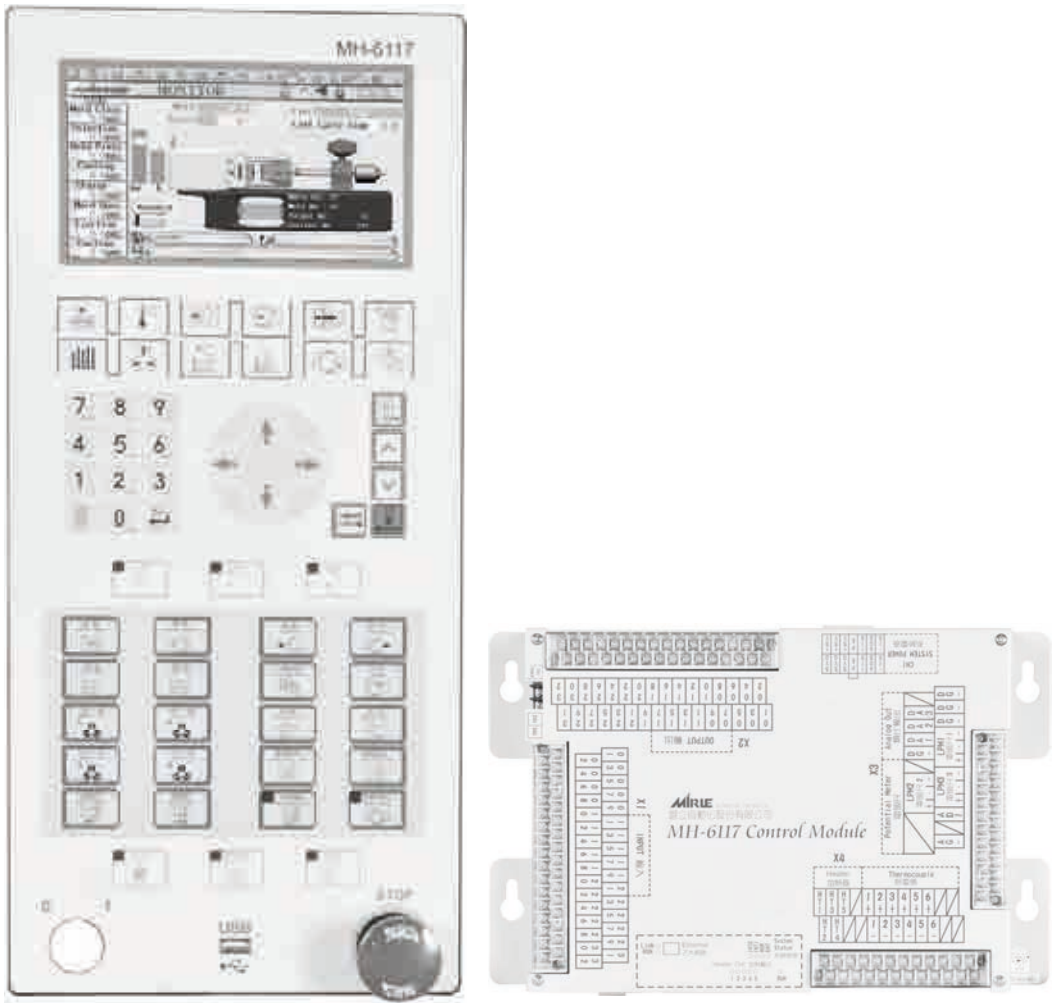
Lubi

MH-6117 Controller



MIRLE AUTOMATION CORPORATION

USER'S MANUAL

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System Specification

1.1 - Standard Configuration

1.2 - Hardware Configuration And Mounting Dimension

1.3 - Software Function

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- MH6117 Operating Controller (HMI Board)
- Proportional (PQ) Card
- Emergency Push Button
- Ethernet Cable (Communication Cable)
- Power Supply (Input 230Vac Output 5-15Vdc)
- Power Supply (Input 230Vac Output 24Vdc / 15Amp)

1.2 - HARDWARE CONFIGURATION

MH6117 Control Module (PLC)

- Display unit CPU : ARM9 266 Mhz 32 bits
- Control unit CPU : RISC 140 Mhz 32 bits
- 6 Zone PID Temperature Sensor input
- 5 Zone Heater Output (NPN)
- 3 Linear Potentiometer Input (16bit)
- 1 Analog Input (Pressure Transducer)
- 3 Digital to Analog Output (16bit)
- 32 Digital Input (NPN)
- 32 Digital Output (NPN)

MH6117 Operating Controller (HMI Board)

- Display unit CPU : ARM9 266 Mhz 32 bits
- 7.4" 800 X 400 TFT LCD Long Screen
- LED Backlight
- 1 USB Interface

1.3 - SOFTWARE FUNCTION

Temperature Page

- 5 Zone Barrel Temperature Set
- 1 Zone Oil Temperature Set
- 5 Zone Barrel Temperature High-Low Tolerance Set
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- Nozzle Duty Function

Mold Open Close Page

- 5 Stage Mold Close Parameter
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- Suckback Mode Selection
- Injection - Charge Protection Timer
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- 2 Stage Ejector Retract Parameter
- Ejector Mode Selection
- Ejector Number
- Air Ejector Parameter
- Auto Lubrication Parameter

Carriage - Auto Purge Page

- 2 Stage Carriage Advance Parameter
- 2 Stage Carriage Retract Parameter
- Carriage Retract Selection
- Carriage Retract Protection Time
- Carriage Load Function
- Auto Purge On/Off Selection
- Auto Purge Number
- Auto Purge Parameter

Core Page

- 2 Core Parameter
- Function + Timer Page Jump (Password Protect)

Special Features

- 3 Layer Password Protection
- 120 Mold File Memory
- Quality Record
- Alarm Message
- Modify Record
- Input - Output Status
- Production Record
- Real - Time Display
- Temperature Curve Graph

CHAPTER - 2
OPERATING PANEL DESCRIPTION

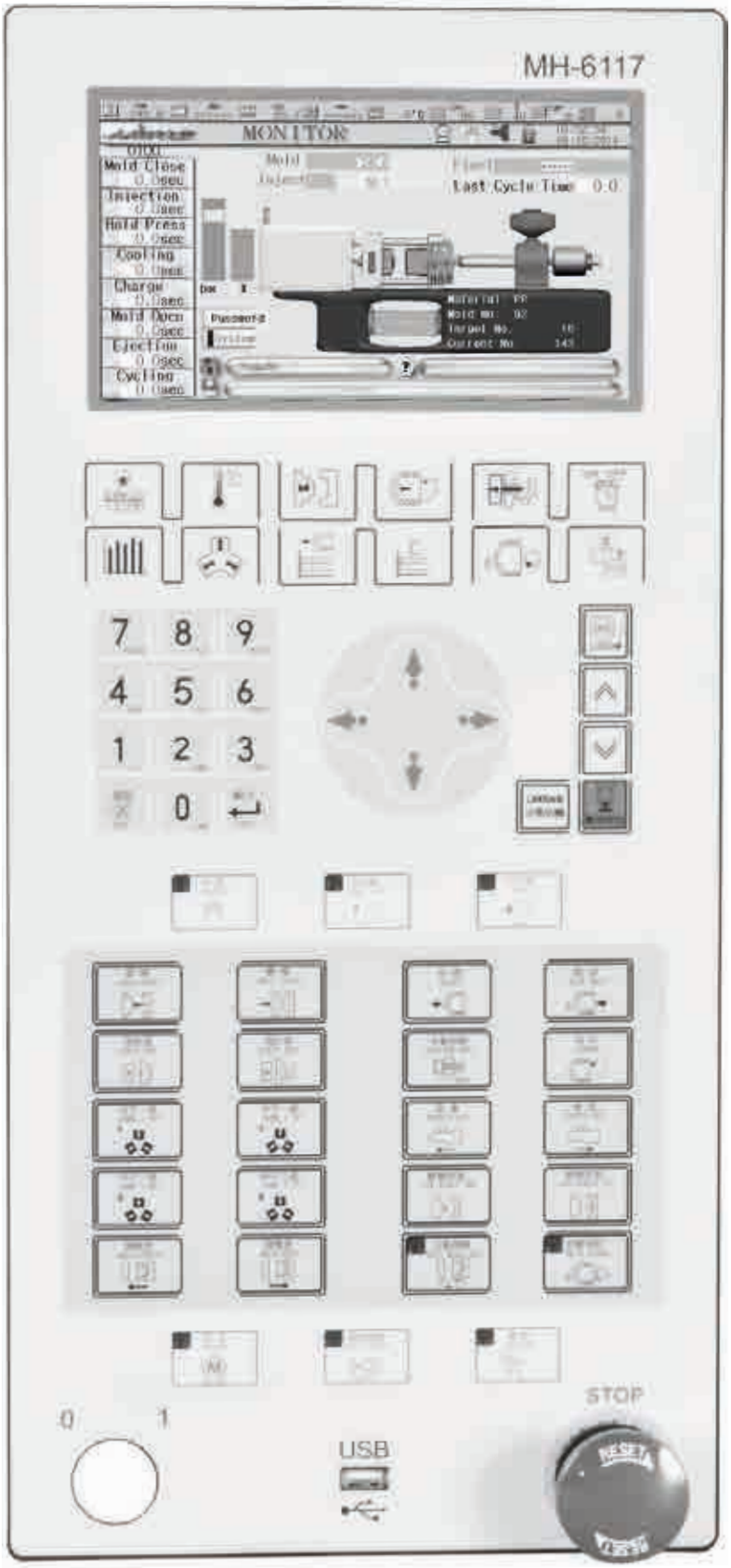
2.1 - Screen Selector

2.2 - Cursor And Numeric Key

2.3 - Operating Mode Selection

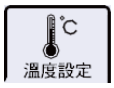
2.4 - Manual Operation Key

HMI OPERATING PANEL



2.1 - SCREEN SELECTOR

Monitor Key (Actual Temperature, Actual Cycle Time, Actual Pressure & Flow)



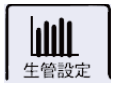
Temperature Key (Set Temperature Parameter)

Mold Key (Mold Open – Close And Mold Adjust Parameter)

Injection Key (Injection Charge Parameter, Intrusion Page Selection)

Ejector Key (Ejector, Air Ejector, Auto Lubrication Parameter)

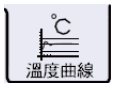
On-Off Key (Quality Record,Input – Output Status,Alarm Message,Modify Record)



Production Key (Production Record)

Core Key (Core Parameter, Fun + Timer Page Selection)

Inject Curve Key (Injection And Cusion Curve)



Temperature Curve Key (Temperature Curve)

Carriage Key (Carriage Parameter, Auto Purge Parameter)

Mold File Key (Mold File Save Parameter)

2.2 - CURSOR AND NUMERIC KEY

Cursor Key (To Move Cursor Up-Down And Left-Right)

Numeric Keys (To Enter Numeric Number And Alphabet)

Enter Key

Clear Key

Reset Key (To Reset Alarm)

Language Key (To Change Language)

USB Key (To Take Screen SnapShoot)

Cursor Moving upward

Cursor Moving downward

Cursor Moving leftward

Cursor Moving rightward

2.3 - OPERATING MODE SELECTOR

Manual Key (To Operate Machine In Manual Mode)

Semi Auto Key (To Operate Machine In Semi Auto Mode)

Auto Key (To Operate Machine In Auto Mode)

Motor Key (To Start and Stop Motor)

Mold Setup Key (To Adjust Die Height)

Heater Key (To Start and Stop Heater)

2.4 - MANUAL OPERATION KEY

Mold Close Key

Mold Open Key

Injection Key

Charge Key

Suckback Key

Eject Adv. Key

Eject Ret. Key

Carriage (Unit) Adv. Key

Carriage (Unit) Ret. Key

Core 1 In Key

Core 1 Out Key

Core 2 In Key

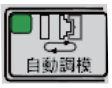
Core 2 Out Key

Air Eject Key From Mold Moving Side

Air Eject Key From Mold Fix Side

Mold Thin Key

Mold Thick Key

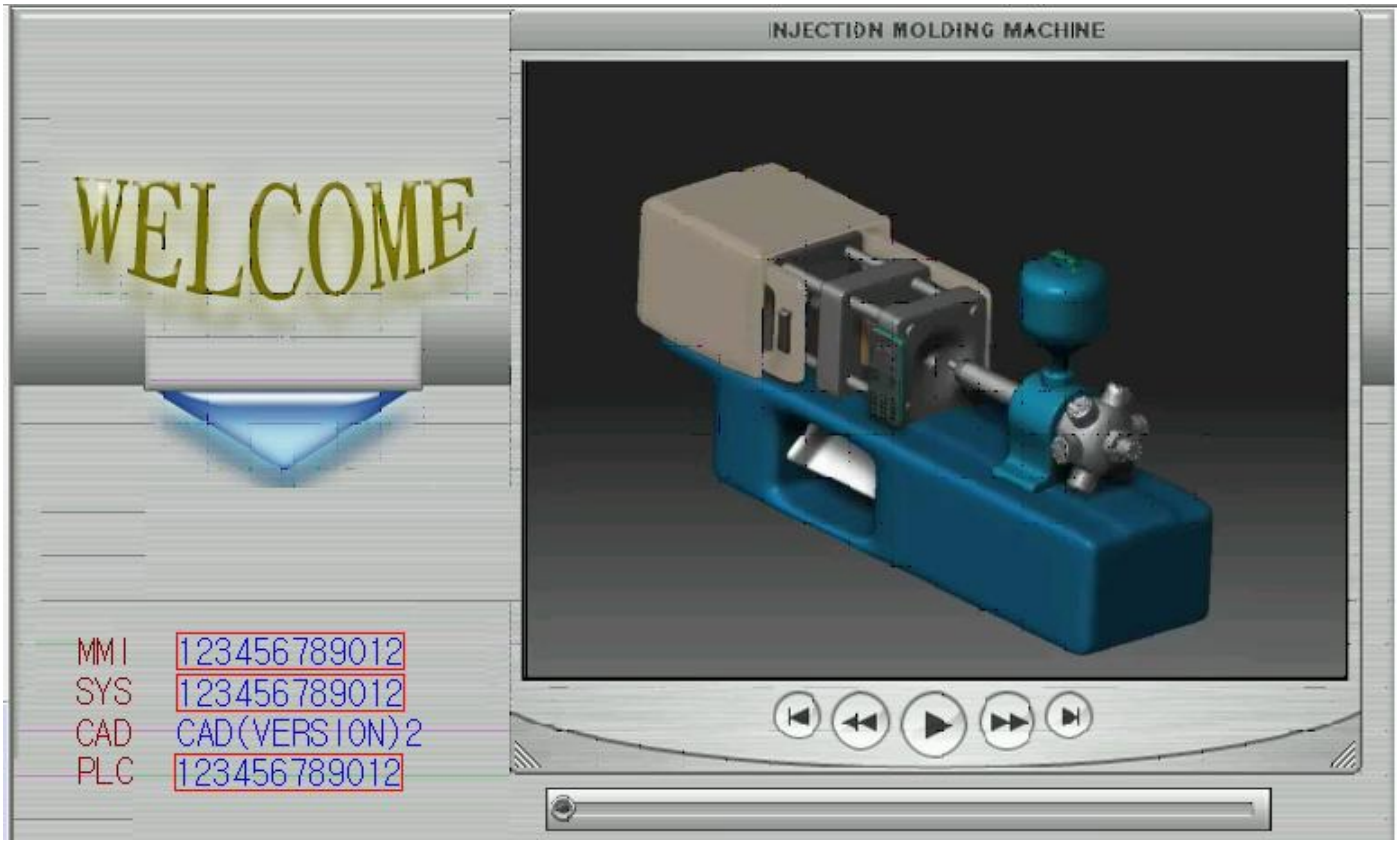


Auto Mold Setup Key

Auto Purge Key

CHAPTER - 3
SCREEN OPERATION DESCRIPTION

3.01 - WEL COME PAGE

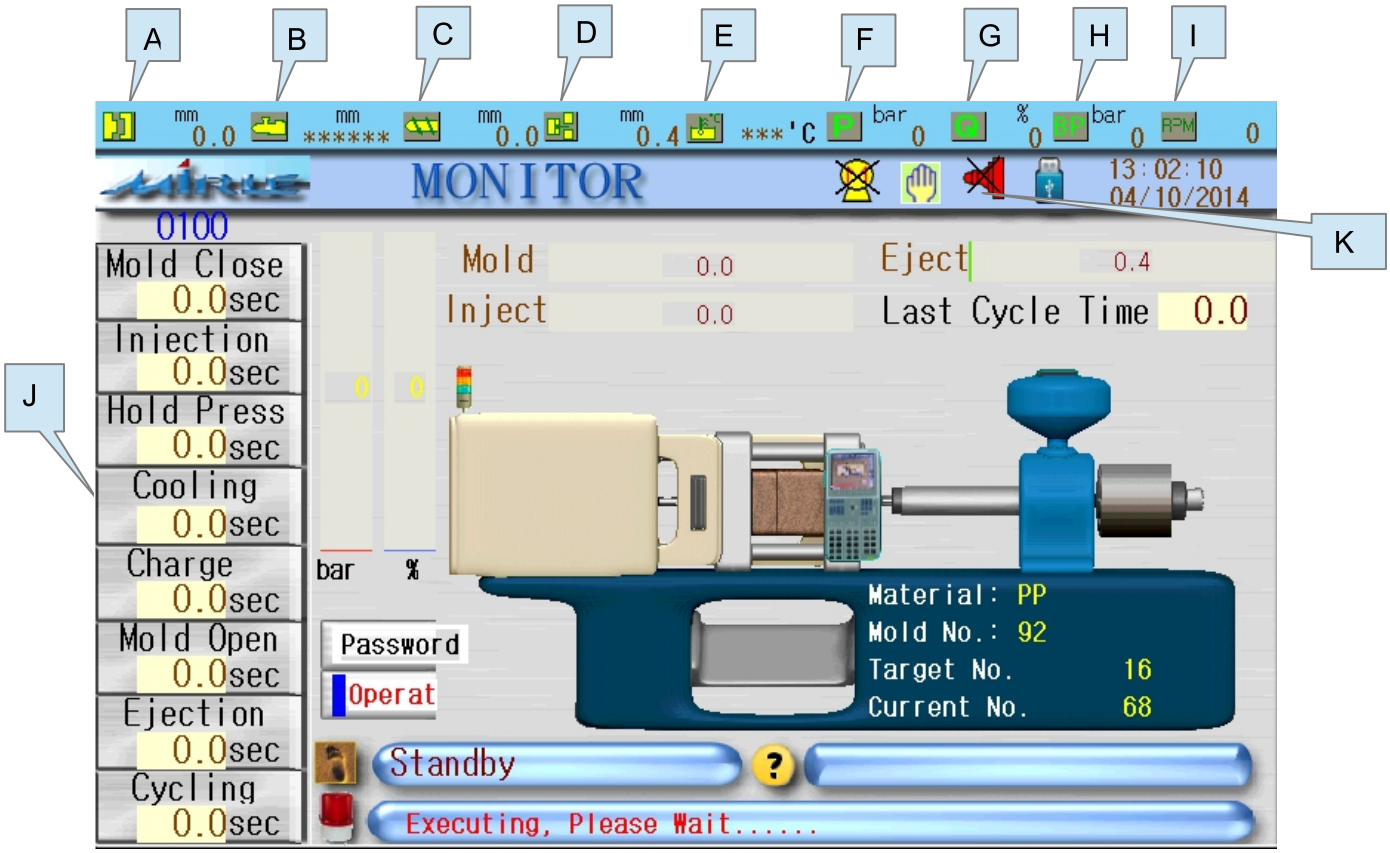


A) Left-down corner of initial page show the version of machine programs, Including MMI (Man Machine Interface program) • SYS(SYStem Program)• CAD(winCAD program) • PLC(PLC ladder program).

B) After completing the system testing, the lower part will display the results to see if the system testing was normal or unusual. Moving on to press [ENT]key to enter < Machine Monitoring > page.

Note : If system testing not complete than check communication cable or system power supply

3.02 - MONITOR PAGE - 0100



A) Mold Position In mm.

B) Carriage Position In mm.

C) Injection Position In mm.

D) Ejector Position In mm.

E) Oil Temperature.

F) Pressure Command.

G) Flow Command.

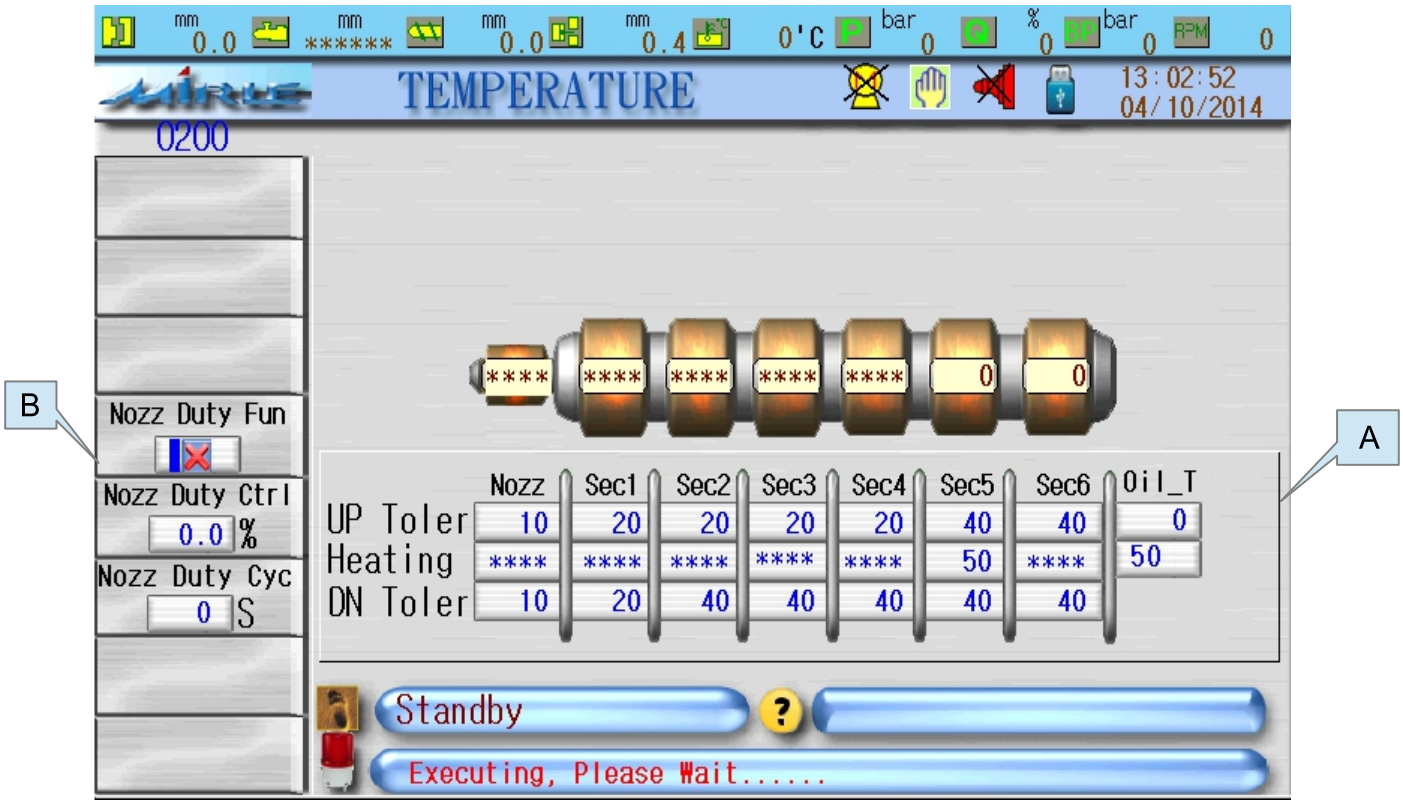
H) Back Pressure Command.

I) Screw RPM.

J) Actual Time.(Mold Close, Injection, Hold, Cooling, Charge, Mold Open, Ejector, Total Cycle).

K) Status Of Motor On/Off, Manual Semi-Auto Auto Cycle, Heater On/Off, USB Detect.

3.03 - TEMPERATURE PAGE - 0200



This page introduce the setting of temperature, details as following :

A) TEMPERATURE SETTING SCREEN :

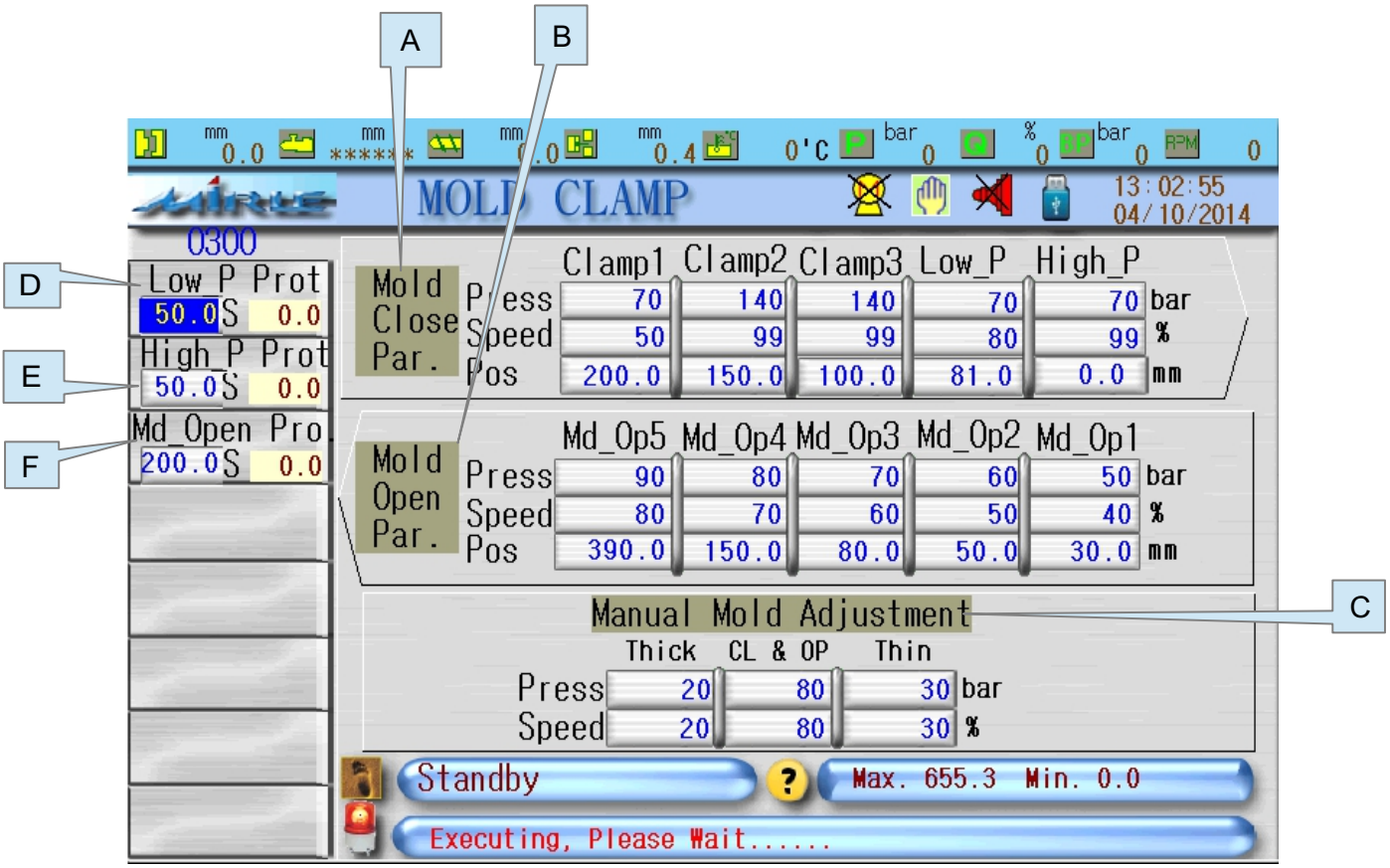
This screen was designed to set those values related to each section of the barrel, which including: heating values upper-deviation lower-deviation . . . etc. If to press (CLR) button any section in **"Heating Values"** The setting value will display as ****, Which means this section only display the temperature which has been measured, not to be controlled. **"UP-tol."** When the temperature of any section of the tube is higher than (setting value + UP-tolerance) high temperature deviation alarm will occur. **"DN-tol."** : When the temperature of any section of the tube is lower than (setting value - DN-tolerance) Low temperature deviation alarm will occur.

Note : When heating system switch on and the temperature of every section of the barrel higher/lower than (setting value - DN-tolerance + Up-tolerance) both high / low temperature deviation alarm will start to detect.

B) NOZZLE DUTY FUNCTION :

This is to set up the cycle time and duty percentage which nozzle is controlled under the same temperature status.

3.04 - MOLD OPEN CLOSE PAGE - 0300



This page introduce the setting of mold clamp, details as following :

A) MOLD CLOSE PARAMETER :

It provides data entry of pressure, speed and position, five sections in total including : [Clamp 1] • [Clamp 2] • [Clamp 3] • [Low_P] • [High_P]. When the final position of mold clamping setting during mold moving process to be 200.0 • 150.0 • 60.0 • 30.0 • 0.0 [Clamp 1] • [Clamp 2] • [Clamp 3] • [Low_P] • [High_P]. In other words, these values are set to be each section's targeting position, above screen showed the map of related position in order: [Clamp 1 ≧ [Clamp 2] ≧ [Clamp 3] ≧ [Low_P] ≧ [High_P]

B) MOLD OPEN PARAMETER :

Mold Open also provides data key in columns which divided into five sections from [Md_Op1] • [Md_Op2] • [Md_Op3] • [Md_Op4] • [Md_Op5], it also provides the corresponding pressure, speed, position setting to each section which is the same designed as Mold Clamp. In order to protect the mold and to increase the final positioning accuracy of the mold opening, the end section of mold opening has a function which to force reducing the speed. Related position in order: [Md_Op1] ≦ [Md_Op2] ≦ [Md_Op3] ≦ [Md_Op4] ≦ [Md_Op5].

C) MANUAL MOLD ADJUSTMENT :

To adjust pressure and flow of moving platen and die height platen in manual mode.

D) LOW P_ PROT :

Low pressure protect time work between clamp 3 to low_p position . If low pressure position not achieve in set time than error comes and mold open automatic.

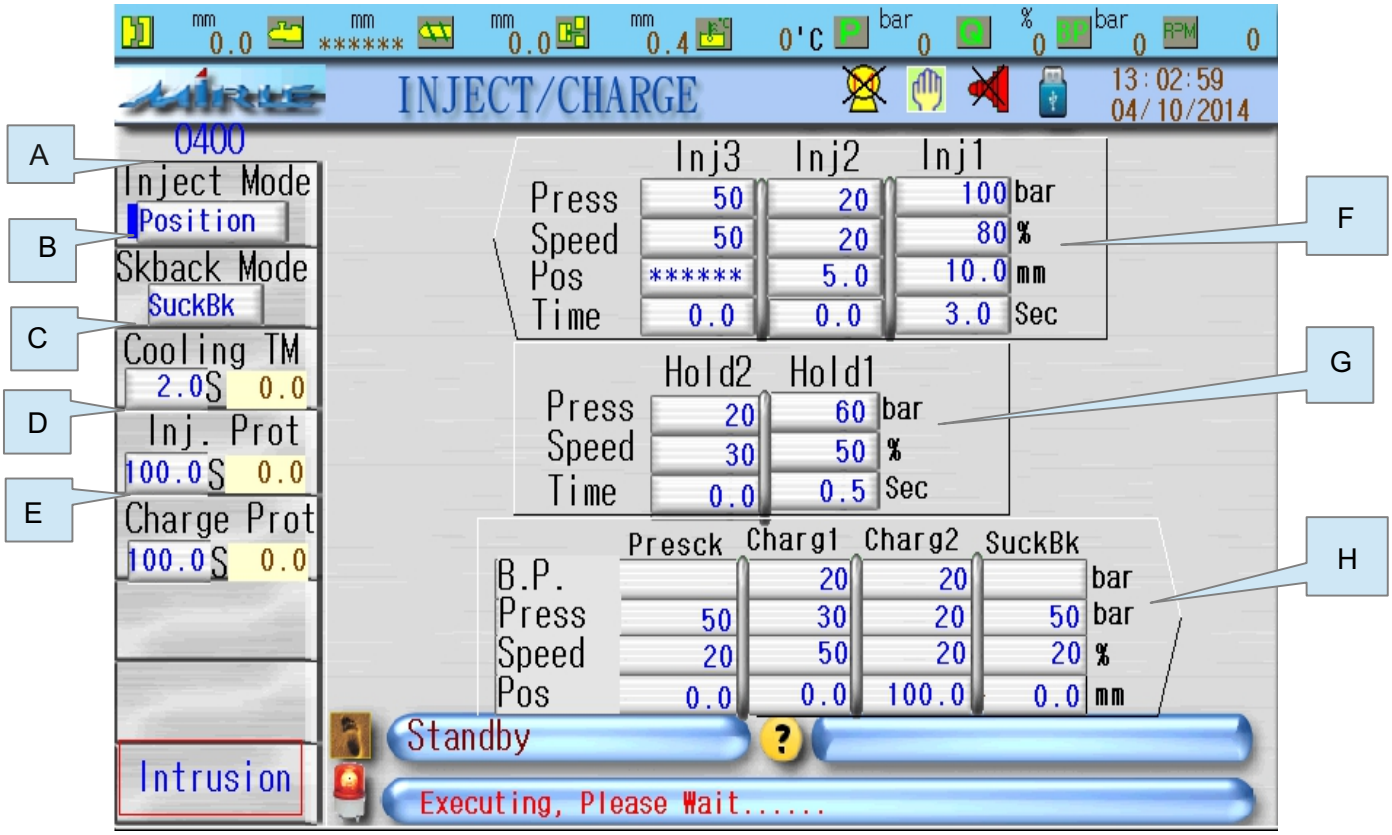
E) HIGH P_ PROT :

High pressure protect time work between low_p to high_p position . If high pressure position not achieve in set time than error comes and mold open automatic.

F) MD_OPEN PROT :

Mold pressure protect time work between Md op1 to Md op5 . If mold open-5 position not achieve in set time than error comes.

3.05 - INJECTION CHARGE PAGE - 0400



This page introduce the setting of Inject/Charge, details as following :

A) INJECT MODE :

Three ways including ” Pos (Position) ” Time and ” Pos+Time press (ENT) or ( ) Button to choose the transfer mode from injection to holding pressure process.

B) SKBACK MODE :

Press (ENT) or ( ) button to choose the suck back mode under bellowing 4 types : Standby • Presuck • Suckback and all . The screw would not suck back until it finishes the process of charge or cooling.

C) COOLING TIME :

Counting for cooling time products in molds need, stated after pressure maintenance. Above display column showed cooling time.

D) INJ PROT :

Injection protect time work in Injection position mode. If position not achieve in injection protect time error comes and machine go in manual mode.

E) CHARGE PROT :

Charge protect time work in position mode. If position not achieve in charge protect time error comes and machine go in manual mode.

F) INJECTION PARAMETER :

Set up pressure, flow and position which shared with another timer. When controlled with position", move cursor to unwanted injection section's corresponding position" field then press (CLR) button when " * * * "is displayed, procure has been completed.

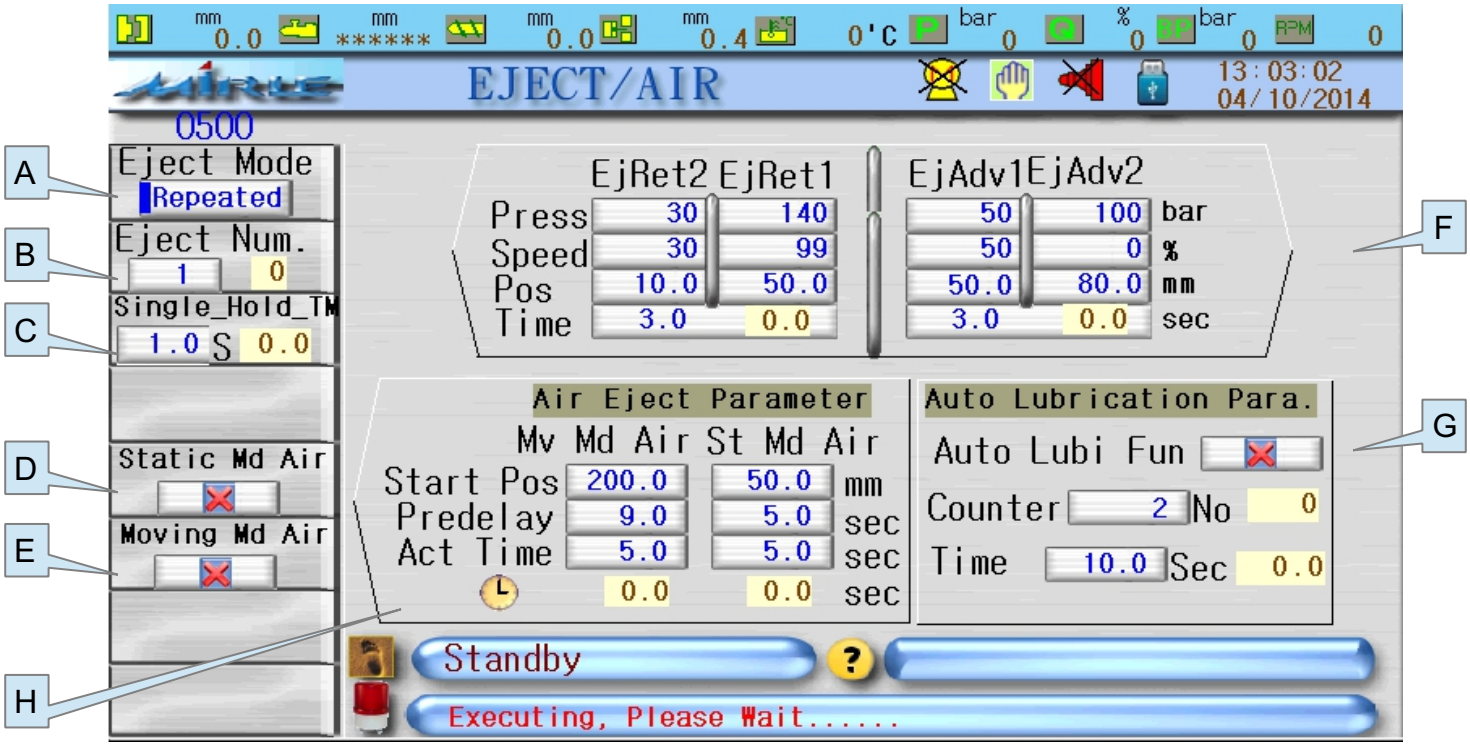
G) INJECTION HOLD :

Pressure maintenance which can set up pressure/speed and time. Pressure maintenance time is 0.1 sec.

H) CHARGE / SUCK BACK :

There are four columns : [Pre Suck back] [Charge 1] [Charge 2] [Suck back] in adding each of them could set up pressure, speed and position. There are two stages in adding materials majorly designed to change the speed of each section and to control the back pressure of adding actions to achieve high density of material and accurate position. Pre Suck back could be set to be 0 if not in use, the restrictions of position setting is as following : [Pre Suck back] ≦ [Charge 1] ≦ [Charge 2] ≦ [Suck Back]

3.06 - EJECTOR AND AUTO PURGE PAGE - 0500



This page introduce the setting of Eject/Air, details as following :

A) EJECTOR MODE :

Move the cursor to the column then press (ENT) or (⩓) button to switch to “Standby” “Repeated” Oscillate” and “Holding”

B) EJECT NUMBER :

Setting the ejecting numbers of Repeated Mode

C) SINGLE HOLD TIME :

Setting the ejector waiting time for the action of robotic arm after ejection if choose the Holding ejecting mode.

D) STATIC MOLD AIR :

Enable the function of static mold blowing.

E) MOVING MOLD AIR :

Enable the function of moving mold blowing.

F) EJECTOR PARAMETER :

Pressure, flow and position of [EjAdv1] [EjAdv2] [EjRet1] [EjRet2]. The restrictions of position setting is [EjAdv1] ≦ [EjAdv2] [EjRet1] ≧ [EjRet2].

G) AUTO LUBRICATION PARAMETER :

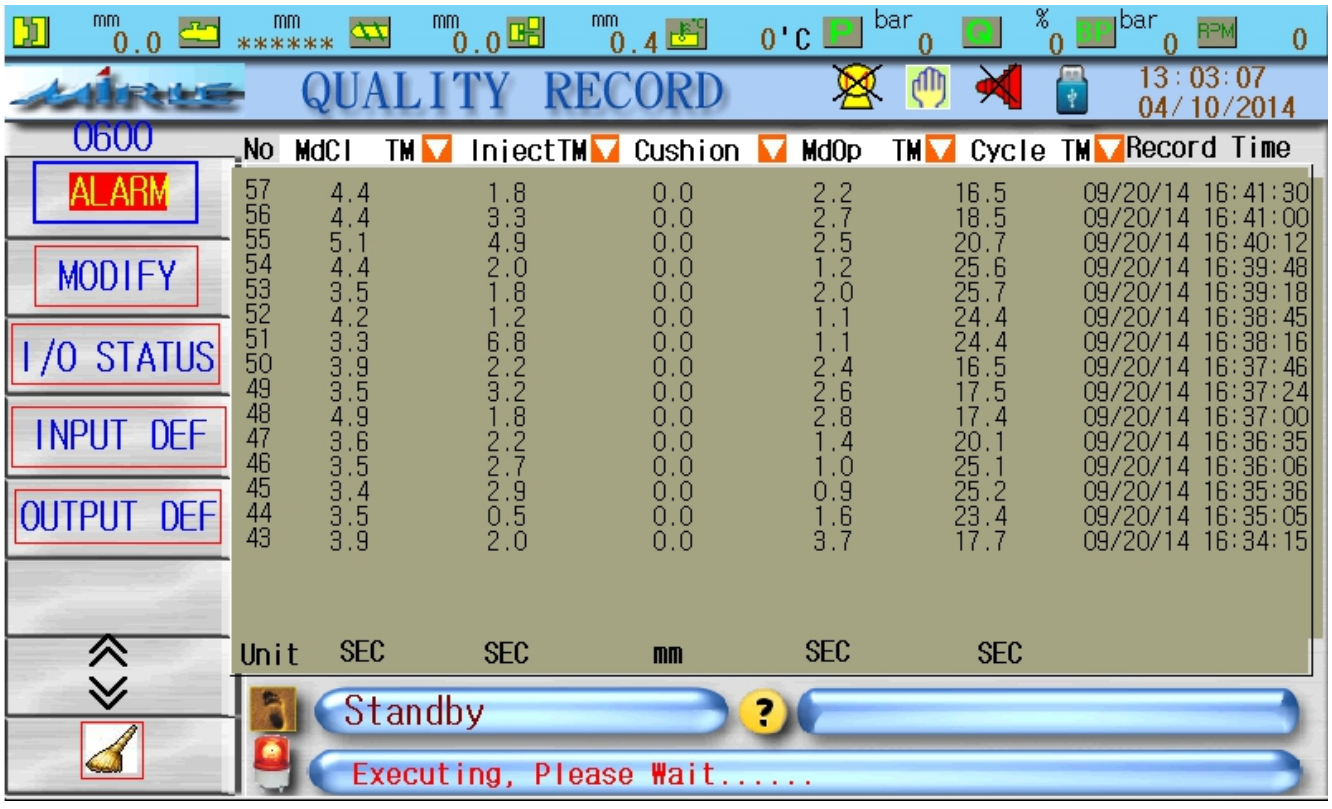
Enable the Function Of Auto lubrication. And Set up Count And Set up Time For Auto Lubrication On.

H) AIR EJECT PARAMETER :

Set up the start position, Pre delay time and Act time of [Mv Md Air] (Blowing from moving mold) and [St Md Air] (Blowing from static mold).

3.07 - QUALITY RECORD PAGE - 0600

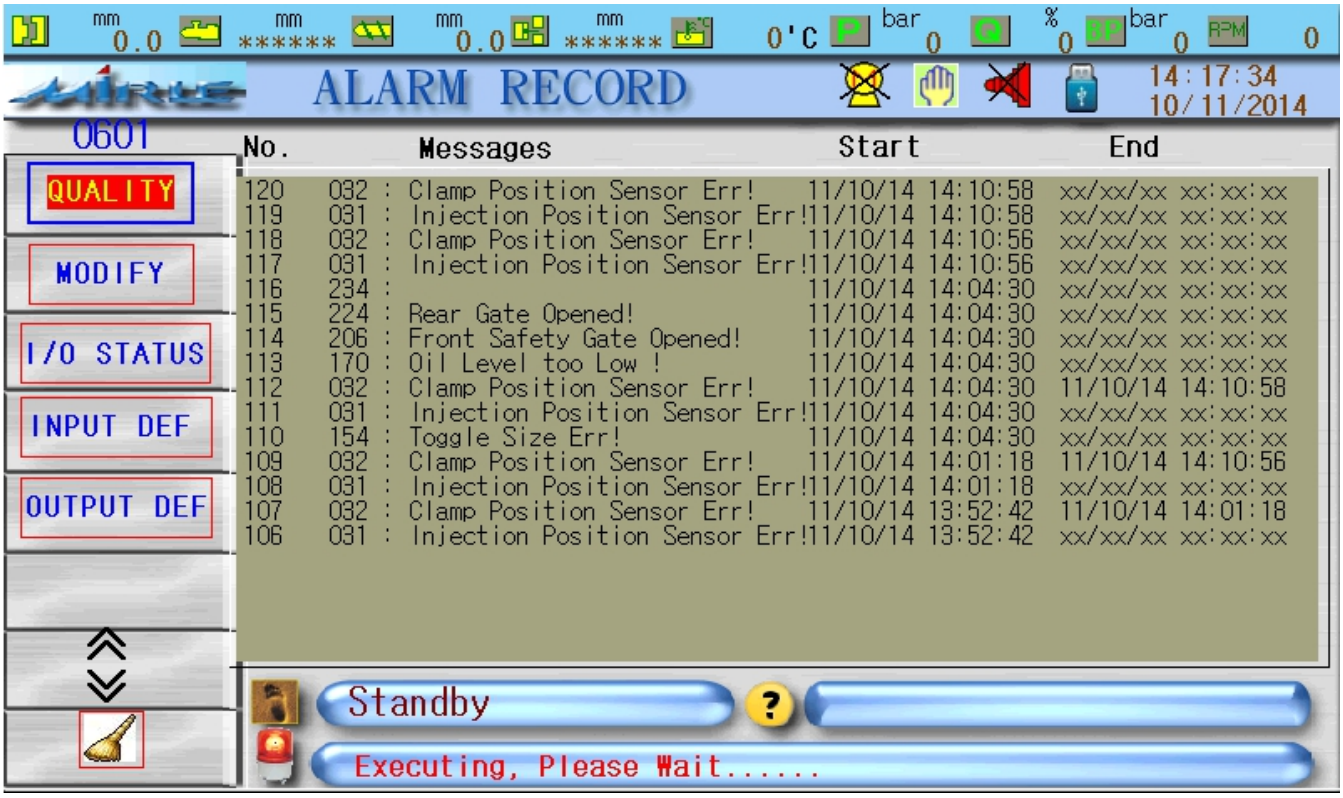
A) QUALITY RECORD :



This Page Could Display The Quality Record Of Present 20 Cycles
(500 Data Record Could Be Saved).

1) **No.** : Display the sequence number of recording data of each mold.
2) **Cushion/Inj_Time/Chrg_End/Charg_Tm/Cycle_Tm** : display the quality record values of each mold.
3) **Record time** : Display quality record time of each mold.
4) ⩓ : To turn the page, each page shows 20 records.
5) : Under manual mode, press [ENT] key and password to delete all the records.

B) ALARM RECORD PAGE - 0601



This Page Is To Record The Condition Before/after Alarm Message Occurred And To Provide The Operator Tracking Down The Problems.

1) **No.** : It displays the sequence number of each alarm message.
2) **Messages :** It displays the alarm number and messages.
3) **Start/End** : It displays the start and end time of alarms.
4) ⩓ : To turn the pages, each page contains 20 records (totally saved up to 500 records)
5) : Under manual mode, press [ENT] key and password to delete all the records.

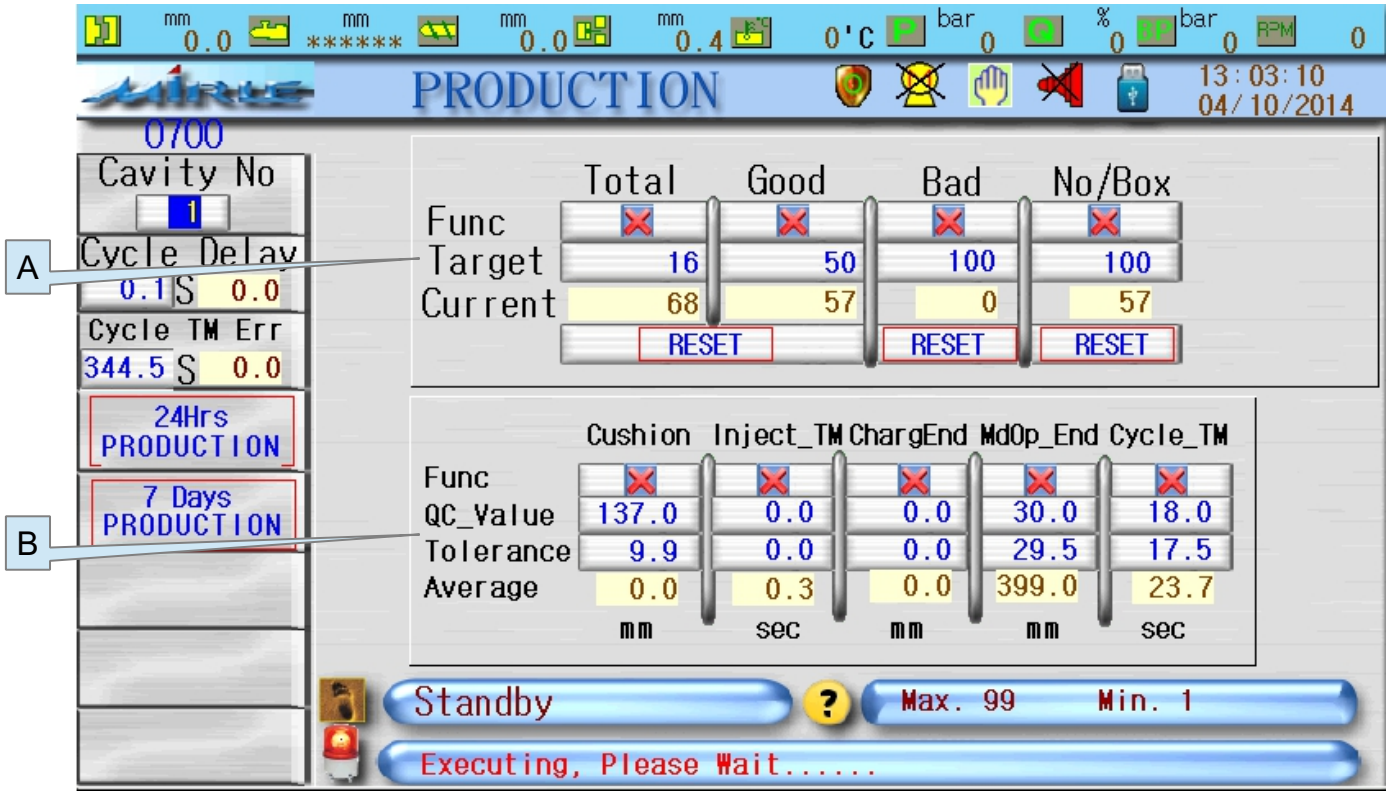
C) MODIFY RECORD PAGE - 0602

This Page Shows 20 Record of Forming Parameter Which Have Been Modified (Total 500 Could Be Saved).

Serial Numbers, Mold Name, Accumulated Mode Numbers, Modifying Parts, Modifying Time, Old Values And New Values

1) **No.** : It displays the sequence number of each message.
2) **Name of mold numbers** : Name of modifying machine mold.
3) **Accumulated mode numbers** : Total mode numbers when modifying
4) **Modifying parts** : The name of the modifying parameters
5) **Modifying time** : Time when modifying.
6) **Old values** : Values before modifying
7) **New values** : To display new values 28
8) ⩓ : To turn the pages, each page contains 20 records.
9) : Under manual mode, press [ENT] key and password to delete all the records.

3.08 - PRODUCTION PAGE - 0700



This page introduce the setting of Production data, details as following :

A) PRODUCTION SCREEN :

Including parts : [Total] (Total production number) [Good] (Good numbers) [Bad] (Bad numbers) and [Box No.] (Box numbers).

Function : It is the switch to control the numbers from above parts; that is the alarm will be triggered when the numbers have been achieved and the machine will be stopped automatically.

Target : The setting values for achieving the correspond numbers of production target.

Reset : Move the cursor the corresponding item, then press〔E NT〕to reset the corresponding current value to zero.

B) QUALITY CONTROL :

Including parts : [Cushion] (Minimum position of injection) [Chrg_End] (the end position of charging) [MdOp_End] (the end position of mold opening) and [Cycle_Tm] (Cycle Time).

Function: It is the switch to control the quality from above four parts, when exceed the range of quality tolerance, judged as bad quality.

QC Value : It is the settings for the corresponding absolute value of each quality control item.

Tolerance : It is the settings for the corresponding tolerance of each quality control item.

For example : QC value of ”Cushion” set to be 10.0mm, Tolerance” set to be 0.5mm, when present value is 11.2mm the difference with QC value is 1.2mm(11.2-10.0=1.2) and obviously exceed the tolerance 0.5 mm , judged to be bad.

Average : It shows the average value of continue 30 molds.

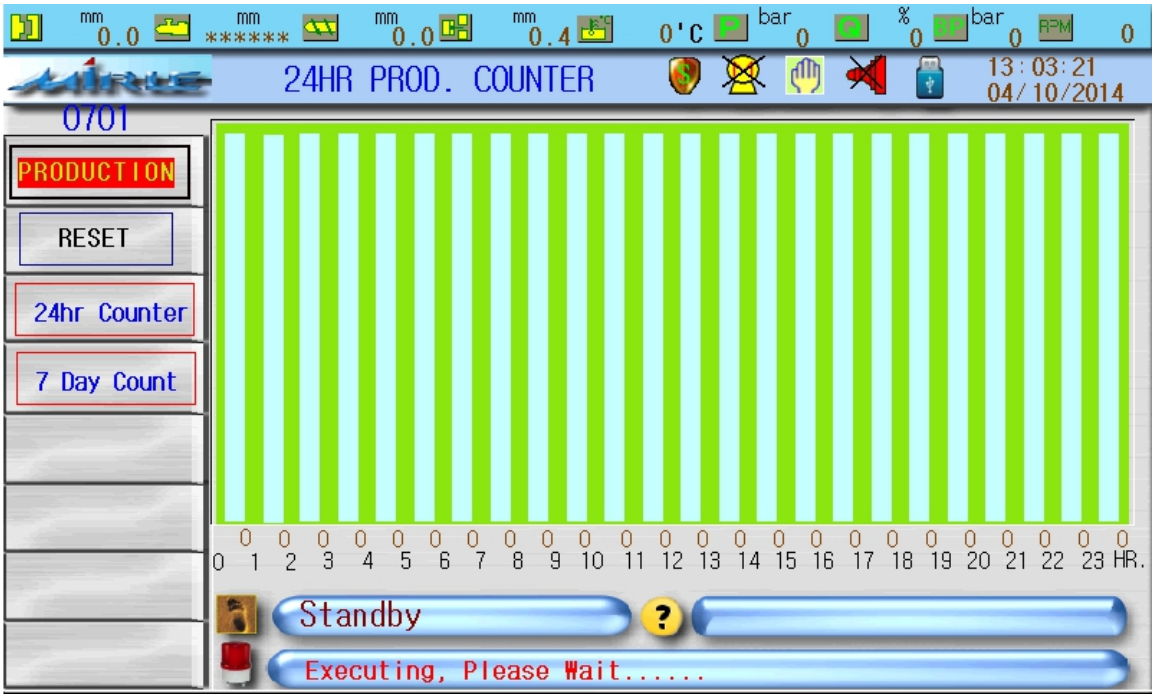
OTHER SETTING :

Cavity No. : It is the settings for the cavity numbers in one Mold.

Cycle Delay : It Is the Settings for the auto cycle delay time.

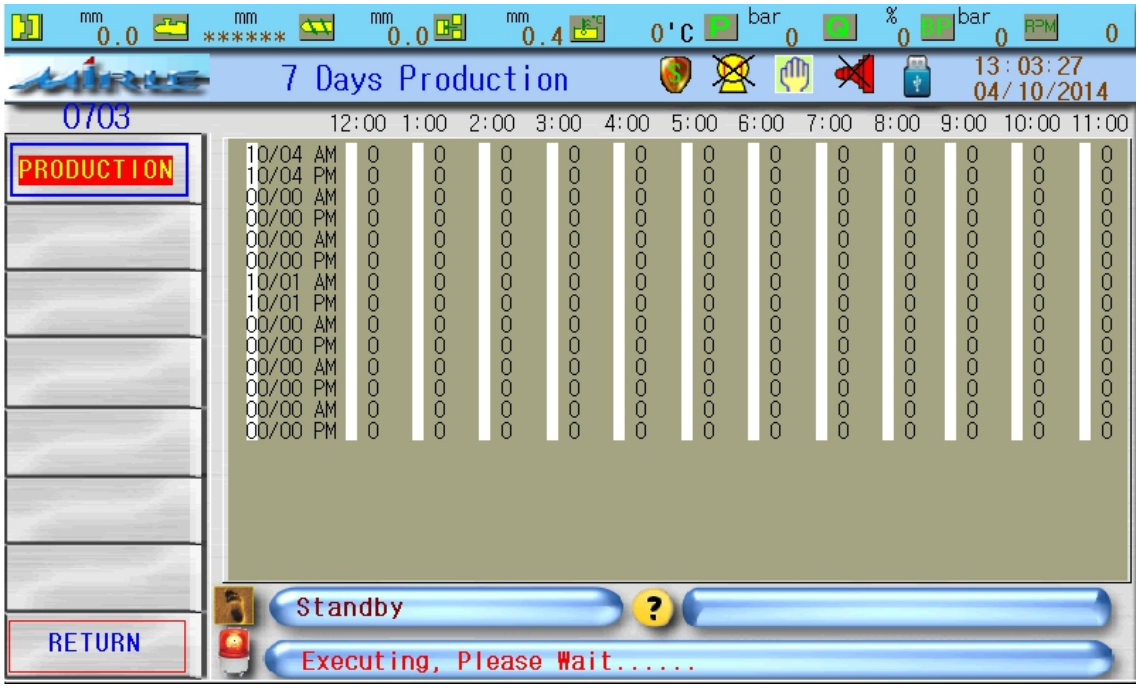
Cycle Tm Err. : It Is the setting for the cycle time error (total cycle time).
If cycle not complete set cycle time than error occur.

D) 24HR. PRODUCTION COUNTER PAGE - 0701



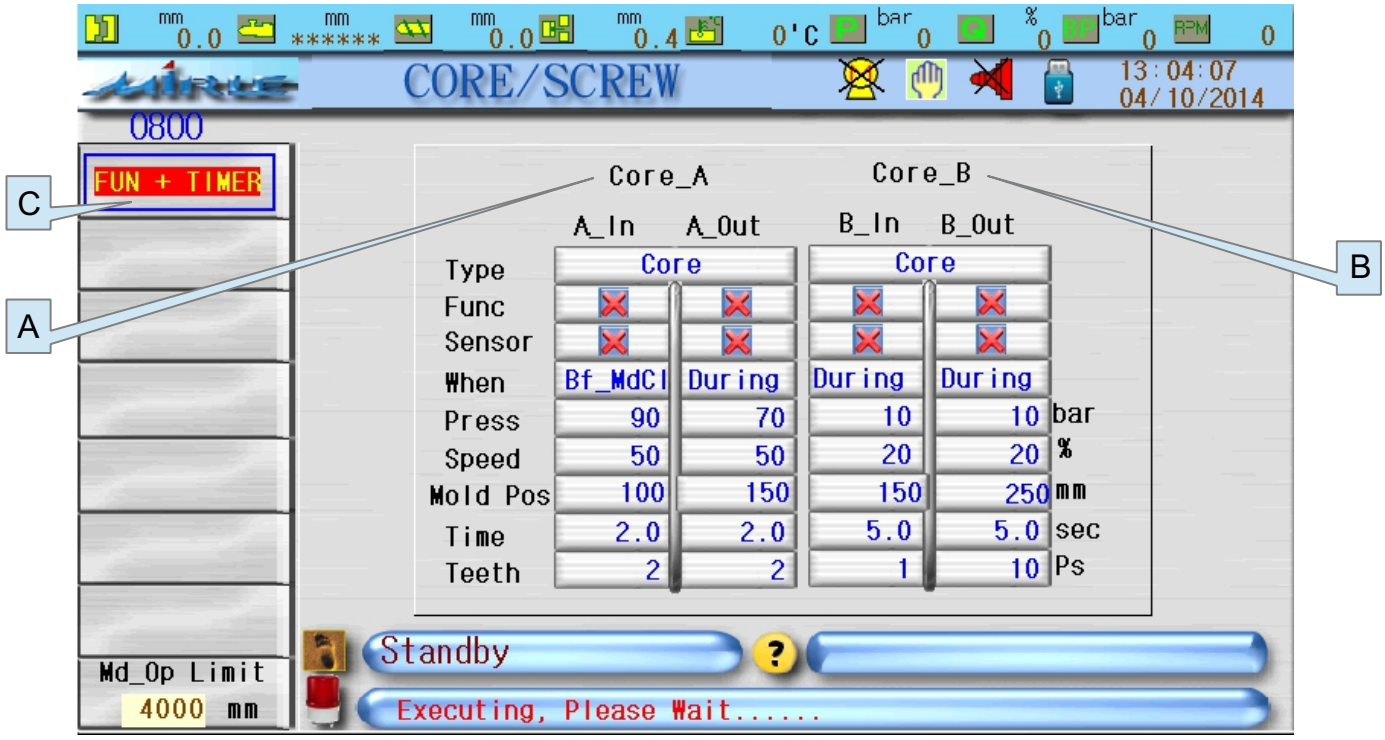
This page is to display 24hr. production data.

E) 7 DAYS PRODUCTION COUNTER - 0703



This page is to display the 7 days production data.

3.09 - CORE PAGE - 0800



This page introduce the setting of core details as following.

A) Core A :

Type : Press the corresponding [ENT] or [ ] button to choose Core" or Screw" for a moving type.

Func : Enable the corresponding function to work.

Sensor : Choose limit switch for the position limitation of core or screw.

When : Three choices when [A in] : Bf_MdCl " [Before Mold Close] " During " (Mold Closing) and Af_MdCl" (After Mold Close); [A out] has three choices as well : Bf_MdOp " (Before Mold Open) "During" (Mold Opening) Af_MdOp" (After Mold Open).

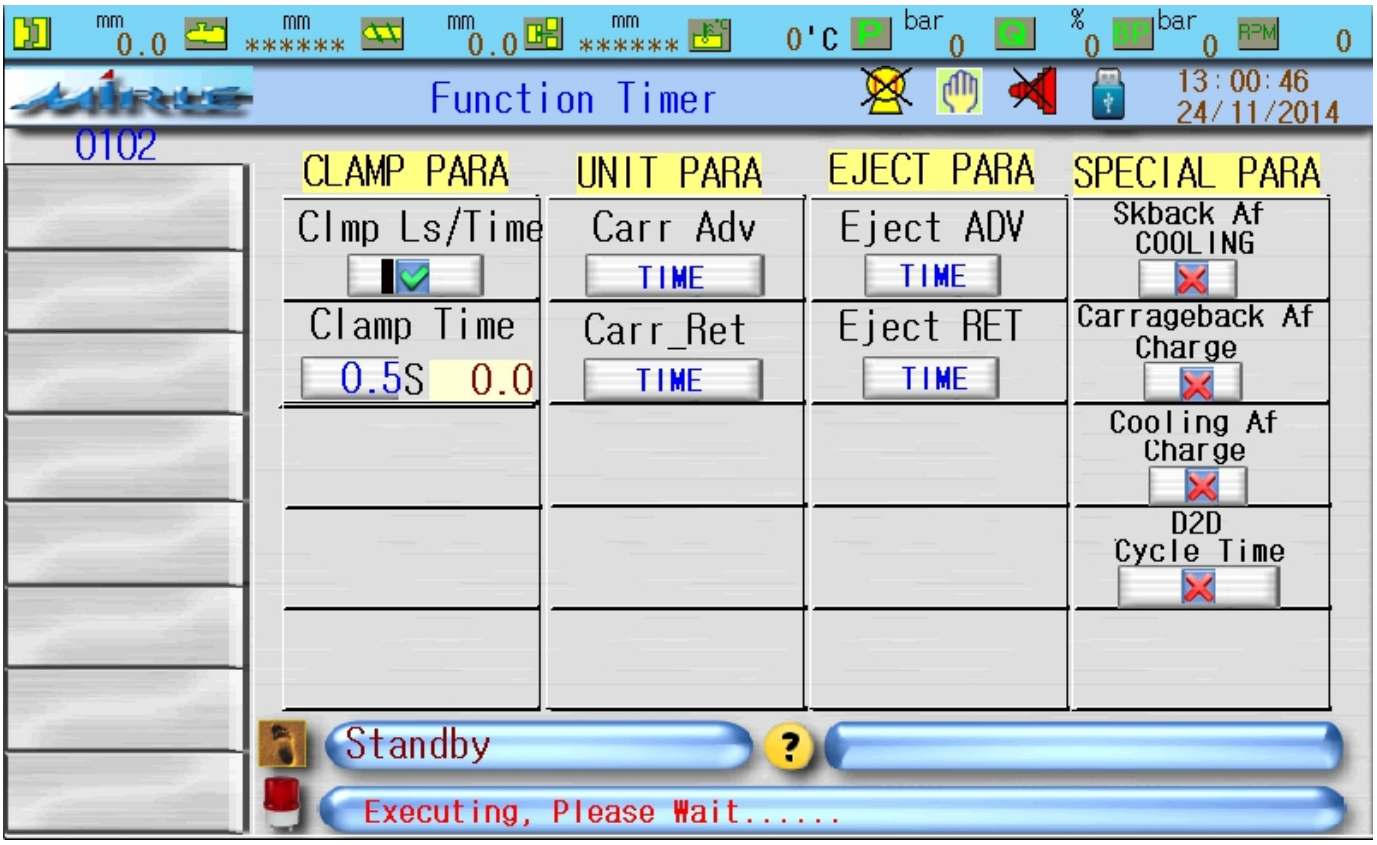
Mold Pos. : If choose During", it needs stop mold clamping and switch core to activate when the mold are at the position where we set.

Time : When core type is Core and not choose position limitation switch this is set to be working time on the other hand is the protection time of activating.

Teeth : When choose screw" type , correspond column can set up in/out numbers of screw pulses.

B) Core B : The setting procedure is similar to Core A.

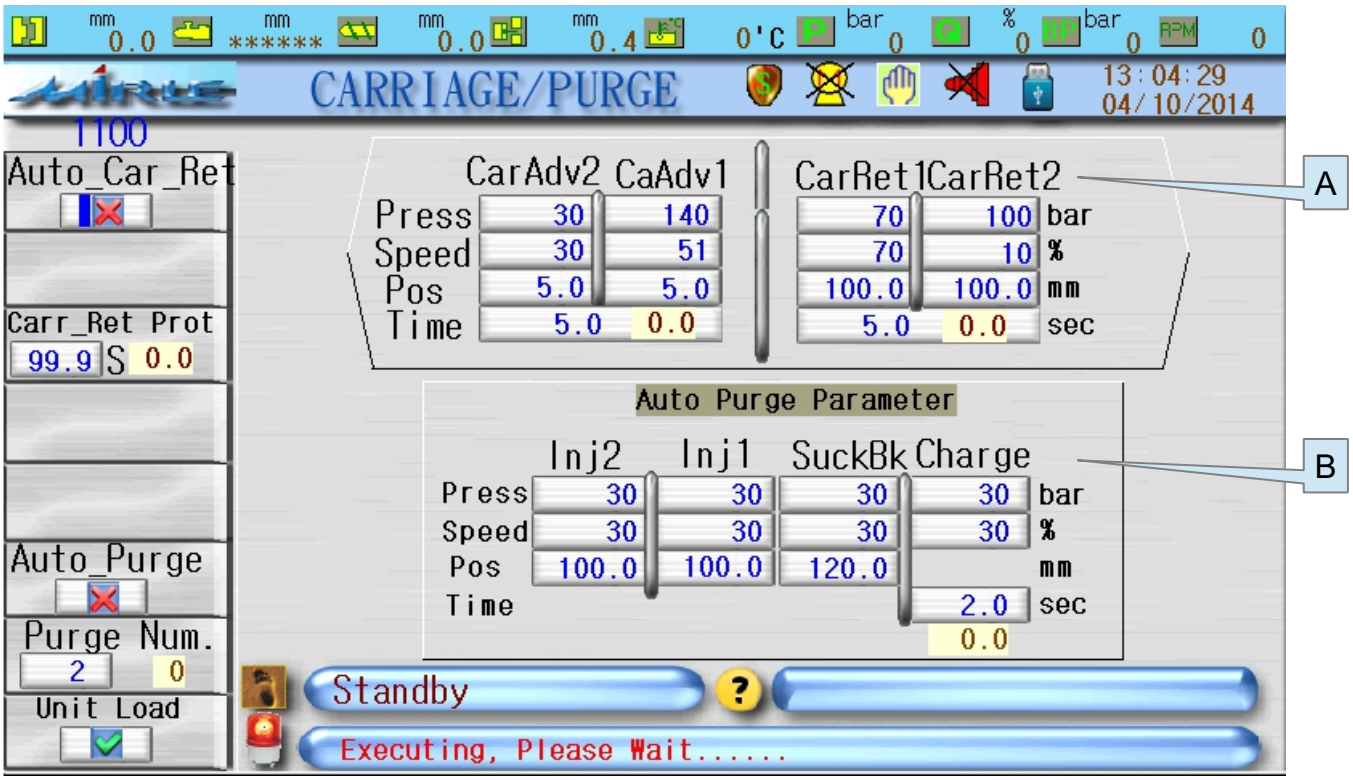
C) FUNCTION + TIMER PAGE - 0102



This page introduce the setting of function + timer details as following.

Contact machine supplier for above page parameter setting.

3.10 - CARRIAGE (INJECTION UNIT) PAGE - 1100



This page introduce the setting of function + timer details as following.

A) CARRIAGE ADV-RET PARAMETER :

Before to execute carriage movement, go to the left side of the page to switch ON the **"AT_Carr_Ret."** (Automatic Carriage Return)" function and choose **"Carr_Ret Mode"** (Carriage Return control Mode, [Time] or [Position]) and " Carr_Ret Prot"(Carriage Return Protection time).

In this screen you can set up the pressure, flow and position of [CarAdv1] (Carriage Advance 1) [CarAdv2] [CarRet1] (CarRet1) and [CarRet2], the restrictions of position setting is [CarAdv1] ≧ [CarAdv2] [CarRet1] ≦ [CarRet2]

B) AUTO PURGE PARAMETER :

Before executing automatic purging, check if under manual control mode, then go to the left side of screen to open the function of **"Auto_Purge"**, key in the numbers of Purge number" then could enter the values of the pressure, flow, position and time of [Inj1] [Inj2] [Suckback] and [Charge].

Note 1：Under automatic purging motion, back pressure control will not be executed. (Whether been set up or not)

Note 2 ：Automatic purging process usually are as following: inject (Fast speed → slow speed), suck back (according to the position where operator set) charging(time which operator set); then inject again, repeat till fulfill the setting numbers.

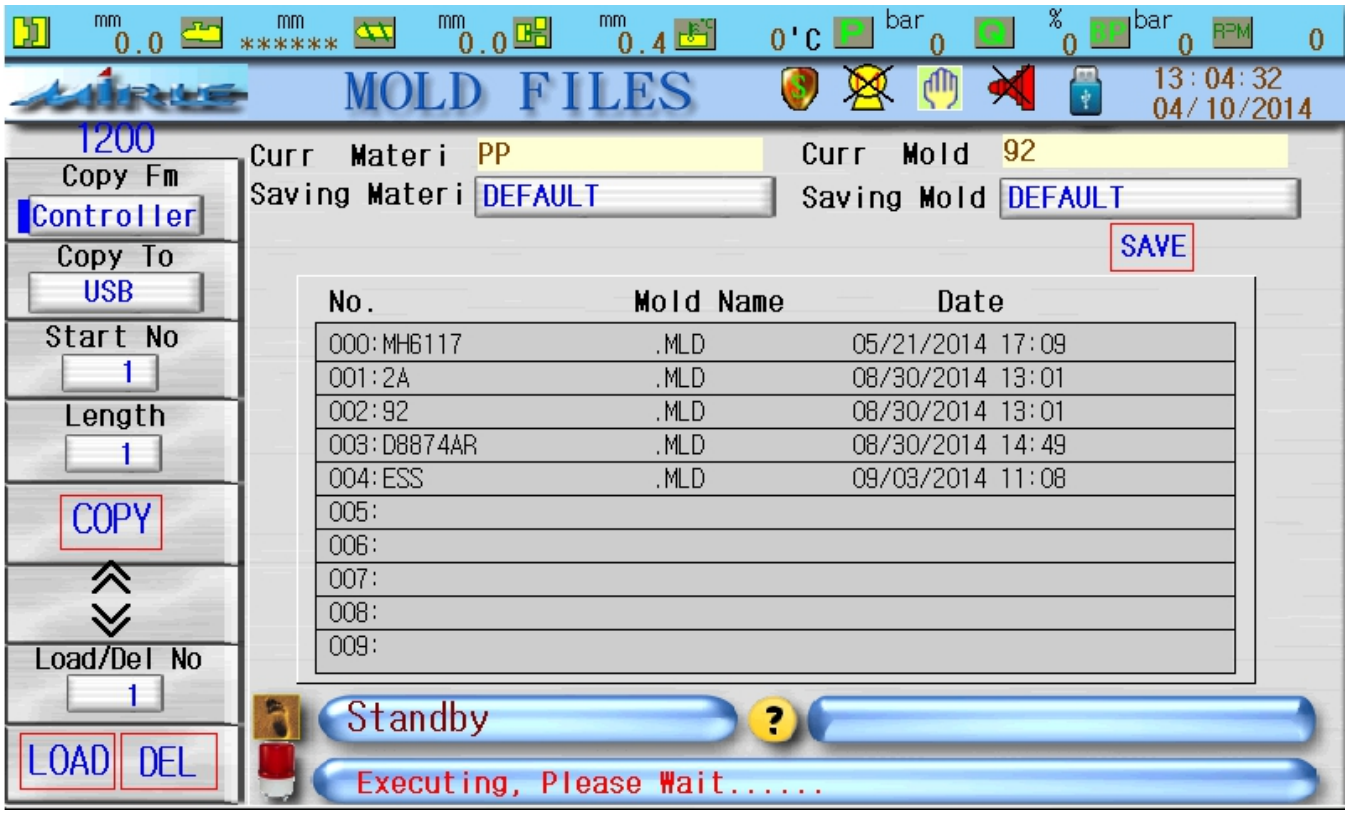
AT_Carr_Ret : Enable the function of carriage return when running under semi or auto mode。

Carr_Ret Prot ： Setting the protective time for the action of carriage.

Auto_Purge ： Select the function of purge movement.

Purge No. ：Setting the numbers of purge movement.

3.11 - MOLD FILE PAGE - 1200



This page introduce the setting of mold file, details as following.

Copy Fm: resource device of copying files (Controllers or USB).

Copy To : Destination device of copying files (Controllers or USB).

Start No. : Start number of copy files.

Length : Total numbers of copying files.

Copy : Press [ENT] key to start copy files, but the system will check if machine under manual mode.

: To look up copying files, press [ ] to turn pages。

Load/Del No. : The sequence number of file to be loaded or deleted.

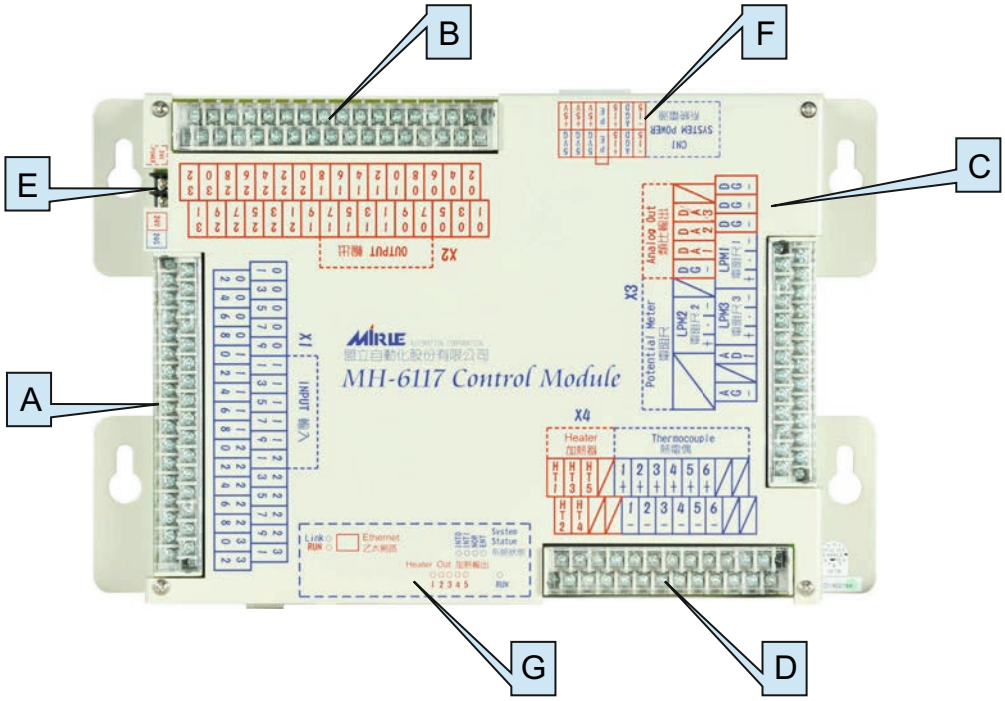
Load or Del : Press [ENT] to execute the function of [LOAD] or [DEL], but the system will check if machine under manual mode.

CHAPTER - 4
System Wiring

4.1 - Wiring Diagram

4.2 - Proportional (PQ) Card Wiring

4.1 - WIRING DIAGRAM



A) X1-Input NPN (32 channels)

B) X2-Output NPN (32 channels)

C) X3-Analog Input (Linear Potentiometer - 3 channels)

Analog Input (Pressure Transducer - 1 channel)

X3-Analog Output (Digital to Analog - 3 channels)

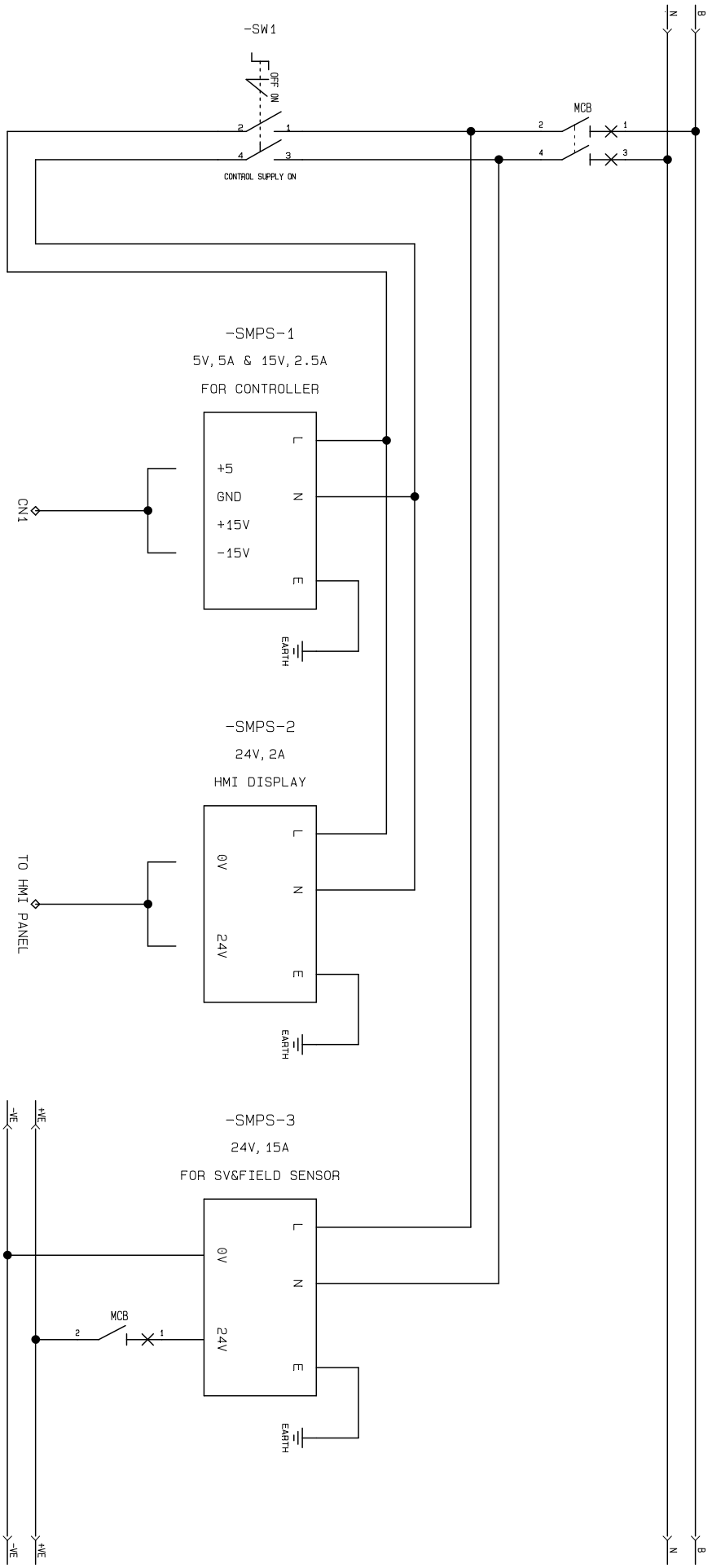
D) X4-Thermocouple (J or K type Input - 5 channels & 6 no. Oil Temp.)

Heater Output NPN (5 channels)

E) 24V DC Power Connection

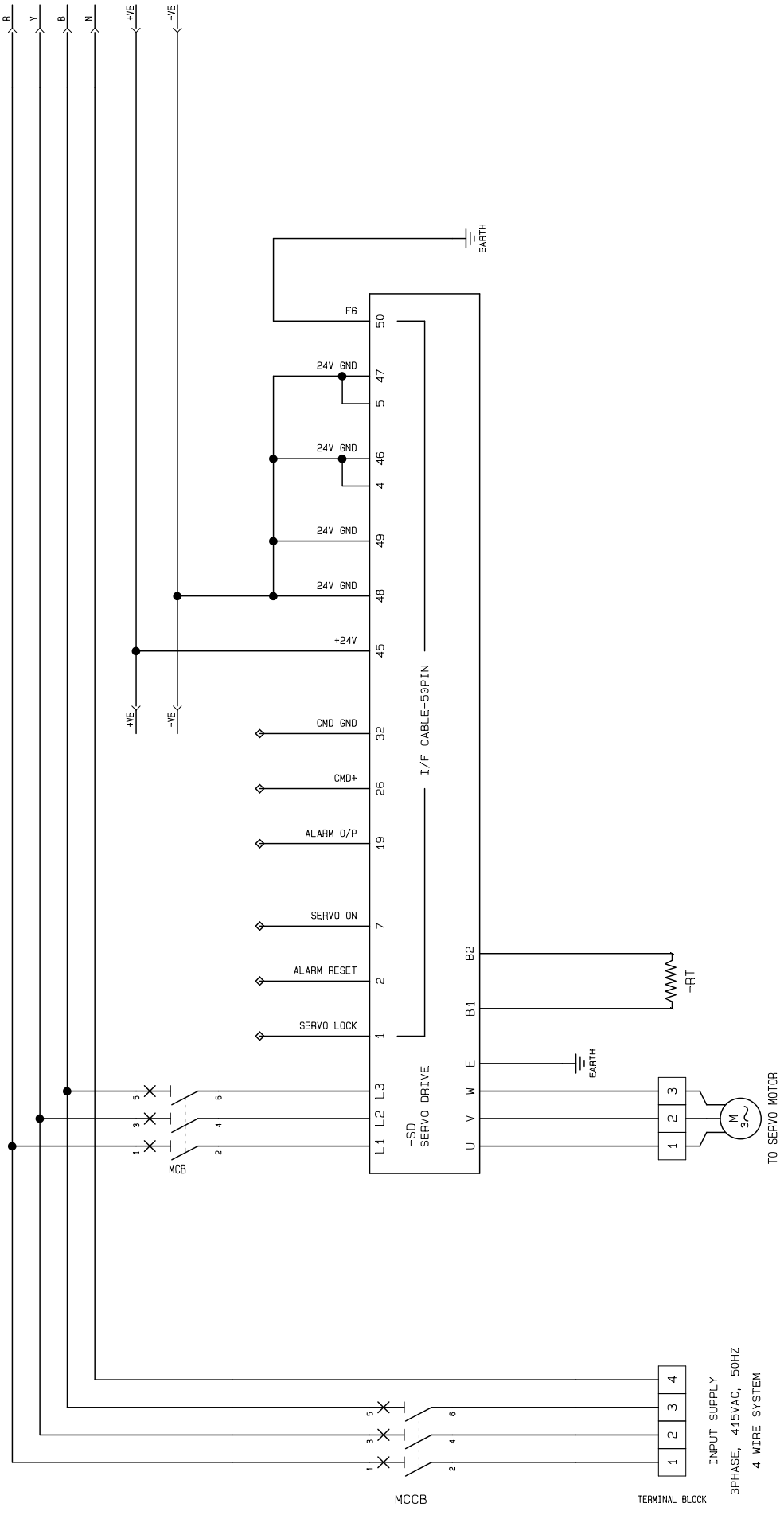
F) CN1 - System Power

G) System Status (Run, Heater Output, Ethernet Communication & System Indication LED)

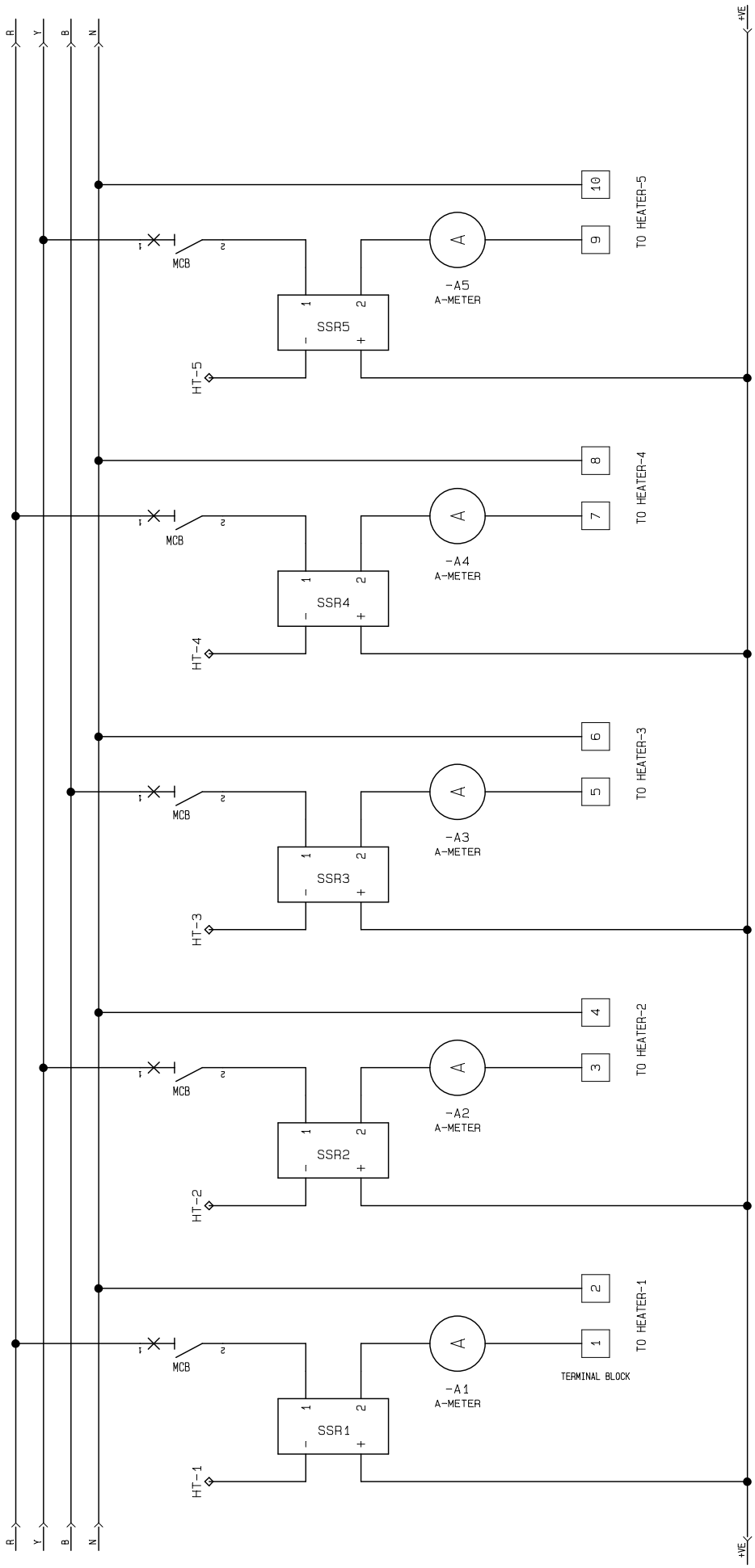


Note : Above 40 Ω Pressure / Flow proportional valve : Required 48V DC ~ 5Amp Power supply

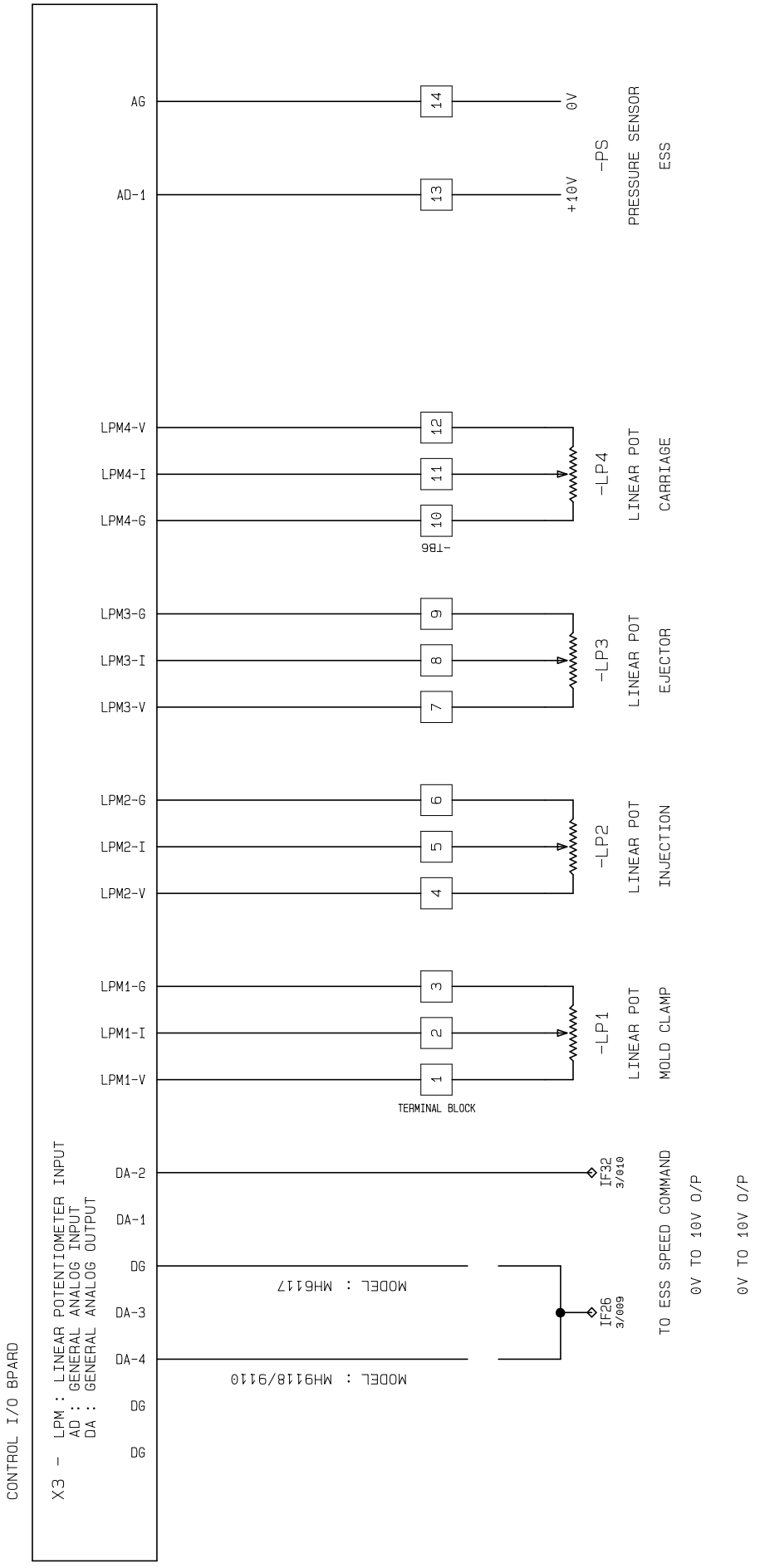
ESS SERVO DRIVER WIRING



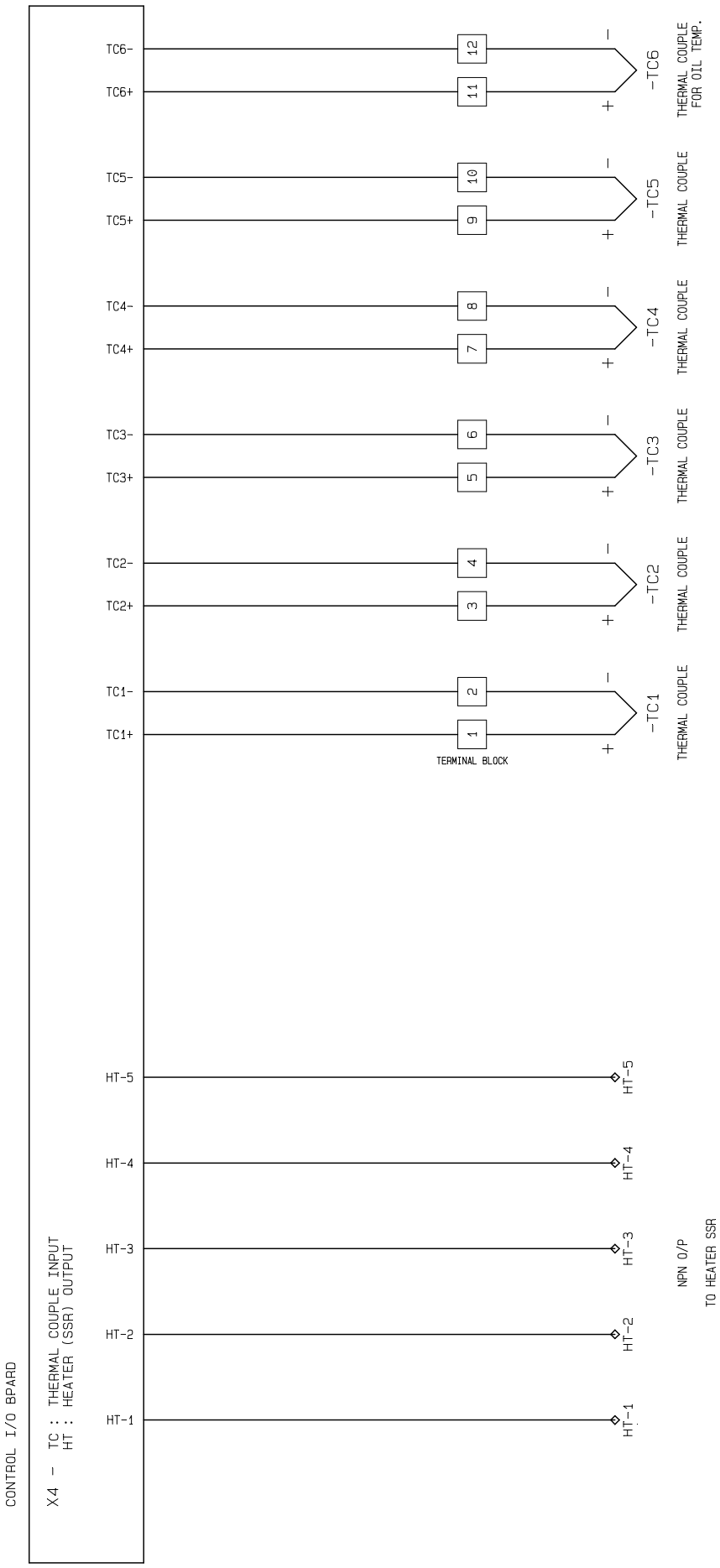
HEATER WIRING



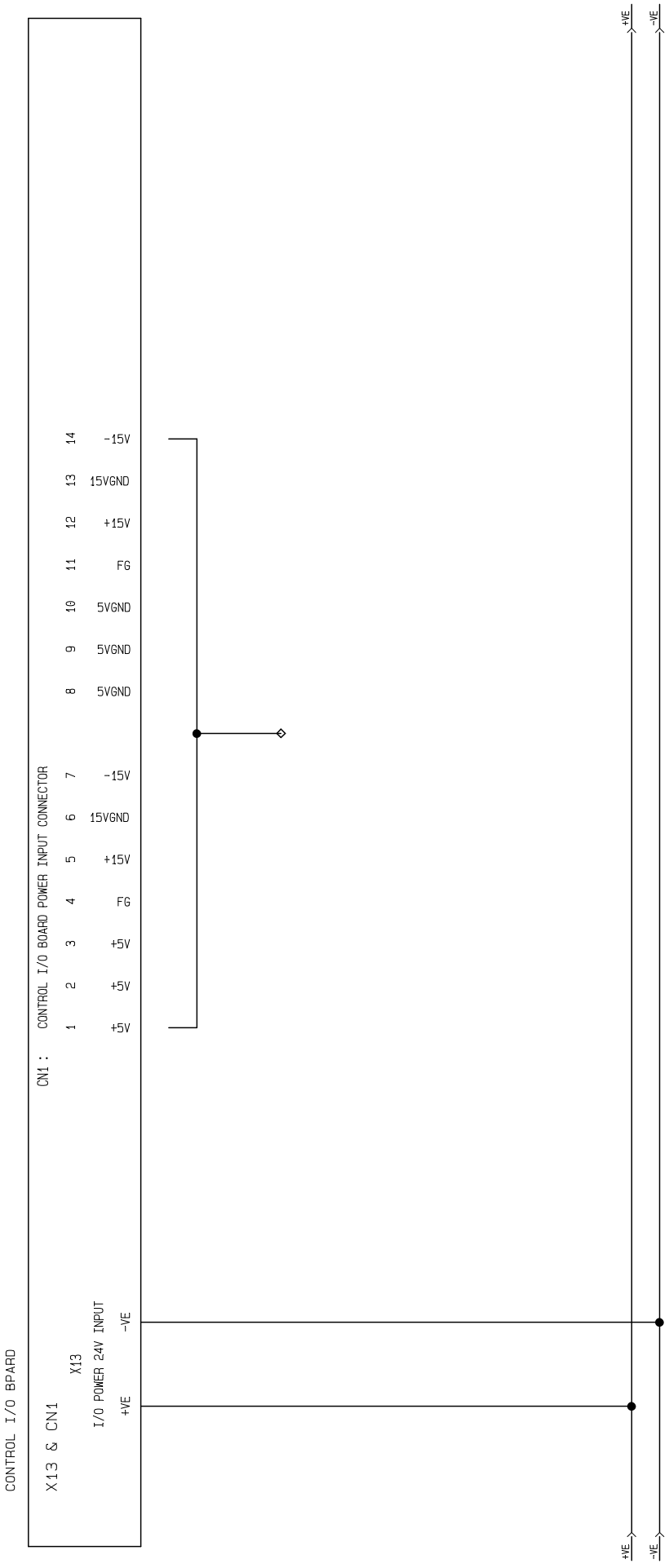
ANALOG INPUT/OUTPUT WIRING



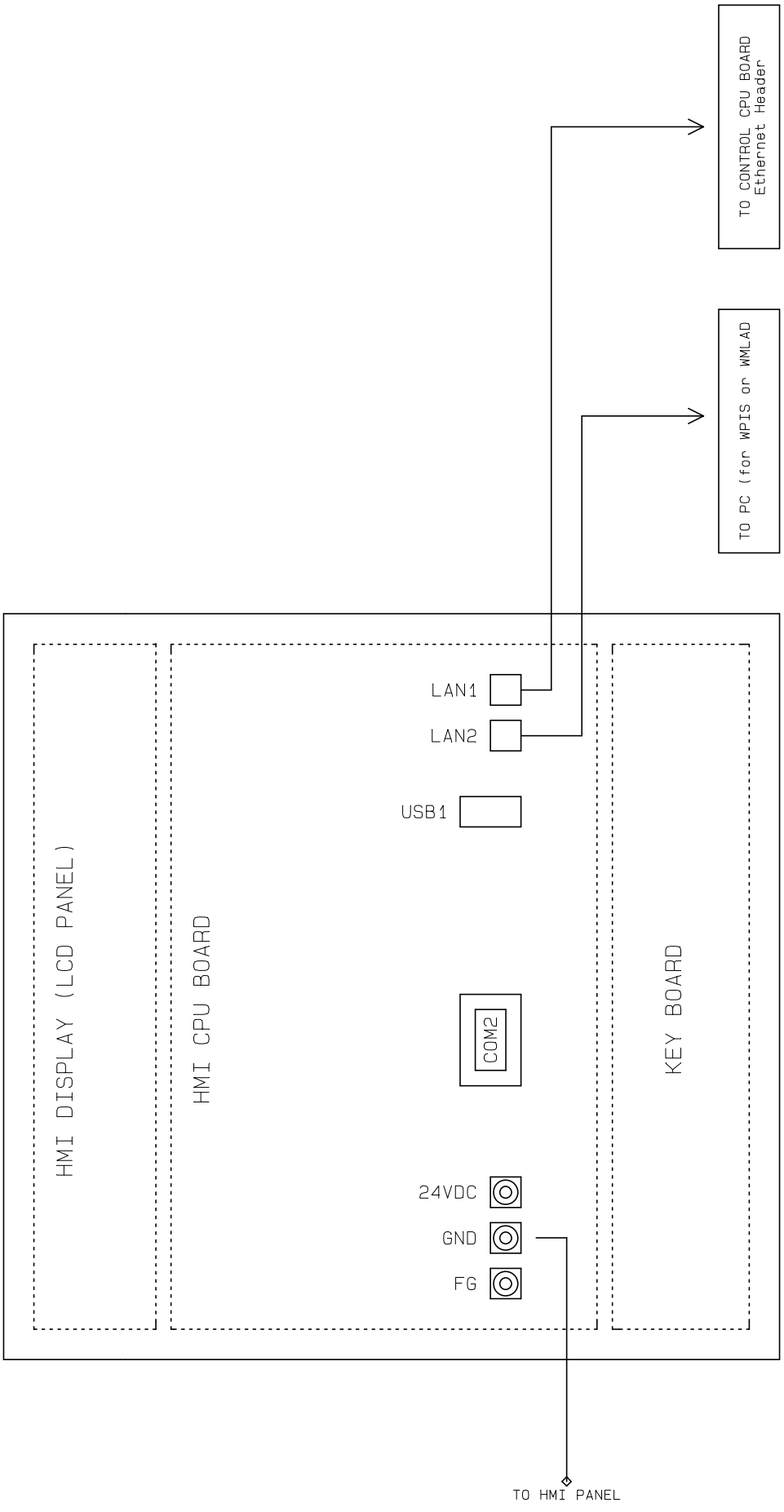
THERMOCOUPLE WIRING



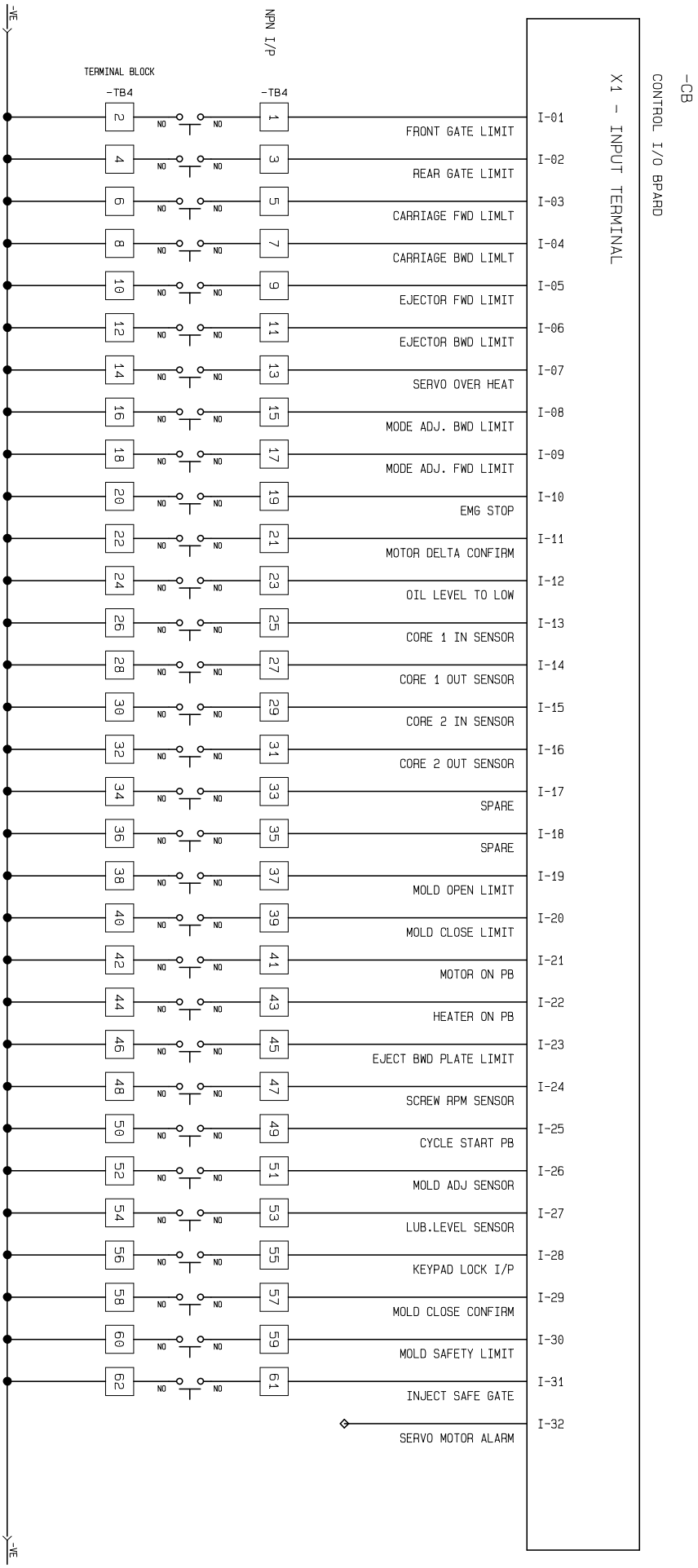
SYSTEM PLC POWER SUPPLY WIRING



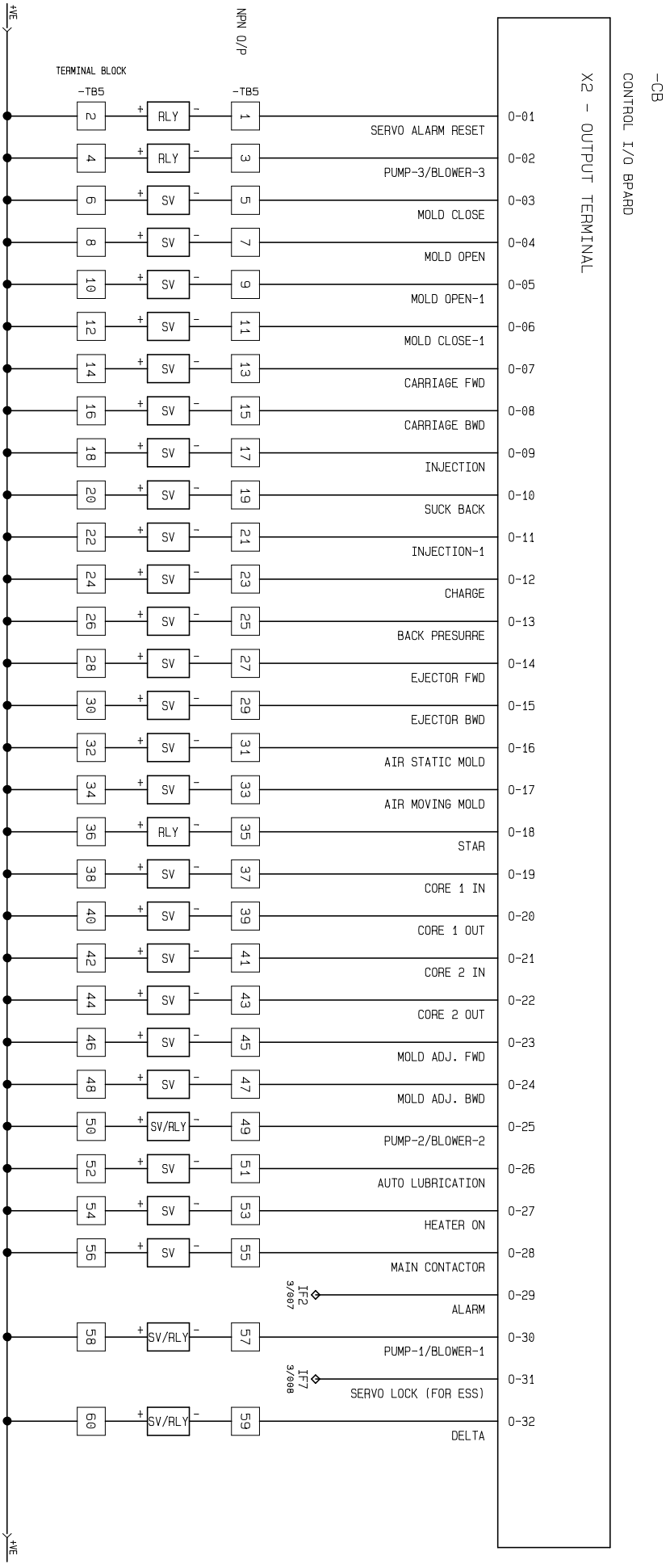
HMI DISPLAY WIRING



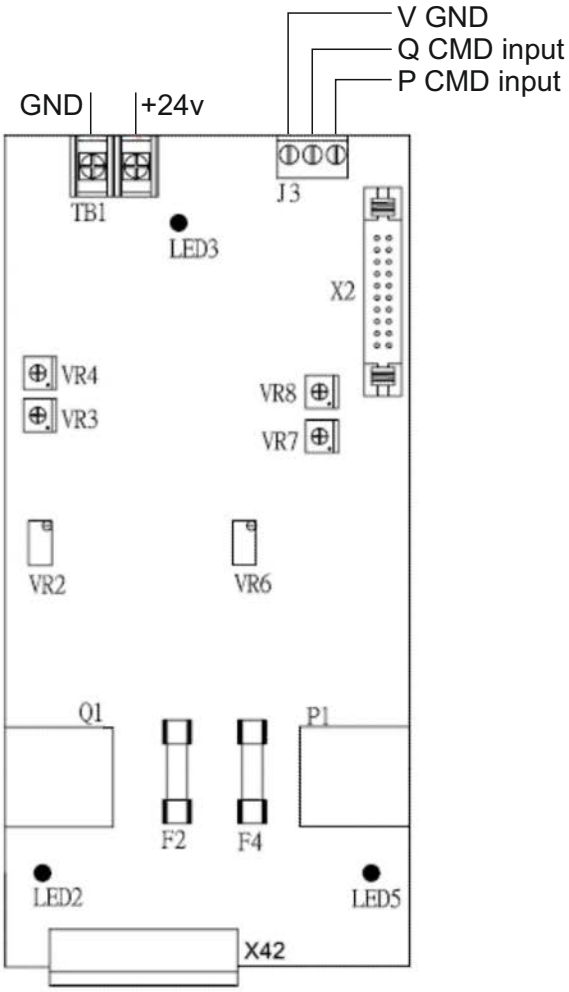
INPUT WIRING

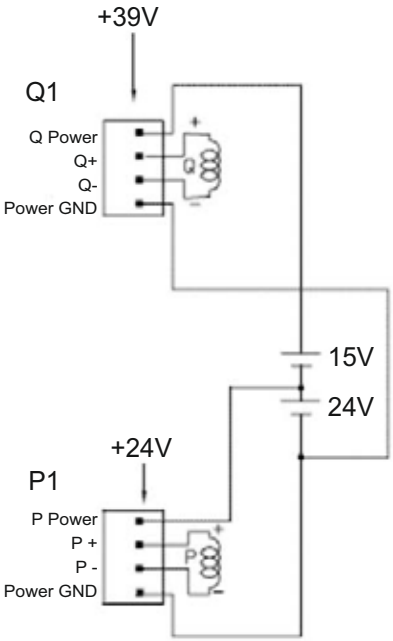


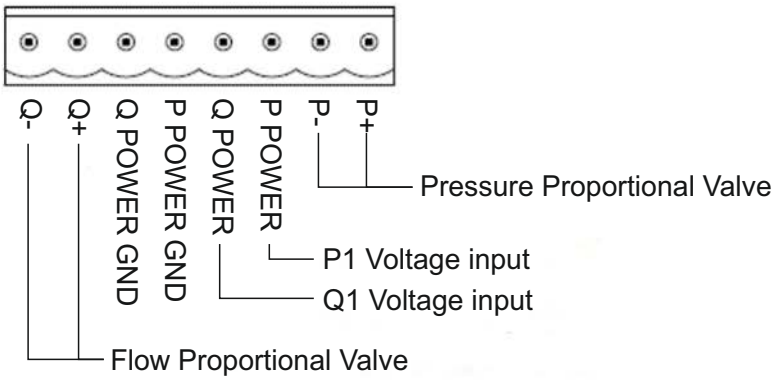
OUTPUT WIRING



4.3 - PROPORTIONAL (PQ) CARD WIRING







Note : Above 40 Ω Pressure / Flow proportional valve : Required 48V DC ~ 5Amp Power supply

CHAPTER - 5
Troubleshooting

5.1 Alarm Message & Solution

5.1 - ALARM MESSAGE & SOLUTION

Alarm No.	Alarm Message	Alarm Solution
008	Barrel Temperature too Low !	1) Actual tempreture not achive the set tempreture
019	Barrel Temperature too High !	1) Actual tempreture is very high more than the set tempreture & up tolerance
020	Oil Temperature too High !	1) Oil tempreture is very higher than the set tempreture
021	Injection Protection Time Error !	1) Injection safety time is not set or low
022	Charge Protection Time Error !	1) Charging safety time is not set or low
025	Mold Safty LS On Error !	1) Mold safety Proxy/Limit switch input on
026	Mold Eject Bwd Plate Error !	1) Ejector safety Proxy/Limit switch input on
030	Thermocouple Broken!	1) Thermocouple connection is wrong. 2) Thermocouple type (k or j) selection is wrong
031	Injection Position Sensor Err!	1) Injection linear scale selection is on 2) injection linear scale wiring is wrong
032	Clamp Position Sensor Err!	1) Clamp linear scale selection is on 2) Clamp linear scale wiring is wrong
033	Ejector Position Sensor Err!	1) Ejector linear scale selection is on 2) Ejector linear scale wiring is wrong
042	Reach Total Product Number!	1) Total product counter set value is achive
043	Reach Good Product Number!	1) Good Product counter set value is achive
044	Reach Bad Product Number!	1) Bad product counter set value is achive
049	Carriage Position Sensor Err!	1) Carriage linear scale selection is on 2) Carriage linear scale wiring is wrong
078	I/O Simulating ...	1) I/O is on from i/o simulation page
079	I/O Redirecting ...	1) I/O is change from i/o redirecting page
081	Core In Sequence Err!	1) Core in sequence selection wrong
082	Core out Sequence Err!	1) Core out sequence selection wrong
151	Communication Err !	1) Plc and HMI ethernet cable is not connected proper 2)System Power Supply (5-15Vdc) Off
161	Emergency Stop!	1) Emergency stop button input is on
170	Oil Level too Low !	1) Oil level input is on
172	Lubrication Oil Low	1) Lubrication Oil level input is on
176	Auto lubrication Fail !	1) lubrication input is not come in set timer of auto lubrication
178	Mold Low Pressure Protection !	1) Mold low pressure protection time is not set or low 2) Mold close valve is not work
180	Cycle Alarm	1) Cycle time is not set or low
183	Motor Overload !	1) Motor amp. Is goes to high 2) Check motor star delta time 3) Motor delta comfirm input X11 off.
185	High Pressure Protection Err !	1) Mold high pressure protection time is not set or low 2) mold close valve is not work
186	Front Gate Protection Err !	1) Front gate input X1 is off
200	Servo Error !	1) Servo motor Alalrm X32 is off. 2) Servo driver some alarm occur
202	Servo Over Heat Err !	1) Servo motor temp. Input X7 is off 2) Servo motor temp. Is high or Low
203	Motor isn't Running Or Started !	1) Motor is off
206	Front Safety Gate Opened!	1) Front safety gate X1 is off
217	Unreach Normal Temperature !	1) Actual tempreture is not achive the set tempreture
222	Screw Protection Err !	1) Screw protection function is On. (Page.200)
223	Mold Open over Time !	1) Mold open protetion time is set low.(Page.300)
224	Rear Gate Opened!	1) Rear gate input X2 is off
237	Carriage BWD Protect Err !	1) Carriage protection time is not set or low
238	Mold Adj Thick L.S. On !	1) Mold thick input X8 is on
239	Mold Adj Thin L.S. On !	1) key lock input X9 is on
241	Key Down is Locked!	1) key lock input X28 is on
248	Eject Adv not in Position!	1) Ejector is not in position/Time is not over
249	Eject Ret not in Position!	1) Ejector is not in position/Time is not over
261	Barrel Temperature too High !	1) Actual tempreture is very high more than the set tempreture & up tolerance
281	Mold Open is not in Position!	1) Mold open 5 position is not achive the actual mold Position.
287	Reach BOX Number !	1) Total box counter value is achive or not set

MH-6117

FEATURES
- Display unit CPU : ARM9 266MHz 32 bits
- Control unit CPU : RISC 140MHz 32 bits
- 7.4-inch 800 x 480 color TFT LCD long screen, LED back light
- 6 Ranges PID temperature control (control accuracy ±1°C)
- 3 Sets of transducer input (16 bit)
- 1 Set of A/D pressure sensing input (16 bit)
- 3 Sets of D/A proportional valve output (16 bit)
- 32 Digital inputs • 32 Digital outputs
- 1 USB interface

MH-9118

FEATURES
- Display unit CPU : ARM9 266MHz 32 bits
- Control unit CPU : RISC 140MHz 32 bits
- 8.4 inch 800 x 600 color TFT LCD
- 8 Ranges of PID temperature control (control accuracy±1°C)
- 4 Sets of transducer input (16 bit)
- 2 Sets of A/D pressure sensing input (16 bit)
- 4 Sets of D/A proportional valve output (16 bit)
- 32 Digital inputs • 32 Digital outputs (expandable to 48/64 points)
- 2 USB interfaces

MH-9110

FEATURES
- Display unit CPU : ARM9 266MHz 32 bits
- Control unit CPU : RISC 140MHz 32 bits
- 10.4 inch 800 x 600 color TFT LCD
- 8 Ranges of PID temperature control (control accuracy±1°C)
- 4 Sets of transducer input (16 bit)
- 2 Sets of A/D pressure sensing input (16 bit)
- 4 Sets of D/A proportional valve output (16 bit)
- 32 Digital inputs (expandable to 48/64 points)
- 32 Digital outputs (expandable to 48/64 points)
- 2 USB interfaces

MQ- 200

FEATURES
- Display unit CPU : X86 800MHz 32 bits
- Control unit CPU : RISC 140MHz 32 bits
- 10.4 inch 600 x 800 16 bit color TFT LCD (Vertical)
- 8 Ranges of PID temperature control (control accuracy±1°C)
- 4 Sets of transducer input (16 bit)
- 2 Sets of A/D pressure sensing input (16 bit)
- 4 Sets of D/A proportional valve output (16 bit)
- 32 Digital inputs (expandable to 48/64 points)
- 32 Digital outputs (expandable to 48/64 points)
- 2 USB interfaces

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GEFRAN

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NOTE

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