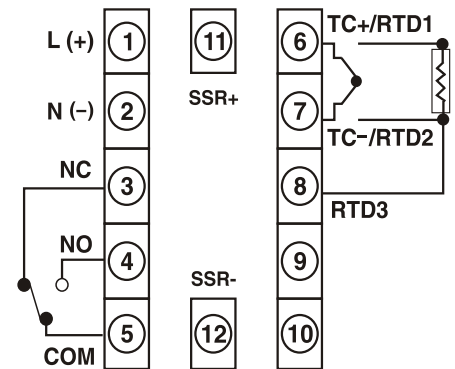


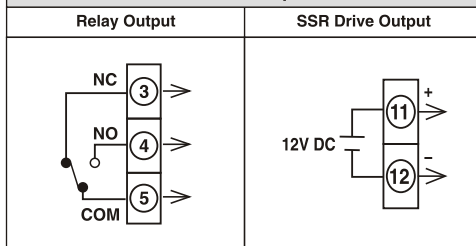


TERMINAL CONNECTIONS

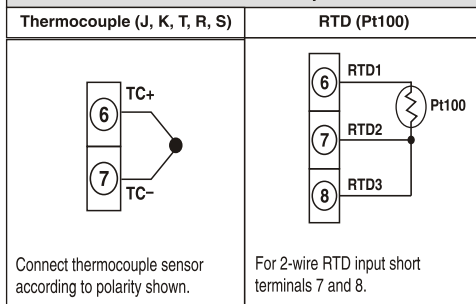


WARNING : Please check the power supply voltage and controllers output type ordered (with reference to the order code) before installation.

Control Output



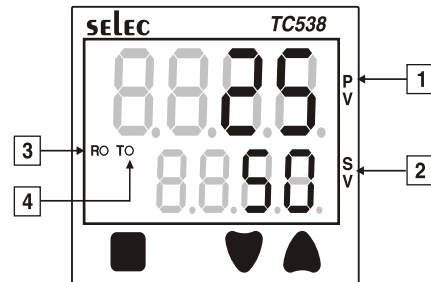
Measured Value Input



CAUTION :
Use only the correct thermocouple wire or compensating cable from the probe to instrument terminals avoiding joints in the cable if possible.
Failure to use the correct wire type will lead to inaccurate readings.

Ensure that the input sensor connected at the terminals and the input type set in the temperature controller configuration are the same.

FRONT PANEL DESCRIPTION



1	Process-value (PV) / Parameter name display	1) Displays a process value (PV). 2) Displays the parameter symbols at parameter setting mode. 3) Displays PV error conditions. (refer Table 2)
2	Set-value (SV) / Parameter setting display	1) Displays a set value (SV). 2) Displays the parameter settings at parameter setting mode.
3	Control output indication	The LED is lit when the control output is ON
4	Tune	Auto tune : Blinking (With faster rate) Self tune : Blinking (With slower rate)

FRONT KEYS DESCRIPTION

Functions	Key Press
ONLINE	
To view Level 1	Press \heartsuit key for 3sec.
To view Level 2	Press \blacktriangle key for 3sec.
To view Protection Level	Press \blacktriangle + \heartsuit keys for 3sec.
To change setpoint value	Press \blacksquare + \blacktriangle / \heartsuit to change setpoint value.
PROGRAMMING MODE	
To view parameters on the same level.	\blacktriangle or \heartsuit key once to view the next or previous function in operational menu.
To increase or decrease the value of a particular parameter.	\blacksquare + \blacktriangle to increase and \blacksquare + \heartsuit to decrease the function value. Note: Parameter value will not alter when respective level is locked.
NOTE : The unit will auto exit programming mode after 30sec. of inactivity.	
OR By pressing the \blacktriangle or \heartsuit or \blacktriangle + \heartsuit keys for 3sec.	

INPUT RANGES (Table 1)

FOR RTD		
Input	Ranges	
Resolution	1	0.1
PT 100	$^{\circ}\text{C}$	-150 to 850
	$^{\circ}\text{F}$	-238 to 1562

FOR THERMOCOUPLE

Input	Ranges	
Resolution	1	0.1
J	$^{\circ}\text{C}$	-199 to 750
	$^{\circ}\text{F}$	-328 to 1382
K	$^{\circ}\text{C}$	-199 to 1350
	$^{\circ}\text{F}$	-328 to 2462
T	$^{\circ}\text{C}$	-199 to 400
	$^{\circ}\text{F}$	-328 to 750
R & S	$^{\circ}\text{C}$	0 to 1750
	$^{\circ}\text{F}$	32 to 3182

ERROR DISPLAY (Table 2)

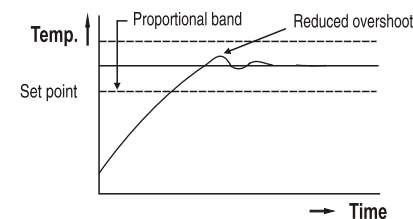
When an error has occurred, the upper display indicates error codes as given below.

Error	Meaning	Control output Status
S _b E	Sensor break / over range condition	OFF
S _r E	Sensor reverse / under range condition	OFF

USER GUIDE

Self Tune : It is used where modification of PID parameters is required repeatedly due to frequent change in process condition eg. Setpoint.

- While Self-tune is in progress, 'T' LED will blink at a slower speed.
- After Self-tuning is completed, the 'T' LED stops blinking.



- Self-tuning is initiated under the following conditions :

- When setpoint is altered.
 - When tune mode is altered. (TUNE=ST)
- ST will start tuning only if PV < 50% of setpoint.
 - ST will work only when ACT=RE.
 - The P, I, D parameters in configuration menu will not be prompted for TUNE=ST. To view the PID parameters obtained after completion of self-tuning make TUNE=OFF in Level 2.

CALIBRATION CERTIFICATE

Model No : TC538CX

Claimed Accuracy :

For TC inputs : 0.25% of FS $\pm 1^{\circ}\text{C}$
For R & S inputs : 0.5% of F.S $\pm 2^{\circ}\text{C}$
(30 min of warm up time for TC input)
For RTD inputs : 0.1% of FS $\pm 1^{\circ}\text{C}$

Standard used for Calibration of product is traceable to NABL

The calibration of this unit has been verified at the following values :

SENSOR SELECTION	VERIFICATION VALUE ($^{\circ}\text{C}$)
K	25.0
	475.0
	975.0
RTD	0.0
	323.5
	800.0

The thermocouple / RTD curves are linearized in this microprocessor based product; and hence the values interpolated across the input range are also equally accurate ; at every point in the curve.

Unit is accepted as accuracy is within the specified limit of claimed accuracy and certificate is valid upto one year from the date of issue.

(Specifications are subject to change, since development is a continuous process.)

Selec Controls Pvt. Ltd., India

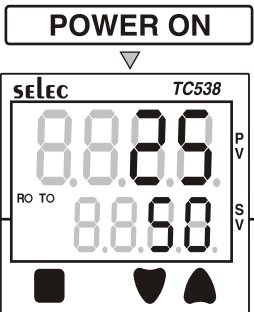
Factory Address :
EL-27/1, Electronic Zone, TTC Industrial Area, MIDC, Mahape, Navi Mumbai - 400 710, INDIA.
Tel. No. : +91-22-41 418 452/468 | Fax No. : +91-22-28471733
Toll free : 1800 227 353 (BSNL/MTNL Subscribers only)
Website : www.selec.com | Email : sales@selec.com

CONFIGURATION INSTRUCTIONS

KEY FUNCTIONS

- ▲ → Press for 3sec. to enter Level 2
- ▼ → Press once to view next parameter in configuration menu
- ▼ → Press for 3sec. to enter Level 1
- ▲ → Press once to view previous parameter in configuration menu
- ▲ + ▼ → Press for 3sec. to enter protection Level
- + ▲ or ■ + ▼ → Allows the user to increase or decrease associated parameter value
- ▲ or ▼ or ▲ + ▼ → To exit configuration menu press any of these keys for 3sec.

OPERATIONAL MENU



Press ▼ key for 3sec.

Press ▲ + ▼ keys for 3sec.

Press ▲ key for 3sec.

Level 1

Level 2

Protection Level

Display	Description	Default Value	Range	Display Condition
INPE	Input type (Refer Table 1)	J	J / K / T / R / S / RTD	—
RESL	Display resolution	I	1 / 0.1	Not prompted for R & S type
UNTE	Temperature unit	°C	°C / °F	—
SPLL	Set point low limit	-199	Min range of sensor selected to SPHL	—
SPHL	Set point high limit	750	SPLL to Max range of sensor selected	—
FELC	Filter time constant (Refer user guide)	1.0	0.2 to 10.0 sec	—
RECE	Control action	FE	RE / FD	—
CNEL	Control logic	PII	PID / ONF	—
OUUE	Control Output selection	RLY	RELAY / SSR	—
ARWU	Anti reset windup %	25	1.0 to 100.0 %	For CNTL = PID
FSLE	Factory default (Reset all)	NO	NO / YES	—

Display	Description	Default Value	Range	Display Condition
TUNE	Tune (Refer user guide)	SE	OFF / ST / AT	For CNTL=PID
P	Proportional band	10	1.0 to 400.0°	For CNTL=PID
I	Integral time	120	0 to 9999 sec	For CNTL=PID
D	Derivative time	30	0 to 9999 sec	For CNTL=PID
CTCM	Cycle time mode	3UL0	AUTO / USR.F	For CNTL=PID
CTCT	Cycle time	15.0	0.1 to 99.9 sec	For CNTL=PID
HYSLE	Hysteresis	1.0	0.1 to 99.9°	For CNTL=ONF
MRLR	Manual reset (Refer user guide)	0.0	-19.9 to 19.9°	For CNTL=PID & I=0
DSPB	Display bias (Refer user guide)	0.0	-19.9 to 19.9°	—

Display	Description	Default Value	Range	Display Condition
SP	Lock setpoint	UNLK	UNLK / READ	—
LVL1	Lock Level 1	UNLK	UNLK / READ / LOCK	—
LVL2	Lock Level 2	UNLK	UNLK / READ / LOCK	—

Note

- Locking parameters (LVL1 or LVL2 or SP) will not permit change in the value of respective level parameters.
- Continuous operation of ■ + ▲ / ▼ keys for SP or other parameters makes update speed faster in 3 stages after 3sec.

Programming Setpoint (Online) : Default : 50
 Range : SPLL to SPHL
 To increase/decrease setpoint : Press ■ + ▲ / ▼ keys.

Note : At power ON lower display shows (momentary) input type selected in Level 1.