

Operating Manual
Shutter module

LUXOR 408 S 408 0 100 (basic device)
LUXOR 409 S 409 0 100 (upgrade module)



- Do not route the COM line parallel to 230 V lines.
 - Can be extended to max. 16 devices inc. basic module.
 - Ensure correct polarity!
- ⇒ If the COM connection fails, the SET LED flashes continuously.

1.0 Designated use

The LUXOR shutter module controls shutters, awnings and blinds. It expands the existing LUXOR range and is suitable for installation in houses, flats and offices etc. The device should be properly installed in a control or distribution box.

2.0. Safety notes



WARNING

Danger of death through electric shock or fire!

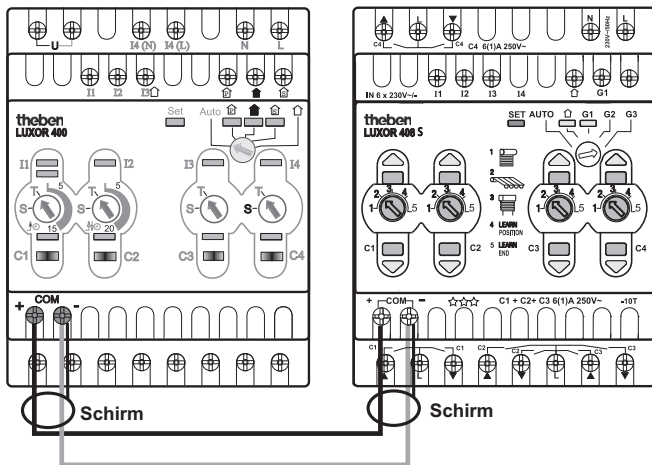
- Installation should only be carried out by a professional electrician!

- Set the final position of the motors before starting up shutter module. This prevents damaging the covering.
- Keep the area of the system's direction of travel clear.
- Disconnect the system/covering from the power supply before carrying out work on system/coverings.
- The direction of travel must be visible during operation if the system is controlled by the device.
- Do not connect inputs in parallel.

3.0 Connection and installation

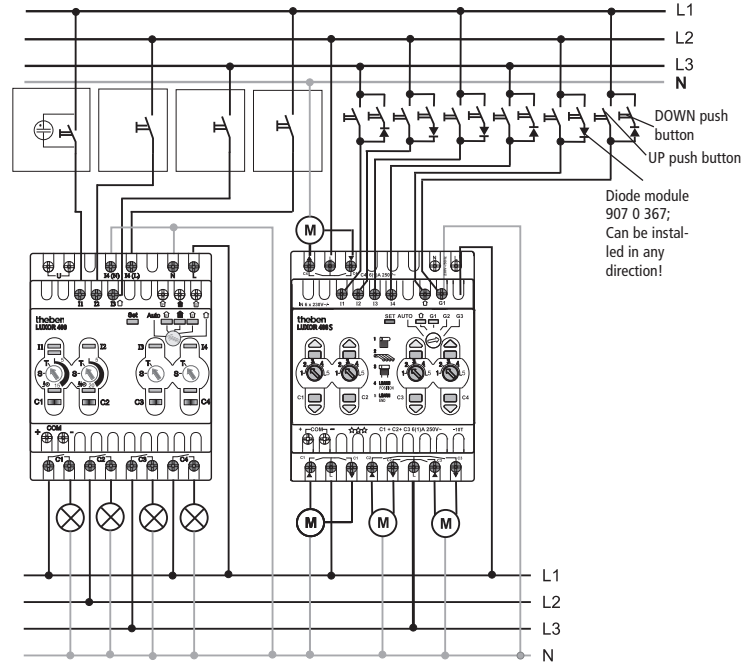
Installation of bus line

LUXOR 400 + LUXOR 408 S



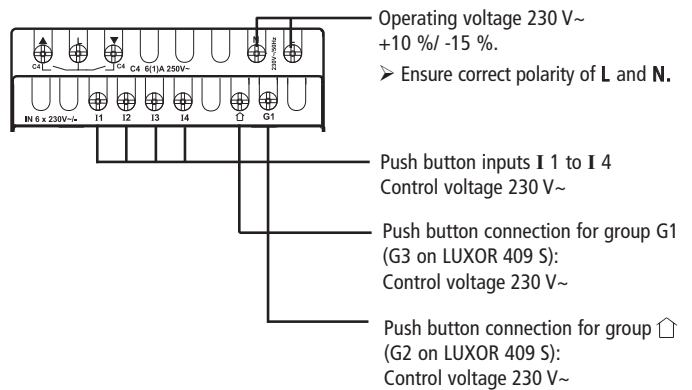
- Use the following lines: EIB/KNX bus line type YCYM or Y(ST)Y or telecommunication line J-Y(ST)Y
- Connect both sides of the shielding to the minus bus terminal on the COM bus.
- The COM line may be up to 100 m in length.
- Always route the COM line separately from other lines (separate cable).

Installation of inputs



- Do not connect inputs in parallel! You can achieve the same effect through configuration (see 9.0 Group functions/Assigning multiple outputs to one input).
- Only connect one motor per channel! If more than one drive is connected per channel, they must be decoupled via relay controls.

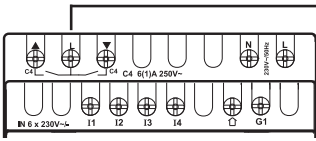
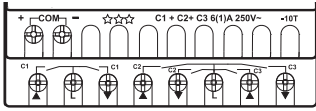
Input terminals



With push button inputs I 1 to I 4, the push button connection for group G1 and the push button connection for group G2 applies: It is possible to connect different outer conductors/phases (full wave = UP, half-wave = DOWN).

Output terminals

LUXOR 408 S/409 S (C1 - C4) 6(1) A 250 V~



Phase for shutters,
awnings, blinds

- The outputs are adjacent and isolated for the supply.
- Any external wire/phase can be connected!
(Exception: Channels 2 and 3 have a common phase)
- The outputs are **not** suitable for switching protective low voltage (SELV).
- If a change of direction is performed during the run, there is a change-over delay of 0.5 seconds for safety reasons. No relays are closed during this time.

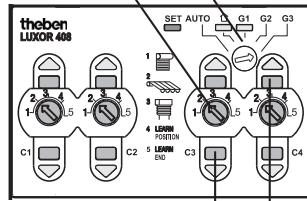
4.0 Operation

Group selector switch for assigning channels to the shutter groups (only with the LUXOR 408 S)

Selector switch for programs 1 to 5:

- 1 = shutters
- 2 = awning
- 3 = blinds
- 4 = "Teach-in function" (intermediate position, ventilation position)
- 5 = "Teach-in function" (Runtime turn increment)

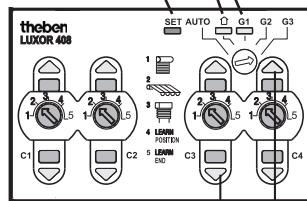
Channel key C1 to C4 for manual switching UP/DOWN and programming group assignments



The shutter module has light emitting diodes (LEDs) that display the operating status of the device as well as its individual channels.

If the group selector switch is not on Auto or if the UP/DOWN push button is pressed, the corresponding group LEDs light up

When the group selector switch on LUXOR 408 S is in position or G1-3 or a selector switch is on program 4 or 5, the LED set shows the program mode.



Channel key C1 to C4 for manual switching UP/DOWN and programming group assignments

5.0 Explanation of terms

- Covering:** Generic term for shutters, awnings or blinds
- Upper end position:** Shutters, blinds are up; awning is retracted
- Lower end position:** Shutters, blinds are down; awning is retracted
- Runtime:** The time it takes for a covering to travel between upper and lower final positions.
- Ventilation position:** Used with shutters. This involves the free choice of a position between "upper and lower final position with the runtime measured from the lower end position. The runtime determines how many ventilation slots in the shutter are open.
- Fabric tensioning:** Use with awnings. This involves the free choice of a position for tensioning the fabric in the lower final position with the runtime measured from the lower end position.
- Turning:** Use with blinds. This is a position that always runs from bottom to top. The runtime determines the angle that the lamellas turn.
- Turn increment:** Use with blinds. This describes the smallest possible degree of lamella turn with a short key activation.
- Intermediate position:** A freely selectable position between the upper and lower end position with the runtime always measured from the upper final position.
- Jerk:** Covers briefly run back and forth

6.0 Setting selection programs 1, 2, 3, 4 and 5

The selector switch enables you to choose from 5 programs such as 1 to 3 for shutters, awnings and blinds as well as 4 for the "Learn function" (intermediate and ventilation position or turn/ tension fabric) and 5 for the "Learn function" (runtime and turn increment).

◆ Set program 1 (shutters)

Program 1 controls the shutters.

Automatic operation

- It always moves to the assigned, taught position.
- If it is to be moved automatically to the ventilation position, LUXOR 414 must assign a new switching time with the appropriate position.

Manual operation with key commands

- Covering comes to a stop if any push button is pressed for the corresponding channel during the run.
- The LED for the corresponding channel lights up in the direction of travel during the run.

Briefly press DOWN push button:

- Shutters move down to bottom (lower end position)

Press DOWN push button:

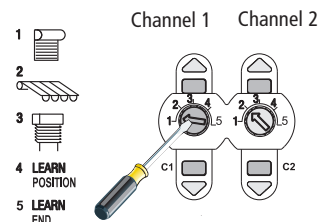
- Shutters move down to bottom (lower end position)

Briefly press UP push button:

- Shutters move to the top (upper end position)

Press UP push button:

- Shutters move to the top (upper end position)



Press DOWN push button twice:

- With taught intermediate position: Shutters move downwards.
- Without taught intermediate position: Shutters move right down to the lower end position.

Press UP push button twice:

- With taught ventilation position: Shutters move down to taught ventilation position.
- Without taught ventilation position: Shutters move right down to the lower end position.

◆ Program 2 (awning)

Program 2 controls the awning.

Automatic operation

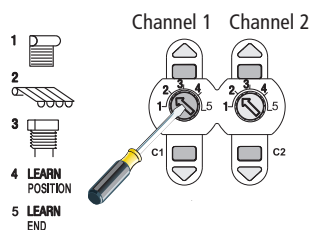
- It always moves to the assigned taught position.
- Automatic fabric tightening is performed providing the fabric tightening time has been taught-in and moved to the lower end position.

Semi-automatic operation

- If the light value of 100 lx is not achieved or is exceeded, the semi-automatic function is deactivated and the awning is moved to the lower end position.

Manual operation with key commands

- Covering comes to a stop if any push button is pressed for the corresponding channel during the run.
- The LED for the corresponding channel lights up in the direction of travel during the run.

**Briefly press DOWN push button:**

- With taught fabric tightening: Awning moves downwards (+ fabric tightening).
- Without taught fabric tightening: Awning moves to lower final position.

Briefly press UP push button:

- Awning moves right to the top (upper end position)

Press DOWN push button:

- With taught fabric tightening: Awning moves downwards (+ fabric tightening).
- Without taught fabric tightening: Awning moves to lower final position.

Press UP push button:

- Awning moves right to the top (upper end position)

Press DOWN push button twice:

- With taught intermediate position: Awning moves to intermediate position.
- Without taught intermediate position: With taught fabric tightening: Awning moves downwards and completes fabric tensioning. Without taught fabric tightening: Awning moves to lower final position.

Press UP push button twice:

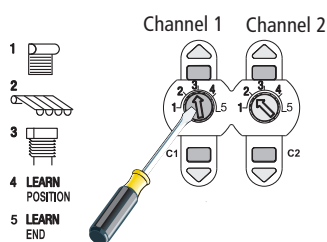
- With taught fabric tightening: Awning performs fabric tightening.
- Without taught fabric tightening: Awning does not move.

◆ Program 3 (blinds)

Program 3 controls the blinds.

Automatic operation

- It always moves to the assigned taught position.
- If a turning time has been taught-in turns are added – except for moving to the lower end position (with dimming function).

**Manual operation with key commands**

- Covering comes to a stop if any push button is pressed for the corresponding channel during the run.
- The LED for the corresponding channel lights up in the direction of travel during the run.

Briefly press DOWN push button:

- Blind in upper end position: Blind moves right down to bottom (lower final position)
- Blind not in upper end position: Blinds move downwards.

Briefly press UP push button:

- The blind turns upwards.

Press DOWN push button:

- Blind moves to lower final position.

Press UP push button:

- Awning moves right to the top (upper end position)

Press DOWN push button twice:

- With taught intermediate position: With taught turn: Blinds move to taught-in intermediate position and complete turn. Without taught turn: Blinds move to taught intermediate position
- Without taught intermediate position: With taught turn: Blind moves downwards. Without taught turn: Blind moves to lower final position.

Press UP push button twice:

- With taught turn: The blind turns upwards.
- Without taught turn: The blind does not move.

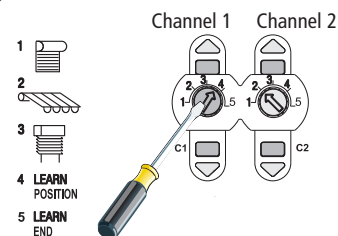
◆ Program 4 Teaching "LEARN POSITION"

In program 4 you can teach the intermediate and ventilation position and the fabric tightening/turning.

Teaching intermediate position (from the upper end position)

Important: Teach the runtime first before teaching an intermediate or ventilation position or fabric tightening/turn.

- 1. Set learning mode**
⇒ Move selector switch to position 4.
- 2. Start of teach-in process**
⇒ Double click the external DOWN push button. The start of the teach-in process is indicated by a jerk of the covering.
- 3. Define position**
⇒ Use the external UP/DOWN push button to move to desired position.
- 4. Store position**
⇒ Double click the external DOWN push button. The end of the teach-in operation is indicated by a jerk.
- 5. End**
⇒ Put the selector switch back to the required covering.

**Teaching-in ventilation position or fabric tightening/turn (only from lower final position)**

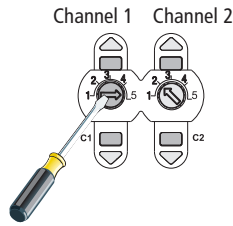
⇒ Perform the same steps as above. To start and end the teach-in process, use the external UP push button.

◆ Program 5 “Teaching-in (LEARN END)” the overall running time and the turn increment

In program 5 you can teach-in the running time and the turn increment.

Teaching-in the runtime (from upper final position only)


- 1. Set learning mode**
⇒ Move selector switch to position 5.
- 2. Start of teach-in process**
⇒ Move to upper end position by holding down the external UP push button.
- 3. Start of teach-in process**
⇒ Double click the external DOWN push button. The start of the teach-in process is indicated by a jerk of the covering.
- 4. Define position**
⇒ Use the external UP/DOWN push button to move to lower end position.
- 5. Store position**
⇒ Double click the external DOWN push button. The end of the teach-in operation is indicated by a jerk.
- 6. End**
⇒ Put the selector switch back to the required covering.




Teaching-in turn increments (from free choice of intermediate position)

⇒ Perform the same steps as above. To start and end the teach-in process, use the external UP push button.

7.0 Group functions , G1 to G3

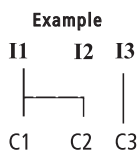
The group selector switch enables you to choose between the 4 groups  , G1, G2 and G3.

Several channels can be taught-in as a group. A push button command on a group will be carried out simultaneously by all participants in the group.

- 1. Start allocation**
⇒ Set switch selector to group  , G1, G2 or G3.
- 2. Allocate channel to a group**
One or more channels can be assigned to a group. By pressing the device movement keys for a channel you can allocate the selected channel in the group. The UP and DOWN LED are shown in the allocated channel.
- 3. Deselecting a channel from a group**
⇒ Press device key again. The relevant channel is deselected. The UP and DOWN LEDs go off.
- 4. End grouping**
⇒ Reset selector switch to Auto.

Allocate several outputs to an input

- 1. Start allocation**
⇒ Press DOWN push button of the channel that the sensor is attached to for > 3 seconds (while the power supply is switched on).




- 2. Allocate output to a channel**
The channel LEDs for the allocated channels light up. These channels can be selected or deselected by pressing the channel switch. An output can only be allocated to one input, i.e. existing allocations are deleted.
- 3. End allocation**
Settings are stored when the power supply is switched off.

8.0 Function in comb. with basic mod. LUXOR 400


Panic function

- The panic function can be activated via LUXOR 400.
- The central OFF, central ON function and the presence simulation are not available.
- All channels that have been allocated a panic function via LUXOR 400, move, according to configuration (panic UP/DOWN) to the corresponding final position.
- During the panic function the corresponding channels cannot be operated manually (the block is indicated by a jerk).

Setting “panic” group function

- ⇒ Set switch selector on LUXOR 400 to panic. The LED  set on the shutter module must light up.
- ⇒ UP/DOWN-Press keys (panic function is set for individual channels C1 to C4. If the UP LED (DOWN LED) lights up, the panic UP (DOWN) function is allocated.
- ⇒ Reset switch selector on LUXOR 400 to Auto.

9.0 Function in timer module LUXOR 414

- The runtime must be taught-in to enable run to correct position.
- The switching times are applied using the LUXOR 414.
- The target position is determined by LUXOR 414.
- LUXOR 414 assigns 8 switching channels to the shutter channels.
- Allocation of clock channels to the shutter channels is performed in tandem with programming groups  , G1 to G3.
- Astro switching and blocking times can be set using LUXOR 414.
- When running in position 100%, the blind does not turn automatically.
- When running in position 0.5-99.5 %, the turn is automatic (with blinds).

10.0 Function in comb. with operating device LUXOR 426

- If LUXOR 426 is set to clock, sensor functions (manual/automatic) the mode on the shutter module 408 S is activated.
- The panic function can be activated via the LUXOR 426.
- The switching times are applied using the LUXOR 426.
- Semi-automatic function (awnings only):
Semi-automatic function is not possible as automatic runs are not permitted in automatic mode.
- Manual/automatic function: Channels that are allocated to the manual/automatic function can only be set to manual mode via clock, sensor function (manual/automatic).
Unallocated channels are always in auto mode. There is no review when switching from manual to automatic.
The coverings remain in the same position.

11.0 Function in comb. with sensor mod. LUXOR 411

If a sensor module LUXOR 411 is connected to the LUXOR system, the shutter channels can be switched irrespective of environmental influences such as sun, twilight, wind, rain, temperature and frost (awnings only).

- The sensor module assigns the sensor functions to the shutter channels.
- Allocation of sensor functions to the shutter channels is performed in tandem with programming groups \hat{H} , G1 to G3.

Sun protection function

- The sun protection function only functions in auto mode. It is only triggered above the intermediate position.
- If the set light threshold is exceeded, the covering moves to the taught intermediate position. If the light threshold is not achieved it returns to the upper final position.
- Semi-automatic function (awnings only): Semi-automatic mode is active if the sun protection function has been assigned to a channel and a run key has been pressed. At sunrise or sunset, this mode is deactivated and the awning moves into its upper final position.
- Blocking times with sun protection function (only with LUXOR 414)
The purpose of this function is to stop a covering moving out too early, or in too late.
 1. Morning blocking time: The covering does not move before the programmed time.
 2. Evening blocking time: The covering moves up no later than the programmed time, although the set light threshold has been exceeded.

Twilight function C (only with LUXOR 414)

- If the set threshold value is not achieved for a certain length of time, the covering moves to the lower final position.
- The twilight function is permitted only after 12:00 hrs and only once per day.
- The covering can only be moved back up via a switching time or manually.
- Turns are not performed if the blinds are in operation.
- The sun protection function only functions in auto mode.
- Blocking times with twilight function (only with LUXOR 414)
The morning blocking time is irrelevant for the twilight function.
The evening blocking time means that the covering does not move before the programmed time.

Wind function \leftrightarrow

- Exceeding the set threshold value results in movement to upper final position and underrunning to the original position.
- The covering cannot be controlled manually while the wind function is active (indicated by a jerk).

Rain function

- The covering is immediately retracted if it starts to rain.
The covering now no longer moves out automatically. However, it can be operated manually.
- The rain function remains active for a defined time after the rain stops. The covering is then returned to its original position.

Frost function (awnings only)

- In the event of frost ($<3^{\circ}\text{C}$), the awning is not moved out.
- Automatic run is blocked, although manual movement is possible.
- When the frost alarm is triggered, the covering is moved to its original position.

Temperature function G

- If the set temperature threshold is exceeded the channels run to the lower final position provided the channel is in automatic mode.
- If the set temperature is not achieved, it returns to the original position unless a new position is not approached by sending a command to LUXOR 414.

12.0 Mains power failure

- Taught-in run positions and channel assignments are saved.
- If there is a power cut during a run, the last automatic run command is completed when power is restored. Manual runs are not repeated.
- When power is restored, a review is carried out on LUXOR 414 and the covering moved to the corresponding position.
If sun protection is active, it is reactivated.
The covering remains in its current position.

13.0 Diode module (907 0 367)

- The DOWN function is achieved by connecting diode module 907 0 367 in series (any installation direction) with a push button.
- The UP function is achieved by switching a push button parallel to this series connection (without diode module).

14.0 Technical data

Operating voltage:	230 V AC, + 10 % / - 15 %
Mains frequency:	50 Hz
Power consumption:	4 VA
Push button / switch connecting cable:	230 V phase-independent
Push button / switch cable length:	up to 100 m (NYM, H05/H07, NYIF)
2-wire connection for COM:	Any cross-section / max. length 100 m
Permissible ambient temperature:	-10 °C... +50 °C
Protection class:	II in accordance with EN 60730-1 for designated installation
Protection rating:	IP 20 in accordance with EN 60529
Switching outputs:	6 A at 250 V AC, $\cos \varphi = 1$
Mode of operation:	RS Type 1B in accordance with EN 60730-1
Runtime:	max. 3 min
Slip correction:	20 s
Pollution degree:	2

Please refer to the LUXOR manual for detailed functional descriptions at www.theben.de.

15.0 What happens if ...

	Cause	Remedy
Does the covering always jerk when it reaches its upper final position?	The runtime has not been taught-in.	Teach-in runtime (see chapter 6.0)
With group movements, do the coverings behave differently?	Different covers such as shutters and blinds are mixed in a group, or a part of a group's channels are in "Learning the run positions".	Only use one type of covering in a group; apply long key-stroke on the group run sensor or set all channels in a group to "Learning runpositions".
After a mains power failure, are the coverings in the wrong position?	The coverings are not in the same phase as the LUXOR device.	- Connect the device to be controlled and its covering to the same phase. - Move the coverings to the upper final position by hand. If the covering stops, briefly press the DOWN push button. The covering can now be moved UP again for 20 seconds. Repeat the procedure until the covering is in its upper final position.
Are the coverings not in the upper final position during start-up?		- Move the coverings to the upper final position by hand. If the covering stops, briefly press the DOWN push button. The covering can now be moved UP again for 20 seconds. Repeat the procedure until the covering is in its upper final position.
After installation, the covering cannot be moved upwards or does it stop its run in the intermediate position and does it jerk briefly in this position?	When the LUXOR device is started-up, the covering is not in its upper final position. No runtime has been taught-in.	Teach-in runtime first (see chapter 6.0)
Do all coverings in a group have the same runtime, although they are different lengths?	The runtime has been taught-in to already formed groups via the group key.	Teach-in the channels separately before forming the groups.
When teaching-in the runtimes or travel positions, is the time is not accepted by all channels in a group?	Not all selector switches were set to "learn".	Set all selector switches in a group to "learn".
Is positioning incorrect for the switching times (the % value does not match the position of the cover)?	The runtime has not been taught-in or has not been taught-in correctly.	Teach-in correct runtime (see chapter 6.0)
Does the LED set flash slowly in auto mode.	- Short-circuit on the COM bus - Polarity of the COM connections on the device is reversed	Check connection.
Is the intermediate position incorrect?	Motor continues to run	Run the covering to the upper final position, wait 20 seconds before continuing.
Does the LED set flash rapidly?	During a programming process another programming process was attempted to be activated, or a selector switch was in program mode when power was restored.	Set all the selector switches on the relevant devices to P1 to P3 or auto.
Can it be moved down when teaching-in ventilation position/ turn/fabric tightening?	No negative ventilation position/turn/fabric tightening can be taught in.	Only teach-in in UP direction.
Does a new fabric tightening has to be taught in for the awning?	The fabric tightening should be taught in from the lower final position. However, automatic fabric tightening is performed.	Set selector switch to program 4 and run the covering to the lower final position. You can now start the teach-in process.
Do the blinds not tuun in the lower final position?	Function required for the blinds to be able to close during the night via automatic run command.	Double-click on the UP switch in the lower final position or program the switching time position to 99.5 % instead of 100 %.

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