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# Supplementary instructions for UVR61-3 Building drying with ventilator

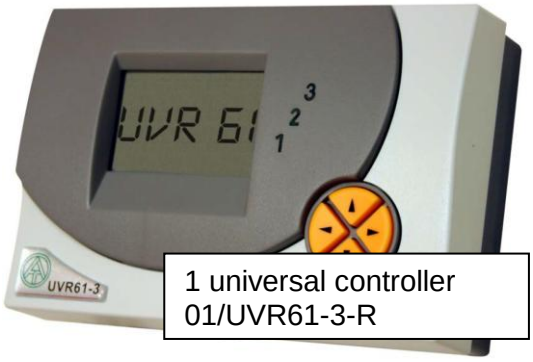
A special application of the universal controller is the **energy-saving** and cost-effective drying of basements and other building parts with fan control. The special functionality (measurement of the absolute humidity) of the sensor RFS-DL enables this simple drying out of buildings in connection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

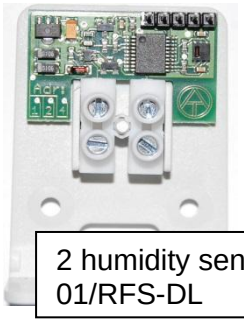
- Lowering humidity through specific ventilation with dry air
- Improvement of air quality and odour with regular ventilation
- Replacement of energy-intensive dehumidification devices

## 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 addressing must be changed for the RFS-DL which is installed on the **outside**. The conductor path must be cut at digit 1 for that (wire cutter, knife…). This changes the sensor address to 2 (sensor address 1 is the delivery condition, 1 is added after the cut: 1 + 1 = 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.

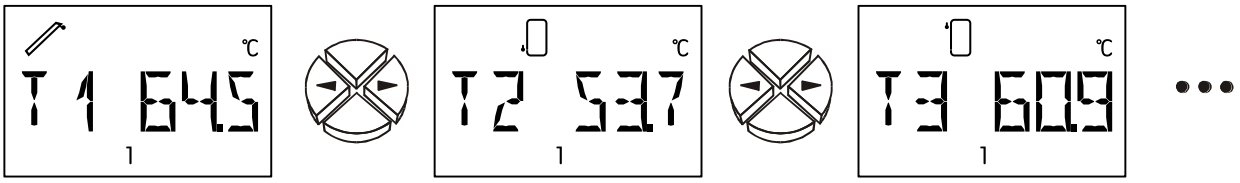
⇦⇨ Navigation keys for selecting the display and for changing parameters.

⇩ 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).

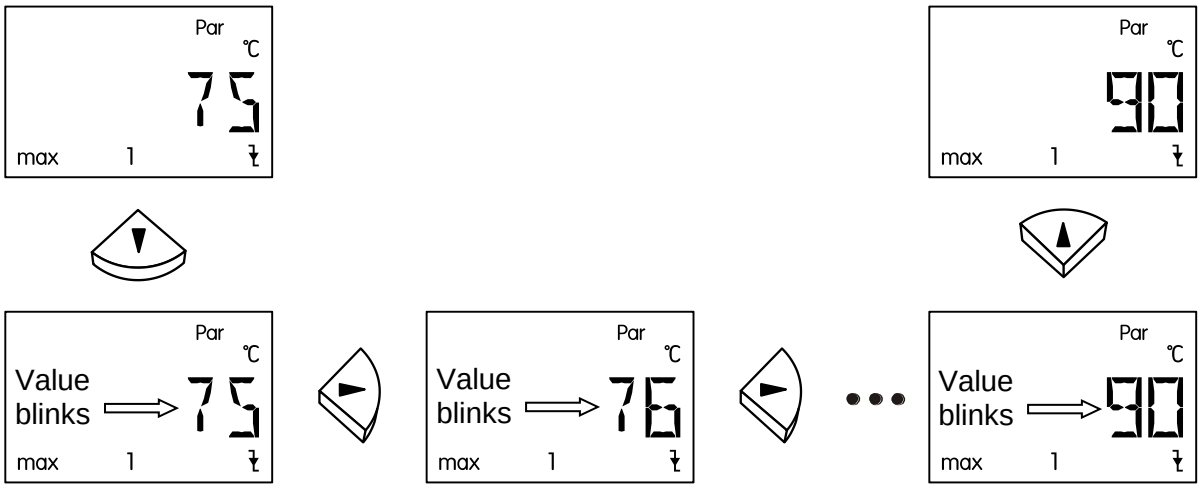
The side keys ⇦⇨ are the navigation keys for selecting the required display such as e.g. collector or tank temperature during regular operation. A different sensor symbol and the corresponding temperature are displayed for each pressure.

The appropriate symbol is displayed for information above the text line (according to the example of the collector temperature). All instruction during parameterisation are below the text line.



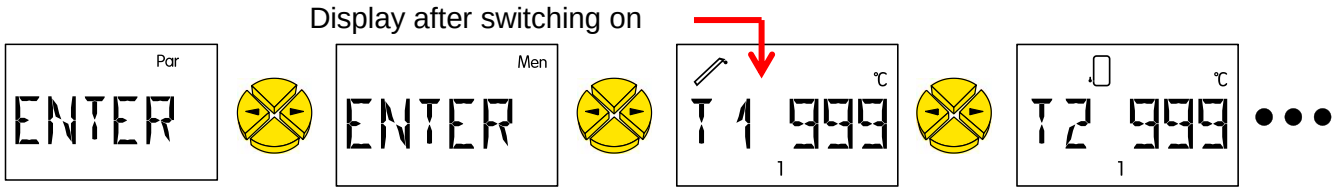

To the side of the display, the currently active outputs are identifiable on the **green** illuminated figures 1–3. If the speed control is active, the output 1 display flashes according to the speed stage.

## Changing a value (parameter)



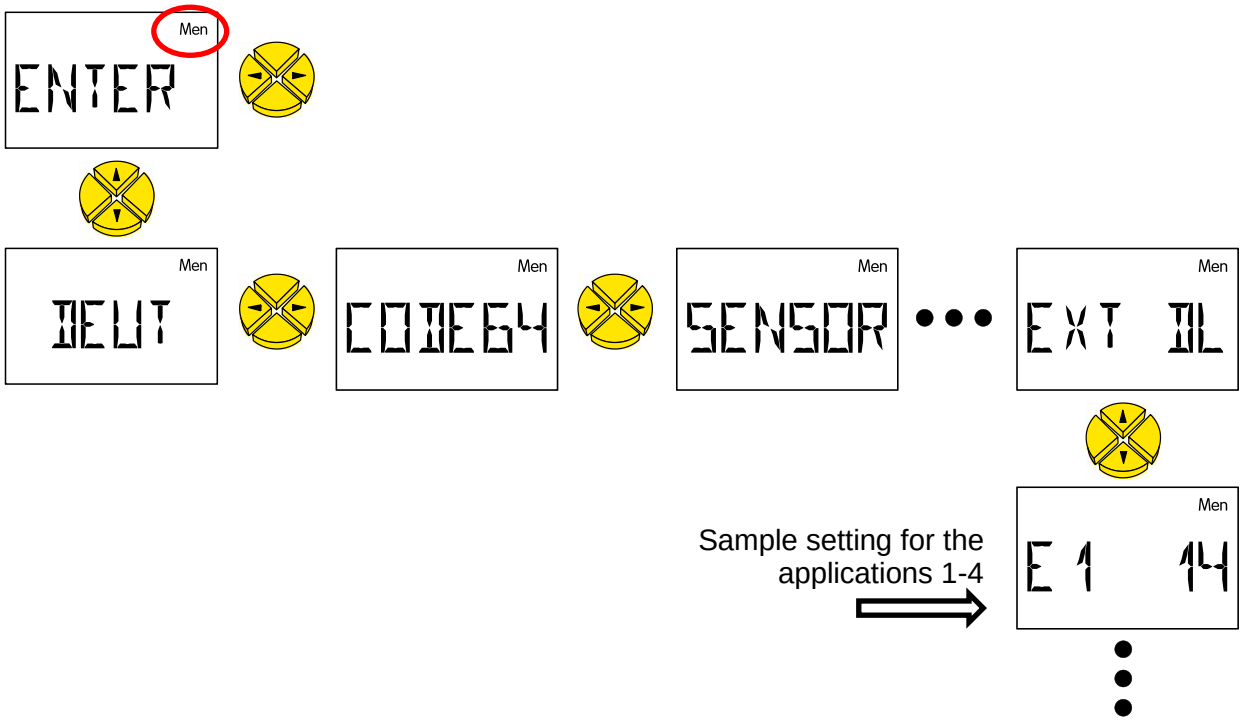

If a value is to be changed, the arrow key in downward direction must be pressed. This value now blinks and can be changed to the required value using the navigation keys.
The value is saved pressing the arrow key in upward direction.

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

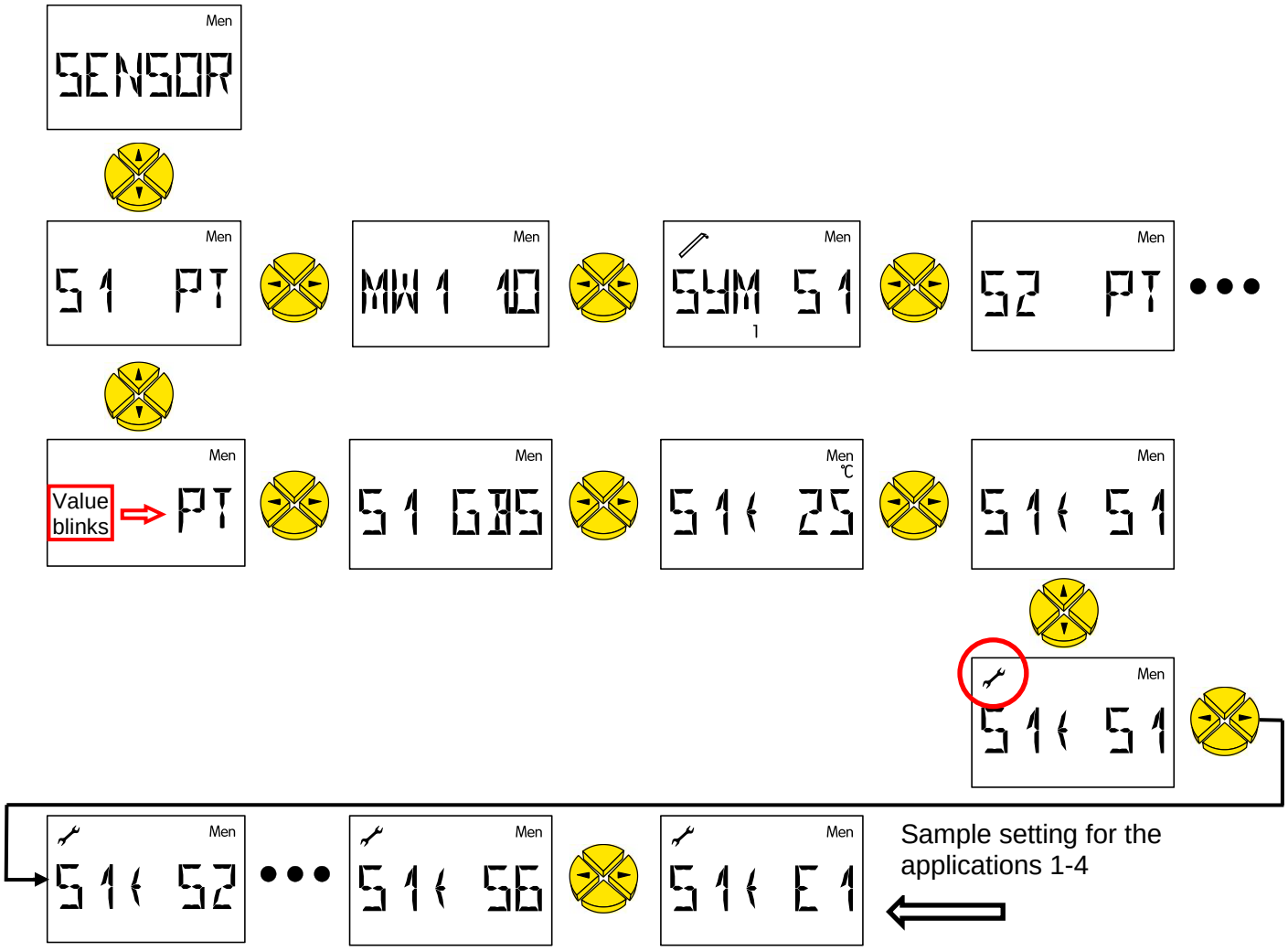



The sensor values initially show 999°C because no sensors are defined as yet.

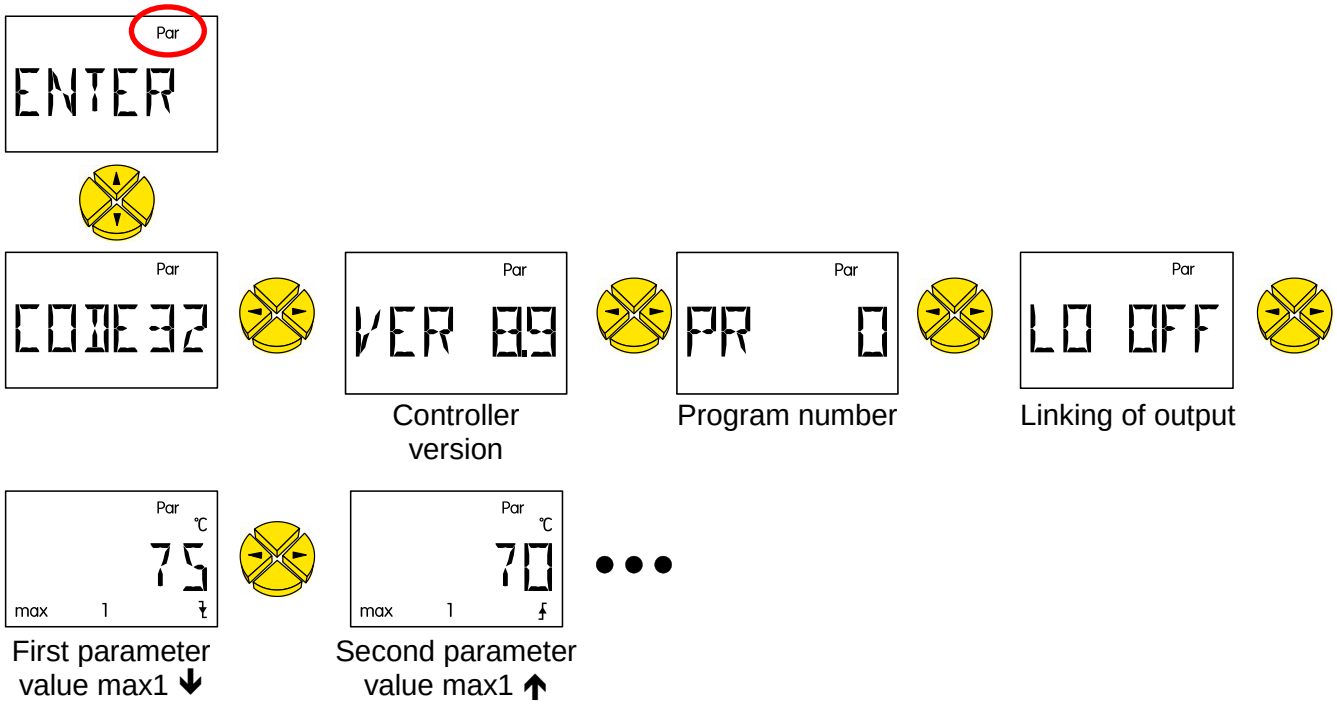
## Access to menu ENTER/Men and setting of external sensors



## 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

A “humid” room should be ventilated with the goal of lowering the humidity. As soon as the absolute exterior humidity is lower than the one inside, a fan is switched on.

The fan runs if:

- the absolute exterior humidity is lower than the interior one

**Required settings with UVR61-3**

Menu **ENTER Par** Code: 32

| | |
|---|---|
| Program **PR** | 0 |
| Linking of output **LO** | OFF |
| max 1 ↓ / ↑ | 75/70 |
| min 1 ↑ / ↓ | 2/1 |
| diff 1 ↑ / ↓ | 1.0/0.5 |

**TIMER** ***optional***

| | |
|---|---|
| Outputs | OPA 1 |
| 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 |

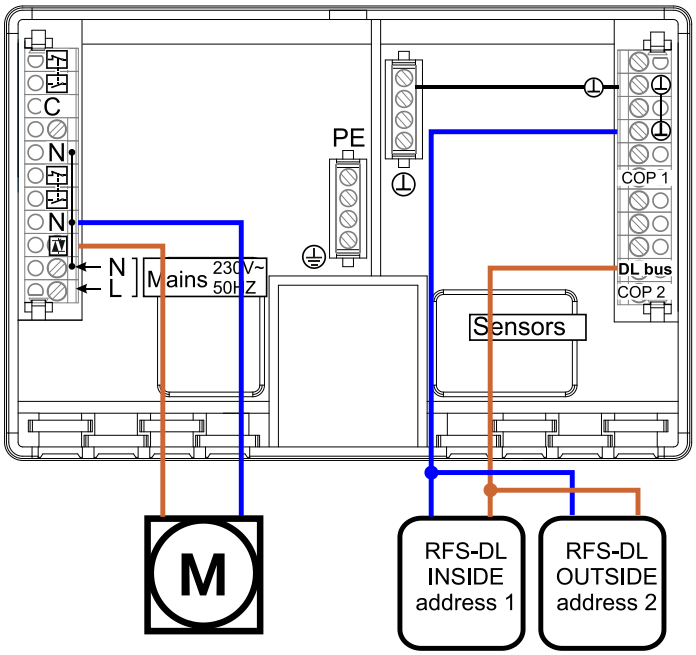
**SENSOR** (value transfer)

| | |
|---|---|
| Sensor S1 -> | E1 |
| Sensor S2 -> | E2 |

**Display**

| | |
|---|---|
| T1 and E1 | Absolute interior humidity (g/m³, displayed in °C) |
| T2 and E2 | Absolute exterior humidity (g/m³, 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

A “humid” room should be ventilated with the goal of lowering the humidity. If a ventilated room is too cold, the fan is switched off.

The fan 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); sample setting: Below 9°C (min3) switch off, above 10°C (max3) enable

**Required settings with UVR61-3**

Menu **ENTER Par** Code: 32

| | |
|---|---|
| Program **PR** | 129 |
| Linking of output **LO** | OFF |
| max 1 ↓ / ↑ | 75/70 |
| max 3 | 10 |
| min1 ↑ / ↓ | 2/1 |
| min3 | 9 |
| diff1 ↑ / ↓ | 1.0/0.5 |

**TIMER** ***optional***

| | |
|---|---|
| Outputs | OPA 1 |
| Release time | 00:20 |
| Block time | 00:40 |

| | |
|---|---|
| O1 | 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 |

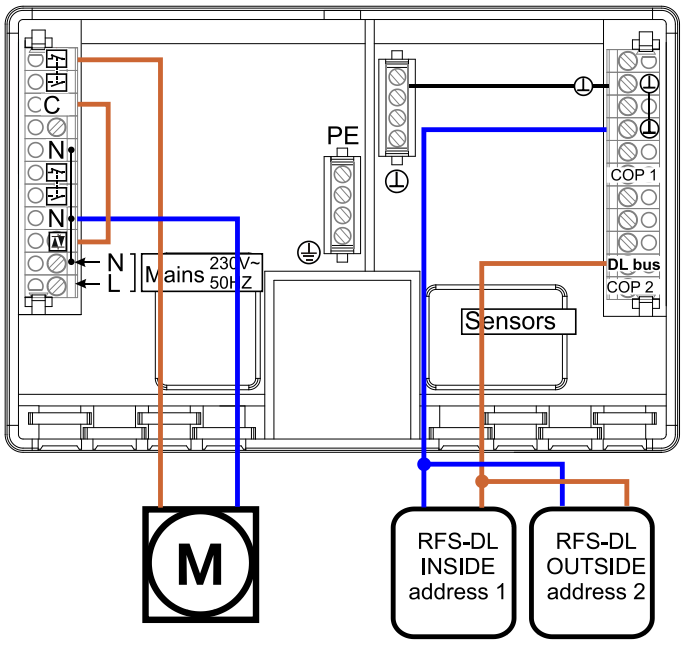
**SENSOR** (value transfer)

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

**Display**

| | |
|---|---|
| T1 and E1 | Absolute interior humidity (g/m³, displayed in °C) |
| T2 and E2 | Absolute exterior humidity (g/m³, displayed in °C) |
| T3 and E3 | Exterior temperature |
| T3, 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”

A “humid” room should be ventilated with the goal of lowering the humidity. 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 exterior humidity is lower than the interior one and
- the room temperature is high enough (protection against too much cooling down in the winter)

The fan for “comfort ventilation” runs

- Daily according to time window

**Required settings with UVR61-3**

Menu
**ENTER Par** Code: 32

| | |
|---|---|
| Program **PR** | 129 |
| Linking of output **LO** | OFF |
| max 1 ↓ / ↑ | 75/70 |
| max 3 | 10 |
| min1 ↑ / ↓ | 2/1 |
| min3 | 9 |
| diff1 ↑ / ↓ | 1.0/0.5 |

**TIME W**

| | |
|---|---|
| Time window 1 | |
| 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 |
| 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)

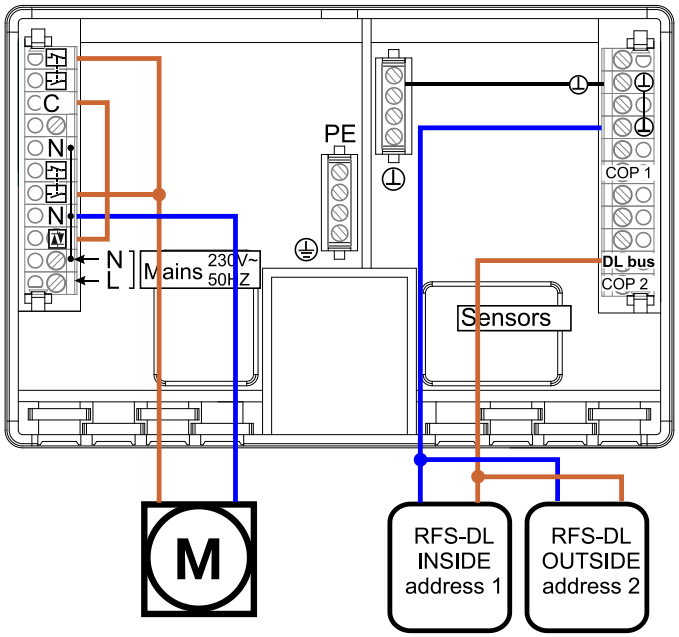
| | |
|---|---|
| Sensor S1 | E1 |
| Sensor S2 | E2 |
| Sensor S3 | E3 |
| Sensor S4 | E4 |

| | |
|---|---|
| O1 | Auto |
| O2 | Auto |
| O3 | Auto |

**Display**

| | |
|---|---|
| T1 and E1 | Absolute interior humidity (g/m³, displayed in °C) |
| T2 and E2 | Absolute exterior humidity (g/m³, displayed in °C) |
| T3 and E3 | Exterior temperature |
| T3, 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, comfort ventilation remains activated.

Application 4

# Room drying with minimum temperature monitoring and “Comfort ventilation”

A “humid” room should be ventilated with the goal of lowering the humidity. 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)

The fan for “comfort ventilation” runs

- daily according to time window <u>if the room temperature is high enough</u>.

**Required settings with UVR61-3**

Menu
**ENTER Par** Code: 32

| | |
|---|---|
| Program **PR** | 129 |
| Linking of output **LO** | OFF |
| max 1 ↓ / ↑ | 75/70 |
| max 3 | 10 |
| min1 ↑ / ↓ | 2/1 |
| min3 | 9 |
| diff1 ↑ / ↓ | 1.0/0.5 |

**TIME W**

| | |
|---|---|
| Time window 1 | |
| 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 |
| 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 |

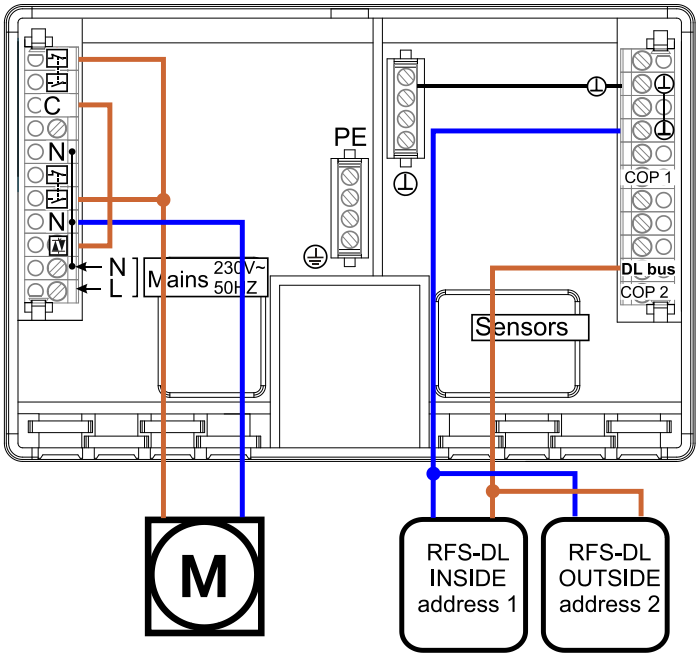
**SENSOR** (value transfer)

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

**Display**

| | |
|---|---|
| T1 and E1 | Absolute interior humidity (g/m³, displayed in °C) |
| T2 and E2 | Absolute exterior humidity (g/m³, displayed in °C) |
| T3 and E3 | Exterior temperature |
| T3, 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

A wine cellar should be ventilated with the goal of lowering the humidity. 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 interval switching (“Timer”) is activated.

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

**Required settings with UVR61-3**

Menu **ENTER Par** Code: 32

| | |
|---|---|
| Program **PR** | 512 |
| Linking of output **LO** | OFF |
| max 1 | 75/70 |
| max 2 | 100/95 |
| max 3 | 50/45 |
| min 1 | 2/1 |
| min 2 | 62/60 |
| min 3 | 11/10 |
| diff 1 | 1.0/0.5 |
| diff 2 | -- |
| diff 3 | -- |

**TIME W**

| | |
|---|---|
| Time window 1 | |
| Outputs | OPO 123 |
| Time on/off | 10.0/10.30 |

**Timer *optional***

| | |
|---|---|
| Outputs | OPA 1 |
| 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 |

diff 2 and diff 3 are set to “unused” (setting above 98°C, display: --)

min2 = Turn-on threshold for the relative humidity in % (display: °C)

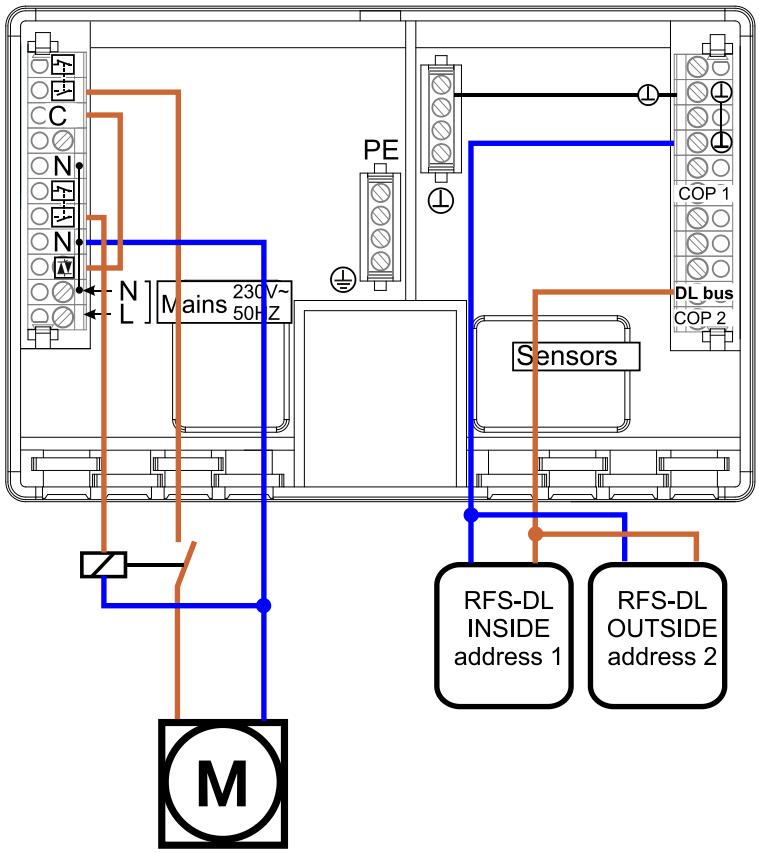
min3 = Turn-on threshold for the room temperature in °C

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/m³, displayed in °C) |
| T2 and E6 | Absolute exterior humidity (g/m³, 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**.