

OPERATING INSTRUCTIONS

FOR

WATER CHILLER

(Water-cooled, Microprocessor Controlled)

CE

Conformity

OPERATING INSTRUCTIONS

INSTALLATION

Install this water cooled chiller on a solid foundation. The installation location should be convenient for operation and proper distance from the cooling tower. If the cooling tower is installed outdoors, make sure it is in an environment with good air convection, free of pollution and gas. If the cooling tower is installed at a factory, use an exhaust fan to keep good air convection. Because the exhausted air will contain considerable moisture, mounting the exhaust fan too close to the machine will affect the switches and the controllers.

INSTALLATION NOTICES

1. Make sure the power source voltage and Hz comply with those indicated on the instruction plate attached to the machine.
2. Connecting power wire and grounding should conform to local regulations.
3. Use only separate power wires and power switch. The power wire diameter should not be smaller than those applied in the electrical control box.
4. The power wire connection points should be tightened securely.
5. Make piping work according to the installation layout drawing. Protect the ice water pipes with thermal-keeping piping.
6. The pipe diameter for the cooling tower and circulation pump should not be smaller than the condensing pipes. (Inlet and outlet piping are installed according to installation layout drawing.)
7. Open the ice water inlet and outlet valves, but close the water exhaust valve.
8. Connect the power wires of the cooling tower fan motor and circulation pump to the electrical control box of water chiller.
9. Properly set the current valve on overload relay of the cooling tower.

NOTICES FOR OPERATION

1. Turn on the main power source switch. When the control panel power is turned on, it has a safety guard when power is shut off.
Note: When the control box cover must be opened for inspection of the control system, turn the main power source switch counter-clockwise. Pull out the control panel, and press the safety pin located at the side of the main power switch. Turn on the switch for inspection.
2. When start the machine, if error code indication displays 01 (reverse phase running), then the chilling pump is running in reverse. If this occurs, turn the power off, and change any two of the power wires.
3. Check to see if the fan motor of the cooling tower and circulation pump run to the directions as arrowhead instruction. Do not allow them to run in the opposite direction.
4. The Chilling pump must not run if there is no water in the water tank. Start the cooling tower running for about 15 minutes. When the water tank is fully filled with water, start the chilling pump and the compressor.
5. Once the chilling pump is started, check to see if the water pressure gauge indicates over 1 kg.
6. Start the compressor running. When the water temperature reaches the set temperature, the running indication lamp will extinguish. This is the normal condition.
7. Do not set the temperature switch lower than 5°C (except for special models)
8. When the compressor is running, the ideal conditions are when the high/low pressure gauge is in the blue range. (High pressure range 180-250 PSI, low pressure range 45-75 PSI)
9. If an abnormal motion occurs, first stop the alarm, then make the correction. After the trouble is corrected, press the reset key to restart the machine.
10. If your machine has no water tank provided, then it is equipped with a filter screen and flow control switch. Make sure the water circulates in the pipe before starting the compressor. After a long period of operation, if the water flow is too little (or the error code indication lamp displays '11'), clean the Y shape filter located in front of the pump at the water suction port.
11. To ensure high efficiency operation and to extend the service life of the machine, it is important to perform monthly cleaning for the cooling tower, water suction filter screen, and make sure the heat dissipation pipes flow and rotate smoothly.
12. If any emergency condition occurs, press the red emergency stop switch immediately. Troubleshooting should be done only by qualified personnel.

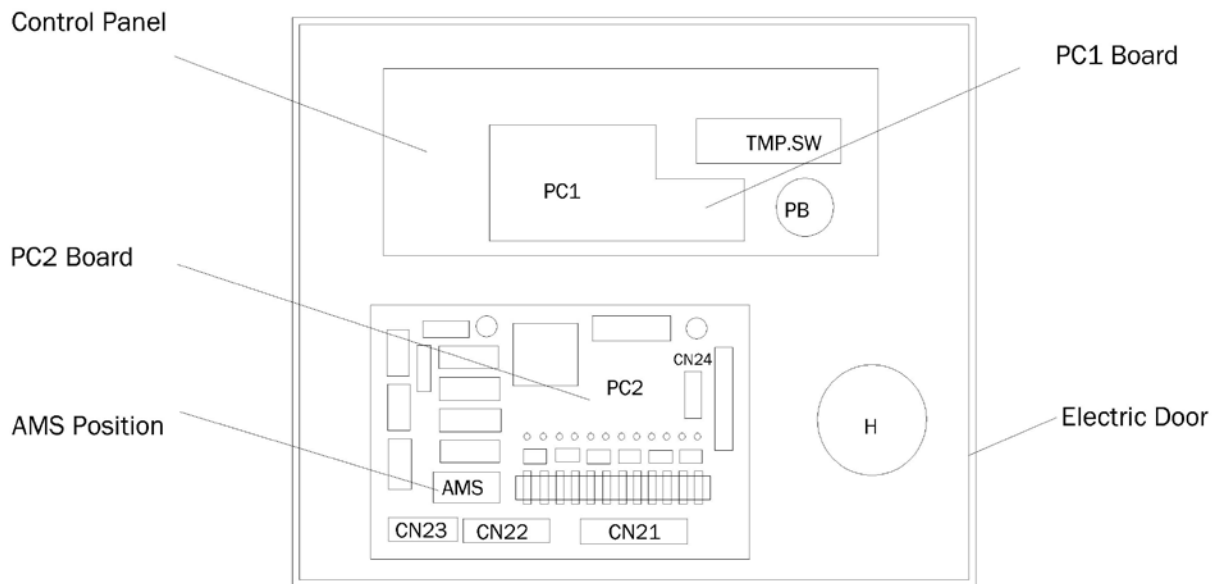
HOW TO OPERATE THE MACHINE

A. OPERATING SEQUENCE

1. Push on the Main Isolator to “1” (ON) position.
2. Push on the switch of cooling tower and indicator lamp lighting.
3. Push on the chilled water pump switch and indicator lamp lighting.
Notice: The outlet ball valve of condensing water must be opened.
4. At last, to push the switch of compressor and indicator lamp lighting, and check the temperature controller.
5. When stop machine, the operating procedures is accorded as the above mentioned but reversely.

B. AUTO/MANUAL OPERATION MODE

1. If the control panel is something trouble, you can change the machine to the MANUAL mode, and continue using the machine.
2. The position of AUTO/MANUAL mode is located at the AMS bar of PC2 control board of electrical door, then push AMS bar to left or right direction. (Refer to the figure introduction)



WATER-COOLED WATER CHILLER



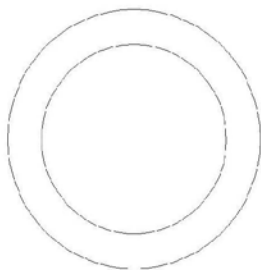
CHILLED WATER TEMP.



OPERATING FUNCTION SWITCH

- Cooling Tower
- Chilled water pump
- Compressor 'A'
- Compressor 'B'

EMERGENCY STOP



Buzzer
Mute



Pressure
Reset



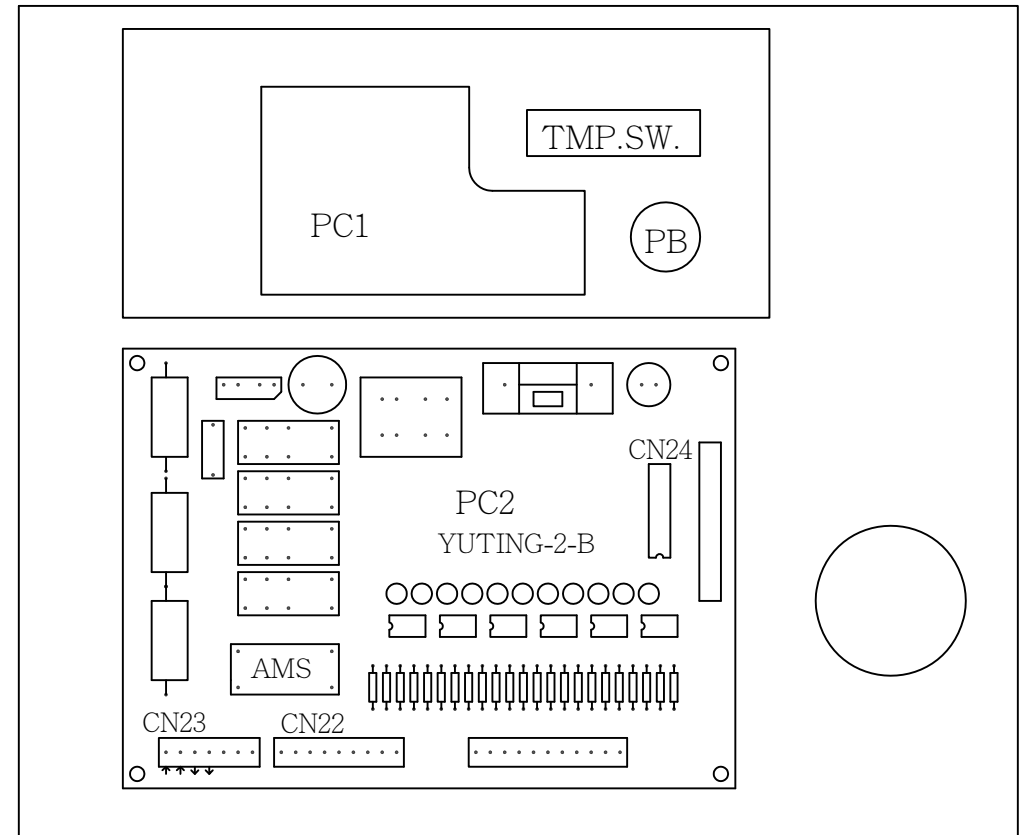
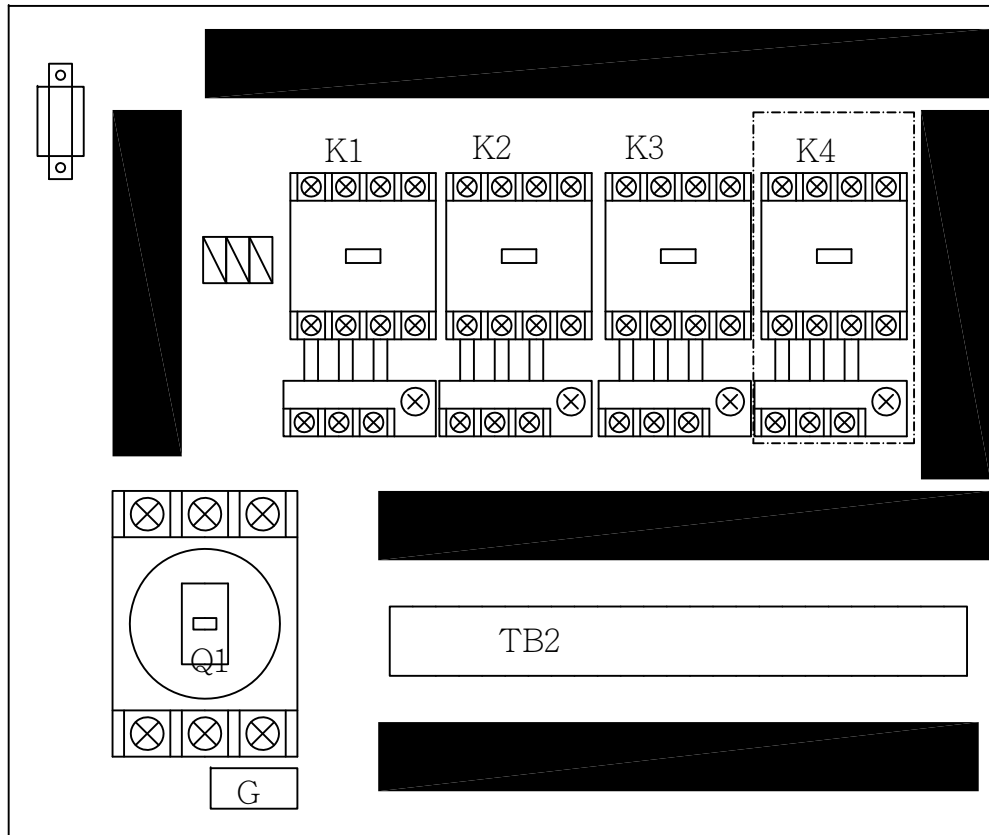
Error
Code



OPERATING ERROR INDICATOR

01	Phase Reversed	07	Chilled Water Pump Overload
02	Anti-freezing	08	Cooling Tower Overload
03	Insufficient Refrigerant'A'	09	Compressor'A' Overload
04	Insufficient Refrigerant'B'	10	Compressor'B' Overload
05	Inferior Radiation 'A'	11	Insufficient Chiller Water
06	Inferior Radiation 'B'	12	Normal & Perfect

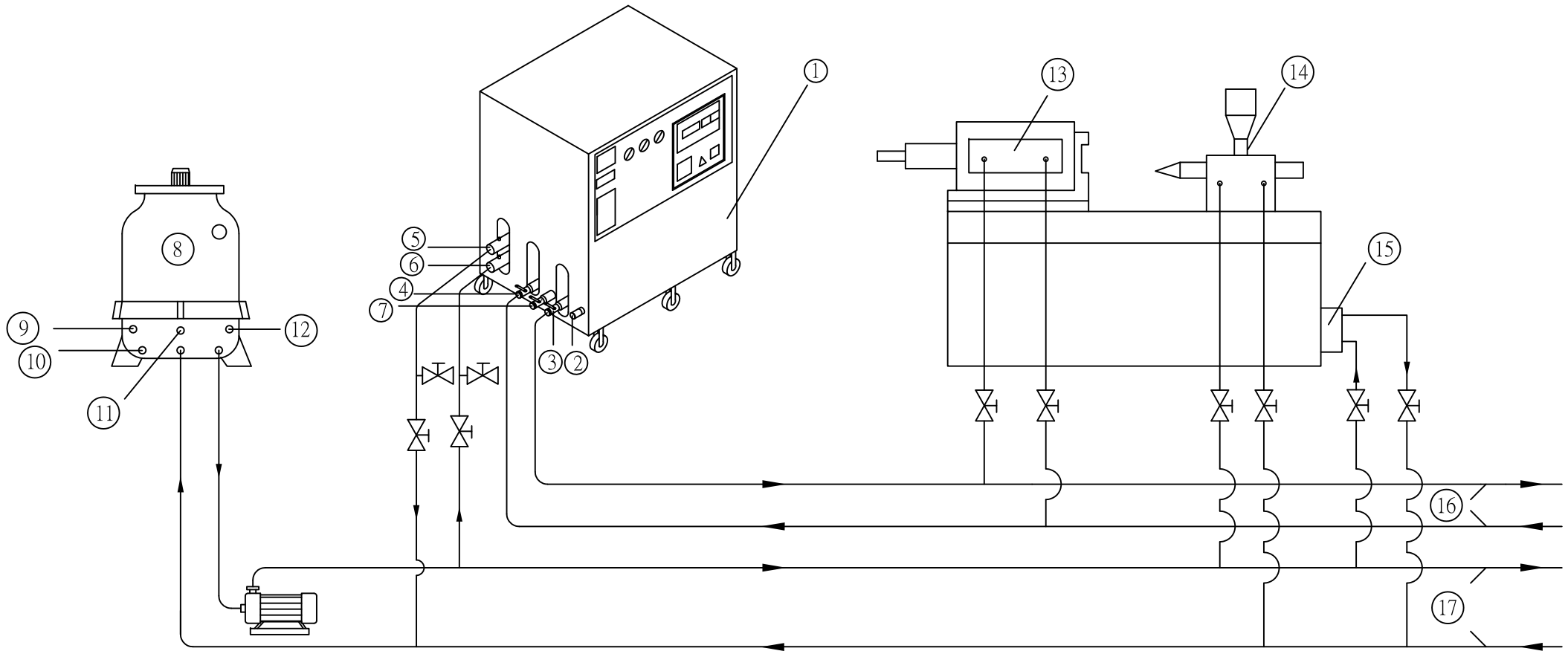
IMPLEMENT FIXED



THE DOTTED LINE IS APPLIED FOR TWIN COMPRESSOR UNIT ONLY.

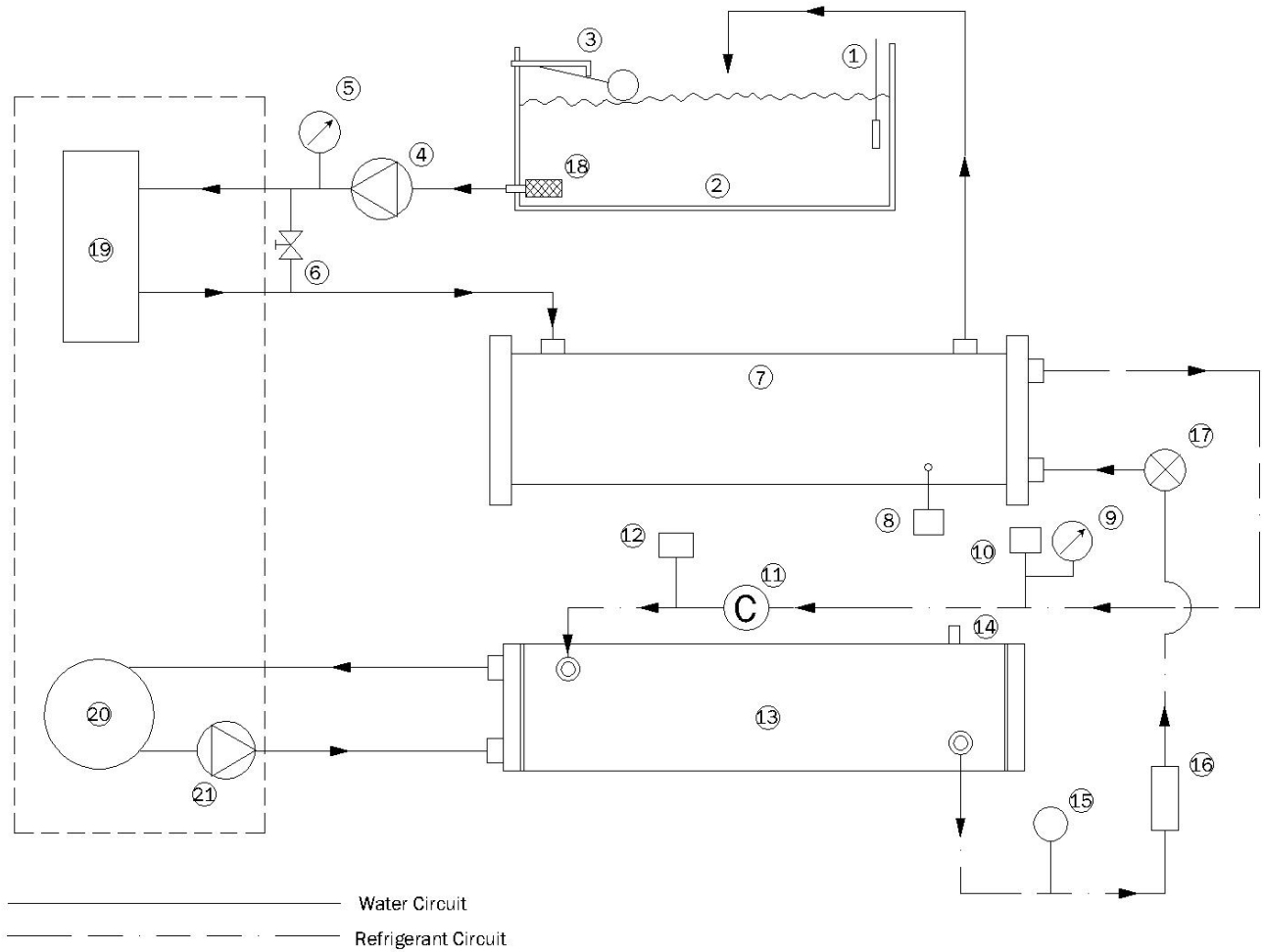
Q1	MAIN POWER SWITCH	TB	TERMINAL BLOCK	PC2	CONTROL BOARD 2
F1-F3	FUSE	TR2	TRANSFORMER (0V-12V)	H	MAIN POWER SWITCH HOLE
FB	FUSE BLOCK	PC1	CONTROLBOARD 1	AMS	AUTO-MANUAL OPERATION MODE SELECTOR SWITCH
K1-K4	CONTACTOR	TMP.SW.	TEMPERATURE CONTROLLER		
G	EARTH COPPER BOARD	PB	EMERGENCY STOP		

INSTRALLATION LAYOUT



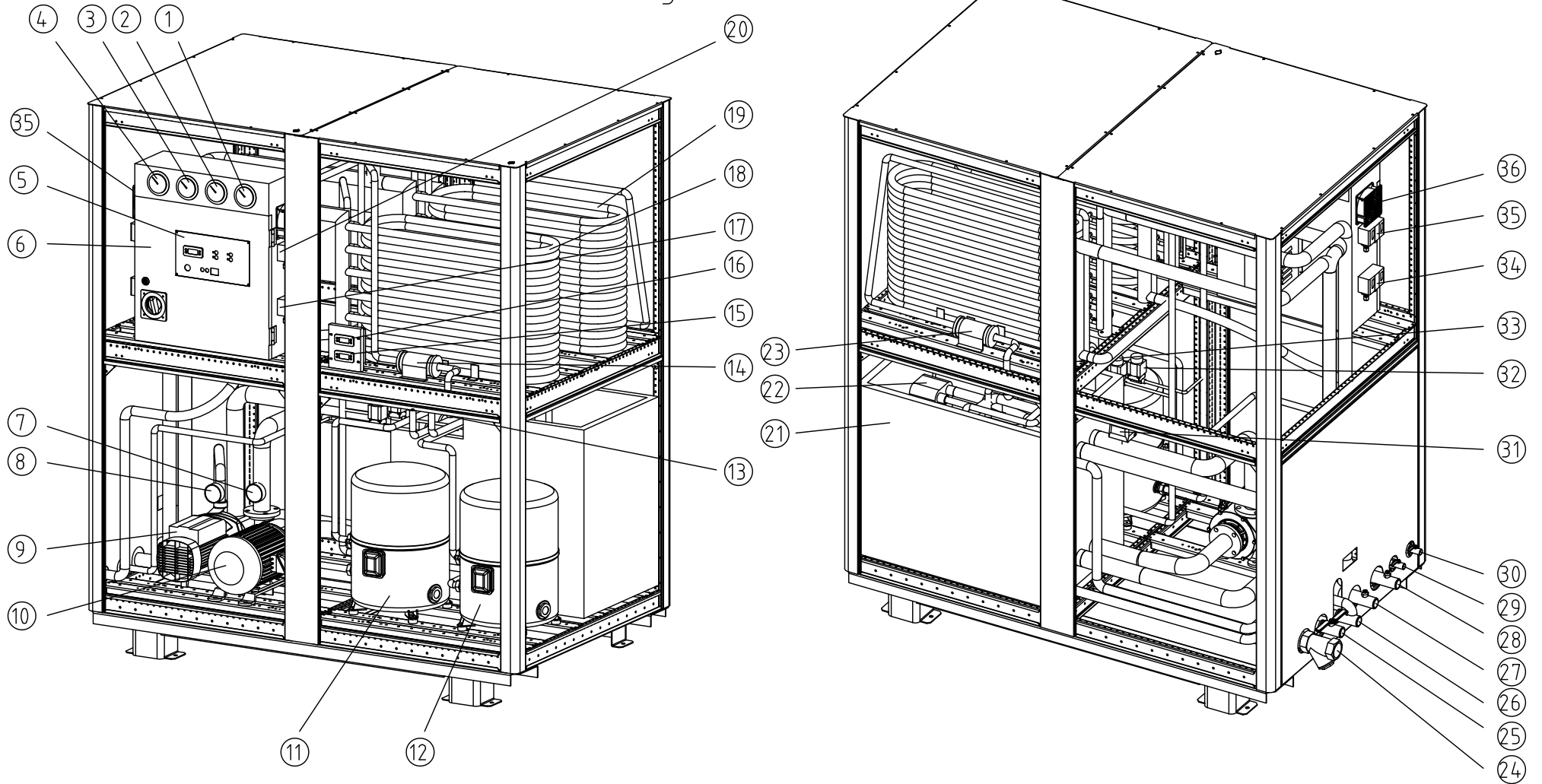
1	CHILLER	6	CONDENSED WATER INLET	11	OVERFLOW OUTLET	16	FROZEN WATER CIRCULATION
2	POWER SUPPLY	7	DRAINAGE	12	DRAINAGE	17	REGULAR TEMPERATURE WATER CIRCULATION
3	FROZEN WATER OUTLET	8	COOLING TOWER	13	MOLD COOLING		
4	FROZEN WATER INLET	9	WATER SUPPLY INLET	14	BARREL COOLING		
5	CONDENSED WATER OUTLET	10	MANUAL SUPPLY	15	HYDRAULIC OIL COLLING		

REFRIGERANT AND WATER SYSTEM DIAGRAM



No.	Description	No.	Description
1.	Temperature Sensor	12.	High Pressure Switch
2.	Water Tank	13.	Water Condenser
3.	Automatic Water Supply	14.	Pressure Release Valve
4.	Pump Motor	15.	High Pressure Gauge
5.	Water Pressure Gauge	16.	Dry Strainer
6.	Bypass Valve	17.	Expansion Valve
7.	Evaporator	18.	Mesh Filter
8.	Anti-Frozen Switch	19.	Mold
9.	Low Pressure Gauge	20.	Cooling Tower
10.	Low Pressure Switch	21.	Cooling Tower Pump
11.	Compressor		

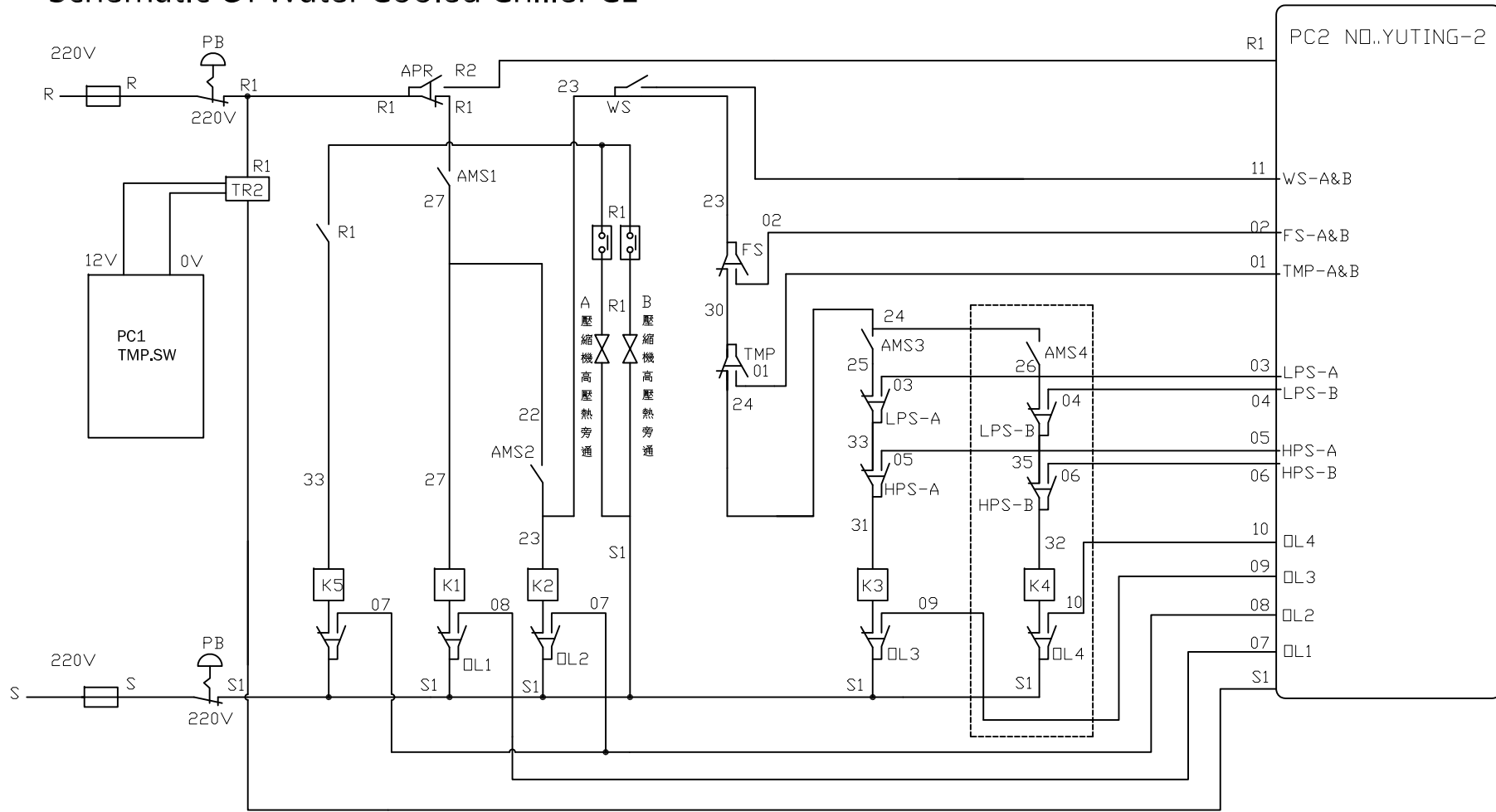
GPWC70 內部構造圖 Internal structure diagram



1	B高壓錶 B High pressure gauge	10	內循環泵浦 Internal circulation pump	19	B 套管式冷凝器 B-casing condenser	28	冷凝水入口 Cooling water inlet
2	B低壓錶 B Low pressure gauge	11	B 壓縮機 B Compressor	20	A 低壓開關 A-Low pressure switch	29	冰水補給口 Ice water supply port
3	A高壓錶 A High pressure gauge	12	A 壓縮機 A Compressor	21	B 乾燥過濾器 B Dry filter	30	排水口 Drainage port
4	A低壓錶 A high pressure gauge	13	膨脹閥 Expansion valve	22	板式熱交換器 Plate heat exchanger	31	流量開關 Flow Switch
5	控制面板 Control panel	14	A 乾燥過濾器 A Dry filter	23	水箱 Water tank	32	B 旁通電磁閥 B bypass solenoid valve
6	控制箱 Control box	15	B 防凍開關 B Antifreeze switch	24	冷凍水入口 Frozen water inlet	33	A 旁通電磁閥 A bypass solenoid valve
7	內循環水壓錶 Internal circulation water pressure gauge	16	A 防凍開關 A Antifreeze switch	25	冷凍水出口 Frozen water outlet	34	B 高低壓開關 B high and low pressure switch
8	外循環水壓錶 External circulation water pressure gauge	17	B 低壓開關 B Low pressure switch	26	排水口 Drainage port	35	A 高低壓開關 A high and low pressure switch
9	外循環泵浦 External circulation pump	18	A 套管式冷凝器 A-casing condenser	27	冷凝水出口 Cooling water outlet	36	排風扇 Exhaust fan

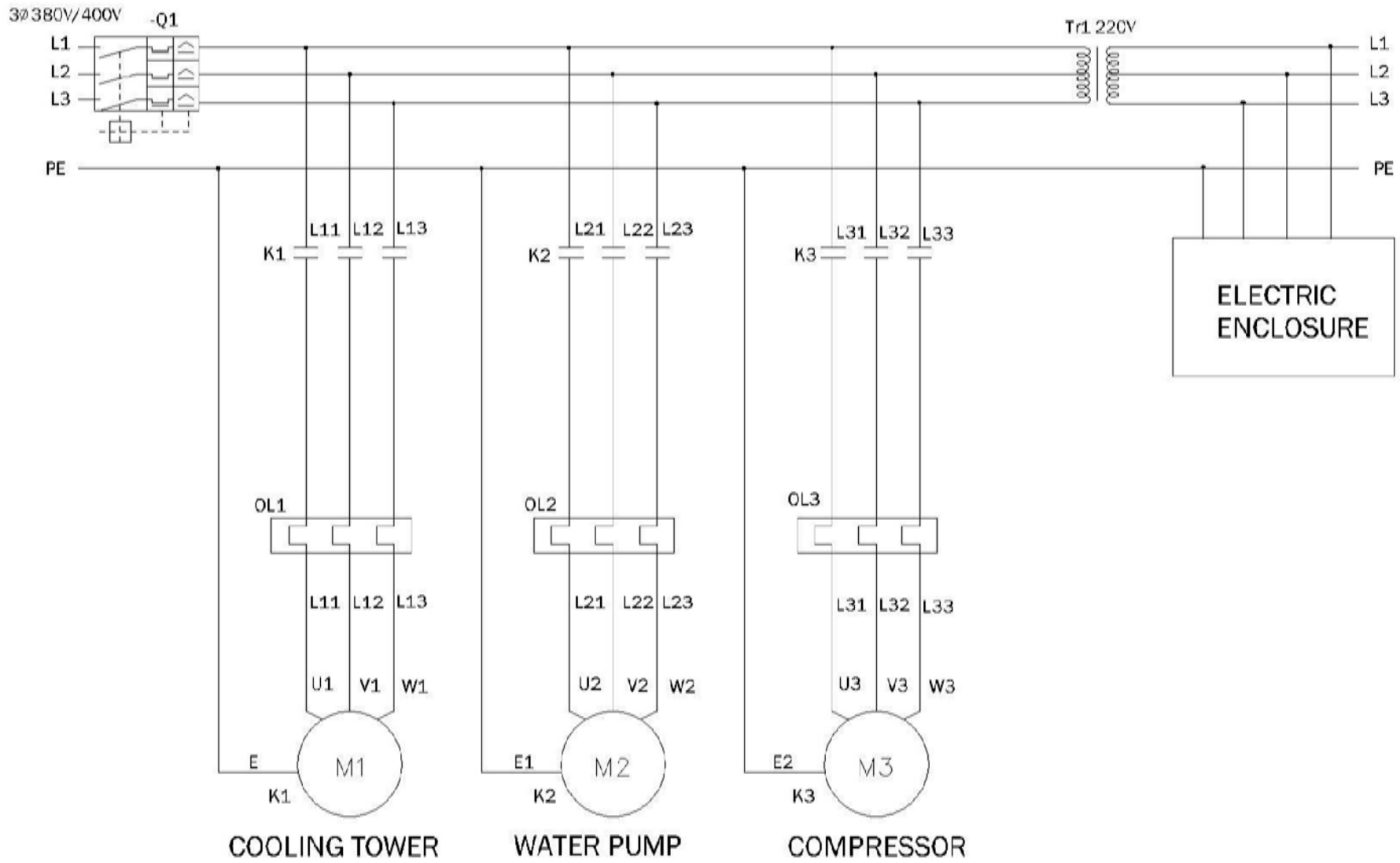
水冷式冰水機電路圖-CE

Schematic Of Water Cooled Chiller CE

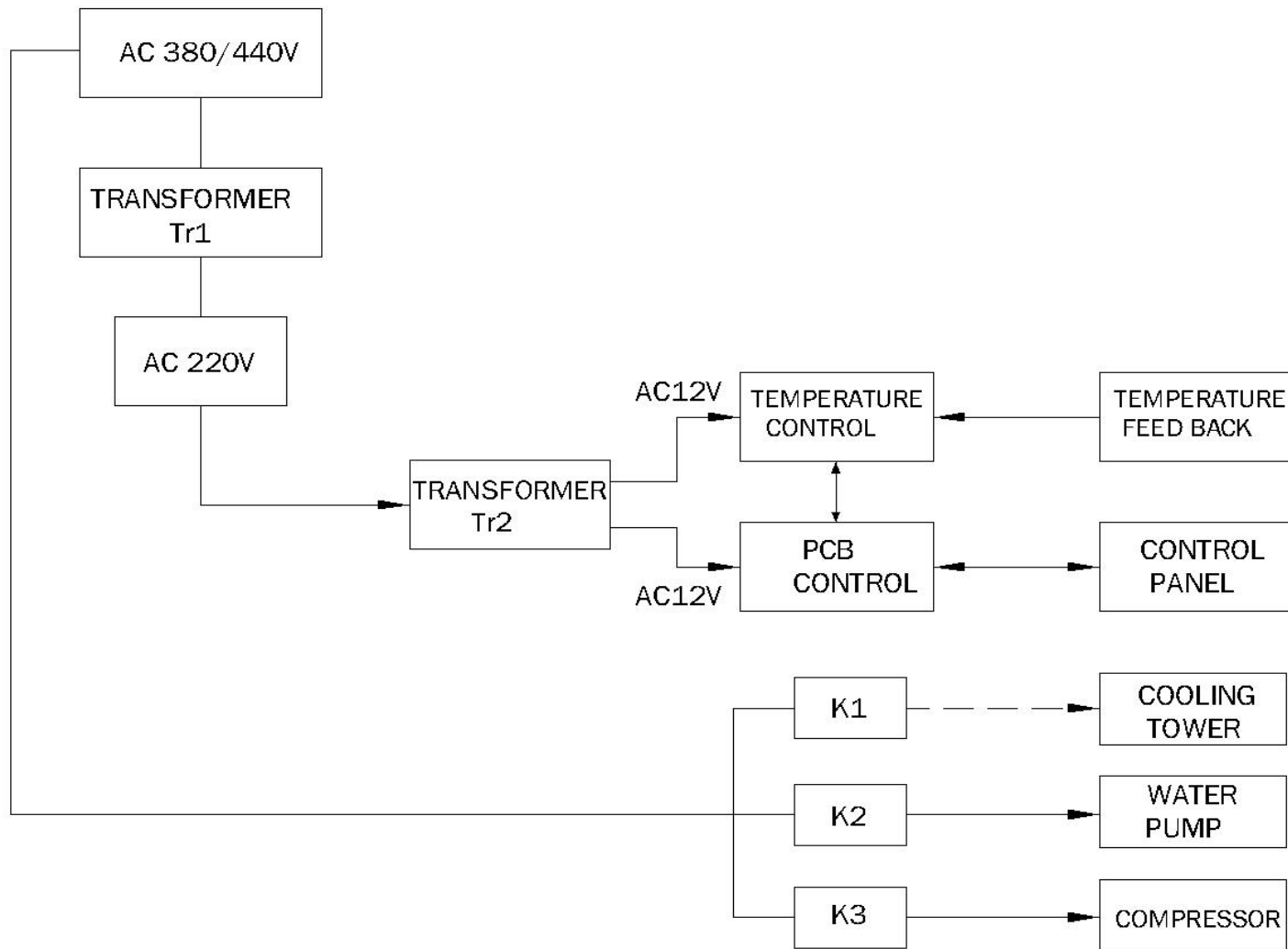


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F1-F2	FUSE 保險絲	FS	ANTI-FREEZING SWATCH 防凍開關	K2	PUMP 泵浦
PB	EMERGENCY STOP 緊急停止	TMP	TEMPERATURE CONTROLLER 溫度控制	K3	A COMPRESSOR A壓縮機
APR	REV. PREVENTING 電源欠逆向	LPS	LO-PRESSURE SWITCH 低壓開關	K4	B COMPRESSOR B壓縮機
TR2	TRANSFORMER 變壓器	HPS	HI-PRESSURE SWITCH 高壓開關	K5	EXTERNAL CIRCULATION PUMP 外循環泵浦
WS	WATER FLOW SWITCH 水流量開關	K1	COOLING TOWER 散熱水塔	OL	OVERLOAD 過載



BLOCK DIAGRAM



————— CONTROL-INSIDE WIRING

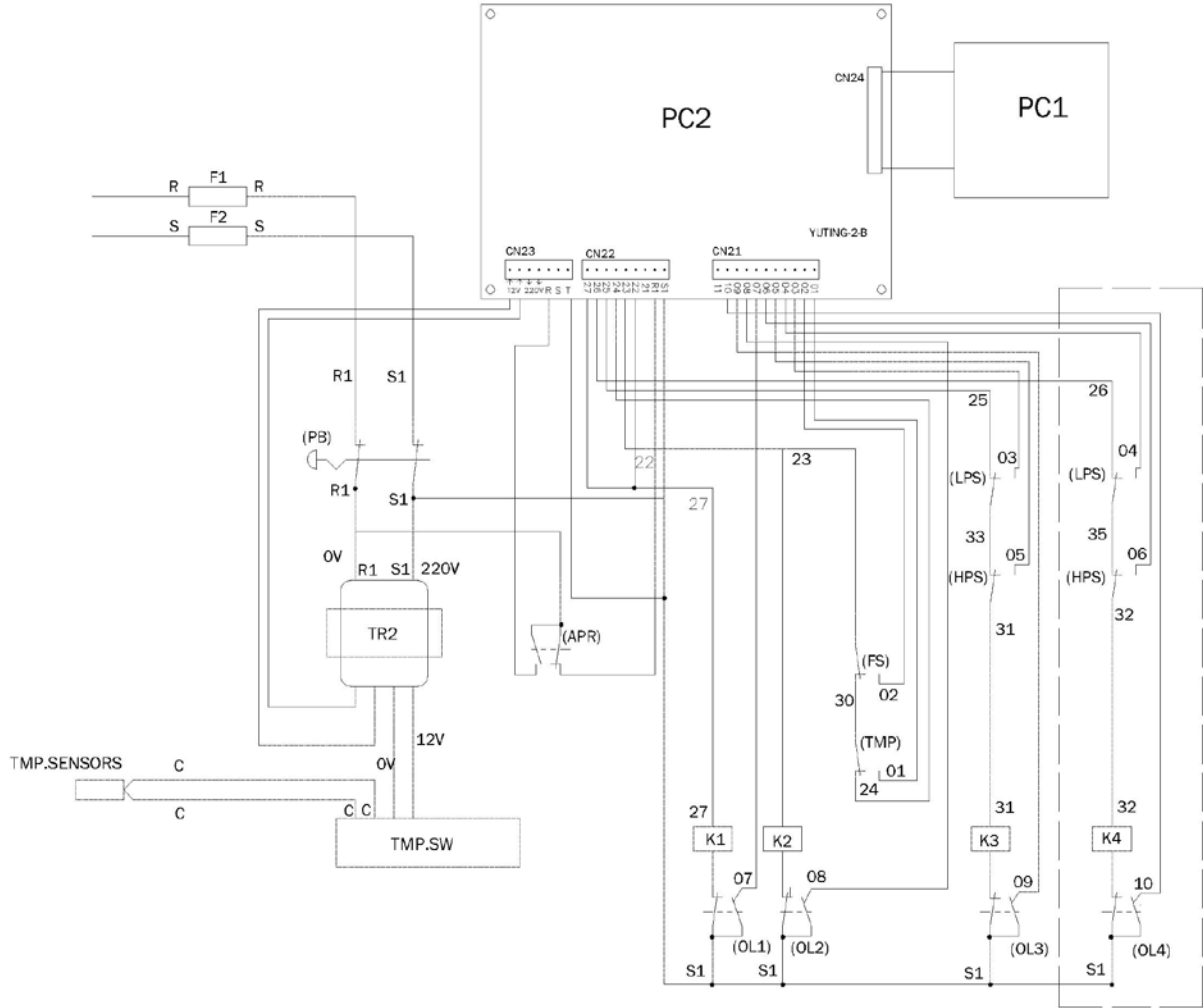
- - - - - CONTROL-OUTSIDE WIRING

IMPLEMENT FIXED 機器修復

WATER CHILLER CE 水冷式冰水機 CE

F1	FUSE	保險絲
PB	EMERGENCE STOP	緊急停止
TR2	TRANSFORMER	變壓器
TMP	TEMPWEATURE CONTROLLER	溫度控制器
HT	HEATER (COMPRESSOR)	加熱器(壓縮機)
FS	ANTI-FREEZING SWITCH	防凍開關
WS	WATER FLOW SWITCH	流量開關
LPS	LO-PRESSURE SWITCH	低壓開關
HPS	HI-PRESSURE SWITCH	高壓開關
K1	COOLING TOWER	泵浦
K2	PUMP	泵浦
K3	A COMPRESSOR	A壓縮機
K4	B COMPRESSOR	B壓縮機
OL	OVERLOAD	過載

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作記號只供兩個壓縮機使用



FAULT FINDING HINTS

CONDITION	STATUS	TROUBLE SHOOTING
Power is normal, no error code is displayed, but machine does not run.	1.Fuse burnt out. 2.Microprocessor board faulty.	1.Replace the fuse. 2.Replace PC board or set AMS switch
Error code displays '00', but compressor does not run.	1. PC1 board on control Panel faulty. 2.Protection switch faulty.	1. Replace PC1 board or set AMS switch to manual position. 2. Make correction according to Appendix 5.
Power fuse burnt out	1. Power cable grounded or Short circuit. 2. Compressor, pump or heat dissipation motor damaged.	1. Replace. 2.Repair or replace.
Phase Reversed of power cable (Error code display '01')	Reverse running of circulation pump.	Inverse any of two live wires.
Anti-freezing (Error code display '02')	1. Chiller frozen. 2. Anti-freeze switch tripped. 3. Anti-freeze switch faulty. 4. Water tank is out of water. 5. Pump damaged or reverse running.	1. Open by-pass valve. 2. Raise high temperature. On control switch or low anti-freeze temperature. Anti-freeze temperature should not be lower than 3°C (except for special models) 3. Replace. 4. Check water condition in water tank. 5. Make sure pump is normal.
Insufficient refrigerant (Error code display '03' or '04')	1. Insufficient refrigerant, low-pressure switch tripped. 2. Chiller frozen, or pump damaged. 3. Water by-pass not open, circulating water too little. 4. Y strainer jammed (On models without water tank)	1. Add refrigerant. (See Appendix 2) 2. Check if expansion tank holds water. Make sure the circulation pump is running. 3. Open water by-pass valve. 4. Clean Y strainer.
Insufficient Radiation (Error code display '05' or '06')	1. High temperature switch tripped. 2.filter screen jammed	1. See Appendix 1 2.Clean filter.
Chilled water pump overloaded (Error code display '07')	1.Abnormal voltage. Lack of phase running. 2.Coil burnt out or bearing damaged on the motor or pump.	1. Three phase power source dropped unstable voltage or lack of phase. 2. Replace bearing or motor.
Cooling fan motor overloaded (Error code display '08')	3.Poor terminal connection or loose power wires/relays. 4.Relay overload (current is Set too high)	3. Tighten or replace. 4.Properly adjust overload current.

Compressor overload (Error code display '09' or '10')	<ol style="list-style-type: none"> 1. Abnormal voltage, or lack of phase running. 2. Compressor damage. 3. Overload, or water temperature too high. 4. Overload current on relay set too high. 	<ol style="list-style-type: none"> 1. Three phase power source voltage dropped, unstable voltage or lack of phase. 2. Replace. 3. Reduce load. 4. Properly adjust overload current.
Insufficient flow of chilled water (Error code display '11')	<ol style="list-style-type: none"> 1. Filter screen jammed. 2. Chiller frozen, insufficient flow through bypass valve. 3. Pump reverse running or damaged. 4. Flow control switch damaged. 	<ol style="list-style-type: none"> 1. Clean Y shaped filter screen at water suction port. 2. Raise temperature. Open water bypass valve. 3. Change any two load wires or replace pump. 4. Replace.
Water is not cooled in chilled water tank.	<ol style="list-style-type: none"> 1. Poor heat dissipation. 2. Insufficient refrigerant. 3. Overload. 4. Temperature switch set too high or damaged. 5. Compressor vane broken. 6. Refrigerant jammed. 	<ol style="list-style-type: none"> 1. Poor cooling efficiency. (See Appendix 1 for correction) 2. Add refrigerant. (See Appendix 2 for correction) 3. Increase capacity of chiller. 4. Reduce temperature or replace switch. 5. Replace compressor. (Check according to Appendix 3) 6. Replace the jammed parts, dry filter or expansion valve. Vacuum treat then add refrigerant.
Insufficient refrigerant cause by high pressure valve release	<ol style="list-style-type: none"> 1. High pressure switch damaged. When refrigerant pressure exceeds 23kg/cm², the high pressure valve releases for safety. 2. High pressure valve damaged. 	<ol style="list-style-type: none"> 1. Repair high/low pressure switch, then fill with refrigerant. 2. Replace high pressure valve.
Temperature controller faulty.	<ol style="list-style-type: none"> 1. Trouble 'E1' displayed or Unstable temperature. 2. Controller damaged. 3. LED damaged. 	<ol style="list-style-type: none"> 1. Replace temperature-sensor wire. 2. Set parameter according to instructions for temperature controller. 3. Replace temperature control switch.

After the above troubles have been corrected, the machine can be reset automatically for trouble displays 01,02 and 11. Press the reset key on the control panel for trouble displays 03, 04, 05 and 06. Press the reset key on the relay for trouble displays 07, 08, 09 and 10.

APPENDIX 1: TREATMENT FOR POOR HEAT DISSIPATION

Poor heat dissipation on the condenser will result in low efficiency, current consumption increase and a poor cooling effect. When pressure reaches 285 PSI, the high-pressure protection switch for the compressor will trip. The compressor stops, and error code indication 05 or 06 will display, indication poor heat dissipation. If this occurs, check according to the following steps:

1. Ensure that there is enough cooling water.
2. Make sure the pump and heat dissipation motors run clockwise.
3. Check if water suction filter and water suction pipes are jammed.
4. Make sure the nozzle and water tube run clockwise at 30°C

If all the above conditions are normal, the poor heat dissipation may be caused by too dust deposited in the condenser. Clean the condenser as per the below instructions:

A. CLEAN WITH DETERGENT

First remove the dust deposited at the bottom of cooling tower, then clean the filter screen and the jammed parts in the water pipe. When the water level reaches 1" above the water suction filter screen, add detergent at a 1:10 ratio into the cooling tower. Use the pump to circulate the detergent. Start the compressor running every half an hour. When the compressor is running, and the high pressure lowers to 200 PSI, then the condenser is well cleaned. Add a large amount of water into the cooling tower to neutralize the detergent. Replacing with clean water three times will yield normal running conditions.

NOTE: Cleaning period should be no more than three hours.

B. CLEAN WITH COPPER BRUSH

Open the condenser cover, and use a copper brush to clean the deposited dust. Be careful not to damaged the copper tubing when cleaning. After cleaning, close the condenser cover and reset the high pressure switch before starting the machine.

APPENDIX 2: TREATMENT FOR INSUFFICIENT REFRIGERANT

1. While the chiller is running, if the low pressure gauge display is lower than 30 PSI, then there is insufficient refrigerant. When this occurs, repair the locked parts, dry the filter and vacuum treat, then fill with the proper amount of refrigerant.
2. If leaking parts are immersed in water, immediately stop the machine running and remove the water from the water tank. Contact the machine manufacturer or your local distributor for maintenance. Continued operation under this condition may cause serious damage.
3. Applicable refrigerant is R407C.

APPENDIX 3: NORMAL VALUE FOR HIGH/LOW PRESSURE

When the compressor is running, the best condition for the high-pressure display is 180-230 PSI. However, the pressure should not be higher than 285 PSI. If the high pressure exceeds 325 PSI then the high-pressure switch will trip. When this occurs, make correction according to Appendix 1. The best condition for the low-pressure display is 45-65 PSI. The low pressure should not be less than 30 PSI. When the low-pressure switch is tripped, make correction according to Appendix 1. When the compressor is running, if there is little or not difference between the high and low pressure then the valve in the compressor is damaged. When this occurs, stop the machine running immediately and contact the distributor for maintenance. If the compressor does not run, the high and low pressure should be at 130 PSI under normal temperature. A balance between the high and low pressure is normal.

APPENDIX 4: TEMPORARY TREATMENT WHEN MACHINE SHUTS DOWN

When the compressor is damaged, but continuous operation is required, continuous running of the pump may cause the temperature to rise rapidly. If the water temperature exceeds 50°C, water leakage will occur due to damaged seals in the water pipe and pump. To prevent such problems, release a small amount of water through the water outlet port, and automatically supply water to the tank to slow the rising of water temperature. Repair the machine as soon as possible.

APPENDIX 5: PROTECTION SWITCH FAULTY

When the error code indication displays '00', but the compressor does not run, check the following items:

1. Check PC1 on the microcomputer control panel for damaged.
2. Check the relay coil on the compressor for damage or poor contact, and check the overload protector for damage.
3. Make sure that the temperature controller is not set too high and is not damaged.
4. Check the anti-freeze switch for damaged.
5. Check the high/low pressure switch for damage.
6. If the machine has no water tank, check the flow control switch for damage.

The above control switches and circuits are connected in series, any damaged part may cause a stop of compressor.

APPENDIX 6: PC BOARD DAMAGED

When the PC board for the microcomputer is damaged, turn the AMS switch on the PC2 to the manual control position. This will enable the chiller to run not under the control of the microcomputer, without running indication and without error code display. The temperature control and protection switch will work normally. Under these circumstances, the machine can be operated temporarily.

OPERATING SAFETY PRECAUTION

1. Do not run the machine unattended.
2. Do not move guards while COOLING CHILLER is under power.
3. Do not allow distractions to interfere with COOLING CHILLER operations. Do not operate it while talking.
4. Beware of obstructions that prevent completely tightening the screws. Ensure that screw is tight.
5. To be sure that the power has been turned off when the COOLING CHILLER is not used for sometime.
6. To be sure that protective guards are in place of machine.
7. To know the function of each controller.
8. To know how to hold components properly when lifting.

PERSONAL PROTECTIVE EQUIPMENT

1. To take with the helmet protection when operating.
2. To take with the safety shoes when operating.

HOW TO MAINTAIN THE MACHINE

1. If the refrigerant is less, we can fill the type R407C refrigerant.
2. If the cooling water of tank is less, we can fill the water.

HOW TO DO THE INDUSTRIAL WASTE

1. The machine is failure and useless, the cooling medium R407C must be treated in advance or call for special waste company.
2. The other industrial waste must be followed national or local area rule to treat.





IDPlus 902

USER INTERFACE



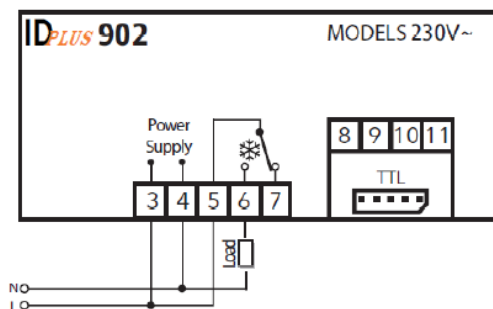
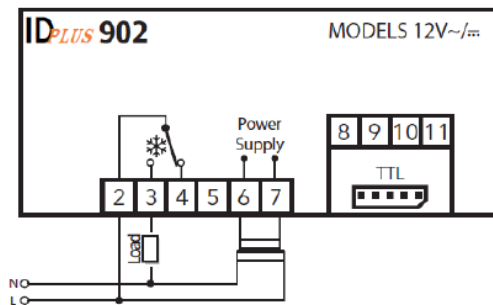
IDPLUS 902

KEYS

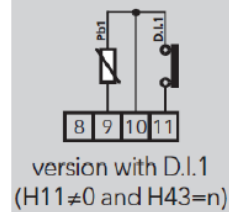
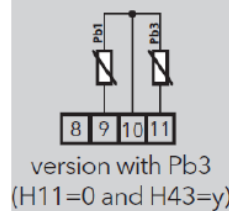
 <p>UP Press and release Scroll menu items Increases values Press for at least 5 sec Activates the Manual Defrost function</p>	 <p>STANDBY (ESC) Press and release Returns to the previous menu level Confirms parameter value Press for at least 5 sec Activates the Standby function (when outside the menus)</p>
 <p>DOWN Press and release Scroll menu items Decrease values Press for at least 5 sec Function can be configured by the user (par. H32)</p>	 <p>SET (ENTER) Press and release Displays alarms (if active) Opens Machine Status menu Press for at least 5 sec Opens Programming menu Confirm commands</p>

IDPLUS 902

CONNECTIONS



Probe connections



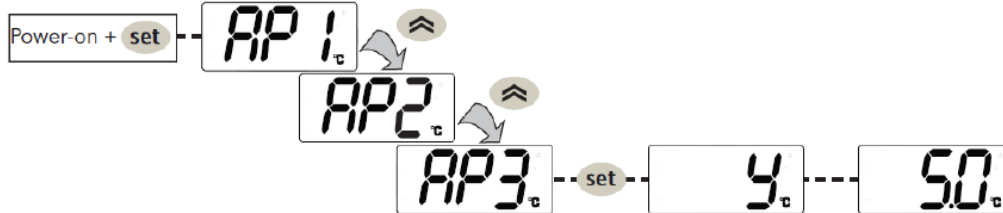
IDPlus 902: TERMINALS

OUT1	OUT1 relay → 2-3-4: 12V~ or 5-6-7: 230V~
Supply	6-7: models 12V~ or 3-4: models 230V~
N-L	230V~ power supply
10-9	Probe Pb1
10-11	Digital Input 1/ Pb3 probe
TTL	TTL Input

LOADING DEFAULT APPLICATIONS

The procedure used to load one of the default applications is:

- when the instrument switches on, press and hold the **set** key: the label "AP1" will appear;
- scroll through the various applications (AP1-AP2-AP3-AP4) using the **⏪** and **⏩** keys;
- select the desired application using the key **set** ("AP3" in the example) or cancel the procedure by pressing the key **ⓘ**; alternatively wait for the timeout;
- if the operation is successful, the display will show "y", otherwise "n" will appear;
- after a few seconds the instrument will return to the main display.



LOCK SETPOINT MODIFICATION

The keypad can be locked by entering the "Basic Commands" menu using **set** and pressing **ⓘ** and **⏪** within 2 seconds, or by programming the "LOC" parameter (see "diS" folder). If the keypad is locked, the "Basic Commands" menu can be accessed and the Setpoint displayed, but the value cannot be modified.

INSTRUMENT ON/OFF

The instrument can be switched off by pressing the key **ⓘ** for longer than 5 seconds. In this condition, the adjustment algorithms and defrost cycles are disabled and the text "OFF" will appear on the display.

ACCESSING AND USING THE MENUS

Resources are organised into menus. Press and release the **set** key to access the "Machine Status" menu. To access the "Programming" menu, press the **set** key for more than 5 seconds. If no keys are pressed for over 15 seconds (Timeout), or if the **ⓘ** key is pressed, the last value to appear on the display is confirmed.

MANUAL DEFROST CYCLE ACTIVATION

Hold down the **⏪** key for longer than 5 seconds. It is only activated if the temperature conditions are fulfilled. Otherwise, the display will flash three times to indicate that the operation will not be performed.

MOUNTING - DIMENSIONS

The device is designed for panel mounting. Drill a 29x71 mm hole and insert the instrument; secure it with the special brackets provided. Do not install the instrument in damp and/or dirty places; in fact, it is suitable for use in places with ordinary or normal levels of pollution.

Keep the area around the instrument cooling slots adequately ventilated.

DIAGNOSTICS

Alarms are always indicated by the buzzer (if present) and the alarm icon (🔊).

To switch off the buzzer, press and release any key; the corresponding icon will continue to flash.

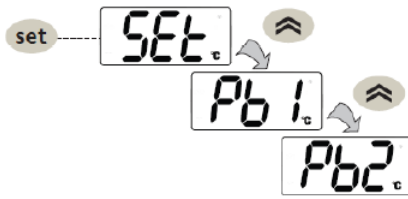
N.B.: If alarm exclusion times have been set (see "AL" folder) the alarm will not be signalled.

In the event of an alarm caused by a malfunctioning ambient probe (Pb1), the indication "E1" will appear on the display.

Finally, for a malfunctioning Pb3 probe, the indication "E3" will appear on the display.

MACHINE STATUS MENU

Access the Machine Status menu by pressing **set** and releasing the key. If no alarms are active, the "SEt" label appears. Use the keys **⏶** and **⏷** to scroll through all the folders in the menu:



- AL: alarms folder (**only visible if an alarm is active**);
- SEt: Setpoint setting folder;
- Pb1: probe 1 - Pb1 folder;

- Pb3: probe 3 - Pb3** folder;

* folder displayed if Pb2 present (H42 = y)

** folder displayed if Pb3 present (H11 = 0 and H43 = y)

Setting the Setpoint: To display the Setpoint value press the **set** key when the "SEt" label is displayed. The Setpoint value appears on the display. To change the Setpoint value, press the **⏶** and **⏷** keys within 15 seconds. Press **set** to confirm the modification.

Displaying the probes: When labels Pb1, Pb2 or Pb3 are present, press the **set** key to view the value measured by the corresponding probe (NOTE: the value cannot be modified).

PROGRAMMING MENU

To access the "Programming" menu, press the **set** key for more than 5 seconds. If specified, an access PASSWORD will be requested: "PA1" for User parameters and "PA2" for Installer parameters (see "PASSWORD" paragraph).

User parameters: When accessed, the display will show the first parameter (e.g. "diF"). Press **⏶** and **⏷** to scroll through all the parameters on the current level. Select the desired parameter by pressing **set**. Press **⏶** and **⏷** to modify it and **set** to save the changes.

Installer parameters: When accessed, the display will show the first folder (e.g. "CP"). Press **⏶** and **⏷** to scroll through the folders on the current level. Select the desired folder using **set**. Press **⏶** and **⏷** to scroll through the parameters in the current folder and select the parameter using **set**. Press **⏶** and **⏷** to modify it and **set** to save the changes.

NOTE: Make sure you switch the instrument off and on again each time the parameter configuration is changed, in order to prevent malfunctioning in the configuration and/or timing in progress.

PASSWORD

Password "PA1": used to access **User** parameters. The password is not enabled by default (PS1=0).

To enable it (PS1≠0): press and hold **set** for longer than 5 seconds, scroll through the parameters using **⏶** and **⏷** until you see the label **PS1**, press **set** to display the value, modify it using **⏶** and **⏷**, then save it by pressing **set** or **⏵**. If enabled, it will be required in order to access the User parameters.

Password "PA2": used to access **Installer** parameters. The password is enabled by default (PS2=15).

To modify it (PS2≠15): press **set** and hold for longer than 5 seconds, scroll through the parameters using **⏶** and **⏷** until you see the label **PA2**, press **set**, set the value to "15" using **⏶** and **⏷**, then confirm using **set**.

Scroll through the folders until you find the label **diS** and press **set** to enter. Scroll through the parameters using **⏶** and **⏷** until you see the label **PS2**, press **set** to display the value, modify it using **⏶** and **⏷**, then save it by pressing **set** or **⏵**. The visibility of "PA2" is as follows:

- 1) **PA1** and **PA2 ≠ 0:** Press and hold **set** for longer than 5 seconds to display "PA1" and "PA2". It will then be possible to decide whether to access the User (PA1) or the Installer (PA2) parameters.
- 2) **Otherwise:** The password "PA2" is amongst the level1 parameters. If enabled, it will be required when accessing the Installer parameters; to enter it, proceed as instructed for password "PA1".

If the password entered is incorrect, the label PA1/PA2 will be displayed again and the procedure will need to be repeated.

USING THE COPY CARD

The Copy Card is connected to the serial port (TTL) and allows rapid programming of the instrument parameters. Access **Installer** parameters by entering "PA2", scroll through the folders using **⏶** and **⏷** until folder **FPr** appears. Select it using **set**, scroll through the parameters using **⏶** and **⏷**, then select the function using **set** (e.g. **UL**).

- **Upload (UL):** Select UL and press **set**. This function uploads the programming parameters from the instrument to the card. If the procedure is a success, "y" will appear on the display, otherwise "n" will appear.
- **Format (Fr):** This command is used to format the copy card, (recommended when using the card for the first time). **Important:** the **Fr** parameter deletes all data present. This operation cannot be cancelled.
- **Download:** Connect the Copy Card when the instrument is switched off. At power-on, data is downloaded from the copy card to the instrument automatically. At the end of the lamp test, the display will show "**dly**" if the operation was successful and "**dLn**" if not.

NOTE: After downloading, the instrument works with the settings of the new map just downloaded.

DISCLAIMER

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ELECTRICAL CONNECTIONS

Attention! Make sure the machine is switched off before working on the electrical connections.

The instrument is equipped with screw or disconnectable terminal blocks for connecting electrical cables with a max. diameter of 2.5 mm² (one wire per terminal for power connections); for the terminal ratings, see the label on the instrument. Do not exceed the maximum permissible current; in case of higher loads, use a suitably rated contactor. Make sure the power supply voltage complies with that required by the instrument.

Probes have no connection polarity and can be extended using a normal bipolar cable (note that the extension of the probes influences the electromagnetic compatibility - EMC - of the instrument: take great care with the wiring).

Probe cables, power supply cables and the TTL serial cable should be routed separately from power cables.

CONDITIONS OF USE

Permitted use

For safety reasons, the instrument must be installed and used according to the instructions supplied and, in particular, parts under dangerous voltages must not be accessible in normal conditions. The device must be adequately protected from water and dust with regard to its application, and must only be accessible using tools (except for the front panel). The device is suitable for use in household refrigeration appliances and/or similar equipment and has been tested for safety aspects in accordance with the harmonised European reference standards.

Improper use

Any use other than that expressly permitted is prohibited. The relay contacts provided are of a functional type and subject to failure: any protection devices required by product standards, or suggested by common sense for obvious safety requirements, must be installed externally to the instrument.

TABLE OF INSTALLER MENU PARAMETERS IDPLUS 902

PAR.	DESCRIPTION	RANGE	App2	M.U.
SEt	Temperature control SEtpoint	LSE ... HSE	0,0	°C/°F
diF	Compressor relay activation differential	0,1...30,0	2,0	°C/°F
HSE	Higher SEt. Maximum value that can be assigned to the Setpoint.	LSE...302	140	°C/°F
LSE	Lower SEt. Minimum value that can be assigned to the Setpoint.	-58,0...HSE	-55,0	°C/°F
Hc	Control mode. "H" = Hot, "C" = Cold.	C/H	C	flag
Ont	Controller on time for faulty probe. if Ont = 1 and OFt = 0, the compressor remains on; if Ont = 1 and OFt > 0 it runs in duty cycle mode.	0 ... 250	0	min
OFt	Controller off time for faulty probe. if OFt = 1 and Ont = 0, the controller remains off; if OFt = 1 and Ont > 0, it operates in duty cycle mode.	0 ... 250	1	min
dOn	Compressor relay activation delay after request.	0 ... 250	0	secs
dOF	Delay after switching off and subsequent activation.	0 ... 250	0	min
dbi	Delay between two consecutive compressor activations.	0 ... 250	0	min
OdO (!)	Delay in activating outputs after the instrument is switched on or after a power failure. 0 = not active.	0 ... 250	0	min
HAL	Maximum temperature alarm	LAL ... 150	150	°C/°F
LAL	Minimum temperature alarm	-50,0 ... HAL	-50,0	°C/°F
LOC	Basic commands modification lock. It is still possible to enter parameter programming mode and modify them. y = yes; n = no.	n/y	n	flag
PS1	PAssword1: if PS1≠0 is the access key to "User" parameters.	0 ... 250	0	num
ndt	Display with decimal point. y = yes; n = no.	n/y	y	flag
CA1	Calibration 1. Temperature value to be added to the Pb1 value.	-12,0...12,0	0,0	°C/°F
dro	Select the unit of measurement used when displaying the temperature recorded by the probes. (0 = °C, 1 = °F). NOTE: switching between °C and °F or vice-versa DOES NOT modify the SEt, diF values, etc. (e.g. Setpoint=10° C becomes 10°F)	0/1	0	flag
H00	Probe type selection. 0 = PTC; 1 = NTC; 2 = PT1000.	0/1/2	1	num
tAb	tAble of parameters. Reserved: read-only parameter.	/	/	/
UL	Programming parameter transfer from instrument to Copy Card.	/	/	/
Fr	Format Copy Card. Erase all data contained in the Copy Card. NOTE: if parameter "Fr" is used, the data entered will be permanently lost. This operation cannot be cancelled.	/	/	/