RECO Technologies

Imagination To Creation

AN ISO 9001 : 2015 Company

TEMPERATURE

Prodcut code : RT-TM-5051

Features:

- Multiple input flexibility,
- One or two relay out put provide one set point, two set-point, or one set-point one alarm function according to model.
- class- 2 accuracy provide accurate results.
- One or two 7 segment display

SPECIFICATION

Input type	Range	Input type	Range
E	-199.9 to 1000 °C	Pt100 (0.1°C)	-199.9 to 850.0 °C
J	-199.9 to 1200 °C	Pt100 (1°C)	-200 to 850 °C
K	-199.9 to 1350 °C	0-5 VDC	-1999 TO 9999 (Field Scalable)
T	-199.9 to 400 °C	0-10 VDC	
B	450 to 1800 °C	*4-20mA	
R	0 to 1750 °C	*0-20mA	
S	0 to 1750 °C		

* Use external 250ohms, 0.1% for current input

Inputs

Accuracy T/C and RTD Linear :	 ± 0.25% of full span ±1 count ± 0.1% of full span ±1 count
Resolution	ADC 16 bits, Display: 0.1°C/1count
Sampling rate	5 Sample / second
CJC Error	±3.0 °C
Sensor Burnout Current	0.25uA
RTD Excitation current	0.166mA approx
Allowable wiring Resistance (RTD)	Maximum 15E /wire(conductor resistance between three wire should be equal
NMRR	>40dB
CMRR	>120dB
Max voltage	20 VDC

Display & Keys

PV Display	4-Digits, 7-Segment, .56" High, Red
SV Display	4-Digits, 7-Segment, .40" High, Red
Status Indication	Individual RED led for Relay, Manual, & Communication Status
Keys	SET1, SET2, Increase, Decrease

Output Types

Relay output	Relay-1: For On-Off, or PID Controlling Relay-2: Alarm or Set-pint 2 Output
Relay type and Rating	Single Changeover three terminal (C, NO, NC) 5A @ 230VAC / 30VDC

Power supply

Standard	85-265VAC / 100-300VDC
Power Consumption	<10 VA
Data Backup	Non-Volatile memory (written up to 100000 times)

Environment Condition

TEMPCO Input to PV	< 100ppm/°C
Humidity	30% to 95% RH (Non-Condensing)
Instrument Warm up time	Approx. 15 minutes
Ambient Temperature	0 to 55 °C

Isolation (Withstanding voltage)

Between Primary Terminal* & Secondary Terminal**	1500 V AC for 1 Minutes
Between Primary Terminal* & Ground Terminal	1500 V AC for 1 Minutes
Between Secondary Terminal** & Ground Terminal	1500 V AC for 1 Minutes
Between Secondary Terminal**	500 V AC for 1 Minutes

* Primary terminal indicate power terminals and relay o/p terminals

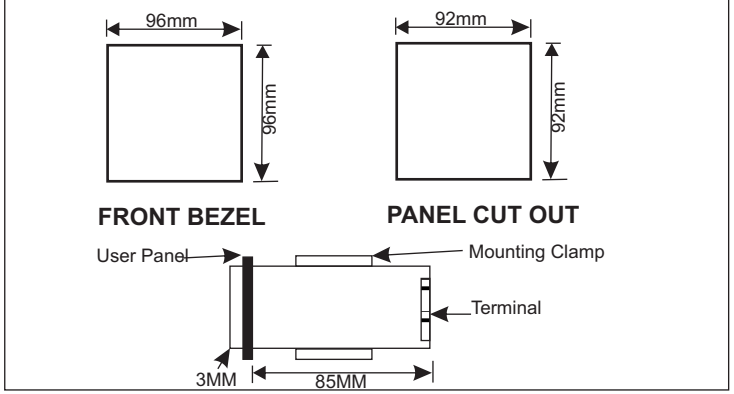
** Secondary terminals indicate analog I/O signal and Communication O/p

Insulation Resistance : 20ME or more at 500 V DC Between power and ground terminal

Physical

Dimension (H x W x D) mm	96 x 96 x 88
Front Bezel (H x W) mm	96 x 96
Panel cut out mm	92 x 92
Depth behind panel mm	85
Weight (Approx.)	300 g.
Enclosure material	ABS molded
Enclosure protection	IP 20
Terminal cable size	2.5 mm_2

Mounting Details

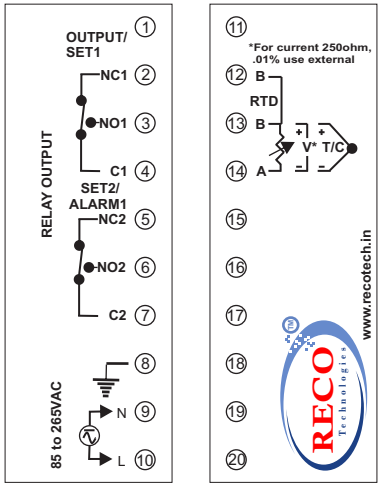


SAFETY / WARNING PRECAUTIONS

To ensure that the device can be operate safely and first read these instruction carefully.
Installation and start-up must be carried out by qualified person only. and before startup it is important to ensure:

- Terminal wiring : check all cable are correctly connected according to the connection diagram.
- All wiring must confirm suitable for voltage current and temperature rating of the systems.
- unused terminals should not be used as jumper.

TERMINAL CONNECTION



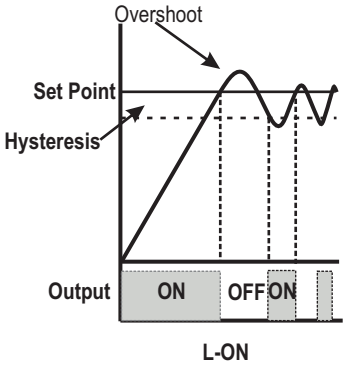
Terminal No.	Description
2 (NC1) 3 (NO1) 4 (C1)	For Relay 1 potential free contacts (use 2A, 230V) On off control output
5 (NC2) 6 (NO2) 7 (C2)	For Relay 2 potential free contacts (use 2A, 230V) On off control output
8 (Earth)	Earth connection
9 (N/-) 10(P/+)	Power supply input
12	For RTD Input Only (Three wire compensation)
13 (TC+ / V+) 14 (TC- / V-)	For Thermocouple, RTD, & Linear Input

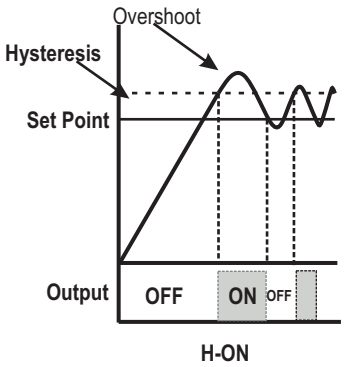
FRONT PANEL DESCRIPTION

Symbol	Function
▲	Increment the value of any parameter. Shows ambient value for T/C Input in RUN mode.
▼	Decrement the value of any parameter.
SET1	In sub menu, it used to get to the next parameter Save the parameter to nonvolatile memory.
SET2	Show control set point -2, in run mode. escape from sub menu without save
PV	Display process value. Display parameter name when use set parameter.
SV	Display set value. Display parameter value field when set parameter.
RI1	On when Relay-1 is energized.
RL2	On when Relay-2 is energized.

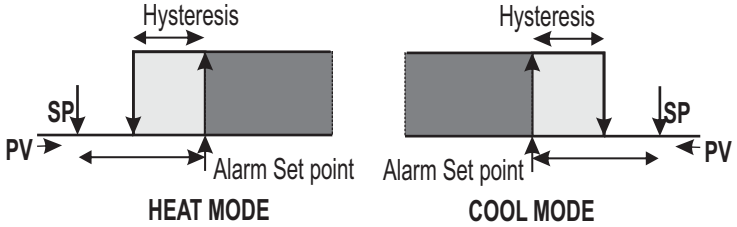
CONTROL FUNCTION

ON/OFF Control (For L-ON mode): The relay is 'ON' up to the set temperature and cuts 'OFF' above the set temperature. As the temperature of the system drops, the relay is switched 'ON' at temperature lower(Hysteresis) then the set point.
HYSTERESIS : The difference between the temperature at which relay switch 'ON' and 'OFF' is the hysteresis or dead band



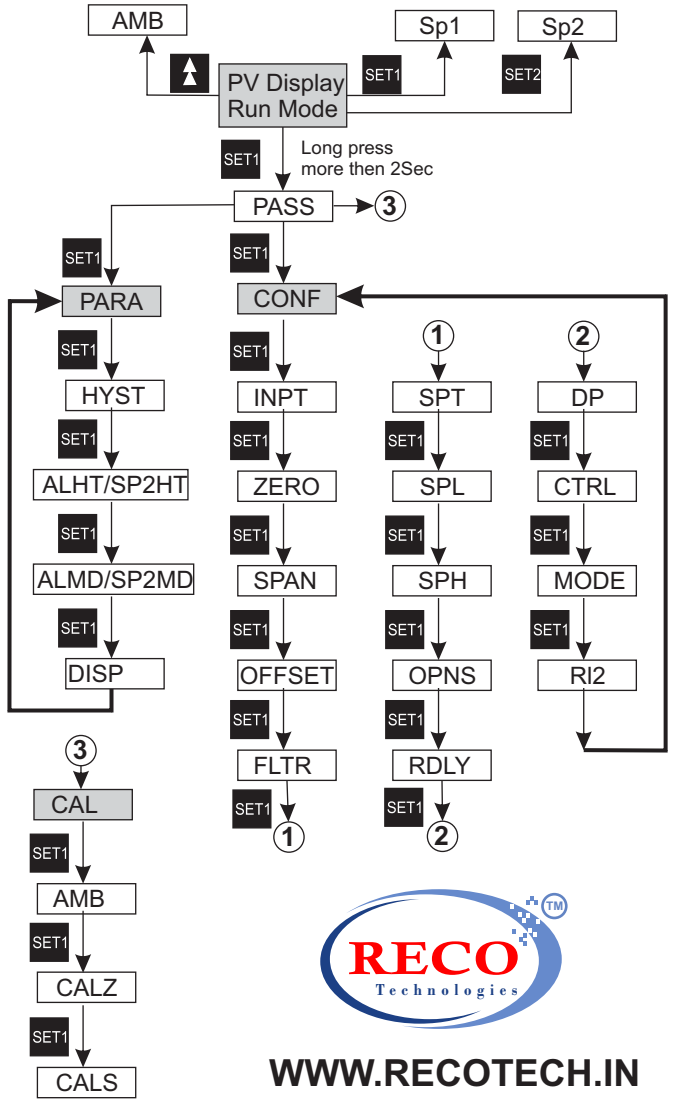


ALARM OUTPUT



Up arrow indicate Alarm will ON from this value.
Down arrow indicate Alarm will OFF from this value.

MENU LAYOUT



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<table>
<tr><th colspan="6">CONFIGURATION MODE</th></tr>
<tr><th>SYMBOL</th><th>NAME</th><th colspan="4">Setting name and Description</th><th>Default Value</th></tr>
<tr><td rowspan="9">INPT</td><td rowspan="9">INPUT TYPE</td><td>Input type</td><td>Range</td><td>Input type</td><td>Range</td><td rowspan="9">TCK</td></tr>
<tr><td>E</td><td>-199.9 to 1000 °C</td><td>Pt100 (0.1°C)</td><td>-199.9 to 850.0 °C</td></tr>
<tr><td>J</td><td>-199.9 to 1200 °C</td><td>Pt100 (1°C)</td><td>-200 to 850 °C</td></tr>
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(Field Scalable)</td></tr>
<tr><td>T</td><td>-199.9 to 400 °C</td><td>0-10 VDC</td></tr>
<tr><td>B</td><td>450 to 1800 °C</td><td>*4-20mA</td></tr>
<tr><td>R</td><td>0 to 1750 °C</td><td>*0-20mA</td></tr>
<tr><td>S</td><td>0 to 1750 °C</td><td></td></tr>
<tr><td>ZERO</td><td>Zero</td><td colspan="4">Automatically change to the input lower range with changing to input type(as above table) Can be set any value with the input range and less the span value</td><td>-200(if TC K)</td></tr>
<tr><td>SPAN</td><td>Span</td><td colspan="4">Automatically change to the input higher range with changing to input type(as above table)
Can be set any value within the input range and grater the zero value</td><td>1350(if TC K)</td></tr>
<tr><td>OFST</td><td>Offset</td><td colspan="4">Apply offset value in the reading (+-20)
(+-1000 for linear)</td><td>0</td></tr>
<tr><td>FLTR</td><td>Filter</td><td colspan="4">On or off digital filter on taken reading
0 : on
1 : off</td><td>off</td></tr>
<tr><td>SPT</td><td>Set Point Tyoe</td><td colspan="4">0 : L – on
1: H –on</td><td>L on</td></tr>
<tr><td>SPL</td><td>Set Point Low</td><td colspan="4">Provide the lower limit for set point.
Can be set any value within the input range.</td><td>-200(if TC K)</td></tr>
<tr><td>SPH</td><td>Set Point High</td><td colspan="4">Provide the high limit for set point.
Can be set any value within the input range.</td><td>1350(if TC K)</td></tr>
<tr><td>OPNS</td><td>Open Sensor Status</td><td colspan="4">Set control o/p when input open condition
0 : up
1 : dn (down)</td><td>up</td></tr>
<tr><td>RDLY</td><td>Relay Delay</td><td colspan="4">Relay Delay(0 to 99)
Apply delay second on relay</td><td>0</td></tr>
<tr><td>DP</td><td>Decimal Point</td><td colspan="4">Set decimal point</td><td>0</td></tr>
<tr><td>CTRL</td><td>Control Type</td><td colspan="4">control
0 : rly</td><td>Rly</td></tr>
<tr><td>MODE</td><td>Mode</td><td colspan="4">Select mode of working
0: on off 1: tp
2: pi 3: pid</td><td>On off</td></tr>
<tr><td>RI2</td><td>Relay -2</td><td colspan="4">Set Relay 2
0 : Alarm
1: set2</td><td>Alarm</td></tr>
</table>

CONFIGURATION MODE			
SYMBOL	**NAME**	**Setting name and Description**	**Default Value**
HYST	Hysteresis	Set Hysteresis	5
ALHT	Alarm Hysteresis	Set Alarm Hysteresis	5
ALMD/SP2	Alarm / Sp2 Mode	0 : Heat /H ON 1: Cool /L ON	HEAT
DISP	Set Display SV	Set SV display 0 : SP - 1 1 : AL-1 / SP2	SP - 1