

PST



Features

- ⊙ Linearized output
- ⊙ Field - rangeable
 - Switchable input & output ranges
 - Changeable input T/C module J K E T S R B N types
- ⊙ Outstanding CJC traceability
 - $< 0.5^{\circ}\text{C} \leq 10$ minutes warm up
- ⊙ Accuracy 0.2%
- ⊙ Input / output isolation 1.6KVdc
- ⊙ Available standard calibration or custom calibration

Model Selection Standard or custom calibration

PST — **C** — **S** Standard calibration - °C

PST — F — S Standard calibration - °F

PST **C** Custom calibration - °F

PST  **F**  Custom calibration - °C

Mn An On Pn

Input modules Effective range	Mn	Input Range	An	Input Range	An	Output Range	On	Power	Pn
-100~440C / -150~800F	J4	-100~0	1	0~1100	18	0~1 V	A	AC120V	A
-100~440C / -150~800F	K4	-100~50	2	0~1200	19	0~2 V	B	AC240V	B
-150~400C / -220~750F	T4	-50~50	3	0~1400	20	0~5 V	C		
-100~750C / -150~1380F	J8	-50~100	4	0~1500	21	1~5 V	D	Option	
-100~800C / -150~1470F	E8	-50~200	5	0~1600	22	0~10 V	E		
-100~1250C / -150~2250F	K12	0~100	6	0~1800	23	2~10 V	F	DC 24V	C
-100~1250C / -150~2250F	N12	0~150	7	0~2000	24	0~1 mA	G	DC 48V	D
300~1700C / 600~3100F	R16	0~200	8	0~2200	25	0~2 mA	H	DC 12V	E
300~1700C / 600~3100F	S16	0~250	9	300~1400	26	0~5 mA	I		
500~1750C / 900~3200F	B16	0~300	10	300~1500	27	1~5 mA	J		
		0~400	11	300~1600	28	0~10 mA	K		
		0~500	12	300~1700	29	2~10 mA	L		
		0~600	13	500~1700	30	0~16 mA	M		
		0~700	14	600~2500	31	0~20 mA	N		
		0~800	15	600~2800	32	4~20 mA	P		
		0~900	16	600~3000	33	Specified	Y		
		0~1000	17	900~3000	34				
		Specified / non - list range			Y				

Standard calibration table power AC 120V

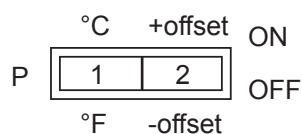
[illegible]

Specification

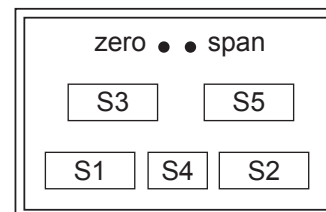
Accuracy (23±3°C)	0.2% of effective range + 0.5°C J-K-E-T-N 0.25% of effective range + 1.0°C R-S-B
Linearity & repeatability	0.12% typical Linearized output vs input temperature
Temperature stability	≤ 0.015% fs per degree C
Configuration	field rangeability changeable thermocouple input module selectable output mode.....voltage or current switchable input ranges/switchable output ranges switchable AC power 120V or 240V selectable °C / °F calibration
CJC stability	< 0.03°C per °C....10~40°C
CJC traceability	Warm up condition.....typically less 0.5°C...10 minutes compare to 2 hours Ambient temp. change... rate : 10°C / 3 minutes less 2°C deviation within 5 minutes
Input resistance	≥ 20 MΩ
Effect of wire resistance	≤ 4 uV per 100Ω
Input break detection	selectable Hi-set or Lo-set Hi - set ≥ 110% of rated output, Lo-set ≤ 0.5% of rated output
Maximum input over	≤ 250 Vrms 30 sec.
Power effect	< 0.003% for per volt change
Response time & ripple	250ms typically , ripple < 0.1% rms of span
Output drive capability	≤ 10mA for voltage mode, ≤ 10 V for current mode
Common mode rejection	> 100db 50 / 60 Hz
Dielectric strength	1500Vac power / input & output terminals 1600Vdc input / output terminals
Operating condition	-5~55°C , humidity 20~95% RH non - condensed
Storage condition	-10~70°C , humidity 20~95% RH non - condensed
Power supply	± 20% of rated , less 3.5 VA for AC input ± 20% of rated , less 3.5 watt for DC input
Construction	Socket plug - in type with barrier terminals

Function switches S1 , S2 , S3 , S4 , S5

S4 °C / °F calibration & offset polarity selection



Status P1 ON / °C calibration OFF / °F calibration
 P2 ON = +offset ; OFF = -offset
 TL > 0 + offset selection
 TL < 0 - offset selection
 TL = 0 don't care
 TL input low (TH input high)



S1 % offset

S2 % span gain

Status S1 & S2 OFF = enable N% 1 2 4 8 10 20 40 80 1 2 4 8 10 20 40 80
 All poles OFF ΣN = 165% P 1 2 3 4 5 6 7 8 1 2 3 4 5 6 7 8 ON
 All poles ON ΣN = 0% OFF

S3 output range selection 6 poles ref. output switching table

S5 output mode : voltage / current selection 2 poles ref. output switching table

Reference constant TR

Module		J4	K4	T4	J8	K12	E8	N12	R16/S16	B16
TR	°C	400	400	400	800	1200	800	1200	1600	1600
	°F	720	720	720	1440	2160	1440	2160	2880	2880

Programming formula TH / TL : input high / input low TR : reference constant

Input gain $X = [10TR / (TH - TL)] \%$

Input offset $Y = (100TL / TR) \%$ TL > 0 +offset ; TL < 0 -offset

Note

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

Application

Example 1 : PST - K12C - Y - P - A

Input module K12 K type thermocouple

Input range Y non list range , say specified 200~1200°C ; TH = 1200°C ; TL = 200°C

Output 4~20mA ; Power AC 120V

S4 P1 ON / °C calibration ... P2 ON / +offset (TL > 0)

Input gain = $[10TR / (TH - TL)] \%$
 $= [(10 \times 1200) / (1200 - 200)] \%$ TR = 1200 for K12 °C version
 $= 12\%$

S2

1	2	3	4	5	6	7	8
---	---	---	---	---	---	---	---

ON
OFF P2 - P5 off & the rest on 12%

OFF OFF

Input offset = $(100TL / TR) \%$ = $(100 \times 200 / 1200) \%$ = 17%

S1

1	2	3	4	5	6	7	8
---	---	---	---	---	---	---	---

ON
OFF P1 - P2 - P3 - P5 off & the rest on 17%

OFF OFF OFF
OFF OFF

Example 2 : PST - J4F - Y - E - B

S4 P1 OFF / °F calibration P2 OFF / -offset (TL < 0)

Input gain = $\{ (10 \times 720) / [250 - (-50)] \} \%$ = 24% TR = 720

Input offset = $[100 \times (-50) / 720] = -7\%$

Switch setting

S2 P3 - P6 OFF & the rest ON 24%

S1 P1 - P2 - P3 OFF & the rest ON | 7 | %

Output switching table

Switch status 1 : ON ; 0 : OFF

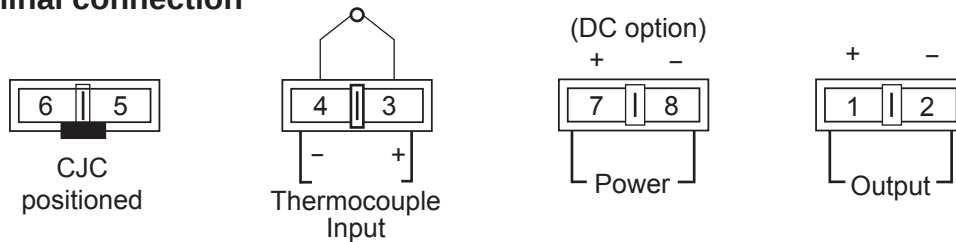
Output Ranges	S5 1-2	S3 1-2-3-4-5-6	Output Ranges	S5 1-2	S3 1-2-3-4-5-6
0~0.5 V	1-0	0-0-1-1-1-1	0~1 mA	0-1	0-0-1-1-1-1
0~1 V	1-0	0-1-0-1-1-1	0~2 mA	0-1	0-1-0-1-1-1
0~2 V	1-0	0-1-1-0-1-1	0~5 mA	0-1	0-0-1-0-1-1
0~4 V	1-0	0-1-1-1-0-1	1~5 mA	0-1	1-1-1-0-1-1
0~5 V	1-0	0-1-0-1-0-1	0~10 mA	0-1	0-1-0-1-0-1
1~5 V	1-0	1-1-1-1-0-1	2~10 mA	0-1	1-1-1-1-0-1
0~6 V	1-0	0-1-1-0-0-1	0~16 mA	0-1	0-1-1-1-1-0
0~8 V	1-0	0-1-1-1-1-0	0~20 mA	0-1	0-1-1-0-1-0
0~10 V	1-0	0-1-1-0-1-0	4~20 mA	0-1	1-1-1-1-1-0
2~10 V	1-0	1-1-1-1-1-0			

* Plus 0.008% fs per °C of 0 - 0.5V / 1V / 2V / 1mA / 2mA range selection

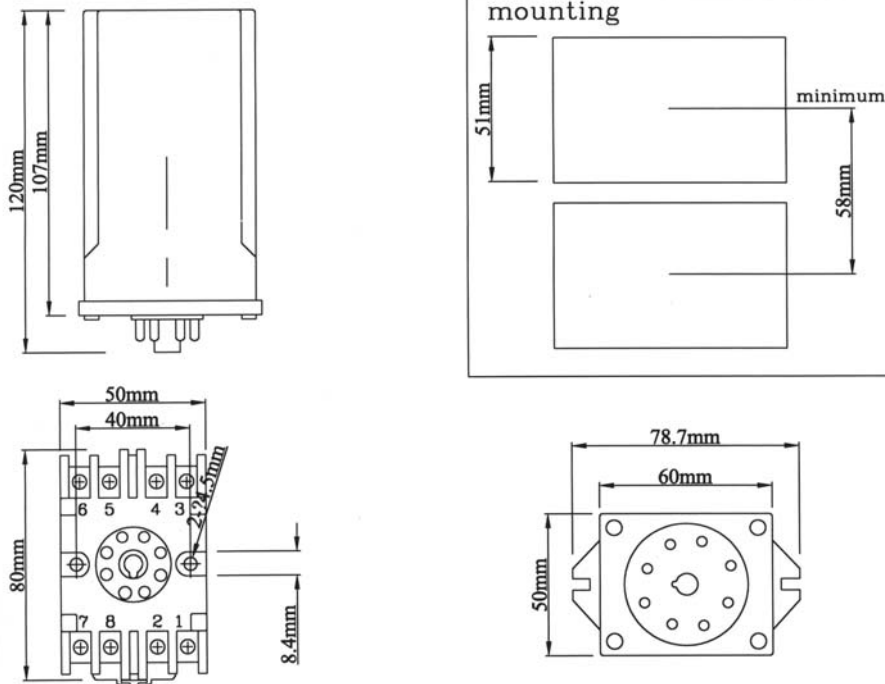
AC auxiliary power selection

Switchable 120V / 240V by slide switch internally

Terminal connection



Dimension



HSIANG CHENG ELECTRIC CORP.

4F., No.11, Ln. 235, Baoqiao Rd., Xindian Dist., New Taipei City 231, Taiwan

TEL : 886-2-2917-5865~9

FAX : 886-2-2917-3946

E-mail : expo.sales@hc.com.tw

http://www.hc.com.tw