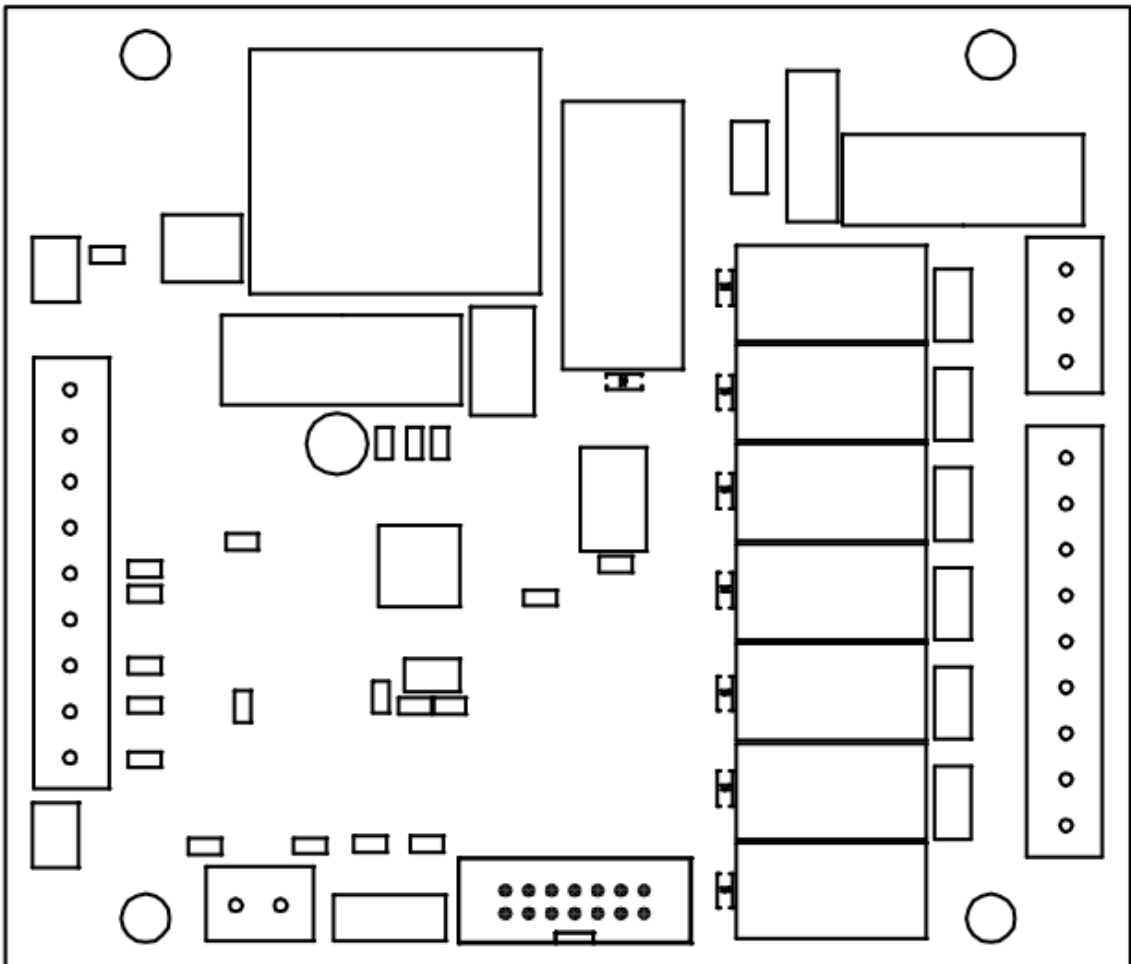


Coffee Machine Control Board

HTCNS

Instruction Manual



PREFACE

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

This manual contains instructions for mounting, functions, operations, and notes when operating the **HTCNS**. 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 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 **HTCNS** board on 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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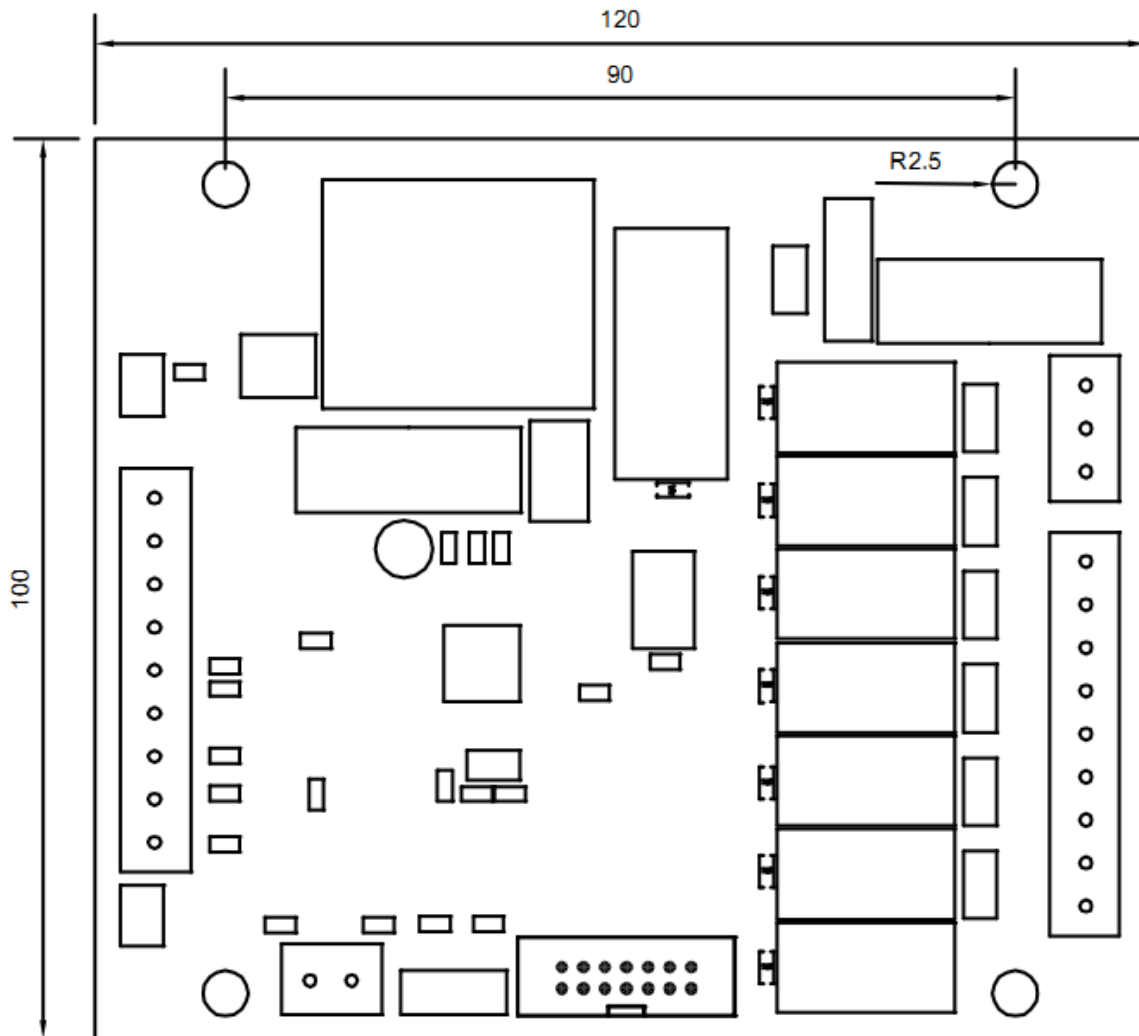
I. GENERAL

1. Introduction

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

II. TECHNICAL SPECIFICATIONS

1. Dimensions (mm)



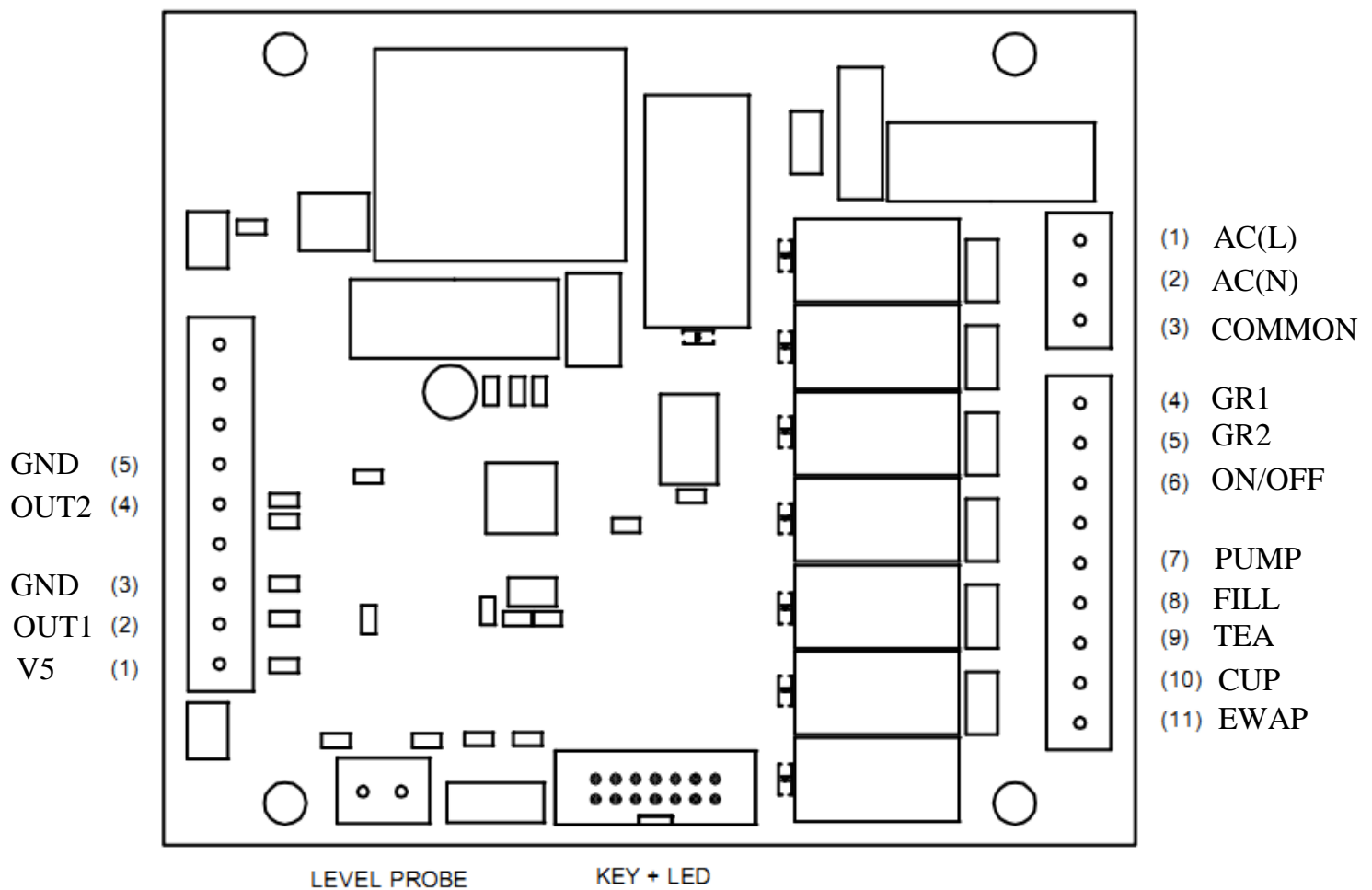
2. Specifications

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



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

III. WIRING

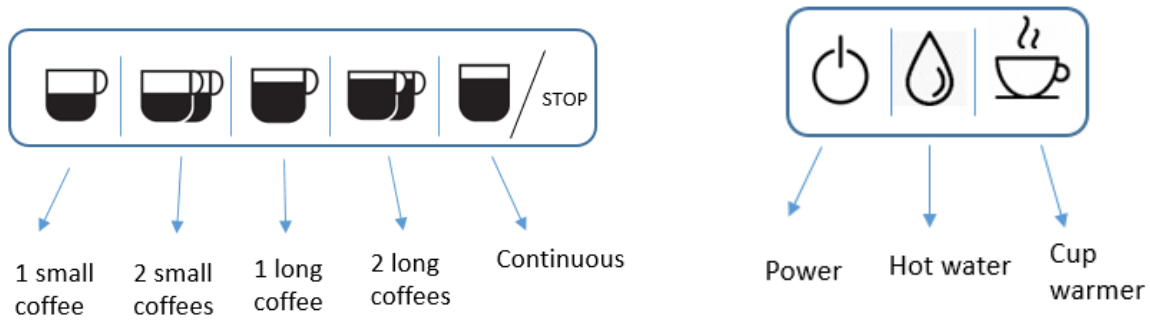


*Important:*

- Any mistake in connecting actuators will affect the normal operation of the coffee machine, and even cause damage.
- Ensure that one of the level probe inputs is connected to the metal box of the machine.

Terminal	Description
AC(L), AC(N)	Power supply
COMMON	Common input of actuators
GR1	Solenoid valve of group 1
GR2	Solenoid valve of group 2
ON/OFF	Power relay input
PUMP	Pump input
FILL	Autofill solenoid valve
TEA	Hot water valve input
CUP	Cup warmer relay input
EWAP	Heating element input
GND	Ground
OUT2	Water flow meter of Group 1
OUT1	Water flow meter of Group 2
V5	5V output
LEVEL PROBE	Water level probe
KEY+LED	Key and led input


IV. PROGRAMMING AND USE




1. Programming doses


To set the dose for any dispensing button, you will have to enter the setting mode and program for that key by the steps below.

i *Note:* The procedure can just be implemented when the machine is on.

Step 1: Press the  key and hold it down for 5 seconds until all keys begin to flash.

Step 2: Press once a delivery key to program for it. The machine starts to dispense coffee. Just the selected dose key and Continuous key lights are on.


Step 3: Press the continued key  when reaching the desired dose on the selected delivery key. The machine stops brewing coffee, and the key's light switches off (the others in the group continue to flash).


Step 4: Repeat steps 2 and 3 to program for another delivery key or press the key  to exit the setting mode. All key lights return to their normal state (All lights are on).

2. Programming hot water


Step 1: Do a similar procedure to enter the programming function.

Step 2: Press the hot water key  to program for hot water volume.


Step 3: When reaching the required amount of hot water and then press the hot water key  again to stop delivering hot water.

Step 4: Press the /STOP key to exit the programming mode.



3. Coffee dispensing


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

4. Copying dose settings

To copy dose settings for group 1 to group 2 or 3, hold down the continuous key /STOP for at least 8 seconds until the keys stop flashing.



5. Automatic group cleaning

- Press and hold the /STOP key  simultaneously of each group for 3 seconds to enter cleaning mode until the pressed key's light start to flash.
- The pump and selected group solenoid valve turn on at the same time for 5 seconds and then turn off in the next 5 seconds. The 1 Small Coffee and Continuous key lights are switched on or off according to the pump and group solenoid valve's opening and closing cycle.

- Press the  key to stop the auto-cleaning process on the selected group or it will finish when reaching 5 times of cleaning. All lights return to their normal state.

6. Pre-infusion

It's possible to activate or deactivate pre-infusion mode by following the step below:

- Press and hold the  and  key simultaneously for 3 seconds to enable the pre-infusion function. All lights on groups blink in 3 seconds.
- Do similarly to the step above to disable the pre-infusion function.

7. Filling

- When the boiler is in an out-of-water state for more than 3 seconds, the pump and autofill solenoid valve will automatically open to fill up the boiler.
- If the boiler is full of water for more than 3 seconds, the filling process will automatically stop.



Note: The water source should always be available for filling operation.

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 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 any malfunction at the water flow meter, the process won't stop automatically.

b. 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

a. Error symptom

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



Warning: Any error above needs to be handled instantaneously.

Otherwise, 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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