

# 可程式電阻式溫度隔離傳送器

( PROGRAMMABLE RTD(Pt-100) ISOLATED TRANSMITTER )

MODEL  
TPP



## ■特點(FEATURES)

- 精確度0.1%滿刻度 (Accuracy 0.1%F.S.)
- 開關式多種Pt-100輸入與直流輸出規劃功能(Field-rangeable switchable Pt-100 input ranges from 0~50°C to -200~800°C,wide switchable DC output ranges over 20 standard process signal)
- 輸入與輸出與電源絕緣耐壓 2千伏特/1分鐘(Dielectric strength 2KVac/1 min.(input/output/power))
- 三線式接線自動補償線路阻抗效應(3 wire configuration automatically compensate line resistance effects)
- 寬範圍交直流兩用電源設計(Wide input range for auxiliary power)
- 尺寸小,穩定性高(Dimension small & High stability)

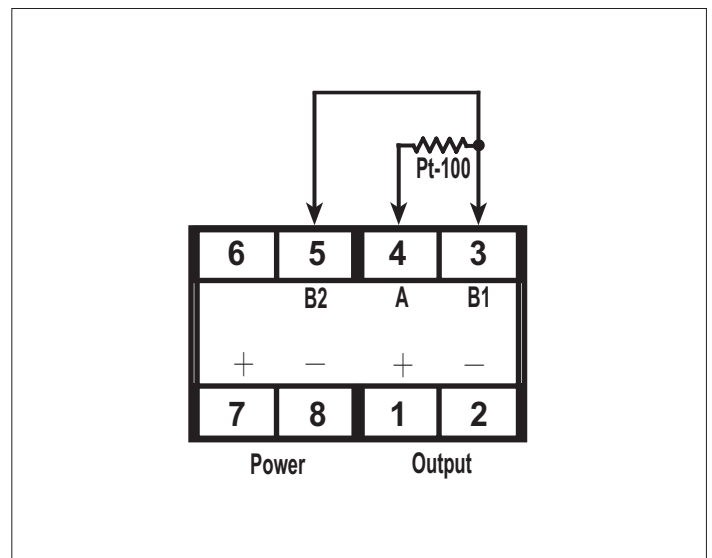
1.MODEL:TPP -      
(選購型號)

NO	Input Range	NO	Input Range	NO	Input Range	NO	Output Range	NO	Output Range	NO	Output Range	NO	Aux.Power
10	0~50°C	16	0~800°C	22	-100~+800°C	A	0~0.5V	G	0~8V	M	1~5mA	A	AC/DC 18~60V
11	0~100°C	17	-20~+80°C	23	-200~+200°C	B	0~1V	H	0~10V	N	0~10mA	B	AC/DC 90~260V
12	0~200°C	18	-50~+50°C	24	-200~+400°C	C	0~2V	I	2~10V	O	0~16mA	*Less 3VA for AC/DC input *AC input frequency (45~65Hz)	
13	0~300°C	19	-100~+100°C	25	-200~+800°C	D	0~4V	J	0~1mA	P	0~20mA		
14	0~400°C	20	-100~+200°C	29	SPECIFIED	E	0~5V	K	0~2mA	Q	4~20mA		
15	0~600°C	21	-100~+400°C		*DIN standard(TCR:385ppm/°C)	F	1~5V	L	0~5mA	R	SPECIFIED		

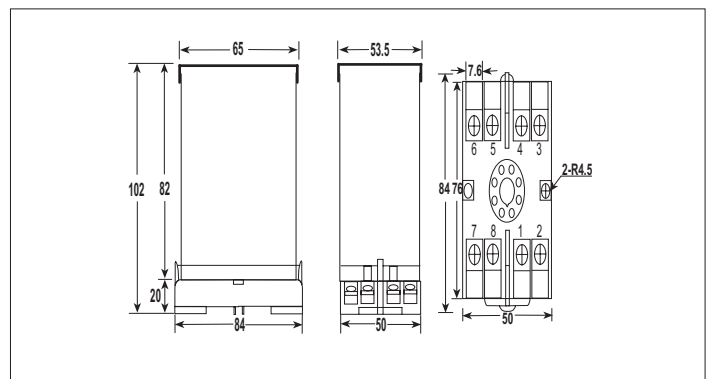
## 2.SPICIFICATION (主要規格)

- Measuring accuracy : 0.1% F.S. (23±5°C)  
(精確度)
- Response time : <250ms (0~90%)  
(輸出反應時間)
- Output drive capability : <10mA for voltage mode  
<10V for current mode  
(輸出負載能力)
- Output ripple(p-p) : <0.1% F.S.  
(輸出漣波)
- Zero (offset) range : 0~±165% F.S.(DIP-switches)  
0~±5% F.S.(VR adjustable)  
(歸零調整範圍)
- Span (scale) range : 0~165% F.S.(DIP-switches)  
0~±10% F.S.(VR adjustable)  
(最大值調整範圍)
- Temp. coefficient : 100ppm/°C (0~50°C)  
(溫度係數)
- Isolation : Input/Output/Power/Case  
(隔離特性)
- Insulation Resistance : >100M ohm with 500V DC  
(絕緣阻抗)
- Dielectric strength : 2KVac/1 min. (input/output/power)  
1600Vdc (input/output)  
(絕緣耐壓能力)
- Operating condition : 0~60°C (20 to 90% RH non-condensed)  
(使用環境條件)
- Storage condition : 0~70°C (20 to 90% RH non-condensed)  
(存放環境條件)
- Construction : Socket/plugin type with barrier terminals  
(安裝方式)
- CE EMC Certification : EN 55022:1998/A1:2000 Class A  
EN 61000-3-2:2000  
EN 61000-3-3:1995/A1:2001  
EN 55024:1998/A1:2001  
(CE 認證)

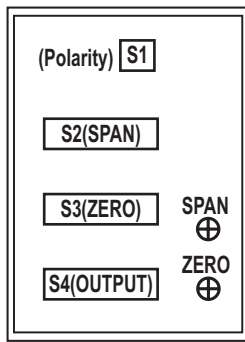
## 3.TERMINAL CONNECTION (接線圖)



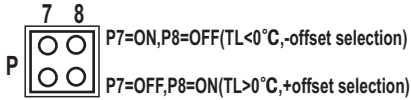
## 4.DIMENSION(unit:mm) (外型尺寸)



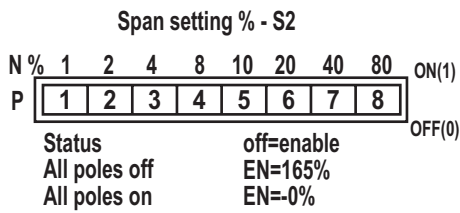
## 5. FUNCTION SWITCHES (S1, S2, S3, S4) (開關功能)



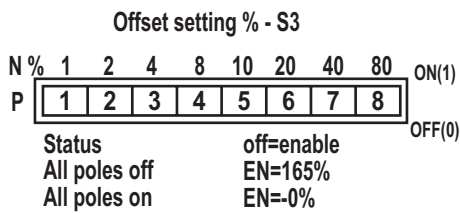
• S1 → Input offset polarity selection



• S2 → Input range span (GAIN) selection



• S3 → Input range offset (ZERO) selection



• S4 → P1-P2-P3-P4-P5-P6: output range selection  
 P7-P8: output mode of voltage or current selection  
 (Refer, output switching table)

## 6. PROGRAMMING FORMULA

TH/TL: input high/input low unit (°C)  
 RL: percent input Low range

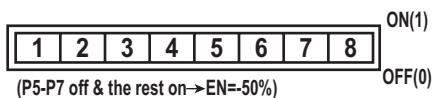
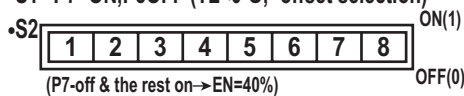
- Span →  $X = [8000 / (TH - TL)] \%$
- Offset →  $Y = (TL / 2) \%$

Note 1. Input span | TH-TL | should be > 0.1 | TH |  
 2. If input | TH-TL | < 0.2 | TH | ..... at normal setting with calibration,  
 if non-linear happened, shifting offset switches up or down 1~2%  
 & recalibrating to obtain correct output.

## 7. APPLICATION

Example: TPP-19Q2  
 Input range → -100~+100°C (TH=+100°C, TL=-100°C)  
 Output range → DC 4-20mA  
 Aux. Power → AC/DC 90~260V

- SPAN →  $X = [8000 / (+100 - (-100))] \%$  = 40%
- ZERO →  $Y = (-100 / 2) \%$  = -50%
- S1 → P7=ON, P8=OFF (TL < 0°C, -offset selection)



## 8. INPUT SWITCHING TABLE (S1, S2, S3)

(switching status 1=on ; 0=off)

Input range	S3(ZERO)	S2(SPAN)	S1
	1-2-3-4-5-6-7-8	1-2-3-4-5-6-7-8	7-8
0~50°C	1-1-1-1-1-1-1-1	1-0-1-0-0-0-0-0	X-X
0~100°C	1-1-1-1-1-1-1-1	1-1-1-1-1-1-1-0	X-X
0~200°C	1-1-1-1-1-1-1-1	1-1-1-1-1-1-0-1	X-X
0~400°C	1-1-1-1-1-1-1-1	1-1-1-1-1-0-1-1	X-X
0~600°C	1-1-1-1-1-1-1-1	0-0-1-1-0-1-1-1	X-X
0~800°C	1-1-1-1-1-1-1-1	1-1-1-1-0-1-1-1	X-X
-20~80°C	1-1-1-1-0-1-1-1	1-1-1-1-1-1-1-0	1-0
-50~+50°C	0-1-0-1-1-0-1-1	1-1-1-1-1-1-1-0	1-0
-100~+100°C	1-1-1-1-0-1-0-1	1-1-1-1-1-1-0-1	1-0
-100~+200°C	1-1-1-1-0-1-0-1	0-0-0-1-1-0-1-1	1-0
-100~+400°C	1-1-1-1-0-1-0-1	1-0-0-1-0-1-1-1	1-0
-100~+800°C	1-1-1-1-0-1-0-1	0-1-1-0-1-1-1-1	1-0
-200~+200°C	1-1-1-1-1-0-1-0	1-1-1-1-1-0-1-1	1-0
-200~+400°C	1-1-1-1-1-0-1-0	0-0-1-1-0-1-1-1	1-0
-200~+800°C	1-1-1-1-1-0-1-0	1-1-1-0-1-1-1-1	1-0

△Recalibrating to obtain linear output

## 9. OUTPUT SWITCHING TABLE (S4)

(switching status 1=on ; 0=off)

Output range	O/P Range		O/P Mode
	1-2-3-4-5-6	7-8	
0~0.5V	0-1-1-1-1-0	1-1	
0~1V	1-0-1-1-1-0	1-1	
0~2V	1-1-0-1-1-0	1-1	
0~4V	1-1-1-0-1-0	1-1	
0~5V	1-0-1-0-1-0	1-1	
1~5V	1-1-1-0-1-1	1-1	
0~6V	1-1-0-0-1-0	1-1	
0~8V	1-1-1-1-0-0	1-1	
0~10V	1-1-0-1-0-0	1-1	
2~10V	1-1-1-1-0-1	1-1	
0~1mA	0-1-1-1-1-0	0-0	
0~2mA	1-0-1-1-1-0	0-0	
0~5mA	0-1-0-1-1-0	0-0	
1~5mA	1-1-0-1-1-1	0-0	
0~10mA	1-0-1-0-1-0	0-0	
2~10mA	1-1-1-0-1-1	0-0	
0~16mA	1-1-1-1-0-0	0-0	
0~20mA	1-1-0-1-0-0	0-0	
4~20mA	1-1-1-1-0-1	0-0	