# DeltaSol® E

# Examples of use

System description

Connection schemes

Adjustment


48004451

**Thank you for buying this RESOL product.**
**Please read this manual carefully, to get the best performance from this unit.**

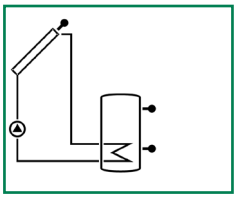
DeltaSol® E

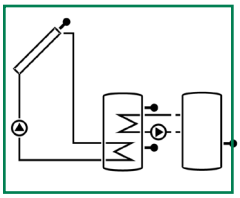
en

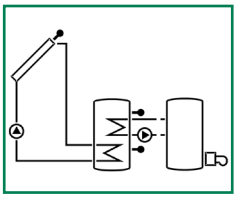
**System description**

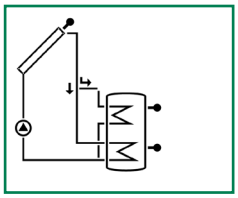
## Overview of systems

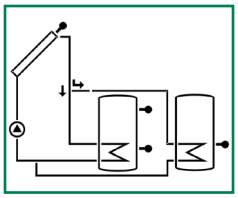
The controller is pre-programmed for 30 basic systems. For these systems and hydraulic variants, the relay and sensor allocation has to be carried out as follows.

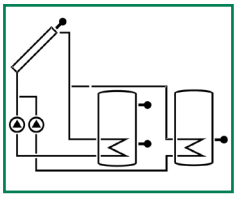

System 1 (p. 3)

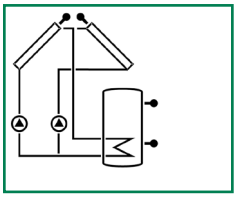

System 2 (p. 5)

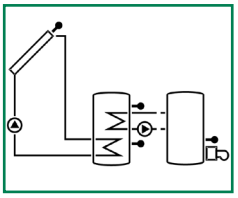

System 3 (p. 8)

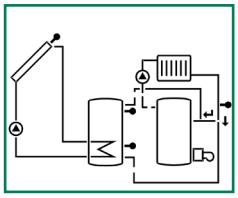

System 4 (p. 11)

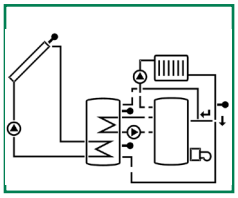

System 5 (p. 14)

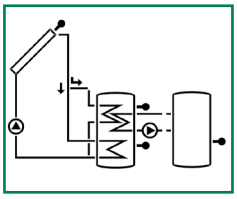

System 6 (p. 17)

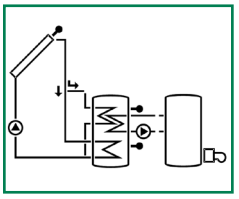

System 7 (p. 20)

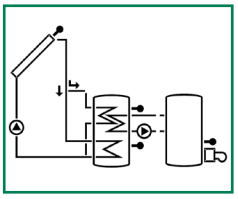

System 8 (p. 23)

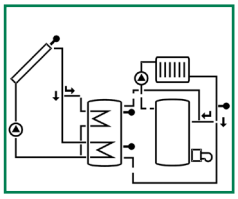

System 9 (p. 26)

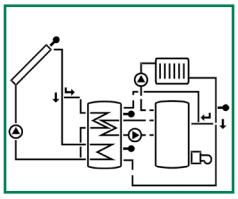

System 10 (p. 29)

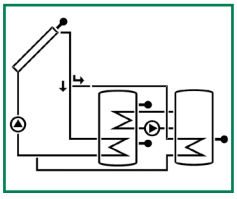

System 11 (p. 32)

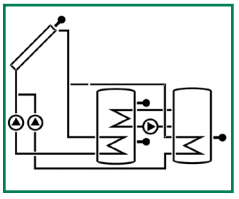

System 12 (p. 35)

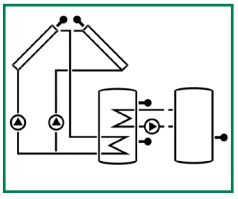

System 13 (p. 38)

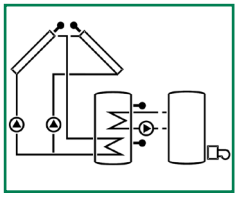

System 14 (p. 41)

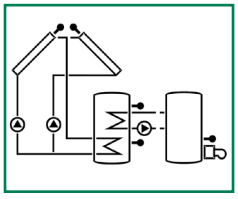

System 15 (p. 44)

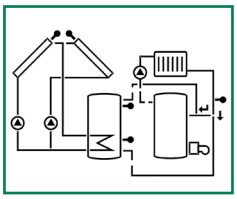

System 16 (p. 47)

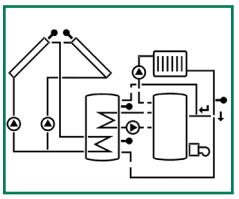

System 17 (p. 50)

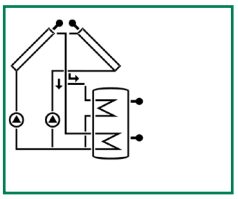

System 18 (p. 53)

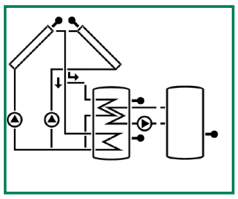

System 19 (p. 56)

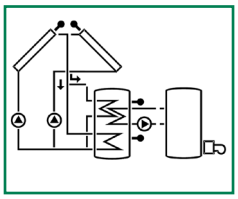

System 20 (p. 59)

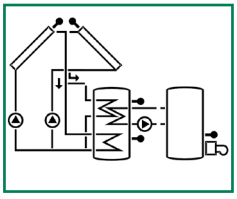

System 21 (p. 62)

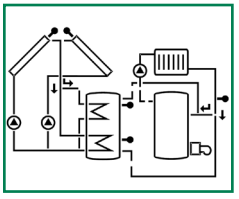

System 22 (p. 65)

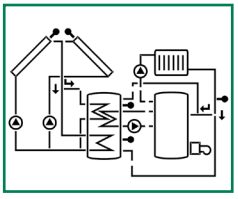

System 23 (p. 68)

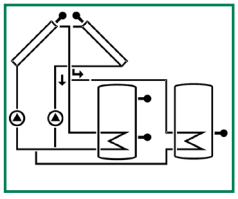

System 24 (p. 71)

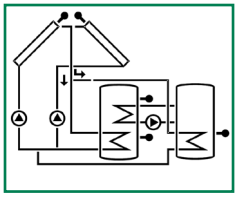

System 25 (p. 74)


System 26 (p. 77)


System 27 (p. 80)


System 28 (p. 83)


System 29 (p. 86)


System 30 (p. 89)

**Important note**

We took a lot of care with the texts and drawings of this manual and to the best of our knowledge and consent. As faults can never be excluded, please note:

Your own calculations and plans, under consideration of the current standards and DIN-directions should only be basis for your projects. We do not offer a guarantee for the completeness of the drawings and texts of this manual - they only represent some examples. They can only be used at your own risk. They can only be used at your own risk. No liability is assumed for incorrect, incomplete or false information and / or the resulting damages.

Subject to technical change. Errors excepted.

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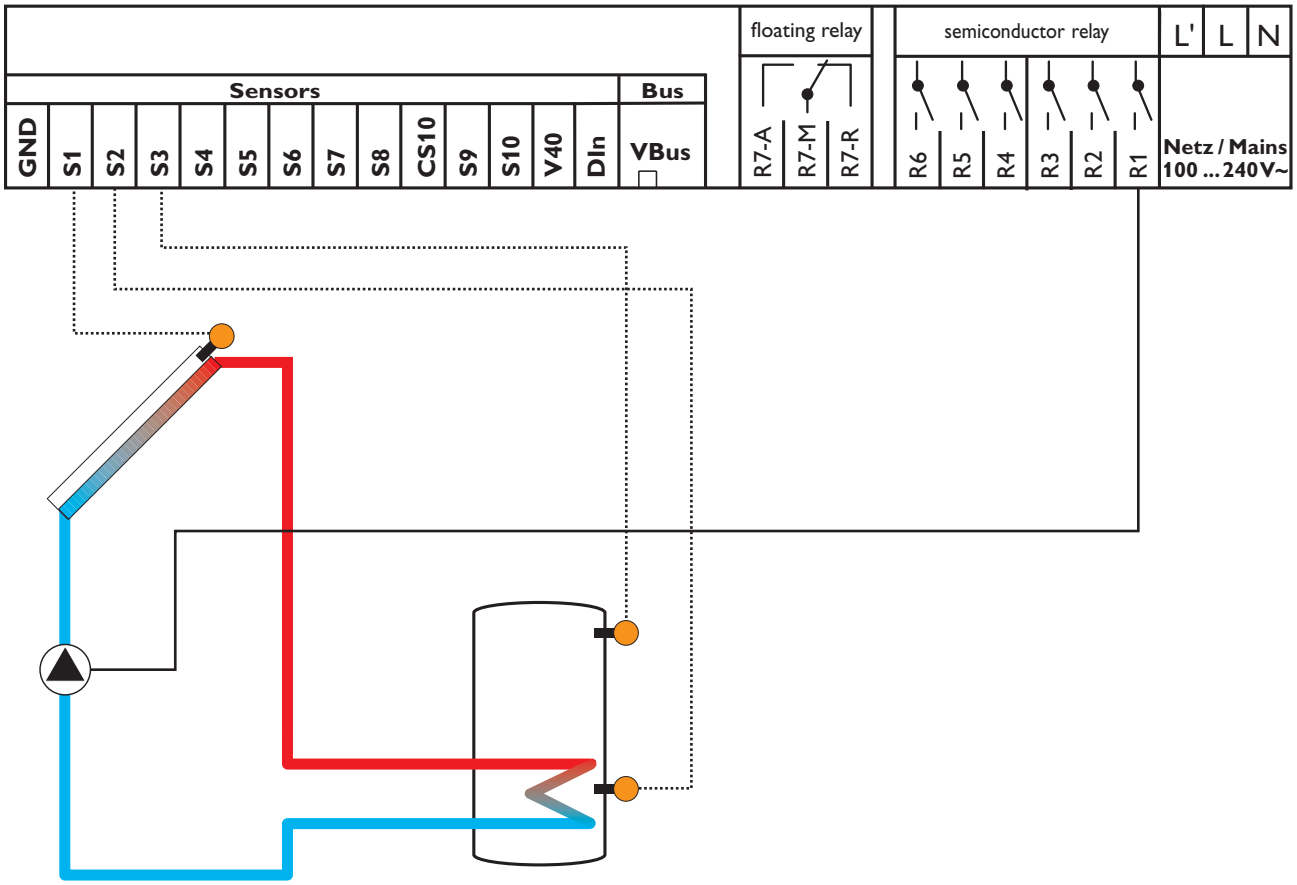
## System 1

### System description:

The controller calculates the temperature difference between collector sensor S1 and store sensor S2. If the difference is larger than or identical to the adjusted switch-on temperature difference, the pump (P1) will be switched on and the store will be loaded until the switch-off temperature difference or the maximum store temperature is reached. Sensor S3 can optionally be connected for measurement purposes.




| Relay output | Description | Note | Terminals |
|---|---|---|---|
| Relay 1 | P1 | Solar pump | R1-A |
| Relay 2 | | | R2-A |
| Relay 3 | | | R3-A |
| Relay 4 | | | R4-A |
| Relay 5 | | | R5-A |
| Relay 6 | | | R6-A |
| Relay 7 | | | R7-A |
| Relay 7 | | | R7 R |
| Relay 7 | | | R7 M |

| Sensor input | Description | Note | Terminals |
|---|---|---|---|
| Sen. 1 | S1 | Collector Solar | S1 |
| Sen. 2 | S2 | Store 1 bottom, solar | S2 |
| Sen. 3 | | | S3 |
| Sen. 4 | | | S4 |
| Sen. 5 | | | S5 |
| Sen. 6 | | | S6 |
| Sen. 7 | | | S7 |
| Sen. 8 | | | S8 |
| CS10 | | | CS10 |
| Sen. 9 | | | S9 |
| Sen. 10 | | | S10 |
| V40 | | | V40 |
| Din | | | Din |
| VBus | | | VBus |

| Solar / Options | | | |
|---|---|---|---|
| Description | Factory setting | Change to | Note |
| Schematic | 000 | 001 | Adjust the desired schematic (e.g. schematic 28) |
| System | 1 | | System 1 for one collector |

| Solar / Adjustment values | | | |
|---|---|---|---|
| Description | Factory setting | Change to | Note |
| Tstmax | 60 | | Adjust the desired maximum store temperature for store 1. |
| Tcolsec | 130 | | Adjust this value to 200°C when the collector emergency shutdown function is not to start. |

| Solar / Expert | | | |
|---|---|---|---|
| Description | Factory setting | Change to | Note |
| Tcolmin | 10 | | Adjust the minimum temperature of the collector. |
| ΔT-Stmax | 2,0 | | This menu is used for changing the hysteresis for maximum limitation of store 1. |
| **Control** | **Solar / Expert / Solar control** | | |

| System / Adjustment values | | | |
|---|---|---|---|
| Description | Factory setting | Change to | Note |
| Date | 01.01.2006 | | Adjust the actual date |
| Time | 12:01 | | Adjust the actual clock time. |

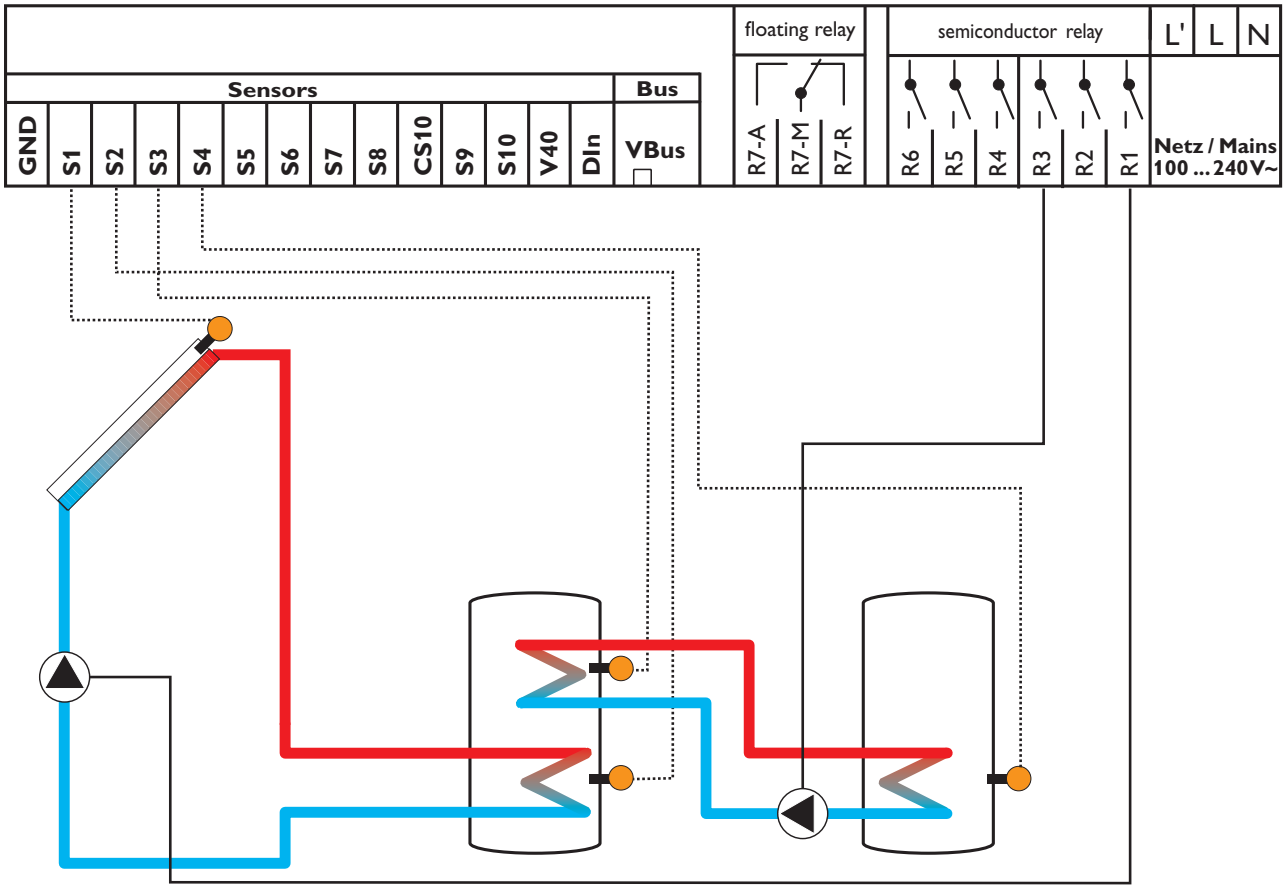
| User code | | | |
|---|---|---|---|
| Description | Factory setting | Change to | Note |
| Code | 0262 | 0000 | After having adjusted the controller settings, enter the user code 0000.<br>Note: The expert menu is "hidden", parameters and balance values cannot be changed |

| Expert | | | |
|---|---|---|---|
| Description | Factory setting | Change to | Note |
| ΔT too high | Yes | | In this menu, the messages „ΔT too high“ and „Non-ret. valve“ can be switched off. |
| Non-ret. valve | Yes | | |
| Message relay | No | | |
| Message inp. | No | | |
| Chimney | No | | |
| **Sensors** | **Expert / Sensors** | | |
| CS-Type | E | | Adjust the CS-type, with the solar cell connected.<br>A = 1, B = 2, C = 3, D = 4, E = 5, F = 6, G = 7 |
| CS Adjust | | | The CS adjustment should be carried out with the irradiation sensor disconnected or when it is dark (select with adjustment button)! The sensor type must have been previously selected! |
| CS Offset | | Control value | This menu indicates the offset after the solar cell has been adjusted. |
| Sensor 1 | 0,0 | | In this menu, an offset can be allocated to the measured values of sensors 1 to 10 (e.g. in the case of long sensor cables) Adjustment range +/- 5 K (the temperatures indicated in the measured values menu will be corrected using the values adjusted in this menu). |
| : | | | |
| Sensor 10 | 0,0 | | |
| **Relay** | **Expert / Relay** | | |
| Min speed 1 | 30 | | In this menu the minimum speed of the circulating pumps can be adjusted; at 100% speed control is deactivated. |
| Min speed 2 | 30 | | |
| Min speed 3 | 30 | | |
| **Language** | **Expert / Language** | | |
| German | | | |
| English | | | |
| français | | | |
| castellano | | | |
| italiano | | | |

## System 2

### System description:

The controller calculates the temperature difference between collector sensor S1 and store sensor S2. If the difference is larger than or identical to the adjusted switch-on temperature difference, pump P1 will be switched on and the store will be loaded until the switch-off temperature difference or the maximum store temperature is reached. Heat exchange to an existant store (P2) can be carried out via another temperature differential function (S3/S4).




| Relay output | Description | Note | Terminals |
|---|---|---|---|
| Relay 1 | P1 | Solar pump | R1-A |
| Relay 2 | | | R2-A |
| Relay 3 | P2 | Heat exchange pump | R3-A |
| Relay 4 | | | R4-A |
| Relay 5 | | | R5-A |
| Relay 6 | | | R6-A |
| Relay 7 | | | R7-A |
| Relay 7 | | | R7 R |
| Relay 7 | | | R7 M |

| Sensor input | Description | Note | Terminals |
|---|---|---|---|
| Sen. 1 | S1 | Collector Solar | S1 |
| Sen. 2 | S2 | Store 1 bottom, solar | S2 |
| Sen. 3 | S3 | Store 1 top, heat exchange | S3 |
| Sen. 4 | S4 | Store 2 bottom, heat exchange | S4 |
| Sen. 5 | | | S5 |
| Sen. 6 | | | S6 |
| Sen. 7 | | | S7 |
| Sen. 8 | | | S8 |
| CS10 | | | CS10 |
| Sen. 9 | | | S9 |
| Sen. 10 | | | S10 |
| V40 | | | V40 |
| Din | | | S11 |
| VBus | | | VBus |

| Solar / Options | | | |
|---|---|---|---|
| Description | Factory setting | Change to | Note |
| Schematic | 000 | 002 | Adjust the desired schematic (e.g. schematic 28) |
| System | 1 | | System 1 for one collector and one store |

| Solar / Adjustment values | | | |
|---|---|---|---|
| Description | Factory setting | Change to | Note |
| Tstmax | 60 | | Adjust the desired maximum store temperature for store 1. |
| Tcolsec | 130 | | Adjust this value to 200°C when the collector emergency shutdown function is not to start. |

| Solar / Expert | | | |
|---|---|---|---|
| Description | Factory setting | Change to | Note |
| Tcolmin | 10 | | Adjust the minimum temperature of the collector. |
| ΔT-Stmax | 2,0 | | This menu is used for changing the hysteresis for maximum limitation of store 1. |
| **Control** | **Solar / Expert / Solar control** | | |

| Arrangements / Options | | | |
|---|---|---|---|
| Description | Factory setting | Change to | Note |
| Thermo. 2 | No | Yes | Thermostat function (maximum limitation) for heat exchange |
| ΔT-Func.5 | No | Yes | Differential function for afterheating |
| Timer 1 | No | | In this menu, the timer of function block 1 can be activated (Thermo. 1 / 2 and ΔT-Func.5) |

| Arrangement / Adjustment values | | | |
|---|---|---|---|
| Description | Factory setting | Change to | Note |
| Date | 01.01.2006 | | Adjust the actual date |
| Time | 12:01 | | Adjust the actual clock time. |
| Th2on | 40 | 55 | Th2on |
| Th2off | 45 | 60 | Th2off |
| ΔT5on | 5,0 | | Switch-on difference for the heat exchange pump |
| ΔT5off | 3,0 | | Switch-off difference for the heat exchange pump |
| **Timer 1** | **See Arrangement / Adjustment values / Timer 1** | | |

| Arrangement / Expert | | | |
|---|---|---|---|
| Description | Factory setting | Change to | Note |
| Sen-Th2 | 4 | Do not change the value as the sensor has already been correctly allocated. | |
| Sen1-ΔT5 | 3 | | |
| Sen2-ΔT5 | 4 | | |

| User code | | | |
|---|---|---|---|
| Description | Factory setting | Change to | Note |
| Code | 0262 | 0000 | After having adjusted the controller settings, enter the user code 0000. Note: The expert menu is "hidden", parameters and balance values cannot be changed |

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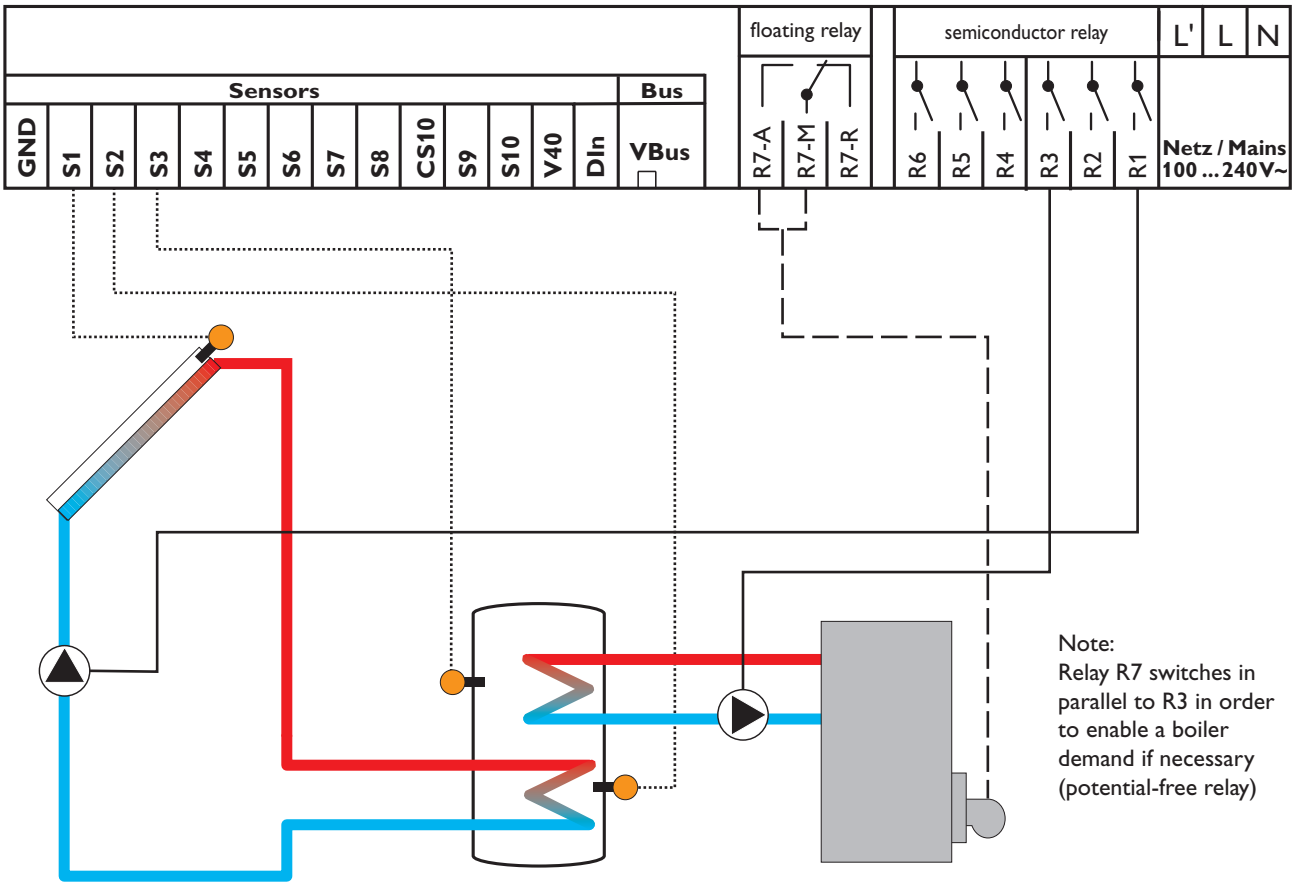
| Expert | | | |
|---|---|---|---|
| Description | Factory setting | Change to | Note |
| ΔT too high | Yes | | In this menu, the messages „ΔT too high“ and „Non-ret. valve“ can be switched off. |
| Non-ret. valve | Yes | | |
| Message relay | No | | |
| Message inp. | No | | |
| Chimney sweeper | No | | |
| **Sensors** | **Expert / Sensors** | | |
| CS-Type | E | | Adjust the CS-type, with the solar cell connected. A = 1, B = 2, C = 3, D = 4, E = 5, F = 6, G = 7 |
| CS Adjust | | | The CS adjustment should be carried out with the irradiation sensor disconnected or when it is dark (select with adjustment button)! The sensor type must have been previously selected! |
| CS-Offset | | Control value | This menu indicates the offset after the solar cell has been adjusted. |
| Sensor 1 | 0,0 | | In this menu, an offset can be allocated to the measured values of sensors 1 to 10 (e.g. in the case of long sensor cables) Adjustment range +/- 5 K (the temperatures indicated in the measured values menu will be corrected using the values adjusted in this menu). |
| . . . | | | |
| Sensor 10 | 0,0 | | |
| **Relay** | **Expert / Relay** | | |
| Min speed 1 | 30 | | In this menu the minimum speed of the circulating pumps can be adjusted; at 100% speed control is deactivated. |
| Min speed 2 | 30 | | |
| Min speed 3 | 30 | | |
| **Language** | **Expert / Language** | | |
| German | | | |
| English | | | |
| français | | | |
| castellano | | | |
| italiano | | | |

## System 3

**System description:**

The controller calculates the temperature difference between collector sensor S1 and store sensor S2. If the difference is larger than or identical to the adjusted switch-on temperature difference, the pump (P1) will be switched on and the store will be loaded until the switch-off temperature difference or the maximum store temperature is reached.

Domestic hot water afterheating (P2) can be carried out with a thermostat function (S3).




| Relay output | Description | Note | Terminals |
|---|---|---|---|
| Relay 1 | P1 | Solar pump | R1-A |
| Relay 2 | | | R2-A |
| Relay 3 | P2 | Boiler pump | R3-A |
| Relay 4 | | | R4-A |
| Relay 5 | | | R5-A |
| Relay 6 | | | R6-A |
| Relay 7 | Boiler demand | Potential-free contact | R7-A |
| Relay 7 | | | R7 R |
| Relay 7 | Boiler demand | Potential-free contact | R7 M |

| Sensor input | Description | Note | Terminals |
|---|---|---|---|
| Sen. 1 | S1 | Collector Solar | S1 |
| Sen. 2 | S2 | Store 1 bottom, solar | S2 |
| Sen. 3 | S3 | Store 1 top, afterheating | S3 |
| Sen. 4 | | | S4 |
| Sen. 5 | | | S5 |
| Sen. 6 | | | S6 |
| Sen. 7 | | | S7 |
| Sen. 8 | | | S8 |
| CS10 | | | CS10 |
| Sen. 9 | | | S9 |
| Sen. 10 | | | S10 |
| V40 | | | V40 |
| Din | | | S11 |
| VBus | | | VBus |

| Solar / Options | | | |
|---|---|---|---|
| description | factory set-ting | change to | note |
| Schematic | 000 | 003 | Adjust the desired schematic (e.g. schematic 28) |
| System | 1 | | System 1 for one collector and one store |
| Loading | 1 | | |

| Solar / Adjustment values | | | |
|---|---|---|---|
| Description | Factory setting | Change to | Note |
| Tstmax | 60 | | Adjust the desired maximum store temperature for store 1. |
| ΔTon | 5,0 | | Adjust the desired switch-on temperature difference for store 1. |
| ΔToff | 3,0 | | Adjust the desired switch-off temperature difference for store 1. |
| ΔTset | 10,0 | | Adjust the desired set temperature difference for store 1. Once the adjusted temperature difference is reached, the speed is increased by 10 %. |
| Tcolsec | 130 | | Adjust this value to 200°C when the collector emergency shutdown function is not to start. |

| Solar / Expert | | | |
|---|---|---|---|
| Description | Factory setting | Change to | Note |
| Tcolmin | 10 | | Adjust the minimum temperature of the collector. |
| ΔT-Stmax | 2,0 | | This menu is used for changing the hysteresis for maximum limitation of store 1. |
| **Control** | **Solar / Expert / Solar control** | | |

| Arrangements / Options | | | |
|---|---|---|---|
| Description | Factory setting | Change to | Note |
| Thermo. 1 | No | Yes | Thermostat function for afterheating |
| Timer 1 | No | | In this menu, a timer of function block 1 can be activated (Thermo. 1 / 2 and ΔT-Func.5) |
| Thermo. 9 | No | Yes | Thermostat function for afterheating (boiler demand) |
| Timer 5 | No | | In this menu, a timer of function block 5 can be activated (Thermo. 9 / 10 and ΔT-Func.9) |

| System / Adjustment values | | | |
|---|---|---|---|
| Description | Factory setting | Change to | Note |
| Date | 01.01.2006 | | Adjust the actual date |
| Time | 12:01 | | Adjust the actual clock time. |
| Th1on | 40 | 55 | Switch-on temperature for the boiler pump |
| Th1off | 45 | 60 | Switch-off temperature (minimum limitation) for the boiler pump |
| **Timer 1** | **See Arrangement / Adjustment values / Timer 1** | | |
| Th9on | 40 | 55 | Switch-on temperature for boiler demand |
| Th9off | 45 | 60 | Switch-off temperature for boiler demand |
| **Timer 5** | **See Arrangement / Adjustment values / Timer 5** | | |

| Arrangement / Expert | | | |
|---|---|---|---|
| Description | Factory setting | Change to | Note |
| Sen-Th1 | 3 | Do not change the value as the sensor has already been correctly allocated. | |
| Sen-Th9 | 9 | 3 | Sensor S9 is allocated to thermostat function 3. |

| User code | | | |
|---|---|---|---|
| Description | Factory setting | Change to | Note |
| Code | 0262 | 0000 | After having adjusted the controller settings, enter the user code 0000.<br>Note: The expert menu is "hidden", parameters and balance values cannot be changed |

| Expert | | | |
|---|---|---|---|
| Description | Factory setting | Change to | Note |
| ΔT too high | Yes | | In this menu, the messages „ΔT too high“ and „Non-ret. valve“ can be switched off |
| Non-ret. valve | Yes | | |
| Message relay | No | | |
| Message inp. | No | | |
| Chimney sweeper | No | | |
| **Sensors** | **Expert / Sensors** | | |
| CS-Type | E | | Adjust the CS-type, with the solar cell connected.<br>A = 1, B = 2, C = 3, D = 4, E = 5, F = 6, G = 7 |
| CS Adjust | | | The CS adjustment should be carried out with the irradiation sensor disconnected or when it is dark (select with adjustment button)! The sensor type must have been previously selected! |
| CS Offset | | Control value | This menu indicates the offset after the solar cell has been adjusted. |
| Sensor 1 | 0,0 | | In this menu, an offset can be allocated to the measured values of sensors 1 to 10 (e.g. in the case of long sensor cables) Adjustment range +/- 5 K (the temperatures indicated in the measured values menu will be corrected using the values adjusted in this menu). |
| . . . | | | |
| Sensor 10 | 0,0 | | |
| **Relay** | **Expert / Relay** | | |
| Min speed 1 | 30 | | In this menu the minimum speed of the circulating pumps can be adjusted; at 100% speed control is deactivated. |
| Min speed 2 | 30 | | |
| Min speed 3 | 30 | | |
| **Language** | **Expert / Language** | | |
| German | | | |
| English | | | |
| français | | | |
| castellano | | | |
| italiano | | | |

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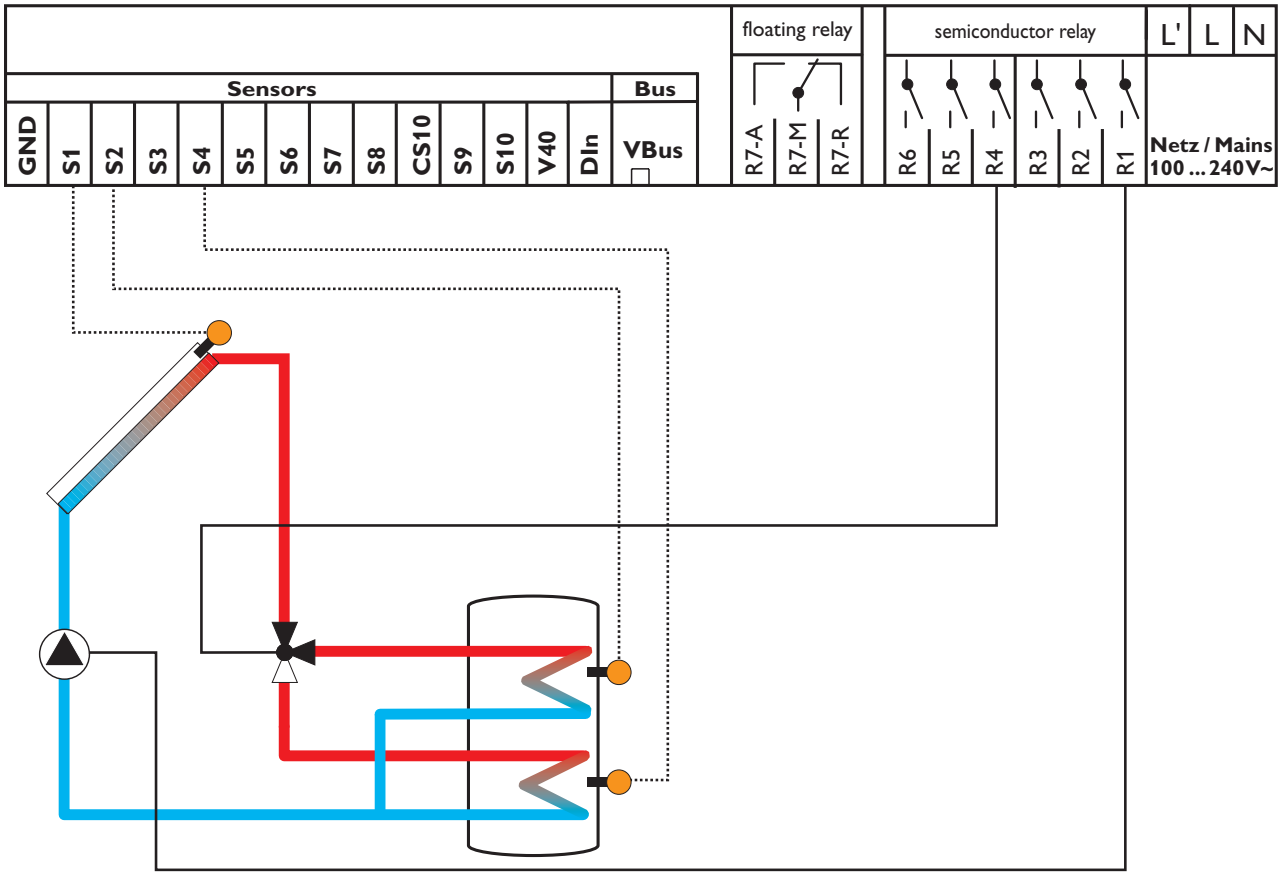
## System 4

### System description:

The controller compares the temperature at sensor S1 to the temperatures at sensors S2 and S4. If the measured temperature differences are higher than the adjusted switch-on temperature differences, the pump (P1) will be activated and the corresponding store zone will be loaded up to the adjusted maximum temperature at most via the valve (V1). The priority logic causes prior loading of the upper zone of the store.




| Relay output | Description | Note | Terminals |
|---|---|---|---|
| Relay 1 | P1 | Solar pump | R1-A |
| Relay 2 | | | R2-A |
| Relay 3 | | | R3-A |
| Relay 4 | V1 | 3-port valve store top / bottom | R4-A |
| Relay 5 | | | R5-A |
| Relay 6 | | | R6-A |
| Relay 7 | | | R7-A |
| Relay 7 | | | R7 R |
| Relay 7 | | | R7 M |

| Sensor input | Description | Note | Terminals |
|---|---|---|---|
| Sen. 1 | S1 | Collector Solar | S1 |
| Sen. 2 | S2 | Store 1 top, solar | S2 |
| Sen. 3 | | | S3 |
| Sen. 4 | S4 | Store 1 bottom, solar | S4 |
| Sen. 5 | | | S5 |
| Sen. 6 | | | S6 |
| Sen. 7 | | | S7 |
| Sen. 8 | | | S8 |
| CS10 | | | CS10 |
| Sen. 9 | | | S9 |
| Sen. 10 | | | S10 |
| V40 | | | V40 |
| Din | | | S11 |
| VBus | | | VBus |

| Solar / Options | | | |
|---|---|---|---|
| Description | Factory setting | Change to | Note |
| Schematic | 000 | 004 | Adjust the desired schematic (e.g. schematic 28) |
| System | 1 | 3 | System 3 for one collector and one stratified store |
| Loading | 1 | | |
| ST2 on | Yes | | |

| Solar / Adjustment values | | | |
|---|---|---|---|
| Description | Factory setting | Change to | Note |
| Tstmax | 60 | | Adjust the desired maximum store temperature for store 1 top. |
| Tst2max | 60 | | Adjust the desired maximum store temperature for store 1 bottom. |
| ΔTon | 5,0 | | Adjust the desired switch-on temperature difference for store 1 top. |
| ΔToff | 3,0 | | Adjust the desired switch-off temperature difference for store 1 top. |
| ΔTset | 10,0 | | Adjust the desired set temperature difference for store 1 top. Once the adjusted temperature difference is reached, the speed is increased by 10 %. |
| ΔT2on | 5,0 | | Adjust the desired switch-on temperature difference for store 1 bottom. |
| ΔT2off | 3,0 | | Adjust the desired switch-off temperature difference for store 1 bottom |
| ΔT2set | 10,0 | | Adjust the desired set temperature difference for store 1 bottom. Once the adjusted temperature difference is reached, the speed is increased by 10 %. |
| Priority ST1 | 1 | | Priority store 1 top |
| Priority ST2 | 2 | | Non-priority store 1 bottom |
| Tcolsec | 130 | | Adjust this value to 200°C when the collector emergency shutdown function is not to start. |

| Solar / Expert | | | |
|---|---|---|---|
| Description | Factory setting | Change to | Note |
| Tcolmin | 10 | | Adjust the minimum temperature of the collector. |
| ΔT-Stmax | 2,0 | | This menu is used for changing the hysteresis for maximum limitation of store 1 top. |
| ΔT-St2max | 2,0 | | This menu is used for changing the hysteresis for maximum limitation of store 1 bottom. |
| t-st | 2 | | The loading break time for the priority logic function can be changed (see appendix priority logic) |
| t-circ. | 15 | | The oscillating loading time for the priority logic function can be changed (see appendix priority logic) |
| ΔT-Col | 2 | | The collector rise temperature during the break time of the priority logic function can be changed (see appendix priority logic) |
| **Control** | **Solar / Expert / Solar control** | | |

| System / Adjustment values | | | |
|---|---|---|---|
| Description | Factory setting | Change to | Note |
| Date | 01.01.2006 | | Adjust the actual date |
| Time | 12:01 | | Adjust the actual clock time. |

| User code | | | |
|---|---|---|---|
| Description | Factory setting | Change to | Note |
| Code | 0262 | 0000 | After having adjusted the controller settings, enter the user code 0000.<br>Note: The expert menu is "hidden", parameters and balance values cannot be changed |

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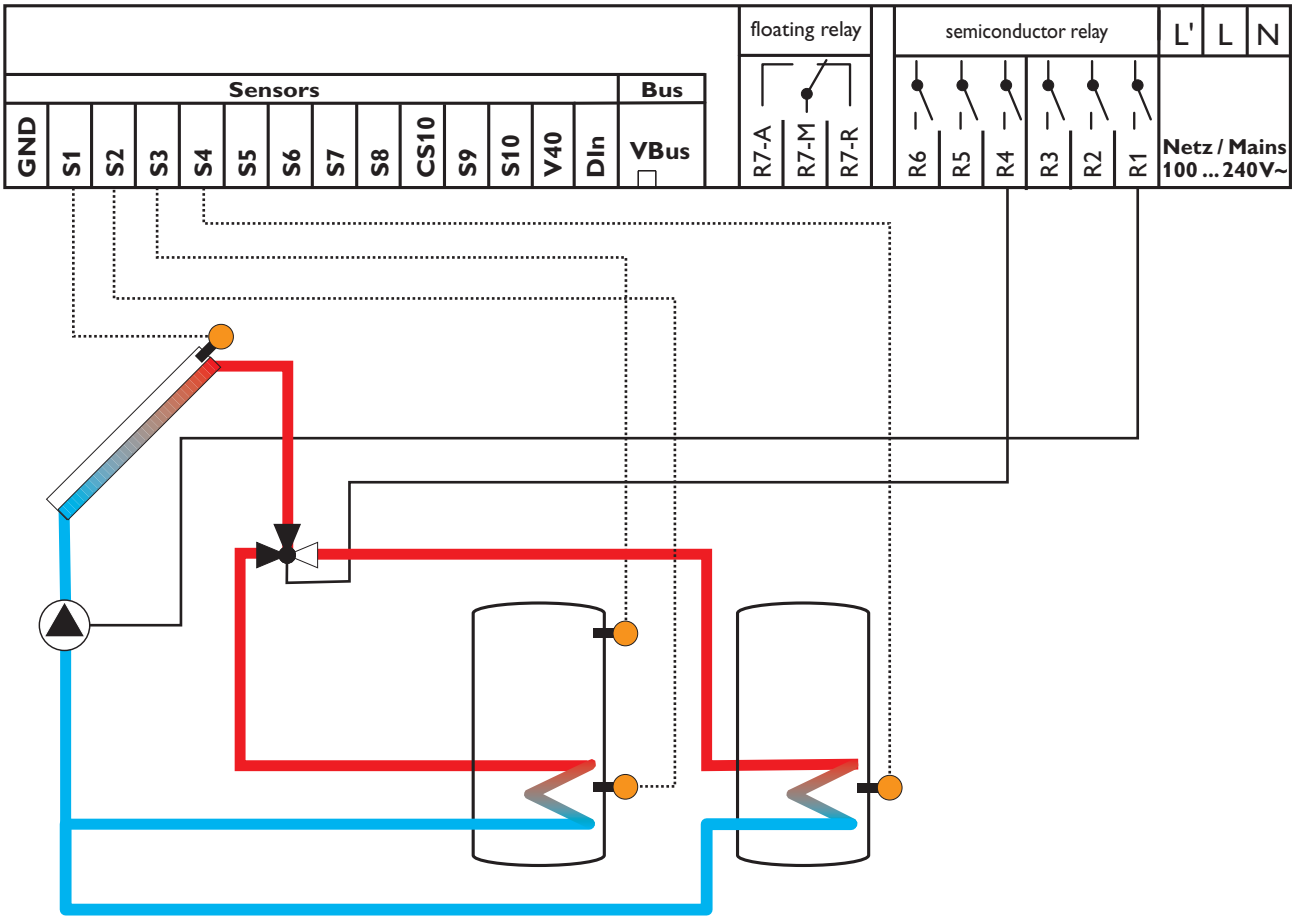
| Expert | | | |
|---|---|---|---|
| Description | Factory setting | Change to | Note |
| ΔT too high | Yes | | In this menu, the messages „ΔT too high“ and „Non-ret. valve“ can be switched off |
| Non-ret. valve | Yes | | |
| Message relay | No | | |
| Message inp. | No | | |
| Chimney sweeper | No | | |
| **Sensors** | **Expert / Sensors** | | |
| CS-Type | E | | Adjust the CS-type, with the solar cell connected. A = 1, B = 2, C = 3, D = 4, E = 5, F = 6, G = 7 |
| CS Adjust | | | The CS adjustment should be carried out with the irradiation sensor disconnected or when it is dark (select with adjustment button)! The sensor type must have been previously selected! |
| CS Offset | | Control value | This menu indicates the offset after the solar cell has been adjusted. |
| Sensor 1 | 0,0 | | In this menu, an offset can be allocated to the measured values of sensors 1 to 10 (e.g. in the case of long sensor cables) Adjustment range +/- 5 K (the temperatures indicated in the measured values menu will be corrected using the values adjusted in this menu). |
| . . . | | | |
| Sensor 10 | 0,0 | | |
| **Relay** | **Expert / Relay** | | |
| Min speed 1 | 30 | | In this menu the minimum speed of the circulating pumps can be adjusted; at 100% speed control is deactivated. |
| Min speed 2 | 30 | | |
| Min speed 3 | 30 | | |
| **Language** | **Expert / Language** | | |
| German | | | |
| English | | | |
| français | | | |
| castellano | | | |
| italiano | | | |

## System 5

### System description:

The controller compares the temperature at sensor S1 to the temperatures at sensors S2 and S4. If the measured temperature differences are higher than the adjusted switch-on temperature differences, the pump (P1) will be activated and the corresponding store will be loaded up to the adjusted maximum temperature at most via the valve (V1).




| Relay output | Description | Note | Terminals |
|---|---|---|---|
| Relay 1 | P1 | Solar pump | R1-A |
| Relay 2 | | | R2-A |
| Relay 3 | | | R3-A |
| Relay 4 | V1 | 3-port valve store 1 / 2 | R4-A |
| Relay 5 | | | R5-A |
| Relay 6 | | | R6-A |
| Relay 7 | | | R7-A |
| Relay 7 | | | R7 R |
| Relay 7 | | | R7 M |

| Sensor input | Description | Note | Terminals |
|---|---|---|---|
| Sen. 1 | S1 | Collector Solar | S1 |
| Sen. 2 | S2 | Store 1 bottom, solar | S2 |
| Sen. 3 | S3 | Sensor | S3 |
| Sen. 4 | S4 | Store 2 bottom, solar | S4 |
| Sen. 5 | | | S5 |
| Sen. 6 | | | S6 |
| Sen. 7 | | | S7 |
| Sen. 8 | | | S8 |
| CS10 | | | CS10 |
| Sen. 9 | | | S9 |
| Sen. 10 | | | S10 |
| V40 | | | V40 |
| Din | | | S11 |
| VBus | | | VBus |

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| Solar / Options | | | |
|---|---|---|---|
| Description | Factory setting | Change to | Note |
| Schematic | 000 | 005 | Adjust the desired schematic (e.g. schematic 28) |
| System | 1 | 3 | System 3 for one collector and two stores |
| Loading | 1 | | |
| ST2 on | Yes | | |

| Solar / Adjustment values | | | |
|---|---|---|---|
| Description | Factory setting | Change to | Note |
| Tstmax | 60 | | Adjust the desired maximum store temperature for store 1 bottom. |
| Tst2max | 60 | | Adjust the desired maximum store temperature for store 2 bottom. |
| ΔTon | 5,0 | | Adjust the desired switch-on temperature difference for store 1. |
| ΔToff | 3,0 | | Adjust the desired switch-off temperature difference for store 1. |
| ΔTset | 10,0 | | Adjust the desired set temperature difference for store 1. Once the adjusted temperature difference is reached, the speed is increased by 10 %. |
| ΔT2on | 5,0 | | Adjust the desired switch-on temperature difference for store 2 bottom. |
| ΔT2off | 3,0 | | Adjust the desired switch-off temperature difference for store 2 bottom |
| ΔT2set | 10,0 | | Adjust the desired set temperature difference for store 2 bottom. Once the adjusted temperature difference is reached, the speed is increased by 10 %. |
| Priority ST1 | 1 | | Priority store 1 |
| Priority ST2 | 2 | | Non-priority store 2 bottom |
| Tcolsec | 130 | | Adjust this value to 200°C when the collector emergency shutdown function is not to start. |

| Solar / Expert | | | |
|---|---|---|---|
| Description | Factory setting | Change to | Note |
| Tcolmin | 10 | | Adjust the minimum temperature of the collector. |
| ΔT-Stmax | 2,0 | | This menu is used for changing the hysteresis for maximum limitation of store 1. |
| ΔT-St2max | 2,0 | | This menu is used for changing the hysteresis for maximum limitation of store 2. |
| t-st | 2 | | The loading break time for the priority logic function can be changed (see appendix priority logic) |
| t-circ. | 15 | | The oscillating loading time for the priority logic function can be changed (see appendix priority logic) |
| ΔT-Col | 2 | | The collector rise temperature during the break time of the priority logic function can be changed (see appendix priority logic) |
| **Control** | **Solar / Expert / Solar control** | | |

| Arrangement / Adjustment values | | | |
|---|---|---|---|
| Description | Factory setting | Change to | Note |
| Date | 01.01.2006 | | Adjust the actual date |
| Time | 12:01 | | Adjust the actual clock time. |

| User code | | | |
|---|---|---|---|
| Description | Factory setting | Change to | Note |
| Code | 0262 | 0000 | After having adjusted the controller settings, enter the user code 0000.<br>Note: The expert menu is "hidden", parameters and balance values cannot be changed |

| Expert | | | |
|---|---|---|---|
| Description | Factory setting | Change to | Note |
| ΔT too high | Yes | | In this menu, the messages „ΔT too high“ and „Non-ret. valve“ can be switched off |
| Non-ret. valve | Yes | | |
| Message relay | No | | |
| Message inp. | No | | |
| Chimney sweeper | No | | |
| **Sensors** | **Expert / Sensors** | | |
| CS-Type | E | | Adjust the CS-type, with the solar cell connected. A = 1, B = 2, C = 3, D = 4, E = 5, F = 6, G = 7 |
| CS Adjust | | | The CS adjustment should be carried out with the irradiation sensor disconnected or when it is dark (select with adjustment button)! The sensor type must have been previously selected! |
| CS Offset | | Control value | This menu indicates the offset after the solar cell has been adjusted. |
| Sensor 1 | 0,0 | | In this menu, an offset can be allocated to the measured values of sensors 1 to 10 (e.g. in the case of long sensor cables) Adjustment range +/- 5 K (the temperatures indicated in the measured values menu will be corrected using the values adjusted in this menu). |
| . . . | | | |
| Sensor 10 | 0,0 | | |
| **Relay** | **Expert / Relay** | | |
| Min speed 1 | 30 | | In this menu the minimum speed of the circulating pumps can be adjusted; at 100% speed control is deactivated. |
| Min speed 2 | 30 | | |
| Min speed 3 | 30 | | |
| **Language** | **Expert / Language** | | |
| German | | | |
| English | | | |
| français | | | |
| castellano | | | |
| italiano | | | |

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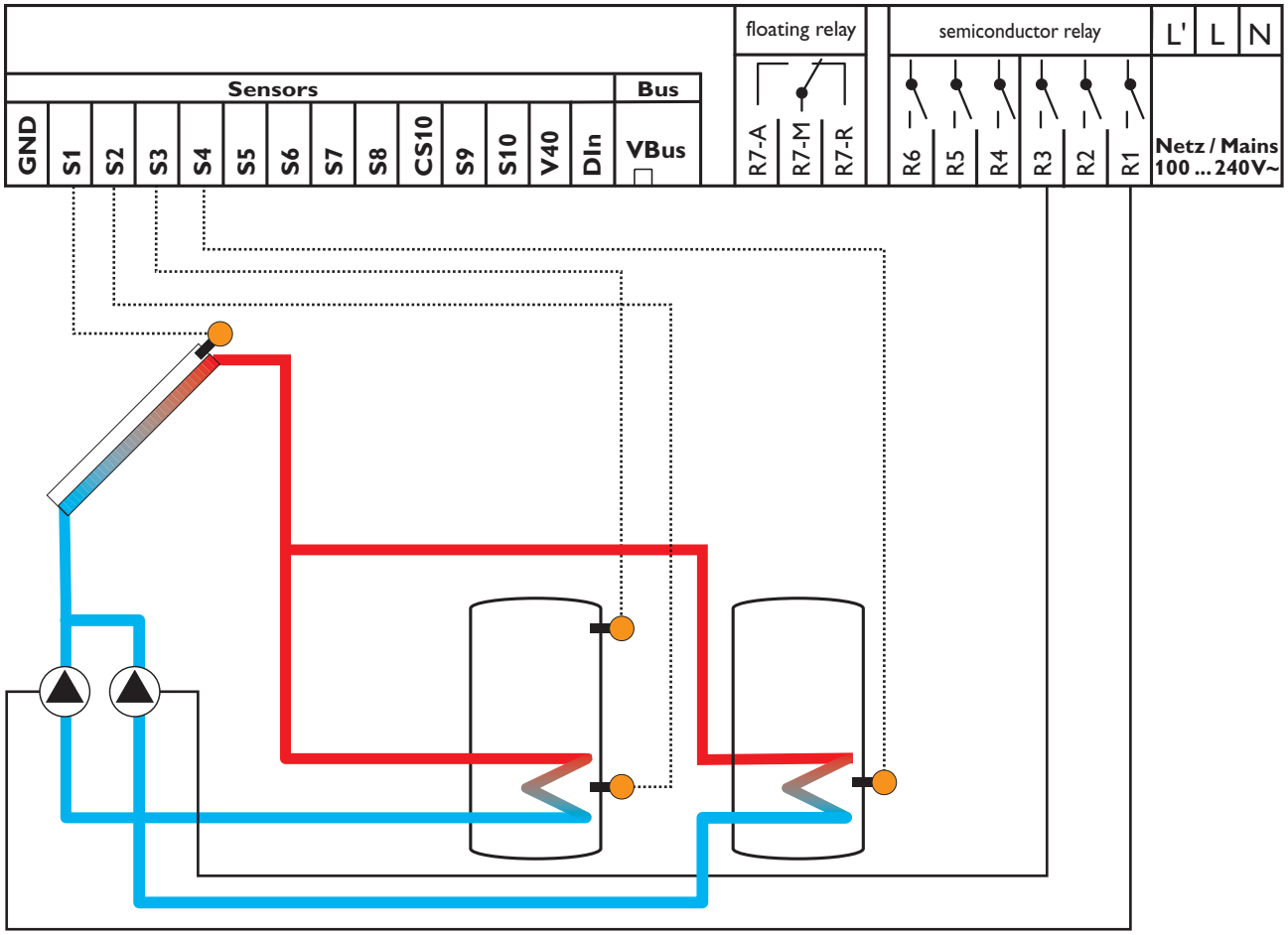
## System 6

### System description:

The controller compares the temperature at sensor S1 to the temperatures at sensors S2 and S4. If the measured temperature differences are higher than the adjusted switch-on temperature differences, the pump (P1 or P2) will be activated and the corresponding store will be loaded up to the adjusted maximum temperature at most.




| Relay output | Description | Note | Terminals |
|---|---|---|---|
| Relay 1 | P1 | Store 1 | R1-A |
| Relay 2 | | | R2-A |
| Relay 3 | P2 | Store 2 | R3-A |
| Relay 4 | | | R4-A |
| Relay 5 | | | R5-A |
| Relay 6 | | | R6-A |
| Relay 7 | | | R7-A |
| Relay 7 | | | R7 R |
| Relay 7 | | | R7 M |

| Sensor input | Description | Note | Terminals |
|---|---|---|---|
| Sen. 1 | S1 | Collector Solar | S1 |
| Sen. 2 | S2 | Store 1 bottom, solar | S2 |
| Sen. 3 | S3 | Sensor | S3 |
| Sen. 4 | S4 | Store 2 bottom, solar | S4 |
| Sen. 5 | | | S5 |
| Sen. 6 | | | S6 |
| Sen. 7 | | | S7 |
| Sen. 8 | | | S8 |
| CS10 | | | CS10 |
| Sen. 9 | | | S9 |
| Sen. 10 | | | S10 |
| V40 | | | V40 |
| Din | | | S11 |
| VBus | | | VBus |

| Solar / Options | | | |
|---|---|---|---|
| Description | Factory setting | Change to | Note |
| Schematic | 000 | 006 | Adjust the desired schematic (e.g. schematic 28) |
| System | 1 | 3 | System 3 for one collector and two stores |
| Loading | 1 | | |

| Solar / Adjustment values | | | |
|---|---|---|---|
| Description | Factory setting | Change to | Note |
| Tstmax | 60 | | Adjust the desired maximum store temperature for store 1. |
| Tst2max | 60 | | Adjust the desired maximum store temperature for store 2. |
| ΔTon | 5,0 | | Adjust the desired switch-on temperature difference for store 1. |
| ΔToff | 3,0 | | Adjust the desired switch-off temperature difference for store 1. |
| ΔTset | 10,0 | | Adjust the desired set temperature difference for store 1. Once the adjusted temperature difference is reached, the speed is increased by 10 %. |
| ΔT2on | 5,0 | | Adjust the desired switch-on temperature difference for store 2. |
| ΔT2off | 3,0 | | Adjust the desired switch-off temperature difference for store 2. |
| ΔT2set | 10,0 | | Adjust the desired set temperature difference for store 2. Once the adjusted temperature difference is reached, the speed is increased by 10 %. |
| Priority ST1 | 1 | | Priority store 1 |
| Priority ST2 | 2 | | Non-priority store 2 |
| Tcolsec | 130 | | Adjust this value to 200°C when the collector emergency shutdown function is not to start. |

| Solar / Expert | | | |
|---|---|---|---|
| Description | Factory setting | Change to | Note |
| Tcolmin | 10 | | Adjust the minimum temperature of the collector. |
| ΔT-Stmax | 2,0 | | This menu is used for changing the hysteresis for maximum limitation of store 1. |
| ΔT-St2max | 2,0 | | This menu is used for changing the hysteresis for maximum limitation of store 2. |
| t-st | 2 | | The loading break time for the priority logic function can be changed (see appendix priority logic) |
| t-circ. | 15 | | The oscillating loading time for the priority logic function can be changed (see appendix priority logic) |
| ΔT-Col | 2 | | The collector rise during the break time of the priority logic function can be changed (see appendix priority logic) |
| **Control** | **Solar / Expert / Solar control** | | |

| Arrangement / Adjustment values | | | |
|---|---|---|---|
| Description | Factory setting | Change to | Note |
| Date | 01.01.2006 | | Adjust the actual date |
| Time | 12:01 | | Adjust the actual clock time. |

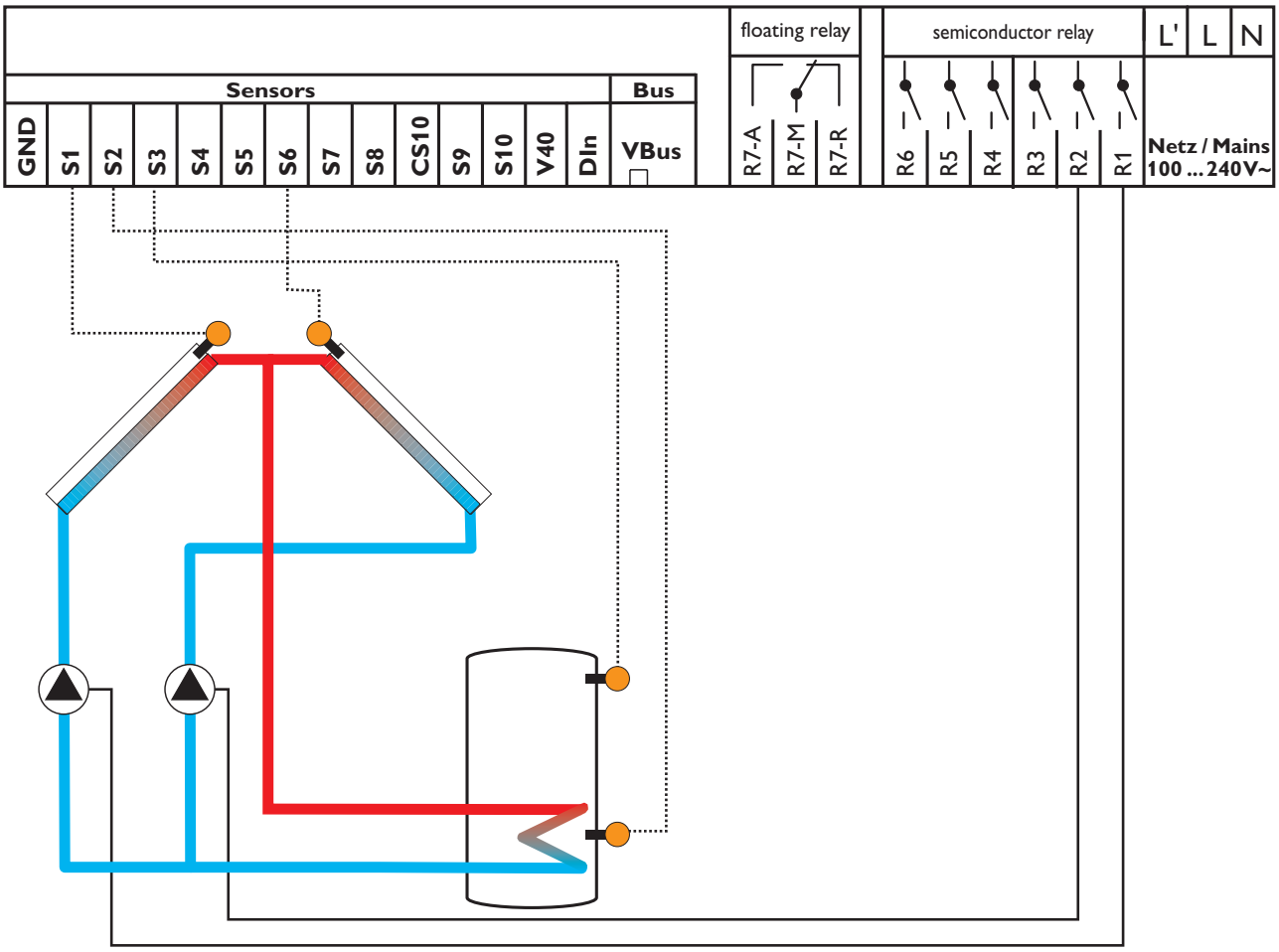
| User code | | | |
|---|---|---|---|
| Description | Factory setting | Change to | Note |
| Code | 0262 | 0000 | After having adjusted the controller settings, enter the user code 0000.<br>Note: The expert menu is "hidden", parameters and balance values cannot be changed |

| Expert | | | |
|---|---|---|---|
| Description | Factory setting | Change to | Note |
| ΔT too high | Yes | | In this menu, the messages „ΔT too high“ and „Non-ret. valve“ can be switched off |
| Non-ret. valve | Yes | | |
| Message relay | No | | |
| Message inp. | No | | |
| Chimney sweeper | No | | |
| **Sensors** | **Expert / Sensors** | | |
| CS-Type | E | | Adjust the CS-type, with the solar cell connected. A = 1, B = 2, C = 3, D = 4, E = 5, F = 6, G = 7 |
| CS Adjust | | | The CS adjustment should be carried out with the irradiation sensor disconnected or when it is dark (select with adjustment button)! The sensor type must have been previously selected! |
| CS Offset | | Control value | This menu indicates the offset after the solar cell has been adjusted. |
| Sensor 1 | 0,0 | | In this menu, an offset can be allocated to the measured values of sensors 1 to 10 (e.g. in the case of long sensor cables) Adjustment range +/- 5 K (the temperatures indicated in the measured values menu will be corrected using the values adjusted in this menu). |
| . . . | | | |
| Sensor 10 | 0,0 | | |
| **Relay** | **Expert / Relay** | | |
| Min speed 1 | 30 | | In this menu the minimum speed of the circulating pumps can be adjusted; at 100% speed control is deactivated. |
| Min speed 2 | 30 | | |
| Min speed 3 | 30 | | |
| **Language** | **Expert / Language** | | |
| German | | | |
| English | | | |
| français | | | |
| castellano | | | |
| italiano | | | |

## System 7

### System description:

The controller compares the temperatures at the collector sensors S1 and S6 to the store temperature at store sensor S2. If one of the measured temperature differences is higher than the adjusted switch-on temperature differences, the corresponding pump (P1, P2) will be activated and the store will be loaded.




| Relay output | Description | Note | Terminals |
|---|---|---|---|
| Relay 1 | P1 | Solar pump collector 1 | R1-A |
| Relay 2 | P2 | Solar pump collector 2 | R2-A |
| Relay 3 | | | R3-A |
| Relay 4 | | | R4-A |
| Relay 5 | | | R5-A |
| Relay 6 | | | R6-A |
| Relay 7 | | | R7-A |
| Relay 7 | | | R7 R |
| Relay 7 | | | R7 M |

| Sensor input | Description | Note | Terminals |
|---|---|---|---|
| Sen. 1 | S1 | Collector 1 solar | S1 |
| Sen. 2 | S2 | Store 1 bottom, solar | S2 |
| Sen. 3 | S3 | Sensor | S3 |
| Sen. 4 | | | S4 |
| Sen. 5 | | | S5 |
| Sen. 6 | S6 | Collector 2 solar | S6 |
| Sen. 7 | | | S7 |
| Sen. 8 | | | S8 |
| CS10 | | | CS10 |
| Sen. 9 | | | S9 |
| Sen. 10 | | | S10 |
| V40 | | | V40 |
| Din | | | S11 |
| VBus | | | VBus |

| Solar / Options | | | |
|---|---|---|---|
| Description | Factory setting | Change to | Note |
| Schematic | 000 | 007 | Adjust the desired schematic (e.g. schematic 28) |
| System | 1 | 2 | System 2 for two collectors and one store |
| Loading | 1 | | |
| ST2 on | Yes | | |

| Solar / Adjustment values | | | |
|---|---|---|---|
| Description | Factory setting | Change to | Note |
| Tstmax | 60 | | Adjust the desired maximum store temperature for store 1. |
| ΔTon | 5,0 | | Adjust the desired switch-on temperature difference for store 1. |
| ΔToff | 3,0 | | Adjust the desired switch-off temperature difference for store 1. |
| ΔTset | 10,0 | | Adjust the desired set temperature difference for store 1 top. Once the adjusted temperature difference is reached, the speed is increased by 10 %. |
| Tcolsec | 130 | | Adjust this value to 200°C when the collector emergency shutdown function is not to start. |

| Solar / Expert | | | |
|---|---|---|---|
| Description | Factory setting | Change to | Note |
| Tcolmin | 10 | | Adjust the minimum temperature of collector 1. |
| TCol2min | 10 | | Adjust the minimum temperature of collector 2. |
| ΔT-Stmax | 2,0 | | This menu is used for changing the hysteresis for maximum limitation of store 1. |
| **Control** | **Solar / Expert / Solar control** | | |

| Arrangement / Adjustment values | | | |
|---|---|---|---|
| Description | Factory setting | Change to | Note |
| Date | 01.01.2006 | | Adjust the actual date |
| Time | 12:01 | | Adjust the actual clock time. |

| User code | | | |
|---|---|---|---|
| Description | Factory setting | Change to | Note |
| Code | 0262 | 0000 | After having adjusted the controller settings, enter the user code 0000.<br>Note: The expert menu is "hidden", parameters and balance values cannot be changed |

| Expert | | | |
|---|---|---|---|
| Description | Factory setting | Change to | Note |
| ΔT too high | Yes | | In this menu, the messages „ΔT too high“ and „Non-ret. valve“ can be switched off |
| Non-ret. valve | Yes | | |
| Message relay | No | | |
| Message inp. | No | | |
| Chimney sweeper | No | | |
| **Sensors** | **Expert / Sensors** | | |
| CS-Type | E | | Adjust the CS-type, with the solar cell connected. A = 1, B = 2, C = 3, D = 4, E = 5, F = 6, G = 7 |
| CS Adjust | | | The CS adjustment should be carried out with the irradiation sensor disconnected or when it is dark (select with adjustment button)! The sensor type must have been previously selected! |
| CS Offset | | Control value | This menu indicates the offset after the solar cell has been adjusted. |
| Sensor 1 | 0,0 | | In this menu, an offset can be allocated to the measured values of sensors 1 to 10 (e.g. in the case of long sensor cables) Adjustment range +/- 5 K (the temperatures indicated in the measured values menu will be corrected using the values adjusted in this menu). |
| . . . | | | |
| Sensor 10 | 0,0 | | |
| **Relay** | **Expert / Relay** | | |
| Min speed 1 | 30 | | In this menu the minimum speed of the circulating pumps can be adjusted; at 100% speed control is deactivated. |
| Min speed 2 | 30 | | |
| Min speed 3 | 30 | | |
| **Language** | **Expert / Language** | | |
| German | | | |
| English | | | |
| français | | | |
| castellano | | | |
| italiano | | | |

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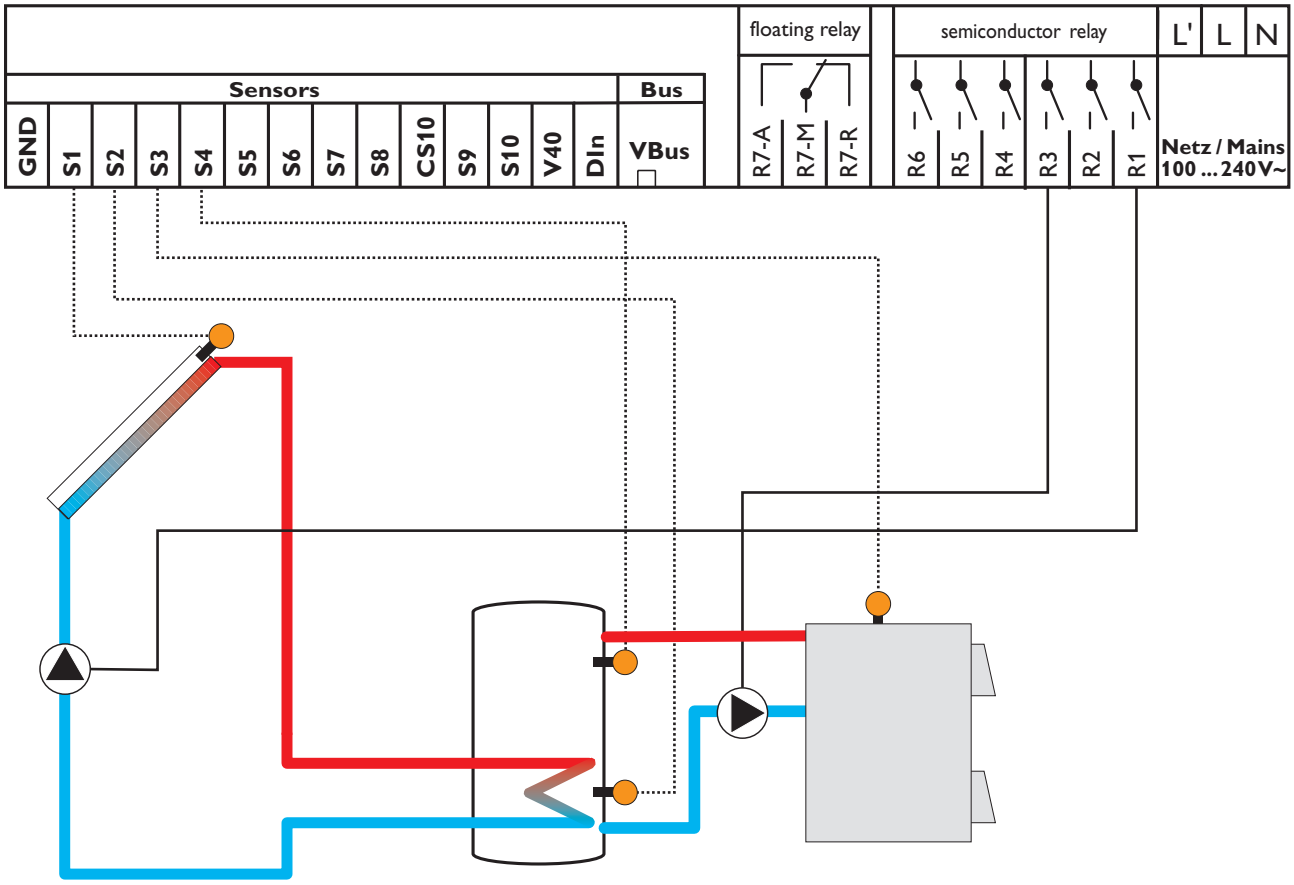
## System 8

### System description:

The controller calculates the temperature difference between collector sensor S1 and store sensor S2. If the difference is larger than or identical to the adjusted switch-on temperature difference, the pump (P1) will be switched on and the store will be loaded until the switch-off temperature difference or the maximum store temperature is reached.Via another temperature differential function (S3/S4), afterheating of the store can be carried out with a solid fuel boiler (P2).




| Relay output | Description | Note | Terminals |
|---|---|---|---|
| Relay 1 | P1 | Solar pump | R1-A |
| Relay 2 | | | R2-A |
| Relay 3 | P2 | Solid fuel boiler pump | R3-A |
| Relay 4 | | | R4-A |
| Relay 5 | | | R5-A |
| Relay 6 | | | R6-A |
| Relay 7 | | | R7-A |
| Relay 7 | | | R7 R |
| Relay 7 | | | R7 M |

| Sensor input | Description | Note | Terminals |
|---|---|---|---|
| Sen. 1 | S1 | Collector Solar | S1 |
| Sen. 2 | S2 | Store 1 bottom, solar | S2 |
| Sen. 3 | S3 | Solid fuel boiler, heat source ΔT-Func.5 | S3 |
| Sen. 4 | S4 | Store 1 top, heat sink ΔT-Func.5 | S4 |
| Sen. 5 | | | S5 |
| Sen. 6 | | | S6 |
| Sen. 7 | | | S7 |
| Sen. 8 | | | S8 |
| CS10 | | | CS10 |
| Sen. 9 | | | S9 |
| Sen. 10 | | | S10 |
| V40 | | | V40 |
| Din | | | S11 |
| VBus | | | VBus |

| Solar / Options | | | |
|---|---|---|---|
| Description | Factory setting | Change to | Note |
| Schematic | 000 | 008 | Adjust the desired schematic (e.g. schematic 28) |
| System | 1 | | System 1 for one collector and one store |

| Solar / Adjustment values | | | |
|---|---|---|---|
| Description | Factory setting | Change to | Note |
| Tstmax | 60 | | Adjust the desired maximum store temperature for store 1. |
| Tcolsec | 130 | | Adjust this value to 200°C when the collector emergency shutdown function is not to start. |

| Solar / Expert | | | |
|---|---|---|---|
| Description | Factory setting | Change to | Note |
| Tcolmin | 10 | | Adjust the minimum temperature of the collector. |
| ΔT-stmax | 2,0 | | This menu is used for changing the hysteresis for maximum limitation of store 1. |
| **Control** | **Solar / Expert / Solar control** | | |

| Solar / Options | | | |
|---|---|---|---|
| Description | Factory setting | Change to | Note |
| Thermo. 1 | No | Yes | Thermostat function (minimum limitation) for solid fuel boiler |
| Thermo. 2 | No | Yes | Thermostat function (maximum limitation) for the store |
| ΔT-Func.5 | No | Yes | Differential function for the soid fuel boiler |
| Timer 1 | No | | In this menu, the timer of function block 1 can be activated (Thermo. 1 / 2 and ΔT-Func.5) |

| Arrangement / Adjustment values | | | |
|---|---|---|---|
| Description | Factory setting | Change to | Note |
| Date | 01.01.2006 | | Adjust the actual date |
| Time | 12:01 | | Adjust the actual clock time. |
| Th1on | 40 | 60 | Switch-on temperature (minimum limitation) for the solid fuel boiler pump |
| Th1off | 45 | 58 | Switch-off difference for the solid fuel boiler pump |
| Th2on | 40 | 55 | Switch-off difference for the solid fuel boiler pump |
| Th2off | 45 | 60 | Switch-off temperature (maximum limitation) for the solid fuel boiler pump |
| ΔT5on | 5,0 | | Switch-on difference for the solid fuel boiler pump |
| ΔT5off | 3,0 | | Switch-off difference for the solid fuel boiler pump |
| **Timer 1** | **See Arrangement / Adjustment values / Timer 1** | | |

| Arrangement / Expert | | | |
|---|---|---|---|
| Description | Factory setting | Change to | Note |
| Sen-Th1 | 3 | Do not change the value as the sensor has already been correctly allocated. | |
| Sen-Th2 | 4 | | |
| Sen1-ΔT5 | 3 | | |
| Sen2-ΔT5 | 4 | | |

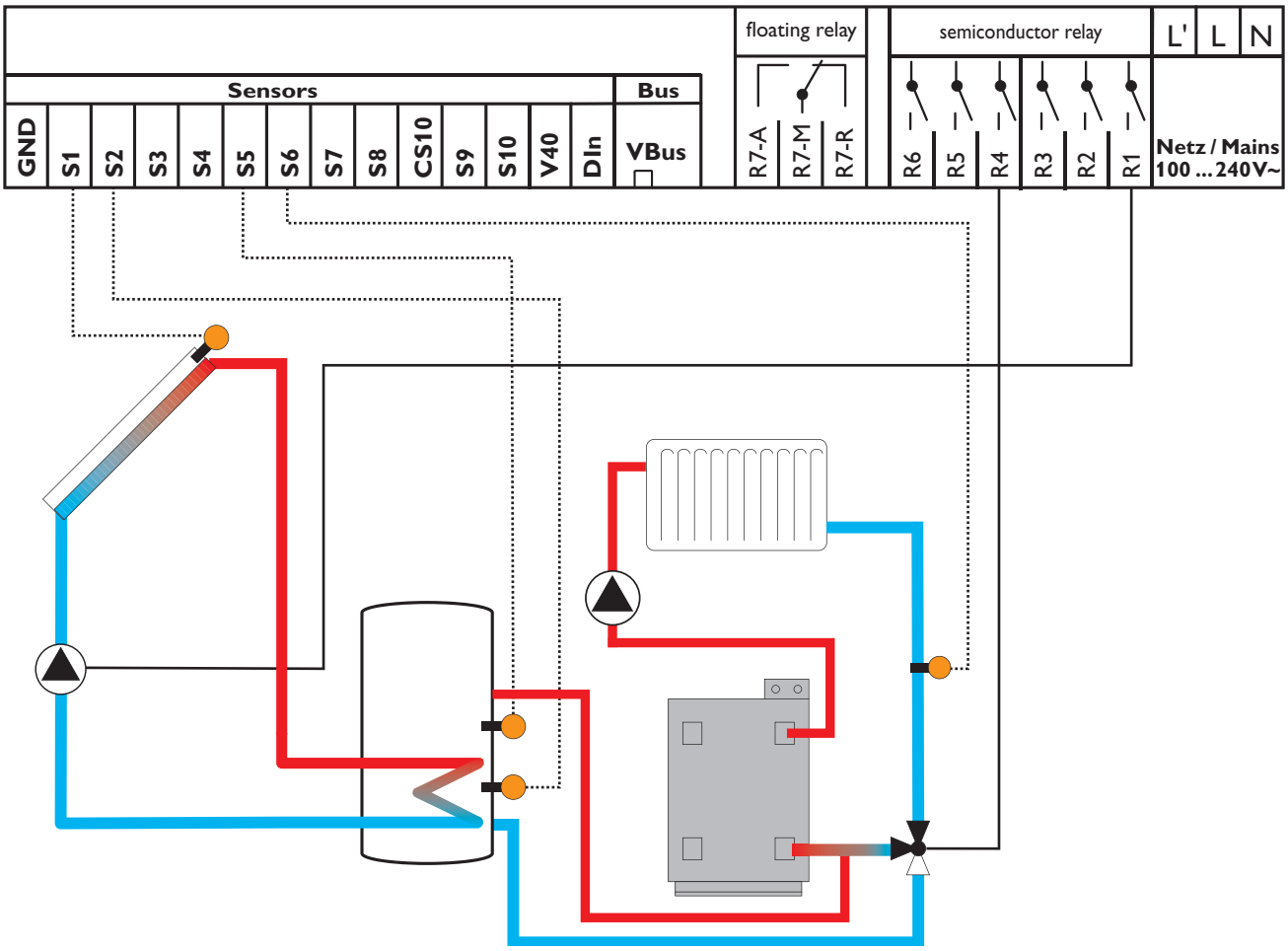
| User code | | | |
|---|---|---|---|
| Description | Factory setting | Change to | Note |
| Code | 0262 | 0000 | After having adjusted the controller settings, enter the user code 0000. Note: The expert menu is "hidden", parameters and balance values cannot be changed |

| Expert | | | |
|---|---|---|---|
| Description | Factory setting | Change to | Note |
| ΔT too high | Yes | | In this menu, the messages „ΔT too high“ and „Non-ret. valve“ can be switched off |
| Non-ret. valve | Yes | | |
| Message relay | No | | |
| Message inp. | No | | |
| Chimney sweeper | No | | |
| **Sensors** | **Expert / Sensors** | | |
| CS-Type | E | | Adjust the CS-type, with the solar cell connected. A = 1, B = 2, C = 3, D = 4, E = 5, F = 6, G = 7 |
| CS Adjust | | | The CS adjustment should be carried out with the irradiation sensor disconnected or when it is dark (select with adjustment button)! The sensor type must have been previously selected! |
| CS Offset | | Control value | This menu indicates the offset after the solar cell has been adjusted. |
| Sensor 1 | 0,0 | | In this menu, an offset can be allocated to the measured values of sensors 1 to 10 (e.g. in the case of long sensor cables) Adjustment range +/- 5 K (the temperatures indicated in the measured values menu will be corrected using the values adjusted in this menu). |
| . . . | | | |
| Sensor 10 | 0,0 | | |
| **Relay** | **Expert / Relay** | | |
| Min speed 1 | 30 | | In this menu the minimum speed of the circulating pump can be adjusted; at 100% speed control is deactivated. |
| Min speed 2 | 30 | | |
| Min speed 3 | 30 | | |
| **Language** | **Expert / Language** | | |
| German | | | |
| English | | | |
| français | | | |
| castellano | | | |
| italiano | | | |

## System 9

### System description:

The controller calculates the temperature difference between collector sensor S1 and store sensor S2. If the difference is larger than or identical to the adjusted switch-on temperature difference, pump P1 will be switched on and the store will be loaded until the switch-off temperature difference or the maximum store temperature is reached. With another temperature differential function (S5/S6) heating circuit return preheating (heating circuit backup) is possible via V1.




| Relay output | Description | Note | Terminals |
|---|---|---|---|
| Relay 1 | P1 | Solar pump | R1-A |
| Relay 2 | | | R2-A |
| Relay 3 | | | R3-A |
| Relay 4 | V1 | 3-port valve, return preheating | R4-A |
| Relay 5 | | | R5-A |
| Relay 6 | | | R6-A |
| Relay 7 | | | R7-A |
| Relay 7 | | | R7 R |
| Relay 7 | | | R7 M |

| Sensor input | Description | Note | Terminals |
|---|---|---|---|
| Sen. 1 | S1 | Collector Solar | S1 |
| Sen. 2 | S2 | Store 1 bottom, solar | S2 |
| Sen. 3 | | | S3 |
| Sen. 4 | | | S4 |
| Sen. 5 | S5 | Store 1 center, return preheating | S5 |
| Sen. 6 | S6 | Heating return, return preheating | S6 |
| Sen. 7 | | | S7 |
| Sen. 8 | | | S8 |
| CS10 | | | CS10 |
| Sen. 9 | | | S9 |
| Sen. 10 | | | S10 |
| V40 | | | V40 |
| Din | | | S11 |
| VBus | | | VBus |

| Solar / Options | | | |
|---|---|---|---|
| Description | Factory setting | Change to | Note |
| Schematic | 000 | 009 | Adjust the desired schematic (e.g. schematic 28) |
| System | 1 | | System 1 for one collector and one store |

| Solar / Adjustment values | | | |
|---|---|---|---|
| description | Factory setting | Change to | Note |
| Tstmax | 60 | | Adjust the desired maximum store temperature for store 1. |
| ΔTon | 5,0 | | Adjust the desired switch-on temperature difference for store 1. |
| ΔToff | 3,0 | | Adjust the desired switch-off temperature difference for store 1. |
| ΔTset | 10,0 | | Adjust the desired set temperature difference for store 1. Once the adjusted temperature difference is reached, the speed is increased by 10 %. |
| Tcolsec | 130 | | Adjust this value to 200°C when the collector emergency shutdown function is not to start. |

| Solar / Expert | | | |
|---|---|---|---|
| Description | Factory setting | Change to | Note |
| Tcolmin | 10 | | Adjust the minimum temperature of the collector. |
| ΔT-Stmax | 2,0 | | This menu is used for changing the hysteresis for maximum limitation of store 1. |
| **Control** | **Solar / Expert / Solar control** | | |

| Arrangements / Options | | | |
|---|---|---|---|
| Description | Factory setting | Change to | Note |
| ΔT-Func.6 | No | Yes | Differential function for return preheating |

| Arrangement / Adjustment values | | | |
|---|---|---|---|
| Description | Factory setting | Change to | Note |
| Date | 01.01.2006 | | Adjust the actual date |
| Time | 12:01 | | Adjust the actual clock time. |
| ΔT6on | 5,0 | | Switch-on difference for return preheating |
| ΔT6off | 3,0 | | Switch-off difference for return preheating |

| Arrangement / Expert | | | |
|---|---|---|---|
| Description | Factory setting | Change to | Note |
| Sen1-ΔT6 | 5 | Do not change the value as the sensor has already been correctly allocated. | |
| Sen2-ΔT6 | 6 | | |

| User code | | | |
|---|---|---|---|
| Description | Factory setting | Change to | Note |
| Code | 0262 | 0000 | After having adjusted the controller settings, enter the user code 0000.<br>Note: The expert menu is "hidden", parameters and balance values cannot be changed |

| Expert | | | |
|---|---|---|---|
| Description | Factory setting | Change to | Note |
| ΔT too high | Yes | | In this menu, the messages „ΔT too high“ and „Non-ret. valve“ can be switched off |
| Non-ret. valve | Yes | | |
| Message relay | No | | |
| Message inp. | No | | |
| Chimney sweeper | No | | |
| **Sensors** | **Expert / Sensors** | | |
| CS-Type | E | | Adjust the CS-type, with the solar cell connected. A = 1, B = 2, C = 3, D = 4, E = 5, F = 6, G = 7 |
| CS Adjust | | | The CS adjustment should be carried out with the irradiation sensor disconnected or when it is dark (select with adjustment button)! The sensor type must have been previously selected! |
| CS Offset | | Control value | This menu indicates the offset after the solar cell has been adjusted. |
| Sensor 1 | 0,0 | | In this menu, an offset can be allocated to the measured values of sensors 1 to 10 (e.g. in the case of long sensor cables) Adjustment range +/- 5 K (the temperatures indicated in the measured values menu will be corrected using the values adjusted in this menu). |
| . . . | | | |
| Sensor 10 | 0,0 | | |
| **Relay** | **Expert / Relay** | | |
| Min speed 1 | 30 | | In this menu the minimum speed of the circulating pumps can be adjusted; at 100% speed control is deactivated. |
| Min speed 2 | 30 | | |
| Min speed 3 | 30 | | |
| **Language** | **Expert / Language** | | |
| German | | | |
| English | | | |
| français | | | |
| castellano | | | |
| italiano | | | |

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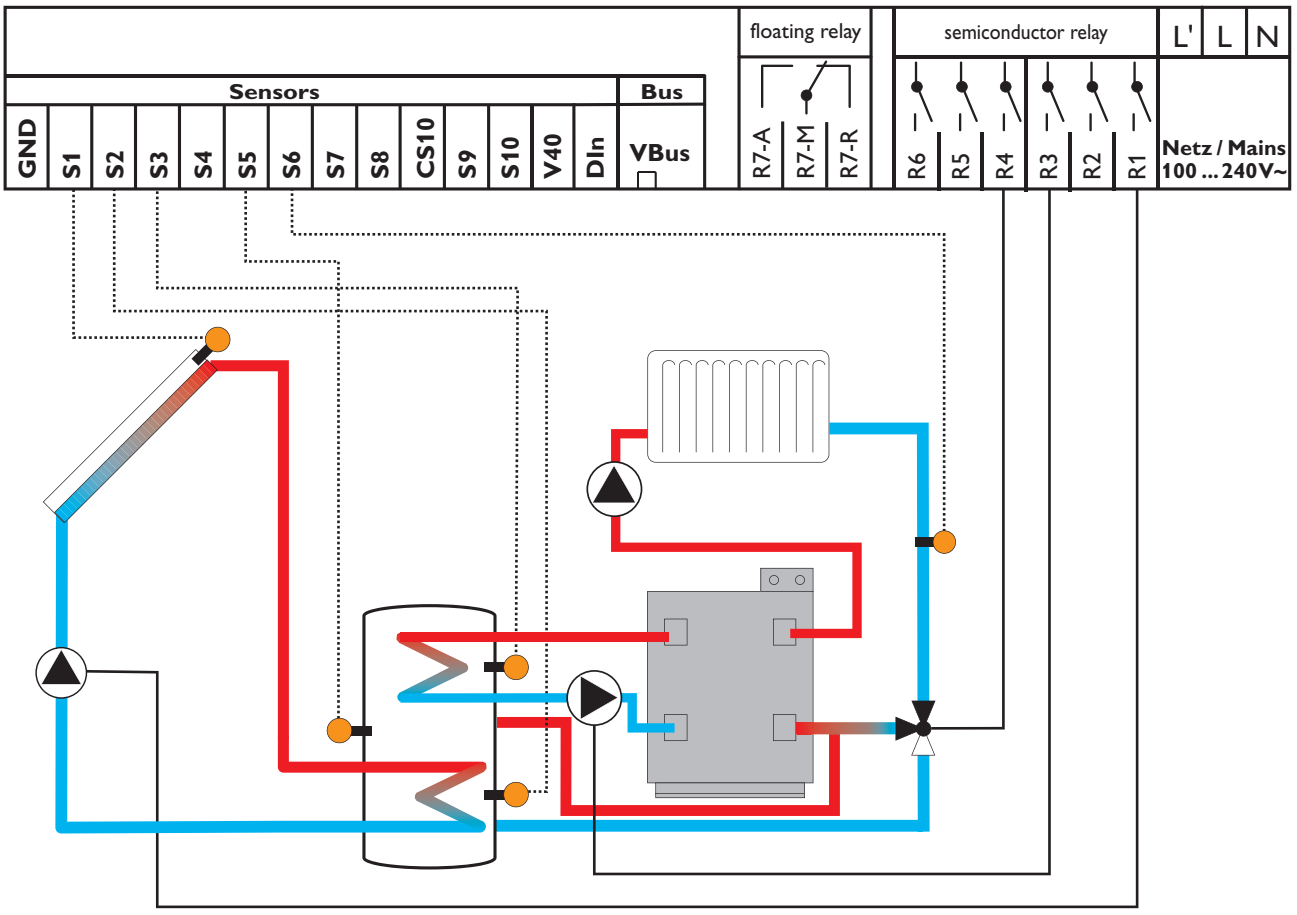
## System 10

### System description:

The controller calculates the temperature difference between collector sensor S1 and store sensor S2. If the difference is larger than or identical to the adjusted switch-on temperature difference, pump P1 will be switched on and the store will be loaded until the switch-off temperature difference or the maximum store temperature is reached. Via another temperature differential function (S5/S6) heating circuit backup (heating circuit return preheating) is possible via V1. Via a thermostat function (S3) domestic hot water afterheating (P2) can be carried out.




| Relay output | Description | Note | Terminals |
|---|---|---|---|
| Relay 1 | P1 | Solar pump | R1-A |
| Relay 2 | | | R2-A |
| Relay 3 | P2 | Boiler pump | R3-A |
| Relay 4 | V1 | 3-port valve, return preheating | R4-A |
| Relay 5 | | | R5-A |
| Relay 6 | | | R6-A |
| Relay 7 | | | R7-A |
| Relay 7 | | | R7 R |
| Relay 7 | | | R7 M |

| Sensor input | Description | Note | Terminals |
|---|---|---|---|
| Sen. 1 | S1 | Collector Solar | S1 |
| Sen. 2 | S2 | Store 1 bottom, solar | S2 |
| Sen. 3 | S3 | Store 1 top, afterheating | S3 |
| Sen. 4 | | | S4 |
| Sen. 5 | S5 | Store 1 center, return preheating | S5 |
| Sen. 6 | S6 | Heating return, return preheating | S6 |
| Sen. 7 | | | S7 |
| Sen. 8 | | | S8 |
| CS10 | | | CS10 |
| Sen. 9 | | | S9 |
| Sen. 10 | | | S10 |
| V40 | | | V40 |
| Din | | | S11 |
| VBus | | | VBus |

| Solar / Options | | | |
|---|---|---|---|
| Description | Factory setting | Change to | Note |
| Schematic | 000 | 010 | Adjust the desired schematic (e.g. schematic 28) |
| System | 1 | | System 1 for one collector and one store |

| Solar / Adjustment values | | | |
|---|---|---|---|
| Description | Factory setting | Change to | Note |
| Tstmax | 60 | | Adjust the desired maximum store temperature for store 1. |
| ΔTon | 5,0 | | Adjust the desired switch-on temperature difference for store 1. |
| ΔToff | 3,0 | | Adjust the desired switch-off temperature difference for store 1. |
| ΔTset | 10,0 | | Adjust the desired set temperature difference for store 1. Once the adjusted temperature difference is reached, the speed is increased by 10 %. |
| Tcolsec | 130 | | Adjust this value to 200°C when the collector emergency shutdown function is not to start. |

| Solar / Expert | | | |
|---|---|---|---|
| Description | Factory setting | Change to | Note |
| Tcolmin | 10 | | Adjust the minimum temperature of the collector. |
| ΔT-Stmax | 2,0 | | This menu is used for changing the hysteresis for maximum limitation of store 1. |
| **Control** | **Solar / Expert / Solar control** | | |

| Arrangement / Options | | | |
|---|---|---|---|
| Description | Factory setting | Change to | Note |
| Thermo. 1 | No | Yes | Thermostat function for afterheating |
| ΔT-Func.6 | No | Yes | Differential function for return preheating |

| Arrangement / Adjustment values | | | |
|---|---|---|---|
| Description | Factory setting | Change to | Note |
| Date | 01.01.2006 | | Adjust the actual date |
| Time | 12:01 | | Adjust the actual clock time. |
| Th1on | 40 | 55 | Switch-on temperature for afterheating |
| Th1off | 45 | 60 | Switch-off temperature (maximum limitation) for afterheating |
| **Timer 1** | **See Arrangement / Adjustment values / Timer 1** | | |
| ΔT6on | 5,0 | | Switch-on difference for return preheating |
| ΔT6off | 3,0 | | Switch-off difference for return preheating |

| Arrangement / Expert | | | |
|---|---|---|---|
| Description | Factory setting | Change to | Note |
| Sen-Th1 | 3 | Do not change the value as the sensor has already been correctly allocated. | |
| Sen1-ΔT6 | 5 | | |
| Sen2-ΔT6 | 6 | | |

| User code | | | |
|---|---|---|---|
| Description | Factory setting | Change to | Note |
| Code | 0262 | 0000 | After having adjusted the controller settings, enter the user code 0000.<br>Note: The expert menu is "hidden", parameters and balance values cannot be changed |

| Expert | | | |
|---|---|---|---|
| Description | Factory setting | Change to | Note |
| ΔT too high | Yes | | In this menu, the messages „ΔT too high“ and „Non-ret. valve“ can be switched off |
| Non-ret. valve | Yes | | |
| Message relay | No | | |
| Message inp. | No | | |
| Chimney sweeper | No | | |
| **Sensors** | **Expert / Sensors** | | |
| CS-Type | E | | Adjust the CS-type, with the solar cell connected: A = 1, B = 2, C = 3, D = 4, E = 5, F = 6, G = 7 |
| CS Adjust | | | The CS adjustment should be carried out with the irradiation sensor disconnected or when it is dark (select with adjustment button)! The sensor type must have been previously selected! |
| CS Offset | | Control value | This menu indicates the offset after the solar cell has been adjusted. |
| Sensor 1 | 0,0 | | In this menu, an offset can be allocated to the measured values of sensors 1 to 10 (e.g. in the case of long sensor cables) Adjustment range +/- 5 K (the temperatures indicated in the measured values menu will be corrected using the values adjusted in this menu). |
| . . . | | | |
| Sensor 10 | 0,0 | | |
| **Relay** | **Expert / Relay** | | |
| Min speed 1 | 30 | | In this menu the minimum speed of the circulating pumps can be adjusted; at 100% speed control is deactivated. |
| Min speed 2 | 30 | | |
| Min speed 3 | 30 | | |
| **Language** | **Expert / Language** | | |
| German | | | |
| English | | | |
| français | | | |
| castellano | | | |
| italiano | | | |

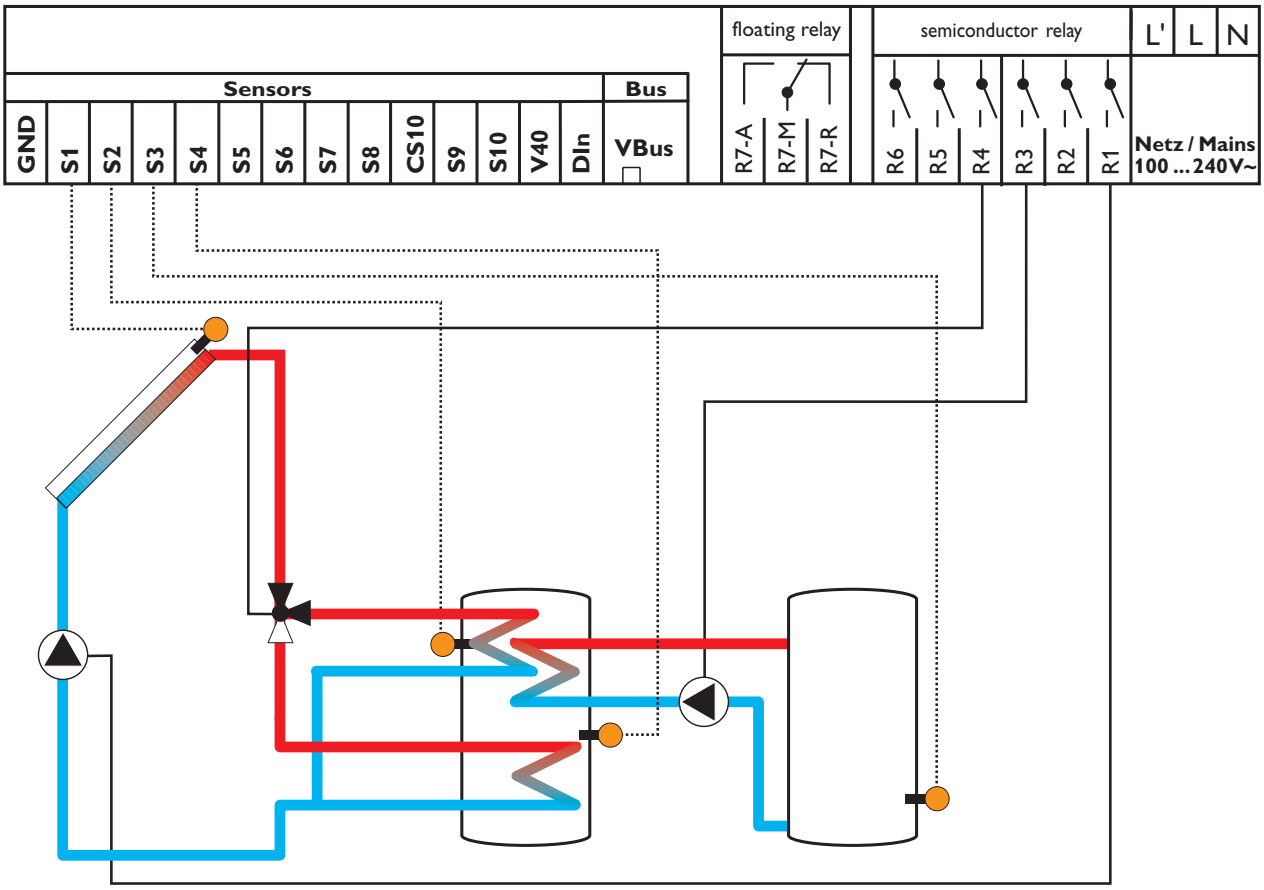
## System 11

### System description:

The controller compares the temperature at sensor S1 to the temperatures at sensors S2 and S4. If the measured temperature differences are higher than the adjusted switch-on temperature differences, the pump (P1) will be activated and the corresponding store zone will be loaded up to the adjusted maximum temperature at most via the valve (V1).

The priority logic causes prior loading of the upper zone of the store.

Heat exchange control to an existant store (P2) can be carried out via another temperature differential function (S2 heat source/S3 heat sink).




| Relay output | Description | Note | Terminals |
|---|---|---|---|
| Relay 1 | P1 | Solar pump | R1-A |
| Relay 2 | | | R2-A |
| Relay 3 | P2 | Heat exchange pump | R3-A |
| Relay 4 | V1 | 3-port valve store top / bottom | R4-A |
| Relay 5 | | | R5-A |
| Relay 6 | | | R6-A |
| Relay 7 | | | R7-A |
| Relay 7 | | | R7 R |
| Relay 7 | | | R7 M |

| Sensor input | Description | Note | Terminals |
|---|---|---|---|
| Sen. 1 | S1 | Collector Solar | S1 |
| Sen. 2 | S2 | Store 1 top, solar | S2 |
| Sen. 3 | S3 | Store 2 bottom, heat exchange | S3 |
| Sen. 4 | S4 | Store 1 bottom, solar | S4 |
| Sen. 5 | | | S5 |
| Sen. 6 | | | S6 |
| Sen. 7 | | | S7 |
| Sen. 8 | | | S8 |
| CS10 | | | CS10 |
| Sen. 9 | | | S9 |
| Sen. 10 | | | S10 |
| V40 | | | V40 |
| Din | | | S11 |
| VBus | | | VBus |

| Solar / Options | | | |
|---|---|---|---|
| Description | Factory setting | Change to | Note |
| Schematic | 000 | 011 | Adjust the desired schematic (e.g. schematic 28) |
| System | 1 | 3 | System 3 for one collector and one stratified store |
| Loading | 1 | | |
| ST2 on | Yes | | |

| Solar / Adjustment values | | | |
|---|---|---|---|
| Description | Factory setting | Change to | Note |
| Tstmax | 60 | | Adjust the desired maximum store temperature for store 1 top. |
| Tst2max | 60 | | Adjust the desired maximum store temperature for store 1 bottom. |
| ΔTon | 5,0 | | Adjust the desired switch-on temperature difference for store 1 top. |
| ΔToff | 3,0 | | Adjust the desired switch-off temperature difference for store 1 top. |
| ΔTset | 10,0 | | Adjust the desired set temperature difference for store 1 top. Once the adjusted temperature difference is reached, the speed is increased by 10 %. |
| ΔT2on | 5,0 | | Adjust the desired switch-on temperature difference for store 1 bottom. |
| ΔT2off | 3,0 | | Adjust the desired switch-off temperature difference for store 1 bottom |
| ΔT2set | 10,0 | | Adjust the desired set temperature difference for store 1 bottom. Once the adjusted temperature difference is reached, the speed is increased by 10 %. |
| Priority ST1 | 1 | | Priority store 1 top |
| Priority ST2 | 2 | | Non-priority store 1 bottom |
| Tcolsec | 130 | | Adjust this value to 200°C when the collector emergency shutdown function is not to start. |

| Solar / Expert | | | |
|---|---|---|---|
| Description | Factory setting | Change to | Note |
| Tcolmin | 10 | | Adjust the minimum temperature of the collector. |
| ΔT-Stmax | 2,0 | | This menu is used for changing the hysteresis for maximum limitation of store 1 top. |
| ΔT-St2max | 2,0 | | This menu is used for changing the hysteresis for maximum limitation of store 1 bottom. |
| t-st | 2 | | The loading break time for the priority logic function can be changed (see appendix priority logic) |
| t-circ. | 15 | | The oscillating loading time for the priority logic function can be changed (see appendix priority logic) |
| ΔT-Col | 2 | | The collector rise temperature during the break time of the priority logic function can be changed (see appendix priority logic) |
| **Control** | **Solar / Expert / Solar control** | | |

| Arrangement / Options | | | |
|---|---|---|---|
| Description | Factory setting | Change to | Note |
| Thermo. 1 | No | Yes | Thermostat function (maximum limitation) for heat exchange |
| ΔT-Func.5 | No | Yes | Differential function for heat exchange |
| Timer 1 | No | | In this menu, the timer of function block 1 can be activated (Thermo. 1 / 2 and ΔT-Func.5) |

| Arrangement / Adjustment values | | | |
|---|---|---|---|
| Description | Factory setting | Change to | Note |
| Date | 01.01.2006 | | Adjust the actual date |
| Time | 12:01 | | Adjust the actual clock time. |
| Th1on | 40 | 55 | Switch-on temperature for the heat exchange pump |
| Th1off | 45 | 60 | Switch-off temperature (maximum limitation) for the heat exchange pump |
| ΔT5on | 5,0 | | Switch-on difference for the heat exchange pump |
| ΔT5off | 3,0 | | Switch-off difference for the heat exchange pump |
| **Timer 1** | **See Arrangement / Adjustment values / Timer 1** | | |
| **Arrangement / Expert** | | | |

| Description | Factory setting | Change to | Note |
|---|---|---|---|
| Sen-Th1 | 3 | Do not change the value as the sensor has already been correctly allocated. | |
| Sen1-ΔT5 | 3 | 2 | Sensor S2 is used as the heat source sensor and is allocated to differential function 5. |
| Sen2-ΔT5 | 4 | 3 | Sensor S3 is used as the heat sink sensor and is allocated to differential function 5. |

| **User code** | | | |
|---|---|---|---|
| Description | Factory setting | Change to | Note |
| Code | 0262 | 0000 | After having adjusted the controller settings, enter the user code 0000.<br>Note: The expert menu is "hidden", parameters and balance values cannot be changed |

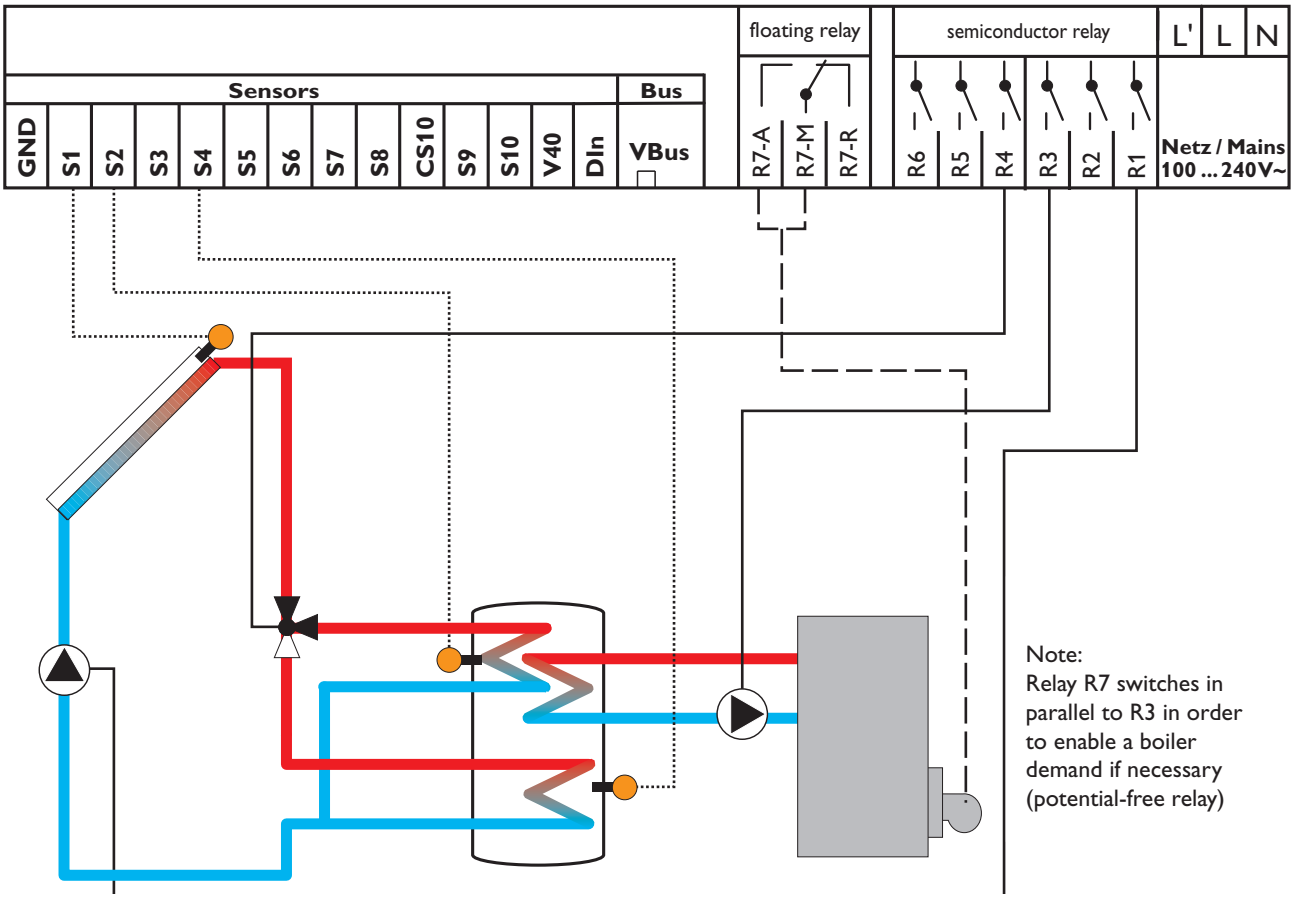
| **Expert** | | | |
|---|---|---|---|
| Description | Factory setting | Change to | Note |
| ΔT too high | Yes | | In this menu, the messages „ΔT too high“ and „Non-ret. valve“ can be switched off |
| Non-ret. valve | Yes | | |
| Message relay | No | | |
| Message inp. | No | | |
| Chimney sweeper | No | | |
| **Sensors** | **Expert / Sensors** | | |
| CS-Type | E | | Adjust the CS-type, with the solar cell connected:<br>A = 1, B = 2, C = 3, D = 4, E = 5, F = 6, G = 7 |
| CS Adjust | | | The CS adjustment should be carried out with the irradiation sensor disconnected or when it is dark (select with adjustment button)! The sensor type must have been previously selected! |
| CS Offset | | Control value | This menu indicates the offset after the solar cell has been adjusted. |
| Sensor 1 | 0,0 | | In this menu, an offset can be allocated to the measured values of sensors 1 to 10 (e.g. in the case of long sensor cables) Adjustment range +/- 5 K (the temperatures indicated in the measured values menu will be corrected using the values adjusted in this menu). |
| . . . | | | |
| Sensor 10 | 0,0 | | |
| **Relay** | **Expert / Relay** | | |
| Min speed 1 | 30 | | In this menu the minimum speed of the circulating pumps can be adjusted; at 100% speed control is deactivated. |
| Min speed 2 | 30 | | |
| Min speed 3 | 30 | | |
| **Language** | **Expert / Language** | | |
| German | | | |
| English | | | |
| français | | | |
| castellano | | | |
| italiano | | | |

10215 deltasol_e_sysen.indd

## System 12

### System description:

The controller compares the temperature at sensor S1 to the temperatures at sensors S2 and S4. If the measured temperature differences are higher than the adjusted switch-on temperature differences, the pump (P1) will be activated and the corresponding store zone will be loaded up to the adjusted maximum temperature at most via the valve (V1). The priority logic causes prior loading of the upper zone of the store.
Domestic hot water afterheating (P2) can be carried out with a thermostat function (S3).




| Relay output | Description | Note | Terminals |
|---|---|---|---|
| Relay 1 | P1 | Solar pump | R1-A |
| Relay 2 | | | R2-A |
| Relay 3 | P2 | Boiler pump | R3-A |
| Relay 4 | V1 | 3-port valve store top / bottom | R4-A |
| Relay 5 | | | R5-A |
| Relay 6 | | | R6-A |
| Relay 7 | Boiler demand | Potential-free contact | R7-A |
| Relay 7 | | | R7 R |
| Relay 7 | Boiler demand | Potential-free contact | R7 M |

| Sensor input | Description | Note | Terminals |
|---|---|---|---|
| Sen. 1 | S1 | Collector Solar | S1 |
| Sen. 2 | S2 | Store 1 top, solar afterheating | S2 |
| Sen. 3 | | | S3 |
| Sen. 4 | S4 | Store 1 bottom, solar | S4 |
| Sen. 5 | | | S5 |
| Sen. 6 | | | S6 |
| Sen. 7 | | | S7 |
| Sen. 8 | | | S8 |
| CS10 | | | CS10 |
| Sen. 9 | | | S9 |
| Sen. 10 | | | S10 |
| V40 | | | V40 |
| Din | | | S11 |
| VBus | | | VBus |

| Solar / Options | | | |
|---|---|---|---|
| Description | Factory setting | Change to | Note |
| Schematic | 000 | 012 | Adjust the desired schematic (e.g. schematic 28) |
| System | 1 | 3 | System 3 for one collector and one stratified store |
| Loading | 1 | | |
| ST2 on | Yes | | |

| Solar / Adjustment values | | | |
|---|---|---|---|
| Description | Factory setting | Change to | Note |
| Tstmax | 60 | | Adjust the desired maximum store temperature for store 1 top. |
| Tst2max | 60 | | Adjust the desired maximum store temperature for store 2 bottom. |
| ΔTon | 5,0 | | Adjust the desired switch-on temperature difference for store 1 top. |
| ΔToff | 3,0 | | Adjust the desired switch-off temperature difference for store 1 top. |
| ΔTset | 10,0 | | Adjust the desired set temperature difference for store 1 bottom. Once the adjusted temperature difference is reached, the speed is increased by 10 %. |
| ΔT2on | 5,0 | | Adjust the desired switch-on temperature difference for store 1 bottom. |
| ΔT2off | 3,0 | | Adjust the desired switch-off temperature difference for store 1 bottom |
| ΔT2set | 10,0 | | Adjust the desired set temperature difference for store 1 bottom. Once the adjusted temperature difference is reached, the speed is increased by 10 %. |
| Priority ST1 | 1 | | Priority store 1 top |
| Priority ST2 | 2 | | Non-priority store 1 bottom |
| Tcolsec | 130 | | Adjust this value to 200°C when the collector emergency shutdown function is not to start. |

| Solar / Expert | | | |
|---|---|---|---|
| Description | Factory setting | Change to | Note |
| Tcolmin | 10 | | Adjust the minimum temperature of the collector. |
| ΔT-Stmax | 2,0 | | This menu is used for changing the hysteresis for maximum limitation of store 1 top. |
| ΔT-St2max | 2,0 | | This menu is used for changing the hysteresis for maximum limitation of store 1 bottom. |
| t-st | 2 | | The loading break time for the priority logic function can be changed (see appendix priority logic) |
| t-circ. | 15 | | The oscillating loading time for the priority logic function can be changed (see appendix priority logic) |
| ΔT-Col | 2 | | The collector rise temperature during the break time of the priority logic function can be changed (see appendix priority logic) |
| **Control** | **Solar / Expert / Solar control** | | |

| Arrangement / Options | | | |
|---|---|---|---|
| Description | Factory setting | Change to | Note |
| Thermo. 2 | No | Yes | Thermostat function for afterheating |
| Timer 1 | No | | In this menu, the timer of function block 1 can be activated (Thermo. 1 / 2 and ΔT-Func.5) |
| Thermo. 9 | No | Yes | Thermostat function for afterheating (boiler demand) |
| Timer 5 | No | | In this menu, the timer of function block 5 can be activated (Thermo. 9 / 10 and ΔT-Func.9) |

| Arrangement / Adjustment values | | | |
|---|---|---|---|
| Description | Factory setting | Change to | Note |
| Date | 01.01.2006 | | Adjust the actual date |
| Time | 12:01 | | Adjust the actual clock time. |
| Th2on | 40 | 55 | Switch-on temperature for afterheating |
| Th2off | 45 | 60 | Switch-off temperature (maximum limitation) for afterheating |
| **Timer 1** | **See Arrangement / Adjustment values / Timer 1** | | |
| Th9on | 40 | 55 | Switch-on difference for boiler demand |
| Th9off | 45 | 60 | Switch-off difference for boiler demand |
| **Timer 5** | **See Arrangement / Adjustment values / Timer 5** | | |

| Arrangement / Expert | | | |
|---|---|---|---|
| Description | Factory setting | Change to | Note |
| Sen-Th2 | 4 | 2 | Sensor S2 is allocated to thermostat function 2. |
| Sen-Th9 | 9 | 2 | Sensor S2 is allocated to thermostat function 9. |

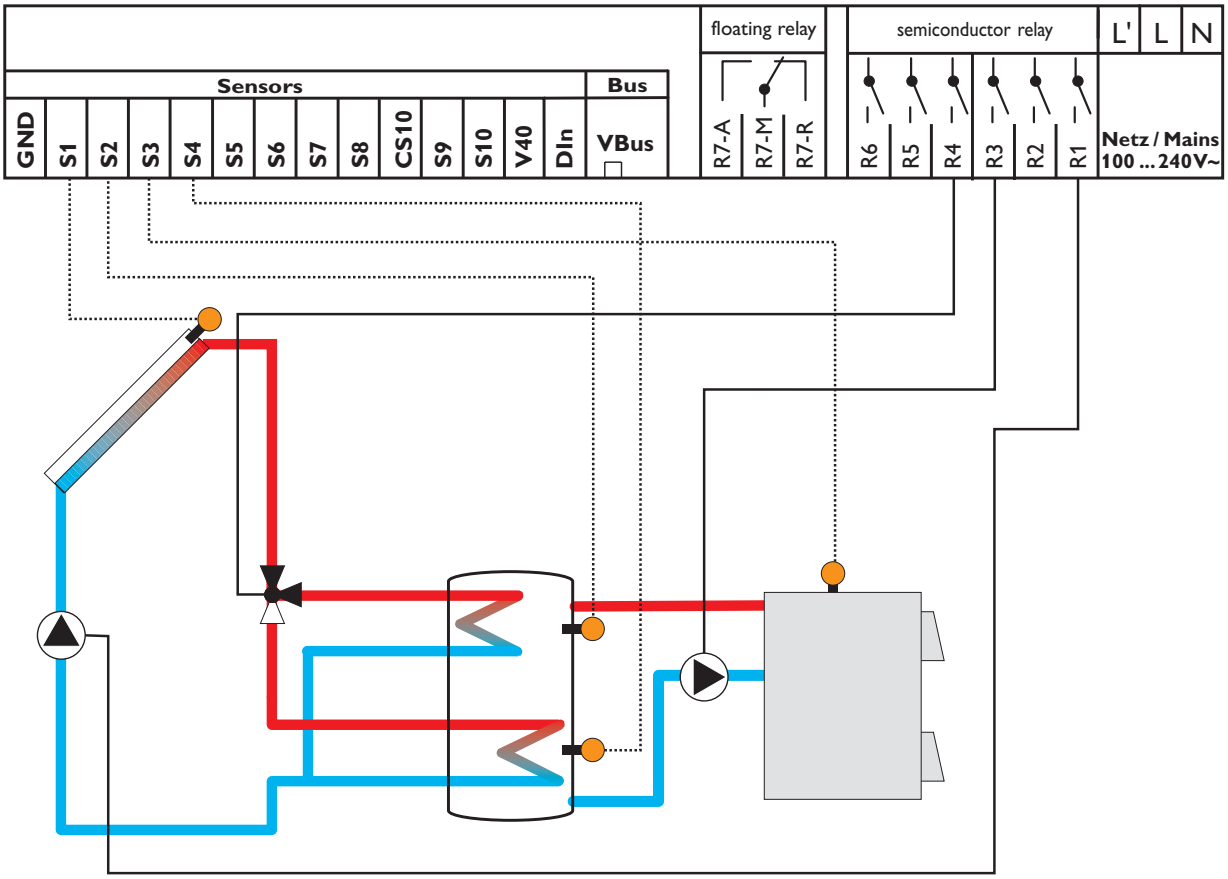
| User code | | | |
|---|---|---|---|
| Description | Factory setting | Change to | Note |
| Code | 0262 | 0000 | After having adjusted the controller settings, enter the user code 0000.<br>Note: The expert menu is "hidden", parameters and balance values cannot be changed |

| Expert | | | |
|---|---|---|---|
| Description | Factory setting | Change to | Note |
| ΔT too high | Yes | | In this menu, the messages „ΔT too high“ and „Non-ret. valve“ can be switched off |
| Non-ret. valve | Yes | | |
| Message relay | No | | |
| Message inp. | No | | |
| Chimney sweeper | No | | |
| **Sensors** | **Expert / Sensors** | | |
| CS-Type | E | | Adjust the CS-type, with the solar cell connected:<br>A = 1, B = 2, C = 3, D = 4, E = 5, F = 6, G = 7 |
| CS Adjust | | | The CS adjustment should be carried out with the irradiation sensor disconnected or when it is dark (select with adjustment button)! The sensor type must have been previously selected! |
| CS Offset | | Control value | This menu indicates the offset after the solar cell has been adjusted. |
| Sensor 1 | 0,0 | | In this menu, an offset can be allocated to the measured values of sensors 1 to 10 (e.g. in the case of long sensor cables) Adjustment range +/- 5 K (the temperatures indicated in the measured values menu will be corrected using the values adjusted in this menu). |
| . . . | | | |
| Sensor 10 | 0,0 | | |
| **Relay** | **Expert / Relay** | | |
| Min speed 1 | 30 | | In this menu the minimum speed of the circulating pumps can be adjusted; at 100% speed control is deactivated. |
| Min speed 2 | 30 | | |
| Min speed 3 | 30 | | |
| **Language** | **Expert / Language** | | |
| German | | | |
| English | | | |
| français | | | |
| castellano | | | |
| italiano | | | |

## System 13

### System description:

The controller compares the temperature at sensor S1 to the temperatures at sensors S2 and S4. If the measured temperature differences are higher than the adjusted switch-on temperature differences, the pump (P1) will be activated and the corresponding store zone will be loaded up to the adjusted maximum temperature via the valve (V1). The priority logic causes prior loading of the upper zone of the store. Via another temperature differential function (S3/S4), afterheating of the store can be carried out with a solid fuel boiler (P2).




| Relay output | Description | Note | Terminals |
|---|---|---|---|
| Relay 1 | P1 | Solar pump | R1-A |
| Relay 2 | | | R2-A |
| Relay 3 | P2 | Solid fuel boiler pump | R3-A |
| Relay 4 | V1 | 3-port valve store top / bottom | R4-A |
| Relay 5 | | | R5-A |
| Relay 6 | | | R6-A |
| Relay 7 | | | R7-A |
| Relay 7 | | | R7 R |
| Relay 7 | | | R7 M |

| Sensor input | Description | Note | Terminals |
|---|---|---|---|
| Sen. 1 | S1 | Collector Solar | S1 |
| Sen. 2 | S2 | Store 1 top, | S2 |
| Sen. 3 | S3 | Solid fuel boiler, heat source ΔT-Func.5 | S3 |
| Sen. 4 | S4 | Store 1 bottom, solar, Heat sink ΔT-Func.5 | S4 |
| Sen. 5 | | | S5 |
| Sen. 6 | | | S6 |
| Sen. 7 | | | S7 |
| Sen. 8 | | | S8 |
| CS10 | | | CS10 |
| Sen. 9 | | | S9 |
| Sen. 10 | | | S10 |
| V40 | | | V40 |
| Din | | | S11 |
| VBus | | | VBus |

| Solar / Options | | | |
|---|---|---|---|
| Description | Factory setting | Change to | Note |
| Schematic | 000 | 013 | Adjust the desired schematic (e.g. schematic 28) |
| System | 1 | 3 | System 3 for one collector and one stratified store |
| Loading | 1 | | |
| ST2 on | Yes | | |

| Solar / Adjustment values | | | |
|---|---|---|---|
| description | factory set-ting | change to | note |
| Tstmax | 60 | | Adjust the desired maximum store temperature for store 1 top. |
| Tst2max | 60 | | Adjust the desired maximum store temperature for store 1 bottom. |
| ΔTon | 5,0 | | Adjust the desired switch-on temperature difference for store 1 top. |
| ΔToff | 3,0 | | Adjust the desired switch-off temperature difference for store 1 top. |
| ΔTset | 10,0 | | Adjust the desired set temperature difference for store 1 top. Once the adjusted temperature difference is reached, the speed is increased by 10 %. |
| ΔT2on | 5,0 | | Adjust the desired switch-on temperature difference for store 1 bottom. |
| ΔT2off | 3,0 | | Adjust the desired switch-off temperature difference for store 1 bottom |
| ΔT2set | 10,0 | | Adjust the desired set temperature difference for store 1 bottom. Once the adjusted temperature difference is reached, the speed is increased by 10 %. |
| Priority ST1 | 1 | | Priority store 1 top |
| Priority ST2 | 2 | | Non-priority store 1 bottom |
| Tcolsec | 130 | | Adjust this value to 200°C when the collector emergency shutdown function is not to start. |

| Solar / Expert | | | |
|---|---|---|---|
| Description | Factory setting | Change to | Note |
| Tcolmin | 10 | | Adjust the minimum temperature of the collector. |
| ΔT-Stmax | 2,0 | | This menu is used for changing the hysteresis for maximum limitation of store 1 top. |
| ΔT-St2max | 2,0 | | This menu is used for changing the hysteresis for maximum limitation of store 1 bottom. |
| t-st | 2 | | The loading break time for the priority logic function can be changed (see appendix priority logic) |
| t-circ. | 15 | | The oscillating loading time for the priority logic function can be changed (see appendix priority logic) |
| ΔT-Col | 2 | | The collector rise temperature during the break time of the priority logic function can be changed (see appendix priority logic) |
| **Control** | **Solar / Expert / Solar control** | | |

| Arrangement / Options | | | |
|---|---|---|---|
| Description | Factory setting | Change to | Note |
| Thermo. 1 | No | Yes | Thermostat function (minimum limitation) for solid fuel boiler |
| Thermo. 2 | No | Yes | Thermostat function (maximum limitation) for the store |
| ΔT-Func.5 | No | Yes | Differential function for the solid fuel boiler |
| Timer 1 | No | | In this menu, the timer of function block 1 can be activated (Thermo. 1 / 2 and ΔT-Func.5) |
| **Arrangement / Adjustment values** | | | |
| Description | Factory setting | Change to | Note |
| Date | 01.01.2006 | | Adjust the actual date |
| Time | 12:01 | | Adjust the actual clock time. |
| Th1on | 40 | 60 | Switch-on temperature (minimum limitation) for the solid fuel boiler pump |
| Th1off | 45 | 58 | Switch-off temperature for the solid fuel boiler pump |
| Th2on | 40 | 55 | Switch-on temperature for the solid fuel boiler pump |
| Th2off | 45 | 60 | Switch-off temperature (maximum limitation) for the solid fuel boiler pump |
| ΔT5on | 5,0 | | Switch-on difference for the solid fuel boiler pump |
| ΔT5off | 3,0 | | Switch-off difference for the solid fuel boiler pump |
| **Timer 1** | **See Arrangement / Adjustment values / Timer 1** | | |

| Arrangement / Expert | | | |
|---|---|---|---|
| Description | Factory setting | Change to | Note |
| Sen-Th1 | 3 | Do not change the value as the sensor has already been correctly allocated. | |
| Sen-Th2 | 4 | | |
| Sen1-ΔT5 | 3 | | |
| Sen2-ΔT5 | 4 | | |

| User code | | | |
|---|---|---|---|
| Description | Factory setting | Change to | Note |
| Code | 0262 | 0000 | After having adjusted the controller settings, enter the user code 0000.<br>Note: The expert menu is "hidden", parameters and balance values cannot be changed |

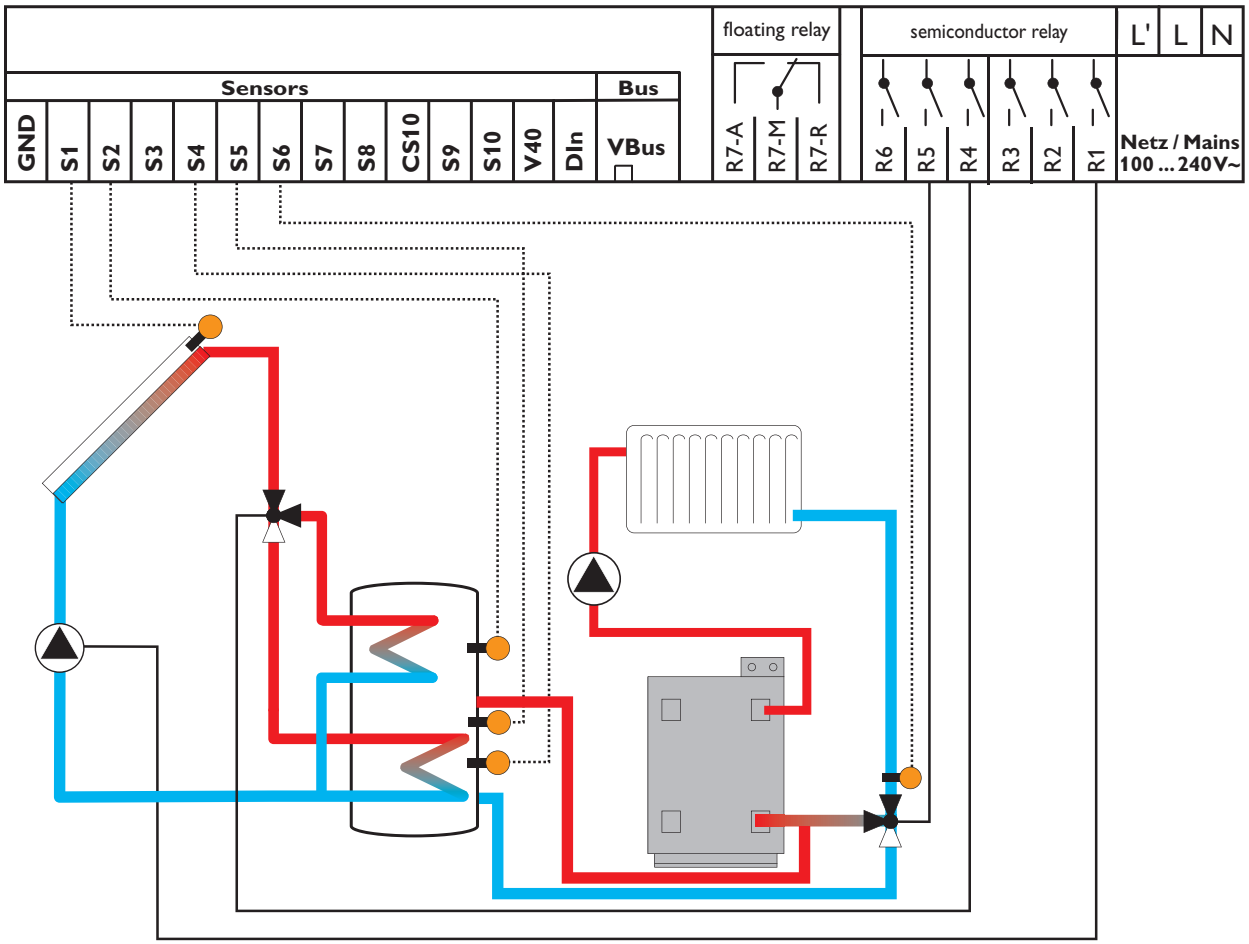
| Expert | | | |
|---|---|---|---|
| Description | Factory setting | Change to | Note |
| ΔT too high | Yes | | In this menu, the messages „ΔT too high“ and „Non-ret. valve“ can be switched off |
| Non-ret. valve | Yes | | |
| Message relay | No | | |
| Message inp. | No | | |
| Chimney sweeper | No | | |
| **Sensors** | **Expert / Sensors** | | |
| CS-Type | E | | Adjust the CS-type, with the solar cell connected:<br>A = 1, B = 2, C = 3, D = 4, E = 5, F = 6, G = 7 |
| CS Adjust | | | The CS adjustment should be carried out with the irradiation sensor disconnected or when it is dark (select with adjustment button)! The sensor type must have been previously selected! |
| CS Offset | | Control value | This menu indicates the offset after the solar cell has been adjusted. |
| Sensor 1 | 0,0 | | In this menu, an offset can be allocated to the measured values of sensors 1 to 10 (e.g. in the case of long sensor cables) Adjustment range +/- 5 K (the temperatures indicated in the measured values menu will be corrected using the values adjusted in this menu). |
| . . . | | | |
| Sensor 10 | 0,0 | | |
| **Relay** | **Expert / Relay** | | |
| Min speed 1 | 30 | | In this menu the minimum speed of the circulating pump can be adjusted; at 100% speed control is deactivated. |
| Min speed 2 | 30 | | |
| Min speed 3 | 30 | | |
| **Language** | **Expert / Language** | | |
| German | | | |
| English | | | |
| français | | | |
| castellano | | | |
| italiano | | | |

## System 14

### System description:

The controller compares the temperature at sensor S1 to the temperatures at sensors S2 and S4. If the measured temperature differences are higher than the adjusted switch-on temperature differences, the pump (P1) will be activated and the corresponding store zone will be loaded up to the adjusted maximum temperature at most via the valve (V1).

The priority logic causes prior loading of the upper zone of the store.
With another temperature differential function (S5 heat source / S6 heat sink) heating circuit return preheating is possible via V2.




| Relay output | Description | Note | Terminals |
|---|---|---|---|
| Relay 1 | P1 | Solar pump | R1-A |
| Relay 2 | | | R2-A |
| Relay 3 | | | R3-A |
| Relay 4 | V1 | 3-port valve store top / bottom | R4-A |
| Relay 5 | V2 | 3-port valve, return preheating | R5-A |
| Relay 6 | | | R6-A |
| Relay 7 | | | R7-A |
| Relay 7 | | | R7 R |
| Relay 7 | | | R7 M |

| Sensor input | Description | Note | Terminals |
|---|---|---|---|
| Sen. 1 | S1 | Collector Solar | S1 |
| Sen. 2 | S2 | Store 1 top, solar | S2 |
| Sen. 3 | | | S3 |
| Sen. 4 | S4 | Store 1 bottom, solar | S4 |
| Sen. 5 | S5 | Store center, return preheating | S5 |
| Sen. 6 | S6 | Heating return, return preheating | S6 |
| Sen. 7 | | | S7 |
| Sen. 8 | | | S8 |
| CS10 | | | CS10 |
| Sen. 9 | | | S9 |
| Sen. 10 | | | S10 |
| V40 | | | V40 |
| Din | | | S11 |
| VBus | | | VBus |

| Solar / Options | | | |
|---|---|---|---|
| Description | Factory setting | Change to | Note |
| Schematic | 000 | 014 | Adjust the desired schematic (e.g. schematic 28) |
| System | 1 | 3 | System 3 for one collector and one stratified store |
| Loading | 1 | | |
| ST2 on | Yes | | |

| Solar / Adjustment values | | | |
|---|---|---|---|
| description | factory set-ting | change to | note |
| Tstmax | 60 | | Adjust the desired maximum store temperature for store 1 top. |
| Tst2max | 60 | | Adjust the desired maximum store temperature for store 1 bottom. |
| ΔTon | 5,0 | | Adjust the desired switch-on temperature difference for store 1 top. |
| ΔToff | 3,0 | | Adjust the desired switch-off temperature difference for store 1 top. |
| ΔTset | 10,0 | | Adjust the desired set temperature difference for store 1. Once the adjusted tempera-ture difference is reached, the speed is increased by 10 %. |
| ΔT2on | 5,0 | | Adjust the desired switch-on temperature difference for store 1 bottom. |
| ΔT2off | 3,0 | | Adjust the desired switch-off temperature difference for store 1 bottom |
| ΔT2set | 10,0 | | Adjust the desired set temperature difference for store 1 bottom. Once the adjusted temperature difference is reached, the speed is increased by 10 %. |
| Priority ST1 | 1 | | Priority store 1 top |
| Priority ST2 | 2 | | Non-priority store 1 bottom |
| Tcolsec | 130 | | Adjust this value to 200°C when the collector emergency shutdown function is not to start. |

| Solar / Expert | | | |
|---|---|---|---|
| Description | Factory setting | Change to | Note |
| Tcolmin | 10 | | Adjust the minimum temperature of the collector. |
| ΔT-Stmax | 2,0 | | This menu is used for changing the hysteresis for maximum limitation of store 1 top. |
| ΔT-St2max | 2,0 | | This menu is used for changing the hysteresis for maximum limitation of store 1 bottom. |
| t-st | 2 | | The loading break time for the priority logic function can be changed (see appendix priority logic) |
| t-circ. | 15 | | The oscillating loading time for the priority logic function can be changed (see appendix priority logic) |
| ΔT-Col | 2 | | The collector rise temperature during the break time of the priority logic function can be changed (see appendix priority logic) |

| Arrangement / Options | | | |
|---|---|---|---|
| Description | Factory setting | Change to | Note |
| ΔT-Func.7 | No | Yes | Differential function for return preheating |

| System / Adjustment values | | | |
|---|---|---|---|
| Description | Factory setting | Change to | Note |
| Date | 01.01.2006 | | Adjust the actual date |
| Time | 12:01 | | Adjust the actual clock time. |
| ΔT7on | 5,0 | | Switch-on difference for return preheating |
| ΔT7off | 3,0 | | Switch-off difference for return preheating |

| Arrangement / Expert | | | |
|---|---|---|---|
| Description | Factory setting | Change to | Note |
| Sen1-ΔT7 | 5 | Do not change the value as the sensor has already been correctly allocated. | |
| Sen2-ΔT7 | 6 | | |

| User code | | | |
|---|---|---|---|
| Description | Factory setting | Change to | Note |
| Code | 0262 | 0000 | After having adjusted the controller settings, enter the user code 0000.<br>Note: The expert menu is "hidden", parameters and balance values cannot be changed |

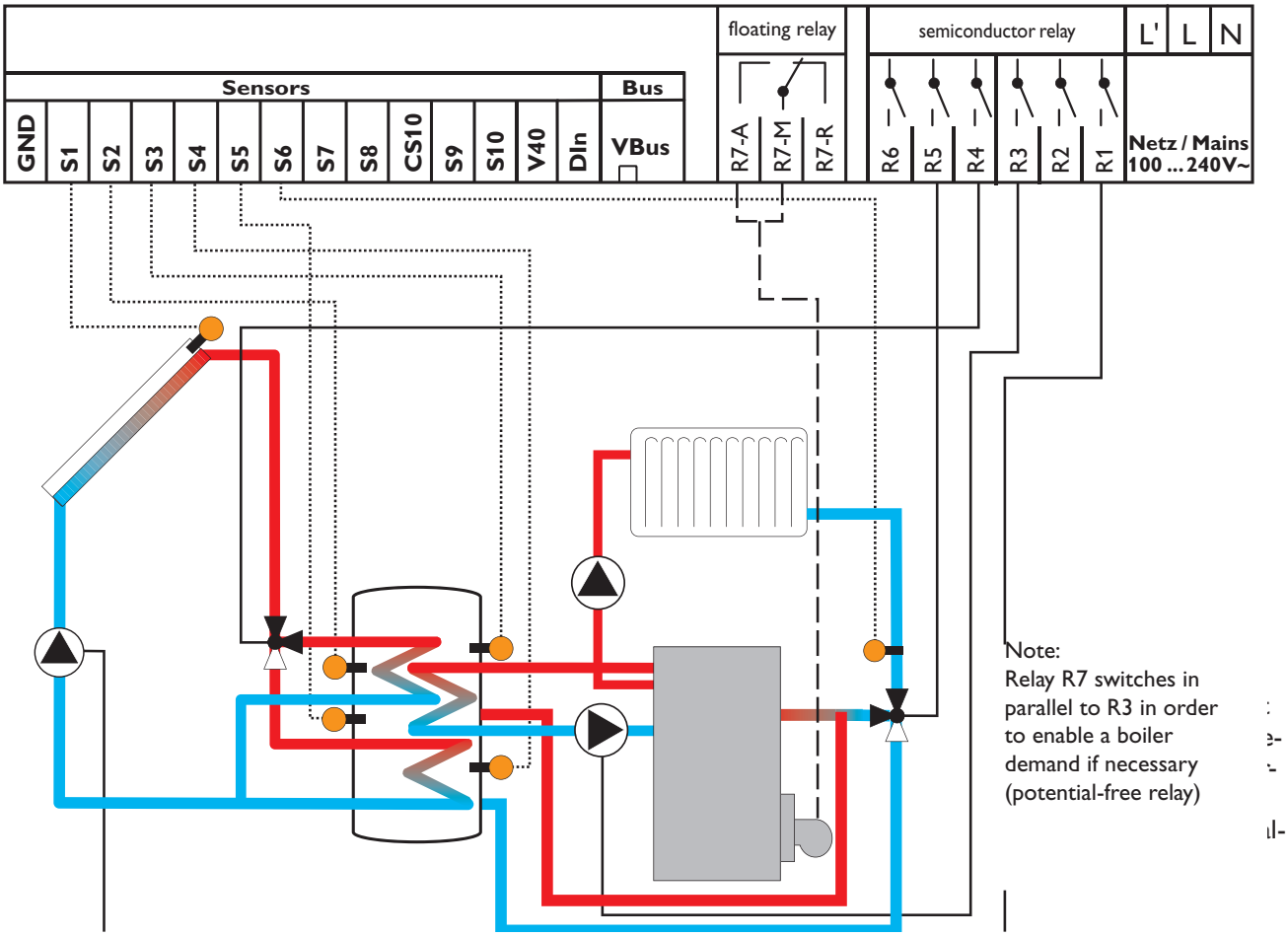
| Expert | | | |
|---|---|---|---|
| Description | Factory setting | Change to | Note |
| ΔT too high | Yes | | In this menu, the messages „ΔT too high“ and „Non-ret. valve“ can be switched off |
| Non-ret. valve | Yes | | |
| Message relay | No | | |
| Message inp. | No | | |
| Chimney sweeper | No | | |
| **Sensors** | **Expert / Sensors** | | |
| CS-Type | E | | Adjust the CS-type, with the solar cell connected:<br>A = 1, B = 2, C = 3, D = 4, E = 5, F = 6, G = 7 |
| CS Adjust | | | The CS adjustment should be carried out with the irradiation sensor disconnected or when it is dark (select with adjustment button)! The sensor type must have been previously selected! |
| CS Offset | | Control value | This menu indicates the offset after the solar cell has been adjusted. |
| Sensor 1 | 0,0 | | In this menu, an offset can be allocated to the measured values of sensors 1 to 10 (e.g. in the case of long sensor cables) Adjustment range +/- 5 K (the temperatures indicated in the measured values menu will be corrected using the values adjusted in this menu). |
| . . . | | | |
| Sensor 10 | 0,0 | | |
| **Relay** | **Expert / Relay** | | |
| Min speed 1 | 30 | | In this menu the minimum speed of the circulating pumps can be adjusted; at 100% speed control is deactivated. |
| Min speed 2 | 30 | | |
| Min speed 3 | 30 | | |
| **Language** | **Expert / Language** | | |
| German | | | |
| English | | | |
| français | | | |
| castellano | | | |
| italiano | | | |

## System 15

### System description:

The controller compares the temperature at sensor S1 to the temperatures at sensors S2 and S4. If the measured temperature differences are higher than the adjusted switch-on temperature differences, the pump (P1) will be activated and the corresponding store zone will be loaded up to the adjusted maximum temperature at most via the valve (V1).

The priority logic causes prior loading of the upper zone of the store.
With another temperature differential function (S5 heat source / S6 heat sink) heating circuit return preheating is possible via V2. With a thermostat function (S3) domestic hot water afterheating (P2) can be carried out.




Note:
Relay R7 switches in parallel to R3 in order to enable a boiler demand if necessary (potential-free relay)

| Relay output | Description | Note | Terminals |
|---|---|---|---|
| Relay 1 | P1 | Solar pump | R1-A |
| Relay 2 | | | R2-A |
| Relay 3 | P2 | Boiler pump | R3-A |
| Relay 4 | V1 | 3-port valve store top / bottom | R4-A |
| Relay 5 | V2 | 3-port valve, return preheating | R5-A |
| Relay 6 | | | R6-A |
| Relay 7 | Boiler demand | Potential-free contact | R7-A |
| Relay 7 | | | R7 R |
| Relay 7 | Boiler demand | Potential-free contact | R7 M |

| Sensor input | Description | Note | Terminals |
|---|---|---|---|
| Sen. 1 | S1 | Collector Solar | S1 |
| Sen. 2 | S2 | Store 1 top, solar | S2 |
| Sen. 3 | S3 | Boiler, afterheating | S3 |
| Sen. 4 | S4 | Store 1 bottom, solar | S4 |
| Sen. 5 | S5 | Store center, return preheating | S5 |
| Sen. 6 | S6 | Heating return, return preheating | S6 |
| Sen. 7 | | | S7 |
| Sen. 8 | | | S8 |
| CS10 | | | CS10 |
| Sen. 9 | | | S9 |
| Sen. 10 | | | S10 |
| V40 | | | V40 |
| Din | | | S11 |
| VBus | | | VBus |

| Solar / Options | | | |
|---|---|---|---|
| Description | Factory setting | Change to | Note |
| Schematic | 000 | 015 | Adjust the desired schematic (e.g. schematic 28) |
| System | 1 | 3 | System 3 for one collector and one stratified store |
| Loading | 1 | | |
| ST2 on | Yes | | |

| Solar / Adjustment values | | | |
|---|---|---|---|
| Description | Factory setting | Change to | Note |
| Tstmax | 60 | | Adjust the desired maximum store temperature for store 1 top. |
| Tst2max | 60 | | Adjust the desired maximum store temperature for store 1 bottom. |
| ΔTon | 5,0 | | Adjust the desired switch-on temperature difference for store 1 top. |
| ΔToff | 3,0 | | Adjust the desired switch-off temperature difference for store 1 top. |
| ΔTset | 10,0 | | Adjust the desired set temperature difference for store 1. Once the adjusted temperature difference is reached, the speed is increased by 10 %. |
| ΔT2on | 5,0 | | Adjust the desired switch-on temperature difference for store 1 bottom. |
| ΔT2off | 3,0 | | Adjust the desired switch-off temperature difference for store 1 bottom |
| ΔT2set | 10,0 | | Adjust the desired set temperature difference for store 1 bottom. Once the adjusted temperature difference is reached, the speed is increased by 10 %. |
| Priority ST1 | 1 | | Priority store 1 top |
| Priority ST2 | 2 | | Non-priority store 1 bottom |
| Tcolsec | 130 | | Adjust this value to 200°C when the collector emergency shutdown function is not to start. |

| Solar / Expert | | | |
|---|---|---|---|
| Description | Factory setting | Change to | Note |
| Tcolmin | 10 | | Adjust the minimum temperature of the collector. |
| ΔT-Stmax | 2,0 | | This menu is used for changing the hysteresis for maximum limitation of store 1 top. |
| ΔT-St2max | 2,0 | | This menu is used for changing the hysteresis for maximum limitation of store 1 bottom. |
| t-st | 2 | | The loading break time for the priority logic function can be changed (see appendix priority logic) |
| t-circ. | 15 | | The oscillating loading time for the priority logic function can be changed (see appendix priority logic) |
| ΔT-Col | 2 | | The collector rise temperature during the break time of the priority logic function can be changed (see appendix priority logic) |
| **Control** | **Solar / Expert / Solar control** | | |

| Arrangement / Options | | | |
|---|---|---|---|
| Description | Factory setting | Change to | Note |
| Thermo. 1 | No | Yes | Thermostat function for afterheating |
| Timer 1 | No | | In this menu, the timer of function block 1 can be activated (Thermo. 1 / 2 and ΔT-Func.5) |
| ΔT-Func.7 | No | Yes | Differential function for return preheating |
| Thermo. 9 | No | Yes | Thermostat function for afterheating (boiler demand) |
| Timer 5 | No | | In this menu, the timer of function block 5 can be activated (Thermo. 9 / 10 and ΔT-Func.9) |

| Arrangement / Adjustment values | | | |
|---|---|---|---|
| Description | Factory setting | Change to | Note |
| Date | 01.01.2006 | | Adjust the actual date |
| Time | 12:01 | | Adjust the actual clock time. |
| Th1on | 40 | 55 | Switch-on temperature for afterheating |
| Th1off | 45 | 60 | Switch-off temperature (maximum limitation) for afterheating |
| **Timer 1** | **See Arrangement / Adjustment values / Timer 1** | | |
| ΔT7on | 5,0 | | Switch-on difference for return preheating |
| ΔT7off | 3,0 | | Switch-off difference for return preheating |
| Th9on | 40 | 55 | Switch-on difference for the boiler pump |
| Th9off | 45 | 60 | Switch-off difference for boiler demand |
| **Timer 5** | **See Arrangement / Adjustment values / Timer 5** | | |

| Arrangement / Expert | | | |
|---|---|---|---|
| description | Factory setting | Change to | Note |
| Sen-Th1 | 3 | Do not change the value as the sensor has already been correctly allocated. | |
| Sen1-ΔT7 | 5 | | |
| Sen2-ΔT7 | 6 | | |
| Sen-Th9 | 9 | 3 | Sensor S3 is allocated to thermostat function 9. |

| User code | | | |
|---|---|---|---|
| Description | Factory setting | Change to | Note |
| Code | 0262 | 0000 | After having adjusted the controller settings, enter the user code 0000.<br>Note: The expert menu is "hidden", parameters and balance values cannot be changed |

| Expert | | | |
|---|---|---|---|
| Description | Factory setting | Change to | Note |
| ΔT too high | Yes | | In this menu, the messages „ΔT too high“ and „Non-ret. valve“ can be switched off |
| Non-ret. valve | Yes | | |
| Message relay | No | | |
| Message inp. | No | | |
| Chimney sweeper | No | | |
| **Sensors** | **Expert / Sensors** | | |
| CS-Type | E | | Adjust the CS-type, with the solar cell connected:<br>A = 1, B = 2, C = 3, D = 4, E = 5, F = 6, G = 7 |
| CS Adjust | | | The CS adjustment should be carried out with the irradiation sensor disconnected or when it is dark (select with adjustment button)! The sensor type must have been previously selected! |
| CS Offset | | Control value | This menu indicates the offset after the solar cell has been adjusted. |
| Sensor 1 | 0,0 | | In this menu, an offset can be allocated to the measured values of sensors 1 to 10 (e.g. in the case of long sensor cables) Adjustment range +/- 5 K (the temperatures indicated in the measured values menu will be corrected using the values adjusted in this menu). |
| : | | | |
| Sensor 10 | 0,0 | | |
| **Relay** | **Expert / Relay** | | |
| Min speed 1 | 30 | | In this menu the minimum speed of the circulating pumps can be adjusted; at 100% speed control is deactivated. |
| Min speed 2 | 30 | | |
| Min speed 3 | 30 | | |
| **Language** | **Expert / Language** | | |
| German | | | |
| English | | | |
| français | | | |
| castellano | | | |
| italiano | | | |

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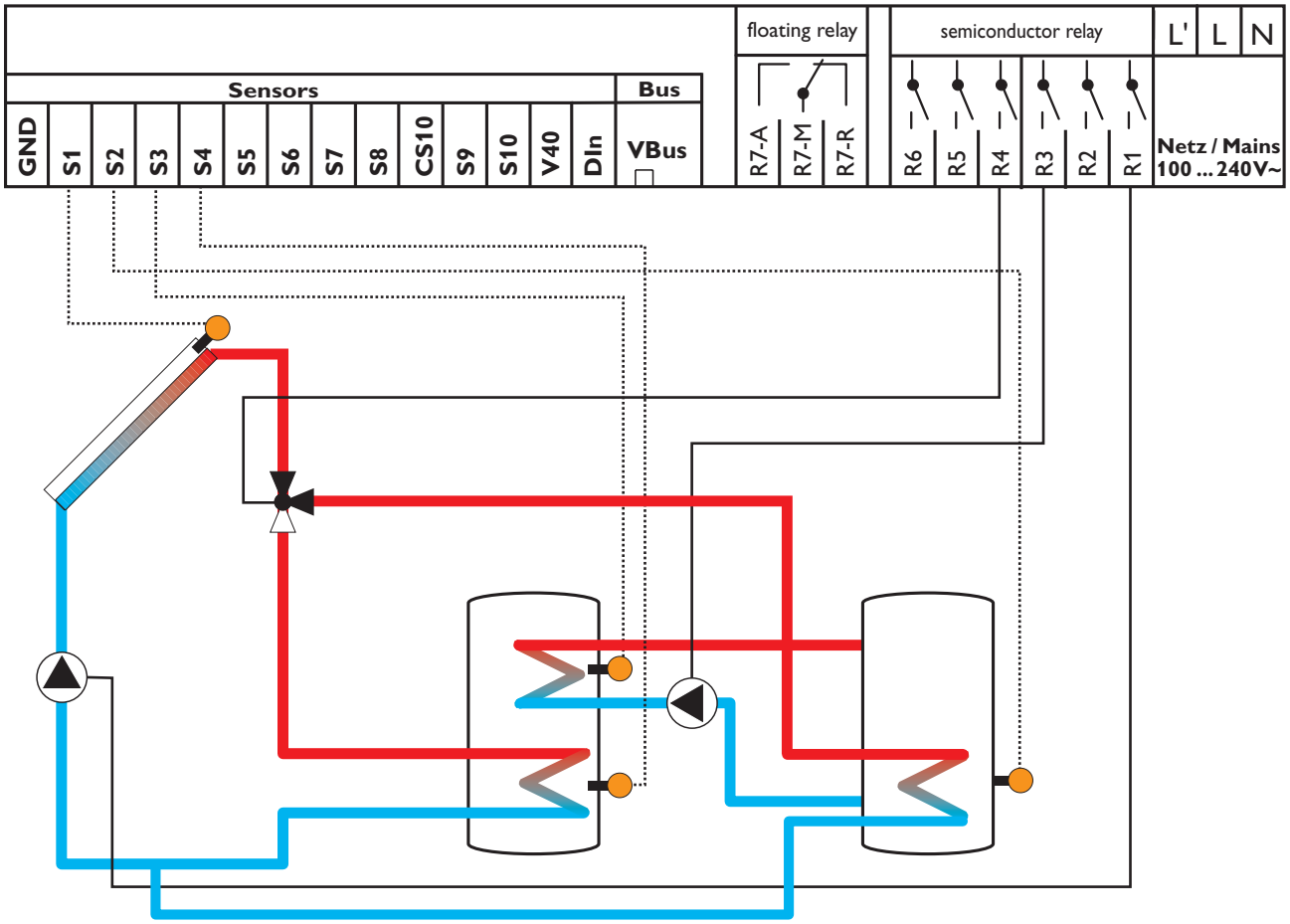
## System 16

### System description:

The controller compares the temperature at sensor S1 to the temperatures at sensors S2 and S4. If the measured temperature differences are higher than the adjusted switch-on temperature differences, the pump (P1) will be activated and the corresponding store will be loaded up to the adjusted maximum temperature via the valve (V1).
Heat exchange control to store 1 (P2) can be carried out using another temperature differential function (S3 heat source/S2 heat sink).




| Relay output | Description | Note | Terminals |
|---|---|---|---|
| Relay 1 | P1 | Solar pump | R1-A |
| Relay 2 | | | R2-A |
| Relay 3 | P2 | Heat exchange pump | R3-A |
| Relay 4 | V1 | 3-port valve store top / bottom | R4-A |
| Relay 5 | | | R5-A |
| Relay 6 | | | R6-A |
| Relay 7 | | | R7-A |
| Relay 7 | | | R7 R |
| Relay 7 | | | R7 M |

| Sensor input | Description | Note | Terminals |
|---|---|---|---|
| Sen. 1 | S1 | Collector solar | S1 |
| Sen. 2 | S2 | Store 1 bottom, solar | S2 |
| Sen. 3 | S3 | Store 2 top, heat exchange | S3 |
| Sen. 4 | S4 | Store 2 bottom, solar | S4 |
| Sen. 5 | | | S5 |
| Sen. 6 | | | S6 |
| Sen. 7 | | | S7 |
| Sen. 8 | | | S8 |
| CS10 | | | CS10 |
| Sen. 9 | | | S9 |
| Sen. 10 | | | S10 |
| V40 | | | V40 |
| Din | | | S11 |
| VBus | | | VBus |

| Solar / Options | | | |
|---|---|---|---|
| Description | Factory setting | Change to | Note |
| Schematic | 000 | 016 | Adjust the desired schematic (e.g. schematic 28) |
| System | 1 | 3 | System 3 for one collector and two stores |
| Loading | 1 | | |
| ST2 on | Yes | | |

| Solar / Adjustment values | | | |
|---|---|---|---|
| Description | Factory setting | Change to | Note |
| Tstmax | 60 | | Adjust the desired maximum store temperature for store 1 bottom. |
| Tst2max | 60 | | Adjust the desired maximum store temperature for store 2 bottom. |
| ΔTon | 5,0 | | Adjust the desired switch-on temperature difference for store 1. |
| ΔToff | 3,0 | | Adjust the desired switch-off temperature difference for store 1. |
| ΔTset | 10,0 | | Adjust the desired set temperature difference for store 1 bottom. Once the adjusted temperature difference is reached, the speed is increased by 10 %. |
| ΔT2on | 5,0 | | Adjust the desired switch-on temperature difference for store 2 bottom. |
| ΔT2off | 3,0 | | Adjust the desired switch-off temperature difference for store 2 bottom |
| ΔT2set | 10,0 | | Adjust the desired set temperature difference for store 2 bottom. Once the adjusted temperature difference is reached, the speed is increased by 10 %. |
| Priority ST1 | 1 | | Priority store 1 bottom |
| Priority ST2 | 2 | | Non-priority store 2 bottom |
| Tcolsec | 130 | | Adjust this value to 200°C when the collector emergency shutdown function is not to start. |

| Solar / Expert | | | |
|---|---|---|---|
| Description | Factory setting | Change to | Note |
| Tcolmin | 10 | | Adjust the minimum temperature of the collector. |
| ΔT-Stmax | 2,0 | | This menu is used for changing the hysteresis for maximum limitation of store 1 bottom. |
| ΔT-St2max | 2,0 | | This menu is used for changing the hysteresis for maximum limitation of store 2 bottom. |
| t-st | 2 | | The loading break time for the priority logic function can be changed (see appendix priority logic) |
| t-circ. | 15 | | The oscillating loading time for the priority logic function can be changed (see appendix priority logic) |
| ΔT-Col | 2 | | The collector rise temperature during the break time of the priority logic function can be changed (see appendix priority logic) |
| **Control** | **Solar / Expert / Solar control** | | |

| Arrangement / Options | | | |
|---|---|---|---|
| Description | Factory setting | Change to | Note |
| Thermo. 2 | No | Yes | Thermostat function (maximum limitation) for heat exchange |
| ΔT-Func.5 | No | Yes | Differential function for heat exchange |
| Timer 1 | No | | In this menu, the timer of function block 1 can be activated (Thermo. 1 / 2 and ΔT-Func.5) |

| Arrangement / Adjustment values | | | |
|---|---|---|---|
| Description | Factory setting | Change to | Note |
| Date | 01.01.2006 | | Adjust the actual date |
| Time | 12:01 | | Adjust the actual clock time. |
| Th2on | 40 | 55 | Switch-on temperature for the heat exchange pump |
| Th2off | 45 | 60 | Switch-off temperature (maximum limitation) for the heat exchange pump |
| ΔT5on | 5,0 | | Switch-on difference for the heat exchange pump |
| ΔT5off | 3,0 | | Switch-off difference for the heat exchange pump |
| **Timer 1** | **See Arrangement / Adjustment values / Timer 1** | | |

| Arrangement / Expert | | | |
|---|---|---|---|
| Description | Factory setting | Change to | Note |
| Sen-Th2 | 4 | 2 | Sensor S2 is allocated to thermostat function 2. |
| Sen1-ΔT5 | 3 | Do not change the value as the sensor has already been correctly allocated. | |
| Sen2-ΔT5 | 4 | 2 | Sensor S2 is used as the heat sink sensor and is allocated to differential function 5. |

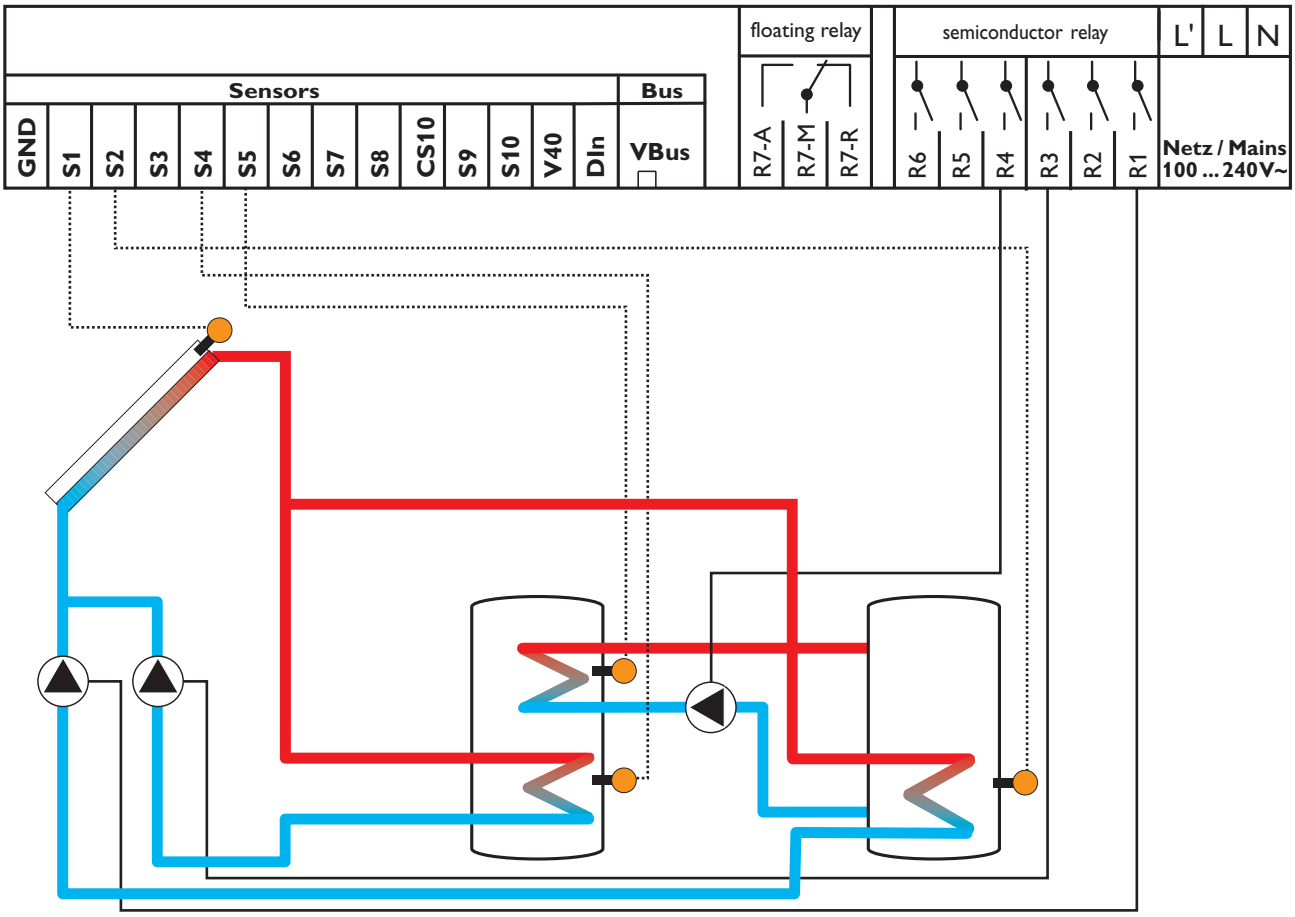
| User code | | | |
|---|---|---|---|
| Description | Factory setting | Change to | Note |
| Code | 0262 | 0000 | After having adjusted the controller settings, enter the user code 0000.<br>Note: The expert menu is "hidden", parameters and balance values cannot be changed |

| Expert | | | |
|---|---|---|---|
| Description | Factory setting | Change to | Note |
| ΔT too high | Yes | | In this menu, the messages „ΔT too high“ and „Non-ret. valve“ can be switched off |
| Non-ret. valve | Yes | | |
| Message relay | No | | |
| Message inp. | No | | |
| Chimney sweeper | No | | |
| **Sensors** | **Expert / Sensors** | | |
| CS-Type | E | | Adjust the CS-type, with the solar cell connected:<br>A = 1, B = 2, C = 3, D = 4, E = 5, F = 6, G = 7 |
| CS Adjust | | | The CS adjustment should be carried out with the irradiation sensor disconnected or when it is dark (select with adjustment button)! The sensor type must have been previously selected! |
| CS Offset | | Control value | This menu indicates the offset after the solar cell has been adjusted. |
| Sensor 1 | 0,0 | | In this menu, an offset can be allocated to the measured values of sensors 1 to 10 (e.g. in the case of long sensor cables) Adjustment range +/- 5 K (the temperatures indicated in the measured values menu will be corrected using the values adjusted in this menu). |
| : | | | |
| Sensor 10 | 0,0 | | |
| **Relay** | **Expert / Relay** | | |
| Min speed 1 | 30 | | In this menu the minimum speed of the circulating pumps can be adjusted; at 100% speed control is deactivated. |
| Min speed 2 | 30 | | |
| Min speed 3 | 30 | | |
| **Language** | **Expert / Language** | | |
| German | | | |
| English | | | |
| français | | | |
| castellano | | | |
| italiano | | | |

## System 17

### System description:

The controller compares the temperature at sensor S1 to the temperatures at sensors S2 and S4. If the measured temperature differences are higher than the adjusted switch-on temperature differences, the pump (P1 or P2) will be activated and the corresponding store will be loaded up to the adjusted maximum temperature. Heat exchange between stores 2 and 1 (P3) is possible via another temperature differential function (S5 heat source/ S2 heat sink).




| Relay output | Description | Note | Terminals |
|---|---|---|---|
| Relay 1 | P1 | Solar pump Store 1 | R1-A |
| Relay 2 | | | R2-A |
| Relay 3 | P2 | Solar pump Store 2 | R3-A |
| Relay 4 | P3 | Heat exchange pump | R4-A |
| Relay 5 | | | R5-A |
| Relay 6 | | | R6-A |
| Relay 7 | | | R7-A |
| Relay 7 | | | R7 R |
| Relay 7 | | | R7 M |

| Sensor input | Description | Note | Terminals |
|---|---|---|---|
| Sen. 1 | S1 | Collector Solar | S1 |
| Sen. 2 | S2 | Store 1 bottom, solar | S2 |
| Sen. 3 | | | S3 |
| Sen. 4 | S4 | Store 2 bottom, solar | S4 |
| Sen. 5 | S5 | Store 2 top, heat exchange | S5 |
| Sen. 6 | | | S6 |
| Sen. 7 | | | S7 |
| Sen. 8 | | | S8 |
| CS10 | | | CS10 |
| Sen. 9 | | | S9 |
| Sen. 10 | | | S10 |
| V40 | | | V40 |
| Din | | | S11 |
| VBus | | | VBus |

| Solar / Options | | | |
|---|---|---|---|
| Description | Factory setting | Change to | Note |
| Schematic | 000 | 017 | Adjust the desired schematic (e.g. schematic 28) |
| System | 1 | 3 | System 1 for one collector and two stores |
| Loading | 1 | 2 | Hydraulic type for two solar pumps |
| ST2 on | Yes | | |

| Solar / Adjustment values | | | |
|---|---|---|---|
| Description | Factory setting | Change to | Note |
| Tstmax | 60 | | Adjust the desired maximum store temperature for store 1. |
| Tst2max | 60 | | Adjust the desired maximum store temperature for store 2. |
| ΔTon | 5,0 | | Adjust the desired switch-on temperature difference for store 1. |
| ΔToff | 3,0 | | Adjust the desired switch-off temperature difference for store 1. |
| ΔTset | 10,0 | | Adjust the desired set temperature difference for store 1. Once the adjusted temperature difference is reached, the speed is increased by 10 %. |
| ΔT2on | 5,0 | | Adjust the desired switch-on temperature difference for store 2. |
| ΔT2off | 3,0 | | Adjust the desired switch-off temperature difference for store 2. |
| ΔT2set | 10,0 | | Adjust the desired set temperature difference for store 2 bottom. Once the adjusted temperature difference is reached, the speed is increased by 10 %. |
| Priority ST1 | 1 | | Priority store 1 |
| Priority ST2 | 2 | | Non-priority store 2 |
| Tcolsec | 130 | | Adjust this value to 200°C when the collector emergency shutdown function is not to start. |

| Solar / Expert | | | |
|---|---|---|---|
| Description | Factory setting | Change to | Note |
| Tcolmin | 10 | | Adjust the minimum temperature of the collector. |
| ΔT-Stmax | 2,0 | | This menu is used for changing the hysteresis for maximum limitation of store 1. |
| ΔT-St2max | 2,0 | | This menu is used for changing the hysteresis for maximum limitation of store 2. |
| t-st | 2 | | The loading break time for the priority logic function can be changed (see appendix priority logic) |
| t-circ. | 15 | | The oscillating loading time for the priority logic function can be changed (see appendix priority logic) |
| ΔT-Col | 2 | | The collector rise temperature during the break time of the priority logic function can be changed (see appendix priority logic) |
| **Control** | **Solar / Expert / Solar control** | | |

| Arrangement / Options | | | |
|---|---|---|---|
| Description | Factory setting | Change to | Note |
| Thermo. 4 | No | Yes | Thermostat function (maximum limitation) for heat exchange |
| ΔT-Func.6 | No | Yes | Differential function for heat exchange |
| Timer 2 | No | | In this menu, the timer of function block 2 can be activated (Thermo. 1 / 2 and ΔT-Func.5) |

| Arrangement / Adjustment values | | | |
|---|---|---|---|
| Description | Factory setting | Change to | Note |
| Date | 01.01.2006 | | Adjust the actual date |
| Time | 12:01 | | Adjust the actual clock time. |
| Th4on | 40 | 55 | Switch-on temperature for the heat exchange pump |
| Th4off | 45 | 60 | Switch-off temperature (maximum limitation) for the heat exchange pump |
| ΔT6on | 5,0 | | Switch-on difference for the heat exchange pump |
| ΔT6off | 3,0 | | Switch-off difference for the heat exchange pump |
| **Timer 2** | **See Arrangement / Adjustment values / Timer 2** | | |

| Arrangement / Expert | | | |
|---|---|---|---|
| Description | Factory setting | Change to | Note |
| Sen-Th4 | 6 | 2 | Sensor S2 is allocated to thermostat function 4. |
| Sen1-ΔT6 | 5 | Do not change the value as the sensor has already been correctly allocated. | |
| Sen2-ΔT6 | 6 | 2 | Sensor S2 is used as the heat sink sensor and is allocated to differential function 6. |

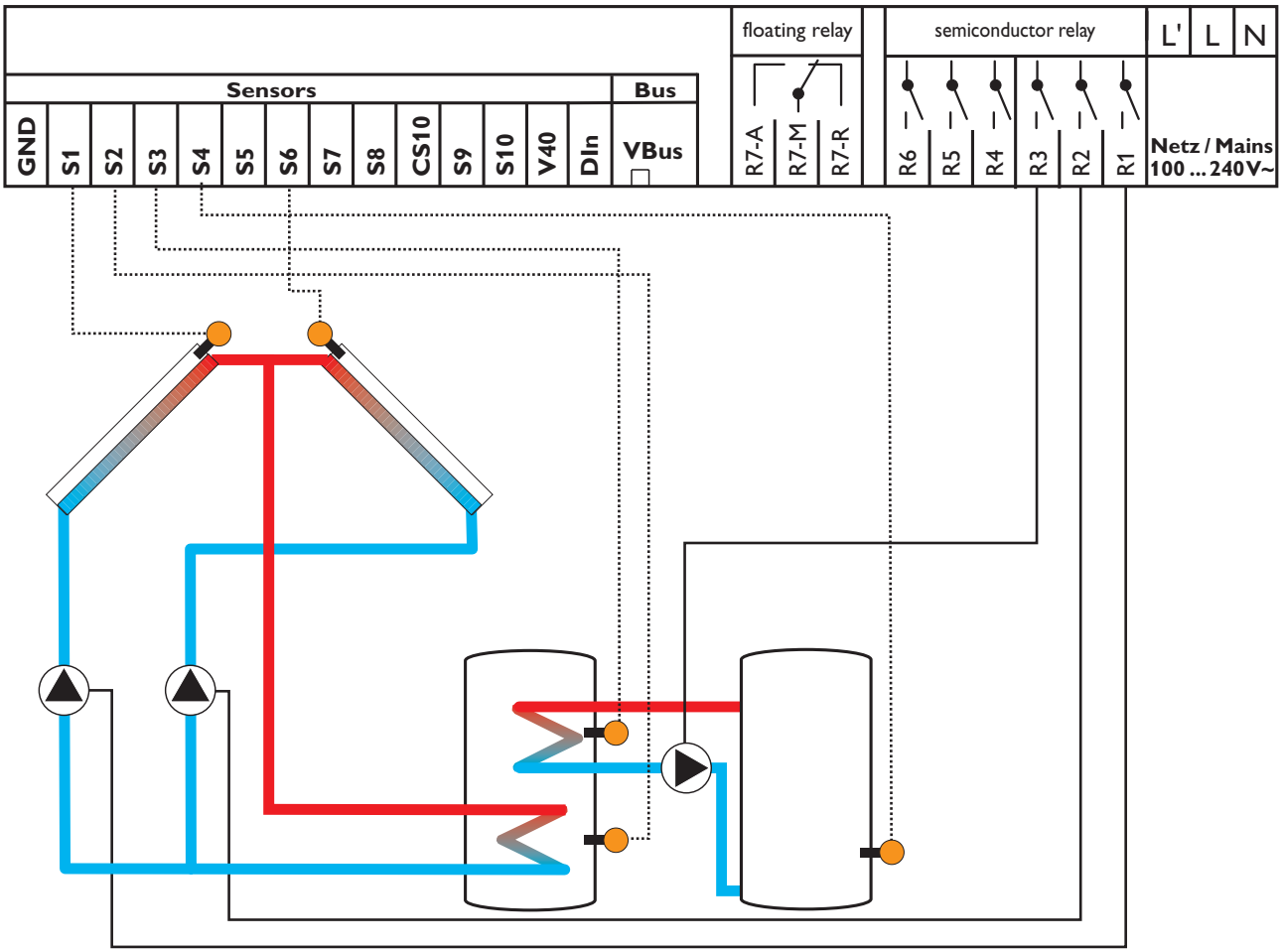
| User code | | | |
|---|---|---|---|
| Description | Factory setting | Change to | Note |
| Code | 0262 | 0000 | After having adjusted the controller settings, enter the user code 0000.<br>Note: The expert menu is "hidden", parameters and balance values cannot be changed |

| Expert | | | |
|---|---|---|---|
| Description | Factory setting | Change to | Note |
| ΔT too high | Yes | | In this menu, the messages „ΔT too high“ and „Non-ret. valve“ can be switched off |
| Non-ret. valve | Yes | | |
| Message relay | No | | |
| Message inp. | No | | |
| Chimney sweeper | No | | |
| **Sensors** | **Expert / Sensors** | | |
| CS-Type | E | | Adjust the CS-type, with the solar cell connected:<br>A = 1, B = 2, C = 3, D = 4, E = 5, F = 6, G = 7 |
| CS Adjust | | | The CS adjustment should be carried out with the irradiation sensor disconnected or when it is dark (select with adjustment button)! The sensor type must have been previously selected! |
| CS Offset | | Control value | This menu indicates the offset after the solar cell has been adjusted. |
| Sensor 1 | 0,0 | | In this menu, an offset can be allocated to the measured values of sensors 1 to 10 (e.g. in the case of long sensor cables) Adjustment range +/- 5 K (the temperatures indicated in the measured values menu will be corrected using the values adjusted in this menu). |
| ⋮ | | | |
| Sensor 10 | 0,0 | | |
| **Relay** | **Expert / Relay** | | |
| Min speed 1 | 30 | | In this menu the minimum speed of the circulating pumps can be adjusted; at 100% speed control is deactivated. |
| Min speed 2 | 30 | | |
| Min speed 3 | 30 | | |
| **Language** | **Expert / Language** | | |
| German | | | |
| English | | | |
| français | | | |
| castellano | | | |
| italiano | | | |

## System 18

**System description:**

The controller compares the temperatures at the collector sensors S1 and S6 to the store temperature at store sensor S2. If one of the measured temperature differences is higher than the adjusted switch-on temperature differences, the corresponding pump (P1, P2) will be activated and the store will be loaded. Heat transfer control to an existant store (P3) can be carried out via another temperature differential function (S3 heat source/S4 heat sink).




| Relay output | Description | Note | Terminals |
|---|---|---|---|
| Relay 1 | P1 | Solar pump collector 1 | R1-A |
| Relay 2 | P2 | Solar pump collector 2 | R2-A |
| Relay 3 | P3 | Heat exchange pump | R3-A |
| Relay 4 | | | R4-A |
| Relay 5 | | | R5-A |
| Relay 6 | | | R6-A |
| Relay 7 | | | R7-A |
| Relay 7 | | | R7 R |
| Relay 7 | | | R7 M |

| Sensor input | Description | Note | Terminals |
|---|---|---|---|
| Sen. 1 | S1 | Collector 1 solar | S1 |
| Sen. 2 | S2 | Store 1 bottom, solar | S2 |
| Sen. 3 | S3 | Store 1 top, heat exchange | S3 |
| Sen. 4 | S4 | Store 2 bottom, heat exchange | S4 |
| Sen. 5 | | | S5 |
| Sen. 6 | S6 | Collector 2 solar | S6 |
| Sen. 7 | | | S7 |
| Sen. 8 | | | S8 |
| CS10 | | | CS10 |
| Sen. 9 | | | S9 |
| Sen. 10 | | | S10 |
| V40 | | | V40 |
| Din | | | S11 |
| VBus | | | VBus |

| Solar / Options | | | |
|---|---|---|---|
| Description | Factory setting | Change to | Note |
| Schematic | 000 | 018 | Adjust the desired schematic (e.g. schematic 28) |
| System | 1 | 2 | System 2 for two collectors and one store |
| Loading | 1 | | |
| ST2 on | Yes | | |

| Solar / Adjustment values | | | |
|---|---|---|---|
| Description | Factory setting | Change to | Note |
| Tstmax | 60 | | Adjust the desired maximum store temperature for store 1. |
| ΔTon | 5,0 | | Adjust the desired switch-on temperature difference for store 1. |
| ΔToff | 3,0 | | Adjust the desired switch-off temperature difference for store 1. |
| ΔTset | 10,0 | | Adjust the desired set temperature difference for store 1. Once the adjusted temperature difference is reached, the speed is increased by 10 %. |
| Tcolsec | 130 | | Adjust this value to 200°C when the collector emergency shutdown function is not to start. |

| Solar / Expert | | | |
|---|---|---|---|
| Description | Factory setting | Change to | Note |
| Tcolmin | 10 | | Adjust the minimum temperature of the collector. |
| TCol2min | 10 | | Adjust the minimum temperature of collector 2. |
| ΔT-St2max | 2,0 | | This menu is used for changing the hysteresis for maximum limitation of store 1. |
| **Control** | **Solar / Expert / Solar control** | | |

| Arrangement / Options | | | |
|---|---|---|---|
| Description | Factory setting | Change to | Note |
| Thermo. 2 | No | Yes | Thermostat function (maximum limitation) for heat exchange |
| ΔT-Func.5 | No | Yes | Differential function for heat exchange |
| Timer 1 | No | | In this menu, the timer of function block 1 can be activated (Thermo. 1 / 2 and ΔT-Func.5) |

| Arrangement / Adjustment values | | | |
|---|---|---|---|
| Description | Factory setting | Change to | Note |
| Date | 01.01.2006 | | Adjust the actual date |
| Time | 12:01 | | Adjust the actual clock time. |
| Th2on | 40 | 55 | Switch-on temperature for the heat exchange pump |
| Th2off | 45 | 60 | Switch-off temperature (maximum limitation) for the heat exchange pump |
| ΔT5on | 5,0 | | Switch-on difference for the heat exchange pump |
| ΔT5off | 3,0 | | Switch-off difference for the heat exchange pump |
| **Timer 1** | **See Arrangement / Adjustment values / Timer 1** | | |

| Arrangement / Expert | | | |
|---|---|---|---|
| Description | Factory setting | Change to | Note |
| Sen-Th2 | 4 | Do not change the value as the sensor has already been correctly allocated. | |
| Sen1-ΔT5 | 3 | | |
| Sen2-ΔT5 | 4 | | |

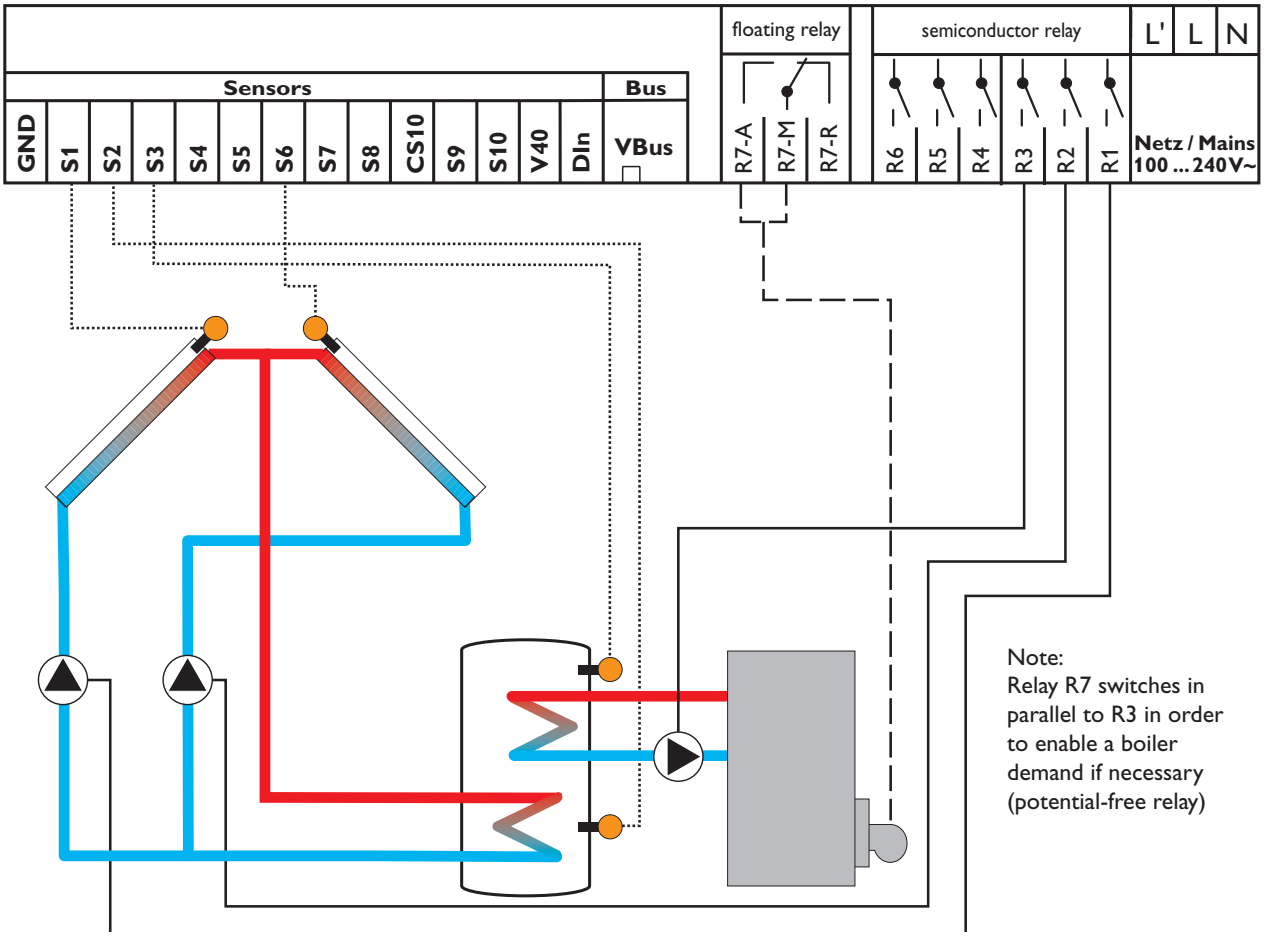
| User code | | | |
|---|---|---|---|
| Description | Factory setting | Change to | Note |
| Code | 0262 | 0000 | After having adjusted the controller settings, enter the user code 0000.<br>Note: The expert menu is "hidden", parameters and balance values cannot be changed |

| Expert | | | |
|---|---|---|---|
| Description | Factory setting | Change to | Note |
| ΔT too high | Yes | | In this menu, the messages „ΔT too high“ and „Non-ret. valve“ can be switched off |
| Non-ret. valve | Yes | | |
| Message relay | No | | |
| Message inp. | No | | |
| Chimney sweeper | No | | |
| **Sensors** | **Expert / Sensors** | | |
| CS-Type | E | | Adjust the CS-type, with the solar cell connected:<br>A = 1, B = 2, C = 3, D = 4, E = 5, F = 6, G = 7 |
| CS Adjust | | | The CS adjustment should be carried out with the irradiation sensor disconnected or when it is dark (select with adjustment button)! The sensor type must have been previously selected! |
| CS Offset | | Control value | This menu indicates the offset after the solar cell has been adjusted. |
| Sensor 1 | 0,0 | | In this menu, an offset can be allocated to the measured values of sensors 1 to 10 (e.g. in the case of long sensor cables) Adjustment range +/- 5 K (the temperatures indicated in the measured values menu will be corrected using the values adjusted in this menu). |
| : | | | |
| Sensor 10 | 0,0 | | |
| **Relay** | **Expert / Relay** | | |
| Min speed 1 | 30 | | In this menu the minimum speed of the circulating pumps can be adjusted; at 100% speed control is deactivated. |
| Min speed 2 | 30 | | |
| Min speed 3 | 30 | | |
| **Language** | **Expert / Language** | | |
| German | | | |
| English | | | |
| français | | | |
| castellano | | | |
| italiano | | | |

## System 19

### System description:

The controller compares the temperatures at the collector sensors S1 and S6 to the store temperature at store sensor S2. If one of the measured temperature differences is higher than the adjusted switch-on temperature differences, the corresponding pump (P1, P2) will be activated and the store will be loaded.
Domestic hot water afterheating (P3) is possible via a thermostat function (S3).




| Relay output | Description | Note | Terminals |
|---|---|---|---|
| Relay 1 | P1 | Solar pump collector 1 | R1-A |
| Relay 2 | P2 | Solar pump collector 2 | R2-A |
| Relay 3 | P3 | Boiler pump | R3-A |
| Relay 4 | | | R4-A |
| Relay 5 | | | R5-A |
| Relay 6 | | | R6-A |
| Relay 7 | Boiler demand | Potential-free contact | R7-A |
| Relay 7 | | | R7 R |
| Relay 7 | Boiler demand | Potential-free contact | R7 M |

| Sensor input | Description | Note | Terminals |
|---|---|---|---|
| Sen. 1 | S1 | Collector 1 solar | S1 |
| Sen. 2 | S2 | Store 1 bottom, solar | S2 |
| Sen. 3 | S3 | Store 1 top, afterheating | S3 |
| Sen. 4 | | | S4 |
| Sen. 5 | | | S5 |
| Sen. 6 | S6 | Collector 2 solar | S6 |
| Sen. 7 | | | S7 |
| Sen. 8 | | | S8 |
| CS10 | | | CS10 |
| Sen. 9 | | | S9 |
| Sen. 10 | | | S10 |
| V40 | | | V40 |
| Din | | | S11 |
| VBus | | | VBus |

| Solar / Options | | | |
|---|---|---|---|
| Description | Factory setting | Change to | Note |
| Schematic | 000 | 019 | Adjust the desired schematic (e.g. schematic 28) |
| System | 1 | 2 | System 2 for two collectors and one store |
| Loading | 1 | | |

| Solar / Adjustment values | | | |
|---|---|---|---|
| Description | Factory setting | Change to | Note |
| Tstmax | 60 | | Adjust the desired maximum store temperature for store 1. |
| ΔTon | 5,0 | | Adjust the desired switch-on temperature difference for store 1. |
| ΔToff | 3,0 | | Adjust the desired switch-off temperature difference for store 1. |
| ΔTset | 10,0 | | Adjust the desired set temperature difference for store 1. Once the adjusted temperature difference is reached, the speed is increased by 10 %. |
| Tcolsec | 130 | | Adjust this value to 200°C when the collector emergency shutdown function is not to start. |

| Solar / Expert | | | |
|---|---|---|---|
| Description | Factory setting | Change to | Note |
| Tcolmin | 10 | | Adjust the minimum temperature of the collector. |
| TCol2min | 10 | | Adjust the minimum temperature of collector 2. |
| ΔT-Stmax | 2,0 | | This menu is used for changing the hysteresis for maximum limitation of store 1. |
| **Control** | **Solar / Expert / Solar control** | | |

| Arrangement / Options | | | |
|---|---|---|---|
| Description | Factory setting | Change to | Note |
| Thermo. 1 | No | Yes | Thermostat function for afterheating |
| Timer 1 | No | Yes | In this menu, a timer of function block 1 can be activated (Thermo. 1 / 2 and ΔT-Func.5) |
| Thermo. 9 | No | Yes | Thermostat function for afterheating (boiler demand) |
| Timer 5 | No | | In this menu, a timer of function block 5 can be activated (Thermo. 9 / 10 and ΔT-Func.9) |

| Arrangement / Adjustment values | | | |
|---|---|---|---|
| Description | Factory setting | Change to | Note |
| Date | 01.01.2006 | | Adjust the actual date |
| Time | 12:01 | | Adjust the actual clock time. |
| Th1on | 40 | 55 | Switch-on temperature for afterheating |
| Th1off | 45 | 60 | Switch-off temperature (minimun limitation) for afterheating |
| **Timer 1** | **See Arrangement / Adjustment values / Timer 1** | | |
| Th9on | 40 | 55 | Switch-on difference for boiler demand |
| Th9off | 45 | 60 | Switch-off difference for boiler demand |
| **Timer 5** | **See Arrangement / Adjustment values / Timer 5** | | |

| Arrangement / Expert | | | |
|---|---|---|---|
| Description | Factory setting | Change to | Note |
| Sen-Th1 | 3 | Do not change the value as the sensor has already been correctly allocated. | |
| Sen-Th9 | 9 | 3 | Sensor S3 is allocated to thermostat function 9. |

| User code | | | |
|---|---|---|---|
| Description | Factory setting | Change to | Note |
| Code | 0262 | 0000 | After having adjusted the controller settings, enter the user code 0000.<br>Note: The expert menu is "hidden", parameters and balance values cannot be changed |

| Expert | | | |
|---|---|---|---|
| Description | Factory setting | Change to | Note |
| ΔT too high | Yes | | In this menu, the messages „ΔT too high“ and „Non-ret. valve“ can be switched off |
| Non-ret. valve | Yes | | |
| Message relay | No | | |
| Message inp. | No | | |
| Chimney sweeper | No | | |
| **Sensors** | **Expert / Sensors** | | |
| CS-Type | E | | Adjust the CS-type, with the solar cell connected:<br>A = 1, B = 2, C = 3, D = 4, E = 5, F = 6, G = 7 |
| CS Adjust | | | The CS adjustment should be carried out with the irradiation sensor disconnected or when it is dark (select with adjustment button)! The sensor type must have been previously selected! |
| CS Offset | | Control value | This menu indicates the offset after the solar cell has been adjusted. |
| Sensor 1 | 0,0 | | In this menu, an offset can be allocated to the measured values of sensors 1 to 10 (e.g. in the case of long sensor cables) Adjustment range +/- 5 K (the temperatures indicated in the measured values menu will be corrected using the values adjusted in this menu). |
| ⋮ | | | |
| Sensor 10 | 0,0 | | |
| **Relay** | **Expert / Relay** | | |
| Min speed 1 | 30 | | In this menu the minimum speed of the circulating pumps can be adjusted; at 100% speed control is deactivated. |
| Min speed 2 | 30 | | |
| Min speed 3 | 30 | | |
| **Language** | **Expert / Language** | | |
| German | | | |
| English | | | |
| français | | | |
| castellano | | | |
| italiano | | | |

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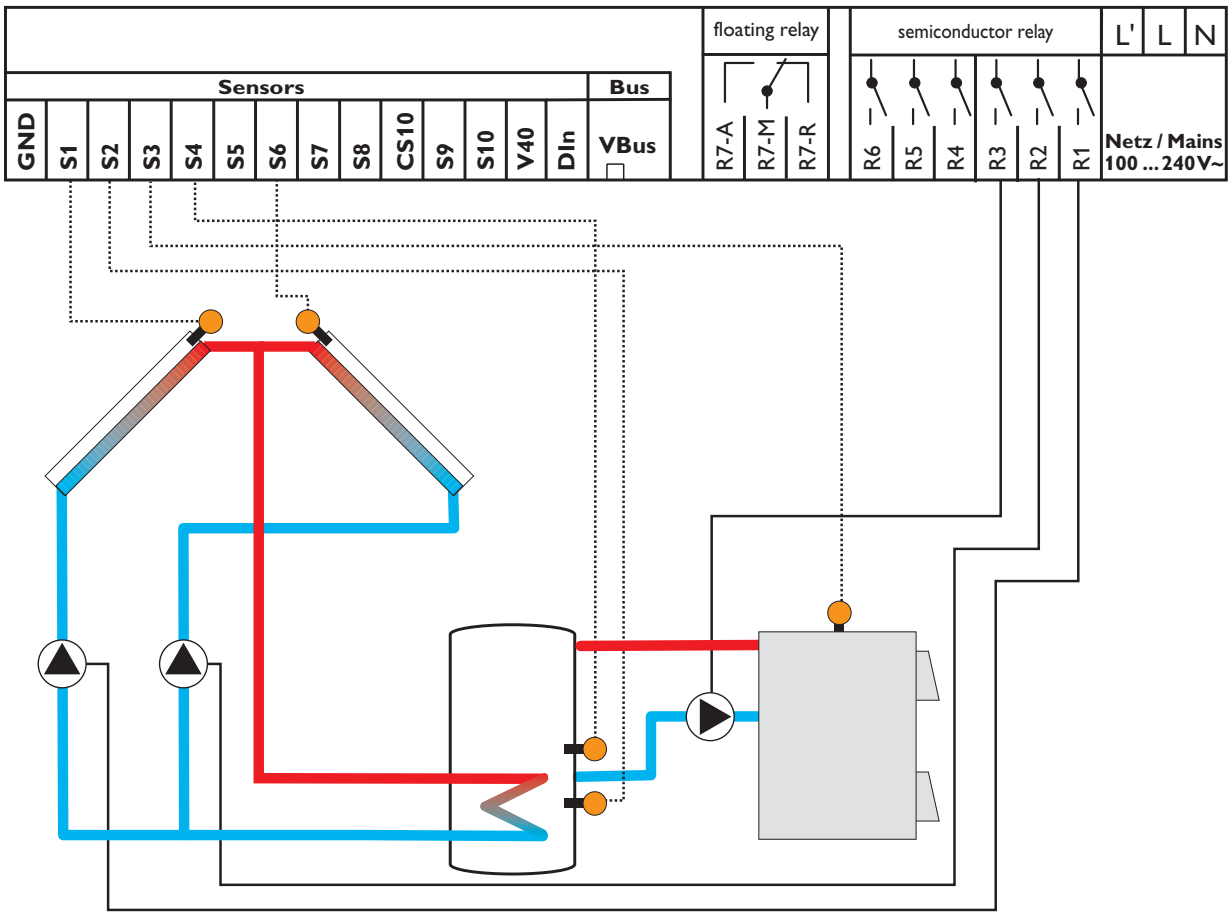
## System 20

### System description:

The controller compares the temperatures at the collector sensors S1 and S6 to the store temperature at store sensor S2. If one of the measured temperature differences is higher than the adjusted switch-on temperature differences, the corresponding pump (P1, P2) will be activated and the store will be loaded.
With another temperature differential function (S4/S43), afterheating of the store can be carried out with a solid fuel boiler (P3).




| Relay output | Description | Note | Terminals |
|---|---|---|---|
| Relay 1 | P1 | Solar pump collector 1 | R1-A |
| Relay 2 | P2 | Solar pump collector 2 | R2-A |
| Relay 3 | P3 | Solid fuel boiler pump | R3-A |
| Relay 4 | | | R4-A |
| Relay 5 | | | R5-A |
| Relay 6 | | | R6-A |
| Relay 7 | | | R7-A |
| Relay 7 | | | R7 R |
| Relay 7 | | | R7 M |

| Sensor input | Description | Note | Terminals |
|---|---|---|---|
| Sen. 1 | S1 | Collector 1 solar | S1 |
| Sen. 2 | S2 | Store 1 bottom, solar | S2 |
| Sen. 3 | S3 | Solid fuel boiler, heat source ΔT-Func.5 | S3 |
| Sen. 4 | S4 | Store 1 center<br>Heat sink ΔT-Func.5 | S4 |
| Sen. 5 | | | S5 |
| Sen. 6 | S6 | Collector 2 solar | S6 |
| Sen. 7 | | | S7 |
| Sen. 8 | | | S8 |
| CS10 | | | CS10 |
| Sen. 9 | | | S9 |
| Sen. 10 | | | S10 |
| V40 | | | V40 |
| Din | | | S11 |
| VBus | | | VBus |

| Solar / Options | | | |
|---|---|---|---|
| Description | Factory setting | Change to | Note |
| Schematic | 000 | 020 | Adjust the desired schematic (e.g. schematic 28) |
| System | 1 | 2 | System 2 for two collectors and one store |
| Loading | 1 | | |

| Solar / Adjustment values | | | |
|---|---|---|---|
| Description | Factory setting | Change to | Note |
| Tstmax | 60 | | Adjust the desired maximum store temperature for store 1. |
| ΔTon | 5,0 | | Adjust the desired switch-on temperature difference for store 1. |
| ΔToff | 3,0 | | Adjust the desired switch-off temperature difference for store 1. |
| ΔTset | 10,0 | | Adjust the desired set temperature difference for store 1. Once the adjusted temperature difference is reached, the speed is increased by 10 %. |
| Tcolsec | 130 | | Adjust this value to 200°C when the collector emergency shutdown function is not to start. |

| Solar / Expert | | | |
|---|---|---|---|
| Description | Factory setting | Change to | Note |
| Tcolmin | 10 | | Adjust the minimum temperature of the collector. |
| TCol2min | 10 | | Adjust the minimum temperature of collector 2. |
| ΔT-Stmax | 2,0 | | This menu is used for changing the hysteresis for maximum limitation of store 1. |
| **Control** | **Solar / Expert / Solar control** | | |

| Arrangement / Options | | | |
|---|---|---|---|
| Description | Factory setting | Change to | Note |
| Thermo. 1 | No | Yes | Thermostat function (minimum limitation) for solid fuel boiler |
| Thermo. 2 | No | Yes | Thermostat function (maximum limitation) for the store |
| ΔT-Func.5 | No | Yes | Differential function for the solid fuel boiler |
| Timer 1 | No | | In this menu, the timer of function block 1 can be activated (Thermo. 1 / 2 and ΔT-Func.5) |

| Arrangement / Adjustment values | | | |
|---|---|---|---|
| Description | Factory setting | Change to | Note |
| Date | 01.01.2006 | | Adjust the actual date |
| Time | 12:01 | | Adjust the actual clock time. |
| Th1on | 40 | 60 | Switch-on temperature (minimum limitation) for the solid fuel boiler pump |
| Th1off | 45 | 58 | Switch-off temperature for the solid fuel boiler pump |
| Th2on | 40 | 55 | Switch-on temperature for the solid fuel boiler pump |
| Th2off | 45 | 60 | Switch-off temperature (maximum limitation) for the solid fuel boiler pump |
| ΔT5on | 5,0 | | Switch-on difference for the solid fuel boiler pump |
| ΔT5off | 3,0 | | Switch-off difference for the solid fuel boiler pump |
| **Timer 1** | **See Arrangement / Adjustment values / Timer 1** | | |

| Arrangement / Expert | | | |
|---|---|---|---|
| Description | Factory setting | Change to | Note |
| Sen-Th1 | 3 | Do not change the value as the sensor has already been correctly allocated. | |
| Sen-Th2 | 4 | | |
| Sen1-ΔT5 | 3 | | |
| Sen2-ΔT5 | 4 | | |

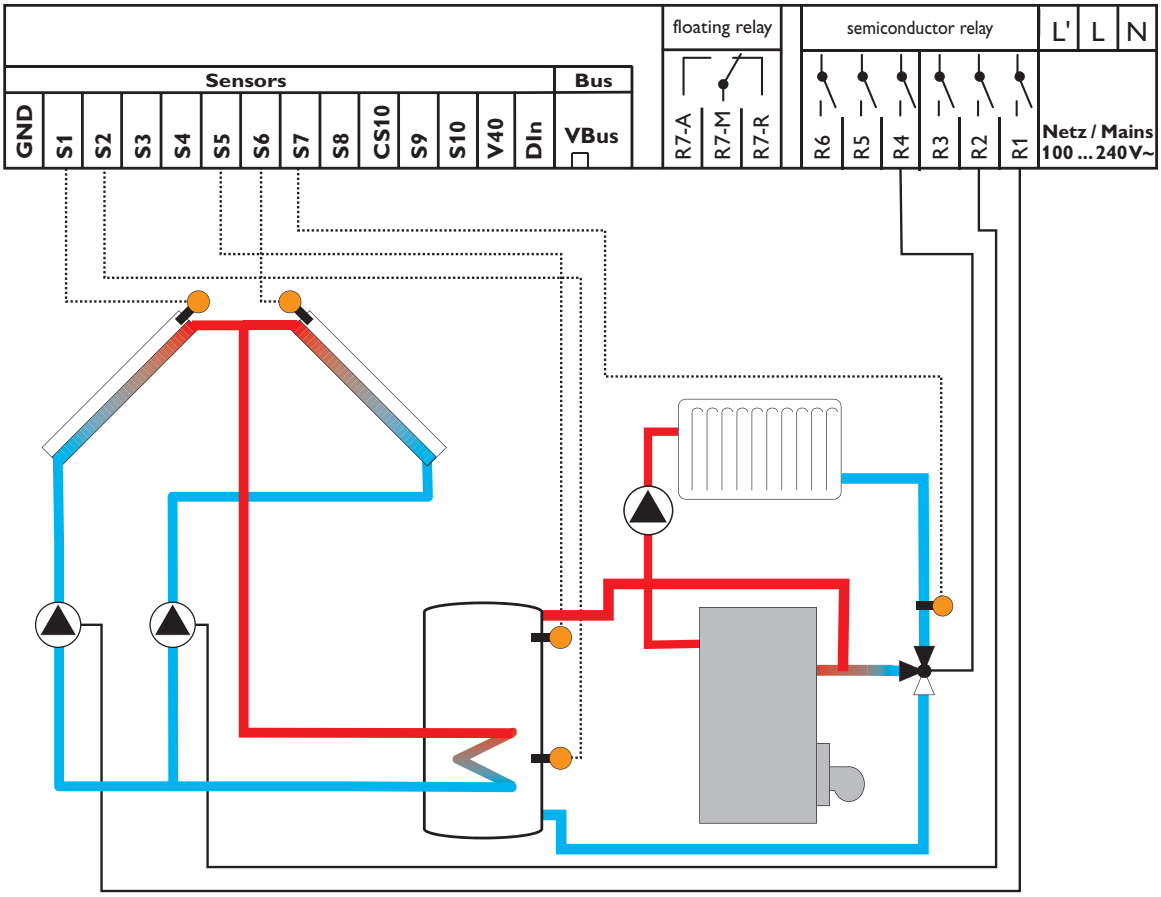
| User code | | | |
|---|---|---|---|
| Description | Factory setting | Change to | Note |
| Code | 0262 | 0000 | After having adjusted the controller settings, enter the user code 0000.<br>Note: The expert menu is "hidden", parameters and balance values cannot be changed |

| Expert | | | |
|---|---|---|---|
| Description | Factory setting | Change to | Note |
| ΔT too high | Yes | | In this menu, the messages „ΔT too high“ and „Non-ret. valve“ can be switched off |
| Non-ret. valve | Yes | | |
| Message relay | No | | |
| Message inp. | No | | |
| Chimney sweeper | No | | |
| **Sensors** | **Expert / Sensors** | | |
| CS-Type | E | | Adjust the CS-type, with the solar cell connected:<br>A = 1, B = 2, C = 3, D = 4, E = 5, F = 6, G = 7 |
| CS Adjust | | | The CS adjustment should be carried out with the irradiation sensor disconnected or when it is dark (select with adjustment button)! The sensor type must have been previously selected! |
| CS Offset | | Control value | This menu indicates the offset after the solar cell has been adjusted. |
| Sensor 1 | 0,0 | | In this menu, an offset can be allocated to the measured values of sensors 1 to 10 (e.g. in the case of long sensor cables) Adjustment range +/- 5 K (the temperatures indicated in the measured values menu will be corrected using the values adjusted in this menu). |
| : | | | |
| Sensor 10 | 0,0 | | |
| **Relay** | **Expert / Relay** | | |
| Min speed 1 | 30 | | In this menu the minimum speed of the circulating pumps can be adjusted; at 100% speed control is deactivated. |
| Min speed 2 | 30 | | |
| Min speed 3 | 30 | | |
| **Language** | **Expert / Language** | | |
| German | | | |
| English | | | |
| français | | | |
| castellano | | | |
| italiano | | | |

## System 21

### System description:

The controller compares the temperatures at the collector sensors S1 and S6 to the store temperature at store sensor S2. If one of the measured temperature differences is higher than the adjusted switch-on temperature differences, the corresponding pump (P1, P2) will be activated and the store will be loaded.
With another temperature differential function (S5 heat source / S7 heat sink) heating circuit return preheating is possible via V1.




| Relay output | Description | Note | Terminals |
|---|---|---|---|
| Relay 1 | P1 | Solar pump collector 1 | R1-A |
| Relay 2 | P2 | Solar pump collector 2 | R2-A |
| Relay 3 | | | R3-A |
| Relay 4 | V1 | 3-port valve, return preheating | R4-A |
| Relay 5 | | | R5-A |
| Relay 6 | | | R6-A |
| Relay 7 | | | R7-A |
| Relay 7 | | | R7 R |
| Relay 7 | | | R7 M |

| Sensor input | Description | Note | Terminals |
|---|---|---|---|
| Sen. 1 | S1 | Collector 1 solar | S1 |
| Sen. 2 | S2 | Store 1 bottom, solar | S2 |
| Sen. 3 | | | S3 |
| Sen. 4 | | | S4 |
| Sen. 5 | S5 | Store 1 top, return preheating | S5 |
| Sen. 6 | S6 | Collector 2 solar | S6 |
| Sen. 7 | S7 | Heating return, return preheating | S7 |
| Sen. 8 | | | S8 |
| CS10 | | | CS10 |
| Sen. 9 | | | S9 |
| Sen. 10 | | | S10 |
| V40 | | | V40 |
| Din | | | S11 |
| VBus | | | VBus |

| Solar / Options | | | |
|---|---|---|---|
| Description | Factory setting | Change to | Note |
| Schematic | 000 | 021 | Adjust the desired schematic (e.g. schematic 28) |
| System | 1 | 2 | System 2 for two collectors and one store |
| Loading | 1 | | |
| ST2 on | Yes | | |

| Solar / Adjustment values | | | |
|---|---|---|---|
| Description | Factory setting | Change to | Note |
| Tstmax | 60 | | Adjust the desired maximum store temperature for store 1. |
| ΔTon | 5,0 | | Adjust the desired switch-on temperature difference for store 1. |
| ΔToff | 3,0 | | Adjust the desired switch-off temperature difference for store 1. |
| ΔTset | 10,0 | | Adjust the desired set temperature difference for store 1. Once the adjusted temperature difference is reached, the speed is increased by 10 %. |
| Tcolsec | 130 | | Adjust this value to 200°C when the collector emergency shutdown function is not to start. |

| Solar / Expert | | | |
|---|---|---|---|
| Description | Factory setting | Change to | Note |
| Tcolmin | 10 | | Adjust the minimum temperature of the collector. |
| TCol2min | 10 | | Adjust the minimum temperature of collector 2. |
| ΔT-St2max | 2,0 | | This menu is used for changing the hysteresis for maximum limitation of store 1. |
| **Control** | **Solar / Expert / Solar control** | | |

| Arrangement / Options | | | |
|---|---|---|---|
| Description | Factory setting | Change to | Note |
| ΔT-Func.6 | No | Yes | Differential function for return preheating |

| Arrangement / Adjustment values | | | |
|---|---|---|---|
| Description | Factory setting | Change to | Note |
| Date | 01.01.2006 | | Adjust the actual date |
| Time | 12:01 | | Adjust the actual clock time. |
| ΔT6on | 5,0 | | Switch-on difference for return preheating |
| ΔT6off | 3,0 | | Switch-off difference for return preheating |

| Arrangement / Expert | | | |
|---|---|---|---|
| Description | Factory setting | Change to | Note |
| Sen1-ΔT6 | 5 | Do not change the value as the sensor has already been correctly allocated. | |
| Sen2-ΔT6 | 6 | 7 | Sensor S7 is used as the heat sink sensor and is allocated to differential function 6. |

| User code | | | |
|---|---|---|---|
| Description | Factory setting | Change to | Note |
| Code | 0262 | 0000 | After having adjusted the controller settings, enter the user code 0000.<br>Note: The expert menu is "hidden", parameters and balance values cannot be changed |

| Expert | | | |
|---|---|---|---|
| Description | Factory setting | Change to | Note |
| ΔT too high | Yes | | In this menu, the messages „ΔT too high“ and „Non-ret. valve“ can be switched off |
| Non-ret. valve | Yes | | |
| Message relay | No | | |
| Message inp. | No | | |
| Chimney sweeper | No | | |
| **Sensors** | **Expert / Sensors** | | |
| CS-Type | E | | Adjust the CS-type, with the solar cell connected:<br>A = 1, B = 2, C = 3, D = 4, E = 5, F = 6, G = 7 |
| CS Adjust | | | The CS adjustment should be carried out with the irradiation sensor disconnected or when it is dark (select with adjustment button)! The sensor type must have been previously selected! |
| CS Offset | | Control value | This menu indicates the offset after the solar cell has been adjusted. |
| Sensor 1 | 0,0 | | In this menu, an offset can be allocated to the measured values of sensors 1 to 10 (e.g. in the case of long sensor cables) Adjustment range +/- 5 K (the temperatures indicated in the measured values menu will be corrected using the values adjusted in this menu). |
| ⋮ | | | |
| Sensor 10 | 0,0 | | |
| **Relay** | **Expert / Relay** | | |
| Min speed 1 | 30 | | In this menu the minimum speed of the circulating pumps can be adjusted; at 100% speed control is deactivated. |
| Min speed 2 | 30 | | |
| Min speed 3 | 30 | | |
| **Language** | **Expert / Language** | | |
| German | | | |
| English | | | |
| français | | | |
| castellano | | | |
| italiano | | | |

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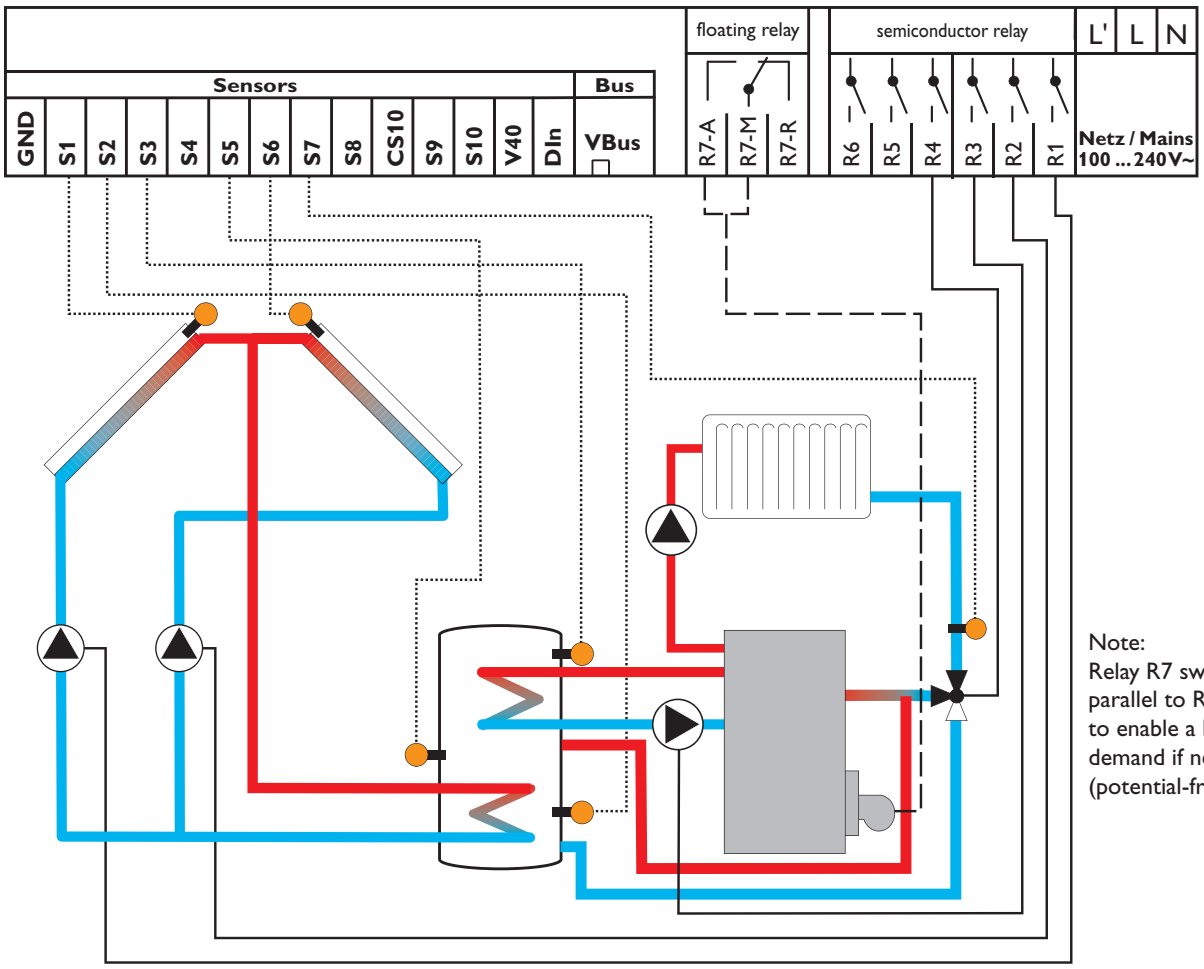
## System 22

### System description:

The controller compares the temperatures at the collector sensors S1 and S6 to the store temperature at store sensor S2. If one of the measured temperature differences is higher than the adjusted switch-on temperature differences, the corresponding pump (P1, P2) will be activated and the store will be loaded.

With another temperature differential function (S5 heat source / S7 heat sink) heating circuit return preheating (heating circuit backup) is possible via V1. With a thermostat function (S3) domestic hot water afterheating (P3) can be carried out.




Note:
Relay R7 switches in parallel to R3 in order to enable a boiler demand if necessary (potential-free relay)

| Relay output | Description | Note | Terminals |
|---|---|---|---|
| Relay 1 | P1 | Solar pump collector 1 | R1-A |
| Relay 2 | P2 | Solar pump collector 2 | R2-A |
| Relay 3 | P3 | Boiler pump | R3-A |
| Relay 4 | V1 | 3-port valve, return preheating | R4-A |
| Relay 5 | | | R5-A |
| Relay 6 | | | R6-A |
| Relay 7 | Boiler demand | Potential-free contact | R7-A |
| Relay 7 | | | R7 R |
| Relay 7 | Boiler demand | Potential-free contact | R7 M |

| Sensor input | Description | Note | Terminals |
|---|---|---|---|
| Sen. 1 | S1 | Collector 1 solar | S1 |
| Sen. 2 | S2 | Store 1 bottom, solar | S2 |
| Sen. 3 | S3 | Boiler, afterheating | S3 |
| Sen. 4 | | | S4 |
| Sen. 5 | S5 | Store 1 top, return preheating | S5 |
| Sen. 6 | S6 | Collector 2 solar | S6 |
| Sen. 7 | S7 | Heating return, return preheating | S7 |
| Sen. 8 | | | S8 |
| CS10 | | | CS10 |
| Sen. 9 | | | S9 |
| Sen. 10 | | | S10 |
| V40 | | | V40 |
| Din | | | S11 |
| VBus | | | VBus |

| Solar / Options | | | |
|---|---|---|---|
| Description | Factory setting | Change to | Note |
| Schematic | 000 | 022 | Adjust the desired schamtic (e.g. schematic 28) |
| System | 1 | 2 | System 2 for two collectors and one store |
| Loading | 1 | | |

| Solar / Adjustment values | | | |
|---|---|---|---|
| Description | Factory setting | Change to | Note |
| Tstmax | 60 | | Adjust the desired maximum store temperature for store 1. |
| ΔTon | 5,0 | | Adjust the desired switch-on temperature difference for store 1. |
| ΔToff | 3,0 | | Adjust the desired switch-off temperature difference for store 1. |
| ΔTset | 10,0 | | Adjust the desired set temperature difference for store 1. Once the adjusted temperature difference is reached, the speed is increased by 10 %. |
| Tcolsec | 130 | | Adjust this value to 200°C when the collector emergency shutdown function is not to start. |

| Solar / Expert | | | |
|---|---|---|---|
| Description | Factory setting | Change to | Note |
| Tcolmin | 10 | | Adjust the minimum temperature of the collector. |
| TCol2min | 10 | | Adjust the minimum temperature of collector 2. |
| ΔT-Stmax | 2,0 | | This menu is used for changing the hysteresis for maximum limitation of store 1. |
| **Control** | **Solar / Expert / Solar control** | | |

| Arrangement / Options | | | |
|---|---|---|---|
| Description | Factory setting | Change to | Note |
| Thermo. 1 | No | Yes | Thermostat function for afterheating |
| Timer 1 | No | | In this menu, a timer of function block 1 can be activated (Thermo. 1 / 2 and ΔT-Func.5) |
| ΔT-Func.6 | No | Yes | Differential function for return preheating |
| Thermo. 9 | No | Yes | Thermostat function for afterheating (boiler demand) |
| Timer 5 | No | | In this menu, the timer of function block 5 can be activated (Thermo. 9 / 10 and ΔT-Func.9) |

| Arrangement / Adjustment values | | | |
|---|---|---|---|
| Description | Factory setting | Change to | Note |
| Date | 01.01.2006 | | Adjust the actual date |
| Time | 12:01 | | Adjust the actual clock time. |
| Th1on | 40 | | Switch-on temperature for afterheating |
| Th1off | 45 | | Switch-off temperature (maximum limitation) for afterheating |
| **Timer 1** | **See Arrangement / Adjustment values / Timer 1** | | |
| ΔT6on | 5,0 | | Switch-on difference for return preheating |
| ΔT6off | 3,0 | | Switch-off difference for return preheating |
| Th9on | 40 | | Switch-on temperature for boiler demand |
| Th9off | 45 | | Switch-off temperature for boiler demand |
| **Timer 5** | **See Arrangement / Adjustment values / Timer 5** | | |

| Arrangement / Expert | | | |
|---|---|---|---|
| Description | Factory setting | Change to | Note |
| Sen-Th1 | 3 | Do not change the value as the sensor has already been correctly allocated. | |
| Sen1-ΔT6 | 5 | | |
| Sen2-ΔT6 | 6 | 7 | Sensor S7 is used as the heat sink sensor and is allocated to differential function 6. |
| Sen-Th9 | 6 | 3 | Sensor S3 is allocated to thermostat function 9. |

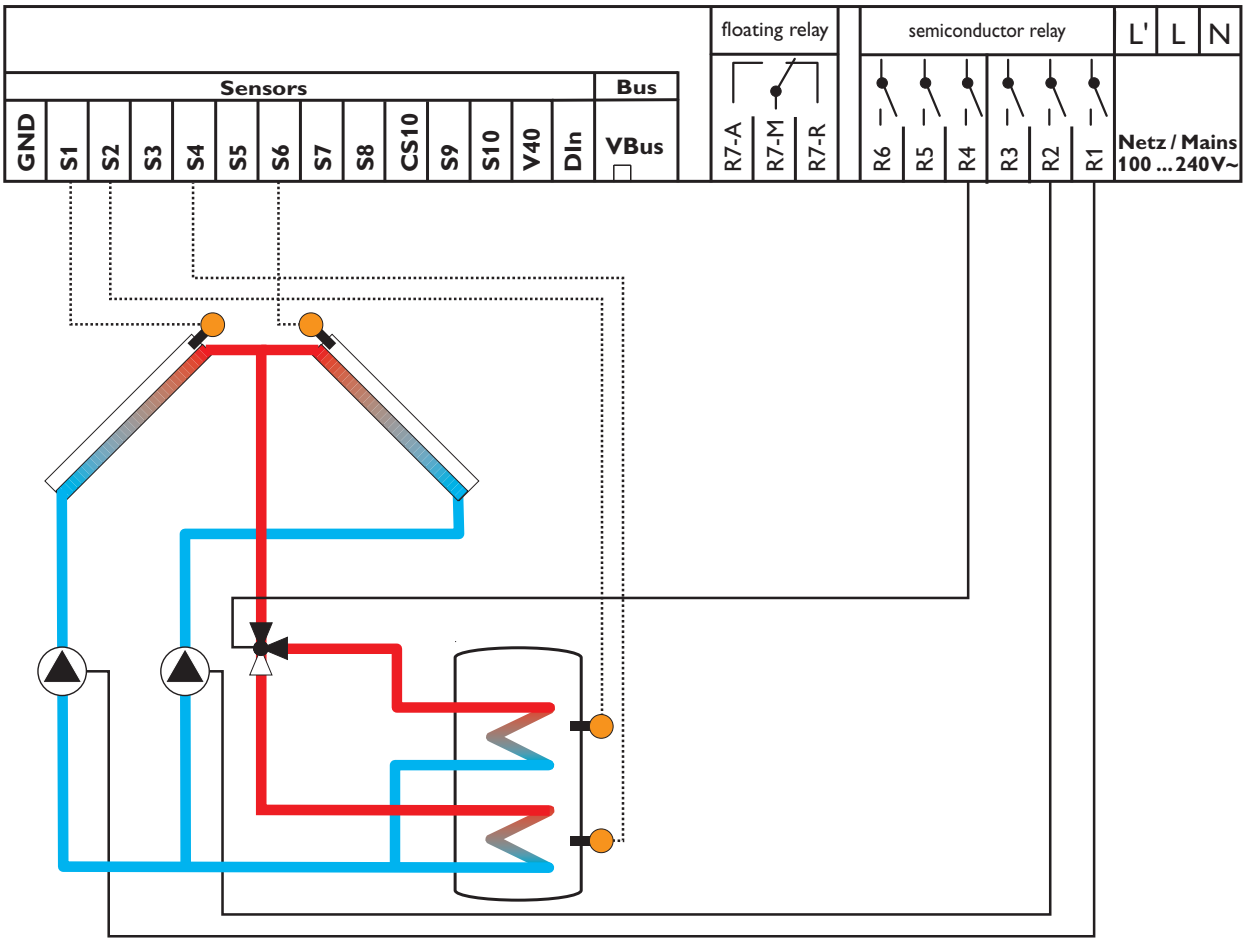
| User code | | | |
|---|---|---|---|
| Description | Factory setting | Change to | Note |
| Code | 0262 | 0000 | After having adjusted the controller settings, enter the user code 0000.<br>Note: The expert menu is "hidden", parameters and balance values cannot be changed |

| Expert | | | |
|---|---|---|---|
| Description | Factory setting | Change to | Note |
| ΔT too high | Yes | | In this menu, the messages „ΔT too high“ and „Non-ret. valve“ can be switched off |
| Non-ret. valve | Yes | | |
| Message relay | No | | |
| Message inp. | No | | |
| Chimney sweeper | No | | |
| **Sensors** | **Expert / Sensors** | | |
| CS-Type | E | | Adjust the CS-type, with the solar cell connected:<br>A = 1, B = 2, C = 3, D = 4, E = 5, F = 6, G = 7 |
| CS Adjust | | | The CS adjustment should be carried out with the irradiation sensor disconnected or when it is dark (select with adjustment button)! The sensor type must have been previously selected! |
| CS Offset | | Control value | This menu indicates the offset after the solar cell has been adjusted. |
| Sensor 1 | 0,0 | | In this menu, an offset can be allocated to the measured values of sensors 1 to 10 (e.g. in the case of long sensor cables) Adjustment range +/- 5 K (the temperatures indicated in the measured values menu will be corrected using the values adjusted in this menu). |
| : | | | |
| Sensor 10 | 0,0 | | |
| **Relay** | **Expert / Relay** | | |
| Min speed 1 | 30 | | In this menu the minimum speed of the circulating pumps can be adjusted; at 100% speed control is deactivated. |
| Min speed 2 | 30 | | |
| Min speed 3 | 30 | | |
| **Language** | **Expert / Language** | | |
| German | | | |
| English | | | |
| français | | | |
| castellano | | | |
| italiano | | | |

## System 23

### System description:

The controller compares the temperatures at the collector sensors S1 and S6 to the store temperatures at the store sensors S2 and S4. If one of the measured temperature differences is higher than the adjusted switch-on differences, the corresponding pump (P1, P2) will be switched on and the corresponding store zone will be loaded up to the maximum temperature via valve (V1). The priority logic causes prior loading of the upper zone of the store.




| Relay output | Description | Note | Terminals |
|---|---|---|---|
| Relay 1 | P1 | Solar pump collector 1 | R1-A |
| Relay 2 | P2 | Solar pump collector 2 | R2-A |
| Relay 3 | | | R3-A |
| Relay 4 | V1 | 3-port valve store top / bottom | R4-A |
| Relay 5 | | | R5-A |
| Relay 6 | | | R6-A |
| Relay 7 | | | R7-A |
| Relay 7 | | | R7 R |
| Relay 7 | | | R7 M |

| Sensor input | Description | Note | Terminals |
|---|---|---|---|
| Sen. 1 | S1 | Collector 1, solar | S1 |
| Sen. 2 | S2 | Store 1 top, solar | S2 |
| Sen. 3 | | | S3 |
| Sen. 4 | S4 | Store 1 bottom, solar | S4 |
| Sen. 5 | | | S5 |
| Sen. 6 | S6 | Collector 2, solar | S6 |
| Sen. 7 | | | S7 |
| Sen. 8 | | | S8 |
| CS10 | | | CS10 |
| Sen. 9 | | | S9 |
| Sen. 10 | | | S10 |
| V40 | | | V40 |
| Din | | | S11 |
| VBus | | | VBus |

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| Solar / Options | | | |
|---|---|---|---|
| Description | Factory setting | Change to | Note |
| Schematic | 000 | 023 | Adjust the desired schematic (e.g. schematic 28) |
| System | 1 | 4 | System 4 for two collectors and one stratified store |
| Loading | 1 | | |
| ST2 on | Yes | | |

| Solar / Adjustment values | | | |
|---|---|---|---|
| Description | Factory setting | Change to | Note |
| Tstmax | 60 | | Adjust the desired maximum store temperature for store 1 top. |
| Tst2max | 60 | | Adjust the desired maximum store temperature for store 1 bottom. |
| ΔTon | 5,0 | | Adjust the desired switch-on temperature difference for store 1 top. |
| ΔToff | 3,0 | | Adjust the desired switch-off temperature difference for store 1 top. |
| ΔTset | 10,0 | | Adjust the desired set temperature difference for store 1 top. Once the adjusted temperature difference is reached, the speed is increased by 10 %. |
| ΔT2on | 5,0 | | Adjust the desired switch-on temperature difference for store 1 bottom. |
| ΔT2off | 3,0 | | Adjust the desired switch-off temperature difference for store 1 bottom |
| ΔT2set | 10,0 | | Adjust the desired set temperature difference for store 1 bottom. Once the adjusted temperature difference is reached, the speed is increased by 10 %. |
| Priority ST1 | 1 | | Priority store 1 top |
| Priority ST2 | 2 | | Non-priority store 1 bottom |
| Tcolsec | 130 | | Adjust this value to 200°C when the collector emergency shutdown function is not to start. |

| Solar / Expert | | | |
|---|---|---|---|
| Description | Factory setting | Change to | Note |
| Tcolmin | 10 | | Adjust the minimum temperature of collector 1. |
| TCol2min | 10 | | Adjust the minimum temperature of collector 2. |
| ΔT-Stmax | 2,0 | | This menu is used for changing the hysteresis for maximum limitation of store 1 top. |
| ΔT-St2max | 2,0 | | This menu is used for changing the hysteresis for maximum limitation of store 1 bottom. |
| t-st | 2 | | The loading break time for the priority logic function can be changed (see appendix priority logic) |
| t-circ. | 15 | | The oscillating loading time for the priority logic function can be changed (see appendix priority logic) |
| ΔT-Col | 2 | | The collector rise temperature during the break time of the priority logic function can be changed (see appendix priority logic) |
| **Control** | **Solar / Expert / Solar control** | | |

| Arrangement / Adjustment values | | | |
|---|---|---|---|
| Description | Factory setting | Change to | Note |
| Date | 01.01.2006 | | Adjust the actual date |
| Time | 12:01 | | Adjust the actual clock time. |

| User code | | | |
|---|---|---|---|
| Description | Factory setting | Change to | Note |
| Code | 0262 | 0000 | After having adjusted the controller settings, enter the user code 0000.<br>Note: The expert menu is "hidden", parameters and balance values cannot be changed |

| Expert | | | |
|---|---|---|---|
| Description | Factory setting | Change to | Note |
| ΔT too high | Yes | | In this menu, the messages „ΔT too high“ and „Non-ret. valve“ can be switched off |
| Non-ret. valve | Yes | | |
| Message relay | No | | |
| Message inp. | No | | |
| Chimney sweeper | No | | |
| **Sensors** | **Expert / Sensors** | | |
| CS-Type | E | | Adjust the CS-type, with the solar cell connected:<br>A = 1, B = 2, C = 3, D = 4, E = 5, F = 6, G = 7 |
| CS Adjust | | | The CS adjustment should be carried out with the irradiation sensor disconnected or when it is dark (select with adjustment button)! The sensor type must have been previously selected! |
| CS Offset | | Control value | This menu indicates the offset after the solar cell has been adjusted. |
| Sensor 1 | 0,0 | | In this menu, an offset can be allocated to the measured values of sensors 1 to 10 (e.g. in the case of long sensor cables) Adjustment range +/- 5 K (the temperatures indicated in the measured values menu will be corrected using the values adjusted in this menu). |
| ⋮ | | | |
| Sensor 10 | 0,0 | | |
| **Relay** | **Expert / Relay** | | |
| Min speed 1 | 30 | | In this menu the minimum speed of the circulating pumps can be adjusted; at 100% speed control is deactivated. |
| Min speed 2 | 30 | | |
| Min speed 3 | 30 | | |
| **Language** | **Expert / Language** | | |
| German | | | |
| English | | | |
| français | | | |
| castellano | | | |
| italiano | | | |

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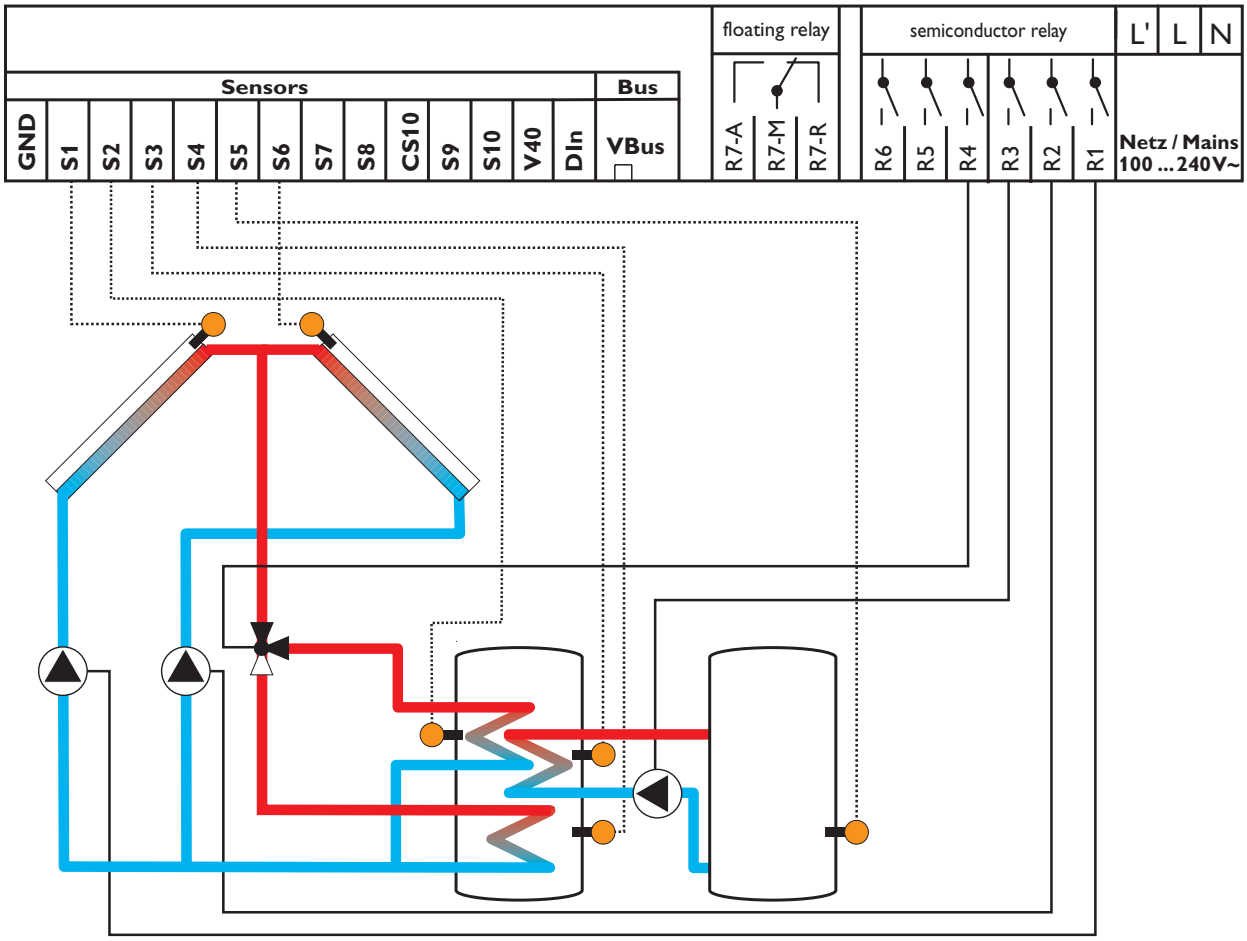
## System 24

### System description:

The controller compares the temperatures at the collector sensors S1 and S6 to the store temperatures at the store sensors S2 and S4. If one of the measured temperature differences is higher than the adjusted switch-on differences, the corresponding pump (P1, P2) will be switched on and the corresponding store zone will be loaded up to the maximum temperature at most via the valve (V1). The priority logic causes prior loading of the upper zone of the store. Heat exchange control to an existant store (P3) can be carried out via another temperature differential function (S3 heat source/S5 heat sink).




| Relay output | Description | Note | Terminals |
|---|---|---|---|
| Relay 1 | P1 | Solar pump collector 1 | R1-A |
| Relay 2 | P2 | Solar pump collector 2 | R2-A |
| Relay 3 | P3 | Heat exchange pump | R3-A |
| Relay 4 | V1 | 3-port valve store top / bottom | R4-A |
| Relay 5 | | | R5-A |
| Relay 6 | | | R6-A |
| Relay 7 | | | R7-A |
| Relay 7 | | | R7 R |
| Relay 7 | | | R7 M |

| Sensor input | Description | Note | Terminals |
|---|---|---|---|
| Sen. 1 | S1 | Collector 1, solar | S1 |
| Sen. 2 | S2 | Store 1 top, solar | S2 |
| Sen. 3 | S3 | Store 1 top, heat exchange | S3 |
| Sen. 4 | S4 | Store 1 bottom, solar | S4 |
| Sen. 5 | S5 | Store 2 bottom, heat exchange | S5 |
| Sen. 6 | S6 | Collector 2, solar | S6 |
| Sen. 7 | | | S7 |
| Sen. 8 | | | S8 |
| CS10 | | | CS10 |
| Sen. 9 | | | S9 |
| Sen. 10 | | | S10 |
| V40 | | | V40 |
| Din | | | S11 |
| VBus | | | VBus |

| Solar / Options | | | |
|---|---|---|---|
| Description | Factory setting | Change to | Note |
| Schematic | 000 | 024 | Adjust the desired schematic (e.g. schematic 28) |
| System | 1 | 4 | System 4 for two collectors and one stratified store |
| Loading | 1 | | |
| ST2 on | Yes | | |

| Solar / Adjustment values | | | |
|---|---|---|---|
| Description | Factory setting | Change to | Note |
| Tstmax | 60 | | Adjust the desired maximum store temperature for store 1 top. |
| Tst2max | 60 | | Adjust the desired maximum store temperature for store 1 bottom. |
| ΔTon | 5,0 | | Adjust the desired switch-on temperature difference for store 1 top. |
| ΔToff | 3,0 | | Adjust the desired switch-off temperature difference for store 1 top. |
| ΔTset | 10,0 | | Adjust the desired set temperature difference for store 1 top. Once the adjusted temperature difference is reached, the speed is increased by 10 %. |
| ΔT2on | 5,0 | | Adjust the desired switch-on temperature difference for store 1 bottom. |
| ΔT2off | 3,0 | | Adjust the desired switch-off temperature difference for store 1 bottom |
| ΔT2set | 10,0 | | Adjust the desired set temperature difference for store 1 bottom. Once the adjusted temperature difference is reached, the speed is increased by 10 %. |
| Priority ST1 | 1 | | Priority store 1 top |
| Priority ST2 | 2 | | Non-priority store 1 bottom |
| Tcolsec | 130 | | Adjust this value to 200°C when the collector emergency shutdown function is not to start. |

| Solar / Expert | | | |
|---|---|---|---|
| Description | Factory setting | Change to | Note |
| Tcolmin | 10 | | Adjust the minimum temperature of collector 1. |
| TCol2min | 10 | | Adjust the minimum temperature of collector 2. |
| ΔT-Stmax | 2,0 | | This menu is used for changing the hysteresis for maximum limitation of store 1 top. |
| ΔT-St2max | 2,0 | | This menu is used for changing the hysteresis for maximum limitation of store 1 bottom. |
| t-st | 2 | | The loading break time for the priority logic function can be changed (see appendix priority logic) |
| t-circ. | 15 | | The oscillating loading time for the priority logic function can be changed (see appendix priority logic) |
| ΔT-Col | 2 | | The collector rise temperature during the break time of the priority logic function can be changed (see appendix priority logic) |
| **Control** | **Solar / Expert / Solar control** | | |

| Arrangement / Options | | | |
|---|---|---|---|
| Description | Factory setting | Change to | Note |
| Thermo. 2 | No | Yes | Thermostat function (maximum limitation) for heat exchange |
| ΔT-Func.5 | No | Yes | Differential function for heat exchange |
| Timer 1 | No | | In this menu, the timer of function block 1 can be activated (Thermo. 1 / 2 and ΔT-Func.5) |

| Arangement / Adjustment values | | | |
|---|---|---|---|
| Description | Factory setting | Change to | Note |
| Date | 01.01.2006 | | Adjust the actual date |
| Time | 12:01 | | Adjust the actual clock time. |
| Th2on | 40 | | Switch-on temperature for the heat exchange pump |
| Th2off | 45 | | Switch-off temperature (maximum limitation) for the heat exchange pump |
| ΔT5on | 5,0 | | Switch-on difference for the heat exchange pump |
| ΔT5off | 3,0 | | Switch-off difference for the heat exchange pump |
| **Timer 1** | **See Arrangement / Adjustment values / Timer 1** | | |

| Arrangement / Expert | | | |
|---|---|---|---|
| Description | Factory setting | Change to | Note |
| Sen-Th2 | 4 | 5 | Sensor S5 is allocated to thermostat function 2. |
| Sen1-ΔT5 | 3 | Do not change the value as the sensor has already been correctly allocated. | |
| Sen2-ΔT5 | 4 | 5 | Sensor S5 is used as the heat sink sensor and is allocated to differential function 5. |

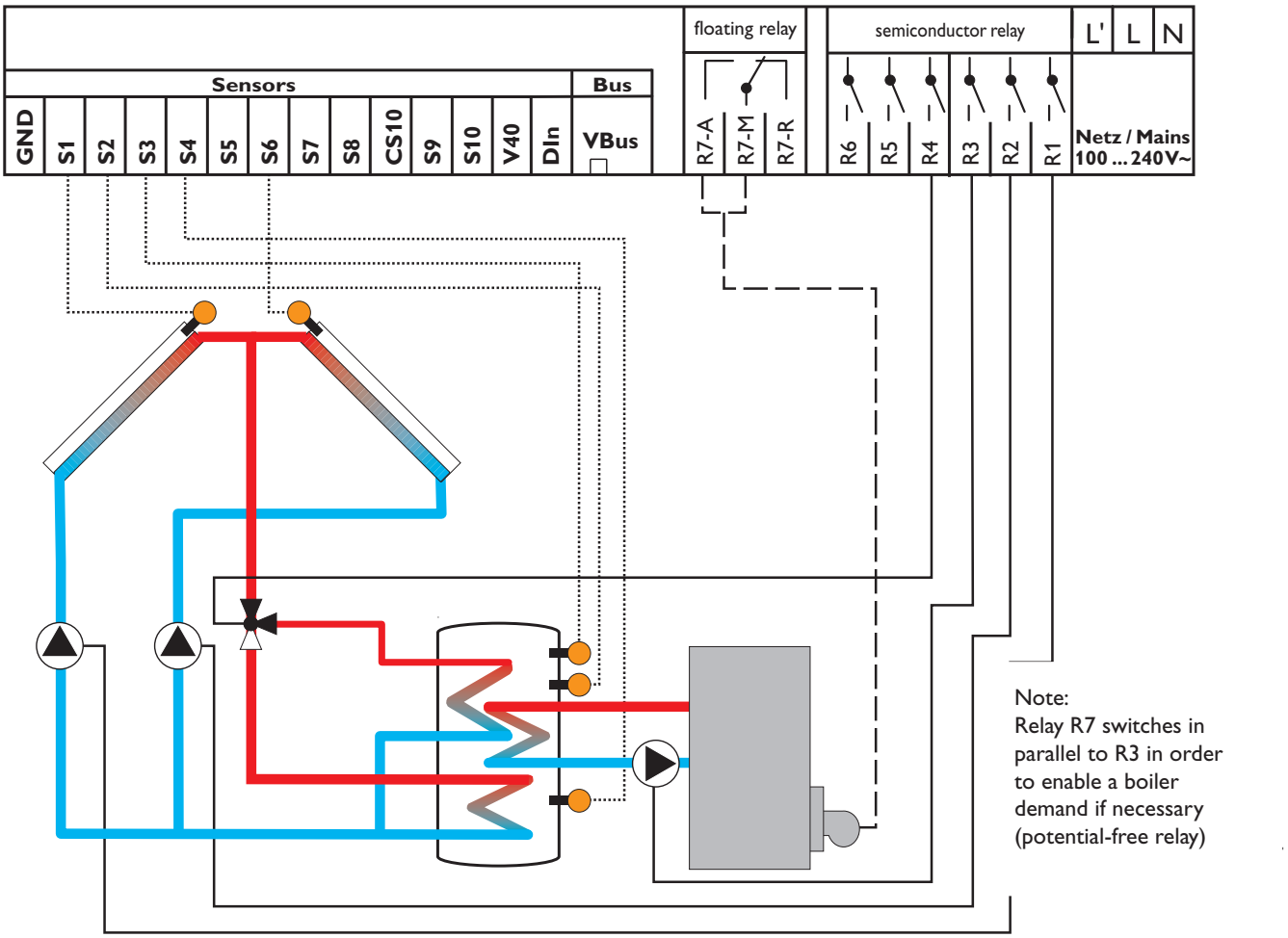
| User code | | | |
|---|---|---|---|
| Description | Factory setting | Change to | Note |
| Code | 0262 | 0000 | After having adjusted the controller settings, enter the user code 0000.<br>Note: The expert menu is "hidden", parameters and balance values cannot be changed |

| Expert | | | |
|---|---|---|---|
| Description | Factory setting | Change to | Note |
| ΔT too high | Yes | | In this menu, the messages „ΔT too high“ and „Non-ret. valve“ can be switched off |
| Non-ret. valve | Yes | | |
| Message relay | No | | |
| Message inp. | No | | |
| Chimney sweeper | No | | |
| **Sensors** | **Expert / Sensors** | | |
| CS-Type | E | | Adjust the CS-type, with the solar cell connected:<br>A = 1, B = 2, C = 3, D = 4, E = 5, F = 6, G = 7 |
| CS Adjust | | | The CS adjustment should be carried out with the irradiation sensor disconnected or when it is dark (select with adjustment button)! The sensor type must have been previously selected! |
| CS Offset | | Control value | This menu indicates the offset after the solar cell has been adjusted. |
| Sensor 1 | 0,0 | | In this menu, an offset can be allocated to the measured values of sensors 1 to 10 (e.g. in the case of long sensor cables) Adjustment range +/- 5 K (the temperatures indicated in the measured values menu will be corrected using the values adjusted in this menu). |
| : | | | |
| Sensor 10 | 0,0 | | |
| **Relay** | **Expert / Relay** | | |
| Min speed 1 | 30 | | In this menu the minimum speed of the circulating pumps can be adjusted; at 100% speed control is deactivated. |
| Min speed 2 | 30 | | |
| Min speed 3 | 30 | | |
| **Language** | **Expert / Language** | | |
| German | | | |
| English | | | |
| français | | | |
| castellano | | | |
| italiano | | | |

## System 25

**System description:**

The controller compares the temperatures at the collector sensors S1 and S6 to the store temperatures at the store sensors S2 and S4. If one of the measured temperature differences is higher than the adjusted switch-on differences, the corresponding pump (P1, P2) will be switched on and the corresponding store zone will be loaded up to the maximum temperature at most via valve (V1). The priority logic causes prior loading of the upper zone of the store. Domestic hot water afterheating (P3) is possible via a thermostat function (S3).




Note:
Relay R7 switches in parallel to R3 in order to enable a boiler demand if necessary (potential-free relay)

| Relay output | Description | Note | Terminals |
|---|---|---|---|
| Relay 1 | P1 | Solar pump collector 1 | R1-A |
| Relay 2 | P2 | Solar pump collector 2 | R2-A |
| Relay 3 | P3 | Boiler pump | R3-A |
| Relay 4 | V1 | 3-port valve store top / bottom | R4-A |
| Relay 5 | | | R5-A |
| Relay 6 | | | R6-A |
| Relay 7 | Boiler demand | Potential-free contact | R7-A |
| Relay 7 | | | R7 R |
| Relay 7 | Boiler demand | Potential-free contact | R7 M |

| Sensor input | Description | Note | Terminals |
|---|---|---|---|
| Sen. 1 | S1 | Collector 1, solar | S1 |
| Sen. 2 | S2 | Store 1 top, solar | S2 |
| Sen. 3 | S3 | Store 1 top, afterheating | S3 |
| Sen. 4 | S4 | Store 1 bottom, solar | S4 |
| Sen. 5 | | | S5 |
| Sen. 6 | S6 | Collector 2, solar | S6 |
| Sen. 7 | | | S7 |
| Sen. 8 | | | S8 |
| CS10 | | | CS10 |
| Sen. 9 | | | S9 |
| Sen. 10 | | | S10 |
| V40 | | | V40 |
| Din | | | S11 |
| VBus | | | VBus |

| Solar / Options | | | |
|---|---|---|---|
| Description | Factory setting | Change to | Note |
| Schematic | 000 | 025 | Adjust the desired schematic (e.g. schematic 28) |
| System | 1 | 4 | System 4 for two collectors and one stratified store |
| Loading | 1 | | |
| ST2 on | Yes | | |

| Solar / Adjustment values | | | |
|---|---|---|---|
| Description | Factory setting | Change to | Note |
| Tstmax | 60 | | Adjust the desired maximum store temperature for store 1 top. |
| Tst2max | 60 | | Adjust the desired maximum store temperature for store 1 bottom. |
| ΔTon | 5,0 | | Adjust the desired switch-on temperature difference for store 1 top. |
| ΔToff | 3,0 | | Adjust the desired switch-off temperature difference for store 1 top. |
| ΔTset | 10,0 | | Adjust the desired set temperature difference for store 1 top. Once the adjusted temperature difference is reached, the speed is increased by 10 %. |
| ΔT2on | 5,0 | | Adjust the desired switch-on temperature difference for store 1 bottom. |
| ΔT2off | 3,0 | | Adjust the desired switch-off temperature difference for store 1 bottom |
| ΔT2set | 10,0 | | Adjust the desired set temperature difference for store 1 bottom. Once the adjusted temperature difference is reached, the speed is increased by 10 %. |
| Priority ST1 | 1 | | Priority store 1 top |
| Priority ST2 | 2 | | Non-priority store 1 bottom |
| Tcolsec | 130 | | Adjust this value to 200°C when the collector emergency shutdown function is not to start. |

| Solar / Expert | | | |
|---|---|---|---|
| Description | Factory setting | Change to | Note |
| Tcolmin | 10 | | Adjust the minimum temperature of collector 1. |
| TCol2min | 10 | | Adjust the minimum temperature of collector 2. |
| ΔT-Stmax | 2,0 | | This menu is used for changing the hysteresis for maximum limitation of store 1 top. |
| ΔT-St2max | 2,0 | | This menu is used for changing the hysteresis for maximum limitation of store 1 bottom. |
| t-st | 2 | | The loading break time for the priority logic function can be changed (see appendix priority logic) |
| t-circ. | 15 | | |
| ΔT-Col | 2 | | The collector rise temperature during the break time of the priority logic function can be changed (see appendix priority logic) |
| **Control** | **Solar / Expert / Solar control** | | |

| Arrangement / Options | | | |
|---|---|---|---|
| Description | Factory setting | Change to | Note |
| Thermo. 1 | No | Yes | Thermostat function for afterheating |
| Timer 1 | No | | In this menu, a timer of function block 1 can be activated (Thermo. 1 / 2 and ΔT-Func.5) |
| Thermo. 9 | No | Yes | Thermostat function for afterheating (boiler demand) |
| Timer 5 | No | | In this menu, a timer of function block 5 can be activated (Thermo. 9 / 10 and ΔT-Func.9) |

| Arrangement / Adjustment values | | | |
|---|---|---|---|
| Description | Factory setting | Change to | Note |
| Date | 01.01.2006 | | Adjust the actual date |
| Time | 12:01 | | Adjust the actual clock time. |
| Th1on | 40 | 55 | Switch-on temperature for afterheating |
| Th1off | 45 | 60 | Switch-off temperature (minimun limitation) for afterheating |
| **Timer 1** | **See Arrangement / Adjustment values / Timer 1** | | |
| Th9on | 40 | 55 | Switch-on difference for boiler demand |
| Th9off | 45 | 60 | Switch-off difference for boiler demand |
| **Timer 5** | **See Arrangement / Adjustment values / Timer 5** | | |

| Arrangement / Expert | | | |
|---|---|---|---|
| Description | Factory setting | Change to | Note |
| Sen-Th1 | 3 | Do not change the value as the sensor has already been correctly allocated. | |
| Sen-Th9 | 9 | 3 | Sensor S3 is allocated to thermostat function 9. |

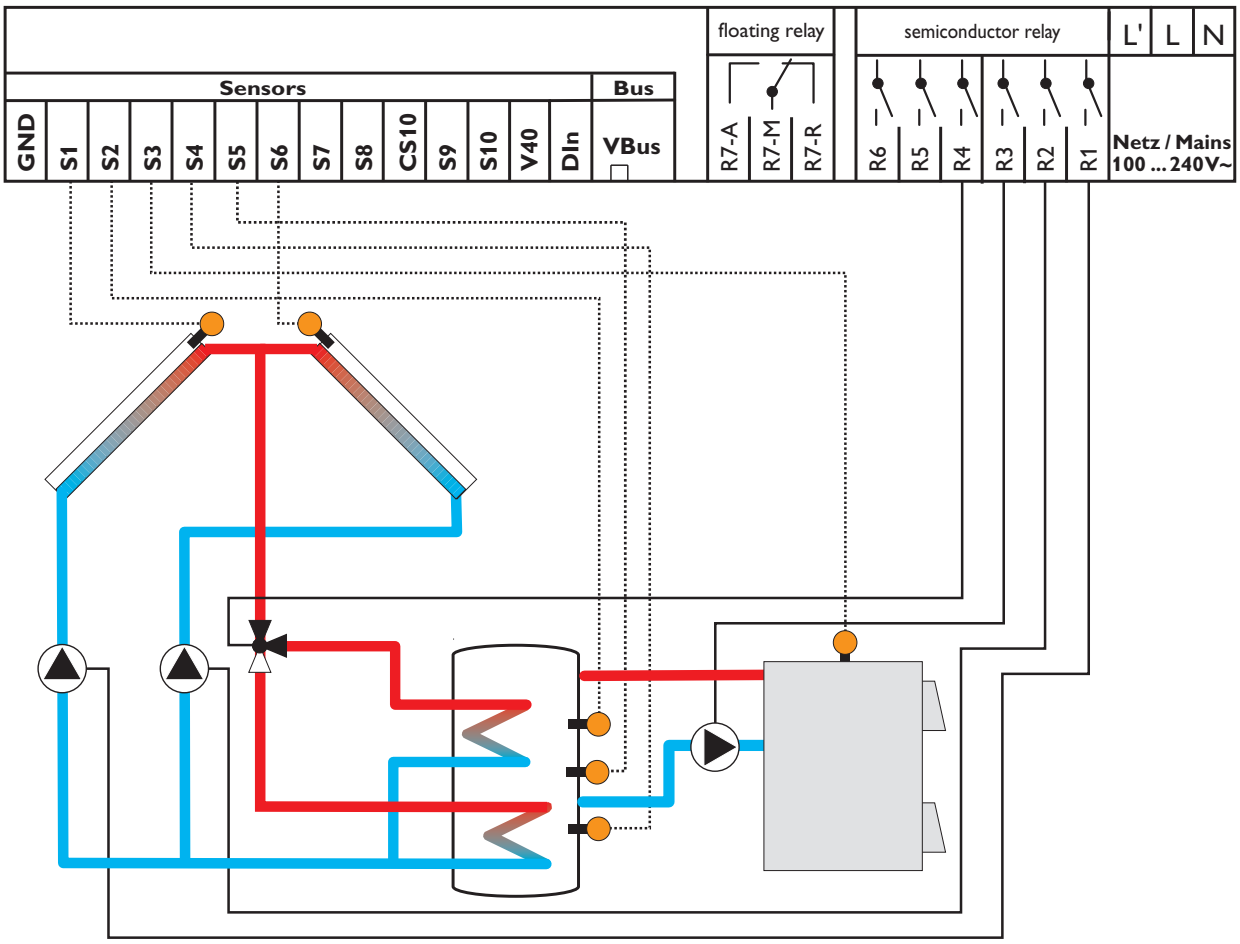
| User code | | | |
|---|---|---|---|
| Description | Factory setting | Change to | Note |
| Code | 0262 | 0000 | After having adjusted the controller settings, enter the user code 0000.<br>Note: The expert menu is "hidden", parameters and balance values cannot be changed |

| Expert | | | |
|---|---|---|---|
| Description | Factory setting | Change to | Note |
| ΔT too high | Yes | | In this menu, the messages „ΔT too high“ and „Non-ret. valve“ can be switched off |
| Non-ret. valve | Yes | | |
| Message relay | No | | |
| Message inp. | No | | |
| Chimney sweeper | No | | |
| **Sensors** | **Expert / Sensors** | | |
| CS-Type | E | | Adjust the CS-type, with the solar cell connected:<br>A = 1, B = 2, C = 3, D = 4, E = 5, F = 6, G = 7 |
| CS Adjust | | | The CS adjustment should be carried out with the irradiation sensor disconnected or when it is dark (select with adjustment button)! The sensor type must have been previously selected! |
| CS Offset | | Control value | This menu indicates the offset after the solar cell has been adjusted. |
| Sensor 1 | 0,0 | | In this menu, an offset can be allocated to the measured values of sensors 1 to 10 (e.g. in the case of long sensor cables) Adjustment range +/- 5 K (the temperatures indicated in the measured values menu will be corrected using the values adjusted in this menu). |
| ⋮ | | | |
| Sensor 10 | 0,0 | | |
| **Relay** | **Expert / Relay** | | |
| Min speed 1 | 30 | | In this menu the minimum speed of the circulating pumps can be adjusted; at 100% speed control is deactivated. |
| Min speed 2 | 30 | | |
| Min speed 3 | 30 | | |
| **Language** | **Expert / Language** | | |
| German | | | |
| English | | | |
| français | | | |
| castellano | | | |
| italiano | | | |

## System 26

### System description:

The controller compares the temperatures at the collector sensors S1 and S6 to the store temperatures at the store sensors S2 and S4. If one of the measured temperature differences is higher than the adjusted switch-on differences, the corresponding pump (P1, P2) will be switched on and the corresponding store zone will be loaded up to the maximum temperature at most via the valve (V1). The priority logic causes prior loading of the upper zone of the store.
With another temperature differential function (S3/S5), afterheating of the store can be carried out with a solid fuel boiler (P3).




| Relay output | Description | Note | Terminals |
|---|---|---|---|
| Relay 1 | P1 | Solar pump collector 1 | R1-A |
| Relay 2 | P2 | Solar pump collector 2 | R2-A |
| Relay 3 | P3 | Boiler pump | R3-A |
| Relay 4 | V1 | 3-port valve store top / bottom | R4-A |
| Relay 5 | | | R5-A |
| Relay 6 | | | R6-A |
| Relay 7 | | | R7-A |
| Relay 7 | | | R7 R |
| Relay 7 | | | R7 M |

| Sensor input | Description | Note | Terminals |
|---|---|---|---|
| Sen. 1 | S1 | Collector 1, solar | S1 |
| Sen. 2 | S2 | Store 1 top, solar | S2 |
| Sen. 3 | S3 | Boiler, afterheating | S3 |
| Sen. 4 | S4 | Store 1 bottom, solar | S4 |
| Sen. 5 | S5 | Store 1 center, afterheating | S5 |
| Sen. 6 | S6 | Collector 2, solar | S6 |
| Sen. 7 | | | S7 |
| Sen. 8 | | | S8 |
| CS10 | | | CS10 |
| Sen. 9 | | | S9 |
| Sen. 10 | | | S10 |
| V40 | | | V40 |
| Din | | | S11 |
| VBus | | | VBus |

| Solar / Options | | | |
|---|---|---|---|
| Description | Factory setting | Change to | Note |
| Schematic | 000 | 026 | Adjust the desired schematic (e.g. schematic 28) |
| System | 1 | 4 | System 4 for two collectors and one stratified store |
| Loading | 1 | | |
| ST2 on | Yes | | |

| Solar / Adjustment values | | | |
|---|---|---|---|
| Description | Factory setting | Change to | Note |
| Tstmax | 60 | | Adjust the desired maximum store temperature for store 1 top. |
| Tst2max | 60 | | Adjust the desired maximum store temperature for store 1 bottom. |
| ΔTon | 5,0 | | Adjust the desired switch-on temperature difference for store 1 top. |
| ΔToff | 3,0 | | Adjust the desired switch-off temperature difference for store 1 top. |
| ΔTset | 10,0 | | Adjust the desired set temperature difference for store 1 top. Once the adjusted temperature difference is reached, the speed is increased by 10 %. |
| ΔT2on | 5,0 | | Adjust the desired switch-on temperature difference for store 1 bottom. |
| ΔT2off | 3,0 | | Adjust the desired switch-off temperature difference for store 1 bottom |
| ΔT2set | 10,0 | | Adjust the desired set temperature difference for store 1 bottom. Once the adjusted temperature difference is reached, the speed is increased by 10 %. |
| Priority ST1 | 1 | | Priority store 1 top |
| Priority ST2 | 2 | | Non-priority store 1 bottom |
| Tcolsec | 130 | | Adjust this value to 200°C when the collector emergency shutdown function is not to start. |

| Solar / Expert | | | |
|---|---|---|---|
| Description | Factory setting | Change to | Note |
| Tcolmin | 10 | | Adjust the minimum temperature of collector 1. |
| TCol2min | 10 | | Adjust the minimum temperature of collector 2. |
| ΔT-Stmax | 2,0 | | This menu is used for changing the hysteresis for maximum limitation of store 1 top. |
| ΔT-St2max | 2,0 | | This menu is used for changing the hysteresis for maximum limitation of store 1 bottom. |
| t-st | 2 | | The loading break time for the priority logic function can be changed (see appendix priority logic) |
| t-circ. | 15 | | The oscillating loading time for the priority logic function can be changed (see appendix priority logic) |
| ΔT-Col | 2 | | The collector rise temperature during the break time of the priority logic function can be changed (see appendix priority logic) |
| **Control** | **Solar / Expert / Solar control** | | |

| Arrangement / Options | | | |
|---|---|---|---|
| Description | Factory setting | Change to | Note |
| Thermo. 1 | No | Yes | Thermostat function (minimum limitation) for solid fuel boiler |
| Thermo. 2 | No | Yes | Thermostat function (maximum limitation) for the store |
| ΔT-Func.5 | No | Yes | Differential function for the solid fuel boiler |
| Timer 1 | No | | In this menu, the timer of function block 1 can be activated (Thermo. 1 / 2 and ΔT-Func.5) |

| Arrangement / Adjustment values | | | |
|---|---|---|---|
| Description | Factory setting | Change to | Note |
| Date | 01.01.2006 | | Adjust the actual date |
| Time | 12:01 | | Adjust the actual clock time. |
| Th1on | 40 | 60 | Switch-on temperature (minimum limitation) for the solid fuel boiler pump |
| Th1off | 45 | 58 | Switch-off temperature for the solid fuel boiler pump |
| Th2on | 40 | 55 | Switch-on temperature for the solid fuel boiler pump |
| Th2off | 45 | 60 | Switch-off temperature (maximum limitation) for the solid fuel boiler pump |
| ΔT5on | 5,0 | | Switch-on difference for the solid fuel boiler pump |
| ΔT5off | 3,0 | | Switch-off difference for the solid fuel buoiler pump |
| **Timer 1** | **See Arrangement / Adjustment values / Timer 1** | | |

| Arrangement / Expert | | | |
|---|---|---|---|
| Description | Factory setting | Change to | Note |
| Sen-Th1 | 3 | Do not change the value as the sensor has already been correctly allocated. | |
| Sen-Th2 | 4 | 5 | Sensor S5 is allocated to thermostat function 2. |
| Sen1-ΔT5 | 3 | Do not change the value as the sensor has already been correctly allocated. | |
| Sen2-ΔT5 | 4 | 5 | Sensor S5 is used as the heat sink sensor and is allocated to differential function 5. |

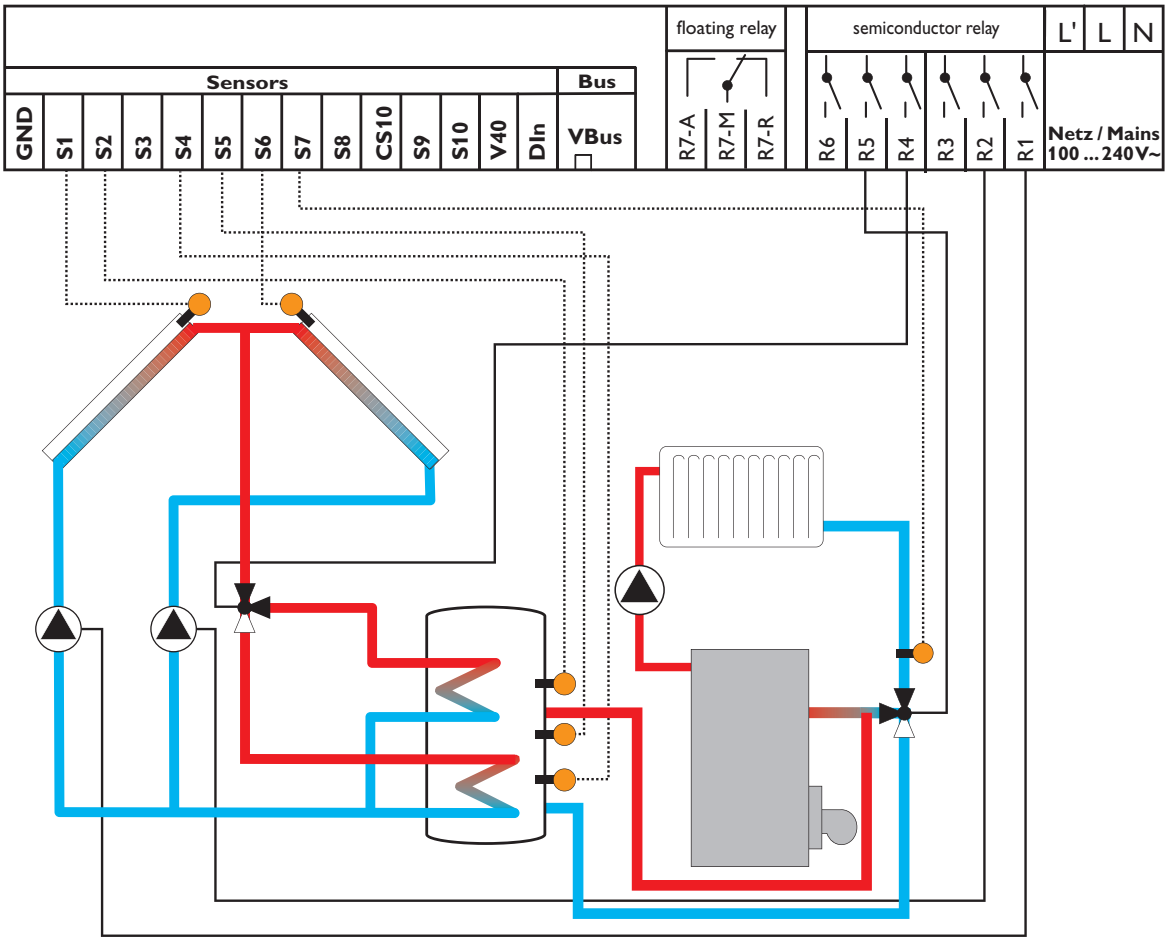
| User code | | | |
|---|---|---|---|
| Description | Factory setting | Change to | Note |
| Code | 0262 | 0000 | After having adjusted the controller settings, enter the user code 0000.<br>Note: The expert menu is "hidden", parameters and balance values cannot be changed |

| Expert | | | |
|---|---|---|---|
| Description | Factory setting | Change to | Note |
| ΔT too high | Yes | | In this menu, the messages „ΔT too high“ and „Non-ret. valve“ can be switched off |
| Non-ret. valve | Yes | | |
| Message relay | No | | |
| Message inp. | No | | |
| Chimney sweeper | No | | |
| **Sensors** | **Expert / Sensors** | | |
| CS-Type | E | | Adjust the CS-type, with the solar cell connected:<br>A = 1, B = 2, C = 3, D = 4, E = 5, F = 6, G = 7 |
| CS Adjust | | | The CS adjustment should be carried out with the irradiation sensor disconnected or when it is dark (select with adjustment button)! The sensor type must have been previously selected! |
| CS Offset | | Control value | This menu indicates the offset after the solar cell has been adjusted. |
| Sensor 1 | 0,0 | | In this menu, an offset can be allocated to the measured values of sensors 1 to 10 (e.g. in the case of long sensor cables) Adjustment range +/- 5 K (the temperatures indicated in the measured values menu will be corrected using the values adjusted in this menu). |
| ⋮ | | | |
| Sensor 10 | 0,0 | | |
| **Relay** | **Expert / Relay** | | |
| Min speed 1 | 30 | | In this menu the minimum speed of the circulating pumps can be adjusted; at 100% speed control is deactivated. |
| Min speed 2 | 30 | | |
| Min speed 3 | 30 | | |
| **Language** | **Expert / Language** | | |
| German | | | |
| English | | | |
| français | | | |
| castellano | | | |
| italiano | | | |

## System 27

### System description:

The controller compares the temperatures at the collector sensors S1 and S6 to the store temperatures at the store sensors S2 and S4. If one of the measured temperature differences is higher than the adjusted switch-on differences, the corresponding pump (P1, P2) will be switched on and the corresponding store zone will be loaded up to the maximum temperature at most via the valve (V1). The priority logic causes prior loading of the upper zone of the store.
With another temperature differential function (S5 heat source / S7 heat sink) heating circuit return preheating is possible via V2.




| Relay output | Description | Note | Terminals |
|---|---|---|---|
| Relay 1 | P1 | Solar pump collector 1 | R1-A |
| Relay 2 | P2 | Solar pump collector 2 | R2-A |
| Relay 3 | | | R3-A |
| Relay 4 | V1 | 3-port valve store top / bottom | R4-A |
| Relay 5 | V2 | 3-port valve, return preheating | R5-A |
| Relay 6 | | | R6-A |
| Relay 7 | | | R7-A |
| Relay 7 | | | R7 R |
| Relay 7 | | | R7 M |

| Sensor input | Description | Note | Terminals |
|---|---|---|---|
| Sen. 1 | S1 | Collector 1, solar | S1 |
| Sen. 2 | S2 | Store 1 top, solar | S2 |
| Sen. 3 | | | S3 |
| Sen. 4 | S4 | Store 1 bottom, solar | S4 |
| Sen. 5 | S5 | Store 1 center, return preheating | S5 |
| Sen. 6 | S6 | Collector 2, solar | S6 |
| Sen. 7 | S7 | Heating return, return preheating | S7 |
| Sen. 8 | | | S8 |
| CS10 | | | CS10 |
| Sen. 9 | | | S9 |
| Sen. 10 | | | S10 |
| V40 | | | V40 |
| Din | | | S11 |
| VBus | | | VBus |

| Solar / Options | | | |
|---|---|---|---|
| Description | Factory setting | Change to | Note |
| Schematic | 000 | 027 | Adjust the desired schematic (e.g. schematic 28) |
| System | 1 | 4 | System 4 for two collectors and one stratified store |
| Loading | 1 | | |
| ST2 on | Yes | | |

| Solar / Adjustment values | | | |
|---|---|---|---|
| Description | Factory setting | Change to | Note |
| Tstmax | 60 | | Adjust the desired maximum store temperature for store 1 top. |
| Tst2max | 60 | | Adjust the desired maximum store temperature for store 1 bottom. |
| ΔTon | 5,0 | | Adjust the desired switch-on temperature difference for store 1 top. |
| ΔToff | 3,0 | | Adjust the desired switch-off temperature difference for store 1 top. |
| ΔTset | 10,0 | | Adjust the desired set temperature difference for store 1 top. Once the adjusted temperature difference is reached, the speed is increased by 10 %. |
| ΔT2on | 5,0 | | Adjust the desired switch-on temperature difference for store 1 bottom. |
| ΔT2off | 3,0 | | Adjust the desired switch-off temperature difference for store 1 bottom |
| ΔT2set | 10,0 | | Adjust the desired set temperature difference for store 1 bottom. Once the adjusted temperature difference is reached, the speed is increased by 10 %. |
| Priority ST1 | 1 | | Priority store 1 top |
| Priority ST2 | 2 | | Non-priority store 1 bottom |
| Tcolsec | 130 | | Adjust this value to 200°C when the collector emergency shutdown function is not to start. |

| Solar / Expert | | | |
|---|---|---|---|
| Description | Factory setting | Change to | Note |
| Tcolmin | 10 | | Adjust the minimum temperature of collector 1. |
| TCol2min | 10 | | Adjust the minimum temperature of collector 2. |
| ΔT-Stmax | 2,0 | | This menu is used for changing the hysteresis for maximum limitation of store 1 top. |
| ΔT-St2max | 2,0 | | This menu is used for changing the hysteresis for maximum limitation of store 1 bottom. |
| t-st | 2 | | The loading break time for the priority logic function can be changed (see appendix priority logic) |
| t-circ. | 15 | | The oscillating loading time for the priority logic function can be changed (see appendix priority logic) |
| ΔT-Col | 2 | | The collector rise temperature during the break time of the priority logic function can be changed (see appendix priority logic) |
| **Control** | **Solar / Expert / Solar control** | | |

| Arrangement / Options | | | |
|---|---|---|---|
| Description | Factory setting | Change to | Note |
| ΔT-Func.7 | No | Yes | Differential function for return preheating |

| Arrangement / Adjustment values | | | |
|---|---|---|---|
| Description | Factory setting | Change to | Note |
| Date | 01.01.2006 | | Adjust the actual date |
| Time | 12:01 | | Adjust the actual clock time. |
| ΔT7on | 5,0 | | Switch-on difference for return preheating |
| ΔT7off | 3,0 | | Switch-off difference for return preheating |

| Arrangement / Expert | | | |
|---|---|---|---|
| Description | Factory setting | Change to | Note |
| Sen1-ΔT7 | 5 | Do not change the value as the sensor has already been correctly allocated. | |
| Sen2-ΔT7 | 6 | 7 | Sensor S7 is used as the heat sink sensor and is allocated to differential function 7. |

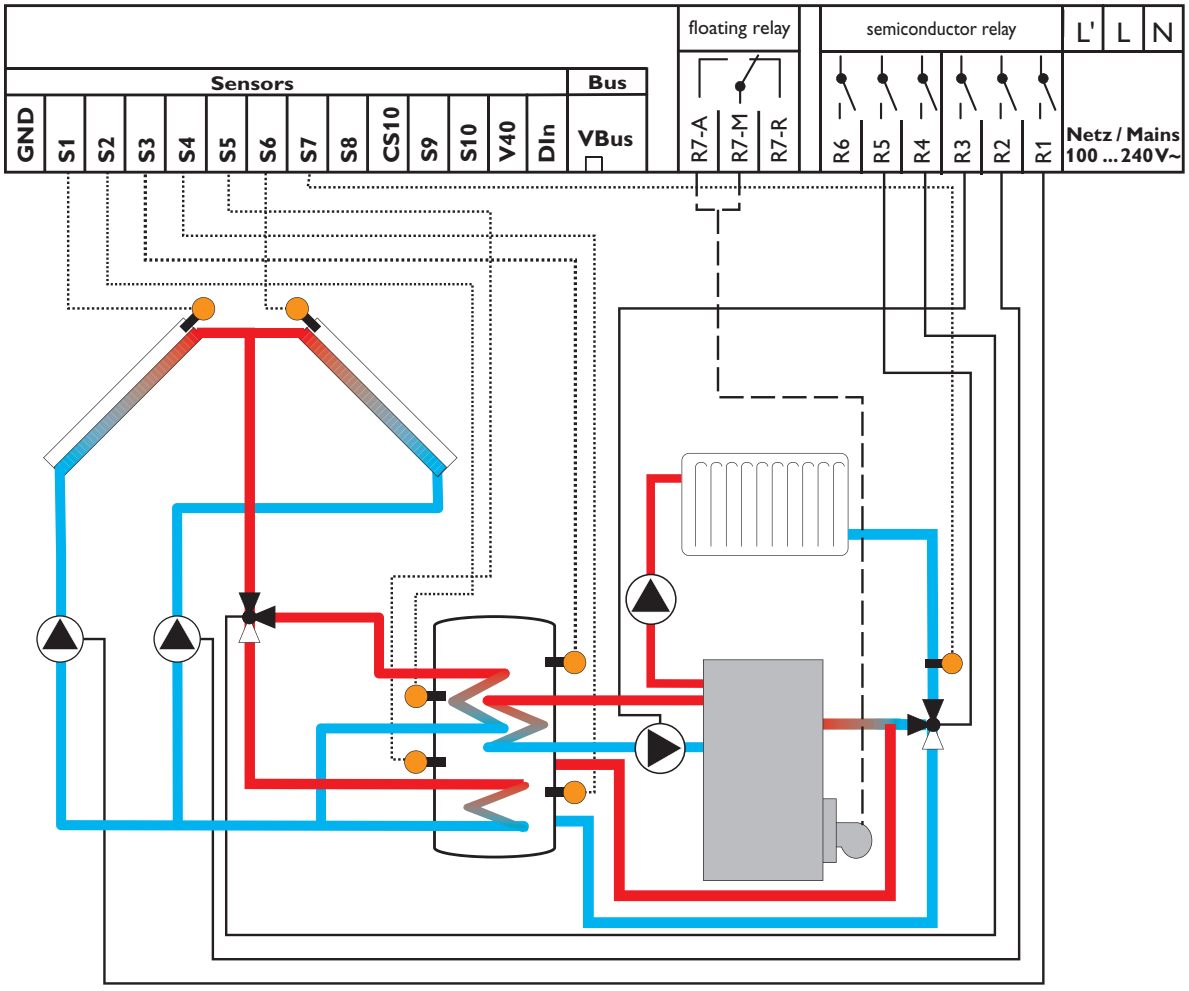
| User code | | | |
|---|---|---|---|
| Description | Factory setting | Change to | Note |
| Code | 0262 | 0000 | After having adjusted the controller settings, enter the user code 0000.<br>Note: The expert menu is "hidden", parameters and balance values cannot be changed |

| Expert | | | |
|---|---|---|---|
| Description | Factory setting | Change to | Note |
| ΔT too high | Yes | | In this menu, the messages „ΔT too high“ and „Non-ret. valve“ can be switched off |
| Non-ret. valve | Yes | | |
| Message relay | No | | |
| Message inp. | No | | |
| Chimney sweeper | No | | |
| **Sensors** | **Expert / Sensors** | | |
| CS-Type | E | | Adjust the CS-type, with the solar cell connected:<br>A = 1, B = 2, C = 3, D = 4, E = 5, F = 6, G = 7 |
| CS Adjust | | | The CS adjustment should be carried out with the irradiation sensor disconnected or when it is dark (select with adjustment button)! The sensor type must have been previously selected! |
| CS Offset | | Control value | This menu indicates the offset after the solar cell has been adjusted. |
| Sensor 1 | 0,0 | | In this menu, an offset can be allocated to the measured values of sensors 1 to 10 (e.g. in the case of long sensor cables) Adjustment range +/- 5 K (the temperatures indicated in the measured values menu will be corrected using the values adjusted in this menu). |
| ⋮ | | | |
| Sensor 10 | 0,0 | | |
| **Relay** | **Expert / Relay** | | |
| Min speed 1 | 30 | | In this menu the minimum speed of the circulating pumps can be adjusted; at 100% speed control is deactivated. |
| Min speed 2 | 30 | | |
| Min speed 3 | 30 | | |
| **Language** | **Expert / Language** | | |
| German | | | |
| English | | | |
| français | | | |
| castellano | | | |
| italiano | | | |

## System 28

### System description:

The controller compares the temperatures at the collector sensors S1 and S6 to the store temperatures at the store sensors S2 and S4. If one of the measured temperature differences is higher than the adjusted switch-on differences, the corresponding pump (P1, P2) will be switched on and the corresponding store zone will be loaded up to the maximum temperature at most via the valve (V1). The priority logic causes prior loading of the upper zone of the store. With another temperature differential function (S5 heat source / S7 heat sink) heating circuit return preheating (heating circuit backup) is possible via V2. With a thermostat function (S3) domestic hot water afterheating (P3) can be carried out.




| Relay output | Description | Note | Terminals |
|---|---|---|---|
| Relay 1 | P1 | Solar pump collector 1 | R1-A |
| Relay 2 | P2 | Solar pump collector 2 | R2-A |
| Relay 3 | P3 | Boiler pump | R3-A |
| Relay 4 | V1 | 3-port valve store top / bottom | R4-A |
| Relay 5 | V2 | 3-port valve, return preheating | R5-A |
| Relay 6 | | | R6-A |
| Relay 7 | Boiler demand | Potential-free contact | R7-A |
| Relay 7 | | | R7 R |
| Relay 7 | Boiler demand | Potential-free contact | R7 M |

| Sensor input | Description | Note | Terminals |
|---|---|---|---|
| Sen. 1 | S1 | Collector 1, solar | S1 |
| Sen. 2 | S2 | Store 1 top, solar | S2 |
| Sen. 3 | S3 | Store 1 top, afterheating | S3 |
| Sen. 4 | S4 | Store 1 bottom, solar | S4 |
| Sen. 5 | S5 | Store 1 center, return preheating | S5 |
| Sen. 6 | S6 | Collector 2, solar | S6 |
| Sen. 7 | S7 | Heating return, return preheating | S7 |
| Sen. 8 | | | S8 |
| CS10 | | | CS10 |
| Sen. 9 | | | S9 |
| Sen. 10 | | | S10 |
| V40 | | | V40 |
| Din | | | S11 |
| VBus | | | VBus |

| Solar / Options | | | |
|---|---|---|---|
| Description | Factory setting | Change to | Note |
| Schematic | 000 | 028 | Adjust the desired schematic (e.g. schematic 28) |
| System | 1 | 4 | System 4 for two collectors and one stratified store |
| Loading | 1 | | |
| ST2 on | Yes | | |

| Solar / Adjustment values | | | |
|---|---|---|---|
| Description | Factory setting | Change to | Note |
| Tstmax | 60 | | Adjust the desired maximum store temperature for store 1 top. |
| Tst2max | 60 | | Adjust the desired maximum store temperature for store 1 bottom. |
| ΔTon | 5,0 | | Adjust the desired switch-on temperature difference for store 1 top. |
| ΔToff | 3,0 | | Adjust the desired switch-off temperature difference for store 1 top. |
| ΔTset | 10,0 | | Adjust the desired set temperature difference for store 1 top. Once the adjusted temperature difference is reached, the speed is increased by 10 %. |
| ΔT2on | 5,0 | | Adjust the desired switch-on temperature difference for store 1 bottom. |
| ΔT2off | 3,0 | | Adjust the desired switch-off temperature difference for store 1 bottom |
| ΔT2set | 10,0 | | Adjust the desired set temperature difference for store 1 bottom. Once the adjusted temperature difference is reached, the speed is increased by 10 %. |
| Priority ST1 | 1 | | Priority store 1 top |
| Priority ST2 | 2 | | Non-priority store 1 bottom |
| Tcolsec | 130 | | Adjust this value to 200°C when the collector emergency shutdown function is not to start. |

| Solar / Expert | | | |
|---|---|---|---|
| Description | Factory setting | Change to | Note |
| Tcolmin | 10 | | Adjust the minimum temperature of collector 1. |
| TCol2min | 10 | | Adjust the minimum temperature of collector 2. |
| ΔT-Stmax | 2,0 | | This menu is used for changing the hysteresis for maximum limitation of store 1 top. |
| ΔT-St2max | 2,0 | | This menu is used for changing the hysteresis for maximum limitation of store 1 bottom. |
| t-st | 2 | | The loading break time for the priority logic function can be changed (see appendix priority logic) |
| t-circ. | 15 | | The oscillating loading time for the priority logic function can be changed (see appendix priority logic) |
| ΔT-Col | 2 | | The collector rise temperature during the break time of the priority logic function can be changed (see appendix priority logic) |
| **Control** | **Solar / Expert / Solar control** | | |

| Arrangement / Options | | | |
|---|---|---|---|
| Description | Factory setting | Change to | Note |
| Thermo. 1 | No | Yes | Thermostat function for afterheating |
| ΔT-Func.7 | No | Yes | Differential function for return preheating |
| Thermo.9 | No | Yes | Thermostat function for afterheating (boiler demand) |

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| Arrangement / Adjustment values | | | |
|---|---|---|---|
| Description | Factory setting | Change to | Note |
| Date | 01.01.2006 | | Adjust the actual date |
| Time | 12:01 | | Adjust the actual clock time. |
| Th1on | 40 | 55 | Switch-on temperature for the loading pump |
| Th1off | 45 | 60 | Switch-off temperature (minimum limitation) for the loading pump |
| **Timer 1** | **See Arrangement / Adjustment values / Timer 1** | | |
| ΔT7on | 5,0 | | Switch-on difference for return preheating |
| ΔT7off | 3,0 | | Switch-off difference for return preheating |
| Th9on | 40 | 55 | Switch-on difference for boiler demand |
| Th9off | 45 | 60 | Switch-off difference for boiler demand |
| **Timer 5** | **See Arrangement / Adjustment values / Timer 5** | | |

| Arrangement / Expert | | | |
|---|---|---|---|
| Description | Factory setting | Change to | Note |
| Sen-Th1 | 3 | Do not change the value as the sensor has already been correctly allocated. | |
| Sen1-ΔT7 | 5 | | |
| Sen2-ΔT7 | 6 | 7 | Sensor S7 is used as the heat sink sensor and is allocated to differential function 7. |
| Sen-Th9 | 9 | 3 | Sensor S3 is allocated to thermostat function 9. |

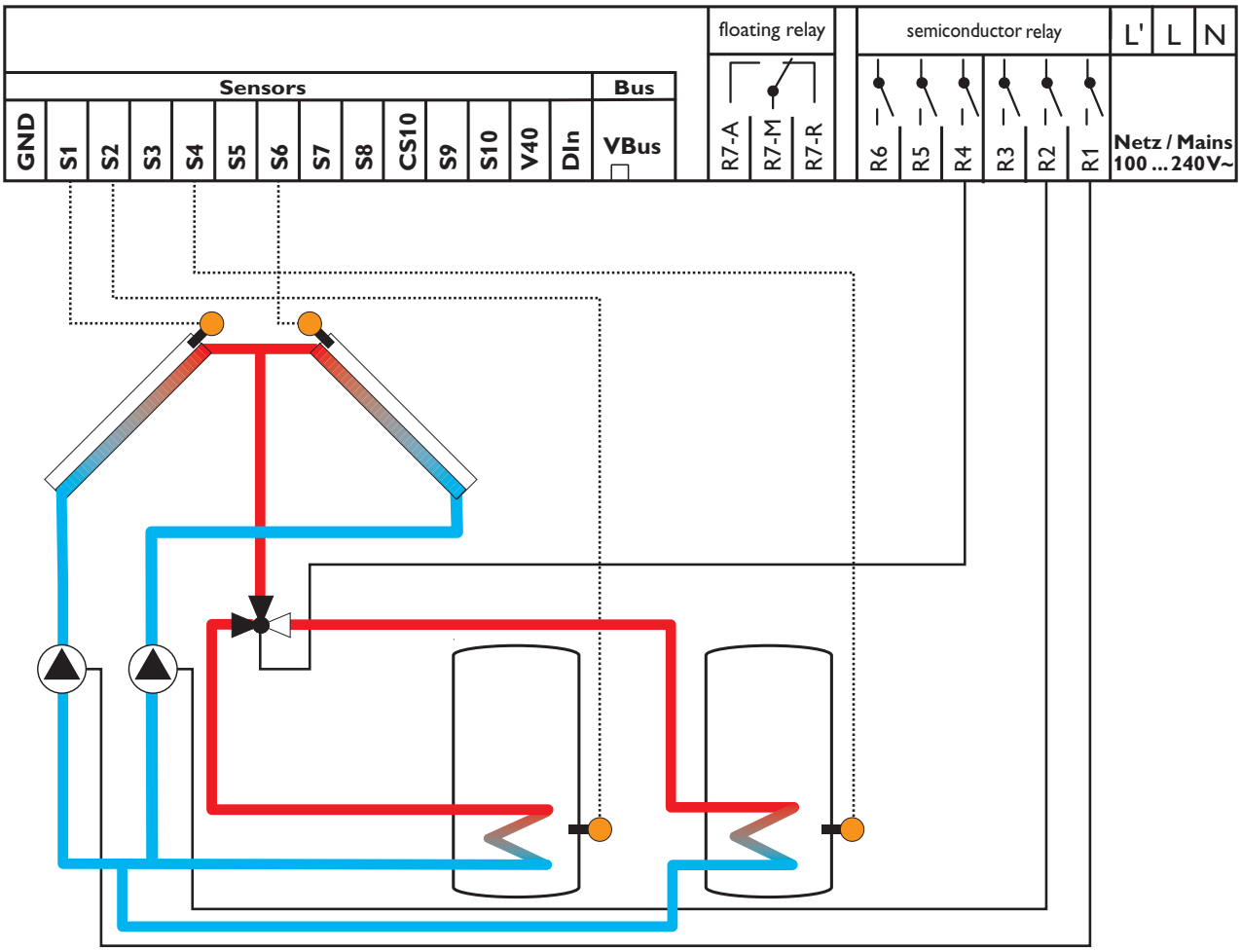
| User code | | | |
|---|---|---|---|
| Description | Factory setting | Change to | Note |
| Code | 0262 | 0000 | After having adjusted the controller settings, enter the user code 0000. Note: The expert menu is "hidden", parameters and balance values cannot be changed |

| Expert | | | |
|---|---|---|---|
| Description | Factory setting | Change to | Note |
| ΔT too high | Yes | | In this menu, the messages „ΔT too high“ and „Non-ret. valve“ can be switched off |
| Non-ret. valve | Yes | | |
| Message relay | No | | |
| Message inp. | No | | |
| Chimney sweeper | No | | |
| **Sensors** | **Expert / Sensors** | | |
| CS-Type | E | | Adjust the CS-type, with the solar cell connected: A = 1, B = 2, C = 3, D = 4, E = 5, F = 6, G = 7 |
| CS Adjust | | | The CS adjustment should be carried out with the irradiation sensor disconnected or when it is dark (select with adjustment button)! The sensor type must have been previously selected! |
| CS Offset | | Control value | This menu indicates the offset after the solar cell has been adjusted. |
| Sensor 1 | 0,0 | | In this menu, an offset can be allocated to the measured values of sensors 1 to 10 (e.g. in the case of long sensor cables) Adjustment range +/- 5 K (the temperatures indicated in the measured values menu will be corrected using the values adjusted in this menu). |
| : | | | |
| Sensor 10 | 0,0 | | |
| **Relay** | **Expert / Relay** | | |
| Min speed 1 | 30 | | In this menu the minimum speed of the circulating pumps can be adjusted; at 100% speed control is deactivated. |
| Min speed 2 | 30 | | |
| Min speed 3 | 30 | | |
| **Language** | **Expert / Language** | | |
| German | | | |
| English | | | |
| français | | | |
| castellano | | | |
| italiano | | | |

## System 29

### System description:

The controller compares the temperatures at the collector sensors S1 and S6 to the temperatures at S2 and S4. If one of the measured temperature differences is higher than the adjusted switch-on differences, the corresponding pump (P1, P2) will be switched on and the corresponding store will be loaded up to the maximum temperature at most via the valve (V1).




| Relay output | Description | Note | Terminals |
|---|---|---|---|
| Relay 1 | P1 | Solar pump collector 1 | R1-A |
| Relay 2 | P2 | Solar pump collector 2 | R2-A |
| Relay 3 | | | R3-A |
| Relay 4 | V1 | 3-port valve store top / bottom | R4-A |
| Relay 5 | | | R5-A |
| Relay 6 | | | R6-A |
| Relay 7 | | | R7-A |
| Relay 7 | | | R7 R |
| Relay 7 | | | R7 M |

| Sensor input | Description | Note | Terminals |
|---|---|---|---|
| Sen. 1 | S1 | Collector 1, solar | S1 |
| Sen. 2 | S2 | Store 1 bottom, solar | S2 |
| Sen. 3 | | | S3 |
| Sen. 4 | S4 | Store 2 bottom, solar | S4 |
| Sen. 5 | | | S5 |
| Sen. 6 | S6 | Collector 2, solar | S6 |
| Sen. 7 | | | S7 |
| Sen. 8 | | | S8 |
| CS10 | | | CS10 |
| Sen. 9 | | | S9 |
| Sen. 10 | | | S10 |
| V40 | | | V40 |
| Din | | | S11 |
| VBus | | | VBus |

| Solar / Options | | | |
|---|---|---|---|
| Description | Factory setting | Change to | Note |
| Schematic | 000 | 029 | Adjust the desired schematic (e.g. schematic 28) |
| System | 1 | 4 | System 4 for two collectors and two stores |
| Loading | 1 | | |
| ST2 on | Yes | | |

| Solar / Adjustment values | | | |
|---|---|---|---|
| Description | Factory setting | Change to | Note |
| Tstmax | 60 | | Adjust the desired maximum store temperature for store 1 bottom. |
| Tst2max | 60 | | Adjust the desired maximum store temperature for store 2 bottom. |
| ΔTon | 5,0 | | Adjust the desired switch-on temperature difference for store 1 bottom. |
| ΔToff | 3,0 | | Adjust the desired switch-off temperature difference for store 1 bottom |
| ΔTset | 10,0 | | Adjust the desired set temperature difference for store 1. Once the adjusted temperature difference is reached, the speed is increased by 10 %. |
| ΔT2on | 5,0 | | Adjust the desired switch-on temperature difference for store 2 bottom. |
| ΔT2off | 3,0 | | Adjust the desired switch-off temperature difference for store 2 bottom |
| ΔT2set | 10,0 | | Adjust the desired set temperature difference for store 2 bottom. Once the adjusted temperature difference is reached, the speed is increased by 10 %. |
| Priority ST1 | 1 | | Priority store 1 bottom |
| Priority ST2 | 2 | | Non-priority store 2 bottom |
| Tcolsec | 130 | | Adjust this value to 200°C when the collector emergency shutdown function is not to start. |

| Solar / Expert | | | |
|---|---|---|---|
| Description | Factory setting | Change to | Note |
| Tcolmin | 10 | | Adjust the minimum temperature of collector 1. |
| TCol2min | 10 | | Adjust the minimum temperature of collector 2. |
| ΔT-Stmax | 2,0 | | This menu is used for changing the hysteresis for maximum limitation of store 1 bottom. |
| ΔT-St2max | 2,0 | | This menu is used for changing the hysteresis for maximum limitation of store 2 bottom. |
| t-st | 2 | | The loading break time for the priority logic function can be changed (see appendix priority logic) |
| t-circ. | 15 | | The oscillating loading time for the priority logic function can be changed (see appendix priority logic) |
| ΔT-Col | 2 | | The collector rise temperature during the break time of the priority logic function can be changed (see appendix priority logic) |
| **Control** | **Solar / Expert / Solar control** | | |

| Arrangment / Adjustment values | | | |
|---|---|---|---|
| Description | Factory setting | Change to | Note |
| Date | 01.01.2006 | | Adjust the actual date |
| Time | 12:01 | | Adjust the actual clock time. |

| User code | | | |
|---|---|---|---|
| Description | Factory setting | Change to | Note |
| Code | 0262 | 0000 | After having adjusted the controller settings, enter the user code 0000.<br>Note: The expert menu is "hidden", parameters and balance values cannot be changed |

| Expert | | | |
|---|---|---|---|
| Description | Factory setting | Change to | Note |
| ΔT too high | Yes | | In this menu, the messages „ΔT too high“ and „Non-ret. valve“ can be switched off |
| Non-ret. valve | Yes | | |
| Message relay | No | | |
| Message inp. | No | | |
| Chimney sweeper | No | | |
| **Sensors** | **Expert / Sensors** | | |
| CS-Type | E | | Adjust the CS-type, with the solar cell connected:<br>A = 1, B = 2, C = 3, D = 4, E = 5, F = 6, G = 7 |
| CS Adjust | | | The CS adjustment should be carried out with the irradiation sensor disconnected or when it is dark (select with adjustment button)! The sensor type must have been previously selected! |
| CS Offset | | Control value | This menu indicates the offset after the solar cell has been adjusted. |
| Sensor 1 | 0,0 | | In this menu, an offset can be allocated to the measured values of sensors 1 to 10 (e.g. in the case of long sensor cables) Adjustment range +/- 5 K (the temperatures indicated in the measured values menu will be corrected using the values adjusted in this menu). |
| ⋮ | | | |
| Sensor 10 | 0,0 | | |
| **Relay** | **Expert / Relay** | | |
| Min speed 1 | 30 | | In this menu the minimum speed of the circulating pumps can be adjusted; at 100% speed control is deactivated. |
| Min speed 2 | 30 | | |
| Min speed 3 | 30 | | |
| **Language** | **Expert / Language** | | |
| German | | | |
| English | | | |
| français | | | |
| castellano | | | |
| italiano | | | |

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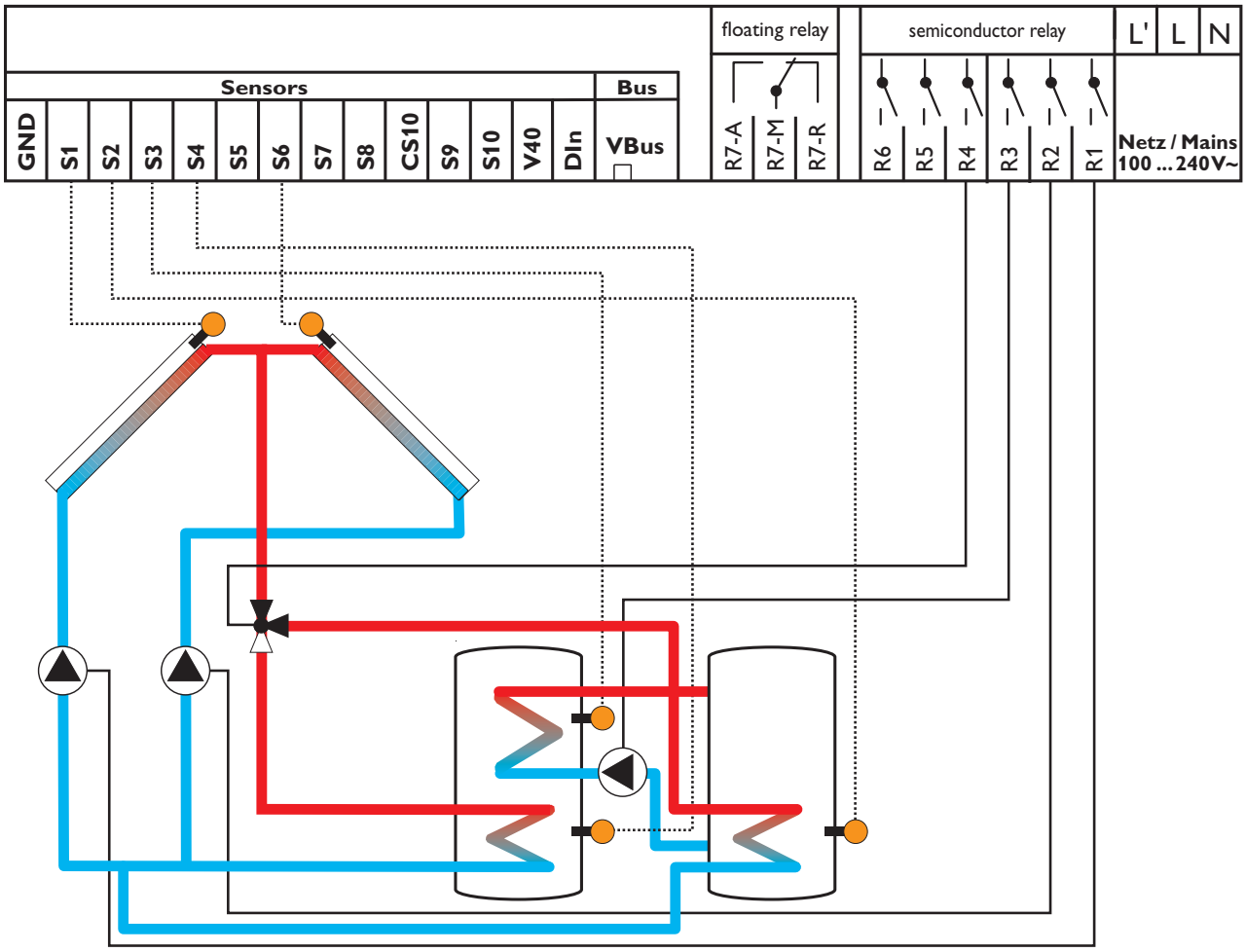
## System 30

### System description:

The controller compares the temperatures at the collector sensors S1 and S6 to the temperatures at S2 and S4. If one of the measured temperature differences is higher than the adjusted switch-on differences, the corresponding pump (P1, P2) will be switched on and the corresponding store will be loaded up to the maximum temperature at most via the valve (V1).
Heat exchange control to store 1 (P2) can be carried out using another temperature differential function (S3 heat source/S2 heat sink).




| Relay output | Description | Note | Terminals |
|---|---|---|---|
| Relay 1 | P1 | Solar pump collector 1 | R1-A |
| Relay 2 | P2 | Solar pump collector 2 | R2-A |
| Relay 3 | P3 | Heat exchange pump | R3-A |
| Relay 4 | V1 | 3-port valve store top / bottom | R4-A |
| Relay 5 | | | R5-A |
| Relay 6 | | | R6-A |
| Relay 7 | | | R7-A |
| Relay 7 | | | R7 R |
| Relay 7 | | | R7 M |

| Sensor input | Description | Note | Terminals |
|---|---|---|---|
| Sen. 1 | S1 | Collector 1, solar | S1 |
| Sen. 2 | S2 | Store 1 bottom, Solar heat exchange | S2 |
| Sen. 3 | S3 | Store 2 top, heat exchange | S3 |
| Sen. 4 | S4 | Store 2 bottom, solar | S4 |
| Sen. 5 | | | S5 |
| Sen. 6 | S6 | Collector 2 solar | S6 |
| Sen. 7 | | | S7 |
| Sen. 8 | | | S8 |
| CS10 | | | CS10 |
| Sen. 9 | | | S9 |
| Sen. 10 | | | S10 |
| V40 | | | V40 |
| Din | | | S11 |
| VBus | | | VBus |

| Solar / Options | | | |
|---|---|---|---|
| Description | Factory setting | Change to | Note |
| Schematic | 000 | 030 | Adjust the desired schematic (e.g. schematic 28) |
| System | 1 | 4 | System 4 for two collectors and two stores |
| Loading | 1 | | |
| ST2 on | Yes | | |

| Solar / Adjustment values | | | |
|---|---|---|---|
| Description | Factory setting | Change to | Note |
| Tstmax | 60 | | Adjust the desired maximum store temperature for store 1 bottom. |
| Tst2max | 60 | | Adjust the desired maximum store temperature for store 2 bottom. |
| ΔTon | 5,0 | | Adjust the desired switch-on temperature difference for store 1 bottom. |
| ΔToff | 3,0 | | Adjust the desired switch-off temperature difference for store 1 bottom |
| ΔTset | 10,0 | | Adjust the desired set temperature difference for store 1. Once the adjusted temperature difference is reached, the speed is increased by 10 %. |
| ΔT2on | 5,0 | | Adjust the desired switch-on temperature difference for store 2 bottom. |
| ΔT2off | 3,0 | | Adjust the desired switch-off temperature difference for store 2 bottom |
| ΔT2set | 10,0 | | Adjust the desired set temperature difference for store 2 bottom. Once the adjusted temperature difference is reached, the speed is increased by 10 %. |
| Priority ST1 | 1 | | Priority store 1 bottom |
| Priority ST2 | 2 | | Non-priority store 2 bottom |
| Tcolsec | 130 | | Adjust this value to 200°C when the collector emergency shutdown function is not to start. |

| Solar / Expert | | | |
|---|---|---|---|
| Description | Factory setting | Change to | Note |
| Tcolmin | 10 | | Adjust the minimum temperature of collector 1. |
| TCol2min | 10 | | Adjust the minimum temperature of collector 2. |
| ΔT-Stmax | 2,0 | | This menu is used for changing the hysteresis for maximum limitation of store 1 bottom. |
| ΔT-St2max | 2,0 | | This menu is used for changing the hysteresis for maximum limitation of store 2 bottom. |
| t-st | 2 | | The loading break time for the priority logic function can be changed (see appendix priority logic) |
| t-circ. | 15 | | The oscillating loading time for the priority logic function can be changed (see appendix priority logic) |
| ΔT-Col | 2 | | The collector rise temperature during the break time of the priority logic function can be changed (see appendix priority logic) |
| **Control** | **Solar / Expert / Solar control** | | |

| Arrangement / Options | | | |
|---|---|---|---|
| Description | Factory setting | Change to | Note |
| Thermo. 2 | No | Yes | Thermostat function for heat exchange |
| ΔT-Func.5 | No | Yes | Differential function for heat exchange |

| Arrangement / Adjustment values | | | |
|---|---|---|---|
| Description | Factory setting | Change to | Note |
| Date | 01.01.2006 | | Adjust the actual date |
| Time | 12:01 | | Adjust the actual clock time |
| Th2on | 40 | 55 | Switch-on temperature for heat exchange |
| Th2off | 45 | 60 | Switch-off temperature (maximum limitation) for heat exchange |
| ΔT5on | 5,0 | | Switch-on difference for heat exchange |
| ΔT5off | 3,0 | | Switch-off difference for heat exchange |

| Arrangement / Expert | | | |
|---|---|---|---|
| Description | Factory setting | Change to | Note |
| Sen-Th2 | 4 | 2 | Sensor S5 is allocated to thermostat function 3. |
| Sen1-ΔT5 | 3 | Do not change the value as the sensor has already been correctly allocated. | |
| Sen2-ΔT5 | 4 | 2 | Sensor S2 is used as the heat sink sensor and is allocated to differential function 5. |

| User code | | | |
|---|---|---|---|
| Description | Factory setting | Change to | Note |
| Code | 0262 | 0000 | After having adjusted the controller settings, enter the user code 0000.<br>Note: The expert menu is "hidden", parameters and balance values cannot be changed |

| Expert | | | |
|---|---|---|---|
| Description | Factory setting | Change to | Note |
| ΔT too high | Yes | | In this menu, the messages „ΔT too high“ and „Non-ret. valve“ can be switched off |
| Non-ret. valve | Yes | | |
| Message relay | No | | |
| Message inp. | No | | |
| Chimney sweeper | No | | |
| **Sensors** | **Expert / Sensors** | | |
| CS-Type | E | | Adjust the CS-type, with the solar cell connected:<br>A = 1, B = 2, C = 3, D = 4, E = 5, F = 6, G = 7 |
| CS Adjust | | | The CS adjustment should be carried out with the irradiation sensor disconnected or when it is dark (select with adjustment button)! The sensor type must have been previously selected! |
| CS Offset | | Control value | This menu indicates the offset after the solar cell has been adjusted. |
| Sensor 1 | 0,0 | | In this menu, an offset can be allocated to the measured values of sensors 1 to 10 (e.g. in the case of long sensor cables) Adjustment range +/- 5 K (the temperatures indicated in the measured values menu will be corrected using the values adjusted in this menu). |
| : | | | |
| Sensor 10 | 0,0 | | |
| **Relay** | **Expert / Relay** | | |
| Min speed 1 | 30 | | In this menu the minimum speed of the circulating pumps can be adjusted; at 100% speed control is deactivated. |
| Min speed 2 | 30 | | |
| Min speed 3 | 30 | | |
| **Language** | **Expert / Language** | | |
| German | | | |
| English | | | |
| français | | | |
| castellano | | | |
| italiano | | | |

## Priority logic

**Corresponding adjustment values:**

| | Factory setting | Adjustment range |
|---|---|---|
| **Solar / Adjustment values:** | | |
| **Priority ST1** | **1** | 1 - 4 |
| **Priority ST2** | **2** | 1 - 4 |
| **Priority ST3** | **3** | 1 - 4 |
| **Priority ST4** | **4** | 1 - 4 |
| | | |
| **Solar / Expert:** | | |
| **Loading break time [t-st]** | **2 min.** | 1 - 60 min. |
| **Store sequence control [t-circ.]** | **15 min** | 1 - 60 min. |
| **Collector rise temperature [T-col]** | **2 K** | 1 - 10 K. |

**Priority logic:**
The options and parameters mentioned above are used in multi-store systems only.

**Priority / parallel loading:**
If **Priority St1, St2, St3, St4** is set to **1**, the stores with a temperature difference to the collector are loaded in parallel as long as their switch-on conditions are fulfilled.

**Loading break time / store sequence control / collector rise temperature:**

The controller checks whether the stores can be loaded (switch-on difference). When the priority store cannot be loaded, the subordinate stores are checked. If a subordinate store can be loaded, it will be loaded for the **oscillating loading time [t-circ.]** . After this period of time, the loading process stops. The controller monitors the increase in collector temperature. If it increases by the **collector rise temperature [T-Kol]** within the **loading break time [t-st]**, the elapsed break time is set to 0. The break time starts again. As soon as the switch-on condition of the priority store is fulfilled, it will be loaded. If the switch-on condition of the priority store is not fulfilled, loading of the subordinate stores will be continued. If the priority store reaches its maximum temperature, oscillating loading will not be carried out.

If St1 is set to **1, St2** to **2, St3** to **3, St4 to 4** (factory setting) the first store will be loaded first as long as its switch-on conditions are fulfilled. When the selected priority store reaches its adjusted maximum temperature, the subordinate stores will be loaded in numerical order using store sequence control: store 1, then store 2, then store 3, then store 4.

**Example:**
Priority ST1: 2
Priority ST2: 1
Priority ST3: 3
Priority ST4: 2

Store 2 is priorly loaded. If the priority store has reached its adjusted maximum store temperature, the subordinate stores St1 and st4 are loaded in parallel, provided that their switch-on conditions are fulfilled. Store St3 is the last store to be loaded in the priority sequence.

Speed control of the system generally depends on the numerical order of the stores to be loaded.

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**Note**
The design and the specifications can be changed without notice.
The illustrations may differ from the original product.



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