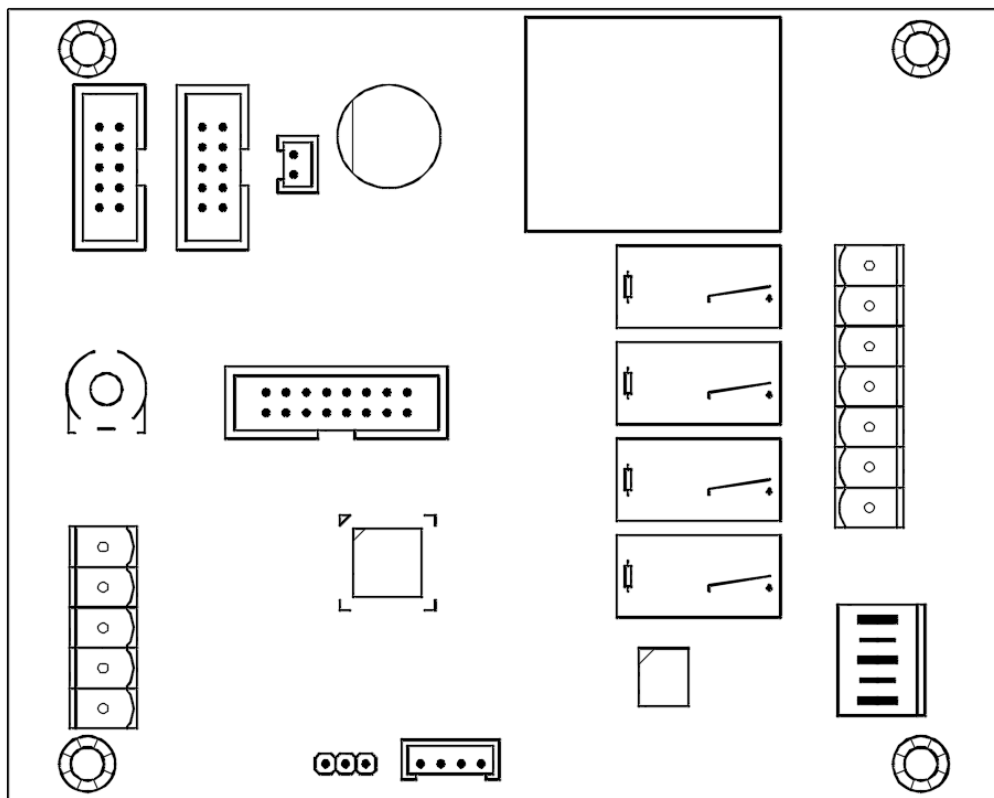


Coffee Machine Control Board

CAP2G

Instruction Manual



PREFACE

Thank you for purchasing our **CAP2G**, Control board for the Coffee machine.

This manual contains instructions for mounting, functions, operations, and notes when operating the **CAP2G**. To ensure safe and correct use, thoroughly read and understand this manual before using this instrument.

To prevent accidents arising from the misuse of this instrument, 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 the espresso coffee machine control board. Do not use it for any other purpose.

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

Read thoroughly the following conditions before installing the **CAP2G** 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.

***** CONTENTS *****

| | |
|--|-----------|
| I. GENERAL | 1 |
| 1. Introduction..... | 1 |
| II. TECHNICAL SPECIFICATIONS | 1 |
| 1. Dimensions (mm)..... | 1 |
| 2. Specifications..... | 1 |
| III. WIRING..... | 2 |
| IV. PROGRAMMING AND USE | 3 |
| 1. Configuring the temperature sensor function | 4 |
| 2. Programming the standard doses | 4 |
| 3. Coffee dispensing..... | 4 |
| 4. Pre-infusion..... | 5 |
| 5. Switch to teapresso mode | 5 |
| 6. Tea brewing time programming..... | 5 |
| 7. Automatic group cleaning | 6 |
| 8. Advanced setting..... | 6 |
| 9. Reset to the factory default..... | 11 |
| 10. Alarms | 12 |
| V. ERROR DETECTION AND TROUBLESHOOTING | 12 |
| 1. Water flow meter error..... | 12 |
| 2. Autofill problem..... | 13 |

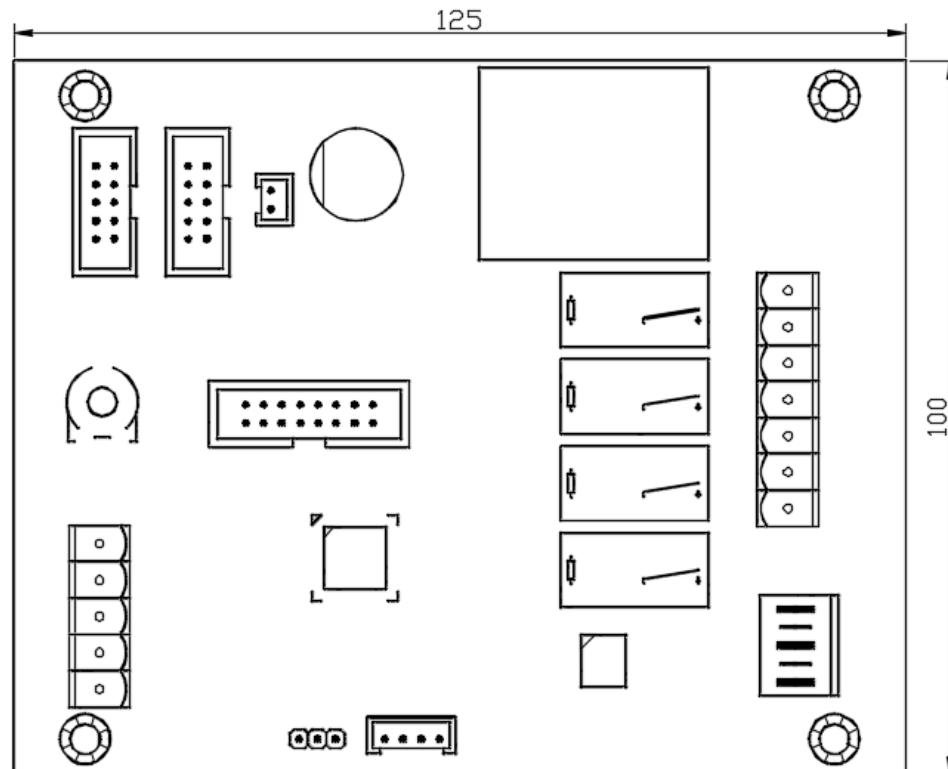
I. GENERAL

1. Introduction

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

II. TECHNICAL SPECIFICATIONS

1. Dimensions (mm)



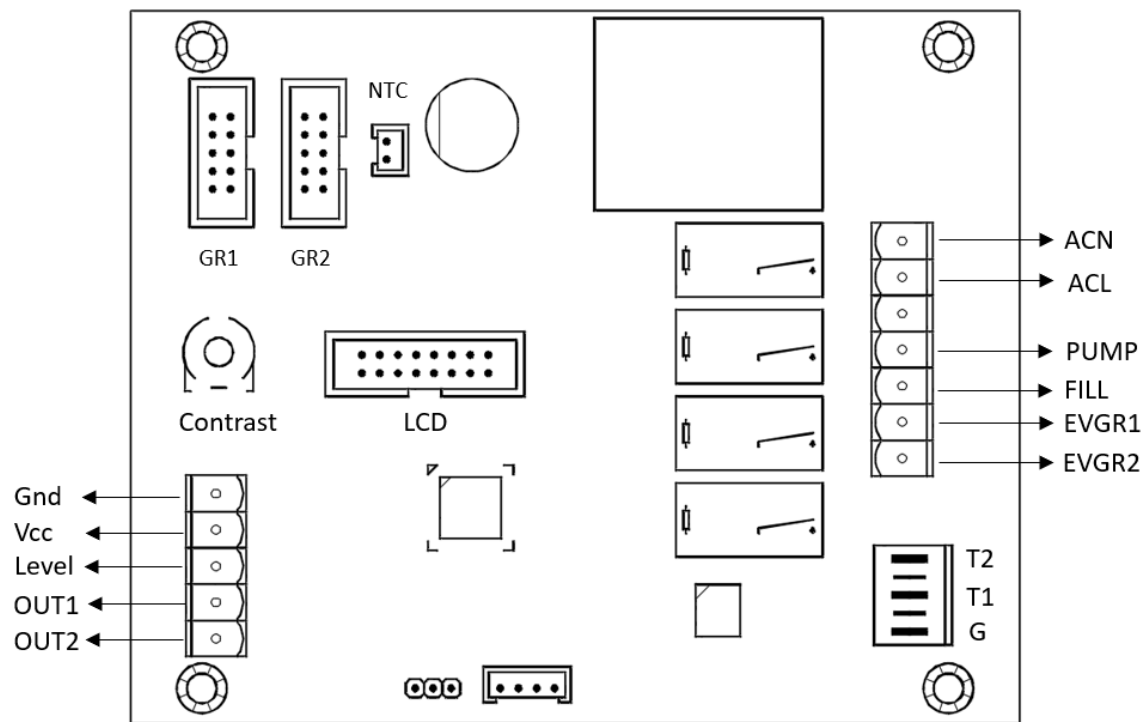
2. Specifications

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



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

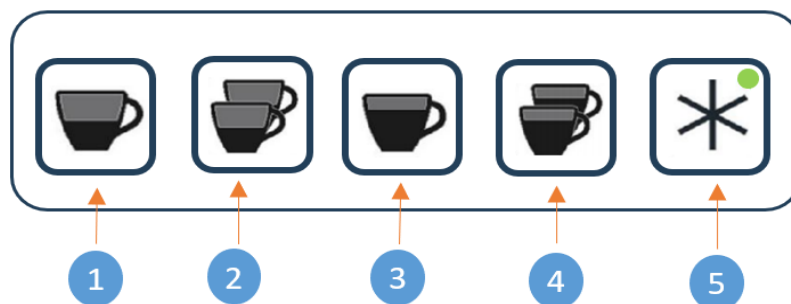
III. WIRING



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

| Terminal | Description |
|-----------|---|
| GR1 | Key + LED input of group 1 |
| GR2 | Key + LED input of group 2 |
| LCD | LCD input |
| Contrast | Adjust LCD contrast |
| GND | Ground |
| Vcc | 12V output |
| Level | Water level probe input |
| NTC | Temperature probe |
| OUT1 | Water flow meter input of Group1 |
| OUT2 | Water flow meter input of Group2 |
| G, T1, T2 | Triac input for heating element control |
| PUMP | Pump |
| EVGR1 | Solenoid valve of group1 |
| EVGR2 | Solenoid valve of group2 |
| EVFILL | Solenoid valve of filling |
| ACL, ACN | Power supply AC 230V |

IV. PROGRAMMING AND USE



1. Configuring the temperature sensor function

- ❖ **Disabling the temperature sensor function** (*Apply to models that do not use a temperature sensor*)


Turn off the machine. Press and hold buttons 2 and 5 simultaneously, then turn the machine back on while continuing to hold the buttons until the LED of button 5 blinks 3 times.

- ❖ **Enabling the temperature sensor function** (*Default*)

Turn off the machine. Press and hold buttons 2 and 4 simultaneously, then turn the machine back on while continuing to hold the buttons until the LED of button 5 blinks. Restart to use normally.

2. Programming the standard doses

To program coffee doses dispensed automatically by each drink button, follow the steps below:

Step 1: Press and hold the  button for 5 seconds to enter the setting mode. This button light starts to blink at every 0.5 seconds.

Step 2: Press the dispensing option that you wish to program.

Step 3: After reaching the desired dose, press the concerned button to save its dose.

Step 4: Repeat the steps above to program for other options. Otherwise, move to the next step.


Step 5: Wait for at least 5 seconds to finish the setting process.



Note: The dispensing options that are not programmed will be kept as the default setting. The new coffee doses will be valid just on the setting group, the others will be retained as before.


3. Coffee dispensing

- Press any drink button between 1 and 4 to start to dispense coffee.

- Press the  button to stop dispensing immediately or it will stop automatically when reaching the programmed dosage. All lights return to on state.


4. Pre-infusion

a. Machine is not equipped with display

- Turn off the power switch and hold down the  button for enabling the pre-infusion function.
- Switch the power on again and release the pressed button if LED light blink. Do similarly for disabling the pre-infusion.

b. Machines equipped with a display: *Follow the instructions at 8.b and 8.c.*

5. Switch to teapresso mode

Press and hold the key  of the desired group for 5 seconds until all the LEDs on the keyboard start flashing, to toggle between tea brewing and coffee brewing modes.




Note: The tea brewing mode can be activated in the **Advanced Settings** section. Please refer to sections **8.p, 8.q** for more details.

6. Tea brewing time programming



Note: Please switch to tea brewing mode before proceeding the setup on the selected group.

Step 1: Press and hold key  for 5 seconds until its light starts to flash.

Step 2: Press one of the buttons 1-4 to start setting the brewing time for that button.


- Upon the first press, the machine will activate both the pump and group head to start brewing. When the desired brewing time is reached, press again to start the infusion process; the pump and group head will turn off.

- Repeat this cycle for subsequent brew/infusion cycles. You can set up to 8 brew/infusion cycles.
- During brewing, the corresponding button light will be solid; during infusion, it will blink.

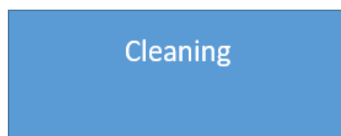
Step 3: Press and hold the Stop key for 3 seconds to save the brewing time on the selected button. Return to step 2 to set other buttons or proceed to step 4 to finish.

Step 4: Wait for at least 30 seconds to finish the setting process.

7. Automatic group cleaning


Press simultaneously the  and  buttons at the same time to activate the function.

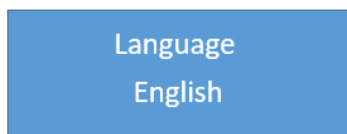
The display will be like this:



8. Advanced setting

To access this function, follow the steps below:

- Switch off the machine by the main switch.
- Turn the machine on while hitting down the  button and until the display likes the following:



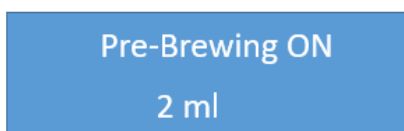
a. Choose language

Change the system language using buttons 1 and 2. Press button 5 to confirm your change and move to the next setup.

There are 2 language options: *English, Vietnamese*.

b. Water amount of pre-infusion

From the previous setup, press button 5 until the display shows:

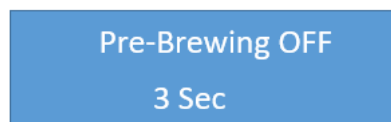


Pre-Brewing ON
2 ml

Use button 1 and button 2 adjust the water quantity of the pre-infusion.

c. Pre-infusion OFF time

From the previous setup, press button 5 until the display shows:

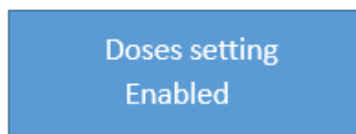


Pre-Brewing OFF
3 Sec

Use button 1 and button 2 change the pause of brewing in the infusion phase.

d. Dose programming

From the previous setup, press button 5 until the display shows:




Doses setting
Enabled

Use button 1 and button 2 to “*Enabled/Disabled*” the dose programming function respectively.

e. Probe sensitivity

From the previous setup, press button 5 until the display shows:

A blue rectangular box with the text "ProbeSensitivity" on the top line and "Low" on the bottom line, both in white.

Use buttons 1 and 2 to change values between “*Low/Medium/High*”

The lower the water sensor sensitivity, the longer the filling mode switching time will be, and vice versa.

f. Dispensing while filling

From the previous setup, press button 5 until the display shows:


A blue rectangular box with the text "FillingUp+Coffee" on the top line and "Enabled" on the bottom line, both in white.

Use button 1 and button 2 to “*Enabled/Disabled*” the function.

If this setting is disabled, it can’t dispense coffee while in the filling process.

g. Display temperature

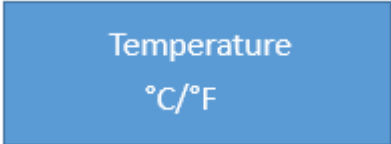
From the previous setup, press button 5 until the display shows:

A blue rectangular box with the text "Disp.Temperat." on the top line and "Enabled" on the bottom line, both in white.

Use button 1 and button 2 to “*Enabled/Disabled*” the temperature display function.

h. Temperature unit

From the previous setup, press button 5 until the display shows:

A blue rectangular box with the text "Temperature" on the top line and "°C/°F" on the bottom line, both in white.

Use buttons 1 or 2 to select the desired unit.

i. Boiler temperature

From the previous setup, press button 5 until the display shows:



Boiler Temp
122°C

Use buttons 1 and 2 to change to the expected temperature.

j. Proportional band (P)

From the previous setup, press button 5 until the display shows:



Setp
10

Use buttons 1 and 2 to change to the desired number.

k. Hysteresis (HYS)

Note: This setting is only available when the P value is set to be equal to 0

From the previous step, press button 5 until the display shows:



Set Hys
2

Use buttons 1 and 2 to change to the desired number.

l. Integral time (I)

From the previous setup, press button 5 until the display shows:



Seti
200

Use buttons 1 and 2 to change to the desired number.

m. Derivative time (D)

From the previous setup, press button 5 until the display shows:



Use buttons 1 and 2 to change to the desired number.

n. Proportional cycle

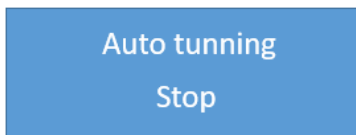
From the previous setup, press button 5 until the display shows:



Use buttons 1 and 2 to change to the desired number.

o. Automatic PID tuning

From the previous setup, press button 5 until the display shows



When using for the first time, users should activate the PID tuning mode (using the 1, 2 keys) to allow the machine to automatically search for the best PID parameter set, helping the temperature control process to be more precise when operating.



Note: All coffee brewing and hot water extraction functions on the machine are blocked when in this mode.

p. Tea mode on Group1

From the previous setup, press button 5 until the display shows:

A blue rectangular display showing the text "TeapressoG1" on the top line and "Enabled" on the bottom line in white font.

Use buttons 1 and 2 to change between the “*Enabled*” and “*Disabled*” states.

- “*Enabled*”: Group1 works in tea brewing mode.
- “*Disabled*” Group1 works in coffee brewing mode.

q. Tea mode on Group2

From the previous setup, press button 5 until the display shows:

A blue rectangular display showing the text "TeapressoG1" on the top line and "Enabled" on the bottom line in white font.

Use buttons 1 and 2 to change between the “*Enabled*” and “*Disabled*” states.

- “*Enabled*”: Group2 works in tea brewing mode.
- “*Disabled*” Group2 works in coffee brewing mode.

9. Reset to the factory default

- Switch off the machine while pressing buttons 1, 3, and 5 at the same time
- Keep holding down buttons 1, 3, and 5 at the same time and turn the machine on again. Release if the display looks below.

A blue rectangular display showing the text "Reset complete" in white font.

10. Alarms

| Description | Display |
|-------------------------------------|---|
| Flow meter error | <div>Alarm</div> <div>Flowmeter Gr1</div> |
| Temperature probe error | <div>T.probeUnconnect</div> |
| Pump is opened over 120 over | <div>Time-out alarm</div> <div>Pump TooLong</div> |
| Filling process is over 120 seconds | <div>Time-out alarm</div> <div>Boiler FillingUp</div> |

V. ERROR DETECTION AND TROUBLESHOOTING

1. Water flow meter error

❖ Error symptom

❖ *When programming:*

The programming process will also start normally but the coffee amount on the error group won't be saved afterward.

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

❖ *When dispensing:*

- When dispensing, if it has malfunction at the water flow meter, the process won't stop automatically.

❖ Solution

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

Ensure the water flow meter still works properly on another group. Otherwise, you need to replace it with the new one.

2. Autofill problem

❖ Error symptom

- The boiler is overfull of water.
- The boiler is underfull of water.



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

❖ Solution

- Water level probe: Removing the level probe and checking for continuity, replace the new one if needed.
- 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.

TIFATECH Co., Ltd

Address: 14 Tran Tu Binh Street, Hoa Chau Ward, Hoa Vang District, Da Nang City, Viet Nam

Email: tifatech.vn@gmail.com

Tel: +84(0)899.600.009

Website: <https://tifatech.vn>