

**The controller for culm and coal boilers with air blow**

**GH10MA** 

(G-406-P01, G-406-P08 SUCCESOR)



**APPLICATION**

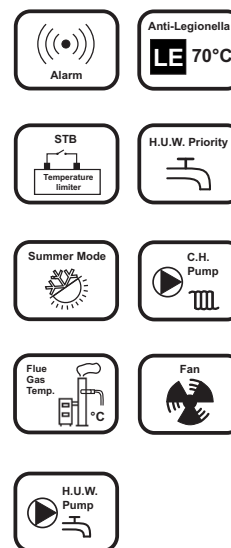
The GH10MA is a controller for culm and coal boilers with air blow.

The GH10MA supervises the process of preparing hot utility water (HUW cycle), and allows to operate main heating circuit (central heating - CH cycle).

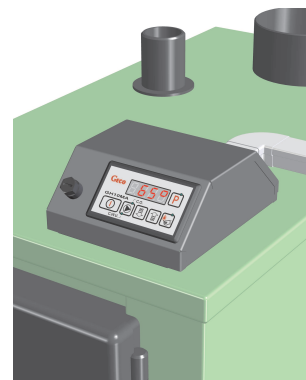
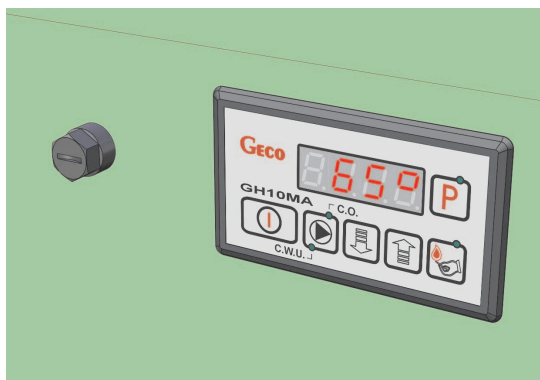
The GH10MA is adapted for TS-35 rail assembly, it has specially designed casing making it possible to install the controller in many different positions on the boiler.

**PROPERTIES**

- modern and functional visualisation of casing
- four-segment LED display
- two-module construction (executive module + control panel)
- cooperation with the HUW pump (Hot Utility Water)
- disinfection of the HUW cycle (Anti-Legionella function)
- HUW priority and Summer mode functions
- flue gas temperature measurement (PT1000 sensor)
- controls fan rotation (gear fan modulation by algorithm)
- possible to use temperature limiter STB for safety work
- additional protective relay on fan output
- sound signal for the alarms
- provides storage of all controller settings in case of power failure
- soft-start of the fan.



**INSTALLATION ON THE BOILER**



# DIAGRAM OF CONNECTIONS

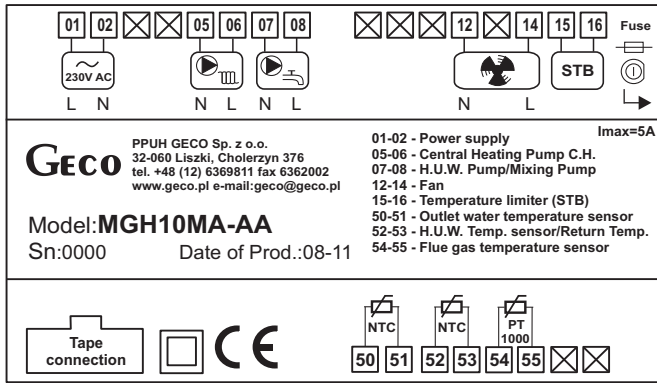
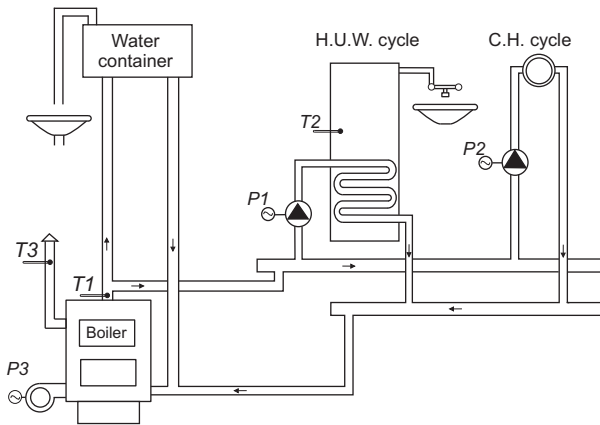
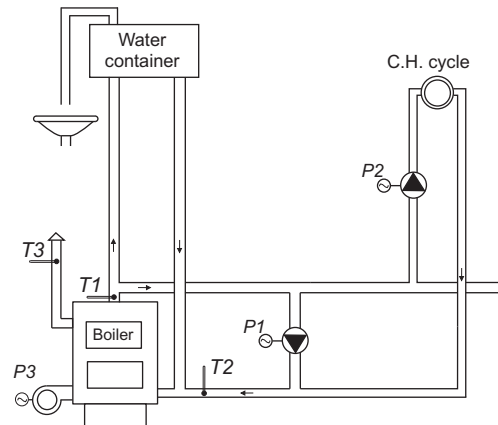


Diagram of electric connections			
Outputs		Inputs	
01 L	Power AC 230V	50 - 51	Boiler temperature
02 N	Power AC 230V	52 - 53	H.U.W. temperature/ Return temperature
05 N	C.H. pump	54 - 55	Flue gas temperature
06 L	C.H. pump		
07 N	H.U.W. pump/Mix pump		
08 L	H.U.W. pump/Mix pump		
09 N	Feeder		
11 L	Feeder		
12 N	Fan		
14 L	Fan		

# THE CONTROL AND HEATING SYSTEM



Controls		Sensors	
P1	H.U.W. pump	T1	Boiler temperature
P2	C.H. pump	T2	H.U.W. temperature
P3	Fan	T3	Flue gas temperature



Controls		Sensors	
P1	Mixing pump	T1	Boiler temperature
P2	C.H. pump	T2	Return temperature
P3	Fan	T3	Flue gas temperature

# TECHNICAL DATA

Power supply voltage	230V AC +10%/-15%
Fan protection	2 A
Working temperature	from +5°C to +40°C
Relative humidity	20% ÷ 80% RH
Sensors type	NTC - from 0°C to +100°C PT 1000 - from 0°C to +400°C

Output	Constant load	
Fan	1A	200W
C.H. pump	1A	200W
H.U.W. pump	1A	200W

Temp. sensors (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	

GH10MA equipment	
<b>Necessary equipment:</b>	
1) boiler temperature sensor 2) flue gas temperature	
<b>Optional equipment:</b>	
1) H.U.W. temperature sensor / return temperature sensor	
<b>Controls:</b>	
1) Fan 2) C.H. pump 3) H.U.W. pump / mixing pump	

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