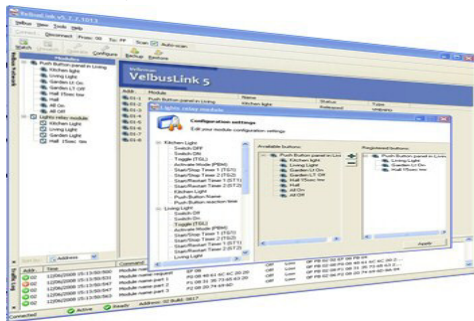# MULTIROOM TEMPERATURE CONTROLLER SYSTEM

- Up to 32 sensors per controller
- Up to 7 zones
- Up to 31 program instructions can be saved per sensor or zone
- Program types :
  - *day programs*
  - *working day programs*
  - *weekend programs*
 - *week programs*
- Power supply: 12VDC ... 18VDC/50mA

VMB1TC

VMB1TCW

VMB1TSW

VMB1TS

There are several manuals available for this temperature control system:

1. Getting started manual, This guide can be found in the sensor package, and provides an overview of the system. Read this first!

2. This manual, use it together with the getting started manual for standard system set-up.

3. An extended manual is available for download. Use this manual for special features and to study examples.

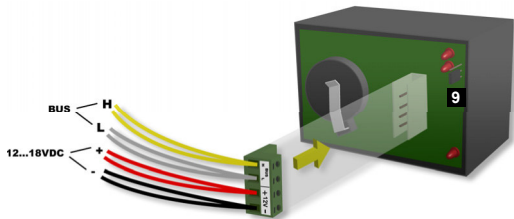4. A controller menu overview sheet is also available for download, used as reference.
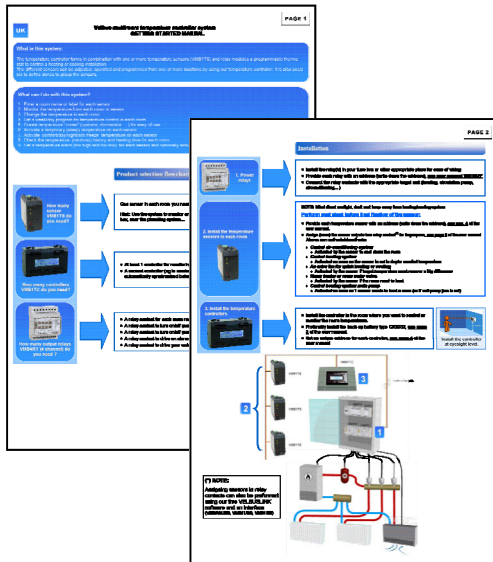
IMPORTANT: VMB1TS(W) and VMB1TC(W) modules have the unique feature of user firmware update!
Due to the large amount of applications, check our web site for manual updates and firmware updates. Updates can add or improve functionality, not described in these manuals.
Your current firmware version can be checked using the Velbuslink PC software.

In this manual:

1. Temperature controller 'VMB1TC' connection

Connection

Battery backup

To avoid losing the clock when a power failure occurs, a backup battery (3V Lithium CR2032) can be installed in the battery holder at the back of the module.

To avoid premature depletion of the battery, only install it when permanent power is supplied to the Velbus system.

9 Place the TERM jumper if the module is connected at the start or end of a cable on the Velbus.
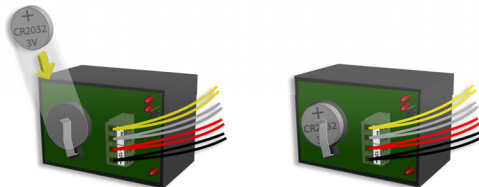
Remove the jumper in all other cases. Place a jumper on the end module of the longest cable only, NOT on each end point.

E.g. a normal two-story house will have 3 terminators: 1 upstairs end point, 1 downstairs end point and 1 in the fuse box.

2. Temperature sensor 'VMB1TS' connection and button+indicators overview

LED indication	
1	Cooling mode
2	Comfort mode
3	Day mode
4	Night mode
5	Heating or air-conditioning on

| Sensor	
6	Temperature sensor

Controls	
7	Mode pushbutton
7+11	Assign high temperature alarm*
7+12	Assign low temperature alarm*
7+13	Assign circulation pump*
10	Assign airco (COOL)*
11	Assign day setup for Central heating (DAY)*
12	Assign extra fan for boost heat (BOOST)*
13	Assign heater (HEAT)*

Settings	
8	Address setting*
9	Terminator

Wiring	
14	power supply 12 to 18Vdc
15	Velbus

BUS TWISTED PAIR (0.5mm²)

* only available for the VMB1TS module

5
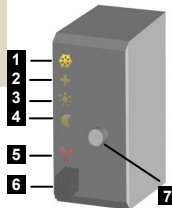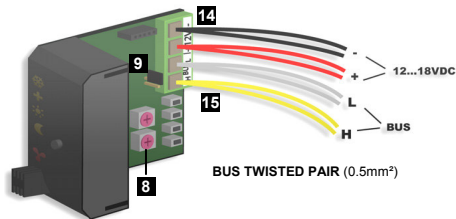
3. Address selection

In order to identify each module in your system it is necessary to set an unique address for each module. This address will also be used by the PC software to scan all the addresses and to identify the modules.
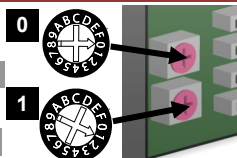

VMB1TSW / VMB1TCW

Adress setting trough Velbuslink©

### VMB1TS : ADDRESS SETTING USING THE 2 ADDR ROTARY SWITCHES.

CAUTION: Addresses 81,91,A1, B1, C1, D1, E1, F1 & FF can NOT be used. Examples of valid addresses: 01, 02, 03…. 0A, 0B…, 1A, 1B…
A total of 248 valid addresses can be selected for this module.

Example of a valid address: "0 1"

VMB1TC : ADDRESS SETTING USING THE MENU

1	2	3	4	5
Configuration	Configuration	Address	Address __	Address 15

6	7
Address	Mo 0:06
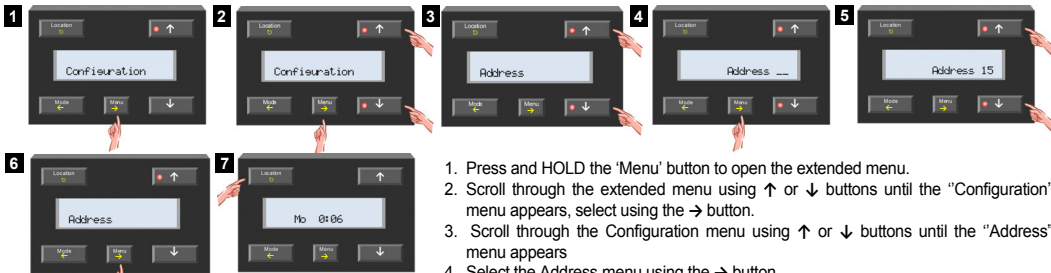
1. Press and HOLD the 'Menu' button to open the extended menu.
2. Scroll through the extended menu using ↑ or ↓ buttons until the ''Configuration'' menu appears, select using the → button.
3. Scroll through the Configuration menu using ↑ or ↓ buttons until the ''Address'' menu appears
4. Select the Address menu using the → button.
5. Enter a unique address ('01'...'FE') using the ↑ or ↓ button.
6. Confirm the address using the → button.
7. Exit the menu using the ↻ button.

Each module on the Velbus system must have its own unique address, write down the address for later use!

4. Assign a relay channel to a temperature sensor function *(can also be performed using PC, advised)*

Only available for VMB1TS

On the sensor module:
Set the sensor module in anti-freeze mode by pressing the push button on the front panel repeatedly until all LED's are off.

On the relay module:

ADDR

First remember the address of the module to reinstate it later on. Set the Address rotary switches to 'C1', 'C2', 'C3', or 'C4', depending on the chosen channel. The 'MODE' LED of that channel will flash to indicate learning mode.

Mode

Time1

Set the MODE and TIME1 rotary switches of the chosen channel to '0' (instant control)

Select one of the below functions: (ask someone to help if needed)
To assign a room heater or room water valve to a relay contact (>> this will mostly be used)
  ➤ **Press button 13 on the sensor until relay engages**
To assign the air-conditioning system (fan or compressor control) to a relay contact:
  ➤ Press button 10 on the sensor until relay engages.
To assign the central heating system day/night setting to a relay contact:
  ➤ Press button 11 on the sensor until relay engages.
To assign an extra fan for quick heating or cooling (boost) to a relay contact:
  ➤ Press button 12 on the sensor until relay engages
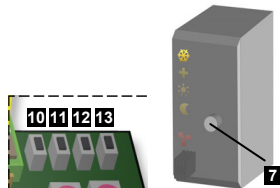To assign the central heating system main pump to a relay contact
  ➤ Press button 7+ button 13 on the sensor until relay engages
To assign a low temperature alarm to a relay contact
  ➤ Press button 7+ button 12 on the sensor until relay engages
To assign a high temperature alarm to a relay contact
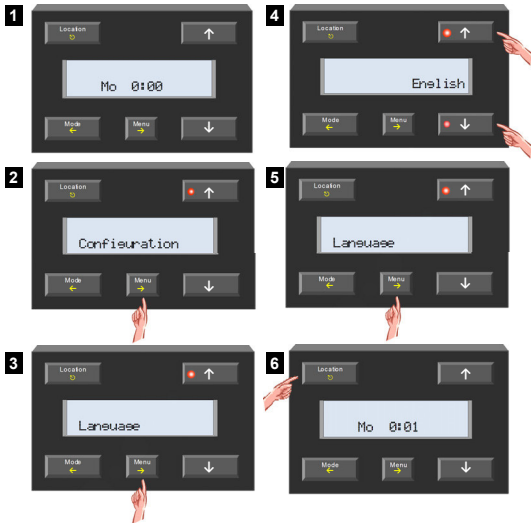 ➤ Press button 7+ button 11 on the sensor until relay engages

10 11 12 13

7

☞ **Do not forget to set the address of the relay module back to its original value.**

☞ **Repeat the procedure for other sensors or other functions.**
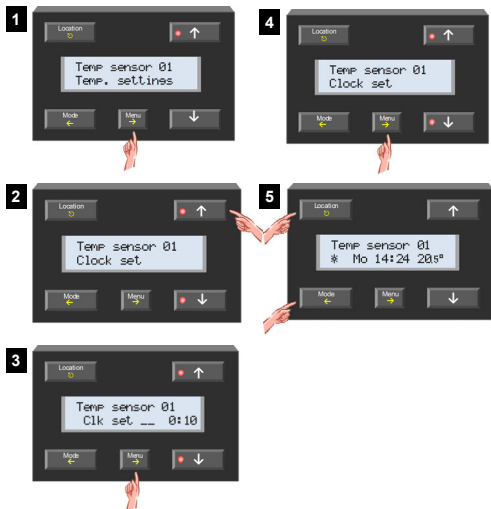
5. Set the menu language on the controller

1. **When applying power to the controller for the first time, only the time is shown on the display.**

2. Press and HOLD the 'Menu' button to open the extended menu. Scroll to "Configuration" menu using the ↑ or ↓ buttons. Confirm using the → button.

3. Enter the language menu using the → button.

4. Choose the desired language using the ↑ or ↓ buttons.

5. Confirm the language selection using the → button.

6. Exit the menu using the ↺ button.

See display & menu overview on page 21 & 22

8

VELBUS

6. Setting the clock

It is important to set the correct time for the internal clock.
Setting the time on this module will synchronise all clocks in your Velbus system.

When applying power to the controller for the first time, only the time is shown on the display.

1. Open the "short" menu by pressing the 'Menu' button.

2. Scroll to "clock set" menu using ↑ or ↓ buttons.

3. Select the set clock menu using the → button. The day-indication flashes.

   · Set the day using ↑ or ↓ buttons.
   · Confirm using the → button. The hour-indication flashes.
   · Set the hour using ↑ or ↓ buttons.
   · Confirm using the → button. The minutes-indication flashes
   · Set the minutes using ↑ or ↓ buttons.

4. Confirm using the → button to start the clock from the set time.

5. Exit the menu using the ↻ button.

See display & menu overview on page 21 & 22

9

7. Sensors setup

Searching for temperature sensors

Before the controller can work with the temperature sensors it must first scan the network for all connected sensors.

If temperature sensors are installed or removed afterwards, the search process must be repeated to update the list of sensors to the new situation. **NOTE: Make sure "all rooms" or "zone" is not selected.**
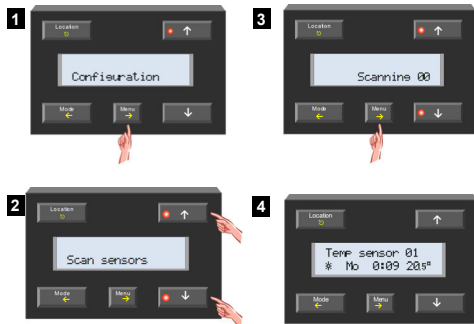
1. Press and HOLD the 'Menu' button to open the extended menu. Scroll through the extended menu using ↑ or ↓ buttons until the 'Configuration' menu appears. Select the configuration menu using the → button.

2. Scroll through the Configuration menu using ↑ or ↓ buttons until the 'Scan sensors' item appears.

3. Confirm the scan sensors menu using the → button.
   The search for sensors on the network is now in progress.

4. Once the search process is completed, the first of the connected temperature sensors is shown on the display.

Assign sensor names (can also be done using PC, advised)

Each sensor can have a specific label or name *(Default all the temperature sensors will have the same name 'Temp sensor' & address)*
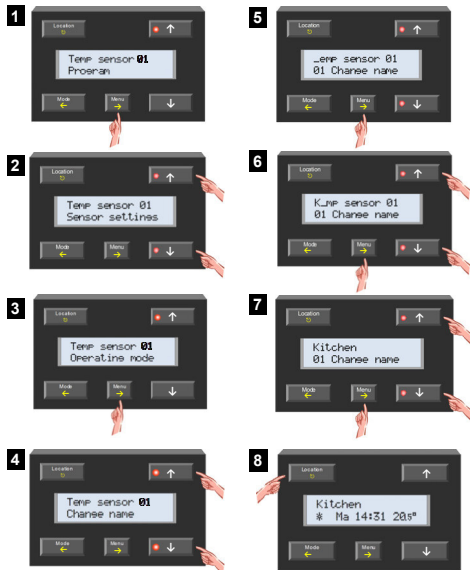
1. Press and HOLD the 'Menu' button until the extended menu appears.

2. Scroll through the extended menu using ↑ or ↓ buttons until the 'Sensor settings' menu appears.

3. Select the Sensor settings menu using the → button.

4. Scroll through the menu using the ↑ or ↓ button until the 'Change name' item appears.

5. Select the change name menu using the → button. The cursor flashes on the first character of the name. The second line indicates the address of the selected temperature sensor. With this address the location of the sensor can be determined.

6. Change the character at the cursor location using ↑ or ↓ buttons and confirm using the → button. The cursor moves to the next character.

7. Repeat step 6 until all characters are entered.

8. Exit the menu using the ↺ button. Press the 'Location' button to select the next sensor.

9. Repeat steps 1 through 8 until every sensor has a meaningful name.

8. operating the temperature controller

Select room or zone

To set up a heating system for different rooms, each room will need a temperature sensor. Multiple rooms can be grouped together in zones* (e.g. ground floor, second floor, bedrooms…).
Prior to setting heating (or air-conditioning) requirements for a certain room or zone, the desired room or zone must be selected on the controller.

Press the 'Location' button repeatedly until the desired room or zone is displayed.

Remark:
Press and hold the 'Location' button for easy switching between rooms and zones.

* See extended manual how-to create zones

Recall and change the desired temperature

At any time the desired temperature for a room can be shown and/or changed.

- Press the ↑ or ↓ button. The desired temperature for the selected room is flashing on the display.
- When desired, change the target temperature using ↑ or ↓ buttons.


Return to normal display by pressing the ↻ or ← button or simply wait for ±5 seconds without touching any button.

Upon switching between anti-freeze, night, day or comfort preset, the target temperature will again be replaced with the selected preset temperature.

Setting the comfort, day and night temperature presets

The temperature sensor VMB1TS can be used in 4 modes (comfort ☀, day ☀, night ☾ or standby -). Every mode has its own preset for the desired temperature.
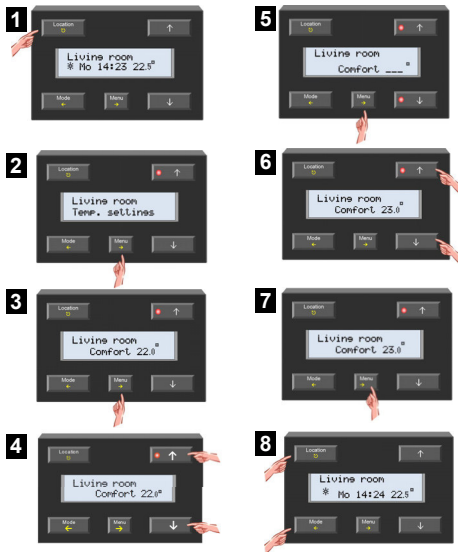
1. Press the 'Location' button repeatedly until the desired room or zone for which one wants to set the preferred comfort, day and/or night temperature is displayed.

2. Press the 'Menu' button to enter the short menu.

3. Select the temperature settings menu using the → button.

4. Scroll to the desired mode using ↑ or ↓ buttons.

5. Select the desired mode using the → button, the temperature starts flashing.

6. Set the desired mode temperature using ↑ or ↓ buttons.

7. Confirm using the → button.

8. Exit the menu using the ↻ or ← button.

NOTE: In the "Sensor setting" menu, it is possible to adjust the temperature limits, these limits will also be used for the "Upper cool temp." and Anti-freeze presets.

13

The heating or (air-conditioning) can be forced temporary (sleep timer) into a certain mode. During this time period, all program instructions will be ignored. When the sleep timer ends, normal program execution is resumed.
This could be useful e.g. to force the bathroom heating in comfort mode for an hour.

1

Press the 'Location' button repeatedly until the desired room or zone is displayed or select "ALL ROOMS" if you go on holiday.

2

Once you switch the desired mode (anti-freeze, night, day or comfort) using the 'Mode' button, the sleep timer (hourglass) is activated automatically.

The LED of the Mode push button (bottom left) starts flashing as well as the indication LEDs on the sensor module. The display indicates an hourglass.
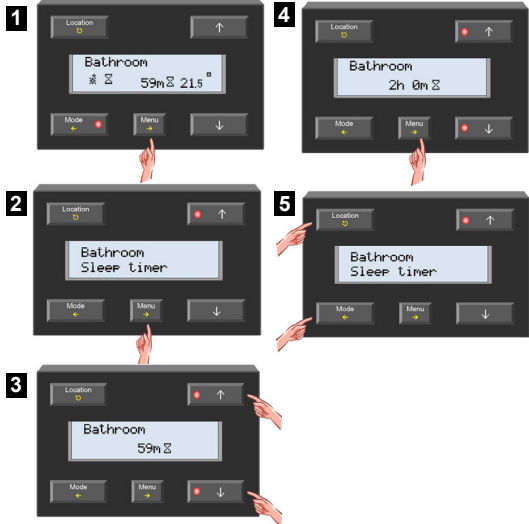The remaining time of the sleep timer is displayed, unless a zone was selected.

NOTE:
To cancel the sleep function and keep the preset mode, press and HOLD the mode button until sleep (hourglass) is cancelled. This preset will remain active until a program step is executed for this sensor or zone.

Setting the sleep time (temporary mode)

Once the heating (or air-conditioning) is in temporary mode, the duration of the sleep timer can be increased or decreased. This could be useful e.g. to leave the heating in comfort mode a few hours/days or manual.

1. If sleep timer is active, press the 'Menu' button
2. The 'Sleep timer' menu appears on the display. Select the item using the → button.
3. The remaining sleep timer-time flashes on the display. Change the time using ↑ or ↓ button.
4. Confirm the changes using the → button.

   Remark: Cancel the changes by pressing the ← button.

5. Exit the menu using the ↺ or ← button.

YOU CAN SELECT :

⇒ Hours ⧗

⇒ Days ⧗ (in case of holiday..)

⇒ Manual ⼿(always locked, in case of summer time..)

---

9. Programming the controller

This controller has two ways to program heating or cooling periods
1- Normal week timer programming (see next pages)
2- Wake-up and goto-bed alarm timer feature
This unique alarm feature makes programming heating or cooling periods very easy. It is even possible to link this timer to other modules in your Velbus system (eg. Open de blinds, power-up the radio...)
The alarm can also be turned ON or OFF in a few steps, just like any clock radio or alarm clock

How to do this:

First set the time you go to sleep and the time you want to wake up.
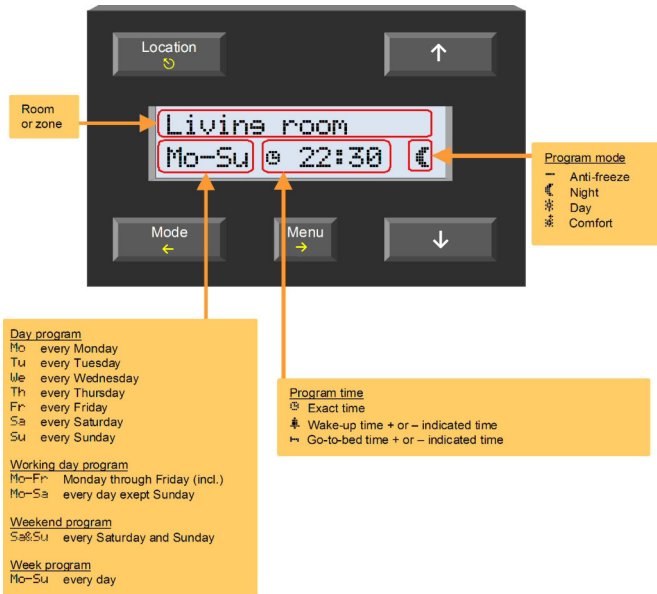
1. Open the "short" menu by pressing the 'Menu' button and select the "Alarm clock set" menu using ↑ or ↓ buttons.
2. Select the "Alarm clock set" menu using the → button. Select the "On" (or OFF to disable the alarm) setting
3. Confirm using the → button. The hour-indication flashes.
4. Set the "Wake-up time" (hour/minutes) using ↑ or ↓ and → buttons.
5. Next Set the "Go-to-bed time" (hour/minutes) using ↑ or ↓ and → buttons.
6. Confirm using the → button.
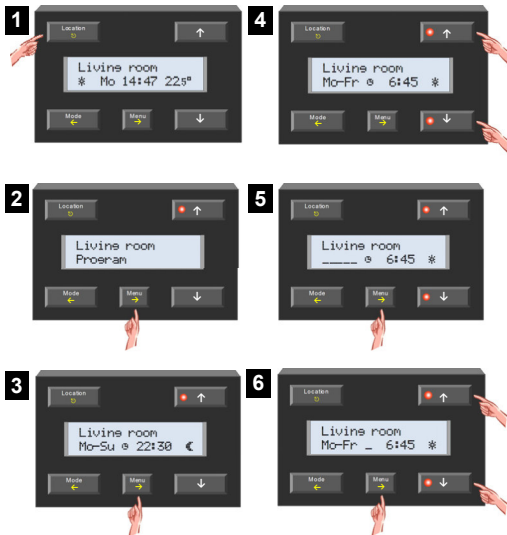7. Exit the menu using the ↺ button.

Next activate the wake-up 🔔 and Go-to-bed ⏰ timers in the program. (see next pages)
If the alarm function is active, the clock symbol 🔔 is indicated on the display.

```
Living room
Mo-Fr ♪-30m    ☀
```

In this program example, you see that from Monday to Friday, 30 minutes (offset) before wake up time, the temperature in the living room will be set to day preset.

velbus

Program step overview

Room or zone → **Living room**
Mo-Su ⊕ 22:30 ☽

Program mode
- — Anti-freeze
- ☾ Night
- ☀ Day
- ❄ Comfort

Day program
Mo   every Monday
Tu   every Tuesday
We   every Wednesday
Th   every Thursday
Fr   every Friday
Sa   every Saturday
Su   every Sunday

Working day program
Mo-Fr   Monday through Friday (incl.)
Mo-Sa   every day exept Sunday

Weekend program
Sa&Su   every Saturday and Sunday

Week program
Mo-Su   every day

Program time
⊕ Exact time
♦ Wake-up time + or – indicated time
⊢ Go-to-bed time + or – indicated time

1. Press the 'Location' button repeatedly until the room or zone of which a program instruction needs to be added is displayed

2. Press and hold the 'Menu' button until the extended menu appears.

3. Select the program menu using the → button. The display shows the first program instruction.

   Remark: When no instructions are entered yet, the line will be empty "- - -". Skip step 4 and proceed with step 5.

4. Scroll through the program instructions using the ↑ button until the instruction line is empty or until the instruction that needs to change is shown.

5. Press the → button to add an instruction or to select the instruction that needs to change. The first data entry field flashes.

6. Use the ↑ or ↓ button to set the day(s) on which the instruction needs to be executed. Confirm using the → button.
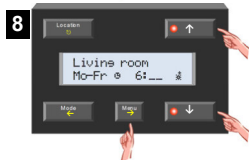
7. Use the ↑ or ↓ button to set the time reference.
   Possibilities on which the instruction needs to be executed are:
   - Exact time ⊕,
   - Relative to the Wake-up alarm time 🔔
   - Relative to the Go-to-bed alarm time 🛏

   Confirm using the → button.

8. Change the program time using ↑ or ↓ buttons and confirm using the → button.

   Remark: I*n case the Wake-up or Go-to-bed time is selected as reference, the offset can be set per 15 minutes with a limit of 4 hours. Step 9 is not applicable.*

9. Set the minutes using the ↑ or ↓ button and confirm with the → button.

10. Set the mode (comfort, day, night or anti-freeze mode) with the ↑ or ↓ button and confirm using the → button. The flashing cursor disappears.

11. Repeat steps 4 through 10 to add or change more program instructions or exit the menu using the ↺ button.
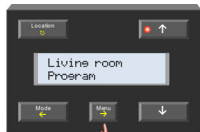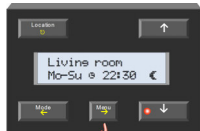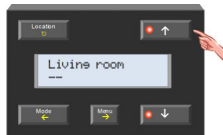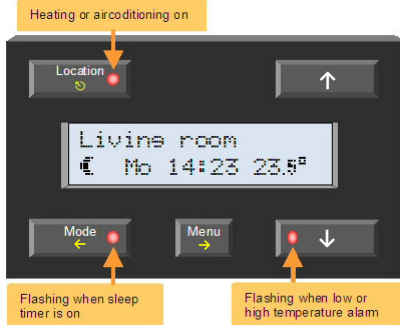
Deleting a program instruction

1. Press the 'Location' button repeatedly until the room or zone of which the program instruction needs to be changed is displayed.

2. Press and hold the 'Menu' button until the extended menu appears.

3. Select the program menu using the → button. The display shows the first program instruction.

4. Scroll through the program using the ↑ or ↓ buttons until the instruction that needs to be removed is shown.

5. Select the instruction that needs to be deleted using the → button. The first data entry field flashes.

6. Use the ↑ button until the instruction line is empty.

7. Confirm using the → button. The program instruction is removed from the memory, the flashing cursor disappears and the next program instruction is shown. If this was the last instruction, the display remains empty.

8. Repeat steps 4 through 7 to remove other program instructions or exit the menu using the ↺ button.

10. Screen & LED indicators

Room or zone	Living room	Mo 14:23 23.5°

Heating or aircoditioning on

Anti-freeze mode
Night mode
Day mode
Comfort mode

Alarm off
Alarm On

Heating
Cooling

Current temperatur

Clock with day indication or remaining 'sleep time'

⊠ Temporary mode
Mode locked
P Room program active
Z Zone program active
A All rooms program active

Flashing when sleep timer is on

Flashing when low or high temperature alarm

Location ↻	Change room or zone. Push and hold to switch between rooms and zones. Exit the menu. Changes made in a data entry screen (flashing item) are discarded.	
Mode ←	Switch between anti-freeze, night, day, comfort mode and start the sleep timer. Push and hold to stop the sleep timer. Move one level back in the menu. Changes made in a data entry screen (flashing item) are discarded.	
Menu →	Open the menu. Push and hold to open the extended menu. Move to the next level in het menu. Changes made in a data entry screen (flashing item) are retained.	
↑ ↓	Alter the data entry (flashing item) or scroll through the menu.	

11. Controller menu overview
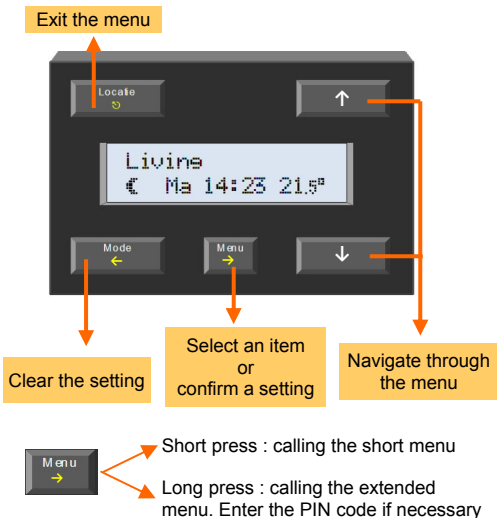
Short menu
- Sleep timer [1]
- Temp. settings
  - Comfort
  - Day temp
  - Night temp
  - To main menu
- Alarm set
- Clock set
- Exit

Extended menu

Program

Sensor Settings
- Operating mode
- Button lock
- Sleep timer
- Low temp. alarm
- High temp. alarm
- Anti-freeze temp
- Upper heat temp
- Lower cool temp
- Upper cool temp
- Hysteresis
- Temp difference
- Unjam pump
- Unjam valve
- Local program
- Zone number [2]
- Diff. sensor [2]
- Sensor cal. [2]
- Change name [3]
- To main menu

Attention : The program, settings and statistic menu will not be accesable when no sensors have been added to the system.

Configuration
- Language
- Temp. Read-out
- Master clock
- Global alarm clk
- Battery backup
- Change PIN code
- Firmware version
- Address [2]
- Link wake-up [2]
- Link go-to-bed [2]
- Scan sensors [2]
- To main menu

Display
- Contrast
- Backlight
- To main menu

Statistics [2]
- Min temp 16.0°
- Max temp 23.0°
- − 0m/5m
- ☾ 0m/5m
- ☀ 8m/1h10m
- ❄ 10m/1h15m
- Σ 18m/2h35m
- To main menu

Exit

Exit the menu

Clear the setting

Select an item or confirm a setting

Navigate through the menu

Short press : calling the short menu

Long press : calling the extended menu. Enter the PIN code if necessary

User Remarks: **1.** *This menu is only accessible if the temporary mode (sleep timer) is activated* **2.** *This menu is not accessible if a zone or "all rooms" are selected* **3.** *This menu is not accessible if "all rooms" are selected*

www.velbus.be

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