

SOLEX

Mounting
Connection
Operation



SOLEX

GB
manual

Thank you for buying a product.
Please read this manual carefully in order to put this controller to the best possible use.

Content

Imprint	18	2	Operation and functions	23
Technical Data	19	2.1	Setting pushbutton	23
1 Electrical connection	20	2.2	Blinking codes	23
1.1 Overview of the connections	20	2.3	Commissioning	23
1.2 Relay outputs	21	2.4	Adjustments solar cell	23
1.3 Sensors	21	3. Menu structure	24	
1.4 Data communication / Bus	21	4. Function / Option overview	25-26	
1.5 Power supply	22	5. Functions/ Options	27-30	

Imprint

This mounting and operation manual including all parts is copyrighted. Another use outside the copyright requires the approval of RESOL - Elektronische Regelungen GmbH. This especially applies for copies, translations, micro films and the storage into electronic systems.

Editor: RESOL - Elektronische Regelungen GmbH

Important notice:

All descriptions and drawings contained in this manual have been prepared to the best of our knowledge and belief. The drawings in this manual are for the purpose of example and should be used at your own risk.

We cannot be held responsible for any errors. Please note:

Safety regulations:

Please read the following information carefully before installing and operating the controller. This way damage to the solar system by wrong installation will be avoided:

DIN 4757, part 1

Solar heating systems with water and water mixtures as heat transfer medium; Demands to the safety requirements.

DIN 4757, part 2

Solar heating systems with organic heat transfer medium; Demands to safety requirements.

DIN 4757, part 3

Solar heating systems; solar collectors; meanings; safety regulations; Testing of standstill temperature

DIN 4757, part 4

Solar thermal systems; solar collectors; determination of efficiency, heat capacity and pressure loss.

Additionally European standards are worked out:

PrEN 12975-1

Thermal solar systems and their components; collectors, part 1: General demands.

PrEN 12975-2

Thermal solar systems and their components; collectors; part 2: Test processes

PrEN 12976-1

Thermal solar systems and their components; prefabricated systems, part 1: General demands.

PrEN 12976-2

Thermal solar systems and their components; prefabricated systems, part 2: Test processes

PrEN 12977-1

Thermal solar systems and their components; Customer-designed-manufactured systems, part 1: General demands.

It is the responsibility of the installer to ensure current standards and industry best practices are followed.

PrEN 12977-2

Thermal solar systems and their components; Customer-designed

PrEN 12977-3

Thermal solar systems and their components; Customer-designed-manufactured systems, part 3: Performance test of warm water stores.

DIN 1988

Technical rules for the installation of drinking water

DIN 4708

Central hot water warmer systems

DIN 4751

Water heating systems

DIN 4753

Water heater and hot water warmer systems for drinking and process water

DIN 18380

Heating and process water systems

DIN 18381

Gas, water und waste water installation workings DIN 18382

electric conduct und circuit lines in buildings PrEN 12975 Thermal solar systems and their components

VDE 0100

Installation of electric equipment

VDE 0185

General information on the installation of lightning protection

VDE 0190

Main potential equalization of electric systems

- Optimal loading of the store
- Minimisation of heat losses
- Illuminated text display
- RESOLVBus®



Technical data controller

Housing: plastic, PC-ABS and PMMA
Protection category: IP 20 / DIN 40 050

Ambient temp.: 0...40 °C

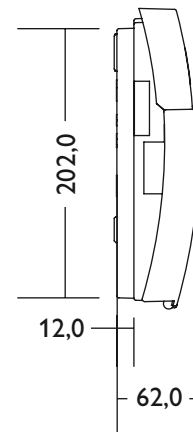
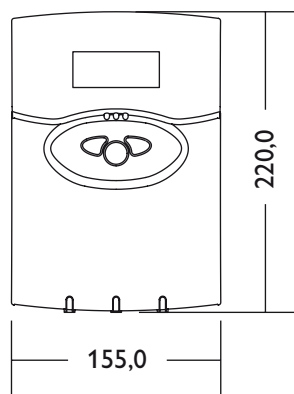
Measurement: 220 x 155 x 62 mm

Operation: via three pushbuttons

Bus: RESOLVBus®

Supply: 210 ... 250 V~

Breaking capacity: 4 (1) A 250V~



1. Electrical connection



Electrostatical discharges can lead to damages of electronic components!



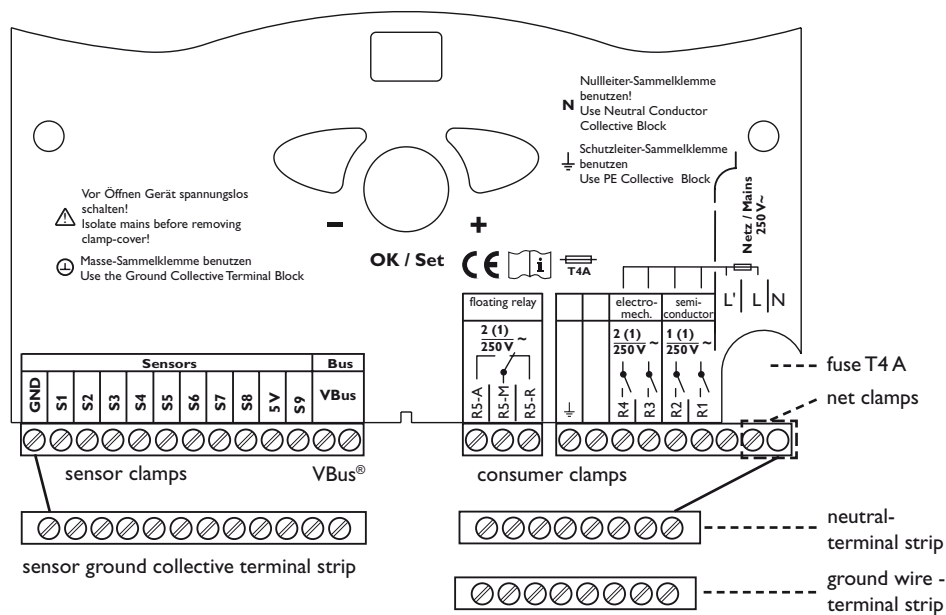
Please note: components are carrying high voltages!

The SOLEX is already wired. Points 2.1 - 2.5 are only for information.

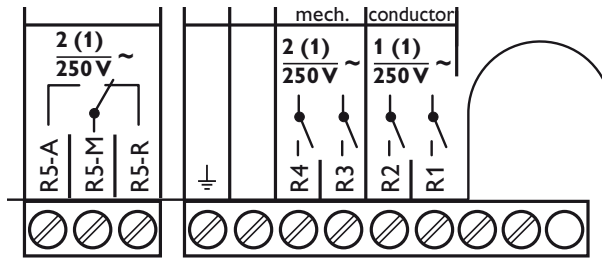
The connection to the power supply system (230 V/AC, 50 ... 60 Hz) is effected by the already clamped line connector. Workings on the current-carrying components of the FriWa-module must only be carried out by a specialist firm regarding current standards and corresponding norms (VDE 0100, VDE 0185, VDE 0190 etc.).

An appropriate earthing is to be carried out at the holding plate of the SOLEX!

1.1 Overview of the electrical connections



1.2 Relay outputs



neutral contact relay



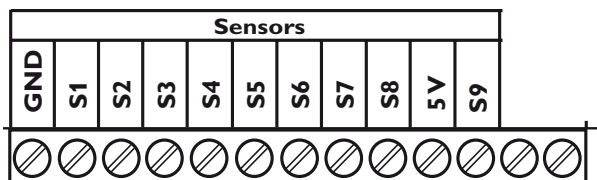
ground collective terminal strip

The controller is equipped with a total of 5 relays to which loads (actuators) like valves and auxiliary relays are to be connected:

- The relays R1 and R2 are semiconductor relays and also suitable for a pump speed control:
 R1 ... R2 = normally open contact R1 ... R2
 N = neutral contact (terminal strip)
 PE = protection conductor PE (terminal strip)
- The relays R3 and R4 are electromechanical relays for normally open contact:
 R3, R4 = normally open contact R3, R4
 N = neutral contact relay N (terminal strip)
 PE = protection conductor PE (terminal strip)
- Relay R5 is a floating relay with a change-over contact:
 R5-M = medium power relay
 R5-A = normally open contact relay
 R5-R = break contact relay
 N = neutral contact relay N (terminal strip)
 PE = protection conductor PE (terminal strip)

R1	R2	R3	R4	R5
P1	P2	V-St	P-bypass error relay operating relay after heating	error relay operating relay after heating

1.3 Sensors



ground collective terminal strip

The controller is equipped with a total of 9 sensor inputs. The earth connection for sensors is effected via the sensor-ground collective terminal strip (GND). The temperature sensors are to be connected with a user-defined polarity to clamps S1 ... S9 and GND.

The power supply of the sensors S7 and S8 is effected via clamp 5V (Us).

S1	S2	S3	S4	S5	S6
Tcol	Tstd	Tstu T1-AH	T-St-FL	Tby T2-AH	T-FL

S7	S8	5V	S9
T-RT	Flow	Us	CS10

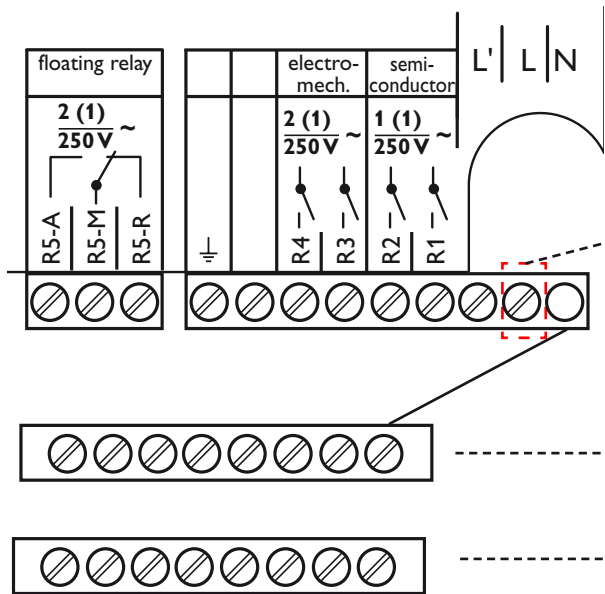
1.4 Data communication / Bus



RESOLVBus
connection clamps

The controller disposes of a RESOLVBus® for data communication with external modules. The connection must be effected by any polarity at the clamps marked with „VBus“.

1.5 Electrical connection



The electric supply of the controller has to be effected via an external power switch (last workstep!), the supply voltage has to be 210... 250 Volt (50 ... 60 Hz). Flexible conductors are either to be fixed with the enclosed strain-relief clamps and the appropriate screws to the housing or to be induced in a guide conductor into the housing of the controller.

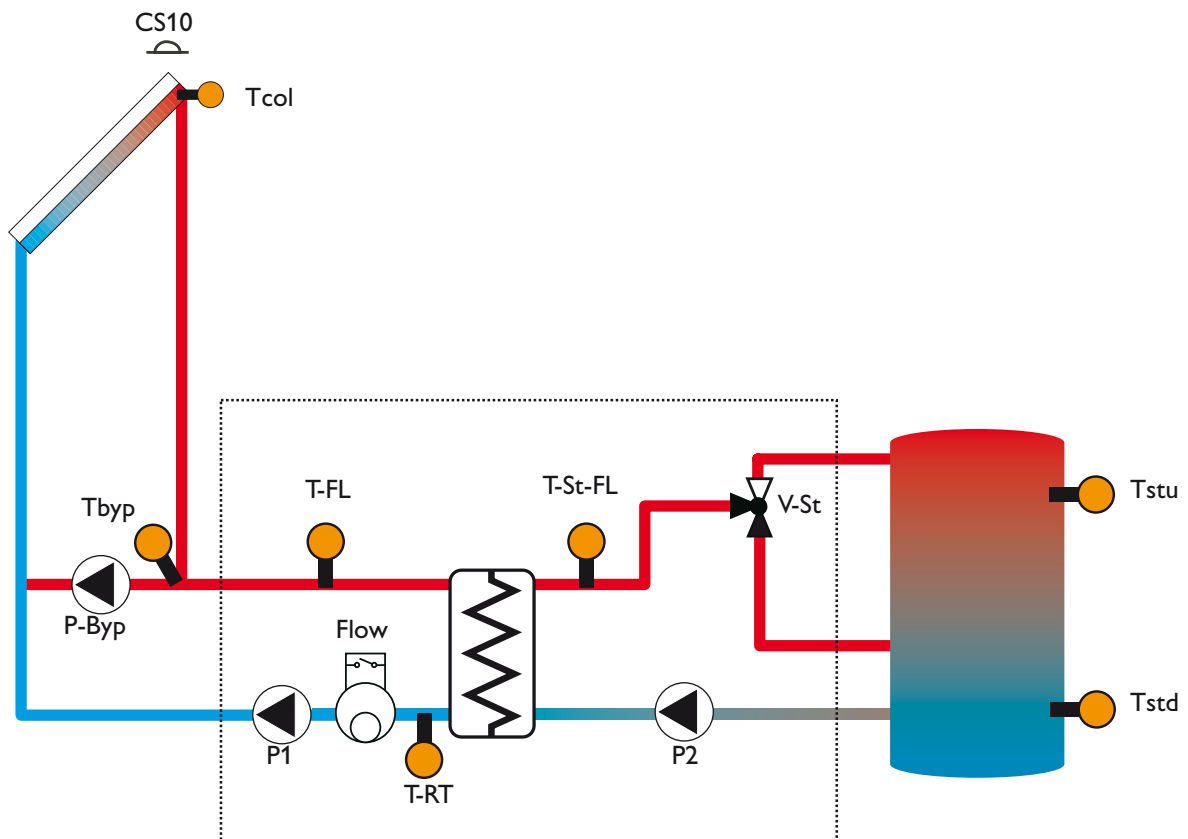
conductor L

neutral conductor N (collective terminal strip)

protective conductor PE (collective terminal strip)

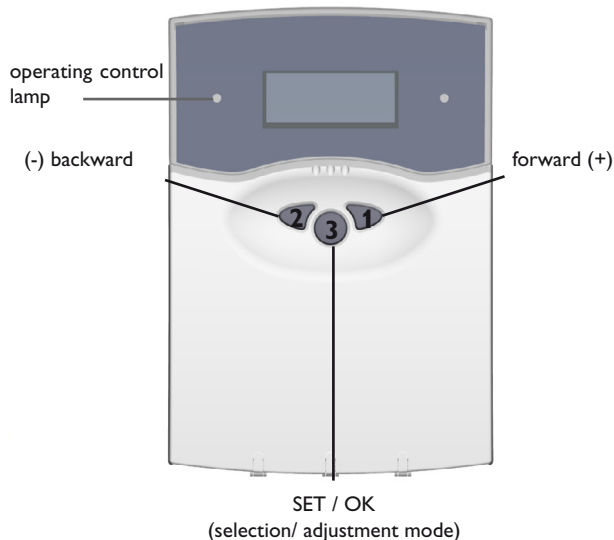
- T-FL Feed flow temperature
- T-RT Return flow temperature
- Tcol Collector temperature
- T-St-FL Store feed flow temperature
- Tstd Lower store temperature
- Tstu Upper store temperature
- Tbyp Temperature bypass

- CS10 Solarisation
- P1 Primary pump
- P2 Secondary pump
- Flow Volume flow primary circuit
- V-St Valve store
- P-Byp Pump bypass



2. Operation and function

2.1 Setting pushbutton



The controller is operated by three pushbuttons below the display. Button 1 is for scrolling forward through the menu options or for increasing the adjustment values. Button 2 is used for the opposite function.

Button 3 is for the adjustment of individual parameters. By pressing button 3 you will get to the next submenu or the SET-mode. It is also used for the confirmation of the adjustments made.

In order to get to the main menu the backward button has to be set to „back“ and has to be confirmed with the SET / OK button. If no button has been pressed for more than 60 seconds, the controller is automatically set back to the main menu.

Important notice: The selectable values and options are function dependant and will only appear on the display if they are available for the adjusted start parameter and are activated via the operation code.

Operator code: Expert-Code 077

All menus and adjustable valued are indicated and all adjustments can be changed.

2.2 Blinking codes

Constantly green:	orderly operation
Blinking red/green:	initalisation phase (10 sec.)
Blinking green:	manual operation
Blinking red:	sensor failure

2.3 Start menu

When switching on the controller for the first time, a special Solex type menu will be displayed. In this menu the system type can be feeded in (HF 20, HF 30, LF 21 oder LF 45). You can leave the menu without making any adjustments. As long as the der Solex type isn't specified the solar cycle will be blocked. When the time-out is over the controller will get back to the Solex type start menu. If the Solex type has been specified - this menu won't be activated again. A correction of the system type can be carried out by expert adjustable values.

(EXPERT/ADJ. VALUES/FLOW SET)

2.4 Adjustment for the operation with a solar cell

1. Adjust the CS10-type for the solar cell
(EXPERT/SENSORS/CS-TYPE).
2. Activate the CS10 adjustment for the solar cell
(EXPERT/SENSORS/CS-ADJUST).
The solar cell has to be branched off for this purpose!
3. Activate the CS10-Offset for the solar cell
(EXPERT/CS-OFFSET/CS-OFFSET).
The solar cell has to be branched off for this purpose!

3. Menu structure

Main menu:
Meas. values
Reports
Balance values
Adj. values
Options
Manual operation
User code
Expert

Meas. values:
back
Tcol
Tstd
Tstu
T-St-FL
T-FL
T-RT
Tbyp
Flow
T1-AH
T2-AH
Intens.
P1
P2
V-St
Bypass
Afterhtg
Afterhtg
Time
Relay 1-5
Sens. 1-9

Reports:
back
!Sensor fail
>>Meas. value
!EEPROM
!RTC
-Sol. preheating
-Charge Stu
-Charge Std
-Stmax reached
-Cooling active
-Tube active
↳ run
↳ pause
-CS Bypas active
↳ delay
-Col. antifreeze
-HE antifreeze
Everything Ok
SW-Version

Balance values:
back
Colmax
Stdmax
Stumax
StFLmax
FLmax
RTmax
Gain [Wh]
Gain [kWh]
Gain [MWh]
P1
P2
V-St
Bypass
Afterhtg.
Oper.days

Adjustable values:
back
Tstmax
ΔT1on
ΔT1off
ΔT2 on
ΔT2 off
Stu-set
ΔTstu-on
ΔTstu-off
T- AH on
T- AH off
WT afterheating
Tube-init
Tube-final
CS-byp.
CS-Delay
Tcolmax
Tcolsec
Time

Options:
back
Stu off
Bypass
Tube col.
Col.-cooling
Recooling
Frost prot.
CS-Bypass
HE-Frost
Afterhtg
Error rel.
Oper.-Rel.

Manual operation:
back
All relays
Relay 1-5

Expert:
back
Adj. values
Sensors
Relays
Language

4. Function and option overview

Description	Type	Range	Basic value	Description / Access level
Volume flow primary circuits	M	0 ... 9999 l/h	---	
Temperature Bypass	M	- 30 ... 250 °C	---	
Bypass pump	S	on ... off	---	
Sensor-Bypass	P	1 ... 6	5	
Option Bypasspump	P	yes ... no	no	
Temperature collector	M	- 30 ... 250 °C	---	
Lower store temperature	M	- 30 ... 250 °C	---	
Upper store temperature	M	- 30 ... 250 °C	---	
Temperature feed flow	M	- 30 ... 250 °C	---	
Temperature feed flow sec.	M	- 30 ... 250 °C	---	
Temperature return flow	M	- 30 ... 250 °C	---	
Primary pump	S	on ... off	---	
Secondary pump	S	on ... off	---	
Antifreeze type	P	Water ... TyfoLS	Propy.	Water, Propylene, Ethylene oder Tyfocor LS
Antifreeze	P	20 ... 70 %	40 %	
Store valve	S	on ... off	---	
ΔT1 on	P	0,0 ... 25,0 K	10,0	
ΔT1 off	P	0,0 ... 25,0 K	7,0	
ΔT2 on	P	0,0 ... 25,0 K	8,0	
ΔT2 off	P	0,0 ... 25,0 K	5,0	
ΔT upper St on	P	-10,0 ... 10,0 K	5,0 K	
ΔT upper St off	P	-10,0 ... 10,0 K	3,0 K	
ΔT upper st nominal	P	40 ... 70 °C	60 °C	
Sensor-Tcol	P	1 ... 6	1	Sensor number for collectors
Option upper store off	P	yes ... no	no	
Solarisation	M	0 ... 1365 W/m ²	---	
CS-Bypass	P	100 ... 500 W/m ²	200 W/m ²	solarisation threshold
CS-after-running time	P	0 ... 600 s	120 s	after-running time for Bypass function
Option CS-Bypass	P	yes... no	no	
Tube-init	P	00:00 ... 23:59	08:00	Acceleration time for tube collector function
Tube	P	00:00 ... 23:59	19:00	End time for tube collector function
Tube collector	P	1 ... 60 min	30 min	pause between activations
Tube-running time	P	1 ... 600 s	30 s	run time for initiation
Option tube collector	P	yes ... no	no	
Tcolmax	P	80 ... 160 °C	110 °C	activation for collector cooling
ΔTcolmax	P	1 ... 20 K	5 K	hysteresis for collector cooling
Option Col. cooling	P	yes ... no	yes	
Option Recooling	P	yes ... no	no	
Tcolmin	P	10 ... 90 °C	10 °C	minimum collector limitation
ΔTcolmin	P	0,3 ... 10,0 K	2,0 K	Hysteresis minimum collector limitation

TStmax	P	4 ... 95 °C	85 °C	Adjusted to the system (85 °C)
ΔTstmax	P	0,3 ... 10,0 K	2,0 K	
Nominal volume flow	P	0 ... 9999 l/h	➔	No Sorex: 0 LF 21: 500 l/h LF 45: 700 l/h HF 20: 1000 l/h HF 30: 1100 l/h
Option antifreeze	P	Yes... No	No	Antifreeze kollektor
Option frost protection	P	Yes ... No	Yes	antifreeze heat exchangee
Option error relay	P	No ... R4+R5	No	no, R4, R5 and R4+R5
Option operation notification	P	No ... R4+R5	No	no, R4, R5 and R4+R5
Operation mode R1	P	on / auto / off	Auto	
Operation mode R2	P	on / auto / off	Auto	
Operation mode R3	P	on / auto / off	Auto	
Operation mode R4	P	on / auto / off	Auto	
Operation mode R5	P	on / auto / off	Auto	
Operation days	B	0 ... 9999	0	
Operating hours P1	B	0 ... 99999	0	
Operating hours P2	B	0 ... 99999	0	
operating hours store valve	B	0 ... 99999	0	
Operating hours bypass pump	B	0 ... 99999	0	
Maximum Tcol	B	- 30 ... 250 °C	-30 °C	
Maximum lower Tst	B	- 30 ... 250 °C	-30 °C	
Maximum upper Tst	B	- 30 ... 250 °C	-30 °C	
Maximum T-Fflow	B	- 30 ... 250 °C	-30 °C	
Maximum T-RL	B	- 30 ... 250 °C	-30 °C	
Maximum Tsp-VL	B	- 30 ... 250 °C	-30 °C	
Option afterheating	P	no ... R4+R5	no	no R4, R5 and R4+R5
AH-type	P	Therm. ... Boiler	Therm.	
T-AH-on	P	10,0 ... 90 °C	60 °C	
T-AH-off	P	10,0 ... 90 °C	70 °C	
AH-week timer	P			21 channels
Station type	P	none ... LF-45	none	none, HF-20, HF-30, LF-21 und LF-45 !a changing of the type or the confirmation of the storage causes a reset f the adjusted values!
Software version	VN	X.XX	1.00	

Types:

Parameter	P
Balance values	B
Meas. values	M
Status value	S
Constants	C

5. Functions and Options

The primary circuit is started up if the precondition for switching on between collector- und store sensor (Tstu) is fulfilled (the volume flow is adjusted to the set volume flow). The secondary circuit is started when the switch on differential between feed flow and store sensor is exceeded. If the store feed flow temperature (T-St-FL) in the secondary circuit exceeds the set store temperature

(Stu-set) including the switch over differential (ΔT_{Stu-on}), the switch over valve (V-St) will be switched to the upper store range. A shift-in of the lower store range will take place if the temperature at the store feed flow sensor underruns the set store temperature plus the switch off differential ($\Delta T_{Stu-off}$).

5.1 Heat flow balancing

EXPERT/ADJ.VALUES/FLOW SET

Adjustment range 0 l/h .. 9990 l/h

Factory setting 0 l/h

EXPERT/ADJUSTMENTS/SOLEX

Adjustment range:

none: 0 l/h

HF20: 1000 l/h

HF30: 1100 l/h

LF21: 500 l/h

LF45: 700 l/h

Factory setting: none

The technician can indicate a volume flow (Vol.) at the controller.

The controller will adjust the volume flow by means of the RESOL pump activation and the volume flow sensor.

As a cause of the stored system characteristics and the predetermined heat transfer medium of the primary circuit, the secondary pump will be adjusted in a way that enables an optimum heat transfer.

5.2 Bypass pump

OPTIONS/BYPASS

Adjustment range on / off

Factory setting

OPTIONS/CS-BYPASS

Adjustment range yes...no

Factory setting no

If the switch on condition for the collector circuit is established (tube collector function, CS-Bypass or ΔT) the bypass pump will be started. The solar pump will be switched on if the switch on condition between bypass and store sensor (T-By – lower Tst \geq 2,5 K) is fulfilled. The sensor channel for the bypass sensor (T-Byp) is adjustable.

5.3 CS-Bypass

OPTIONS/BYPASS

Adjustment range on / off

Factory setting

ADJ.VALUES/CS-BYP.

Adjustment range 100 ... 500 W/m²

Factory setting 200 W/m²

ADJ.VALUES/CS-DELAY

Adjustment range 0 ... 600 s

Factory setting 120 s

The primary circuit pump (P1) will be put into operation, if the preadjusted solarisation threshold (CS-Bypass) at the solarisation sensor is exceeded. If the solarisation threshold is underrun, the primary circuit will be kept in operation for a specified time span (CS-Delay). The function is only activated if a solar charge is possible - which means that neither the sensor nor the collector is blocked.

The aim of the function is to make the collector temperature accessible for a temperature sensor that is not located at the collector.

5.4 Collector emergency shut down

ADJ.VALUES/TCOLSEC

Adjustment range 80°C ... 190°C

Factory setting 130°C

At high collector temperatures (dependant on the e.g. system pressure or antifreeze concentration) the water transfer medium is vaporised. This means that a solar loading isn't possible anymore.

If the adjusted category temperature Tcolemerg. is exceeded, the loading of the respective collector is suppressed.

5.5 Collector cooling function

OPTIONS/COL.-COOLING

Adjustmet range no...yes

Factory setting yes

ADJ.VALUES/TCOLMAX

Adjustmet range 80°C ... 190°C

Factory setting 120°C

The collector cooling function is started at a set maximum collector temperature. If this is underrun by 5 K, the function is switched off again. The collector is cooled by the heat dissipation to the lower area of the store. (P1 and P2 are activated).

5.6 Store maximum limitation

ADJ.VALUES/TSTMAX

Adjustment range 20 ... 95°C

Factory setting 80°C

EXPERT/ADJ.VALUES/ΔT-STMAX

Adjustment range 0,5 ... 5,0 K

Factory setting 2,0 K

The maximum store limitation refers to the lower store sensor (T_{stu}). If the preadjusted T_{stmax} value is reached, the system will be switched off.

The value for ΔT-Stmax stands for the hysteresis between the turn on or turn off criteria.

5.7 Store emergency shut down

Fixed value 95°C

Hysteresis 2 K

If the cooling option is activated (e.g. collector cooling) the store will be loaded beyond the set maximum temperature. The store emergency shut down is also intended to avoid high temperatures at the sensor and to block the cooling function. If the store temperature reaches 95 °C, the emergency shut down is activated.

5.8 Collector minimum limitation

EXPERT/ADJ.VALUES/TCOLMIN

Adjustment range 10 ... 90°C

Factory setting 10°C

The minimum collector temperature is a minimum switch-on temperature that has to be exceeded in order to switch on the solar pump (R1 / R2). The minimum temperature is to prevent a too steady switch-on of the solar pump at low collector temperatures. The minimum temperature is preset to 10 °C and by this deactivated.

5.9 Antifreeze

OPTIONS/FROST PROT.

Adjustment range no...yes

Factory setting no

The antifreeze function activates the charge circuit between the collector and the store if the antifreeze temperature is underrun in order to protect the medium against freezing or „thickening“. If the set antifreeze temperature is exceeded by 1 °C the circuit will be switched off.

Please note:

As there is only a limited heat quantity of the store available for this function, the antifreeze function should only be used in regions with few days of temperatures around freezing point.

5.10 Tube collector function

OPTIONS/TUBE COL.

Adjustment range no...yes

Factory setting no

ADJ.VALUES/TUBE-INIT

Adjustment range 00:00 - 23:59 h

Factory setting 09:00 h

ADJ.VALUES/TUBE-FINAL

Adjustment range 00:00 - 23:59 h

Factory setting 19:00 h

EXPERT/ADJ.VALUES/TUBE COL.

Adjustment range 1 - 60 min

Factory setting 30 min

EXPERT/ADJ. VALUES/TUBE-RUN

Adjustment range 5 - 500 s

Factory setting 30s

The primary circuit pump (P1) is put into operation if the specified time span of the non-operation is exceeded (t-still). The solar pump of the primary circuit is switched on for the preadjusted runtime (Tube-run). Furthermore, this function is only activated within a specified time frame and if a solar charge is possible.

The aim of the function is to make the collector temperature accessible for a temperature sensor that is not located at the collector.

5.11 Antifreeze heat exchanger

OPTIONS/HE-FROST.

Adjustment range no...yes

Factory setting yes

If the feed flow temperature (T-FL) at the heat exchanger underruns 10°C, the secondary circuit (P2) is put into operation with a minimum rotational speed in order to protect the heat exchanger from freezing (this function can be switched off).

5.12 Afterheating

OPTIONS/AFTERHTG

Adjustment range no...R4+R5

Factory setting no

EXPERT/ADJ.VALUES/S1-AH

Adjustment range 1 ... 6

Factory setting 3

EXPERT/ADJ.VALUES/S2-AH

Adjustment range 1 ... 6

Factory setting 5

EXPERT/ADJ.VALUES/TYPE-AH

Adjustment range therm.... boiler

Factory setting therm

ADJ. VALUES/T-AH ON

Adjustment range 0 ... 90°C

Factory setting 45°C

ADJ. VALUES/T-AH OFF

Adjustment range 0 ... 90°C

Factory setting 55°C

ADJ. VALUES/WT AFTERHEATING

The type of the afterheating function can be selected in the expert menu.

Thermostat

Thermal afterheating is effected by a sensor and can be selected in the expert menu. If the switch-on temperature is underrun, the relay is switched on. If the switch-off temperature is exceeded, the relay is switched off again.

Boiler

If the measured temperatures at the two temperature sensors underrun the set switch-on temperature T-AH ON, the relay is switched on. It is switched off again if the temperature at both sensors has exceeded T-AH OFF.

If one of the sensors is defective, the afterheating will be stopped or suppressed.

Additionally, this option can be temporary locked by means of a week timer.

5.13 Balance values

BALANCE VALUES

Following values are balanced:

- days of operation controller
- hours of operation solar pump (P1)
- hours of operation charge pump(P2)
- hours of operation layer valve
- maximum temperature collector
- maximum temperature feed flow (T-FL)
- maximum temperature return flow(T-RT)

The balance values can be set back. As soon as a balance channel is chosen, symbol SET will be permanently shown on the display. Button SET (3) has to be pressed for approx. 2 sec. in order to get to the RESET mode. The display symbol SET is blinking and the balance value will be set to 0. In order to finish the RESET process button SET has to be pressed. In order to cancel the RESET process, don't press any button at all for approx 5 sec. The controller is automatically set to the display mode.

Each relay can be optionally set to Off- / On- or Automatic mode.

5.14 Manual operation

MANUAL OPERATION

Adjustment range Off,Auto, On

Factory setting Auto

5.15 Energy balancing (heat quantity measurement)

BALANCE VALUES/GAIN

EXPERT/ADJ. VALUES/MEDIUM

Adj. range

Water

Propylene

Ethylene

Tyfocon LS

Factory setting: Propy

EXPERT/ADJ. VALUES/ANTIFREEZE

Adjustment range: 20 ... 70 %

Factory setting: 40 %

With the help of the measured volume flow, the domestic cold and hot water an energy balancing can be effected .

For an accurate heat quantity measurement it is important to use the correct frost protection and ratio of mixture.

5.16 Operating notification

OPTIONS/ERROR REL.

Adjustment range No ... R4 + 5

Factory setting No

If the solar system is activated in order to load the store (solar operation), the relay will be switched on. If the Bypass option is activated, the operating notification will be activated as soon as the Bypass circulation is heated up.

The controller itself shows following states:

- Preheating circuit active
- Solar load Std
- Solar load Stu
- Store maximum is reached
- Cooling active (Recooling / Collector cooling)
- Tube collector function active
- => Indication of the remaining standstill time
- => Indication of the remaining run time
- CS-Bypass active
- => Indication of the remaining after run time
- Antifreeze WT active
- Antifreeze Collector aktive

The relay for the operating notification can be adjusted.

You can only choose a relay that is not already being used for a different function.

5.17 Error reports

REPORTS

Defective temperature sensors are reported.

5.18 Error relay

OPTIONS/ERRORREL.

Adjustment range No ... R4 + 5

Factory setting No

If there is an error at the sensors or the controller, the error relay will drop out. The relays for the error report can be adjusted (R4 and/or R5).

This function can be used kann for an additional external display.

Notes: