PPI Zenex 48X48 Universal PID Temperature Controller User Manual

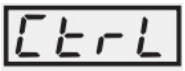
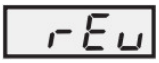
Zenex 48X48 Universal PID Temperature Controller
User Manualv

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**

Contents

Zenex 48X48 Universal PID Temperature Controller

I / O CONFIGURATION PARAMETERS

Parameters	Settings (Default Value)
Input Type 	Refer Table 1 (Default : Type K)
Temperature Display Units 	 °C  °F (Default : °C)
Temperature Range 	Min. to Max. specified for the selected Input Type (Refer Table 1) (Default : 1375)
Control Output Type 	Refer Table 2 (Default : Relay)
Control Mode 	 On-Off  PID (Default : PID)
Control Logic 	 Direct  Reverse (Default : Reverse)
Hysteresis 	1 to 999°C or 0.1 to 99.9°C (Default : 2 or 0.2)
Setpoint Low Limit 	Min. Range to Setpoint High for the selected Input Type (Default : -200)
Setpoint High Limit 	Setpoint Low to Max. Range for the selected Input Type (Defaul t : 1375)

SUPERVISORY PARAMETERS

Parameters	**Settings (Default Value)**
Tune / Optimize Command 	 No  Yes (Default : No)
Tune / Optimize Abort Command 	 No  Yes (Default : No)
Overshoot Inhibit 	 Enable  Disable (Default : Disable)
Overshoot Inhibit Factor 	1.0 to 2.0 (Default : 1.2)
Self-tune on Setpoint Change 	 Enable  Disable (Default : Disable)
Offset for PV 	-1999 to 9999 or -199.9 to 999.9 (Default : 0)
PV Digital Filter for PV 	0.5 to 25.0 Seconds in steps of 0.5 Seconds (Default : 1.0)
Permission for OP2/OP3 Setpoint Editing on Operator Page 	 Enable  Disable (Default : Enable)
Soak Abort Command on Operator Page 	 Enable  Disable (Default : Enable)
Soak Time Adjustment on Operator Page 	 Enable  Disable (Default : Enable)

Parameters	Settings (Default Value)
Utility Option OPtn	nonE None SrL.C Serial Comm. Strt Soak Start (Default : None)
Slave ID Id	1 to 127 (Default : 1)
Baud Rate bAUd	1200, 2400, 4800, 9600 (Default : 9600)
Communication Write Enable Con.E	no No YES Yes (Default : Yes)

PID CONTROL PARAMETERS

Parameters	Settings (Default Value)
% Output Power OUt.P	Not Applicable (Default : Not Applicable)
Cycle Time Ct	0.5 to 120.0 Seconds (in steps of 0.5 secs.) (Default : 0.5)
Proportional Band Pb	0.1 to 999.9 (Default : 10.0)
Integral Time It	0 to 1000 Seconds (Default : 100)
Derivative Time dt	0 to 250 Seconds (Default : 25)

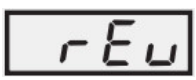
OP2 FUNCTION PARAMETERS

Parameters	Settings (Default Value)
Output-2 Function Selection OP2.F	nonE None ALrn Alarm CtrL Control bLOr Blower S.SOP Set point

OP2 Function : Alarm-1

Type 	 Process Low  Process High  Deviation Band  Window Band  End of Soak (Default : Process Low)
Setpoint 	Min. to Max. Range for the selected Input type (Default : 0)
Deviation Band 	-1999 to 9999 or -199.9 to 999.9 (Default : 0)
Window Band 	3 to 999 or 0.3 to 99.9 (Default : 3)
Logic 	 Normal  Reverse (Default : Normal)
Inhibit 	 Normal  Reverse (Default : Normal)
Alarm Timer 	5 to 250 Seconds (Default : 10)

OP2 Function : Auxiliary Control

Parameters	**Settings (Default Value)**
Offset Value 	(Min. Range – SP) to (Max. Range – SP) specified for the selected In put Type (Default : 0)
Hysteresis 	1 to 999 or 0.1 to 99.9 (Default : 2 or 0.2)
Control Logic 	 Normal  Reverse (Default : Normal)

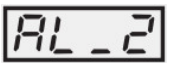
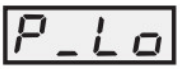
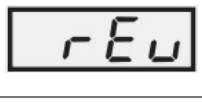
OP2 Function : Blower / Compressor Control

Offset Value 	0 to 250 or 0.0 to 25.0 (Default : 0)
Hysteresis 	1 to 250 or 0.1 to 25.0 (Default : 2 or 0.2)
Time Delay 	00.00 to 10.00 Min. Sec (in steps of 5 Seconds) (Default : 00.00)

OP3 FUNCTION PARAMETERS

Parameters	**Settings (Default Value)**
Output-3 Function Selection 	 None  Alarm  Control

OP3 Function : Alarm-2

Type 	 Process Low  Process High  Deviation Band  Window Band  End of Soak (Default : Process Low)
Setpoint 	Min. to Max. Range for the selected Input type (Default : 0)
Deviation Band 	-1999 to 9999 or -199.9 to 999.9 (Default : 0)
Window Band 	3 to 999 or 0.3 to 99.9 (Default : 3)
Logic 	 Normal  Reverse (Default : Normal)
Inhibit 	 Yes  No (Default : Yes)
Alarm Timer 	5 to 250 Seconds (Default : 10)

OP3 Function : Auxiliary Control

Offset Value 	(Min. Range – SP) to (Max. Range – SP) specified for the selected Input Type (Default : 0)
Hysteresis 	1 to 999 or 0.1 to 99.9 (Default : 2 or 0.2)
Control Logic 	 Normal  Reverse (Default : Normal)

SOAK TIMER PARAMETERS

Parameters	Settings (Default Value)
Timer Enable 	 No  Yes (Default : No)
Time Units 	 Min:Sec  Hours:Min  Hours (Default : Min: Sec)
Time Duration 	00.05 to 60:00 Min: Sec 00.05 to 99:55 Hrs: Min 1 to 999 Hours (Default : 00.10 Min: Sec)
Timer-Start Band 	0 to 9999 or 0.0 to 999.9 (Default : 5 or 0.5)
Holdback Strategy 	 None  Up  Down  Both (Default : None)
Hold Band 	1 to 9999 or 0.1 to 999.9 (Default : 5 or 0.5)
Switch-Off Control Output at Timer End 	 No  Yes (Default : No)
Power-fail Recovery Method 	 Continue  (Re)Start  Abort (Default : Continue)

OPERATOR PAGE AND PARAMETERS

Parameters	Settings
Timer Start Command 	 No  Yes
Timer Abort Command 	 No  Yes
Time Duration 	00.05 to 60.00 M:S or 00.05 to 99.55 H:M or 1 to 999 Hours

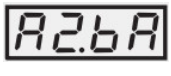
OP2 Function : Alarm-1

Alarm-1 Setpoint 	Min. to Max. Range for the Input Type
Alarm-1 Deviation Band 	-1999 to 9999 or -199.9 to 999.9
Alarm-1 Window Band 	3 to 999 or 0.3 to 99.9

OP2 Function : Auxiliary Control

Auxiliary Control Setpoint 	(Min. Range – SP) to (Max. Range – SP) for selected In put
OP2 Function : Blower / Compressor Control	
Blower / Compressor Setpoint 	0 to 250 or 0.0 to 25.0

OP3 Function : Alarm-2

Parameters	Settings
Alarm-2 Setpoint 	Min. to Max. Range for the Input Type
Alarm-2 Deviation Band 	-1999 to 9999 or -199.9 to 999.9
Alarm-2 Window Band 	3 to 999 or 0.3 to 99.9

OP3 Function : Auxiliary Control	
Auxiliary Control Setpoint 	(Min. Range SP) to (Max. Range SP) for selected Input
Control Setpoint (SP) Locking	
Setpoint Locking 	 No  Yes

TABLE- 1

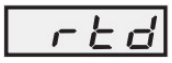
Option	Range (Min. to Max.)	Resolution
J Type T/C 	0 to +960°C / +32 to +1760°F	Fixed 1°C / 1°F
K Type T/C 	-200 to +1375°C / -328 to +2508°F	
T Type T/C 	-200 to +385°C / -328 to +725°F	
R Type T/C 	0 to +1770°C / +32 to +3218°F	
S Type T/C 	0 to +1765°C / +32 to +3209°F	
B Type T/C 	0 to +1825°C / +32 to +3092°F	
N Type T/C 	0 to +1300°C / +32 to +2372°F	
3-wire, RTD Pt100 	-199 to +600°C / -328 to +1112°F	
3-wire, RTD Pt100 	-199.9 to 600.0°C / -199.9 to 999.9°F	0.1°C / 0.1°F

TABLE- 2

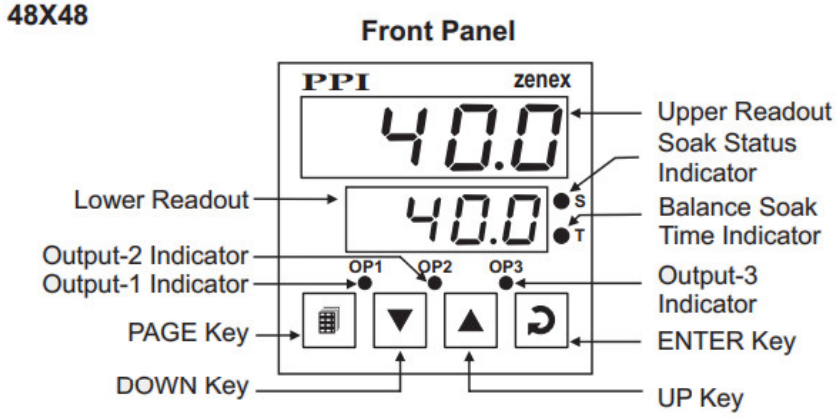
Option	What it means	Remarks
	Relay SSR (Solid State Relay)	Applicable for OP1 as Relay / SSR

NOTE : Applicable Only For Zenex DC Linear Version

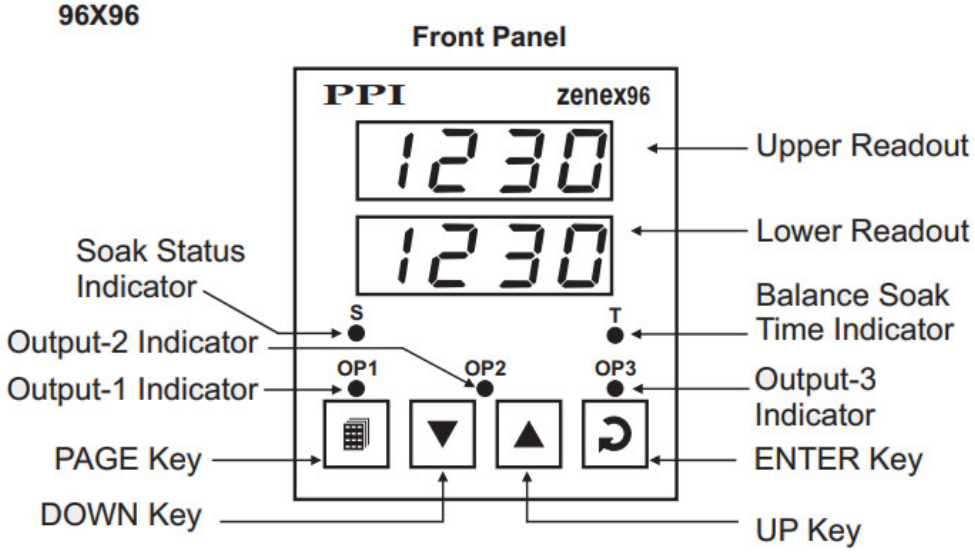
Option	What it means	Remarks
0-20 4-20	0 to 20mA current 4 to 20mA current	Applicable for OP1 as DC Linear Current
0-5 0-10	0 to 5 Volts 0 to 10 Volts	Applicable for OP1 as DC Linear Voltage

FRONT PANEL LAYOUT

48X48



96X96



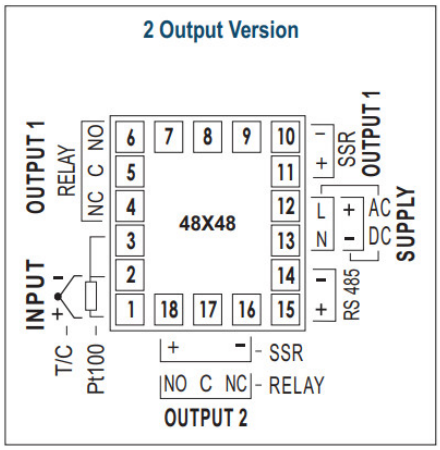
Keys Operation

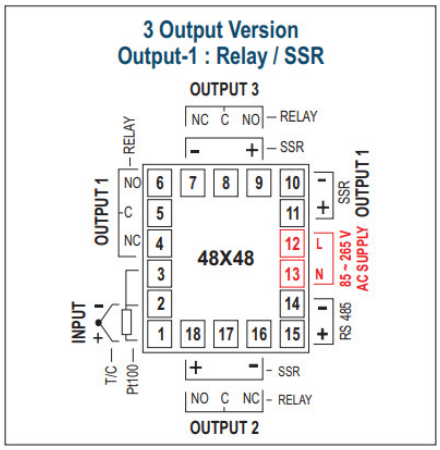
Symbol	Key	Function
	PAGE	Press to enter or exit set-up mode.
	DOWN	Press to decrease the parameter value. Pressing once decreases the value by one c ount; keeping pressed speeds up the change.
	UP	Press to increase the parameter value. Pressing once increases the value by one co unt; keeping pressed speeds up the change.
	ENTER	Press to store the set parameter value and to scroll to the next parameter on the PA GE.

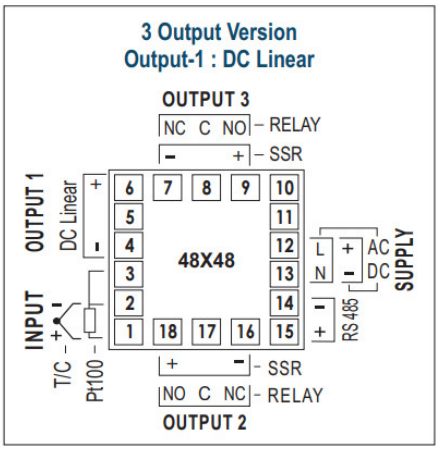
PV Error Indications

Message	PV Error Type
	Over-range (PV above Max. Range)
	Under-range (PV below Min. Range)
	Open (Sensor open / broken)

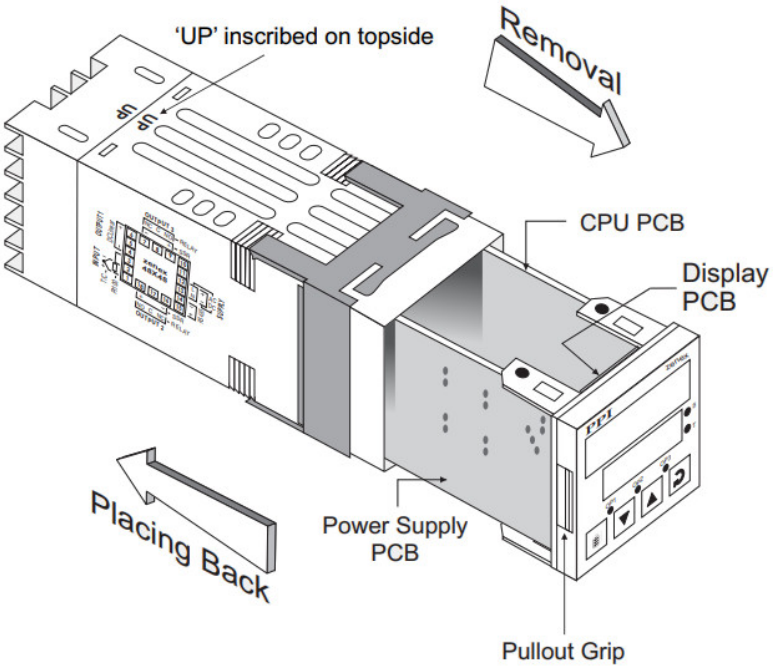
ELECTRICAL CONNECTIONS



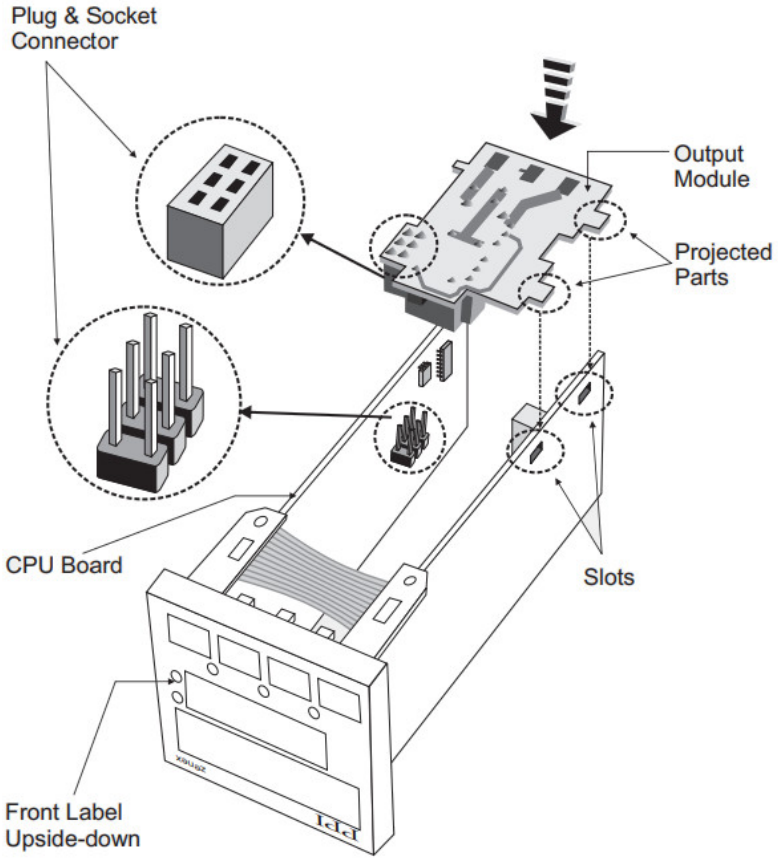




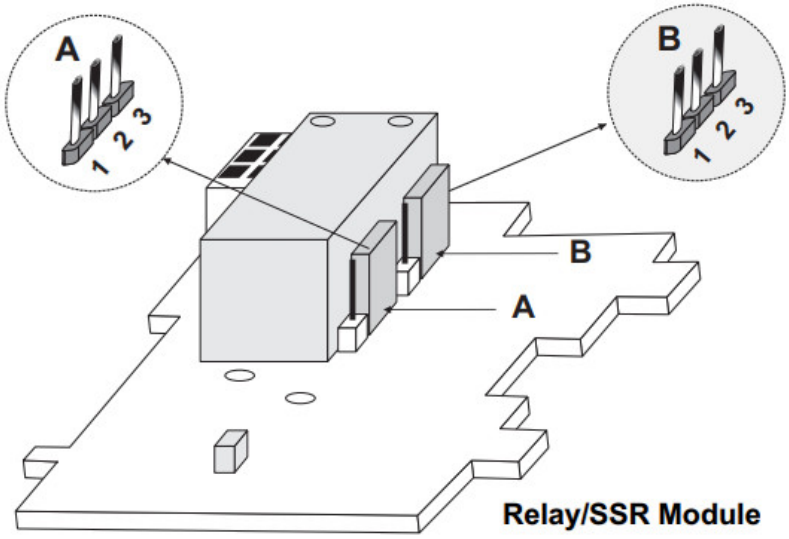
ENCLOSURE ASSEMBLY

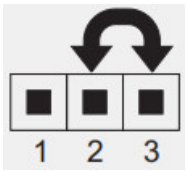
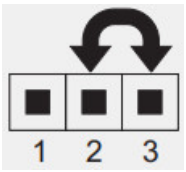
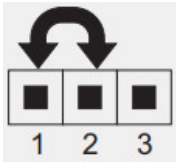
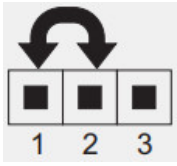


MOUNTING DETAILS OUTPUT-2 MODULE

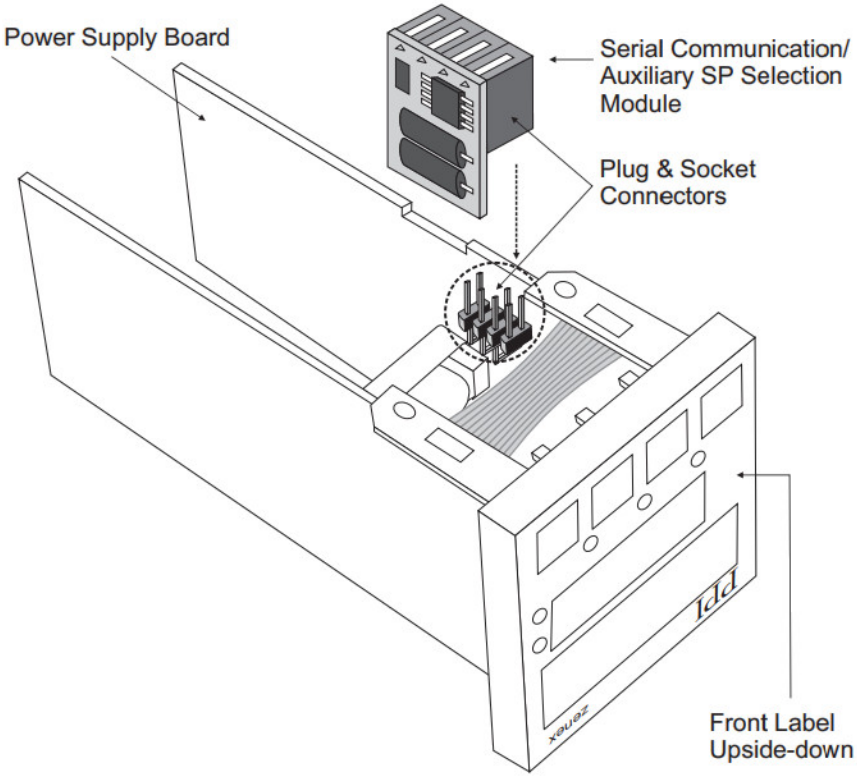


JUMPER SETTINGS OUTPUT-2 & OUTPUT-3

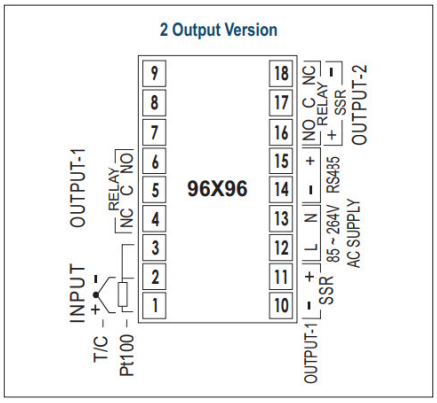


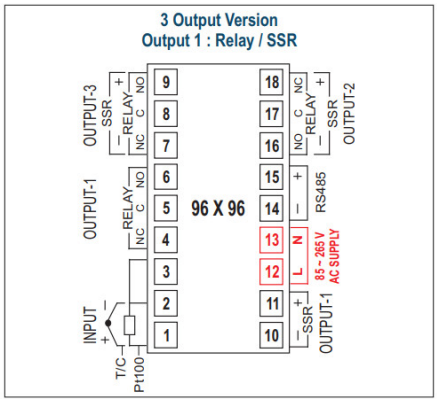
Output Type	Jumper Setting – A	Jumper Setting – B
Relay		
SSR		

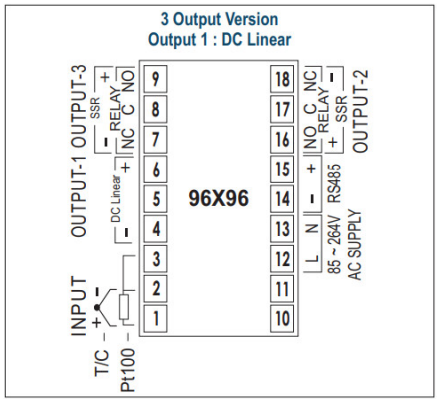
MOUNTING DETAILS SERIAL COMM. MODULE



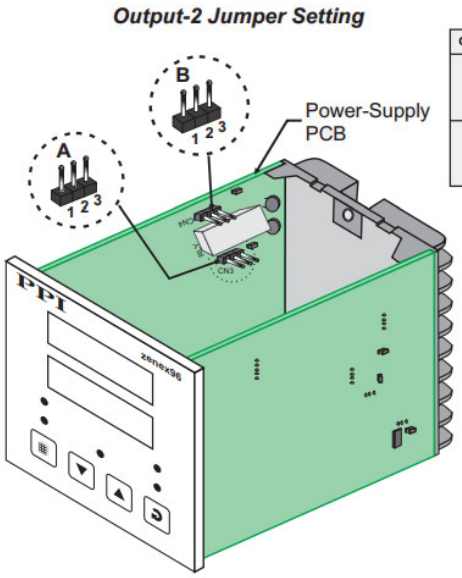
ELECTRICAL CONNECTIONS





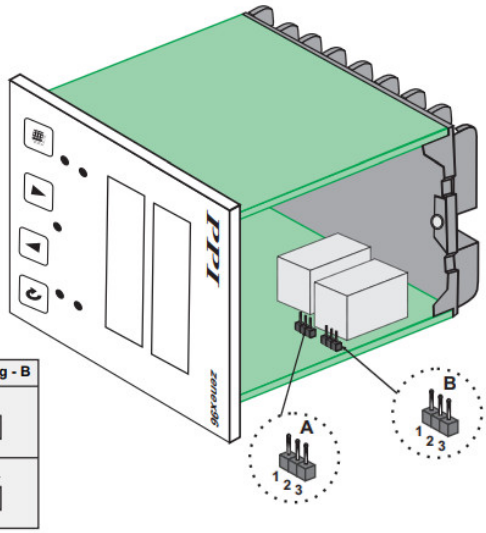


OUTPUT-2 & OUTPUT-3 : HARDWARE JUMPER SETTINGS



Output-2 Jumper Settings

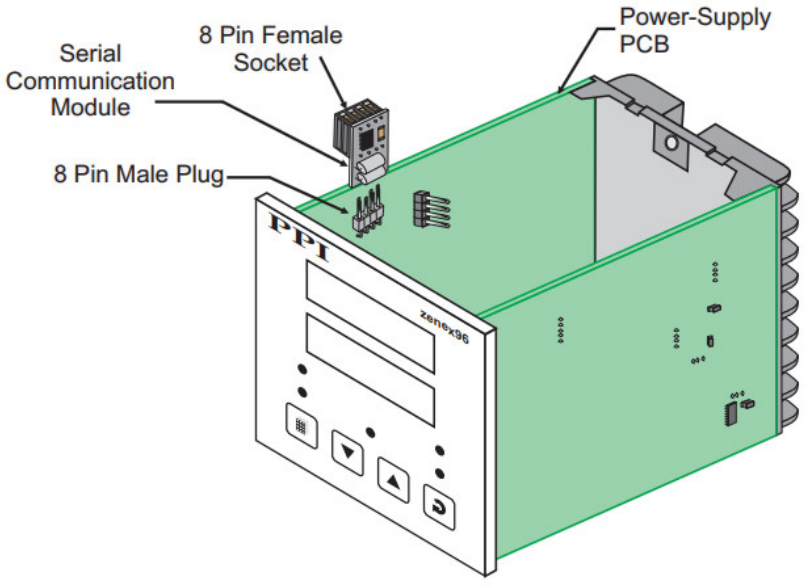
Output Type	Jumper Setting - A	Jumper Setting - B
Relay	1 2 3	1 2 3
SSR	1 2 3	1 2 3



Output-3 Jumper Settings

Output Type	Jumper Setting - A	Jumper Setting - B
Relay	1 2 3	1 2 3
SSR	1 2 3	1 2 3

SERIAL COMMUNICATION MODULE



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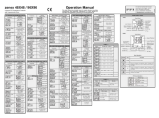
Documents / Resources

	PPI Zenex 48X48 Universal PID Temperature Controller [pdf] User Manual Zenex 48X48 Universal PID Temperature Controller, Zenex 48X48, Universal PID Temperature Controller, PID Temperature Controller, Temperature Controller, Controller

References

- Factory Automation Products India | Automation Solutions in India