	Blumotix s.r.l.	BX-RO24
blumotix	Via Bedazzo 2, 48022 Lugo (RA) – Italy	Technical manual
	+3905451895254 – www.blumotix.it	Rev.: 01 - 13/12/2023

1.1.1 BX-RO24 > A-F: Channels group > A-B: Shutter/Blinds > Scenes > Scene 1

Channels configuration	Scene ID	1 ▼
Shutter/Blinds generic		
— A-F: Channels group	Enable memo scene	◉ No ○ Yes
— A-B: Shutter/Blinds	Shutter position	0 ▼
Blinds		
— Scenes	Slat position	0 ▼
Scene 1		
Scene 2		
Scene 3		
Scene 4		
Scene 5		
Scene 6		
Scene 7		
Scene 8		

4.4.2 Scene ID

This parameter defines the number of the scenario to be associated with that action. The value can be set from 1 to 64.

The following communication objects are available for each channel to use to recall the scenario with a value of 1 byte.

| 1156 | A-B: Shutter/Blinds | Scene ID | 1 byte | C | - | W | - | - | scene control, scene control |

4.4.3 Enable memo scene

to enable the storage function; you can send a command on the bus to ask the devices to store their current location as a new value to be assigned to that scenario. The current value will replace the one set in the configuration parameters. This option allows the end customer to configure the scenarios independently without having to program the system.

	Blumotix s.r.l.	BX-RO24
blumotix	Via Bedazzo 2, 48022 Lugo (RA) – Italy	Technical manual
	+3905451895254 – www.blumotix.it	Rev.: 01 - 13/12/2023

Learning the scenario includes storing the position of the slats (if Venetian blind mode in enables). Therefore, scenario execution must also include reproduction of the previously stored slats position.

4.4.4 Shutter position

This parameter defines the position towards which the Roller blind will be commanded when entering the scenario enable command. The parameter can be set in an interval between 0% and 100%, with minimum increments of 5%. The predefined settings are:

10 % _"default" value scenario 1	30 % _"default" value scenario 3	50 % _"default" value scenario 5	70 % _"default" value scenario 7
20 % _"default" value scenario 2	40 % _"default" value scenario 4	60 % _"default" value scenario 6	80 % _"default" value scenario 8

4.4.5 Slat position

Same as previous paragraph (4.4.4) but referred to the position of the Venetian blind slats.

10 % _"default" value scenario 1 slat	30 % _"default" value scenario 3 slats	50 % _"default" value scenario 5 slats	70 % _"default" value scenario 7 slats
20 % _"default" value scenario 2 slats	40 % _"default" value scenario 4 slats	60 % _"default" value scenario 6 slats	80 % _"default" value scenario 8 slats

4.5 Venetian blind

The Venetian blind menu contains all the parameters which will enable the device to control the Venetian blinds with the various operation times of the slats and of the load connected to the related channels. The following settings are available:

-.-.- BX-RO24 > A-F: Channels group > A-B: Shutter/Blinds > Blinds

Channels configuration	Slats run time up X 100 [sec]	50
Shutter/Blinds generic	Slats run time up when shutter closed X 100 [sec]	50
— A-F: Channels group	Number of regulation steps, up direction	10
	Dead time up direction X 100 [sec]	0
— A-B: Shutter/Blinds	Dead time up direction when shutter closed X 100 [sec]	0
Blinds		
	Slats run time down X 100 [sec]	50
	Slats run time down when shutter closed X 100 [sec]	50
	Number of regulation steps, down direction	10
	Dead time down direction X 100 [sec]	0
	Dead time down direction when shutter closed X 100 [sec]	0
	Slats position % at the end of driving	50

4.5.1. Slats run time X 100 [sec]

X 100 means that the value has to be expressed in hundreds of ms.

This parameter allows the total time of slat movement to be set to the running position (as shown in the image below) in the upward movement phase. Hence, it is defined that the slat movement has to be identified with a different value from the one defined as "Shutter/Blinds run time". Therefore, a second measurement to be identified in the field is that of the rotation time taken between the 0% to 100% position of the slat itself. Once this value has been identified, it must be entered in the 'slats run time' parameter. This time can be very fast and is expressed in milliseconds.

Slats run time
0% - 100%
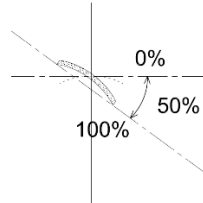
It should be noted hereunder how, as regards some types of Venetian blinds, the position of the slats during the down time ② is different from the position at the end of run ③, as is shown in the illustration.

① Slats position when shutter closed

② Slats run position when shutter closed

③ Slats position when shutter closed

④ Slats run position when shutter open

Slats run time
0% - 100%

Slats run time when shutter closed
0% - 100%

Inside this parameter, the value ② must be entered.

4.5.2 Slats run time up when shutter closed X 100 [sec]

X 100 means that the value has to be expressed in hundreds of ms.

This parameter allows to set the total slat movement time on % closed position ③ (as shown in the illustration).

4.5.3 Number of regulation steps, up direction

This parameter allows to set the number of steps calculated by dividing the total rotation time by the number of steps required.

4.5.4 Dead time up direction X 100 [sec]

X 100 means that the value has to be expressed in hundreds of ms.

This parameter allows to set what are known as 'dead' times. These are periods in which the motor is controlled by the actuator but mechanically does not produce any movement. These times can be considered if the manufacturer of the automation specifically requires them, or by testing the device and taking the times directly in the "movement" phase.".

Venetian blind position	Slats position	Send command	t	Start of movement
Roller blind not closed "picture 1"	Rotation of slats from fully closed (100%) to fully open (0%)	Up =>	Dead Time	Start of roller blind upward movement

4.5.5 Dead time up direction when shutter closed X 100 [sec]

X 100 means that the value has to be expressed in hundreds of ms.

This parameter is similar to the previous one, but it allows to distinguee the case in which the blind is closed. In this situation some shutters have a different dead time.

Venetian blind position	Slats position	Send command	t	Start of movement
Roller blind closed "picture 3"	Rotation of slats from fully closed (100%) to fully open (0%)	Up =>	Dead Time	Start of roller blind upward movement

	Blumotix s.r.l.	BX-RO24
	Via Bedazzo 2, 48022 Lugo (RA) – Italy	Technical manual
	+3905451895254 – www.blumotix.it	
		Rev.: 01 - 13/12/2023

4.5.6. Slats run time down X 100 [sec]

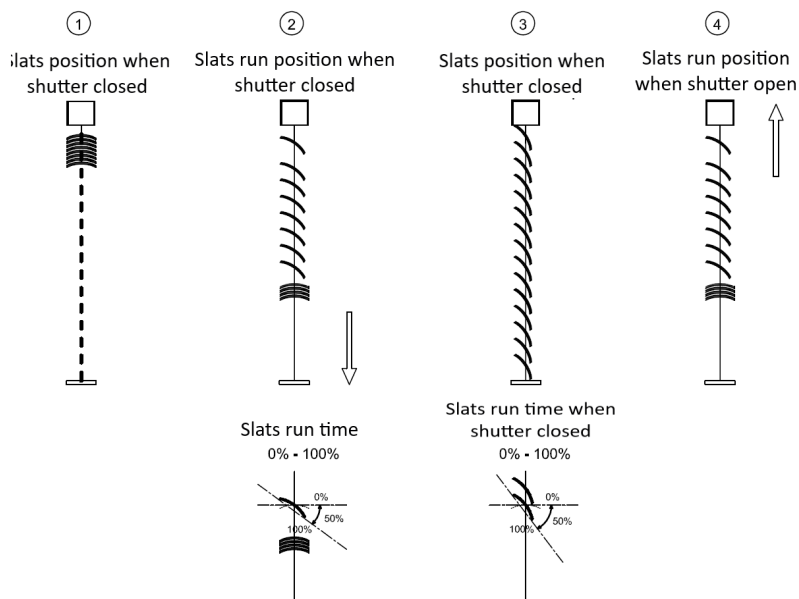X 100 means that the value has to be expressed in hundreds of ms.

This parameter allows to set the total time of slat movement on the running position (as shown in the illustration below) when moving down. The slat movement has to be identified with a separate value from that defined as "Shutter /Blinds run time". Therefore, a second measurement to be identified in the field is the time taken between the 100% to 0% position of the slat itself. Once this value has been identified, it must be entered in the 'slats run time' parameter. This time can be very fast and the scale value is in msec. The factory setting is 5000msec.

Slats run time
0% - 100%

0%

50%

100%

Hereunder, it should be noted that with regard to some types of Venetian blinds, the position of the slats during the down phase ② is different from the position at the end of run ③, as can be seen in the illustration.

① ② ③ ④

Slats position when shutter closed | Slats run position when shutter closed | Slats position when shutter closed | Slats run position when shutter open

Slats run time
0% - 100%

Slats run time when shutter closed
0% - 100%
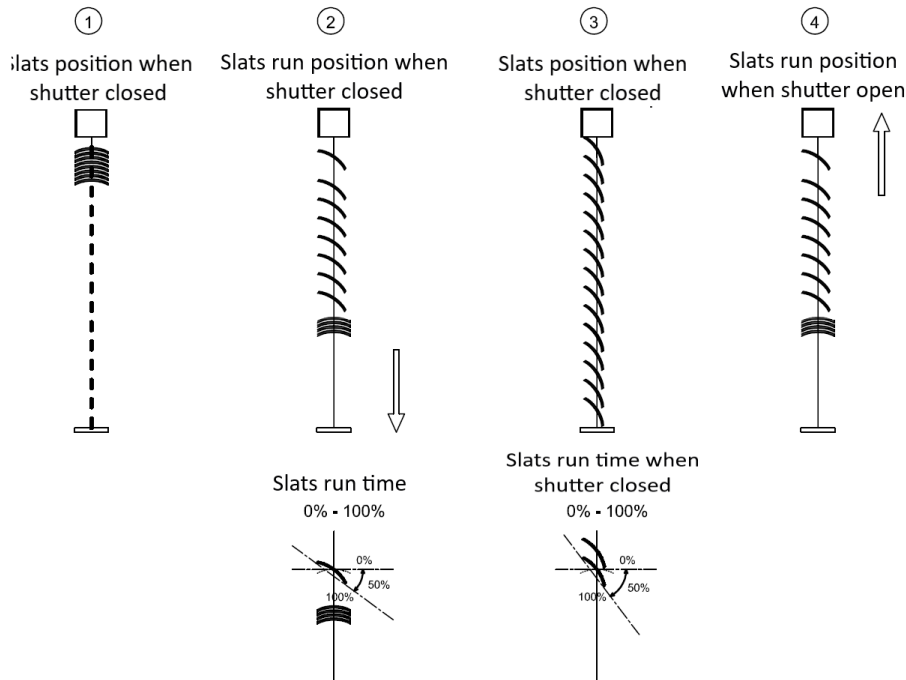
Within this parameter, the value ② must be entered.

4.5.7 Slats run time down when shutter closed X 100 [sec]

X 100 means that the value has to be expressed in hundreds of ms.

This parameter allows to set the total slats movement time on 100% closed position ③ (as in the illustration). This slats movement has to be identified with a value distinct from that defined as "total run time" and in open position.

4.5.8 Number of regulation steps, down direction

This parameter allows to set the number of steps calculated by dividing the total rotation time with respect to the number of required steps.

4.5.9 Dead time down direction X 100 [sec]

KNX

blumotix	Blumotix s.r.l.	BX-RO24
	Via Bedazzo 2, 48022 Lugo (RA) – Italy	Technical manual
	+3905451895254 – www.blumotix.it	Rev.: 01 - 13/12/2023

X 100 means that the value has to be expressed in hundreds of ms.

This parameter allows to set the 'dead' times. These are periods in which the motor is controlled by the actuator, but mechanically does not produce any movement. These times can be considered if the manufacturer of the automation specifically requires them or by testing the device and taking times directly in the "movement" phase.".

Venetian blind position	Slats position	Send command	t	Start of movement
Roller blind not open "picture 1"	Rotation of slats from fully closed (100%) to fully open (0%)	Up =>	Dead Time	Start of roller blind upward movement

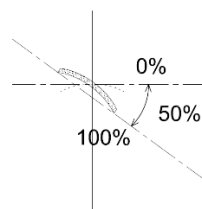## 4.5.10 Dead time down direction when shutter is closed X 100 [sec]

X 100 means that the value has to be expressed in hundreds of ms.

This parameter is similar to the previous one, but it allows to distinguee the case in which the blind is closed. In this situation, some shutters have a different dead time.

Venetian blind position	Slats position	Send command	t	Start of movement
Roller blind open "picture 3"	Rotation of slats from fully closed (100%) to fully open (0%)	Up =>	Dead Time	Start of roller blind upward movement

4.5.11 Slat position % at the end of driving

This parameter allows to set the position of the slats at the end of movement (value in %).

	Blumotix s.r.l.	BX-RO24
blumotix	Via Bedazzo 2, 48022 Lugo (RA) – Italy	Technical manual
	+3905451895254 – www.blumotix.it	Rev.: 01 - 13/12/2023

4.6 Alarms

Enabling the "Alarm" function from the general menu will enable a sub-menu on each individual actuator channel configured as "Shutter/Blinds".
Four different alarm levels with different priorities and dedicated communication objects are identified (see General Alarms chapter). It is possible to manage individual alarm and the alarm behaviour per channel. Available settings are:

4.6.1 Enable alarm x

This parameter allows to enable or disable or the association of the individual channel to the alarm of reference. If disabled, in case of recall of that alarm channel, the channel will not be associated with that alarm.

4.6.2 Alarm x behavior

When receiving the alarm via KNX bus, this parameter allows to establish an activation value of the alarm X on the respective communication object. It will therefore be

	Blumotix s.r.l.	BX-RO24
blumotix	Via Bedazzo 2, 48022 Lugo (RA) – Italy	Technical manual
	+3905451895254 – www.blumotix.it	Rev.: 01 - 13/12/2023
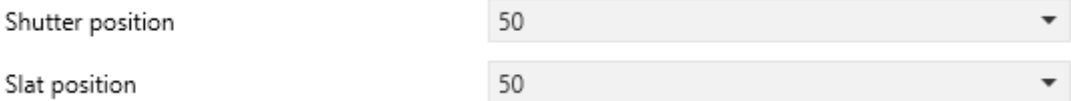
possible to define the status to set the shutter/blinds at the time of activation. The available choice is shown in the illustration below.

By selecting "Go to position", a % value of the Roller blind/Venetian blind of the required position can be set. If the device is also used in Venetian blind configuration, the position of the slats can also be defined. If this is not used, the set value will not be considered.

4.7 Communication objects dedicated to the individual channel

The objects available for each single channel are activated in the "X-Y: Shutter/Blinds" menu.

16 different Communication Objects are available for each Shutter/Blinds channel. Below an example for channel A-B is shown.

	Blumotix s.r.l.	BX-RO24
blumotix	Via Bedazzo 2, 48022 Lugo (RA) – Italy	Technical manual
	+3905451895254 – www.blumotix.it	Rev.: 01 - 13/12/2023

1145	A-B: Shutter/Blinds	Up/Down command	1 bit	C	- W - -	1-bit, up/down
1146	A-B: Shutter/Blinds	Up/Down status	1 bit	C	R - T -	1-bit, up/down
1147	A-B: Shutter/Blinds	Shutter percentage command	1 byte	C	- W - -	8-bit unsigned value, percentage (0..100%)
1148	A-B: Shutter/Blinds	Shutter percentage status	1 byte	C	R - T -	8-bit unsigned value, percentage (0..100%)
1149	A-B: Shutter/Blinds	Stop/Step	1 bit	C	- W - -	1-bit, step
1150	A-B: Shutter/Blinds	Slats percentage command	1 byte	C	- W - -	8-bit unsigned value, percentage (0..100%)
1151	A-B: Shutter/Blinds	Slats percentage status	1 byte	C	R - T -	8-bit unsigned value, percentage (0..100%)
1152	A-B: Shutter/Blinds	Upward movement status	1 bit	C	R - T -	1-bit, boolean
1153	A-B: Shutter/Blinds	Downward movement status	1 bit	C	R - T -	1-bit, boolean
1154	A-B: Shutter/Blinds	Up limit status	1 bit	C	R - T -	1-bit, boolean
1155	A-B: Shutter/Blinds	Down limit status	1 bit	C	R - T -	1-bit, boolean
1156	A-B: Shutter/Blinds	Scene ID	1 byte	C	- W - -	scene control, scene control
1157	A-B: Shutter/Blinds	Forcing function command	2 bit	C	- W - -	1-bit controlled, direction control 1
1158	A-B: Shutter/Blinds	Lock command	1 bit	C	- W - -	1-bit, switch
1159	A-B: Shutter/Blinds	Lock status	1 bit	C	R - T -	1-bit, switch
1160	A-B: Shutter/Blinds	Calibration function	1 bit	C	- W - -	1-bit, up/down

4.7.1 Up/down command

This communication object is used to move the actuator channel in up/down commands for roller blinds and Venetian blinds.

4.7.2 Up/down status

This communication object is used to be able to receive the type of command given to the device channel.

4.7.3 Shutter percentage command

This communication object is used to set the roller blinds and Venetian blinds to a certain % position via KNX bus.

4.7.4 Shutter percentage status

This communication object is used to receive from the device the % value of the status which the run position of the motor is in. This value is sent at the end of each run or after reading via KNX bus.

	Blumotix s.r.l.	BX-RO24
blumotix	Via Bedazzo 2, 48022 Lugo (RA) – Italy	Technical manual
	+3905451895254 – www.blumotix.it	Rev.: 01 - 13/12/2023

4.7.5 Stop/Step

This communication object is used to stop the ongoing motor movement of the Venetian blind actuator channel. If the device is configured as Venetian blind, this communication object is also used to adjust the slats with single steps at the time.

4.7.6 Slats percentage command

This communication object is used to set the slats (Venetian blind setting only) at a certain % position via KNX bus.

4.7.7 Slats percentage status

This communication object is used to receive from the device the % value of the status which the slats run position is in. This value is sent at the end of each run or after reading via KNX bus.

4.7.8 Upward movement status - Downward movement status

These two communication objects send the movement direction status.

4.7.9 Up limit status – Down limit status

These two communication objects send a message when the up/down limit is reached.

4.7.10 Scene ID

See chapter 8 paragraph 8.1.2.

	Blumotix s.r.l.	BX-RO24
blumotix	Via Bedazzo 2, 48022 Lugo (RA) – Italy	Technical manual
	+3905451895254 – www.blumotix.it	Rev.: 01 - 13/12/2023

4.7.11 Forcing function command

This communication object is used to force an up/down command.

4.7.12 Lock command

This communication object is used to block the shutter/blinds. In this mode of operation, the channel performs an action according to its associated parameters in the lock section. Thus, any successive command targeting that channel is denied.

4.7.13 Lock status

This communication object gives the current lock status for that channel.

4.7.14 Calibration function

This communication object is used to perform a calibration of that specific channel when channel calibration parameter is enabled.

4.8 Communication objects for all channels

Each channel can be enabled to respond to "All shutter/blinds" commands enabling the parameter "General functions" for the specific channel.

4 different Communication Objects are available for all the channels.

796	All shutters/blinds	Up/Down command	1 bit	C	-	W	-	-	1-bit, up/down
797	All shutters/blinds	Shutter percentage command	1 byte	C	-	W	-	-	8-bit unsigned value, percentage (0..100%)
798	All shutters/blinds	Stop/Step	1 bit	C	-	W	-	-	1-bit, step
799	All shutters/blinds	Slats percentage command	1 byte	C	-	W	-	-	8-bit unsigned value, percentage (0..100%)

	Blumotix s.r.l.	BX-RO24
	Via Bedazzo 2, 48022 Lugo (RA) – Italy	Technical manual
	+3905451895254 – www.blumotix.it	Rev.: 01 - 13/12/2023

4.8.1 Up/Down command

This is the Up/Down broadcast communication object.

4.8.2 Shutter percentage command

This is the Shutter percentage broadcast communication object.

4.8.3 Stop/Step

This is the Stop/Step broadcast communication object.

4.8.4 Slats percentage command

This is the Slats percentage broadcast communication object.

5 Single output

The single output function is dedicated to act as contact with different function associated to it.
It is possible to associate up to 6 single outputs to a main group of 6 channels. Up to 24 single output functions are available on the BX-RO24.

Here follows the list and description of the single output parameters.

	Blumotix s.r.l.	BX-RO24
![blumotix logo]	Via Bedazzo 2, 48022 Lugo (RA) – Italy	Technical manual
	+3905451895254 – www.blumotix.it	Rev.: 01 - 13/12/2023

5.1 X: Single output

Choosing the option "Single relay", a subpage dedicated to the parameters for that channel will appear under the X-Y channel group page.

Here, the list of all the configurable parameter for the single output function.

1.1.1 BX-RO24 > A-F: Channels group > A: Single output

Channels configuration	Enable R0	○ No ● Yes
+ Shutter/Blinds generic		
− A-F: Channels group	Send status at startup	○ No ● Yes
	Send output state after	00:00:00 hh:mm:ss
A: Single output	Enable front button	○ Disable ● Enable
B: Single output		
C: Single output	Switch mode	● Normally open ○ Normally closed
D: Single output		
E: Single output	Timing function	● No ○ Yes
F: Single output		
	Flashing function	● No ○ Yes
	Logic functions	● No ○ Yes
	Forcing function	● No ○ Yes
	Enable lock	● No ○ Yes
	Enable scenes	● No ○ Yes
	General functions	○ No ● Yes
	Behavior after bus power up	Previous state ▼

5.1.1 Enable Rn

This parameter enables the channel to work as a contact. Here is the list of all the available parameters for the single output.

5.1.2 Send status at startup

	Blumotix s.r.l.	BX-RO24
blumotix	Via Bedazzo 2, 48022 Lugo (RA) – Italy	Technical manual
	+3905451895254 – www.blumotix.it	Rev.: 01 - 13/12/2023

If "No" option is chosen, no output status will be sent on the bus during the startup of the device for this channel.
If "Yes" option is chosen, it is possible to set a delay after which the first output status will be sent on the bus.

Send output state after	00:00:00	hh:mm:ss

5.1.3 Enable front button

Enabling the front button allows the user to open/close the relay by using the physical button on the front panel of the device.

5.1.4 Switch mode

With this parameter it is possible to choose if to consider the contact as normally open or normally closed.

5.1.5 Timing function

This parameter enables the "Timing function" subpage (see the "Timing" paragraph).

5.1.6 Flashing function

This parameter enables the "Flashing function" subpage (see the "Flashing" paragraph).

5.1.7 Logic function

This parameter enables the "Logic function" subpage (see the "Logic" paragraph).

5.1.8 Forcing function

This parameter enables the "Forcing function" subpage and the parameters dedicated to manage the behaviour of the channel when a force command is entered.

	Blumotix s.r.l.	BX-RO24
blumotix	Via Bedazzo 2, 48022 Lugo (RA) – Italy	Technical manual
	+3905451895254 – www.blumotix.it	Rev.: 01 - 13/12/2023

5.1.9 Behav. at the end of the forcing

This parameter specifies the behaviour of the switch at the end of the forcing command. It is possible to choose between various options. If "Last command" is chosen, after the forcing is disabled, the last command from the bus will be implemented for that channel. While, the "Previous state" option will restore the switch state before the forcing command.

5.1.10 Behav. at the startup

When this parameter is set to "Previous state", the switch will assume the last forcing status before the device shutdown.

5.1.11 Enable lock

This parameter enables the "Lock function" subpage and the parameters dedicated to manage the behaviour of the channel when a lock command is entered.

	Blumotix s.r.l.	BX-RO24
	Via Bedazzo 2, 48022 Lugo (RA) – Italy	Technical manual
	+3905451895254 – www.blumotix.it	Rev.: 01 - 13/12/2023

5.1.12 Behaviour after bus power up

This parameter specifies whether to lock the channel after the power on of the device.

5.1.13 Telegram for lock activation

By setting this parameter it is possible to choose the type of message to send on the bus when the lock is activated.

5.1.14 Automatic unlocking time (0 = no automatic unlock) [min]

When this parameter assumes a value different from 0, it means that after that time an automatic unlock will apply for that channel.

5.1.15 Output value when locked

This parameter specifies the behaviour of the channel when the lock command is set. It is possible to choose between the following options.

	Blumotix s.r.l.	BX-RO24
blumotix	Via Bedazzo 2, 48022 Lugo (RA) – Italy	Technical manual
	+3905451895254 – www.blumotix.it	Rev.: 01 - 13/12/2023

Output value when locked	None ▼
	None ✓
	On
Output value when unlocked	Off

5.1.16 Output value when unlocked

This parameter specifies the behaviour of the channel when the unlock command is set.
It is possible to choose between the following options.

Output value when unlocked	None ▼
	None ✓
	On
	Off
	Previous state
	Last command

5.1.17 Enable scenes

This parameter enables the "Scenes" subpage (see the "Scenarios" paragraph).

5.1.18 General functions

This parameter allows the "All switches" parameters to work for this channel.

5.1.19 Behavior after bus power up

This parameter specifies the channel behavior after the startup of the device.

Behavior after bus power up	Previous state ▼
	Off
	On
	Previous state ✓

	Blumotix s.r.l.	BX-RO24
blumotix	Via Bedazzo 2, 48022 Lugo (RA) – Italy	Technical manual
	+3905451895254 – www.blumotix.it	Rev.: 01 - 13/12/2023

With the "Previous state" option, the device will store the last status of that channel before the shutdown and will recall it after the successive startup.

5.2 Timing

The timing function is enabled by the "Timing function" parameter in the "Single output" page.

This function delays the startup of the switch and it is used, for example, for the staircase lights.

5.2.1 Timing msg

This parameter specifies the type of telegram to be received when the timing command must be activated.

	Blumotix s.r.l.	BX-RO24
blumotix	Via Bedazzo 2, 48022 Lugo (RA) – Italy	Technical manual
	+3905451895254 – www.blumotix.it	Rev.: 01 - 13/12/2023

5.2.2 ON delay

This parameter defines how long the delay must last before turning on the switch.

5.2.3 Auto-off time (0 = no auto-off)

When this parameter is different from 0, the switch turns off automatically after the defined auto-off time.

5.2.4 Alert before the end of the timing after (0 = no alert)

With this parameter you can set that channel so that it flashes quickly after a specific time after the startup of the switch. It is used as an alert before turning off the light and it is set only when the auto-off time is set.

5.2.5 Change auto-off time from bus

This parameter enables two new communication objects for the channel.

23	A: Switch	Set auto-off interval	4 bytes	C	-	W	-	-	4-byte signed value, time lag (s)
24	A: Switch	Auto-off interval status	4 bytes	C	R	-	T	-	4-byte signed value, time lag (s)

This allows to change the auto-off interval through messages from the bus.

5.2.6 Reset auto-off time

When this parameter is set to "Yes", if the timing is already activated and a new timing command comes from the bus, the auto-off timer restarts its counting.

5.2.7 Behavior on deactivation msg

This parameter gives the possibility to choose if enabling the timing deactivation while it is on execution on that channel.

	Blumotix s.r.l.	BX-RO24
blumotix	Via Bedazzo 2, 48022 Lugo (RA) – Italy	Technical manual
	+3905451895254 – www.blumotix.it	Rev.: 01 - 13/12/2023

5.3 Flashing

The flashing function is enabled by the "Flashing function" parameter in the "Single output" page.

This function allows the channel to perform a temporized flashing when the correspondent communication object is received.

5.3.1 Flashing msg

This parameter specifies the type of telegram to be received when the flashing command is activated.

5.3.2 Number of cycles (0 = non-stop)

This parameter specifies the number of flashing. When 0, the channel will commutate continuously.

5.3.3 Time on (s) – Time off (s)

	Blumotix s.r.l.	BX-RO24
blumotix	Via Bedazzo 2, 48022 Lugo (RA) – Italy	Technical manual
	+3905451895254 – www.blumotix.it	Rev.: 01 - 13/12/2023

This parameter defines the startup period and the shutdown period of the switch during the flashing function.

5.4 Logic functions

The logic function is enabled by the "Logic function" parameter in the "Single output" page.

This function gives the possibility to associate to the channel several external inputs whose will be processed with logic operations specified by the user. If the result of the logic operation is 1, the contact will switch on according to the switch command. If the result is 0, the contact will switch off according to the switch command.

1.1.1 BX-RO24 > A-F: Channels group > A: Single output > Logic functions

Channels configuration	Logic inputs delay 00:00:00 hh:mm:ss
+ Shutter/Blinds generic	
− A-F: Channels group	Link with Switch ▼
− A: Single output	Number of logic inputs 16 ▼
− **Logic functions**	
Logic input 1	
Logic input 2	
Logic input 3	
Logic input 4	
Logic input 5	
Logic input 6	
Logic input 7	
Logic input 8	
Logic input 9	
Logic input 10	
Logic input 11	
Logic input 12	
Logic input 13	
Logic input 14	
Logic input 15	
Logic input 16	

blumotix	Blumotix s.r.l.	BX-RO24
	Via Bedazzo 2, 48022 Lugo (RA) – Italy	Technical manual
	+3905451895254 – www.blumotix.it	
		Rev.: 01 - 13/12/2023

5.4.1 Logic inputs delay

With this parameter is possible to set a delay before the logic inputs should be processed for the first time.

5.4.2 Link with

With this parameter, it is possible to associate the logic function to one of the following contact functions.

The chosen function will be performed by that channel when the logic operation gives 1 as result.

5.4.3 Number of logic inputs

Up to 16 logic inputs can be associated to each channel.

To each logic input can be associated a specific logic operation. The chain of logic operations is performed starting from the first logic input and ending with the last one.

The first logic operation is always done along with the current switch status.

	Blumotix s.r.l.	BX-RO24
blumotix	Via Bedazzo 2, 48022 Lugo (RA) – Italy	Technical manual
	+3905451895254 – www.blumotix.it	Rev.: 01 - 13/12/2023

1.1.1 BX-RO24 > A-F: Channels group > A: Single output > Logic functions > Logic input 1

Channels configuration	Default state	◉ Off ○ On
+ Shutter/Blinds generic		
– A-F: Channels group	Logic type	AND ▼
– A: Single output	Negated input	◉ No ○ Yes
– Logic functions		
Logic input 1	Startup read	◉ No ○ Yes

5.4.4 Default state

This parameter defines the state of the logic input at the startup.

5.4.5 Logic type

This parameter specifies the logic operation that must be executed on that logic input. Several logic operations are available.

Logic type	AND ▼
	AND ✔
	OR
	XOR
Negated input	NAND
	NOR
	XNOR
Startup read	GATE

The GATE operation passes the result of the previous operations only if the current logic input is active. If the current logic input is not active, the last result is maintained regardless the actual state of the logic inputs.

5.4.6 Negated input

This parameter allows to negate the current value of the logic input.

	Blumotix s.r.l.	BX-RO24
blumotix	Via Bedazzo 2, 48022 Lugo (RA) – Italy	Technical manual
	+3905451895254 – www.blumotix.it	Rev.: 01 - 13/12/2023

5.4.7 Startup read

If this parameter is enabled, a reading request is sent over the bus for that specific logic input. This is done in order to synchronize the state of the logic inputs.

5.5 Scenarios

Enabling the parameter "Enable scenes", a new subpage called "Scenes" will appear under the single output main page. It contains dedicated parameters for single output scenes.

	Blumotix s.r.l.	BX-RO24
	Via Bedazzo 2, 48022 Lugo (RA) – Italy	Technical manual
	+3905451895254 – www.blumotix.it	Rev.: 01 - 13/12/2023

Up to 8 scenes are available for each single output channel.

5.5.1 Set OFF before scene

This parameter always set off the switch before the scene is implemented.

5.5.2 ID scene

This parameter assigns the unique identifier for that specific scenario.

5.5.3 Behavior

This parameter specifies whether to turn the channel on or off in correspondence with the scenario.

5.5.4 Learning scene

This parameter enables or disables the storing/learning of the channel status through the use of the same communication object. When the scenario is recalled, the value learnt at the time of its storage will be recalled. This parameter can only be set when using the ETS program. Factory setting is "Disabled".

5.6 Communication objects dedicated to the individual channel

22 different Communication Objects are available for each switch channel. Below an example for the channel A.

	Blumotix s.r.l.	BX-RO24
	Via Bedazzo 2, 48022 Lugo (RA) – Italy	Technical manual
	+3905451895254 – www.blumotix.it	Rev.: 01 - 13/12/2023

1	A: Switch	Forcing command	2 bit	C	-	W	-	-	1-bit controlled, switch control
2	A: Switch	Lock command	1 bit	C	-	W	-	-	1-bit, switch
3	A: Switch	Lock status	1 bit	C	R	-	T	-	1-bit, switch
4	A: Switch	Switch command	1 bit	C	-	W	-	-	1-bit, switch
5	A: Switch	Switch status	1 bit	C	R	-	T	-	1-bit, switch
6	A: Switch	Logic input 1	1 bit	C	-	W	T	U	1-bit, switch
7	A: Switch	Logic input 2	1 bit	C	-	W	T	U	1-bit, switch
8	A: Switch	Logic input 3	1 bit	C	-	W	T	U	1-bit, switch
9	A: Switch	Logic input 4	1 bit	C	-	W	T	U	1-bit, switch
10	A: Switch	Logic input 5	1 bit	C	-	W	T	U	1-bit, switch
11	A: Switch	Logic input 6	1 bit	C	-	W	T	U	1-bit, switch
12	A: Switch	Logic input 7	1 bit	C	-	W	T	U	1-bit, switch
13	A: Switch	Logic input 8	1 bit	C	-	W	T	U	1-bit, switch
14	A: Switch	Logic input 9	1 bit	C	-	W	T	U	1-bit, switch
15	A: Switch	Logic input 10	1 bit	C	-	W	T	U	1-bit, switch
16	A: Switch	Logic input 11	1 bit	C	-	W	T	U	1-bit, switch
17	A: Switch	Logic input 12	1 bit	C	-	W	T	U	1-bit, switch
18	A: Switch	Logic input 13	1 bit	C	-	W	T	U	1-bit, switch
19	A: Switch	Logic input 14	1 bit	C	-	W	T	U	1-bit, switch
20	A: Switch	Logic input 15	1 bit	C	-	W	T	U	1-bit, switch
21	A: Switch	Logic input 16	1 bit	C	-	W	T	U	1-bit, switch
22	A: Switch	Timing command	1 bit	C	-	W	-	-	1-bit, start/stop
23	A: Switch	Set auto-off interval	4 bytes	C	-	W	-	-	4-byte signed value, time lag (s)
24	A: Switch	Auto-off interval status	4 bytes	C	R	-	T	-	4-byte signed value, time lag (s)
25	A: Switch	Flashing command	1 bit	C	-	W	-	-	1-bit, start/stop
26	A: Switch	Scene ID	1 byte	C	-	W	-	-	scene control, scene control

5.6.1 Forcing command

When the forcing function is enabled for the channel, this communication object forces the output to be closed or open regardless any other commands from the bus. In this mode of operation, only the force and block commands can affect that channel. It is always possible to disable the forcing mode by using the same communication object.

5.6.2 Lock command

When the lock function is enabled for the channel, this communication object allows to block that channel to a specific state according to its block configuration parameters.

	Blumotix s.r.l.	BX-RO24
	Via Bedazzo 2, 48022 Lugo (RA) – Italy	Technical manual
	+3905451895254 – www.blumotix.it	
		Rev.: 01 - 13/12/2023

5.6.3 Lock status

When the lock function is enabled for the channel, this communication object holds the lock status for that channel.

5.6.4 Switch command

This communication object is used to close or open the output of the corresponding channel.

5.6.5 Switch status

This communication object indicated the switch status for that channel.

5.6.6 Logic input x

When the logic function is enabled for the channel, these communications objects (up to 16 for channel) are used as logic inputs for that channel.

5.6.7 Timing command

When the timing function is enabled for the channel, this communication object is used to temporize the switching on of that channel.

5.6.8 Set auto-off interval

When the timing function is enabled for the channel, this communication object is used to change the auto-off timer for that channel.

5.6.9 Auto-off status

When the timing function is enabled for the channel, this communication object keeps the auto-off timer status for that channel.

5.6.10 Flashing command

When the flashing function is enabled for the channel, this communication object is used to start the periodic commutation of that channel, according to its flashing function configuration parameters.

5.7 Communication objects for all channels

Each channel can be enabled to respond to "All switches" commands by enabling the parameter "General functions" for the specific channel.

3 different Communication Objects are available for all the channels.

793	All switches	Switch command	1 bit	C	-	W	-	-	1-bit, switch
794	All switches	Timing command	1 bit	C	-	W	-	-	1-bit, start/stop
795	All switches	Flashing command	1 bit	C	-	W	-	-	1-bit, start/stop

5.7.1 Switch command

This communication object commutates on (or off) all the switches.

5.7.2 Timing command

This communication object starts a temporized switching on for all the channels configured as single output.

5.7.3 Flashing command

This communication object starts the flashing function for all the channels configured as single output.

6 Electric valves

The single output function can also work to control an electric valve. Just select the "Electric valve" option under the channel configuration as shown below.

	Blumotix s.r.l.	BX-RO24
	Via Bedazzo 2, 48022 Lugo (RA) – Italy	Technical manual
	+3905451895254 – www.blumotix.it	
		Rev.: 01 - 13/12/2023

The electric valve function enables the PWM of the output in order to modulate, for example, the flow of current through a pipeline.

Up to 6 electric valves can be selected for a specific channel group and up to 24 electric valves can be selected over the whole actuator.

6.1 X: Electric valve

When choosing the "Electric valve" option, a subpage dedicated to the parameters for that channel will appear under the X-Y channel group page.

Individual outputs R0   ◯ Single relay ⦿ Electric valve

Here the list of all the configurable parameter for the electric valve function.

	Blumotix s.r.l.	BX-RO24
blumotix	Via Bedazzo 2, 48022 Lugo (RA) – Italy	Technical manual
	+3905451895254 – www.blumotix.it	Rev.: 01 - 13/12/2023

1.1.1 BX-RO24 > A-F: Channels group > A: Electric valve

Channels configuration

+ Shutter/Blinds generic

− A-F: Channels group

A: Electric valve

B: Electric valve

C: Electric valve

D: Electric valve

E: Electric valve

F: Electric valve

Enable E0	○ Disable ● Enable
Enable front button	○ Disable ● Enable
Valve position when relay is open	● Open ○ Closed
Msg when valve is open	○ Telegram msg 0 ● Telegram msg 1
All valve closed/off	● No ○ Yes
PWM period [min]	10
PWM lower limit value	0 %
PWM upper limit value	100 %
Forcing function	● Disable ○ Enable
Enable lock	● Disable ○ Enable
Enable anti-lock	● Disable ○ Enable
Behavior after bus power up	None

6.1.1 Enable E0

This parameter enables the channel and its parameters for the electric valve function configuration.

6.1.2 Enable front button

This parameter enables the button on the front panel.

6.1.3 Valve position when relay is open

This parameter should be configured in order to associate a correspondence between the actuator relay and the valve that it has to control.

6.1.4 Msg when valve is open

With this parameter it is possible to choose the type of message to be sent (or received) when the valve is open, according to the previous parameter.

6.1.5 All valve closed/off

When this parameter is enabled, the channel will respond to the following common communication object.

| 808 | All valves | Closing control function | 1 bit | C | R | - | T | - | 1-bit, switch |

This communication object will be discussed in the "Communication object for all channels" paragraph of this section.

6.1.6 PWM period [min]

This parameter is used to configure the PWM period for that channel. This enables a periodic square waveform to control the channel output.

6.1.7 PWM lower limit value

This parameter specifies the minimum percentage value for PWM. Lower values will be set to this percentage.

6.1.8 PWM upper limit value

This parameter specifies the maximum percentage value for PWM. Higher values will be set to this percentage.

6.1.9 Forcing function

	Blumotix s.r.l.	BX-RO24
![Blumotix logo]	Via Bedazzo 2, 48022 Lugo (RA) – Italy	Technical manual
	+3905451895254 – www.blumotix.it	Rev.: 01 - 13/12/2023

This parameter enables the "Forcing function" subpage and the parameters dedicated to manage the behaviour of the channel when a force command is entered.

6.1.10 Forcing function (behaviour)

This parameter specifies the channel behaviour when a forcing command is received from the bus.

6.1.11 Forcing status at power on

This parameter specifies the forcing status at the startup of the device.

6.1.12 Enable lock

By enabling the block function, a new subpage called "Lock function" will appear under the "Electric valve" main page.

	Blumotix s.r.l.	BX-RO24
blumotix	Via Bedazzo 2, 48022 Lugo (RA) – Italy	Technical manual
	+3905451895254 – www.blumotix.it	Rev.: 01 - 13/12/2023

6.1.13 Behavior after bus power up

This parameter specifies whether the channel must be locked or not at the startup of the device.

6.1.14 Telegram for lock activation

This parameter specifies the type of message to be received from the bus when the channel has to be locked.

6.1.15 Automatic unlocking time (0 = no automatic unlock) [min]

If this parameter is different from 0, it specifies an interval after which an automatic unlock of that channel will be performed.

6.1.16 Output value when locked

	Blumotix s.r.l.	BX-RO24
blumotix	Via Bedazzo 2, 48022 Lugo (RA) – Italy	Technical manual
	+3905451895254 – www.blumotix.it	Rev.: 01 - 13/12/2023

This parameter specifies the state of the channel when a lock command is received from the bus.
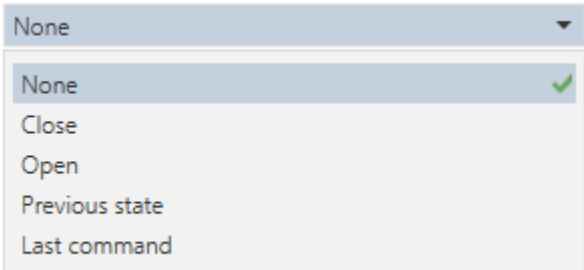
Output value when locked   None ▼

                              None ✔
Output value when unlocked   Close
                              Open

6.1.17 Output value when unlocked

This parameter specifies the state of the channel when an unlock command is received from the bus.

Output value when unlocked   None ▼

                              None ✔
                              Close
                              Open
                              Previous state
                              Last command

With the "Previous state" option the channel will come back to its previous state.

While, with the "Last command" option, it will maintain the last command received during the lock mode.

6.1.18 Enable anti-lock

This parameter allows the channel to perform a commutation of its output when it remains closed over a certain period.

When this happens, the output will be toggled open for 5 min and then closed again.

This is usually done in order to prevent an unwanted blocking of the valve due to long period of inactivity.

	Blumotix s.r.l.	BX-RO24
blumotix	Via Bedazzo 2, 48022 Lugo (RA) – Italy	Technical manual
	+3905451895254 – www.blumotix.it	Rev.: 01 - 13/12/2023

6.1.19 Anti-lock period

When the anti-lock is enabled, this parameter specifies the period after which the anti-lock must be performed.

Anti-lock period	Every 6 days ▼

6.1.20 Behavior after bus power up

This parameter specifies the channel behaviour after the startup of the device.

Behavior after bus power up	None ▼
	None ✓
	Closed
	Open

6.2 Communication objects dedicated to the individual channel

7 different Communication Objects are available for each electric valve channel. Below an example for the channel A.

625	A: electric valve	EV command	1 bit	C	-	W	-	-	1-bit, switch
626	A: electric valve	EV status	1 bit	C	R	-	T	-	1-bit, switch
627	A: electric valve	PWM percentage command	1 byte	C	-	W	-	-	8-bit unsigned value, percentage (0..100%)
628	A: electric valve	PWM percentage status	1 byte	C	R	-	T	-	8-bit unsigned value, percentage (0..100%)
630	A: electric valve	Lock command	1 bit	C	-	W	-	-	1-bit, switch
631	A: electric valve	Lock status	1 bit	C	R	-	T	-	1-bit, switch

blumotix	Blumotix s.r.l.	BX-RO24
	Via Bedazzo 2, 48022 Lugo (RA) – Italy	Technical manual
	+3905451895254 – www.blumotix.it	Rev.: 01 - 13/12/2023

6.2.1 EV command

This communication object is used to switch on or off the valve.

6.2.2 EV status

This communication object keeps the valve status for that channel.

6.2.3 PWM percentage command

This communication object is used to set the PWM duty cycle for that channel.

6.2.4 PWM percentage status

This communication object holds the PMW duty cycle status for that channel.

6.2.5 Forcing function command

This communication object is used to force a specific status for that channel. The status will be maintained until the forcing command is disabled.

6.2.6 Lock command

This communication object is used to block the channel to a specific state according to its parameter setting for the lock function.

6.2.7 Lock status

This communication object keeps the lock status for that channel.

	Blumotix s.r.l.	BX-RO24
blumotix	Via Bedazzo 2, 48022 Lugo (RA) – Italy	Technical manual
	+3905451895254 – www.blumotix.it	Rev.: 01 - 13/12/2023

6.3 Communication objects for all channels

Each channel can be enabled to respond to "All valves" commands by enabling the parameter "All valve closed/off" for the specific channel.

| 808 | All valves | Closing control function | 1 bit | C | R | - | T | - | 1-bit, switch |

6.3.1 Closing control function

This communication object is used to check if all channel configured as valves are closed (or in their off state).

When the returned value is 1, it means at least one valve is open. While, if the returned value is 0, it means that all the valves are closed.

This is true only for the valves enabled to this communication object.

7 Interlocks

Interlocks are used to help prevent any damage to the load by avoiding more than one contact from being active at the same time.

Up to 6 outputs can be grouped within an interlock function. Different configurations are available, from 2-outputs to 6-outputs interlocks. According to this, up to 12 interlocks are available if all are configured as 2-outputs interlocks, while up to 6 interlocks are available if all are configured as 6-outputs interlocks.

It follows the parameters description for the 6-outputs interlocks, which is representative of the category.

	Blumotix s.r.l.	BX-RO24
	Via Bedazzo 2, 48022 Lugo (RA) – Italy	Technical manual
	+3905451895254 – www.blumotix.it	Rev.: 01 - 13/12/2023

7.1 X-Y: n outputs interlock

7.1.1 Send status at startup

When this parameter is enabled, every time the actuator is turned on, the interlock status will be sent to the bus.

7.1.2 Send output state after

If the previous parameter is set to "Yes", this parameter allows to configure a delay for the first sending of the interlock status.

7.1.3 Enable front button

This parameter is configured to enable the front panel button.

7.1.4 Switch mode

This parameter is used to configure the switch as normally open or normally closed, according to the load.

7.1.5 Msg type

	Blumotix s.r.l.	BX-RO24
blumotix	Via Bedazzo 2, 48022 Lugo (RA) – Italy	Technical manual
	+3905451895254 – www.blumotix.it	Rev.: 01 - 13/12/2023

This parameter is used to configure the bus message which corresponds to the setting on and the setting off for that channel.

7.1.6 Delay between commutations

This parameter is used to set a delay between each output commutation.

7.1.7 Lock function

This parameter enables the lock command for the channel. When enabled, a new subpage called "Lock function" appears. Here it is possible to configure the behaviour of that channel when a lock command is received to the bus.

7.1.8 Startup behaviour

With this parameter it is possible to choose if the channel initial state must be locked or not.

7.1.9 Lock active msg

This parameter specifies the type of message to be send over the bus in order to lock or unlock the channel.

7.1.10 Auto-unlock delay (0 = no auto-unlock)

blumotix	Blumotix s.r.l.	BX-RO24
	Via Bedazzo 2, 48022 Lugo (RA) – Italy	Technical manual
	+3905451895254 – www.blumotix.it	
		Rev.: 01 - 13/12/2023

When this parameter is different from 0, it specifies a time after which the channel will be automatically unlocked.

7.1.11 Lock action

When this parameter is set to "Fixed", every time a lock command is received, the interlock will assume a specific value.

7.1.12 Fixed position

When a fixed action is set under the lock command, this parameter specify the action itself.

Lock action	○ None ● Fixed
Fixed position	0
	0 ✓
	1
Unlock action	2
	3
	4
	5
	6

Where 0 means all outputs deactivated, 1 means first output active, 2 means second output active and so on.

7.1.13 Unlock action

This parameter specifies the channel action when an unlock message is received to the bus.

	Blumotix s.r.l.	BX-RO24
blumotix	Via Bedazzo 2, 48022 Lugo (RA) – Italy	Technical manual
	+3905451895254 – www.blumotix.it	Rev.: 01 - 13/12/2023

Unlock action

None ▼

None	✓
Fixed	
Last value	
Previous state	

7.2 Communication objects dedicated to the individual channel

Up to 16 different Communication Objects are available, according to the interlock function type, for each interlock channel. Below an example for the channel A-F configured as 6-outputs interlock.

1909	A-F: Interlock 6	Lock command	1 bit	C	-	W	-	-	1-bit, switch
1910	A-F: Interlock 6	Lock status	1 bit	C	R	-	T	-	1-bit, switch
1911	A-F: Interlock 6	Group command	1 byte	C	-	W	-	-	8-bit unsigned value, counter pulses (0..2...
1912	A-F: Interlock 6	Group status	1 byte	C	R	-	T	-	8-bit unsigned value, counter pulses (0..2...
1913	A-F: Interlock 6	Output 1 command	1 bit	C	-	W	-	-	1-bit, switch
1914	A-F: Interlock 6	Output 1 status	1 bit	C	R	-	T	-	1-bit, switch
1915	A-F: Interlock 6	Output 2 command	1 bit	C	-	W	-	-	1-bit, switch
1916	A-F: Interlock 6	Output 2 status	1 bit	C	R	-	T	-	1-bit, switch
1917	A-F: Interlock 6	Output 3 command	1 bit	C	-	W	-	-	1-bit, switch
1918	A-F: Interlock 6	Output 3 status	1 bit	C	R	-	T	-	1-bit, switch
1919	A-F: Interlock 6	Output 4 command	1 bit	C	-	W	-	-	1-bit, switch
1920	A-F: Interlock 6	Output 4 status	1 bit	C	R	-	T	-	1-bit, switch
1921	A-F: Interlock 6	Output 5 command	1 bit	C	-	W	-	-	1-bit, switch
1922	A-F: Interlock 6	Output 5 status	1 bit	C	R	-	T	-	1-bit, switch
1923	A-F: Interlock 6	Output 6 command	1 bit	C	-	W	-	-	1-bit, switch
1924	A-F: Interlock 6	Output 6 status	1 bit	C	R	-	T	-	1-bit, switch

7.2.1 Lock command

This communication object appears only if the correspondent parameter is enabled. It is used to lock or unlock the channel.

7.2.2 Lock status

This communication object keeps the lock status for that specific channel.

7.2.3 Group command

This communication object controls the whole interlock group. When 0 is send, all the outputs will be disabled. Other values indicate the output that has to be activated.

7.2.4 Group status

This communication object keeps the interlock group status, according to which channel is active.

7.2.5 Output X command

These communication objects are used specifically for each single output belonging to the interlock group.

7.2.6 Output X status

These communication objects contain the state for each output belonging to the block group.

8 Fancoils

The actuator outputs can be configured to control fancoils.

Up to 6 outputs can be grouped within a fancoil function. Different configurations are available; from 2-outputs to 5-outputs fancoil. According to this, up to 12 fancoil are available if all are configured as 2-outputs fancoil, while up to 6 fancoils are available if all are configured as 5-outputs fancoil.

It follows the parameters description for the 5-outputs fancoil, which is representative of the category.

	Blumotix s.r.l.	BX-RO24
blumotix	Via Bedazzo 2, 48022 Lugo (RA) – Italy	Technical manual
	+3905451895254 – www.blumotix.it	Rev.: 01 - 13/12/2023

8.1 X-Y: n outputs fancoil

8.1.1 Relay position with valve off

This parameter specifies which relay position the actuator should consider when the valve is off.

8.1.2 Message with valve off

This parameter specifies the type of message associated with the off state of the valve.

8.1.3 Delay between speed changes [s]

This parameter specifies a delay between the commutations of the outputs.

8.1.4 Minimum control value

This parameter specifies a percentage value under which all the output related to the speeds are turned off.

8.1.5 Limit value speed 1/2

This parameter specifies the limit percentage value for the commutation between speed 1 and speed 2.

8.1.6 Limit value speed 2/3

This parameter specifies the limit percentage value for the commutation between speed 2 and speed 3.

8.1.7 Delay on ventilation start [min]

With this parameter it is possible to specify a time before which the ventilation must be kept off.

8.1.8 All valve closed/off

This parameter enables the channel to be considered by the "Closing control function" communication object.

8.1.9 Behavior on power up

This parameter specifies the channel behaviour after the actuator startup.

8.2 Communication objects dedicated to the individual channel

Up to 12 different Communication Objects are available, according to the fancoil function type, for each fancoil channel. Below an example for the channel A-E configured as 5-outputs fancoil.

	Blumotix s.r.l.	BX-RO24
blumotix	Via Bedazzo 2, 48022 Lugo (RA) – Italy	Technical manual
	+3905451895254 – www.blumotix.it	Rev.: 01 - 13/12/2023

1097	A-E F5 valve	Heating	1 bit	C	-	W	-	-	1-bit, switch
1098	A-E F5 valve	Heating status	1 bit	C	R	-	T	-	1-bit, switch
1099	A-E F5 valve	Cooling	1 bit	C	-	W	-	-	1-bit, switch
1100	A-E F5 valve	Cooling status	1 bit	C	R	-	T	-	1-bit, switch
1101	A-E: F5 speed	Percentage command	1 byte	C	-	W	-	-	8-bit unsigned value, percentage (0..100%)
1102	A-E: F5 speed	Percentage status	1 byte	C	R	-	T	-	8-bit unsigned value, percentage (0..100%)
1103	A-E: F5 speed	Speed 1 command	1 bit	C	-	W	-	-	1-bit, switch
1104	A-E: F5 speed	Speed 1 status	1 bit	C	R	-	T	-	1-bit, switch
1105	A-E: F5 speed	Speed 2 command	1 bit	C	-	W	-	-	1-bit, switch
1106	A-E: F5 speed	Speed 2 status	1 bit	C	R	-	T	-	1-bit, switch
1107	A-E: F5 speed	Speed 3 command	1 bit	C	-	W	-	-	1-bit, switch
1108	A-E: F5 speed	Speed 3 status	1 bit	C	R	-	T	-	1-bit, switch

8.2.1 Heating

This communication object is used to control the first fancoil output valve.

8.2.2 Heating status

This communication object keeps the first fancoil output valve status.

8.2.3 Cooling

This communication object is used to control the second fancoil output valve.

8.2.4 Cooling status

This communication object keeps the second fancoil output valve status.

8.2.5 Percentage command

This communication object is used to control the fancoil outputs dedicated to the speeds through a percentage.

8.2.6 Percentage status

This communication object keeps the percentage status for the speeds.

8.2.7 Speed n command

These communication objects are used to control the outputs dedicated to the speeds by means of 1-bit datapoint.

	Blumotix s.r.l.	BX-RO24
	Via Bedazzo 2, 48022 Lugo (RA) – Italy	Technical manual
	+3905451895254 – www.blumotix.it	
		Rev.: 01 - 13/12/2023

8.2.8 Speed n status

These communication objects keep the speed status for each output dedicated to the speed.

8.3 Communication objects for all channels

Each channel can be enabled to respond to "All valves" commands by enabling the parameter "All valve closed/off" for the specific channel.

| 808 | All valves | Closing control function | 1 bit | C | R | - | T | - | 1-bit, switch |

8.3.1 Closing control function

This communication object is used to check if all channel configured as valves are closed (or in their off state).

When the returned value is 1, it means at least one valve is open. While, if the returned value is 0, it means that all the valves are closed.

This is true only for the valves enabled to this communication object.

9 Front panel

On the actuator front panel, one physical button is dedicated to each channel.

Physical buttons are interlocked with each other until when the ETS application is not loaded into the device. This is done to avoid accidental damage to the loads due to the simultaneous activation of the channels.

In this case, each button works in toggle mode, which means that the contact will not remain active after the release of the button.

blumotix	Blumotix s.r.l.	BX-RO24
	Via Bedazzo 2, 48022 Lugo (RA) – Italy	Technical manual
	+3905451895254 – www.blumotix.it	Rev.: 01 - 13/12/2023

After the download of the ETS application, the behaviour of each front panel button can be different according to the channel configuration.

9.1 Shutter/Blinds: physical button behaviour

When the channel is configured as "Shutter/Blinds", the first button is always dedicated to the upward movement, while the second button is used for the downward movement.

For this type of function the button works in toggle mode, which means that the contact will not remain active after the release of the button.

9.2 Single output/Electric valve: physical button behaviour

When the channel is configured as "Single output" or "Electric valve", when the associated front panel button is pressed, the contact will toggle and will maintain the position also after the release of the button.

9.3 Interlock: physical button behaviour

When the channel is configured as "Interlock", when the associated front panel button is pressed, any other output of that channel will be deactivated before the target one is activated.

In this case, the new status will be maintained.

9.3 Fancoil: physical button behaviour

In order to avoid accidental damage, the physical buttons related to the fancoils are always kept disabled.

10 Appendix

10.1 How to properly connect RO24 actuator to different loads

The multifunction actuator BX-RO24 allows a huge number of configurations. Different loads can be attached to it according to specific rules, as described below.

1. When a specific configuration for a group X-Y of channels is chosen, functions whose number of outputs associated is greater are usually placed in the first group positions.

2. Fancoils always have the first outputs dedicated to the speeds and the last outputs dedicated to the valves (heating and cooling).

3. For the shutter/Blinds configuration, first output is used for the upward movement and the second one for the downward movement.

In general, channels position always follow the order on the ETS software.

Here follows an example.

In this case Shutter/Blinds is a 2-outputs function, while electric valves are 1-output function. Thus, channels dedicated to the Shutter/Blinds function are placed in the

blumotix	Blumotix s.r.l.	BX-RO24
	Via Bedazzo 2, 48022 Lugo (RA) – Italy	Technical manual
	+3905451895254 – www.blumotix.it	
		Rev.: 01 - 13/12/2023

first positions of the group (A-B in this case), while channels dedicated to the valve outputs are placed in the following positions (from C to F in this case).

10.2 Front panel LEDs light meaning

The front panel LEDs indicate the state of the output according to the channel configuration.

The following rules work for standard configurations.

1. For the single output configuration of the channel, the LED light is on when the switch is closed.

2. For valves configurations, the channel LED light is on when the valve is open.