



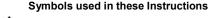
Comfort Control TAC Operating Instructions

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Concerning these Instructions

Before using the TAC Comfort Control please read these instructions carefully and fully! Pay special
attention to the general safety instructions and the safety symbols with respective notes in the text.





This symbol warns of risk of injury.



This symbol warns of risk of injury from electrocution.

The structure of these instructions corresponds to a procedure by which you can gain access
to the respective screens and sub-menus from the start screen. If you wish to access a specific sub-menu you have to ,pass through' the respective super-ordinate screens. For rapid access to specific functions, you can use the option ,Rapid Access' in the start screen. As a
support, the chapters for screens in these instructions are consecutively numbered in
,hierarchical' form.

Safety Instructions



Caution! The mains voltage must be completely disconnected before any installation work is carried out on the ventilation unit. The control element has protective insulation pursuant to Protection Class II, protective earth connection is not required!



Attention! Electric connections must only be executed by authorized staff pursuant current VDE 0100 regulations and requirements!



Attention! This unit must not be operated by children and persons who are not able to handle it safely on account of physical, sensoric or mental disability or on account of their inexperience or lack of know-how. Children should be supervised to ensure they do not play with the unit.



Attention! In the case of installation in connection with heat systems dependent on ambient air, the ventilation units must be separated from the mains voltage via a safety device when deactivated.

Technical Data

Supply voltage: Protection Class: 100-240 VAC 50-60 Hz

IP 22

Disposal



Packaging must be sorted before disposal. If you wish to dispose of the device, you must observe respective regulations. Information is available from your community waste management center.

Operating Instructions for the User of a TAC Fan Control

These operating instructions are primarily intended for the user of a TAC control. We assume that the control as well as all ventilation components have been installed and commissioned by a qualified specialist.

We also assume that the user is aware which ventilation units or components have been installed and where and how these are connected to the control unit.

Attention: You require a configuration code for your control.

Via the ,Information screen' you can find out whether your control unit has a configuration code and which configuration code your control unit has. This code contains all information for smooth installation, commissioning of the control unit and all information concerning the ventilation systems connected and their configuration. The configuration code is individual and can only be taken over and used by other installations in very seldom cases.

Please contact your ventilation planner, if you have not received a configuration code.

At www.lunos.de you will find assistance for preparing a configuration code yourself.

Using a TAC Fan Control for Ventilation Systems

A TAC control (Touch-Air-Comfort) is a state of the art control unit which can provide almost constant air conditioning in the respective area of application without user intervention. Fully automatic functions for humidity (and optionally CO_2 -) regulation combined with numerous comfort functions and time controls enable simple, extremely effective ventilation control which requires no manual intervention on the part of the user.

For example, a sensor-based room control can be activated which controls the respective fans and regulates air supply based on room temperature and room humidity (or optionally based on CO_2 values). All parameters required are recorded and processed accordingly. The TAC controls or regulates the air volume flow required automatically and adjusts it to existing conditions. The correct volume flow is selected automatically in order to avoid increased values (such as humidity or CO_2). You can choose which fan should react to which values to provide the user with maximum individualization and comfort. In addition, certain functions of the fan can be automatically activated or deactivated via time function. For example, it is possible to select different fan programs depending on the time of day. At night, for example you can avoid noise developments or unnecessary ventilation while the user is absent (working time or vacation). All functions are structured to ensure the volume flow of fresh air required is ensured and that minimum energy consumption is achieved at all times.

It is of course possible to intervene manually in the control of the fans connected at any time. This can be done directly via TAC or via switches which can be connected optionally.

You can also connect light control (or a total of three additional switches or buttons) e.g. of a bathroom to the TAC. When entering a room, for example, and actuating a light switch, a ventilation system can be activated in order to remove e.g. odors or humidity faster (or to switch off the ventilation system).

LUNOS has already configured the most important functions for the user and has summarized these in a rapid menu. It is, for example, possible to execute various rapid accesses to fans very easily. When leaving the apartment the air capacity can be reduced. With the aid of a timer it is very easy to ensure that the ventilation system functions fully again before the planned return of the user. You can also select short-term breaks (e.g. for a spontaneous siesta) or the party mode if there are many people in the apartment.

In addition, you can also activate a summer bypass (summer ventilation). In this type of fan control, the function of heat recovery (for units with heat recovery) is deactivated, and the room temperature is regulated with the aid of outside air. This means you can have hot or cold air flow into the apartment, as required.

The user of a TAC has a variety of opportunities at his fingertips to ensure his own, individual ideal functioning of the ventilation system without having to intervene manually.

The E Ink Display

The display used is a so-called E lnk Display. You may be familiar with this display if you have seen or use E-book readers, which are becoming more and more popular.

The great benefit of this display is its extremely low power consumption compared to conventional LCD displays and its outstandingly clear display of symbols and text.

Savings potential from low power consumption can quickly run into double Euro figures and is of course also friendly to our environment.

LUNOS has decided to do without lighting for the display. The display can still be easily read from all sides and from almost every angle even without lighting.

The energy saving impact also has a minor 'disadvantage'. As soon as the display is frequently updated within a brief period (e.g. when the TAC is configured), so-called 'ghostings' (shadow images) may appear. You can then see the previous image in a slightly gleaming form behind the current screen. However, the TAC also has an algorithm which ensures that such ghostings disappear after approx. 60 seconds. If you look at the screen for a longer period you will notice that after a certain time the writing is extremely clear without any ghostings.

In normal operation you will not see any ghostings.

Control Keys

There are four control keys on the TAC (refer to III. Chapter ,1. Start Screen—permanent Display'). You can complete all setting options via these keys. The symbols and allocation of the keys is similar to the keys you are familiar with in devices used in the household and electronic entertainment field:

- Λ Key "up", via this key you can move ,upwards' within a screen or you can increase numerical quantities, in the start screen you can move to the menu ,Settings'.
- V Key "down", via this key you can move ,downwards' within a screen or reduce numerical quantities, in the start screen you can move to the menus for outlets
- OK via "OK" you either confirm that you wish to process the screen line selected or that the change executed is complete, in the start screen you can move to "Rapid access'
- Use this key you move to the previous, super-ordinate screen in hierarchical terms, this is not occupied in the start screen

Note:

In the bottom right hand corner of the screen you are shown the next possible key to be operated as assistance.

Application

The TAC comfort control serves to enable common triggering of ventilation units of the company LUNOS with different functionality:

- Ventilation with heat recovery
- Exhaust air
- Supply air

The TAC is fitted with a standard humidity/temperature sensor. A CO₂ sensor can also be purchased as an optional accessory.

Important:

The TAC has three inlets and three outlets. If required, you can connect switches directly to the inlets (contact voltage range 100 to 240 VAC) and allocate the outlets via configuration software. In combination with the universal control 5/UNI, you can connect keys to the 5/UNI.

You can trigger only **one** ventilation unit type respectively via the outlets. The basic number of possible devices which can be connected per outlet is displayed in the adjacent table.

Which and how many devices are to be connected, and in which manner, is normally defined by planning and the respective configuration code.

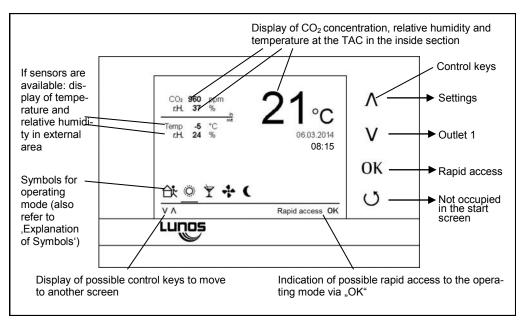
Fan type	Connection	Number of units
e²	Directly to 2 outlets	2 Pairs
	via 1 x 5/UNI to one outlet	3 Pairs with power supply 18 W or 5 Pairs with power supply 60 W
e ^{go}	Directly to 2 outlets	2 units in parallel
	via 1 x 5/UNI to one outlet	3 units with power supply 18 W or 5 units with power supply 60 W
RA 15-60	Directly to 1 outlet	1 unit
	via 1 x 5/UNI to one outlet	1 unit with power supply 18 W or 2 units with power supply 60 W
Silvento 30-60 FK	Directly to 1 outlet	1 unit
Silvento 30/60	with 1 x 5/ACM to 1 outlet	1 unit
AB 30/60	with 1 x 5/ACM to 1 outlet	1 unit

Connection of several universal controls 5/UNI or additional modules 5/ACM to one outlet is possible.

1. Start Screen—permanent Display

On the permanently displayed start screen you are provided with all information required concerning operating mode and ambient conditions of your LUNOS ventilation system in brief form. The following are displayed (provided respective sensors are connected):

- CO₂ concentrations, relative humidity and the temperature of room air in the AC section
- Temperature and relative humidity of outside air (provided sensors are connected in the external
 area)
- Current date and time
- The respective active operating mode of the ventilation system from the options: Absent; summer ventilation; party mode; intensive ventilation; night reduction (the symbol of the respective operating mode is underlined when activated. If you access one of these symbols via the function ,Rapid Access' it is highlighted in black and the respective verbal sign is displayed in the bottom right hand corner of the screen. You can then activate this function via ,OK'. If there is no activity, ,Rapid Access OK' appears in this position and you can activate one of the options specified via this function)



2. Settings

Proceed as described for navigation in the chapter ,Control Keys', the type of navigation is always the same:

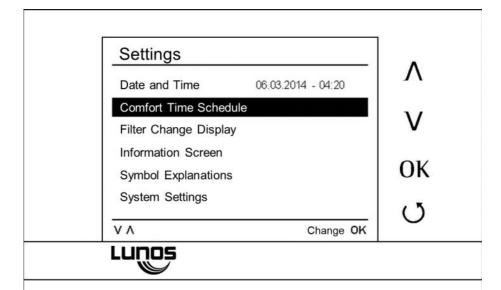
Via the key "A" you move from the start screen to the menu ,Settings'. If you want to change one of the settings, press the key ,OK' and then you can select the respective setting via the key " A" and "V" and move to the respective screen via ,OK'. Via "U" you move back to the super-ordinate menu ,Settings'.

If you have a so-called configuration code as user or installer of the TAC (three blocks respectively with five numbers and/or letters) and if this has been entered into the TAC, the control has already been configured and is operable. Manual settings are normally not required, but can be executed at any time. Only use manual settings if the ventilation systems connected do not function as required or if you wish to change e.g. thresholds of the sensor control.

The settings made in the configuration code are normally sufficient and are ideal settings for your individual needs.

If you are not satisfied with manually actuated settings and are not able to restore the required functions, you can reset to factory settings, i.e. to the settings of the original configuration code at any time via ,Settings', or use the mechanical ,reset' button on the bottom side of the TAC.

If you use the ,reset' button, your previously stored manual changes remain unaffected (except for the rapid access functions).



2.1. Setting the Date and Time

After connecting the TAC to the mains supply, the correct time and current date should normally be set (German summer or winter time).

It is only necessary to move to this menu if you are in another time zone or the time and/or date have been changed (by mistake).

If regulation of the ventilation system is via sensor control pursuant to humidity/temperature value, the ventilation system operates in summer mode during the months marked for summer reduction and in winter mode for other months.

In winter mode, during the cold season and the transition period, this prevents excessive humidity in the apartment and thus prevents structural damage and mold. The TAC controls automatically and ensures ideal comfort and a cozy feeling via continuous adjustment of the ventilation system to the room air humidity and room temperature.

In summer mode, during the summer months, excessive ventilation is not useful on account of an increase in external air humidity. If the TAC records an increased room air humidity during this period, it tries to discharge the humidity by adjusting the ventilation stages. If the room air humidity then decreases, the ventilation system is regulated in accordance with the humidity limits set (3.3 mode outlet 1). If the room humidity does not decrease, the TAC switches the ventilation systems back to the starting stage. This process prevents continuous ventilation at higher stages during the summers months on account of an increase in external air humidity.

Date	28.01.2014	,
Time	09:18	1
Time mode	24 hours	V
Summer reduction	April O●●●●O Sept.	Ol
V A	Change OK	Ċ

2.2. Comfort Time Schedule

Via the key " Λ " or "V" you move to the respective line to be changed, and via "OK' you open the lines for the change process. Via " Λ " and "V" you can then execute respective changes and confirm such changes via "OK".

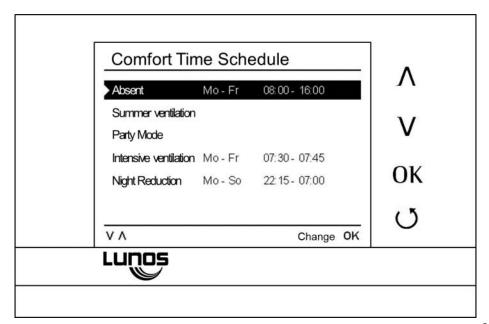
Via the key "O" you return to the screen "Settings".

An individual comfort time schedule gives you the opportunity of automatically executing specific fan functions via time control in a weekly/daily setting.

In the standard version, for example, the comfort function ,Night reduction' is always selected for the night (weekdays and at weekends) between 8 p.m. and 8 a.m. This means that during the night all ventilation systems connected change automatically to the lowest possible fan stage (this can mean either a low flow rate or complete deactivation). The lowest respective fan stage can be configured in the respective menu of the outlet involved at the TAC for the respective ventilation system (lowest selectable or displayed flow rates).

You can of course also adjust the comfort functions and time schedules available to your own wishes and needs

Attention: The outlets must be configured with the respective comfort function!



2.3. Filter Change Display

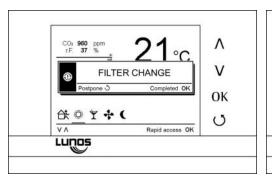
The TAC has an automatic filter change display. When a filter change or filter cleaning is required, a clearly visible message appears on the screen for the user. The time after which the filters of respective ventilation systems have to be cleaned or changed depends on their respective use. A filter in a ventilation system with a high flow rate and frequent use will normally have to be cleaned/changed more frequently than a filter in a ventilation system which is only used sporadically.

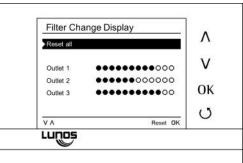
The filter change display is oriented towards the system which is used most frequently. All filters of systems connected should be cleaned/changed at this time, even if such action may not be essential for a specific ventilation system.—Your health will thank you for your action.

On completion of a filter change, you can reset the filter change display via this menu point. You can do this for all or for individual outlets of the TAC.

,OK' you open the lines for the change process. Via $_{n}\Lambda$ " and $_{n}V$ " you can then execute respective changes and confirm such changes via $_{n}OK$ ".

Via the key "U" you return to the screen "Settings".





2.4. Information Screen

In this display you will find information on the hardware installed in the control and on the status of firmware.

If any difficulties arise with your TAC, such information is essential for the service technician.

Based on the firmware installed (a firmware version number is displayed), you can find out whether an updated version of a firmware is available. To do this, simply go to www.lunos.de and look in the section of TAC Control to check which version of firmware is currently available as a download. If necessary, you can download the new firmware and install it in accordance with the instructions provided

When necessary, LUNOS provides new versions of the firmware which sometimes involve program improvements or even include new functions for your ventilation systems.

Please make a note of the firmware version which was installed at the time of delivery or transfer of system so that you can specify this if any questions arise.

Information Screen Software version LunOS 1.1 HW 22 Hardware version Configuration Code 72500 - 72500 - 20500 LUNOS Lüftungstechnik GmbH OK Wilhelmstraße 31, 13593 Berlin Tel:: 030/362 001 0 eMail: info@lunos.de Fax: 030/362 001 89 Web: www.lunos.de VA Back () Lunos

2.5 Explanation of Symbols

Symbols:



Mumidity Protection





Party mode



Intensive ventilation



Anti-freeze



Summer ventilation



Night reduction



Filter change

2.5.1. Explanation of Symbols—Protection Functions



Protection against Humidity:

This symbol appears when humidity in the sensor range of the TAC in the inside area is at an unhealthy high level for a longer period. All fans are then triggered by the TAC automatically to generate a more healthy air condition. It is not possible to avoid protection against humidity since this is an automatic ,safety function'.



Anti-freeze:

If temperatures fall below 8°C in the inside area (and in the sensor area of the TAC), all ventilation units connected are deactivated automatically. It is not possible to restart the ventilation systems. A minimum room temperature of 15 °C must be reached on activation of the anti-freeze mode. All functions are then available again as normal.



Filter change:

Refer to Chapter "Filter Change Display"

2.5.2. Explanation of Symbols—Comfort Functions

Attention: The comfort functions have to be separately configured for the respective outlet at the TAC (refer to Chapter 3.5. "Comfort Functions Outlet 1")



Absence:

Activate this comfort function when you are absent from your residence. This can be during normal working hours or during vacation. Even short-time use of the absence function (e.g. when you go shopping) can have a positive effect on energy consumption in your apartment.

Summer ventilation:



This function enables you to simulate a so-called ,summer bypass'. All fans with heat recovery then have the opportunity of drawing fresh air from outside into the apartment without heat transfer. This function, for example, can be activated at night in the summer months to cool the apartment with outside air, and the reversing time is then extended to one hour.

Party mode:



All ventilation systems connected and accordingly configured switch to the highest volume flow rate. This function can be used in the case of an increase in requirement for fresh air (party).

Night Reduction:

Via this function all ventilation systems connected and accordingly configured switch to the socalled night reduction mode (Quiet mode).

Respective fans change to the lowest possible volume flow rate or are completely deactivated (depending on the configuration of the outlet of the TAC or ventilation systems).

However, protective functions remain active and monitor the room climate.

Manual reduction can be skipped manually.

You can use this function e.g. at night or during the first hours of sleep so that you can get to sleep peacefully.



Intensive ventilation:

This function serves to discharge ,spent' air. We recommend this function be used instead of the normal ,opening of the window'. The fans configured respectively run at maximum available volume flow rate.

Please use this function very ,economically since it requires considerably more energy compared to normal operation (heating energy and electric energy for the fans).

2.6. System Settings

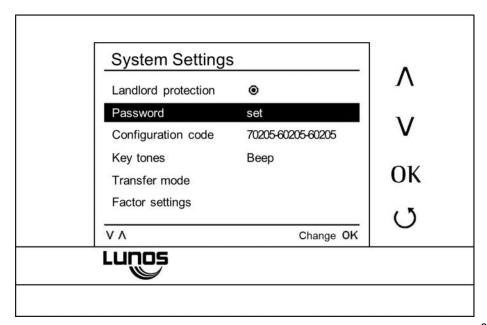
System settings may be required for installation and commissioning of the TAC. In this menu, for example, the so-called configuration code of the TAC can be entered.

If landlord protection is activated, the menu scope is reduced and, as a result, also the setting options available. This ensures minimum ventilation defined by the landlord.

If you activate the landlord protection you will be requested to enter a four-digit password. You will need this for subsequent deactivation.

If the password is no longer available, please contact us.

Note: If you are not satisfied with manually actuated settings and are not able to restore the required functions, you can reset to factory settings, i.e. to the settings of the original configuration code at any time via ,Settings', or use the mechanical ,Reset' button on the bottom side of the TAC If you use the ,Reset' button, your previously stored manual changes remain unaffected (except for the rapid access functions).



3. Outlet 1

The outlets of TAC available are the connection options of the ventilation systems (or optionally additional controls) at the TAC. Each outlet is allocated different ventilation systems with the respective configuration code.

You also have the option of allocating different rooms to the outlets with ventilation systems. This makes it easier for subsequent use to allocate the correct functions to the correct respective rooms.

A fan stage can be selected manually in this menu. The volume flow rate selected is reset automatically after one hour and serves only for commissioning purposes or brief switching of the fans.

For many fans you also have the option of selecting different, Fan stages'. Such fan stages (different volume flow rates) are then used subsequently by the comfort functions of the TAC. For example, you can set whether it should be possible to deactivate specific fans or whether a smaller volume flow rate should apply continuously (basic ventilation).

To use the comfort functions it is necessary to configure the allocation status of outlets with the comfort functions.

Stage	●00	71
Program	OFF/15/30/38	1/
Mode	Automatic sensor	V
Room allocation	Child 1, Child 2,	01
Comfort functions	A. (i) ♥	Ok
Dependencies	Inlet 01,	()
V Λ Select program	Change OK	\circ

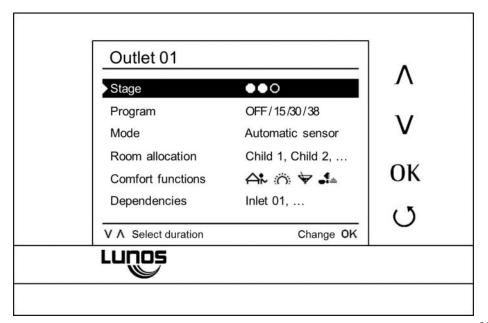
3.1. Screen Line "Stage"

In the screen line ,Stage' of the screen ,Outlet 1' you can manually switch the fan stages in accordance with the program displayed beneath using the keys "\nambda" and "V". You confirm your action via "OK".

Attention:

The fans stage selected is only active for one hour. After this time the comfort functions, sensor control and manual operation are re-activated.

This function serves only for commissioning or brief operation of the fans.

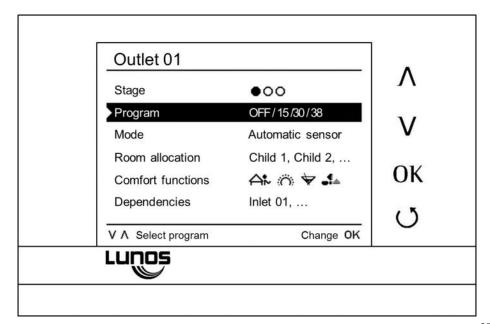


3.2. Screen Line "Program"

In the screen line ,Program' you can select between several possible programs for the fan type connected to this respective outlet.

If the number of stages changes by way of changing the program, the screen line ,Stage' is adjusted automatically.

In this menu, please select the volume flow rates of the fans which will subsequently be available. The lowest possible fan stage is at the same time the lowest possible (switchable) fan stage. This means, for example, that the fan can be switched off at the lowest term 'OFF'. If the lowest fan stage is, for example, 15 m³/h, you cannot completely switch off the fan (also not for night rest). The minimum rate is then 15 m³/h



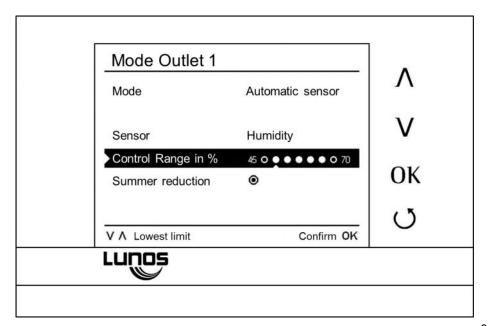
3.3. Mode Outlet 1

Via this screen you can change the mode of triggering the fan connected to this outlet. In the line "Mode' you can choose between "Automatic Sensor" , "Automatic Timing" and "Manual", and in the line "Sensor" you can select between different variables (Humidity, CO₂ (if connected)) and can then set the ,'Control Range' for these variables etc. in the following lines.

In this menu, please select in which way the ventilation systems connected are to be triggered. Via "Automatic Sensor" the fans are triggered fully automatically via the adjustable control ranges. The lowest value specifies when the fan is to change to a higher level for the first time, while the higher value specifies that the fan will achieve the maximum volume flow rate available at this sensor value. Linear control is applied between the respective values.

If control is made via Humidity **and** CO₂, control is made in accordance with the level with the higher ventilation requirement.

You should only change the preset values if you are sure you must change these values!



3.4. Room Allocation

By actuating the key "OK" in the line "Room Allocation" (in this example shown as "Child 1, Child 2, Bedroom") you access a screen via which you can change this description. You can delete these via "Delete' and can select one or more of these terms provided via " Λ " and "V" and confirm your selection via "OK". You can also number rooms if you require more, e.g. "Bathroom 1" or "Bathroom 2". You can leave this sub-menu via "V".

This menus provides a better overview of fan control. Using a respective room allocation, specific rooms can be allocated to the outlets and the respective fans connected at that outlet. This means that it is easily possible, without any know-how of the fans connected, to specifically configure or trigger devices of a specific room.

The allocation of room names does not have any impact on ventilation behavior.

Delete	Kitchen	Fitness	Guest	1
Save	Bath	Living	HAR	١,
	WC	Bedroom 1	Level	\ \
	Crafts	Dining	UF	0
	Cellar	Work	GF	U
2	Sauna	Child 2	BF	(
V A		Cor	nfirm OK	`

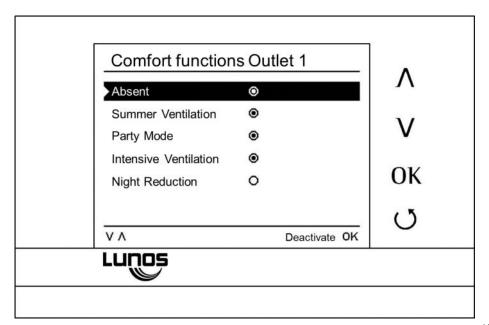
3.5. Configuration Outlet 1

This menu must be configured if you wish to adjust the comfort functions available to your needs. All symbols of comfort functions are highlighted as standard in this menu. This means that the outlet under which this menu was selected participates in all comfort functions.

For example, it may be that you do not want a specific room (e.g. Child Room) to participate in the ,Party Mode' (or any other function).

In this case, please remove the symbol for ,Party Mode' from this menu. The Party function can of course still be executed, but the respective outlet involved (in this case, Child Room) will no longer be included in this function.

Note: If you have connected several rooms to one outlet, the change refers to fan operation in all these rooms.

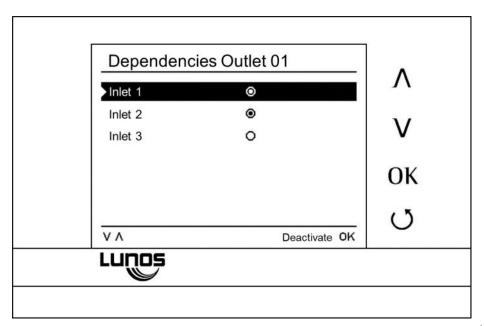


3.6. Dependencies Outlet 1

Via this screen you can change and adjust the inlets allocated to ,Outlet 1'. Via ,\(\Lambda'\) and ,\(\V'\) you access the respective inlets, and via ,\(\OK'\) you access the screen ,\(\Effect Inlet 1'\). In this way you influence the behavior of the fan devices connected to Outlet 1, if a switch or key is actuated at the respective inlet allocated.

You only need this menu if you have connected additional switches or keys to the inlets of the TAC. Via these switches or keys, for example, functions can be executed manually (e.g. to switch on a fan when you enter the room).

In this menu you can configure which inlet (i.e. which switch/key) should relate to the respective outlet (and therefore also to the respective fan or fans).



3.6.1. Effect Inlet 1

Via these settings you can configure the function of the switch/key connected. You can select between rundown times (the fan continues to run even if the switch has been turned off again), or Inverse Operation (the fan only starts/activates for the duration of the rundown time when the room has been left again).

Stage Supply Air	000	١,٧
Time controlled	•	
Input device	Caliper	V
Rundown time	15 minutes	01
Switch-on delay	120 seconds	Ol
Inverse operation	0	(5
V Λ Select Stage	Confirm OK	

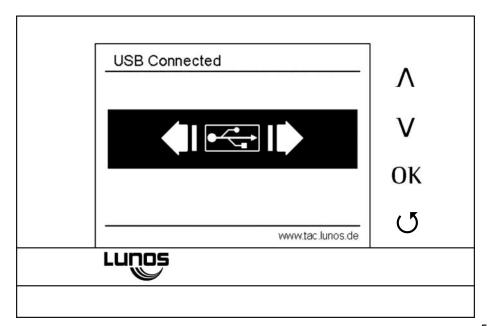
4. Outlet 2; Outlet 3

Adjustments to outlets 2 and 3 are executed analog to those at Inlet 1. Via $_{\text{\tiny N}}$ 0" you return to the start screen.

Each outlet is configured individually. If required, please execute the steps specified for the other outlets.

Connection of the USB Cable

If the USB cable is connected for program updates, this connection is acknowledged via a respective screen display.



Firmware Update

To connect the TAC to the PC you require a USB cable with micro-USB connection (enclosed with the packaging/delivery unit).

Preparation:

- Download Update file from the website <u>www.lunos.de</u>
- 2. Unpack the file (ZIP Archive)

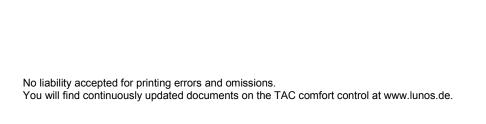
The driver must be installed on the first update. Retrieve the file "usb treiber.bat" and follow the instructions on the screen.

If you experience any problems, observe the instructions for the update included in the ZIP archive.

Execute Update:

- Connect TAC to the PC
- 2. Execute the file "TAC Firmware Updater.exe"
- Start the process by clicking on the button "Firmware Update"
 You will receive confirmation of the successful update. If the TAC does not react after you have
 removed the USB cable, actuate "Reset". This will definitely complete execution of the firmware
 update.

Notes





Germany

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