PPI LabCon Multi-Purpose Temperature Controller User Manual

LabCon
Multi-Purpose Temperature Controller
Operation Manual

Contents

LabCon Multi-Purpose Temperature Controller

This brief manual is primarily meant for quick reference to wiring connections and parameter searching. For more details on operation and application; please log on to www.ppiindia.net

OPERATOR PAGE PARAMETERS

Parameters	Settings (Default Value)
Time Start Command >> Time Abort Command >>	Yes No (Default: No)
Time Interval (H:M) >>	0.00 to 500.00 (HH:MM) (Default: 0.10)
Ctrl Set Value >>	Setpoint LO limit to Setpoint HI limit (Resolution 0.1°C for RTD / DC Linear & 1°C for Thermocouple) (Default: 25.0)
Ctrl Lo Deviation >>	For RTD & DC Linear: 0.2 to 99.9 For Thermocouple: 2 to 99 (Default: 2.0)
Ctrl Hi Deviation >>	For RTD & DC Linear: 0.2 to 99.9 For Thermocouple: 2 to 99 (Default: 2.0)
Change Password >>	1 to 100 (Default: 0)

SUPERVISORY > SENSOR INPUT

Parameters	Settings (Default Value)
Ctrl Zero Offset >>	-50 to 50 (Resolution 0.1°C for RTD / DC Linear & 1°C for Thermocouple) (Default : 0.0)

SUPERVISORY > CONTROL

Parameters	Settings (Default Value)
Tune >>	Yes No (Default: No)
Setpoint LO Limit >>	Min Range for the Selected Input Type to Setpoint HI Limit (Resolution 0.1°C for RTD/ DC Linear & 1°C for Thermocouple) (Default : 0.0)
Setpoint HI Limit >>	Setpoint LO Limit to Max Range for the Selected Input Type (Resolution 0.1°C for RTD / DC Linear & 1°C for Thermocouple) (Default: 600.0)
Compressor Setpoint >>	0 to 100 (Resolution 0.1°C for RTD / DC Linear & 1°C for Thermocouple) (Default: 45.0)
Compressor Hyst >>	0.1 to 99.9 (Default : 2.0)
Heat Ctrl Action >>	ON-OFF PID (Default: PID)
Heat Hyst >>	0.1 to 99.9 (Default: 0.2)

Heat Only Control	Heat + Cool Control Zone: Single	Heat + Cool Control Zone: Dual
Proportional Band >> 0.1 to 999.9 (Default: 50.0)	Proportional Band >> 0.1 to 999.9 (Default: 50.0)	Cz Prop Band >> Proportional Band for Cool Pre-dominant zone 0.1 to 999.9 (Default: 50.0)
Integral Time >> 0 to 3600 sec (Default: 100 sec)	Integral Time >> 0 to 3600 sec (Default: 100 sec)	Cz Integral Time >> Integral Time for Cool Pre-dominant zone 0 to 3600 sec (Default: 100 sec)
Derivative Time >> 0 to 600 sec (Default: 16 sec)	Derivative Time >> 0 to 600 sec (Default: 16 sec)	Cz Derivative Time >> Derivative Time for Cool Pre-dominant zone 0 to 600 sec (Default: 16 sec)
Cycle Time >> 0.5 to 100.0 sec (Default : 10.0 sec)	Cycle Time >> 0.5 to 100.0 sec (Default : 10.0 sec)	Hz Prop Band >> Proportional Band for Heat Pre-dominant zone 0.1 to 999.9 (Default: 50.0)
Overshoot Inhibit >> Enable Disable (Default: Disable)	Overshoot Inhibit >> Enable Disable (Default: Disable)	Hz Integral Time >> Integral Time for Heat Pre-dominant zone 0 to 3600 sec (Default: 100 sec)
Cutoff Factor >> 1.0 to 2.0 sec (Default: 1.2 sec)	Cutoff Factor >> 1.0 to 2.0 sec (Default: 1.2 sec)	Hz Derivative Time >> Derivative Time for Heat Pre-dominant zone 0 to 600 sec (Default: 16 sec)
		Cycle Time >> 0.5 to 100.0 sec (Default: 10.0 sec)
		Overshoot Inhibit >> Enable Disable (Default: Disable)
		Cutoff Factor >> 1.0 to 2.0 sec (Default: 1.2 sec)

SUPERVISORY > PASSWORD

Parameters	Settings (Default Value)
Change Password >>	1000 to 1999 (Default: 123)

SUPERVISORY > EXIT

Parameters	Settings (Default Value)
Exit Setup Mode >>	Yes No (Default: No)

FACTORY > CONTROL SENSOR INPUT

<table>
<tr><th>Parameters</th><th>Settings (Default Value)</th></tr>
<tr><td>Input Type >></td><td>Refer Table 1
(Default : RTD Pt100)</td></tr>
<tr><td>Signal LO >></td><td>
<table>
<tr><th>Input Type</th><th>Settings</th><th>Default</th></tr>
<tr><td>0 to 20mA</td><td>0.00 to Signal High</td><td>0.00</td></tr>
<tr><td>4 to 20mA</td><td>4.00 to Signal High</td><td>4.00</td></tr>
<tr><td>0 to 5V</td><td>0.000 to Signal High</td><td>0.000</td></tr>
<tr><td>0 to 10V</td><td>0.00 to Signal High</td><td>0.00</td></tr>
<tr><td>1 to 5V</td><td>1.000 to Signal High</td><td>1.000</td></tr>
</table>
</td></tr>
<tr><td>Signal HI >></td><td>
<table>
<tr><th>Input Type</th><th>Settings</th><th>Default</th></tr>
<tr><td>0 to 20mA</td><td>Signal Low to 20.00</td><td>20.00</td></tr>
<tr><td>4 to 20mA</td><td>Signal Low to 20.00</td><td>20.00</td></tr>
<tr><td>0 to 5V</td><td>Signal Low to 5.000</td><td>5.000</td></tr>
<tr><td>0 to 10V</td><td>Signal Low to 10.00</td><td>10.00</td></tr>
<tr><td>1 to 5V</td><td>Signal Low to 5.000</td><td>5.000</td></tr>
</table>
</td></tr>
<tr><td>Range LO >></td><td>-199.9 to RANGE HI
(Default : 0.0)</td></tr>
<tr><td>Range HI >></td><td>RANGE LO to 999.9
(Default : 100.0)</td></tr>
</table>

FACTORY > ALARM PARAMETERS

Parameters	Settings (Default Value)
Hysteresis **>>**	0.1 to 99.9 (Default: 0.2)
Inhibit **>>**	Yes No (Default: Yes)

FACTORY > HEAT COOL SELECT

Parameters	Settings (Default Value)
Control Strategy >>	Heat Only Cool Only Heat + Cool (Default: Heat + Cool)
Control Strategy: Cool Only	
Time Delay (sec) >>	0 to 1000 Sec (Default : 200 Sec)
Control Strategy: Heat + Cool	
Compressor Strategy >>	CONT. OFF CONT. ON SP BASED PV BASED (Default: CONT. ON)

CONT. ON	SP BASED	PV BASED
Time Delay (sec) >> 0 to 1000 Sec (Default: 200 Sec)	**Boundary Set Value >>** 0 to 100 (Resolution 0.1°C for RTD / DC Linear & 1°C for Thermocouple) (Default : 45.0)	Time Delay (sec) >> 0 to 1000 Sec (Default: 200 Sec)
	Control Zones >> Single Dual (Default: Single)	
	Time Delay (sec) >> 0 to 1000 Sec (Default : 200 Sec)	

Parameters	Settings (Default Value)
Holdback Strategy >>	None Up Down Both (Default: None)
Hold Band >>	0.1 to 999.9 (Default: 0.5)
Heat Off >>	No Yes (Default: No)
Cool Off >>	No Yes (Default: No)
Power Recovery >>	Abort Restart Continuous (Default: Restart)

FACTORY > DOOR OPEN

Parameters	Settings (Default Value)
Enable >>	Yes No (Default: No)
Switch Logic >>	Close: Door Open Open: Door Open (Default: Close: Door Open)
Door Alrm Dly (sec) >>	0 to 1000 Sec (Default: 60 Sec)

FACTORY > MAINS FAILURE

Parameters	Settings (Default Value)
Enable >>	Yes No (Default: No)
Switch Logic >>	Close: Mains Fail Open: Mains Fail (Default: Close: Mains Fail)

FACTORY > PASSWORD

Parameters	Settings (Default Value)
Change Password >>	2000 to 2999 (Default: 321)

FACTORY > FACTORY DEFAULT

Parameters	Settings (Default Value)
Set To Default >>	Yes No (Default: No)

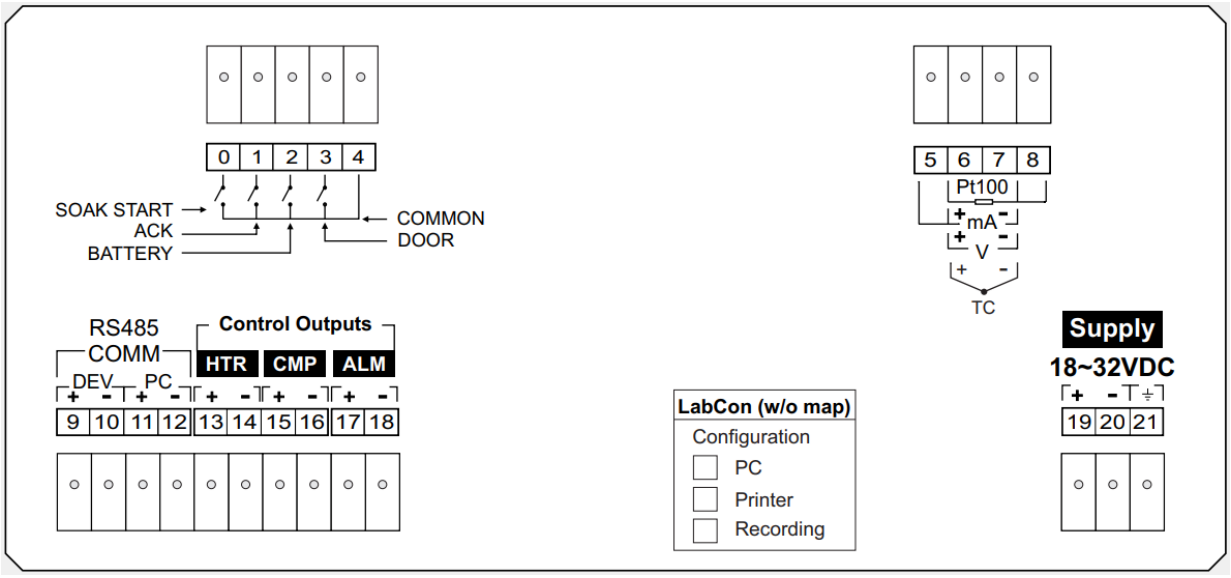
FACTORY > EXIT

Parameters	Settings (Default Value)
Exit Setup Mode >>	Yes No (Default: No)

TABLE 1

What it means	Range (Min. to Max.)	Resolution
Type J Thermocouple	0 to +960°C	Fixed 1°C
Type K Thermocouple	-200 to +1376°C	
Type T Thermocouple	-200 to +385°C	
Type R Thermocouple	0 to +1770°C	
Type S Thermocouple	0 to +1765°C	
Type B Thermocouple	0 to +1825°C	
Type N Thermocouple	0 to +1300°C	
Reserve	Reserved for customer specific Thermocouple type not li sted above. The type shall be specified in accordance wit h the ordered (optional on request) Thermocouple type.	
3-wire, RTD Pt100	-199.9 to 600.0°C	Fixed 0.1°C
0 to 20mA DC current	-199.9 to 999.9 units	Fixed 0.1 unit
4 to 20mA DC current		
0 to 5.0V DC voltage		
0 to 10.0V DC voltage		
1 to 5.0V DC voltage		

ELECTRICAL CONNECTIONS



FRONT PANEL KEYS

Symbol	Key	Function
	Scroll	Press to scroll through various Process Information Screens in Normal Operation Mode.
	Alarm Acknowledge	Press to acknowledge and mute (if active) alarm output.
	DOWN	Press to decrease the parameter value. Pressing once decreases the value by one count; keeping pressed speeds up the change.
	UP	Press to increase the parameter value. Pressing once increases the value by one count; keeping pressed speeds up the change.
	SET-UP	Press to enter or exit set-up mode.
	ENTER	Press to store the set parameter value and to scroll to the next parameter.

PV ERROR INDICATIONS

Message	Error Type	Cause
	Sensor Open	Sensor (RTD Pt100) Broken / Open
	Over-range	Temperature above Max. Specified Range
	Under-range	Temperature below Min. Specified Range

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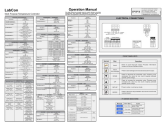
Documents / Resources

	PPI LabCon Multi-Purpose Temperature Controller [pdf] User Manual LabCon Multi-Purpose Temperature Controller, LabCon, Multi-Purpose Temperature Controller, Temperature Controller, Controller

References

- Factory Automation Products India | Automation Solutions in India