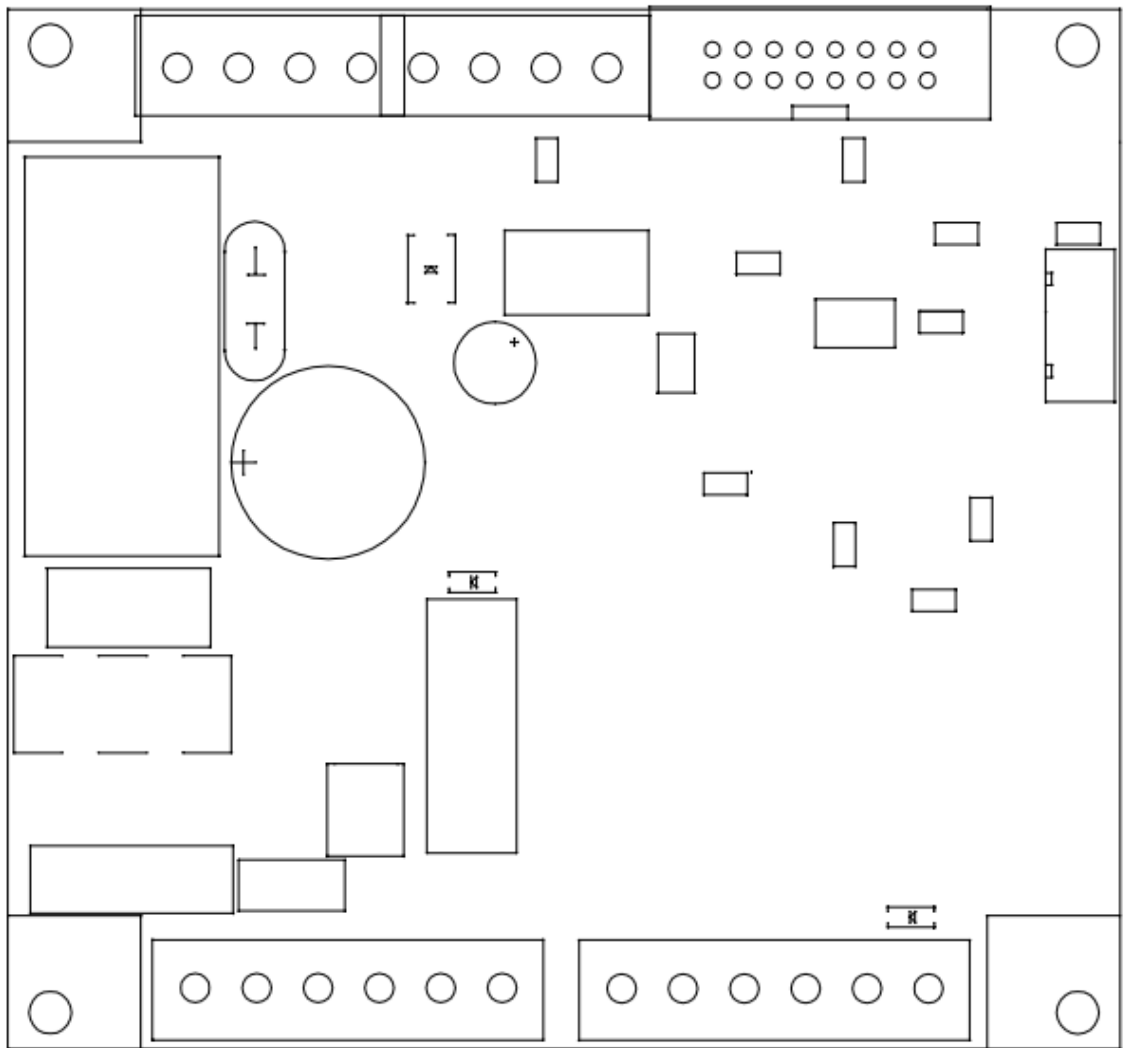


Coffee Machine Control Board

HTCGS

Instruction Manual



PREFACE

Thank you for purchasing our **HTCGS**, Control board for the Coffee machine.

This manual contains instructions for the mounting, functions, operations, and notes when operating the **HTCGS**. To ensure safe and correct use, thoroughly read and understand this manual before using this product.

To prevent accidents arising from the misuse of this product, please ensure the operator receives this manual.

HAZARD INTENSITY LEVELS

The level of risk and importance of the notification is determined by the following definitions. Always observe the warnings to ensure safety and prevent potential injury and product damage.



Important:

Alerts against unsafe practices. Observe *Important* notifications to prevent possible minor personal injury or damage to the board.



Warning:

Indicates a potentially hazardous situation that, if the *Warning* is ignored, could result in injury or death.



Note:

Gives additional information which may be helpful for the proper operation of the board.

**WARNINGS:**

Note: TIFATECH Co., Ltd declines all responsibility for damage to persons or property resulting from failure to follow the instructions and warning listed below when installing and using this board.

- Ensure every part of the machine including actuators and sensors is working properly before replacing the new control board.
- Ensure that the power supply voltage does not fluctuate by more than 6%.
- Before mounting or removing the control board, disconnect it from the power supply and wait a while for it to cool down.
- Do not remove any original electrical part of the board.
- Repairing, cleaning, or parts replacement should only be performed by **TIFATECH** or other qualified service personnel.
- Children should never be allowed to play with the board.
- This board is intended to only use for one group espresso coffee machine control board. Do not use it for any other purpose.

**PRECAUTIONS****❖ Installation precautions**

Read thoroughly the following conditions before installing the **HTCGS** board to the coffee machine.

The mounting location must be:

- No flammable, explosive gases
- No exposure to water.
- An ambient temperature of 0 to 70°C that does not change rapidly, and no icing.
- An ambient non-condensing humidity of 35 to 85 %RH.

❖ Operation and Maintenance Precautions

- Do not touch live terminals. This may cause an electrical shock or problems in operation.
- Ensure the board surface is completely dry before powering.
- Periodic cleaning will reduce the risk of damaging the board.

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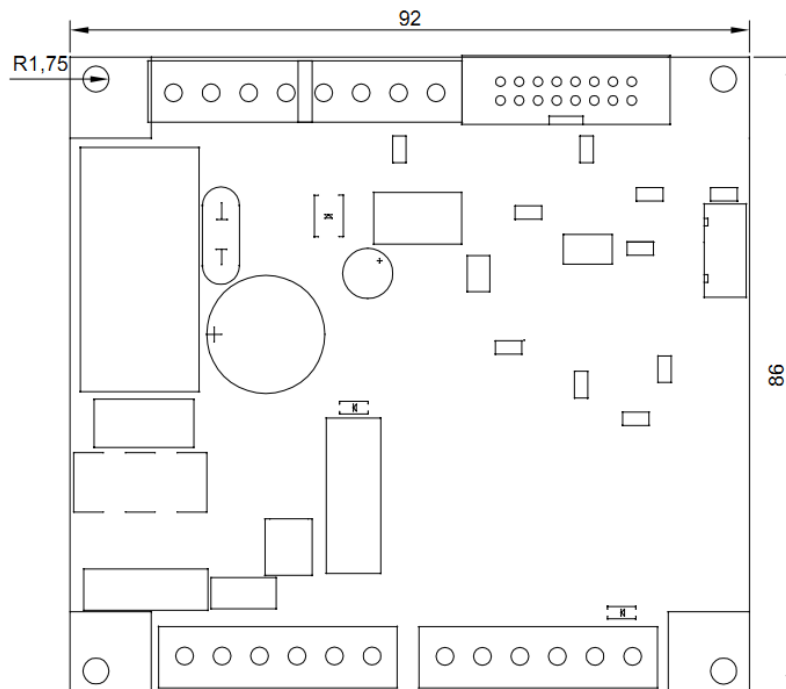
I. GENERAL

1. Introduction

- This manual contains important instructions regarding the safe intended use of the machine.
- If any damaged or loss to this manual, request a copy from the *TIFATECH* manufacturer.

II. TECHNICAL SPECIFICATIONS

1. Dimensions (mm)



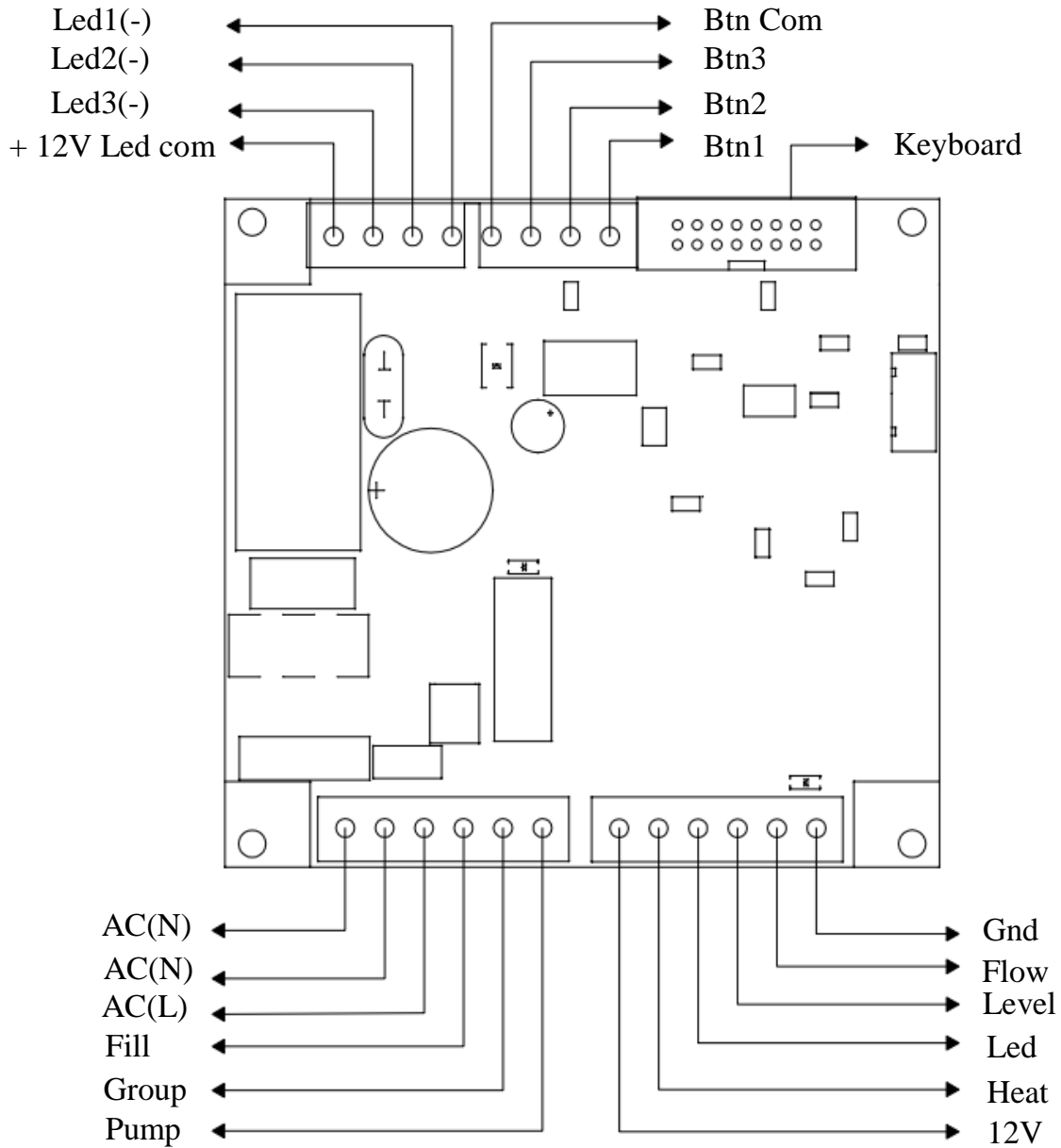
2. Specifications

- ❖ Power supply: 230V AC 50/60Hz
- ❖ Actuator voltage: 230V AC



Note: Please contact us if your country doesn't support the requirement above.

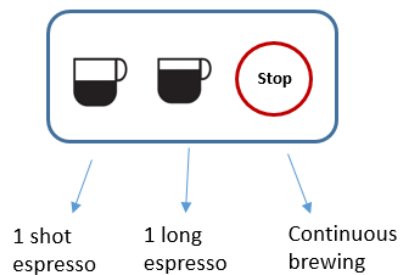
III. WIRING



Important: Any mistake in connecting actuators will affect the normal operation of the coffee machine, and even cause damage.


Terminal	Description
Btn Com	Button common
Btn1	Continuous brewing button
Btn2	1 short espresso button
Btn3	1 long espresso button
Led1(-)	Negative pin for continuous brewing light
Led2(-)	Negative pin for 1 short espresso light
Led3(-)	Negative pin for 1 long espresso light
+12V Led Com	Positive pin for lights common
GND	Ground
FLOW	Water flow meter input
LEVEL	Water level sensor
LED	12V output for the water level of the boiler
HEAT	12V output for the heating element control
V12	12V DC output
PUMP	Pump input
GROUP	Group valve input
FILL	Autofill valve input
Keyboard	5V Key input
AC(L), AC(N)	Power supply AC 230V

IV. PROGRAMMING AND USE



1. Programming standard doses

The coffee quantities of dispensing buttons can be customized and saved by the procedure below:

Step 1: Keep pressing the Continuous brewing button  for 3 seconds to enter the setting mode. Ensure that the Continuous brewing button's light turns into a flashing state and the others are turned on.


Step 2: Press 1 shot espresso or 1 long espresso to start to program for it. Only the lights of the button being programmed and the Continuous brewing button are turned on, the rest is turned off.

Step 3: When the coffee dose is achieved, press the selected button again to interrupt the coffee dispensing and save the new dose on that button. The selection that is already programmed will appear with its light off. The Continuous brewing button light continues flashing.

Step 4: Repeat points 2 and 3 to proceed with programming the remaining coffee doses.

Step 5: To completely exit from the setting mode, press and hold the Continuous brewing button for 3 seconds or leave all buttons release in about 5 seconds until all lights return to the off state



2. Coffee dispensing

- Press any drink button to start to dispense coffee. Just dispensing button's light is turned on.
- Press the  key to finish immediately or the process will automatically stop when reaching the setting dose on that button. All lights are off.






Note: If the dispensing process happens over two minutes, it will stop automatically to protect the pump from damage.

3. Pre-infusion

- Press the Continuous brewing button  and the 1 long espresso  button simultaneously to enable/disable the pre-infusion function. All lights blink 3 times as the signal of switching successfully.
- When the machine is in the pre-infusion mode, any dispensing process will always begin with the group solenoid valve open for the first 2 seconds, then turn off for the next 3 seconds before reopening at a later time.

4. Automatic group cleaning

- Press the Continuous brewing button  and the 1 shot espresso  button simultaneously to make the group cleaning process carry out automatically. These selected buttons' lights will flash during the cleaning process.
- The pump and the group solenoid valve will turn on in 7 seconds and then shut off in 3 seconds. This process will be repeated 5 times before it is completed.
- To immediately exit this mode, press the  key. All lights return to the off state.

5. Filling

- When the boiler is in an out-of-water state for more than 1.5 seconds. If coffee is not being dispensed, the pump and filling solenoid valve will automatically open to fill up the boiler. Otherwise, the machine will wait for dispensing process to finish to open the pump and the filling solenoid valve.

- After being full of water for 5 seconds, the filling process will automatically stop.



Note:

- The water source should always be available for filling operations.
- If an error occurs while dispensing like a water flow sensor malfunction, the filling function will be disabled after that.
- The maximum time of filling operation is two minutes.

V. ERROR DETECTION AND TROUBLESHOOTING

1. Water flow meter error

a. Error symptom

❖ *When programming:*

The programming process will also start normally but the coffee dose on that button won't be saved afterward.

The button which is programmed in error condition will be locked after that.

❖ *When dispensing:*

- When dispensing coffee, if it has malfunction at a water flow meter, the process won't stop automatically. All lights start to blink after 3 seconds.

b. Solution

Check if the connection to the water flow meter is correct and stable.

Make sure that the water flow meter still works properly. Otherwise, you need to replace it with the new one.

2. Autofill problem

a. Error symptom

- The boiler is overfull of water.

- The boiler is underfull of water.



Warning: Any error above need to be handled instantaneously. On the contrary, it will interrupt your machine's operation, and even cause damage to the pump.

b. Solution

- Water level probe: Removing the level probe and checking for continuity, replace the new one if necessary.
- Autofill solenoid: If the water pump is running and the machine is trying to fill but not making any progress, the solenoid may be stuck shut, not allowing water to fill the boiler. Correct or replace if needed.

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