

Supplementary instructions for UVR61-3 Building drying with ventilator

A special application of the universal controller is the **energy-saving** and cost-effective drying of basements and other building parts with fan control. The special functionality (measurement of the absolute humidity) of the sensor RFS-DL enables this simple drying out of buildings in connection with the universal controller. The absolute humidity inside and outside is compared and a fan switched on or off accordingly.

Building drying can be carried out with all **universal controllers** that have a DL bus (with the exception of UVR63-H).

Goal

- Lowering humidity through specific ventilation with dry air
- Improvement of air quality and odour with regular ventilation
- Replacement of energy-intensive dehumidification devices

Required material:

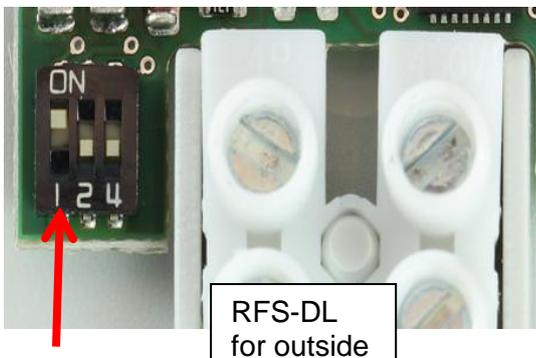
Complete **UVR61-GT** set comprising:



1 universal controller
01/UVR61-3-R



2 humidity sensors
01/RFS-DL



RFS-DL
for outside

The address must be changed if the RFS-DL is installed **outside**.

The **DIP switch 1** must be set to **ON**.

This changes the sensor address to 2.

Planning principles

- **Blow direction of the fan always from the outside to the inside!**
If the fan blows from the inside to the outside, there is a danger of warm and thus humid air following from adjacent building parts thus increasing the problem!
- **A supply air fan is usually sufficient!**
The “exhaust air” is pushed out through leaks in the building. With building that are very leak-proof, an overflow opening (flap, ...) must be created. If supply and exhaust fans are used, the efficiency of the exhaust fan must never be above that of the supply fan.
- **The ventilated buildings (the ventilated room) must be as leak-proof as possible!**
In order to prevent unwanted penetration of humid air through natural circulation, windows and doors should be closed.
- In order to (especially in the winter) keep the cooling of rooms within limits, **timer-controlled interval operation** is useful. An additional minimum temperature monitoring can be implemented.
- The **exterior humidity sensor** must not be directly subjected to insolation or rain. If necessary, the sensor will be protected with a small shield.

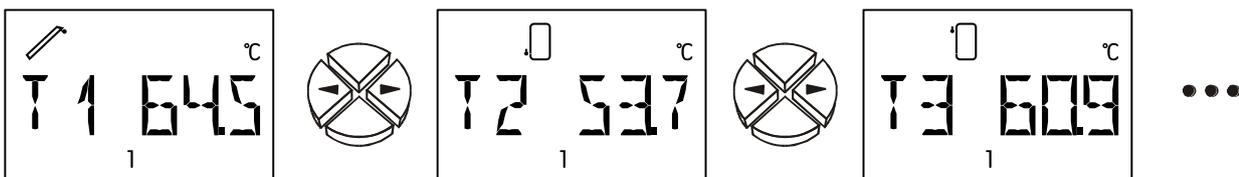
Operation

The large display contains the symbols for all important information and a plain text area. Navigation with the coordinate keys is matched to the display sequence.

- ↔ Navigation keys for selecting the display and for changing parameters.
- ↓ Entry to a menu, release of a value for changing with the navigation keys (enter key).
- ↑ Return from the menu level selected last, exit from the parameterising of a value (return key).

The side keys ↔ are the navigation keys for selecting the required display such as e.g. collector or tank temperature during regular operation. A different sensor symbol and the corresponding temperature are displayed for each pressure.

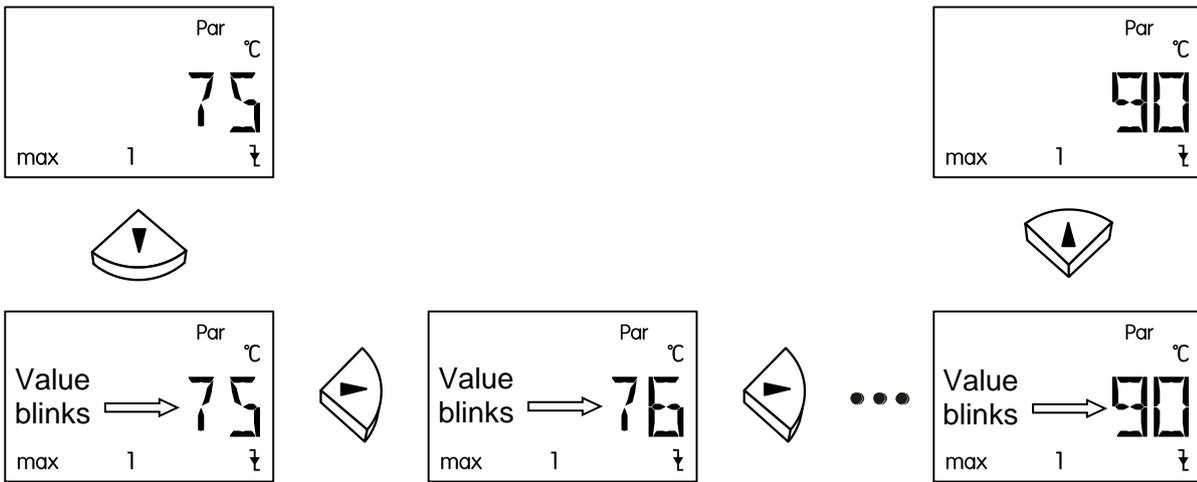
The appropriate symbol is displayed for information above the text line (according to the example of the collector temperature). The choice of symbol has no effect on the control function. All instruction during parameterisation are below the text line.



To the side of the display, the currently active outputs are identifiable on the **green** illuminated figures 1–3.

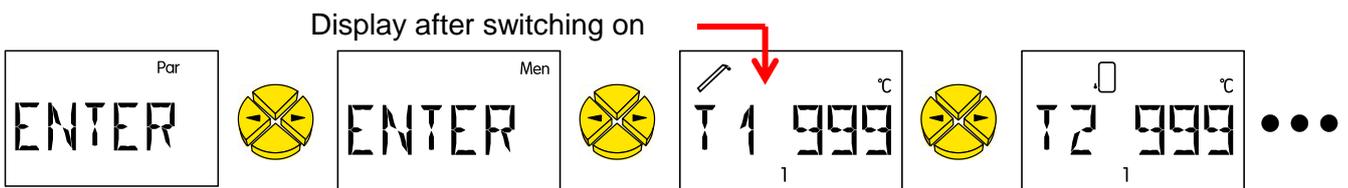
3
2
1

Changing a value (parameter)



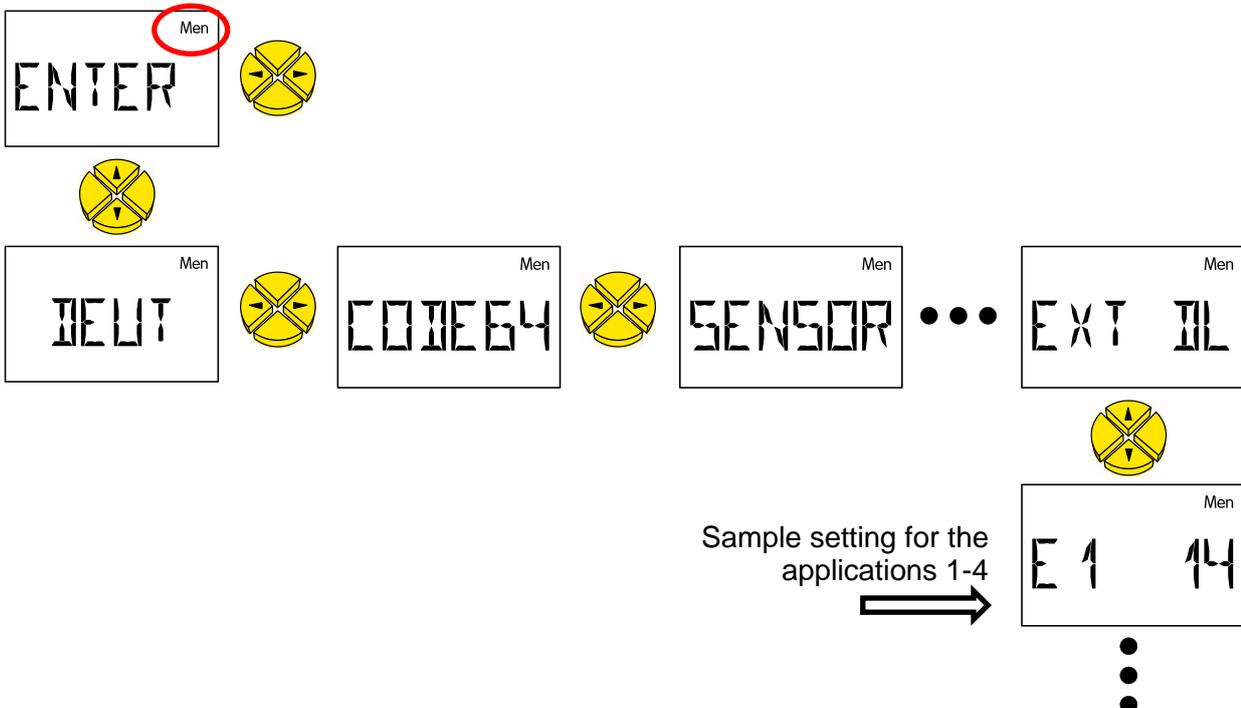
If a value is to be changed, the arrow key in downward direction must be pressed. This value now blinks and can be changed to the required value using the navigation keys. The value is saved pressing the arrow key in upward direction.

View of the display after the first start of controller UVR61-3

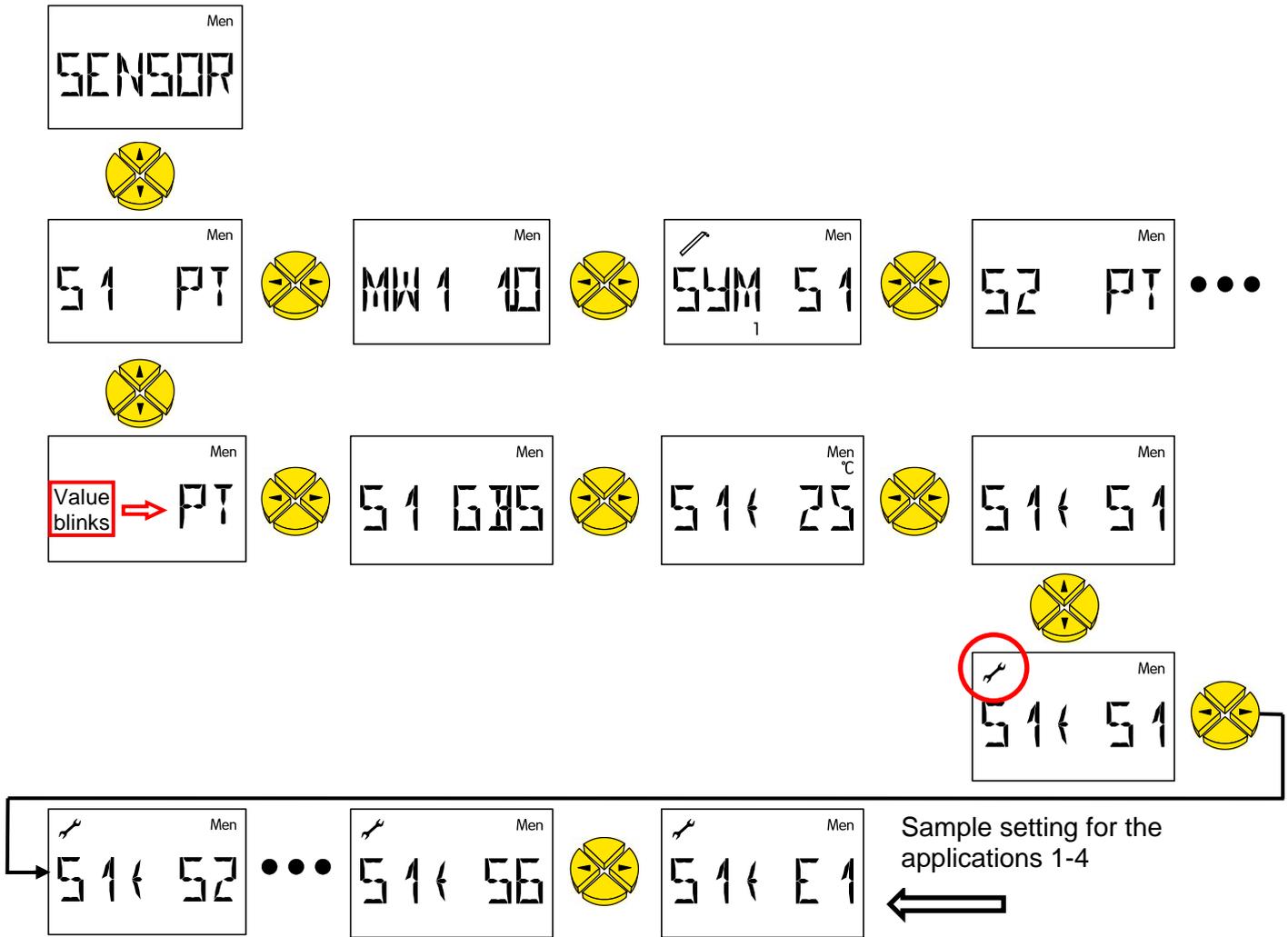


The sensor values initially show 999°C because no sensors are defined as yet.

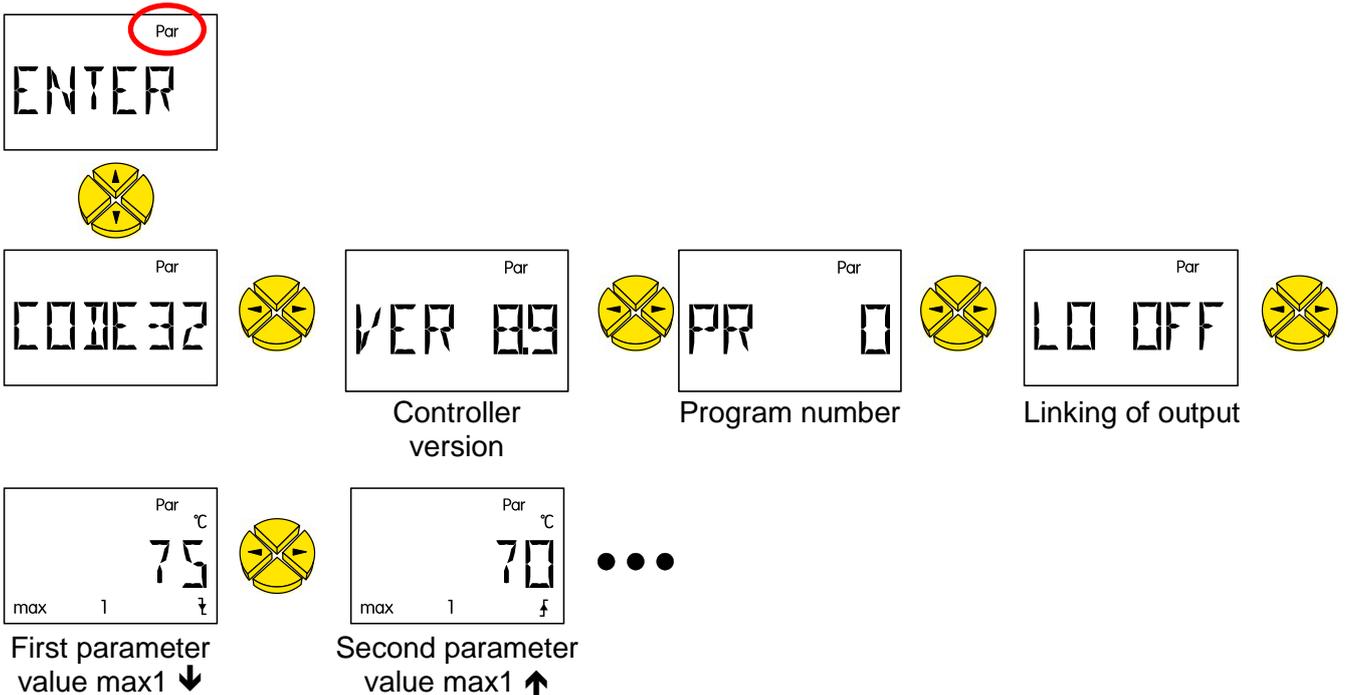
Access to menu ENTER/Men and setting of external sensors



Allocation of the external sensors to sensor values in the menu SENSOR



Access to menu ENTER/Par and definition of the parameters



Application 1

Room drying only

The humidity should be lowered in a humid room. As soon as the absolute exterior humidity is lower than the one inside, a fan is switched on.

The fan runs if

- the absolute humidity is lower outside than inside **and**
- the optional interval switch ("Timer") is active.

Recommended settings for UVR61-3

Menu
ENTER Par Code: **32**

Program PR	0	
Linking of output LO	OFF	
max 1 ↓ / ↑	75/70	no effect
min 1 ↑ / ↓	2/1	minimum humidity, inside
diff 1 ↑ / ↓	1,0/0,5	minimum humidity differential, outside/inside

TIMER *optional*

Outputs	OPA 1	The fan is switched ON and OFF alternately (ON and OFF time in minutes).
Release time	00:20	
Block time	00:40	

O1	Auto
----	------

Menu
ENTER Men Code: **64**

EXT DL	
Ext. Sensor E1	14
Ext. Sensor E2	24

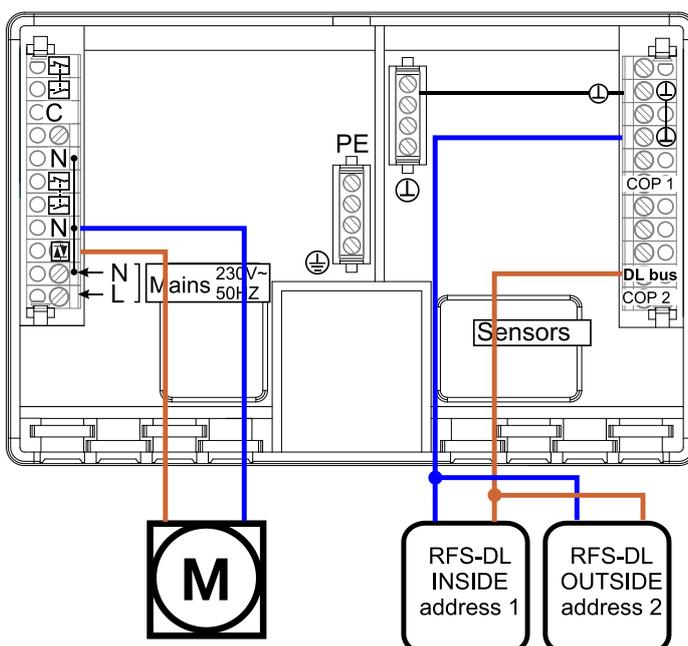
SENSOR (value transfer)

Sensor S1 ->	E1
Sensor S2 ->	E2

Display

T1 and E1	Absolute interior humidity (g/m ³ , displayed in °C)
T2 and E2	Absolute exterior humidity (g/m ³ , displayed in °C)

Electrical connection UVR61-3



Meaning of the luminous digits

1: Fan operation for room drying activated

Application 2

Room drying with minimum temperature monitoring

The humidity should be lowered in a humid room. If a ventilated room is too cold, the fan is switched off.

The fan runs if:

- the absolute humidity is lower outside than inside **and**
- the room temperature is high enough (protection against too much cooling down in the winter) **and** the optional interval switch ("timer") is active.

Recommended settings for UVR61-3

Menu	Code: 32	
ENTER Par		
Program PR	129	
Linking of output LO	OFF	
max 1 ↓ / ↑	75/70	no effect
max 3 ↓	10	minimum room temperature
min1 ↑ / ↓	2/1	minimum humidity, inside
min3 ↓	9	If the temperature falls below this room temperature, the fan is blocked.
diff1 ↑ / ↓	1,0/0,5	minimum humidity differential, outside/inside

Menu	Code: 64
ENTER Men	
EXT DL	
Ext. Sensor E1	14
Ext. Sensor E2	24
Ext. Sensor E3	22
Ext. Sensor E4	12

TIMER *optional*

Outputs	OPA 1	The fan is switched ON and OFF alternately (ON and OFF time in minutes).
Release time	00:20	
Block time	00:40	

SENSOR (value transfer)

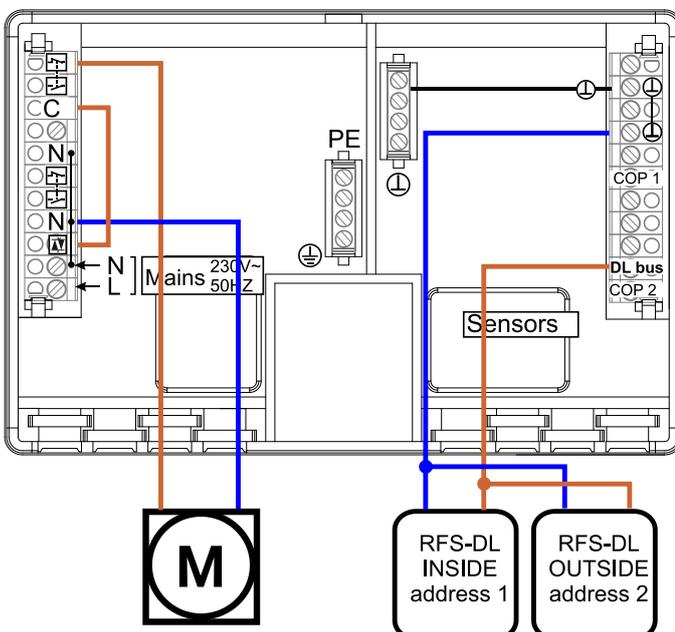
Sensor S1	E1
Sensor S2	E2
Sensor S3	E3
Sensor S4	E4

O1	Auto
O3	Auto

Anzeige

T1 and E1	Absolute interior humidity (g/m ³ , displayed in °C)
T2 and E2	Absolute exterior humidity (g/m ³ , displayed in °C)
T3 and E3	Exterior temperature
T4 and E4	Interior room temperature

Electrical connection UVR61-3



Output 3 must be made **potential-free**. For this, the red jumper on the rear of the detachable upper controller part is removed.

Meaning of the luminous digits

- 1**: Fan operation for room drying activated
- 3**: Fan operation for room drying blocked because the room temperature is too low

Application 3

Room drying with minimum temperature monitoring and “Comfort ventilation”

The humidity should be lowered in a humid room. If a ventilated room is too cold, the fan is switched off.

In order to guarantee a minimum room air quality for every day, even on days

- with humid exterior air or
- a drop below the set minimum room temperature

the fan is switched on with “comfort ventilation” for one or several time windows, preferable in the cool morning hours.

The fan for room drying runs if:

- the absolute humidity is lower outside than inside **and**
- the room temperature is high enough (protection against too much cooling down in the winter) **and** the optional interval switch ("Timer") is active.

The fan for “comfort ventilation” runs

- Daily according to time window

Recommended settings for UVR61-3

Menu

ENTER Par Code: **32**

Program PR	129	
Linking of output LO	OFF	
max 1 ↓ / ↑	75/70	no effect
max 3 ↓	10	minimum room temperature
min1 ↑ / ↓	2/1	minimum humidity, inside
min3 ↓	9	If the temperature falls below this room temperature, the fan is blocked.
diff1 ↑ / ↓	1,0/0,5	minimum humidity differential, outside/inside

TIME W

Time window 1		Within this time window, the fan runs independently of the humidity and temperature conditions.
Outputs	OPO 2	
Time on/off	4.00/4.30	
Time window 2		
Outputs	OPO 2	
Time on/off	5.30/6.00	
Time window 3		
Outputs	OPO 2	
Time on/off	7.30/8.00	

TIMER *optional*

Outputs	OPA 1	The fan is switched ON and OFF alternately (ON and OFF time in minutes).
Release time	00:20	
Block time	00:40	

Menu

ENTER Men Code: **64**

EXT DL	
Ext. Sensor E1	14
Ext. Sensor E2	24
Ext. Sensor E3	22
Ext. Sensor E4	12

SENSOR (value transfer)

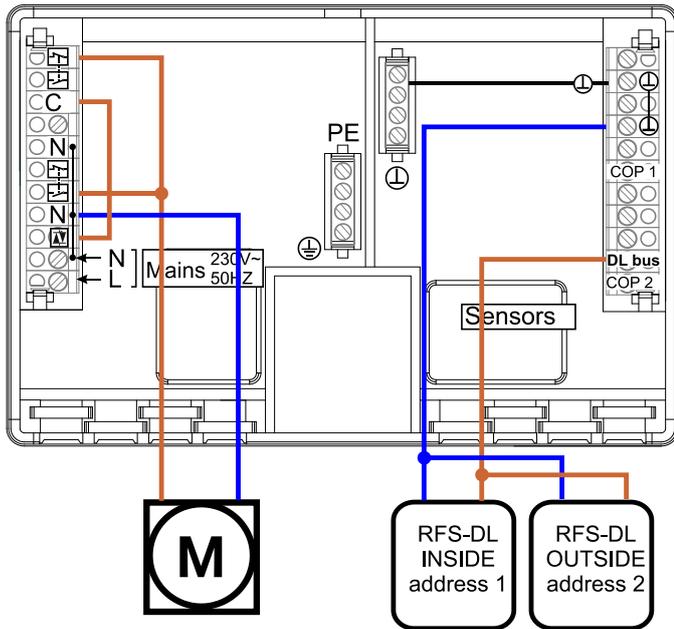
Sensor S1	E1
Sensor S2	E2
Sensor S3	E3
Sensor S4	E4

O1	Auto
O2	Auto
O3	Auto

Display

T1 and E1	Absolute interior humidity (g/m ³ , displayed in °C)
T2 and E2	Absolute exterior humidity (g/m ³ , displayed in °C)
T3 and E3	Exterior temperature
T4 and E4	Interior room temperature

Electrical connection UVR61-3



Output 3 must be made **potential-free**. For this, the red jumper on the rear of the detachable upper controller part is removed.

Meaning of the luminous digits

- 1**: Fan operation for room drying activated
- 2**: Fan operation for “comfort ventilation” activated
- 3**: Fan operation for room drying **blocked** because the room temperature is too low

Application 4

Room drying and "comfort ventilation", both with minimum temperature monitoring

The humidity should be lowered in a humid room. In order to ensure room air quality to a large extent, the fan is switched on for one or several time windows, preferably in the cool morning hours, even on days with humid exterior air. If the set minimum room temperature is fallen short of, this "Comfort ventilation" will also be blocked.

The fan for room drying runs if:

- the absolute exterior humidity is lower than the interior one **and**
- the room temperature is high enough (protection against too much cooling down in the winter) **and** the optional interval switch ("Timer") is active.

The fan for "comfort ventilation" runs

- daily according to time window if the room temperature is high enough.

Recommended settings for UVR61-3

Men

ENTER Par Code: **32**

Program PR	129	
Linking of output LO	OFF	
max 1 ↓ / ↑	75/70	no effect
max 3 ↓	10	minimum room temperature
min1 ↑ / ↓	2/1	minimum humidity, inside
min3 ↓	9	If the temperature falls below this room temperature, the fan is blocked.
diff1 ↑ / ↓	1,0/0,5	minimum humidity differential, outside/inside

TIME W

Time window 1		Within this time window, the fan runs if the room temperature exceeds the max 3 value.
Outputs	AGO 2	
Time on/off	4.00/4.30	
Time window 2		
Outputs	AGO 2	
Time on/off	5.30/6.00	
Time window 3		
Outputs	AGO 2	
Time on/off	7.30/8.00	

TIMER *optional*

Outputs	AGU 1	The fan is switched ON and OFF alternately (ON and OFF time in minutes).
Release time	00:20	
Block time	00:40	

O1	Auto
O2	Auto
O3	Auto

Menu

ENTER Men Code: **64**

EXT DL

Ext. Sensor E1	14
Ext. Sensor E2	24
Ext. Sensor E3	22
Ext. Sensor E4	12

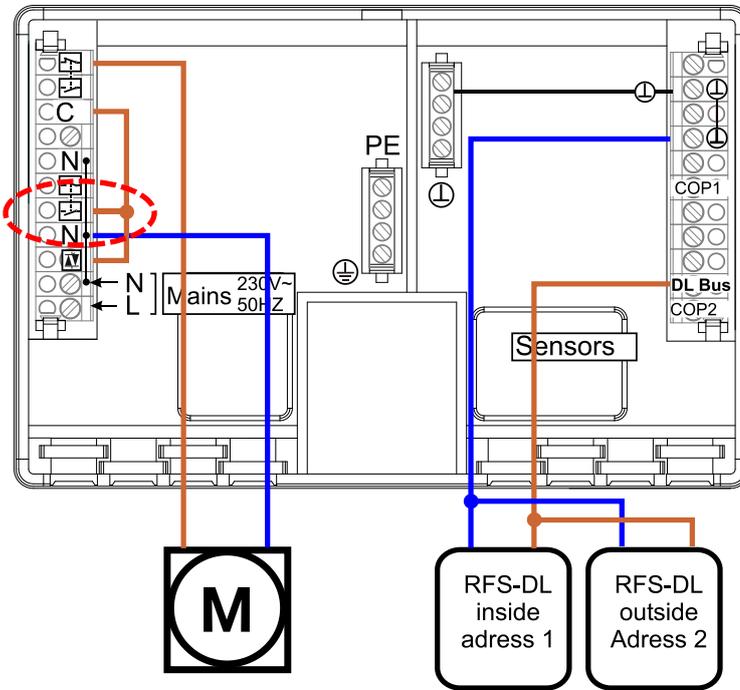
SENSOR (value transfer)

Sensor S1	E1
Sensor S2	E2
Sensor S3	E3
Sensor S4	E4

Display

T1 and E1	Absolute interior humidity (g/m ³ , displayed in °C)
T2 and E2	Absolute exterior humidity (g/m ³ , displayed in °C)
T3 and E3	Exterior temperature
T4 and E4	Interior room temperature

Electrical connection UVR61-3



Output 3 must be made **potential-free**. For this, the red jumper on the rear of the detachable upper controller part is removed.

Meaning of the luminous digits

- 1**: Fan operation for room drying activated
- 2**: Fan operation for “comfort ventilation” activated
- 3**: Fan operation for room drying or comfort ventilation blocked because the room temperature is too low

Application 5

Room drying with room temperature monitoring and “comfort ventilation” for a wine cellar

The humidity should be lowered in a wine cellar. In order to ensure room air quality to a large extent, the fan is switched on for one time window regardless of the room temperature (“comfort ventilation”) even on days with humid exterior air.

The fan for **room drying** runs if:

- **the absolute** exterior humidity is lower than the interior one **and**
- **the relative** interior humidity is higher than e.g. 60% **and**
- the room temperature is above the required temperature (example: 10C) **and**
- the optional interval switch ("Timer") is active.

The fan for “**comfort ventilation**” runs

- daily according to the time window regardless of other settings (example: 10:00 to 10:30 a.m.), up to three time windows can be set

Recommended settings for UVR61-3

Menu

ENTER Par Code: **32**

Program PR	512	
Linking of output LO	OFF	
max 1 ↓ / ↑	75/70	no effect
max 2 ↓ / ↑	100/95	no effect
max 3 ↓ / ↑	50/45	no effect
min 1 ↑ / ↓	2/1	Start threshold for inside absolute humidity in g/m ³ (display: °C)
min 2 ↑ / ↓	62/60	Start threshold for relative humidity in % (display: °C)
min 3 ↑ / ↓	11/10	Start threshold for room temperature in °C
diff 1 ↑ / ↓	1,0/0,5	Minimum differential, absolute humidity outside - inside
diff 2 ↑	--	Set diff 2 and diff 3 to "unused" (setting over 98 °C, display: --)
diff 3 ↑	--	

TIME W

Time window 1		Within this time window, the fan runs independently of the humidity and temperature conditions.
Outputs	OPO 123	
Time on/off	10:0/10:30	

Timer *optional*

Outputs	OPA 1	The fan is switched ON and OFF alternately (ON and OFF time in minutes).
Release time	00:10	
Block time	00:10	

O1	Auto
O2	Auto
O3	Auto

Menu

ENTER Men Code: **64**

EXT DL	
Ext. Sensor E1	11
Ext. Sensor E2	21
Ext. Sensor E3	12
Ext. Sensor E4	22
Ext. Sensor E5	14
Ext. Sensor E6	24

SENSOR

(value transfer)

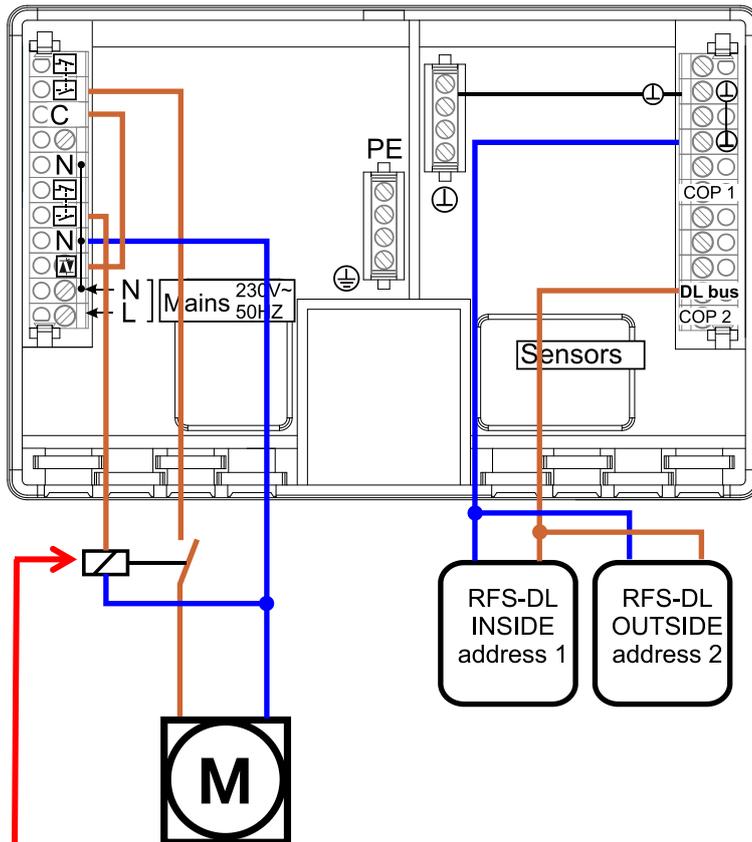
Sensor S1	E5
Sensor S2	E6
Sensor S3	E1
Sensor S4	E2
Sensor S5	E3
Sensor S6	E4

With **time window** setting **OPO 12**, “comfort ventilation” takes place only if the room temperature has exceeded the temperature threshold.

Display

T1 and E5	Absolute interior humidity (g/m ³ , displayed in °C)
T2 and E6	Absolute exterior humidity (g/m ³ , displayed in °C)
T3 and E1	Relative interior humidity (% , displayed in °C)
T4 and E2	Relative exterior humidity (% , displayed in °C)
T5 and E3	Interior temperature
T6 and E4	Exterior temperature

Electrical connection UVR61-3



Output 3 must be made **potential-free**. For this, the red jumper on the rear of the detachable upper controller part is removed.

Meaning of the luminous digits

- 1**: Fan operation for room drying activated (interval operation) via **absolute** humidity
- 2**: Activated if **relative** interior humidity is above the turn-on threshold
- 3**: Activated if the room temperature is above the temperature threshold

The fan runs only if all three luminous digits are illuminated

An **external auxiliary relay** whose contact is arranged **in series** with both other outputs is connected to **output 2**.