



## Table of contents

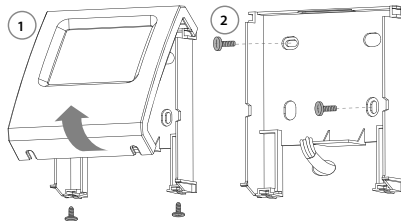
<b>Installation</b> .....	54
<b>Navigation</b> .....	54
<b>Technical data</b> .....	55
<b>First run</b> .....	56
<b>Main screen</b> .....	58
Main menu .....	58
Time .....	59
Date .....	59
Calendar .....	59
Language .....	63
Integrated units .....	64
Reset .....	64
Antifreeze .....	65
Leading sensor .....	65
Controller lock .....	66
External gas detector .....	66
Information menu .....	67
BMS .....	67
<b>LEO fan heaters</b> .....	68
<b>LEO EL fan heaters</b> .....	72
<b>KM mixing chambers</b> .....	76
<b>LEO D destratifiers</b> .....	82
<b>ROBUR gas heaters</b> .....	84
<b>ROBUR mixing chambers</b> .....	86
<b>ELiS air curtains</b> .....	90
<b>ELiS DUO air curtain-fan heater combo units</b> .....	92
<b>OXeN heat recovery units</b> .....	96
<b>OXeN EL heat recovery units</b> .....	100
<b>Alarms</b> .....	103

## Installation









T-box controller has a built-in sensor for measuring air temperature in the room. To ensure proper measurements, the controller should be installed at a height of approx. 1.5 m above the ground in a place with good air circulation. Do not place it near heat sources, lighting, air inlets, windows and door openings, etc.

If temperature sensor was chosen in a T-Box menu as "installed in unit", T-box controller can be mounted out of area i.e. technical room.

**The passcode to change parameters is 2014**

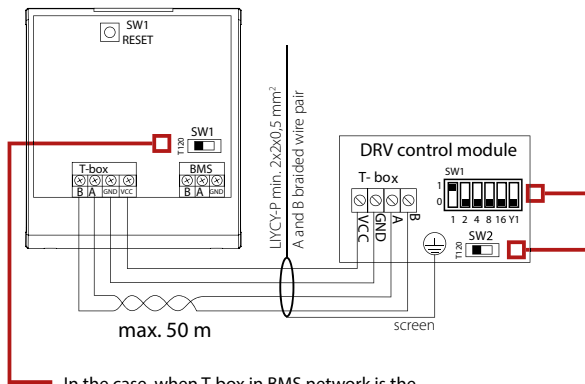


## Navigation

-  return to previous screen with save of changes
-  return to previous screen without save of changes
-   menu navigation
-   change of parameter value
-   change of unit group

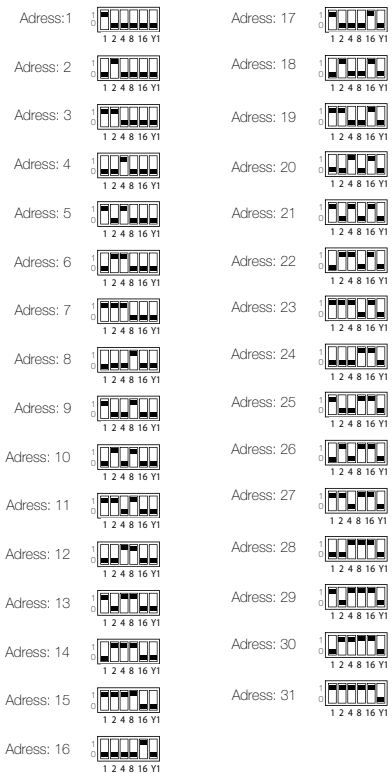
# Technical data

Name	Description
Power supply	24 VDC
Way of control	touch screen
Temperature adjustment range	+5 ÷ +45°C
Operating temperature range	0 ÷ +60°C
Temperature sensor	built-in
Protection degree	IP20
Installation	on the wall
Casing	ABS plastic, RAL 9003
Max. number of connected units	31
Dimensions (HxWxD)	130 x 115 x 35 mm



In the case, when T-box in BMS network is the last device, SW1 switch should be set in T120 position.

## DRV - SW1 ADDRESS SETTING



## DRV - SW2 ADDRESS SETTING

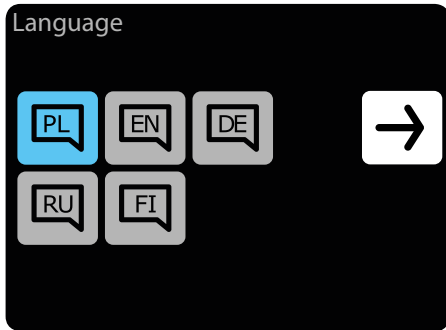
Last DRV  
in line




Others DRV  
in line

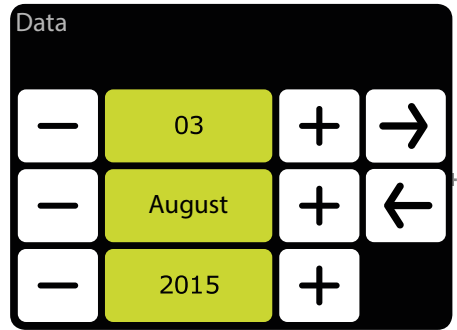


# First run

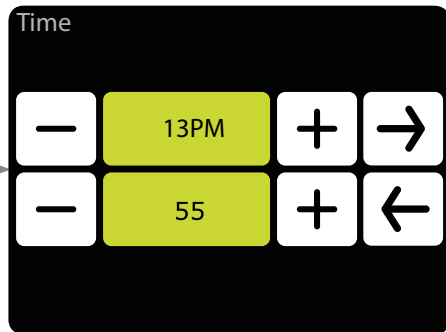


Selection of language

 active language




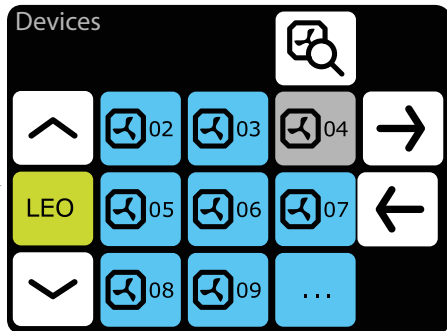
Setting of date



Setting of time



 Searching of connected units.



- |                               |  |
|-------------------------------|--|
| <b>LEO</b> group of devices   | <b>08</b> device no 8 in LEO group             |
| <b>LEO</b> water heater       | <b>KM</b> water heater with mixing chamber     |
| <b>ROBUR</b> gas heater       | <b>ROBUR KM</b> gas heater with mixing chamber |
| <b>LEO EL</b> electric heater | <b>DUO</b> air curtain-fan heater combo unit   |
| <b>LEO D</b> destratificator  | <b>ELIS</b> air curtain                        |
| <b>OXeN</b> ventilation unit  |  |

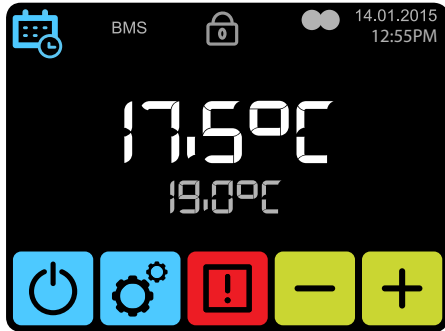
Verify if all units have been found. If not, check:


- correct connection of communication signal  
A-A, B-B,
- power supply of the unit,
- correct setting of addresses, each unit must have different address,
- if in the last unit dip-switch SW2 is set in T120 position.




- +** Setting of desired temperature.


## Main screen





 **long press** turn on/off of the controller

 **long press** main menu  
**short press** units menu


 alarms


 setting of desired temperature


 set temperature


 measured temperature


 date, time

 settings lock active

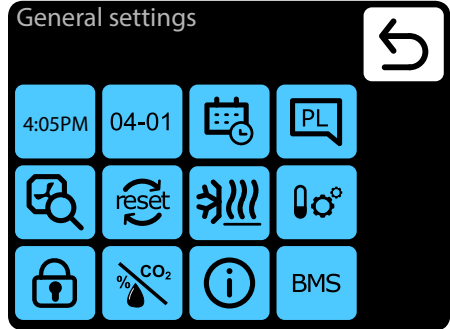
 BMS BMS mode active

 calendar active


 calendar active - settings forced


 icon informs that the OXeN dampers position is changing, fan are stopped


## long press Main menu




**Enter to the menu after entering the password: 2014**


 time setting


 date setting


 calendar

 language selection

 integrated units

 restore factory settings


 antifreeze

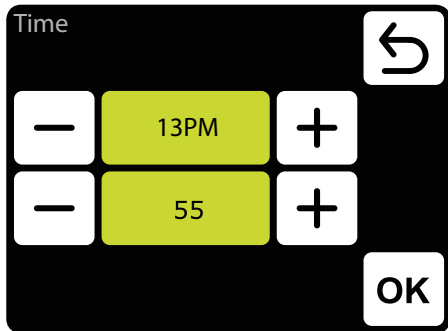
 selection of leading sensor

 controller lock

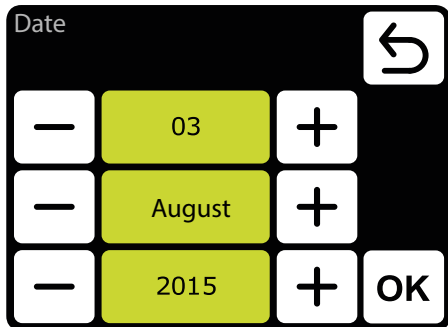
 external gas detector settings

 hardware version

 BMS settings



Setting of time



Setting of date

- For each day you can set up to 20 on/off events,
- Start time of new event is also the end time of previous event,
- For each event you can set any temperature for units, in the range of 5 – 45°C,
- For each event you can set for KM an air flow and dampers opening degree, for OXeN an air flow,
- Events for each day can be set individually or can be copied from day, which was already set.

Activation of calendar is signaled on main screen via following icons:



calendar active – SYSTEM ON



calendar active – SYSTEM OFF



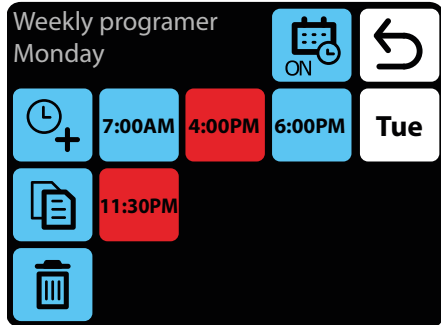
calendar active – settings forced.


There were ad hoc set other parameters than the settings programmed in the calendar:


- desired temperature,
- air flow for OXeN,
- air flow or dampers opening degree for KM,
- system were OFF and was turned on (to turn on the system press and hold for 2 s the calendar icon on main screen),
- system were ON and was turned off (to turn off the system press and hold for 2 s the calendar icon on main screen).


Ad hoc settings stays as long as time of current event in calendar. With start of next event, units will operate according to programmed settings.


## Calendar





 activation/deactivation of calendar


 adding the event

 copying events on the following days

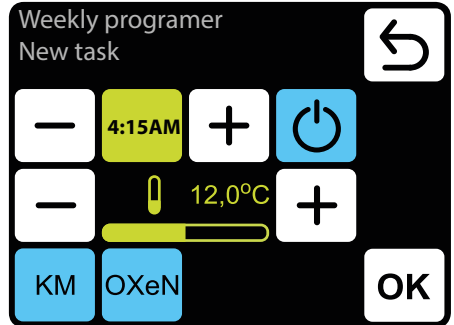
 removing the events

 moving to the next day

 event – system ON

 event – system OFF

## Calendar – Adding the ON event



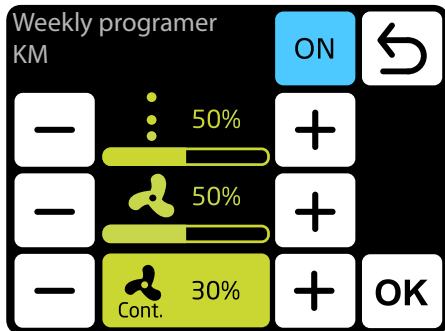
In given example SYSTEM will be turned on at 6:15 and the units will maintain temp. 12°C.

SYSTEM WILL OPERATE USING CURRENT SETTINGS UNTIL NEW EVENT WILL BE SET.

KM – additional settings for KM group

OXeN – additional settings for OXeN group



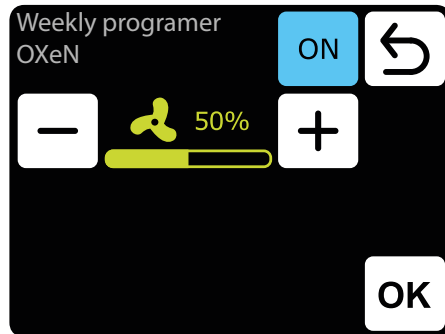


For KM it is possible to set an air flow and dampers opening degree in current event.



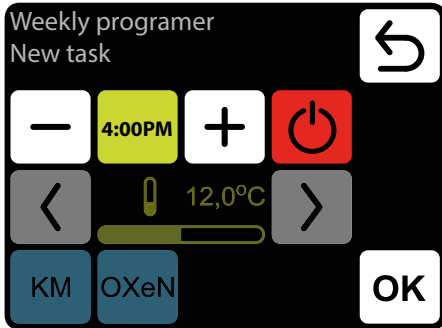
Cont.

When the dampers are closed (no ventilation), it is possible to select the operating mode of the fan after reaching desired temperature. Fan can operate continuously or be turned off.



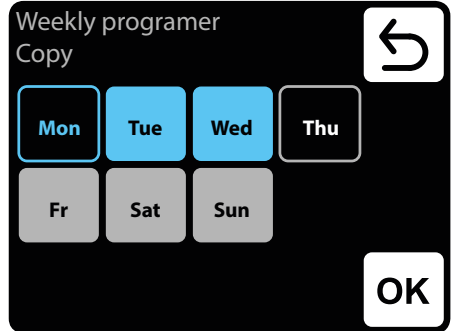
For OXeN it is possible to set an air flow in current event.

## Calendar – Adding the OFF event



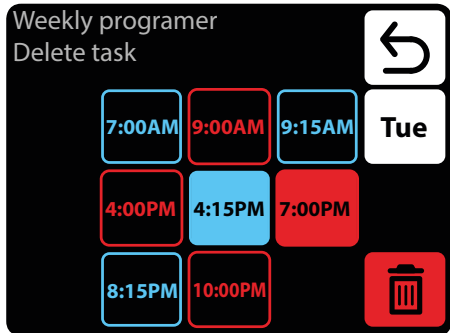
In given example units will be turned off at 16:00.  
SYSTEM WILL BE TURNED OFF UNTIL THE NEXT EVENT,  
ACCORDING TO CALENDAR SETTINGS.

## Calendar – Copying events




- Mon** day from which events will be copied
- Tue** day selected for copying events from PN day
- Wed** day with already programmed operation schedule – you can also copy here the events from PN day
- Thu**
- Fr** day without programmed operation schedule

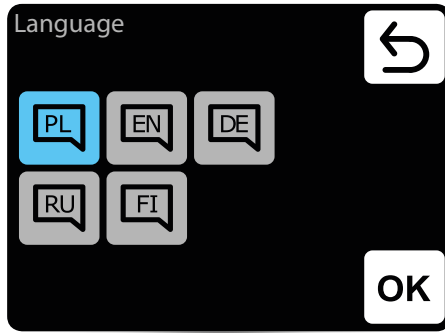
## Calendar – Removing events




  events selected to remove

 confirmation of events removal

## Language



 active language

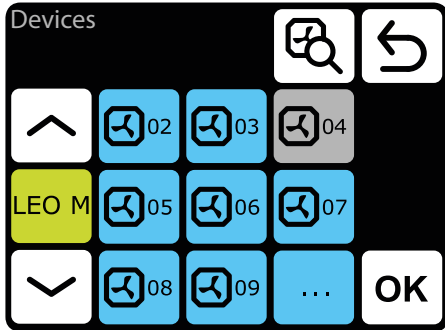
POLSKI

ENGLISH

РУССКИЙ

NEDERLANDS

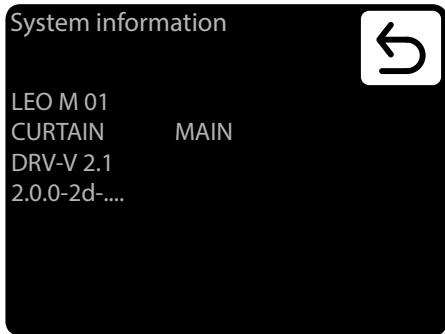
## Integrated units



searching for units integrated with system

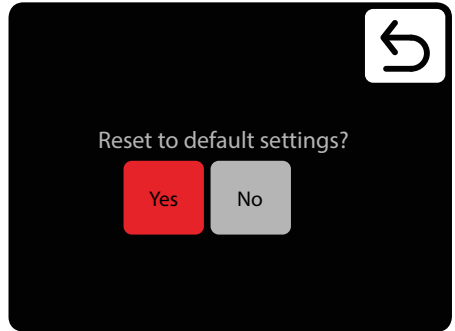
active unit

deactivated unit  
– not operating



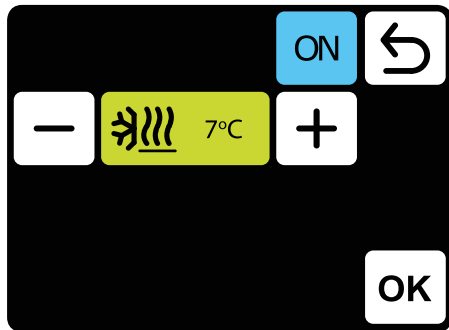
long press displays the DRV software

## Reset



Restore default settings.

## Antifreeze

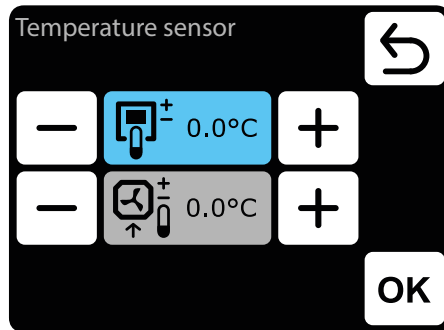


Automatic protection against too low temperature in the room. When temperature in the room drops below desired temperature, LEO and KM units are turned on:


- valves (if installed) opens,
- fan is turned on at 100% of efficiency,
- KM dampers are closed, unit operates using recirculating air.


Units operate until the temperature in the room is higher of 1°C than antifreeze temperature, protecting the hall against too low temperature inside and freeze of heating medium in the exchanger.

## Leading sensor



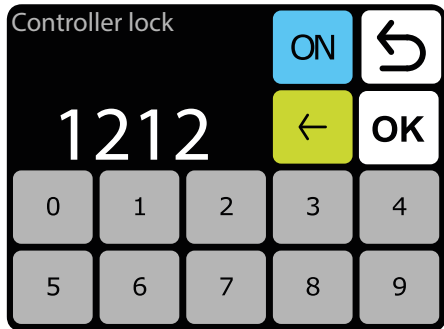
 active temperature sensor

 0.0°C leading sensor is the sensor built in T-box controller

 0.0°C leading sensor is the local sensor. When it is selected, operation of each unit is regulated locally

The correction of sensor measurements is also possible.

## Controller lock



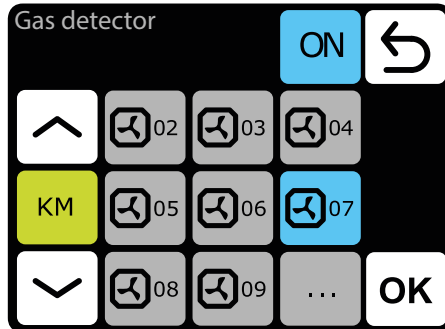
To activate the lock:

1. Set password
2. Confirm OK

Free 4-digit password can be set.

After returning to main screen and 30s of inactivity, controller will be locked automatically.

## External gas detector



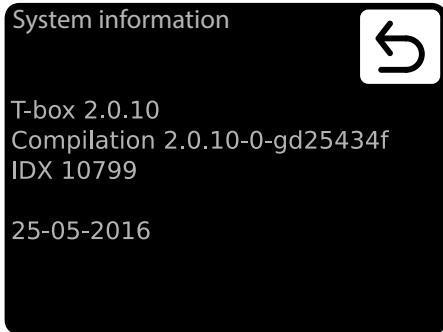
SYSTEM enables cooperation with external detectors of CO<sub>2</sub> sensors, humidity sensors etc. – two-step alarm signal. Air flow setting of KM and OXeN and dampers settings of KM will be automatically changed depending on alarm signal.

Detectors should be connected to one of the DRV KM or DRV OXeN control module.

It should be noted in the menu to which DRV module detectors is connected.

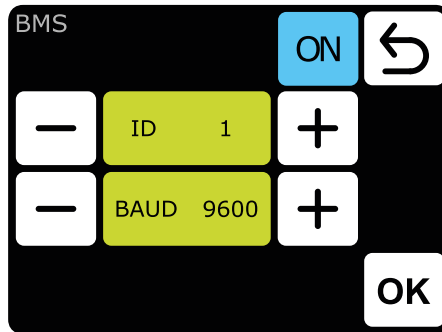
In given example detectors is connected to DRV KM no. 7.

## System information



Basic information about software and hardware version.

## BMS – settings

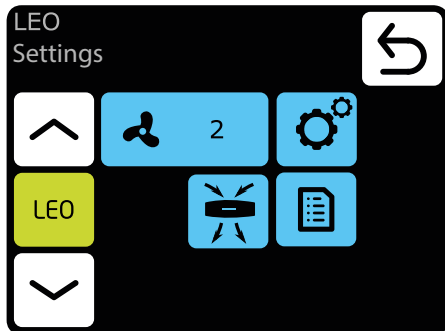



ID – setting unit adress: from 1 to 247


BAUD – setting data transmission speed: from 9600 to 230400 bit/s


Physical layer: Modbus RTU

Protocol: RS485

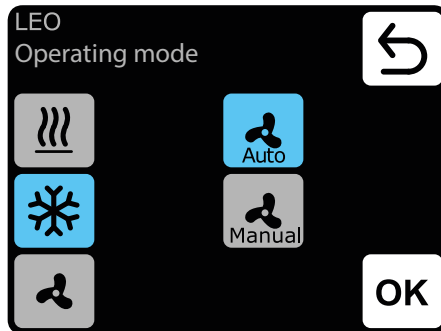



 2 air flow setting – 3-steps


 selection of operating mode


 destratification


 readings





 active operating mode

 heating – heating medium valve is opened when measured temperature is lower than desired temperature

 cooling – heating medium valve is opened when measured temperature is higher than desired temperature

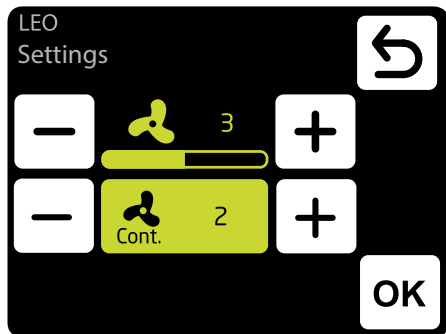
 ventilation – valve is constantly closed, fan operates continuously at selected speed


 Auto – automatic fan regulation depending on desired and measured temperature


 Manual – fan operates with constant, selected speed

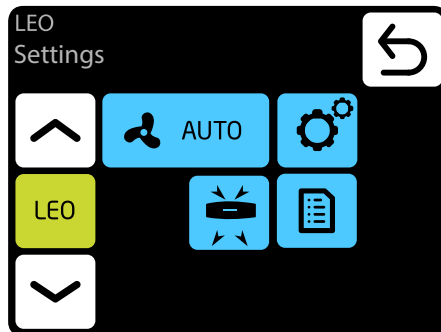


## Air flow setting

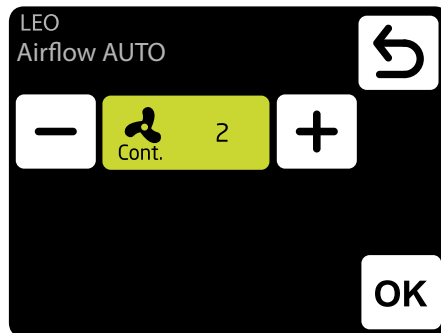



 air flow setting during operation in manual mode

 In MANUAL mode after reaching desired temperature fan can operate continuously on selected step: 1, 2, 3 or be turned off - select OFF.

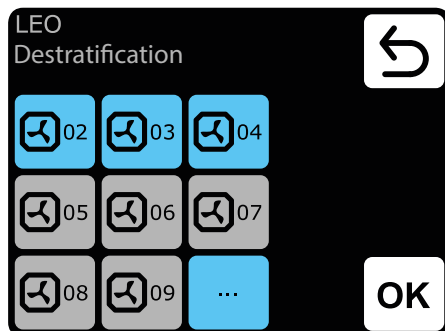
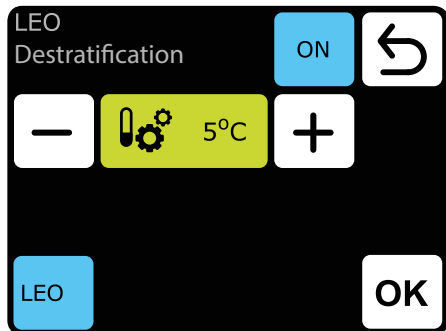



Automatic air flow regulation according to desired and measured temperature, manual air flow regulation is not possible - inactive menu.



 In AUTO mode after reaching desired temperature fan can operate continuously on selected step: 1, 2, 3 or be turned off - select OFF.

## Destratification





 heater activated for operation in destratification mode

LEO heaters can optionally operate in destratification mode (only heaters installed under the ceiling). When the measured temperature drops to the set temperature only fan starts. When the heat under the ceiling is not enough, and the temperature continues to decline (-1°C from the setpoint) valve will open.

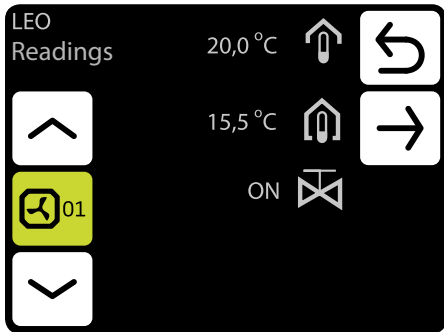
The heater must be equipped with T3 sensor (optional equipment).


 activation of destratification mode


 setting of temperature difference (difference between temperature under the ceiling and temperature in the occupied zone), at which LEO heaters will be turned on

 selection of heaters, which should operate in destratification mode

## Readings








 Temperature under the ceiling

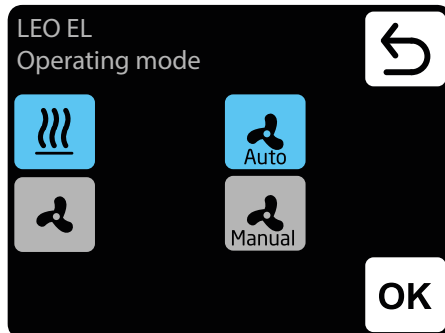
 Temperature in the room






 ON/OFF valve

To read temperatures near the unit, external temperature sensors PT-1000 must be connected to DRV control module.

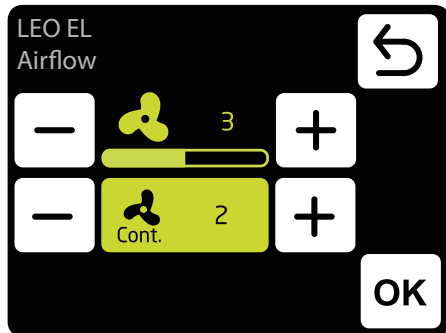



-  air flow setting – 3-steps
-  heating power setting
-  selection of operating mode
-  destratification
-  readings




-  active operating mode
-  heating
  -  automatic fan and heaters power regulation depending on desired and measured temperature
  -  manual regulation of airflow and heaters power
-  ventilation – heaters are OFF, fan operates at selected speed continuously

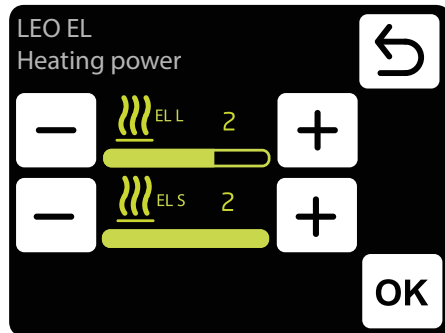
## Airflow





 air flow setting during operation in manual mode

 In MANUAL mode after reaching desired temperature fan can operate continuously on selected step: 1, 2, 3 or be turned off - select OFF.

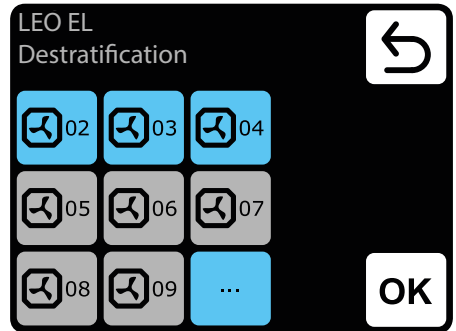
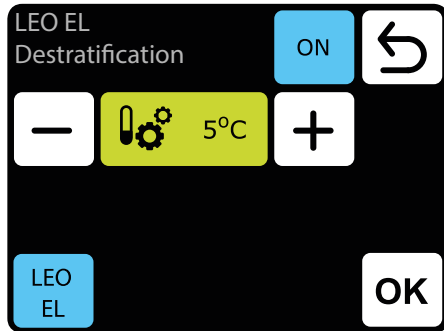
## Heating power




 heating power setting - 3 steps

 heating power setting - 2 steps


## Destratification





 02 heater activated for operation in destratification mode

LEO heaters can optionally operate in destratification mode (only heaters installed under the ceiling). When the measured temperature drops to the set temperature only fan starts. When the heat under the ceiling is not enough, and the temperature continues to decline ( $-1^{\circ}\text{C}$  from the setpoint) heaters are ON.

The heater must be equipped with T3 sensor (optional equipment).


 activation of destratification mode


  $5^{\circ}\text{C}$  setting of temperature difference (difference between temperature under the ceiling and temperature in the occupied zone), at which LEO heaters will be turned on


 selection of heaters, which should operate in destratification mode

## Readings

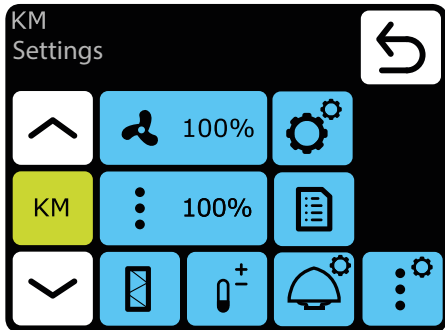










 Temperature under the ceiling

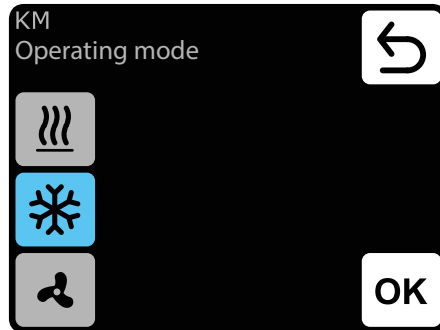
 Temperature under the ceiling





 Chosed of heating power

To read temperatures near the unit, external temperature sensors PT-1000 must be connected to DRV control module.



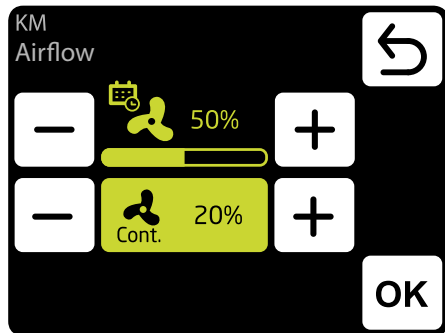
-  100% air flow setting – depending on LEO model stepless or 3-steps
-  operating modes
-  100% dampers setting - stepless
-  readings
-  filters operating status
-  selection of leading sensor
-  roof fan setting
-  dampers setting according to external temperature





-  active operating mode
-  **heating** – valve is opened when measured temperature is lower than desired temperature
-  **cooling** – valve is opened when measured temperature is higher than desired temperature
-  **ventilation** – valve is constantly closed, fan operates continuously at selected step




## Air flow setting

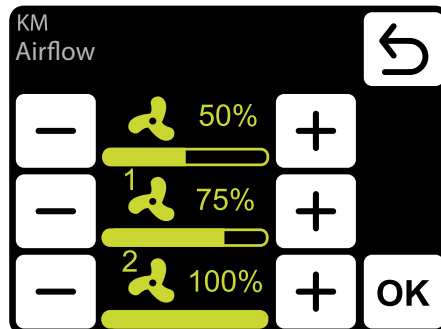


 air flow setting – 3-steps

 Appearance of this icon informs that the air flow setting has been defined in the calendar. It is possible to change it ad hoc only. Change will only be active in given calendar zone.

 When the dampers are closed (no ventilation), it is possible to select the operating mode of the fan after reaching desired temperature. Fan can operate continuously or be turned off.

## Air flow setting – gas detector

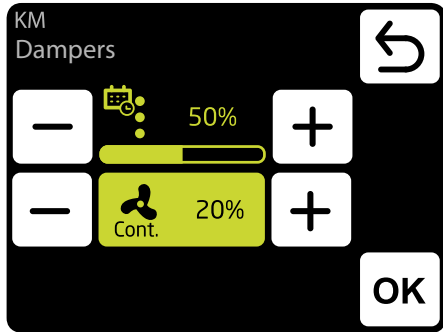



Operation with gas detector should be activated – see point „External gas detector” on page 66.


Three values of air flow should be defined:

- normal operation status
- 1 – first step of alarm from gas detector
- 2 – second step of alarm from gas detector

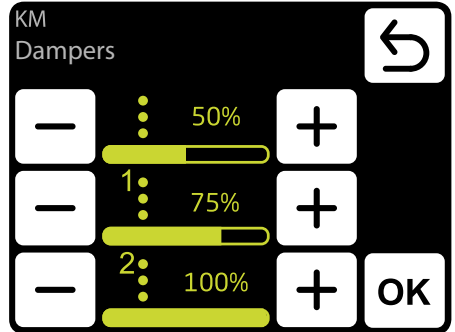
## Dampers setting



 Appearance of this icon informs that the air flow setting has been defined in the calendar. It is possible to change it ad hoc only. Change will only be active in given calendar event.

 When the dampers are closed (no ventilation), it is possible to select the operating mode of the fan after reaching desired temperature. Fan can operate continuously or be turned off.

## Dampers setting – gas detector

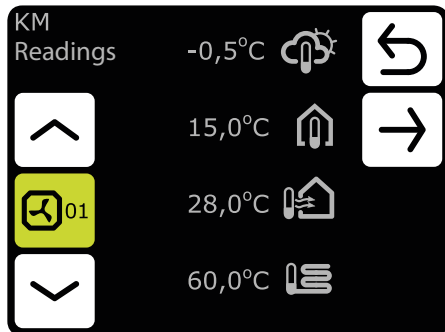


Operation with gas detector should be activated – see point „External gas detector“ on page 66.

Three values of air flow should be defined:

- normal operation status
- 1 – first step of alarm from gas detector
- 2 – second step of alarm from gas detector

## Readings



External temperature



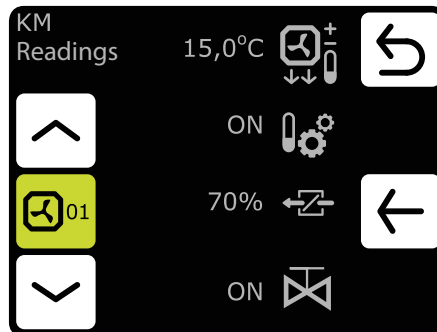
Temperature in the room



Temperature of air supplied into the room



Temperature of heating medium  
on return pipe



Desired temperature of supply air



**ON** – automatic setting of dampers according  
to external temperature is active – see p. 37

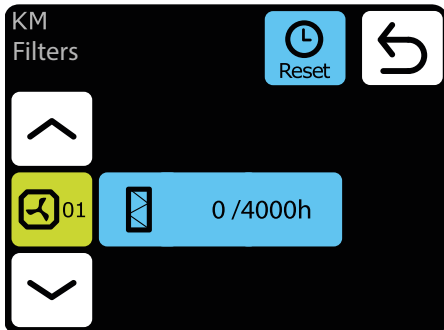


dampers opening degree



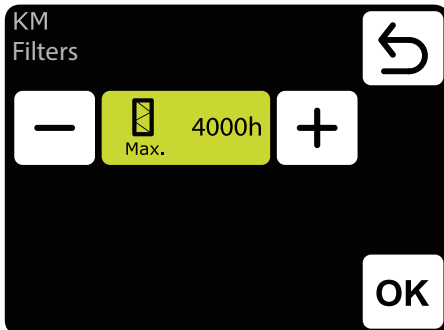
ON/OFF valve

## Filters operating time counter



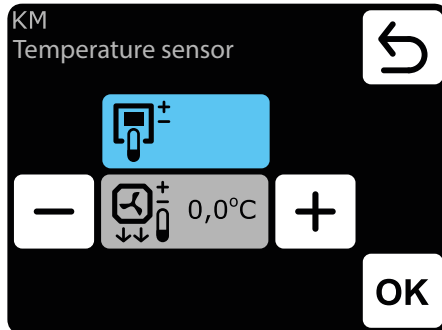
After reaching the limit of working hours, there will be displayed an indication in alarm menu. Value must be reset. Alarm does not affect the operation of the unit.

## Filters operating time limit





Value should be set according to building contamination level.

## Temperature sensor



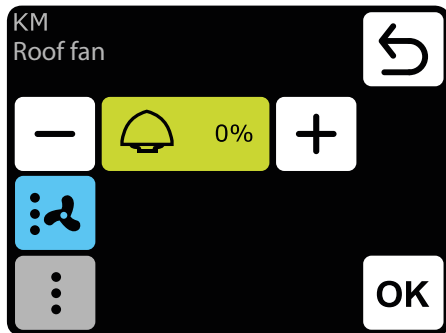
 active temperature sensor

 Leading sensor is the ambient air temperature sensor (built in T-box or local, near the unit). When temperature in the room is not reached, SRX3d valve is open in 100%. When temperature in the room is reached, flow of heating medium is regulated in such way, that the supply air temperature is equal to set temperature.


 Leading sensor is the supply air temperature sensor. Controller will maintain supply air temperature set on the main screen, thanks to regulation of the flow of heating medium by SRX3d valve opening degree.


— + correction of air temperature set on main screen

## Roof fan setting



 active setting

 roof fan change air volume according to present dampers opening level and air flow of LEO heater

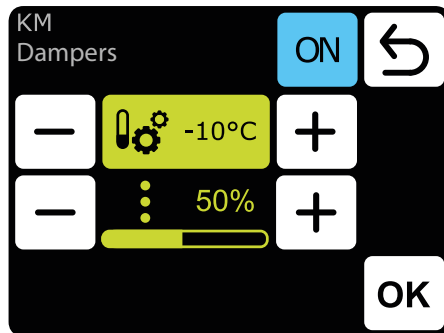
 roof fan change air volume according to present dampers opening level

Setting „0%“ means balance between air removed by roof fan and supplied by KM heater.

Positive value means that the roof fan removes more air than the KM supplies (under-pressure). Setting „+100%“ means continuous operation of the roof fan.

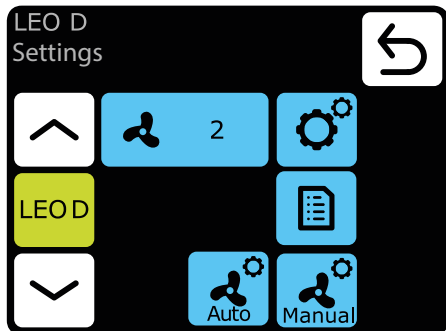
Negative value means that the roof fan removes less air than the KM supplies (overpressure). Setting „-100%“ means operation of the KM only.


## Dampers setting according to external temperature





Automatic setting of dampers opening level according to external air temperature.


Value set here is overriding normal damper setting and setting in calendar.




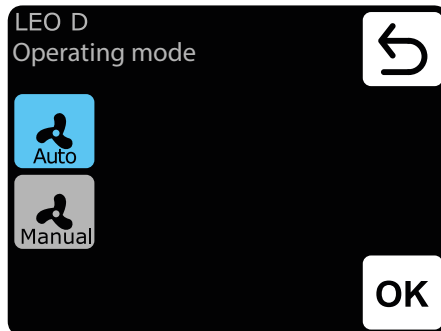
 2 air flow setting – 3-steps


 selection of operating mode


 readings


 settings of manual operating mode

 settings of auto operating mode




 active operating mode


 **Auto** – integration of operation of destratifiers with LEO heaters and effective use of heat from upper zones of the room. Destratifiers are turned on automatically, when there is suitable amount of heat accumulated in the upper zones of the room. Units press of warm air down to occupied zone. When amount of heat is insufficient, LEO heaters are turned on automatically.

 **Manual** – destratificator operates in ON/OFF mode. It is turned on when temperature under the ceiling is higher than set temperature.

## Readings

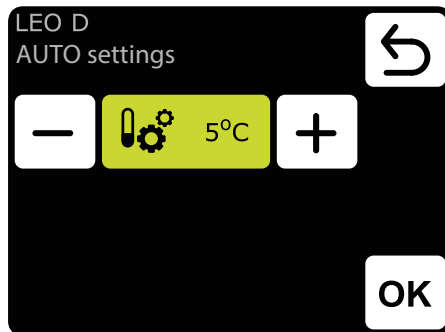


 Temperature under the ceiling

 Temperature in the room

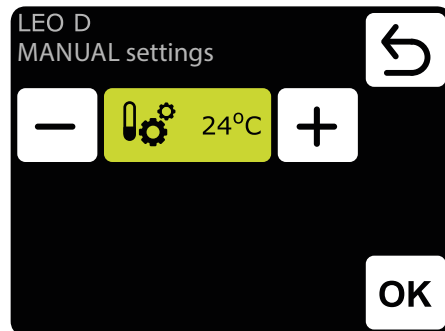
To read temperatures near the unit, external temperature sensors PT-1000 must be connected to DRV control module.

## Settings of auto operating mode

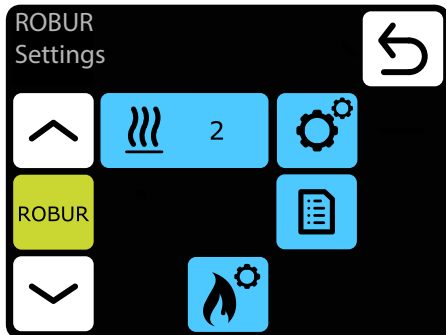






Setting of temperature difference (difference between temperature under the ceiling and temperature in the occupied zone), at which LEO D units will be turned on.

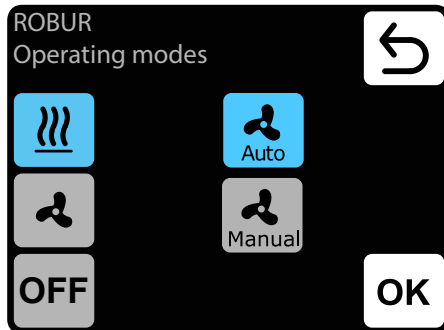
## Settings of manual operating mode









Destratificator operates in ON/OFF mode. It is turned on when temperature under the ceiling is higher than set temperature.



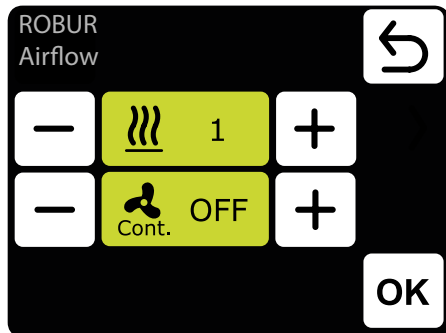
-  burner power settings
-  operating modes
-  readings
-  thermal protection settings



-  active operating mode
-  heating mode – burner and fan is working according to temperature
-  heating-auto – automatic selection of the burner power depending on the measured temperature
-  heating-manual – manual selection of the burner power
-  ventilation mode - fan is working continuously, burner is OFF
-  unit is OFF



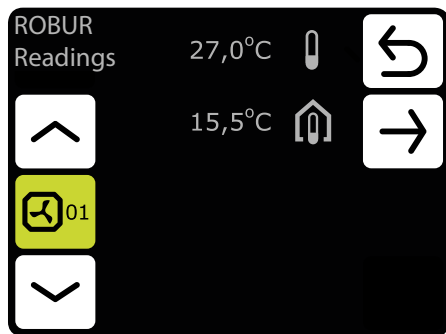
## Airflow



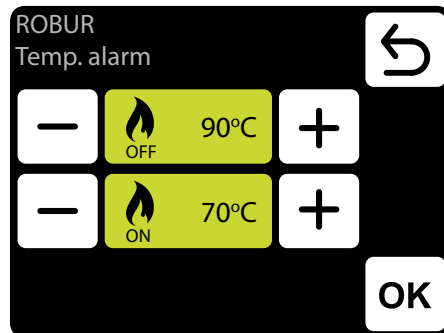
burner power setting in heating-manual mode

in heating operation mode after reaching the set temp. the fan may work continuously - ON or be turned off - OFF

## Readings



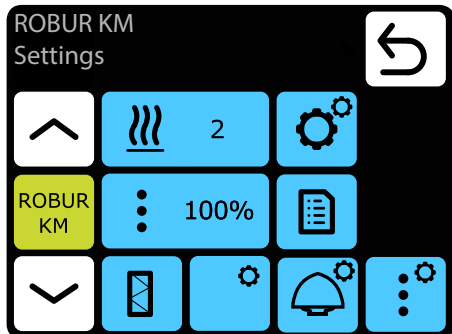
## Thermal protection











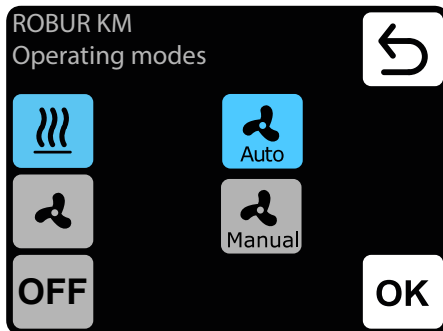
max. operating temperature  
OFF







temperature ready for restart  
ON

# ROBUR KM mixing chambers

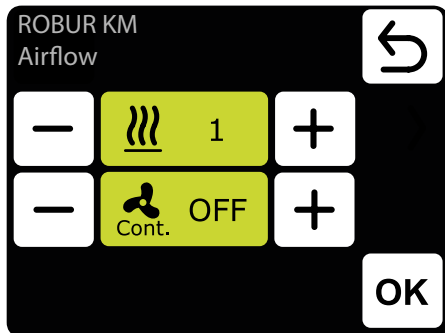


-  100% dampers setting - stepless
-  2 burner power settings
-  operating modes
-  dampers setting according to external temperature
-  readings
-  thermal protection settings
-  filters operating status
-  roof fan setting



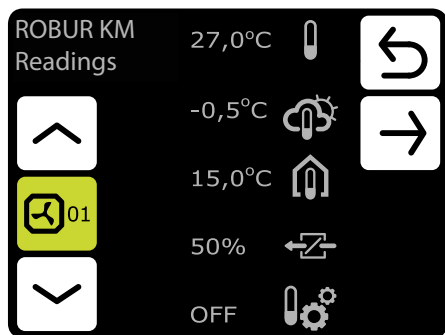
-  active operating mode
-  heating mode – burner and fan is working according to temperature
-  heating-auto – automatic selection of the burner power depending on the measured temperature
-  heating-manual – manual selection of the burner power
-  ventilation mode – fan is working continuously, burner is OFF
-  OFF unit is OFF

## Air flow

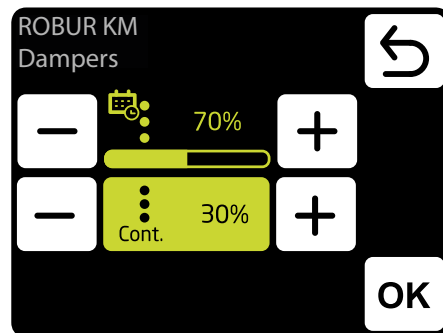


- burner power setting in heating-manual mode
- in heating operation mode after reaching the set temp. the fan may work continuously - ON or be turned off - OFF

## Readings



## Dampers setting



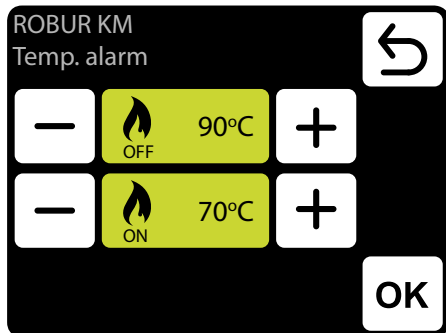
- Appearance of this icon informs that the air flow setting has been defined in the calendar. It is possible to change it ad hoc only. Change will only be active in given calendar zone.


70% damper setting in heating mode


30% damper setting in heating-continues mode

- outlet air temp., STB protection.
- external temperature
- temperature in the room
- dampers opening degree
- ON – automatic setting of dampers according to external temperature is active.

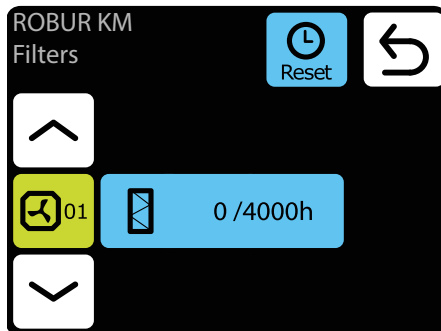
## Thermal protection



 max. operating temperature  
OFF

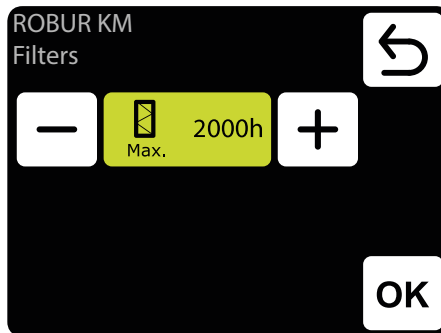
 temperature ready for restart  
ON

## Filters operating time counter



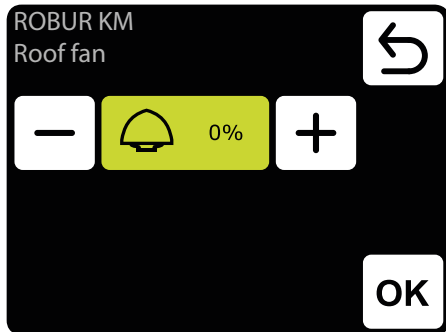
After reaching the limit of working hours, there will be displayed an indication in alarm menu. Value must be reset. Alarm does not affect the operation of the unit.

## Filters operating time limit



Value should be set according to building contamination level.

## Roof fan setting

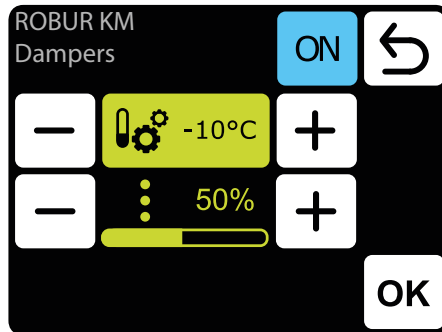


Setting „0%“ means balance between air removed by roof fan and supplied by ROBUR KM heater.

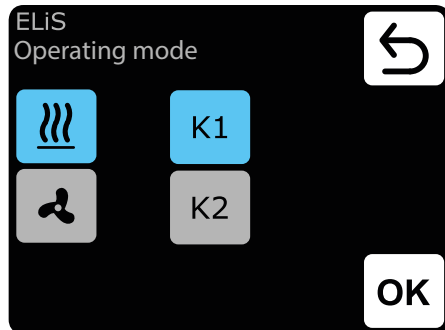
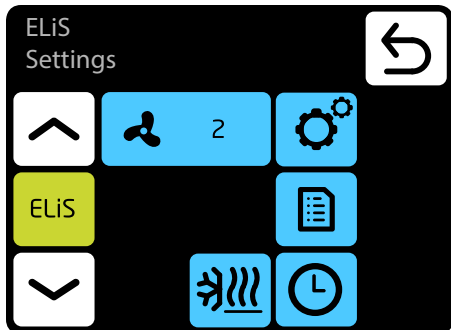
Positive value means that the roof fan removes more air than the ROBUR KM supplies (under-pressure). Setting „+100%“ means continuous operation of the roof fan.

Negative value means that the roof fan removes less air than the ROBUR KM supplies (overpressure). Setting „-100%“ means operation of the ROBUR KM only.


## Dampers setting according to external temperature





Automatic setting of dampers opening level according to external air temperature. Value set here is overriding normal damper setting and setting in calendar.





 2 air flow setting – 3-steps


 selection of operating mode


 setting of delay times


 readings


 antifreeze

 active operating mode

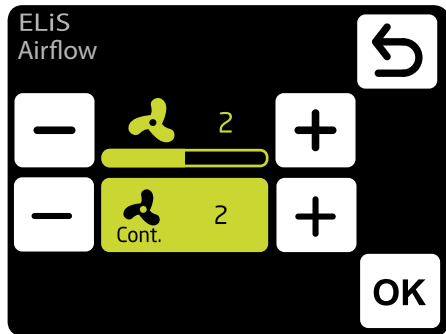
 K1 air curtain operates according to door sensor and thermostat, whose priority is equivalent


 K2 air curtain operates according to door sensor and thermostat. Door sensor has a priority. Without it's signal unit will not run


 heating – valve is opened when measured temperature is lower than desired temperature

 ventilation – valve is constantly closed, fan operates continuously at selected step

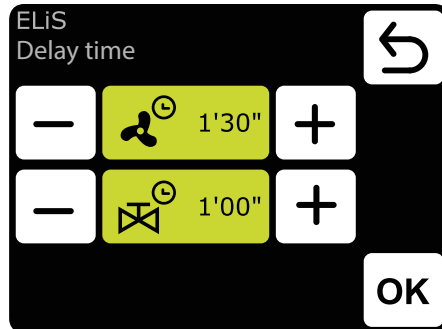
## Air flow setting





 air flow setting

 Cont. After the disappearance of signal from the door sensor (or thermostat if K1 mode is activated), fan of air curtain can operate on selected step for a specified period of time or be turned off - select OFF.

## Setting of delay time

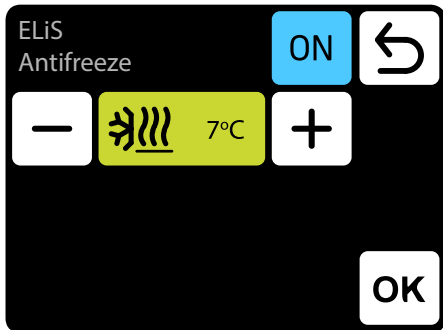


 Fan switch off delay time – it can be set in the range 0:00 - 10:00 minutes, every 0:30s. It is possible to set ∞ value, then fan operates continuously.

 Valve switch off delay time - it can be set in the range 0:00 - 10:00 minutes, every 0:30s. It is possible to set ∞ value, then valve is constantly open.

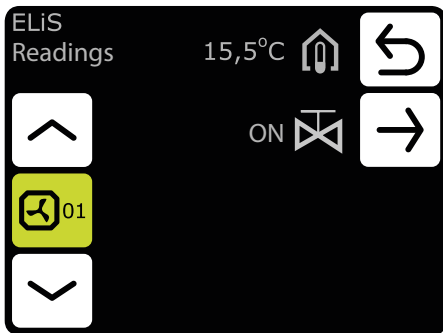
Valve delay time must be shorter than fan delay time.

## Antifreeze



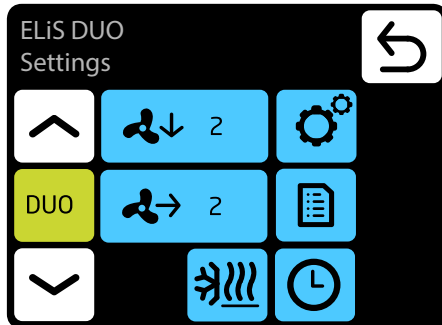
Antifreeze protection of the heat exchanger. When temperature in the room drops below desired temperature fans stops and valve is open to 100%. The unit must be equipped with T3 sensor (optional equipment).


## Readings





To read temperatures near the unit, external temperature sensors PT-1000 must be connected to DRV control module.


## short press **ELiS DUO** air curtain-fan heater combo units





 2 air flow setting for air curtain part – 3-steps

 2 air flow setting for fan heater part – 3-steps

 selection of operating mode

 setting of delay times

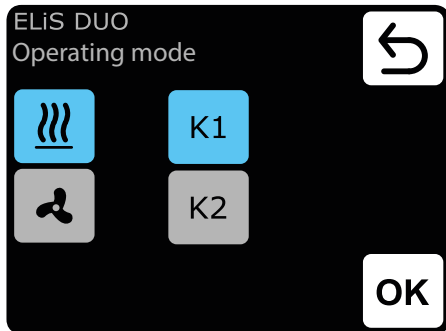
 readings






 antifreeze

ON/OFF valve   
Temperature in the room 



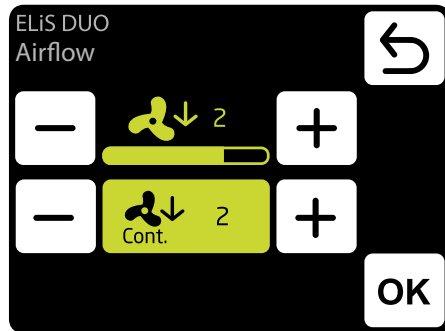
## Operating modes





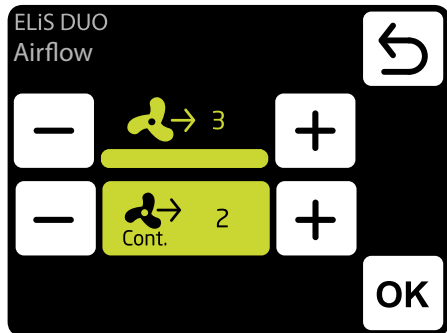
-  active operating mode
-  **K1** air curtain operates according to door sensor and thermostat, whose priority is equivalent
-  **K2** air curtain operates according to door sensor and thermostat. Door sensor has a priority. Without it's signal unit will not run
-  **heating** – valve is opened when measured temperature is lower than desired temperature
-  **ventilation** – valve is constantly closed, fan operates continuously at selected step

Fan heater operates always according to temperature set on the controller, regardless K1/K2 mode.


## Air flow setting



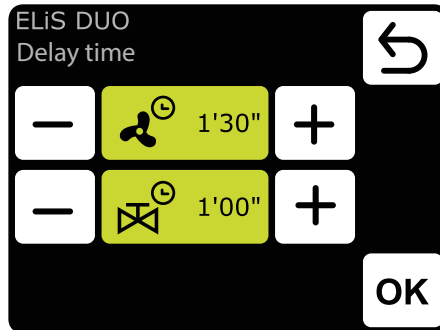
-  air flow setting
-  **Cont.** After the disappearance of signal from the door sensor (or thermostat if K1 mode is activated), fan of air curtain can operate on selected step for a specified period of time or be turned off - select OFF.





 air flow setting

 After reaching desired temperature fan of the heater can operate continuously on selected step: 1, 2, 3 or be turned off - select OFF.

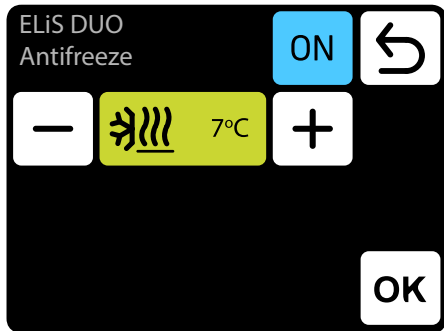
## Setting of delay time



 fan switch off delay time can be set in the range 0:00 - 10:00 minutes, every 0:30s. Value ∞ - fan operates continuously.

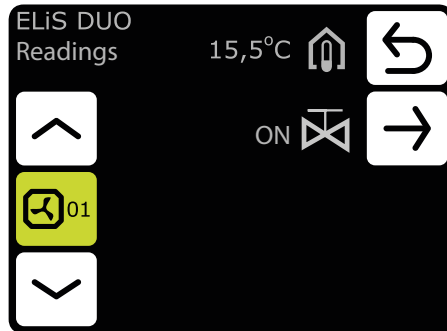
 valve switch off delay time can be set in the range 0:00 - 10:00 minutes, every 0:30s. Value ∞ - valve is constantly open.



## Antifreeze



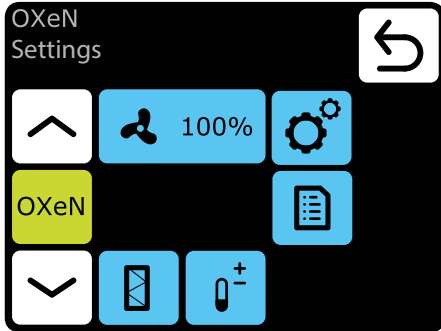
Antifreeze protection of the heat exchanger. When temperature in the room drops below desired temperature fans stops and valve is open to 100%. The unit must be equipped with T3 sensor (optional equipment).







## Readings

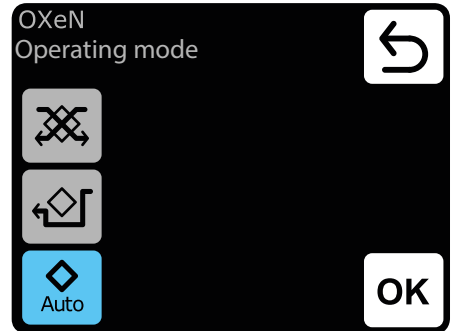






 Temperature in the room       ON/OFF valve

To read temperatures near the unit, external temperature sensors PT-1000 must be connected to DRV control module.

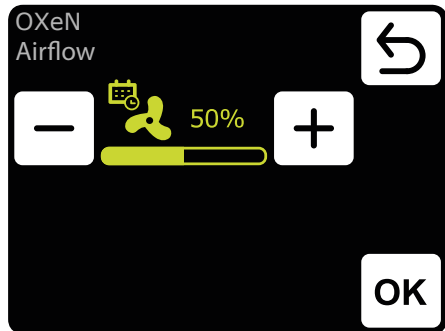



-  air flow setting – stepless
-  operating modes
-  readings
-  filters operating status
-  selection of leading sensor
-  this icon inform that dampers are during change of position, fan are stopped



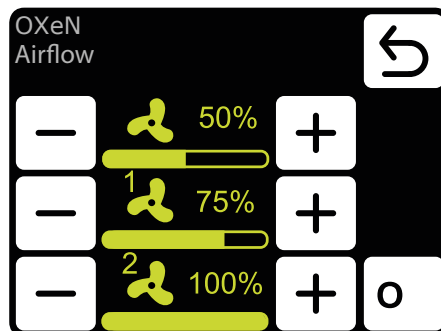
-  active operating mode
-  **Operation with heat recovery** – operation in this mode ensures heat or cool recovery from removed air
-  **Operation without heat recovery** – supply air is directed via by-pass without heat recovery („freecooling“/„free-heating“).
-  Automatic change of operating mode with or without heat recovery, depending on temperature

## Air flow setting



 Appearance of this icon informs that the air flow setting has been defined in the calendar. It is possible to change it ad hoc only. Change will only be active in given calendar event.

## Air flow setting – gas detector

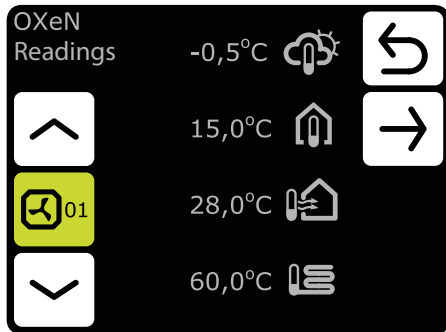


Operation with gas detector should be activated – see point „External gas detector” on page 66.

Three values of air flow should be defined:

- normal operation status
- 1 – first step of alarm from gas detector
- 2 – second step of alarm from gas detector

## Readings



External temperature



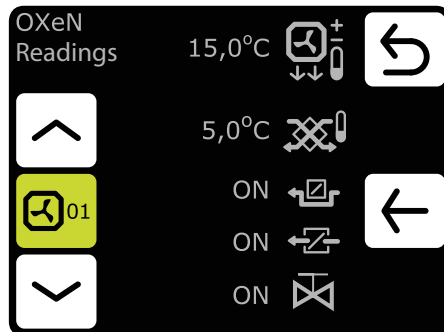
Temperature in the room



Temperature of air supplied into the room



Temperature of heating medium on return pipe



Desired temperature of supply air



Temperature of removed air



ON – status of by-pass dampers

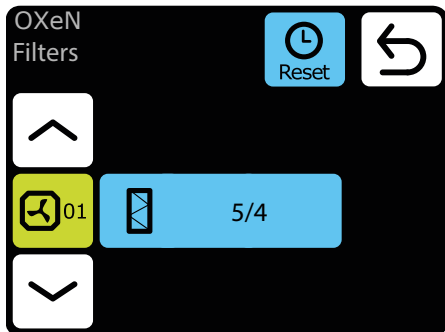


ON – status of external dampers

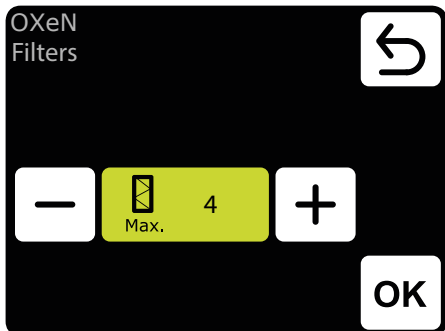


ON/OFF valve

## Control of the filters pollution

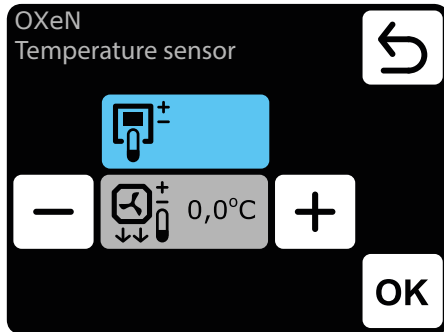



## Control of the filters pollution





Set the required alarm value, where 1 means an alarm a small filter pollution, 5 means an alarm a very pollution filter.


## Temperature sensor

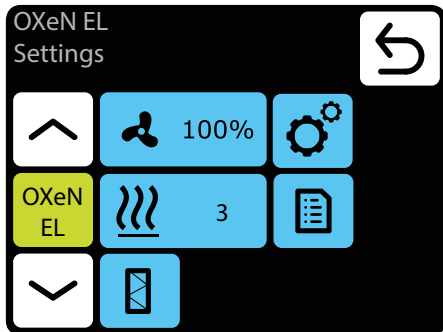



 active temperature sensor


 Leading sensor is the ambient air temperature sensor (built in T-box or local, near the unit). When temperature in the room is not reached, SRX3d valve is open in 100%. When temperature in the room is reached, flow of heating medium is regulated in such way, that the supply air temperature is equal to set temperature.


 Leading sensor is the supply air temperature sensor. Controller will maintain supply air temperature set on the main screen, thanks to regulation of the flow of heating medium by SRX3d valve opening degree.


 correction of air temperature set on main screen





 100% airflow setting - only 100%

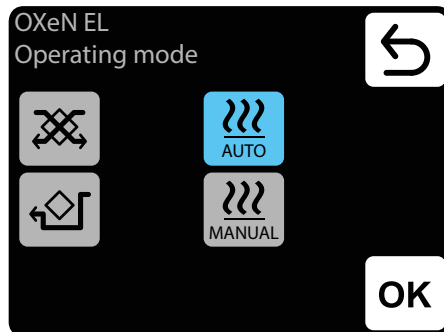
 3 heating power setting


 operating modes


 readings


 filters operating status


 this icon inform that dampers are during change of position, fan are stopped  
 this icon inform also that fans cooling the heater




 Activ operating mode

 **Operation with heat recovery** – operation in this mode ensures heat or cool recovery from removed air

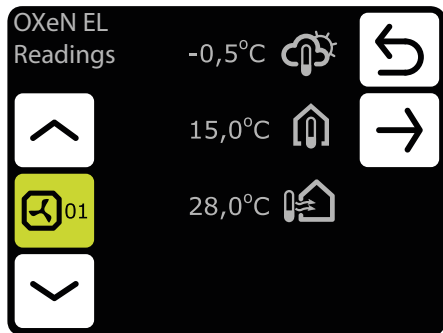
 **Operation without heat recovery** – supply air is directed via by-pass without heat recovery („freecooling”/„free-heating”).

 AUTO automatic setting of heating power

 MANUAL manual setting of heating power



## Readings



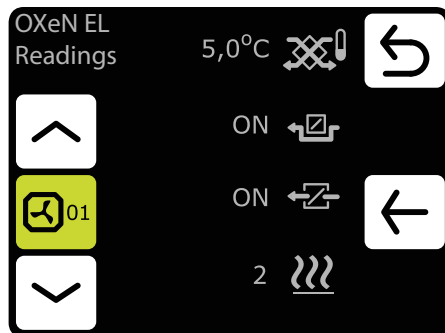
External temperature



Temperature in the room



Temperature of air supplied into the room



Temperature of removed air



ON – status of by-pass damper

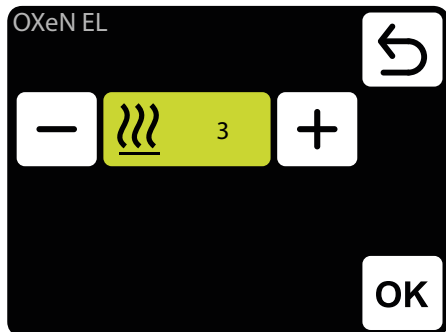


ON – status of external dampers



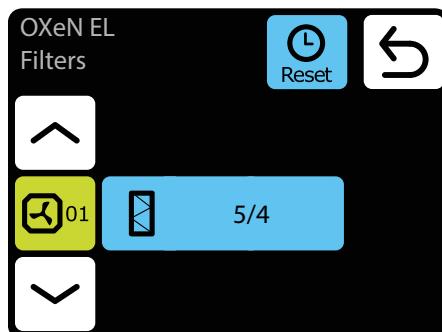
chosed of heating power

## Heating power

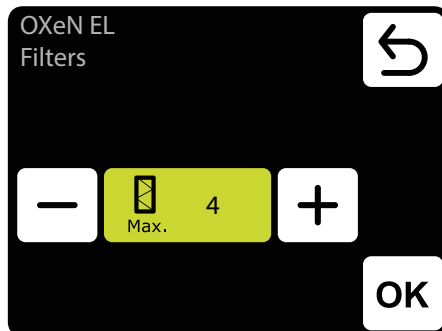


-  3 Heating power setting:
- 3 – 8,5 kW
  - 2 – 5,5 kW
  - 1 – 3,5 kW

## Control of the filters pollution

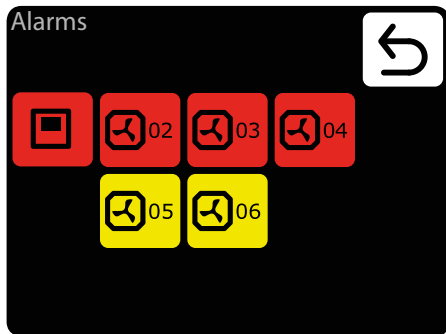


## Control of the filters pollution



Set the required alarm value, where 1 means an alarm a small filter pollution, 5 means an alarm a very pollution filter.

## Alarms



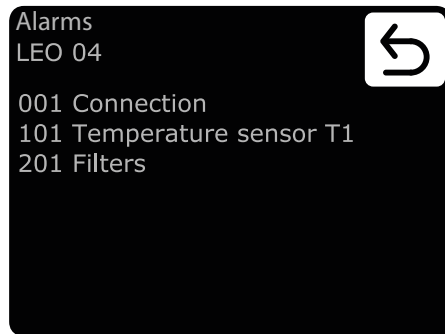
### warnings

- **Gas sensor: level 1**  
signal from gas detector, level I
- **Gas sensor: level 2**  
signal from gas detector, level II
- **Antifreeze heat recover exchanger ON**  
antifreeze mode of heat recovery exchanger is on
- **Filter work time**  
check filters contamination level
- **Filter pressure**  
dirty filter of KM, change the filter, if pressure switch is not applied make a bridge (jumper) between PRDN IN and GND

### alarms

- **Real time clock error**  
set the T-box time again
- **Temperature sensor T1/T2/T3/T4/T5**  
check temperature sensor
- **Roof fan fuse**  
check fuse of roof fan in DRV module
- **Roof fan TK**  
thermal protection alarm of roof fan
- **Fan 3V fuse**  
check fuse of fan of LEO heater in DRV module
- **Fan EC fuse**  
check fuse of fan of LEO M heater in DRV module
- **Fan EC not connected**  
check connection of fan of LEO M heater

## List of alarms



- **Antifreeze water exchanger ON**  
antifreeze mode of water heat exchanger is on
- **DRV group error**  
Addressing failure. Check binary address set in DRV and use search button again
- **Connection error**  
no communication between DRV and T-box, check connection and DRV power supply
- **DUO heater not connected**  
no communication between DRV of fan heater part of ELIS DUO, check connection between DRV of air curtain part and DRV of fan heater part



## ***Declaration of Conformity***

We hereby declare that the T-box controller has been manufactured in accordance to the requirements of the following EU Directives:

**2006/95/WE** – Low Voltage Directive (LVD),

**2004/108/WE** – Electromagnetic Compatibility (EMC),

and harmonized with these directives regulations:

**PN-EN 60730-1:2012E** Automatic electric controllers for domestic and similar use  
Part 1: General requirements

**PN-EN 55022:2011** Information devices - Characteristics of radioelectric disorders

**CE: 15**

Gdynia, 01.10.2015  
R&D department manager