



電控箱專用冷卻空調

Air Conditioner for Electric Control Panel

使用說明書 User guide

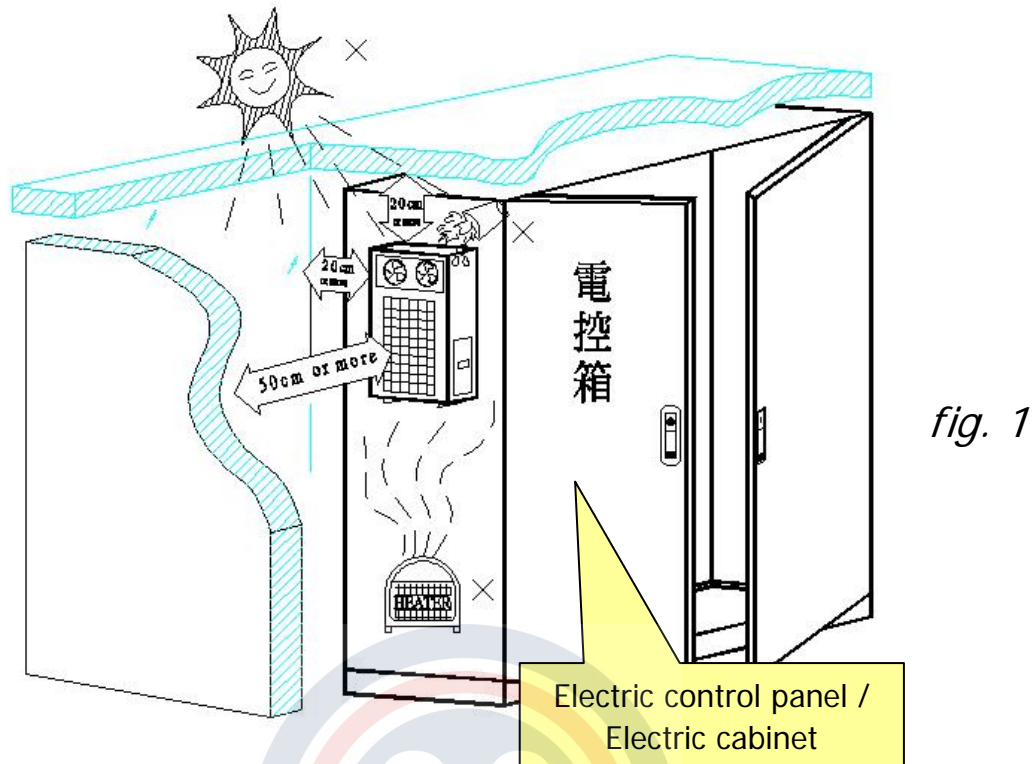
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1. 冷卻機安裝前注意事項圖示與說明：



- 1_1. 安裝或運轉前請先詳讀本使用手冊；非專業人員嚴禁拆裝、維修本冷卻機。
- 1_2. 本冷卻機為工業散熱用設備，請勿使用於動植物或食物等其他冷卻用途。
- 1_3. 嚴禁自行改裝、維修、拆卸或移裝；欲進行上述動作前請先向專業人員洽詢，以防人員傷害與機器損壞。
- 1_4. 請將本冷卻機安裝於周圍溫度 20°C ~40°C、濕度 85%以下之環境中；並且選擇易於維修保養、通風散熱條件良好、遠離油氣與灰塵、避免陽光日照、避免熱源之空間進行安裝。**當環境溫度高於 43°C 時請立即停止使用以免發生危險。**
- 1_5. 冷卻機室外側出風口不可有異物阻擋；散熱不良時將影響冷房效率甚至造成冷卻機故障。電控箱內零件請勿擋住冷卻機室內側出風口；因為低溫冷風直接吹襲零件易產生結露現象，恐造成零件浸水故障；若無法避免冷風直吹處，請加以隔熱保溫處置，並確保電控箱內通風順暢，避免有短回風現象。
- 1_6. 冷卻機之安裝高度建議至少離地 50cm，以便於人員操作；冷卻機請安裝於水平位置，機器之左右、前後傾斜角度不得大於 3°，並且嚴禁機器被水噴灑或對機器潑水沖洗。
- 1_7. 安裝時以電控箱體左側為第一優先考量，電控箱右側次之；當安裝於電控箱體右側時，請自行將冷氣機（左側板+錶頭）與右側板作更換，以利溫控錶頭之操作與溫度觀察。
- 1_8. 請勿將手指、棒頭等物伸入進出風口，避免被內部之高速風扇或鰭片傷害。
- 1_9. 冷卻機運轉前請確實將空氣濾網安裝好，以防止棉絮、灰塵進入冷卻機內部。

1. Safety precautions .

● **Be sure to follow all the precautions below : they are all important for ensuring safety .**

- 1_1. Please read through the manual before installation or operation. Non-professional users are banned from mounting, dismounting and maintaining the cooler. Improper and incomplete installation may cause water leakage, electric shock, or fire.
- 1_2. This cooler is a heat-dissipating equipment only for industrial use and can not be used in other cooling purposes such as animals, plants or food.
- 1_3. Private refit, maintenance, disassembly or translocation & installation are all prohibited. Before proceeding above operations, please consult professionals so as to prevent damages to people or the machine.
- 1_4. This cooler should be installed in an environment with ambient temperature of 20°C to 40°C and humidity under 85%. The installing space should be suitable for maintenance, good for ventilation and heat-dispersion, far from oil, gas and dust, as well as able to prevent sunlight and heat. When the environmental temperature is higher than 43°C, please promptly stop using this cooler to avoid dangers.
- 1_5. Extraneous matter shouldn't block outdoor air outlet of the cooler. Otherwise, bad heat dissipation will affect cooling efficiency or even cause cooler failure. Components inside the electrical control panel should not obstruct the indoor outlet because a direct low-temperature and cool air blow toward components can easily result in condensation, which may cause immergence error. If this air blow is inevitable, please take measurement for heat insulation and ensure smooth ventilation inside the electrical control panel to avoid short return air.
- 1_6. The cooler should be installed more than 50cm away from the ground for operating conveniently and should be installed in horizontal/vertical position, with the angle of inclinations in left, right, forth and back directions not more than 3 degrees. Do not sprinkle water over the machine or wash the machine by splashing water.
- 1_7. During installation, left side of the electrical control panel body should be considered first, the right side next. When the cooler is installed at right side, please change the right-side plate with the left-side plate and the display unit so as to help operate the temperature-control panel and observe the display.
- 1_8. Do not put finger, rod, etc. into the air inlet/outlet, so as to avoid damages caused by high-speed fan or fin inside.
- 1_9. Before the cooler runs, please ensure that air filter is properly installed, and thus to prevent cotton fiber and dust getting inside the cooler.

2. 運送/搬運過程中請勿傾倒或重力撞擊機器：

2. Do not tilt or forcefully hit the cooler during transporting or carrying .

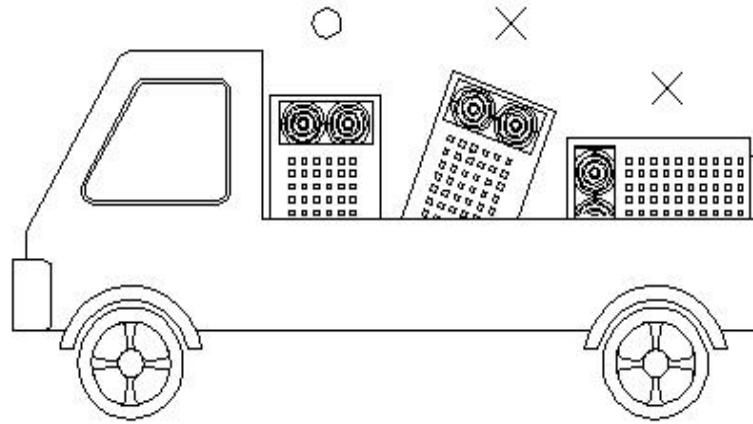
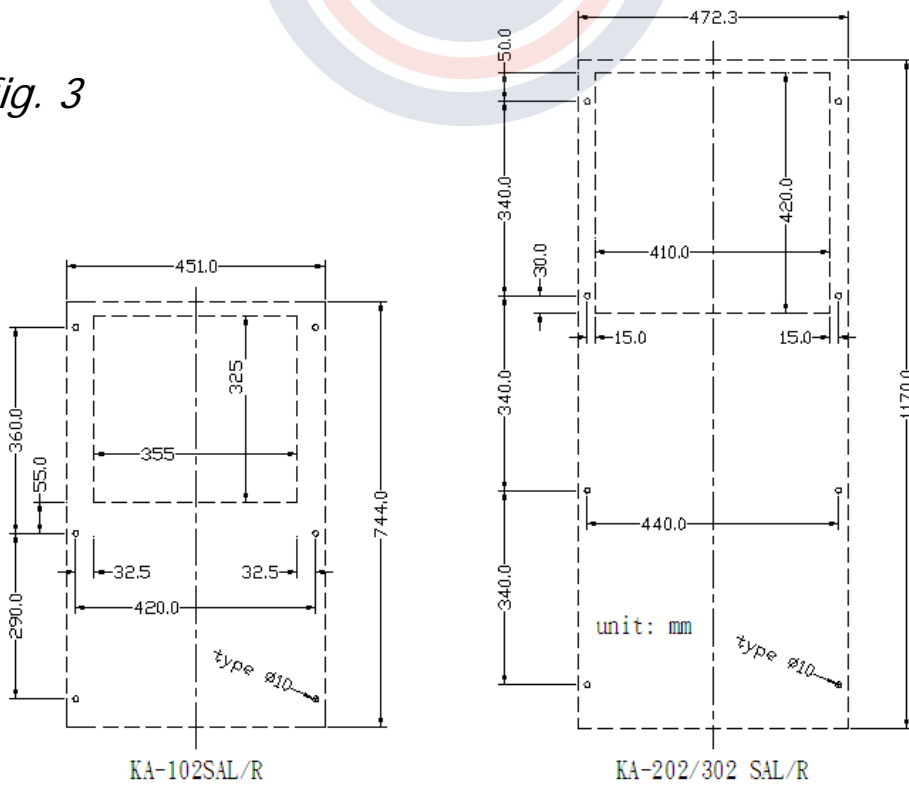


fig. 2

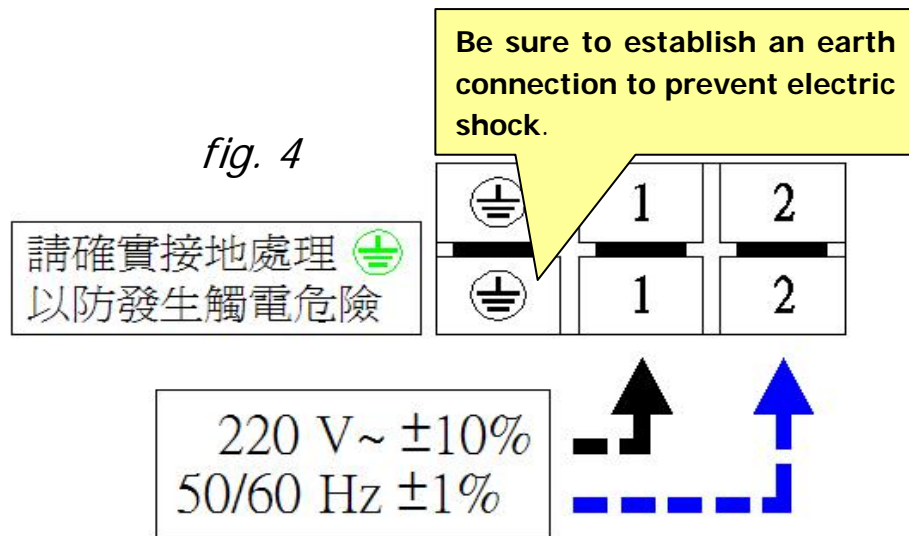
3. 安裝開孔尺寸：
(單位: mm)

3. Mounting hole dimensions . (unit: mm)

fig. 3



4. 冷氣機電力接點端子座圖示：（請確實接地處理，以防發生觸電危險）



4_1. 供應電源請務必使用專用配電分路，請勿與其他設備共用同一條線路。

4_2. 請自行加裝 30mA 接地漏電斷路器與選用標稱電流值 1.25~1.5 倍規格之過電流保護裝置，如果不安裝接地漏電斷路器可能導致人員觸電或是引起火災。

4_2A. 產品標稱電源規格值：（table 4_2A）

型式 Model No.		KA-102SAL/R	KA-202SAL/R	KA-302SAL/R
電源 Power Source	V/Hz	1∅ AC 220V 50 / 60 Hz		
	A	3.5	6	8.5
	W	770	1320	1870

4_3. 送電前請確認電壓與頻率規格，並確實做好接地工事。

4. Diagram and cautions of Power supply connector .

(Be sure to establish an earth connection to prevent electric shock.)

4_1. Be sure to use a dedicated power circuit, Never use a power supply shared by another appliance.

4_2. Be sure to install an Earth leakage circuit breaker(30mA) and a Safety breaker on your own (over current circuit breaker should be complied with 1.25 to 1.5 times power source current that were shown in **table 4_2A**). Failure to install an earth leakage breaker may result in electric shock, or fire.

4_3. Before power supply, be sure to establish an earth connection well and confirm the voltage and frequency specification.


5. 冷卻機標準附件：

- 5_1. 排水管轉接頭 1 個
- 5_2. 排水管 1 條 (1.5m)
- 5_3. 吊模栓 2 個
- 5_4. 使用說明書 1 本
- 5_5. 安裝螺絲+墊片 6 / 8 支


5. Accessories .

- 5_1. a drain plug
- 5_2. a drain pipe
- 5_3. two hook screws
- 5_4. a user guide
- 5_5. six / eight installation screws and spacers

6. 冷卻機簡易保養：

- 6_1 . 冷氣機表面清理：請定期使用中性清洗劑清除冷氣機表面污垢，嚴禁使用酸/鹼類溶劑。
- 6_2 . 過濾網清洗：冷凝器空氣過濾網請定期一週清洗一次（可由系統設定濾網清洗週期  提醒）。
- 6_3 . 長期不使用本冷卻機前請先做好機器斷電、外觀清理、濾網清洗、冷凝器清潔乾燥後，再將整台冷卻機做好防塵處理。

6. Simple maintenances .

- 6_1. Cooler surface cleaning: use neutral detergent to eliminate dirt on the cooler surface regularly. The use of acid or alkali solvent is forbidden.
- 6_2. Filter cleaning: please clean the air filters of the condenser weekly (it can be reminded by setting filter cleaning period in the item **10_2** , i.e. ).
- 6_3. If the cooler has not been used for a long time, please cut off the power supply, clean up the exterior, wash the filters, make the condenser clean and dry, and then take dustproof actions for the cooler.

7. 商品外觀及各部名稱、功能：

7. Product appearance and name & function of each part .

Model No. KA-102SA、KA-202SA、KA-302SA

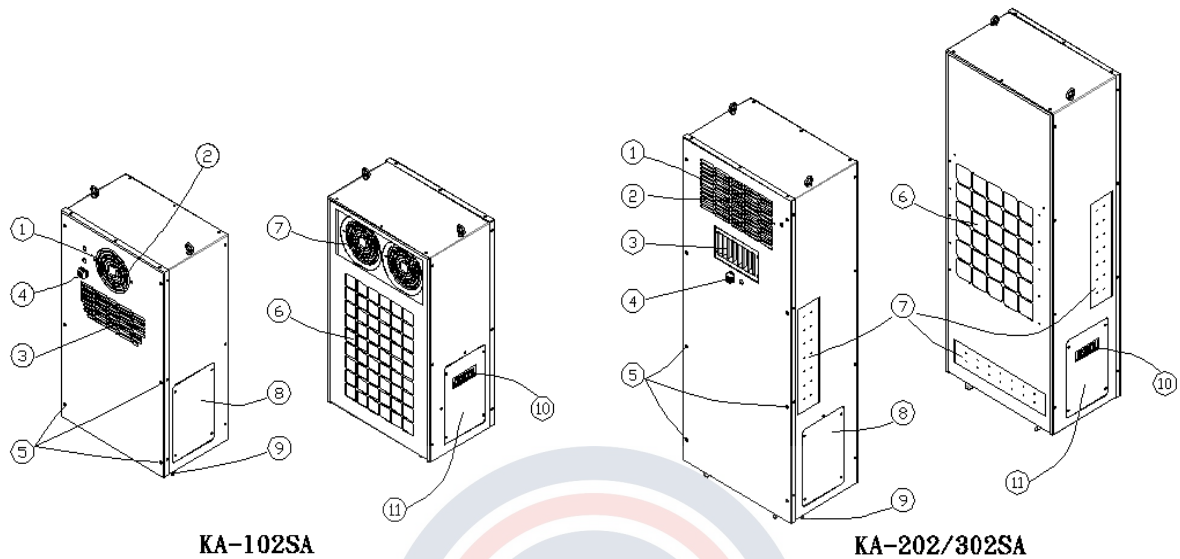
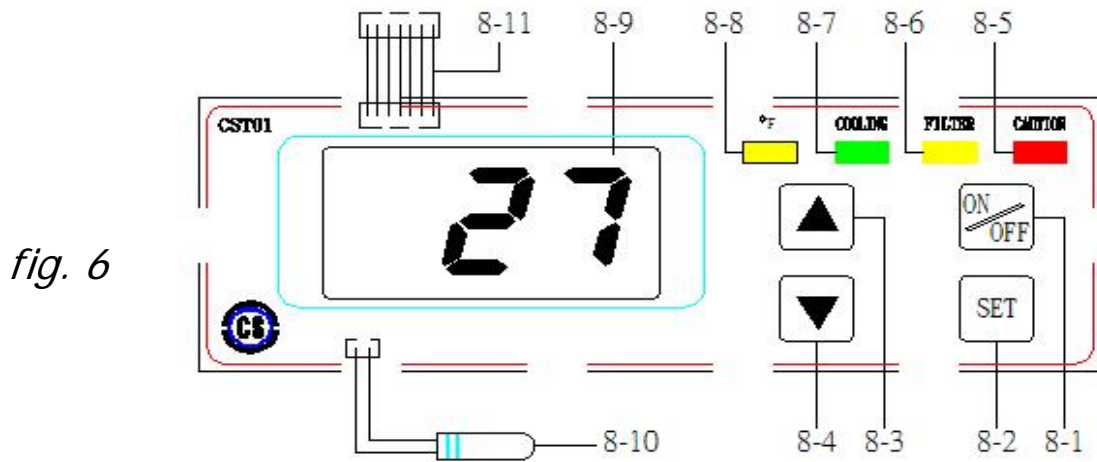


fig. 5

- | | |
|------------------|--|
| ① 感溫器 | ① temperature sensor |
| ② 室內側入風口 | ② indoor air inlet |
| ③ 室內側冷氣出風口 | ③ indoor cooling air outlet |
| ④ 接線端子座 | ④ power supply connector |
| ⑤ 安裝固定螺絲孔× 6 / 8 | ⑤ Six or eight installation screw holes |
| ⑥ 室外側散熱出風口 | ⑥ outdoor heat-dissipation outlet |
| ⑦ 室外側入風口+濾網 | ⑦ outdoor air inlets and filters |
| ⑧ 右側板 | ⑧ right-side plate |
| ⑨ 排水出口 | ⑨ drain outlet |
| ⑩ 溫控錶頭 | ⑩ temperature-control panel (display unit) |
| ⑪ 左側板 | ⑪ left-side plate |

8. 溫控錶頭外觀及各部名稱、功能：



8-1	開機/關機 按鍵	8-7	壓縮機運轉指示燈 (綠色)
8-2	設定 按鍵	8-8	°F 指示燈 (黃色)
8-3	▲ 調整按鍵	8-9	顯示燈
8-4	▼ 調整按鍵	8-10	感溫器
8-5	異常指示燈 (紅色)	8-11	連接排線
8-6	濾網清洗指示燈 (黃色)		



8. Appearance of display unit and name & function of each part .



8-1	On/off	8-7	Compressor running indicator (green LED)
8-2	Set	8-8	°F indicator (yellow LED)
8-3	▲ Adjustment	8-9	Display
8-4	▼ Adjustment	8-10	Temperature sensor
8-5	Error indicator (red LED)	8-11	Connector
8-6	Filter cleaning indicator (yellow LED)		



9. 一般操作： 9. General Operations .



9_1. 本機設計有**壓縮機 3 分鐘延遲啟動**功能；在每次送電初開機、停機又開機、溫度下降使壓縮機停止運轉後至溫度上升再次啟動壓縮機期間均至少有 3 分鐘延遲時間，可防止壓縮機過載啟動現象。

9_1. The compressor of this machine has a function of 3-minute delay start. There is at least three-minute delay time between each initial startup and stop, stop and restart as well as a temperature fall that makes the compressor stop running and a temperature rise that restarts the compressor, and thus to prevent overload start of the compressor.

9_2. **手動開機**：持續按住  1 秒以上，顯示  + 全數 LED 閃爍 3 次→顯示目前溫度；壓縮機運轉指示(綠色 LED)開始閃爍經過延遲 [tdy] 時間後判定溫度條件是否令壓縮機運轉。

9_2. **Manual turn-on** . Press and hold the button  for more than 1 second. Then,  and all LEDs blink three times, and then current temperature will show. Compressor running indicator green LED begins to blink. After delay time [tdy], it's possible to determine if the temperature can make the compressor run.

9_3. **手動關機**：持續按住  0.2 秒以上，顯示  與目前溫度交替閃爍。

9_3. **Manual turn-off** . Press and hold the button  for more than 0.2 seconds; then,  and current temperature will be displayed alternately.

9_4. 送電後自動開機：

9_4_1. 此功能必須由一般功能參數設定之第 10_1 項 **Aut** = y 時才有作用；可作為遠端開機控制。

9_4_2. 送電後 **Aut** **Pon** 交替閃爍 3 次約 6 秒後自動開機；其開機後之顯示同手動開機。

9_4. Auto On after power supply .

9_4_1. This function can only be activated when item 10_1 of "General Function Setting"-- **Aut** equals y. It can be used as remote control.

9_4_2. After power supply, **Aut** and **Pon** alternately display three times within six seconds and then the cooler can be turned on automatically. Consequent display is the same with that of manual turn-on.

9_5. 運轉溫度設定：

9_5_1. 重新送電或開機後若未改變溫度設定值則機器會依照內訂 **StS** 標準溫度運轉。

9_5_2. 開機後在顯示目前溫度時，按 **▲** 或 **▼** 選擇新的需求溫度後，再按 **SET** 3 秒以上，記憶該新溫度值（閃爍新溫度值 3 次 → **Ent**）並退出該項溫度設定→顯示目前溫度。

9_5_3. 該記憶 [新溫度-tdL] 為壓縮機停止溫度；該記憶 [新溫度+ tdH] 為壓縮機重新啟動溫度。

9_5_4. 如果設定期間超過 20 秒內未按任一鍵或最後未按住 **SET** 3 秒以上進行記憶寫入 → **ESC**，自動退出設定功能且參數值是依照上一次之記憶值。

9_5. Rnning temperature setting .

9_5_1. Resupply power. If the temperature set value is not changed after power on, the cooler will run according to default standard temperature, i.e. **StS** .

9_5_2. When current temperature is displayed after power on, press **△** or **▽** to select new temperature and then hold **SET** for 3 seconds or more. The machine will memorize this new temperature value (new temperature blinks three times and then **Ent** will show) and quit temperature setting. Then, current temperature shows.

9_5_3. The memory value-"new temperature minus tdL"-is compressor stop temperature. The memory value-"new temperature plus tdH"-is compressor restart temperature.

9_5_4. If none button is pressed within the first 20 seconds of setting period or **SET** hasn't been held for over 3 seconds to memorize and record, **ESC** will show. Setting function will be quitted automatically and parameter values will be in accordance with last memory values.

10. 一般功能參數設定：

操作方法：

10_a. 持續按住 **SET** 3 秒以上，顯示 **Fun** 閃爍，放開 **SET**，直至顯示 **Aut**，按 **SET** 進入該項設定，按 **△** 或 **▽** 改變參數值，再按 **SET** 跳至下一項 **FCL** 設定，其他項次之設定請依上述相同方法進行設定；最後請在項次代號下按住 **SET** 3 秒以上寫入新參數 → **Ent** 且退出設定。

10_b. 如果設定期間超過 20 秒內未按任一按鍵或最後未按住 **SET** 3 秒以上進行記憶寫入 → **ESC**，自動退出設定功能且參數值是依照上一次之記憶值。

10. General Function Setting .

Operation methods .

10_a. Press and hold **SET** for more than 3 seconds , **Fun** blinking shows and then **Aut** will show. Press **▲** or **▼** to select item code or press **SET** to enter setting. Using **▲** or **▼** to change parameter value , and then press **SET** to next item **FCL** setting. The method for setting other items is the identical with above-mentioned method. Finally, hold **SET** for over 3 seconds under item code so as to memorize and record the new parameter values. Then, **Ent** will show and setting will be quitted.

10_b. If none button is pressed within the first 20 seconds of setting period or **SET** hasn't been held for over 2 seconds to memorize and record, **ESC** will show. Setting function will be quitted automatically and parameter values will be in accordance with last memory values.



10_c. 一般功能參數表：



項次	代號	功能說明	參數範圍	初始值
10_1	Aut	送電後自動啟動功能選擇	y/n	y
10_2	FCL	濾網清洗周期設定	1~180 日	7

10_c. General function table .

Item No.	Item Code	Function Description	Parameter range	Initial value
10_1	Aut	Auto on after power supply	y/n	y
10_2	FCL	Filter cleaning period setting	1 to180 days	7




11. 其它操作： 11. Others Operations .



11-1. 當濾網清洗指示燈 (FILTER) 閃爍時，請將濾網拆下清洗風乾後安裝回去；並且同時按住  +  3 秒以上解除指示燈閃爍，重新計時濾網清洗週期。(濾網清洗週期是以開機時數作累積計算，當時數累積至 [FCL] 時即閃爍指示燈提醒清洗濾網)。



11-1. When the indicator FILTER blinks, please dismount the filters and mount them again after cleaning and air drying. Simultaneously press  and  for more than 3 seconds to make the FILTER stop blinking and re-count time of filter cleaning period (This period is accumulatively counted beginning with startup time. When the time reaches [FCL], the blinking indicator reminds of cleaning filter).

11-2. 系統重新初始化：所有參數值將回復成初始值 (Aut, °C/°F, rES, AoS 除外)。

先按住  不放+立即再按住  5 秒以上→顯示  閃爍 3 次→系統初始化。

11-2. When the system is initialized again, all parameters return to initial values (except Aut, °C/°F, rES, AoS). Firstly, do not stop pressing  and then immediately press and hold  for over 5 seconds. Consequently,  will blink three times and the system is initialized.

11-3. 當出現異常碼 [AH1] 或 [AL1]時，可以同時按住  +  3 秒以上暫時解除異常碼與乾接點輸出 (如果特殊功能設定第 14_17 項 [AoS=y])，待一定時間 [At1] 後若異常狀況仍未排除，異常碼會再次出現且乾接點恢復異常時之輸出。





11-3. When error codes [AH1] or [AL1] blinking show, error code and RY3 output can be temporarily released through simultaneously pressing  and  for 3 seconds or more. If error is still not eliminated after [At1] time, error code will show again and RY3 will revert to the error alarm output (when the item 14_17 of advanced function setting - - AoS equals y) .

12. 異常碼與處置方法：

項次	異常碼	異常指示燈 (R)	異常說明	處置方法
12_1	AL1	間隔 5 秒 閃爍 1 次	目前溫度低於第一段低溫報警溫度	此時電控箱內溫度已經偏低 (不需使用冷氣), 冷卻機之壓縮機與風扇均已停止運轉, 確認感溫器正常後建議將機器關機或斷電。
12_2	AH1	間隔 5 秒 閃爍 1 次	目前溫度高於第一段高溫報警溫度	此時電控箱內溫度稍微偏高, 冷卻機之壓縮機斷斷續續運轉中(3 分鐘 on, 6 分鐘 off), 若長時間異常未能解除, 請檢查感溫器、冷凍系統或是冷卻機冷卻能力太小、熱源偏高。
12_3	AL2	間隔 2 秒 閃爍 1 次	目前溫度低於第二段低溫報警溫度	此時電控箱內溫度已經過低 (不需使用冷氣), 冷卻機之壓縮機與風扇均已停止運轉, 確認感溫器正常後建議將機器關機或斷電。
12_4	AH2	間隔 2 秒 閃爍 1 次	目前溫度高於第二段高溫報警溫度	此時電控箱內溫度已經過高, 冷卻機之壓縮機停止運轉, 請立即檢查感溫器、冷凍系統或是冷卻機冷卻能力過小、熱源過高, 建議將機器關機或斷電。
12_5	ELO	持續亮著	感溫器斷路或目前溫度低於 -20°C	請立即將機器斷電檢查感溫器, 或通知專業維修人員。
12_6	EHS	持續亮著	感溫器短路或目前溫度高於 $+99^{\circ}\text{C}$	請立即將機器斷電檢查感溫器, 或通知專業維修人員。

12. Error Codes and Solutions .

Item No.	Error Code	Error Indicator (R)	Error Descriptions	Solutions
12_1	RL 1	Blink once every 5 seconds	Current temperature is lower than temperature of stage-one caution low temperature	The temperature inside electric control panel is quite low, cooling air is unnecessary. Compressor and fan both stop running. If you have confirmed the temperature sensor is normal, please turn off the machine or cut off the Power supply.
12_2	AH 1	Blink once every 5 seconds	Current temperature is higher than temperature of stage-one caution high temperature	The temperature inside electric control panel is a bit high and the compressor is still working intermittently (on=3 Mins , off=6 Mins). If the error is still unsolved after long time, please check the temperature sensor or cooling system and confirm if the cooling capacity is lower or the heat source inside the electric control panel is a bit high.

12_3		Blink once every 2 seconds	Current temperature is lower than temperature of stage-two caution low temperature	The temperature inside electric control panel is too low, cooling air is unnecessary. Compressor and fan both stop running. If you have confirmed the temperature sensor is normal, please turn off the machine or cut off the Power supply.
12_4		Blink once every 2 seconds	Current temperature is higher than temperature of stage-two caution high temperature	The temperature inside electric control panel is too high and the compressor of the cooler stops running. please check the temperature sensor or cooling system and confirm if the cooling capacity is too low or the heat source inside the electric control panel is too high. Turn off the machine or cut off the Power supply.
12_5		Lighted continuously	Open circuit of temperature sensor or current temperature lower than -20°C	Cut off the Power supply. promptly and check the temperature sensor or inform professional maintenance man.
12_6		Lighted continuously	Short circuit of temperature sensor or current temperature higher than $+99^{\circ}\text{C}$	Cut off the Power supply. promptly and check the temperature sensor or inform professional maintenance man.

13. 電氣配線圖： 13. Wiring diagram .

- 請確實接地處理以防發生觸電危險
- Be sure to establish an earth connection to prevent electric shock.

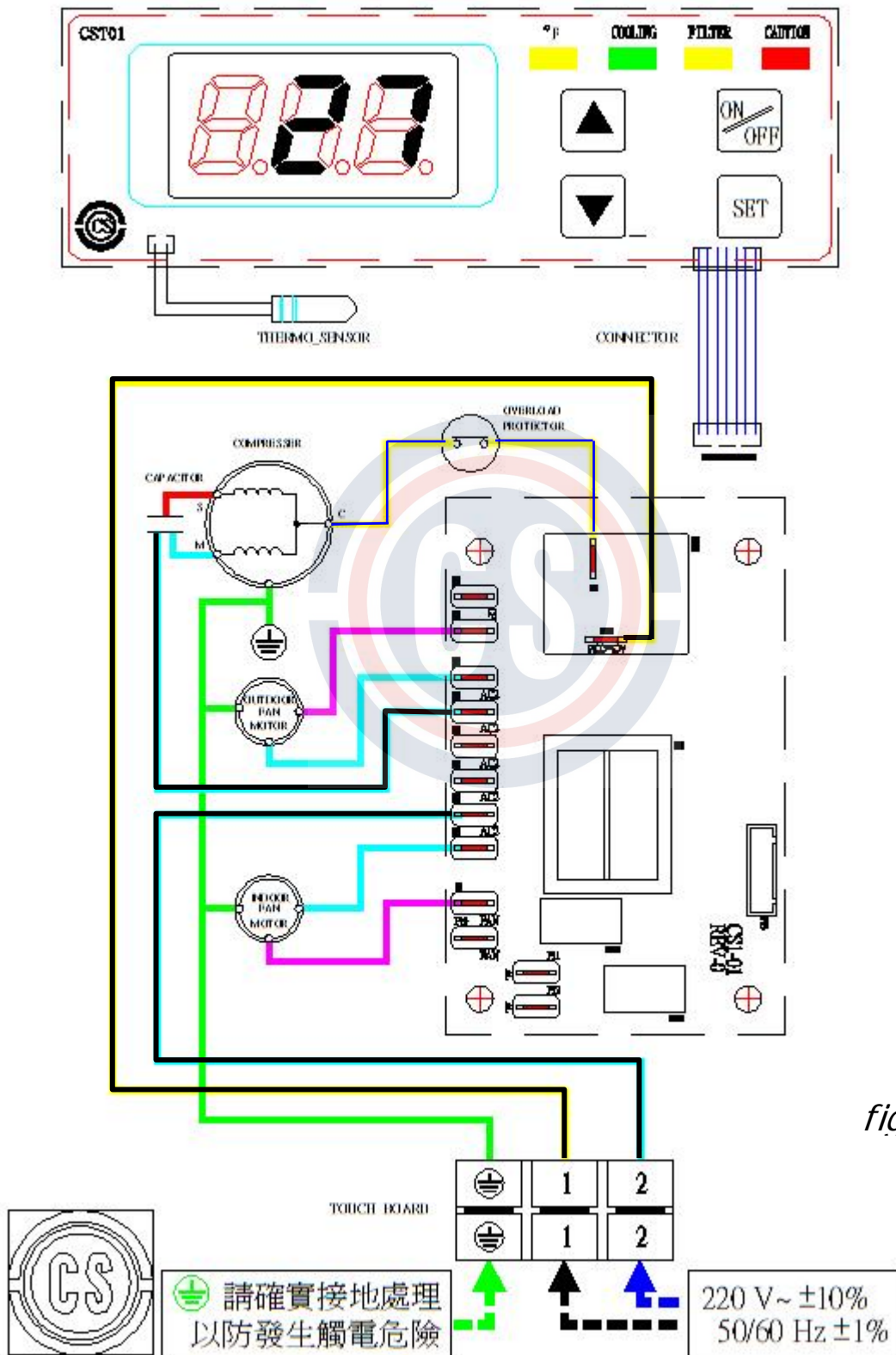


fig. 7

14. 特殊功能參數設定：

14_a. 操作方法：

14_a_1. 持續按住 **SET** 3 秒以上，顯示 **Fun** 閃爍，放開 **SET**，於閃爍期間同時按住 **△** + **▽** 3 秒以上，直至顯示 **Loc**，按 **SET** 進入該項設定，按 **△** 或 **▽** 改變參數值，再按 **SET** 跳至下一項 **StS**，其他項次之設定請依上述相同方法進行設定；最後請在項次代號下按住 **SET** 3 秒以上寫入新參數 → **Ent** 且退出設定。

14_a_2. 如果設定期間超過 20 秒內未按任一按鍵或最後未按住 **SET** 3 秒以上進行記憶寫入 → **ESC**，自動退出設定功能且參數值是依照上一次之記憶值。

14_a_3. 當 **Loc** = y 時，第 14-2 ~ 14-17 項設定會被鎖住無法開啟；欲進行第 14-2 ~ 14-17 項設定時須先將 **Loc** = n

14_b. 特殊功能參數表：

項次	代號	功能說明	參數範圍	初始值
14-1	Loc	參數鎖定選擇	y / n	n
14-2	StS	標準溫度設定	10 ~ 40°C	27
14-3	t dH	壓縮機重新啟動之溫度差	1 ~ 10°C	2
14-4	t dL	壓縮機停止運轉之溫度差	0 ~ 10°C	1
14-5	t dY	壓縮機停止運轉 → 重新啟動之時間差	18 ~ 255	18(*10秒)
14-6	rES	溫度顯示精度選擇	0.1 / 1	1
14-7	°C	溫度顯示類別選擇	'C / 'F	'C
14-8	ELH	可調最高溫度限制	StS ~ 40°C	31
14-9	ELL	可調最低溫度限制	10°C ~ StS	24
14-10	AH1	第一段高溫警報溫度	StS+t dH ~ 55°C	43
14-11	AL1	第一段低溫警報溫度	-20°C ~ StS	16
14-12	AH2	第二段高溫警報溫度	AH1 ~ 70°C	55
14-13	AL2	第二段低溫警報溫度	-20°C ~ AL1	10
14-14	AL1	第一段高/低溫警報偵測延遲時間	0 ~ 120分	15
14-15	AL2	第二段高/低溫警報偵測延遲時間	2 ~ 255	12(*10秒)
14-16	tSR	感溫器溫度補償	-10 ~ +10°C	0
14-17	RoS	異常發報(RY3乾接點)輸出選擇	y / n	n

14. Advanced function setting .

14_a. Operation methods .

14_a_1. Press and hold **SET** for more than 3 seconds and **Fun** blinking shows.

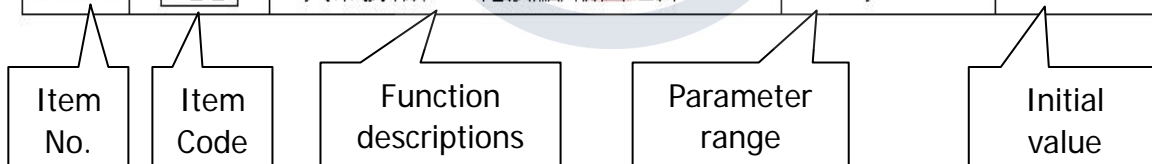
Then, stop pressing **SET** and simultaneously press **△** & **▽** during blinking till **Loc** appears. Consequently, press **△** or **▽** to select item code or press **SET** to enter setting. Using **△** or **▽** to change parameter value , and then press **SET** to next item **StS** setting. The method for setting other items is the identical with above-mentioned method. Finally, hold **SET** for over 3 seconds under item code so as to to memorize and record the new parameter values. Then, **Ent** will show and setting will be quitted.

14_a_2. If none button is pressed within the first 20 seconds of setting period or **SET** hasn't been held for over 2 seconds to memorize and record, **ESC** will show. Setting function will be quitted automatically and parameter values will be in accordance with last memory values.

14_a_3. When **Loc** equals **y**, items 14-2 to 14-7 are locked and not able to set. **Loc** should be set as **n** before setting items 14-2 to 14-17.

14_b. Advanced function table .

項次	代號	功能說明	參數範圍	初始值
14-1	Loc	參數鎖定選擇	y/n	n
14-2	StS	標準溫度設定	10 ~ 40°C	27
14-3	tdH	壓縮機重新啟動之溫度差	1 ~ 10°C	2
14-4	tdL	壓縮機停止運轉之溫度差	0 ~ 10°C	1
14-5	tdY	壓縮機停止運轉→重新啟動之時間差	18 ~ 255	18(*10s)
14-6	rES	溫度顯示精度選擇	0.1 / 1	1
14-7	°C	溫度顯示類別選擇	'C / 'F	'C
14-8	tLH	可調最高溫度限制	StS ~ 40°C	31
14-9	tLL	可調最低溫度限制	10°C ~ StS	24
14-10	AH1	第一段高溫警報溫度	StS+tdH ~ 55°C	43
14-11	AL1	第一段低溫警報溫度	-20°C ~ StS	16
14-12	AH2	第二段高溫警報溫度	AH1 ~ 70°C	55
14-13	AL2	第二段低溫警報溫度	-20°C ~ AL1	10
14-14	At1	第一段高/低溫警報偵測延遲時間	0 ~ 120分	15
14-15	At2	第二段高/低溫警報偵測延遲時間	2 ~ 255	12(*10s)
14-16	tSR	感溫器溫度補償	-10 ~ +10°C	0
14-17	RoS	異常發報(RY3乾接點)輸出選擇	y/n	n



Item No.	Function descriptions
14_1.	Advanced function lock.
14_2.	Standard temperature setting.
14_3.	Temperature difference of compressor restart.
14_4.	Temperature difference of compressor stop.
14_5.	Minimum delay time between compressor stop and restart.
14_6.	Temperature precision.
14_7.	Temperature category.

Item No.	Function descriptions
14_8.	Adjustable maximum temperature.
14_9.	Adjustable minimum temperature.
14_10.	Temperature of stage-one caution high temperature.
14_11.	Temperature of stage-one caution low temperature.
14_12.	Temperature of stage-two caution high temperature.
14_13.	Temperature of stage-two caution low temperature.
14_14.	Detection delay time of stage-one caution high/low temperature.
14_15.	Detection delay time of stage-two caution high/low temperature.
14_16.	Modification of temperature sensor.
14_17.	Alarm output enable (RY3).



15. 簡易故障判定與處置方法：

15_1. 一般電控箱內需求溫度約 28°C～30°C，當壓縮機持續運轉不停且箱內溫度一直無法降低時之可能原因與處置方法：

15_1. Temperature needed inside the electrical control panel is about 28°C to 30°C. If the compressor doesn't stop and temperature inside the panel is unable to decrease long after the cooler is turned on, there're some causes and solutions as follows:

- 15_1_a. 冷卻機冷卻能力太小且箱內持續性熱源過大 → 更換較大型冷卻機
- 15_1_b. 冷凍系統冷媒洩漏 → 通知專業人員檢查維修
- 15_1_c. 風扇不轉 → 檢查配線更換風扇
- 15_1_d. 濾網不潔 → 清洗濾網
- 15_1_e. 冷凝器不潔 → 清理冷凝器
- 15_1_f. 感溫器異常 → 檢查配線或更換感溫器

15. Simple fault judgment and solutions .

- 15_1_a. Cooling capacity is too low and heat source is continuously too great.
→ Replace it with a large-scale cooler.
- 15_1_b. Cooling system refrigerant leakage.
→ Inform professional to check and repair.
- 15_1_c. The fan doesn't work.
→ Check the wiring or change the new fan.
- 15_1_d. Unclean Filter.
→ Clean the filter.
- 15_1_e. Unclean condenser.
→ Clean the condenser.
- 15_1_f. Temperature sensor error.
→ Check the wiring or change the new temperature sensor.

15_2. 一般電控箱內需求溫度約 28°C ~ 30°C，當開機許久後壓縮機持續不運轉且箱內溫度一直無法降低（高於 40°C）時之可能原因與處置方法：

15_2. Temperature needed inside the electrical control panel is about 28°C to 30°C. If the compressor doesn't run and temperature inside the panel is unable to decrease long after the cooler is turned on, there're some causes and solutions as follows:

- | | |
|------------------|---------------|
| 15_2_a. 運轉溫度設定錯誤 | → 重新設定運轉溫度 |
| 15_2_b. 壓縮機故障 | → 通知專業人員檢查維修 |
| 15_2_c. 過負荷保護器故障 | → 更換 OLP |
| 15_2_d. 溫控機板故障 | → 更換溫控機板 |
| 15_2_e. 配線斷路 | → 檢查配線+接回斷線部份 |

15_2_a. Running temperature set error.

→ Reset running temperature.

15_2_b. Compressor fault.

→ Inform professional to check and repair.

15_2_c. Overload protector fault.

→ Replace it with a new OLP.

15_2_d. Temperature-control unit fault.

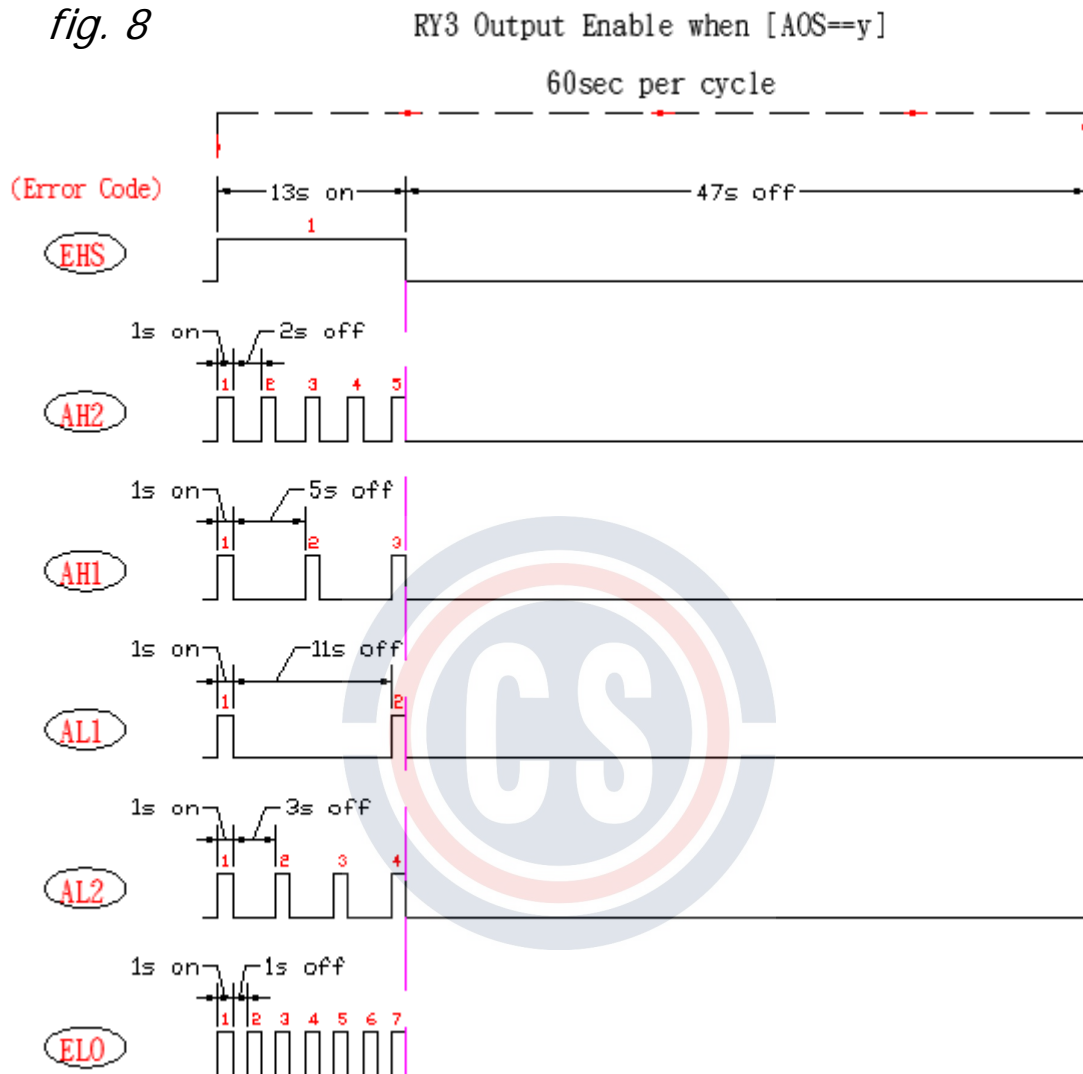
→ Replace it with a new temperature-control unit.

15_2_e. Circuit broken.

→ Check the wiring and reinstate the circuit.

16. 警報輸出時序圖：

16. Alarm Output Timing Diagram (RY3).



- ◎ RY3 maximum Load 2A/220v~ (Normal Open switch / a 接點)
- ◎ 當設計將輸出接燈號或蜂鳴器時，可利用肉眼或聽力直接辨識閃爍次數對應之故障碼。
- ◎ 當設計將輸出接至 PLC 作為偵測信號時，可利用 RY3 第一個輸出正緣(Lo→Hi)作為觸發信號，並於 14~15 秒內計數正緣或負緣次數而加以判定對應之故障碼。



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