

For the operator

Operating instructions



auroSTEP plus

VMS 8 D, VIH S1 .../4 B, VIH S2 .../4 B

EXPen

Publisher/manufacture

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1 Safety

1.1 Action-related warnings

Classification of action-related warnings

The action-related warnings are classified in accordance with the severity of the possible danger using the following warning signs and signal words:

Warning symbols and signal words



Danger!

Imminent danger to life or risk of severe personal injury



Danger!

Risk of death from electric shock



Warning.

Risk of minor personal injury



Caution.

Risk of material or environmental damage

1.2 Intended use

There is a risk of injury or death to the user or others, or of damage to the product and other property in the event of improper use or use for which it is not intended.

The product is used to store and provide hot water, and to regulate its distribution. This hot water is generated thanks to the solar technology. The product must only be operated in the solar circuit with Vaillant ready-mixed solar fluid. The product was specially developed for Vaillant **auroTHERM** (VFK .. D and VFK .. VD) solar collectors.

Intended use includes the following:

- observance of the operating instructions included for the product and any other system components
- compliance with all inspection and maintenance conditions listed in the instructions.

This product can be used by children aged from 8 years and above and persons with reduced physical, sensory or mental capabilities or lack of experience and knowledge if they have been given supervision or instruction concerning use of the product in a safe way and understand the hazards involved. Children must not play with the product.

Cleaning and user maintenance work must not be carried out by children unless they are supervised.

Any other use that is not specified in these instructions, or use beyond that specified in this document shall be considered improper use. Any direct commercial or industrial use is also deemed to be improper.

Caution.

Improper use of any kind is prohibited.

1.3 General safety information

1.3.1 Installation by competent persons only

Only an approved competent person is permitted to carry out installation, inspection, maintenance and repair work on the product.

1.3.2 Danger caused by improper operation

Improper operation may present a danger to you and others, and cause material damage.

- ▶ Carefully read the enclosed instructions and all other applicable documents, particularly the "Safety" section and the warnings.

1.3.3 Risk of burns from components through which solar fluid flows and from hot water pipes

In solar mode, components through which solar fluid flows, such as collectors and solar lines, as well as the hot water pipes, reach extremely high temperatures. Touching these components may result in serious personal injury.

- ▶ Only touch these components if you have first checked the temperature.

1.3.4 Risk of death due to changes to the product or the product environment

- ▶ Never remove, bridge or block the safety devices.
- ▶ Do not alter the safety devices in any way.
- ▶ Do not damage or remove any seals on components. Only authorised competent persons or customer services may modify sealed components.
- ▶ Do not make any changes:



1 Safety

- to the product itself
- to the lines for the solar fluid, water and power supply
- to the discharge line and the collecting container for the solar fluid
- to the expansion relief valve
- to the drain lines
- to constructional conditions that may affect the operational reliability of the product

1.3.5 Risk of injury and material damage due to maintenance and repairs carried out incorrectly or not carried out at all

- ▶ Never attempt to carry out maintenance work or repairs on your product yourself.
- ▶ Faults and damage should be immediately rectified by a competent person.
- ▶ Adhere to the maintenance intervals specified.

1.3.6 Structural damage due to escaping water

Escaping water can cause damage to the building.

- ▶ If there is a possibility of leaks in the pipe-work, close the service valves immediately.
- ▶ Have any leaks remedied by a heating specialist company.

1.3.7 Risk of material damage caused by frost

- ▶ Ensure that the product is installed in a frost-free room.
- ▶ Ensure that only solar fluid from the manufacturer is used.
 - By filling the system with solar fluid from the manufacturer, you can achieve frost protection of up to approx. -28 °C. However, at outside temperatures lower than -28 °C, there is no immediate risk of frost damage, because the explosive effect of the water is reduced.



2 Notes on the documentation

2.1 Observing other applicable documents

- You must observe all operating instructions enclosed with the system components.

2.2 Storing documents

- Keep this manual and all other applicable documents safe for future use.

2.3 Applicability of the instructions

These instructions apply for the following only:

Product – Article numbers

	Article number
VMS 8 D	0010017719
VIH S1 250/4 B	0010017708
VIH S2 250/4 B	0010017709
VIH S1 350/4 B	0010017710
VIH S2 350/4 B	0010017711

3 Product description

3.1 System performance data

The system should be dimensioned in such a way that the volume of the cylinder is sufficient for two days. In areas where the sun shines brightly, we recommend that you use a cylinder with a lower volume in order to prevent frequent stagnation in the system.

The solar system has been tested with radiation exposure over a collector surface of 1000 W/m².

The system's degree of solar cover depends on the relationship between the collector surface and the cylinder surface, on the geographical circumstances (the collector surface's country and alignment), and on the type of cylinder (mono-valent or bivalent). If the system has been designed and installed correctly, the guideline value is up to 3 kWh/m²d (one collector = 2.3 m²).

The consumption of electrical energy for 2000 hours in solar mode is 149.5 kWh.

The frost protection function is controlled via a post-heating installation and/or via the internal electrical heating rod. The minimum temperature of 10 °C can be set in the DIA system and can then be used as a switch-on threshold in the cylinder (→ Page 5).

The maximum daily hot water output can be found in the table in the appendix:

Maximum daily hot water output (→ Page 11)

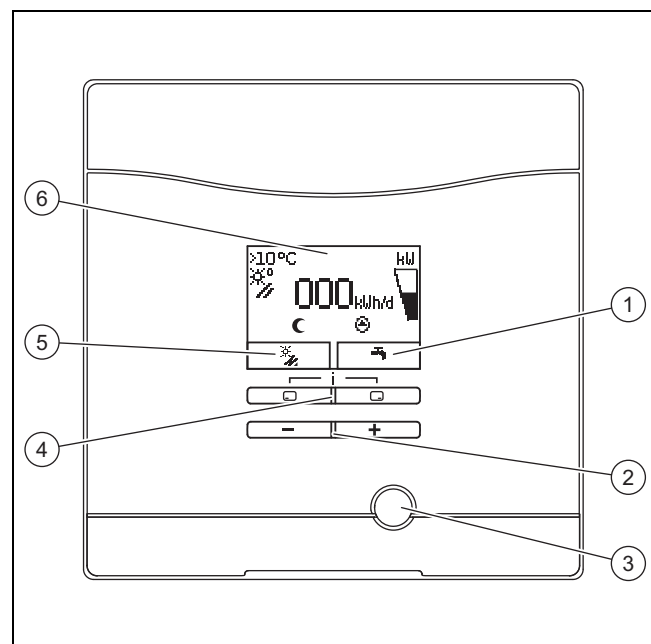
3.2 Digital Information and Analysis System (DIA)

The product is equipped with a Digital Information and Analysis System (DIA system). The DIA system consists of a display that shows symbols and plain text, along with 5 operating buttons. The DIA system provides information on the operating condition of the product and helps you deal with problems.

The display lights up when one of the DIA system buttons is pressed. At first, pressing the button does not trigger any other function.

The light automatically switches off after one minute if no further buttons are pressed.

3.2.1 Operator control element for the DIA system (Digital Information and Analysis System)



- | | | | |
|---|--|---|--|
| 1 | Display of the current assignment of the right-hand selection button | 4 | Left- and right-hand selection button |
| 2 | Left- and right-hand selection button | 5 | Display of the current configuration of the left-hand selection button |
| 3 | Fault clearance key | 6 | Display |

3.2.2 Displayed symbols

Symbol	Explanation
	Display of the current solar output (bar display) Power transmitted to the cylinder
	Temperature at the collector temperature sensor (T5)
	Solar pump(s) active Flashes: Solar circuit is starting up (filling of the field) Permanently on: Solar circuit running

4 Operation

Symbol	Explanation
	Hot water settings (time period and temperature)
 F.XX	Fault in the solar system Appears instead of the basic display. A plain text display explains the displayed fault code.
	Time period for post-heating installations inactive
	Time period for post-heating installations active

3.3 Information on the identification plate

The identification plate is attached at the factory so that it is above the safety cut-out. The identification plate contains the following information:

Information on the identification plate	Meaning
VMS 8 D	For identification
P_{max}	Maximum solar output
m	Weight
$V_s \text{ prim}$	Solar circuit volume
$T_{max \text{ prim}}$	Solar circuit maximum temperature
$P_{max \text{ prim}}$	Solar circuit maximum operating pressure

3.4 Serial number

The 10-digit article number for the product (solar charging system and cylinder) can be found in the serial number. The seventh to sixteenth numbers constitute the article number.

The serial number is located on the identification plates for the solar charging system and the cylinder. You can also view the serial number for the solar charging system in the display (→ **Operating instructions**).

3.5 CE label



The CE label shows that the products comply with the basic requirements of the applicable directives as stated on the identification plate.

The declaration of conformity can be viewed at the manufacturer's site.

4 Operation

4.1 Measures before starting up

Before starting up the product (e.g. after switching off and draining due to an extended period of absence), proceed as follows:

- ▶ Before heating up for the first time, open a hot water draw-off point to check that the vessel is filled with water and the isolator device in the cold water pipe is not closed.
- ▶ If no water flows to the hot water draw-off point, make absolutely sure that the drain valve (1) on the storage cylinder is closed, and then open the isolator device in the cold water pipe.
- ▶ Open a hot water draw-off point and allow the air from the line to escape until the water comes out without any air bubbles.

4.2 Starting up the product

- ▶ On the partition that was installed on-site by your competent person (e.g. fuse or power switch), switch on the power supply to the product.

4.3 Operating concept

You can operate the product using the /  selection buttons and the  and  buttons.

Both selection buttons have a soft key function. This means that the function of the selection buttons changes.

If, for example, the left-hand selection button  is pressed in the basic display, the current function of  switches to **Back**.

Press  :

- to cancel the change to a set value
- to go one selection level higher in the menu.

Press  :

- to confirm a set value
- to go one selection level lower in the menu.

Press  +  at the same time:

- to call up a menu with additional functions.

Press  or  :

- to go back and forth between the individual points of the entry list in the menu
- You can increase or decrease a selected set value.

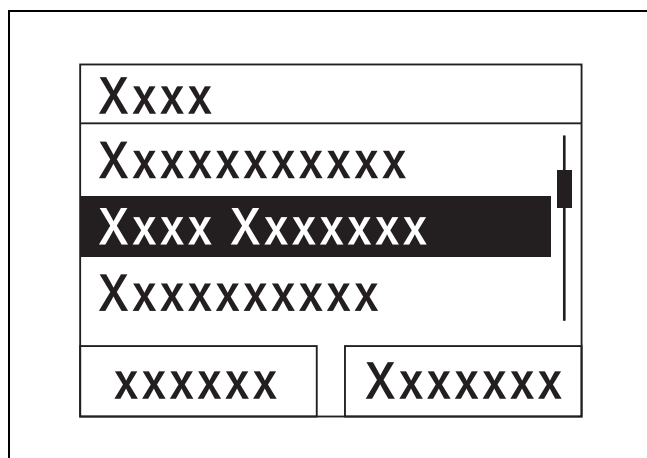
Configurable values are always displayed flashing.

You must always confirm any change to a value. Only then does the product save the new setting.



Note

You always have the option to cancel the change to a setting or the reading of a value by pressing the left-hand selection button.



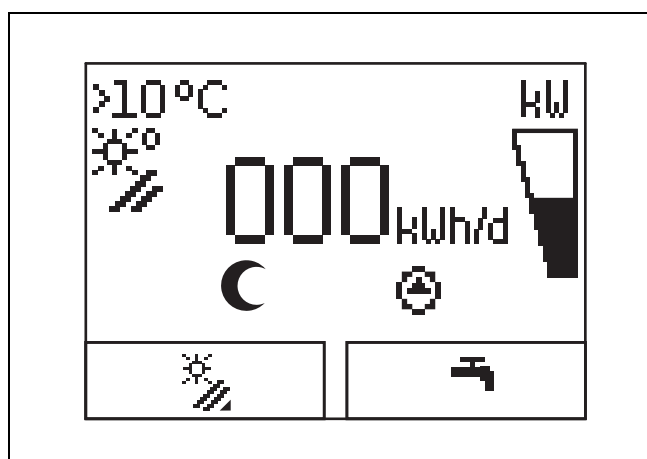
A highlighted object is indicated in the display inversely (light text on dark background).



Note

If you do not press any buttons for more than 15 minutes, the display returns to the basic display. Any unconfirmed changes are then cancelled by the product.

4.4 Basic display



In the normal operating status, the basic display is shown. The basic display shows the current condition of the solar system. If the display is dimmed, the first button push switches on the display illumination. In this case, to trigger the button function, you must press the button again.

You can switch back to the basic display by:

- If required, press  several times to access the previous selection level or the basic display
- not pressing any button for longer than 15 minutes.

The product does not save any unconfirmed changes in this case.

If there is a fault message, the basic display switches to a plain text display of the fault message.

4.5 Operating levels

4.5.1 Operating level

The standard operating level offers you the most frequently used setting options that do not require any special prior knowledge and displays the most important information.

You can access additional information using a menu.

4.5.2 Installer level

The installer level must only be operated by a competent person. The installer level is therefore protected with a code. The competent person uses this level to adjust the product's parameters on the solar system.

4.6 Setting the hot water generation parameters

You can set or read the following parameters in the basic display:

- Cylinder temperature (top)
 - Target hot water temperature
 - One-time cylinder charging
- ▶ Press .
- ▶ Press  or  to change the value that is displayed.
- ▶ Press  to save the new value.

4.7 Displaying the solar yields

You can display the solar yields for the following time frames in the basic display:

- Previous day
 - Month
 - Years
 - Total
- ▶ Press .
- ▶ Press  to display the next value.

4.8 Menu functions

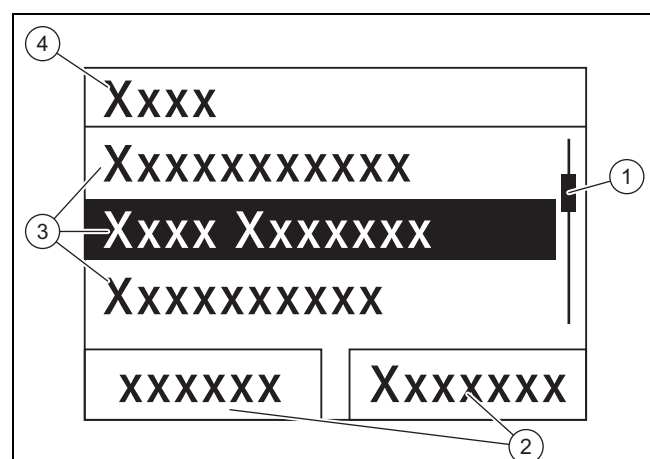
The digital information and analysis system provides auxiliary functions via the menu.

4.8.1 Operation in the menu

Press  and  ("i") at the same time to access the menu.

4 Operation

4.8.1.1 Design of the menu



- | | | | |
|---|--|---|---|
| 1 | Scroll bar
(only appears if there are more list entries than can be shown at once on the display) | 2 | Current functions of the right and left selection buttons
(Soft key functions) |
| 3 | Selection level list entries | 4 | Name of the selection level |

The Digital Information and Analysis System has a menu containing up to two selection levels (sub-menus).

The selection levels are used to navigate to the setting level required to read or change settings.



Note

Path details at the start of an instruction specify how this function can be accessed, e.g. **Menu → Information → Contact data**.

4.8.2 Displaying the solar yield

Menu → Solar yield

- You can display the solar system's current yield under **Solar yield**.
- You can filter the values according to **Previous day**, **Month**, **Year** or **Total**.

4.8.3 Live Monitor

Menu → Live Monitor

- You can use the Live Monitor function to display the current product status for the solar system in plain text. The status code is not displayed.
- The display is automatically updated if the product status changes.
- If a post-heating installation is available, the display alternates between the solar system's product status and the post-heating installation's status, provided this has the status "Charging" or "Anti-legionella function".

Status code	Meaning
400	The solar charging system is in standby
401	Solar circuit being filled
403	Cylinder completely charged
406	Cylinder is being charged via the post-heating installation

Status code	Meaning
408	Frost protection active
409	Solar protection active
415	Anti-legionella function active
416	Cylinder is being solar-charged
417	Electrically powered cylinder charging

4.8.4 Displaying contact data

Menu → Information → Contact details

- If the competent person has entered their telephone number during the installation, you can read the data under **Contact data**.

4.8.5 Displaying the serial number and article number

Menu → Information → Serial number

- **Serial number** shows the serial number of the product, which the competent person may require you to tell him.
- The article number is found in the second line of the serial number (seventh to sixteenth digits).

4.8.6 Displaying the solar pump's operating hours

Menu → Information → Solar pump

- You can read the solar pump's operating hours under **Solar pump**.

4.8.7 Setting the language

Menu → Basic setting → Language

- During installation, the competent person has set the desired language for you. If you want to set a different language, you can do this using this menu point.

4.8.8 Set display contrast

Menu → Basic setting → Display contrast

- This function is used to adjust the display contrast to ensure that the display can be read easily.

4.8.9 Setting time periods

You can use this function to define one or more time periods for post-heating. You do not have to program both time periods in a time frame (e.g. Mo-Fr). If the current time is within one of the time periods, post-heating is possible.

Menu → Basic setting → Mo-Fr, 1st time per.

- You can use this menu point to set the first time period for the time frame of Monday to Friday.

Menu → Basic setting → Mo-Fr, 2nd time per.

- You can use this menu point to set the second time period for the time frame of Monday to Friday.

Menu → Basic setting → Sa-Su, 1st time per.

- You can use this menu point to set the first time period for the time frame of Saturday to Sunday.

Menu → Basic setting → Sa-Su, 2nd time per.

- You can use this menu point to set the second time period for the time frame of Saturday to Sunday.

4.8.10 Setting the date/time and summer time



Note

The date, time and automatic summer/winter adjustment can only be set if there is no system controller connected.

Menu → Basic setting → Date

- You can use this menu point to set the date.

Menu → Basic setting → Time

- You can use this menu point to set the time.

Menu → Basic setting → Summer/winter time

- You can use this menu point to set the DIA system to switch automatically between summer time and winter time.

5 Troubleshooting

5.1 Reading fault messages

Fault messages have priority over all other displays. If a fault occurs in the solar system, the solar system switches off. The product's display shows a fault code instead of the basic display. A plain text display explains the displayed fault code.

If multiple faults occur at the same time, the display shows the corresponding fault codes for two seconds each in sequence.

- If the product displays a fault message, contact a competent person.



Note

You can call up status messages about the condition of the solar system using the Live Monitor (→ Page 8) function.

5.1.1 Fault message

Fault messages appear on the display approx. 20 seconds after a fault has occurred. If a fault is present for at least three minutes, a fault message is recorded in the fault memory of the solar control.



Note

Only a competent person can eliminate the cause of the faults described below and delete the fault memory.

Fault code	Fault text
1069	T7 cylinder temperature sensor fault
1070	Coding resistor missing
1273	Electronics fault in solar pump
1274	Electronics fault in solar pump 2
1276	Solar pump blocked
1277	Solar pump 2 blocked
1278	T5 collector sensor fault
1279	T6 temperature sensor fault
1281	T1 temperature sensor fault

Fault code	Fault text
M.45	Solar pump dry run
M.47	Solar pump 2 dry running

6 Maintenance

An annual inspection and biennial maintenance of the product carried out by a competent person is a prerequisite for ensuring that the product is permanently ready and safe for operation, reliable, and has a long working life.

6.1 Caring for the product



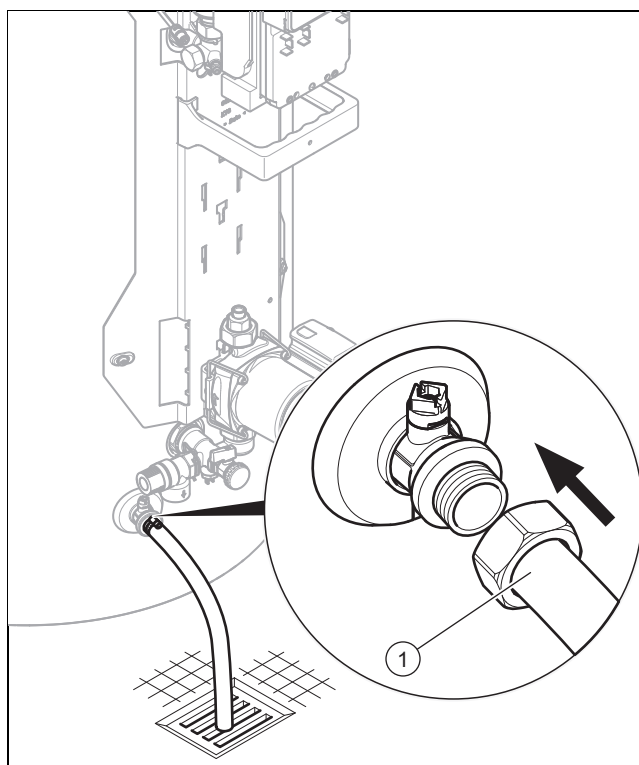
Caution.

Risk of material damage caused by unsuitable cleaning agents.

- Do not use sprays, scouring agents, detergents, solvents or cleaning agents that contain chlorine.

- Clean the casing with a damp cloth and a little solvent-free soap.

6.2 Draining the product



1. Switch off the product. (→ Page 10)
2. Close the isolator device in the product's cold water pipe.
3. Secure a suitable hose to the drain valve (1).
4. Place the free end of the hose in a suitable outflow location.
5. Open the drain valve.
6. Open the highest hot water draw-off point to ventilate and drain the water pipes completely.

7 Decommissioning

7. Once the water has completely drained out, close the drain valve and the hot water draw-off point again.
8. Remove the hose from the drain valve.

6.3 Actuating the expansion relief valve

- ▶ Actuate the drainage device on the expansion relief valve regularly in order to remove any limescale formation and ensure that the device is not blocked.



Note

Water can escape from the discharge line at any time.

7 Decommissioning

7.1 Switching off the product

- ▶ Use the partition that is installed on-site (e.g. fuses or power switches) to disconnect the product from the power supply.

7.2 Decommissioning the solar system permanently

- ▶ Contact a competent person to decommission the solar system permanently.

8 Recycling and disposal

- ▶ The competent person who installed your product is responsible for the disposal of the packaging.



If the product is identified with this symbol:

- ▶ In this case, do not dispose of the product with the household waste.
- ▶ Instead, hand in the product to a collection centre for old electrical or electronic appliances.



If the product contains batteries that are marked with this symbol, these batteries may contain substances that are hazardous to human health and the environment.

- ▶ In this case, dispose of the batteries at a collection point for batteries.

9 Customer service and guarantee

9.1 Customer service

For contact details for our customer service department, you can write to the address that is provided on the back page, or you can visit www.vaillant.com.

9.2 Guarantee

For information on the manufacturer's guarantee, you can write to the contact address that is provided on the back page.

Appendix

A Operator level – overview

Setting level	Values		Unit	Increment, select	Default setting
	Min.	Max.			
Solar yield →					
Previous day	Current value		kWh		
Month	Current value		kWh		
Years	Current value		kWh		
Total	Current value		kWh		
Live Monitor →					
Status	Current value				
Information →					
Contact data	Phone number				
Serial number	Permanent value				
Solar pump: Operating hours	Current value		h		
Basic settings →					
Language	Current language			Deutsch, English, Français, Italiano, Dansk, Nederlands, Castellano, Türkce, Magyar, Русский, Українська, Svenska, Norsk, Polski, Čeština, Hrvatski, Slovenčina, Română, Slovenščina, Português, Srpski	English
Display contrast	Current value			1	25
	15	40			
Mo-Fr, 1st time per.	Start time and end time			10 minutes	06:00–22:00
Mo-Fr, 2nd time per.	Start time and end time			10 minutes	24:00–24:00
Sa-Su, 1st time per.	Start time and end time			10 minutes	06:00–22:00
Sa-Su, 2nd time per.	Start time and end time			10 minutes	24:00–24:00
Date	Current date				
Time	Current time				
Summer/winter time	Automatic clock change off/on				

B Maximum daily hot water output

Load type	Volume	Cylinder size 250 l (bi-valent cylinder)	Cylinder size 350 l (bi-valent cylinder)
		3-6 people	4-7 people
Hot water output in winter at 60 °C ($\Delta T = 35$ K)	Standard household N_L	2.0	2.5
Litres at $\Delta T = 35$ K (from 10 °C to 45 °C) with boiler and target hot water temperature = 60 °C	l/10 min.	195	215
Litres at $\Delta T = 35$ K (from 10 °C to 45 °C), solar mode only, at a maximum cylinder temperature of 85 °C	l/10 min.	448	601



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