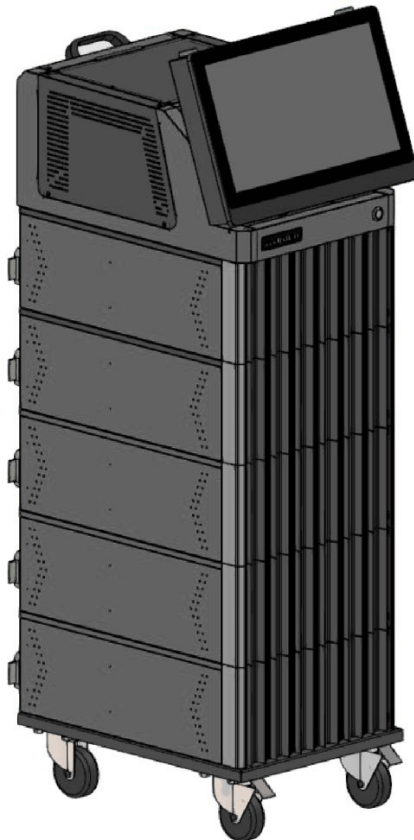




Turn To The Industry Experts

USER'S MANUAL **TC5600**

Multi-Cavity Hot Runner Temperature Controller





Please read through this user manual carefully before operating the TC5600 to avoid damage to machinery or injury to personnel from improper operation. The controller should also be placed in a well-ventilated area to ensure the stability of the instrumentation.

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Chapter I Safety Precautions

To ensure the safe and effective operation of the TC5600 Multi-Cavity Hot Runner Temperature Control System, please read through this user manual carefully before operating the TC5600 and follow the warnings and instructions provided :

1. Must be installed on a flat, stable floor in a well-ventilated area. Avoid humid, dusty or high-temperature environments. Installation in the above environments increases the risk of equipment failure or malfunctions and may even cause a fire. The controller's rollers must be locked after installation to avoid any movement.
2. Pay attention to the type of power supply, voltage and power capacity before connecting the TC5600 to the power supply. Using a power supply that does not meet specifications will cause serious system damage. When the master power switch is turned on, if the Over Voltage Source (OVS) light lights up it means the power supply's voltage is too high ($\geq 280\text{Vac}$). The main power switch must be turned off at once and the power distribution verified.
3. Before turning on the main power switch for the TC5600, make sure that the system ground (PE) is properly connected. Improper grounding may lead to electrocution of personnel or damage to equipment.
4. Check that the TC5600 and mold cable connection type are compatible with each other before connecting the two. Incompatible connection type poses an electrocution hazard and will damage equipment.
5. Make sure that the TC5600 cooling fan is working at all times. A blockage will impact on heat dissipation so always keep the fan clean and running.
6. Do not attempt to modify or change this control system without proper training. Improper modifications may lead to

electrocution, injury, equipment damage, fire and other hazards.

7. Immediately turn off the main power switch if there is any smoke, sparks, strange smells or odd noises during the operation of the TC5600 and have a technician conduct an inspection. Do not turn on the power again before the problem is resolved.
8. The TC5600 may only be maintained by trained personnel. The main power switch must be turned off before maintenance. Disassembling the TC5600 while the power is connected poses serious electrocution hazard.
9. Storage Temperature : -20~70°C / -4~158°F
Operating Temperature : -10~50°C / 14~122°F
Operating Humidity : 0~80%RH (non-condensing)
Altitudes : UP to 1000M

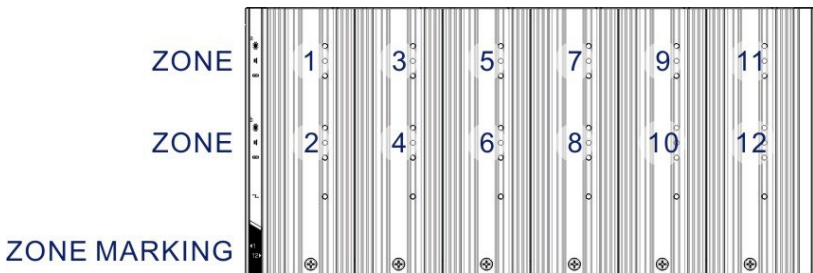
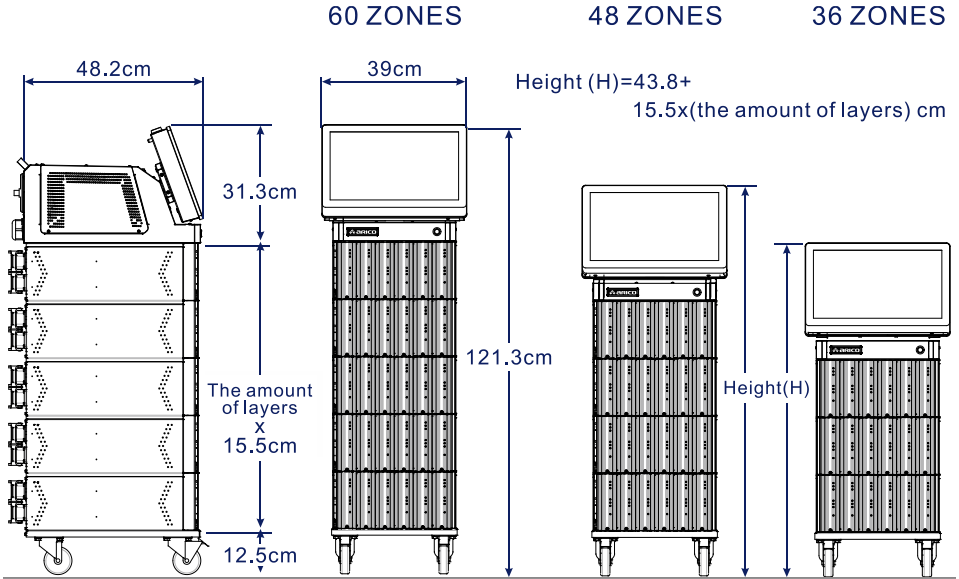
Chapter II Features

1. Each unit (HMI) can be connected to up to 240 points (120 IDs) of hot runner temperature control. Automatic module ID enables plug and play without requiring complicated configuration.
2. The power configuration is simple and easy to change, making it compatible with most electrical systems around the world.
3. Heater detection function (voltage, current, resistance and power rating) allows monitoring of heater status.
4. Multiple types of module anomaly detection for quick troubleshooting.
5. Simple and easy to use HMI interface.
6. Mold self-diagnostics function that shortens maintenance time by quickly identifying problems with the control module and molds.
7. Control loop break that can be set to manual or slave mode to keep production going.
8. Synchronous heating function to avoid power being tripped by excessive loading. This also prevents residue in the tip from becoming carbonized by high temperatures for extended periods of time and impacting product quality.
9. Shutdown, cooling and standby function for the tip to prevent tip deformation due to the tip and manifold cooling at different rates.
10. Triangulated control technology that dynamically balances three-phase power based on the load to lower power loss.

Chapter III Appearance and Electronic Control System

3.1 Appearance (dimensions, components)

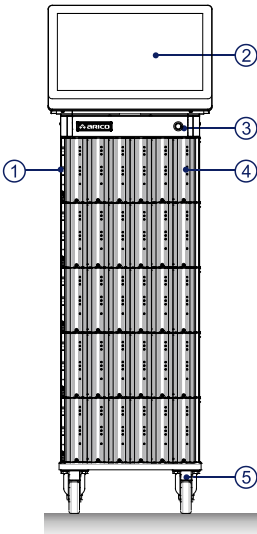
Dimensions of TC5600



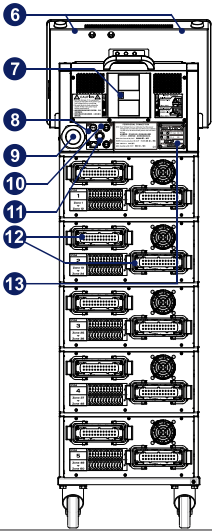
Layout of zones 1~12 shown above

TC5600 Components

Front view

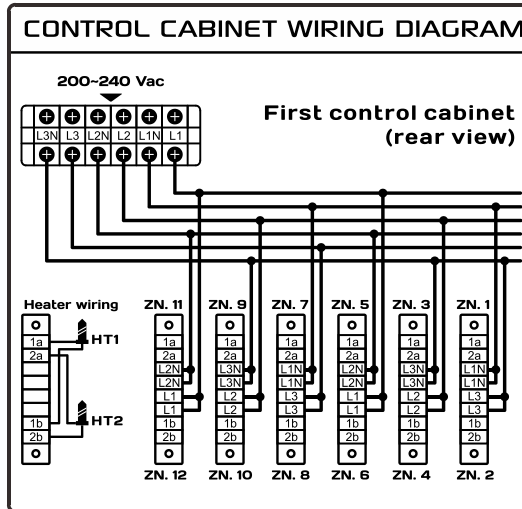
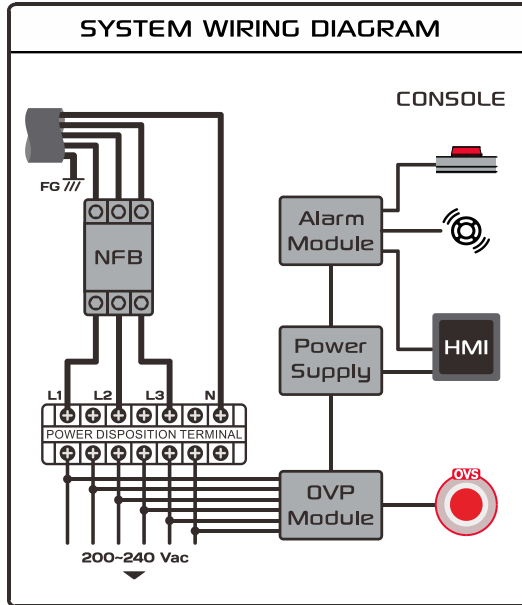


Rear view

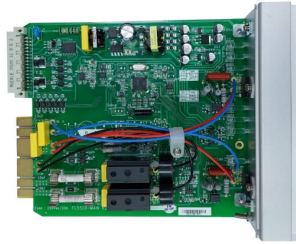


- ① Zone marking
- ② HMI
- ③ Power indicator
- ④ Temperature control module
- ⑤ Lockable roller
- ⑥ System status indicator
- ⑦ Main power switch / NFB
- ⑧ VNC port
- ⑨ Power cable
- ⑩ Auxiliary I/O
- ⑪ Overvoltage source indicator light (OVS)
- ⑫ Multi-pole connector
- ⑬ Machine name plate

3.2 Electronic Layout



3.3 Temperature Control Module (TC56-MDL)



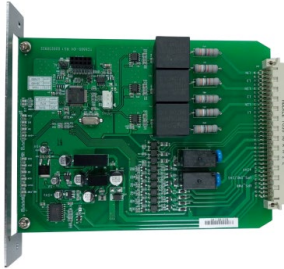
1. Control Zone: 2 zones
2. Power Input: 230Vac $\pm$ 10% / 24Vdc $\pm$ 5%, 50/60Hz
3. Power Consumption: 230Vac: 3W / 24Vdc: 2W
4. Power Output: 3450W, 230Vac / 15A (per zone)
5. Thermocouple: J/K type
6. Temperature Control Range: 0~600°C / 32~999°F
7. Control Precision: $\pm$ 0.25%FS
8. Measurement Precision: $\pm$ 0.25%FS
9. Output Mode: Zero cross / Phase angle
10. Fuse: Ceramic 250Vac / 20A, 30mm
11. Detection Functions: Current / Fuse Open Circuit
12. Temperature Alarm Mode: Higher limit / Lower limit / Standby
Higher limit / Standby lower limit / Absolute alarm
13. Anomaly Detection:
 - Thermocouple: Short / Break / Reverse
 - Heater: Short / Break / Overload
 - TRIAC: Short
 - Fuse Open Circuit
14. Communication Mode: RS-485 (Standard MODBUS, Isolated)
15. Communication Rate: 38400 / 57600
16. ID Setup: Automatic identification (requires compatible BUS board)
17. Indicator Lights: Output, Alarm, Fuse Open Circuit, Communication
18. Storage Temperature: -20~70°C / -4~158°F
19. Operating Temperature: -10~50°C / 14~122°F
20. Operating Humidity: 0~80%RH (No condensation)
21. Altitudes : UP to 1000M

3.4 Bus Board (TC56-BUS)



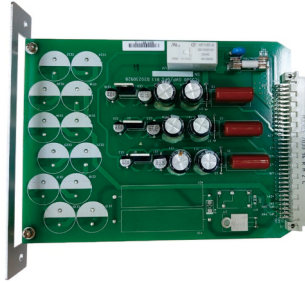
1. Power Input: 230Vac $\pm$ 10% / 24Vdc $\pm$ 5%
2. Power Frequency: 50/60Hz
3. Storage Temperature: -20~70°C / -4~158°F
4. Operating Temperature: -10~50°C / 14~122°F
5. Operating Humidity: 0~80%RH (No condensation)
6. Altitudes : UP to 1000M
7. ID Setup: DIP switch

3.5 Alarm Board (TC56-ALM)



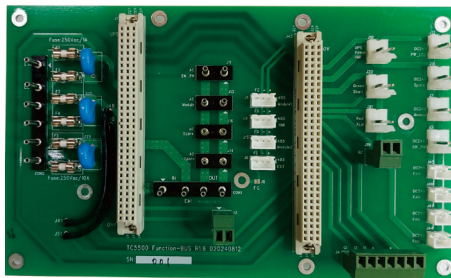
1. Power Input: 24Vdc $\pm$ 5%
2. Communication Mode: RS-485 (Standard MODBUS, Isolated)
3. Storage Temperature: -20~70°C / -4~158°F
4. Operating Temperature: -10~50°C / 14~122°F
5. Operating Humidity: 0~80%RH (No condensation)
6. Altitudes : UP to 1000M
7. ID: 255, fixed
8. Communication Rate: 38400 / 57600
9. Output: 4 point; dry contact / 7A

3.6 Overvoltage Protection Board (TC56-OVP)



1. Power Input: 3 Φ , 230Vac $\pm$ 10% (Phrase lose protection)
2. Action Voltage: $\geq$ 280Vac (Trigger overvoltage protection)
3. Storage Temperature: -20~70°C / -4~158°F
4. Operating Temperature: -10~50°C / 14~122°F
5. Operating Humidity: 0~80%RH (No condensation)
6. Altitudes : UP to 1000M
7. Output: 250Vac / 10A
8. Fuse: Ceramic 250Vac / 10A, 20mm
9. Overvoltage Indication (OVS): Indicator light output

3.7 BUS board on Top (TC56-BUS-T)

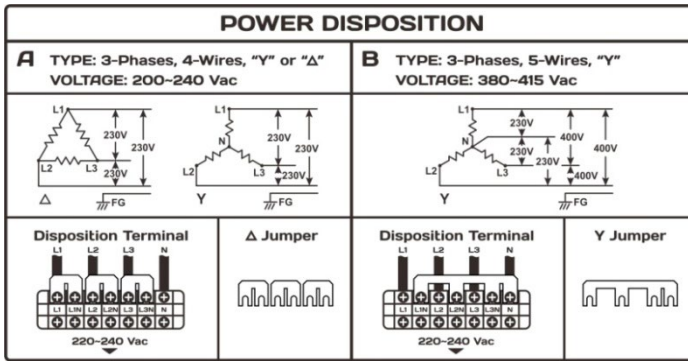


1. Power Input: 230Vac $\pm$ 10% / 24Vdc $\pm$ 5%
2. Power Frequency: 50/60Hz
3. Storage Temperature: -20~70°C / -4~158°F
4. Operating Temperature: -10~50°C / 14~122°F
5. Operating Humidity: 0~80%RH (No condensation)
6. Altitudes : UP to 1000M

3.8



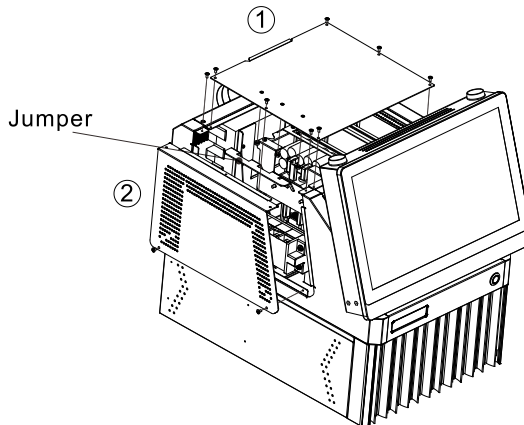
Power Supply and Overvoltage Protection



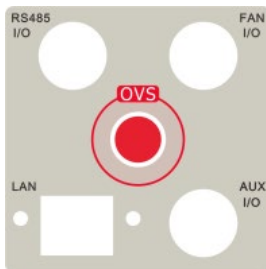
The TC5600 can be connected to 3-phase 4-wire Y/Δ type (230Vac) or 3-phase 5-wire Y type (400Vac) power supplies. Power disposition ensures that 230Vac is delivered to each layer in the control cabinet, allowing the user to adapt the power configuration to their requirements. The configuration must be carried out by trained technicians however.

TC5600 Y/Δ Wire Changing:

Remove the side panel to change the Y/Δ wiring, replacement jumpers are attached to the inside of the panel.



After main power is turned on to the TC5600, check the "Overvoltage Source (OVS)" light. If it light constantly then the voltage delivered to the control cabinet at each layer exceeds 280Vac. In this situation, immediately turn off TC5600 mains power then check the power input and power configuration again.



Chapter IV Convenient Functions

4.1 Mold Self-Diagnostics

Due to the complexity of multi-cavity molds, TC5600 offers convenient molds self-diagnostics function to shorten mold maintenance times. This diagnostics function provides the user with a simple way to troubleshoot most temperature controller and mold malfunctions.

- Module status: TRIAC / fuse
- Heater: Short / Break / Overload
- Mold Thermocouple: Wiring error

When the temperature control module detects a dangerous or anomalous situation, it automatically cuts the power output to prevent danger to personnel and equipment. (refer to 6.5- P38 for details)

4.2 TC open loop treatment (Stop / Manual / Follow / Continue)

The complex structure and large number of temperature control zones used by multi-cavity hot runner molds means that thermocouples (especially at the tip) will inevitably fail during production, forcing a maintenance shutdown that impacts production.

TC5600 offers two loop break modes that allows production to continue and maintenance to be deferred until the end of the current production run (refer to 6.2.1 P27 for details):

- Stop: When thermocouple open loop occurs in a zone, this zone will stop output automatically.
- Manual: The user can pre-define the appropriate manual output percentages for each zone. If a thermocouple fails in one zone, TC5600 will automatically switch temperature control for that zone to manual so the heater will continue to maintain the production temperature and keep production running.

- Follow: Multi-cavity molds are mostly used for producing similar products. Molds for the same product use similar heaters and component structures as well so the production temperatures are quite similar as well. The user can identify mold cavities with similar production conditions and set up master-slave relationships in advance. If the thermocouple for a zone fails and a master-slave relationship had previously been defined, TC5600 will automatically transmit the output percentage from a zone with working temperature control to the zone with the failed thermocouple. This maintains more precise temperature control than manual mode for that zone and allows production to continue.
- Continue: When the mold is heated to the target temperature(SV)for a few minutes and thermocouple abnormality occurs. If this function is selected, the heater can be continuously output, maintaining the steady-state output ratio before the abnormality to maintain production. However, if this function is selected, and abnormality occurs when the mold has not been heated to the target temperature, but the system has not yet obtained the steady-state output ratio, the output will be reduced to 0, means the heating operation is stopped.

4.3 Synchronous Heating

(Check that the heater for each mold matches the selected model before use)

Multi-cavity molds have more heating components (tip, manifold) so consume more power. When temperature control sets all heaters to start increasing the temperature, the power consumption can be as large as to trip mains power. There is also a relatively big difference between the heating time for tips and manifolds. When tips reach the set temperature,

they will still need to wait for the manifolds to reach the set temperature before production can begin. The feed residue in the tip may be degraded by being exposed to high temperature for an extended period of time, impacting product quality or even resulting in tip blockages.

TC5600 is equipped with synchronous heating and function to solve the above problem. In this way, the problems with power outages and extended exposure of feed to high temperature are resolved.

Synchronous heating: When the manifold is being heated, a lower output percentage is maintained for the tip and this is slaved to the manifold temperature. Independent control is only resumed upon approaching the set temperature.

Timing Warming: Manifold heated to a set temperature, after tip warmed up to 70 degrees. When the Manifold heat reaches the set temperature, the tip is heated to a set temperature. Independent control is only resumed upon approaching the set temperature.

Refer to 6.5 P40 for setting.

Synchronous Heating will be shown in the bottom of main menu when the function is enabled.



4.4 Synchronous Cooling

(Check that the heater for each mold matches the selected model before use)

Some multi-cavity molds have very sophisticated tip structures. During shutdown and cooling, the tip will cool at a faster rate than manifolds. When the temperature difference becomes too great, the uneven temperature in the mold body can cause the tip to warp and in serious cases may even impact tip service life.

TC5600 offers a synchronous cooling function during shutdown. The system automatically keeps all heaters cooling at the same rate to reduce malfunctions caused by excessive temperature difference.

Refer to 6.5 P40 for setting.

"Synchronous Cooling" and mode icon will be shown in the bottom of main menu when the function is enabled.



4.5 Mold leakage detection

(Before using this function, you must first confirm that the mold status is ready for normal production and refer to the instructions for use to set it up to exert its function)

After the hot runner mold is produced for a period of time, the plastic will leak out from the joint due to changes in temperature, pressure, tightness, etc. When the plastic leaks out, it may cause damage to the temperature sensing line or heater. If it can Detecting material leakage at an early stage can not only save a lot of maintenance costs, but also shorten the mold repair time to quickly put into production.

PS: This function is based on the analysis and statistics of existing data and cannot replace external material leakage detection. If you need external material leakage detection, please contact our company.

4.6 Mold aging value detection

(Before using this function, you must first confirm that the mold status is ready for normal production)

Mold aging detection is crucial to the maintenance and management of molds. First of all, it can effectively prevent potential failures. By monitoring the aging status of mold electric heating elements, abnormalities can be detected early and repaired to avoid production shutdowns caused by sudden failures. Secondly, mold electrothermal aging detection can improve the service life of the equipment. Through accurate monitoring data, it ensures that the equipment operates in the best condition and extends the use time. In addition, detection helps reduce maintenance costs and avoid excessive maintenance or unnecessary parts replacement, thus improving resource utilization. Ultimately, mold aging detection can improve operational safety, reduce the risk of production shutdowns, ensure stable operations, and enhance the competitiveness of enterprises.

4.7 Mold recognition

(Before using this function, you must first confirm that the wiring between the mold and the controller is correct)

Mold identification technology has several advantages in manufacturing. First of all, it can improve production efficiency by automatically identifying mold types, reducing manual errors and ensuring that molds are accurately used in the appropriate production links. Secondly, mold identification can achieve accurate tracking and management. In addition, this technology can also reduce delays and confusion in the production process and improve product consistency and quality. Ultimately, mold identification technology promotes intelligent manufacturing and data-based management, providing support for the development of factory automation and smart factories.

4.8 Mold viewer

Mold views offer several advantages in the manufacturing process. Through the precise mold view, engineers can clearly understand the temperature-related position of the mold heater, which helps the adjustment machine to judge the position and reduces the time of finding the position, which helps to reduce production costs.

Chapter V Preparations

5.1 Connection between TC5600 and Mold

To keep the entire multi-cavity hot runner system in working order, the user must perform the following checks before connecting the TC5600 with the mold:

1. Confirm that the operating environment is stable, non-humid, low-dust and at a suitable temperature. The rollers must also be locked.
2. Confirm that the power cable is not damaged and securely connected.
3. Confirm that the TC5600 and mold are properly grounded.
4. Check that the TC5600 main power switch is set to "OFF".
5. Confirm that the TC5600 and the mold are properly connected.
6. Confirm that the wiring between the TC5600 and mold are not damaged and that the connection type matches the way that TC5600 and the mold are connected.
7. Only when all of the above checks have been completed can the user connect the TC5600 and the mold, turn on the power and prepare to commence production

5.2 Basic Parameter Setup

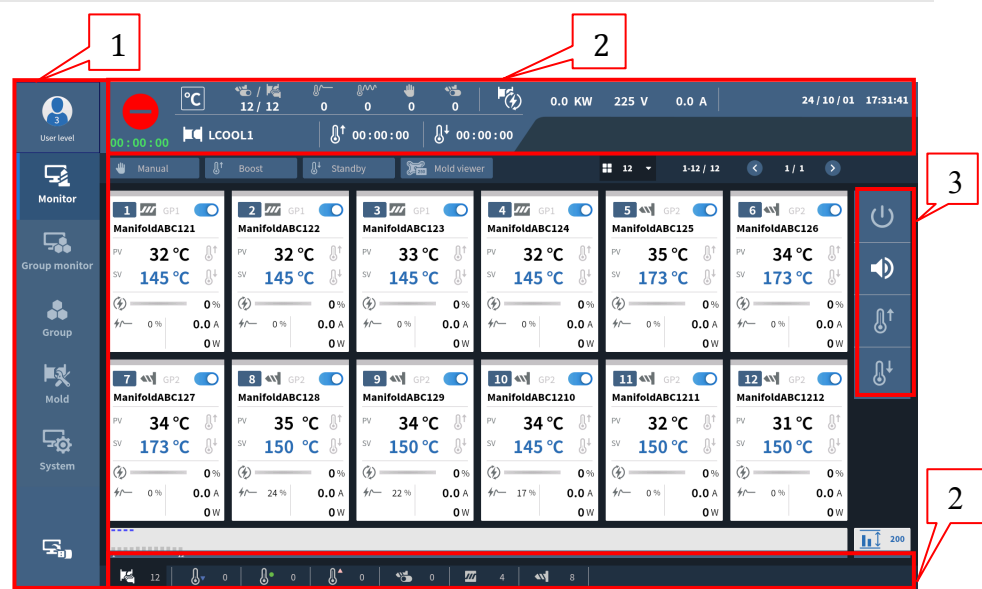
After turning on the power, please set the basic parameters as shown in 6.2.1 P26~28.

1. Setting Value: The setting value (SV) for the current zone. Press to set.
2. Thermocouple type: J/K type.
3. Heater type: Tip/Manifold
4. Soft Start: Enable heater drying function.
5. PID self tuning: Enable Self-tuning mode (Enable / Once / Always).
6. Trigger Mode: Z.C. (Zero cross) / P.A. (Phase angle)
7. TC open loop treatment: Stop / Manual / Follow (refer to 4.2 P14)

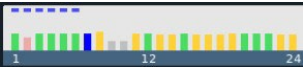
When the basic parameters have been set alright, you can use "Group Setup" to copy parameters to other zones, refer to 6.4 P32 for details.

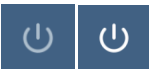
Chapter VI HMI Instructions

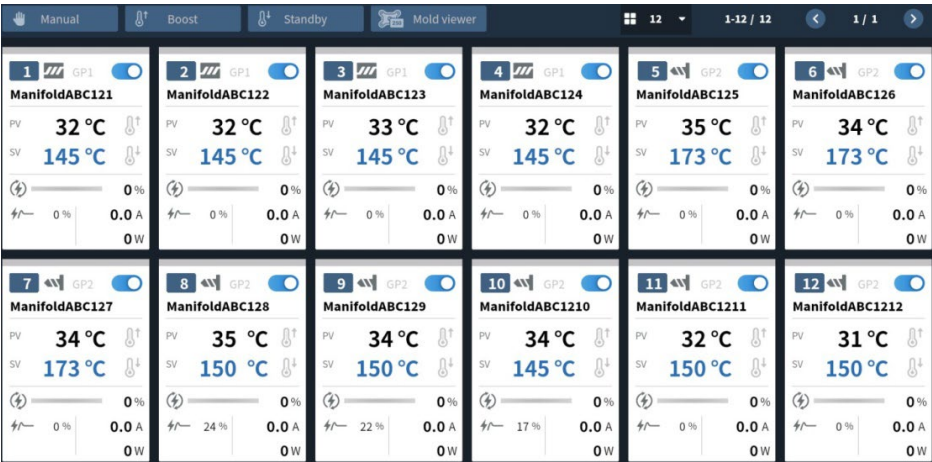
6.1 Main



1- Function page	
	Enter password setting and permission level display
	Display information and related settings for each section
	Display the members of each group and set the temperature of each group
	Edit group members
	Mold related functions and information settings
	System related functions and information settings
	Save current screen
2- status area	
	Display electric heating output status and running time
	Synchronous heating/synchronous cooling Execution diagram and running time
	temperature unit
	Number of sections opened/total quantity
	Ready quantity / Not ready quantity / Manual output quantity / Closed quantity

	Ready instructions: The actual temperature has reached the set temperature within $\pm 5^{\circ}$
	Work mold name - click on the blank space to set the mold name
	Boost/ Boost in progress, when the warming function is started, the execution time is counted down
	Standby/Standby in progress, When the keep warm function is activated, the execution time is counted down
	Total power/voltage/current
	Alarm occurrence message
	Turn on the VNC function icon
	 ---The heater type is set to Manifold   --- The actual temperature has reached the set temperature within $\pm 5^{\circ}$  --- The actual temperature does not reach the set temperature within $\pm 5^{\circ}$  --- Temperature sensing wire disconnected  --- High temperature alarm  --- Low temperature alarm  ---Zone off

	Temperature range setting
	Show all zone
	Show low temperature zone
	Show ready zone
	Display high temperature zone
	Show off zone
	Show manifold zone
	Show tip zone
	input display  No input  Signal input
	Output display  No output  Signal output
3- action keys	
	Turn on/off heating control switch
	buzzer switch
	Boost Start switch
	Standby Start switch



	Manual output setting
	Boost Function settings
	Standby Function settings
	Mold view, refer to 6.6 P47 for details

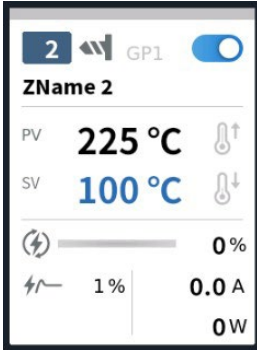
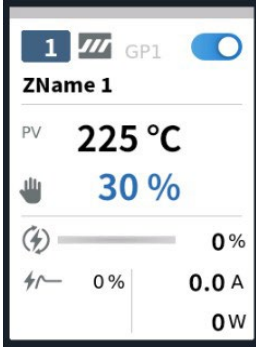


Illustration color function description



--- PV=SV±5°



--- PV≠SV±5°



--- High temperature alarm



--- Low temperature alarm



---Zone off

1 ----- Zone number

ZName 1 ----- Zone name

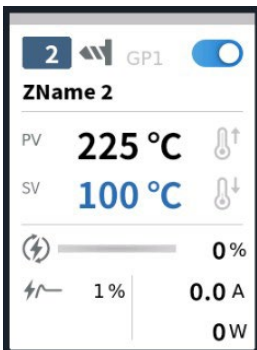
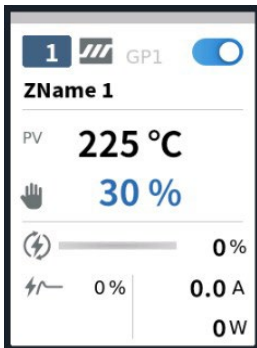
  -----HT type

GP1 -----Group name

 ----- Zone on/off

PV **225 °C** -----PV & units

SV **100 °C** -----SV & units



 **30 %**-----Set manual output&
output %

 **0 %**----- HT output %

 **0 %**----- Material leakage detection
steady state ratio

0.0 A----- Output current

0 W----- Output power

  ----- Set to Standby function / start
up

  ----- Set to Boost function / start up

6.2.1 Zone Parameter Setups

	Zone	5	Output (%)	4	PV	49	Current (A)	0.2	Group No.	0
	Name	MANIFOLD05	Ready output (%)	0	SV	100	Power (W)	44	Module ID.	3
	Heater type	Tip	Aging (%)	0	Room temperature	29	Impedance (Ohm)	0	Module version	0. 50

General	Control	PID	Temperature alarm
Zone switch ☒	Control mode Auto ▾	PID auto tuning ☐	Absolute ☐
SV 100	Manual output (%) 0	PID self tuning No ▾	Absolute range PV≥ 250
PV offset 0	Boost temperature SV+ 20	P-Proportional band (%) 30	High limit ☐
Thermocouple type J ▾	Standby temperature SV- 20	I-Integral time (min) 600	High limit standby ☐
Heater type Tip ▾	Temperature limit 400	D-Differential time (min) 3	High limit range SV+ 20
Soft start ☒	Output limit (%) 100		Low limit ☐
Soft start time (min) 3	Zone to follow 13		Low limit standby ☐
Current detection ☒	TC open loop treatment Stop ▾		Low limit range SV- 20
Leakage threshold + (%) 0	Trigger mode Phase angle ▾		



1. Zone Number
2. Zone name
3. HT type (Tip / Manifold)
4. Output %
5. Ready output-- Steady state output % Provide material leakage function for judging
6. Aging(%)--Display the degree of electrothermal aging
7. Actual temperature
8. Set temperature
9. Room temperature -- ambient temperature
10. Current (A)
11. Power (W)
12. resistance (Ohm)

	13. Group number 14. Modules ID 15. Module version
General parameters	1. Zone switch -- Zone on/off 2. Set temperature -- Heater temperature setting 3. PV offset--Temperature deviation value 4. Thermocouple Type --J/K type 5. Heater type --TIP/M.F. (MANIFOLD) 6. Soft start -- Heater dehumidification switch 7. Slow start timing (min)-- Slow start operation timing 8. Current detection -- Current detection switch (detection can be turned off when the current detection sensor fails) 9. leakage threshold +(%)-- Set trigger leakage threshold
control parameters	1. Control mode -- Automatic/manual control selection 2. manual%-- Manual output% 3. Boost temperature-- Boost Temperature setting 4. Standby temperature -- tandby Temperature setting 5. Temperature limits -- The maximum set temperature for that zone (SV) 6. Output limits(%) --0~100% The maximum output percentage for that zone 7. Zone to follow -- Set the zone to slave the current zone if thermocouple fails 8. TC open ioop treatment--Stop / Manual / Follow / Continue Stop : Stop output in the event of thermocouple break Manual : Automatically switch temperature control for that zone to Manual mode after thermocouple break. Follow the



	manual output percentage so the heater maintains the production temperature and keeps production running. ※The manual output percentage must be set in Control Parameters Follow : Follow the output percentage of the zone slaved to after thermocouple break. This enables more precise temperature control for the current zone and keeps production running. ※The zone to slave to must be set in advance in Control Parameters. Continue : When the mold is heated to the target temperature (SV) for a few minutes and thermocouple abnormality occurs, if this function is selected, the heater can be continuously output, maintaining the steady-state output ratio before the abnormality to maintain production. However, if this function is selected, and abnormality occurs when the mold has not been heated to the target temperature, but the system has not yet obtained the steady-state output ratio, the output will be reduced to 0, means the heating operation is stopped 9. Trigger mode : Z.C. (Zero cross) / P.A. (Phase angle)
PID	1. AT Mode -- When ST MODE is already in use, and the temperature control will still oscillate When the temperature has reached the set value, you can start AT. At this time, it will heat up and cool down to calculate a more accurate PID value 2. ST Mode -- Self-tuning (No / Once / Every) Automatically execute PID algorithm at start up (No: No

	algorithm / Once: Only one algorithm / Every: Execute algorithm every start up) 3. P- Proportional band (%)--Temperature control area This value can be increased when the temperature is exceeded for the first time 4. I- Integral time (min)-- Accumulate Electric energy time When it takes a long time to reach a ready state, this value can be reduced 5. D- Differential time (min)-- Slowing effect when the temperature changes quickly. When modifying the PID value, you must have PID knowledge. When the temperature is still not ideal after ST & AT is used, you need to manually set the PID
--	---



Temperature alarm	1. Absolute -- Absolute switch 2. Absolute range -- The present temperature value (PV) of the absolute alarm is activated 3. High limit -- High Limit Alarm switch 4. High limit standby -- High limit standby Alarm switch 5. High limit range -- High limit alarm range set 6. Low limit -- Low limit Alarm switch 7. Low limit standby -- Low limit standby Alarm switch 8. Low limit range -- Low limit alarm range set Alarm judgment instructions Absolute -- Alarm activates when PV is higher than Absolute range Higher limit alarm -- Alarm activates when PV is higher than the 【SV + High limit Range】 High limit standby -- After lowering the temperature set value, the upper limit alarm is suspended during the first cooling process. Lower limit alarm --Alarm activates when PV is lower than 【SV - Low limit Range】 Low limit standby -- After starting the control or increasing the temperature set value, the lower limit alarm is suspended during the first temperature rise.
------------------------------	---



General

☐

Zone switch

☐

SV

50

☐

PV offset

0

☐

Thermocouple type

J

▼

☐

Heater type

Tip

▼

☐

Soft start

☐

Soft start time (min)

3

☐

Current detection

☐

Leakage threshold + (%)

0



Select all

Elect ☐ Need to copy parameters, Elect ☒ Click after



Copy parameter

Selected : 0

1-50 / 60 < 1 / 2 >

1	2	3	4	5	6	7	8	9	10
Heater type	Heater type	Heater type	Heater type	Heater type	Heater type	Heater type	Heater type	Heater type	Heater type
11	12	13	14	15	16	17	18	19	20
Heater type	Heater type	Heater type	Heater type	Heater type	Heater type	Heater type	Heater type	Heater type	Heater type
21	22	23	24	25	26	27	28	29	30
Heater type	Heater type	Heater type	Heater type	Heater type	Heater type	Heater type	Heater type	Heater type	Heater type
31	32	33	34	35	36	37	38	39	40
Heater type	Heater type	Heater type	Heater type	Heater type	Heater type	Heater type	Heater type	Heater type	Heater type
41	42	43	44	45	46	47	48	49	50
Heater type	Heater type	Heater type	Heater type	Heater type	Heater type	Heater type	Heater type	Heater type	Heater type



Select all



Select none



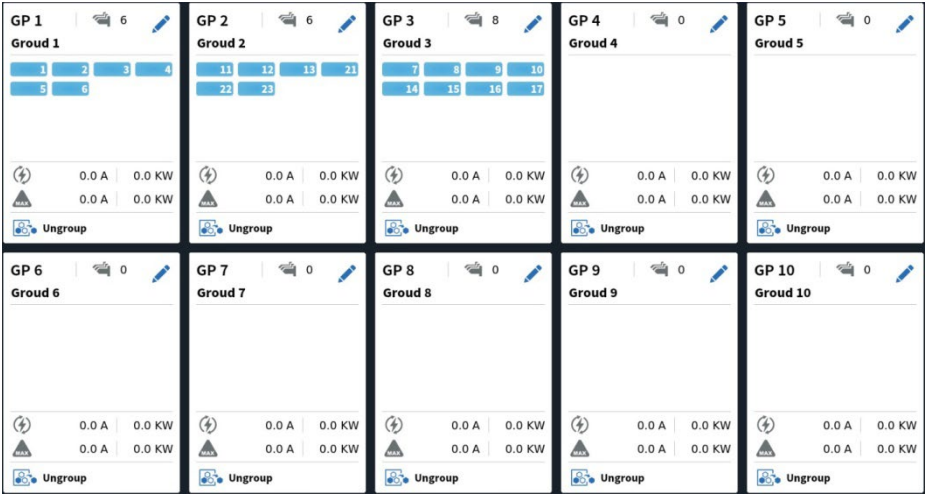
Inverse selection

Elect ☐ The section to be copied is selected as ☒ Click after

6.3



Group monitor



GP 1

Groud 1

1 2 3 4
5 6



0.0 A | 0.0 KW



0.0 A | 0.0 KW



Ungroup

GP 1-- Group number



6 -- Group zone quantity



-- Temperature synchronization setting

Groud 2-- Group name



-- Group zone

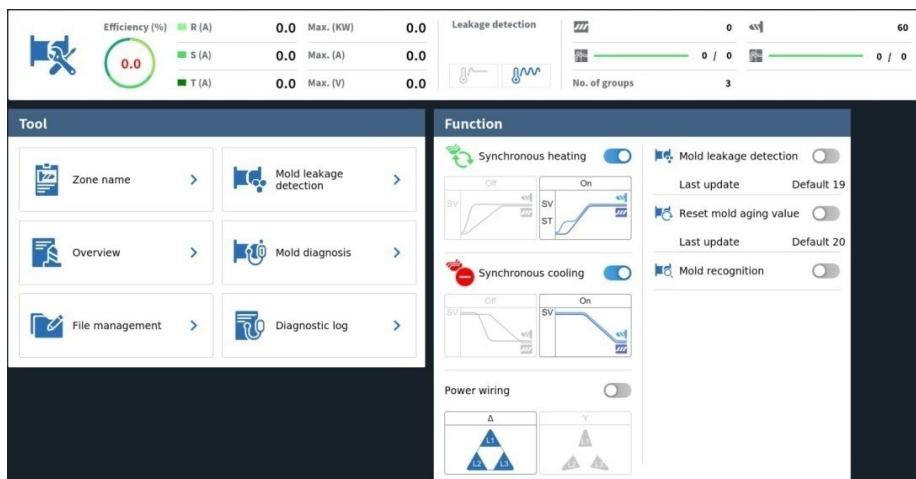


0.0 A | 0.0 KW - Group current / Power

	 0.0 A 0.0 KW-- Group maximum current / Power  Ungroup -- Unset group settings
--	---

[illegible]

-37-



	Three-phase power balance ratio
R (A) 0.0 S (A) 0.0 T (A) 0.0	The total current of each phase of the three phases
Max. (KW) 0.0 Max. (A) 0.0 Max. (V) 0.0	Maximum power/current/voltage
	-- Material leakage detection -- Ready -- Not ready Blue represents the current status
	Manifold quantity / Ready quantity



No. of groups	Groups quantity																																																																				
 0  0	Tip quantity / Ready quantity																																																																				
Zone name	Auto numbering Name Tip Starting number 1  Name ☐ Default 1 Manifold ☒ Default 2 Tip ☐ Default 3 Default 3 ☐ Default 4 Default 4 ☐ Default 5 Default 5 ☐ Default 6 Default 6 ☐ Default 7 Default 7 ☐ Default 8 Default 8 automatic numbering Elect ☒ Default 2 optional name Elect 1 Can set the starting number of the name <table> <tr> <th colspan="4">Zone</th></tr> <tr> <td colspan="4">Selected: 56</td></tr> <tr> <td>☐ 1 Manifold1</td><td>☐ 2 Manifold2</td><td>☐ 3 Manifold3</td><td>☐ 4 Manifold4</td></tr> <tr><td>☒ 5 Tip1</td><td>☒ 6 Tip2</td><td>☒ 7 Tip3</td><td>☒ 8 Tip4</td></tr> <tr><td>☒ 9 Tip5</td><td>☒ 10 Tip6</td><td>☒ 11 Tip7</td><td>☒ 12 Tip8</td></tr> <tr><td>☒ 13 Tip9</td><td>☒ 14 Tip10</td><td>☒ 15 Tip11</td><td>☒ 16 Tip12</td></tr> <tr><td>☒ 17 Tip13</td><td>☒ 18 Tip14</td><td>☒ 19 Tip15</td><td>☒ 20 Tip16</td></tr> <tr><td>☒ 21 Tip17</td><td>☒ 22 Tip18</td><td>☒ 23 Tip19</td><td>☒ 24 Tip20</td></tr> <tr><td>☒ 25 Tip21</td><td>☒ 26 Tip22</td><td>☒ 27 Tip23</td><td>☒ 28 Tip24</td></tr> <tr><td>☒ 29 Tip25</td><td>☒ 30 Tip26</td><td>☒ 31 Tip27</td><td>☒ 32 Tip28</td></tr> <tr><td>☒ 33 Tip29</td><td>☒ 34 Tip30</td><td>☒ 35 Tip31</td><td>☒ 36 Tip32</td></tr> <tr><td>☒ 37 Tip33</td><td>☒ 38 Tip34</td><td>☒ 39 Tip35</td><td>☒ 40 Tip36</td></tr> <tr><td>☒ 41 Tip37</td><td>☒ 42 Tip38</td><td>☒ 43 Tip39</td><td>☒ 44 Tip40</td></tr> <tr><td>☒ 45 Tip41</td><td>☒ 46 Tip42</td><td>☒ 47 Tip43</td><td>☒ 48 Tip44</td></tr> <tr><td>☒ 49 Tip45</td><td>☒ 50 Tip46</td><td>☒ 51 Tip47</td><td>☒ 52 Tip48</td></tr> <tr><td>☒ 53 Tip49</td><td>☒ 54 Tip50</td><td>☒ 55 Tip51</td><td>☒ 56 Tip52</td></tr> <tr><td>☒ 57 Tip53</td><td>☒ 58 Tip54</td><td>☒ 59 Tip55</td><td>☒ 60 Tip56</td></tr> </table> Select the section to be numbered  Modify name Elect ☒ Default 2 Tip TIP Revise	Zone				Selected: 56				☐ 1 Manifold1	☐ 2 Manifold2	☐ 3 Manifold3	☐ 4 Manifold4	☒ 5 Tip1	☒ 6 Tip2	☒ 7 Tip3	☒ 8 Tip4	☒ 9 Tip5	☒ 10 Tip6	☒ 11 Tip7	☒ 12 Tip8	☒ 13 Tip9	☒ 14 Tip10	☒ 15 Tip11	☒ 16 Tip12	☒ 17 Tip13	☒ 18 Tip14	☒ 19 Tip15	☒ 20 Tip16	☒ 21 Tip17	☒ 22 Tip18	☒ 23 Tip19	☒ 24 Tip20	☒ 25 Tip21	☒ 26 Tip22	☒ 27 Tip23	☒ 28 Tip24	☒ 29 Tip25	☒ 30 Tip26	☒ 31 Tip27	☒ 32 Tip28	☒ 33 Tip29	☒ 34 Tip30	☒ 35 Tip31	☒ 36 Tip32	☒ 37 Tip33	☒ 38 Tip34	☒ 39 Tip35	☒ 40 Tip36	☒ 41 Tip37	☒ 42 Tip38	☒ 43 Tip39	☒ 44 Tip40	☒ 45 Tip41	☒ 46 Tip42	☒ 47 Tip43	☒ 48 Tip44	☒ 49 Tip45	☒ 50 Tip46	☒ 51 Tip47	☒ 52 Tip48	☒ 53 Tip49	☒ 54 Tip50	☒ 55 Tip51	☒ 56 Tip52	☒ 57 Tip53	☒ 58 Tip54	☒ 59 Tip55	☒ 60 Tip56
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	Elect 5 Tip1 Blue font can be modified																																																																																																																																																																																																																					
Overview	Overview <table><tr><th colspan="15">1 / 10 / 60 < 1 / 6 ></th></tr><tr><th>Zone</th><th>Name</th><th>TC type</th><th>PU</th><th>Offset</th><th>SV</th><th>Zone to follow</th><th>Group</th><th>Low ALM</th><th>High ALM</th><th>Current detection</th><th>Leakage threshold +5(%)</th><th>Output (%)</th><th>A</th><th>W</th><th>Chm</th><th>Aging (%)</th><th>Zone switch</th></tr><tr><td>1</td><td>2HName 1</td><td>J</td><td>25</td><td>0</td><td>50</td><td>0</td><td>0</td><td>0</td><td>0</td><td>OFF</td><td>0</td><td>0</td><td>0.0</td><td>0</td><td>0</td><td>0</td><td>ON</td></tr><tr><td>2</td><td>2HName 2</td><td>J</td><td>25</td><td>0</td><td>50</td><td>0</td><td>0</td><td>0</td><td>0</td><td>OFF</td><td>0</td><td>0</td><td>0.0</td><td>0</td><td>0</td><td>0</td><td>ON</td></tr><tr><td>3</td><td>2HName 3</td><td>J</td><td>25</td><td>0</td><td>50</td><td>0</td><td>0</td><td>0</td><td>0</td><td>OFF</td><td>0</td><td>0</td><td>0.0</td><td>0</td><td>0</td><td>0</td><td>ON</td></tr><tr><td>4</td><td>2HName 4</td><td>J</td><td>25</td><td>0</td><td>50</td><td>0</td><td>0</td><td>0</td><td>0</td><td>OFF</td><td>0</td><td>0</td><td>0.0</td><td>0</td><td>0</td><td>0</td><td>ON</td></tr><tr><td>5</td><td>2HName 5</td><td>J</td><td>25</td><td>0</td><td>50</td><td>0</td><td>0</td><td>0</td><td>0</td><td>OFF</td><td>0</td><td>0</td><td>0.0</td><td>0</td><td>0</td><td>0</td><td>ON</td></tr><tr><td>6</td><td>2HName 6</td><td>J</td><td>25</td><td>0</td><td>50</td><td>0</td><td>0</td><td>0</td><td>0</td><td>OFF</td><td>0</td><td>0</td><td>0.0</td><td>0</td><td>0</td><td>0</td><td>ON</td></tr><tr><td>7</td><td>2HName 7</td><td>J</td><td>25</td><td>0</td><td>50</td><td>0</td><td>0</td><td>0</td><td>0</td><td>OFF</td><td>0</td><td>0</td><td>0.0</td><td>0</td><td>0</td><td>0</td><td>ON</td></tr><tr><td>8</td><td>2HName 8</td><td>J</td><td>25</td><td>0</td><td>50</td><td>0</td><td>0</td><td>0</td><td>0</td><td>OFF</td><td>0</td><td>0</td><td>0.0</td><td>0</td><td>0</td><td>0</td><td>ON</td></tr><tr><td>9</td><td>2HName 9</td><td>J</td><td>25</td><td>0</td><td>50</td><td>0</td><td>0</td><td>0</td><td>0</td><td>OFF</td><td>0</td><td>0</td><td>0.0</td><td>0</td><td>0</td><td>0</td><td>ON</td></tr><tr><td>10</td><td>2HName 10</td><td>J</td><td>25</td><td>0</td><td>50</td><td>0</td><td>0</td><td>0</td><td>0</td><td>OFF</td><td>0</td><td>0</td><td>0.0</td><td>0</td><td>0</td><td>0</td><td>ON</td></tr></table> Display the parameter setting value of each section	1 / 10 / 60 < 1 / 6 >															Zone	Name	TC type	PU	Offset	SV	Zone to follow	Group	Low ALM	High ALM	Current detection	Leakage threshold +5(%)	Output (%)	A	W	Chm	Aging (%)	Zone switch	1	2HName 1	J	25	0	50	0	0	0	0	OFF	0	0	0.0	0	0	0	ON	2	2HName 2	J	25	0	50	0	0	0	0	OFF	0	0	0.0	0	0	0	ON	3	2HName 3	J	25	0	50	0	0	0	0	OFF	0	0	0.0	0	0	0	ON	4	2HName 4	J	25	0	50	0	0	0	0	OFF	0	0	0.0	0	0	0	ON	5	2HName 5	J	25	0	50	0	0	0	0	OFF	0	0	0.0	0	0	0	ON	6	2HName 6	J	25	0	50	0	0	0	0	OFF	0	0	0.0	0	0	0	ON	7	2HName 7	J	25	0	50	0	0	0	0	OFF	0	0	0.0	0	0	0	ON	8	2HName 8	J	25	0	50	0	0	0	0	OFF	0	0	0.0	0	0	0	ON	9	2HName 9	J	25	0	50	0	0	0	0	OFF	0	0	0.0	0	0	0	ON	10	2HName 10	J	25	0	50	0	0	0	0	OFF	0	0	0.0	0	0	0	ON
1 / 10 / 60 < 1 / 6 >																																																																																																																																																																																																																						
Zone	Name	TC type	PU	Offset	SV	Zone to follow	Group	Low ALM	High ALM	Current detection	Leakage threshold +5(%)	Output (%)	A	W	Chm	Aging (%)	Zone switch																																																																																																																																																																																																					
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2	2HName 2	J	25	0	50	0	0	0	0	OFF	0	0	0.0	0	0	0	ON																																																																																																																																																																																																					
3	2HName 3	J	25	0	50	0	0	0	0	OFF	0	0	0.0	0	0	0	ON																																																																																																																																																																																																					
4	2HName 4	J	25	0	50	0	0	0	0	OFF	0	0	0.0	0	0	0	ON																																																																																																																																																																																																					
5	2HName 5	J	25	0	50	0	0	0	0	OFF	0	0	0.0	0	0	0	ON																																																																																																																																																																																																					
6	2HName 6	J	25	0	50	0	0	0	0	OFF	0	0	0.0	0	0	0	ON																																																																																																																																																																																																					
7	2HName 7	J	25	0	50	0	0	0	0	OFF	0	0	0.0	0	0	0	ON																																																																																																																																																																																																					
8	2HName 8	J	25	0	50	0	0	0	0	OFF	0	0	0.0	0	0	0	ON																																																																																																																																																																																																					
9	2HName 9	J	25	0	50	0	0	0	0	OFF	0	0	0.0	0	0	0	ON																																																																																																																																																																																																					
10	2HName 10	J	25	0	50	0	0	0	0	OFF	0	0	0.0	0	0	0	ON																																																																																																																																																																																																					
File management	HMI < 1 / 1 > No. Mold name Date / Time File attachment 1 1 2024/09/23 14:23 2 12 2024/09/23 14:23 3 1234 2024/09/23 14:21 4 BR2022.03.28 2024/09/23 14:25 5 6 7 8 9 10 HMI memory data leakage detection Mold aging value detection Mold recognition Mold viewer When the color of the icon is blue, it means that the relevant function information has been completed and stored in the file. If it is light gray, it means that the relevant function information																																																																																																																																																																																																																					

has not been completed or opened.



USB File copied to HMI



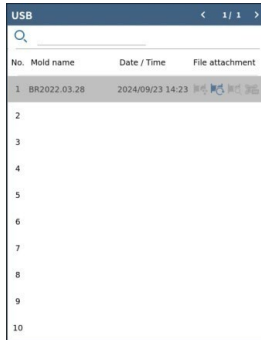
HMI File copied to USB



USB Copy all files to HMI

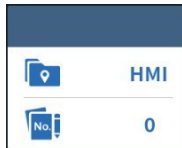


HMI Copy all files to USB



No.	Mold name	Date / Time	File attachment
1	BR2022.03.28	2024/09/23 14:23	
2			
3			
4			
5			
6			
7			
8			
9			
10			

USB memory data



	HMI
	0

File path HMI / file quantity



	USB
	1

File path USB / file quantity

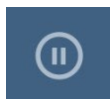


Save working mold parameters to

	folder  Load the folder file into the working mold  Delete files Save file 1. Select the storage path and click on the blank space of HMI or USB  Show current path 2, If there is no file name or you want to modify the file name, click  You can enter the file name in the numerical position 3, Elect  Save Load file Select HMI or USB to load the file name, click  Load
 Mold leakage detection	 -- leakage detection  -- Temperature is ready  -- Temperature not ready Blue represents the current status  Ready output (%) -- Ready output %  Leakage threshold + (%) -- Leakage threshold %



	-- Stable output percentage and leakage threshold of each segment To modify the leakage threshold, you can click on the 0% position or set it by internal parameters. The recommended value is 10~30%
Mold diagnosis	-- Diagnostic record progress Number of zones 0 -- Select the total quantity to be tested Diagnosed 0 -- Number of tests completed Pending 0 -- Untested quantity 0 -- Manifold quantity & Faulty quantity 60 0 -- Tip quantity & Faulty quantity -- Start diagnosing



-- Pause diagnosis until the end of the ongoing section



-- Diagnosis ended

Starting temperature

0 -- Diagnosis will

only start when the value is lower than the set value. The recommended value is 100~150.

Heating temperature

0 -- Heating

temperature during diagnosis, the recommended value is 15~30



-- Reset diagnostic status

Diagnostic process

1	2	3	4	5	6	7
21	22	23	24	25	26	27

-- Select the section

to be diagnosed

Color description

Normal

Unselected

Faulty

Unavailable -- Diagnostic status

Diagnosing

Pending

color description

Heater current (A)

0.2 - 5.0

5.1 - 10.0

10.0 - 15.0

> 15.0

-- Heater current size

analysis





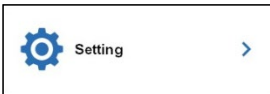
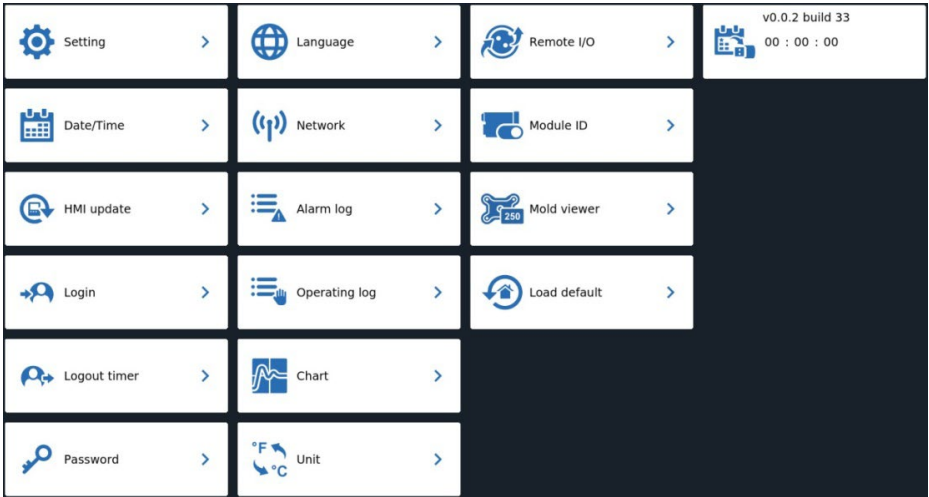
 Mold leakage detection  Last update 2024/09/25	Start leakage detection 1. First come  Mold leakage detection > Or refer to Section 6.2.1 Parameter Settings to set the material leakage judgment value of each section (recommended value is 10~30%) 2. start up If any section is not ready, the icon is  The remaining images are in light gray After all sections are ready, the icon will look like , When the switch is activated  The picture shows  Material leakage detection Last updated date -- each time the switch is turned on, the current readiness and leakage judgment setting values will be recorded. To use this function, it is recommended to use the same mold and controller for a long time to increase its judgment accuracy.
 Reset mold aging value  Last update 2024/09/25	 When resetting the mold aging value is turned on, the electric heater will start to output and record the aging value, so it is necessary to confirm that the wiring related to the electric heater is correct. The aging state can be determined by  Overview > interior  Aging (%) The larger the number, the worse the electric heating efficiency is. Last updated date -- each time the switch is turned on, the current aging judgment value

	will be recorded. To use this function, it is recommended to use the same mold and controller for a long time to increase the judgment accuracy.
 Mold recognition 	 When mold identification is turned on, the electric heater will start outputting to identify the same or similar mold data, so it is necessary to confirm that the wiring related to the electric heater is correct.

6.6



System



Brightness --Brightness adjustment

Touch sound -- Touch ound adjustment

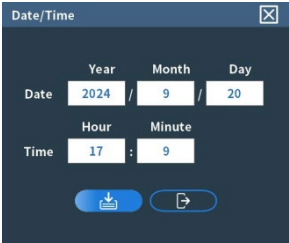
Number of broadcasts -- Number of special
broadcast commands

Command delay (10ms) -- Command delay

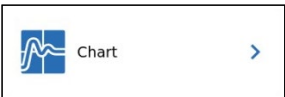
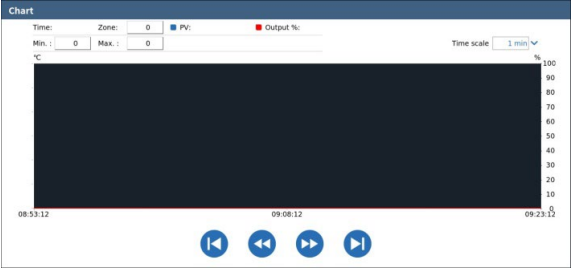
Communication format -- Communication format
(Cannot be set)

Baud rate (Read Only) -- Communication rate
(Cannot be set)

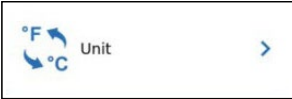
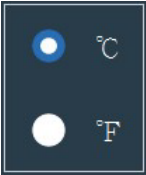
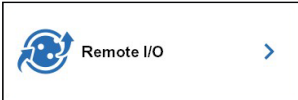
Bit config (Read Only) -- Communication bits
(Cannot be set)

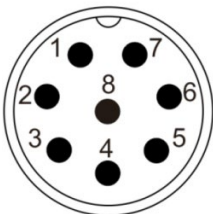
 Date/Time >	  -- Confirm  -- Quit
 HMI update >	Put the new version of the HMI program into a blank flash drive, insert it into the USB and click  Start updating, If you do not want to update, click  Wait until HMI is restarted Or put the new version of the HMI program into a blank flash drive, insert the USB and restart the computer
 Login >	Level 1 : End user Level 2 : Engineer Level 3 : Machinery Factory or mold factory For operation level description, please refer to Chapter 7 Password Level Description
 Logout timer >	Set the automatic logout password time when no operation is performed, set 0 to not log out
 Password >	Change passwords at each level

 Language	Select language -- English / Traditional Chinese / Spanish / German / Simplified Chinese
 Network	Network card setting ☐ -- Requires professional use Wi-Fi connection ☐ -- Requires professional use Port traversal ☐ -- Requires professional use VNC server ☐ --VNC Switch Wi-Fi IP: 192 168 0 70 --Wi-Fi IP eth0 IP: 0 0 0 0 --Ethernet IP
 Alarm log	Date -- Query alarm record date Start time-- Alert occurrence date and time End time-- Alert end date and time Message-- Alert message  -- Clear all alert messages  -- Quit
 Operating log	Date -- Query alarm record date Time-- Modify record date and time

	Message-- Record before modification Before-- Record after modification After-- Edit information  -- Edit information  -- Quit
	  Zone selection -- Setting record zone, 10 sections can be selected to record simultaneously Time: Zone: 0 -- Click location information, Time and zone ☒ PV: ☒ Output %: -- Record temperature and output percentage Min. : 0 Max. : 0 -- Set display temperature range



	Time scale 1 min ▾ -- Set display time interval Zone 1 Zone 2 Zone 3 --選 elect observation zone, Red background is selected								
	 -- Temperature unit switching  -- Confirm  -- Quit								
	Remote input function <table> <tr> <td>● Input 1</td> <td>None ▾</td> </tr> <tr> <td>● Input 2</td> <td>None ▾</td> </tr> </table> When receiving an external signal, set the action as follows until the signal ends None-- No action Standby-- Execute standby function Boost-- Execute boost function Heater off-- Turn off the electric heating output and do not resume heating when the signal ends. Remote output function <table> <tr> <td>● Output 1</td> <td>None ▾</td> </tr> <tr> <td>● Output 2</td> <td>None ▾</td> </tr> </table> Start the output when the related function is executed until the function ends None-- No action	● Input 1	None ▾	● Input 2	None ▾	● Output 1	None ▾	● Output 2	None ▾
● Input 1	None ▾								
● Input 2	None ▾								
● Output 1	None ▾								
● Output 2	None ▾								

	Standby-- Execute standby function Boost-- Execute boost function Heater off-- Turn off electric heat output Heater on-- Turn on electric heat output Alarm-- Alarm occurs  -- Quit  PIN 1---IN1+ (Red) PIN 2---IN2+ (Whitr) PIN 3---IN1- (Green) PIN 4---IN2- (Black) PIN 5---OUT1 (Yellow) PIN 6---OUT1 (Blue) -- contact PIN 7---OUT2 (Orange) PIN 8---OUT2 (Brown) Input signal-----DC24V Output signal-----Relay																		
 Module ID 	<table><tr><td>1 On</td><td>2 On</td><td>3 On</td><td>4 On</td><td>5 On</td><td>6 On</td></tr><tr><td>7 On</td><td>8 On</td><td>9 On</td><td>10 On</td><td>11 On</td><td>12 On</td></tr><tr><td>13 On</td><td>14 On</td><td>15 Off</td><td>16 Off</td><td>17 Off</td><td>18 Off</td></tr></table> -- ID OFF  -- Select on  -- Select off  -- Select all  -- Select none  -- Inverse selection After setting is complete, click  Click without modification 	1 On	2 On	3 On	4 On	5 On	6 On	7 On	8 On	9 On	10 On	11 On	12 On	13 On	14 On	15 Off	16 Off	17 Off	18 Off
1 On	2 On	3 On	4 On	5 On	6 On														
7 On	8 On	9 On	10 On	11 On	12 On														
13 On	14 On	15 Off	16 Off	17 Off	18 Off														
 Mold viewer 	File processing  -- Clear current image  -- Open file image  -- Save current image  -- Save the current image as a																		

new file

File management

-- Copy/delete files

Mount

-- Use current image Image

editing

Exit

-- Leave image editing

-

Zoom

+

-- Image zoom

Select image

-- Load new image

Add zone

-- Add new section

-

Transparency

+

-- Section basemap transparency

GP

-- Show the group you belong to

PV

-- Show temperature value

SV

-- Show set value

Output %

-- Show output ratio

Current

-- Show current



-- Show



-- Don't show

Block color

-- Block color

Text color

-- Text color

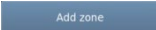
Alarm color

-- Alarm color

Setup steps

New image --

1.Click  Select new image file

2.Click  Set additional section

3. All sections need to be added

4. Set display information

GP/PV/SV/Output%/Current



-- Show



-- Don't show

5.Set

 /

 /



6.Drag section information to relative position

	7.Click  8.Click  Save edits completed The above modifications can also be made to a section that has been set. Click the section information to delete the section.
 Load default 	Restore module factory settings  -- Confirm  -- Quit
 v0.0.2 build 33 00 : 00 : 00	HMI Version & Running Time

Chapter VII Password level description

7.1 Level password description

1. Level user :

Level 1: End user

Level 2: Engineer

Level 3: Machinery Factory or mold factory

2. Default password :

Level 1 : 1111

Level 2 : 2222

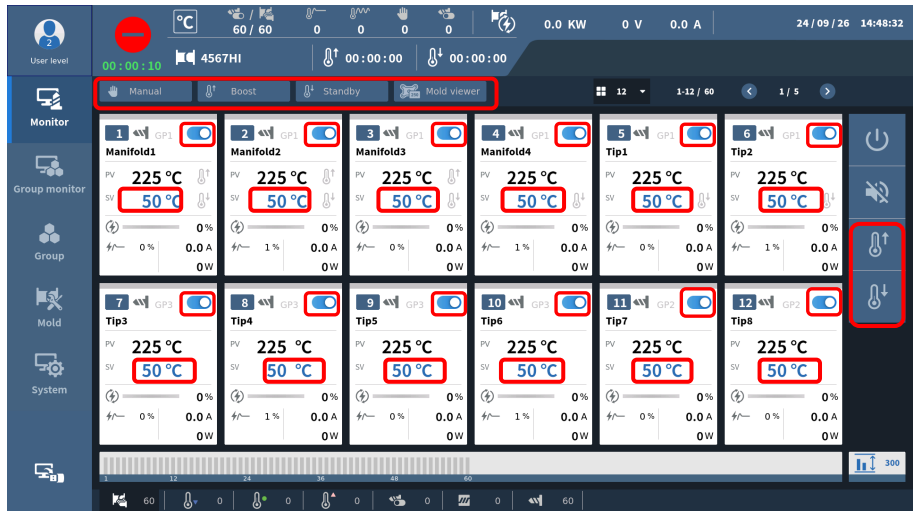
Level 3 : 3333

3. NOTES :

Set the level of management is in accordance with the user and job descriptions and develop particular portfolio, in order to avoid unfamiliar parameter settings.

Set and cause unnecessary trouble, if required level management, please change your password.

7.2 Monitoring



Red block : Password for Level 1 can be change

7.3 Zone Parameter

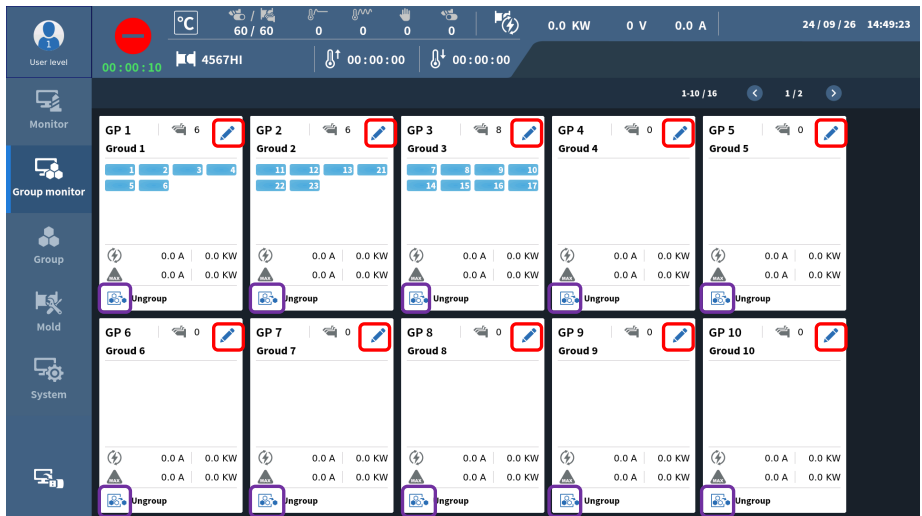
The screenshot displays the TC5600 Multi-Cavity Hot Runner Temperature Controller interface. The top status bar shows various system metrics including temperature (60/60 °C), power (0.0 KW), voltage (0 V), current (0.0 A), and time (24/09/26 14:48:37). The main area is divided into four columns: General, Control, PID, and Temperature alarm. Red and purple boxes highlight specific parameters that can be changed at Level 1 and Level 2 respectively.

Section	Parameter	Value	Change Level
General	Zone switch	On	Level 1
	SV	50	Level 1
	PV offset	0	Level 1
	Thermocouple type	J	Level 1
	Heater type	Tip	Level 1
	Soft start	Off	Level 1
	Soft start time (min)	3	Level 1
	Current detection	On	Level 1
	Leakage threshold + (%)	0	Level 1
	Control	Control mode	Auto
Manual output (%)		0	Level 1
Boost temperature		SV+ 20	Level 1
Standby temperature		SV- 20	Level 1
Temperature limit		400	Level 1
Output limit (%)		100	Level 1
Zone to follow		0	Level 1
TC open loop treatment		Stop	Level 1
Trigger mode		Zero cross	Level 1
PID		PID auto tuning	Off
	PID self tuning	No	Level 1
	P-Proportional band (%)	0	Level 2
	I-Integral time (min)	0	Level 2
Temperature alarm	Absolute	Off	Level 1
	Absolute range	PV± 250	Level 1
	High limit	Off	Level 1
	High limit standby	Off	Level 1
	High limit range	SV+ 20	Level 1
	Low limit	Off	Level 1

Red block : Password for Level 1 can be change

Purple block : Password for Level 2 can be change

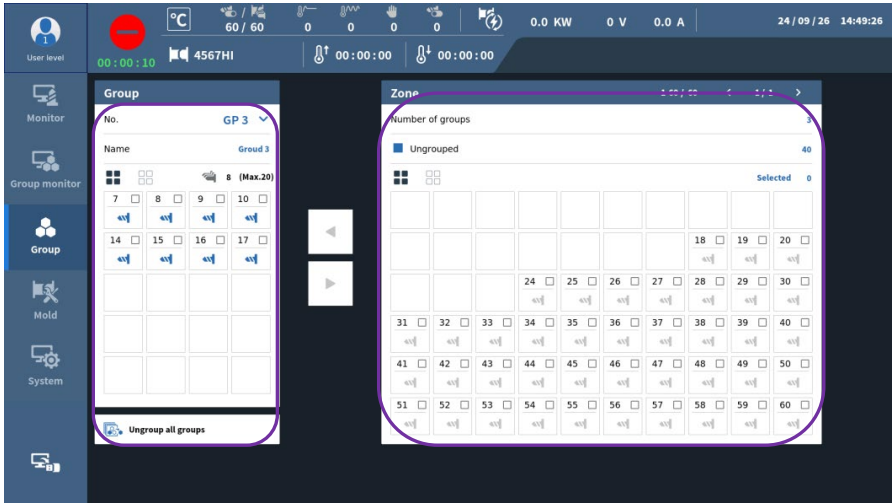
7.4 Group monitor



Red block : Password for Level 1 can be change

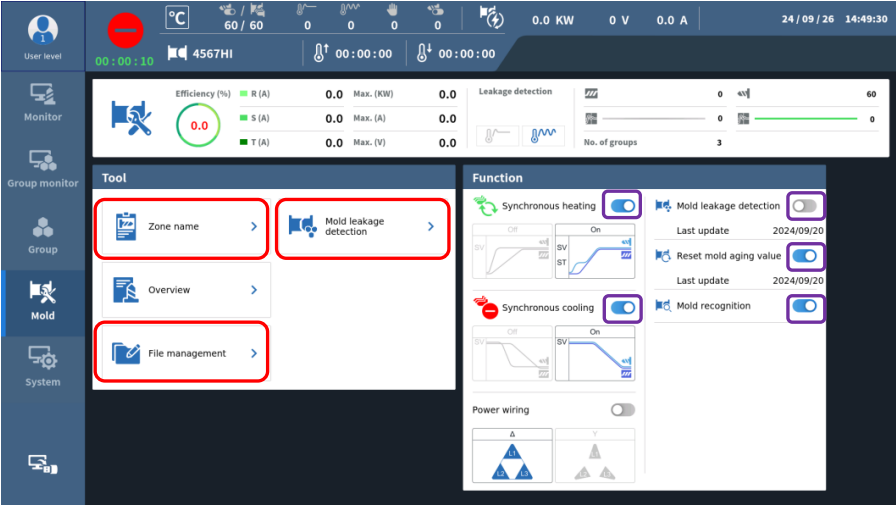
Purple block : Password for Level 2 can be change

7.5 Group



Purple block : Password for Level 2 can be change

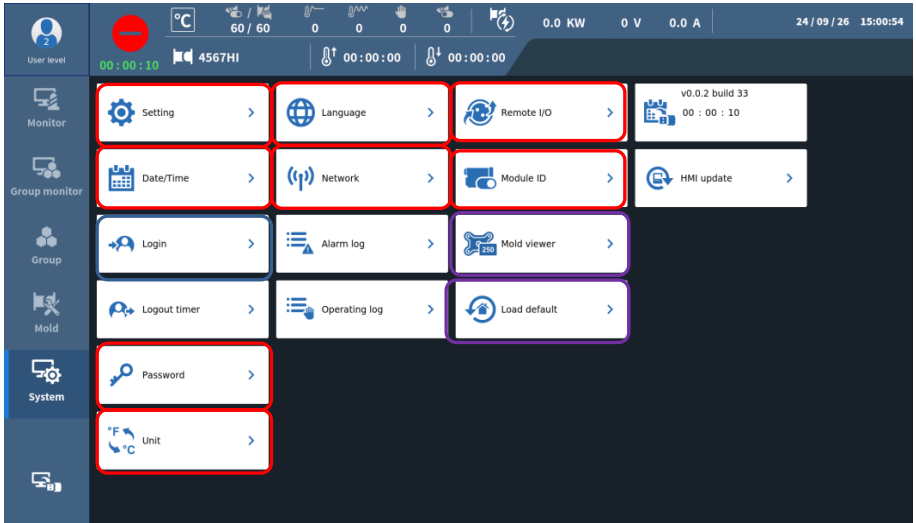
7.6 Mold



Red block : Password for Level 1 can be change

Purple block : Password for Level 2 can be change

7.7 System

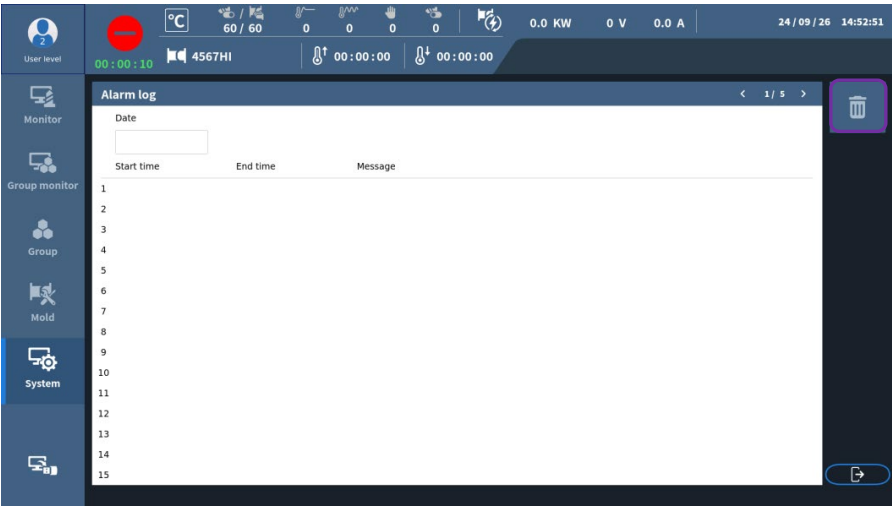


Red block : Password for Level 1 can be change

Purple block : Password for Level 2 can be change

Blue block : Password for Level 3 can be change

7.8 Alarm log



Purple block : Password for Level 2 can be change

7.9 Operating log

Operation log

Date	Time	Message	Before	After
	1 24/09/26 10:49:48	Load default	OK	OK
	2 24/09/26 10:30:17	HMI update	OK	OK
	3 24/09/25 17:21:38	Network card setting	OFF	ON
	4 24/09/25 17:21:33	VNC server	ON	OFF
	5 24/09/25 17:21:30	VNC server	OFF	ON
	6 24/09/25 17:20:52	Wi-Fi connection	OFF	ON
	7 24/09/25 17:20:08	Network card setting	OFF	ON
	8 24/09/25 17:15:34	HMI update	OK	OK
	9 24/09/25 17:15:30	HMI update	OK	OK
	10 24/09/25 17:15:25	HMI update	OK	OK
	11 24/09/23 13:23:12	Zone 1 5V	50	80
	12 24/09/23 10:53:41	Zone 4 heater type	Tip	Manifold
	13 24/09/23 10:53:37	Zone 3 heater type	Tip	Manifold
	14 24/09/23 10:53:33	Zone 2 heater type	Tip	Manifold
	15 24/09/23 10:53:25	Zone 1 heater type	Tip	Manifold

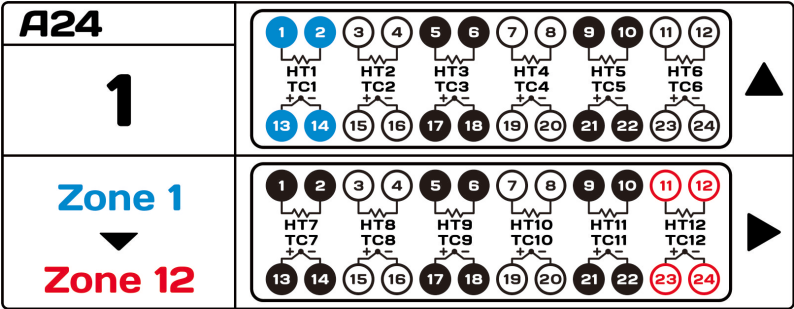
Purple block : Password for Level 2 can be change

Chapter VIII Troubleshooting

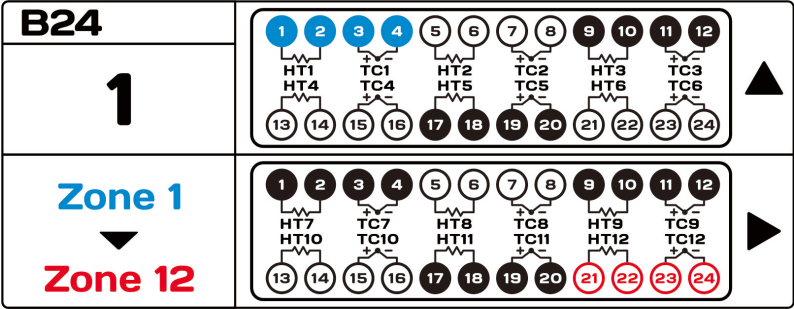
Problem	Check
Nothing happens after turning on power	● Is main power on? ● Check power cable (wiring) are connected properly
No communications	● Is control module loose? ● Is control module broken?
Unstable temperature control	● Refer to 6.2.1-PID P28, SET AT mode to "ON"
TC Break / Reversed Alarm	● Follow alarm inspection checklist
Thermocouple Short Alarm	● Are TC lines properly placed? ● Is there a short circuit in TC line?
Heater Alarm	● Follow alarm inspection checklist
Control Circuit Alarm	● Is heater line open? ● Is wiring loose? ● Is control module broken?
TRIAC Short Alarm	● Change control module
Abnormal Temperature Increase Alarm	● Are heaters properly placed? ● Are TC lines properly placed?
Circuit Breaker Alarm	● Change fuse for that zone

Chapter IX Connector Wiring

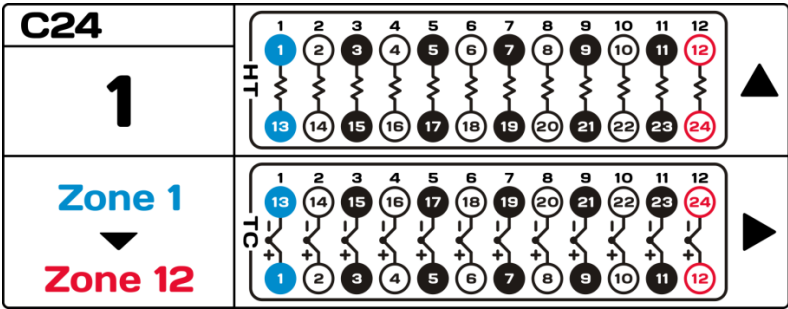
9.1 Type A



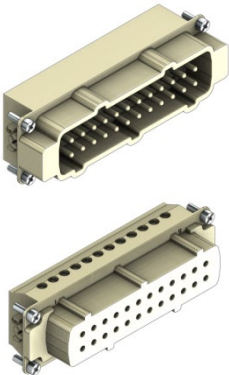
9.2 Type B



9.3 Type C



Chapter X Optional accessories

10.1 Extension cable A coiled black extension cable with two gold-plated connectors.	10.2 Blank faceplate A vertical blank faceplate with multiple mounting holes and a small connector at the bottom.
10.3 USB A USB drive with a silver and black design.	10.4 Multi-pole Connector Two multi-pole connectors, one gold-plated and one silver-plated.

Chapter XI Ordering Instructions

TC5600 - - - - -

a b c d e

(a) No. of Zones :

TC5600: 12~24 Zones

TC5600: 26~72 Zones

(b) Power supply type :

- H: 380Vac, 3Φ, 5-pin wiring
- L: 220Vac, 3Φ, 5-pin wiring

(c) Multi-pole Connector

- SHB: Single hook socket / Single clip cover
- SBH: Single clip socket / Single hook cover
- DHB: Dual hook socket / Dual clip cover
- DBH: Dual hook base / Dual hook cover

(d) Connection method

- A : Connection method A
- B : Connection method B
- C : Connection method C

(e) Power cable length :

- 03: Standard 3M
- XX : Specify according to request

Example: TC5600-60-H-SHB-C-10

(60 zones, 380Vac, single hook socket, single clip cover, connection method C, 10m power cable)



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