



velleman VM148 Programmable Thermostat Instruction Manual

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velleman VM148 Programmable Thermostat



Product Information: Panel Thermostat Module

The Panel Thermostat Module (VM148) is a multifunctional digital thermostat module that allows you to control and monitor the room temperature. It is suitable for general use in heating and cooling systems, such as central heating, air conditioning, and incubators. The module has separate output ON and outputs OFF settings (hysteresis) and a manually adjustable temperature with a red LED display. It comes with board-to-wire connectors and a sensor with a cable length of 20cm. The module has an underflow and overflow indication and a calibration function.

Specifications

- Refresh rate reading: 1 second
- Relay contact: NO – 3A (max. 230V)
- Power supply: 9 – 12V DC
- Consumption: < 70mA
- Weight: 50g

Safety Instructions

Thank you for choosing Velleman products. When using the Panel Thermostat Module, please note the following safety instructions:

- Use an external contactor with currents higher than 3A.
- Do not modify the module without calibration or professional guidance.
- Disconnect the power supply before making any connections or modifications to the module.

Product Usage Instructions

Modules Needed

In addition to the VM148 module, you will need a 12VDC power supply and an external contactor with currents higher than 3A.

General Definitions

- **Heating mode:** Activation of the heating when the measured temperature is below the programmed temperature B until the measured temperature reaches the programmed temperature A.
- **Cooling mode:** Activation of the air conditioning system when the measured temperature is above the programmed temperature B until the ambient temperature drops below programmed temperature A.
- **Off:** The module is not in use.

Set-Up

The actual measured temperature is displayed at power-on or in normal mode. Press the MENU button to access the set-up menu. Use the UP and DOWN buttons to scroll through the options. Press ENTER to confirm a setting. Press MENU to abort the setting or to return to the default settings.

Error Indications

If there is an error with the module, an error message will be displayed. Refer to the manual for troubleshooting steps.

Temperature Modification

To adjust the temperature, press and hold UP or DOWN in the temperature display to display the average target temperature. Use UP and DOWN to adjust the temperature. Press ENTER to confirm the new temperature.

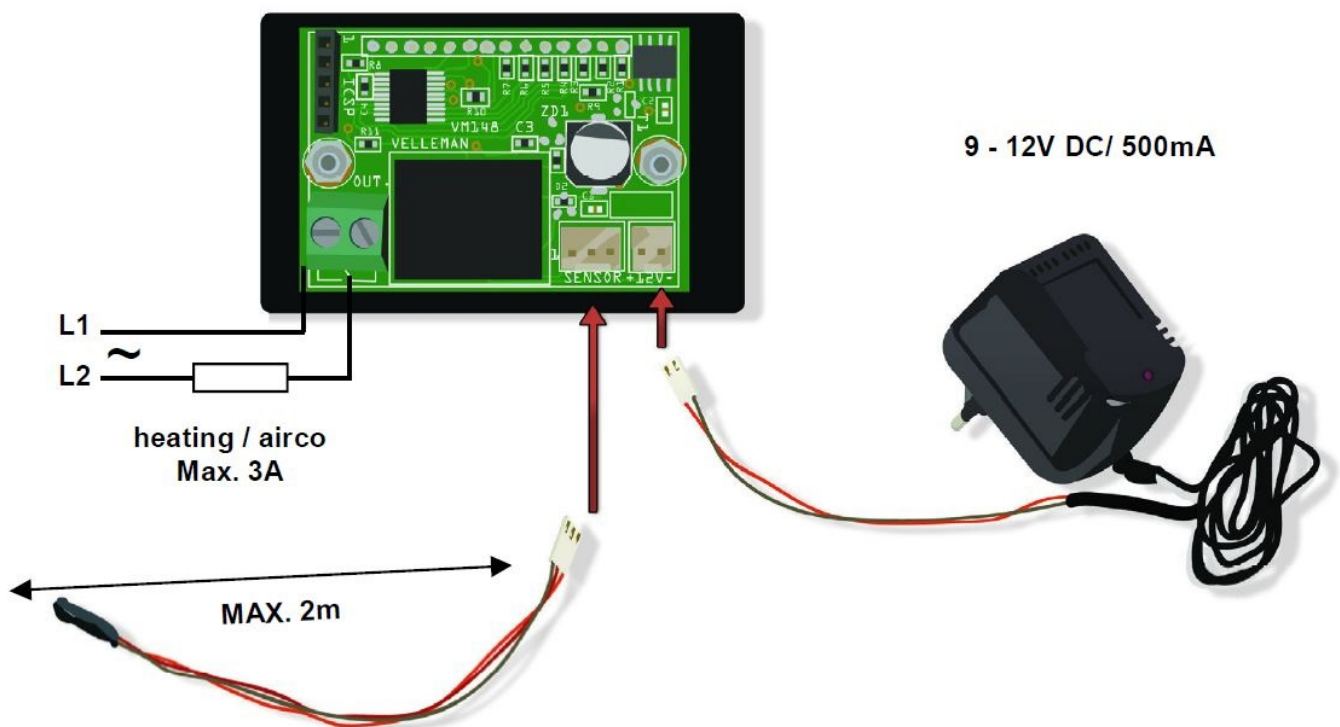
Actual Operation Mode

Press ENTER to display the operation mode of the temperature controller.

Factory Settings

To reset the module to its factory settings, remove the power supply to the module. Hold ENTER pressed and re-establish the power supply to the module. DEF (default) will be displayed. Release the ENTER button. The display will show the firmware version code.

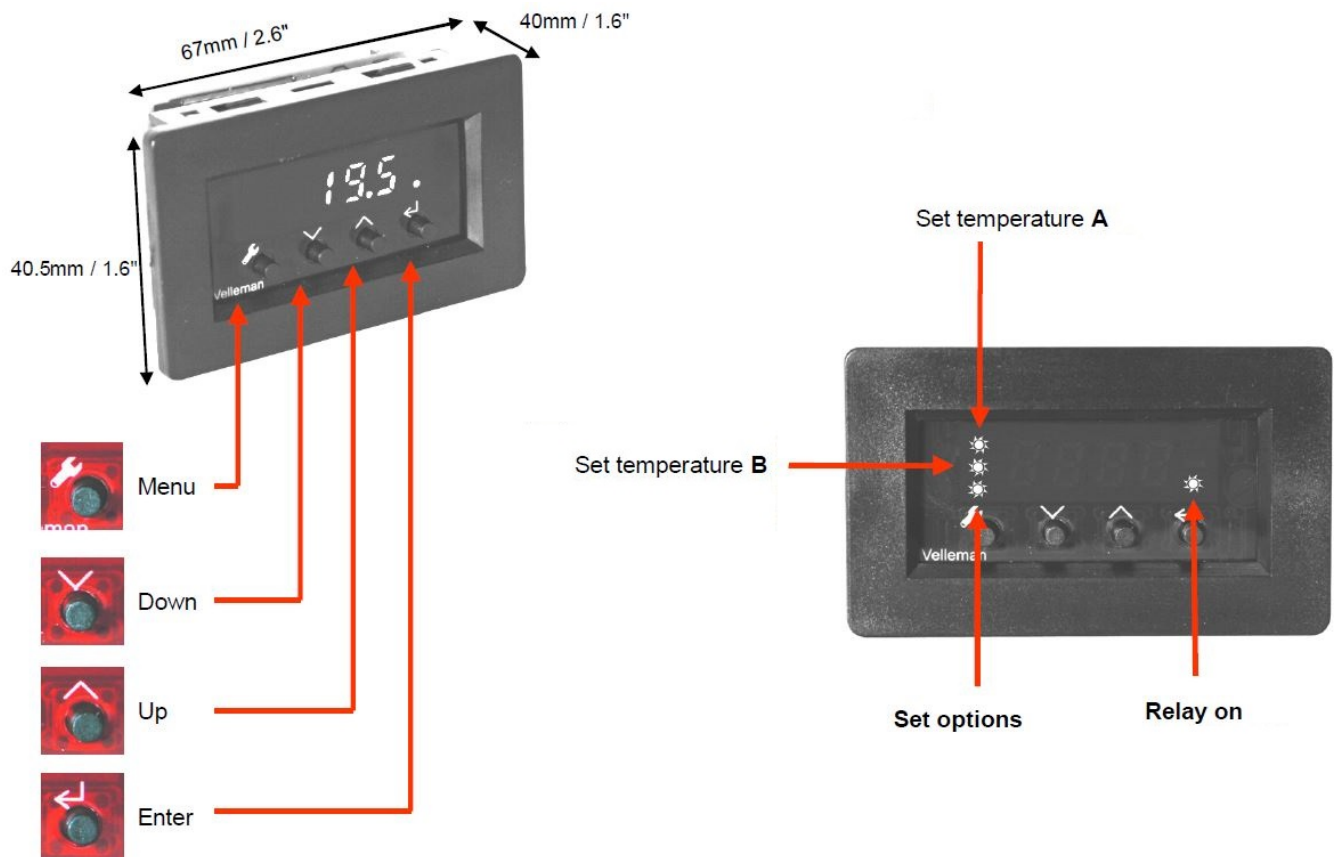
CONNECTION



Temperature sensor

Use a shielded cable as an extension cable for the sensor.

FUNCTIONS



SPECIFICATIONS & FEATURES

Features:

- general purpose panel mount thermostat
- usable for heating or cooling purposes, (central heating, airco, incubator,...)
- separate output-ON and output-OFF setting (hysteresis)
- direct manual temperature adjustment
- bright red LED read-out
- calibrate option
- under- and overflow indication

Specifications

- **Temperature range:**
 - °C: -18°C ~ + 60°C
 - °F: 0°F ~ +146°F
- **temperature resolution:** $\pm 0.5^{\circ}\text{C}$ or $\pm 2^{\circ}\text{F}$
- **accuracy:** $\pm 2^{\circ}\text{C}$, fine tune till $\pm 0.5^{\circ}\text{C}$
- **readout update interval:** 1 second
- **relay contact:** NO – 3A (max. 230V)

- **power supply:** 9 – 12V DC
- **power consumption:** < 70mA
- **weight:** 50g

Factory settings:

- Temp°A = 22°C
- Temp°B = 20°C
- Temp correction = 0°
- Temp display = °C

WARRANTY

This product is guaranteed against defects in components and construction from the moment it is purchased and for a period of **TWO YEARS** starting from the date of sale. This guarantee is only valid if the unit is submitted together with the original purchase invoice. **VELLEMAN** Components Ltd limits its responsibility to the reparation of defects or, as **VELLEMAN** Components Ltd deems necessary, to the replacement or reparation of defective components. Costs and risks connected to the transport, removal, or placement of the product, or any other costs directly or indirectly connected to the repair, will not be reimbursed by **VELLEMAN** Components Ltd. **VELLEMAN** Components Ltd will not be held responsible for any damages caused by the malfunctioning of a unit.

SAFETY INSTRUCTIONS

- All repairs should be executed by qualified technicians.
- Avoid the installation of the module in locations with standing or running water or excessive humidity. Indoor use only !
- Handle the module gently and carefully. Dropping it can damage the circuit board.
- Never exceed the protection limit values indicated in the specifications.
- As safety requirement vary, please check with your local authorities.
- Facilitate the operation of the device by familiarising yourself with its adjustments and indications.
- Velleman modules are not suitable for use or as part of life support systems, or systems that might create hazardous situations of kind.

Introduction

Thank you for choosing Velleman. This multifunctional digital thermostat module allows you to control and monitor the room temperature.

Modules needed:

Apart from the VM148 module, you will be needing a 12VDC power supply. Use an external contactor with currents higher than 3A.

Possibilities:

- The module allows you to maintain the room temperature between 2 programmed limits. Example: The room temperature must not drop below 20°C. Once the heating is activated, the room temperature must reach 22°C before being deactivated.

- Control of the air conditioning system.
- Temperature monitoring in e.g. a housing or greenhouse, of a liquid...).

General definitions:

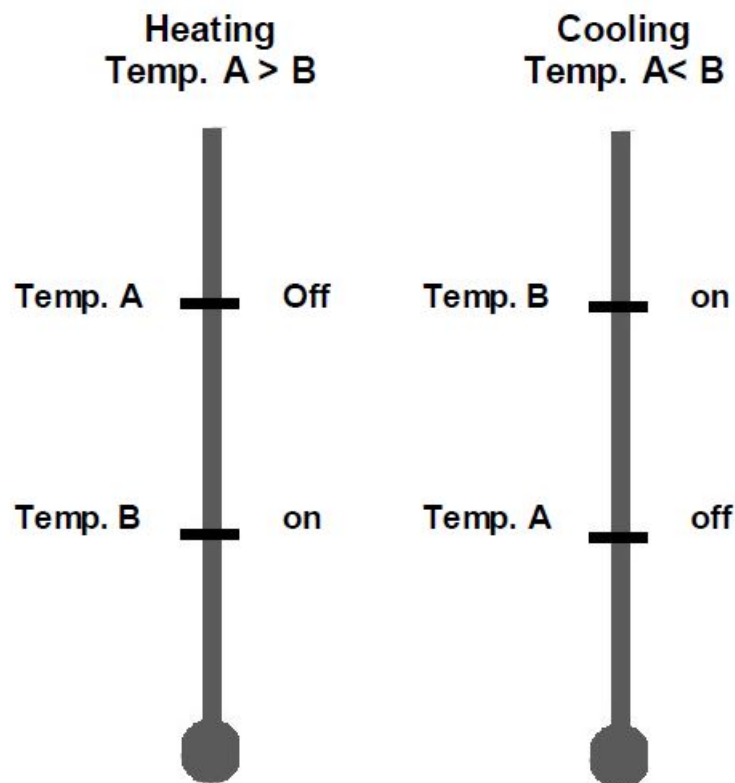
Hysteresis: The temperature difference between temp° A and temp °B (min. 0.5°C). Temp°A will automatically rise by 0.5°C if the two temperature settings have been programmed identically.

Heating mode: Activation of the heating when the measured temperature \leq programmed temperature B until the measured temperature $>$ programmed temperature A. Heating mode is activated when temp°A $>$ temp°B.


Cooling mode: Activation of the air conditioning system when the measured temperature $>$ programmed temperature B until the ambient temperature drops below programmed temperature A. Cooling mode is activated when temp°A $<$ temp°B.

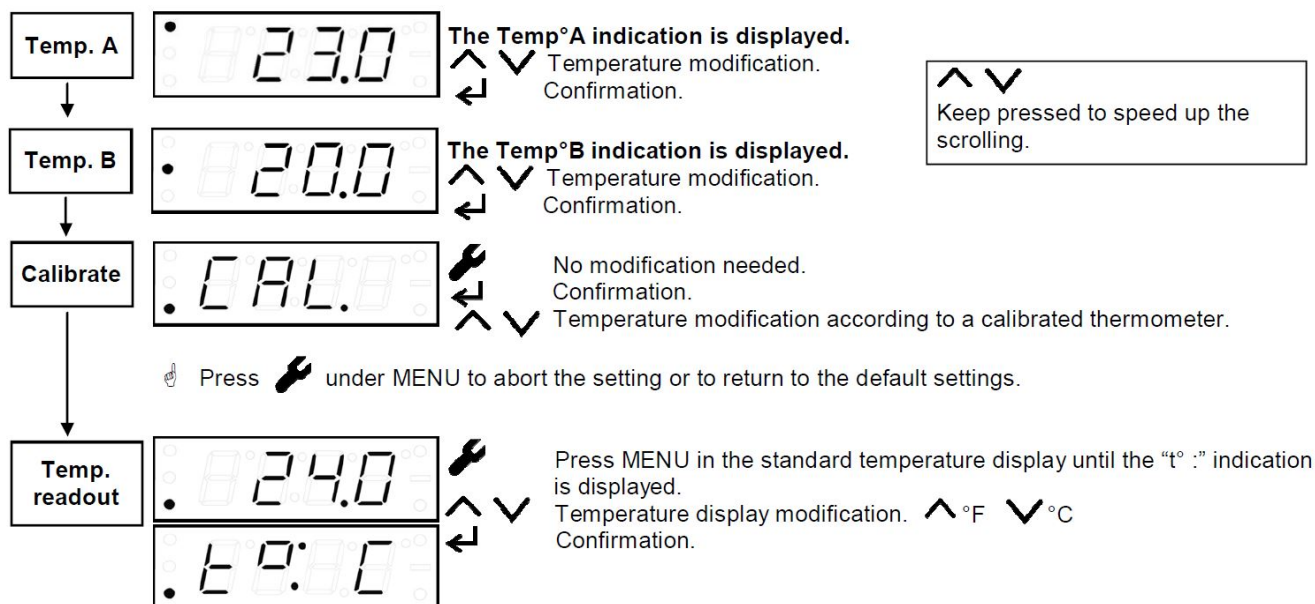
A red dot is displayed in the right corner below when the relay, and consequently the connected device, is activated.

Temperature display: The actual temperature and the settings can be displayed in ° Celsius and ° Fahrenheit.



SET-UP

The actual measured temperature is displayed at power-on or in normal mode. Press  to access the set-up menu.



ERROR INDICATIONS

UnFL – Underflow error: The measured temperature is lower than the minimum measurable temperature (min. temp° = -18°C or 0°F).



OvFL – Overflow error: The measured temperature is higher than the maximum measurable temperature (max. temp° = +60°C or 146°F).



SEnS – Sensor error: Sensor problem or faulty connection.



ACTUAL OPERATION MODE

Press ENTER to display the operation mode of the temperature controller.



Heating mode: temp° A > temp° B



Cooling mode: temp° A < temp° B

TEMPERATURE MODIFICATION

This handy function allows you to modify the temperature directly without reprogramming the max. and min.

values (temp° A and temp° B). the limit values will automatically shift with the temperature modification.

Shortly press **UP or DOWN** in the temperature display to display the average target temperature.



Repeatedly press **UP or DOWN** to rise or lower the target temperature. Example: Set the target temperature to 25°C; temp° A and temp° B will automatically be modified to 26°C and 24°C.

FACTORY SETTINGS

Remove the power supply to the module. **Hold ENTER** pressed and re-establish the power supply to the module. DEF (default) will be displayed. Release the **ENTER** button. The display will show the firmware version code.

PANEL THERMOSTAT MODULE

Advertisement for the Velbus Home Automation System. The image shows a modern house with a large window displaying a living room. To the right, a thermostat module is shown with a digital display showing 'ON---ALL---OFF' and 'Sphere Alarm'. Below the house, a website screenshot for Velbus is visible. The Velbus logo is also present.

All appliances get intelligent, how about your home?
see our website : www.velbus.be

Velleman Home Automation System

Documents / Resources



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