

**The controller for central heating boilers with pellets burners**

**GH21PB**



**APPLICATION**

The GH21PB is a controller for central heating boilers with burners prepared to burn wooden pellets. It feeds fuel precisely and controls air flow into the process of burning.

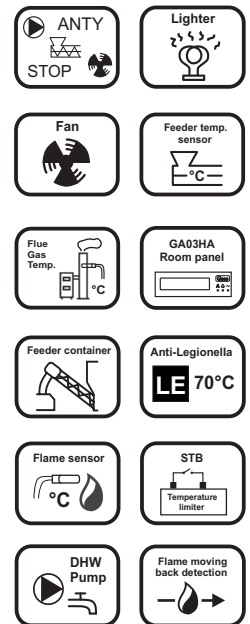
With the inclusion of the heater device, flue gas sensor and flame sensor the controller allows automatic flame ignition in case of a fuel burnout.

Controller supervises the process of preparing domestic hot water (DHW) and allows to operate main heating circuit (central heating - CH cycle).

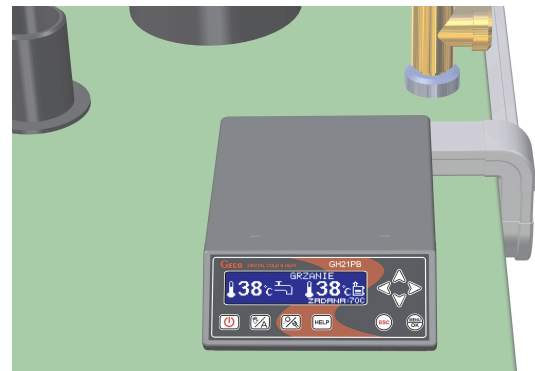
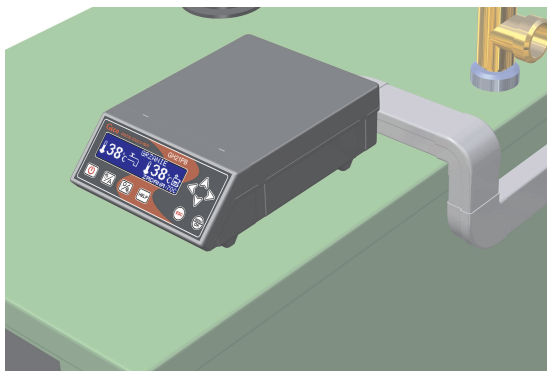
The GH21PB controller has been fitted for full communication with the GA03HA room panel (manufactured by GECO).

**PROPERTIES**

- Functional visualisation of casing and large readable graphic LCD display.
- Single-module construction enables comfortable installation on the boiler .
- Possible to measure flue gas temperature (PT 1000)
- Possible of control over two screw feeders: the burner feeder and the container feeder
- Anit-stagnation protection for the executive devices - ANTI STOP function
- Desinfection of the DHW cycle (Anti Legionella), DHW priority, Summer mode function.
- Co-operation with room panel GA03HA (full control of boiler operation from apartment).
- Adaptation mode regulation which adjust fan rotation to individual boiler dynamics.
- Control temperature in the burner feeder and flame sensor to ignition mode (option).
- Sound and text alarm signals.
- Built -in temperature limiter in standard (STB).
- Many language versions.
- Boiler operational parameters archiving function, among others alarm controller record.
- Soft start of the fan.
- Possibility of selecting type of controller regulation: ADAPTATION MODE, GRATE MODE.



**INSTALATION ON THE BOILER**



# DIAGRAM OF CONNECTIONS

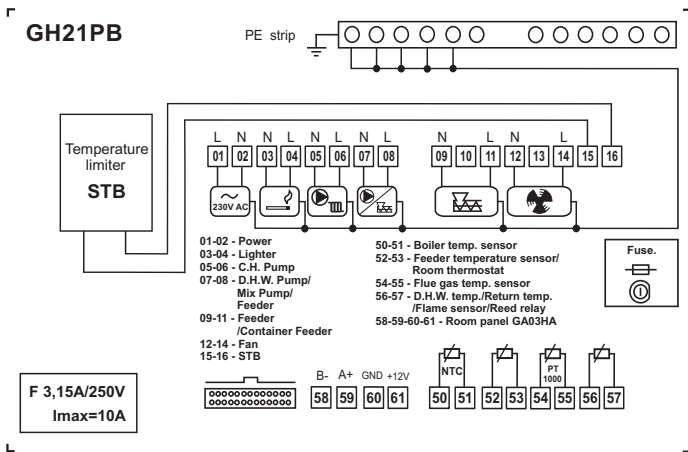
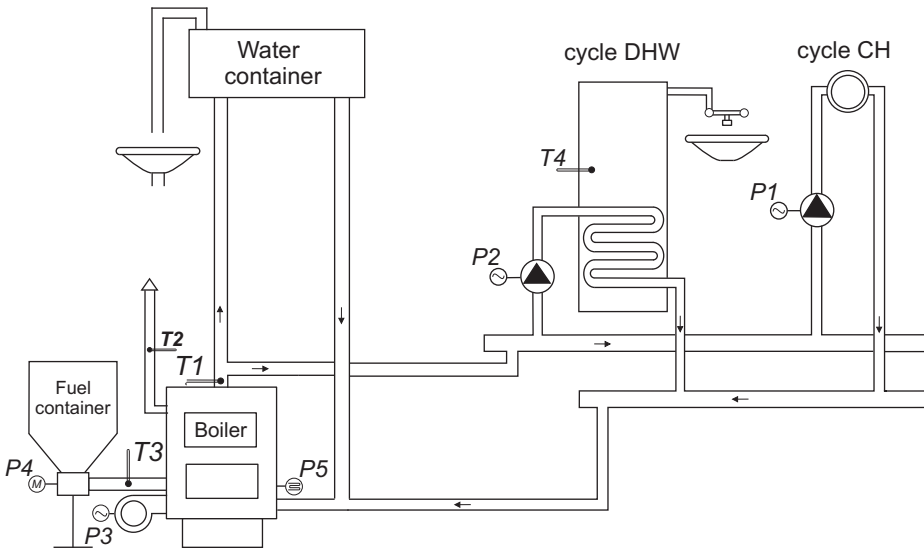


Diagram of electric connections

Outputs		Inputs	
03	N Lighter	50,51	Boiler outlet temp. sensor
04	L Lighter	52,53	Feeder temp. sensor/Thermostat
05	N CH pump	54,55	Flue gas temp. sensor
06	L CH pump	56,57	DHW/Return/ Flame sensor/Reed relay
07	N DHW Pump/ Mix Pump	58	B-
		59	A+
08	L DHW Pump/ Mix Pump	60	GND L
		61	+12 V DC
09	N Burner feeder	01	L Power supply 230V
11	L Burner feeder	02	N Power supply 230V
12	N Fan	15	Temp. limiter (STB)
14	L Fan	16	Temp. limiter (STB)

# THE CONTROL AND HEATING SYSTEM



Controls	Sensors
P1 CH Pump	T1 Boiler temperature
P2 HUW Pump	T2 Flue gas temperature
P3 Fan	T3 Feeder temperature
P4 Container feeder	T4 HUW temp./Flame
P5 Lighter	

# TECHNICAL DATA

Power supply voltage	230V AC +10%/ -15%
Fan and feeder protection	3,15A
Working temperature	od +5°C do +40°C
Relative humidity	20% + 80% RH
Sensor type	NTC - range: od 0°C do +100°C PT1000 - ran.:od 0°C do +750°C

Temp. sensor (NTC) 2,2 kΩ	
°C	Ω
0	7174,89
10	4374,83
20	2747,10
30	1774,91
40	1172,09
50	795,08
60	547,95
70	384,62
80	275,86
90	202,37
100	149,16

Temp. sensor (PT1000)	
°C	Ω
0	1000,00
50	1194,00
100	1385,10
150	1573,30
200	1758,60
250	1941,00
300	2120,50
350	2297,20
400	2470,90
450	2641,80
500	2809,80
550	2974,90
600	3137,10
650	3296,40
700	3452,80
750	3606,40

Output	Constatnt load	
CH pump	1A	250W
DHW pump/Mix pump/ Feeder Container	1A	250W
Fan	1A	250W
Burner feeder	1A	250W
Lighter	3A	750W

## GH21PB equipment

### Standard equipment:

- 1) boiler temperature sensor
- 2) flue gas temperature

### Optional equipment:

- 1) DHW temperature sensor/ Flame sensor
- 2) GA03HA Room panel
- 3) supplying wire
- 4) burner feeder temperature sensor

### Controls:

- 1) CH pump
- 2) DHW pump/ Mix pump/ Container feeder
- 3) fan
- 4) lighter
- 5) burner feeder

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