Instruction Manual for Installation and Operation

DIRECT HYDROHEXA-UFH

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Contents

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1 Explanation of Symbols and Abbreviations

Symbols

CAUTION General Safety Remark

CAUTION Hot Surface, Risk of Burn

CAUTION Risk of electrical shock

Requirement of 230V Altanative Current

Requirement of Handtool

Important Note

Phillips Screewdriver

Insulated flathead Screwdriver

Recyle component if possible

Dispose component

Motorized tool

Manuel operation no need

Abbreviations

DH	District Heating
SH	Space Heating
DHW	Domestic Hot Water
DCW	Domestic Cold Water
VAC	Volts Alternating Current
VDC	Volts Direct Current
A	Current in Amps
N	230VAC Neutral
L	230VAC Live (phase)
PE	Protective Earth
°C	Temperature in degrees Celsius
kPa	Pressure Kilopascal
kg	Weight in kilograms
mm	Distance in millimetres
PN	Pressure class in Bar
“	Thread size in inch (ISO 228/1)
HIU	Heat Interface Unit

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2 Operation

2.1 Space Heating (SH)

The hydraulic regulator in the unit, together with thermostatic valves and temperature sensors regulates the temperature of the space heating. HydroHexa UFH is designed specially for underfloor heating system. It includes mixing loop with temperature control valve and circulation pump.

CAUTION!

Components, pipes and radiators in, and connected to, the unit may be hot. The heat interface unit is designed for use with space heating systems up to 90ºC. The pipes and components in the unit as well as the pipes and radiators in the space heating installation can reach these temperatures. Contact may lead to burns.

2.2 Domestic How Water (DHW)

The HIU is equipped with single wall plate heat exchangers. The heat exchanger transfers the heat from the heat distribution system to the domestic hot water. The hydraulic regulator in the unit, together with temperature control valves and temperature sensors regulate the temperature of the hot water to its set point (default 55°C).

The unit has DHW keep warm mode. This mode the heat exchanger is kept up to temperature after the last hot water draw off. After time of inactivity the temperature is allowed to drop to minimize energy consumption. In this mode the HIU continuously kept warm for quicker hot water delivery.

CAUTION! Hot Water

The hot water temperature is regulated to 55ºC (default value). If there is a power outage during tapping conditions the unit will stop regulating the domestic hot water temperature. This may lead to a domestic hot water temperature that is higher or lower than its set point. Hot water can cause burns.

2.3 Priority Switching

The HIU is fitted with priority switching, when hot water is drawn off, the HIU diverts all the DH flow to heat up the domestic water. If there is a power outage during tapping conditions the space heating valve will stay in closed position. This may lead to a decrease in temperature of the space heating installation/circuit.

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3 General Plumbing Requirements

New System Installations

When carrying out a completely new heating system installation in a new build property or a first time installation in an existing property, then the heating system must conform to current building regulations Part L1a. All new domestic heating systems must have a minimum of two heating zones. Each of these zones should be controlled by a thermostat and zone valve. Alternatively individual electronically controlled Thermostatic Radiator Valves may be fitted. If domestic hot water is provided by a storage system then the storage system or cylinder will require separate time and temperature control.
All radiators must have TRV's fitted in all rooms except bathrooms and any rooms where a thermostat is located. The exception to this are single storey, open plan dwellings where the living area is more than 70% of the total usable floor area. Then this type of dwelling can be controlled as one zone.

Existing Installations

When carrying out boiler replacements on an existing system, the regulations do not require separate zoning of the upstairs and downstairs and compliance with the regulations can be achieved by a single room thermostat or programmable room thermostat. It is however recommended that TRV's are fitted to all rooms except the bathrooms and the room
where a thermostat is located.

3.1 British and Irish Standard

Where no specific instruction is given, reference should be made to the relevant British and/or Irish Standard codes of Practice.

BS7074:1	Code of practice for domestic and hot water supply
EN12928	Space heating for domestic premises
BS7593	Treatment of water in domestic hot water space heating systems
ECTI	National rules for electrical installations

Keep following conditions in mind during installation:

- The HIU can only be used with closed hesting systems up to a temperature of 90°C.
- The HIU must be stored and installed in a frost free area.
- The HIU must not be exposed to direct sunlight.
- Ambient temperature must be between +5°C and +40°C.
- Humidity must be between 20% and 80%. ,
- Temperatures of components in the HIU and connected to the HIU can reach high temperatures.
- Contact may lead to burns.

Potable water: All seals, joints and compounds (including flux and solder) and components used as part of the secondary domestic water system must be approved by WRAS.

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3.2 Fitting and Modufications

Fitting the appliance and any controls to the appliance may only be carried out by a competent engineer. Any misuse or unauthorised modifications to the appliance or associated components and systems could invalidate the guarantee and may lead to serious injury or even death. The manufacturer accepts no liability arising from any such actions, excluding statutory rights.

3.3 District Heating

CAUTION!

Components, pipes and radiators in, and connected to, the unit may be hot. The heat interface unit is designed for use with centralized heating systems up to 90ºC. The pipes and components in the HIU as well as the pipes and radiators in the space heating installation can reach these temperatures. Contact may lead to burns.
Keep following conditions in mind during installation:

- Maximum pressure supplied by the district heating network is 16 bar.
- Maximum differential pressure supplied by the district heating network is 600 kPa.
- Maximum supplied temperature by the district heating network is 90ºC.
  Minimal supply temperature is set-point DHW + 5ºC.

3.4 Servicing

The end user should be advised to have the system serviced annually by a competent engineer. Contact your supplier for. a list of approved engineers. Approved spares must be used to help maintain the economy, safety and reliability of the appliance. The service engineer must complete the Service Record after each service.

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4 General Wiring Requirements

These instructions apply in the UK and Ireland only and must be followed except for any statutory obligations. Component specific electrical information may also be supplied in support of these instructions.

FAILURE TO INSTALL APPLIANCES CORRECTLY COULD LEAD TO PROSECUTION.

CAUTION!

Isolate the mains supply before starting any work and observe all relevant safety precautions. The HIU uses electrical components (230VAC). These components must stay dry at all times. Touching these components can result in an electrical shock, burn, or electrocution.

When the HIU is permanently connected to the 230VAC installation, a switch or circuit-breaker must be included in the installation as the means for disconnection. The switch of circuit-breaker must be suitably located next to the appliance and easily reached. The switch of circuit-breaker must be marked as the disconnecting device for the equipment.

4.1 Danger of Short-Circuit

When connecting the cables ensure that no cable pieces fall inside the control panel. Unless otherwise stated, all HIU's should be connected to a mains 230V 50Hz Supply fused at 3 Amps. All electrical connections with the HIU control panel are clearly marked as follows:

L = Live 230V

N = Neutral

E = Earth 

PE = Protective Earth

Any additional mains cable should comply fully with the current I.E.E. wiring regulations. It must have a minimum section of 1.5mm² and be capable of withstanding a minimum of 90ºC.

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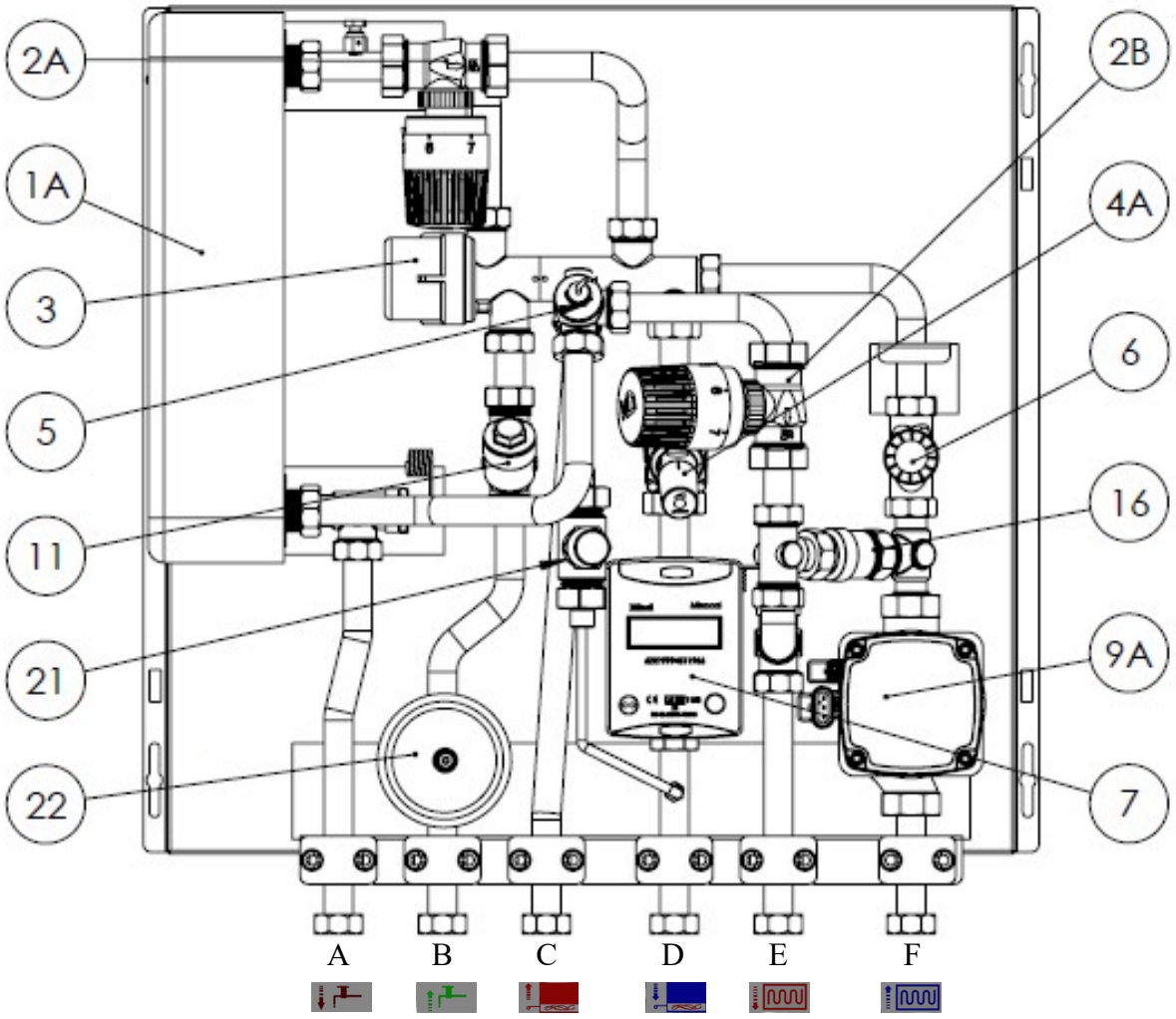
5 Specifications

5.1 Component List



1A DHW Heat Exchanger
2A DHW Temperature Control Valve
2B UFH Temperature Control Valve
3 Proportional HHydraulic Regulator
4A Differential Pressure Valve
5 Boiler Inlet Strainer
6 Zone Valve
7 Heat Meter Space
9A Circulation Pump for UFH
11 Cold Water Inlet Strainer
16 Check Valve
21 Thermostatic By-Pass Control Valve
22 Water Hammer Arrester

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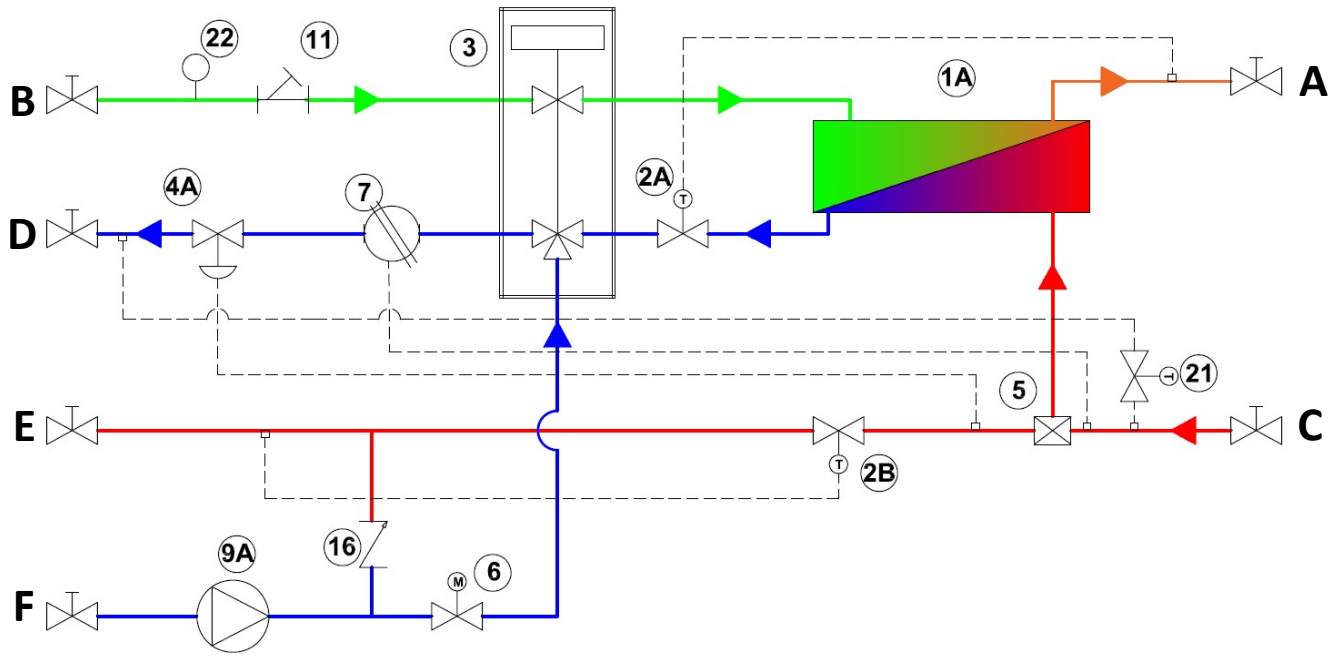
5 Specifications

5.2 Flow Diagram



A — DHW – Domestic Hot Water
B — DCWI – Domestic Cold Water Inlet
C — DHS – District Heating Supply
D — DHR – District Heating Return
E — SHS – Space Heating Supply
F — SHR – Space Heating Return

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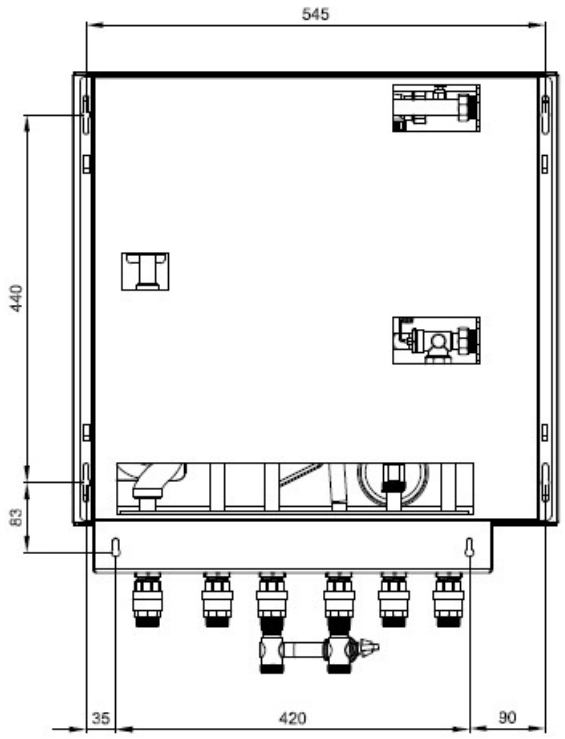
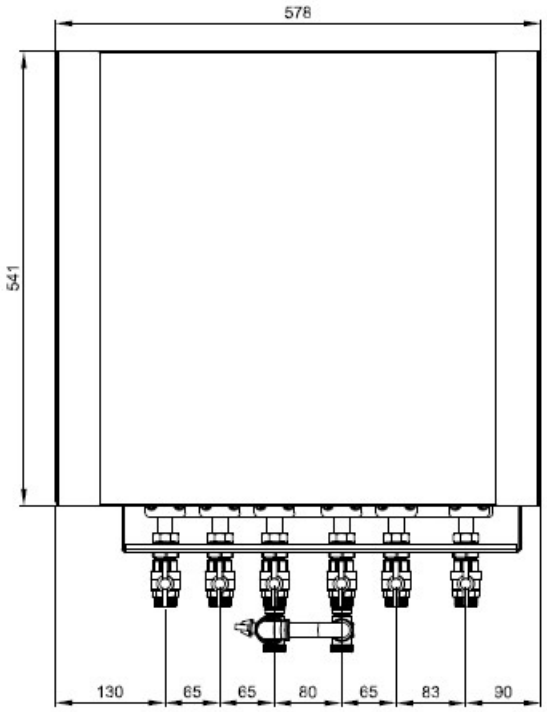
5 Specifications

5.3 Dimensions

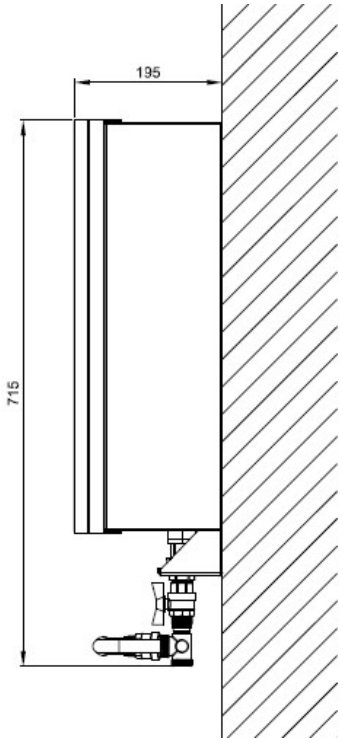
Back View



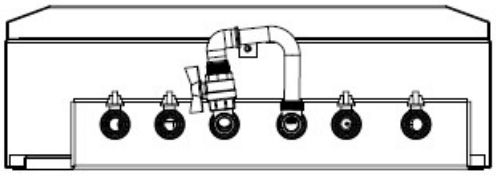
Front View



Wall Mounted View



Bottom View



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5 Specifications

5.4 Technical Data

Description	Data
Nominal primary supply temperature	80°C
Maximum primary supply temperature	85°C
Minimum primary supply temperature	55°C *
Nominal DHW supply temperature	55°C
DHW Set Range	45°C to 60°C
Return Temp Limit Range	35°C to 65°C
CH Limit Range	30°C to 80°C
Primary connections	Female / 18mm
Mains & DHW connections	Female / 18mm
Central heating connections	Female / 18mm
Pressure relief	15mm
Maximal primary differential pressure (without dP regulator)	450 kPa
Pressure class DH circuit	PN10
Pressure class CH circuit (3 bar safety valve)	PN10
Pressure class DHW circuit	PN10
CH Maximum working pressure	2.5 Bar
Casing width	578mm
Casing height	541mm
Casing depth	195mm
Casing Material	Metal case with Insulation
Weight	32kg **
Electrical supply info	230V 50Hz
Fuse ratings	3 Amp

* Minimum required DH supply temperature is DHW setpoint + 5°C with a minimum of 55°C.
** Unit weight may vary depending on the optional components built into the unit.

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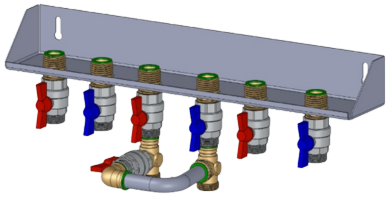
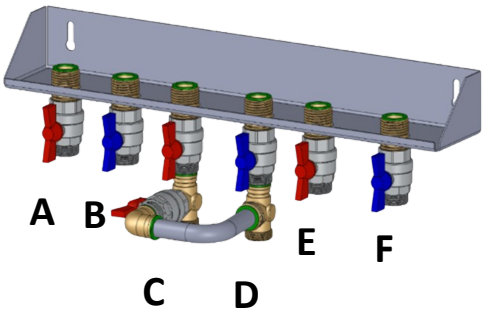
6 Installations

Additional Items Required



Connections



A — DHW	–	Domestic Hot Water
B — DHW	–	Domestic Cold Water Inlet
C — DHS	–	District Heating Supply
D — CHR	–	District Heating Return
E — SHS	–	Space Heating Supply
F — SHR	–	Space Heating Return

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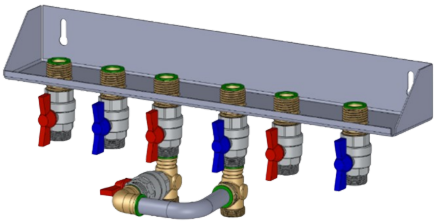
6 Installations

6.1 Mounting to the Wall

The wall needs to be strong enough to support the HIU. If the wall is of drywall construction make sure that there is a board installed (e.g. plywood, min. 18mm) to support the structure, which is strong enough to hold the HIU. Use a 4mm drill bit (at least 40mm depth for the wall plugs).

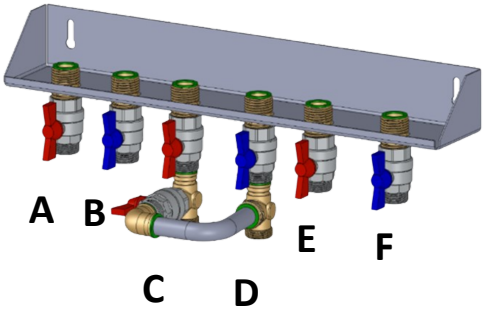


If the wall is of concrete or brick construction use a 10mm drill bit (at least 60mm depth for the wall plugs).

The PPB (Pre-Plumbing Brackets) requires 6 fixing screws, the HIU requires 4 fixing screws.

6.2 Flushing the System

Before mounting the HIU and connecting it to the PPB all pipework that is to be connected must be thoroughly cleaned and flushed out. Any debris or flux that could collect in the narrow channels of the heat exchangers will be difficult to remove once they are installed. Any remaining debris and flux may cause serious corrosion problems, as well as restricting flow and reducing the efficiency of the HIU. Use the flushing by-pass (optional accessory) and connect it to the PPB (C-D).



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7 Service

7.1 Filling the Space Heating System

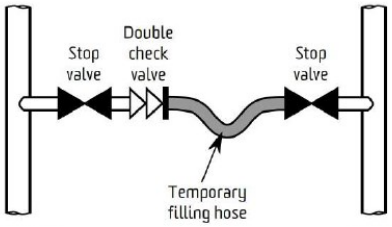
The method of filling the CH system must comply with the current water supply (water fittings) regulations and use approved equipment. For GB Please refer to Guidance G24.2 and recommendation R24.2 of the water regulations guide. For IE Please refer to the current edition of I.S. 813 "Domestic Gas Installations".

A WRAS approved filling loop should be used for connecting the mains water supply to the CH system so that the system can be filled on installation or whenever water pressure has been removed for system modifications, etc. An approved double check valve must be permanently fitted to the mains water circuit to provide backflow prevention and the temporary filling hose must be removed and connections capped after use.

CAUTION!

Failure to isolate and disconnect the temporary filling hose after use, may result in the central heating system being over-pressurised and could cause damage to central heating components.

The nominal operating pressure of the central heating system should be between 1 and 2 Bar.



Domestic Cold Water Inlet Space Heating Supply

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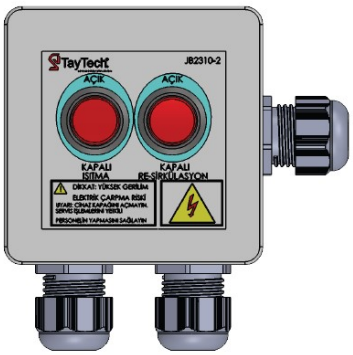
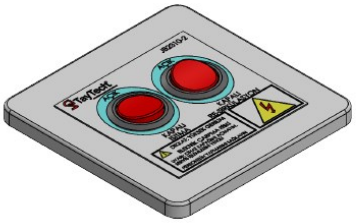
7.2 Power Supply

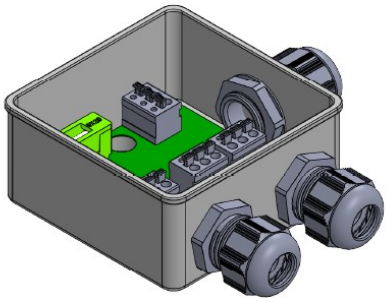
The HIU is equipped with an electric connection box that converts the 230VAC power supply to 24 VDC and powers the equipped SH pump and optional DHW pump. It also houses the fuse of the unit.

CAUTION!

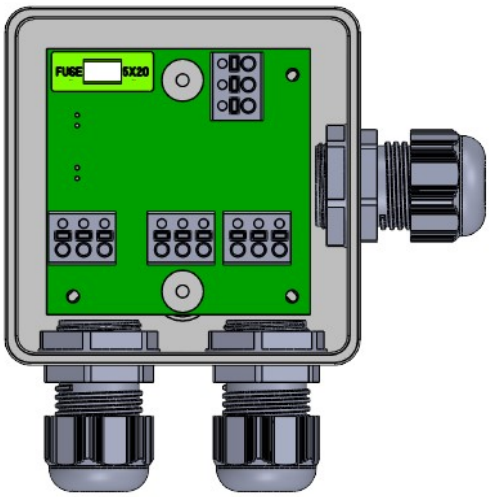
The HIU uses electrical component (230VAC). Touching these components can result in an electrical shock, burn, or electrocution. The casing shall only be opened by authorised personnel when the power supply is cut off

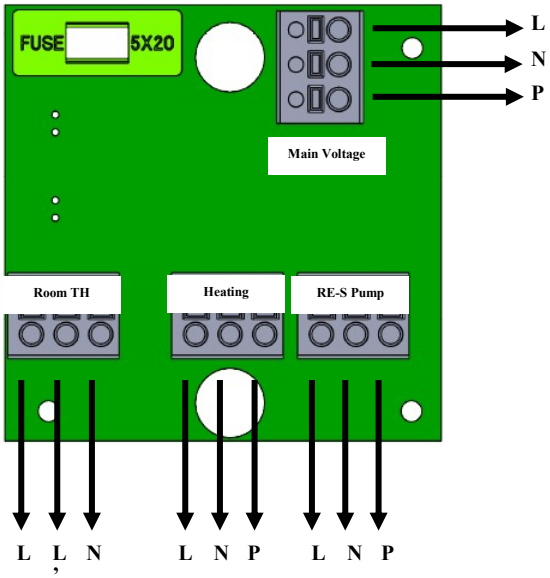






DE10 CONNECTIONS





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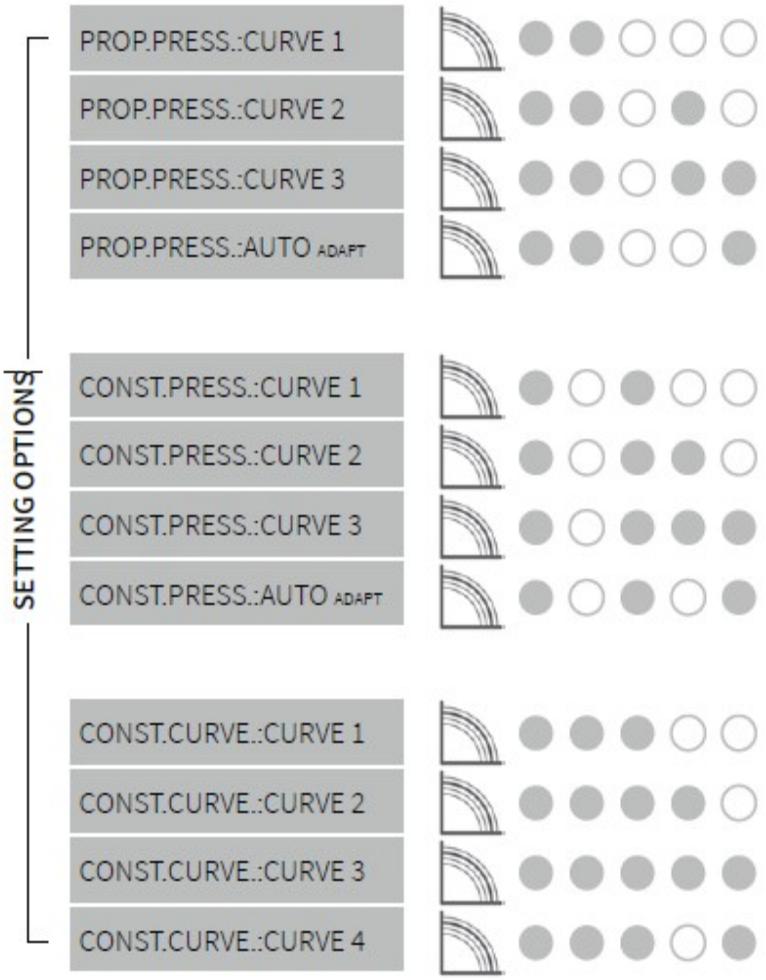
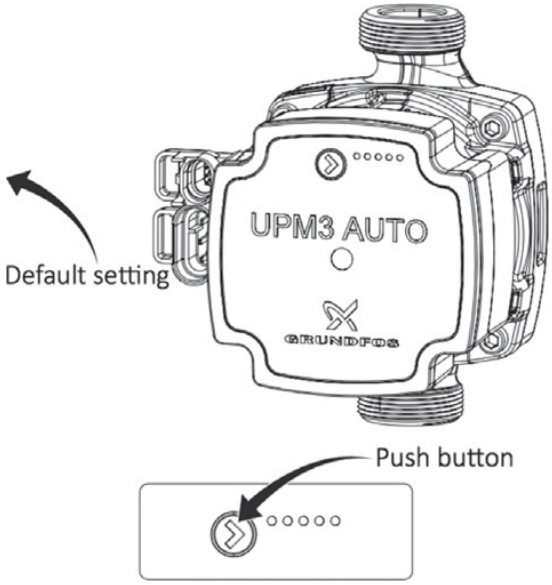
7.3 Circulation Pump

The Grundfos pump has 3 control modes (proportional pressure, constant pressure and constant curve). Each control mode has 4 settings to choose from. The user interface has one push button, one red/ green LED and four yellow LEDs





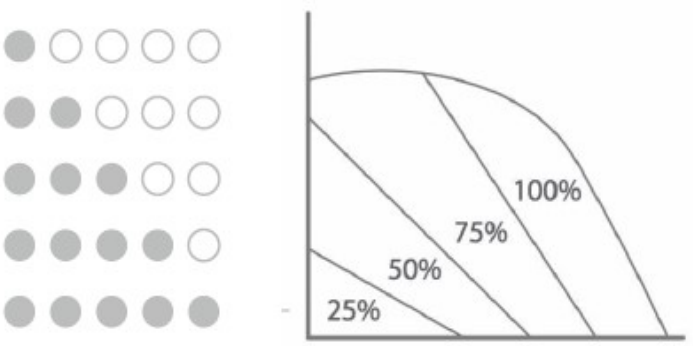
Settings

You can choose between the performance view and settings view. If you press the push button for 2 to 10 seconds, the user interface switches to “select selection” if the user interface is unlocked. You can change the settings as they appear. The settings appear in a particular order in a closed loop. When you release the button, the user interface switches back to the performance view and the last setting is stored.

7.4 Performance View

While the pump is running, the first LED will show a green light. The following four Leds will indicate the power consumption as shown in the table below.

Stand-by (only externally controlled)	0%
Low performance	0 - 25%
Medium performance	25 - 50%
Medium High performance	50 - 70%
High performance	70 - 100%



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8 CE Declaration

TayTech®
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CE

EC DECLARATION OF CONFORMITY

Taytech Otomasyon ve Bilisim Teknolojileri

İnönü Mahallesi, Atatürk Blv. No:7/2 41400 Gebze Plastikçiler
O.S.B Gebze / Kocaeli

We, Taytech Otomasyon ve Bilisim Teknolojileri, declare under our sole responsibility that the product;

Product Name: **Indirect HydroHexa-UFH**

to which this declaration relates is in conformity with the following EU Directives:

Machinery Directive 2006/42/EG
Low Voltage Directive 2014/35/EU
Electromagnetic Compatibility Directive 2014/30/EU

using the provisions set in the following standarts, insofar as they are relevant:

EN 60335-1 : 2012-10
EN 60335-2-51
EN 55014-1&2
EN 60730-1
EN 61000-3

Date and Place of Issue

February 21, 2021 Kocaeli

Name, position and signature of authorized person

Cenk ŞEN
Electromechanical Group Leader

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Deputy of General Manager

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