YUDO
Hot Runner System

HEAD OFFICE & FACTORY
169-4, Gujang-Ri, Paltan-Myun, Hwasung-City, Gyeonggi-Do, 445-911 Korea
TEL : + 82 31 350 2525 FAX : + 82 31 354 7446
e-mail : yudo@yudohot.com / export1@yudohot.com(Asia) / export2@yudohot.com(Europe & America)
Website : www.yudo.com

YUDO-STAR
Take-Out Robot
Factory Automation (Plastics)

HEAD OFFICE & FACTORY
78Blk, 5Lot, 648-4, Gojan-Dong, Namdong-Gu, Incheon, 405-817 Korea
TEL : + 82 32 450 4500 FAX : + 82 32 818 8111 / + 82 32 818 8222
e-mail : yudostar@yudostar.com Website : www.yudostar.com

YUDO-SUNS
Auxiliary System

HEAD OFFICE & FACTORY
78Blk, 5Lot, 648-4, Gojan-Dong, Namdong-Gu, Incheon, 405-817 Korea
TEL : + 82 32 450 7800 FAX : + 82 32 819 3200
e-mail : yudosuns@yudosuns.com Website : www.yudosuns.com

YUDO-ROBOTICS
Factory Automation
(Gantry, Bar Feeder, Etc.)

HEAD OFFICE & FACTORY
345-40, Gasan-Dong, Gumchon-Gu, Seoul, 153-802 Korea
TEL : + 82 2 818 8570 FAX : + 82 2 838 6767
e-mail : yudorobotics@yudorobotics.com Website : www.yudorobotics.com

Local Office

BUSAN OFFICE TEL : + 82 51 304 1711 FAX : + 82 51 304 1713
DAEGU OFFICE TEL : + 82 53 383 3734 FAX : + 82 53 383 3736
GWANGJU OFFICE TEL : + 82 62 953 4711 FAX : + 82 62 954 0846

Subsidiaries

JAPAN
YUDO JAPAN CO., LTD.
TEL : + 81 3 6400 4071 FAX : + 81 3 6400 4072
e-mail : yuja@yudojpn.co.jp
- Osaka Office
TEL : + 81 6 6338 9571 FAX : + 81 6 6338 9572

CHINA
YUDO (CHINA) CO., LTD. (柳道實業有限公司)
TEL : + 852 2344 5180 FAX : + 852 2344 5018
e-mail : info@yudohotrunner.com.hk

YUDO TRADING CO., LTD. (柳道貿易有限公司)
TEL : + 86 769 8539 4466 FAX : + 86 769 8539 4455
e-mail : yudo@changan.net

YUDO TRADE COMPANY LTD. TIANJIN
TEL / FAX : + 86 22 88298279
Mobile : + 86 22 60321560 e-mail : solong1118@yahoo.com.cn

YUDO-WANCO (SUZHOU) HOT RUNNER SYSTEMS CO., LTD.
TEL : + 86 512 6504 8882 FAX : + 86 512 6504 6886
e-mail : suzhou@yudowanco.com

YUDO SHANGHAI
TEL : + 86 21 5059 3818 FAX : + 86 21 6855 6363
e-mail : shanghai@yudowanco.com

TAIWAN
YUDO-WILSON CO., LTD.
TEL : + 886 3 409 1250 FAX : + 886 3 409 1280
e-mail : sales.t@yudotaiwan.com

INDIA
YUDO HOT RUNNER INDIA PVT. LTD.
TEL : + 91 250 245 1155~6 FAX : + 91 250 245 1158
e-mail : yudo@yudoindia.com

IRAN
YUDO IRAN
TEL : + 98 21 2367655 FAX : + 44 1989 566010 (U.K.)
Mobile : + 98 912 2776072 e-mail : amin@yudo.co.uk

U.S.A.
YUDO INC.
- HQ
TEL : + 1 614 873 1300 FAX : + 1 614 873 6873
e-mail : slee@yudousa.com / jaagaard@yudousa.com
- Central Division
TEL : + 1 630 529 7487 FAX : + 1 630 529 7469
Mobile : + 1 630 605 9119 e-mail : ksalemi@yudousa.com
- Mid-Western Division
Mobile : + 1 937 478 9039 e-mail : rkilburn@yudousa.com

CANADA
- Eastern & Canada Division
TEL : + 1 905 304 1680 FAX : + 1 905 304 9934
Mobile : + 1 905 512 6358 e-mail : gsands@yudousa.com

MEXICO
- Western & Mexico Division
TEL : + 1 805 480 4922 FAX : + 1 805 432 1680
Mobile : + 1 805 432 5319 e-mail : jcescalante@yudousa.com

BRASIL
PAULO ENG. LTD.
TEL : + 55 11 3392 5775
e-mail : leonardo@starseiki.com.br

U.K.
YUDO (U.K.) LTD.
TEL : + 44 1989 763423 FAX : + 44 1989 566010
e-mail : enquiries@yudo.co.uk

Subsidiaries

PORTUGAL
YUDO HOT RUNNER SYSTEMS LDA.
TEL : + 351 244 575810 FAX : + 351 244 575819
e-mail : absousa@yudoiberica.com

FRANCE
YUDO FRANCE
TEL : + 33 2 3277 4200 FAX : + 33 2 3253 4655
e-mail : f.louhichi@hvdi.com

SPAIN
YUDO IBERICA S. L.
TEL : + 34 93 715 81 22 FAX : + 34 93 715 81 25
e-mail : yudo@yudoiberica.es

ROMANIA
YUDO ROMANIA
TEL / FAX : + 40 213 272 115
e-mail : mould@rdsnet.ro

TURKEY
YUDO TURKEY
TEL : + 90 212 320 9563 FAX : + 90 212 320 9569
e-mail : murat@yudo.com.tr

ITALY
YUDO MR-TECH S.R.L.
TEL : + 39 02 995 51 78 FAX : + 39 02 995 85 74
e-mail : yudoit@yudoeu.com

GERMANY
YUDO GERMANY GMBH.
TEL : + 49 2359 50 92 04 FAX : + 49 2359 50 92 05
e-mail : info@yudo-germany.com

Agencies

SINGAPORE
WANCO INDUSTRIAL PTE. LTD.
TEL : + 65 6264 1166 FAX : + 65 6268 5645
e-mail : sales@wanco.com.sg

MALAYSIA
MAWANCO SDN BHD.
TEL : + 60 3 8945 2127 FAX : + 60 3 8945 2133
e-mail : sales@mawanco.com.my

THAILAND
WANCO INDUSTRIAL (THAILAND) CO., LTD.
TEL : + 66 2 757 4989 FAX : + 66 2 757 4988
e-mail : sales@thaiwanco.com

VIETNAM
WANCO INDUSTRIAL CO., LTD. (VIETNAM REP. OFFICE)
TEL : + 84 8 935 1207 FAX : + 84 8 843 9409
e-mail : wanco_vietnam@hcm.fgt.vn

AUSTRALIA & NEWZEALAND
STM AUSTRALIA PTY. LTD.
TEL : + 61 3 9885 9795 FAX : + 61 3 9885 2756
e-mail : sales@stm.net.au

ISRAEL
ASI-AFASPEM ISRAEL LTD.
TEL : + 972 4 680 2770 FAX : + 972 4 680 2770
Mobile : + 972 544 340360
e-mail : hrmolds@netvision.net.il

GERMANY
MKT MOLLENBERG GMBH.
TEL : + 49 6162 4077 FAX : + 49 6162 2482
e-mail : m-k-t@t-online.de

AUSTRIA
PROTEC
TEL : + 43 1 259 5917 FAX : + 43 1 259 5918

POLAND
EURO INTERNET HOLDINGS S.A.
TEL : + 48 22 843 0579 FAX : + 48 22 33 90 246
e-mail : jcsuk@euroitech.com

RUSSIA
CS PLASTECH
TEL : + 7 495 737 9575 FAX : + 7 495 236 3221
e-mail : info@csplastech.ru

SOUTH AFRICA
HESTICO PTY. LTD.
TEL : + 27 11 768 5228 FAX : + 27 11 885 1693
e-mail : hest.heiner@yudohot.com

▶We reserve the right to change specifications without notice.

Ver. 4.5 MN CGF560 English

YUDO®
ISO9001: 2000

TEMPERATURE CONTROLLER

MODEL : CGF560

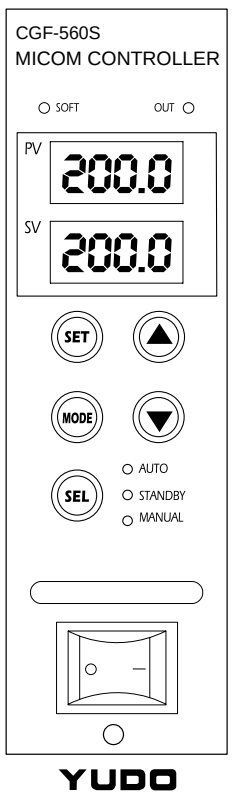
Instruction Manual

English

CGF 560 Series

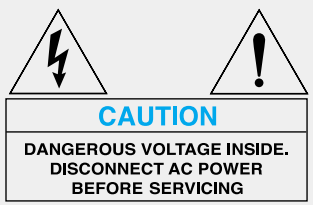
Thank you for using YUDO product.

Before using the product, please read this instruction manual carefully to avoid any damage due to improper usage.
If you have any questions, please do not hesitate to contact our Head Office or your nearst YUDO Office.



CONTENTS

1. Items to check before using the Controller &Operation Procedure

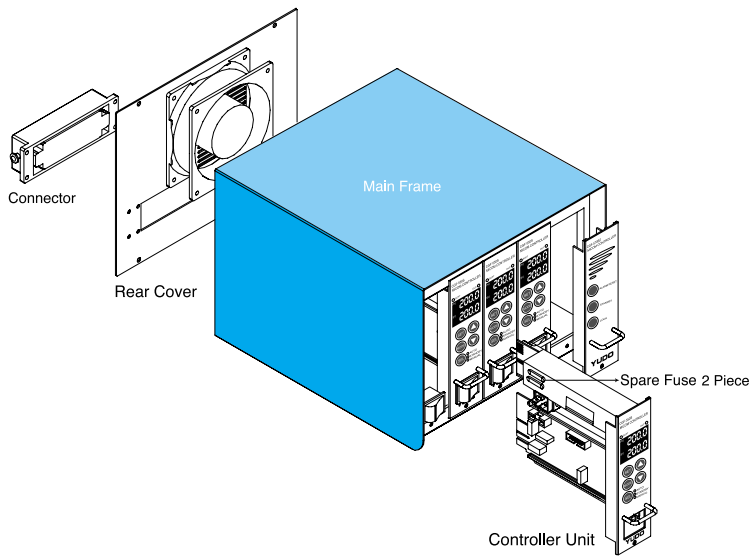


1) Check the wiring status of the connector attached to the mold and the type of T/C.
2) Check if the power lines are separated from the T/C lines, and they are arranged in order.
3) Check if the trunk specification fits to the Controller.
4) Check connection and wiring state of the trunk.
5) Check resistance and insulation state of the heater, then check if T/C wire is disconnected.
6) After the mold is fixed at the injection machine, connect the trunk.
7) Check if the Power Switches of the Main & Units are off.
8) If Input Voltage (240V/380V) fits to the controller voltage specification, connect Power Cable. (Input power voltage is noted on the label of the controller case. If the power input voltage does not fit to that written on the label, ask a territory office and correct the controller wiring. False wiring can cause malfunction of the controller and damage on the unit).
9) Make it sure to earth ground wire of the controller. (Neglect to earth the ground wire (green line) can cause damage to fuse and Triac due to noise voltage)
10) Turn on the Main Power Switch first.
11) Then, turn on the Unit Power switch.
12) Set to the appropriate temperature.
13) Check if the desired temperature is reached and stabilized.

CAUTION : To prevent possible malfunction of the temperature control modules, the cooling fan MUST OPERATE AT ALL TIMES.

2. Basic Structure of Controller

• Installation Condition : The bottom side is blocked for the safety.



3. Outline of Controller

The controller is a device that has a function to maintain the desired temperature consistently by sensing the state of Hot Runner System by use of high-intellectual computer system named MICOM and input proper power. It has several important functions for precise temperature control.

1) PID Control — is a method in order to maintain temperature at the set temperature accurately by controlling Output Power reflecting proportion, integration, and differentiation values.

2) Auto Tuning is a function to extract the governing factors through analyzing capacity of the heaters and heat constant of the mold (characteristics of latent heat and released heat). It helps precise control of temperature regardless of environmental change.

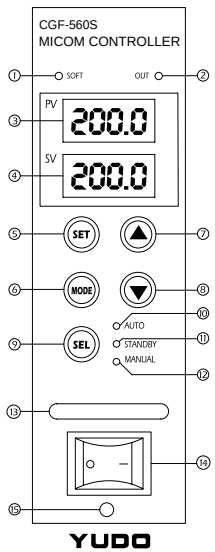
3) Output Method can be changed depending on environment.

- PWM mode : Precise temperature control can be achieved. But electric noise is bigger than that in SSR mode.
- SSR mode : Electric noise is small, but the specific temperature controlling ability is inferior to PWM mode

4. Controller Unit Specification

- Indoor use.
- Power Input Voltage : AC 85V-250V, 50/60Hz, 15A
- Load Capacity : 15A , 50W-1650W(110V), 100W-3300W(220V)
- Output Type : PWM(Pulse Width Modulation), SSR(Solid State Relay)
- Sensor Type : Thermocouple (J, or K)
- Temperature Setting Range : 100¡C ~ 400¡C, 212¡F ~ 752¡F
- Temperature Stability : –0.5% (Full Scale)
- Temperature Control Type : PID CONTROL
- Surrounding temperature : -10¡C~50¡C
- Altitude : up to 2000m
- Over Voltage Categories II
- Degree of Mobility : Plug-in module
- F1, F2 : 250V-15A (Special Fuse)
  F3 : 250V-1A

5.Name of Components



1. SOFT LED	Displays SOFT operation
2. OUT LED	Displays Power Output State
3. PV FND	Displays Measured Temperature (Red 4 DIGIT-Position Value)of Hot Runner System
4. SV FND	Displays the Set Temperature (Green 4 DIGIT-Set Value)of Hot Runner System
5. SET	Enter Key.
6. MODE	Mode Change Key.
7. UP	Value Increase Key.
8. DOWN	Value Decrease Key.
9. SEL	AUTO, STAND-BY MANUAL function conversion key.
10. AUTO LED	Displays Auto Mode is selected
11. STAND-BY LED	Displays Stand-by Mode is selected
12. MANUAL LED	Displays Manual Mode is selected
13. MODULE Handle	
14. MODULE Power Switch	
15. MODULE Lock Bolt	

6. Operation Modes

1) AUTO Mode Normal operation mode in which the temperature is controlled and maintained automatically in accordance with the Set Degree.

- Display conversion : When MODE key is pressed, the display on SV is converted as the following order;
  [Set Temperature]=>[Output %]=>[Ampere] =>[Set Temperature]

2) STAND-BY Mode Down the Output Power to the Given Rate for the given time, when it is needed to stop production for a while on the way or production.

- Holding SEL key for 1 second in AUTO mode will convert it into STAND-BY Mode
- Temperature setting value (SV) is changed into % rate on the basis of the Set Temperature during Stand-by mode is working.

■ Output power is reduced to maintain at the STAND-BY Temperature.
■ STAND-BY Mode will finish after the given time, and move into AUTO Mode

3) MANUAL Mode

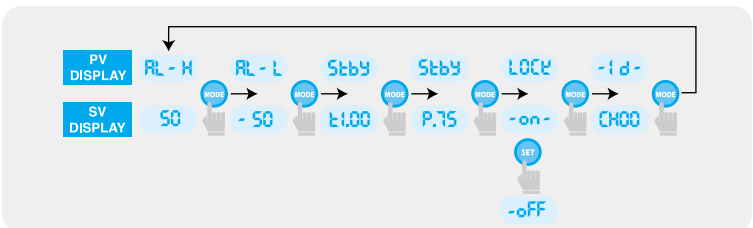
User's can adjust Power Output by using ▲ and ▼ key for Emergency Manual Operation at his will.

■ When SEL key is pressed twice, for 1 seconds each at the Auto Mode, it turns into Manual mode
■ If sensor detect any Disconnection of Thermocouple (tC.oP), or Thermocouple Short (tC.St), it is converted into Manual mode automatically for a emergency operation mode.
■ Setting Value(%) can be modified with ▲, ▼ keys.

7. Menu Setting

1) User's Setting Menu

User's setting menu diagram



■ Press MODE key for 3 seconds in order to start User's setting menu.
■ MODE key is used for selecting functions, SET key for ON/OFF, ▲ and ▼ keys for change parameter.
■ To save as Set Value, press MODE and SET keys together. But also Present Valve is replaced automatically as Set Value unless any key is pressed for 5 seconds.
■ Modifying Set Value must be done under LOCK OFF Mode.

1-1) AL-H (High Limit Alarm Function)

On the basis of the Set Temperature, when the temperature become higher than Setting Value, the AL-H function is operated.

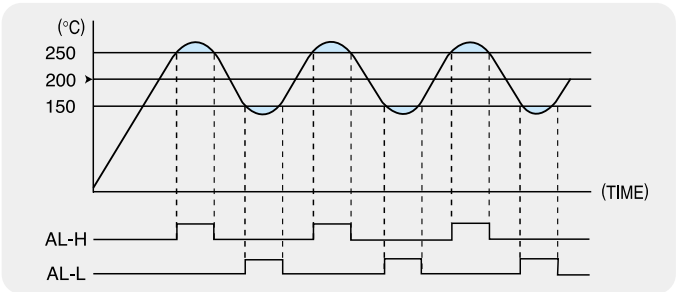
■ When MODE key is held for 3 seconds, AL-H is displayed on PV, and the High Limit Value for AL-H is displayed on SV.
■ The value can be set through 00~99 by using ▲, ▼ key, and the Initial Value is set as 50 at the factory.
■ To save as Set Value, press MODE and SET keys together.

1-2) AL-L (Low Limit Alarm Function)

On the basis of the set temperature, when the temperature is lower than the Low Limit Setting Value, the AL-L function is operated.

■ For the first push MODE key for 3seconds, then press the key once again.
■ AL-L will be displayed on PV, and the Setting Value for the AL-L will be displayed on SV.
■ The value can be set through -99~00, by using ▲, ▼ key, and the Initial Value is set as -50 at the factory.
■ To save as Set Value, press MODE and SET keys together.

Ex) In case SV(Temperature Setting) is set as 200¡C, AL-H(High Limit Alarm) as 50¡C, AL-L(Lowest Limit Alarm) as -50¡C :
=>AL-H start at 250¡C of measured temperature, AL-L at 150¡C



1-3) STBY (STAND-BY Setting)

(1)t(STAND-BY Time Setting)

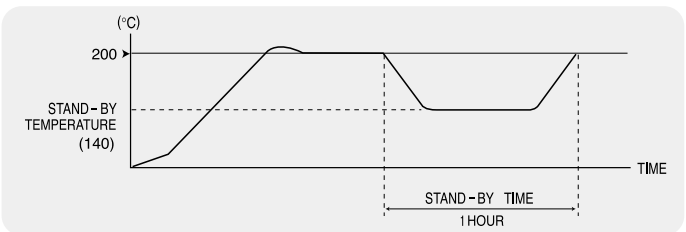
Hold MODE key for 1 seconds and find AL-H is displayed on PV.
Then press it twice more until Stby will be displayed on PV.

- For the conversion between Hour and Minute, press SET key.
- Stand-by Time can be adjusted from 0 (minutes) till 9 hours 59 minutes by use of ▲ , ▼ keys.

(2)P(STAND-BY Temperature Setting)

- At the state of Stand-by Time setting, Push SET key to convert into Stby Temperature Setting Mode.
- The % rate on the basis of Set Temperature is displayed on SV.
- The value can be set in the range of 00-99% with ▲ , ▼ keys.
- To save as Set Value, press MODE and SET keys together.

Ex) In case SV(Temperature Setting) is set as 200, t(Stand-by Time) as 1hour(1:00), P(Standby Temperature %) to P.75 :
=> Stand-by Mode is operated for 1 hour and the Temperature for Standby Mode is set as 140¡C(75% x 200¡C).



1-4) LOCK (Key S/W Locking device)

This is a function to prevent from the change of parameter by mistakes of user.

- Hold MODE key for 3 seconds, and find AL-H is displayed on PV.
- Press it 4 more times until LOCK is displayed on PV, then you can see the OFF on SV.

- Choose ON or OFF with SET key.
- To save, press MODE and SET keys together.

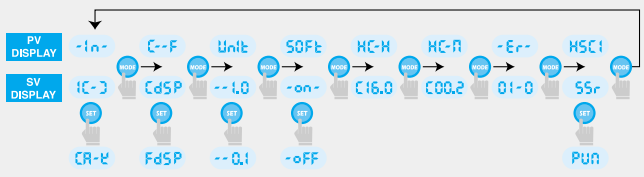
1-5) ID (Channel Setting-Option)

This is provided to help the Integrated Management for many Controller Units. The computer in Central Control Office could control each Unit according to it's own ID number.

- Integrated Management System must be installed additionally in order to use Integrated Management Function(Option for CGF-570 model).
- Hold MODE key for 3 seconds until AL-H is displayed on PV.
- Press it 5 times more, until -id- is displayed on PV, then the channel ID is displayed on SV
- The value can be set from 00 to 63 with ▲ , ▼ keys.
- To save, press MODE and SET keys together.

2) Supplier's Setting Menu

Supplier's setting menu diagram



- Press MODE and SET keys together, for 3 seconds.
- Press MODE for selecting functions, SET key for ON/OFF, ▲ and ▼ keys for setting parameters.
- Press MODE and SET keys together, to save the value. But also it will be saved automatically after 5 seconds, unless any other key is pressed afterwards.
- Setting must be done under LOCK OFF Mode

2-1) -IN- (Sensor selecting function)

Type of Thermocouple can be selected to measure the Heater Temperature.

- Hold MODE and SET keys for 3 seconds together. Then - IN - will be displayed on PV, and J or K (sensor type) will be displayed on SV (YUDO Standard Specification is mainly J for export, and K for domestic)
- Sensor Type can be selected with SET key.
- To save, press MODE and SET keys together.

2-2) C-F(Celsius and Fahrenheit degrees Selection)

Each Celsius or Fahrenheit degrees can be selected for temperature units.

- Hold MODE and SET keys for 3 seconds at the same time, then - IN - will be displayed on PV.
- Press MODE key again to display C-F on PV and CdSP/FdSP (selected temperature display type) on SV.
- Temperature unit can be selected by SET key.
- To save, press MODE and SET keys together.

2-3) UNIT(Temperature display Unit Settiing)

This is a function to select Temperature Units displayed. You can choose 1.0 or 0.1 for temperature units.

- Hold MODE and SET keys for 3 seconds together. Then - IN - will be displayed on PV.
- Press MODE key two times more to display the corresponding unit on PV, and 1.0 or 0.1(Temperature setting unit) will be displayed on SV.
- Temperature units can be selected with SET key.
- To save, press MODE and SET keys together.

2-4) SOFT (Soft START setting)

This helps to avoid humidity-caused damage in heater, by outputting 1~30% of Input Power for 1 minute at the beginning of Power Supply, in order to check connection state of a heater and sensors, and start smooth control action at low heat state.

- Hold MODE and SET keys for 3 seconds at the same time. Then - IN - will be displayed on PV.
- Press MODE key three more times to display SoFt on PV and on/oFF on SV.
- SOFT START (ON/OFF) can be selected with SET key.
- To save, press MODE and SET keys together.

2-5) HC-H (High Limit Current Setting)

This is provided to detect malfunction of the heater(disconnection).
It displays "HtSt" alarm sign, and stops output, when the current becomes bigger than the high limit .

- Hold MODE and SET keys for 3 seconds at the same time. Then - IN - will be displayed on PV.
- Press MODE key 4 times more to display HC-H on PV and the High Limit Current Value on SV.
- The value can be changed by use of ▲, ▼ key.
- To save as Set Value, press MODE and SET keys together.

2-6) HC-L (Low Limit Current Setting)

This is a function to detect malfunction of the heater (disconnection). It displays "Ht-oP" alarm sign, and stops output when the current is smaller than the Low Limit.

- Hold MODE and SET keys for 3 seconds at the same time, then -IN- will be displayed on PV.
- Press MODE key 5 times more to display HC-L on PV, and the lowest limit current value on SV.

■ The value can be changed by use of ▲ , ▼ key.
■ To save as Set Value, press MODE and SET keys together.

2-7) Error Code saving function

Error Codes are saved in memory in order of sequence.
■ Hold MODE and SET keys for 3 seconds at the same time.
Then - IN - will be displayed on PV.
■ Press MODE 6 times more to find - Er - on PV, and the stored Error Code on SV.
■ Error Code can be saved up to 20 cases.
■ The other content can be displayed in sequence, when pressing ▲ or ▼ key is repeated.

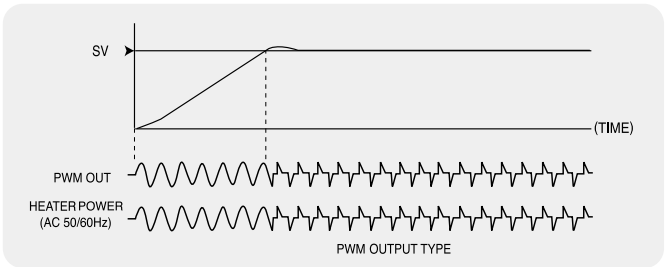
ERROR OCCURRENCE SIGN

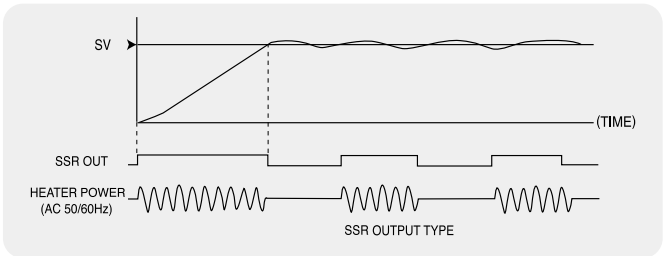
NO	ERROR SIGN	DESCRIPTION
1	tC.oP	Sensor Disconnection
2	tC.St	Sensor Short-Circuit
3	tC.rE	Sensor Polarity Reverse
4	AL-H	High Limit Alarm
5	AL-L	The Low Limit Alarm
6	Ht.oP	Heater Disconnection
7	Ht.St	Heater Short
8	tr.St	Triac Short
9	FU-1	Fuse 1 Disconnection
10	FU-2	Fuse 2 Disconnection

2-8) Selecting Output Method

PWM or SSR are available depending on the user's choice considering environment.
■ Hold MODE and SET keys for 3 seconds at the same time.
Then - IN - will be displayed on PV.

■ Press MODE key 7 times more to display HSCI on PV , and PWM/SSR(Output Method) on SV.
■ Output method can be selected by pressing SET key.
■ To save, press MODE and SET keys together.





8. Error Code Display Function

No	Error classification	Description
1	Malfunction on Temperature Sensor	- Disconnection, Short, or Reversed Polarity of Sensor can be checked. When Disconnection or Short is detected, it is converted into Manual Operation Mode automatically, and Power Output will be continued to maintain at the Set Temperature. This function helps to prevent interruption in production due to malfunction of a sensor, and Output Power can be adjusted manually at will. - On error occurance, Sensor Disconnection(tC.oP), Sensor Short(tC.St), and Sensor Reversed(tC.rE) could be displayed on PV. When the problem is solved, power must be put again to recover Normal Operation.

No	Error classification	Description
2	Malfunction on heater	- Disconnection, Short Circuit, and Over Current of heater can be detected. Short status of Output Device(SSR,TRIAC, RELAY) can be checked also. - On error occurrence, Heater Disconnection(Ht-oP), Heater Short(Ht-St), and TRIAC short(tr-St) could be displayed on SV. When the problem is solved, power must be put again to recover Normal Operation.
3	Fuse Disconnection	- In case the fuse blown out, related fuse number is displayed on SV. - When the problem is solved, power must be put again to recover Normal Operation.

9. Integrated Control Function (optional)

Central Control for every modules in the frame box can be executed effectively, with only one switch handling, i.e. STAND-BY or LOCK for every module could be controlled simultaneously.
This function is available for CGF570(optional) model only.

1) AL/RE (Alarm RESET Function)

When buzzer works with corresponding error codes in one or more modules . You can stop the sound of the buzzer with only one handling (Only alarm buzzer will stop. But it doesn't mean that the cause of the error is removed).

2) STBY (Integrated STANDBY function)

In order to stop the production for a while on the way of normal operation, you can select this function to reduce the Power Supply, with only one handling.

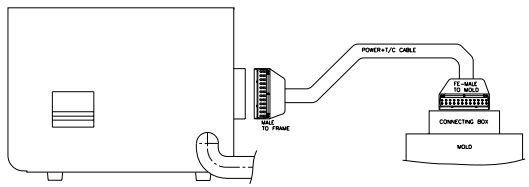
3) LOCK (LOCK ON function)

This is a security function to prevent from any modifications of setting. You can convert all modules into Lock ON/OFF Mode with only one handling.

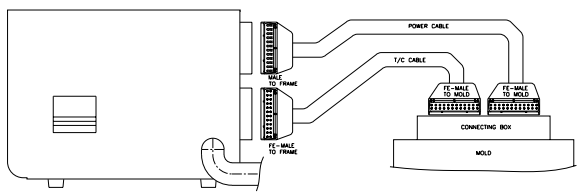
10. Connector and Cable

Connector means a component attached to the end part of cable in order to make it easy to connect / disconnect the wire to the mold / controller. Various kinds of connectors are used depending on load capacities.

• Standard Spec. : Integrated wire(Power+T/C)

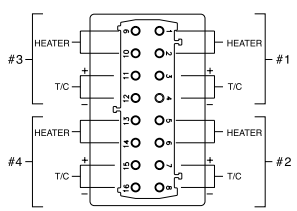


• Optional Spec. : Separated wire(Power, T/C)



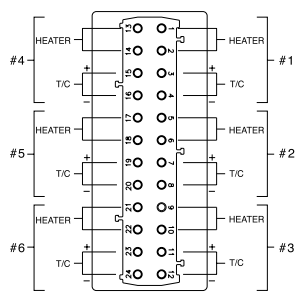
1) How to wire a heater and T/C in connectors

16P Male standard connector
(2 ZONE~4 ZONE)



NOTE:# NO:ZONE NUMBER

24P Male standard connector
(5 ZONE~24 ZONE)



2) Standard specification

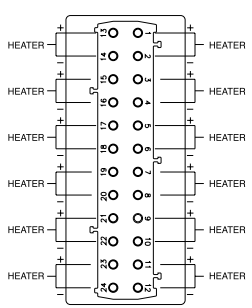
Female connector is attached to the mainframe, and YUDO supply it with 4 pin, 16 pin and 24 pin as same to the following standard.

NO	CONTROLLER	CONNECTOR	QUANTITY
1	1 ZONE	4P Round Jack	1 EA
2	2 ZONE	16 P	1 EA
3	3 ~ 4 ZONE	16 P	1 EA
4	5 ~ 6 ZONE	24 P	1 EA
5	7 ~ 8 ZONE	24 P	2 EA
6	9 ~ 12 ZONE	24 P	2 EA
7	13 ~ 16 ZONE	24 P	3 EA
8	17 ~ 20 ZONE	24 P	4 EA
9	21 ~ 24 ZONE	24 P	4 EA

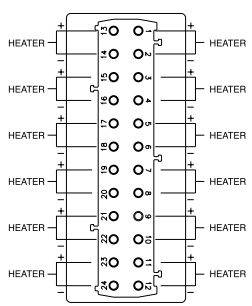
3) Options

As for option in wiring, Separated power lines from that of T/C can be selected depending on customer's preference. But also the other connector out of YUDO standard could be equipped when those are supplied from customer. In case that, a cable is fabricated according to special order, Controller Connector must be fabricated in accordance with the Cable Specification.

24P FeMale heater connector

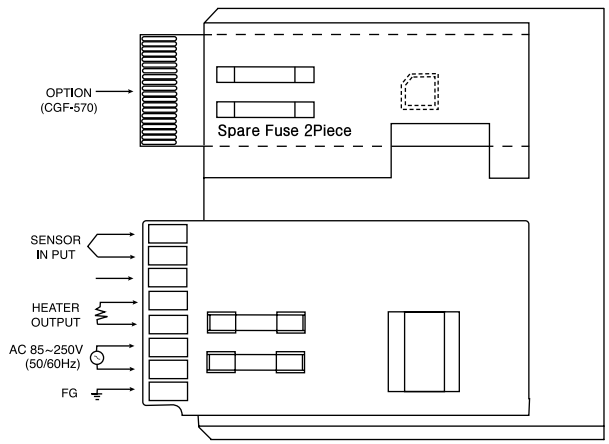


24P Male T/C connector



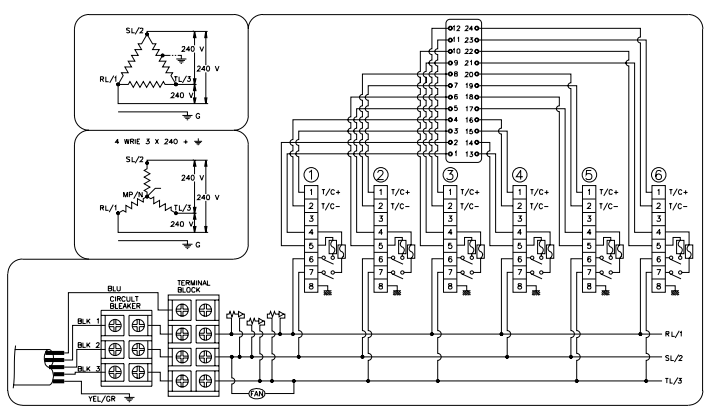
As for Zone No.:Please refer to the standard spec.

11. Diagram for Terminal Connection and Structure

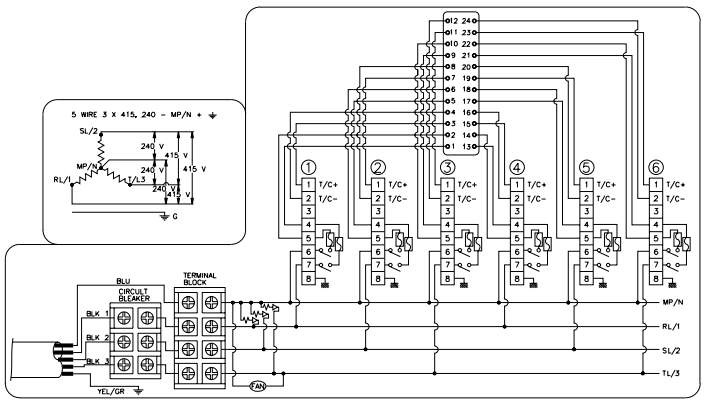


12. Electric Wiring Diagram

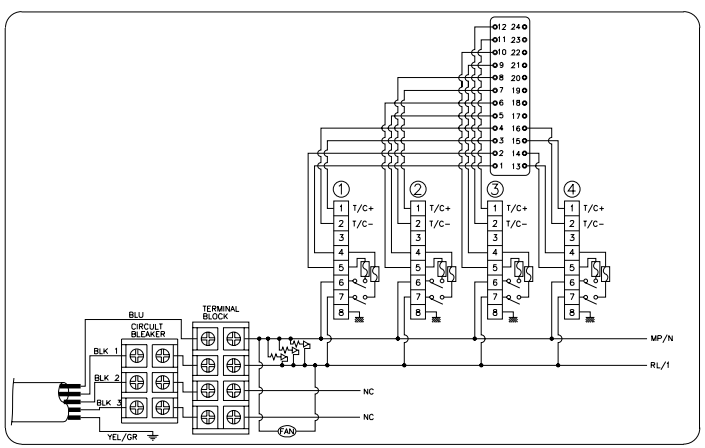
240V 3Phase 3 Line Type



380V/414V 3Phase 4 Line Type



240V 1 Phase 2 Line Type

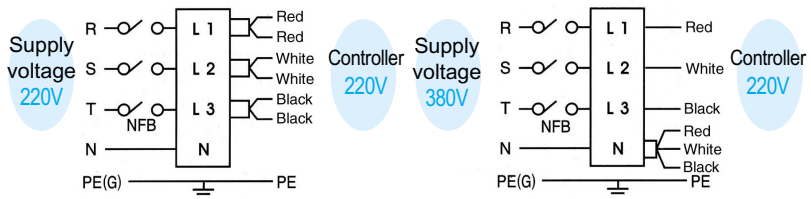


13.Wiring modification method

YUDO Temperature Controller operates with supply voltage 220~240V AC.
But even in case of supply voltage 380~415V AC 3phase 4 line, by re-wiring as shown below, 220~240V AC can be taken between one phase(R, S or T) and Neutral(N).
YUDO Temperature Controller be supplied with wiring for supply voltage 220~240V AC unless special instruction. Please check the current wiring.

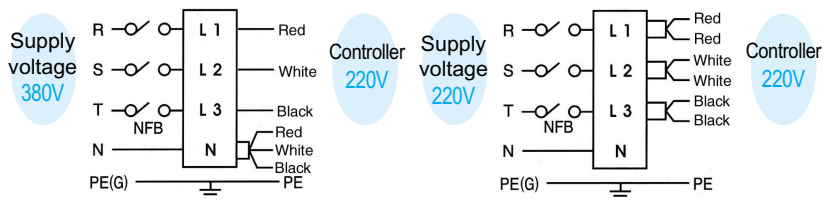
Caution) Before re-wiring, make sure AC main power OFF and Power Switch OFF on controller.

Re-wiring for supply voltage 380V AC from wiring for supply voltage 220V AC



1. Power off 2. Open the back cover of controller
3. Separate all 3 blue-sleeved wires from L1,L2 and L3
4. Plug all 3 blue-sleeved wires into N

Re-wiring for supply voltage 220V AC from wiring for supply voltage 380V AC



1. Power off
2. Open the back cover of controller
3. Separate all 3 blue-sleeved wires from N
4. Plug blue-sleeved RED wire into L1
5. Plug blue-sleeved WHITE wire into L2
6. Plug blue-sleeved BLACK wire into L3

Warning) Do NOT plug PE wire into N. Plugging PE wire into N may cause damage of controller, for which YUDO will not take responsibility.

14. Default Value

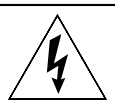
1) Default value of user's menu

NO	MENU	VALUE	
1	SV(Setting temperature)	200¡C	
2	AL-H(High Limit Alarm)	50¡C	
3	AL-L(Low Limit Alarm)	-50¡C	
4	STAND-BY	t(Stand-by time)	1.00(1hour)
		P(Stand-by temperature rate)	75%(150¡C)
5	Lock	OFF	
6	-Id-	CH00	

2) Default Value of Supplier Menu

NO	MENU	VALUE
1	-In-(Sensor Type)	J or K(optional)
2	C-F(Celsius/Fahrenheit)	Mainly CdSP(domestic)/FdSP(foreign)
3	Unit(Temperature Unit)	1.0
4	SoFt(Soft start Function)	On
5	HC-H(High Limit Current)	C16.0
6	HC-M(Minimum Current)	C00.2
7	-Er-(Error History)	0.1-0
8	HSCI(Output Method)	PWM

15. Security Marks

	DANGEROUS VOLTAGE INSIDE
	DISCONNECT AC POWER BEFORE SERVICING

16. Check Points for the Trouble Shooting

No	Phenomenon	Probable Cause	Check point
1	tC.oP on PV	- Sensor(T/C) was disconnected	- Check T/C wire with tester - When disconnected, replace it
2	tC.St on PV	- Sensor(T/C) wire is short on output side	- Check if T/C wire is mal-contacted at connector or pressed by mold
3	tC.rE on PV	- +/- polarity of sensor(T/C) is changed	- Check connection and change polarity of T/C at connector attached to mold
4	Ht.oP on SV	- Heater was disconnected	- Check resistance of heater with tester, if it is blown out replace heater
5	Ht.St on SV	- Short circuit in heater or short in heater wire - Capacity of heater is too high(15A or more)	- Check short circuit of heater or short in heater line with tester - Make wiring so that capacity of heater may lower then 15A.
6	tr.St on SV	- TRIAC attached to heat radiator board is damaged	- Check pin in TRIAC - 2 or 3 pins may be in short circuit
7	FU-1 on SV	- F-1 fuse is disconnected by momentary over-current	- Replace F-1 fuse.(250V 15A)
8	FU-2 on SV	- F-2 fuse is disconnected by momentary over-current	- Replace F-2 fuse.(250V 15A)
9	Temperature rises continuously	- TRIAC attached to heat radiation board of controller is damaged.	- Check pin in triac. - 2 or 3 Pins may be in short circuit
10	Temperature drops continuously	- FS1 or FS2 fuse blown out - Heater blown out - Heater wire disconnection - Sensor(T/C)disconnection	- Change fuse - Check resistance of heater with tester - Check connection of heater - Check sensor disconnection
11	Severe temperature (Deviation between set Temp. & Sensing Temp)	- sensor contact is unstable - sensor type is different each other	- Check contact state of sensor - Check sensor type
12	Controller temperature rises, but heater in actual mold is over heated	- T/C wire is pressed by mold or it s coat is peeled, so as to contact mold or line	- Check and replace T/C wire
13	Setting temperature of controller equals with present temperature, but the heater in actual mold is overheated or cold	- T/C (Sensor)type between mold and controller is different EX:CA(K)→IC(J), IC(J)→CA(K)	- Make T/C(sensor)type of mold equal with that of controller