HRS AQUASAVE 6 Bar Range

6 bar Storage – 600 to 2,000 Litres

Operating & Instruction Manual

A60B
No Controls

A62B
2 Port Control

A63B
3 Port Control

HRS hevac

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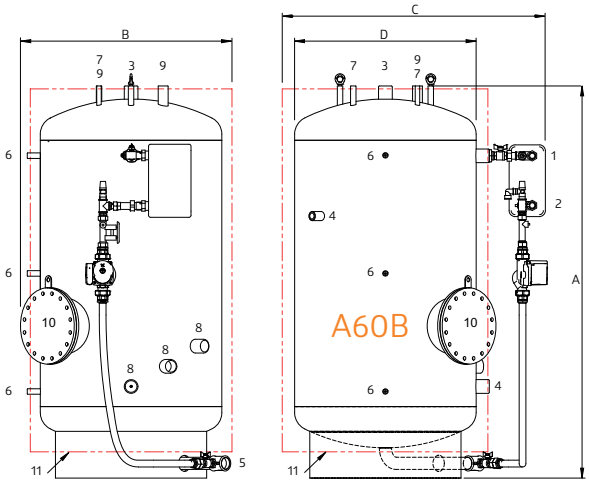
WRAS Water Regulations Advisory Scheme

nqa ISO 9001 Registered Quality Management

UKAS MANAGEMENT SYSTEMS 015

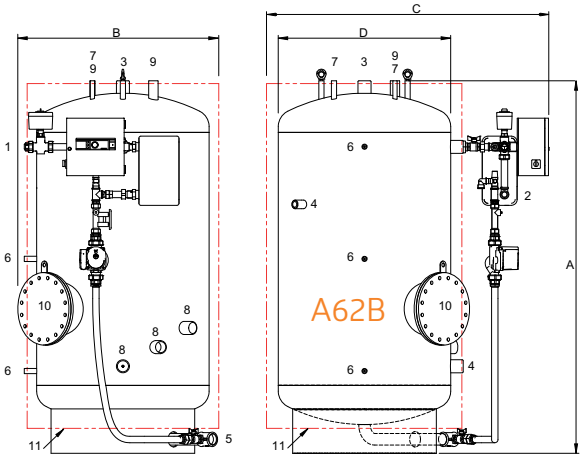
AquaSave A60B Dimensional Details

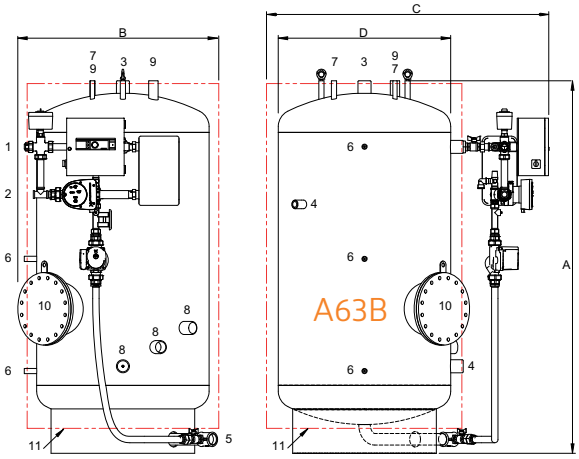
1 Primary Inlet
2 Primary Outlet
3 Secondary Flow
4 Secondary Return
5 Cold Feed
6 Instrument Connections (3-off)
7 Gauge Connections
8 Immersion Heater(s) - See Table
9 Safety Valve Connection(s) - Subject to Duty
10 Inspection Opening (DN250)
11 50mm Mineral Wool Insulation c/w Al. Stucco Cladding



Volume (Litres)	Dimensions				Connections (Screwed BSP F)									Weight (kg)
	A	B	C	D	1	2	3	4	5	6	7a	7b	8	
600	1910	880	1105	700	1"	1"	2"	1"	2"	1/2"	1/2"	3/8"	2"	260
800	1965	965	1205	800	1"	1"	2"	1"	2"	1/2"	1/2"	3/8"	2"	295
1000	1945	1050	1305	900	1"	1"	2"	1"	2"	1/2"	1/2"	3/8"	2"	335
1250	2020	1135	1405	1000	1"	1"	2"	1"	2"	1/2"	1/2"	3/8"	2"	365
1500	2020	1220	1505	1100	1"	1"	2"	1"	2"	1/2"	1/2"	3/8"	2"	400
2000	2275	1305	1605	1200	1"	1"	2"	1"	2"	1/2"	1/2"	3/8"	2"	540

AquaSave A62B & A63B Dimensional Details





Volume (Litres)	Dimensions				Connections (Screwed BSP F)									Weight (kg)
	A	B	C	D	1	2	3	4	5	6	7a	7b	8	
600	1910	910	1265	700	1"	1"	2"	1"	2"	1/2"	1/2"	3/8"	2"	280
800	1965	965	1365	800	1"	1"	2"	1"	2"	1/2"	1/2"	3/8"	2"	315
1000	1945	1050	1465	900	1"	1"	2"	1"	2"	1/2"	1/2"	3/8"	2"	355
1250	2020	1135	1565	1000	1"	1"	2"	1"	2"	1/2"	1/2"	3/8"	2"	385
1500	2020	1220	1665	1100	1"	1"	2"	1"	2"	1/2"	1/2"	3/8"	2"	420
2000	2275	1305	1765	1200	1"	1"	2"	1"	2"	1/2"	1/2"	3/8"	2"	560

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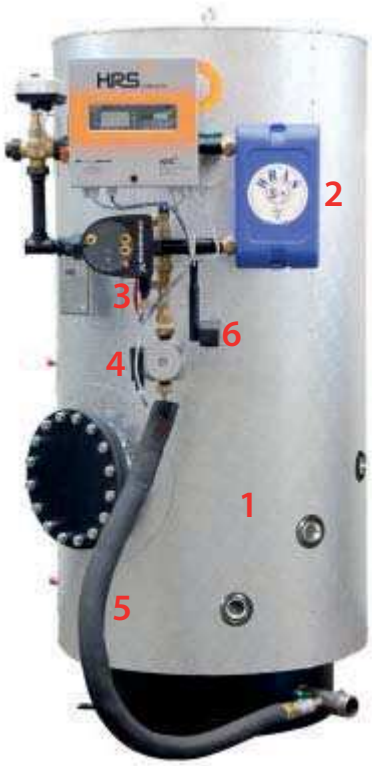
1 Product overview

The basic version of the HRS Hevac AquaSave DHW heater, indirect (semi-instantaneous) system comprises:

A60B
No Controls

A62B
2 Port Control



A63B
3 Port Control

1. Storage tank, stainless steel storage tank with a heat-insulated cover
2. Plate heat exchanger, 316-grade stainless steel copper-welded
3. Balancing valve
4 Charging pump
5. Connector hose between tank and charging pump, thermally-insulated
6. Charging kit support

1.1 Working pressure and temperature

AquaSave Model Type	PRIMARY SIDE		SECONDARY SIDE	
	Max working pressure (bar)	Max temperature (°C)	Max working pressure (bar)	Max temperature (°C)
A60B	10	110	6	95
A62B	10	110	6	95
A63B	10	110	6	95

1.2 Packing format

AquaSave is delivered in two packages:

- storage tank
- exchanger kit

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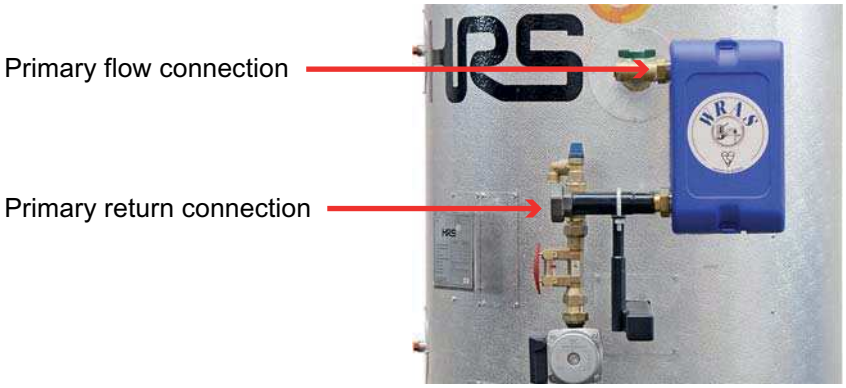
2 Options

There are three different control systems available as option.

2.1 A60B - No Controls

- Supplied with only the secondary charging circuit.

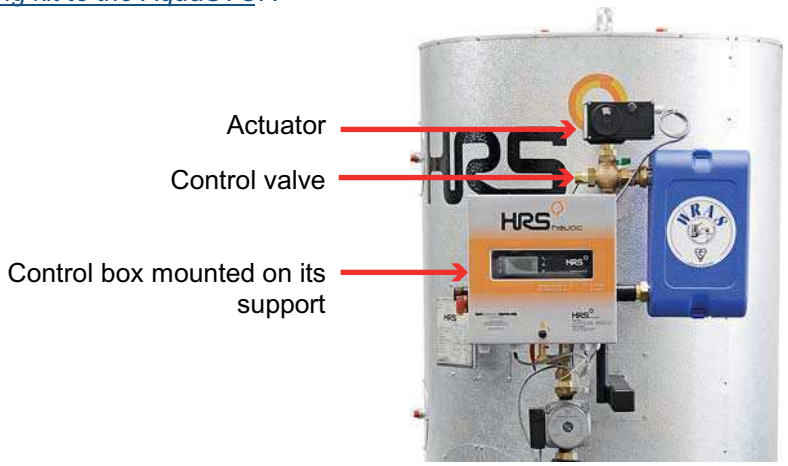
Follow the assembly instructions in *17 Assembly of the charging kit to the AquaSTOR*



2.2 A62B - 2 Port Control Valve

- One 2-port PN25 valve body
- One Pt100 temperature sensor
- One actuator, 230V 3 points with return to zero
- One PID controller box with piping and support, depending on the model selected

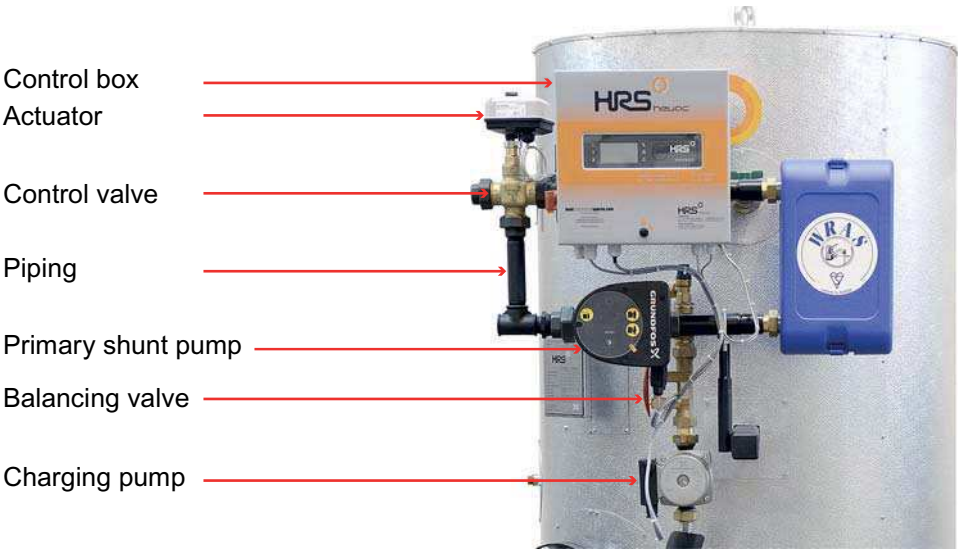
The primary circuit is pre-assembled on the exchanger. Follow the assembly instructions in *17 Assembly of the charging kit to the AquaSTOR*



2.3 A63B - 3 Port Control Valve

- One 3-port control valve, PN16
- One primary shunt pump, PN10
- One actuator, 24V AC feed-in and 0-10V DC controller current
- One PID controller box with Pt100 temperature sensor
- Primary piping, sized differently according to heat exchanger type
- Control box support

The primary circuit is pre-assembled on the exchanger. Follow the assembly instructions in *17 Assembly of the charging kit to the AquaSTOR.*



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3 Installation

3.1 Siting

The AquaSave hot water heater shall be installed in a dry place where room temperature is below 40°C, and ideally in ventilated premises.
AquaSave is placed preferably on a sub-base footing.

3.2 Hydraulic connections

Connect the charging kit (exchanger + control valve + charging pump) to the storage tank using the interlink kit.

Make arrangements for fitting the insulation onto the tank before connecting up the piping.

The indirect AquaSave module can run without a recirculation system fitted.

To avoid creating a galvanic coupling, check that the materials used in the installation have similar corrosion potentials.

3.3 Basic assembly instrustions

Assembly: refer to the full instructions given in *17 Assembly of the charging kit to the AquaSTOR.*
Connect the primary supply and return connections.
Connect the cold water supply, hot water outlet and the recirculation system to the tank.

Fit the tank with a safety valve, a drain valve in the top section and a draw-off in the bottom section.
NOTE: The valve is a compulsory fixture that has to be pre-loaded at the storage tank operating pressure.

NOTE: The safety valve on the charging kit only protects the secondary system – it will neither protect nor surge-feed the installation and the volume stored, in correspondence with local rules.

The safety valve shall have the same diameter as the cold water inlet fixture

Top section connection

Exchanger support + accessories

Bottom section connection, shut-off valve inserted between the conduit hose and the cold water inlet fixture.

3.4 Commissioning

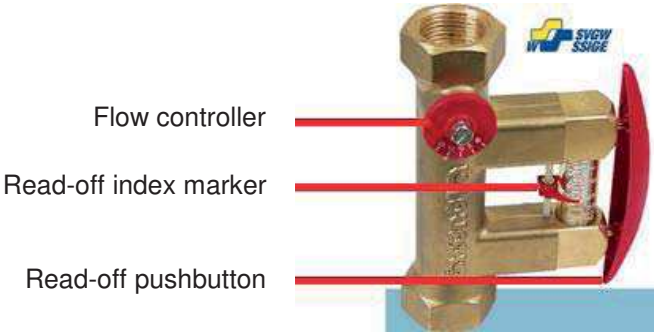
- Flood the various circuits and flush-bleed the pumps.
- Power-up.
- Set the secondary (charging) flow rate using the setting valve (read-off + setting)

NOTE: When first heated, the water in the tank will expand, increasing the pressure. A water hammer-arrester-type surge tank qualified for DHW systems may be fitted to prevent the relief valve from opening. Check the water network pressure.

4 Setting the DHW flow rate

The secondary DHW flow rate is set with the tank full and the primary circuit at nominal operating temperature and at the available exchanger power capacity required for the generator.

1. Fully open up the control valve on the primary side.
2. If a 3-way control valve is fitted, wait for it to open completely.
3. Adjust the secondary flow circuit, as set out in the table below.
   The flow rate can be read by pressing on the red pushbutton and reading the index marker against the float.



P(kW) DHW T(°C)	30	40	50	60	70	80	90	100	125	150	175	200	240
10 > 55°C	9.5	13	16	19	22	25.5	28.5	32	40	48	56	63	76
10 > 60°C	8.5	11.5	14	17	20	23	26	28	35	43	50	57	68
5 > 70°C	6	9	11	13	15	17	20	22	27	33	38	44	53

The recirculation flow rate has to be 60% maximum of the secondary flow rate.

5 Electrical connections

All devices shall be connected up in compliance with the governing standards.

All work on control box and other electrical components must be done by qualified people.

The main electrical box should be equipped with short-circuits protection

5.1 A60B

The charging pump has to be powered constantly.

5.2 A62B & A63B

For more information about the Operator Control box, see chapter *6 Electrical installation of control box, option*, and forward.

Power the control box via a single-phase 230 V + ground.
Electrical system components pre-cabled according to the hardware ordered.

5.3 Electrical power ratings table

Unit Type	Primary pump type	Primary pump consumption. W, A	Secondary pump type	Secondary pump consumption, W	TOTAL + Control box [1]
A60B 80 - 200 kW	-	-	UP20-45N	115W 0.5A	125W 0.6A [2]
A60B >200 kW	-	-	UPS 32-80N	240W 1.05A	245W 1.15A [2]
A62B 80 - 200 kW	-	-	UP20-45N	115W 0.5A	125W 0.8A
A62B >200 kW	-		UPS 32-80N	240W 1.05A	250W 1.17A
A63B 80 - 200 kW	Magna 1 32-80	151W 1.22A	UP20-45N	115W 0.5A	266W 2.02A
A63B >200 kW	Magna 1 32-80	151W 1.22A	UPS 32-80N	240W 1.05A	391W 2.57A
SINGLE-PHASE 230 VOLTS + GROUND					

[1] The electrical consumption of the control box and the actuator is 10W, 0.3A.
Figures are rounded up to the nearest value.
[2] Has no control box

5.4 Current limiting fuses

Power cards are equipped with fuses, labelled FU1 to FU5 on the printed circuit.

Fuse	FU1	FU2	FU3	FU4	FU5
Protection	PUMP 1	N/A	PUMP	N/A	PCB
Size (mm)	6.3x32	6.3x32	6.3x32	6.3x32	6.3x32
Calibre	2.5A		2.5A		250mA
Voltage	250V	250V	250V	250V	250V

Safety fuses are supplied inside the control box.

6 Electrical installation of control box, A62B & A63B only

Power supply the control box with 230VAC 50 Hz. The control box with the controller Micro 3000 is called the secondary control box.

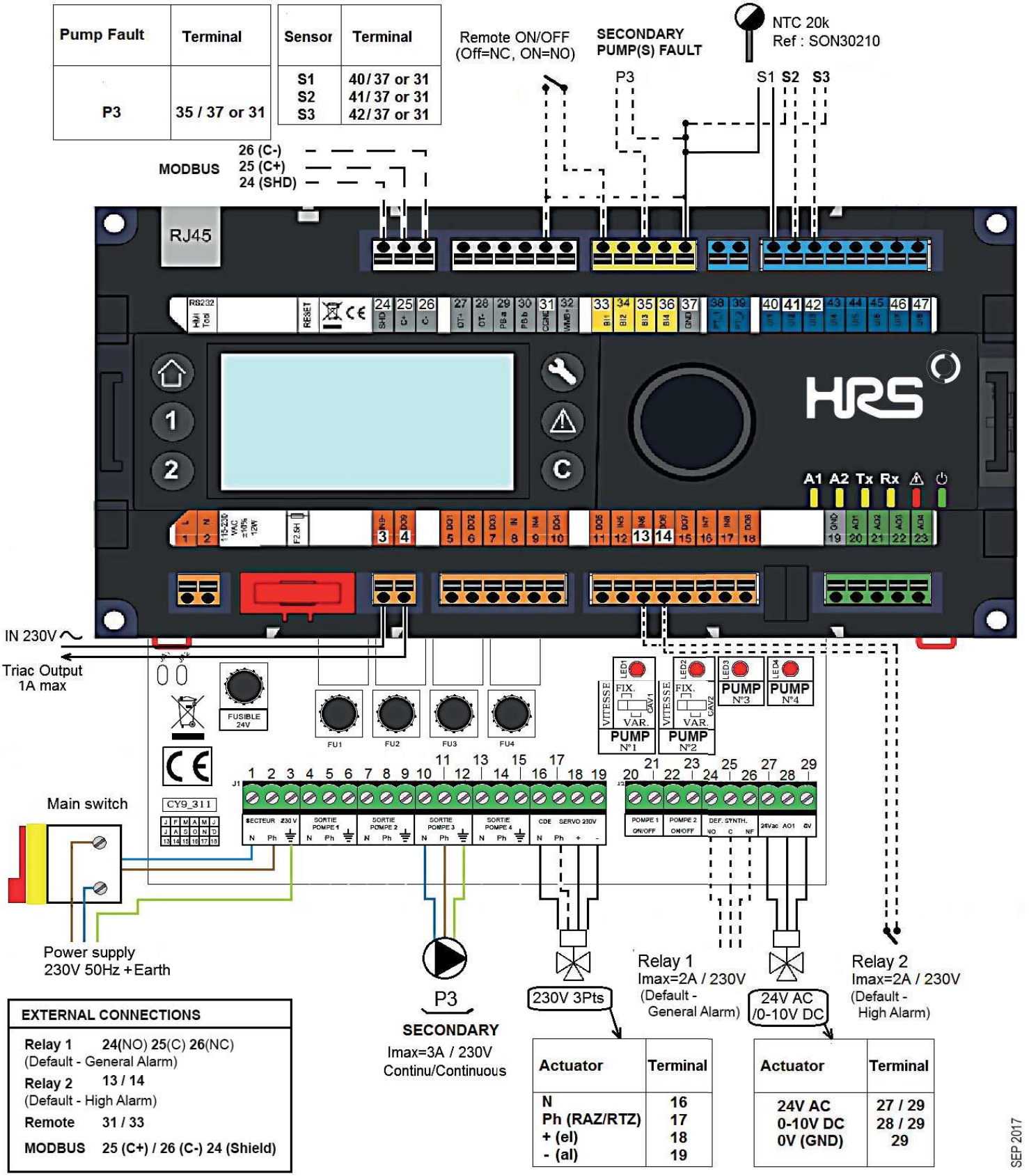
Human protections and protection against short circuits and over intensity must be installed in the main electric box.

6.1 Controller components

1 Controller, Micro 3000
2 Main switch
3 Power Supply contact
4 Printed Circuit Board

6.2 Electrical wiring diagram A62B

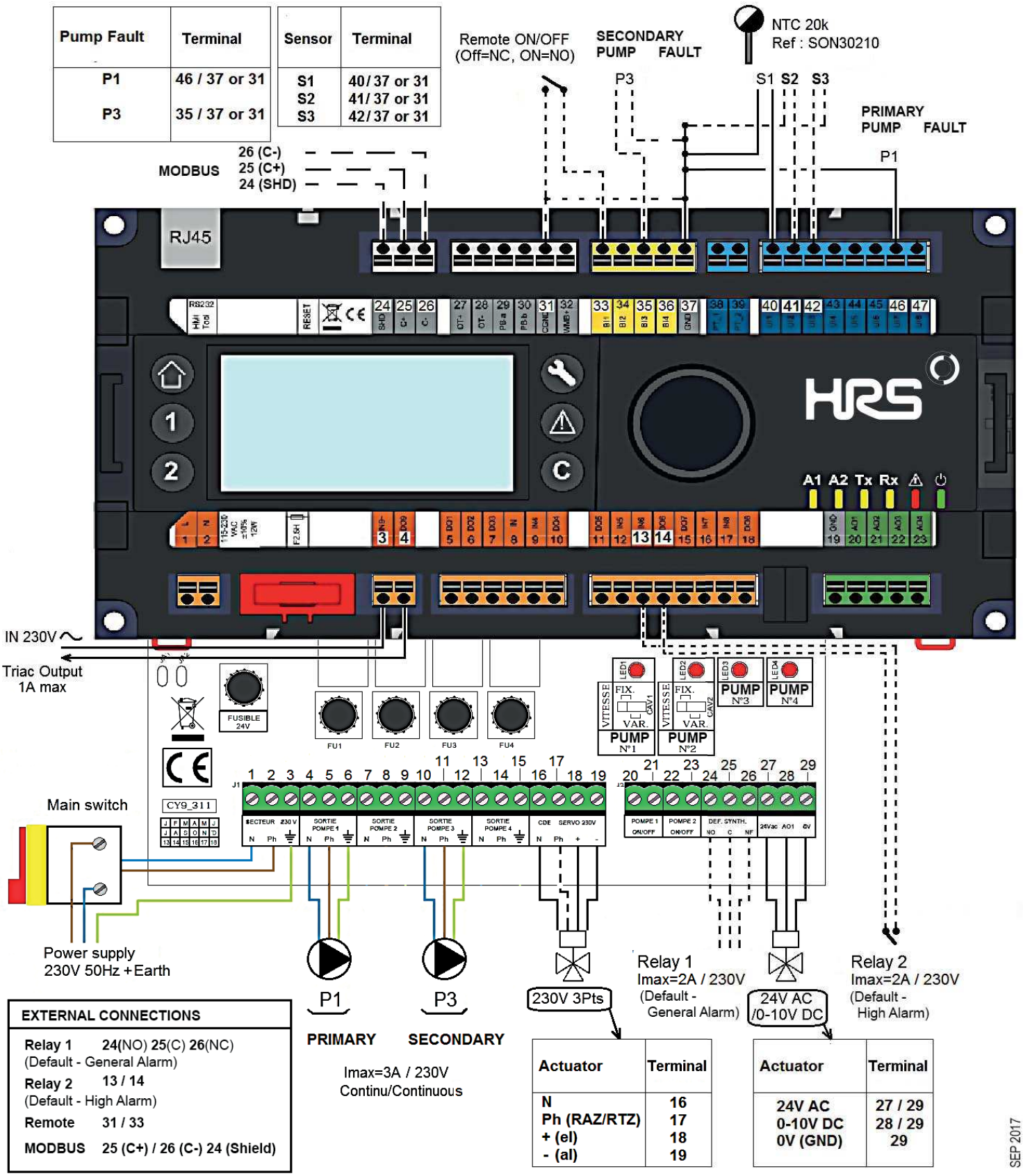
NOTE: When the remote control contact is open, the unit operates normally. If it is closed the unit is in standby.



NOTE: *) 230V 3pts actuator wiring, see *20 Special instructions for options*.

6.3 Electrical wiring diagram A63B

NOTE: When the remote control contact is open, the unit operates normally. If it is closed the unit is in standby.

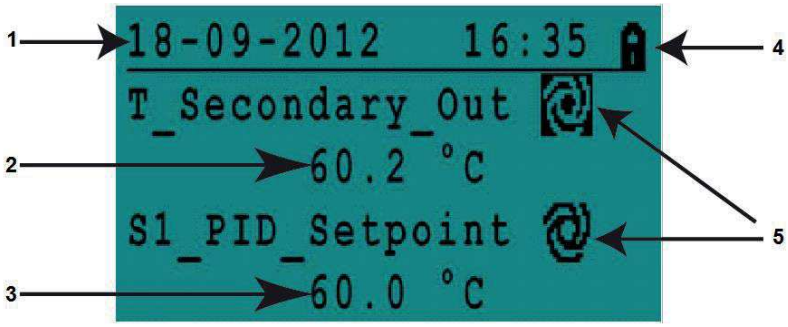


7 User instruction operator control panel Micro 3000

Button	Function
	Rotary button, wheel, for scrolling through the menus. Access sub-menus and change settings by pressing it. To activate the line or change a highlighted value, simply press the wheel. Works like an Enter key.
	Press to exit a level and return to the previous menu/parameter. Works like an ESC key.
	Press to access the maintenance / monitoring menu. **NOTE**: Requires a password.
	Press to go to the Home screen, Main Menu
	Press to access the Alarm Menu.
	Not used
	Not used
	Relay 1 activated.
	Relay 2 activated..
	Active data transmission
	Active data reception
	Alarm indicator
	The Control box is switched on.

7.2 Home screen

When starting up the Micro 3000 controller this menu displays on them screen. The menu is called the Home screen.



1 Date / hour
2 DHW Temperature
3 DHW Set point
4 Access level: Locked=restricted / Key= total (3333)
5 Command symbols

NOTE: if there is an ongoing alarm when starting up the controller AquaSave, an alarm text will be displayed on the screen. Press the House button to enter the Home screen.

7.3 Command symbols

Auto
Datapoint is in automatic operation and can be switched into manual operation.

Manual
Datapoint in manual operation and can be switched into automatic operation.

Today function
Datapoint value can be overridden for a particular time period within the next 24 hours. Datapoint must have a daily time program assigned.

Time Program
Datapoint has a daily time program assigned. Daily time program can be selected and edited.

Edit
Item (datapoint, time program etc.) can be edited.

Add
Item (datapoint, time program etc.) can be added to a list e.g. datapoint can be put to a list of trended datapoints.

Deleted
Item can be deleted

Enable/disable
- Checked: item is enabled
- Unchecked: item is disabled

7.4 Password and login

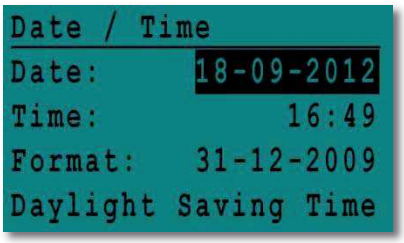
The controller has password protection, allowing accesses to different menus.
- **End user level**- requires no login. Marked with a locker in the upper right corner.
- **Technician level**- access to all menus requires login. Marked with a key in the upper right corner.

7.5 Setting the time and date

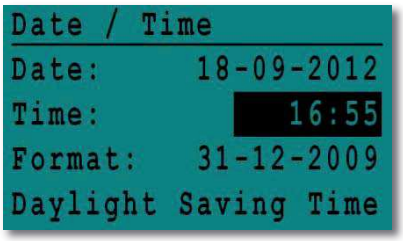
1. Turn the wheel anticlockwise to highlight the line with time and date at the top of the screen. Press the wheel to enter the Date/Time menu.

2. Press the wheel to change the first variable, the year.

3. When the year flashes, increase or reduce the set value by rotating the wheel.
   Once the right value is displayed, press the wheel to confirm the setting. Next parameter to change starts to flash.



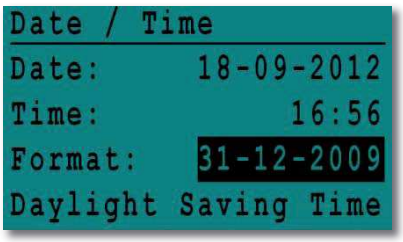
4. Proceed in the same way to set the month, date and time (hour: minute).



7.6 Changing the date format

In the Date/Time menu the date format can be changed.
Choose between the following formats:

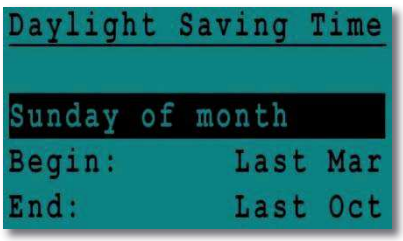
- yyyy-mm-dd
- mm-dd-yyyy
- dd-mm-yyyy
- dd.mm.yyyy
- dd/mm/yyyy



7.7 Setting the daylight saving time

Summer time
Changing between summer/winter time can be automatic or turned off.
You can also define the dates for changes if they are altered.

The default settings for summertime is:
Last Sunday in March to last Sunday in October.



7.8 Saving changes

Once a value has been changed and confirmed by pressing the wheel, the corresponding change will be immediately updated. Press the C or ⌂ to return to the home screen.

8 End user mode

The following changes can be done in end user mode:

- Settings which are identical/different for each day of the week at defined times
- Normal temperature(s)
- Lower temperature(s)
- Special period of defined duration during the current year
- Waiver with change of setting at a specific time.
- One time temperature change at a specific time.

8.1 Set the hot water temperature

Please set a hot water production temperature in line with current national legislation and recommendations (UTD, Standards EN, ISO etc.)
All countries have different rules for how hot or cold tap water should be.

HRS Hevac recommends the hot water temperature is at least 55°C and a hot water recirculation not less than 50°C.
At a temperature below 50°C there is a risk of bacterial growth.
Note that at temperatures above 60°C the risk of scalding increases.

Set points above 63°C result in an increased risk of precipitation of lime scaling on the surfaces of the heat exchanger.

8.2 Time programs

The time programs used in AquaSave are adjusted the same way.

Time programs:

- SP_T_Sec_Outlet, to be found in the menu *9.4 S1 Menu Secondary Outlet*. It is to set the DHW temperature
- ThTr_Activated to be found in *9.5 Thermal Treatment Menu*, to activate a thermal treatment (1 sensor mode).
- Multi_P to be found in *9.9 230V Triac menu*, to activate the 230V power output on the controller

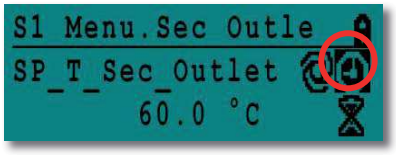
The time program has two different temperature modes - week program or weekend-program.
For each day of the week, define which time program to use.
By default has the weekend-program the same settings as the week- program.
It is even possible to customize the temperature programs with special dates (holidays periods or free days).

Each time program can have a number of different times set per day, each time can have a different temperature. The set temperature is then in effect until the next time occurs. If only one temperature is set, the program will run with the set temperature.

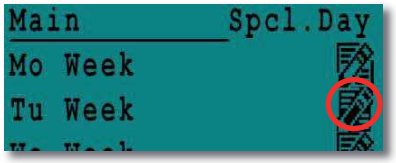
8.3 Changing time and temperature in a time program

By default the DHW set point SP_T_Sec_Outlet, set to 60°C by default, at any time, all the days of the week.
Add extra temperature set points at different times of the day.
These changes will be reported to all days with the time program week, excluding the time program; weekend.

1. Use the wheel and mark the clock logo. Press the wheel.

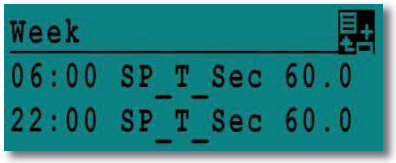


2. Mark the day you want to change.Press the wheel.



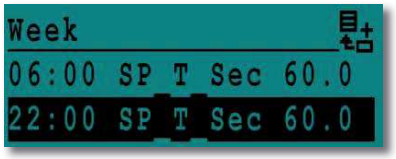
Now you can choose to:

a) Change a time or temperature.
Mark the line and press the wheel. Change the value by turning the wheel.
Confirm the new setting by pressing the wheel.



b) Add a new time or set point; choose .

c) To delete a time or set point; choose; .



In this example the set point is 60°C at 22h00.

You can choose to reduce the temperature during the night, in this example the night temperature is set to 55°C.

8.3.1 *Special days*

Exception days, so called special days, can be defined. The calendar in the controller controls the exceptions that can be selected in the Time program. Exception days override the weekly schedule.

In the Main screen menu, mark ‘Spcl.Days’ and press the wheel.
Choose between:

- Annual - holiday periods where you have to specify beginning date, end date and DHW set point. This mode is applicable to schools, offices and so on.
- Bank Holiday - special days during the year where set points can be different ex: Christmas, New Year.
- Daily programs - particular days where you want to change the temperature set point.

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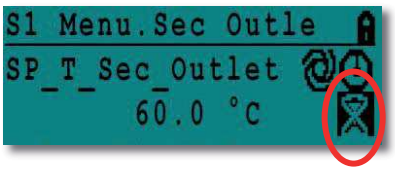
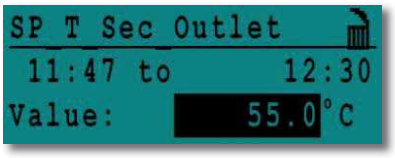
8.4 Making a quick temperature change

It is possible to quickly define a “one time” temperature change, a period of the day with a different setting. When the change period has expired, the temperature set point goes back to standard time schedule program.

1. In the home-screen, use the wheel and mark the hourglass. Press the wheel.



2. Define the starting and ending time, and the temperature set point value.



9 Technician menu

In the technician menu you can:

- make settings for the secondary outlet temperature
- enable/disable functions like Eco, booster, thermal treatment
- change parameters
- start an auto test
- clear alarm.

You need to be logged in to:

- see all submenus and change pre-set values
- have full read and write access in the technician menu

9.1 Login

1. Mark the lock in the upper right corner of the screen and press the wheel.
2. Enter: 3333, to access the technician level.

NOTE: You will be automatically logout after ten minutes if no data has been entered.

9.2 The technician Main menu

To enter the Main menu, press the key.
The grey marked parameters or menus are not available in the AquaSave application.
Their value does not have any impact on the AquaSave.

Main Menu		Description
T_Secondary_Out	***Read Only***	Measured temperature ECS
S1_PID_Setpoint	***Read Only***	DHW temperature setpoint
T_Secondary_Inlet	***Read Only***	N/A
T_Primary_Outlet	***Read Only***	The temperature measured by S3 (option)
T_Primary_Inlet	***Read Only***	N/A
T_Recovery1	***Read Only***	N/A
T_Recovery2	***Read Only***	N/A
T_Outdoor	***Read Only***	N/A
Configuration	***Sub Menu***	See *9.3 Configuration menu*
S1 Menu Sec.Outlet	***Sub Menu***	See *9.4 S1 Menu Secondary Outlet*
S2 Menu Sec.Inlet	***Sub Menu***	N/A
Delta T (S3-S2)	***Sub Menu***	N/A
S4 Menu Prim Inlet	***Sub Menu***	N/A
S5 Menu Outdoor T	***Sub Menu***	N/A
Thermal Treatment	***Sub Menu***	See *9.5 Thermal Treatment Menu*
SAFETY Function	***Sub Menu***	See *9.6 Safety Function*
Eco Booster Fcts	***Sub Menu***	See *9.7 Eco-Booster Function*
Fouling Function	***Sub Menu***	See *9.8 Fouling function*
Pumps Menu	***Sub Menu***	N/A
Solar Menu	***Sub Menu***	N/A
Aquaprot_Heating	***N/A***	N/A
230V Triac Menu	***Sub Menu***	See *9.9 230V Triac menu*
Auto Test	***Sub Menu***	See *9.10 Autotest menu*
Clear Alarm(s)	***Sub Menu***	See *9.11 Clear alarm menu*

9.3 Configuration menu

NOTE: After resetting the controller, this sub menu should be accessed to configure pumps' number.

Parameter	Factory Setting	Optional setting	Description
Type 0= First 1=Eff	0	0= AquaFirst 1= AquaEff	Set to 0
S5 Active heating	0	0 Disables / 1 Enables heat curve	Set to 0
Cooling Mode AO1	0	0=Heating/ 1=Cooling mode	Set to 0
P12 Nbr of Pumps	1/0	0/1/2	Primary pump(s) number
MinSpeedP1P2	40	10 >100	N/A
P34 Nbr of Pumps	1	0/1	Set to 1
Modbus Factor	1	1/10/100	To set displayed decimals on Modbus values. 1=integer value, eg:58°C 10=1 decimal, e.g. 583/10=58,3°C 100=2 decimals, e.g. 5836/100=58,36°C
Relay 1 function*)	1	0..7	0=No action 1=General Default (GD) 2=High temp Alarm (HA) 3=Eco function (E) 4=Booster function (B) N/A 5=Thermal Treatment (TT) 6=Pump Fault (PF) 7=Tank loaded (TL) N/A
Relay 2 function*)	2	0..7	
Renewable Config 0:N 1:SF 2:AA 3:AP	Keep 0	N/A	N/A
APilot rev 0=Off 1=On	Keep 0	N/A	N/A
SP distrib 0=I 1=E	0	N/A	N/A
SW AL Version	4.0	N/A	Firmware Version

*) Both relay 1 and 2 are programmable.

9.4 S1 Menu Secondary Outlet

Parameter	Factory Default Setting	Optional setting	Description
SP_T_Sec_Outlet	60°C	DHW Setpoint	Change setpoint value in clock program
Delta T S1 HiAlm	10°C	0-50	High Temperature Alarm if Ts1 SP_T_Sec_Outlet+Delta Ts1 HiAlm
High T Alarm Delay	1 min	0-60	High temp alarm is effective after this time
High Alarm Auto Reset	0	0/1	0=MANUAL alarm clear / 1=AUTO alarm clear
High_Alm_Reset	Off	Off/On	Put ON to clear an high temp alarm, then put Off
P_Band AquaFirst	40	0<P<200°C	↑P to be less reactive /more accurate
	(-200 to 200)	Negative values in cooling	↓P to be more reactive (be careful of "pumping" effect)
I_Time AquaFirst	15	0-200 sec	↑P to be less reactive
			↓P to be more reactive (be careful of "pumping" effect)
D_Time AquaFirst	2 sec	0-200 sec	Derivative
P_Band AquaEff	80	0<P<200°C	N/A
	(-200 to 200)	Negative values in cooling	
I_Time AquaFirst	15	0-200 sec	N/A
D_Time AquaFirst	2 sec	0-200 sec	N/A

9.5 Thermal Treatment Menu

The function Thermal Treatment is disabled by default.
Activate it by setting TrTh_Activated to ON.
The clock program logically activates it automatically or not.
The thermal treatment starts when the thermal treatment is switch on inside the clock program, and ends at the end of the thermal treatment duration (ThermTr Duration) or at the end of the authorized period, when thermal treatment is OFF in the clock program.

The user has to define a one (1) sensor mode - fixed duration as per Therm.Tr duration parameter.

Parameter	Factory Setting	Optional setting	Description
ThTr_Setpoint	70°C		Usual value
TrTh_Activated	Off	Off/On	Enable or Disable the function as per clock program
Sensor_Nbr NS 0=Auto/1/2S	Auto	Auto/1 sensor/2 sensors	Use 1 sensor (set to 1)
ThTr Duration	1 min	1-240 min (4 hours max)	Adjust value according to the installation + buffer vessel capacity
Fixed duration (1 sensor)	1	0/1	Set to 1
ThTr Max try time	1 min	1-240 min	N/A
DeltaT S1S2 ThTr	7°C	1 - 20°C	N/A
Inhibition time	30 min	0-180 (0 à 3 hours)	High temp alarm inhibition time after thermal treatment

9.6 Safety Function

This function activates all the pumps' power relays at the same time without considering ipsothermic contacts' inputs.

NOTE: This function can be enabled from end user level.

Parameter	Factory Setting	Optional Setting
SAFETY_Speed	75%	Not used
SAFETY FCT	Off	Off/On

In case of high temperature alarm on S1, the primary pumps are stopped, even if the function is activated.

9.7 Eco-Booster Function

- **ECO**: When control valve is sufficiently closed (Valve Hysteresis) during a sufficient long time (ECO delay), primary pump switches off and primary mixing valve close down.
  The system is switch ON when S1 temperature has gone down more than the set value of ”Eco Hysteresis”.
  If secondary pumps are connected (SS/DS/DD series) they are still in operation during the Eco function.

- **Booster** function is not available in AquaCompact

Parameter	Factory Setting	Optional setting	Description
0:- 1:E 2:B 3:E+B	0	0/1/	0 = No function 1 = Eco Function only 2 = N/A 3 = N/A
Fct_Selection	Normal	Normal/Eco/Boost/ EcoBoost	Playback function selected in 1:Eco 2:Booster 3:ECoBoost
Eco Delay	5 min	1-30 min	Scan time before activating function if possible
Eco Hysteresis	5°C	1-20°C	Temperature range in which the function is applicable
Valve Hysteresis.	10%	0-80%	Maximum opening of the valve before switching function
Booster Delay	2 sec	2-200 sec	Time delay between the Booster functions stops and the second pump stops (N/A)
Booster Gradient	2°K/s	1 to 20°K/sec	Minimum temperature fall speed at which the function operates (N/A)

9.8 Fouling function

Accessing the scaling-menu requires login at Technician level.
Scaling function can be activated when the sensor S3 is connected.

If the temperature in S3 is too high for a long time this function activates an alarm that consider the heat exchanger fouled.

Parameter	Factory Setting	Optional setting	Description
Fouling alm activ	0	0/1	0=disabled / 1=enabled
Fouling_alarm	Normal/Default		Read only
SP_Fouling	65°C	60-80	Depends on the HE type and Primary inlet temperature

9.9 230V Triac menu

Accessing the 230C Triac-menu requires login at Technician level.

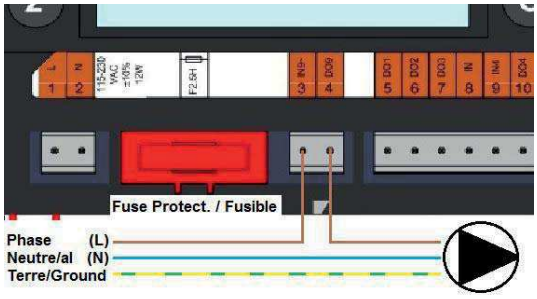
This menu allows using a 230VAC Triac output.

Parameter	Factory Setting	Optional setting	Description
Multi P	Off	Off / On	Enable or Disable the 230V output as per clock program
Pulse Duration	5 sec	1-3600	230V pulse duration in seconds
Bypass 0=Off 1= ON	N/A	N/A	N/A
DeltaT Bypass	N/A	N/A	N/A

The 230V electrical output can be configured as a pulse function. For example it can be used to shortly activate an electrical drain valve.

In this configuration, the pulse duration can be programmed to be active a day, week or special day.
For example each Sunday at 10h00 for 5 seconds.

Connected device must not exceed 230VAC 1A.



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9.10 Autotest menu

Accessing the Autotest menu requires login at Technician level.

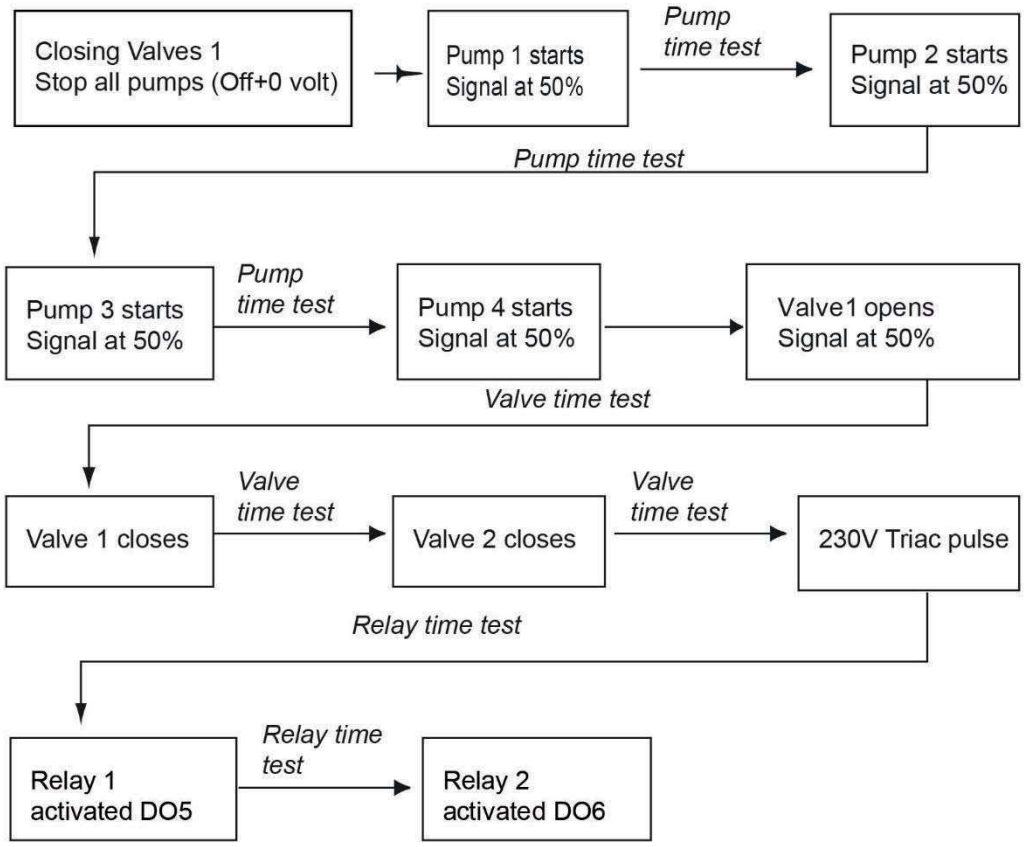
This submenu allows testing analog (contacts) and digital (0-10V) outputs that manage pumps start/stop, both programmable relays, 230V Triac output and valve' signal. It is possible to run an automatic sequence or to test manually each output individually.

In case of Auto test (automatic sequence), it is possible to reduce or increase tests' temporizations. Pump, valve and relays test times can be adjusted individually. The time test value will impact on the total auto test time sequence.

Parameter	Factory Setting	Optional Setting	Description
Start AutoTest	0	0/1	Set 1 to start auto test. When finished, the value goes back to zero.
Pump_Fault_Reset	Off	Off/On	Set to On after an Auto test.
Pump time test	4 sec	1-600 sec	Pumps activated this time value
Valve time test	4 sec	1-600 sec	Valve activated this time value
Alarm time test	4 sec	1-600 sec	Relays 1 and 2 test
Cmd_P1	On/Off	On/Off	Activates pump 1 relay
Cmd_P2	Off/On	On/Off	Activates pump 2 relay
Speed_P1P2	xx %	0-100 %	Not used
Cmd_P3	On/Off	On/Off	Activates pump 3 relay
Cmd_P4	Off/On	On/Off	Activates pump 4 relay
Speed_P3P4	xx %	0-100 %	Not used
Relay 2	Off	On/Off	Activates relay 2
Relay 1	Off	On/Off	Activates Relay 1
Triac_Output	Off	On/Off	Activates 230V triac output
Valve signal	xx %	0-100 %	Valve opening/closing
Valve2 signal	xx %	0-100 %	N/A
Valve_DO	xx %	0-100 %	N/A

NOTE ! Once test is manually done and finished, remember to put the point on Automatic mode, logo .

The Auto test sekvens described in the picture is a general test procedure. It may vary depending on connected components.



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NOTE: A pump fault may occur after Auto test. In this case, clear the alarm according to *9.11 Clear alarm menu*.

9.11 Clear alarm menu

Accessing the Clear Alarm menu requires login at Technician level.

All alarms are cleared the same way.

Parameter	Factory Setting	Optional Setting	
High_Alm_Reset	Off	Off/On	Select **On** to clear the alarm, then return to **Off** or wait a few seconds for automatic return to **Off.** Off: the alarm is cleared
Pump-Fault_Reset	Off	Off/On	Select **On** to clear the alarm, then return to **Off** or wait a few seconds for automatic return to **Off.** Off: the alarm is cleared

10 Service Menu

Press the key to enter the Service menu. In the service menu you can:

- change password for technician level
- trending parameters
- display the trend buffer
- check operating hours

From Point Data sub-menu you can, read or change binary or analog outputs to start/stop a pump, open/close control valve for example.

10.1 Change password for technician level

NOTE: To change the password you need the password for the Technician level, level 3.

1. Press key to access to Service Menu, go to “Login Installer”, press the wheel.
2. Enter the current password, press the wheel to validate.

3. Mark “Change Password” then press the wheel.

4. Go to Level 3 line and then click on the password to change it. Press the wheel to validate.

NOTE: Level 2 password is not in use.

10.2 Login installer

Login Installer	****		Enter 3333 if not in technician mode
	Change password		

10.3 Menu Continue

Menu	Sub-menu	Sub-menu	Description
Continue	**Operating hours**		Viewing operating hours of internal parameters
	Trending	**Points in trend**	Select variables to trend for example temperature sensors
		Display Trend buffer	View the records
	Interface Config (com)	**C-Bus active**	Factory pre-set
		Ctr#1 9600	Factory pre-set
		B-port 9600	Factory pre-set
		Append bus number to data point name	Activated
		RF Teach in (N/A)	Factory pre-set
		Modbus	Device ID: 10 Baud Rate: 9600 Parity: None No.stop bits: 1
	Time Programs	**Solar**	Not used
		Main	It is SP_T_Sec_Oulet (main temperature program). See *9.4 S1 Menu Secondary Outlet*.
		TSP_Amb	Not used
		Multi Pulse	See *9.9 230V Triac menu*
		Therm. treatment	See *9.5 Thermal Treatment Menu*
	Point Data	**Internal parameters +I/O visualisation**	
		Analog input	Sensor values
		Pseudo Analog	Can be set points or internal parameters
		Analog Output	Valve output signal
		Binary input	Ipsothermic contacts from pumps, remote contact
		Pseudo Binary	Internal flags
		Binary Output	Pump start/stop contacts, relays contacts, 230V Triac
		Totalizer	N/A
		Remote Analog	N/A
		Remote Binary	N/A
	System Data	**System information**	
		Parameters	N/A
		Date/Time	Clock settings
		System Info	Hardware/Software info (version, date)
		Interface Config	Access to Modbus parameters see *14 Modbus.*
		DDC Times	Program's time constant
		Flash memory	Info on flashing. Allows saving all settings. It can be reloaded after a Reset

10.4 Operating hours

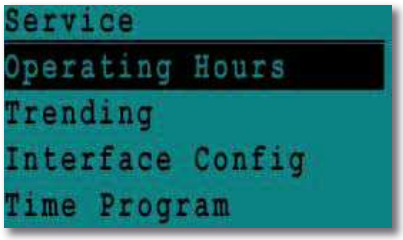
Operating hours for the following parameters can be checked:

- Therm_Protec_P1 /P3
- Cmd_P1/P3
- High_Temp_Alarm
- Main_Alarm
- AFF_leg_active
- SAFETY_FCT
- Multi P
- ECO

For more information and descriptions see *12 Parameters' list*.

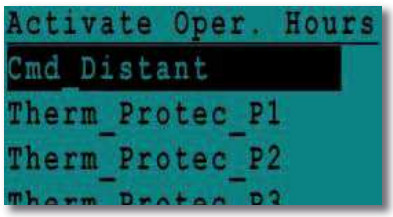
1. Press key to access to Service Menu, then click on "Continue".

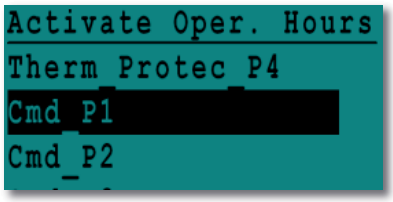
2. Select "Operating Hours" in the menu.
   The first time you enter this menu, the list is empty.



3. To add a variable to trend; choose .

4. Mark one variable to follow and press the wheel.

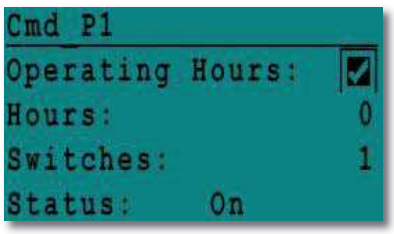




5. Validate the variable by clicking in the Operating Hours box. If this box is empty the variable is in the list but it is not recorded.

When you go back in the menu (key), you can see the list with "Cmd_P1" parameter, and on the right side, the operating hours.

For more details, click on the line to open the sub-menu.
Here you can read that P1 has been operating less than 1 hour, has been switched one time and status is On.



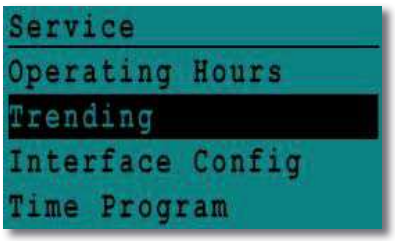
Proceed the same way to add extra variables.

10.5 Trending parameters menu

A lot of different variables can be recorded or trended. It can be temperatures' measurement, valves or pumps' signals, ipsothermic contacts, alarms, thermal treatments etc.

1. Press key to access to Service Menu, then click on "Continue".

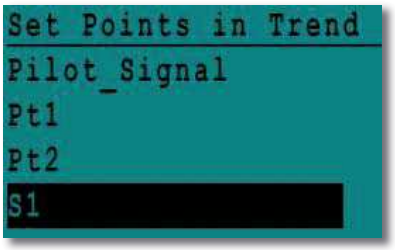
2. Select "Trending" in the menu



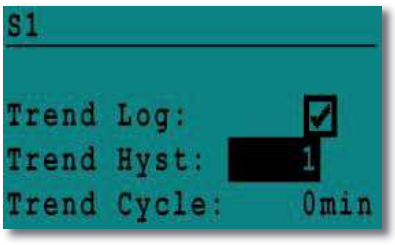
3. Select "Points in Trend".
   The first time you enter this menu, the list is empty.

4. To add a variable to trend; choose .

5. Mark the variable to follow and press the wheel.
   In this example the Secondary outlet temperature, S1.

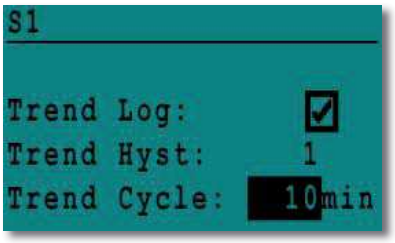


6. Validate the variable by ticking in the Trend Log box. If this box is empty the variable is in the list but it is not record.



There are two different ways to record (method a and b):

a) Only the temperature change is recorded.
This saves memory and allows a longer sampling period compared to method b.
Select the record hysteresis. In our case, every 1°C temperature change is recorded. The hysteresis value can be changed by clicking on it.



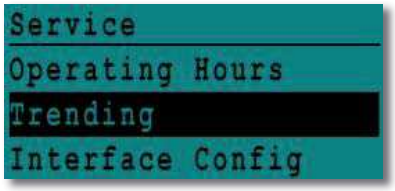
b) Record on a time base, whatever the temperature changes or not.
Note that this method consumes memory, especially if a short time base is selected. Here the time base selected is 10 minutes recording (1 record every 10 minutes).

For method ***a*** set *Trend cycle* to zero, and set *Trend Hyst* value different to zero. For method ***b***, set *Trend Hyst* to zero and set *Trend cycle* value different to zero.

10.6 Display the trend buffer

1. Press key to access to Service Menu, then click on “Continue”.

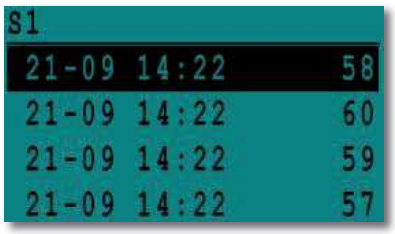
2. Select “Trending” in the menu.



3. Select “Display Trend Buffer”.

4. Select the variable to display, S1 in this case, and press the wheel.

Date, time and temperature at the time can be read.
For example on 21st of September at 14h22 was the temperature in S1 58°C.



10.7 Point Data

From the menu Point Data you can:

- read or change binary or analog outputs
- start and stop pumps
- open or close control valve.

This sub menu is very similar with Autotest as it performs same actions in manual mode.

NOTE ! Once test is manually done and finished, remember to put the point on Automatic mode, logo .

11 Alarm menu

Alarm indication is a volt Free Contacts (VFCs), 2 Amps maxi, each under 230 V.

Press key to access to Alarm menu. The menu contains four different lists:

- **Alarm Buffer**
  Lists all events with; date, time and type of event.

- **Points in Manual**
  List of all points actually in manual mode this list should be empty. When point values are forced for tests for example, they should be place in automatic mode at the end.

- **Points in Alarm**
  Lists all events with alarm condition.

- **Critical Alarms**
  Lists all alarms with critical alarm condition.
  Critical alarms are important alarms, like high temp.

- **Non-Critical Alarms**
  Lists all non-critical alarm condition.
  These alarms are more information, like power failure.

For example, in the alarm buffer you can read:

15:52	SAFETY_FCT
15:51	SAFETY_Speed
15:41	SAFETY_Speed
15:40	SAFETY_FCT

Note that the alarms are listed with the latest at the top.

Press a line to see more information about the alarm.

Displayed	Meaning
19-06-2012 15:52 SAFETY_FCT On Auto operation	The safety function has been set to auto mode, stopping the safety function at 15h52.
19-06-2012 15:51 SAFETY_Speed 100% Auto operation	The safety speed has been set in Auto mode at 100% at 15h51.
19-06-2012 15:41 SAFETY_Speed 75% Manual operation	The speed pump has been set manually to 75% at 15h41.
19-06-2012 15:40 SAFETY_FCT On Manual Operation	The safety function has been activated manually the 19th of June 2012 at 15h40.

12 Parameters' list

There are more than 100 different parameters used in the controller. Most of them are used for internal programs and calculations. Here we describe the main points.

Name	Description	Unit	Modbus Address*
Therm_Protec P1	Ipsothermic input from P1 pump	0/1	11
Therm_Protec P3	Ipsothermic input from P3 pump	0/1	13
PD_Cmd_P1	P1 command. It is the pump Start/Stop output	On/Off	15
PD_Cmd_P3	P3 command. It is the pump Start/Stop output	On/Off	17
PriP1_Alarm_On	Primary pump 1 default	0/1	19
PriP2_Alarm_On	Primary pump 2 default	0/1	20
Sec_P3_Fault	Secondary pump3 default	0/1	25
PDMain_Alarm	General Alarm	0/1	28
High_Temp_Alarm	High temperature alarm on S1 sensor	0/1	29
Fouling_Alarm	Fouling heat exchanger Alarm	0/1	30
Ret_High_Alarm	High temperature alarm on S2	0/1	31
ThermTr_Alarm	Thermal treatment failed	0/1	32
SAFETY_FCT	The safety function state	0/1	35
Disp_Leg_active	Thermal treatment running	0/1	36
Remote_Control	The unit is remotely controlled	0/1	37
ECOMode	ECO function activated	0/1	42
Tank_load	Tank loaded (sensor S2 need to be connected)	0/1	44
PA10_valve1	Primary valve actuator	0-100%	47
S1_10	Secondary Outlet temperature measurement (S1 sensor)	°C	50
S2_10	Secondary Inlet temperature measurement (S2 sensor if present)	°C	51
S3_10	Primary Outlet temperature measurement (S3 sensor if present)	°C	52
S1_PID_SP_10	Current temperature set point of the main control loop on S1	°C	62
High_Alm_Reset	To Reset an high temperature alarm	On/Off	201
Pump_Fault_Reset	Resets a pump fault	On/Off	202
SP_T_Sec_Outlet	Domestic Hot Water Setpoint (S1)	°C	211
ThTr_Setpoint	Thermal treatment temperature set point	°C	213
PD_Triac_Output	230V Triac output state.	On/off	33

* Please refer to *14 Modbus*.

13 Factory reset

After a reset must the controller be configured,
see *9.3 Configuration menu*.
Especially the number of pumps must be configured.

1. Press both and C for 5 seconds.
2. Rotate the wheel; select the last line, program name with a star at the end.
3. Press the wheel a few seconds and the program will start after 1 minute.

Settings are now factory settings.

Note that on some software versions, the displayed language can be changed.

1. Rotate the wheel clockwise to display all available languages.
2. Select and press the wheel.
3. Select *Factory* line and press the wheel, the controller will restart.

NOTE: If another line is available, it contains previous set parameters and function before Reset was done. You can then recover all the parameters.

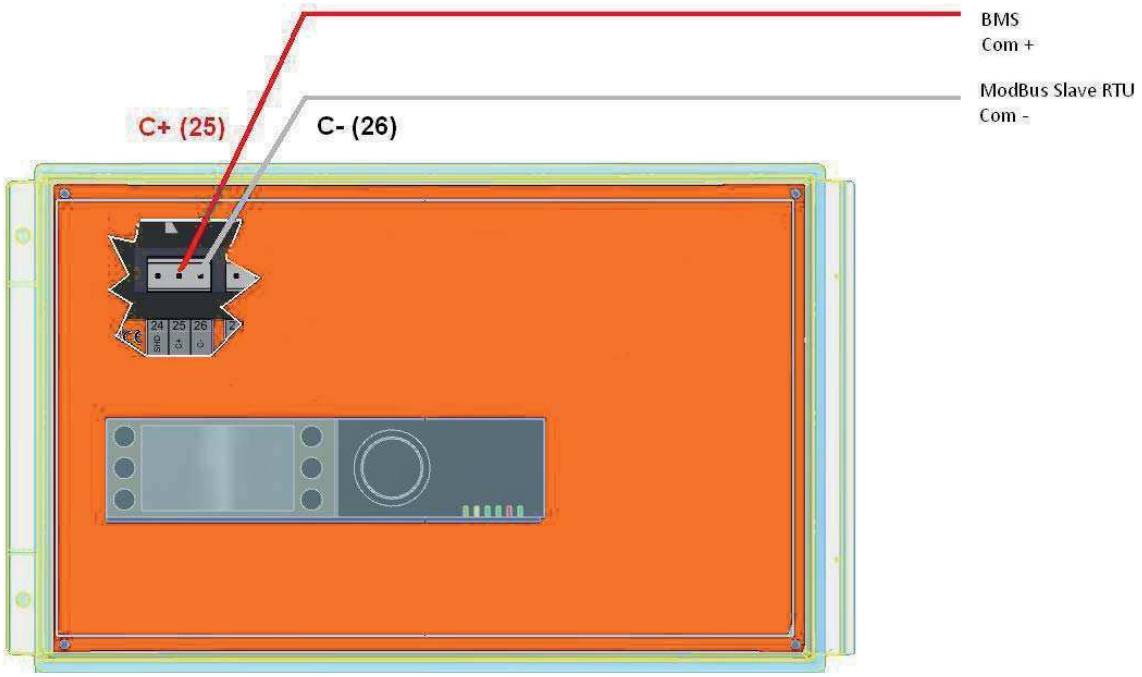
14 Modbus

14.1 Modbus communication

The controller includes a Modbus slave communication protocol, type Modbus RTU RS485.

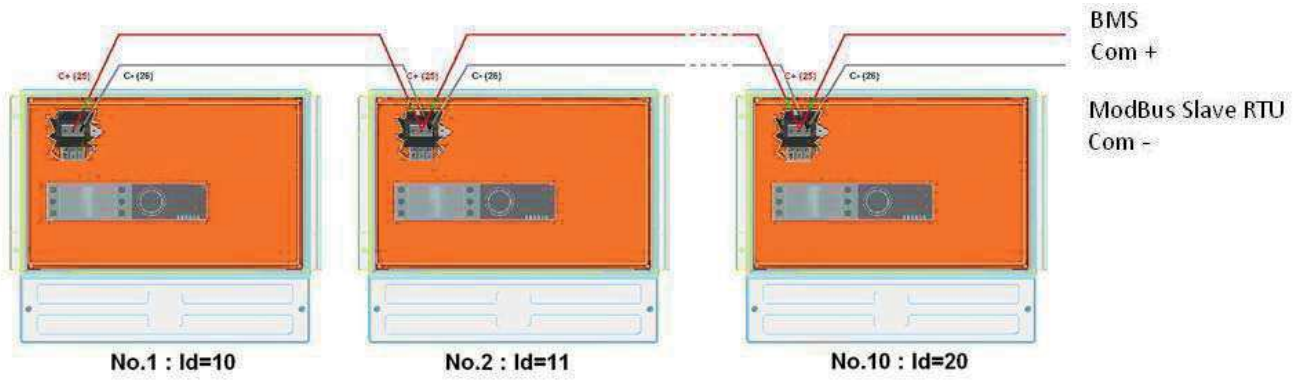
Connection between BMS (building management system) and Micro 3000 requires two polarized wires on C+ and C-, respectively labelled 25 and 26 on controller C Bus terminal.

The connection via shielded cable is not required but can be performed with the terminal 24.
For this, it is necessary to unscrew the front panel.



14.2 Connecting multiple Micro 3000 control boxes

Rules to respect
Max length between BMS and farer control box is 500 meters
Connection (C+ and C-) has to be done directly on the controller C Bus terminal, without using derivation boxes. Respecting this, there are two wires per terminal, except the farer control box.



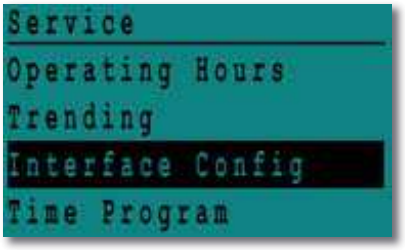
14.3 Change Modbus parameters

1. Press key to access to Service Menu, go to “Login Installer”, press the wheel.

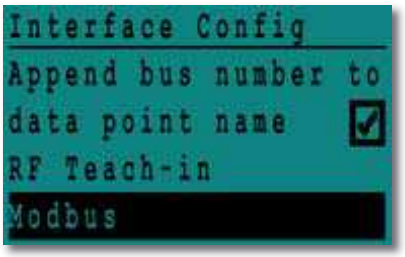
2. Enter the current password, press the wheel to validate.

3. Mark “Next" then press the wheel.

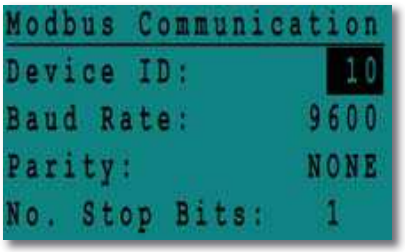
4. Select “Interface Config”.



5. Select “Modbus”.



6. Select the variable to change
   Press the wheel to validate.
   - Device ID = Modbus Address of the controller
   - Baud Rate=Com speed
   - Parity = None (0) / Even /Odd
   - No of Stop Bits= 0/1



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14.4 Modbus slave communication parameters

MODBUS PARAMETERS :		
	Speed:	9600
	Bit number:*	8
	Stop bit:	1
	Parity:	None
	Mode:	RTU

In case of multiple controllers, change ModBus slave number

ModBus Points	MODBUS adress**	Type	Sub-type	Mode	Value	Comment
Read Only digital						
PD Cmd P1	15	HR 16	BOOL	R	0=Off, 1=On	Command P1
PD Cmd P3	17	HR 16	BOOL	R	0=Off, 1=On	Command P3
PriP1 Alarm On	19	HR 16	BOOL	R	0=OK, 1=Alarm	P1 Fault
PriP2 Alarm On	20	HR 16	BOOL	R	0=OK, 1=Alarm	P2 Fault
SecP3 Alarm On	23	HR 16	BOOL	R	0=OK, 1=Alarm	P3 Fault
PD High Alarm	27	HR 16	BOOL	R	0=OK, 1=Alarm	S1 High Temp Alarm
PDMain Alarm	28	HR 16	BOOL	R	0=OK, 1=Alarm	General default
Fouling Alarm	30	HR 16	BOOL	R	0=OK, 1=Alarm	Fouling alarm (S3)
Reserved for future use	32	HR 16	BOOL	R	0=Off, 1=On	Reserved for future use
PD Triac Output	33	HR 16	BOOL	R	0=Off, 1=On	230V Triac output
SAFETY FCT	35	HR 16	BOOL	R	0=Off, 1=On	Safety function
Disp Leg active	36	HR 16	BOOL	R	0=Off, 1=On	Therm.Treat. On going
Remote Control Re	37	HR 16	BOOL	R	0=Off, 1=On	Remote control
AFF FD20	39	HR 16	BOOL	R	0=Off, 1=On	Heating mode
AFF FD22	40	HR 16	BOOL	R	0=Off, 1=On	Cooling mode
EcoMode	42	HR 16	BOOL	R	0=Off, 1=On	ECO activated
PD Pumps Fault	43	HR 16	BOOL	R	0=Off, 1=On	Synthesis pump(s) fault
Tank load	44	HR 16	BOOL	R	0=Off, 1=On	Tank loaded
	(16 bit integer/Entier 16 bit)*					
Read Only Analogic						
SW AL Version	34	HR 16	int16	R		Software version
PA10 valve1	47	HR 16	int16	R	%	Control vlave 1 signal
S1 10	50	HR 16	int16	R	°C	Sensor 1 measurement
S2 10	51	HR 16	int16	R	°C	Sensor 2 measurement
S3 10	52	HR 16	int16	R	°C	Sensor 3 measurement
S1 PID SP 10	62	HR 16	int16	R	°C	Calculated S1 setpoint
	(16 bit integer/Entier 16 bit)*					
Read-Write digital						
High Alm Reset	201	HR 16	BOOL	R/W	1=Reset fault. Pulse point necessary 30 seconds On/Off	
Pump fault Reset	202	HR 16	BOOL	R/W	1=Reset fault. Pulse point necessary 30 seconds On/Off	
	(16 bit integer/Entier 16 bit)*					
Read-Write Analogic						
SP T Sec Outlet	211	HR 16	int16	R/W	°C	S1 fixed setpoint (DHW)
ThTr setpoint	213	HR 16	int16	R/W	°C	Thermal treatment setpoint
	(16 bit integer/Entier 16 bit)*					

* For some supervisors, it is necessary to implement BOOL as int16
** For some supervisors, remove 1 to adress number (ex : S1 10 adress=49)
*** If present

15 Trouble shooting

FINDINGS	PROBABLE CAUSES	REMEDIES
Pump not operating	Locked rotor or damaged	Force to rotate. Replace if required
	Corresponding led is not lit	Replace Power Board
	Pump relay damaged	Replace Power Board
	Pump protection fuse blown	Check then replace if necessary
	High Alarm condition detected	Clear alarm then reset system
	No voltage to control board terminals	Check power supply cable and fuses
	No voltage to pump motor terminals	Check protection fuse on main board, cable condition and connections
	Controller improperly set	Contact After Sales Service
Low temp alarm condition	Primary pump stopped	See “Pump not operating”
	Too low primary temperature	Check for a closed valve in the primary
	Too high tap water flow rate (SI)	Reduce buffer vessel charging flow rate
	Set point too high 3 way valve remains closed	See “The actuator does not operate”
The actuator does not operate	Damaged or broken actuator	Test and replace if necessary
	Broken or improperly tightened coupling	Check and replace if necessary
	Valve blocked	Replace
	No signal from the controller	Check then replace if necessary
	Supply wires improperly tightened	Check wires, re-tighten connections
	Actuator stroke restricted	Dismount then clean the valve
High alarm condition detected	Charging pump stopped	Refer to ‘’Pump not operating’’ above
	Low recirculation flow rate	Check and fix problem
	Alarm differential too low	Check and set the controller
	Actuator not closing	Refer to “The actuator does not operate” above
	Too much differential of pressure across the actuator	Check the way the TWM is piped-up. A mixing bottle should be used
Correct temperatures across the exchanger not obtained. **Valve and pumps operating satisfactorily**	Excessive exchanger scaling at the primary or secondary side	Open and clean the exchanger according to cleaning instructions
	Primary pipe work obstructed or strainer upstream clogged	Inspect primary pipe work. Clean strainer on the primary side
	Shut-off valves closed	Open shut-off valves
	Air presence in the primary circuit	Purge. Check no high parts where air could be trapped exist
	Excessive pressure drops	Check pipe size is suitable for nominal flow rate
Temperature does not increase in the buffer tank and the tap water value is correct.	Recirculation flow rate exceeds charging flow rate.	Check and measure charging and recirculation flow rates. Adjust when necessary
		Recirculation FR < 0.6 x Charging FR (FR =Flow Rate)

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16 Maintenance and repairs

HRS Hevac AquaSave does not require any specific maintenance.
The frequency of the inspections depends on the water hardness, temperature and flow rate.

Weekly inspections:

- Check for leaks on pipes and components.
- Check that the operation control system is stable and that the temperature does not fluctuate. Temperature hunting causes unnecessary wear of valves, actuators.

Annually:

- Check the control box electrical connections tightening.
- Check the control valve for leaks.
- Check the electric current requirement of the circulation pump.
- Clean and disinfect the system at least once a year, see *16.1 Antibacterial treatment of the AquaSTOR.*

Regularly:

- The cleaning schedule for the exchanger will depend on the quality of the water and how much demand is placed on the system.
- Flush-out the tank on a regular basis.
- Check regularly that the safety devices (like safety valve, etc.) are working properly.
- Lime scaling on the connected devices.

Scaling of the secondary side will be evidenced by:

- A high pressure drop on the secondary side of the exchanger that should not exceed 50 kPa on all models (heat exchanger only).
- Improper temperature range on the secondary side of the exchanger.
- Low temperature difference between inlet and outlet on the primary side of the exchanger when the control valve is fully open.

Only replace any defective parts with the **original** spare parts.
Please contact our after sales company HeatExchangerSpares.com for spare parts, note serial number and model designation.

Maintenance work must be carried out by a qualified and authorized technician.

Hazard of severe electrical shock or burn.
Before cleaning and servicing, disconnect power supplies.

Risk of burns. Let the pipes cool down before starting out with maintenance work.

16.1 Antibacterial treatment of the AquaSTOR

Clean and disinfect the system at least once a year

Whenever the AquaSTOR or exchanger circuits are to be drained, it is crucial to let the water cool down to preclude any risk of scolding or burns.

The AquaSTOR is fitted with a dismounting inspection hole.

In order to work on the inside of the tank:

- use the shut-off to isolate the exchanger kit
- isolate the installation's power circuit
- close the cold water inlet, and drain out the tank.

Access is through the inspection hole, once the tightening screws have been loosened.

NOTE: Comply with all currently applicable governing standards of, cleaning and disinfecting the system at least once a year.

16.2 Clean the brazed plate heat exchangers

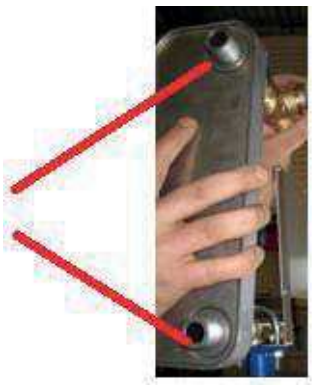
Only the specially designed, pre-fitted cleaning kit and compatible agents should be used for cleaning brazed plate heat exchangers.

Protective gloves and glasses should always be worn while these operations.

Use the specially-engineered plugs and isolate the secondary circuit using the gate valves.

Unclip the heat insulator at the top and bottom of the exchanger

Isolate the exchanger and use the special connective fittings for cleaning, removing the plugs.
CIP connector: 3/4‘’

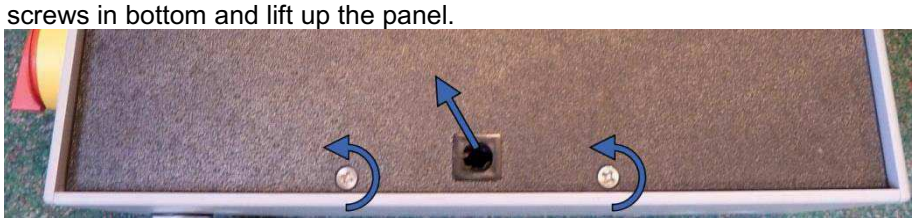


- The circulator systems and pumps require no specific maintenance action.
- The motor-driven control valves do not need any particular maintenance. Run annual checks to ensure that the valve glands do not show signs of leakage.
- The control box requires no specific maintenance action. Run an annual check to make sure the electrical connections hold tight.

16.3 Open the control box

Remove the front panel by turning the lock button counter clockwise and lift up the cover.

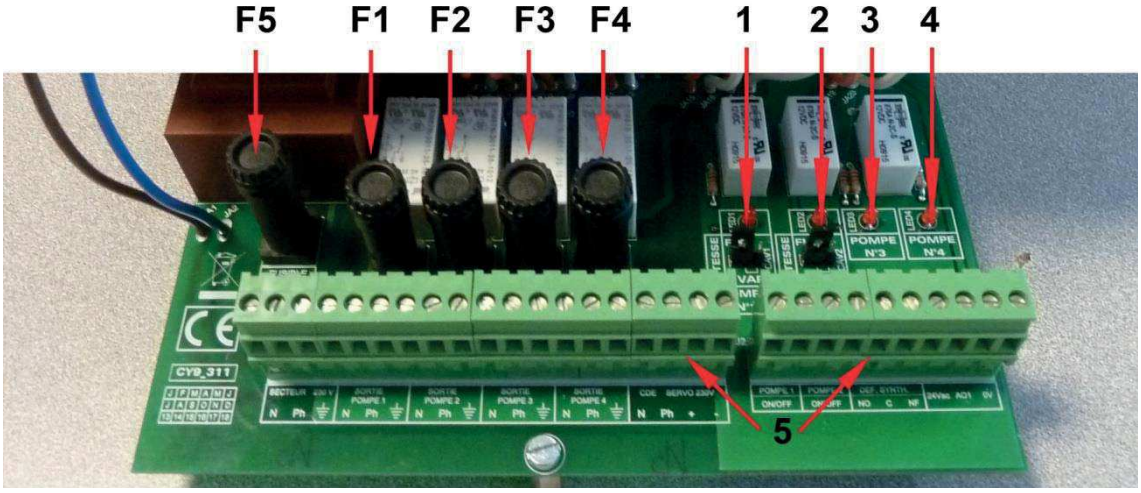
Unscrew the two screws in bottom and lift up the panel.



16.4 Change fuses

The control box is fitted with a set of fuses to protect the different components against overload. Extra fuses are included in the control box.

The service work must be carried out by an authorized service technician.
Turn off the power supply before starting to work.



F5	Fuse F5	1	Led 1, lit when pump P1 is power supplied
F1	Fuse F1	2	Led 2, lit when pump P2 is power supplied
F2	Fuse F2	3	Led 3, lit when pump P3 is power supplied
F3	Fuse F3	4	Led 4, lit when pump P4 is power supplied
F4	Fuse F4	5	Terminal block

For technical information about the fuses, see *5.4 Current limiting fuses*.

16.5 Set the number of pumps

The pumps' configuration and connections is factory made.
In a servicing situation the correct pump must be identified.

Codification	Meaning	Connected pump(s)
A62B	1 charging pump	P3
A63B	1 primary pump + 1 charging pump	P1+P3

16.6 Add an extra sensor

Please see *6.2 Electrical wiring diagram, option A62B* and *6.3 Electrical wiring diagram, option A63B*

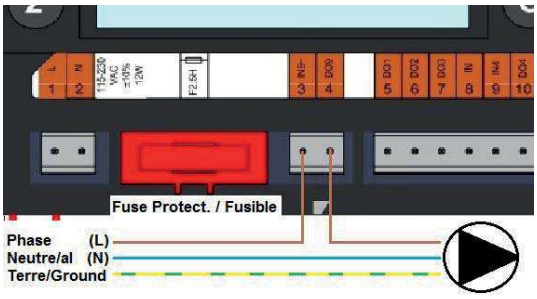
S1-S3 are temperature sensors, NTC20k.

16.7 Connect to 230V Triac output

The 230V electrical output can be configured as a pulse function. For example it can be used to shortly activate an electrical drain valve.

In this configuration, the pulse duration can be programmed to be active a day, week or special day.
For example each Sunday at 10h00 for 5 seconds.

See *9.9 230V Triac menu*.



Connected device must not exceed 230VAC 1A.

16.8 Add relay 1 and relay 2

Relay 1 can be NO (normally open) or NC (normally closed). Relay 2 is always NO (normally open).

Connect the relay 1:

Operating mode	Connections on PCB bottom terminal
NO	C-NO (25-24)
NC	C-NF (25-26)

Connect relay 2 to the controller terminal 13(IN6) and 14 (OUT6).
See *6.2 Electrical wiring diagram, option A62B* and *6.3 Electrical wiring diagram, option A63B*

If using 230V phase through this contact, do not exceed 2A load.

16.9 Add a remote control contact

The AquaSave can be operated by a remote controller. To enable that connect a volt free contact between BI1 and GND.

Wire terminal name	Wire terminal number
BI1	33
GND	31 or 37

NOTE: When the contact is open, the unit operates normally. If it is closed the unit is in standby (mode) but the controller display remains activated.

DO NOT power supply this contact! It is a volt free contact.

See *6.2 Electrical wiring diagram, option A62B* and *6.3 Electrical wiring diagram, option A63B*

17 Assembly of the charging kit to the AquaSTOR

NOTE: The photos are non-binding – changes are liable to made without notice.

1. Unpack secondary charging kit and check all parts for damage.

2. Tools required to install the secondary charging kit:
   Adjustable spanner
   10mm spanner
   Phillips No2 screwdriver
   Small flat electrician's screwdriver

3. Connect the secondary isolation valve to the AquaSTOR.

4. Connect the heat exchanger support to the support connection on the AquaSTOR

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5. Mount the heat exchanger on the support bracket and connect to the secondary isolation valve.

6. Tighten the "U" bracket on the heat exchanger support.

7. Install a fibre washer on the inlet connection of the heat exchanger.

8. Connect the secondary inlet sub-assembly (pressure relief valve, taco flow valve and secondary pump) to the inlet connection of the heat exchanger.

10. Install a fibre washer in to one end of the flexible hose.

11. Connect the flexible hose to the secondary pump.

12. Insure the pump connection is tight.

13. Install a fibre washer in the flexible hose and connect to the bottom connection on the AquaSTOR.

14. Insure the flexible hose connection is tight.

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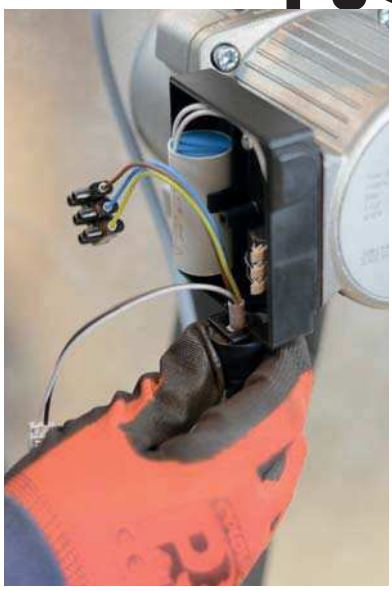
15. Mount the first half of the insulation jacket, aligning with the heat exchanger secondary connections.

16. Mount the second half of the insulation jacket, aligning with the heat exchanger primary connections.

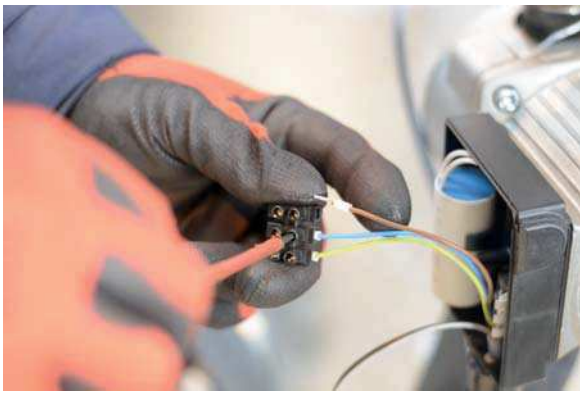
17. "Snap" on the insulation retaining clips.

18. Ensure both top and bottom clips are fully seated.

19. Remove the secondary pump terminal box cover.



20. Attach the gland and wiring loom to the terminal box.



21. Remove the protective terminal strip

22. Connect the secondary pump wiring.
    Brown : Live
    Blue : Neutral
    Green/Yellow : Earth

23. Ensure that the wiring will not be trapped by the terminal cover.

24. Re-attach the secondary pump terminal box cover.

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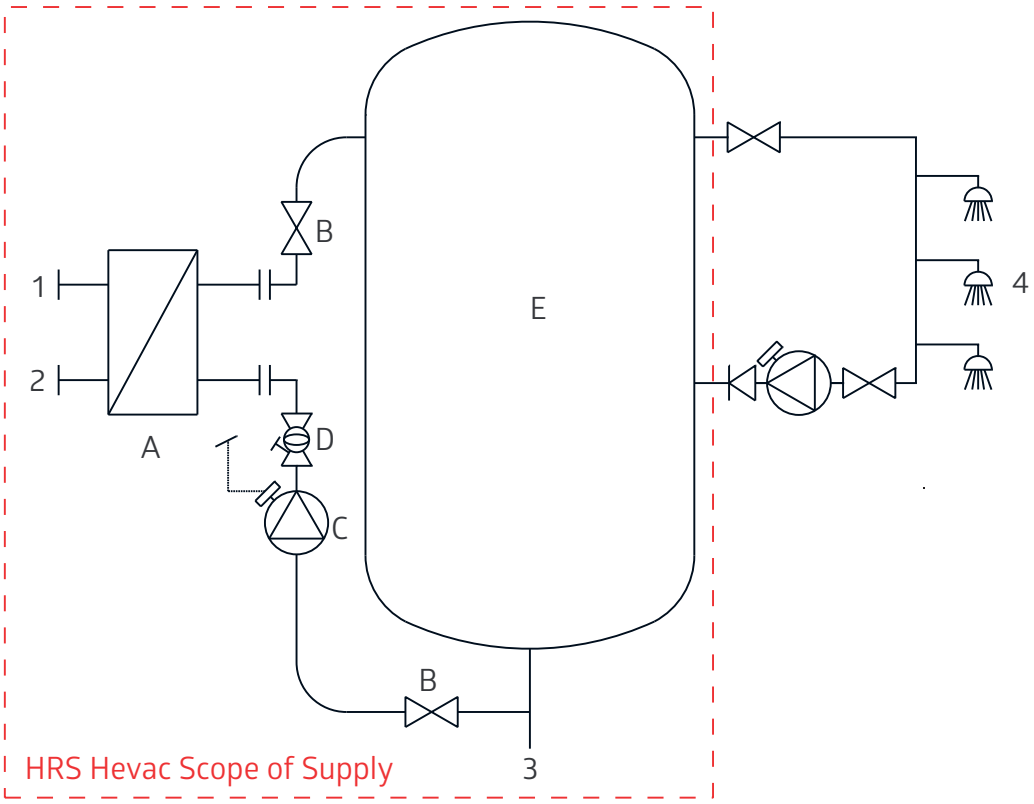
18 Flowcharts

18.1 Flowchart A60B

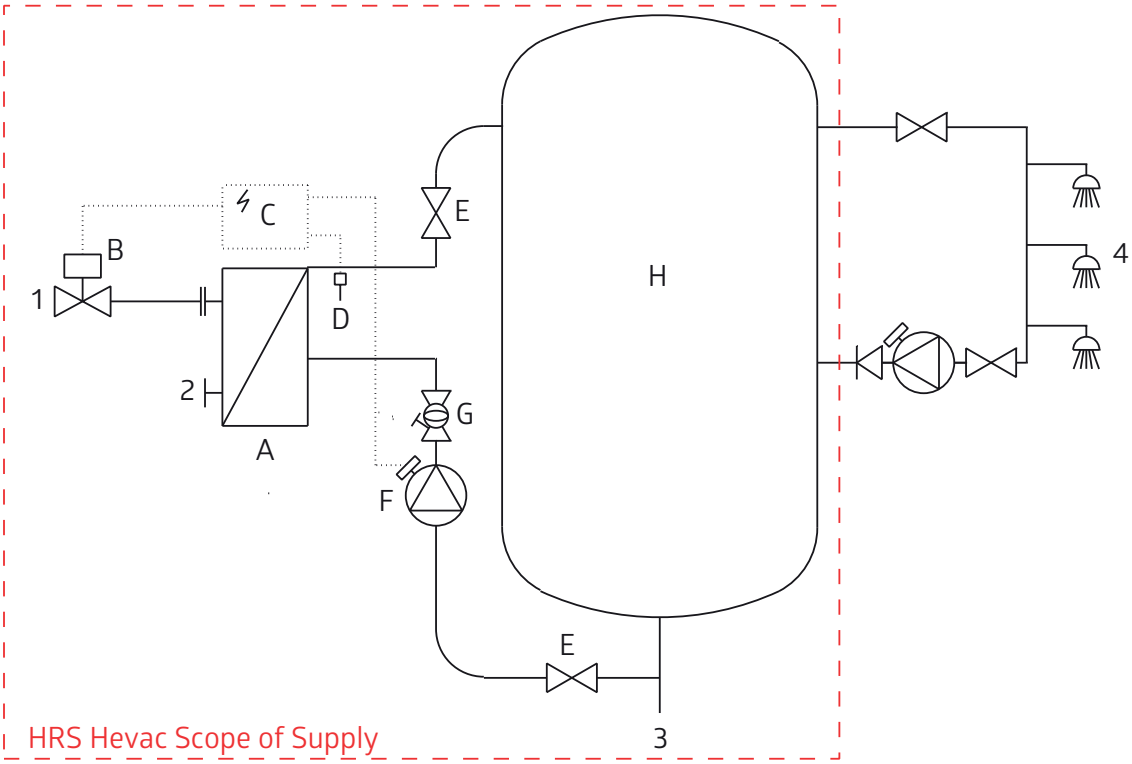


Key

A Heat Exchanger
B Isolating Valve
C Shunt Pump
D Flow Regulating Valve
E Secondary Buffer Vessel

1 Primary Inlet
2 Primary Outlet
3 Cold Feed
4 Water Outlets

18.2 Flowchart A62B

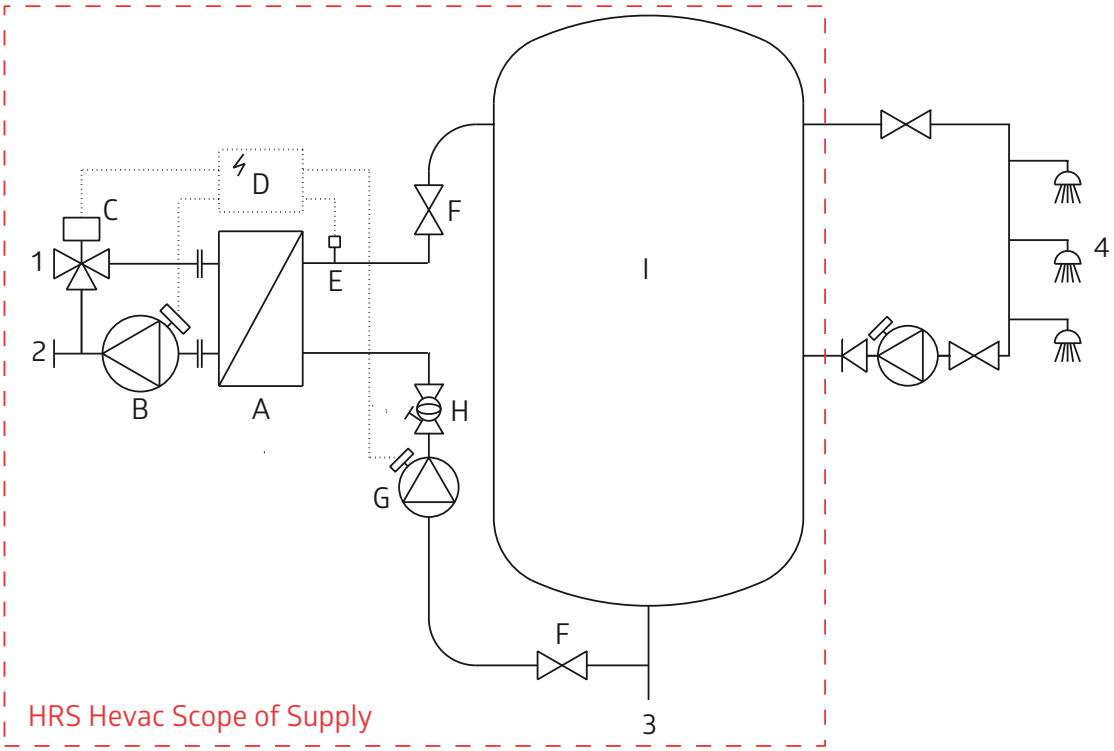


Key

A Heat Exchanger
B 2 Port Control Valve
C Control Panel
D Control Sensor
E Isolating Valve
F Secondary Shunt Pump
G Flow Regulating Valve
H Secondary Buffer Vessel

1 Primary Inlet
2 Primary Outlet
3 Cold Feed
4 Water Outlets

18.3 Flowchart A63B



Key

A Heat Exchanger
B Primary Shunt Pump
C 3 Port Control Valve
D Control Panel
E Control Sensor
F Isolating Valve
G Secondary Shunt Pump
H Flow Regulating Valve
I Secondary Buffer Vessel

1 Primary Inlet
2 Primary Outlet
3 Cold Feed
4 Water Outlets

19 Wiring the charging pump

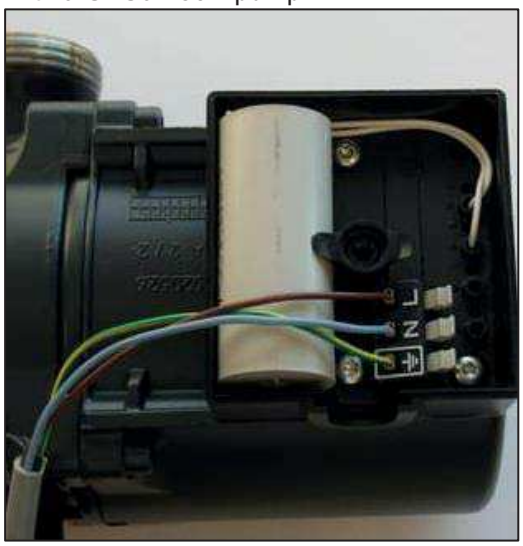
Note: The charging pump has not been wired previous to delivery.
The five wires cable connected to the control box that must be wire to the charging pump.
Please proceed as follow:

1. Ensure the system is not connected to the main power supply. If the control box is connected to the main power supply, ensure that the main switch is turned off and locked.
2. Open the electric box of the charging pump.
3.

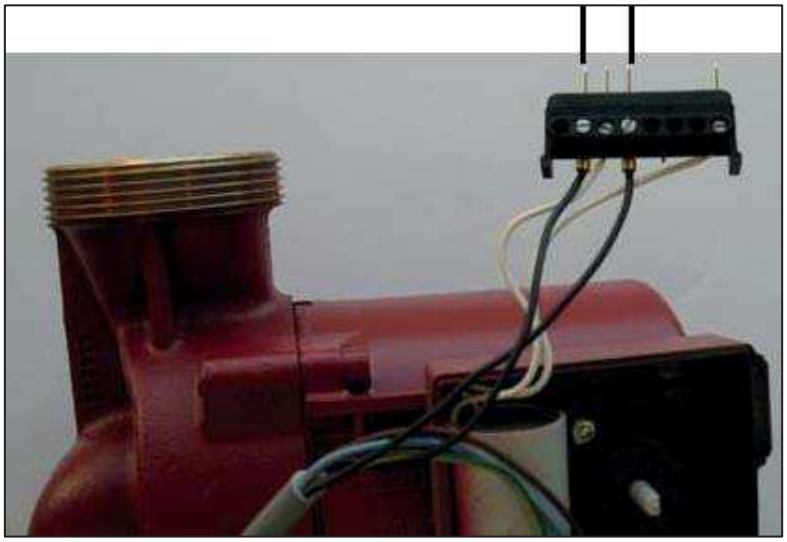
Yellow/Green wire to Earth:	⏚
Blue wire to Neutral:	N
Brown wire to Phase:	L

4. With a UPS32-80N pump:
   To allow the pump to report Ipsothermic contact to the control box, wire the two black wires to the heating protection plug (mark 2 & mark 4).
   To proceed, remove the plug from its location.
5. Place the gland back in place to provide sealing of the cable.
6. Close the electric box of the pump.

With a UPS32-80N pump



Mark 2 Mark 4



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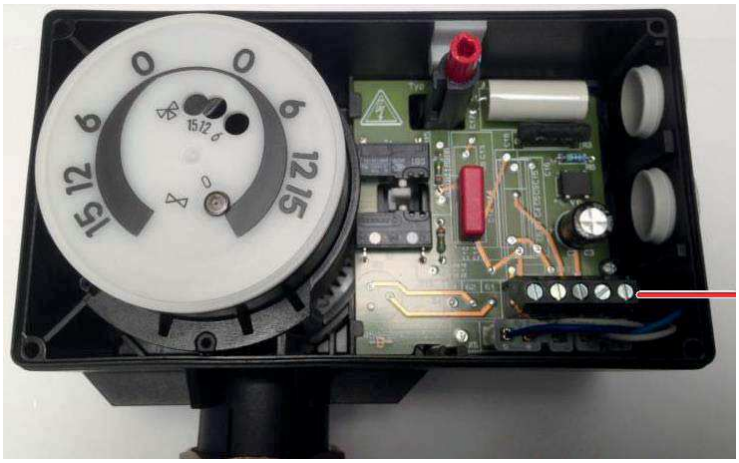
20 Special instructions for options

20.1 Special instructions for A62B

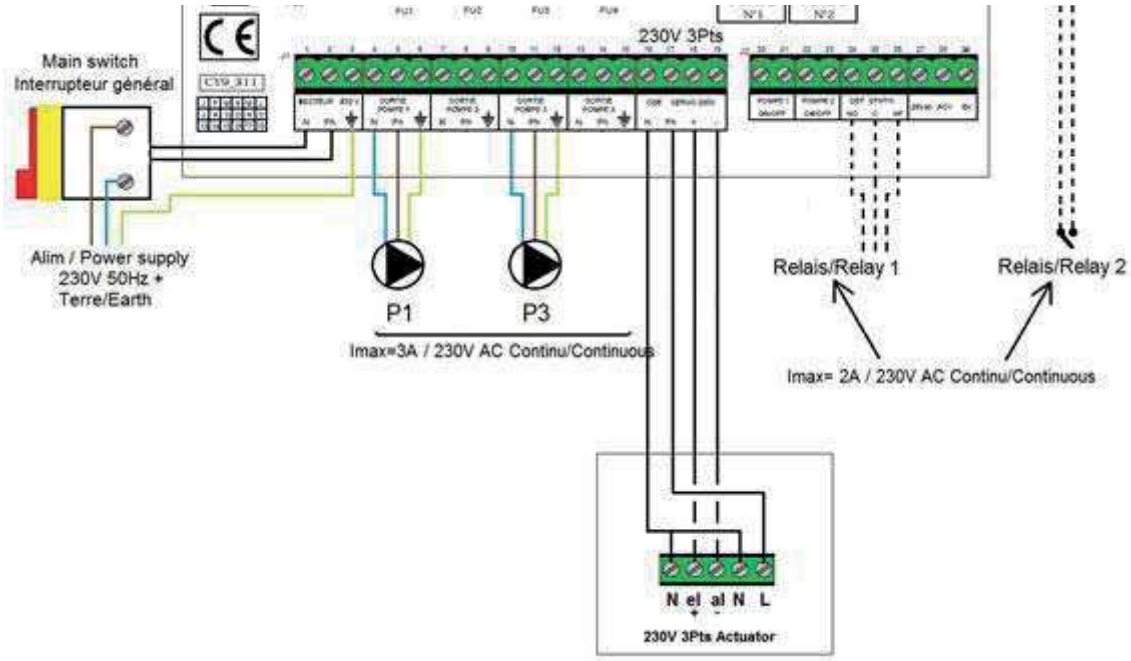
The actuator has been factory-calibrated. No special setting is needed.

20.1.1 *Electrical wiring*



Wire terminal

20.1.2 *Wiring diagram*



21 Commissioning report

All parts are not applicable to the AquaSave

COMMISSIONNING REPORT								
Installation								
Tightening dimension control								
Air vent position								
Settling Pot presence on primary								
Boiler Brend, installation and power								
Mixing bottle required / Presence								
Balancing valve presence on Indirect (Semi Instantaneous) installations								
Close drain valves								
Primary conformity:								
Secondary conformity:								
Accessibility of unit and components								
Configuration menu								
Sensors								
Pumps								
Other								
Primary Pumps:				Secondary Pumps:				
Pump 1		Pump 2		Pump 3		Pump 4		
Electrical bridges control for pumps on power plate								
Pump 1		Pump 2		Pump 3		Pump 4		
Control valve working								
Settings								
DHW secondary outlet T° setting: S1								
PID setting								
High alarm setting			Manual			Auto		
Thermal Treatment		Type		Setting		Time		
Eco function activation								
Booster function activation								
Other functions activated								
Relay 1 function								
Relay 2 function								
Trending and/or Modbus value activated								
Volt free Remote contact wired or not								
TRIAC 230 V connections wired or not								
Other comments:								
Identification of the unit:								
Unit ID N°	Installer / Company Name	Installation site	Date					

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22 Declaration of Conformity

Declaration of Conformity
Déclaration de conformité
Konformitätserklärung
Försäkran om överensstämmelse

Manufacturer/ Fabricant/ Hersteller/ Tillverkare

HRS Hevac Ltd
10-12 Caxton Way, Watford, Herfordshire. WD18 8JY

* Heat exchanger system for plates and gaskets for the production of hot water
* Système à échangeur de chaleur à plaques et joints pour la production d'eau chaude sanitaire
* Wärmeübertrager-System für Platten und Dichtungen für die Produktion von Warmwasser
* Värmeväxlarsystem med plattor och och packningar för produktion av varmvatten

Products/ Produits/ Produkte/ Produkter	Models/ Modèles/ Modelle/ Varianter
HRS Hevac AquaSave A60B, A62B & A63B	Honeywell/ Grundfos

Above mentioned products are in article 4.3 according to PED 2014/68/EU
Les produits susmentionnés figurent à l'article 4.3 conformément à la DESP 2014/68/EU
Vorstehend benannte Produkte fallen unter Artikel 4.3 der DGRL 2014/68/EU
Ovanstående produkter ligger i artikel 4.3 enligt PED 2014/68/EU

- Used directives / Directives utilisées/ Verwendete Richtlinien / Tillämpade direktiv
  Pressure Equipment Directives PED 2014/68/EU /
  Directive sur les équipements sous pression PED 2014/68/EU
  Druckgeräterichtlinien PED 2014/68/EU /
  Tryckkärlsdirektivet PED 2014/68/EU /

- Low Voltage Directive (LVD) 73/23/EEC followed by 2006/95/EEC/
  Directive Basse tension 73/23/EEC suivie de 2006/95/EEC
  Niederspannungsrichtlinie (LVD) 73/23/EEC gefolgt von 2006/95/EEC/
  Lågspänningsdirektivet (LVD) 73/23/EEC följt av 2006/95/EEC/

Following norms have been applied/ Les normes suivantes ont été appliquées:/ Folgende Normen wurden angewendet/ Följande normer har tillämpats:
- EN 60335-1 partly/ EN 60335-1 en partie/ EN 60335-1 teilweise
- EN 60204-1 partly/ EN 60204-1 en partie/ EN 60204-1 teilweise

Conformity Assessment procedure:
Procédure d'évaluation de conformité:
Konformitätsbewertungsverfahren:
Konformitetsprocedur:

Sound Engineering practice
Règle d'ingénierie sonore
Gute Ingenieurpraxis
God teknisk praxis

Pontcharra sur Turdine, 19.07.2016

DHW/R Product manager/ Responsable de la conformité/ Produktmanager

23 Warranty

Our equipment comes with a 12-month warranty from the date of shipment. This may be extended to 6 months from the date of commissioning of the equipment, subject to commissioning report being mailed to HRS Hevac. The warranty period is limited to 18 months from the actual date of shipment from the factory.

The manufacturer's liability is limited to the replacement of any defective part ***that cannot be repaired. No other financial compensation may be claimed in any case under the warranty***

The nature and probable cause of the defect must be reported to the manufacturer before any action is taken. The defective part should then be returned to our factory in Watford for assessment unless written agreement to proceed otherwise has been obtained from HRS Hevac. The results of the assessment can only state whether or not the terms of the warranty apply.

Exclusion factors:
Non-compliance with the guidelines for installation, configuration and maintenance:
Over pressures, water-hammer, scaling, noncompliant water quality

Also excluded from the warranty:

- Fitting costs, refitting costs, packaging, transport, and any accessories or equipment not manufactured by HRS Hevac, which will only be covered by any warranties issued by said third-party manufacturers.
- Any damage caused by connection errors, insufficient protection, misapplication or faulty or careless operations.
- Equipment disassembled or repaired by any other party than HRS Hevac.

Non-payment will lead to all operational warranties covering the delivered equipment being terminated.

23.1 Spare parts

Only replace any defective part with the original spare part. Please contact HRS Hevac during the warranty period.

23.2 How to contact HRS Hevac

HRS Hevac Limited mail@hrshevac.co.uk www.hrshevac.co.uk

Head Office
10-12 Caxton Way, Watford,
Hertfordshire.
WD18 8JY t. 01923 232335

North & Factory
No 1, Rosemount Works,
Huddersfield Rd, Elland.
HX5 0EE t. 01422 317070

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