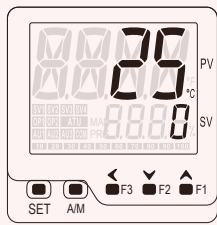
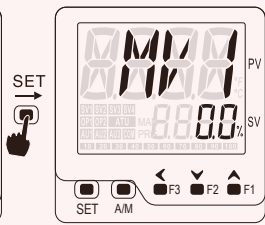


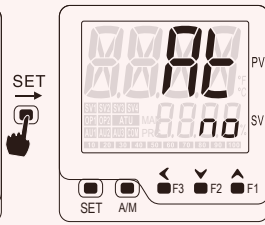
## Quick Start Menu Level 1



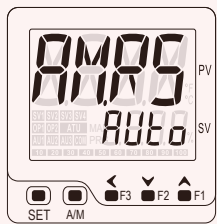
PV/SV Display



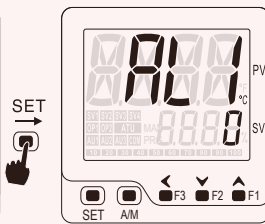
Output 1 % value. This is the current amount of output in % the controller is giving to Output 1. Typically calculated by the PID.



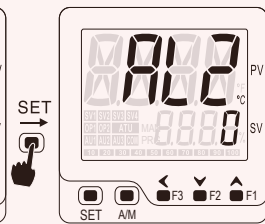
Auto-Tuning. Set to yes to begin the auto-tuning process. Set to no to stop.



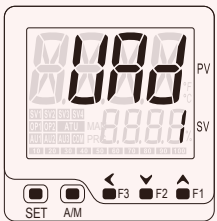
Control mode select. Set to Auto by default. Set to Man for manual control mode. This will allow you to define the MV1 % value. Set to Stop to stop the controller.



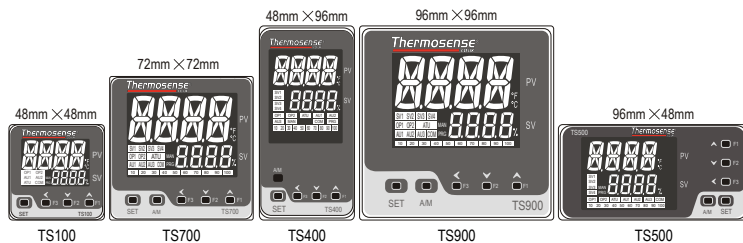
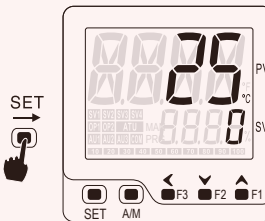
Alarm 1 set value



Alarm 2 set value



Communication address, for RS-485 models only.



## Quick Start Guide

This is a quick start guide for your new TS series instrument and it will provide you with the basic settings, functions and procedures of the unit.



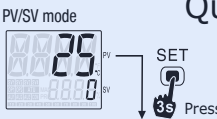
For a comprehensive manual with all functions and details please visit our website:

[www.thermosense.co.uk](http://www.thermosense.co.uk)

Tel: +44 (0)1628 531166

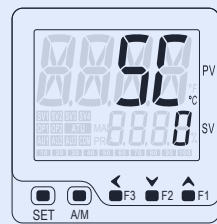
email: [sales@thermosense.co.uk](mailto:sales@thermosense.co.uk)

## Quick Start Menu Level 2

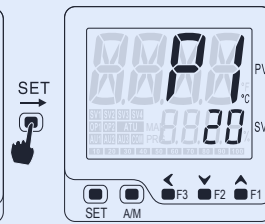


PV/SV mode

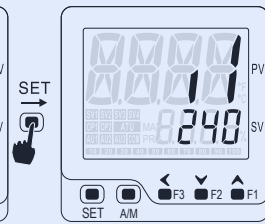
Press SET for 3 seconds



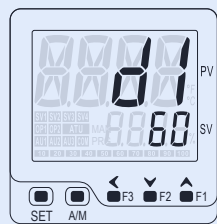
Input offset, this value is used to correct any input errors from the sensor.



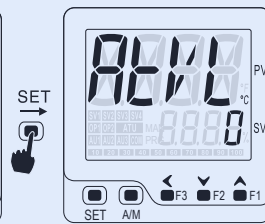
P1: Proportional band of Output 1



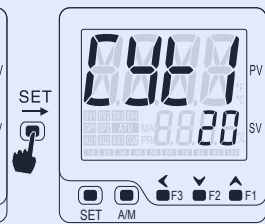
I1: Integral time of Output 1



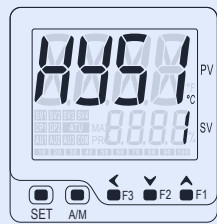
d1: Derivative time of Output 1



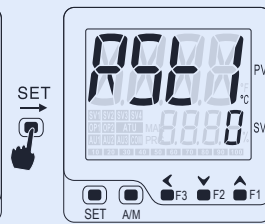
ATVL: Auto-Tuning offset. If your Auto-Tune yields a consistent error you can compensate for it by entering the value of the error here



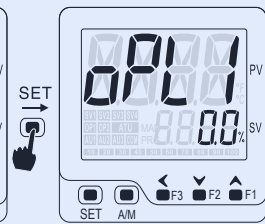
CYT1: Control cycle time of Output 1



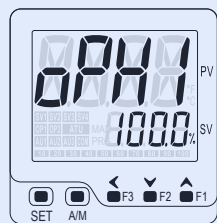
HYS 1: Hysteresis for Output 1



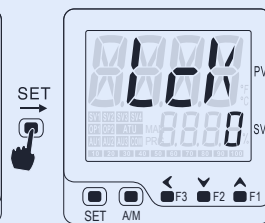
RST 1: P1 reset wind-up. Sometimes referred to as anti-reset wind up



OPL 1: Minimum output for Output 1

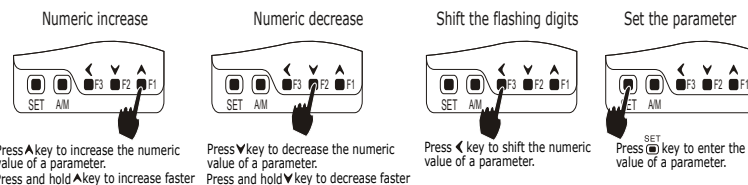


OPH 1: Maximum output for Output 1



LCK: Lock for parameter access protection

### How to configure all configurable parameters



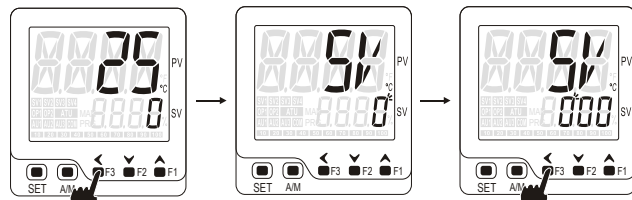
Press **F3** key to increase the numeric value of a parameter. Press and hold **F3** key to increase faster

Press **F2** key to decrease the numeric value of a parameter. Press and hold **F2** key to decrease faster

Press **F1** key to shift the numeric value of a parameter.

Press **SET** key to enter the value of a parameter.

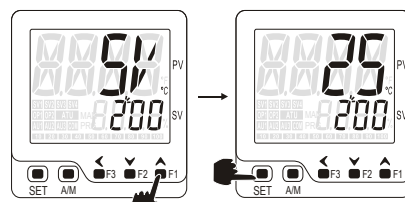
### Setting of the Set Value



(1) Press the F3 key to switch to the SV edit mode

(2) The set point is now editable

(3) Press the F3 key to shift the decade



(4) Press the up or down keys to edit the value

(5) Press the set key to save the value

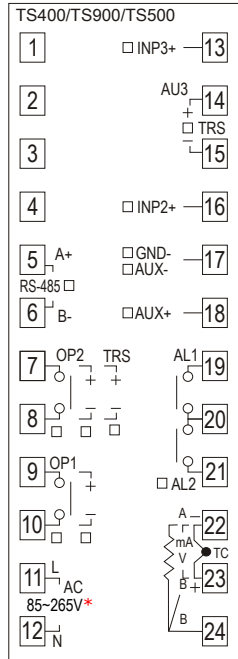
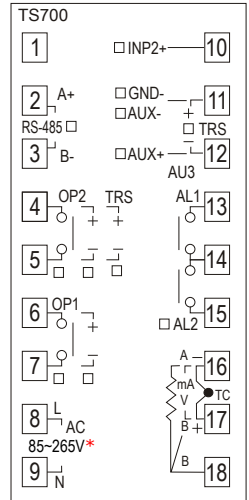
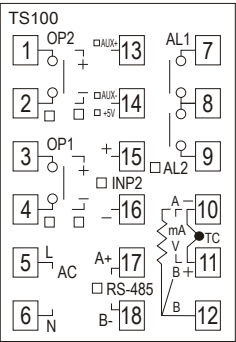
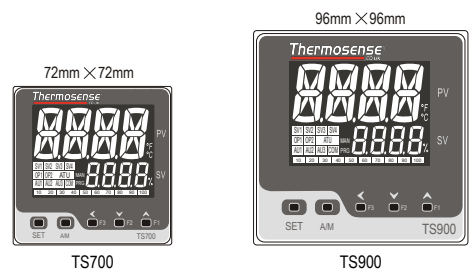
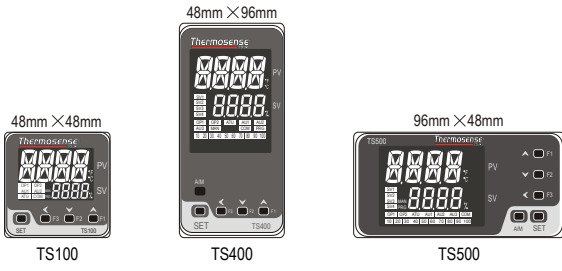
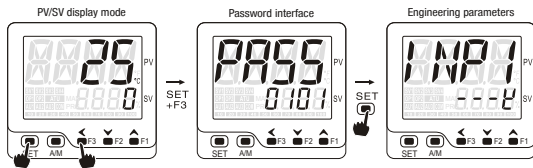
## Engineering parameters

Depending on the specific model, some of the parameters may or may not be available

Notation	Name	Description	Default	Description			
<b>INP1</b>	Input sensor code selection INP1						
Symbol	<i>E</i>	<i>J</i>	<i>N</i>	<i>S</i>	<i>t</i>		
input	K	E	J	N	Wu3_Re25	S	t
range	-15 to 1300°C 0 to 2600°F	-15 to 800°C 0 to 1560°F	-15 to 1000°C 0 to 1950°F	-15 to 1300°C 0 to 2600°F	0 to 2200°C 0 to 3276°F	0 to 1600°C 0 to 3000°F	-15 to 400°C 0 to 782°F
Symbol	<i>r</i>	<i>b</i>	<i>AN1</i>	<i>AN2</i>	<i>F3</i>	<i>F4</i>	<i>PE</i>
input	r	b	DC0-50mV	DC10-50mV	Reserved	Reserved	PT100
range	0 to 1769°C 0 to 3216°F	0 to 1800°C 0 to 3276°F	-1999 to 9999	-1999 to 9999	Reserved	Reserved	-199 to 800°C -326 to 1472°F
<b>dP</b>	Decimal point dP	0, 1, 2, 3	0	TORTD input, 0: without decimal point, 1: 1 decimal point Analog input, 0: without decimal point, 1: 1 decimal point, 2: 2 decimal points 3: 3 decimal points			
<b>UNIT</b>	Display unit UNIT	°C, °F, no	°C	°C: Celsius °F: Fahrenheit No: No unit			
<b>LSPL</b>	SV lower limit LSPL	Temp: -199-3276 Analog: -1999-9999	0	SV lower limit Remote-SV lower limit input display value			
<b>USPL</b>	SV higher limit USPL	Temp: -199-3276 Analog: -1999-9999	400	SV higher limit Remote-SV higher limit input display value			
<b>PVOS</b>	input offset PVOS	Temp: -199-199 Analog: -1999-9999	0	To compensate the input error caused by the sensor			
<b>PVFE</b>	Input filter strength PVFE	0 to 60	5	1-30 normal input filter strength 31-60 enhanced input filter strength			
<b>ANL1</b>	lower limit display for analog input	-1999-9999	0	Display for analog input at its lower limit value "ANL1"			
<b>ANH1</b>	higher limit display for analog input	-1999-9999	2000	Display for analog input as its higher limit value "ANH1"			
<b>LRSL</b>	Transmission output lower limit TRSL	-1999-9999	0	Display for re-transmission at its lower limit value			
<b>LRSH</b>	Transmission output higher limit TRSH	-1999-9999	400	Display for re-transmission at its higher limit value			
<b>ALD1</b>	Alarm mode for alarm 1	00 to 16	11	To configure the alarm mode of alarm 1			
<b>AH1</b>	Alarm hysteresis for alarm 1	0 to 9999	0	Hysteresis value for alarm 1			
<b>ALD1</b>	Alarm 1 delay time	0 to 9999 seconds	0	Alarm delay time for alarm 1 only applicable for ALD1=01-06 and 11-16, Alarm 1 will be triggered after delay time AL1			
<b>ALD2</b>	Alarm mode for alarm 2	00 to 16	10	To configure the alarm mode of alarm 2			
<b>AH2</b>	Alarm hysteresis for alarm 2	0 to 9999	0	Hysteresis value for alarm 2			
<b>ALD2</b>	Alarm 2 delay time	0 to 9999 seconds	0	Alarm delay time for alarm 2 only applicable for ALD2=01-06 and 11-16, Alarm 2 will be triggered after delay time AL2			
<b>OUd1</b>	OP1 output mode	0 or 1	0	0: reverse control (heating) 1: direct control (cooling)			
<b>BER1</b>	OP1 analog output restriction	0, 1, 2	0	0: output restriction off 1: output restriction on when output increase, restriction off when output decrease			
<b>TUCY</b>	motor valve travel time	0-200 s	60	This parameter assign the travel time for the motor valve means the time for the valve from full open to full close this is only application for motor valve without position feedback			
<b>SSPM</b>	Triac triggering mode	Stnd CYCL PHAS	PHAS	Stnd: SSR Drive output, zero-crossing trigger CYCL: Random trigger PHAS: Phase angled trigger			
<b>PMd</b>	Program execution mode	0, 1, 2	0	Only applicable for temp constant and ramp and soak mode 0: Standard mode 1: temp constant mode 2: ramp and soak mode			
<b>TSP</b>	TSP	0 to 9999	1	This parameter defines the temperature when the timer kicks in Temperature(TSP) for timer kicks in= SV-TSP when PV ≥ SV-TSP, and stay for 5 seconds then timer kicks in			
<b>PENd</b>	PENd	0, 1	1	=0, PID control off when timer finish =1, PID control goes on when timer finish power interruption or press F1 for 3 seconds will re-start			
<b>IdNO</b>	IdNO	0-255	1	Device address configuration			
<b>bAud</b>	bAud	2.4 4.8 9.6 19.2	9.6	2.4 Baud rate 2400 bps 4.8 Baud rate 4800 bps 9.6 Baud rate 9600 bps 19.2 Baud rate 19200 bps			
<b>UCR</b>	UCR	N,O,E	N	N: 8 data bit, + No parity+1 stop bit(8N1) O: 8 data bit, + odd parity+1 stop bit(8O1) E: 8 data bit, + Even parity+1 stop bit(8E1)			

## Alarm mode details

Code	ALD	Specification(Example for alarm 1)
N	10 or 00	No alarm
A	11	Deviation high alarm AL1≥0: LOW SV AH1 Alarm ON SV+AL1 HIGH AL1<0: AH1 Alarm ON SV+AL1 SV HIGH
	12	Deviation low alarm AL1≥0: LOW SV AH1 Alarm ON SV+AL1 HIGH AL1<0: Alarm ON AH1 SV+AL1 SV HIGH
B	12	Deviation high/low alarm AL1≥0: LOW SV AH1 Alarm ON SV+AL1 HIGH AL1<0: Alarm ON AH1 SV+AL1 SV HIGH
	13	Deviation high/low alarm AL1≥0: LOW SV-AL1 SV+AL1 SV+AL1 HIGH AL1<0: Alarm ON AH1 SV+AL1 SV+AL1 HIGH
D	14	Deviation band alarm LOW SV-AL1 SV SV+AL1 HIGH
H	15	Process high alarm LOW AH1 AL1 HIGH
J	16	Process low alarm Alarm ON AH1 AL1 HIGH
E	01	Deviation high alarm with hold action AL1≥0: LOW SV AH1 Alarm ON SV+AL1 HIGH AL1<0: AH1 Alarm ON SV+AL1 SV HIGH
	02	Deviation low alarm with hold action AL1≥0: LOW SV AH1 Alarm ON SV+AL1 HIGH AL1<0: Alarm ON SV+AL1 AH1 SV HIGH
G	03	Deviation high/low alarm with hold action AL1≥0: LOW SV-AL1 SV+AL1 SV+AL1 HIGH AL1<0: Alarm ON AH1 SV+AL1 SV+AL1 HIGH
M	04	Deviation band alarm with hold action LOW SV-AL1 SV SV+AL1 HIGH
K	05	Process high alarm with hold action LOW AH1 AL1 HIGH
L	06	Process low alarm with hold action Alarm ON AH1 AL1 HIGH
V	21	SV high alarm When SV>AL1, AL1 on, When SV<AL1-AH1, AL1 off LOW AH1 AL1 ON SV HIGH
W	22	SV low alarm When SV<AL1, AL1 on, When SV>AL1+AH1, AL1 off LOW AL1 OFF AH1 SV HIGH
P	23	Process value limit alarm
R	09	LBA loop break alarm
Q	19	Heater short circuit alarm
3	17	timer kick-in alarm
4	18	timer finish alarm



\* supply for 24V versions

**Main output Relay**

250Vac 5A (resistive load)

**Alarm Relay**

250Vac 3A (resistive load)

**4-20mA output**

(maximum load resistance 500 ohm)

**12VDC pulse output**

(20mA)



Download from [www.thermosense.co.uk](http://www.thermosense.co.uk)



tel: +44 (0)1628 531166  
email: [sales@thermosense.co.uk](mailto:sales@thermosense.co.uk)