E.C.A.
PROTEUS PREMIX

H_2 20%

Superior Safety Systems

Technical Design Properties

- 14-20-24-28-30-35-45 kW capacities
- Usage ability with Natural Gas and LPG
- 107,5% efficiency
- ErP A energy efficiency class
- ErP regulation compatible
- Eco and Comfort modes for the Central Heating
- 1/6 modulation rate
- Low NOx and CO emissions
- With the help of a energy efficient automatic purger equipped circulation pump, less energy consumption and compatibility with every space.
- High combustion efficiency with stainless steel burner and low waste gas emission
- Protection of the fitting and combi boiler by the help of the automatic by-pass system
- Protection against freezing

CAPACITY	14-20-24-28-30-35-45 kW
MODELS	Combi Boiler (HM) CH Only (HCH) System Boiler (HST)
FLUE TYPE	C and B Types
GAS TYPE	Natural Gas/ LPG

- "Pump over-run" feature that prevents thermal piling up within the fitting
- Plated exchanger in order to get hot water at a high comfort level.
- Feed forward feature of potable water and ability to get water at constant temperature via the turbine system
- Minimal dimensions to fit in (678 mm x 410 mm x 288 mm)
- Large display, white LCD illumination integrated with ergonomically designed electronic card.
- Ergonomic control panel design
- Design that facilitates servicing and maintenance
- The rear cover of the control panel is flexible; thus, intervention without completely removing the cover is possible.
- Silent operation (<49 dB)
- 2 functions in 1 electrode (ignition - ionization)
- Compact Full Hermetic Structure
- Single body for 60/100 mm and 80/125 chimneys.
- TSE, CE and WRAS approved
- Ability to connect room thermostat, external weather temperature sensor and timer
- Control availability with iOS and Android applications via the smart room thermostat (Optional)
- Pressured System Solar Energy Support (Optional)

1. High Water Pressure (3 bar) safety unit protects both the central heating system and the combi boiler against overpressure
2. Low Water Pressure (0,4 bar) safety unit switches the combi boiler off when the water pressure is low
3. Expansion Tank (8 l) compensates expansion of the hot water circulating within the central heating system
4. Flame Loss Protection
5. Pump Blockage unit protects the pump against blockage risk after it remains idle for a long time
6. 3-Way Blockage Protection unit for monothermic models
7. Automatic Air Purger for the pump
8. Over Heating Protection Unit for DHW (71 °C)
9. Over Heating Protection Unit for Flue Gas (95 °C)
10. Over Heating Safety Unit for CH (95 °C)
11. Low Voltage Safety Unit (170 VAC)
12. Internal By-Pass System
13. Anti-Freeze Protection
14. Hall Effect Flow Sensor Detection
15. Ingress of Water Protection from Air Inlet Side of Chimney
16. Annual Maintenance Reminding System

How to Adjust...

1. **Position Selection Button** The position can be changed by pressing the position selection button once to change between the winter mode and the summer mode. If the button is pressed for 3 seconds, the device will switches into "standby" position. It will suffice to press the button once to get the device in operation position.

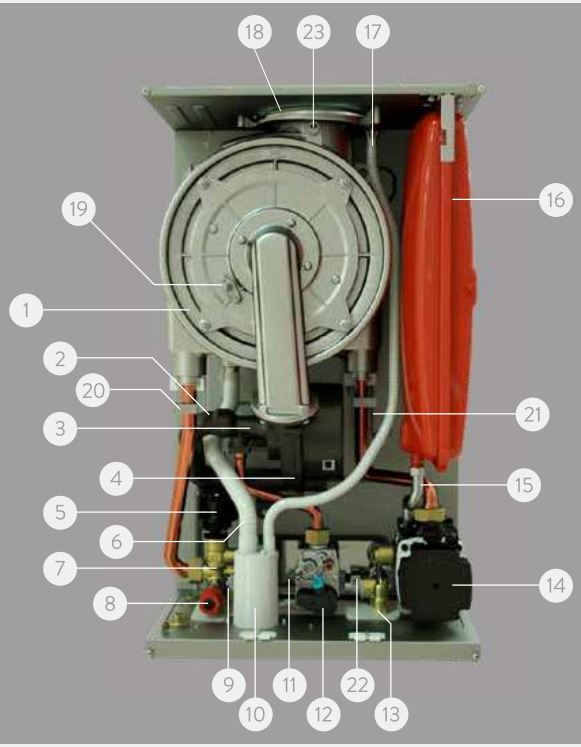
2. **Reset Button** When a lockout error condition occurs (EXX), the error must first be corrected so that the error code can be removed from the LCD screen. After pressing the "Reset" key once, the device can switch back to normal operation state. The first time the device starts, it will start working in Comfort mode. Once the Reset button is pressed when operating in Comfort mode, the device will switch to Eco mode. Then when Reset button is pressed again, the unit will switch to Comfort mode.

3. **Domestic Hot Water Increase Temperature Button** The temperature of the domestic water can be increased up to 65 °C

4. **Central Heating Water Increase Temperature Button** The temperature of the heating water can be increased up to 80 °C

5. **Domestic Hot Water Decrease** Temperature Button The temperature of the domestic water can be decreased down to 30 °C

6. **Central Heating Water Decrease** Temperature Button The temperature of the heating water can be decreased down to 30 °C



1. Main Exchanger
2. Silencer
3. Venturi
4. Fan
5. Motorized Valve
6. Condensing Water Hose
7. Outlet Manifold
8. 3 Bar Safety Valve
9. Pressure Sensor
10. Siphon
11. Plated Heat Exchanger
12. Gas Valve
13. Return Manifold
14. Pump
15. Copper Expansion Tube
16. Expansion Tank (8 liters)
17. Rainwater Hose
18. Rainwater Collection Reservoir
19. Ignition Electrode
20. Temperature Sensor for Supply Water
21. Temperature Sensor for Return Water
22. Turbine
23. Flue Gas Sensor

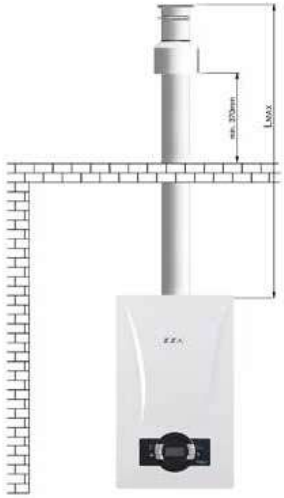
Technical Specifications

PRODUCT TYPE	UNIT	Proteus Premix 14 HM-HCH-HST	Proteus Premix 20 HM-HCH-HST	Proteus Premix 24 HM-HCH-HST	Proteus Premix 28 HM-HCH-HST	Proteus Premix 30 HM-HCH-HST	Proteus Premix 35 HM-HCH-HST	Proteus Premix 45 HM-HCH-HST
Gas Category	-	I2H, I2E, I3+, I3B/P, I3P, II2E3B/P, II2ELL3B/P, II2ELL3P, II2E3rP, II2H3B/P, II2H3P, II2L3P						
Flue Types	-	C13(x), C33(x), C43(x), C53(x), C63(x), C83(x), B23, B33						
Gas Input Pressure (Natural Gas G20)	mbar	20						
Gas Input Pressure (Natural Gas G25)	mbar	20/25						
Gas Input Pressure (G30)	mbar	30/50						
Gas Input Pressure (LPG G31)	mbar	37/50						
Capacity-Efficiency								
Minimum Heating Power (Min. 60°C)	kW	5,6	5,6	5,6	6,4	6,9	8	9,0
Maximum Heating Power (80/60°C)	kW	14,1	20,2	24,5	28	30	35	42,8
Minimum Heating Power (Min. 30°C)	kW	6,7	6,7	6,7	7,7	8,3	9,6	10,2
Maximum Heating Power (50/30°C)	kW	15	22,2	26	29,6	31,7	37	47,0
Minimum Heat Input (Qn)	kW	6,2	6,2	6,2	7,2	7,7	9	9,5
Maximum Heat Input (Qn)	kW	14,5	20,7	25,2	28,7	30,8	35,9	45,5
Efficiency (Max. 80°/60°C) (Gross Calorific Value)	%	97,50%	97,50%	97,50%	97,50%	97,50%	97,50%	97,50%
Efficiency (30°C Return) (Gross Calorific Value)	%	107,50%	107,50%	107,50%	107,50%	107,50%	107,50%	107,50%
ERP Informations								
Seasonal Space Heating Energy Efficiency Class	-	A	A	A	A	A	A	A
Water Heating Energy Efficiency Class/ Load Profile	-	A/XL	A/XL	A/XL	A/XL	A/XL	A/XL	A / XL
Rated Heat Output (Prated)	kW	20,2	20,2	24,5	28	30	35	42,8
Seasonal Space Heating Energy Efficiency	%	91,11	91,4	92,2	92,4	92	92,9	92,18
Water Heating Energy Efficiency	%	83,6	83,6	83,6	83,9	82,8	82,8	87,8
Sound Power Level	db(A)	49	49	49	49	49	49	53
Efficiency at Rated Heat Output At High Temperature Regime (η4)	%	87,9	87,9	87,9	87,9	87,9	87,9	87,9
Efficiency at 30% of rated Output At Low Temperature Regime (η1)	%	97	97	97,2	97,4	97	97,9	97
At Full Load elmax	kW	0,028	0,035	0,04	0,051	0,056	0,066	0,08
At Part Load elmin	kW	0,012	0,012	0,012	0,012	0,013	0,013	0,013
In standby Mode	kW	0,004	0,004	0,004	0,004	0,004	0,004	0,0021
Standby Heat Loss	kW	0,065	0,065	0,065	0,065	0,065	0,065	0,07
Emissions of NOX Level	mg/kWh	25,91	27,2	25,91	21,29	25,91	25,91	34
Daily Electricity Consumption (Qelect)	kWh	0,423	0,423	0,194	0,22	0,24	0,24	0,15
Daily Fuel Consumption (Qfuel)	kWh	22,88	22,88	22,8	22,8	23,021	23,021	23,96
Gas Consumption								
Natural Gas (Min-Max Capacity)	m^3/h	0,65-1,53	0,65-2,2	0,65-2,65	0,75-3,02	0,81-3,25	0,94-3,79	0,95 - 4,65
LPG (Min-Max Capacity) (Propane)	kg/h	0,51-1,2	0,51-1,7	0,51-1,98	0,59-2,26	0,63-2,46	0,74-2,87	0,74 - 3,53
NOX Class	-	6	6	6	6	6	6	6
Central Heating								
Minimum Water Pressure	bar	0,4	0,4	0,4	0,4	0,4	0,4	0,8
Maximum Water Pressure	bar	3	3	3	3	3	3	3
Operation Range (@Radiator heating)	°C	30-80	30-80	30-80	30-80	30-80	30-80	30-80
Operation Range (@Underfloor heating)	°C	30-45	30-45	30-45	30-45	30-45	30-45	< 30-45
Maximum Limit Temperature	°C	< 90	< 90	< 90	< 90	< 90	< 90	< 90
Domestic Hot Water (only valid for HM)								
Minimum Flow for Operating	l/min	2 (±%10)	2 (±%10)	2 (±%10)	2 (±%10)	2 (±%10)	2 (±%10)	3 (±%10)
Minimum Flow for Closing	l/min	1,5 (±%10)	1,5 (±%10)	1,5 (±%10)	1,5 (±%10)	1,5 (±%10)	1,5 (±%10)	2 (±%10)
Maximum Flow Rate	l/min	10 ±%15 (ΔT = 34,7°C)	10 ±%15 (ΔT = 34,7°C)	10 ±%15 (ΔT = 34,7°C)	12 ±%15 (ΔT = 33,5°C)	12 ±%15 (ΔT = 35,8°C)	14 ±%15 (ΔT = 35,8°C)	21,7 ±%15 (ΔT = 30°C)
Minimum Water Pressure	bar	0,4	0,4	0,4	0,4	0,4	0,4	0,8
Maximum Water Pressure	bar	10	10	10	10	10	10	10
Operation Range	°C	30-65	30-65	30-65	30-65	30-65	30-65	30-60
Maximum Limit Temperature	°C	≤ 71	≤ 71	≤ 71	≤ 71	≤ 71	≤ 71	≤ 71
General								
Electrical Supply	V AC-Hz	231 V AC-50 Hz						230 V AC-50 Hz
Electrical Consumption (Max-Std Pump)	Watt	120	130	135	155	170	190	240
Electrical Consumption (Max-HE Pump)	Watt	60	70	80	110	130	165	180
Protection Class	-	IPX4D						
Expansion Vessel Capacity	l	8						12
Weight (Net)	kg	28,5			30	30	32	36
Dimensions (HxWxD)	mm	678*410*288						325x444x670
Flue Lengths								
C13 – 60/100 Max.	m	10	10	10	10	10	10	12
C13 – 80/125 Max.	m	20	20	20	20	20	20	22
C33 – 60/100 Max.	m	10	10	10	10	10	10	12
C33 – 80/125 Max.	m	20	20	20	20	20	20	22
C43 – 60/100 Max.	m	10	10	10	10	10	10	12
C53 – 60/100 Max.	m	10	10	10	10	10	10	12
C83 – 80/80 Max.	m	28	28	28	28	28	28	30
C83 – 80/80 Min.	m	3	3	3	3	3	3	4
B23 – 80 Max.	m	28	28	28	28	28	28	30
B33 – 60/100 Max.	m	10	10	10	10	10	10	12
Emission Values								
CO_2 Ratio (@Max-G20)	%	9,15 ± 0,2	9,2 ± 0,2	9,5 ± 0,2	9,5 ± 0,2	9,5 ± 0,2	9,5 ± 0,2	9,0 ± 0,2
CO_2 Ratio (@Min-G20)	%	8,9 ± 0,2	8,9 ± 0,2	8,9 ± 0,2	8,9 ± 0,2	8,9 ± 0,2	8,9 ± 0,2	8,4 ± 0,2
CO_2 Ratio (@Max-G31)	%	10,3 ± 0,2	10,3 ± 0,2	10,6 ± 0,2	10,6 ± 0,2	10,6 ± 0,2	10,6 ± 0,2	10,1 ± 0,2
CO_2 Ratio (@Min-G31)	%	9,7 ± 0,2	9,7 ± 0,2	9,9 ± 0,2	9,9 ± 0,2	9,9 ± 0,2	9,9 ± 0,2	9,5 ± 0,2
Boiler Circuit (only valid for HST)								
Operation Range	°C	30-65	30-65	30-65	30-65	30-65	30-65	30-65

Chimney Applications

Horizontal & Vertical Applications

Horizontal Hermetic Flue Application
L max. distance with single elbow: 10 m, Ø60/100
L max. distance with single elbow: 20 m, Ø80/125



Vertical Hermetic Flue Application
L max. distance without elbow: 10 m, Ø60/100
L max. distance without elbow: 20 m, Ø80/125

Valve Connection Kit

Our Valve Connection Kit comprises of the following items:

3/4" Ball Valve Blue Butterfly Handle (Cold Water In)
1/2" Union (Hot Water Out)
3/4" Ball Valve with Yellow Handwheel (Gas)
1/2" Ball Valve with Blue Handwheel (Heating Return)
3/4" Ball Valve with Red Butterfly Handle (Heating Flow)

Optional Control Accessories

E.C.A. Poly Comfort 200W Thermostat

- LCD Display
- Wireless Connection
- On/Off Model
- Sensitivity: 0,1°C
- Room Control Temperature: 5°C-30°C
- Eco and Comfort Mode
- For Heating and Cooling

E.C.A. Poly Comfort 200B Thermostat

- LCD Display
- Wireless Connection
- On/Off Model
- Sensitivity: 0,1°C
- Room Control Temperature: 5°C-30°C
- Eco and Comfort Mode
- For Heating and Cooling

E.C.A. Poly Touch 400W Thermostat

- LCD Touchscreen Display
- Daily and Weekly Programmable
- Wireless Connection
- On/Off Model
- Sensitivity: 0,1°C
- Room Control Temperature: 5°C-30°C
- Eco and Comfort Mode
- For Heating and Cooling

E.C.A. Poly Touch 400B Thermostat

- LCD Touchscreen Display
- Daily and Weekly Programmable
- Wireless Connection
- On/Off Model
- Sensitivity: 0,1°C
- Room Control Temperature: 5°C-30°C
- Eco and Comfort Mode
- For Heating and Cooling

E.C.A. Poly Pure 100W Thermostat

- LCD Display
- Wireless Connection
- On/Off Model
- Sensitivity: 0,1°C
- Room Control Temperature: 5°C-30°C
- For Heating and Cooling

E.C.A. Circle 100W Thermostat

- LCD Display
- Wireless Connection
- On/Off Model
- Sensitivity: 0,1°C
- Room Control Temperature: 5°C-30°C

E.C.A. Wireless Thermostat

- LCD Display
- Wireless Connection
- On/Off Model
- Sensitivity: 0,2°C
- Room Control Temperature: 5°C-35°C

E.C.A. Thermostat

- LCD Display
- Cable Connection
- On/Off Model
- Sensitivity: 0,2°C
- Daily, 4 different time frames

E.C.A. Programmable Thermostat

- LCD Display
- Cable Connection
- On/Off Model
- Sensitivity: 0,2°C
- Daily, 4 different time frames