



CHWS PRORAPID

SEMI INSTANTANEOUS DHW GENERATOR

**Installation Manual
Operation & Maintenance Manual**

NB See New Rapid Controls Manual for Wiring Guidelines

CHWS ProRapid

Semi Instantaneous DHW Generator General Layout

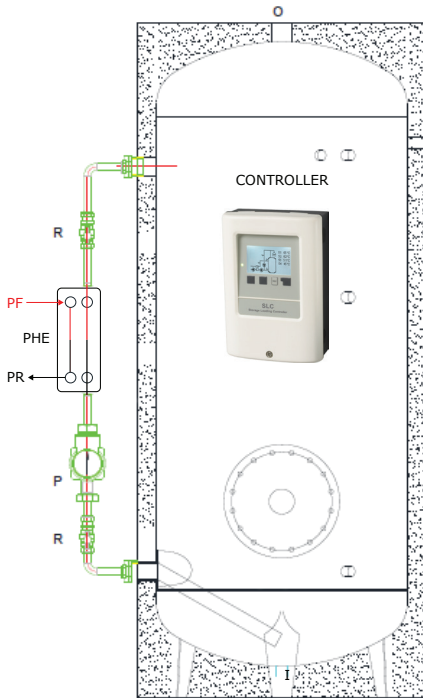


Fig. 1

Key

- O Sanitary hot water outlet
- I Inlet cold water
- PHE Plate Heat Exchanger
- P Circulation pump
- R Isolating valve
- WR Water recirculation
- PR Primary return
- PF Primary flow
- C Controller

Instructions For Use

General Information

This instruction manual is a part of the product, check that it is always supplied with the CHWS ProRapid DHW generator.

Carefully read the instructions contained in this chapter as they provide important information on the usage of the unit.

Keep this manual for future reference if the CHWS ProRapid DHW generator is sold or transferred to a different owner or leaving the unit where installed, please make sure that this manual always accompanies the CHWS ProRapid DHW generator so as it can be used for reference by the new owner or installation expert.

Important: This CHWS ProRapid Hot water generator has to be used to produce hot sanitary water, in accordance with its technical features of performance and power, by thermal exchange with a heating water supply ($t \leq 100^{\circ}\text{C}$) max.

Any different usage for the CHWS ProRapid Hot water generator is forbidden, do not clean the CHWS ProRapid Hot water generator with corrosive or flammable liquids.

The use of electric adapters, extension cords or socket sets is not recommended. In case of damages to the electric cord turn the power off and consult a professionally qualified technician.

An electric manual is enclosed in the appliance please observe the following fundamental rules:

- Do not touch the appliance with parts of the body which are wet, damp or in bare feet
- Do not pull the electric wires
- Do not allow children or unqualified persons to use the appliance

The manufacturer declines any responsibility for damages caused by neglect of the appliance or system. If the CHWS ProRapid hot water generator is not used for long periods of time, turn off the power supply and empty the unit.

Description

The CHWS ProRapid DHW generators is manufactured in stainless steel and is able to satisfy high requirements of sanitary hot water. The automatic system of water mixing will avoid temperature' stratification the heat storage is therefore higher. The external stainless steel plate exchanger enables easy maintenance and cleaning.

The system will reduce the potential for Legionella growth in an effective way by heating the stored contents and circulating water through the entirety of the cylinder.

Periodical Checks

Periodic checks of the units must be performed by qualified personnel in order to guarantee the appliance efficiency and correct system operation, regular maintenance is recommended to ensure optimum operational performance and to meet safety requirements.

In the event that problems do occur during the hot water generation, turn it off and do not attempt to repair it please consult a qualified technician.

Important Information

These instructions must be read and understood before installing, commissioning, operating or maintaining the equipment.

Installation & Commissioning

Read this installation and commissioning manual and where necessary refer to appendix C before commencing, the CHWS ProRapid semi instantaneous DHW Generator is a controlled service as defined in the latest edition of the building regulations and should only be fitted by a competent person. Installation & Commissioning of equipment by accredited agents or specialist sub-contractors will ensure the equipment is operating safely and efficiently.

The installation should also be in accordance with the British Standard Codes

of Practice, current Building Regulations, , i.e. Health & Safety Document No. 635 (The Electricity At Work Regulations 1989), and the Water Supply (Water fittings) Regulations, BS 5449:1990 Forced circulation hot water systems , BS 6700:2006 Design, installation, testing and maintenance of services supplying water. The relevant regulations are: England and Wales – Building Regulation G3; Scotland – Technical Standard P3; North Ireland – Building Regulation P5.

Failure to install this appliance correctly could lead to prosecution and will invalidate the guarantee.

It is in your own interest and that of safety to ensure that the law is complied with.

Installation Instructions

General Information

This instruction manual is an integral and essential part of the product check that it is always furnished with the CHWS ProRapid DHW generator.

Carefully read the instructions contained in this chapter as it provides important information for the correct and safe installation and use of the appliance.

After the installation please deliver this manual to the user. The installation and start-up operations must be performed by professionally qualified technicians having the specific skills required in the heating system sector.

The manufacturer declines responsibility for any damage to persons or property caused by a faulty installation or start up.

Important: This appliance should be used only for the purpose mentioned any other use is improper and therefore dangerous. Before performing any operation on the appliance, turn off the electric power supply and close the water supply tap.

The use of any electric component involves the observance of the following fundamental rules:

- Always turn off the electric power supply switch before touching any electrical connection
- Do not touch the appliance with parts of the body which are wet, damp or in bare feet
- Do not pull the electric wires
- Do not expose the appliance to atmospheric conditions
- Do not leave the appliance on when not in use always turn the water and electric supplies off.

Start Up

Before starting up the CHWS ProRapid DHW generator, check that the unit is not damaged if in doubt, do not use it and contact CHWS Ltd.

The transport and positioning of the appliance should be carefully performed with the proper lifting hook. Avoid banging or forcing the control board and the insulation. The installation should be performed in a suitable environment.

The CHWS ProRapid is suitable for operating at 6 bar working pressure both for sanitary and heating purposes. In the event that the hydraulic pressure is higher than 6 bar, insert a pressure reducer in the sanitary water supply.

Always cover both the sanitary hot water and the heating water pipes with an insulating coating according to the regulations in force.

Packaging components (plastic bags, etc.) are potential danger and should not be left within the reach of children.

The electrical safety of the equipment is achieved when correctly connected to an efficient grounding system performed according to the regulations in force. This fundamental safety requirement must be verified.

If in doubt, request installation of the electrical system by professionally qualified personnel. CHWS Ltd declines responsibility for damages caused by neglecting grounding the system.

Gas, hydraulic and heating pipes cannot be used as grounding. Serious damages to pipes may occur within a short period of time.

The use of electric adapters, extension cords or socket sets is not recommended.

Each appliance must be connected to the electrical system by using a double-pole switch according to the regulations in force. The use of any component run by electrical power involves the observance of the following fundamental rules:

- Always turn off the electric power supply switch before touching the electrical connections

- Do not touch the appliance with parts of the body which are wet, damp or in bare feet
- Do not pull the wiring
- Do not expose the appliance to atmospheric conditions (rain, sun, etc.)

Loading System

In case the external temperature is very low, keep the temperature of the room where the CHWS ProRapid DHW generator is installed over 0°C when the hot water generator is not in use, in order to avoid bursting due to frost damage (the warranty does not cover damages due to frost).

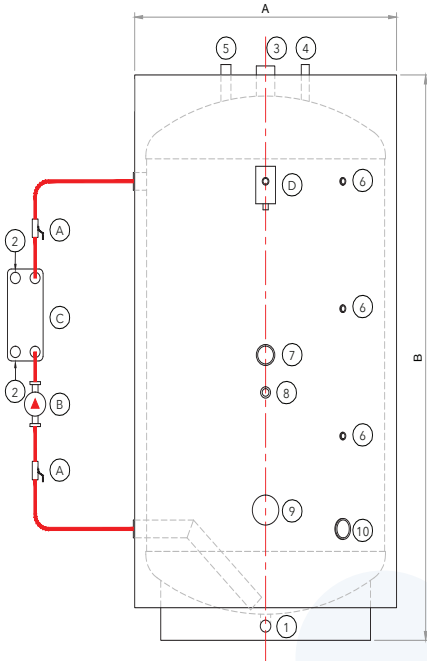
Fill the CHWS ProRapid by using the hydraulic system check that the sanitary water safety valve and the drain work properly. Before filling the heating circuit with water, clean the system carefully in order to remove dirt and any residual substance that may cause scale or damage.

Operation

Before turning the system on check that:

- The pipe connections are completely sealed
- The system is equipped with safety devices and controls according to the regulations in force.
- The hot water pipes are insulated.

ProRapid - Semi Instantaneous DHW Generator



Connections

1	Drain	
2	Primary Connections	
3	DHW Outlet	
4	Temperature & Pressure Relief Valve	
5	Anti-Vac Valve	
6	Sensor Tappings (x3)	
7	Electrical Immersion Tapping	
8	DHW Return	
9	Inspection Hatch / Electrical Immersion	
10	Cold Water Inlet	

A	Isolation Valve
B	Charging Pump
C	Brazed Plate Heat Exchanger
D	Control Panel

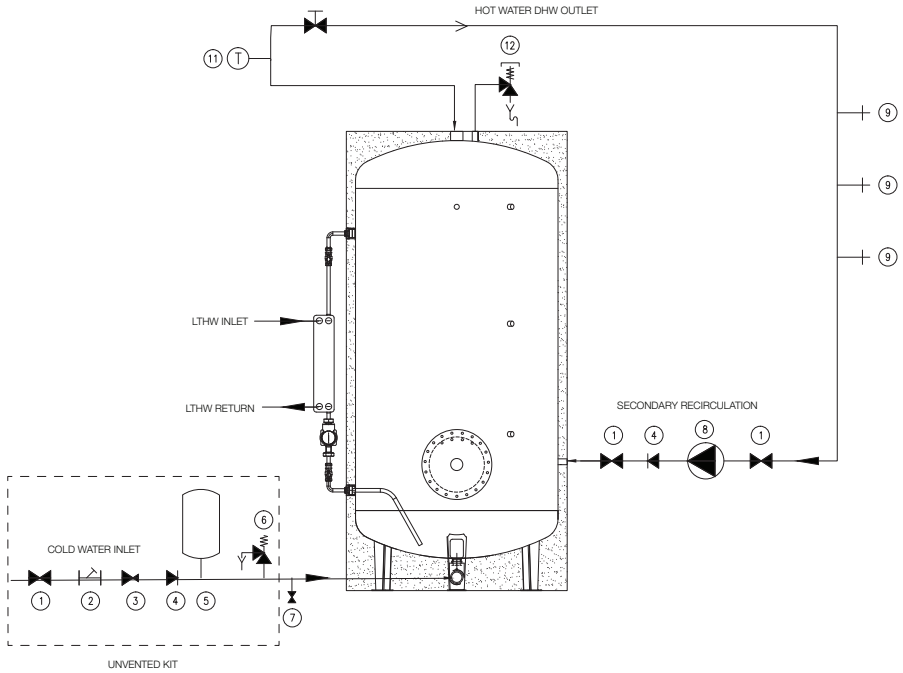
Drawing correct at time of publishing, some minor changes in design may occur which will not affect performance.

COMMERCIAL HOT WATER SOLUTIONS LTD



rapid/tps/feb2021/v1

Appendix C



Key

- | | | | |
|---|-------------------------|---|------------------------------|
| ① | Isolating valve | ⑦ | Drain |
| ② | Strainer | ⑧ | Circulation pump (optional) |
| ③ | Pressure reducing valve | ⑨ | Draw-off points |
| ④ | Non return valve | ⑩ | Service stop valve |
| ⑤ | Expansion vessel | ⑪ | Temperature gauge (optional) |
| ⑥ | Safety relief valve | ⑫ | T&P valve |

Maintenance Instructions

General Instructions

Read carefully the instructions contained in this chapter as they provide important indications on the use and maintenance of the appliance. Before performing any operation on the CHWS ProRapid DHW generator, turn off the electric power supply switch and close the water supply valve.

The use of any component which is electrically supplied entails the close observance of the following fundamental rules:

- Always turn off the electric power supply switch before touching any electrical connection
- Do not touch the appliance with parts of the body which are wet, damp or in bare feet
- Do not pull the wiring
- Do not expose the appliance to atmospheric conditions

Substitute parts or accessories of the appliance with original spare parts only. Do not leave the appliance on when not in use. Always turn the water and electric supply switches off.

Emptying The CHWS ProRapid DHW Hot Water Generator

Remove the electric supply and close the cold water supply and empty the CHWS ProRapid DHW generator by opening the

valve at the bottom of the tank. In case a vacuum circuit breaker was not inserted in the sanitary water circuit, insure that a valve is open at the top of the vessel to vent the vessel and avoid a damaging vacuum.

Troubleshooting

In case the heat exchange is not heating sufficiently, the cause can be:

- The boiler power is not sufficient
- The circulation of heating water is not sufficient because of a faulty or undersized pump
- The temperature of the heating water entering the ProRapid Plate Heat exchanger is too low
- The temperature of the sanitary water is too low or the temperature is too high
- The ProRapid is overused in comparison with its performance
- Calcium deposits or other deposits in the heat exchanger

The above listed causes must be verified by professionally qualified personnel.

Warranty conditions for ProRapid® cylinders

General warranty

CHWS Ltd will within a period of 5 years from the date of purchase of the vessel, supply a new and replacement cylinder of the equivalent size and quality if the cylinder is proved to be leaking or corroding due to faulty manufacture or material defects. Claims must be validated by CHWS Ltd who will also have sole discretion on the validity of any claim.

Components supplied by CHWS Ltd with the cylinder will carry their manufacturers warranty of 1 year. CHWS Ltd will repair or replace any of these components that have failed due to manufacturing or material defects within that 1-year period. The validity of any claim for faulty components will be decided by the manufacturer of that component.

Cylinder warranty

- The warranty on the ProRapid range of products applies only to cylinders/ vessels supplied for use with sanitary/ drinking water.
- The products covered are the ProRapid® models.
- CHWS Ltd will provide a 5 Year warranty on the products as stated in clause 2 as above.
- The warranty will only apply subject to observance of the following conditions:
 1. The cylinder should be installed in accordance with the manufacturer's installation instructions
 2. The cylinder should be installed in accordance with National and Local Building Regulations and observing all relevant installation regulations at the time of installation.
 3. The cylinder is only used for the purpose it was designed for, that being the heating and storing of sanitary/ drinking water.
 4. The design water temperatures or pressure values displayed on the cylinder data plate are not exceeded during use at any time.
 5. The cylinder is installed in a suitable area that is not in a damp or corrosive environment
 6. In hard water areas, suitable water conditioning or softening equipment should be installed to condition the sanitary water prior to heating. The acceptable level of water hardness is between 0 - 0.4 on the Langelier's Index of water measured at the cylinder's working temperature.

7. The cylinder should be periodically maintained in accordance with the manufacturers servicing schedule which will include keeping any sacrificial anodes installed into the cylinders serviceable.
8. Damage to the cylinder by an external factor, misuse, neglect (this includes frost damage), unauthorised modifications or attempts to repair any leak or defect (other than by an authorised and approved service engineer) will invalidate any claim.
9. ALL claims must be authorised by CHWS Ltd before any work or replacement of defective components takes place.

Limitations of warranty

CHWS Ltd will supply free of cost replacement cylinders and components including delivery to the original delivery address of the cylinder. CHWS Ltd will not accept any charges for the cost of labour, installation or any other associated costs with the installation of the replacement cylinder or ancillary component. Claims must be validated by CHWS Ltd who will also have sole discretion on the validity of any claim.

Safety Instructions

EU-Conformity

By affixing the CE mark to the unit the manufacturer declares that the SLC conforms to the following relevant safety regulations:

- EU low voltage directive 2014/35/EU
- EU electromagnetic compatibility directive 2014/30/EU conforms.

Conformity has been verified and the corresponding documentation and the EU declaration of conformity are kept on file by the manufacturer.

General instructions

Please read carefully!

These installation and operating instructions contain basic instructions and important information regarding safety, installation, commissioning, maintenance and the optimal use of the unit. Therefore these instructions must be read and understood completely by the installation technician/specialist and by the system user before installation, commissioning and operation of the unit.

This unit is an automatic, electrical Storage Loading Controller. Install the unit only in dry areas and under the ambient conditions described in "Specifications".

The valid accident prevention regulations, VDE regulations, the regulations of the





local power utility, the applicable DIN-EN standards and the installation and operating instruction of the additional system components must also be observed.

Under no circumstances does the unit replace any safety devices to be provided by the customer!

Installation, electrical connection, commissioning and maintenance of the device may only be carried out by an appropriately trained specialist. Users: Make sure that the specialist gives you detailed information on the function and operation of the unit. Always keep these instructions in the vicinity of the unit.


The manufacturer does not take over any liability for damage caused through improper usage or non-compliance of this manual!

Explanation of Symbols

	Danger Failure to observe these instructions can result in electrocution.
	Danger Failure to observe these instructions can result in serious damage to health such as scalding or life-threatening injuries.
	Caution Failure to observe these instructions can result in destruction of the unit or the system, or environmental damage.
	Caution Information which is especially important for the function and optimal use of the unit and the system.

Changes to the Unit

- Changes, additions to or conversion of the unit are not permitted without written permission from the manufacturer.
- It is likewise forbidden to install additional components that have not been tested together with the unit.
- If it becomes clear that safe operation of the unit is no longer possible, for example because of damage to the housing, turn the Unit off immediately.
- Any parts of the unit or accessories that are not in perfect condition must be exchanged immediately.
- Use only original spare parts and accessories from the manufacturer.
- Markings made on the unit at the factory must not be altered, removed or made illegible.
- Only the settings described in these instructions may be set using the Unit.

	Changes to the unit can compromise the safety and function of the unit or the entire system.
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Warranty and Liability

The Unit has been manufactured and tested with regard to high quality and safety requirements. The warranty and liability shall not include, however, any injury to persons or material damage that is attributable to one or more of the following causes:

- Failure to observe these installation and operating instructions.
- Improper installation, commissioning, maintenance and operation.
- Improperly executed repairs.
- Unauthorised structural changes to the unit.

- Use of the device for other than its intended purpose.
- Operation above or below the limit values listed in the 'Specifications' section.
- Force majeure.

Disposal and Pollutants

The unit conforms to the European RoHS 2011/65/EU for 2011/65/EU the restriction of the use of certain hazardous substances in electrical and electronic equipment.



Under no circumstances may the device be disposed of with the normal household waste. Dispose of the unit only at appropriate collection points or ship it back to the seller or manufacturer.

Description Slc

Specifications

Electrical specifications:

Power supply		100 - 240VAC, 50 - 60 Hz
Power consumption / standby		0,5W - 2,5W/ X
Internal fuse	1	2A slow blow 250V
Protection Class		IP40
Protection Class		II
Overvoltage category		II
Degree of pollution category		II

Inputs/Outputs

Sensor inputs		6	-40 °C ... 300 °C
Outputs mechanical relay	3		
mechanical relay	R1 - R3	460VA for AC1 / 460W for AC3	
0-10V/PWM output	V1 - V2	for 10 k Ω working resistance 1 kHz, level 10 V	

Max. cable length

Flow sensors		<3m
0-10V/PWM		<3m
mechanical relay		<10m

Permissible Ambient Conditions

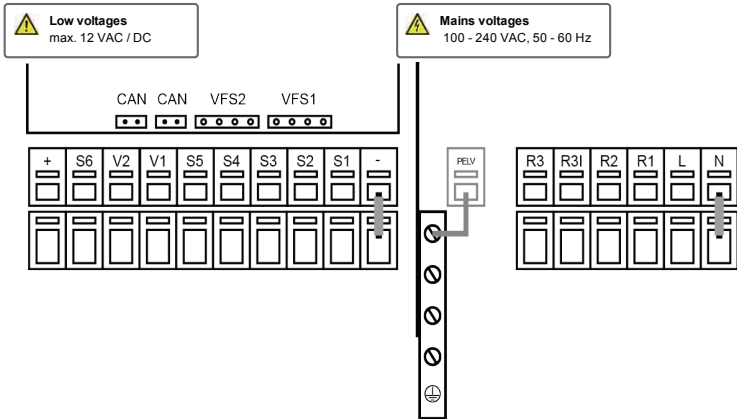
for controller operation		0 °C - 40 °C, max. 85 % rel. humidity at 25 °C
for transport/storage		0 °C - 60 °C, no moisture condensation permitted

Other Specifications and Dimensions

Housing design		2-part, ABS plastic
Installation methods		Wall installation, optionally panel installation
Overall dimensions		163 mm x 110 mm x 52 mm
Aperture installation dimensions		157mm x 106mm x 31mm
Display		completely graphic display 128 x 64 dots
Real Time Clock		RTC with 24 hour power reserve
Operation		4 entry keys

Installation

Electrical Terminals



Terminal: Connection for:

S1	Storage top
S2	Storage bottom
S3	Plate outlet temp
S4*	Primary Flow Temperature
S5	Not used
V1	Not used
V2	Not used
S6	Not used
+	12V Power supply
VFS1	Not used
VFS2	Not used

The connection of the ground wire is made at the lower gray terminal block.

CAN	Not used
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Terminal: Connection for:

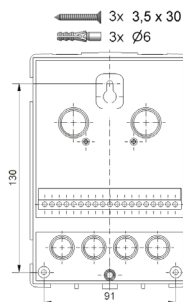
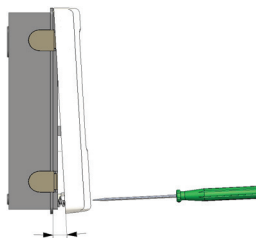
S1	Neutral conductor N
S2	Phase conductor L
S3	240vac Switch Live Burner
S4*	Not in use
S5	Not in use
V1	Secondary pump live

The neutral conductor N must be connected to the N terminal block.

The PE protective conductor must be connected to the PE metal terminal block!

Cable Installation

1. Unscrew cover screw completely.
2. Carefully pull upper part of housing from lower part. During the removal, the brackets are released as well.
3. Set upper part of housing aside. Do not touch the electronics.
4. All terminals are “spring cage” type terminals. To open the terminal use a terminal screw driver to push in the spring and insert your cables. It is recommended to use “boot lace” type connections.
5. Once all cabling is completed, check that no mains voltage cables have been installed on the low voltage side.
6. Put on the cover and screw cover completely.



Electrical Connection

	Before working on the unit, switch off the power supply and secure it against being switched on again! Check that there is no power flowing! Electrical connections may only be made by a specialist and in compliance with the applicable regulations. The unit may not be put into operation if there is visible damage to the housing, e.g. cracks.
	The unit may not be accessible from behind.
	Low-voltage cables such as temperature sensor cables must be routed separately from mains voltage cables. Feed temperature sensor cables only into the left-hand side of the unit, and mains voltage cables only into the right-hand side.
	The customer must provide an all-pole disconnecting device, e.g. an emergency heating switch.
	The cables being connected to the unit must not be stripped by more than 55 mm, and the cable jacket must reach into the housing just to the other side of the strain relief.

Installing the Temperature Sensors

The controller operates with Pt1000 temperature sensors which are accurate to 1 °C, ensuring optimal control of system functions.



If desired, the sensor cables can be extended to a maximum of 30 m using a cable with a cross-section of at least 0.75 mm². Ensure there is no contact resistance! Position the sensor precisely in the area to be measured! Only use immersion, pipe-mounted or flat-mounted sensors suitable for the specific area of application with the appropriate permissible temperature range.



Low-voltage cables such as temperature sensor cables must be routed separately from mains voltage cables. Feed temperature sensor cables only into the left-hand side of the unit, and mains voltage cables only into the right-hand side.

Temperature Resistance Table for Pt1000 Sensors

°C	Ω
-20	922
-10	961
0	1000
10	1039
20	1077
30	1116
40	1155
50	1194
60	1232
70	1270
80	1308
90	1347
100	1385

Operation

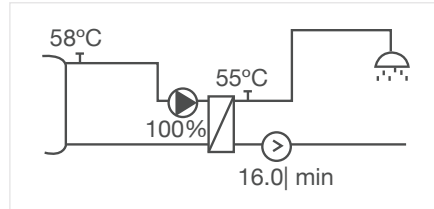
Display and Input

The display's (1), extensive text and graphical mode, enables simple, almost self-explanatory, operation of the controller.

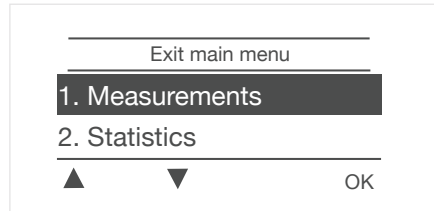
The LED (2) lights up green when the primary pump is switched on (automatic mode). The LED (2) lights up red when operating mode, 'Off' is set. The LED (2) flashes quickly red when an error is present.

Entries are made using 4 keys (3+4), to which contextual functions are assigned. The 'esc' key (3) is used to cancel an entry or to exit a menu. If applicable, a request for confirmation appears to save the made changes.





The function of the other 3 keys (4) is shown in the display right above the keys. The right-hand key generally has a confirmation and selection function.

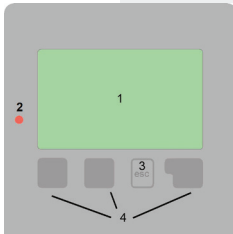


The graphics mode appears if not key is pressed for 2 minutes or after exiting the main menu with 'esc'.



Hitting the "esc" key in the graphics mode takes you directly to the main menu.

Key	Examples for key settings:	
 Pump (rotates when active)	+/-	Increase / decrease values
 Storage / buffer	▼/▲	Scroll menu down / up
 Temperature Sensors	Yes/No	agree / reject
 Heat exchanger	About	further information
	Back	to the previous display
	Ok	Confirm selection
	Confirm	Confirm setting
Further symbols can be found in the special functions		



Commissioning help

Setup wizard



Would you like to start the setup wizard?

no yes

1. Set language and time
2. Commissioning help / setup wizard
 - a) select or
 - b) skip.

The setup wizard guides through the necessary basic settings in the correct order. Pressing the “esc“ key takes you back to the previous setting. With free commissioning the settings should be made in the following order:

- Menu 9. Language
 - menu 3. Time, Date and Operating Times.
 - menu 4. Settings, all values
 - menu 5. Protection Functions (if any adjustments necessary).
 - menu 6. Special Functions (if any adjustments necessary).
3. In menu operating mode “3.2. Manual”, test the switch outputs with the consumers connected and check the sensor values for plausibility. Then set to automatic mode. See “ Manual “ on page 12



	The setup wizard can be accessed in menu 6.12. at any time. area of application with the appropriate permissible temperature range.
	Consider the explanations for the individual parameters on the following pages and check if further settings are necessary for your application.

1. Measurement values

Exit measurements	
1.1 Hot water	65°C
1.2 Hot water	45°C

▲ ▼

Serve to display the current measured temperatures.

	If ,error' appears on the display instead of the measurement value, there may be a defective or incorrect temperature sensor.
	If the cables are too long or the sensors are not well-placed, small deviations in the measurement values may occur. In this case, the display values can be compensated by adjustments in the controller - see ,Sensor calibration'. The selected program, connected sensors and the specific model design determine which measurement values are displayed.

2. Operation mode

Exit operating mode	
3.1 Auto	✓
3.2 Manual	

▲ ▼ Info

Auto

The automatic mode is the normal mode of the controller. A correct controller function under consideration of the current temperatures and the set parameters is only present in automatic mode! After an interruption of the mains voltage, the controller automatically returns to the last operating mode selected.

Manual

The individual relay outputs, v outputs and the connected consumers can be checked for proper functioning and correct assignment.

3. Settings



The operating mode ‚Manual‘ may only be used by specialists for brief function tests, e.g. during commissioning! Function in manual mode: The relays and thus the connected consumers are switched on and off by pressing a key, with no regard to the current temperatures and set parameters. At the same time, the current measurement values of temperature sensors are also shown in the display for the purposes of function control.

Exit settings	
4.1 Tmin storage	40°C
4.2 Tset storage	58°C
▲ ▼	Info



By no means does the controller replace the safety appliances on site!

Off



If the operating mode “off” is enabled, all control functions are turned off. The measured temperatures are displayed for the overview.

Minimum storage temperature

If this value falls below this value at the associated storage sensor outside the enable times for heating, the heating is nevertheless started.

Storage target temperature

Storage target temperature

If this value falls below this value at the associated storage sensor during the enabling times for heating, the heating is started. The storage target temperature is composed of the set value + the switch-off hysteresis.

Switch Off hysteresis

Switch-off hysteresis for storage heating

The storage target temperature is calculated from Tmin or Tset storage at the given operating time plus the hysteresis set here. If

the target temperature at the corresponding storage sensor is reached, storage heating is switched off. This should be factory set. If not, select 2 degrees.

Complete loading

With the complete loading function, the storage is heated up to the lower storage sensor (S2). If complete loading is deactivated, heating switches off when the target storage temperature at the upper storage sensor (S1) is reached. The storage heating is always switched on via the storage sensor S1. This should be factory set. If not, select operation.

Heating times

Enable period for storage heating.

Heating times should be selected for continuous operation only.

4. Protective Functions



The 'Protective functions' can be used by specialists to activate and set various protective functions.



By no means does the controller replace the safety appliances on site!

Anti Legionella

With the help of the anti legionella function (hereinafter referred to as: AL), the system can be heated up at selected times in order to free it of legionella.



In the delivery state, the anti legionella function is switched off.



As soon as it has heated up with "AL" turned on, information with the date will be shown in the display.



This anti legionella function does not offer any secure protection against legionella, because the controller requires an adequate added amount of energy and the temperatures cannot be monitored in the entire storage area and the connected pipe system. For secure protection against legionella, a heating up to the required temperature as well as a simultaneous circulation of water in the storage and pipe system must be guaranteed through energy sources and external control devices.



During the operation of the anti legionella function, if applicable, the storage is heated above the set value "Tmax", which may lead to scalding and system damage.

AL Tset

For a successful heating, this temperature has to be reached at the AL sensor(s) for the exposure time period.

AL residence time

For this period of time the AL Tset temperatures at the activated AL-sensors have to be reached for a successful heating.

Last AL heat

This displays when the last successful heating has occurred.

AL-times

During this periods the AL heat up is attempted. If within the defined period, the AL-condition is met (Tset at the defined sensors for the exposure time period), the heating is completed and logged as "Last AL heating".

Start manually

The anti-Legionella heating can be started manually at any time.

Seizing Protection

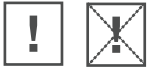
If the anti-seizing protection is activated (daily, weekly, off), the controller switches the heat pump and the mixer on/off at 12:00 noon for 5 seconds to prevent seizing of the pump/valve after long periods of inactivity.

AL-heating

With this function, a relay switches a boiler to anti-legionella mode as needed. The relay

switches on when an anti-legionella heating starts. The relay switches off when the AL-heating was completed successfully or if the enable time for the AL-heating is exceeded. Activate or deactivate function

Error Messages



The relay is switched on if one or several of the set protective functions are activated. This function can be inverted so that the relay is turned on (Duration on) and then turned off again if a protective function is activated.

Error message

Activate or deactivate function
The additional function error message activates the relay for certain events and only deactivates again when the information message to each event was read.

Sensor Calibration

Deviations in the temperature values displayed, for example. due to cables which are too long or sensors which are not positioned optimally can be compensated for manually here. The settings can be made for each individual sensor in steps of 0.5 °C.



Settings are only necessary in special cases at the time of initial commissioning by the specialist. Incorrect measurement values can lead to unpredictable errors.

Commissioning

Starting commissioning help guides you in the correct order through the basic settings necessary for commissioning, and provides brief descriptions of each parameter in the display. Pressing the ‚esc‘ key takes you back to the previous value so you can look at the selected setting again or adjust it if desired. Pressing ‚esc‘ more than once takes you back to the selection mode, thus cancelling the commissioning help (See “Commissioning help “ on page 10).



May only be started by a specialist during commissioning! Observe the explanations for the individual parameters in these instructions, and check whether further settings are necessary for your application..

Factory Settings

All settings can be reset, returning the controller to its delivery state.



All of the controller's parametrization, statistics, etc. will be lost irrevocably. The controller must then be commissioned once again.

Time & Date

Serve to set the current time and date.



For time-dependent functions such as circulation and anti-legionella and the evaluation of system data, it is essential that the time is accurately set on the controller. Please note that the clock continues to run for about 24 hours if the mains voltage is interrupted, and afterward must be reset. Improper operation or an incorrect time may result in data being cleared, recorded incorrectly or overwritten. The manufacturer accepts no liability for the recorded data!

Daylight saving time

If this function is activated, the controller automatically changes to winter time or summer time (DST, Daylight Savings Time).

Eco Display Mode

In Eco Display Mode the backlight of the display is switched off if no buttons are pushed for 2 minutes.

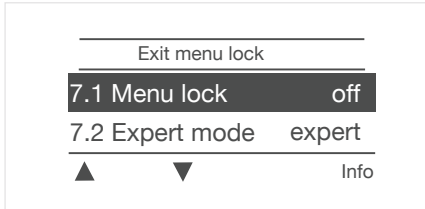


If a message exists, the backlight does not switch off until the message has been scanned by the user.

Temperature unit

In this menu you can select between the temperature units °C and °F. 19

5. Menu Lock



Secure the controller against unintentional changing and compromise of basic functions.

Menu lock active = “On”

Menu lock off = “Off”

In addition, the “Simple” menu view can be used to hide menu items that are not necessary for the daily use of the controller after commissioning. The menu item “Menu lock on/off” is also hidden when the “Simple” menu view is selected!

The menus listed below remain completely accessible despite the menu lock being activated, and can be used to make adjustments if necessary:

1. Measurement values
2. Statistics
3. Settings
4. Special Functions
5. Menu lock
6. Language

6. Language



To select the menu language. During initial commissioning and longer power interruptions, the query is made automatically.

Malfunctions/Maintenance

Replacing the Fuse



Repairs and maintenance may only be performed by a specialist. Before working on the unit, switch off the power supply and secure it against being switched on again! Check that there is no power flowing!



Only use the included safeguard or a similar safeguard with the following specifications: T2A / 250 V.

If the mains voltage is switched on and the controller still does not function or display anything, then the internal device fuse may be defective. First find the external fault source (e.g. pump), replace it and then check the device fuse.

To replace the device fuse, open the device as described under “See “ Wall Installation “ on page 8”, remove the old fuse, check it and replace if necessary.

Then first recommission the controller and check the function of the switch outputs in manual mode as described in Section 3.2. .

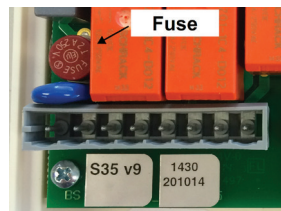
Maintenance



In the course of the general annual maintenance of your heating system, the functions of the controller should also be checked by a specialist and the settings should be optimized if necessary.

Performing maintenance:

- Check the date and time See “ Time & Date “ on page 18
- Assess/check plausibility of statistics See “ Statistics “ on page 11
- Check the error memory See “ Notifications “ on page 11
- Verify/check plausibility of the current measurement values See “ Measurement values “ on page 10
- Check the switch outputs/consumers in manual mode See “ Manual “ on page 12
- Possible optimization of the parameters setting (only on customers request)



Possible error messages

Notes for the specialist

Sensor x defective	Means that either the sensor, sensor entrance on the controller or the connecting wire was defective (See “ Temperature Resistance Table for Pt1000 Sensors “ on page 9).
Restart	Means that the controller was restarted, for example, due to a power outage. Check date & time!
Time & Date	This display appears automatically after a longer network disruption, because the time & date must be examined and, if applicable, adjusted.
Frequent on / off	A relay was switched on and off more than 5 times within 5 minutes.
Anti-legionella failed	Anti-legionella failed appears if at least anti-legionella Tsoll -5 °C could not be held at the antilegionella sensor for the set exposure time.

Tips

- The service values include not only current measurement values and operating states, but also all of the settings for the controller. Write the service values down just once after commissioning has been successfully completed.
- In the event of uncertainty as to the control response or malfunctions the service values are a proven and successful method for remote diagnosis. Write the service values down at the time that the suspected malfunction occurs. Send the service value table by fax or e-mail with a brief description of the error to the specialist or manufacturer.
- To protect against loss of data, record any statistics and data of particular importance at regular intervals.

Final Declaration

Although these instructions have been created with the greatest possible care, the possibility of incorrect or incomplete information cannot be excluded. Subject as a basic principle to errors and technical changes.

Date and time of installation:

Name of installation company:

Space for notes:

COMMERCIAL HOT WATER SOLUTIONS LTD

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Weston Industrial Estate
Weston Super Mare
BS24 9ES
01934 244 770

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“Commercial Hot Water Solutions Ltd (CHWS Ltd) are a Bosch recognised supplier of high quality commercial and industrial hot water generators and storage vessels for use with the Bosch Commercial and Industrial range of boilers and water heaters”