



PPI Neuro 102 EX Enhanced Universal Single Loop Process Controller User Manual

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Neuro 102 EX
Enhanced Universal Single Loop
Process Controller
User Manual

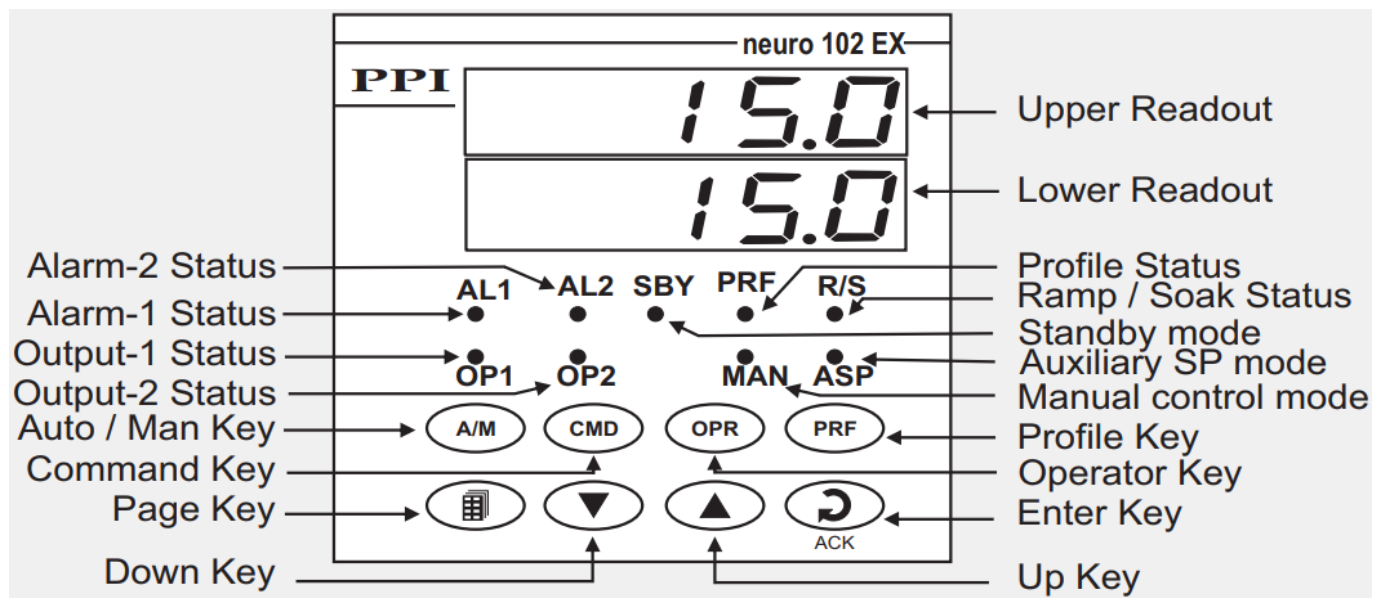
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Neuro 102 EX Enhanced Universal Single Loop Process Controller

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

FRONT PANEL LAYOUT



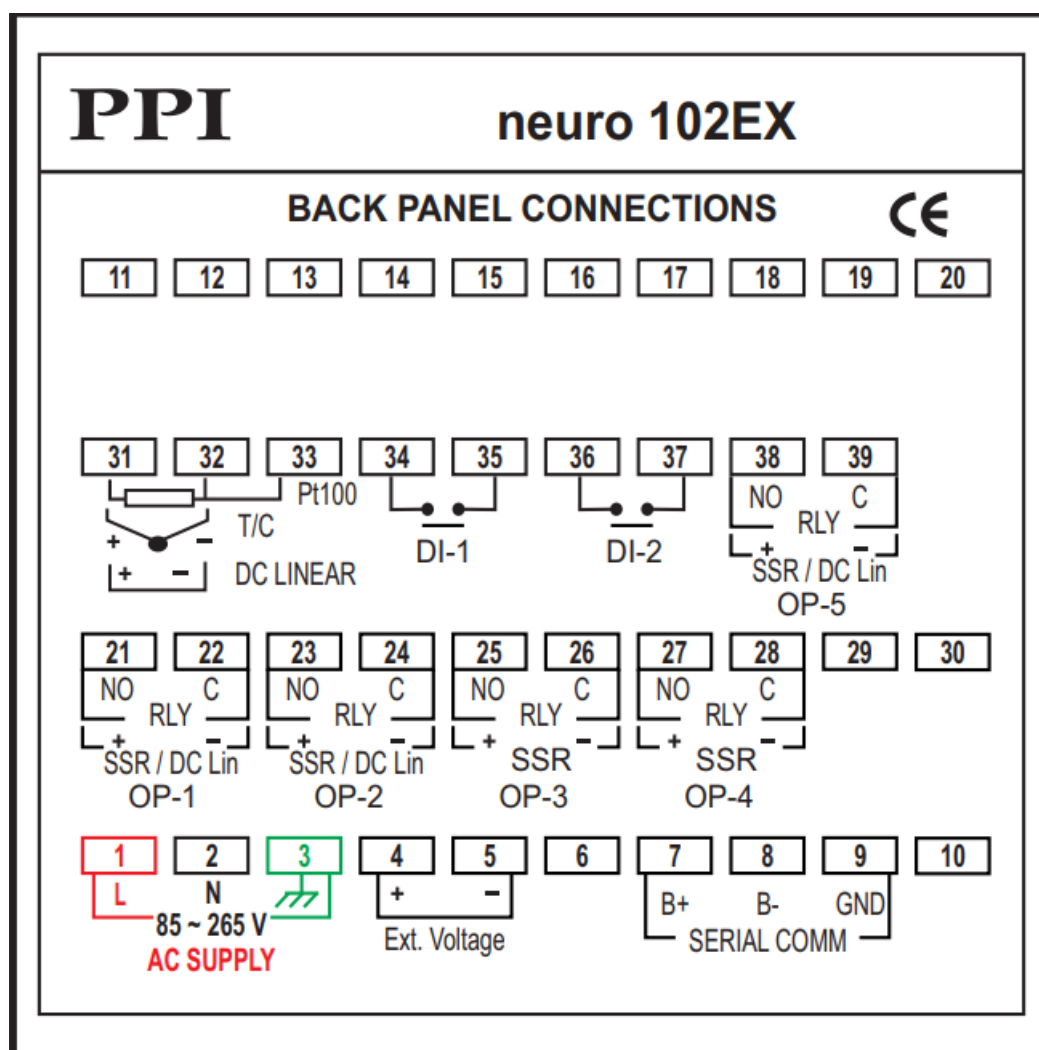
Keys Operation

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 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.
	ENTER OR ALARM ACKNOWLEDGE	Set up Mode: Press to store the set parameter value and to scroll to the next parameter on the PAGE. Run Mode: Press to acknowledge any pending Alarm(s). This also turns off the Alarm relay.
	AUTO MANUAL	Press to toggle between Auto or Manual Control Mode.
	(1) COMMAND	Press to access parameters that are used as Commands.
	(1) OPERATOR	Press to access 'Operator-Page' parameters.
	(2) PROFILE	Press to access 'Profile Run-Time Variables'.

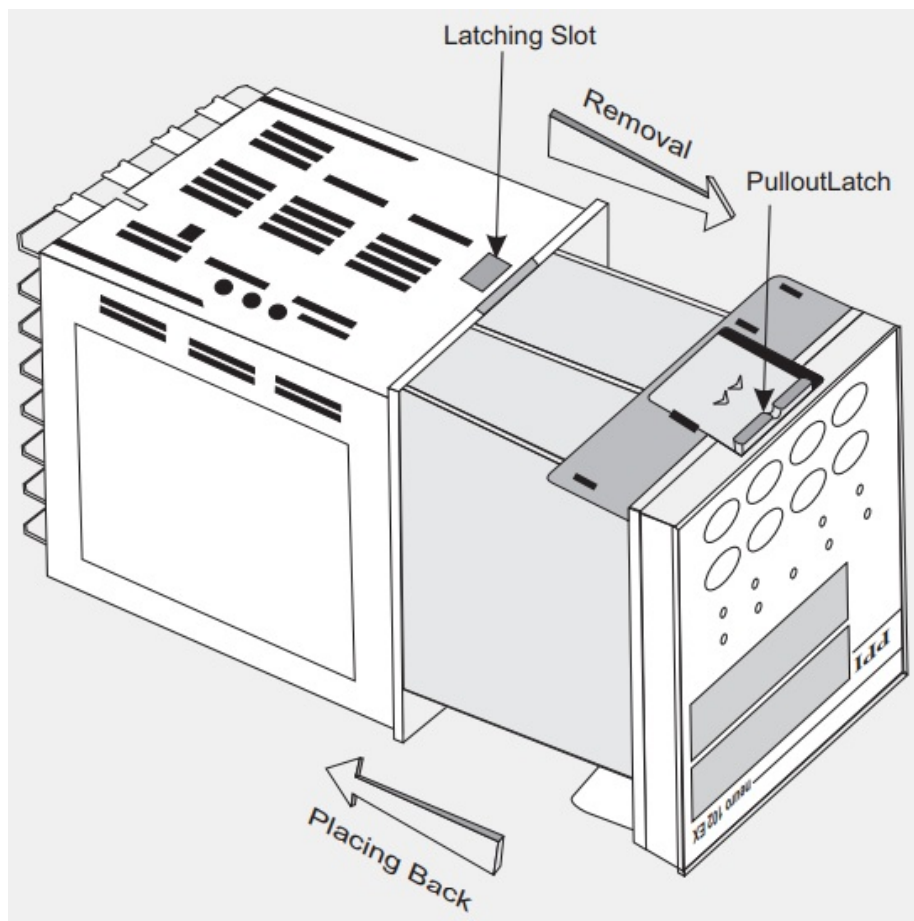
PV Error Indications

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

ELECTRICAL CONNECTIONS



ENCLOSURE ASSEMBLY

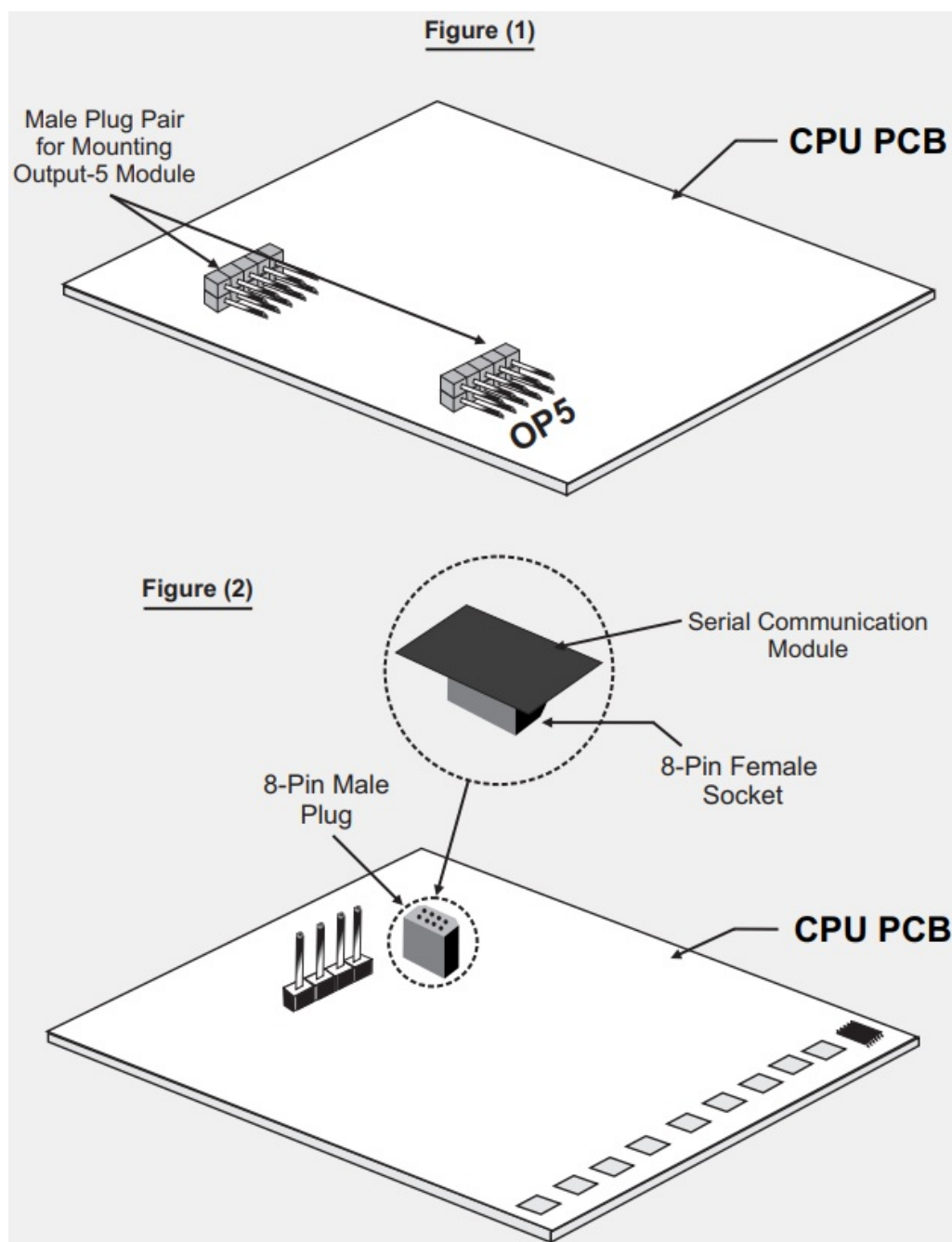


MOUNTING DETAILS

OUTPUT-5 & SERIAL COMM. MODULE

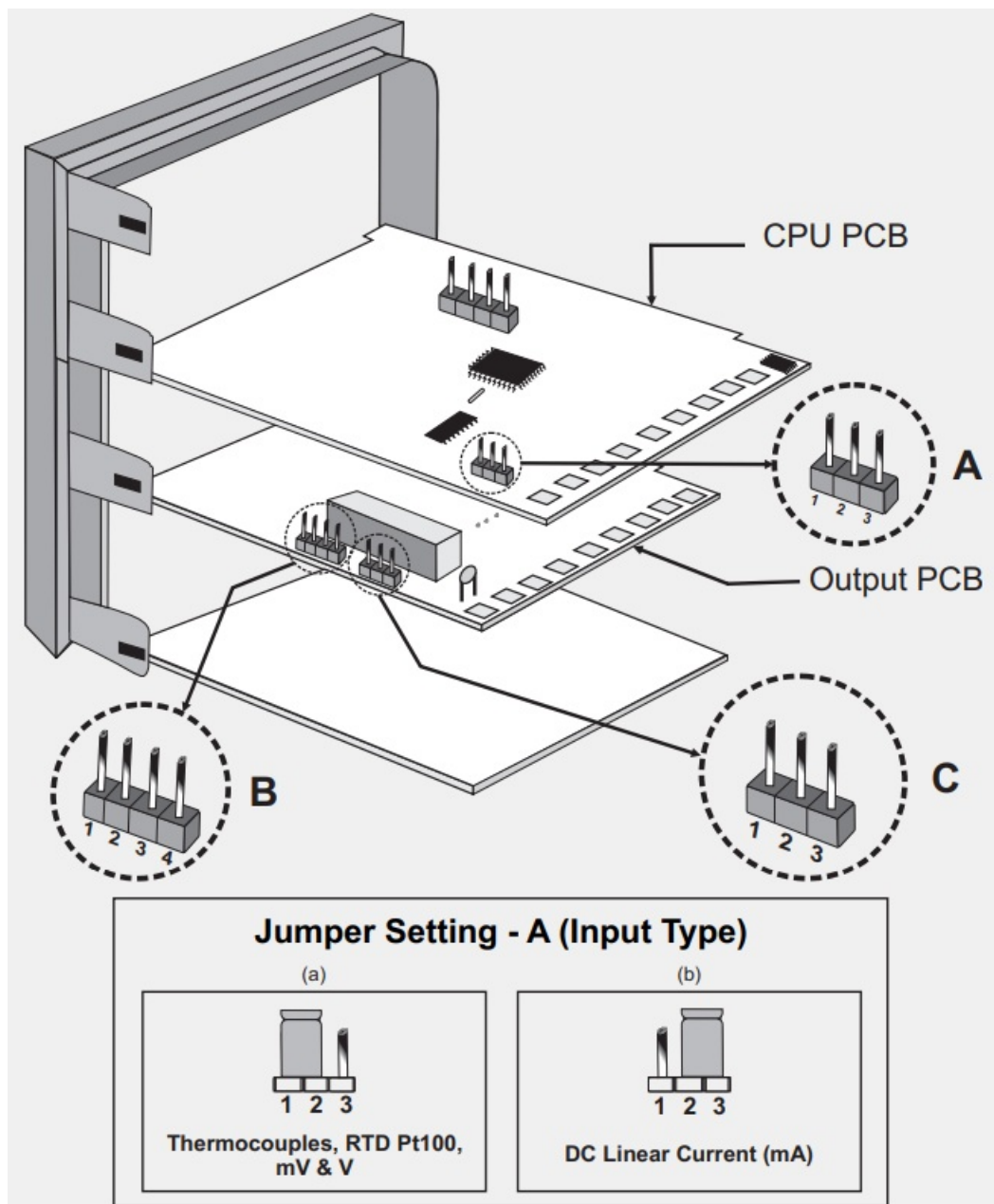
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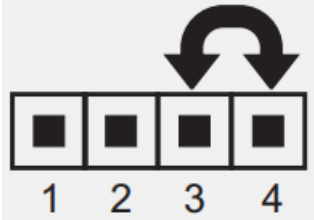
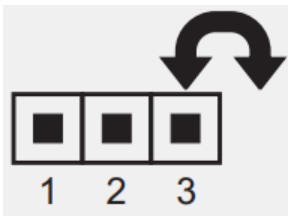
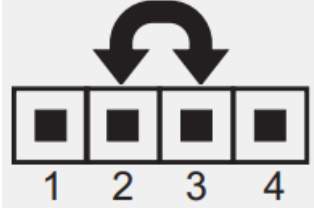
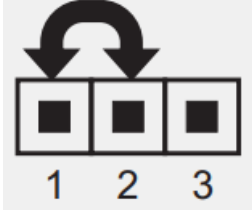
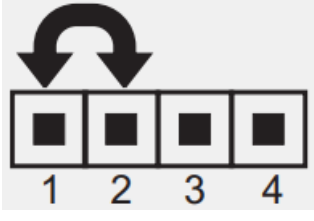
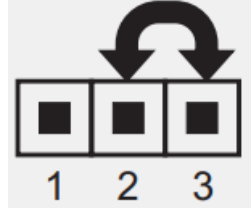
The Output-5 Module & Serial Communication Module are mounted on either side of CPU PCB as shown in figures (1) & (2) below.



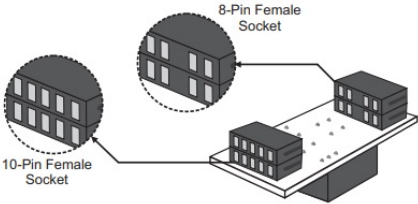
JUMPER SETTINGS

INPUT TYPE & OUTPUT-1



Output Type	Jumper Setting – B	Jumper Setting – C
Relay		
SSR Drive		
DC Linear Current (or Voltage)		

JUMPER SETTINGS & MOUNTING DETAILS
OUTPUT-2,3 & 4 MODULE

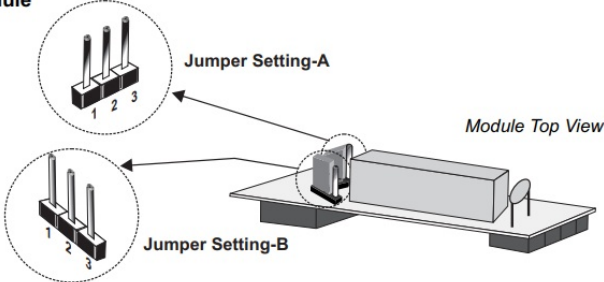


10-Pin Female Socket

8-Pin Female Socket

Module Bottom View

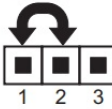
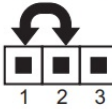
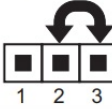
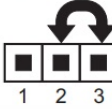
Relay / SSR Module

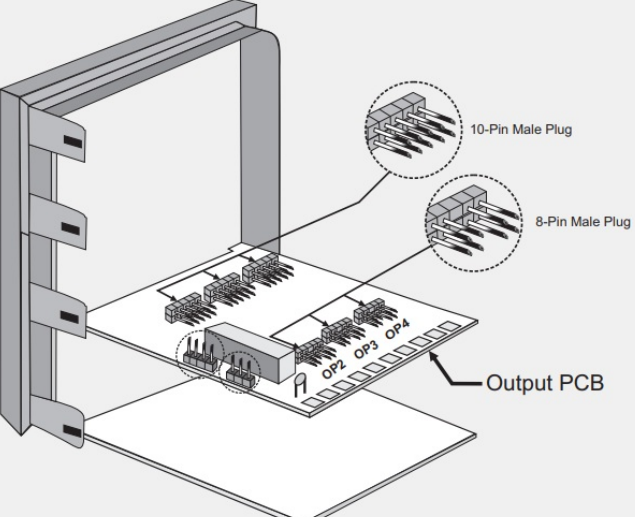


Jumper Setting-A

Jumper Setting-B

Module Top View

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

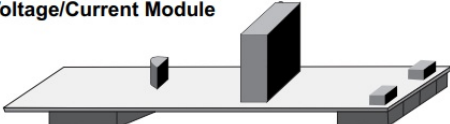


10-Pin Male Plug

8-Pin Male Plug

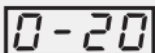
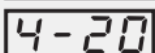
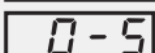
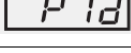
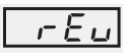
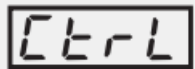
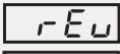
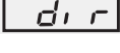
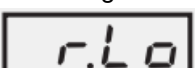
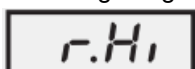
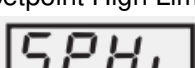
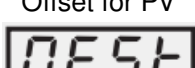
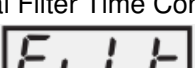
Output PCB

DC Voltage/Current Module



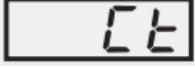
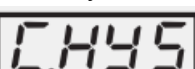
CONFIGURATION PARAMETERS: PAGE 12

Parameters	Settings (Default Value)
------------	--------------------------

Control Output (OP1) Type 	 Relay  SSR  0 - 20mA  4 - 20mA  0 - 5 V  0 - 10 V (Default : Relay)
Control Action 	 On-Off  Pulse  PID  (Default : PID)
Control Logic 	 Reverse  Direct (Default : Reverse)
Input Type 	Refer Table 1 (Default : Type K)
PV Resolution 	Refer Table 1 (Default : 1)
PV Units 	 °C  °F (Default : °C)
PV Range Low 	-19999 to PV Range High (Default : 0)
PV Range High 	PV Range Low to 9999 (Default : 1000)
Setpoint Low Limit 	Min. Range for the selected Input Type to Setpoint High Limit (Default : -200.0)
Setpoint High Limit 	Setpoint Low Limit to Max. Range for the selected Input Type (Default : 1376.0)
Offset for PV 	-199 to 999 or -1999.9 to 9999.9 (Default : 0)
Digital Filter Time Constant 	0.5 to 60.0 Seconds (in steps of 0.5 Seconds) (Default : 2.0 Sec.)

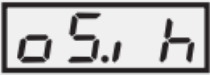
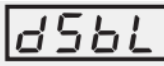
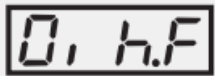
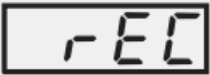
Sensor Break Output Power 	0 to 100 or -100.0 to 100.0 (Default : 0)
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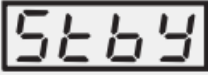
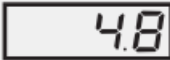
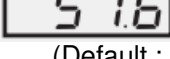
CONTROL PARAMETERS: PAGE 10

Parameters	Settings (Default Value)
Proportional Band 	0.1 to 999.9 Units (Default : 50 units)
Integral Time 	0 to 3600 Seconds (Default : 100 Sec.)
Derivative Time 	0 to 600 Seconds (Default : 16 Sec.)
Cycle Time 	0.5 to 100.0 Seconds (in steps of 0.5 secs.) (Default : 10 .0 Sec.)
Relative Cool Gain 	0.1 to 10.0 (Default : 1.0)
Cool Cycle Time 	0.5 to 100.0 Seconds (in steps of 0.5 secs.) (Default : 10 .0 sec.)
Hysteresis 	1 to 999 or 0.1 to 999.9 (Default : 0.2)
Parameters	Settings (Default Value)
Pulse Time 	Pulse ON Time to 120.0 Seconds (Default : 2.0 sec.)
ON Time 	0.1 to Value set for Pulse Time (Default : 1.0)
Cool Hysteresis 	1 to 999 or 0.1 to 999.9 (Default : 2)
Cool Pulse Time 	Cool ON Time to 120.0 Seconds (Default : 2.0)

Cool ON Time 	0.1 to Value set for Cool Pulse Time (Default : 1.0)
Heat Power Low 	0 to Power High (Default : 0)
Heat Power High 	Power Low to 100% (Default : 100.0)
Cool Power Low 	0 to Cool Power High (Default : 0)
Cool Power High 	Cool Power Low to 100% (Default : 100)

SUPERVISORY PARAMETERS: PAGE 13

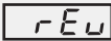
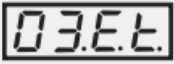
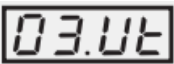
Parameters	Settings (Default Value)
Self-Tune Command 	 No  Yes (Default : No)
Overshoot Inhibit 	 Disable  Enable (Default : Disable)
Overshoot Inhibit Factor 	1.0 to 2.0 (Default : 1.0)
Auxiliary Setpoint 	 Disable  Enable (Default : Disable)
Recorder (Retransmission) Output 	 Disable  Enable (Default : Disable)

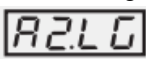
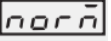
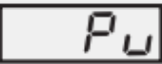
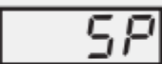
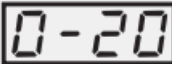
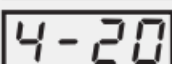
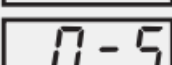
SP Adjustment on Lower Readout 	 Disable  Enable (Default : Enable)
SP Adjustment on Operator Page 	 Disable  Enable (Default : Enable)
Manual Mode 	 Disable  Enable (Default : Disable)
Alarm SP Adjustment on Operator Page 	 Disable  Enable (Default: Disable)
Standby Mode 	 Disable  Enable (Default: Disable)
Profile Abort Command on Operator Page 	 Disable  Enable (Default : Disable)
Baud Rate 	 4800  9600  19200  38400  57600 (Default : 9.6)

Communication Parity PAR.	none None Even Even Odd Odd (Default : Even)
Controller ID Number Id	1 to 127 (Default : 1)
Communication Write Enable Con.E	no No YES Yes (Default : No)

OP2 & OP3,OP4,OP5 FUNCTION PARAMETERS: PAGE 15

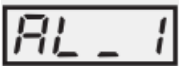
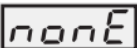
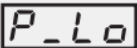
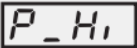
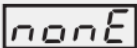
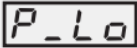
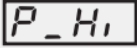
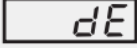
Parameters	Settings (Default Value)
Output-2 Function Selection OP2.F	none None EOP End Of Profile CLon Cool Control (Default : None)
Output-2 Type OP2.t	RLY Relay SSR SSR 0-20 0 - 20mA 4-20 4 - 20mA 0-5 0 - 5 V 0-10 0 - 10 V (Default : Relay)
OP2 Event Status OP2.E.S	On ON OFF OFF (Default: ON)
OP2 Event Time OP2.E.t	0 to 9999 (Default : 0)
OP2 Event Time Units OP2.Ut	SEC Seconds min Minutes Hour Hours (Default : Seconds)
Output-3 Function Selection OP3.F	none None ALr Alarm EOP End of Profile (Default : Alarm)

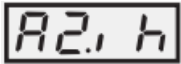
Alarm-1 Logic 	 Normal  Reverse (Default : Normal)
OP3 Event Status 	 ON  OFF (Default : ON)
OP3 Event Time 	0 to 9999 (Default : 0)
OP3 Event Time Units 	 Seconds  Minutes  Hours (Default : Seconds)

Parameters	Settings (Default Value)
Alarm-2 Logic 	 Normal  Reverse (Default : Normal)
Recorder Transmission Type 	 Process Value  Setpoint (Default : Process Value)
Recorder Output Type 	 0 to 20mA  4 to 20mA  0 to 5 Volts  0 to 10 Volts (Default: 0 to 20mA)
Recorder Low 	Min. to Max. Range Specified for the Selected Input Type (Default : -199)
Recorder High 	Min. to Max. Range Specified for the Selected Input Type (Default : 1376)

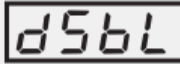
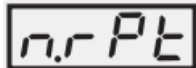
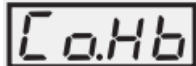
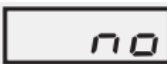
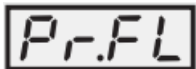
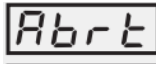
ALARM PARAMETERS: PAGE 11

Parameters	Settings(Default Value)
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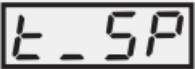
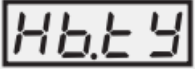
Alarm-1 Type 	 None  Process Low  Process High  Deviation Band  Window Band (Default : None)
Alarm-1 Setpoint 	Min. to Max. Range specified for the selected Input Type (Default : Min or Max Range)
Alarm-1 Deviation Band 	-999 to 999 or -999.9 to 999.9 (Default : 5.0)
Alarm-1 Window Band 	3 to 999 or 0.3 to 999.9 (Default : 5.0)
Alarm-1 Hysteresis 	1 to 999 or 0.1 to 999.9 (Default : 2)
Alarm-1 Inhibit 	  (Default : Yes)
Alarm-2 Type 	 None  Process Low  Process High  Deviation Band  Window Band (Default : None)
Alarm-2 Setpoint 	Min. to Max. Range specified for the selected Input Type (Default : Min or Max Range)
Alarm-2 Deviation Band 	-999 to 999 or -999.9 to 999.9 (Default : 5.0)
Alarm-2 Window Band 	3 to 999 or 0.3 to 999.9 (Default : 5.0)
Alarm-2 Hysteresis 	1 to 999 or 0.1 to 999.9 (Default : 2.0)

Alarm-2 Inhibit 	  (Default : Yes)
--	--

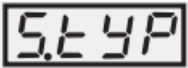
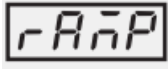
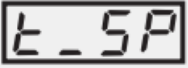
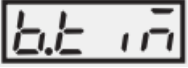
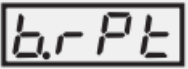
PROFILE CONFIGURATION PARAMETERS: PAGE 16

Parameters	Settings (Default Value)
Profile mode selection 	 Disable  Enable (Default : Disable)
Number of Segments 	1 to 16 (Default : 16)
Number of Repeats 	1 to 9999 (Default : 1)
Common Holdback 	 No  Yes (Default : Yes)
Output Off 	 No  Yes (Default: No)
Power Fail Strategy 	 Abort  Continue (Default: Continue)

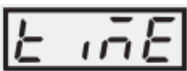
PROFILE SETTING PARAMETERS: PAGE 14

Parameters	Settings (Default Value)
Segment Number 	1 to 16 (Default : 1)
Target Setpoint 	Min. to Max. Range specified for the selected Input Type (Default : -199)
Time Interval 	0 to 9999 Minutes (Default : 0)
Holdback Type 	 None  Up  Down  Both (Default: None)
Holdback Value 	1 to 999 (Default : 1)

PROFILE STATUS INFORMATION: PAGE 1

Lower Readout Prompt	Upper Readout Information
	Active Segment Number
	Segment Type  
	Target Setpoint
	Ramping Setpoint
	Balance Time
	Balance Repeats

ON-LINE ALTERATION PARAMETERS: PAGE 2

Parameters	Effect on the running segment
Time Interval 	RAMP:- Altering the time interval shall immediately affect the 'Ramp Rate' for the current segment. SOAK:- Elapsed time so far is ignored and the soak timer starts counting down to 0 from the altered time interval value.
Holdback Type 	The modified Holdback Band Type is applied immediately on the current segment.
Holdback Value 	The modified Holdback Band Value is applied immediately on the current segment.

USER LINEARISATION PARAMETERS: PAGE 33

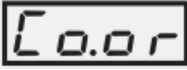
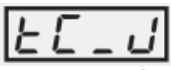
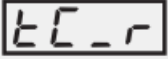
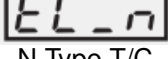
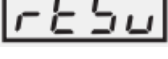
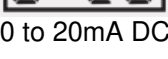
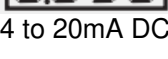
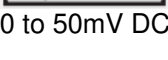
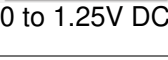
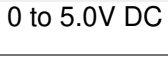
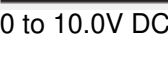
Parameters	Effect on the running segment
Code 	0 to 9999 (Default : 0)
User Linearisation 	 Disable  Enable (Default: Disable)
Total Break Points 	1 to 32 (Default : 2)
Break Point Number 	1 to 32 (Default : 1)
Actual Value for Break Point (X co-ord) 	-1999 to 9999 (Default: Undefined)
Derived Value for Break Point (Y co-ord) 	-1999 to 9999 (Default : Undefined)

TABLE- 1

Option	Range (Min. to Max.)	Resolution
 J Type T/C	0 to +960°C / +32 to +1760°F	

 K Type T/C	-200 to +1376°C / -328 to +2508°F	Fixed 1°C / 1°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 +3218°F	
 N Type T/C	0 to +1300°C / +32 to +2372°F	
 Reserved for customer specific Thermocouple type not listed above.		
 RTD Pt100	-199 to +600°C / -328 to +1112°F -199.9 to or-199.9 to 999.9°F 600.0°C/	User settable 1°C / 1°F or 0.1°C / 0.1°F
 0 to 20mA DC	-1999 to +9999 units	User settable 1 / 0.1 / 0.01/ 0.001 units
 4 to 20mA DC		
 0 to 50mV DC		
 0 to 200mV DC		
 0 to 1.25V DC		
 0 to 5.0V DC		
 0 to 10.0V DC		

1-5
1 to 5.0V DC

PPI

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Sales: 8208199048 / 8208141446

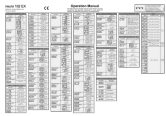
Support: 07498799226 / 08767395333

E: sales@ppiindia.net,

support@ppiindia.net

Jan 2022

Documents / Resources



[PPI Neuro 102 EX Enhanced Universal Single Loop Process Controller](#) [pdf] User Manual
Neuro 102 EX Enhanced Universal Single Loop Process Controller, Neuro 102 EX, Enhanced
Universal Single Loop Process Controller, Universal Single Loop Process Controller, Single Loop
Process Controller, Loop Process Controller, Process Controller, Controller

References

- [Factory Automation Products India | Automation Solutions in India](#)

[Manuals+](#)