

Cetetherm AquaEfficiency

Installation, service and operating instruction



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1 General

Cetetherm AquaEfficiency is a compact tap water system product including a heat exchanger, motorised control valve and managed primary and secondary pumps, as per versions. It is equipped with a control box including a dedicated PCB and communicant temperature controller. Piping is made of specially designed steel and brass parts.

AquaEfficiency has been tested hydraulically and electrically at the factory.

The tap water module is designed for indoor installation in plant rooms where the ambient temperature always should be above 0°C. Max ambient temperature: 40°C. Max. hyg: 85% without condensation.

When handling the unit, make sure the actuator and its wire are not damaged or stressed.

The charging pump will be mounted when installing the AquaEfficiency.

1.1 **Product overview AquaEfficiency** AquaEfficiency EFF76 / EFB112 DD

AquaEfficiency EFP 5000/7000 DD





A	Primary inlet	PP	Primary pump
В	Primary outlet	PRV	Safety valve
CW	Cold Water inlet	S1	DHW temperature sensor (master)
DHW	Domestic Hot water	S2	Secondary inlet temperature sensor
HE	Heat Exchanger	S3	Primary return temperature sensor
NR	Non Return Valve	V3V	3-port control valve with actuator
PC	Charging pump (as per version)	СВ	Control Box



2 Operating principle

AquaEfficiency EFF76 / EFB112 DD

AquaEfficiency EFP 5000/7000 DD



- 8The primary water enters the control valve with actuator (A) and leaves through the fitting (B).
- Cold water enters at bottom part (CW) and leaves at the required temperature at high part (DHW).
- The primary circuit is equipped with a single or double pump.
- The secondary circuit should be equipped with a recirculation or a charging pump for Direct (Instantaneous) versions.

Indirect versions (Semi Instantaneous) are equipped with single or double secondary pump.



3 Installation of an AquaEfficiency unit



The installation work must be carried out by an authorized installation contractor.



The temperature and the pressure of the water are very high. Only qualified technicians are allowed to work with the AquaEfficiency. Incorrect operation may cause serious personal injury and result in damage to the building.



Minimum pressure/temperature on primary side: 1.0 bar at 7°C, 1.5 bar at 100°C Maximum pressure/temperature on primary side:10 bar /100°C

Minimum Pressure / Temperature on secondary side: 1.0 bar/ 7°C, Maximum pressure / Temperature on secondary side: 10 bar/ 100°C

3.1 Unpacking/preparation/mounting

- Before installation this manual must be read.
- The system should be installed and connected in conformity with standard flowcharts defined in <u>4 Flowcharts.</u>
- Rinse the pipes, before connecting them to the tap water module.
 The pipe work may contain solid particles that could block or prevent the control valve with actuator to operate correctly.
- Check the tightening dimensions of the gasket and plate heat exchanger (GPHE), see measure table in <u>18.1 Clean the plate heat exchangers (P-series).</u>
- Also check:
 - Air vent position
 - Settling pot presence on primary side
 - o Boiler installation and capacity conformity
 - Pressure breaker (primary vessel, mixing bottle or equivalent) presence on primary side
 - o Balancing valve on secondary side of indirect (semi-instantaneous) installation
 - o Accessibility of unit and components
- Pipe the primary and the secondary side of the module.
- Fill-up both sides progressively with water.
- Purge air at high parts.
- Purge all the pump bodies.
- Install electrically the unit respecting electrical installation information see chapter <u>8 Electrical installation</u> and <u>18.13 Technical data.</u>
- Switch on the power.
- Check controller setting and enable the required functions.

3.2 Commissioning

The controller has been set at the factory. If any function needs tuning, values can be changed with reference to this manual for parameter setting. Initially, the commissioning process should be carried out with the factory settings.

Fill out the form in chapter 21 Commissioning report.



4 Flowcharts



The tap water modules should be installed according to the following schematics. Whatever type, unit model and production type (Instantaneous or Semi Instantaneous), each pump (or pump motor when double ones) delivers 10% to 100% of the nominal primary pump signal and 25% to 100% of the nominal secondary pump signal, to stick to the actual demand.

Cetetherm do not recommend the use of a mixing bottle on primary side of an AquaEfficiency installation, because the mixing effect destroys the low return temperature. But the need for the differential pressure breaker functionality of this mixing bottle is still mandatory.

On AquaEfficiency Cetetherm recommends replacing the traditional mixing bottle by a small buffer tank, named STBI, that serves as an inertial storage tank and avoids any boiler pumping.

In case a primary vessel, named STP, is required or designed on the installation, the STBI tank becomes unnecessary.

ID.	NAME	ID.	NAME
Α	Primary inlet	Pt1	Outdoor temperature sensor
			optional, for heating purposes
В	Primary outlet	S1	DHW temperature sensor (master)
CW	Cold Water inlet	S2	Secondary inlet temperature sensor
DC	Drain valve	S 3	Primary return temperature sensor
DHW	Domestic Hot water	V, V'	Shut-off valve
HE	Heat Exchanger	V3V	3-port control valve with actuator
NR	Non Return Valve	VR	Balancing valve
PP	Primary pump	STBI	Inertial condensation boiler storage tank
PR	DHWC pump	STP	Primary storage tank
PRV	Safety valve	STS	Secondary storage tank

4.1 Installation of an AquaEfficiency Direct unit

4.1.1 Standard flowchart for Direct version



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4.1.2 Example of Flowchart with eventual optimised use of primary vessel

4.1.3 Other possible drawing

Not recommended for low return temperature applications.



4.2 Installation of an AquaEfficiency Indirect unit (Semi Instantaneous)

ID.	NAME	ID.	NAME
Α	Primary inlet	Pt1	Primary vessel temperature sensor
В	Primary outlet	S1	DHW temperature sensor (master)
CW	Cold Water inlet	S2	Secondary inlet temperature sensor
DC	Drain valve	S3	Primary return temperature sensor
DHW	Domestic Hot water	V, V'	Shut-off valve
HE	Heat Exchanger	V3V	3-port control valve with actuator
NR	Non-Return Valve	VR	Balancing valve
PC	Charging pump (secondary)	STBI	Inertial condensation boiler storage tank
PP	Primary pump	STP	Primary storage tank
PR	DHWC pump	STS	Secondary storage tank
PRV	Safety valve		





4.2.1 Standard flowchart for Indirect version

4.2.2 Other possible drawing

Not recommended for low return temperature applications.



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5 Installation of an AlfaPilot unit

5.1 Operating principle AlfaPilot

AlfaPilot is a simple and reliable system based on comparative measure of primary return, S3, and primary storage vessel temperature, Pt1. AlfaPilot acts as a "piston" effect on the primary storage vessel allowing fulfilling peak demands of Domestic Hot Water.

If the temperature in Pt1 is higher than the temperature in S3+ Δ T (Δ T is settable, default value is 5°C), stored hot water in the primary vessel will be sent to the boiler/generator or the heating network. The primary vessel will be filled up with cold water from the primary return, before the AlfaPilot, until measured temperature in Pt1 becomes lower or equal to the temperature in S3 + Δ T.

The colder the temperature is in S3, the more efficient is the AlfaPilot. Pay attention when making the settings of flow rates and temperature difference on the tap water systems primary side.

In the case, $PT1 \le S3 + \Delta T$, the primary storage vessel is by-passed and heat recovery in the primary storage vessel goes on with help from solar panels or other renewable heating source, for example heat pump or geothermal. The 3-port valve opens, and flow goes from AB to A port.



The primary return water enters the modulating valve in port 'AB'.

If the water is sufficiently cold, return water flows through port 'B' to the bottom part of the primary storage vessel.

If the water is too hot, return water flows through the 'A' port, towards the boiler/heat generator.

5.2 Flowchart AlfaPilot

		T	· • • • • • •
ID.	NAME	ID.	NAME
Α	Primary inlet	Pt1	Primary vessel temperature sensor
В	Primary outlet	Pt2	Mixing AlfaPilot outlet temperature sensor
CW	Cold Water inlet	S1	DHW temperature sensor (master)
DC	Drain valve	S2	Secondary inlet temperature sensor
DHW	Domestic Hot water	S3	Primary return temperature sensor
HE	Heat Exchanger	S4	Primary inlet temperature sensor (optional)
NR	Non Return Valve	S5	Outdoor temperature sensor (optional)
PC	Charging pump (secondary)	V	Shut-off valve
PP	Primary pump	V3V	3-port control valve with actuator
PR	DHWC pump	VR	Balancing valve
PRV	Safety valve	RS	Renewable source





5.2.1 AlfaPilot with low return temperature heat transfer unit









5.2.3 AlfaPilot with low return temperature tap water unit

Not recommended on solar installations when recycling flow rates is too high on DHW side (hospitals for example).





6 Installation of a Solarflow unit

6.1 Operating principle Solarflow

In the flowchart RS means a renewable source, eg solar, heat pump, condensate or else recover unit.

The 3-port mixing value is activated only if temperature in STP or RS is hot enough, to limit DHW over heating on S1.

Temperature on Pt1 is compared with S2 and allows or not, the primary pump, of the AquaEfficiency, to be started.

If Pt1< S2+ΔT then the primary pump is stopped. ΔT (*DT Recov_Min*) by default 5° is set in <u>11.14 Solar menu.</u>

Thanks to the AquaEfficiency control, the temperature at S3 is compared with the temperature at S2 to adjust the primary flow rate and obtain low temperature returns on primary side.

The "leaking flow" on secondary side, coming from the recycling loop, allows S2 sensor to be irrigated and to keep SolarFlow "awaken" without the need of any flow switch.

If a flow switch must be used because of leaking flow could not be installed, connect it on Remote control contact terminal or on pump's start/stop contact.

6.2 Flowchart Solarflow

ID.	NAME	ID.	NAME
CW	Cold Water inlet	Pt1	Primary vessel temperature sensor
DC	Drain valve	S1	DHW temperature sensor (master)
DHW	Domestic Hot water	S2	Secondary inlet temperature sensor
HE	Heat Exchanger	S3	Primary return temperature sensor
NR	Non Return Valve	V	Shut-off valve
PP	Primary pump	V3V	3-port control valve with actuator
PR	DHWC pump	VR	Balancing valve
PRV	Safety valve	STP	Primary storage tank
RS	Renewable source	STS	Secondary storage tank





7 Measure sketches

7.1 AquaEfficiency EFB60/EFF52 ID, Direct Version (Instantaneous)















7.2 AquaEfficiency EFB112/EFF76 ID, Direct Version (Instantaneous)













7.3 AquaEfficiency EFP3000 ID, Direct Version (Instantaneous)













7.4 AquaEfficiency EFP5000/7000 ID, Direct Version (Instantaneous)













7.5 AquaEfficiency EFP9000 ID, Direct Version (Instantaneous)













7.6 AquaEfficiency EFB60/EFF52 DD, Indirect Version (Semi-Instantaneous)













7.7 AquaEfficiency EFB112/EFF76 DD, Indirect Version (Semi-Instantaneous)













7.8 AquaEfficiency EFP3000 DD, Indirect Version (Semi-Instantaneous)













7.9 AquaEfficiency EFP5000/7000 DD, Indirect Version (Semi-Instantaneous)













7.10 AquaEfficiency EFP9000 DD, Indirect Version (Semi-Instantaneous)













8 Electrical installation

Power supply the control box with 230VAC 50 Hz.

The control box with the controller Micro 3000 is called the secondary control box.



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



Earth (Ground) must be wired to the control box on terminal 3, to avoid any risk of electrical shock when touching the unit. Neutral and Phase must be respected: do not invert.

8.1 Controller components



- 1 Controller, Micro 3000
- 2 Display

- 3 Bipolar main switch
- 4 Printed circuit board, with wires terminal



8.2 Electrical wiring diagram



1 ModBus terminal

2 Power terminal

3 I/O terminal

8.2.1 *ModBus terminal*

24	25	26							
*)	C+	Ċ							
N	ModBus								
*) cable									
:	shield								

8.2.2 Power terminal

230V output to pumps and valves

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21
Ν	Ph	1	Ν	Ph	ᅴ	Ν	Ph	Ч	Ν	Ph	Ŧ	N	Ph	네	Ν	Ph	+	-	Ν	DO9
Ма	in pov 230V	wer	F	Pump	1	F	Pump	2	F	Pump	3	F	Pump	4		CDE	Servo		23 Ti ou	30V riac tput



8.2.3 I/O terminal

22	23	24	25	26	27	28 29		30 31		32	33
IPSO 1		On/Off 0V 0/10V				IPS	01	On	/Off	0V	0/10V
Pump 1/Pompe 1							Ρι	ump :	3/Por	npe 3	

34	35	36	37	38	39	40	41	42	43	44	45	46	47	48
0V	PT1	IN5	DO5	24Vac	AO1	0V	0V	U1	0V	U2	0V	U3	0V	U4
Sensor Pt1 Relay 1		A	ctuator		Sens	sor 1	Sens	sor 2	Sens	sor 3	Sens	sor 4		

49	50	51	52	53	54	55	56	57	58	59	60
IPS	01	On/	/Off	0V	0/10V	IPS	01	On/	/Off	0V	0/10V
Pump 2/Pompe 2				P	ump 4	1/Pon	npe 4				

61	62	63	64	65	66	67	68	69	70	71	72	73	74	75
0V	PT2	IN6	DO6	24Vac	AO4	0V	0V	U5	0V	U6	0V	B1	0V	B2
Ser	nsor	Rel	ay 2	Alfa	Alfa	Alfa	Sens	sor 5	N/A	N/A	Ren	note	N/A	N/A
P	t2		-	Pilot	Pilot	Pilot					cor	ntrol		
				Valve	Valve	Valve								

Please check also <u>18.13 Technical data</u> and <u>18.14 Current limiting fuses</u>.



9 User instruction operator control panel Micro 3000

Wheel/Button





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.
C	Press to exit a level and return to the previous menu/parameter. Works like an ESC key.
۲	Press to access the maintenance / monitoring menu. NOTE : Requires a password.
Ô	Press to go to the Home screen, Main Menu
	Press to access the Alarm Menu.
1	Not used
2	Not used
	Relay 1 activated
	Relay 2 activated
	Active data transmission
	Active data reception
	Alarm indicator
	The Control box is switched on.



9.1 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

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

9.2 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.



Enable/disable

Item can be deleted

- Checked: item is enabled
- Unchecked: item is disabled

9.3 Password and login

Deleted

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.



Cetetherm AquaEfficiency

Installation, service and operating instruction

9.4 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.
- 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).





Date / Tr	ime
Date:	18-09-2012
Time:	16:49
Format:	31-12-2009
Daylight	Saving Time

Date / Ti	ime
Date:	18-09-2012
Time:	16:55
Format:	31-12-2009
Daylight	Saving Time

Time

18-09-201

Date

Date:

Time:

Format:

9.5	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

9.6 Setting the Daylight Saving Time-Summertime

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.

9.7 Saving changes

Once a value has been changed and confirmed by pressing the wheel, the corresponding change will be immediately updated.

Press the \bigcirc or \bigcirc to return to the home screen.

Devis	. . (Time
Dayligi		saving	Time
_			
Sunday	of	month	
Begin:		Last	. Mar
End:		Last	Oct

Daylight Saving Time



10 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.

10.1 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.

Cetetherm recommends the hot water temperature is at least 55°C and a hot water circulation not less than 50°C.

At a temperature below 50°C there is a risk of bacterial growth on collective installation.

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.

10.2 Time programs

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

The time programs:

- SP_T_Sec_Outlet, to be found in the menu <u>11.4 S1 Menu Secondary Outlet</u>. It is to set the DHW temperature
- ThTr_Activated to be found in <u>11.9 Thermal Treatment Menu</u>, to activate a thermal treatment (1 sensor mode). Start and stop times are defined here.
- Multi_P, to be found in <u>11.15 230V Triac menu</u>.

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.

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.

Changes will be reported to all days with the week time program. If there is a special weekend program it will not be affected.



Cetetherm AquaEfficiency

Installation, service and operating instruction

10.3 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.





Week				
06:00	SP	Т	Sec	60.0
22:00	SP	Т	Sec	60.0

Week				타
06:00	SP	Т	Sec	60.0
22:00	SP	Т	Sec	60.0



Main	Spcl.Day
Mo Week	

Special Day
Annual
Bank Holiday
Daily Programs

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

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.

10.3.1 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.

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

- Annual holiday periods. Require 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.



10.4 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.

NOTE: Cetetherm do not recommend this in our application.

- 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.

S1	Me	enu.	Sec	Out	le 🔒
SP	T	Sec	Ou	tlet	20
		6	0.0	°C	

SP T Sec	Outlet 🗎
11:47 to	12:30
Value:	55.0°C



11 Technician menu, total read and write level

In the technician menu you can:

- make settings for the secondary outlet temperature
- enable/disable functions like Eco, booster, thermal treatment
- enable/disable the fouling function (option)
- 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.

11.1 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.

11.2 The technician Main menu

To enter the Main menu, press the Wey.

Main Menu		
T_Secondary_Out	Read Only	Measured temperature ECS
S1_PID_Setpoint	Read Only	DHW temperature setpoint
T_Secondary_Inlet	Read Only	The temperature measured by Pt2 (AlfaPilot configuration)
T_Primary_Outlet	Read Only	The temperature measured by S3
T_Primary_Inlet	Read Only	The temperature measured by S4 (option)
T_Renewable1	Read Only	The temperature measured by Pt1 (Solarflow/AlfaPilot configuration)
T_Renewable2	Read Only	The temperature measured by Pt2 (AlfaPilot configuration)
T_Outdoor	Read Only	The temperature measured by S5
Configuration	Sub Menu	See <u>11.3 Configuration menu</u>
S1 Menu Sec.Outlet	Sub Menu	See <u>11.4 S1 Menu Secondary Outle</u>
S2 Menu Sec.Inlet	Sub Menu	See <u>11.5 Sensor 2 menu, secondary inlet temperature sensor</u>
Delta T (S3-S2)	Sub Menu	See <u>11.6 Delta T (S3-S2) Menu</u>
S4 Menu Prim Inlet	Sub Menu	See 11.7 S4 menu primary inlet sensor
S5 Menu Outdoor T	Sub Menu	See <u>11.8 S5 Menu Outdoor Temperature</u> .
Thermal Treatment	Sub Menu	See <u>11.9 Thermal Treatment Menu</u>
SAFETY Function	Sub Menu	See <u>11.10 Safety Function</u>
Eco Booster Fcts	Sub Menu	See <u>11.11 Eco-Booster Function</u>
Fouling Function	Sub Menu	See <u>11.12 Fouling function</u>
Pumps Menu	Sub Menu	See <u>11.13 Pumps Menu</u>
Solar Menu	Sub Menu	See <u>11.14 11.13Solar menu</u>
Aquaprot_Heating	N/A	N/A
230V Triac Menu	Sub Menu	See <u>11.15 230V Triac menu</u>
Auto Test	Sub Menu	See <u>11.16 Autotest menu</u>
Clear Alarm(s)	Sub Menu	See <u>11.17 Clear alarm menu</u>


11.3 Configuration menu

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

Parameter	Factory Default Setting	Optional setting	Description
Type 0=First 1=EFF	0	0= Aqua First 1= AquaEff	Set to 1
S5 Active heating ¹⁾	0	0 Disables / 1 Enables heat curve	Set to 1 to activate S5 Menu Outdoor Temperature
Cooling Mode AO1	0	0=Heating mode/ 1= Cooling Mode	Invert 0-10V signal on primary valve
P12 Nbr of Pumps	0	0/1/2	Primary pump(s) number
MinSpeed P1P2	40	10->100	Minimum primary pumps' signal 40% for AquaEfficiency 50% for SolarFlow N/A for other products
P34 Nbr of Pumps	0	0/1/2	Secondary pump(s) number
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 ²⁾	1	07	0=No action 1=General Default (GD) 2=High temp Alarm (HA) 3=Eco function (E)
Relay 2 function ²⁾	2	07	4=Booster function (B) 5=Thermal Treatment (TT) 6=Pump Fault (PF) 7=Tank loaded (TL).
Renewable Config 0:N 1:SF 2:AA 3:AP ²⁾	0	0/1/2/3	0=Not used 1=application SolarFlow (SF) 2=application AlfaStore A 3=application AlfaPilot
APilot Rev 0=Off 1=On	0	0/1	0/1 (depends of valve type) 1= application AlfaPilot
SP_distrib 0=I 1=E	0	0/1	0/1 : internal / External for Modbus use (for Pt2 only)
SW AL Version	XX	N/A	Firmware Version

¹⁾ If the parameter "S5 Active heating" is set to 1, the secondary outlet temperature set point, called "S1_PID_Setpoint", will be calculated by the heat curve, as a function of the outdoor temperature (S5), see <u>11.8 S5 Menu Outdoor Temperature</u>.

²⁾ These three parameters define the renewable mode, please see 11.14



11.4 S1 Menu Secondary Outlet

S1 is the master sensor.			
Parameter	Factory Default Setting	Optional setting	Description
SP_T_Sec_Outlet ⊕+ਙ	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	0-30	High temp alarm is effective after this temporisation
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< td=""><td>↑P to be less reactive</td></p<200°c<>	↑P to be less reactive
	(-200 to 200)	Negative values in cooling	$\downarrow P$ to be more reactive (be careful of "pumping" effect)
I_Time AquaFirst	15	0-200 sec	↑P to be less reactive
			\downarrow P to be more reactive (be careful of "pumping" effect)
D_Time AquaFirst	2 sec	0-200sec	
P_Band AquaEff	80	0 <p<200°c< td=""><td>↑P to be less reactive</td></p<200°c<>	↑P to be less reactive
	(-200 to 200)	Negative values in cooling	↓P to be more reactive (be careful of "pumping" effect)
I_Time_AquaEff	15	0-200 sec	↑P to be less reactive
			↓P to be more reactive (be careful of "pumping" effect)
D_Time_AquaEff	2 sec	0-200sec	

11.5 Sensor 2 menu, secondary inlet temperature sensor

When the temperature measured with S1 and S2 suddenly increases or decreases, this function will send an action signal to the control valve and the primary pump.

The Delta T (S1-S2) function is only valid for variable charging pumps.

When the S2 temperature approaches S1 temperature, an auxiliary control loop reduces charging pump speed down to a minimum of settable value (see below), at the opposite, if the temperature on S2 decreases, the pump speed increases.



Parameter	Factory Default Setting	Optional setting	Description
DeltaTS1S2 SpdP3P4	8°C	320	When the value S1-S2 is below 8° the signal sent to charging pump start to reduce.
P band DT(S1-S2)	5°C	420	Proportional value of the control
DZ_GS2 enk/s	2	0-20	Anticipation on ctrl valve+prim.pump signal, depending of temperature gradient on S2 (ex: quick temp. Loss if tapping =open ctrl valve + accelerate primary pump to save HE+S1 time cst)
Reversed output S2	0	Set 1 if cooling mode	Reverse anticipation action for cooling mode only)
MinSpeed P3P4	25	10 – 100%	Minimal speed if DHW setpoint almost reached (secondary charging pumps only)

11.6 Delta T (S3-S2) Menu "Efficiency"

This function limits the primary return temperature, acting on primary pump signal (speed). It acts like a setting limit valve, limiting the primary flow rate by minimize the signal send to the pump taking care of the differences S3-S2.

The 0-10V signal sent to the primary pump is the minimum of the signal coming from S1 and the signal coming from the ΔT (S3-S2).

Parameter	Factory Default Setting	Optional setting	Description
Delta T(S3-S2)	15K	0-100°C (keep around 25)	Delta T control loop to influence the primary return temp. For a little impact on Delta T control loop, set >20.
BP Delta T S3-S2	80K	Do not change	Value 0-100°C. Big value=smooth influence
Intégral DT S3-S2	60 sec	Do not change	Value 0-200. Big value=Low influence
Lim S3-S2	N/A	Read only	Indicates the DeltaT(S3-S2) function influence. If <0 : No influence. If >0, reduce the primary pump speed of indicated value

11.7 S4 menu primary inlet sensor

If a sensor S4 is connected at the primary inlet, this function can be activated. When temperature suddenly increases or decreases, an action signal is sent to the control valve and primary pump(s) speed.

Parameter	Factory Default Setting	Optional setting	Description
DZ-GS4	2	Do not change	Anticipation on ctrl valve+prim.pump signal, depending of temperature gradient on S4 (ex: boiler temp. Loss if tapping.
Reversed Output S4	0	Set 1 if cooling mode	=open ctrl valve + accelerate primary pump to save HE+S1 time cst) reverse anticipation action (for cooling mode only)



11.8 S5 Menu Outdoor Temperature

This sub-menu allows to adjust the heating curve parameters: slope + ambient indoor temperature set point on a clock program.

NOTE: To activate this function set parameter S5 Active Heating to 1 in the Configuration menu.

When this parameter is activated, it get its influence on S1 setpoint that is modified and variable. It is not necessary to activate S5 heating in configuration menu in the case of AlfaPilot mode: it should not be activated if a constant temperature set point is required on S1, like in tap water production. For more information on AlfaPilot working mode, see <u>18.12 Add AlfaPilot functionality</u>.

- 1. Use the wheel and mark the clock logo. Press the wheel.
- 2. SP_T_Amb_S5 temperature will apply a set point correction of the heating curve. 20°C in ambient is the reference temperature, where no correction occurs (see diagram below).
- 3. The default value for SP_T_Amb_S5 is:
- 20°C between 6h00 (6am) and 22h00 (10pm) and
- 15°C between 22h00 (10pm) and 6h00 (6am) the next day

To change this time program settings see <u>10.2 Time programs</u>.

- Heat Curve curvature Do not change the heat curve curvature, it is a factory setting.
- Heat Curve slope (see diagram below)
 Default value is 1.6 meaning :

With an outdoor temperature at -20°C, the calculated set point will be \approx 85°C and with an outdoor temperature at +20°C the calculated set point will be 20°C.

For example if you want a 90°C calculated set point at -20°C outdoor temperature, set the parameter *HeatCurve slope* to \approx 1.8.

Now if setting an ambient temperature to 15°C, the set point will be decreased to \approx 87°C.

If no outdoor temperature sensor (S5) is in use, Cetetherm strongly recommend to manually entering a value of 20°C for the S5 sensor.

The S5 value needs to be set for not disturbing the constant temperature set point on Pt2 sensor (see 11.14 Solar menu).

The hand logo indicates that the value has been entered manually.

The weather-compensated controller requires a heating curve to determine the correct flow temperature set point according to outside air temperature. The heating curve graph indicates the relationship between outside air temperature and associated flow temperature.



Week				
06:00	SP	Т	Amb	20.0
22:00	SP	Т	Amb	15.0









Application	Heat curve curvature	Heatcurve Slope
Floor heating	1.1	0.8
Radiators	1.3	1.6
Convectors	1.4 à 1.6	1.6

11.9 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 start 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.

Parameter	Factory Default Setting	Optional setting	Description
ThTr_Setpoint	70°C		Usual value
ThTr_Activated ⊕+ڲ NS 0=Auto/1/2S	Off	Off/On	Define the thermal treatment authorized period.
Sensor_Nbr	Auto	Auto/1 sensor/ 2 sensors	Number of sensors used
ThTr duration	1 min	1-240 min (4 hours max)	Adjust value according to the installation + buffer vessel capacity
Fixed duration (1 sensor)	0	0/1	Set to 1, if Sensor_Nbr =1
TT Max try time	1 min	1-240 min (4 hours max)	If AUTO or 2 sensors mode
DeltaT S1S2 ThTr	7°C	1 - 20°C	If during <i>TT Max try time</i> , delta T (S1-S2) is higher than present value -> thermal treatment failure
Inhibition time	30 min	0-180 (0 à 3 hours)	High temp alarm inhibition time after thermal treatment



11.10 Safety Function

This function activates 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 Default Setting	Optional Setting
SAFETY_Speed	75%	0-100%=0-10V signal sent to the pumps
SAFETY FCT	Off	Off/On



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

11.11 Eco-Booster Function

One or both functions can be activated at the same time.

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:

NOTE: This function require a second primary pump.

If the DHW temperature is dropping faster than "Booster Gradiant", the second primary pump is activated, to increase the primary flow rate.

When the DHW temperature is back to the setpoint value again, the function wait the time set in "Booster Delay" before it stops the second primary pump.

Parameter	Factory Default Setting	Optional setting	Description
10:- 1:E 2:B 3:E+B	0	0/1/2/3	0 = No function 1 = Eco Function only 2 = Booster function only 3 = Accumulated two functions
Fct_Selection	Normal	Normal/Eco/Boost/ EcoBoost	Playback function selected in Normal/Eco/Booster/ECOBoost
Eco Delay	5 min	1-30 min	Time setting of the ECO function "sufficient long time"
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
Booster Gradient	2°C/s	1 à 20°C/sec	Minimum temperature fall speed at which the function operates



11.12 Fouling function

Accessing the fouling-menu requires login at Technician level. Fouling 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.

ononiangor roaroar			
Parameter	Factory Default 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

11.13 Pumps Menu

P1 and P2=Primary pumps

	-	-	•	
P3 and P4=Secor	nda	ary	pum	ps

Parameter	Factory Default Setting	Optional setting	Description
P12 Diff.work time	12 hrs	1 - 1000 hours	P1 or P2 Working time
P12 Cycling.Type	2	0=Fixed time	0 : See P12 Cycling Hour
		1=Fixed time+ diff.work time	1 : If diff reached at this time, pump shift
		2=Immediately after Diff.hrs	2 : Don't care of Cycling day+hour
P12 Cycling.Period	0	0=None 1=Daily 2=Weekly 3=Monthly	
P12 Cycling day	1	From 1st to 31st	Available only if "P12 Cycling Period"=3"
P12 Cycling Hour	10h00 pm	00h00 - 23h59 (11h59 pm)	Pump shift time
Min Speed P1P2	40 pct	10->100	Minimum primary pumps' speed 40% for AquaEfficiency 50% for Solarflow N/A for other products
P1P2 Overlap	6	0-10 seconds	Time to start P2(P1) before stopping P1(P2), to let the other pump start
P34 Diff.work time	12 hrs	1 - 24 hours	P3 or P4 Working time
P34 Cycling.Type	2	0=Fixed time	0 : See P34 Cycling Hour
		1=Fixed time+ diff.work time	1 : If diff reached at this time, pump shift
		2=Immediately after Diff.hrs	2 : Don't care of Cycling day+hour
P34 Cycling.Period	0	0=None 1=Daily 2=Weekly 3=Monthly	
P34 Cycling day	1	From 1st to 31st	Available only if "P34 Cycling Period"=3"
P34 Cycling Hour	10h00 pm	00h00 - 23h59 (11h59 pm)	
P3P4 Overlap	6	0-10 seconds	Time to start P4(P3) before stopping P3(P4), to let the other pump start
Pump_Fault_Reset	Off	Off/On	To clear a pump default, set to On, then Off



11.14Solar menu

AquaEfficiency can be acting with a SolarFlow or AlfaPilot working mode, allowing taking benefit of a solar energy with primary storage tank installation or alternative energy recovering installation.

The Micro 3000 combined with extra sensors can pilot a second 0-10V signal valve actuator, allowing directing the outlet primary flow towards the primary storage vessel or towards the boiler (or heat generator). This distribution can be binary (open OR closed valve) in AlfaStore A configuration or proportional in AlfaPilot configuration.

For more information see 18.12 Add AlfaPilot functionality.

Parameter	Factory Default Setting	Optional setting	Description
Config_Solar	No Option	No/SolarFlow/ AlfaStoreA/ AlfaPilot 1)	Config selection
APilot_Reverse	OFF	Off/On	Depending of used valve type, it is sometimes necessary to invert the opening/closing travel
DT Recov Min	5	-50 à +50	Use a negative value for a cooling mode Heating mode=Positive value (5-50°C)
SolarFlow Hystere	2%	0-100	
AlfaStoreA Hystere	2%	0-100	
AlfaPilot Hysteres	2%	0-100	
External_Dist_Sp (intern/extern)	Intern	internal/external	For AlfaPilot, set point relative to Srenewable2(Pt2) and regulation around this set point via AO4 signal output (Valve No.2)
SP_Distrib_Intern ⊕+వ	70°C		Internal Setpoint for Pt2 if "External_Dist_SP"=Intern
SP_Distrib_Ext	65°C		External Setpoint for Pt2 if "External_Dist_SP"=External

1) See <u>18.12 Add AlfaPilot functionality.</u>

Remark :

If S5 is wired, Pt2 setpoint takes in account the external temperature, generating a heat curve

11.14.1 Solarflow

To use the Solarflow application, an extra sensor Pt1 is needed. It must be placed in the top of a primary storage buffer vessel e.g. solar. See <u>18.9 Change or add an extra sensor</u> and <u>4 Flowcharts</u>.

When Solarflow is not active the AquaEfficiency unit is in standby mode, with valve closed and pump stopped. Standby mode will be active until the temperature in the primary storage buffer (Pt1) becomes higher or the same as the secondary return temperature (S2) plus the set parameter *DT Recov_Min*, (when *Pt1* \geq *S2*+*DT Recov_Min*.).

DT Recov_Min (default 5°C) is set in <u>11.14 Solar menu.</u>

At this moment all other AquaEfficiency functions are operational and the system supplies energy regulating on secondary outlet temperature S1.

When primary temperature (Pt1) is hot enough, the AquaEfficiency is put in Standby mode once again

Solar mode activates in the <u>11.3 Configuration menu.</u>

Remark: In SolarFlow mode, eventual secondary pumps are always working and are not stopped, even in the standby SolarFlow mode.



11.15230V Triac menu

Accessing the Triac-menu requires login at Technician level. Choose between one of two different operating modes. **NOTE:** both modes cannot be combined.

- Pulse(s) function Clock pulse, using time program. Pulse duration settable. Set Multi P= On and ByPass S4S3= Off
- ByPass function Energise a bypass component if delta T (S4-S3)>the set value Delta T Bypass.
 "Multi P": Off and "ByPass S4S3":On

Parameter	Factory Default Setting	Optional setting	Description
Multi P	Off G	Off / On Clock program	Pulse(s) function
Pulse Duration	5 sec	1-3600	230V pulse duration in seconds
Bypass 0=Off 1= ON	Off	Off / On	Disable (0) or Enable (1) the bypass function
DeltaT Bypass	30°C	5-50°C	ByPass Function

11.15.1 Pulse function

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 programed to be active a day, week or a special day

For example each Sunday at 10h00 for 5 seconds.

Connected device must not exceed 230VAC 1A.



11.15.2 ByPass function

Some condensing boilers do not accept too low return temperatures or too high primary inlet temperatures differentials.

AquaEfficiency return temperature can be around 25°C at minimum (especially during peak taping period). If the primary inlet temperature is 70°C, that makes a Delta T=45°C.

There are two solutions to heat up the primary return temperature if delta T is too high, considering the boiler:

The "230V Triac Menu" must be configured, set parameter "BypassS4S3" to ON. In operating mode, if Delta T (S4-S3) is higher than the parameter "DeltaT Bypass" the triac output is energized to give 230V between N and DO9 terminal, to pilot the by-pass component.

1. Install a mixing bottle before the AquaEfficiency primary circuit. Use a transfer pump between the boiler and the bottle

NOTE: The pumps flowrate must be higher than the AquaEfficiency nominal flowrate.

The pump is used to mix some of the primary inlet with the primary return, to increase the return temperature.

- 2. Install a by-pass before the unit with an electrical 230V normally closed shutting component, e.g :
 - electro valve 230V NC or
 - small pump 230V 1A max or
 - 2 port valve 230V 3-steps signal with return to zero position, in case of no power supply.

An extra sensor S4, on the primary inlet, must be added, see <u>18.9 Change or add an extra sensor</u>.



11.16 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, pumps' speeds and valves' signals. 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 Default 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	
Pump time test	4 sec	1-60 sec	The time each pump is activated during the test
Valve time test	4 sec	1-60 sec	Temporisations to adjust test duration.
Alarm time test	4	1-60 sec	Individual output reading / writing
Cmd_P1	Off	Off/On	Activate relay 1 (pump 1)
Cmd_P2	Off	Off/On	Activate relay 2 (pump 2)
Speed_P1P2	xx %	0-100 %	The volt value sent to the pump
Cmd_P3	Off	Off/On	Activate relay 3 (pump 3)
Cmd_P4	Off	Off/On	Activate relay 4 (pump 4)
Speed_P3P4	xx %	0-100 %	The volt value sent to the pump
Relay 2	Off	On/Off	
Relay 1	Off	On/Off	
Triac_Output	Off	On/Off	reading / writing
Valve signal	xx %	0-100 %	
Valve2 signal	xx %	0-100 %	
Valve_DO	xx %	0-100 %	

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



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



NOTE: A pump fault may occur after Auto test. In this case, clear the alarm according to <u>11.17 Clear alarm menu.</u>

11.17 Clear alarm menu

Accessing the Clear Alarm menu requires login at Technician level.

All alarms are cleared the same way.

Parameter	Factory Default Setting	Optional Setting	Description
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



12 Service Menu S

Press the \bigcirc 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.

12.1 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.



Enter	your	Password

Next		

Change Password

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.

Change Pa	ssword
Level 2:	2222
Level 3:	3333
Installer	Service

12.2 Login installer

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



12.3 Menu Continue

Menu	Sub-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	C-Bus		Factory pre-set, must be checked
	(com)	Ctr#		Factory pre-set
		B-port 9600		Factory pre-set
		Append bus number to data point name		activated
		RF Teach-in		N/A
		Modbus	Device ID	10
			Baud Rate	9600
			Parity	NONE
			No. Stop Bits	1
	Time Program	Solar		See <u>11.14 Solar menu</u>
		Main		It is SP_T_Sec_Oulet (main temperature program). See 11.4 S1 Menu Secondary Outlet.
		TSP_Amb		See <u>11.8 S5 Menu Outdoor</u> Temperature
		Multi Pulse		See 11.15 230V Triac menu
		Therm. treatment		See 11.9 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 and pump output signals
		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 16.3 Change Modbus parameters.
		DDC Times		Program's time constant
		Flash memory		Info on flashing. Allows saving all settings. It can be reloaded after a Reset



12.4 Operating hours

Operating hours for the following parameters can be checked:

- Cmd_Distant
- Therm_Protec_P1/P2/P3/P4
- Cmd_P1/P2/P3/P4
- ECO
- Booster
- High_Temp_Alarm
- Main_Alarm

For more information and description see <u>14 Parameter list.</u>

- 1. Press 🔍 key to access to Service Menu, then click on "Continue".
- 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 (^C 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.

- Triac_Output
- AFF_leg_active
- Multi_P
- SAFETY_FCT
- Tank load
- ThTr_Activated





12.5 Trending parameters

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

- 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:

- 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 long

Note that this method consumes memory, especially if a long time base is selected. Here is the time base selected to 10 minutes recording (1 record every 10 minutes).

For method **a** set *Trend cycle* to zero, for method **b**, only Trend Cycle value is considered.

Service Menue <mark>Continue</mark> Login Installer

Servi	ce	
Opera	ting	Hours
Trend	ing	
Inter	face	Config
Time	Progr	am









Cetetherm AquaEfficiency

Installation, service and operating instruction

12.5.1 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.

S	e	r	V	1	C	e	Menue	
C	0	n	t	i	n	u	e	
L	0	g	i	n		I	nstaller	

Service		
Operating	Hours	
Trending		
Interface	Config	

T	r	e	n	d	in	g							
P	0	i	n	t	s	in		Tr	en	d			
D	i	Ş	р	1	аy	Τ	r	en	d	Βt	ıf	fe	er

Trend	Buffer
S1	

S1		
21-09	14:22	58
21-09	14:22	60
21-09	14:22	59
21-09	14:22	57

12.6 Point Data

From the menu Point Data you can for example:

- read or change binary or analog outputs
- start and stop a pump
- open or close control valve for example.

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



13 Alarm menu 🚳

Contact Relays 1 and 2 are 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, 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.



14 Parameter 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 P2	Ipsothermic input from P2 pump	0/1	12
Therm_Protec P3	Ipsothermic input from P3 pump	0/1	13
Therm_Protec P4	Ipsothermic input from P4 pump	0/1	14
Cmd_P1	P1 command. It is the pump Start/Stop output	On/Off	15
Cmd_P2	P2 command. It is the pump Start/Stop output	On/Off	16
Cmd_P3	P3 command. It is the pump Start/Stop output	On/Off	17
Cmd_P4	P4 command. It is the pump Start/Stop output	On/Off	18
PriP1_Alarm_On	Primary pump 1 default	0/1	21
PriP2_Alarm_On	Primary pump 2 default	0/1	22
Sec_P3_Fault	Secondary pump3 default	0/1	25
Sec_P4_Fault	Secondary pump4 default	0/1	26
Main_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
ThTr_Activated	Thermal treatment running	0/1	36
Remote_Control	The unit is remotely controlled	0/1	37
BOOSTER	Booster function activated	0/1	41
ECO	ECO function activated	0/1	42
Tank_load	Tank loaded (sensor S2 need to be connected)	0/1	44
Valve	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_Setpoint	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
AFF_Legio	Thermal treatment function On/Off	On/Off	203
SP_T_Sec_Outlet	Domestic Hot Water Setpoint (S1)	°C	211
ThTr_Setpoint	Thermal treatment temperature set point	°C	213
Triac_Output	230v Triac output state.	On/off	33
Valve 2	Second control valve actuator signal (AlfaPilot only)	0-100%	48

* Please refer to <u>16 Modbus</u>.



15 Factory RESET



After a reset must the controller be re-configured, see <u>11.3 Configuration menu</u>.

Especially the number of pumps must be configured.

- 1. Press both S and 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, this will restart the controller.

15-1	0-2012	13:41
Wiri	ng Che	ck
C-Bu	s:	
CTR#	1	19200
AL_0	9_2ST	12-10-12 *

0	2	/	0	7	/	2	0	1	3						1	5	÷	2	1
A	1	f	a		L	a	V	a	1		S	t	a	r	t	u	p		
C	•	B	u	s		c	0	n	f	i	g	•						V	1
C	T	R	ŧ			2									3	8	4	0	0
S	e	1	e	C	t		L	a	n	g	u	a	g	e	4				
_							_	_		2		_	-						_

nglish (1) 'rench



16 Modbus

16.1 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



16.2 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 will be two wires per ModBus terminal, in the control box.





16.3 Change Modbus parameters

- 1. Press Skey 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".

 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

Servio	e M	enue	
Contin	ue		
Login	Ins	tall	er

Enter	your	Password
* * * *		
Next		
Change	Pas	sword

S	e	r	V	i	С	e											
0	p	e	r	a	t	i	n	g		H	0	u	r	s			
T	r	e	n	d	i	n	g										
Ι		t		r	f	a	C			C	0		f	i	g		
T	i	m	e		P	r	0	g	r	a	m						



Modb	u s	Сo	mmunica	ıti	ion
Devi	се	ΙD	:		10
Baud	Ra	te	:	9 (500
Pari	ty:			N () N E
No.	Sto	р	Bits:	1	L



16.4 Modbus slave communication parameters

MODBUS	Speed / Vitesse :	9600	In case of multiple controllers, change ModBus controler slave number
	Bit number / Nbre de bits :*	8	Parameter="DEVICE ID"
	Stop bit / Bit de stop :	1	
	Parity / Parité :	None / Aucune	
	Mode :	RTU	

ModBus Points	MODBUS adress**	Туре	Sub-type	Mode	Value	Comment		
Read Only digital								
PD Cmd P1	15	HR 16	BOOL	R	0=Off. 1=On	Command(e) P1		
PD Cmd P2	16	HR 16	BOOL	R	0=Off, 1=On	Command(e) P2		
PD Cmd P3	17	HR 16	BOOL	R	0=Off, 1=On	Command(e) P3		
PD_Cmd_P4	18	HR_16	BOOL	R	0=Off, 1=On	Command(e) P4		
PriP1_Alarm_On	19	HR _16	BOOL	R	0=OK, 1=Alarm	P1 Fault P1		
PriP2_Alarm_On	20	HR _16	BOOL	R	0=OK, 1=Alarm	P2 Fault P2		
SecP3_Alarm_On	23	HR _16	BOOL	R	0=OK, 1=Alarm	P3 Fault P3		
SecP4_Alarm_On	24	HR _16	BOOL	R	0=OK, 1=Alarm	P4 Fault P4		
PD_High_Alarm	27	HR_16	BOOL	R	0=OK, 1=Alarm	S1 High Temp Alarm		
PD_Main_Alarm	28	HR_16	BOOL	R	0=OK, 1=Alarm	General default		
Fooling_Alarm	30	HR_16	BOOL	R	0=OK, 1=Alarm	Fooling alarm (S3)		
ThermTr_Alarm	32	HR_16	BOOL	R	0=OK, 1=Alarm	Therm.Treat. Failed		
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		
AFF_Leg_active	36	HR_16	BOOL	R	0=Off, 1=On	Therm.Treat. On going		
Remote_Control_Rev	37	HR_16	BOOL	R	0=Off, 1=On	Remote control		
PC_Distrib_Com	38	HR_16	BOOL	R	0=Internal, 1=External	AlfaPilot external setpoint		
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		
BOOSTER	41	HR_16	BOOL	R	0=Off, 1=On	BOOSTER activated		
ECO	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 (16 bit ir	HR_16 nteger/Entie	BOOL r 16 bit)*	R	0=Off, 1=On	Tank loaded		

Read Only Analogic							
nous only Analogio							
SW AL Version	34	HR_16	int16	R		Software version	
PA10_Speed_P1P2	45	HR_16	int16	R	%	Primary pump signal	
PA10_Speed_P3P4	46	HR_16	int16	R	%	Secondary pump signal	
PA10_valve1	47	HR_16	int16	R	%	Control vlave 1 signal	
PA10_valve2	48	HR_16	int16	R	%	Control vlave 2 signal	
SP_Apilot	49	HR_16	int16	R	°C	AlfaPilot Setpoint	
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	
S4_10	53	HR_16	int16	R	°C	Sensor 4 measurement	
S5_10	54	HR_16	int16	R	°C	Sensor 5 measurement	
S6_10	55	HR_16	int16	R	°C	Sensor 6 measurement	
pt1_10	56	HR_16	int16	R	°C	Sensor Pt1 measurement	
pt2_10	57	HR_16	int16	R	°C	Sensor Pt2 measurement	
DT_recup_min10	61	HR_16	int16	R	°C	Min DT energy recov	
S1_PID_SP_10	62	HR_16	int16	R	°C	Calculated S1 setpoint	
SP_T_Amb_S5_10	63	HR_16	int16	R	°C	Ambiant temp. Setpoint	
					0=no/pas/keine Option 1=Solar Flow		
Solar_Option_Ana	64	HR_16	int16	R	2=Alfa_store A	0 for AquaFirst, AquaEfficiency	
					3=AlfaPilot		
					4=Aqua_Heating		
	(16 b	oit integer/Entier 1	6 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			
(16 bit integer/Entier 16 bit)*							

Read-Write Analogic								
DeltaT_ByPass	210	HR_16	int16	R/W	°C	Delta T bypass (S4-S3)		
SP_T_Sec_Outlet	211	HR_16	int16	R/W	°C	S1 fixed setpoint (DHW)		
PC_Distrib_distant	212	HR_16	int16	R/W	°C	AlfaPilot external setpoint on Pt2		
ThTr_setpoint	213	HR_16	int16	R/W	°C	Thermal treatment setpoint		
	(16 bit integer/Entier 16 bit)*							

 $^{\star}\,$ For some supervisors, it is necessary to implement BOOL as int16 $\,$

** For some supervisors, remove 1 to adress number (ex : S1_10 adress=49)



17 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	Check power supply cable and
	terminals	fuses
	No voltage to pump motor	Check protection fuse on main
	terminals	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
	Cat paint tag high	rate
	Set point too nign	See The actuator does not
The actuator dage not	3 way valve remains closed	Test and replace if persons if
The actuator does not	Damaged of bloken actualof	Chock and replace if necessary
operate	coupling	Check and replace in 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 (SI versions)	Refer to "Pump not operating"
	Low recirculation flow rate (I versions)	Check and fix problem
	Alarm differential too low	Check and set the controller
	Actuator not closing	Refer to "The actuator does not
		operate".
	Too much differential of pressure	Check the way the TWM is piped-
	across the actuator	up. A mixing bottle should be used
Correct temperatures	Excessive exchanger scaling at the	Open and clean the exchanger
across the exchanger not	primary or secondary side	according to cleaning instructions
obtained.	Primary pipe work obstructed or	Inspect primary pipe work.
Valve and pumps operating	strainer upstream clogged	Clean strainer on the primary side
satisfactorily	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
Tomporatura daga nat	Popiroulation flow rate eveneda	Chook and manaura chorging and
increase in the buffer tank	charging flow rate	check and measure charging and
and the tan water value is		when pecessary
correct		$\frac{1}{2} = \frac{1}{2} = \frac{1}$
		FR



18 Maintenance and repairs

Cetetherm AquaEfficiency 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.
- 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
- 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.
- a warning from the controller if the unit is equipped with the scaling control or CIP option (F/B series only).



Only replace any defective parts with the **<u>original</u>** spare parts. Please contact your Cetetherm distributor 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 and exchanger cool down before starting out with maintenance work.



18.1 Clean the plate heat exchangers (P-series)



To avoid injuries, protective gloves and glasses should always be worn when handling plates and protective sheets.



DO NOT USE hydrochloric acid or any acid that could corrode stainless steel plates.

DO NOT USE water with more than 330 ppm Cl when making a cleaning solution. Nitric (for calcium carbonate), sulfamic (for calcium sulphate) or citric (for silt) acids can be used. Concentration should not exceed 4% at 60°C. Carefully rinse the plates with clean water after cleaning.

- 1. Isolate the primary and secondary hydraulic circuits.
- 2. Open the drain valve to drop the internal pressure of each sides.
- 3. Measure the tightening lengths of the exchanger (distance between two frames plates),
- 4. Open the exchanger by loosening and removing the support anchor bolts,
- 5. Remove the plates without damaging the gaskets and readjusting their orientation and position.
- 6. Clean the plates, being careful not to damage them. Do not use metal implements use a metal-free nylon brush or solution of dilute acid in accordance with PHE plate general cleaning instructions.
- 7. Lime scale can be removed by soaking the plates in a correctly-dosed acid solution
- 8. Refit the plates in the same order and position, as when they were disassembled.
- 9. Tighten up the exchanger, using the tightening length as initially.
- 10. Make sure the thermometer pocket of the control sensor is also cleaned properly.

Ask the local Cetetherm Company for more information on maintenance procedures, disassembly, cleaning, remounting.

Plates' package thickness PHE in between frames

N type thickness	13	17	27	37	45	69	97
(mm)	34	44	69	94	114	174	244

18.2 Clean the fusion-bonded or copper brazes plate heat exchangers (F/B-series)



Be sure the heat exchanger has been isolated, using primary and secondary closing valves



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



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



Unscrew the caps located at the opposite of primary and secondary ports.



Open top and bottom clips to remove insulation.

To process cleaning, use CIP connections 3/4" (CB60/FB52) or 1"1/2 (CB/FB76). Remove the caps on the connections and plug in the cleaning system.



Cetetherm recommends the use of a pre-fitted Cetetherm CIP 20-type cleaning unit together with a specific cleaning agent, such as AlfaPhos that is environmentally friendly.

There are several product solutions available depending on the cleaning job to be tackled. Use a neutralizing solution, such as AlfaNeutra, before rinsing.





• The circulator systems and pumps require no specific maintenance action. Check annually that no leaks are detected level with the rotative seal when external motor pumps are used.

Measure the electric motors consumption.

- The control valves do not require any specific maintenance. Annual check that no leaks are detected.
- The control box does not requires any specific maintenance. Annual check the electrical connection tightening.

18.3 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.







18.4 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.



1 Fuse FU5

Led 1-4, lit when pump P1- P4 is power supplied

2 Fuse FU1 – FU4

For technical information about the fuses, see <u>18.14 Current limiting fuses</u>.

18.5 Pumps' number

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

Codification	Meaning	Connected pump(s)
FIxxxIS	Instantaneous Single	P1
FlxxxID	Instantaneous Double	P1+P2
FIxxxSS	Semi-instantaneous Single / Single	P1+P3
FlxxxDS	Semi-instantaneous Double / Single	P1+P2+P3
FlxxxxDD	Semi-instantaneous Double / Double	P1+P2+P3+P4

3

18.6 Add a recycling pump to an AquaEfficiency Direct

A recycling pump can be added to an AquaEfficiency Direct. The pump must be connected to P3.



18.7 Change or add a pump



Control that the fuse has the correct size compare to the pump consumption.

AquaEfficiency can be equipped with four pumps, fixed or variable.

Fix recycling pumps can be connected to a direct AquaEfficiency respecting 230V electrical consumption. Acceptable on the PCB adapting Configuration menu without forgetting to wire Ipsothermic inlet contact of added concerned pump.

1. Open the control box and pump cover.

2. Power supply the pump from the power terminal in the control box.

- Connection on power terminal Connection on Magna 3 pump ⊥ Ν Ph Pump 1 4 5 6 Pump 2 7 8 9 12 Pump 3 10 11 13 14 15 Pump 4
- 3. Select the pump type On the right side of the r

On the right side of the printed circuit board, PCB; find the selector for the actual pump. Place the pump type selector according to pump type.



Pump No.

Pump type selector. Left position=constant speed pump ($\bullet=\bullet$ \bullet). Right position=variable speed pump ($\bullet \bullet=\bullet$).

If lit, the corresponding pump is energized.

 Ipsothermic pump contact wiring NC and C are alarm output.
 Note: No polarity

Connectio	n on I/O ter	minal	Connection on Magna 3 pump
	IPSO		
			NC NO C
	С	NC	
Pump 1	22*	23	
Pump 2	49*	50	
Pump 3	28*	29	
Pump 4	55*	56	Connect to C and NC.

It is common to connect terminals 22, 49, 28 and 55 to terminal C.



5. ON/OFF contact and 0-10V signal wiring ON/OFF Contact

Note: No polarity. Must be a potential-free contact.

Connection on I/O terminal			Connection on Magna 3 pump
	Ŧ	S/S	
Pump 1	24*	25	AA
Pump 2	51*	52	
Pump 3	30*	31	
Pump 4	57*	58	
			Connect to \perp and S/S.

0-10V Contact Note: Make sure to connect to correct polarity.

Connection on I/O terminal			Connection on Magna 3 pump
	0V ⊥	0/10V IN	
Pump 1	26	27	0 V 0-10 V
Pump 2	53	54	
Pump 3	32	33	Connect \perp and IN.
Pump 4	59	60	

Once pump is electrically wired, remember to declare it in the <u>11.3 Configuration menu.</u>

18.8 Relays 1 and 2 wiring

Relay 1 is always NO (normally open) Relay 2 is always NO (normally open). Set the relay function in the <u>11.3. Configuration menu</u>.

Relay	Operating mode	Connection o	n I/O terminal
no		IN	DO
1	NO	36	37
2	NO	63	64



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



18.9 Change or add an extra sensor

Please see 8.2 Electrical wiring diagram.

Temperature sensors are real or simulated thanks to micro switches. The affected sensors are S1-S5, Pt1 & Pt2. If a sensor is not present, corresponding micro switch must be *ON*. If the sensor is present and wired, put the micro switch to *OFF* position.



18.9.1 Mandatory sensors

Sensor	DIP switch	Description	Connection on I/O terminal	
	pos no.		0V	U1-U3
S1	3	Secondary outlet sensor (DHW), NTC20K 2 wires	41	42
S2	4	Secondary inlet sensor (CW/Recycling), NTC20K 2 wires	43	44
S3	5	Primary outlet sensor, NTC20K 2 wires	45	46

18.9.2 Optional sensors

Sensor	DIP switch	Description	Connection on I/O terminal	
	pos no		0V	U4-U5
S4	6	Primary inlet sensor, NTC20K 2 wires	47	48
S5	7	Outdoor temp sensor, heating application only or AquaEfficiency combined with an AlfaPilot unit. NTC20k 2 wires	68	69

Sensor	DIP switch pos no	Description	Connection of terminal	on I/O
			UV	Pt1-Pt2
Pt1	1	Temperature sensor, Pt1000, 2 wires	34	35
Pt2	2	Temperature sensor, Pt1000, 2 wires	61	62

18.10 Remote control wiring

The AquaEfficiency can be operated by a remote controller. To enable that connect a volt free contact between BI1 and 0V.



DO NOT power supply this contact! Volt free contact only.

Wire terminal name	Wire terminal number
0V	72
BI1	73

When the contact is open, the unit operates normally. If it is closed, primary and secondary pump are stopped and valves get a 0% (0 volt) signal AquaEfficiency is in standby but the controller display remains activated.

18.11 Add an actuator

The 0V contact is common for both the 0-10V signal and the 24V AC actuator power supply.

Description	Connection on I/O terminal			
	No	Marked		
24VAC, 22VA max	38	24VAC		
0-10 VDC	39	AO1		
0V	40	0V		



18.12 Add AlfaPilot functionality

NOTE: AlfaPilot was formerly named AlfaStoreB.

The AquaEfficiency can work as an AlfaPilot by adding:

- Valve #2: control valve
- Pt1: temperature sensor
- Pt2: surface temperature sensor
- S5: Outdoor temp sensor (optional)

See <u>18.9 Change or add an extra sensor</u>.

Following parameter settings must be done to get the AlfaPilot functionality, see the 11.3 Configuration menu.

Parameter	Factory Default Setting	Optional setting	Description
S5 Active heating	0	0 Disables / 1 Enables heat curve	Set to1, to be able to use outdoor sensor S5
Renewable Config	3	0	2=if just added PT1 You get AlfaStore A (AA) (also called AlfaPilot On/Off) 3=if added both Pt1 and Pt2 You get a AlfaPilot (AP)
AlfaPilot Inverted	1	0	1= application AlfaPilot
SP distrib	0	0/1	Set to 1 if an External setpoint for Modbus is used (for Pt2 only)

18.12.1 AlfaStore A (AlfaPilot on/off)

This function requires:

- Valve #2: control valve
- Pt1: temperature sensor

When DT(Pt1-S3)> DTrecov_min), the function is activated and opens wide the second control valve wired on AO4 output, extra actuator.

All other AquaEfficiency functions operational.

AlfaStoreA mode is activated in the <u>11.3 Configuration menu</u>. DTrecov_Min (default 5°C) is set in <u>11.14 Solar menu</u>.

Description	Connection of	n I/O terminal
	No	Marked
24VAC, 22VA max	65	24VAC
0-10 VDC	66	AO4
0V	67	0V

Sensor	Description	Connection on I/O terminal		
		0V	Pt1-Pt2	
Pt1	Primary vessel, temperature sensor, Pt1000, 2 wires	34	35	



18.12.2 AlfaPilot

This function require:

- Valve #2:control valve
- Pt1: temperature sensor
- Pt2: surface temperature sensor

When Pt1>(S3+DT Recov Min) the function is activated and opens the second control valve wired on AO4 output, extra actuator.

The regulation is proportional at the opposite of AlfaStore A, and operates around a set point compared to the measured temperature on Pt2.

This setpoint is either Internal OR External:

- Internal : Calculated setpoint is the maximum of SP_Distrib and calculated setpoint of an heat curve issued from S5
- External : The setpoint is written in the parameter "SP_Distrib_Ext" via Modbus

All other AquaEfficiency functions are operational. AlfaPilot mode is activated in the *11.3 Configuration menu*.

Parameters DTrecov_Min (default 5°C), SP_Distrib and SP_Distrib_Ext are set in <u>11.14 Solar menu</u>.

Description	Connection o	n I/O terminal
	No	Marked
24VAC, 22VA max	65	24VAC
0-10 VDC	66	AO4
0V	67	0V

Sensor	Description	Connection on I/O terminal		
		0V	Pt1-Pt2	
Pt1	Temperature sensor, Pt1000 2 wires	34	35	
Pt2	Temperature sensor, Pt1000 2 wires	61	62	



18.13 Technical data

All models are power supplied 230V 50Hz.

	PRIMARY SIDE					SECOND/ (SS/DS/DD n	SECONDARY SIDE S/DS/DD models only)		
Model	3 port Valve DN	Valve Kvs	Pump type	lmax (A)	Pmax (W)	Pump type	lmax (A)	Pmax (W)	
EFF52/EFB60	32	16	Magna 3(D) 32-80	1,2	144	Magna 3 32-40N	0,61	74	
EFF76/EFB112	40	25	Magna 3(D) 40-100	1,61	361	Magna 3 32-100N	1,47	180	
EFP3000	25	10	Magna 3(D) 40-60	1,47	178	Magna 3 32-40N	0,61	74	
EFP5000	40	25	Magna 3(D) 40-60	1,47	178	Magna 3 32-40N	0,61	74	
EFP7000/EFP9000	40	25	Magna 3(D) 40-120	1,95	440	Magna 3 32-100N	1,47	180	

	Dire	ect (Inst.)*	Indire	ct (S.I.)*	Max Weight	Max Dim (LxWxH)
Model	Total Electrical Consumption				(kg)	(mm)
EFF52/EFB60	1.8 A	159 W	2.41 A	233 W	86	480x540x1450
EFF76/EFB112	2.21 A	376 W	3.68 A	556 W	135	590x660x1450
EFP3000	2.07 A	193 W	2.68 A	267 W	191	505x850x1315
EFP5000	2.07 A	193 W	2.68 A	267 W	199	505x850x1315
EFP7000/EFP9000	2.55 A	455 W	4.02 A	635 W	281	505x850x1315

* : For normal operating mode, without Booster nor Safety function activated.

In case of Booster function, add the standard primary concerned pump consumption (only if double pumps on primary side).

In case of Safety function, add the standard primary pump consumption (only if double pumps on primary side) and add the standard secondary pump consumption (only if double pumps on secondary side).

18.14 Current limiting fuses

Power cards are equipped with fuses, labelled FU1 to FU6 on the printed circuit.

Fuse	FU1	FU2	FU3	FU4	FU5
Protection	PUMP 1	PUMP 2	PUMP 3	PUMP 4	Power card
Size	6.3 x 32				
Rating	2,5 A	2,5 A	2,5 A	2,5 A	250 mA
Voltage	250 V				



19 Pump settings



Pumps of delivered units have all been factory programmed. This guide is more applicable in case of adding a pump or pump replacement for which it is not set.

Button	Function
	Goes to the "Home" menu.
6	Returns to the previous action.
< >	Navigates between main menus, displays and digits. When the menu is changed, the display will always show the top display of the new menu.
~ ~	Navigates between submenus.
ОК	Saves changed values, resets alarms and expands the value field.

The pump incorporates a startup guide which is started at the first startup. After the startup guide, the four main menus will appear in the display.

The startup guide will guide you through the general settings of the pump, such as language, date and time.

19.1 Language

NOTE: Measuring units are automatically changed according to selected language.

- 1. Navigate from "Home" to "Settings".
- 2. Select the line "General settings".
- 3. Press [OK].
- 4. Select the line "Language".
- 5. Press [OK].
- 6. Select what language to use.
- 7. Press [OK] to enable.





19.2 Set date and time

- 1. Navigate from "Home" to "Settings".
- 2. Select the line "General settings".
- 3. Press [OK].
- 4. Select the line "Set date and time".
- 5. Press [OK].
- 6. Select the line "Select date format".
- 7. Press [OK] to enable.
- 8. Press < to return to the menu "Set date and time"
- 9. elect the line "Set date".
- 10. Press [OK].
- 11. Press [OK] to start setting and select digit with * and adjust with * * .
- 12. Press [OK] to save.
- 13. Press **X** to return to the menu "Set date and time"
- 14. Select the line "Select time format".
- 15. Press [OK] to enable.
- 16. Press 🕻 to return to the menu "Set date and time"

17. Select the line "Set time".

- 18. Press [OK].
- 19. Press [OK] to start setting and select digit with * > and adjust with * * .
- 20. Press [OK] to save.
- 21. Press < to return to the menu "Set date and time"
- 22. When all settings are done, press < to return to the main menu "Settings" or on to come back to the home screen.





19.3 Setting the pump control mode

Note: Cetetherm recommend to use, Constant Curve and with setpoint 100%.

- 1. Navigate from "Home" to "Assist".
- 2. Select the line "Assisted pump setup".
- 3. Go to the submenu "Select control mode".
- 4. Select the line "Constant curve".
- 5. Press [OK] to save.
- 6. Go to the submenu "Adjust setpoint", press [OK] to start the setting.
- 7. Select digit with \checkmark and adjust with $\land \checkmark$.
- 8. Press [OK] to save.
- 9. Press > to see setting summary.
- 10. Press [OK] to confirm and enable.

11. The selected parameters will be shown in the Home menu.

A Ho Status Settings Assist						
Assisted pump setup	٦î					
Setting of date and time						
Multi-pump setup						
Setup, analog input						
Description of control mode	Ū					
	>					
Assist						
Select control mode						
Select the control mode to be set up:						
Const. press.	^					
Constant curve						
Previous Step 3 of 6 N	ext >					
A Ho Status Settings ASSIST						
Press OK to start the setting.						
100 %						
	200					
Actual value						
Previous Step 5 of 6	Jext >					
Assist						
Summary						
The pump has now been set to						
setpoint of 100 %						
Dross Ol/to confirm and anobla						
Press OK to confirm and enable.						
Press Home to leave without saving.						
Press Home to leave without saving.						
Press Home to leave without saving.	tep					
Press Home to leave without saving. Previous Step 6 of 6 Last s Home Status Settings	tep Assist					
Press Home to leave without saving. Control mode	tep Assis					
Press Home to leave without saving. Previous Step 6 of 6 Last s Home Status Settings Control mode Constant curve 6 0 m	tep Assis					
Press Home to leave without saving. Previous Step 6 of 6 Last s	tep Assist					
Press Home to leave without saving. Previous Step 6 of 6 Last s Home Status Settings Control mode Constant curve Flow rate Head	tep Assis					
Press Home to leave without saving. Previous Step 6 of 6 Last s	tep Assis					
Press Home to leave without saving. Previous Step 6 of 6 Last s Home Status Settings Constant curve 6.0 m Flow rate Head 1500 m³/h 1500 h	tep Assist					


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- 6. Go to the submenu "Electrical signal".
- 7. Select the line "0-10V".
- 8. Press [OK] to save the setting.
- 9. Press > to see settings summary.
- 10. Press [OK] to confirm and enable.

19.6 Relay outputs

- 1. Navigate from "Home" to "Settings".
- 2. Select the line "Relay outputs".
- 3. Press [OK].

- 4. Select the line "Relay output 1".
- 5. Press [OK].

- 6. Select "Alarm".
- 7. Press [OK] to save the setting.

Ho Status S	Settings	Assist	
Electrical si	ignal		
Select the elect	trical signal of	the senso	r or
unit connected	to the input:		
-			1 1
0-10 V			
4-20 mA			
Previous	Step 3 of 10)	Next >
Ho Status S	ettings	Assist	
Summary			
Analog input wi External setpoir 0-10 ∨	ll be set to: nt influence		
Press OK to co	nfirm and enat	ole.	

Ho Status	Settings	Assis
		3.1.0.0.0.0
Operating mo	de	^
Control mode		
FLOW <i>LIMIT</i>		
Automatic Nig	ght Setback	
Relay output:	5	

Press Home to leave without saving.



h Ho Status	Settings	Assist
Relay output 1		3.1.12.1.0.0
Not active		
Ready		
Alarm		
Operation		
<		



19.7 Pump settings

- Navigate from "Home" to "Settings".
 Select the line "Operating mode".
 Press [OK].

- 4. Select "Normal".
- 5. Press [OK] to save the setting.
- Return to the main menu "Settings".
 Select the line "Setpoint influence".
 Press [OK].

- 9. Select "External setpoint function".
- 10. Press [OK].

- 11. Select "Linear with MIN".
- 12. Press [OK] to save the setting.

A Ho Status Settings	Assist 3.1.0.0.0.0
Setpoint Operating mode Control mode FLOW <i>LIMIT</i> Automatic Night Setback	⊐Î ,
A Ho Status Settings Operating mode	Assist 3.1.2.0.0.0
Normal Stop Min. Max.	
A Ho Status Settings	Assist 3.1.0.0.0.0
Control mode FLOW <i>LIMIT</i> Automatic Night Setback Relay outputs Setpoint influence	`,
	Assist 3.1.15.0.0.0
External setpoint function Temperature influence	, ,
	Assist 3.1.15.1.0.0
Not active	
<	,



Note: The operating mode must be set to "Normal" before a control mode can be enabled.

- 13. Return the main menu "Settings".
- 14. Select the line "Control mode".
- 15. Press [OK].



17. Press [OK] to save the setting.

Ho Status	Settings	Assi
		3.1.0.0.0
Operating mo	ode	
Control mode)	
FLOW <i>LIMIT</i>		
Automatic Nig	ght Setback	
Relay output	s	
1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1		

🔒 Ho Status	Settings	Assist
Control mode		3.1.3.0.0.0
Prop. pr	ress.	^
Const. p	press.	
Const. t	emp.	
Constar	nt curve	
<		10000

19.8 Enable/disable settings

In this display, the possibility of making settings can be disabled for protective reasons.

- 1. Navigate from "Home" to "Settings".
- 2. Select the line "General settings".
- 3. Press [OK].

- 4. Select the line "Enable/disable settings".
- 5. Press [OK].
- 6. To look the pump, use $^{\bullet}$ $^{\bullet}$ and select "Disable".
- 7. Press [OK] to save the setting.

The pump will now be locked for settings. Only the "Home" display will be available.

To unlock the pump and allow settings, press both ** simultaneously for at least 5 seconds.









Grundfos Eye	Indication	Cause
	Ni lights on	Power off
		Pump not running
	Two opposite green indicator lights running in	Power on.
	the direction of rotation of the pump.	Pump running.
	Two opposite green indicator lights permanently	Power on.
	on.	Pump not running.
	One yellow indicator light running in the direction	Warning.
	of rotation of the pump.	Pump running.
	One yellow indicator light permanently on.	Warning.
		Pump stopped.
	Two opposite red indicator lights flashing	Alarm.
	simultaneously.	Pump stopped.
	One green indicator light in the middle	Remote-controlled.
•	permanently on (in addition to another	The pump is currently being
	indication).	accessed by the Grundfos GO.

19.9 Grundfos Eye operating indications



Warning and alarm	Fault	Automatic	Corrective actions
codes		reset and	
		restart?	
Pump communication	Communication fault	Yes	Replace the pump or call GRUNDFOS
fault (10)	between different parts		SERVICE for assistance. Check if the
Alarm	of the electronics.		code (29) Forced pumping
Forced pumping (29)	Other pumps or sources	Yes	Switch off the pump on the main switch If
Alarm	force flow through the	100	the light in the Grundfos Eve is on, the
	pump even if the pump		pump is running in forced-pumping mode.
	is stopped and switched		Check the system for defective non-return
	off.		valves and replace, if necessary. Check
			the system for correct position of non-
			return valves, etc.
Undervoltage (40, 75)	Supply voltage to the	Yes	Check that the power supply is within the
Alarm	pump too low.		specified range.
Blocked pump (51)	The pump is blocked.	No	Dismantle the pump, and remove any
Alarm			foreign matter or impurities preventing the
		No	pump from rotating.
Alorm	inlet or the water	INO	startup. Check that the nump is operating
Alalin	contains too much air		correctly if not replace the pump or call
			GRUNDEOS SERVICE for assistance
High motor	Temperature in stator	No	Check the winding resistance.
temperature (64)	windings too high.		encontano minang recictancer
Alarm	3 3 4 3		
Internal fault (72, 84,	Internal fault in the	Yes	Replace the pump, or call GRUNDFOS
155, 157)	pump electronics.		SERVICE for assistance
Warning/alarm			
Overvoltage (74)	Supply voltage to the	Yes	Check that the power supply is within the
Alalin Communication fault	Communication	Voc	Specified range.
twin-headnumn (77)	between nump heads	165	powered or connected to the power
Warning	disturbed or broken.		supply.
Internal sensor fault	The pump is receiving a	Yes	Check that the plug and cable are
(88)	signal from the internal		connected correctly in the sensor. The
Warning	sensor which is outside		sensor is located on the back of the pump
-	the normal range.		housing. Replace the sensor or call
			GRUNDFOS SERVICE for assistance.
External sensor fault	The pump is receiving a	yes	Does the electrical signal set (0-10 V or 4-
(93)	signal from the external		20 mA) match the sensor output signal? If
Warning	sensor which is outside		not, change the setting of the analog input,
	the normal range.		or replace the sensor with one that
			matches the setup.
			Check the cable connection at the numb
			and at the sensor. Correct the connection
			if required. See section 16.2 Sensor
			condition. The sensor has been removed.
			but the analog input has not been
			disabled. Replace the sensor or call
			GRUNDFOS SERVICE for assistance.

If the power supply cable is damaged, it must be replaced by the manufacturer, the manufacturer's service partner or a similarly qualified person.



20 Exploded views and spare part list

20.1 EFF52/EFB60



REP	ARTICLE No.	DESCRI	PTION
4	KITREG01	Power board for ARMAQ3200	CY9-319+connectors+supply wire
5	REG30910	Controller MICRO 3000	Set FR-GB-DE
90	KITARMAQ3200	KIT ARMAQ3200 control box	with bracket + Micro3000 controller
147	COF32411	Door for Armafirst cabinet	with AlafaLaval logo
156	CLA220062	1"1/2 F Non return valve	for AquaEfficiency
85	MOT21272	Actuator ML7430E1005	0-10V 15s for V5833
142	KITCOR21261	Kit body 3PV DN32 Honeywell	V5833A2100 3 gaskets included
9	SOU29011	Safety valve - Male - DN 15 - 10 Bar	For URANUS TWHs
10	SON30210	Sensor NTC20K	Length 2 m
2	CALCB5280	Insulation for ALFA NOVA CB52-80	maxi 80pl
152	AN5230H	FHE Alfa Nova 52-30	
153	AN5250H	FHE Alfa Nova 52-50	
57	AN5260H	FHE Alfa Nova 52-60	
180	CB6030H	CB60-30 H	
181	CB6050H	CB60-50 H	
59	CB6060H	CB60-60 H	
132	POM202500	Pump MAGNA3 32-80 1*230	
133	POM202512	Pump MAGNA3 D 32.80 1*230 *	
140	POM202507	Pump MAGNA3 32-40 N 1*230	



Cetetherm AquaEfficiency Installation, service and operating instruction

20.2 EFF76/EFB112



REP	ARTICLE No.	DESCI	RIPTION
4	KITREG01	Power board for ARMAQ3200	CY9-319+connectors+supply wire
5	REG30910	Controller MICRO 3000	Set FR-GB-DE
90	KITARMAQ3200	KIT ARMAQ3200 control box	with bracket + Micro3000 controller
147	COF32411	Door for Armafirst cabinet	with AlafaLaval logo
85	MOT21272	Actuator ML7430E1005	0-10V 15s for V5833
98	KITCOR21262	Kit body 3PV DN40 Honeywell	V5833A2118 3 gaskets included
9	SOU29011	Safety valve - Male - DN 15 - 10 Bar	For URANUS TWHs
10	SON30210	Sensor NTC20K	Length 2 m
13	CALCB7690	Insulation ALFANOVA CB76-90	
154	AN7650H	FHE Alfa Nova 76-50	
155	AN7670H	FHE Alfa Nova 76-70	
156	CLA220062	1"1/2 F Non return valve	for Aquaefficiency
148	CB11250M	CB112-50 M	
149	CB11270M	CB112-70 M	
136	POM2025056	Pump MAGNA3 40-100 F 1*230	
137	POM202517	Pump MAGNA3 D40-100 F 1*230	
141	POM202508	Pump MAGNA3 32-100 N 1*230	



20.3 EFP All models



REP	ARTICLE No.	DES	CRIPTION
4	KITREG01	Power board for ARMAQ3200	CY9-319+connectors+supply wire
5	REG30910	Controller MICRO 3000	Set FR-GB-DE
90	KITARMAQ3200	KIT ARMAQ3200 control box	with bracket + Micro3000 controller
147	COF32411	Door for Armafirst cabinet	with AlafaLaval logo
85	MOT21272	Actuator ML7430E1005	0-10V 15s for V5833
9	SOU29011	Safety valve - Male - DN 15 - 10 Bar	
10	SON30210	Sensor NTC20K	Length 2 m
27	PLAM6H316E4B	Plate - M6 H 316 - 0,5 - EpdmFF*	1st plate
28	PLAM6H316EST	Plate - M6 H 316 - 0,5 - EpdmFF*	channel plate
29	PLAM6H316E4F	Plate - M6 H 316 - 0,5 - EpdmFF*	endplate
134	POM2025055	Pump MAGNA3 40-60 F 1*230	
135	POM2025155	Pump MAGNA3 D40-60 F 1*230	
138	POM2025058	Pump MAGNA3 40-120 F 1*230	
139	POM202518	Pump MAGNA3 D40-120 F 1*230	
140	POM202507	Pump MAGNA3 32-40 N 1*230	
141	POM202508	Pump MAGNA3 32-100 N 1*230	
142	KITCOR21260	Kit body 3PV DN25 Honeywell	V5833A2092 gaskets included
98	KITCOR21262	Kit body 3PV DN40 Honeywell	V5833A2118 3 gaskets included
97	KITVIS30	Set of tightening bolts for Aquafirst M6	With carrying bars/ screws / rings
26	KITVIS20	Set of 8 tightening bolts L250+ L450 2 carrying bars	L 470 US/AQF/AU M6M/VU12 65 pl
156	CLA220062	1"1/2 F Non return valve	for Aquaefficiency
157	CLA220072	2" F Non return valve	for Aquaefficiency EFP9000
144	CALM6FI	Insulation for Aquafirst M6	
143	CALM6EFP97	Insulation for AquaEfficiency	97 plates (spare part)



21 Commissioning report

		C	OMMISSIO	NNING REP	ORT		
Installation							
Tightenir	ng dimensi	on contro	I				
Air vent	position						
Settling F	Pot presend	e on prin	nary				
Boiler Br	end, install	ation and	power				
Mixing b	ottle requi	red / Pres	ence				
Balancing	g valve pres	sence on	Indirect (Se	mi Instanta	neous) install	ations	
Close dra	ain valves						
Primary o	conformity:						
Seconda	ry conformi	ity:					
Accessib	ility of unit	and com	ponents				
Configuration men	u						
Sensors							
Pumps							
Other							
Primary P	Pumps:		_		Secondary Pu	mps:	
	Pump 1		Pump 2		Pump 3	Pump 4	
Electrical	bridges co	ntrol for	pumps on p	ower plate			
	Pump1		Pump2		Pump3	Pump4	
Control v	alve worki	ng					
Settings							
DHW sec	ondary out	let T° sett	ing: S1				
PID setti	ng		-				
High alar	m setting			Manual		Auto	
Thermal	Treatment		Туре		Setting	Time	
Eco funct	tion activat	ion					
Booster f	function act	tivation					
Other fu	nctions acti	vated					
Relay 1 f	unction						
Relay 2 f	unction						
Trending	and/or Mo	dbus valu	e activated	1			
Volt free Remote c	ontact wire	d or not					
TRIAC 230 V connec	tions wire	d or not					
Other comments:							
Identification of th	e unit:						
Unit ID N°	Installer /	Company	y Name	Installatio	on site	Date	



PED 2014/68/EU art 4.3, LVD, EMC, RoHS

22 Declaration of conformity

Declaration of Conformity Déclaration de conformité Konformitätserklärung Conformiteitsverklaring



Manufacturer / Fabricant / Hersteller / Fabrikant Cetetherm SAS Route du Stade ZI du Moulin, FR 69490 Pontcharra sur Turdine, France

* Heat exchanger unit, District heating System, for heating and/or Domestic Hot Water

* Échangeur thermique, système de chauffage urbain, pour le chauffage et l'eau chaude sanitaire

* Fernwärme-Kompaktstationen, für Heizung und/oder Trinkwarmwasser

* Warmtewisselaarunit, stadsverwarmingsysteem, voor verwarmingswater en/of sanitair warm water

Products/ Produits/ Produkte/ Producten	Models/ Modèles /Varianten/ Modellen
Cetetherm AquaEfficiency	Honeywell/Samson/Grundfos/Wilo

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 Bovengenoemde producten zijn conform artikel 4.3 van Richtlijn 2014/68/EU (Richtlijn Drukapparatuur)

Used directives/ Directives utilisées/ Angewendete Direktiv/ Gebruikte richtlijnen

- PED 2014/68/EU

- LVD 2014/35/EU

- EMC 2014/30/EU

- RoHS 2011/65/EU

Used other standards and specifications/ Autres normes et spécifications utilisées/ Weitere angewendete Standards/ Andere gebruikte standaarden en specificaties

- EN 60335-1 partly/ EN 60335-1 en partie/ EN 60335-1 teilweise/ EN 60335-1 gedeeltelijk
- EN 60204-1 partly/ EN 60204-1 en partie/ EN 60204-1 teilweise/ EN 60204-1 gedeeltelijk

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

Sound Engineering practice Règles de l'art Gute Ingenieurpraxis Regels van goed vakmanschap

Pontcharra sur Turdine, 01-06--2018 Matthieu Perrin

Product manager/ Responsable de la conformité/ Bevollmächtigter/ Verantwoordelijke voor conformiteit/



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 Cetetherm. 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 France for assessment unless written agreement to proceed otherwise has been obtained from Cetetherm. The results of the assessment can only state whether 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 Cetetherm, 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 Cetetherm.

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

23.1 How to contact Cetetherm

Our contact details are updated on our website www.cetetherm.com.



Cetetherm sas ZI du Moulin, Route du Stade 69490 Pontcharra sur Turdine - France www.cetetherm.com

