

溫度控制器 Temperature Controllers



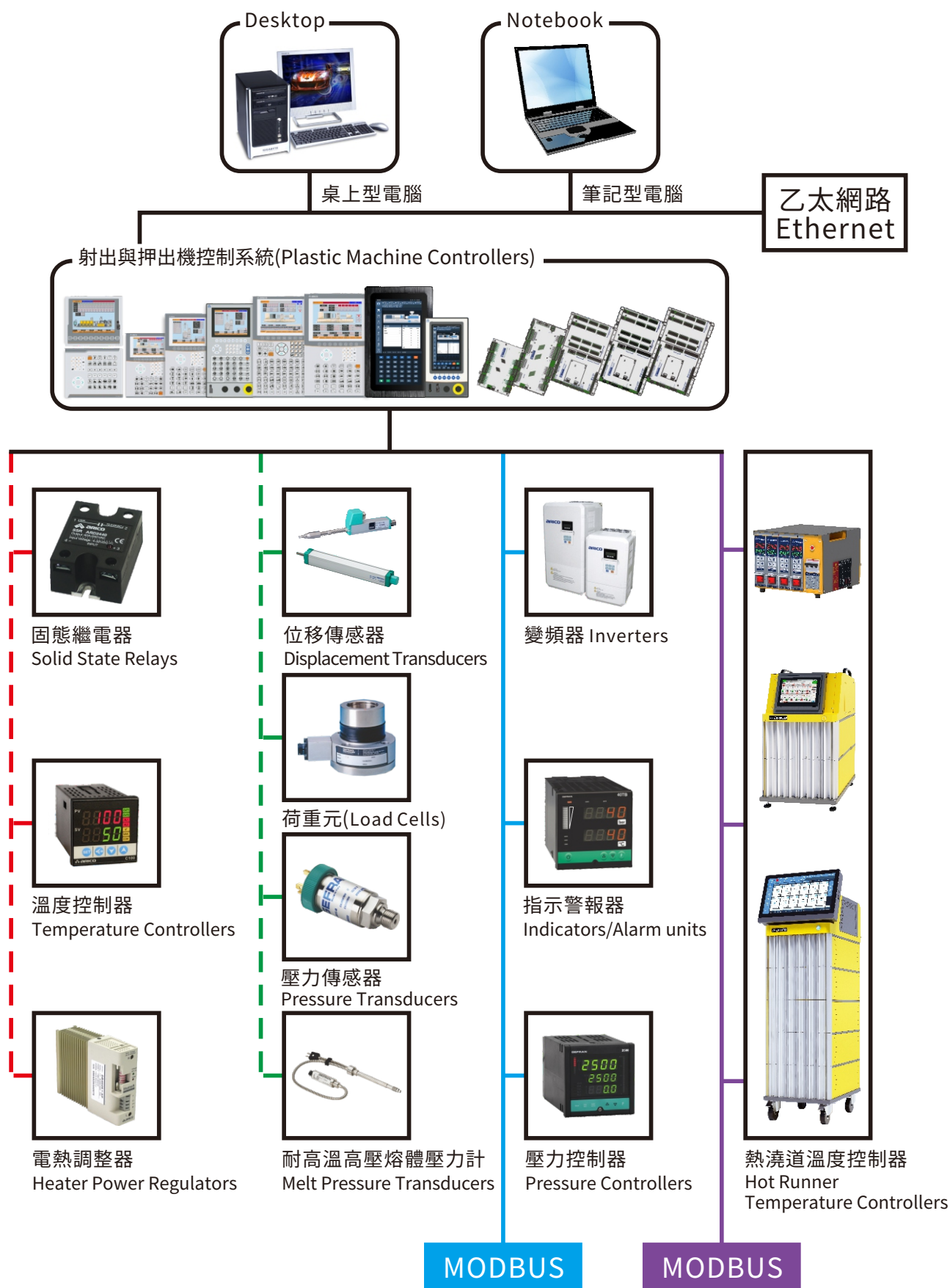
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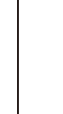
長新科技塑膠機械產品解決方案

ARICO TECHNOLOGY Total Solutions for Plastic Machines



產品總覽 Products Overview

GEFRAN 義大利公司及其它代理產品 Agent products

壓力傳感器 Pressure Transducers										
	K3 Series		KE Series		KN Series					
										
	M3 Series		ME Series		MN Series					
										
	M5 Series		M6 Series		KS/TK					
位移傳感器 Displacement Transducers										
	LT/LT67/LTC		PC		PK		PA1		PY1/PY2/PY3	
										
	PZ12/PZ34		PC67/PZ67A/PZ67S		PMA12/PME12/PMI12		PMI-SL/PMI-SLE			
										
	IC		PR65		PS		PCIR 101-102			
										
	WPG-A		WPP/WPA Series		WRP/WRA/WRG Series					
溫度/壓力/顯示/警示 控制儀表 Controller/Alarm unit/ Programmer/Indicator										
	4T48	4T96	40TB	40B96	400-401	450	600	650	2400	2500
功率控制器/固態繼電器 Power Controller/ Solid State Relay										
	GRM-H	GRP	GRP-H	GRS	GRS-H	GRZ	GRZ-H	GQ		
陶瓷電熱片 Ceramic Band Heater										
	一般式		保溫式				氣冷式			
	Ceramic Band Heater		Insulation Plus Ceramic Band Heater				Air Cooled Ceramic Band Heater			

產品總覽 Products Overview

溫度控制器 Temperature Controllers V Series																		
	V100		V200		V300		V400		V500									
溫度控制器 Temperature Controllers C Series																		
	C100		C200		C300		C400		C500									
溫度控制器 Temperature Controllers A Series																		
	A1AN		A1DN		A2DA		A2DD		A3AN									
																		
	A3DA		A3DD		A4AA		A4AD		A4AN									
溫度控制器 Temperature Controllers TC Series																		
	H2DA		TC2DA		TC3AA		TC3AO		TC3DA									
																		
	TC3DO		TC4AA		TC4AO		TC4DA		TC4DO									
熱澆道溫度控制器 Hot Runner Temperature Controllers																		
					TC5T		TC5H		TC5E Plus									
																		
					TC50		TC500											
橡塑膠機控制系統 (射出機/押出機/吹瓶機等...) Plastic Machine Controllers																		
	AR800/AR810/AR1280/AR2000/AR2010/AR2100					AR/FT/FTS Series - HMI												
固態繼電器 Solid State Relay																		
	ARD24 Series		ARD48 Series		SY Series		SV Series		SW Series									
電熱調整器 Heatsoft					訊號轉換器 Signal Transmitter													
	SB Series						TR100/TR200											

C Series 微電腦 P.I.D. 溫度控制器

PID Temperature Controller

特 色

1. 16 bit 微電腦運算核心 PID + SELF-TUNING
2. 輸入訊號多樣選擇 (感溫線、白金電阻體、類比訊號)
3. 主控輸出多樣選擇 (Relay、脈衝電壓、線性類比訊號)
4. 可驅動各類的接觸器：SSR、SCR、馬達閥門等
5. 可設定正向/逆向控制 (加熱或冷卻過程)
6. 雙輸出機型可作加熱/冷卻雙向 PID 控制
7. SV 目標值可利用類比訊號輸入，達成遠端設定功能
8. 26 種警報模式選擇，可附加斷線檢知警報 (HBA) 功能
9. 再傳送功能可將 PV 值或控制輸出量轉成類比訊號輸出
10. 供給記錄器或其他應用
11. 手動/自動輸出功能
12. 串列通訊支援 ModBus 的 RTU 和 ASCII 格式，最高速率可達 38400 bit/s
13. 程序控制提供 16 組溫度段數，自由規劃執行區間及重複次數

Features

1. 16 bit microprocessor operating core doing PID + Self-tuning
2. Various options of input signals
(Thermocouple, RTD, analog signals, etc.)
3. Main control output can select relay, pulse voltage, linear analog signals
4. Can drive all types of contactors, SSR, SCR, 3-line proportional motor valve, etc
5. Can set reverse/forward control (Heating or cooling process)
6. Dual-output models can do cooling/heating two-way PID controlling
7. Set Value (SV) can employ analog signal input to achieve Remote Set Value setting
8. 26 types of alarm modes for option ; can be added with broken-line detecting alarm function (HBA)
9. Re-transmission function can convert Present Value (PV) or controlling output amount into analog signal output for recorder or other applications
10. Provided with manual output mode
11. Manual and auto output
12. Serial communication function supports RTU and ASCII format of Modbus. The Baud rate can reach as fast as 38400 bit/s
13. Programmed controlling provides 16 temperature levels whose operating intervals and repeat frequency can be planned freely



自動演算
Auto-Tuning



專家系統
Self-Tuning



加熱/冷卻控制
Heating/Cooling Control



自動/手動
Auto/Manual Switching



可程式
Programmable



斷線檢知
Heater Break Alarm



串列通訊
Communication



警 報
Alarm



遙控輸入
Remote Set Value

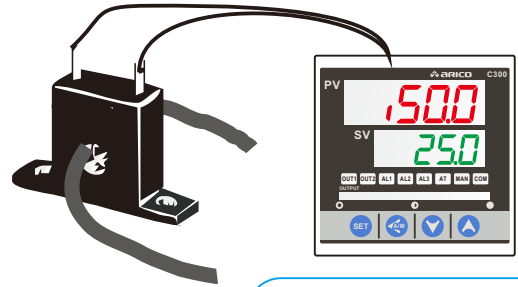


攝氏/華氏
Celsius/Fahrenheit
Unit Switchable

■ 斷線檢知 (HBA) 警報：

利用比流器 (CT) 偵測加熱線的工作電流，由控制器判斷加熱線是否斷線，再產生警報輸出。其輸出條件如下：

1. 輸出為 ON 狀態
2. 電流值低於 HBA 設定值
3. 持續 A1Tr 的時間以上。範圍：-5 ~ -1999
4. 輸出 1 的控制訊號必須為繼電器或邏輯電壓型式



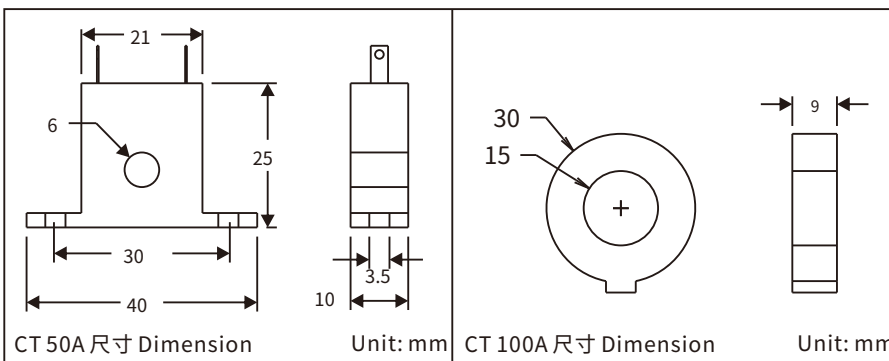
■ Heater Break Alarm (HBA):

Detects the working current of heating lines with CT and the controller judges if the heating line breaks and make alarm output. The output conditions are as below:

1. Output is at ON status
2. Current value is lower than the set value of HBA
3. Continues for more than (A1Tr) time. Range: -5 ~ -1999
4. Controlling signal of Out1 must be relay or logic voltage

HBA 設定電流：

上排顯示現在 CT 的電流值 (50.0 A) 下排設定警報值。
Set Current of HBA:
The upper row displays present current value at CT (50.0A); the lower row displays set alarm value.



■ 警報輸出持續/延遲時間:

A1Tr~A3Tr 參數針對每一組警報做輸出時間控制。

範圍由負 1999 秒到正 9999 秒。(HBA 例外) 意義如下：

1. 負值時間：當警報條件到達時延遲輸出再自保持
2. 零：警報條件到達時立刻輸出且自保持
3. 正值時間：當警報條件成立時立即輸出，且持續設定時間後關閉

■ Alarm Output Hold/Delay Time:

A1Tr ~ A3Tr parameters process output time controlling in accordance with each alarm. Range: -1999 sec. ~ 9999 sec. (Except HBA). The meanings are as follows:

1. Negative value: when alarm condition is reached, delays output and self-hold
2. Zero: when the alarm condition is reached, outputs immediately output and self-hold
3. Positive value: outputs immediately when alarm condition is reached, and hold as long as the set time

■ 程序控制警報輸出 (選購)：

AL1~AL3 除了可當過溫警報外，若功能碼 (A1Fu~A3Fu)

設成 26，則該組警報在段數到達時將會輸出。

利用此動作可做其它控制應用，如打開爐門、或添料加工控制等。

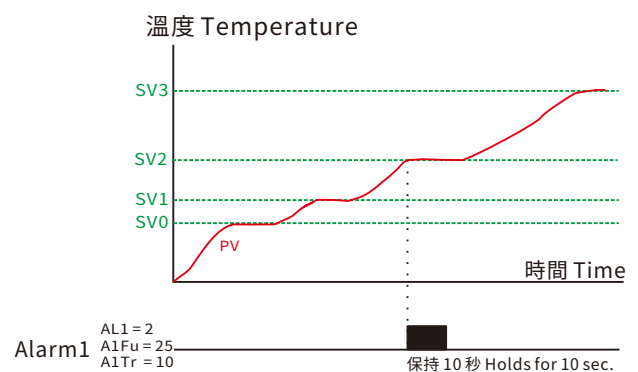
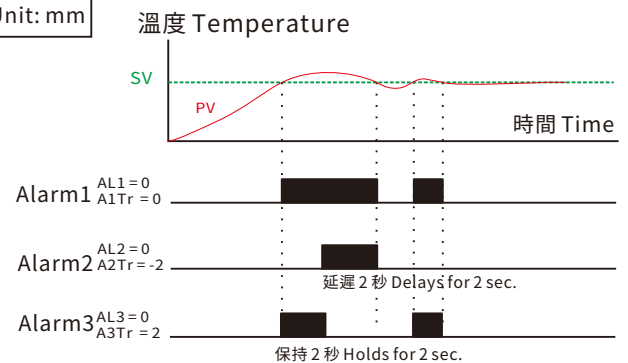
AL1~AL3 定義哪一段執行完後 ALM 輸出。

再利用 A1Tr~A3Tr 控制其輸出時間。

■ Process Control Alarm Output (Optional)：

Except for being used as over-heat alarm, if function code (A1Fu ~ A3Fu) is set at 25, AL1 ~ AL3 will output when the level is reached. By using this operation, the controller can do other applications, such as opening the furnace gate or charging process controlling, etc.

LA1 ~ AL3 define after which level ALM outputs, and then use A1Tr ~ A3Tr to control the output time.



自動演算 PID

Auto-Tuning 使用 Relay ON-OFF 方式來探測被控物 (Process)

的動態特性，再據此資料推算出最佳的 P.I.D 參數組合。

在 Auto Tuning 期間，必須保持被控物不被干擾的狀態下執行。

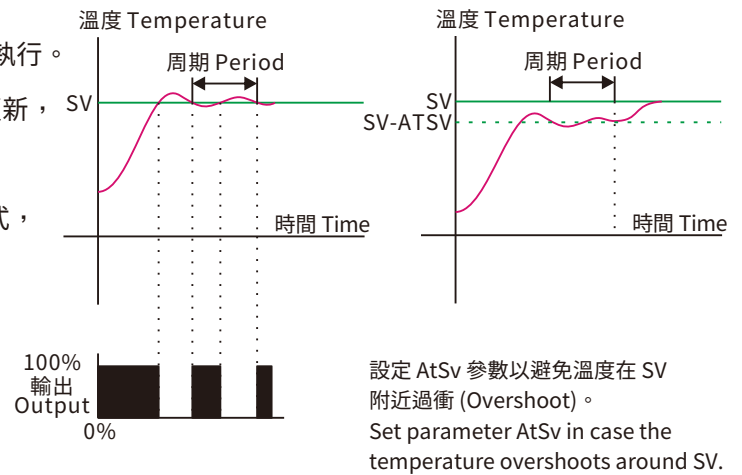
Auto Tuning 完成後 (AT 燈熄滅)，P.I.D 三個參數將自行更新，

然後進入新的 PID 自動控制模式。

若以下任一情況發生，Auto Tuning 將停止且進入手動模式，

但不改變 PID 值：

- 任何異常發生 (包含斷電)
- 輸出 ON 或 OFF 時間超過 2 小時
- 按住 $\triangleleft$ 2 秒 (強制進入手動模式)



Auto-tuning of PID

AT adopts Relay ON/OFF to detect the dynamic characteristics of the Process, and calculate the best parameter combination of P, I, & D according to the data.

During AT, the operation must be kept under the condition where the process is not interfered.

After AT is completed (AT lamp goes off), the three parameters of P, I, & D will renew themselves, and then enter a new PID auto-control mode.

If any one of the following situations occurs,

AT will stop and enter manual mode without changing values of PID:

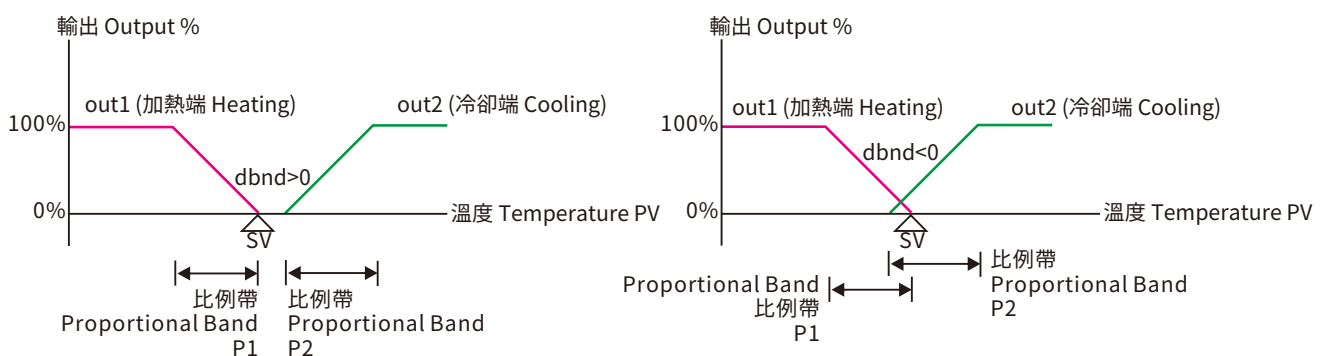
- Any exception occurs (Including power failure)
- The On or Off period of output exceeds 2 hours
- $\triangleleft$ is held for over 2 seconds (Forcing to manual mode)

加熱/冷卻控制 (選購)

Out 1 (加熱端) 與 Out 2 (冷卻端) 藉由參數 “dbnd” 可以設定不感帶 (Gap) 或輸出重疊 (Overlap) 的控制

Heating/Cooling Control (Optional)

Out1 (Heating terminal) and Out2 (Cooling terminal) can set gap or output overlapping via parameter “dbnd”.



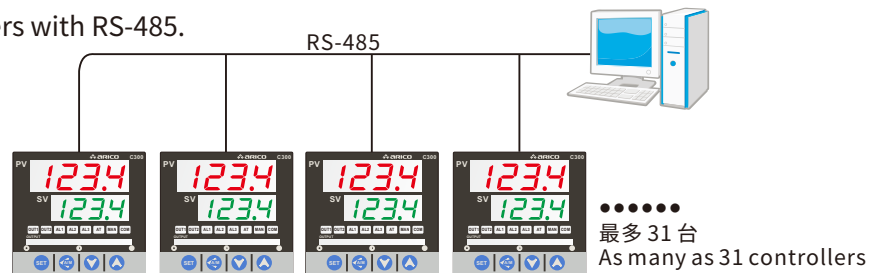
■ 串列通訊 (選購)

可選購 RS-485 串列通訊介面與電腦、PLC 或人機界面連結，選用 RS-485 介面最多可串接 31 台控制器

■ Serial Communication (Optional)

Users can opt for RS-485 serial communication interface to connect the control with PC, PLC or HMI.

Connections can be as many as 31 controllers with RS-485.

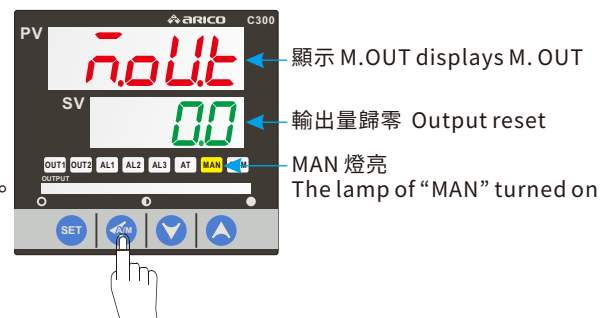


■ 自動/手動切換

按住 $\leftarrow$ A/M 1.5 秒手/自動切換。進入手動模式 MAN 燈亮，OUT1/OUT2 無輸出，上排顯示 PV 值，下排顯示“OFF”。再按一下 $\leftarrow$ A/M 可手動調整 OUT 1 輸出量 0.1~100.0% 或 -0.1~-100.0% 為 OUT 2 輸出量。

若選購 CTL 控制輸入機型，CTL 可設為 [STRT]，由外部切換手/自動。

ON = 自動，OFF = 手動，且面板 A/M 功能失效。

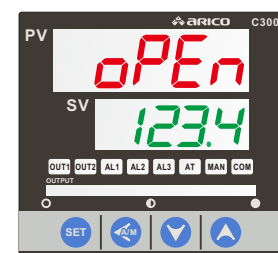


■ Auto/ Manual Shifting

Press $\leftarrow$ A/M for 1.5 second to switching Auto/Manual. In Manual mode, MAN indicator is on, OUT1/OUT2 none output, the upper row display PV, the lower row display "OFF", re-press $\leftarrow$ A/M , can auto adjust OUT1 to 0.1~100.0% or OUT2 to 0.1~100%. If select CTL control input mode, CTL can set [STRT], to switch Manual/Auto from external. ON = AUTO, OFF = MANUAL, and panel A/M function is invalid.

■ 輸入訊號斷線檢知

當控制器的 Sensor 訊號斷路時，溫度值會一直往上升，達到最大量測值後顯示 oL 再顯示 Open。
此時 ALM 警報將以最高溫度當比較條件。



■ Broken-line Detecting of Input Signal

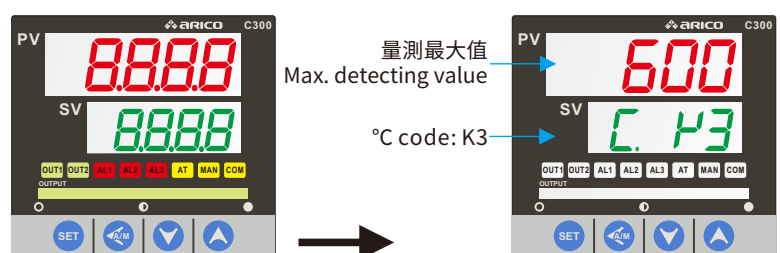
When signals from the sensor of the controller fail, the temperature value will rise to the maximum value and then the controller will display “oL”, then “open”. ALM will adopt the highest temperature as the comparing.

■ 開機畫面

當電源投入後，所有 LED 全亮 3 秒以測試是否缺劃，然後顯示量測最大值，輸入訊號型別代碼，單位，最後進入 PV、SV 顯示模式，且以自動模式控制。

■ Startup Screen

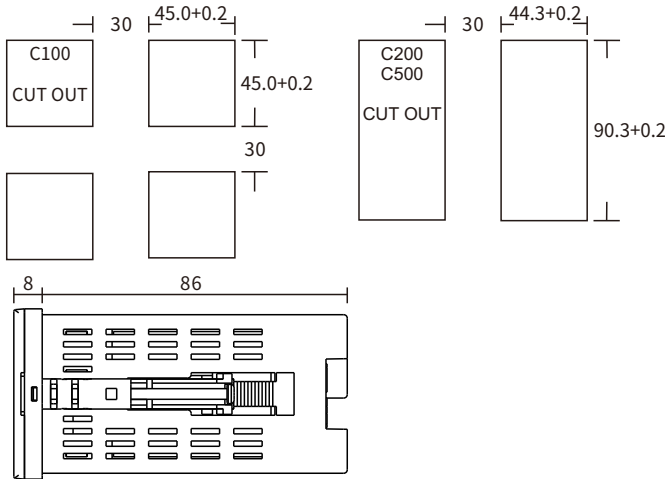
After the power supply is connected, the controller will turn on all the LED for 3 seconds to check missing segment, and then displays the maximum detection value, code of input signal type, unit, and then enters display mode of PV & SV, and controls the value in automatic mode.



C Series

技術規格
Technical Specification

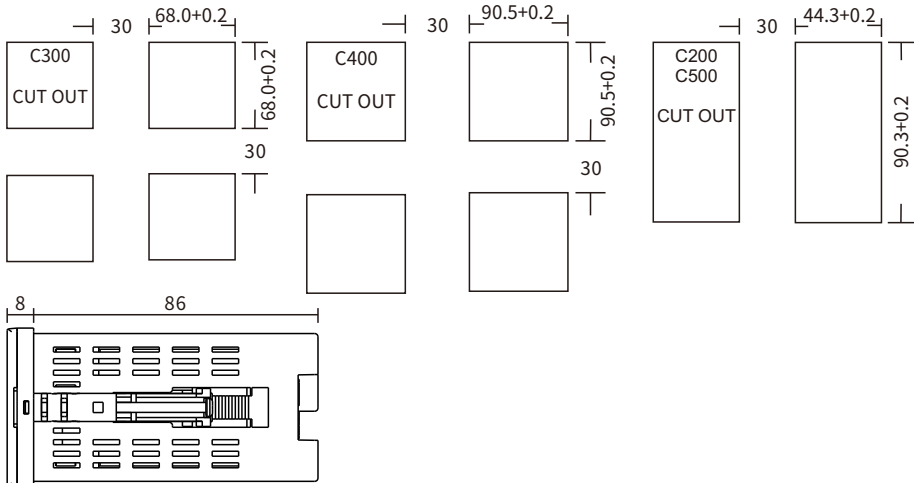


C Series 技術規格 Technical Specification		
型號 Model	C100	C200
尺寸 Dimension W × H (mm)	48 × 48	48 × 96
電源 Power Supply	AC 90 ~ 240 V (60/50 Hz), DC 24 V (選購 Optional)	
消耗功率 Power Consumption	4 W	
機體重量 Unit Weight	130 g	200 g
儲存操作環境 Storage/Operate	0 ~ 65°C/0 ~ 50°C ; 20 ~ 90% RH	
斷電記憶 Data Backup Memory	EEPROM, 10 years	
顯示精度 Accuracy	0.3% FS ± 1 DIG (B & S 感溫線除外) (Except for thermocouples of B and S type)	
字形高度 Digit Height (mm) SV (綠 Green)/PV (紅 Red)	10/10	11/11
警報輸出 Alarm Output	繼電器接點 Relay contact 8 A, 250 Vac	
控制方式 Controlling Measure	ON/OFF, P, PI, PD, PID	
控制輸出 Controlling Output		
繼電器接點 Relay Contact	8 A, 250 Vac	
邏輯電壓 Logic Voltage	PWM pulse voltage (To drive SSR): ON = 24 V, OFF = 0 V (20 mA Max.)	
線性類比 Linear Analog	電流 Current: 0 ~ 20 mA (Input Impedance: 600 Ω Max.) 電壓 Voltage: 0 ~ 10 V (Input Impedance: 1 KΩ Max.)	
輸入類別 Input Type		
感溫線 Thermocouple	K, J, R, S, B, E, N, T, W3, W5, PL-II (Input Impedance: approx. 1 KΩ Max.)	
RTD	PT-100 (DIN), JPT-100 (JIS)	
線性類比 Linear Analog	0 ~ 10 mV, 0 ~ 20 mV, 0 ~ 50 mV, 4 ~ 20 mA, 0 ~ 10 V... 參見操作說明書 See operating instructions	
尺寸及開孔圖 Dimension & Cut-Out 單位 Unit : mm		

C Series

技術規格
Technical Specification



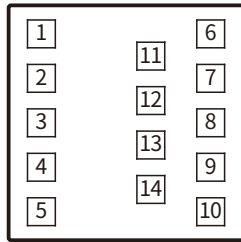
C Series 技術規格 Technical Specification			
型號 Model	C300	C400	C500
尺寸 Dimension W × H (mm)	72 × 72	96 × 96	96 × 48
電源 Power Supply	AC 90 ~ 240 V (60/50 Hz), DC 24 V (選購 Optional)		
消耗功率 Power Consumption	5 W		4 W
機體重量 Unit Weight	200 g	280 g	200 g
儲存操作環境 Storage/Operate	0 ~ 65°C/0 ~ 50°C ; 20 ~ 90% RH		
斷電記憶 Data Backup Memory	EEPROM, 10 years		
顯示精度 Accuracy	0.3% FS ± 1 DIG (B & S 感溫線除外) (Except for thermocouples of B and S type)		
字形高度 Digit Height (mm) SV (綠 Green)/PV (紅 Red)	14/11		14/10
警報輸出 Alarm Output	繼電器接點 Relay contact 8 A, 250 Vac		
控制方式 Controlling Measure	ON/OFF, P, PI, PD, PID		
控制輸出 Controlling Output			
繼電器接點 Relay Contact	8 A, 250 Vac		
邏輯電壓 Logic Voltage	PWM pulse voltage (To drive SSR): ON = 24 V, OFF = 0 V (20 mA Max.)		
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RTD	PT-100 (DIN), JPT-100 (JIS)		
線性類比 Linear Analog	0~10 mV, 0~20 mV, 0~50 mV, 4~20 mA, 0~10 V... 參見操作說明書 See operating instructions		
尺寸及開孔圖 Dimension & Cut-Out 單位 Unit : mm			

接線圖 Wiring Diagram

若腳位重疊只能任選一種功能。

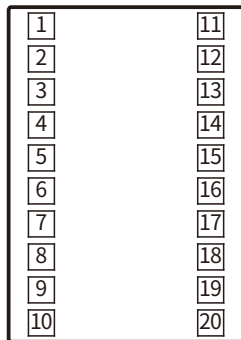
If pin is connected repeat, can only select one function.

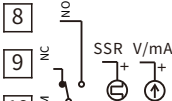
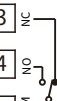
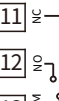
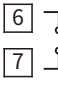
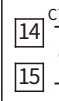
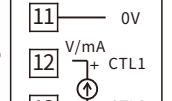
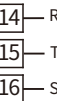
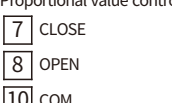
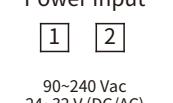
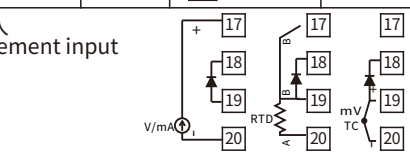
C100



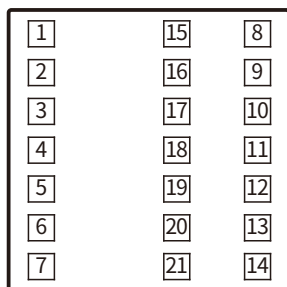
OUT1	OUT2	警報 1 ALM1	警報 2 ALM2	RSV input	CT input	傳送輸出/控制輸入 Transmit output/ control input	通訊 Communication
 比例閥門控制 Proportional value control 3 CLOSE 4 OPEN 5 COM	 2 Relay SSR V/mA 3	 2 3	 13 14	 11 V/mA 12	 11 CT 12	 11 V/mA 12 13 CTL1 14	 11 Rx Dx- 12 Tx Dx+ 13 SG RS-485
 量測輸入 Measurement input 7 8 9 10 V/mA RTD mV TC							

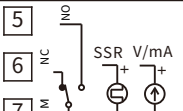
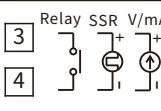
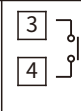
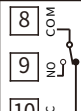
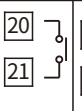
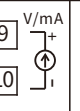
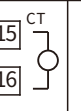
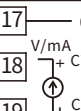
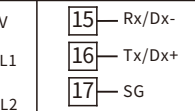
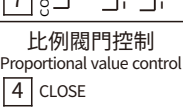
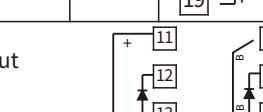
C200/C500



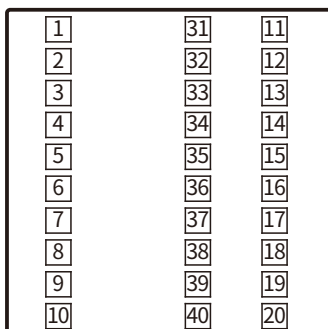
OUT1	OUT2	警報 1 ALM1	警報 2 ALM2	警報 3 ALM3	RSV input	CT input	傳送輸出/控制輸入 Transmit output/ control input	通訊 Communication
								
比例閥門控制 Proportional value control 		電源輸入 Power input  90~240 Vac 24~32 V (DC/AC)		量測輸入 Measurement input 				

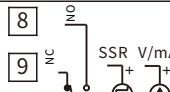
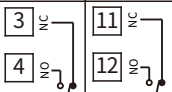
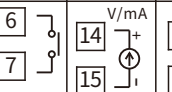
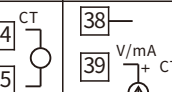
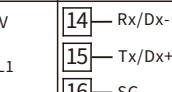
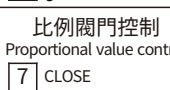
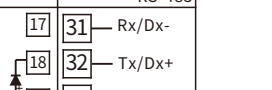
C300



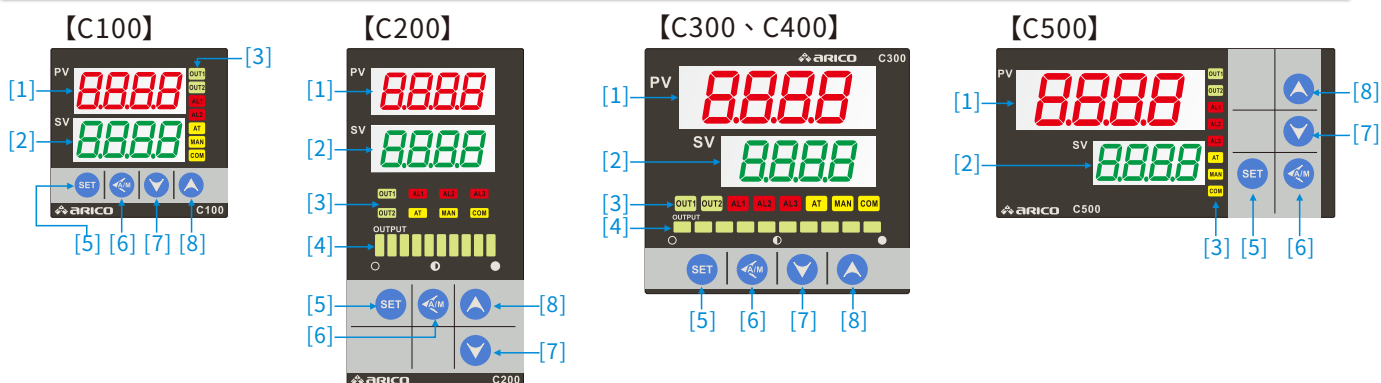
OUT1	OUT2	警報 1 ALM1	警報 2 ALM2	警報 3 ALM3	RSV input	CT input	傳送輸出/控制輸入 Transmit output/ control input	通訊 Communication
								
比例閥門控制 Proportional value control 	電源輸入 Power input  90~240 Vac 24~32 V (DC/AC)		量測輸入 Measurement input					

C400



OUT1	OUT2	警報 1 ALM1	警報 2 ALM2	警報 3 ALM3	RSV input	CT input	傳送輸出/控制輸入 Transmit output/ control input	通訊 Communication
								 RS-485
比例閥門控制 Proportional value control 	電源輸入 Power input  90~240 Vac 24~32 V (DC/AC)							

面板說明 Panel Description

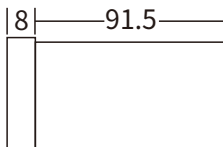
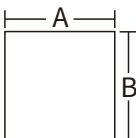
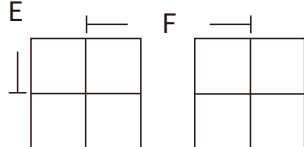
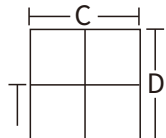


[1]PV (Process variable)	顯示現在溫度/設定模式時顯示功能表 PV (Process variable): display function table in setting temperature/setting mode
[2]SV (Set value)	顯示設定溫度/設定模式，顯示參數值 SV (Set value): display parameter value in setting temperature/setting mode
[3]狀態指示燈 Status indicator	out1, out2(綠)=控制輸出，AL1~AL3(紅)=警報1~3，AT(黃)=自動演算中，MAN(黃)=手動模式，COM(黃)=通訊中 Status indicator: OUT1/OUT2 (Green) = control output, AL1~AL3 (Red) = alert 1~3, AT (Yellow) = Auto-Tuning, MAN (Yellow) = manual mode, COM (Yellow) = communication
[4]OUT1	輸出1百分比輸出量光條 Percentage light bar of OUT1
[5]	啟動參數設定或結束參數設定 Start/End parameter setting
[6]	自動/手動模式切換，在設定模式中移動游標 Auto/Manual switching key, shift the cursor in setting mode
[7]	在設定參數時遞減參數值 Decreases parameter value in setting mode
[8]	在設定參數時遞增參數值 Increases parameter value in setting mode

產品型號索引碼說明 Model Number Description

C100	1	0	1	0	0	0	0	A
機型	控制輸出 1	控制輸出 2	警報	輸入類型	遠端 SV	類比輸出	通訊	電源
C100 48x48mm	0 無	0 無	0 無	0 TC	0 無	控制輸入	0 無	A AC90~240V
C200 48x96mm	1 RELAY	1 RELAY	1 1組	1 PT100	-	0 無		D DC24V
C300 72x72mm	2 邏輯電壓(SSR)	2 邏輯電壓(SSR)	2 2組	-	-	1 1CTL輸入	2 RS-485	
C400 96x96mm	3 4~20mA	3 4~20mA	3 3組	3 4~20mA	3 4~20mA	2 2CTL輸入		
C500 96x48mm	4 0~5V	4 0~5V	A HBA(50A)	4 0~5V	4 0~5V	3 4~20mA		
	5 1~5V	5 1~5V	B HBA+AL2	5 1~5V	5 1~5V	4 0~5V		
	6 0~10V	6 0~10V	C HBA+AL2,3	6 0~10V	6 0~10V	5 1~5V		
	7 2~10V	7 2~10V	D HBA(100A)	7 2~10V	7 2~10V	6 0~10V		
	8 比例閥門控制		E HBA+AL2	8 4~20mA(Aux24v)		7 2~10V		
			F HBA+AL2,3	9 0~10V(Aux24V)				

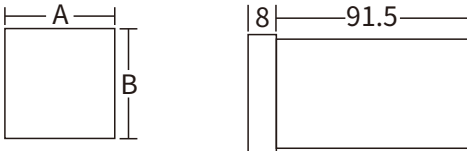
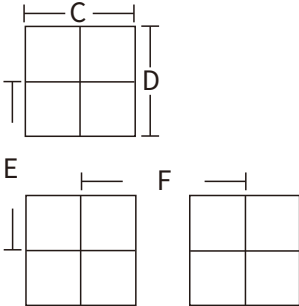
C100	1	0	1	0	0	0	0	A
Model	Control Output 1	Control Output 2	ALM	Input Type	Remote SV	Transmit Output	Communication	Power
C100 48x48mm	0 none	0 none	0 無	0 TC	0 none	Control Input	0 none	A AC90~240V
C200 48x96mm	1 RELAY	1 RELAY	1 1	1 PT100	-	0 none		D DC24V
C300 72x72mm	2 Logic Voltage	2 Logic Voltage	2 2	-	-	1 1CTL input	2 RS-485	
C400 96x96mm	SSR	SSR	3 3	3 4~20mA	3 4~20mA	2 2CTL input		
C500 96x48mm	3 4~20mA	3 4~20mA	A HBA(50A)	4 0~5V	4 0~5V	3 4~20mA		
	4 0~5V	4 0~5V	B HBA+AL2	5 1~5V	5 1~5V	4 0~5V		
	5 1~5V	5 1~5V	C HBA+AL2,3	6 0~10V	6 0~10V	5 1~5V		
	6 0~10V	6 0~10V	D HBA(100A)	7 2~10V	7 2~10V	6 0~10V		
	7 2~10V	7 2~10V	E HBA+AL2	8 4~20mA(Aux24v)		7 2~10V		
	8 Proportional value control		F HBA+AL2,3	9 0~10V(Aux24V)				

V Series 技術規格 Technical Specification																							
型號 Model	V100	V200																					
尺寸 Dimension W × H (mm)	48 × 48	48 × 96																					
電源 Power Supply	100 ~ 240 Vac ± 10%, 50/60 Hz																						
顯示位數 Display Digits	2 × 4																						
機體重量 Unit Weight	123 g	210 g																					
操作環境 Operation Condition	Temperature : 0 ~ 55°C/32°F ~ 130°F Humidity : 10% ~ 80% (Non-condensing)																						
量測精確度 Measurement Accuracy	0.5% of full scale (25°C)																						
溫度單位 Temperature Unit	攝氏 Celsius °C/華氏 Fahrenheit °F																						
動作 Function	加熱 Heating/冷卻 Coolin																						
警報模式 Alarm Mode	10 kinds																						
控制方式 Controlling Measure	ON/OFF, PID																						
主輸出 Main Output	繼電器 Relay: 250 V NO: 7 A/NC: 5 A 數位電壓 Digital voltage: DC 24 V/20 mA 類比電壓 Analog voltage: 0 ~ 10 V、0 ~ 5 V、1 ~ 5 V 類比電流 Analog current: 0 ~ 20 mA、4 ~ 20 mA																						
警報 1/警報 2/副輸出 Alarm 1/Alarm 2/Aux. Output	繼電器 Relay: 250 V NO: 7 A/NC: 5 A 數位電壓 Digital voltage: DC 24 V/20 mA *V 系列副輸出及警報 1/2: 250 V/5A *V series output for aux. and alarm 1/2: 250 V/5A																						
輸入類型 Input Type	感溫線 Thermocouple: J, K RTD: PT100																						
顯示型態 Display Type	PV-4 位數高亮度紅色顯示 4 digital high brightness and red color SV-4 位數高亮度綠色顯示 4 digital high brightness and green color																						
認證標準 Approved Standard	CE-EM2055B0287																						
尺寸及開孔圖 Dimension & Cut-Out 單位 Unit : mm	尺寸圖 Dimension  開孔圖 Cut-Out  <table><tr><th>Model</th><th>A</th><th>B</th><th>C</th><th>D</th><th>E</th><th>F</th></tr><tr><td>V100</td><td>48</td><td>48</td><td>45+0.5</td><td>45+0.5</td><td>72</td><td>60</td></tr><tr><td>V200</td><td>48</td><td>96</td><td>45+0.5</td><td>92+0.5</td><td>120</td><td>60</td></tr></table>		Model	A	B	C	D	E	F	V100	48	48	45+0.5	45+0.5	72	60	V200	48	96	45+0.5	92+0.5	120	60
Model	A	B	C	D	E	F																	
V100	48	48	45+0.5	45+0.5	72	60																	
V200	48	96	45+0.5	92+0.5	120	60																	

V Series

技術規格
Technical Specification



V Series 技術規格 Technical Specification																															
型號 Model	V300	V400	V500																												
尺寸 Dimension W × H (mm)	72 × 72	96 × 96	96 × 48																												
電源 Power Supply	100 ~ 240 Vac ± 10%, 50/60 Hz																														
顯示位數 Display Digits	2 × 4																														
機體重量 Unit Weight	200 g	264 g	210 g																												
操作環境 Operation Condition	Temperature : 0 ~ 55°C/32°F ~ 130°F Humidity : 10% ~ 80% (Non-condensing)																														
量測精確度 Measurement Accuracy	0.5% of full scale (25°C)																														
溫度單位 Temperature Unit	攝氏 Celsius °C/華氏 Fahrenheit °F																														
動作 Function	加熱 Heating/冷卻 Coolin																														
警報模式 Alarm Mode	10 kinds																														
控制方式 Controlling Measure	ON/OFF, PID																														
主輸出 Main Output	繼電器 Relay: 250 V NO: 7 A/NC: 5 A 數位電壓 Digital voltage: DC 24 V/20 mA 類比電壓 Analog voltage: 0 ~ 10 V、0 ~ 5 V、1 ~ 5 V 類比電流 Analog current: 0 ~ 20 mA、4 ~ 20 mA																														
警報 1/警報 2/副輸出 Alarm 1/Alarm 2/Aux. Output	繼電器 Relay: 250 V NO: 7 A/NC: 5 A 數位電壓 Digital voltage: DC 24 V/20 mA *V 系列副輸出及警報 1/2: 250 V/5A *V series output for aux. and alarm 1/2: 250 V/5A																														
輸入類型 Input Type	感溫線 Thermocouple: J, K RTD: PT100																														
顯示型態 Display Type	PV-4 位數高亮度紅色顯示 4 digital high brightness and red color SV-4 位數高亮度綠色顯示 4 digital high brightness and green color																														
認證標準 Approved Standard	CE-EM2055B0287																														
尺寸及開孔圖 Dimension & Cut-Out 單位 Unit : mm	尺寸圖 Dimension  <table><tr><th>Model</th><th>A</th><th>B</th><th>C</th><th>D</th><th>E</th><th>F</th></tr><tr><td>V300</td><td>72</td><td>72</td><td>68+0.5</td><td>68+0.5</td><td>96</td><td>84</td></tr><tr><td>V400</td><td>96</td><td>96</td><td>92+0.5</td><td>92+0.5</td><td>120</td><td>108</td></tr><tr><td>V500</td><td>96</td><td>48</td><td>92+0.5</td><td>45+0.5</td><td>60</td><td>120</td></tr></table> 開孔圖 Cut-Out 			Model	A	B	C	D	E	F	V300	72	72	68+0.5	68+0.5	96	84	V400	96	96	92+0.5	92+0.5	120	108	V500	96	48	92+0.5	45+0.5	60	120
Model	A	B	C	D	E	F																									
V300	72	72	68+0.5	68+0.5	96	84																									
V400	96	96	92+0.5	92+0.5	120	108																									
V500	96	48	92+0.5	45+0.5	60	120																									

面板說明 Panel Description



PV：一般模式

現在溫度值

參數層選擇模式

參數層一至四

參數層模式：

參數名稱

SV：一般模式

設定值，若選擇手動輸出

則為手動輸出比例

參數層模式：該參數之值

PV: Normal mode:

Present temp. Value

Level select mode:

Parameter level 1~4

Parameter mode:

Parameter name

SV: Normal mode:

Setting value, Manual output

percentage

Parameter mode: Parameter value

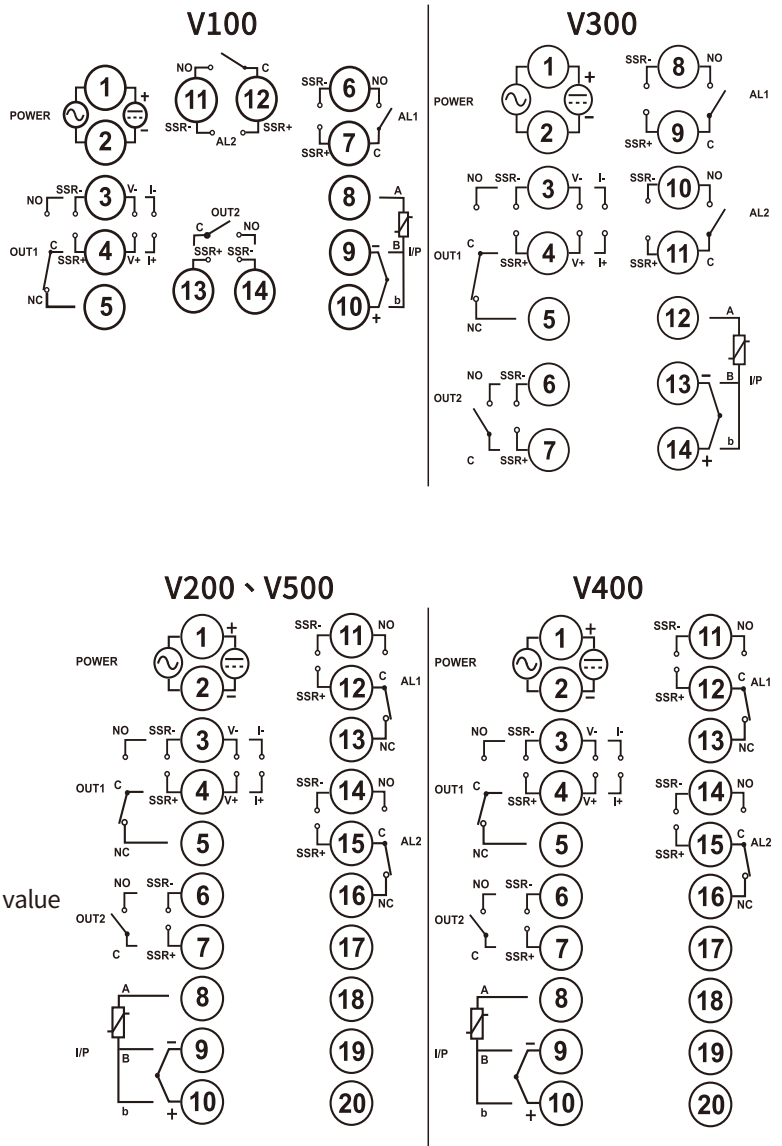
OUT1：主輸出狀態指示燈 Main output indicator

OUT2：副輸出狀態指示燈 Aux. output indicator

AL1：警報一輸出狀態指示燈 Alarm 1 output indicator

AL2：警報二輸出狀態指示燈 Alarm 2 output indicator

接線 Wiring



訂購碼 Order Code

1 — 2 3 4 5

1：型號 Model

V100：48 × 48 mm

V200：48 × 96 mm

V300：72 × 72 mm

V400：96 × 96 mm

V500：96 × 48 mm

3/4/5：副輸出 Aux. Output/Alarm 1/Alarm 2

O：無功能 None

R：繼電器 Relay (*)

V：數位電壓輸出 Digital voltage output 24 V/20 mA

2：主輸出 Main Output

O：無功能 None

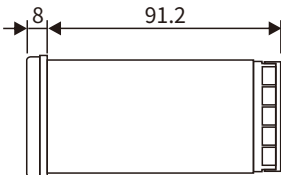
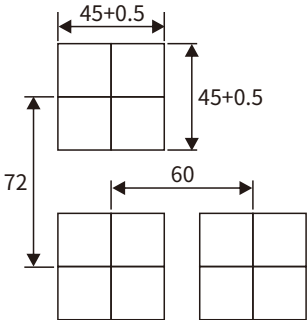
R：繼電器 Relay (*)

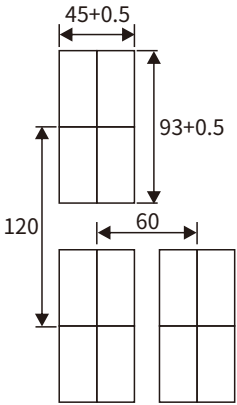
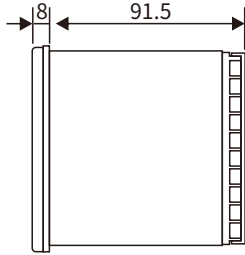
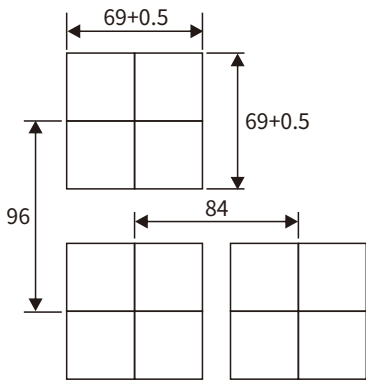
V：數位電壓輸出 Digital voltage output 24 V/20 mA

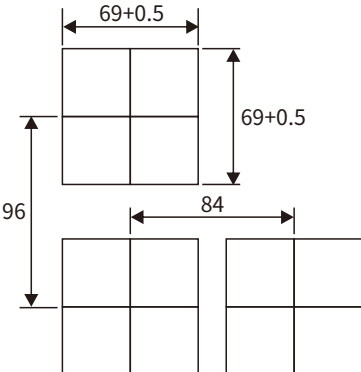
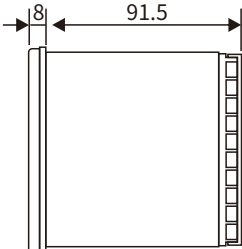
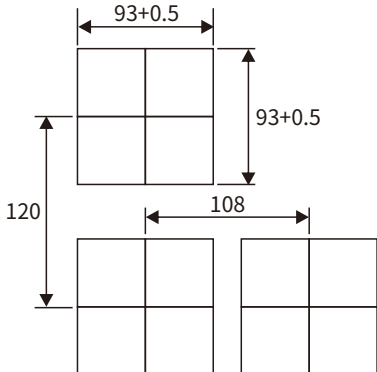
I：類比電流輸出 Analog current output 0~20 mA, 4~20 mA

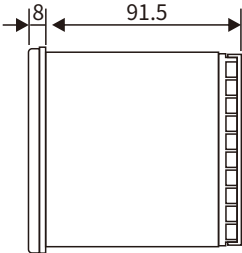
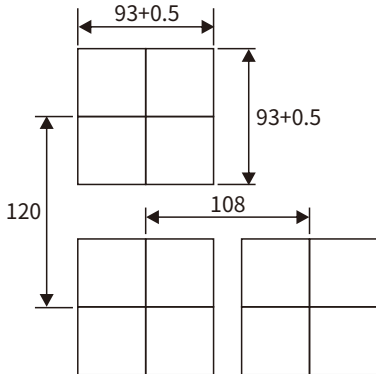
L：類比電壓輸出 Analog voltage output 0~10 V, 0~5 V, 1~5 V

*：標準 (Standard)

A Series 技術規格 Technical Specification		
型號 Model	A1AN	A1DN
尺寸 Dimension W × H (mm)	48 × 48	48 × 48
設定方式 Setting Type	旋鈕設定 Analog setting	指撥設定 Digital setting
顯示型態 Display Type	無顯示 No display	無顯示 No display
輸出類型 Output Type	繼電器 Relay/電壓 Voltage (12 Vdc)	
控制模式 Control Mode	ON/OFF、比例式 Proportional action	
警報 Alarm	有警報/無警報，5 種警報模式 (訂購時指定) With alarm/Without alarm, 5 alarm output modes selectable	
輸入類型 Input Type	感溫線 Thermocouple: J, K	
設定精度 Setting Accuracy	± 0.5% of full scale	
指示精度 Indication Accuracy	± 0.5% of full scale	
比例帶 Proportional Band	± 3% of full scale	
重設範圍 Reset Range	± 3% of full scale	
比例週期 Proportional Recycle	繼電器輸出 20 sec.、電壓輸出 2 sec. Relay output 20 sec., voltage output 2 sec.	
環境溫度 Ambient Temperature	-10 ~ +55°C	
消耗功率 Power Consumption	2 W	
尺寸及開孔圖 Dimension & Cut-Out 單位 Unit : mm	尺寸圖 Dimension  開孔圖 Cut-Out 	

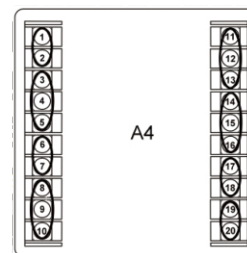
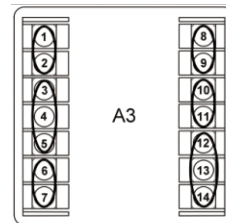
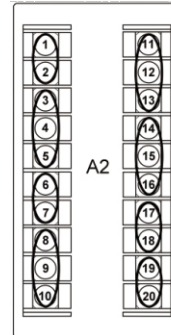
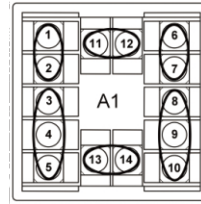
A Series 技術規格 Technical Specification				
型號 Model	A2DA	A2DD	A3AN	A3AA
尺寸 Dimension W × H (mm)	48 × 96	48 × 96	72 × 72	72 × 72
設定方式 Setting Type	指撥設定 Digital setting	指撥設定 Digital setting	旋鈕設定 Analog setting	旋鈕設定 Analog setting
顯示型態 Display Type	偏差表顯示 Analog display	數字顯示 Digital display	無顯示 No display	偏差表顯示 Analog display
輸出類型 Output Type	繼電器 Relay/電壓 Voltage (12 Vdc)			
控制模式 Control Mode	ON/OFF、比例式 Proportional action			
警報 Alarm	有警報/無警報，5 種警報模式 (訂購時指定) With alarm/Without alarm, 5 alarm output modes selectable			
輸入類型 Input Type	感溫線 Thermocouple: J, K			
設定精度 Setting Accuracy	± 0.5% of full scale			
指示精度 Indication Accuracy	± 0.5% of full scale			
比例帶 Proportional Band	± 3% of full scale			
重設範圍 Reset Range	± 3% of full scale			
比例週期 Proportional Recycle	繼電器輸出 20 sec.、電壓輸出 2 sec. Relay output 20 sec., voltage output 2 sec.			
環境溫度 Ambient Temperature	-10 ~ +55℃			
消耗功率 Power Consumption	2 W			
尺寸及開孔圖 Dimension & Cut-Out 單位 Unit : mm	開孔圖 Cut-Out  尺寸圖 Dimension  開孔圖 Cut-Out 			

A Series 技術規格 Technical Specification				
型號 Model	A3AD	A3DA	A3DD	A4AA
尺寸 Dimension W × H (mm)	72 × 72	72 × 72	72 × 72	96 × 96
設定方式 Setting Type	旋鈕設定 Analog setting	指撥設定 Digital setting	指撥設定 Digital setting	旋鈕設定 Analog setting
顯示型態 Display Type	數字顯示 Digital display	偏差表顯示 Analog display	數字顯示 Digital display	偏差表顯示 Analog display
輸出類型 Output Type	繼電器 Relay/電壓 Voltage (12 Vdc)			
控制模式 Control Mode	ON/OFF、比例式 Proportional action			
警報 Alarm	有警報/無警報，5種警報模式(訂購時指定) With alarm/Without alarm, 5 alarm output modes selectable			
輸入類型 Input Type	感溫線 Thermocouple: J, K			
設定精度 Setting Accuracy	± 0.5% of full scale			
指示精度 Indication Accuracy	± 0.5% of full scale			
比例帶 Proportional Band	± 3% of full scale			
重設範圍 Reset Range	± 3% of full scale			
比例週期 Proportional Recycle	繼電器輸出 20 sec.、電壓輸出 2 sec. Relay output 20 sec., voltage output 2 sec.			
環境溫度 Ambient Temperature	-10 ~ +55℃			
消耗功率 Power Consumption	2 W			
尺寸及開孔圖 Dimension & Cut-Out 單位 Unit : mm	開孔圖 Cut-Out  尺寸圖 Dimension  開孔圖 Cut-Out 			

A Series 技術規格 Technical Specification				
型號 Model	A4AD	A4AN	A4DA	A4DD
尺寸 Dimension W × H (mm)	96 × 96	96 × 96	96 × 96	96 × 96
設定方式 Setting Type	旋鈕設定 Analog setting	旋鈕設定 Analog setting	指撥設定 Digital setting	指撥設定 Digital setting
顯示型態 Display Type	數字顯示 Digital display	無顯示 No display	偏差表顯示 Analog display	數字顯示 Digital display
輸出類型 Output Type	繼電器 Relay/電壓 Voltage (12 Vdc)			
控制模式 Control Mode	ON/OFF、比例式 Proportional action			
警報 Alarm	有警報/無警報，5種警報模式(訂購時指定) With alarm/Without alarm, 5 alarm output modes selectable			
輸入類型 Input Type	感溫線 Thermocouple: J, K			
設定精度 Setting Accuracy	± 0.5% of full scale			
指示精度 Indication Accuracy	± 0.5% of full scale			
比例帶 Proportional Band	± 3% of full scale			
重設範圍 Reset Range	± 3% of full scale			
比例週期 Proportional Recycle	繼電器輸出 20 sec.、電壓輸出 2 sec. Relay output 20 sec., voltage output 2 sec.			
環境溫度 Ambient Temperature	-10 ~ +55℃			
消耗功率 Power Consumption	2 W			
尺寸及開孔圖 Dimension & Cut-Out 單位 Unit : mm	尺寸圖 Dimension  開孔圖 Cut-Out 			

接線 Wiring

項 目	端 子 號 碼			
	A1	A2	A3	A4
AC 220Vac 	1	1	1	1
	2	3	2	3
AC 110Vac 		2		2
		3		3
MAIN OUTPUT 	3	6	4	6
	4	5	3	5
	5	4	8	4
RTD 	8	8	5	8
	9	9	6	9
	10	10	7	10
Alarm 		11	9	11
		12	10	12
		13	11	13
	11	14	12	14
	12	15	13	15
	13	16	14	16
	14	17		17
		18		18
		19		19
		20		20



訂購碼 Order Code

A 1 2 3 4 5 6 7

1 : 尺寸 Dimensions

1 : 48 × 48 mm

2 : 48 × 96 mm

3 : 72 × 72 mm

4 : 96 × 96 mm

2 : 設定 Setting

D : 指撥設定 Digital setting

A : 旋鈕設定 Analog setting

3 : 顯示 Display

D : 數字顯示 Digital display

A : 偏差表顯示 Analog display

N : 無顯示 No display

4 : 輸出 Output

R : 繼電器 Relay

V : 電壓 Voltage (12 Vdc)

5 : 控制方式 Control

P : 比例式 Proportional

O : 開關式 ON/OFF

6 : 警報 Alarm

A : 有警報 With alarm

: 無警報 No alarm

7 : 感溫線 Thermocouple

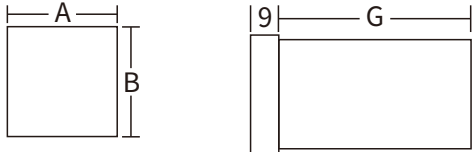
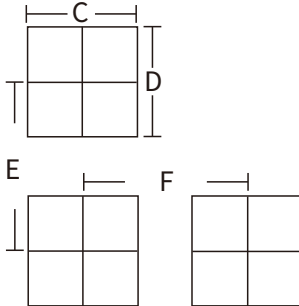
J : J type

K : K type

TC Series

技術規格
Technical Specification

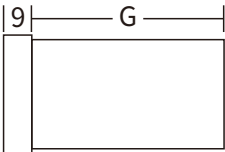
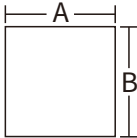
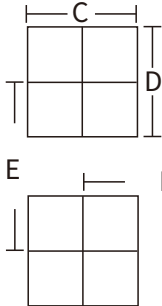


TC Series 技術規格 Technical Specification																										
型號 Model	H2DA	TC2DA																								
尺寸 Dimension W × H (mm)	48 × 96	48 × 96																								
設定方式 Setting Type	指撥設定 Digital setting	指撥設定 Digital setting																								
顯示型態 Display Type	偏差表顯示 Analog display	偏差表顯示 Analog display																								
輸出類型 Output Type	繼電器 Relay: 250 Vac/5 A、數位電壓 Digital voltage: DC 0, 6 V/ 20 mA																									
控制模式 Control Mode	ON/OFF、比例式 Proportional action																									
警報 Alarm	有警報/無警報，5 種警報模式 (訂購時指定) With alarm/Without alarm, 5 alarm output modes selectable																									
加熱器/感溫線斷路指示 Heater/Thermocouple Break Indication	有斷路指示 H/B alarm output 無 None																									
輸入類型 Input Type	感溫線 Thermocouple: J, K																									
設定精度 Setting Accuracy	± 0.5% of full scale																									
指示精度 Indication Accuracy	± 0.5% of full scale																									
比例帶 Proportional Band	± 3% of full scale																									
重設範圍 Reset Range	± 3% of full scale																									
比例週期 Proportional Recycle	繼電器輸出 17 sec.、電壓輸出 2 sec. Relay output 17 sec., voltage output 2 sec.																									
環境溫度 Ambient Temperature	-10 ~ +55℃																									
供應電壓 Supply Voltage	110/220 Vac ± 5%, 50~60 Hz																									
消耗功率 Power Consumption	2 W																									
尺寸及開孔圖 Dimension & Cut-Out 單位 Unit : mm	尺寸圖 Dimension  <table><tr><th>Model</th><th>A</th><th>B</th><th>C</th><th>D</th><th>E</th><th>F</th><th>G</th></tr><tr><td>H2</td><td>48</td><td>96</td><td>45</td><td>92</td><td>120</td><td>93</td><td>99</td></tr><tr><td>TC2</td><td>48</td><td>96</td><td>45</td><td>92</td><td>120</td><td>93</td><td>119</td></tr></table> 開孔圖 Cut-Out 		Model	A	B	C	D	E	F	G	H2	48	96	45	92	120	93	99	TC2	48	96	45	92	120	93	119
Model	A	B	C	D	E	F	G																			
H2	48	96	45	92	120	93	99																			
TC2	48	96	45	92	120	93	119																			

TC Series

技術規格
Technical Specification

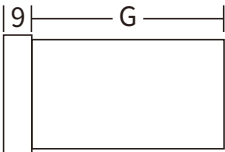
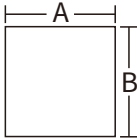
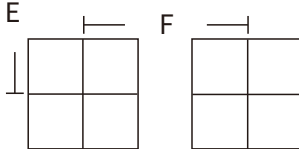
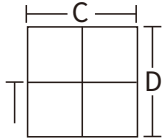


TC Series 技術規格 Technical Specification																				
型號 Model	TC3AA	TC3AO	TC3DA	TC3DO																
尺寸 Dimension W × H (mm)	72 × 72	72 × 72	72 × 72	72 × 72																
設定方式 Setting Type	旋鈕設定 Analog setting	旋鈕設定 Analog setting	指撥設定 Digital setting	指撥設定 Digital setting																
顯示型態 Display Type	偏差表顯示 Analog display	無顯示 No display	偏差表顯示 Analog display	無顯示 No display																
輸出類型 Output Type	繼電器 Relay: 250 Vac/5 A、數位電壓 Digital voltage: DC 0, 6 V/ 20 mA																			
控制模式 Control Mode	ON/OFF、比例式 Proportional action																			
警報 Alarm	有警報/無警報，5 種警報模式 (訂購時指定) With alarm/Without alarm, 5 alarm output modes selectable																			
加熱器/感溫線斷路指示 Heater/Thermocouple Break Indication	有斷路指示 H/B alarm output 無 None																			
輸入類型 Input Type	感溫線 Thermocouple: J, K																			
設定精度 Setting Accuracy	± 0.5% of full scale																			
指示精度 Indication Accuracy	± 0.5% of full scale																			
比例帶 Proportional Band	± 3% of full scale																			
重設範圍 Reset Range	± 3% of full scale																			
比例週期 Proportional Recycle	繼電器輸出 17 sec.、電壓輸出 2 sec. Relay output 17 sec., voltage output 2 sec.																			
環境溫度 Ambient Temperature	-10 ~ +55℃																			
供應電壓 Supply Voltage	110/220 Vac ± 5%, 50~60 Hz																			
消耗功率 Power Consumption	2 W																			
尺寸及開孔圖 Dimension & Cut-Out 單位 Unit : mm	尺寸圖 Dimension  開孔圖 Cut-Out  <table><tr><th>Model</th><th>A</th><th>B</th><th>C</th><th>D</th><th>E</th><th>F</th><th>G</th></tr><tr><td>TC3</td><td>72</td><td>72</td><td>68</td><td>68</td><td>100</td><td>82</td><td>119</td></tr></table>				Model	A	B	C	D	E	F	G	TC3	72	72	68	68	100	82	119
Model	A	B	C	D	E	F	G													
TC3	72	72	68	68	100	82	119													

TC Series

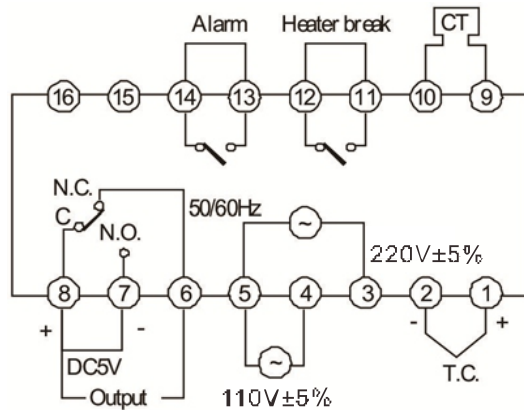
技術規格
Technical Specification



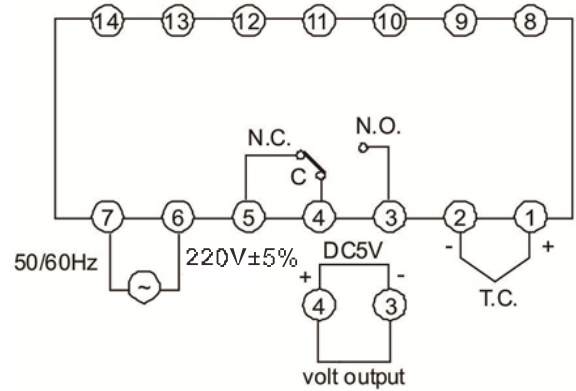
TC Series 技術規格 Technical Specification																				
型號 Model	TC4AA	TC4AO	TC4DA	TC4DO																
尺寸 Dimension W × H (mm)	96 × 96	96 × 96	96 × 96	96 × 96																
設定方式 Setting Type	旋鈕設定 Analog setting	旋鈕設定 Analog setting	指撥設定 Digital setting	指撥設定 Digital setting																
顯示型態 Display Type	偏差表顯示 Analog display	無顯示 No display	偏差表顯示 Analog display	無顯示 No display																
輸出類型 Output Type	繼電器 Relay: 250 Vac/5 A、數位電壓 Digital voltage: DC 0, 6 V/ 20 mA																			
控制模式 Control Mode	ON/OFF、比例式 Proportional action																			
警報 Alarm	有警報/無警報，5 種警報模式 (訂購時指定) With alarm/Without alarm, 5 alarm output modes selectable																			
加熱器/感溫線斷路指示 Heater/Thermocouple Break Indication	有斷路指示 H/B alarm output 無 None																			
輸入類型 Input Type	感溫線 Thermocouple: J, K																			
設定精度 Setting Accuracy	± 0.5% of full scale																			
指示精度 Indication Accuracy	± 0.5% of full scale																			
比例帶 Proportional Band	± 3% of full scale																			
重設範圍 Reset Range	± 3% of full scale																			
比例週期 Proportional Recycle	繼電器輸出 17 sec.、電壓輸出 2 sec. Relay output 17 sec., voltage output 2 sec.																			
環境溫度 Ambient Temperature	-10 ~ +55℃																			
供應電壓 Supply Voltage	110/220 Vac ± 5%, 50~60 Hz																			
消耗功率 Power Consumption	2 W																			
尺寸及開孔圖 Dimension & Cut-Out 單位 Unit : mm	尺寸圖 Dimension  開孔圖 Cut-Out  <table><tr><td>Model</td><td>A</td><td>B</td><td>C</td><td>D</td><td>E</td><td>F</td><td>G</td></tr><tr><td>TC4</td><td>96</td><td>96</td><td>92</td><td>92</td><td>120</td><td>110</td><td>119</td></tr></table>				Model	A	B	C	D	E	F	G	TC4	96	96	92	92	120	110	119
Model	A	B	C	D	E	F	G													
TC4	96	96	92	92	120	110	119													

接線 Wiring

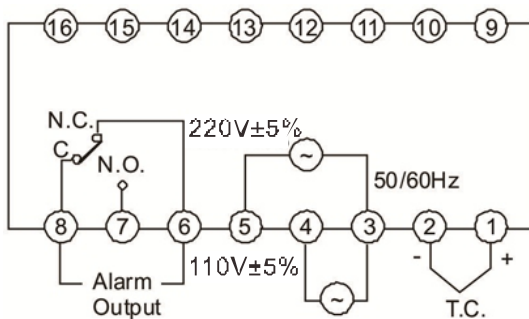
TC2



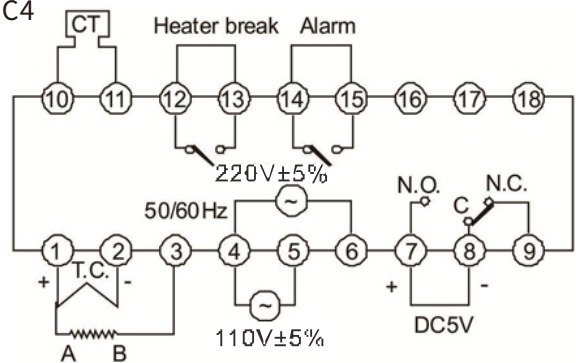
TC3



H2DA



TC4



訂購碼 Order Code

1

2

3

4

5

6

7

8

1 : 尺寸 Dimensions

TC2 : 48 × 96 mm

TC3 : 72 × 72 mm

TC4 : 96 × 96 mm

H2DA : 48 × 96 mm

2 : 設定 Setting

D : 指撥設定 Digital setting

A : 旋鈕設定 Analog setting

O : 無設定 No setting

3 : 顯示 Display

A : 偏差表顯示 Analog display

O : 無顯示 No display

4 : 輸出 Output

R : 繼電器 Relay

V : 電壓 Voltage (6 Vdc)

5 : 控制方式 Control

P : 比例式 Proportional

O : 開關式 ON/OFF

6 : 警報 Alarm

A : 有警報 With alarm

: 無警報 No alarm

7 : 加熱器/感溫線斷路指示

Heater Break Select

H : 有指示 H/B alarm

: 無指示 None

8 : 感溫線 Thermocouple

J : J type

K : K type

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