

### 按鍵操作說明

1. 設定溫度—按(SET)一下，操作<sup>上</sup>▲<sup>下</sup>▼<sup>移位</sup>◀
2. 進入參數—按(F) 3 sec進入參數層（如表1）
3. 自動演算—按▲3 sec再按▲3 sec解除
4. 警報設定—同時按(SET)&(F)3 sec進入（如表2）
5. 通訊設定—同時按(SET)&▼3 sec進入（如表3）
6. 自動/手動—按▼3 sec關閉輸出（顯示OFF）  
再按(SET)一下可設定手動輸出量（顯示N.XX）  
手動/自動按▼3 sec恢復自動控溫狀態



| Function  | Range                                   | Description  |
|---|---|--|
| Control status<br>控制狀態<br>Press <b>[ ]</b> Key ↓ 3 Sec<br>8888<br>8888  | -200 ~ 9999                             |  |
| Cycle time<br>動作週期<br>Press <b>[SET]</b> Key ↓<br>Ct<br>15              | 0 ~ 99                                  | 1> 「CT = 0」: ON/OFF control<br>2> Disappeared in Linear output type                                  |
| Auto tuning<br>自動演算<br>Press <b>[SET]</b> Key ↓<br>At<br>0              | 0 ~ 1                                   | 1> 「AT = 0」: Control status<br>2> 「AT = 1」: Auto tuning status                                       |
| Auto tuning bias<br>自動演算偏差值<br>Press <b>[SET]</b> Key ↓<br>tu<br>0      | 0 ~ 99                                  | 1> Auto tuning value = ( SV - tu )   |
| Proportion band<br>比例帶<br>Press <b>[SET]</b> Key ↓<br>P<br>25           | 0 ~ 3999                                | 1> 「CT = 0」 → 「P」 is disappeared   |
| Integral time<br>積分時間<br>Press <b>[SET]</b> Key ↓<br>I<br>80            | 0 ~ 3999                                | 1> 「CT = 0」 → 「I」 is disappeared   |
| Derivative time<br>微分時間<br>Press <b>[SET]</b> Key ↓<br>d<br>20          | 0 ~ 3999                                | 1> 「CT = 0」 → 「d」 is disappeared   |
| Hysteresis<br>動作應差<br>Press <b>[SET]</b> Key ↓<br>Hys<br>2              | 0 ~ 99                                  | 1> 「CT = 0」 → 「Hys」 is appeared only<br>2> ( PV > SV ) → Out OFF;<br>[ PV < ( SV - Hys ) ] → Out OFF |
| Gain<br>輸出控制增益<br>Press <b>[SET]</b> Key ↓<br>SRn<br>1.0                | 0.1 ~ 9.9                               | 1> Gain of output control  |
| Input selecting<br>輸入選擇<br>Press <b>[SET]</b> Key ↓<br>InE<br>K         | PT / K / J / R / S<br>T / B / E / N / L | 1> 10 input type are selectable  |
| Unit selecting<br>單位選擇<br>Press <b>[SET]</b> Key ↓<br>UnE<br>C          | °C / °F                                 |  |
| Decimal point selecting<br>小數點選擇<br>Press <b>[SET]</b> Key ↓<br>dP<br>0 | 0 ~ 1                                   | 1> 「dp = 0」: Without decimal point<br>2> 「dp = 1」: One decimal point                                 |
| Input shift<br>輸入修正<br>Press <b>[SET]</b> Key ↓<br>Sht<br>0             | -99 ~ +99                               | 1> 「PV」: ( PV + Sht )  |
| Control method<br>控制方式<br>Press <b>[SET]</b> Key ↓<br>HcE<br>HcLr       | Htr / cLr                               | 1> 「Htr」: Heating control<br>2> 「cLr」:   |
| Alarm mode<br>警報模式<br>Press <b>[SET]</b> Key<br>ALt<br>0                | 0 ~ 18                                  | 1> Refer to the mode of Alarm <b>表2-1</b>  |

| Function   | Range                       | Description  |
|--|-----------------------------|--|
| Control status<br>控溫狀態<br>Press [SET] & [F] Key ↓ 3 Sec    | 8888<br>8888<br>-999 ~ 9999 |  |
| Lock setting<br>鎖定設定<br>Press [SET]                        | LCK<br>0<br>0 ~ 3           | 1> 「Lck = 0」: Unlock ;<br>「Lck = 1」: SV settable only<br>「Lck = 2」: SV & AL settable<br>「Lck = 3」: All lock  |
| AL1 Limit setting<br>AL1 警報設定<br>Press [SET]               | AL1<br>50<br>-999 ~ 9999    | 1> Refer to the mode of Alarm (表2-1)   |
| AL2 Limit setting<br>AL2 警報設定<br>Press [SET]               | AL2<br>50<br>-999 ~ 9999    | 1> Refer to the mode of Alarm  |
| Hysteresis of alarm<br>警報應差值設定<br>Press [SET]              | ALH<br>7<br>0 ~ 999         | Ex. $PV \geq (SV+AL1) \rightarrow AL1 ON,$<br>$PV < (SV+AL1-ALH) \rightarrow AL1 OFF$  |
| Flick timer<br>警報內燃輸出時間設定<br>Press [SET]                   | t<br>10<br>0 ~ 99           | 1> Range : 0 ~ 99 sec<br>2> Cycle time of flick timer  |
| Setting limit<br>最大設定值限制<br>Press [SET]                    | SLH<br>400<br>0 ~ 999       | 1> $SV \leq SLH$   |
| Output limit<br>輸出量限制設定<br>Press [SET]                     | Out<br>100<br>0 ~ 100%      | 1> Output volume = Control output volume*「out」   |
| Process output volume<br>實際輸出量<br>Press [SET]              | Un<br>0.0<br>0 ~ 99.99      | 1> Display the output volume   |
| Process current of heater<br>實際加熱器輸出電流值<br>Press [SET]     | Ctu<br>0.00<br>0 ~ 99.99    | 1> Range : 0.00 ~ 99.99 A  |
| Heater break setting<br>加熱器斷線電流設定值<br>Press [SET]          | Hb<br>1.00<br>0 ~ 99.99     | 1> Range : 0.00 ~ 99.99 A<br>2> 「Ctu」 < 「Hb」 → AL2 ON  |
| CT Low limit setting<br>CT最小值設定<br>Press [SET]             | CtL<br>0.00<br>0 ~ 99.99    | 1> Range : 0.00 ~ 99.99<br>2> Offset of CT current   |
| CT High limit setting<br>CT最大值設定<br>Press [SET]            | CtH<br>30.00<br>0 ~ 99.99   | 1> Range : 0.00 ~ 99.99<br>2> To set the max. CT current   |
| HB enable setting<br>HB偵測限制設定<br>Press [SET]               | noL<br>7<br>0 ~ 100%        | 1> Range : 0 ~ 100%<br>2> 「Un<noL」: HB alarm enable  |
| Min. output volume setting<br>最小輸出量設定<br>Press [SET] 3 Sec | Lot<br>0<br>0 ~ 100%        | 1> Range : 0 ~ 100%<br>2> Setting of min. output volume  |
| Soft star setting<br>緩起動設定<br>Press [SET]                  | SV2<br>0<br>-999 ~ 9999     | 1> 「SV2」 = 0 : Without soft start<br>2> 「PV」 < 「SV2」 :<br>Fixed at manual output volume<br>3> 「PV」 $\geq$ 「SV2」 :<br>Output volume controlled by PID |

# 警報模式 表2-1

| Alt | Description / 警報說明 | Alt | Description / 警報說明 |
|-----|--------------------|-----|--------------------|
| 0   | AL1 ON             | 1   | AL1 ON             |
| 3   | AL1 ON             | 4   | AL1 ON             |
| 6   | AL1 ON             | 7   | AL1 ON             |
| 9   | AL1 ON             | 10  | AL1 ON             |
| 2   | AL1 ON             | 8   | AL1 ON             |
| 5   | AL1 ON             | 11  | AL1 Flick ON       |

1> 「Alt=11」：t=ON time of AL1 for cooling, OFF time is controlled by PID.

2> 「ALH」：Hysteresis of alarm.

Ex:  $PV \geq (SV+AL1) \rightarrow AL1 ON$ ;  $PV < (SV+AL1-ALH) \rightarrow AL1 OFF$

3> NT-22□-CT：HB alarm output is AL1

# 通訊參數設定 表3

| Function   | Range                  | Description  |
|--|------------------------|--|
| <div style="border: 1px solid black; padding: 5px;"> <div style="display: flex; justify-content: space-between; align-items: center;"> <div style="border: 1px solid black; padding: 2px;">Control status</div> <div style="border: 1px solid black; padding: 2px;">8888</div> </div> <div style="display: flex; justify-content: space-between; align-items: center; margin-top: 5px;"> <div style="border: 1px solid black; padding: 2px;">控制狀態</div> <div style="border: 1px solid black; padding: 2px;">8888</div> </div> <p style="font-size: small; margin-top: 5px;">Press <b>SET</b> &amp;  Key ↓ 3 Sec</p> </div> | -200 ~ 9999            |  |
| <div style="border: 1px solid black; padding: 5px;"> <div style="display: flex; justify-content: space-between; align-items: center;"> <div style="border: 1px solid black; padding: 2px;">Controller NO.</div> <div style="border: 1px solid black; padding: 2px;">1d</div> </div> <div style="display: flex; justify-content: space-between; align-items: center; margin-top: 5px;"> <div style="border: 1px solid black; padding: 2px;">控制器編號設定</div> <div style="border: 1px solid black; padding: 2px;">1</div> </div> <p style="font-size: small; margin-top: 5px;">Press <b>SET</b> Key ↓</p> </div>                | 1 ~ 255                | 1>Range: 1~255   |
| <div style="border: 1px solid black; padding: 5px;"> <div style="display: flex; justify-content: space-between; align-items: center;"> <div style="border: 1px solid black; padding: 2px;">Communication protocol</div> <div style="border: 1px solid black; padding: 2px;">r5</div> </div> <div style="display: flex; justify-content: space-between; align-items: center; margin-top: 5px;"> <div style="border: 1px solid black; padding: 2px;">通訊協定選擇</div> <div style="border: 1px solid black; padding: 2px;">0</div> </div> <p style="font-size: small; margin-top: 5px;">Press <b>SET</b> Key ↓</p> </div>         | 0 ~ 1                  | 1>「rs = 0」: Modbus-RTU<br>2>「rs = 1」: Modbus-ASCII   |
| <div style="border: 1px solid black; padding: 5px;"> <div style="display: flex; justify-content: space-between; align-items: center;"> <div style="border: 1px solid black; padding: 2px;">Communication speed</div> <div style="border: 1px solid black; padding: 2px;">bP5</div> </div> <div style="display: flex; justify-content: space-between; align-items: center; margin-top: 5px;"> <div style="border: 1px solid black; padding: 2px;">通訊速率選擇</div> <div style="border: 1px solid black; padding: 2px;">192</div> </div> <p style="font-size: small; margin-top: 5px;">Press <b>SET</b> Key ↓</p> </div>         | 96 / 192 / 384         | 1>「bPS = 96」: 9600 bps<br>2>「bPS = 192」: 19200 bps<br>3>「bPS = 384」: 38400 bps   |
| <div style="border: 1px solid black; padding: 5px;"> <div style="display: flex; justify-content: space-between; align-items: center;"> <div style="border: 1px solid black; padding: 2px;">Data configuration</div> <div style="border: 1px solid black; padding: 2px;">blt</div> </div> <div style="display: flex; justify-content: space-between; align-items: center; margin-top: 5px;"> <div style="border: 1px solid black; padding: 2px;">資料結構選擇</div> <div style="border: 1px solid black; padding: 2px;">8n1</div> </div> <p style="font-size: small; margin-top: 5px;">Press <b>SET</b> Key</p> </div>            | 8N1 / 8E1<br>8O1 / 7O1 | 1>「blt = 8N1」: 8 bit non parity<br>2>「blt = 8O1」: 8 bit odd parity<br>3>「blt = 8E1」: 8 bit even parity<br>4>「blt = 8N2」: 8 bit non parity<br>5>「blt = 7O1」: 7 bit odd parity<br>6>「blt = 7E1」: 7 bit even parity |