



Microcomputer Temperature Controller

微電腦溫度控制器

■ SPECIFICATION:

- Advance Design: Fully digitalize. Accuracy up to 0.3%.
- Humanize function: Simple operation without hassle.
- Mainstream for future temperature control : Subversion in tradition which make big difference.
- Top choice for one who chase for perfection: Excellent concept escalate added value of machine.



型號 Type	EF-81	EF-82	EF-83	EF-84
面板尺寸 Size	96mmx96mm	72mmx72mm	48mmx96mm	48mmx48mm
挖孔尺寸 Panel Cut	92mmx92mm	68mmx68mm	44mmx92mm	44mmx44mm
輸入 Input	S,B,K,E,T,J,PT 100Ω 0-20MV, 0-50MV	S,B,K,E,T,J,PT 100Ω 0-20MV, 0-50MV	S,B,K,E,T,J,PT 100Ω 0-20MV, 0-50MV	S,B,K,E,T,J,PT 100Ω 0-20MV, 0-50MV
輸出 Output	Relay : 3 A SSR : 12 VDC SCR : 4-20 MA	Relay : 3 A SSR : 12 VDC SCR : 4-20 MA	Relay : 3 A SSR : 12 VDC SCR : 4-20 MA	Relay : 3 A SSR : 12 VDC SCR : 4-20 MA
控制範圍 Control range	K:0~1300°C , J:0~800°C PT:-200°C~800°C	K:0~1300°C , J:0~800°C PT:-200°C~800°C	K:0~1300°C , J:0~800°C PT:-200°C~800°C	K:0~1300°C , J:0~800°C PT:-200°C~800°C
控制方式 Control type	1. ON/OFF 2. P.I.D. 3. Auto-Tuning 4. Self-Tuning	1. ON/OFF 2. P.I.D. 3. Auto-Tuning 4. Self-Tuning	1. ON/OFF 2. P.I.D. 3. Auto-Tuning 4. Self-Tuning	1. ON/OFF 2. P.I.D. 3. Auto-Tuning 4. Self-Tuning
警報方式 Alarm type	High/Low Limits (Absolute , Deviation)	High/Low Limits (Absolute , Deviation)	High/Low Limits (Absolute , Deviation)	High/Low Limits (Absolute , Deviation)
精度 Accuracy	0.3 % F.S.	0.3 % F.S.	0.3 % F.S.	0.3 % F.S.
解析度 Resolution	20K Steps	20K Steps	20K Steps	20K Steps
取樣時間 Sampling Cycle	0.5 sec	0.5 sec	0.5 sec	0.5 sec
電源 Power	85V-265VAC, 50Hz/60Hz	85V-265VAC, 50Hz/60Hz	85V-265VAC, 50Hz/60Hz	85V-265VAC, 50Hz/60Hz
使用環境 Operation area	0-50°C 10-90%RH	0-50°C 10-90%RH	0-50°C 10-90%RH	0-50°C 10-90%RH

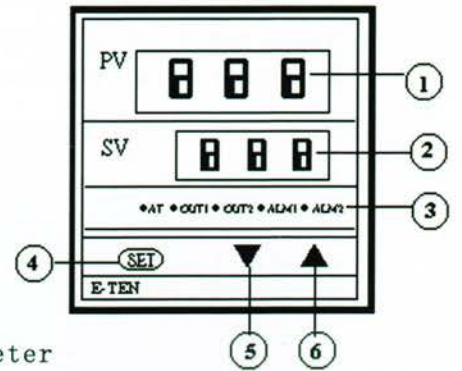


Microcomputer Temperature Controller

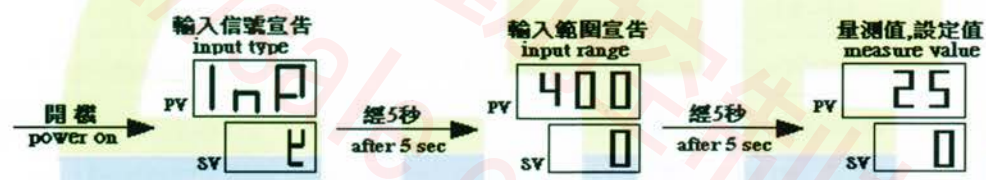
微電腦溫度控制器

一.操作說明(MICROPROCESSOR TEMPERATURE CONTROLLER USER MANUAL):

- 各種顯示 (PV):
 - 量測值顯示 Measure Value
 - 功能名稱顯示 Function Name
- 各種顯示 (SV):
 - 設定值顯示 Set Value
 - 參數值顯示 Function Parameter
- 指示燈 (PL):
 - AT 自動演算指示燈 Auto Tuning (PID Operation)
 - OUT 主控制輸出燈 OUT1,2 : Output Prompting
 - ALM 副控制(警報)輸出燈 ALM : Alarm Prompting
- 設定鍵 (SET):
 - 各功能切換 Change Function
 - 設定值輸入 Set Parameter
- 設定鍵 (▼):
 - 參數減少調整鍵 Decrease Value or Change Parameter
 - AT 啟動鍵 AT Start
 - AT 停止鍵 AT Stop
- 設定鍵 (▲):
 - 參數增加調整鍵 Increase Value or Change Parameter

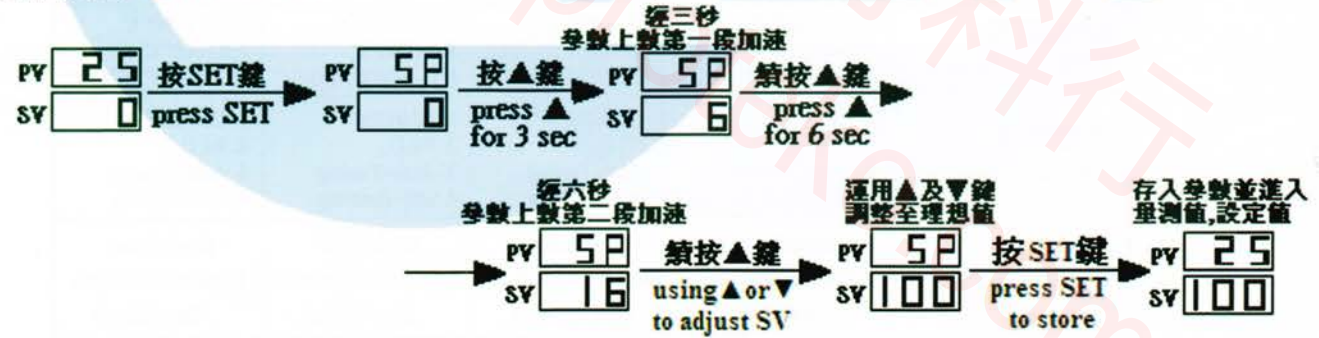


二.開機宣告(Power On):

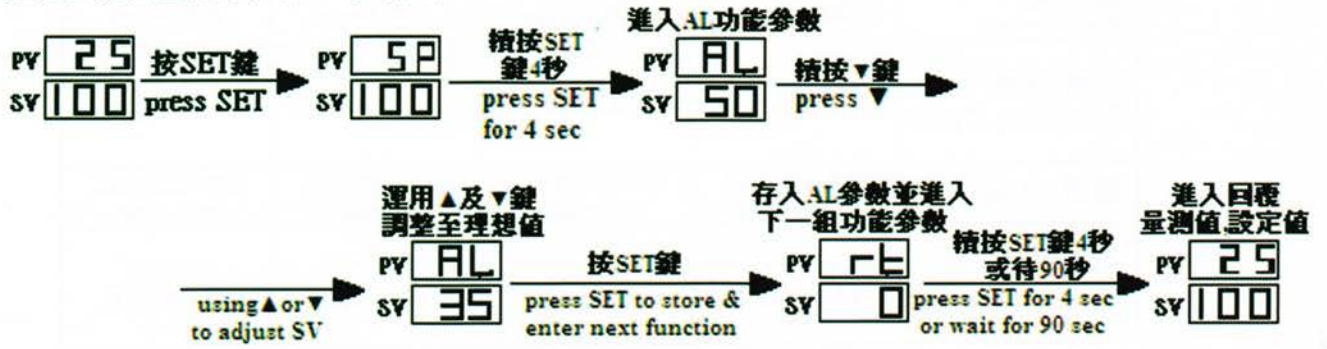


三.鍵盤操作(OPERATION)

1.設定值調整 (SETTING SV)



2.各功能參數調整;範例.設 AL 參數為 35 (SETTING PARAMETER; EX. SET AL AS 35)

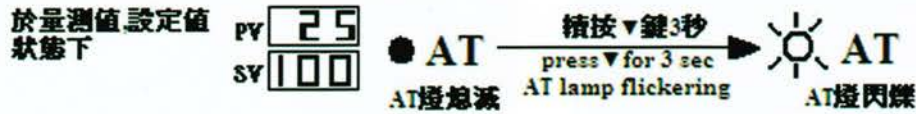




Microcomputer Temperature Controller

3. 啓動自動演算(AT);PS. 停止/完成自動演算前,鍵盤將無作用

(ENABLE AUTO TUNING;PS. WHEN AUTO TUNING RUNNING, EACH FUNCTION ISN'T EFFECTIVE)



4. 停止自動演算(AT);PS. 當控制器完成自動演算則 AT 燈熄滅 (DISABLE AUTO TUNING)



■ 四.各功能參數見下表(FUNCTION & PARAMETER INTRODUCTION)

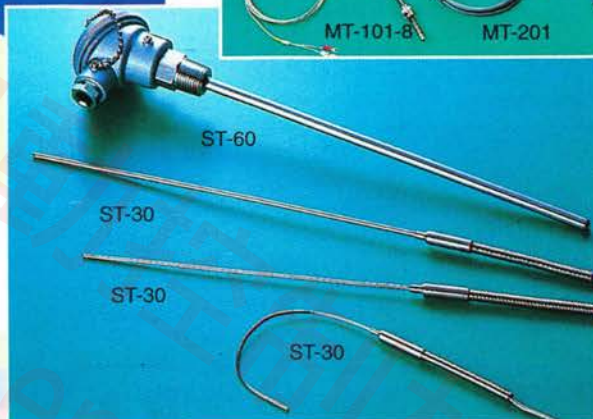
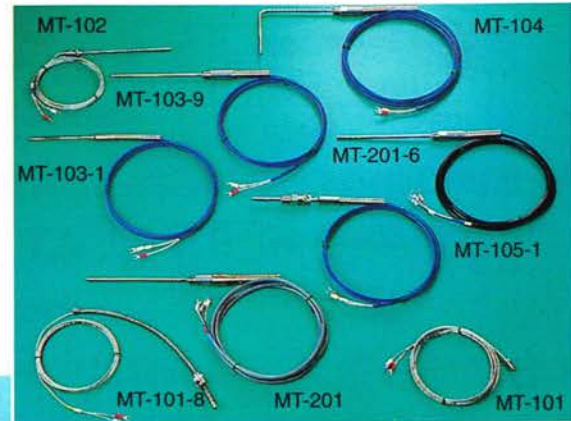
FUNCTION	PARAMETER RANGE	DESCRIPTION	INITIAL VALUE
re	-99.9~100.0°C	When I=0 use it to adjust biased value of controller.	0
rt	-100~100°C	To rectify a thermo couple and leadwire of the measure values.	0
dF	1~100°C	When P.D=0 use this parameter to adjust controller	1
AL1	all range	0.4°C is insensitive district.	50
AL2	all range	0.4°C is insensitive district.	50
P	0~300°C	Adjust proportional zone,the longer the P value,the less proportional function and smaller system benefit will be,it is effective to heated to heated side only on/off at P=0.	12
I	0~3600sec	Integral function is a constant,the larger the I value,integral function would be weaker,integral off at I=0 return to PD control.	240
d	0~3600sec	Constant for derivative time,the larger the D,greaten the derivation function,it can overcome the excess derivation on/off at D=0.	60
t	1~100sec	Relay output<20sec,SSR&SCR<2sec continuous output T=1sec,for heating only.	10
Pc	proportional zone 1~1000%	Adjust proportion,the larger the P the smaller the P function system benefit became smaller.	100
db	-10~10db	Unoverlapped zone between heated & cool sides,if set value is negative they will overlap.	0
FILt	0~255	The smaller the filter wave coefficient the more sensitive is reaction,reverse it will be comparatively calm.	200
LC	0,1,2	0:any parameter changeable 1:only setting value changeable 2:no parameter changeable.	0



Thermocouple

電熱偶

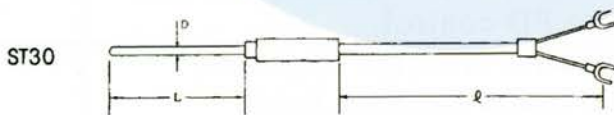
■ 一般熱電偶 GENERAL THERMOCOUPLE



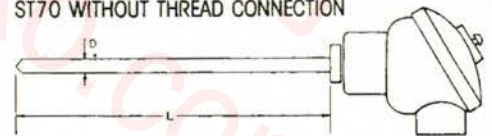
SHEATH THERMOCOUPLE
(Small diameter and can be bent)

■ 極速熱電偶 (直徑小且可彎曲)

■ 極速熱電偶 SHEATH THERMOCOUPLE



ST60 WITH THREAD CONNECTION
ST70 WITHOUT THREAD CONNECTION



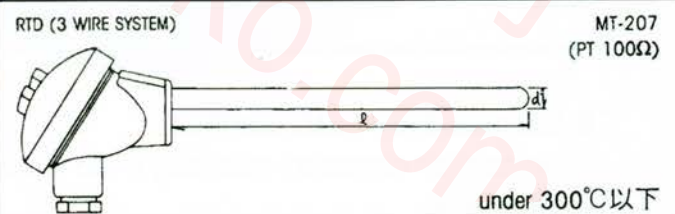
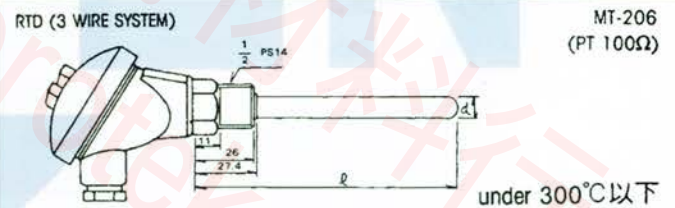
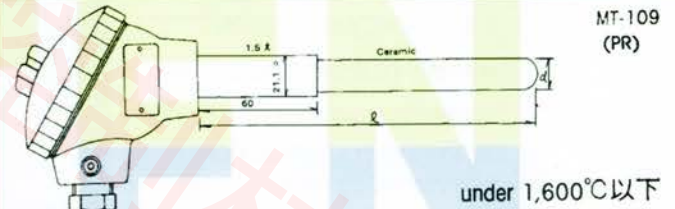
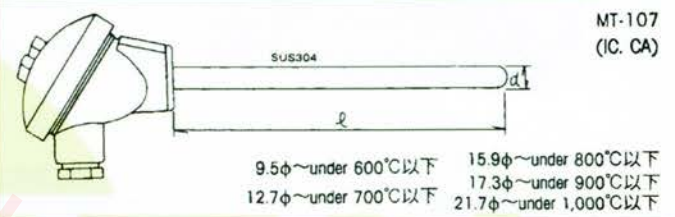
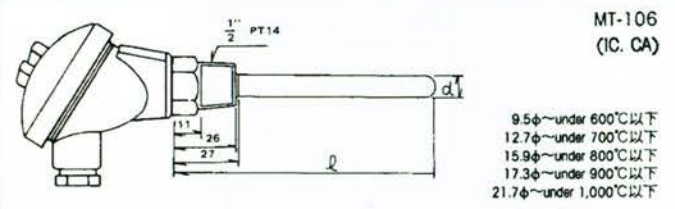
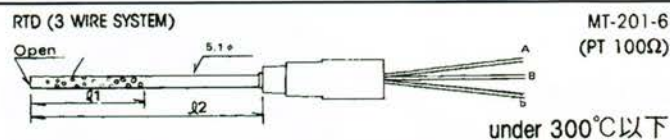
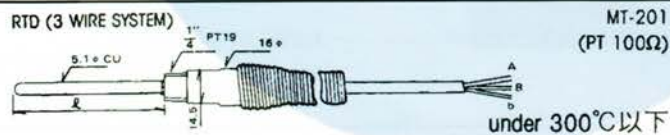
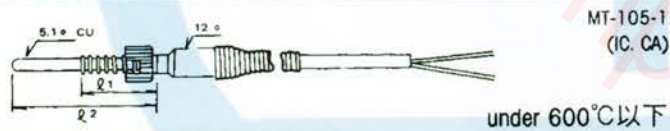
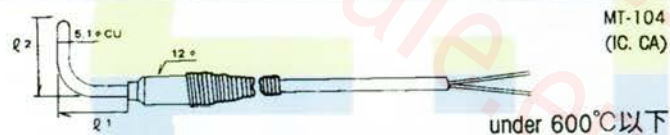
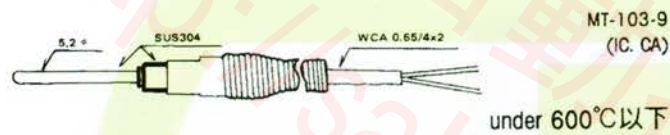
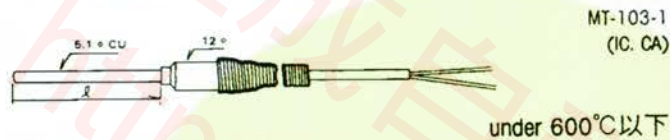
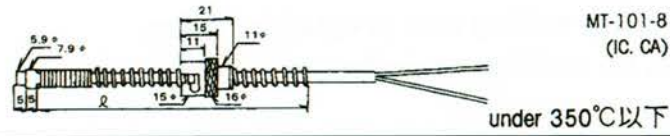
Thermocouple Wire 熱電偶材質	Sheath Outer Dia sheath Material 保護管材質	1.0 φ	1.6 φ	3.2 φ	4.8 φ	6.4 φ	8.0 φ
		C-A (K)	INCONEL 600	500°C	700°C	900°C	1,000°C
C-A (K)	SUS-316	450°C	600°C	700°C	800°C	850°C	900°C
I-C (J)	SUS-316	250°C	350°C	450°C	500°C	Max. Working Temp.	



Thermocouple Temperature Transmitter

電熱偶、溫度信號傳送器

一般熱電偶 特殊規格歡迎訂做



■ 溫度信號傳送器 Model: PTT-T (台製品)
Model: PTT-I (進口品)



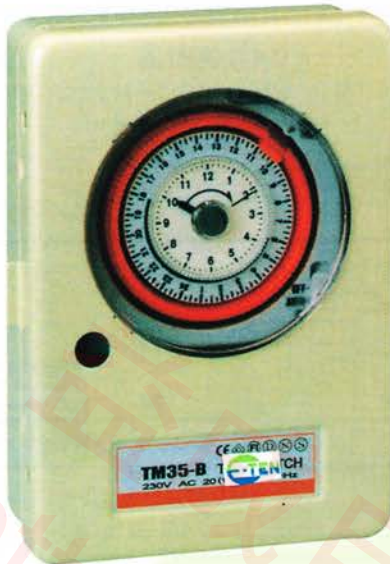
GENERAL SPECIFICATIONS 主要規格

Output current 輸出信號	4-20mA Dc
Range 測量範圍	0-50°C, 0-100°C, 0-200°C, 0-400°C, -50~+50°C, -100-0°C *Range of Fahrenheit (°F) available
Input type 輸入	3-Wire Pt100Ω (α=0.00385) BS1904 and DIN 43760
Accuracy (at 25°C) 精確度	±0.1% (<0.3°C, FS)
Power supply 電源範圍	9-42VDC, 24VDC recommend
Load capability 負載能力	600Ω MAX, @24VDC
Operating temperature range 操作溫度範圍	-40 to +85°C (-40 to 185°F)
Storage temperature range 保存溫度範圍	-50 to +95°C (-58 to 203°F)
Dimensions 外型尺寸	44.5dia x 27mm(H) Height includes terminal chip
Weight 重量	Approx. 30g(1.1oz)



TM Type & TB Type 24H Timer

TM
型、
TB
型
24
小
時
計
時
器



1. Manual override
2. Easily program
3. Captive pins. Many switching possibilities. 96 pins on daily dials
4. Mark for time setting and program reading
5. Time can be setting manually

TM35-A 110V
TM35-B 230V
TM35-C 240V



TB SERIES 24H TIME SWITCH

- No installation necessary must plug it into the socket easy to use it in seconds.
- Clear indication, in brown of On-periods(state)
- Have it auto-matically operate an application several times a day.
- The program is repeated every 24 hours.

SPECIFICATION

ITEM NO.	VOLTAGE	FREQUENCY	MIN SETTING UNIT
TB261	110V AC	50/60HZ	15MINUTES/UNIT
TB262	220V AC	50/60HZ	15MINUTES/UNIT



TB261 / TB262



TR Type 24H Timer

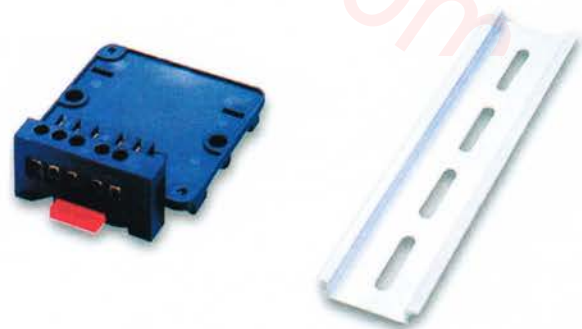
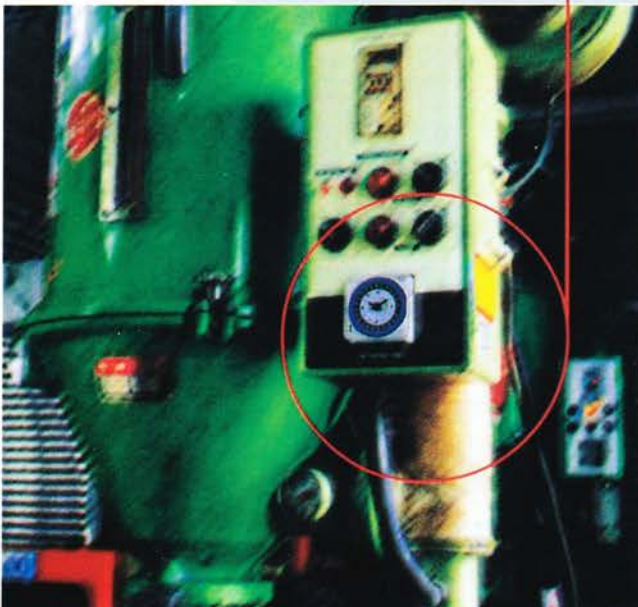
TR SERIES CHARACTERISTICS:

TR SERIES TIME SWITCH, synchronous or quartz drive, with or without battery reserve. In the battery reserve version incorporate the most advanced quartz crystal technology, giving guaranteed accuracy and high quality operation. Daily dials and captive pins. Minimum switching time 15 minute on daily programmes. Suitable for surface, panel or DIN rail mounting. Specially designed to be incorporated in industrial equipment like heating controllers, air conditioning, swimming pools, etc. With manual override for switching "ON and "OFF" independent of the program. High breaking capacity through changeover contact.



■ TR-500Q
QUARTZ / 110V-240V WITH WORKING RESERVE

■ TR-511 110V
■ TR-512 230V



■ Accessories: DIN rail mounting
DIN ADAPTOR

TR
型
24
小
時
計
時
器