

Vitosolic 100
Type SD1

Electronic temperature differential control unit
for Vitocell 100-U, type CVUA

For applicability, see the last page



VITOSOLIC 100



Safety instructions



Please follow these safety instructions closely to prevent accidents and material losses.

Safety instructions explained



Danger

This symbol warns against the risk of injury.



Please note

This symbol warns against the risk of material losses and environmental pollution.

Note

Details identified by the word "Note" contain additional information.

Target group

These instructions are exclusively designed for qualified personnel.

- Work on electrical equipment must only be carried out by a qualified electrician.
- The system must be commissioned by the system installer or a qualified person authorised by the installer.

Regulations

Observe the following when working on this system

- all legal instructions regarding the prevention of accidents,
- all legal instructions regarding environmental protection,
- the Code of Practice of relevant trade associations.
- all current safety regulations as defined by DIN, EN, DVGW, VDE and all locally applicable standards

Working on the system

- Isolate the system from the power supply and check that it is no longer 'live', e.g. by removing a separate fuse or by means of a main isolator.
- Safeguard the system against unauthorised reconnection.



Please note

Electronic modules can be damaged by electrostatic discharges.
Touch earthed objects, such as heating or water pipes, to discharge static loads.

Repair work



Please note

Repairing components that fulfil a safety function can compromise the safe operation of your heating system.
Replace faulty components only with original Viessmann spare parts.

Ancillary components, spare and wearing parts



Please note

Spare and wearing parts that have not been tested together with the heating system can compromise its function. Installing non-authorised components and non-approved modifications or conversions can compromise safety and may invalidate our warranty.
For replacements, use only original spare parts supplied or approved by Viessmann.

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Installation information



Danger

Subject to system configuration, DHW temperatures above 60 °C can occur. DHW at temperatures above 60 °C causes scalding.

To limit the temperature to 60 °C, install mixing equipment, e.g. a thermostatically controlled mixing valve (accessories). Install a mixer tap as anti-scalding device at the draw-off point.

System example

DHW heating with dual mode DHW cylinder

Main components

- Viessmann solar collectors
- DHW cylinder Vitocell 100-U, type CVUA
- Vitosolic 100, type SD1
- Solar-Divicon (integrated into Vitocell 100-U, type CVUA)
- Wall mounted or floorstanding oil/gas boiler

Function description

DHW heating with solar energy

If the temperature differential between collector temperature sensor S1 (31) and cylinder temperature sensor S2 (11) is greater than the start temperature differential DT E, solar circuit pump R1 (33) starts and DHW cylinder (10) is heated.

Solar circuit pump R1 (33) stops in accordance with the following criteria:

- The actual temperature falls below the stop temperature differential DT A
- The electronic temperature limit (up to 90 °C) set in control unit (36) is exceeded
- The temperature selected at high limit safety cut-out (12) (if installed) is reached

Required settings on the solar control unit

Parameter	Delivered condition	Description	Setting
ANL	1	Without auxiliary function for DHW heating	1
		With auxiliary function for DHW heating (see page 24)	4
DT E	8 °C	Start temperature differential for solar circuit pump at R1	
DT A	4 °C	Stop temperature differential for solar circuit pump at R1	
S SL	60 °C	Set cylinder temperature (see page 23)	

For further functions, see chapter "Function description" from page 21.

Note

"DT E" can be set at least 0.5 K higher than "DT A" and up to 0.5 K lower than "DT S" (see page 22).
 "DT A" can be set up to 0.5 K below "DT E".

Additional function for DHW heating

The requirements for the auxiliary function are achieved through circulation pump R2 (15).

Suppression of DHW cylinder reheating by the boiler

Coding address "67" in boiler control unit (2) specifies a third set DHW temperature (setting range 10 to 95 °C). This value must be below the first set DHW temperature. DHW cylinder (10) is only heated by boiler (1) (solar circuit pump R1 (33) runs) if this set value cannot be achieved by the solar thermal system.

DHW heating without solar energy

The top section of DHW cylinder (10) is heated by boiler (1). The cylinder temperature controller with cylinder temperature sensor (3) of boiler control unit (2) regulates cylinder heating (4).

Information regarding speed control of the solar circuit pump

Observe chapter "Speed control" (see page 28).

Hydraulic installation scheme ID: 4605119_1001_01

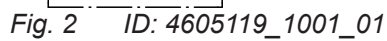


Fig. 1

System example (cont.)**Equipment required****ID: 4605119_1001_01**

Pos.	Description
①	Floorstanding or wall mounted oil/gas boiler with
②	Boiler and heating circuit control unit
③	Cylinder temperature sensor
④	Circulation pump for cylinder heating (integral in wall mounted oil/gas boilers)
⑩	Vitocell 100-U, type CVUA
⑪	Cylinder temperature sensor S2
⑫	High limit safety cut-out (accessories)
⑬	DHW circulation pump (on site) (internal/external extension may be required for connecting a wall mounted oil/gas boiler)
⑭	Thermostatic mixing valve (accessories)
⑮	Circulation pump R2 (transfer) (on site)
③①	Solar collectors
③②	Collector temperature sensor S1
③③	Solar-Divicon (integrated into Vitocell 100-U, type CVUA) with
③④	Solar circuit pump R1
③⑤	Vitosolic 100, type SD1 (integrated into Vitocell 100-U, type CVUA)
③⑦	Junction box (on site)
③⑧	ON/OFF switch (on site)

Installation



- Ⓐ If the control unit is used in conjunction with a variable speed solar circuit pump with PWM control

Mounting the solar control unit (when replacing)

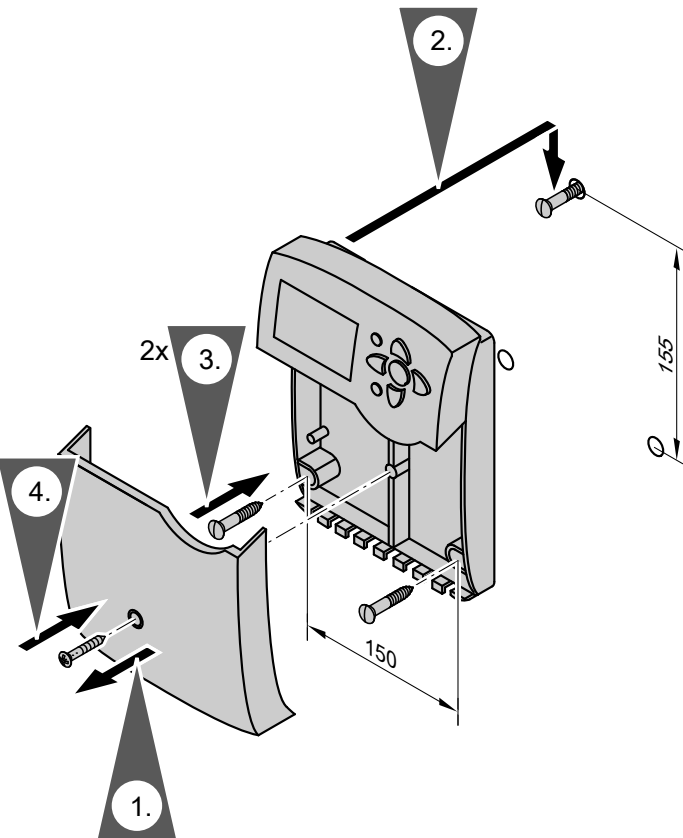


Fig. 3

Before closing the solar control unit, make all electrical connections and apply strain relief to all cables/leads.

Overview of electrical connections

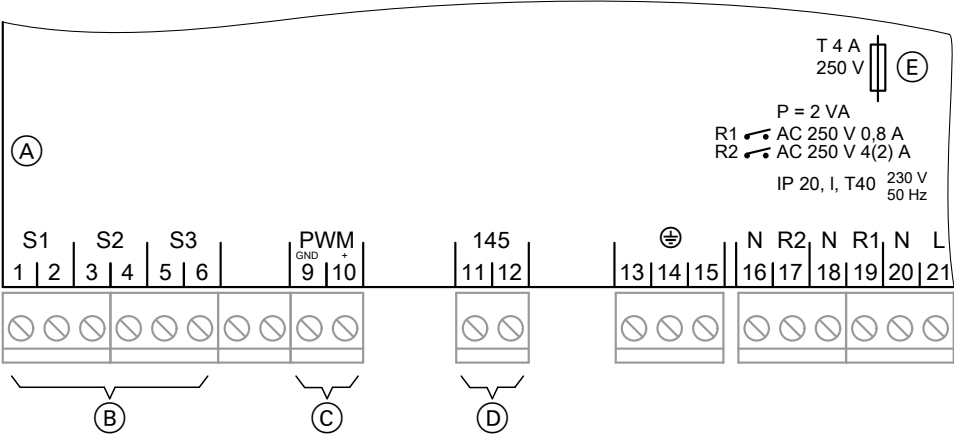


Fig. 4

- (A) Wiring chamber of the solar control unit
- (B) Sensor inputs
- (C) PWM signal for the solar circuit pump
- (D) KM BUS

- (E) Fuse, 4.0 A (slow)
- R1 Semi-conductor relay (suitable for speed control)
- R2 Electromechanical relay

Installation sequence

Solar circuit pump

Note

- The "RPM" parameter is factory-set according to the type of inbuilt pump. This setting only needs to be changed when replacing the control unit or possibly when replacing the pump.
- In the delivered condition, the power cable for the solar circuit pump (power supply) and the PWM cable (if installed) are connected.



Please note

If the "RPM" parameter is set incorrectly, this may damage the appliance or cause faults. Note the relevant value shown in the following table.

Suitable pumps

Standard solar circuit pumps		High efficiency pumps without PWM input	Pumps with PWM input
Without individual speed control (with integral auxiliary capacitor)	With individual speed control		Note Use only solar circuit pumps, not heating circuit pumps.
"RPM" = 1	"RPM" = 0	"RPM" = 0	▪ WILO pumps: "RPM" = 2 ▪ GRUNDFOS pumps: "RPM" = 3

Connection

3-core cable with a cross-section of 0.75 mm².
Rated current: 0.8 A

Note

Pumps with a power consumption in excess of 190 W must be connected via an additional relay (coupling relay). Disable the speed control for this pump (see chapter "Speed control").

Pump without PWM input

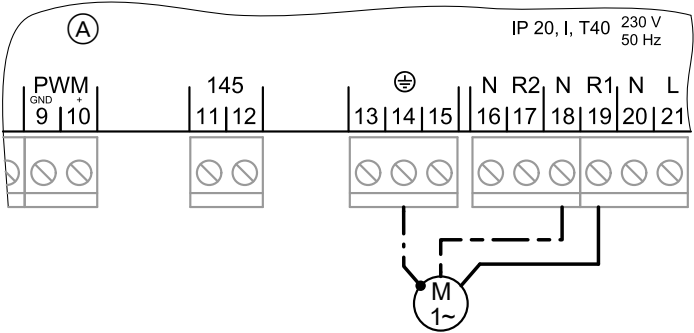


Fig. 5

- Ⓐ Wiring chamber of the solar control unit
- R1 Solar circuit pump

Solar circuit pump (cont.)

Pump with PWM input

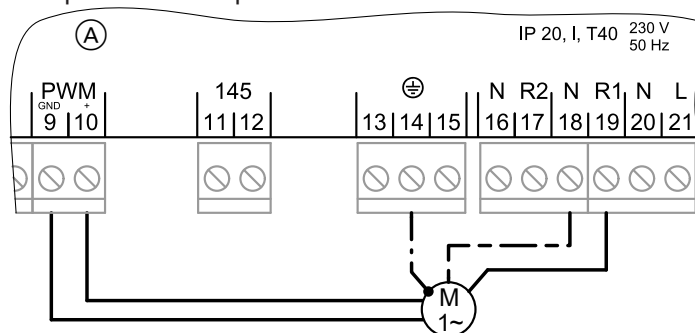


Fig. 6

(A) Wiring chamber of the solar control unit
R1/PWM Solar circuit pump

Pump/valve at output R2

Installation

Pump and valve must be type-tested and installed in accordance with the manufacturer's instructions.

Connection

3-core cable with a cross-section of 0.75 mm².

Rated current: max. 4(2) A

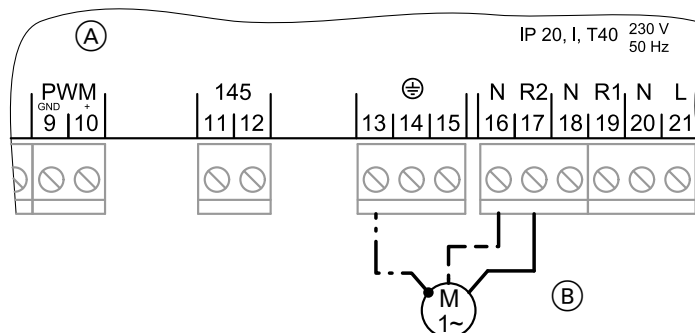


Fig. 7

(A) Wiring chamber of the solar control unit
(B) Pump or valve

High limit safety cut-out

A high limit safety cut-out in the consumer is required when less than 40 litres cylinder volume is available per m² absorber area. This installation prevents temperatures in excess of 95 °C in the consumer.

Note

For the Vitocell 100-U, type CVUA, note that the max. collector area that can be connected is 10 m².

Connection

3-core cable with a cross-section of 1.5 mm².

Installation sequence

High limit safety cut-out (cont.)

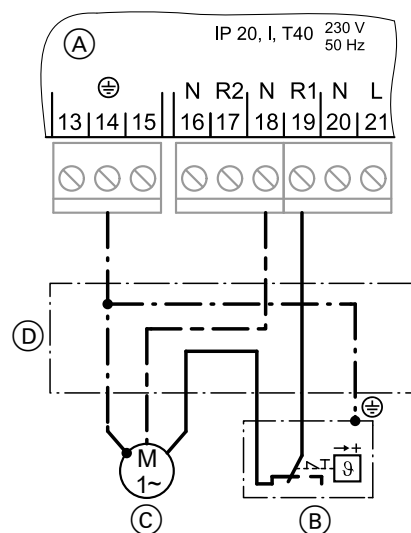


Fig. 8

- Ⓐ Wiring chamber of the solar control unit
- Ⓑ High limit safety cut-out
- Ⓒ Solar circuit pump
- Ⓓ Junction box (on site)

Temperature setting

Delivered condition: 120 °C
Change to 95 °C



High limit safety cut-out installation instructions

Collector temperature sensor

Installation



Collector installation instructions

Connection

Connect the sensor to S1 (terminals 1 and 2).
Extension of the connecting cable:
2-core cable with a cross-section of 1.5 mm².

Note

Never route this lead immediately next to 230/400 V cables over long distances.

Cylinder temperature sensor

Installation

With the threaded elbow.



DHW cylinder installation instructions

Temperature sensor

For additional functions see chapter "Function description".

Installation

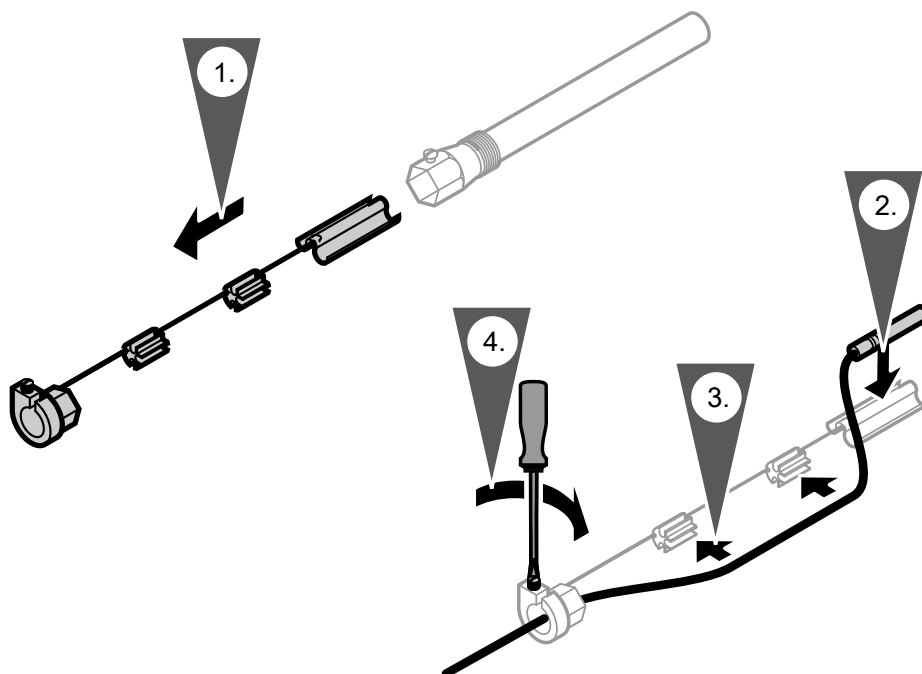


Fig. 9

Note

Do not wrap insulating tape around the sensor.
Seal in the sensor well.

Connection

Connect the sensor to S3 (terminals 5 and 6).
Extension of the connecting cable:
2-core cable with a cross-section of 1.5 mm².

Note

Never route this cable immediately next to 230/400 V cables.

Power supply

Regulations

Carry out the power supply connection and all earthing measures (i.e. RCD circuit) in accordance with IEC 364, the requirements of your local power supply utility and VDE [or local regulations].

Protect the power cable to the control unit with an appropriate fuse/MCB.

Power supply (cont.)

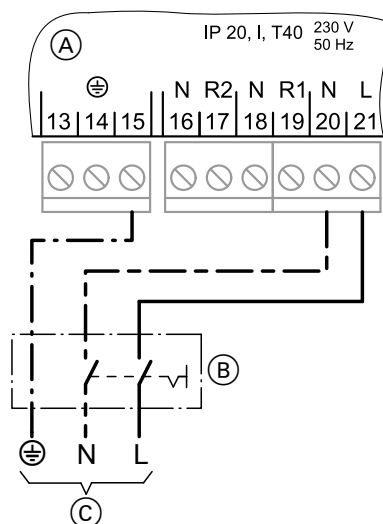


Fig. 10

- Ⓐ Solar control unit wiring chamber
- Ⓑ ON/OFF switch (on site)
- Ⓒ Power supply 230 V/50 Hz

Provide the power supply connection (230 V~) via a two-pole mains isolator (on site).
Disconnect the system by means of a device that simultaneously separates all non-earthed conductors with at least 3 mm contact separation.



Danger

Incorrect core allocation can result in serious injury and damage to the appliance.

Never interchange cores "L" and "N":

L Terminal 21

N Terminal 20

Switching the power ON

1. Check whether all electrical connections have been correctly made.
2. Check that the high limit safety cut-out (if required) is connected.
3. Switch ON the power; the solar control unit then implements an initiation phase.
The solar control unit is now in automatic mode.
4. After replacing the control unit: Check which type of solar circuit pump is connected and set parameter "RPM" accordingly (see pages 10 and 16).

Navigation through the menu

Controls

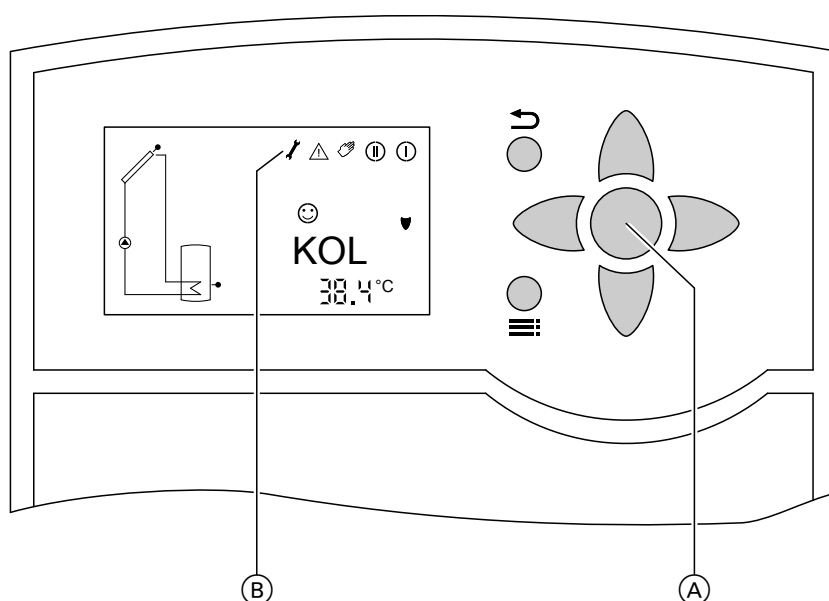


Fig. 11

- | | |
|--|---|
| <p>(A) OK key; to confirm your menu selection or setting</p> <p>(B) Symbols line</p> <p>↺ Terminating an adjustment already begun (the value reverts to its previous setting)</p> <p>▲ / ▼ Cursor keys
Navigating through the menu</p> | <p>► / ◀ Cursor keys
To set a value
Flashing "SET" means that values can be changed.</p> <p>≡ Calling up the menu
The symbol line on the display shows which keys to use to make adjustments and call up information.</p> |
|--|---|

Note

After approx. 4 min, the display changes to show the collector temperature, if no further adjustments are made.

Symbols in the display

These symbols are not always displayed, but appear subject to the system operating condition.

Navigation through the menu (cont.)

Symbol	Permanent display	Flashing
☺	System operational	—
①	Relay 1 on (solar circuit pump)	—
②	Relay 2 on	—
☼	Set DHW temperature reached	Collector cooling function, return cooling function active
❄	Frost protection enabled	Failed to reach minimum collector temperature
⚠	—	Emergency collector shutdown (collector limit temperature reached) or cylinder emergency stop active
⚠ + 🔧	Sensor fault: 🔧	⚠
⚠ + 🖐	Manual mode: 🖐	⚠
SET	Parameters can be changed	Change parameters using ▲ / ▼

Selecting the system scheme

Press the following keys:

1. **≡**: "ANL 1" and the respective scheme appear on the display.

2. OK "SET" flashes.

3. **▶** for the required scheme.

4. OK to confirm.

See system scheme from page 23.

Setting system parameters

Press the following keys:

1. **≡**: "ANL" and the respective scheme appear on the display.

2. **▼** until the required parameter is shown (see table on page 21).

3. OK "SET" flashes.

4. **▶** / **◀** for the required value.

5. OK to confirm.

Resetting system parameters

If a different system scheme is selected, all parameters are returned to their delivered condition.

Carrying out a relay test

Press the following keys:

1.  **"ANL"** and the respective scheme appear on the display.
2.  Select **"HND 1"** or **"HND 2"**.
HND 1 Relay 1
HND 2 Relay 2
3. OK **"SET"** flashes.
4.  /  for the required setting.
Auto Control mode
ON ON (100 %)
" and " and/or " is displayed and " flashes.
OFF OFF
" is displayed and " flashes.
5. OK to confirm.
6. After the relay test has been completed, select **"Auto"**.

Calling up temperatures and operating conditions

Subject to the system configuration and settings made, the following values can be called up with the ▲ / ▼ keys:

Display		Description
KOL	°C	Collector temperature
TSPU	°C	DHW temperature
S3	°C	Temperature at sensor S3 if connected
n1	%	Relative speed of the solar circuit pump
n2		Status of relay R2: OFF: Relay off ON: Relay on
hP1	h	Hours run of the device at output relay R1 (solar circuit pump)
hP2	h	Hours run of the device at output relay R2
kWh		Amount of heat if a heat meter is enabled
MWh		Note Add the values for MWh and kWh together.

Resetting the hours run and the amount of heat

2. OK to confirm.

Whilst this value is displayed, press the following keys:

1. OK "SET" flashes; value 0 is displayed.

Fault messages

Sensor faults:

- Display background light flashes
- The sensor symbol in the system scheme flashes quickly
-  flashes

Possible displays:

- 88.8 Sensor short circuit
- 888.8 Sensor lead break

Note

Further information can be called up with keys  / .

Example - collector temperature sensor short circuit

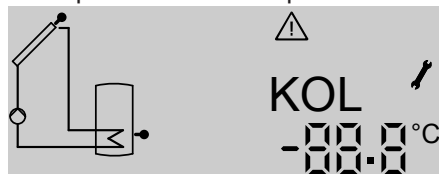


Fig. 12

Checking sensors

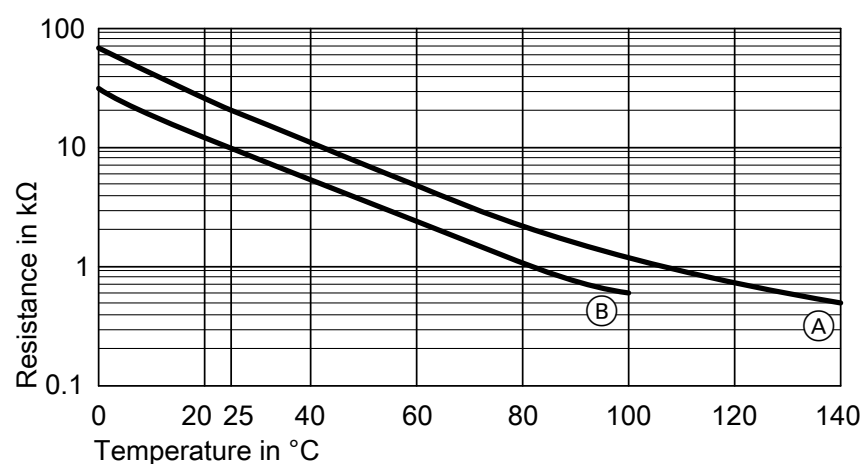


Fig. 13

- (A) Resistor 20 kΩ (sensor S1, collector temperature sensor)
- (B) Resistance 10 kΩ (sensors S2 and S3)

1. Disconnect the relevant sensor and measure its resistance.
2. Compare the measurement with the actual temperature (for scanning see page 18). In the case of severe deviation, check the installation and replace the sensor if required.

Specification

Sensor NTC	10 kΩ at 25 °C	20 kΩ at 25 °C
IP rating	IP 53	IP 53
Permissible ambient temperature		
▪ During operation	–20 to + 90 °C	–20 to + 200 °C
▪ During storage and transport	–20 to + 70 °C	–20 to + 70 °C

Changing the fuse

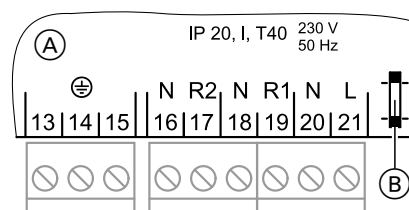


Fig. 14

- Ⓐ Solar control unit wiring chamber
- Ⓑ Fuse, 4 A (slow)

Open the solar control unit wiring chamber.
A spare fuse is included in the fuse holder.

Parameter overview

The following parameters can be set subject to the actual system configuration:

Display	Parameter	Delivered condition	Setting range	System scheme
ANL	System scheme	1	1–10	—
DT E	Start temperature differential for solar circuit pump R1	8 °C	1.5 – 20 °C DT E < DT S	1 to 9
DT A	Stop temperature differential for solar circuit pump R1	4 °C	1.0 – 19.5 °C	
S SL	Set cylinder temperature (see page 23)	60 °C	4 – 90 °C	
DT 1E	Start temperature differential for solar circuit pump R1 (consumer 1)	8 °C	1.5 – 20 °C DT 1E < DT 1S	
DT 1A	Stop temperature differential for solar circuit pump R1 (consumer 1)	4 °C	1.0 – 19.5 °C	10
S 1SL	Set cylinder temperature (consumer 1) (see page 23)	60 °C	4 – 90 °C	
DT 2E	Start temperature differential for solar circuit pump R1 and valve R2 (consumer 2)	8 °C	1.5 – 20 °C DT 2E < DT 2S	
DT 2A	Stop temperature differential for solar circuit pump R1 and valve R2 (consumer 2)	4 °C	1.0 – 19.5 °C	
S 2SL	Set cylinder temperature (consumer 2) (see page 23)	60 °C	4 – 90 °C	
NOT	Collector limit temperature (see page 26)	130 °C	110 – 200 °C	1 to 10
OKX	Collector cooling function (maximum collector temperature limit) (see page 26)	OFF	OFF/ON	
KMX		110 °C	90 – 190 °C	
OKN	Minimum collector temperature limit (see page 26)	OFF	OFF/ON	
KMN		10 °C	10 – 90 °C	
OKF	Frost protection function (see page 27)	OFF	OFF/ON	
KFR		4 °C	–10 – +10 °C	
PRIO	Sequence in which the consumers are heated up	1	0 – 2	10
tSP	Pump run break duration, cyclical pause time	2 min	1 – 30 min	
tUMW	Break intervals	15 min	1 – 30 min	
ORUE	Return cooling function (see page 27)	OFF	OFF/ON	1 to 10
ORK	Interval function (see page 27)	OFF	OFF/ON	

Parameter overview (cont.)

Display	Parameter	Delivered condition	Setting range	System scheme
DT 3E	Start temperature differential for transfer pump R2	8 °C	0 – 20 °C	7
DT 3A	Stop temperature differential for transfer pump R2	4 °C	0.5 – 19.5 °C	
MX3E	Maximum limit S3 on	58 °C	0 – 94.5 °C	
MX3A	Maximum limit S3 off	60 °C	0.5 – 95 °C	
MN3E	Minimum limit S3 on	10 °C	0.5 – 90 °C	
MN3A	Minimum limit S3 off	5 °C	0 – 89.5 °C	
NH E	Start temperature for the thermostat function	40 °C	0 – 89.5 °C	3, 5, 9
NH A	Stop temperature for the thermostat function	45 °C	0.5 – 90 °C	3, 5, 9
OWMZ	Heat statement (see page 27)	OFF	OFF/ON	1 to 10
VMAX at 100 % pump speed		5.0 l/min	0.1 – 20 l/min	
MEDT		3	0 – 3	
MED%		40	20 – 70	
RPM	Speed control (see page 28)	Depending on pump used (see page 10)	0 – 3	
n1MN* ¹	Minimum speed (see page 28)	30 %	30/20 – 100 %	
DT S* ¹	Differential temperature for start of speed control (see page 28)	10 K	0.5 – 30 K	1 to 9
ANS* ¹	Rise (see page 28)	2 K	1 – 20 K	
DT 1S* ¹	Differential temperature for start of speed control (consumer 1) (see page 28)	10 K	0.5 – 30 K	10
ANS1* ¹	Rise (consumer 1) (see page 28)	2 K	1 – 20 K	
DT 2S* ¹	Differential temperature for start of speed control (consumer 2) (see page 28)	10 K	0.5 – 30K	
ANS2* ¹	Rise (consumer 2) (see page 28)	2 K	1 – 20 K	
HND1	Manual mode relay 1 (see page 17)	AUTO	OFF/ON	1 to 10
HND2	Manual mode relay 2 (see page 17)	AUTO	OFF/ON	
PROG	Software version of the solar control unit	—	—	—
VERS	Hardware version	—	—	—

*¹ Only adjustable with setting **RPM > 0**.

System scheme

10 system schemes can be achieved with the solar control unit. The selection is made via parameter **"ANL"** (see page 16). All system schemes include the **"ANL 1"** functions (system scheme 1):

- Dual mode DHW heating
- Suppression of reheating by the boiler in conjunction with control units with KM BUS
- Maximum DHW cylinder temperature limit

- Collector minimum temperature limit (see page 26)
- Frost protection function (see page 27)
- Reverse cooling function (see page 27)
- Interval function (see page 27)
- Heat statement (see page 27)
- Speed control (see page 28)

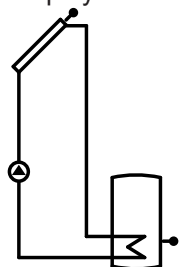
Auxiliary functions can be enabled for every system scheme:

- Collector limit temperature (see page 26)
- Collector cooling function (see page 26)

"ANL" = 1 — Standard scheme

Dual mode DHW heating with suppression of reheating by the boiler in conjunction with control units with KM BUS

Display



Temperature differential control

Determination of the temperature differential between collector temperature sensor S1 and cylinder temperature sensor S2.

- Solar circuit pump R1 on:
"DT E" is exceeded
- Solar circuit pump R1 off:
The actual temperature falls below the stop temperature differential **"DT A"**

Cylinder temperature limit

Solar circuit pump R1 off:

When the set cylinder temperature **"S SL"** has been reached.

Symbol "✱" is displayed.

Suppression of reheating by the boiler in conjunction with control units with KM BUS

- Function enabled:
 - The DHW cylinder is heated by the solar thermal system.
 - Connection of the KM BUS to terminals 11 and 12 in the solar control unit.
- In the boiler control unit, select a 3rd set DHW temperature via coding address "67"
(This value must be **below** the 1st set DHW temperature).
See the installation and service instructions of the boiler control unit.
- The DHW cylinder will only be heated by the boiler if this set value cannot be achieved by the solar thermal system.

Note

In some boiler control units, the PCB must be replaced (see page 31).

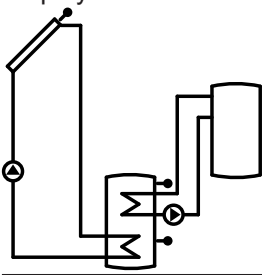
"ANL" = 2

Selection cannot be applied.

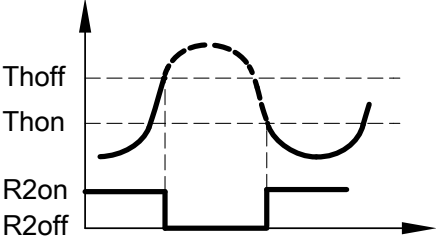
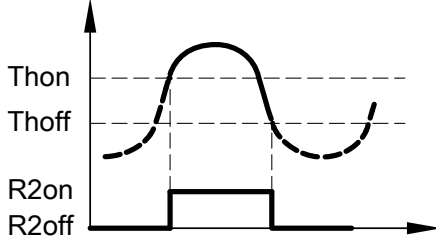
System scheme (cont.)

"ANL" = 3

Dual mode DHW heating and thermostat function

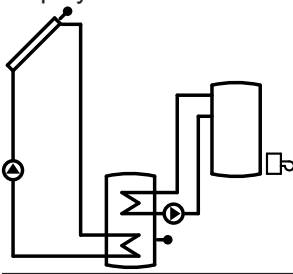
Display 	Thermostat function Output R2 is used for this function. Relay R2 switches subject to the temperature at S3 (see the following table).
--	---

Different effects can be achieved by specifying the start and stop temperatures:

"NH E" < "NH A"	"NH E" > "NH A"
e.g. for reheating 	e.g. for utilising excess heat 

"ANL" = 4

Dual mode DHW heating and auxiliary function

Display 	Additional function for DHW heating - Connection of the transfer pump at R2. - Signal for starting the transfer pump R2 via the KM BUS of the boiler control unit. This also heats the lower area of the DHW cylinder to the required temperature. Note <i>In some boiler control units, the PCB must be replaced (see page 31).</i>
--	--

1. Connect the KM BUS at terminals 11 and 12 in the solar control unit.
2. Program the second set DHW temperature at the boiler control unit.
 Boiler control unit installation and service instructions
3. Select fourth DHW phase at the boiler control unit.
 Operating instructions, boiler control unit

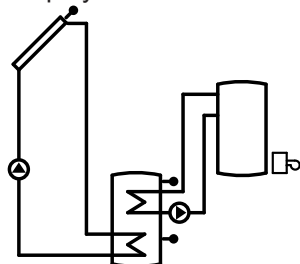


Danger
DHW at temperatures above 60 °C causes scalding.
To limit the temperature to 60 °C, install mixing equipment, e.g. a thermostatically controlled mixing valve (accessories). Install a mixer tap as anti-scalding device at the draw-off point.

System scheme (cont.)

"ANL" = 5**Dual mode DHW heating, thermostat function and auxiliary function**

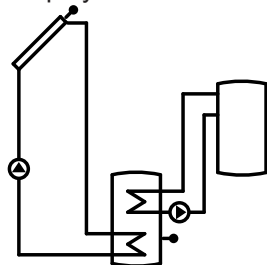
Display



Output R2 enables the thermostat function (see page 24) and the auxiliary function (see page 24) to be achieved.

"ANL" = 6**Dual mode DHW heating and maximum cylinder temperature control**

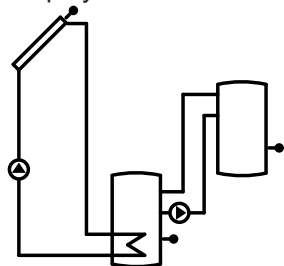
Display



- When set cylinder temperature "**S SL**" is exceeded (see page 23) the circulation pump R2 will start.
- Excess heat is transferred, e.g. to the pre-heating stage.

"ANL" = 7**Dual mode DHW heating and transfer**

Display

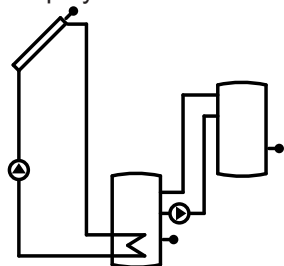


Determination of the temperature differential between collector temperature sensor S2 and cylinder temperature sensor S3.

- Transfer pump R2 on:
"**DT 3E**" is exceeded
- Transfer pump R2 off:
The actual temperature falls below the stop temperature differential "**DT 3A**"

"ANL" = 8**Dual mode DHW heating, auxiliary function and transfer with sensor S3 in DHW cylinder 2 (existing)**

Display



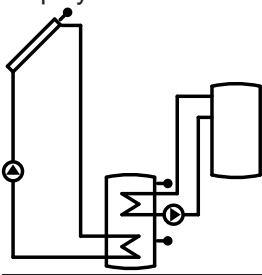
The transfer pump R2 circulates the heating water to prevent stratification (see page 25) and implements the auxiliary function (see page 24).

System scheme (cont.)

"ANL" = 9

Dual mode DHW heating, auxiliary function and transfer with sensor S3 in DHW cylinder 1 (retrofit)

Display



The transfer pump R2 circulates the heating water to prevent stratification (see page 25) and implements the auxiliary function (see page 24).

"ANL" = 10

Selection cannot be applied.

Collector limit temperature

If the "NOT" temperature is exceeded, the solar circuit pump is switched OFF to protect the system components; symbol "△" flashes. Set the value for "NOT". (see page 16).

Setting parameters	Delivered condition	Setting range
NOT	130 °C	110 – 200 °C

Note
If the setting is 200 °C then the function is disabled.

Collector cooling function

The solar circuit pump is switched off when the set cylinder temperature "S SL" is reached.

If the collector temperature rises to the set maximum collector temperature "KMX", the pump is switched on until the temperature falls to 5 K below the set temperature (symbol "✱" flashes). The cylinder temperature can continue to rise, but only up to 90 °C; at which point the solar circuit pump is switched off (symbol "△" flashes).

1. Set "OKX" to "On" (see page 16).
2. Set the value for "KMX".

Setting parameters	Delivered condition	Setting range
KMX	110 °C	90 – 190 °C

Minimum collector temperature limit

Minimum start temperature "KMN" that must be exceeded before the solar circuit pump can start. This prevents the pump starting too frequently (cycling).

If the actual temperature falls 5 K below this temperature, the pump is switched off; symbol "✱" flashes.

1. Set "OKN" to "On" (see page 16).
2. Set the value for "KMN".

Minimum collector temperature limit (cont.)

Setting parameters	Delivered condition	Setting range
KMN	10 °C	10 – 90 °C

Frost protection function

Enable this function only when using water as heat transfer medium.

If the collector temperature falls below the **"KFR"** value, the solar circuit pump is switched on to avoid collector damage.

Symbol "❄" is displayed if this function is enabled and flashes if the solar circuit pump is running.

1. Set **"OKF"** to **"On"** (see page 16).

2. Set the value for **"KFR"**.

Setting parameters	Delivered condition	Setting range
KFR	4 °C	-10 – +10 °C

Reverse cooling function

Enable only in systems with flat-plate collectors.

The **"ORUE"** function is only useful if the collector cooling function has been enabled (see page 26).

The collector cooling function allows the heating of the DHW cylinder to a higher temperature than **"S SL"** (see page 23).

In the evening, the pump will then continue to run (symbol "❄" flashes) until the DHW cylinder has been cooled down via the collector and the pipework to the set cylinder temperature **"S SL"**.

Set **"ORUE"** to **"On"** (see page 16).

Interval function

Activate the interval function in systems where the collector temperature sensor is not in an ideal location, to prevent a time delay in capturing the collector temperature.

For this, the solar circuit pump is started for 30 s when the collector temperature rises by 2 K.

Set **"ORK"** to **"On"** (see page 16).

Heat statement

The heat statement is calculated from the temperature differential between the collector and cylinder temperature as well as the selected throughput (see service instructions "Vitosol").

3. Set the frost protection type for the heat transfer medium **"MEDT"**.

4. If necessary, adjust the mixing ratio of the heat transfer medium **"MED%"**.

1. Set **"OWMZ"** to **"On"** (see page 16).

2. Check the throughput at the flow meter of the Solar-Divicon at 100 % speed and set that value as **"VMAX"**.

MEDT setting	Heat transfer medium
0	Water
1	Propylene glycol
2	Ethylene glycol
3	Viessmann heat transfer medium

Function description

Heat statement (cont.)

Setting parameters	Delivered condition	Setting range
VMAX	5.0 l/min	0.1 – 20 l/min
MEDT	3	0 – 3
MED %	40 %	20 – 70 %

Speed control

Note
The "RPM" parameter is factory-set according to the type of inbuilt pump. This setting only needs to be changed when replacing the control unit or possibly when replacing the pump (see page 10).

If "DT E" is exceeded, the solar circuit pump is switched on.
If the temperature differential rises to "DT S" (differential temperature for the start of the speed control), the speed is increased by 10 % with every rise by the value selected in "ANS" (rise).

Setting parameters	Delivered condition	Setting range
n1MN	30 %	30 – 100 %
DT S	10 K	0.5 – 30 K
ANS	2 K	1 – 20 K

Example

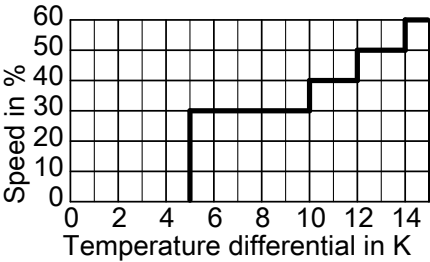


Fig. 15

DT E = 5 K
DT S = 10 K
ANS = 2 K

Parts list

When ordering spare parts

Quote the part and serial numbers (see type plate) and the position numbers of the required part (as per this parts list).

Standard parts are available from your local supplier.

Parts

300 Vitosolic 100, type SD1

311 Collector temperature sensor

312 Cylinder temperature sensor

313 Solar circuit pump connecting cable

314 Strain relief, capacitor and fuse

315 Fuse 4 A (slow)

316 Installation and service instructions

317 Operating instructions

340 PWM cable, solar circuit pump

Specification

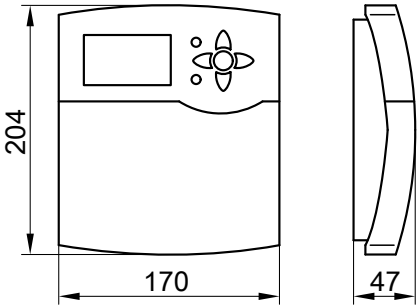


Fig. 16

Rated voltage	230 V~
Rated frequency	50 Hz
Rated current	4 A~
Power consumption	2 W (0.7 W in standby mode)
Safety category	II
IP rating	IP 20 D to EN 60529, ensure through design/installation
Mode of operation	Type 1 B to EN 60730-1
Permiss. ambient temperature	
▪ During operation	0 to +40 °C Installation in living spaces or boiler rooms (standard ambient conditions)
▪ During storage and transport	-20 to +65 °C
Rated relay output breaking capacity at 230 V ~:	
▪ R1	0.8 A~
▪ R2	4 (2) A ~

Appendix

Replace the PCB in the stated boiler control units in conjunction with the following functions:

- Suppression of reheating by the boiler
- Auxiliary function for DHW heating, achieved by the solar control unit

Control unit	PCB
Vitotronic 200, type KW1, Part no. 7450 351, 7450 740	Part no. 7828 192
Vitotronic 200, type KW2, Part no. 7450 352, 7450 750	
Vitotronic 300, type KW3, Part no. 7450 353, 7450 760	
Vitotronic 200, type GW1, Part no. 7143 006	Part no. 7831 930
Vitotronic 300, type GW2, Part no. 7143 156	
Vitotronic 333, type MW1, Part no. 7143 421	Part no. 7828 194

Declaration of conformity

We, Viessmann Werke GmbH & Co KG, D-35107 Allendorf, confirm as sole responsible body that the product **Vitosolic 100** complies with the following standards:

EN 55 014-1

EN 60 730

This product is designated **CE** in accordance with the following Directives:

2004/108/EC

2006/95/EC

Allendorf, 11 January 2010

Viessmann Werke GmbH & Co KG

A handwritten signature in black ink, appearing to read 'M. Sommer', with a long horizontal stroke extending to the right.

Authorised signatory Manfred Sommer

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Applicability

Applicable for the Vitosolic 100, type SD1 solar control unit
Part no. 7418 201 and 7439 960

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5774010 Subject to technical modifications.