

Consul+ systems

*compact water heating system
high efficiency*

- Installation, user and service manual



Models:

- *Consul+35/150*
- *Consul+35/230*
- *Consul+55/230*



BASE VERSION
E93.0902EN

Eco Heating Systems Groningen B.V.

Table of contents

INTRODUCTION.....	5
1 SAFETY GUIDELINES	5
1.1 GENERAL.....	5
1.2 IMPORTANT TECHNICAL WARNINGS AND GUIDELINES	6
2 TECHNICAL DATA CONSUL+ WATER HEATERS	8
2.1 TABLE GENERAL TECHNICAL SPECIFICATIONS.....	8
2.2 SYSTEM EFFICIENCY.....	9
2.3 PERFORMANCE	9
2.4 DIMENSIONS CONSUL+35/150.....	10
2.5 DIMENSIONS CONSUL+35/230 AND CONSUL+55/230	11
3 ACCESSORIES AND UNPACKING.....	12
3.1 SUPPLIED	12
3.2 UNPACKING	12
4 INSTALLATION OF THE CONSUL+ APPLIANCE.....	13
4.1 GENERAL NOTES.....	13

INTRODUCTION

This manual has been written for:

- the installer
- system design engineer
- the service engineer
- the user

abbreviations

EHS	Eco Heating Systems Groningen B.V.
NB	ATTENTION!

symbols



Warning: important information related to the safety of persons and/or the appliance

terminology

Flow	Water heater hot water out
Return	Water heater cold water in

The Consul+ system consists of a boiler, tank, pipes and pump. Use also the “Consul+” manual when installing and servicing the “Consul+ system”

1 SAFETY GUIDELINES

1.1 General

Read all these instructions before commencing installation.

Keep these instructions together with the user manual near the water heater for quick reference.

The appliance should be installed by a skilled installer according to the applicable standards and regulations. Failure to comply with these regulations could lead to the warranty becoming invalid.

Without written approval of the manufacturer the internals of the water heater may not be changed. When these changes are executed without approval, the water heater certification is invalid.

Commissioning, maintenance and repair must be done by a skilled installer/engineer, according to all applicable standards and regulations.

What should one do when there is the smell of gas?

- Do NOT use any electrical equipment
- Do NOT press any switches
- Close the gas supply
- Ventilate the room (open the windows and/or outside plant room doors)
- Warn the installer immediately



The manufacturer/supplier is not liable for any damage caused by inaccurately following of these mounting instructions. Only original parts may be used when carrying out any repair or service works.



This appliance is not intended for use by persons (including children) with reduced physical, sensory or mental capabilities, or lack of experience and knowledge, unless they have been given supervision or instruction concerning use of the appliance by a person responsible for their safety. Children should be supervised to ensure that they do not play with the appliance.

1.2 Important technical warnings and guidelines

The EHS Domestic Hot Water systems will, for a long period, comfortably meet your requirement of hot water of the right temperature at the right hour, provided that a few important conditions have been fulfilled regarding the installation.

Please follow all instructions and recommendations presented in this manual by EHS, especially the ones concerning the next important topics:

- Water quality (see also “Consul+” manual)

A first necessary condition is the quality of the water to be heated in the water heater. Three values matter: hardness, total amount of dissolved solids and acidity. If water quality does NOT meet the requirements the system may be seriously damaged in time.

- ◆ Hardness should not exceed 205 PPM CaCO₃ (11.5°dH)
- ◆ TDS (Total Dissolved Solids) may not exceed 450 ppm
- ◆ Hardness and TDS together may not exceed 450 PPM
- ◆ pH-value should be between 6.5 and 7.5, measured cold

The actual values can be retrieved at your local water supplier.

If water quality doesn't meet the abovementioned requirements, a water treatment installation should be installed to improve water quality to the required levels, if possible.

Following the instructions and recommendations given in the referred paragraphs will highly improve the functioning and considerably lengthen the life time of your EHS DHW system.

Furthermore, for all Consul appliances the next instructions and recommendations apply:

- ! *Only use stainless steel or PP flue gas outlet
(Never use aluminum or aluminum containing flue gas outlet)*
- ! *Always fill the siphon before commissioning the water heater*
- ! *Always set the gas valves during commissioning the water heater, for the first time and after maintenance and/or installation changes*
- ! *Never change the parameters P4AD, P4AA and P5BI*
- ! *Never place a valve between the safety valve and the water heater*
- ! *In a log, keep track of all situations regarding the appliance:
what, when, by whom, what actions and/or changes, what communication has been performed*

Warnings and guidelines (continuation)

EHS is not liable for any damage caused by inaccurately following these mounting instructions. Only EHS parts may be used when carrying out any repair or service works.

Do not use chlorine based products for brazing.

When commissioning the water heater, the running of the pump must be checked before leaving the installation.

By pressing the service button during a couple of seconds the water heater can be fired independently from the thermostat circuit. Firing the water heater without water flow (but filled with water) will cause a boiling noise.

The flow and return temperature are checked continuously. The temperature difference may not exceed the programmed value belonging to the actual power level. If it does, the water heater will go in a lock-out.

Minimum water pressure 1 bar, maximum operating pressure 8 bar.

Fuel used should have sulphur rates that comply with the next values: a maximum annual peak over a short period of time of 150 mg/m³ and an annual average of 30 mg/m³ maximum.

Combustion air must be free of contents of chlorine, ammonia, alkali agents. The air near a swimming pool, a washing machine or a laundry, is containing these contents.

BE AWARE: By first installation, the built-in manually-operated air vent should be open. This air-vent is located at the top of the heat exchanger of the "Consul+ boiler". This vent must be opened during the filling of the water heater and the DHW system to make sure that no air/oxygen is trapped in the heat exchanger of the water heater.

Make sure that, during flushing, filling and venting, no water can reach any electrical parts of the water heater.

LEGIONNAIRES' DISEASE



An anti-Legionella function is present in the software but is default turned OFF. (See also "Consul+" manual).

GAS CONVERSION



If a non-standard gas type is to be used for this water heater, fan speed must be reduced by altering parameter P4BD. (See also "Consul+" manual).

2 TECHNICAL DATA CONSUL+ WATER HEATERS

Important: The water heater system is an assembly of the water heater Consul+35 or Consul+55), pump (Grundfos UPXML GEO 25-125-N-180), tank (EWD150 or EWD230) piping and other parts. For detailed specifications of the water heater see "Consul+ water heater" manual.

2.1 Table general technical specifications

GENERAL				
Type of water heater		Consul+35/150	Consul+35/230	Consul+55/230
Dimensions (h x w x d)	mm	1525x610x1000	1565x610x1000	1565x610x1000
Water content est.	Litres	150	230	230
Weight dry	kg	97	114	117
In- and outlet water connection union	inch	R 1½"	R 1½"	R 1½"
Gas connection	inch	R ¾"	R ¾"	R ¾"
Flue/air concentric	mm	80/125	80/125	80/125
Flue/air twin pipe	mm	80/80	80/80	80/80

DOMESTIC HOT WATER		Values min-max:		
Nominal input (Net)	kW	10.1 – 33.7	10.1 – 33.7	14.0 – 52.9
Nominal input (gross) (G20 G25 G31)	kW	11.2 – 37.4	11.2 – 37.4	15.6 – 58.8
Nom. output 80/60°C	kW	9.6 - 32.1	9.6 - 32.1	13.4 - 50.5
Nom. output 50/30°C	kW	10.4 – 34.7	10.4 – 34.7	14.2 – 53.7
Nom. output 37/30°C	kW	10.8 – 36.3	10.8 – 36.3	15.1 – 57.1

INSTALLATION		
Max. water temperature	°C	75
Pressure WW-system min-max	bar	1,0 – 8,0
Relief valve pressure max	bar	10

ELEKTRICAL				
Power consumption	W	160	160	195
Power supply	V / Hz	230 / 50		
Protection class		IPX4D		

For other specifications see "CONSUL+ " manual.

2.2 System efficiency.

The efficiency of the complete installation depends on:

- type of water tank.
- type of circulation pump.
- insulation of the connecting pipes.
- volume of the water tank.
- length of the connecting pipes.

Type of Water Tank:		EWD150	EWD230
Energy label		C	C
Standing loss (S)	W	61,3	78,8
Storage volume (V)	l.	153	240

2.3 Performance

The amount of hot water which can be tapped, is related to:

- ◆ The temperature of the stored water in the tank
- ◆ The size of the tank
- ◆ The capacity of the water heater
- ◆ The temperature at the tap.

Example: Set temperature tank: 75°C, cold water 10°C
 Temperature at the tap: 38°C (for a bath or shower) – for kitchen use 60°C is available.
 Combination Consul+35 and 230-litre tank

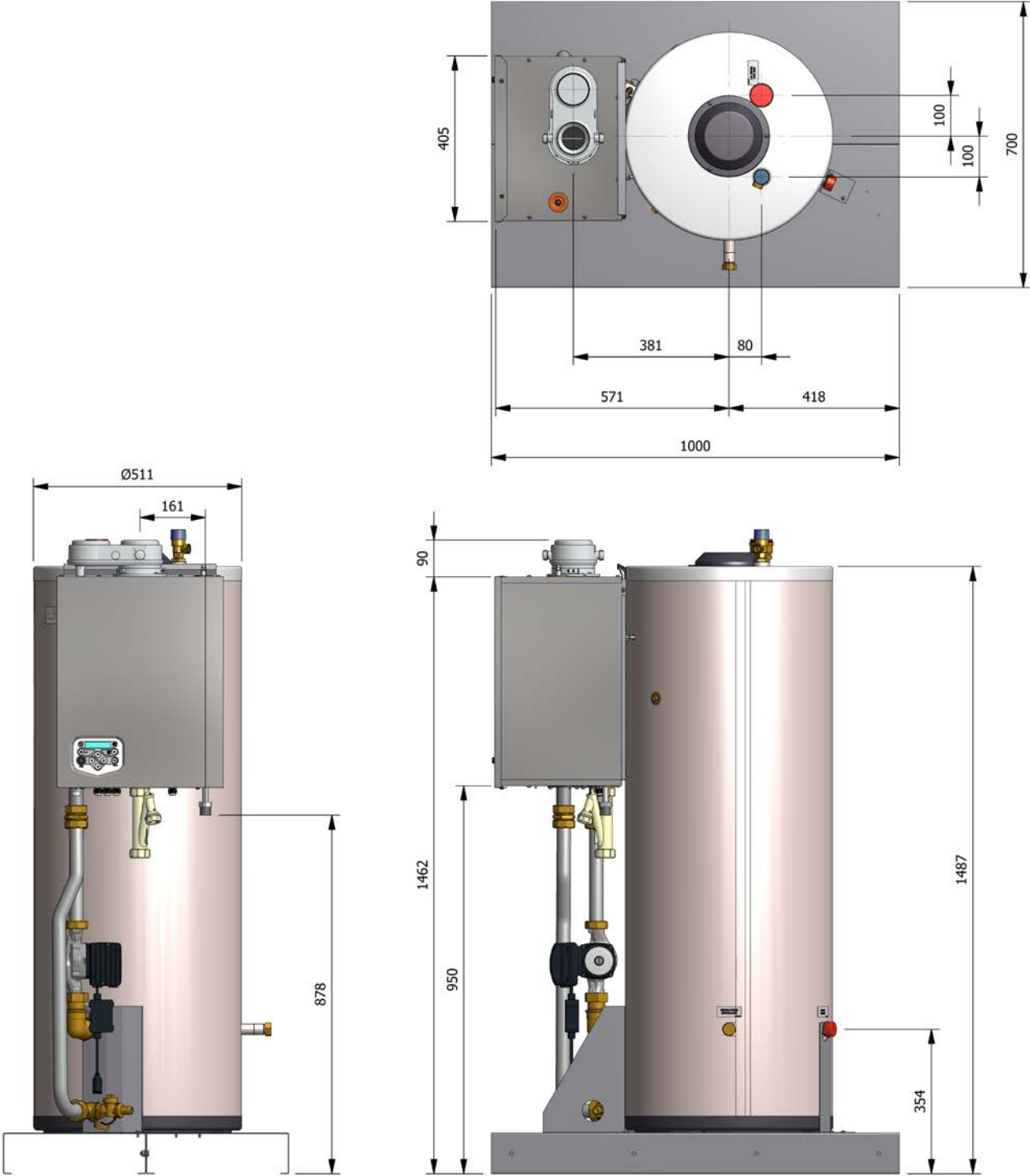
Result:

1. Continuous tapping: up to 16 L/min (hot water 38°C; cold water 10°C)
2. Amount of water in L/min, before the tank temperature is lower than 38°C: by 25 L/min: 27 minutes.

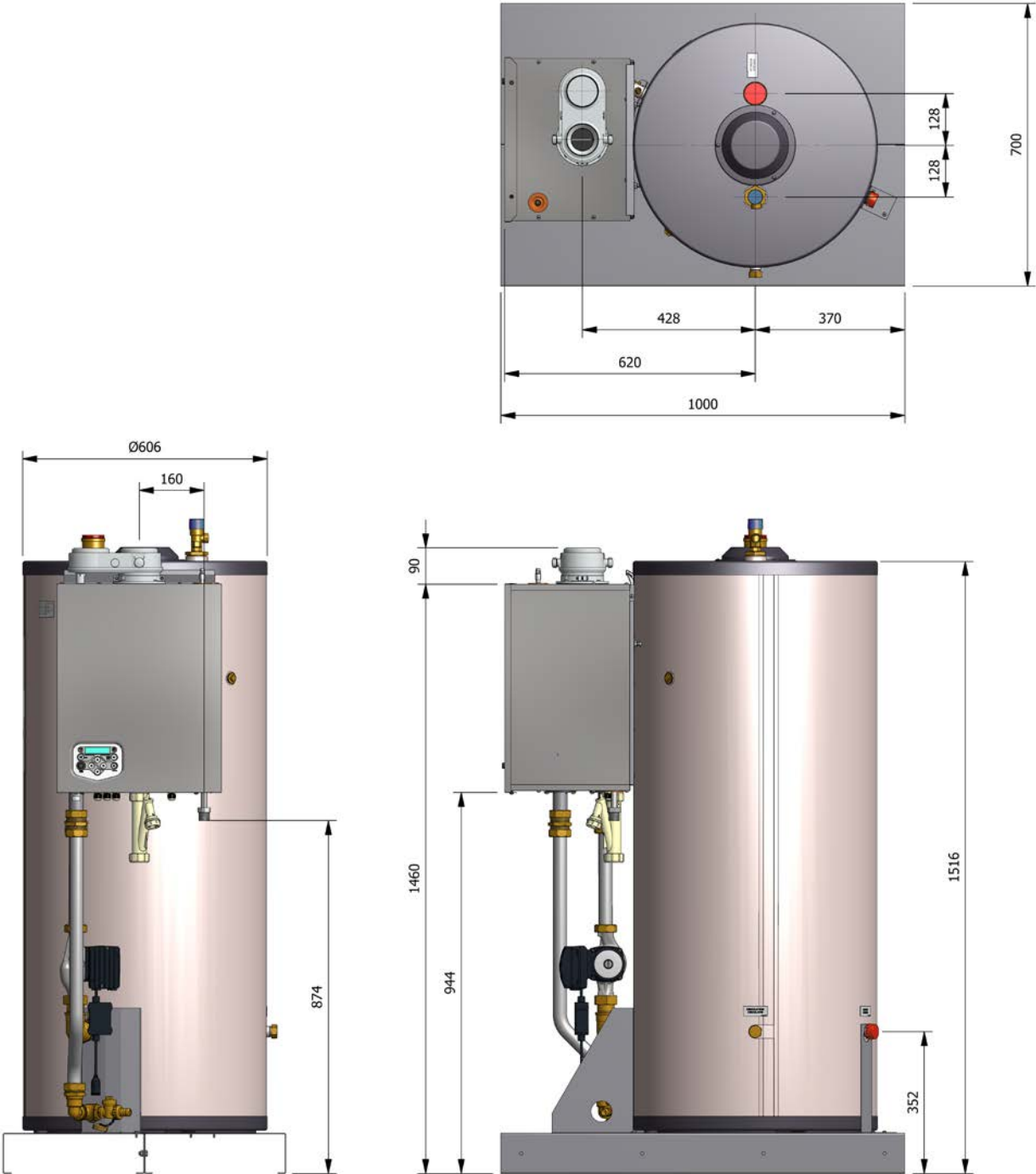
To make calculation easier, hereby some information:

L/min of 38°C	Consul+35 with 150 L. tank	Consul+35 with 230 L. tank	Consul+55 with 230 L. tank
10	continuous	continuous	continuous
15	continuous	continuous	continuous
20	93.2 minutes	143 minutes	continuous
25	27.4 minutes	42 minutes	continuous
30	16.1 minutes	24.6 minutes	161.4 minutes
35	11.4 minutes	17.4 minutes	43.5 minutes
40	8.8 minutes	13.5 minutes	25.2 minutes
45	7.2 minutes	11 minutes	17.7 minutes
50	6.1 minutes	9.3 minutes	13.6 minutes

2.4 Dimensions Consul+35/150



2.5 Dimensions Consul+35/230 and Consul+55/230



3 ACCESSORIES AND UNPACKING

3.1 Supplied

The Consul+ DHW appliance is supplied as a complete system:

- Modulating water heater including control for the complete hot water system
- Tank of stainless steel
- Stainless steel pump
- All the pipes in stainless steel
- Complete wiring
- Drain valve at the bottom of the tank
- Siphon drain hose

3.2 Unpacking

The CONSUL+ DHW comes with the following documents and accessories:

- One "CONSUL+ systems" Installation, users and service manual.
- One "CONSUL+ " Installation, users and service manual.
- Attached to the gas valve:
Two spare fuses, three spare nuts for mounting the burner plate and a gas conversion sticker

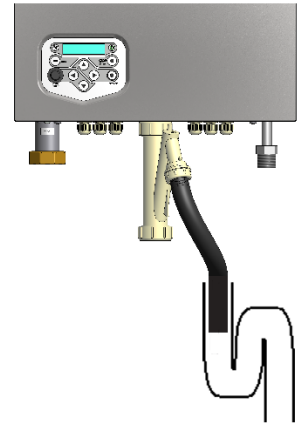
After delivery, immediately check the water heater package to see if it is complete and without any defects. Report any imperfections immediately to your supplier.

4 INSTALLATION OF THE CONSUL+ APPLIANCE

4.1 General notes

The installation area/room must have the following provisions:

- 230 V - 50 Hz power source socket with earth connection.
- Open connection to the sewer system for draining condense water
- Gas connection



Note:

The floor must be able to hold the weight of the water filled appliance.

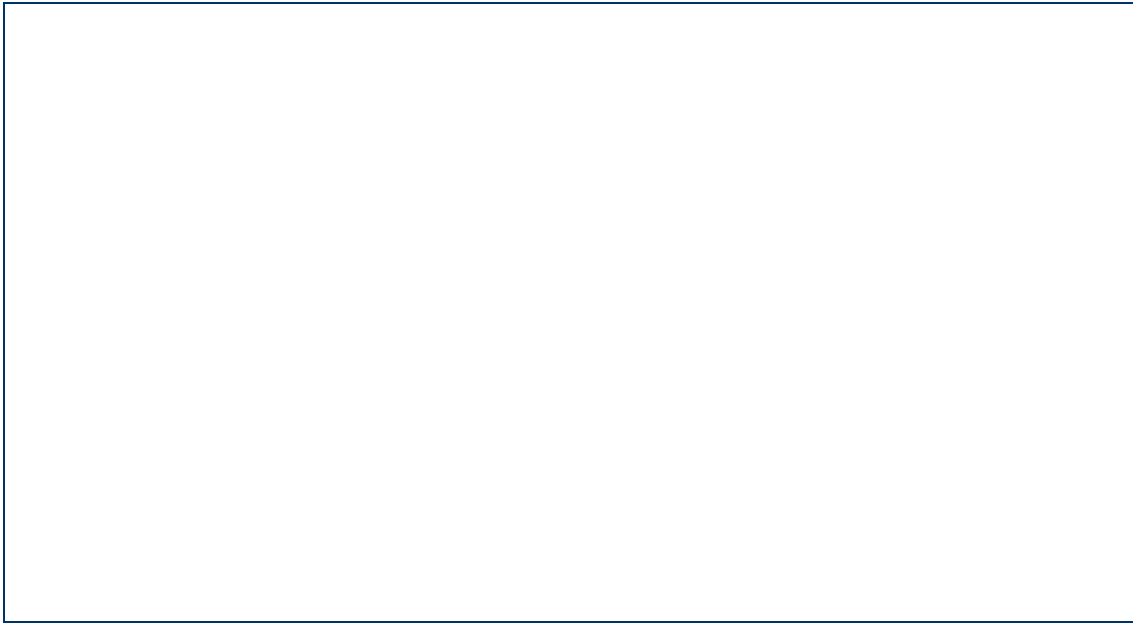
Other considerations related to the water heater location:

- The ventilation of the plant room must meet all applicable standards and regulations, regardless of the selected supply of fresh air to the water heater location.
- Both the air supply and the flue gas tubes must be connected to the outside wall and/or the outside roof.
- The installation area must be dry and frost-free.
- The water heater has a built-in fan that will generate noise, depending on the total heat demand. The water heater location should minimize any disturbance this might cause.
- There must be sufficient lighting available in the plant room to work safely on the water heater.
- Notice the positioning of electrical components in relation to the temperature sensitivity.
- Make sure there is an open connection with the sewer to drain the condensate.
This connection should be lower than the condensate drain level of the water heater.

The water heater must be positioned and installed by a qualified installer in accordance with all applicable standards and regulations. Commissioning the water heater must be done by a skilled service / commissioning engineer.

Use the “Consul+ Wall hung” manual for further assistance.

Your installer:



Eco Heating Systems Groningen B.V.

contact address:

Postbus 5145
9700 GC Groningen
The Netherlands

visit address:

Rigaweg 10
9723 TH Groningen
The Netherlands

T. +31 (0)50 5470470

F. +31 (0)50 5470498

E. sales@ecohs.nl

I. www.ecohs.nl



Eco Heating Systems Groningen B.V.