

zenex Pro / zenex Pro 96

Self-Tune PID & On-Off Control
Heat (Reverse) & Cool (Direct) Control Mode
Auxiliary Control : Blower/Alarm/Compressor with Time Delay

Operation Manual

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

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I / O CONFIGURATION PARAMETERS : PAGE-10	
Parameters	Settings (Default Value)
Input Type InPt	Refer Table 1 (Default : Type K)
Temperature Display Units Unit	°C °F (Default : °C)
Temperature Range rRnG	Min. to Max. specified for the selected Input Type (Refer Table 1) (Default : 1376)
Control Output Type C_OP	Refer Table 2 (Default : Relay)
Control Mode Ctrl	On-Off PID (Default : PID)
Control Logic CLOG	Direct Reverse (Default : Reverse)
Hysteresis HYS	1 to 999°C or 0.1 to 99.9°C (Default : 2 or 0.2)
Setpoint Low Limit SPLo	Min. Range to Setpoint High for the selected Input Type (Default : -200)
Setpoint High Limit SPHi	Setpoint Low to Max. Range for the selected Input Type (Default : 1376)

SUPERVISORY PARAMETERS : PAGE-11	
Parameters	Settings (Default Value)
Tune / Optimize Command Opt	No Yes (Default : No)
Tune / Optimize Abort Command Abt	No Yes (Default : No)
Overshoot Inhibit OS.In	Disable Enable (Default : Disable)
Overshoot Inhibit Factor O.h.F	1.0 to 2.0 (Default : 1.2)
Self-tune on Setpoint Change tn.SP	Disable Enable (Default : Disable)
Offset for PV OFSE	-1999 to 9999 or -199.9 to 999.9 (Default : 0)
Digital Filter for PV FLtr	0.5 to 25.0 Seconds in steps of 0.5 Seconds (Default : 1.0)
Permission for OP2/OP3 Setpoint Editing on Operator Page SPOP	Disable Enable (Default : Enable)
Soak Abort Command on Operator Page SOXA	Disable Enable (Default : Enable)
Soak Time Adjustment on Operator Page SOKE	Disable Enable (Default : Enable)

Parameters	Settings (Default Value)
Utility Option OPTn	None Soak Start Water Level Low Detection (Default : None)
Water Level-Low Detection Logic LLO	Open Close (Default : Open)
Slave ID Id	1 to 127 (Default : 1)
Baud Rate bAud	4800, 9600, 19200 (Default : 9600)
Parity PARi	None Even Odd (Default : Even)
Communication Write Enable ConE	No Yes (Default : Yes)

PID CONTROL PARAMETERS : PAGE-14	
Parameters	Settings (Default Value)
% Output Power OUT.P	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 : PAGE-12	
Parameters	Settings (Default Value)
Output-2 Function Selection OP2.F	None Alarm Control Blower (Default : None)
OP2 Function : Alarm-1	
Type AL_1	Process Low Process High Deviation Band Window Band End of Soak (Default : Process Low)
Setpoint A1SP	Min. to Max. Range for the selected Input type (Default : 0)
Deviation Band A1dE	-199 to 999 or -199.9 to 999.9 (Default : 0)
Window Band A1bA	3 to 999 or 0.3 to 999.9 (Default : 3)

Parameters	Settings (Default Value)
Logic ALG	Normal Reverse (Default : Normal)
Inhibit ALIn	Yes No (Default : Yes)
Alarm Timer ALt	5 to 250 Seconds (Default : 10)
OP2 Function : Auxiliary Control	
Parameters	Settings (Default Value)
Offset Value SP.2	(Min. Range - SP) to (Max. Range - SP) specified for the selected Input Type (Default : 0)
Hysteresis HYS.2	1 to 999 or 0.1 to 999.9 (Default : 2 or 0.2)
Control Logic LOG.2	Normal Reverse (Default : Normal)
OP2 Function : Blower / Compressor Control	
Offset Value bL.SP	0 to 250 or 0.0 to 25.0 (Default : 0)
Hysteresis bL.HY	1 to 250 or 0.1 to 250.0 (Default : 2 or 0.2)
Time Delay bLdLY	00.00 to 10.00 Min. Sec (in steps of 5 Seconds) (Default : 00.00)

OP3 FUNCTION PARAMETERS : PAGE-13	
Parameters	Settings (Default Value)
Output-3 Function Selection OP3.F	None Alarm Control Water Level Low Alarm (Default : None)
OP3 Function : Alarm-2	
Type AL_2	Process Low Process High Deviation Band Window Band End of Soak (Default : Process Low)
Setpoint A2.SP	Min. to Max. Range for the selected Input type (Default : 0)
Deviation Band A2.dE	-199 to 999 or -199.9 to 999.9 (Default : 0)
Window Band A2.bA	3 to 999 or 0.3 to 999.9 (Default : 3)
Logic A2LG	Normal Reverse (Default : Normal)
Inhibit A2.In	Yes No (Default : Yes)
Alarm Timer A2t	5 to 250 Seconds (Default : 10)

OP3 Function : Auxiliary Control	
Offset Value SP.3	(Min. Range - SP) to (Max. Range - SP) specified for the selected Input Type (Default : 0)
Hysteresis HYS.3	1 to 999 or 0.1 to 999.9 (Default : 2 or 0.2)
Control Logic LOG.3	Normal Reverse (Default : Normal)
SOAK TIMER PARAMETERS : PAGE-15	
Parameters	Settings (Default Value)
Timer Enable SEnb	No Yes (Default : No)
Time Units Unit	Min:Sec Hours:Min Hours (Default : Min:Sec)
Time Duration SoKE	00.05 to 60:00 Min:Sec 00.05 to 99:55 Hrs:Min 1 to 9999 Hours (Default : 00.10 Min:Sec)
Timer View tvi.Y	Balance Elapsed (Default : Balance)
Timer-Start Band S.bnd	0 to 9999 or 0.0 to 999.9 (Default : 5 or 0.5)
Holdback Strategy HOLD	None Up Down Both (Default : None)
Hold Band H.bnd	1 to 9999 or 0.1 to 999.9 (Default : 5 or 0.5)
Switch-Off Control Output at Timer End OPOF	No Yes (Default : No)
Power-fail Recovery Method Pr.FL	Abort (Re)Start Continue (Default : Continue)

OPERATOR PAGE AND PARAMETERS	
Parameters	Settings
Timer Start Command Stert	No Yes
Timer Abort Command Abt	No Yes
Time Duration SoKE	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 A1.SP	Min. to Max. Range for the Input Type
Alarm-1 Deviation Band A1.dE	-199 to 999 or -199.9 to 999.9
Alarm-1 Window Band A1.bA	3 to 999 or 0.3 to 999.9

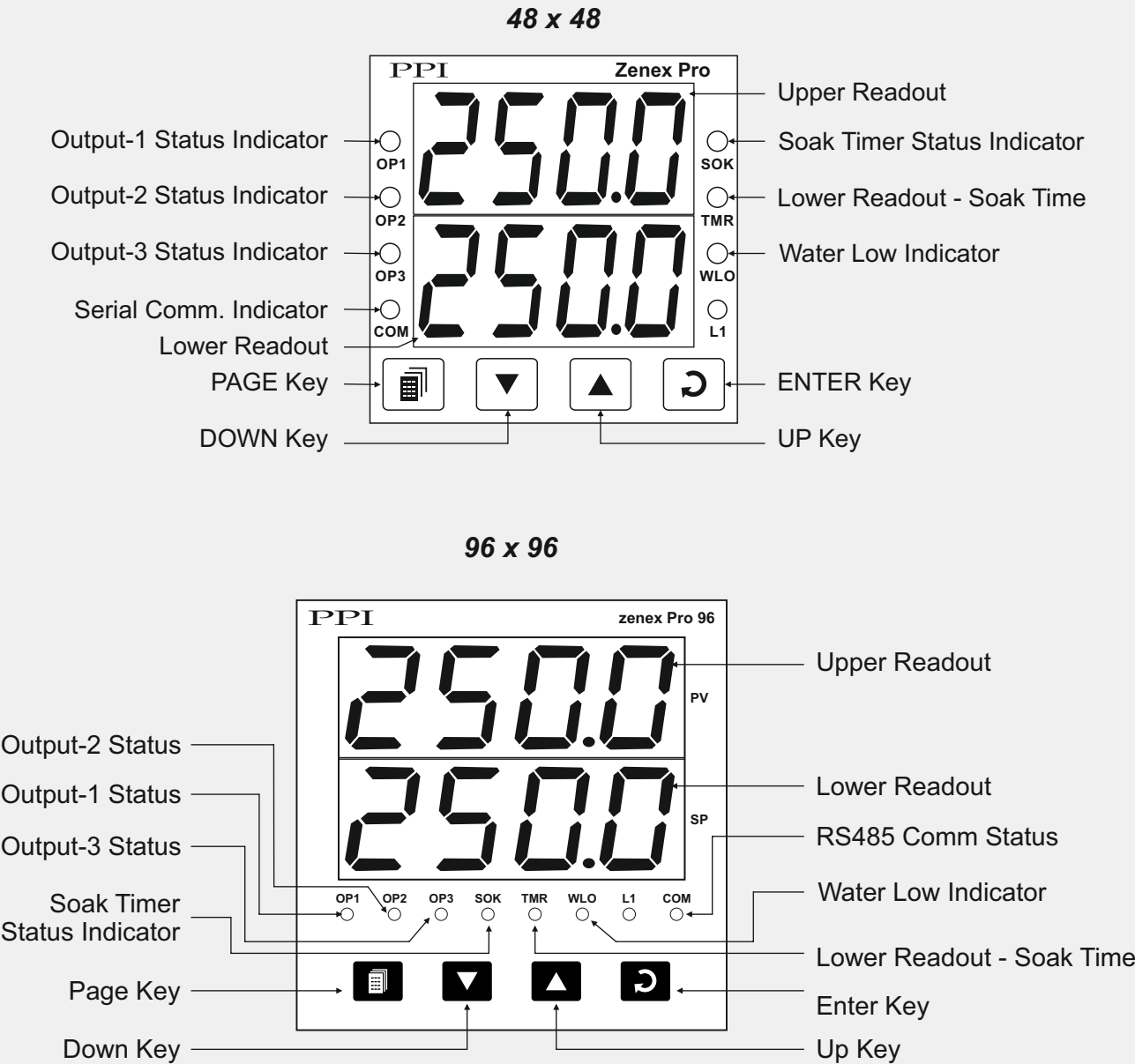
Parameters	Settings
OP2 Function : Auxiliary Control	
Auxiliary Control Setpoint SP2	(Min. Range - SP) to (Max. Range - SP) for selected Input
OP2 Function : Blower / Compressor Control	
Blower / Compressor Setpoint bL.SP	0 to 250 or 0.0 to 25.0
OP3 Function : Alarm-2	
Alarm-2 Setpoint A2.SP	Min. to Max. Range for the Input Type
Alarm-2 Deviation Band A2.dE	-1999 to 9999 or -199.9 to 999.9
Alarm-2 Window Band A2.bA	3 to 999 or 0.3 to 99.9
OP3 Function : Auxiliary Control	
Auxiliary Control Setpoint SP3	(Min. Range - SP) to (Max. Range - SP) for selected Input
Control Setpoint (SP) Locking	
Setpoint Locking SLOC	No Yes

TABLE - 1		
Option	Range (Min. to Max.)	Resolution
EC_U J Type T/C	0 to +960°C / +32 to +1760°F	Fixed 1°C / 1°F
EC_P K Type T/C	-200 to +1376°C / -328 to +2508°F	
EC_E T Type T/C	-200 to +385°C / -328 to +725°F	
EC_r R Type T/C	0 to +1770°C / +32 to +3218°F	
EC_S S Type T/C	0 to +1765°C / +32 to +3209°F	
EC_b B Type T/C	0 to +1825°C / +32 to +3092°F	
EC_n N Type T/C	0 to +1300°C / +32 to +2372°F	0.1°C / 0.1°F
rted 3-wire, RTD Pt100	-199 to +600°C / -328 to +1112°F	
rted.1 3-wire, RTD Pt100	-199.9 to 600.0°C / -199.9 to 999.9°F	

TABLE - 2		
Option	What it means	Remarks
rlY SSr	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



Keys Operation

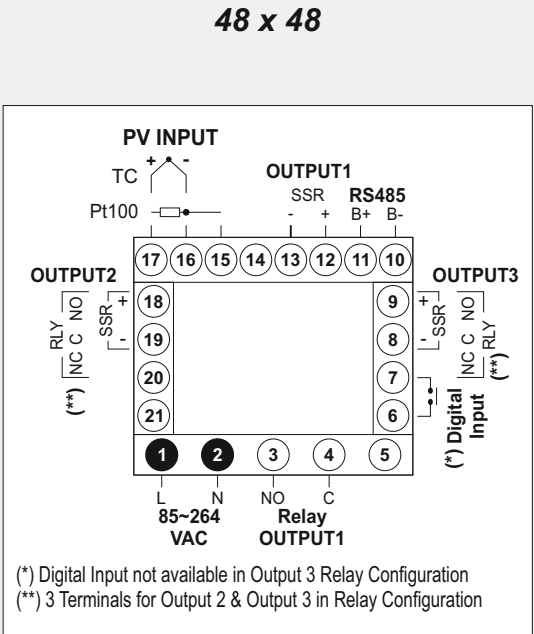
Symbol	Key	Function
	PAGE	Press to enter or exit set-up mode.
	DOWN	Press to decrease the parameter value. Pressing once decreases the value by one count; keeping pressed speeds up the change.
	UP	Press to increase the parameter value. Pressing once increases the value by one count; keeping pressed speeds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

PV Error Indications

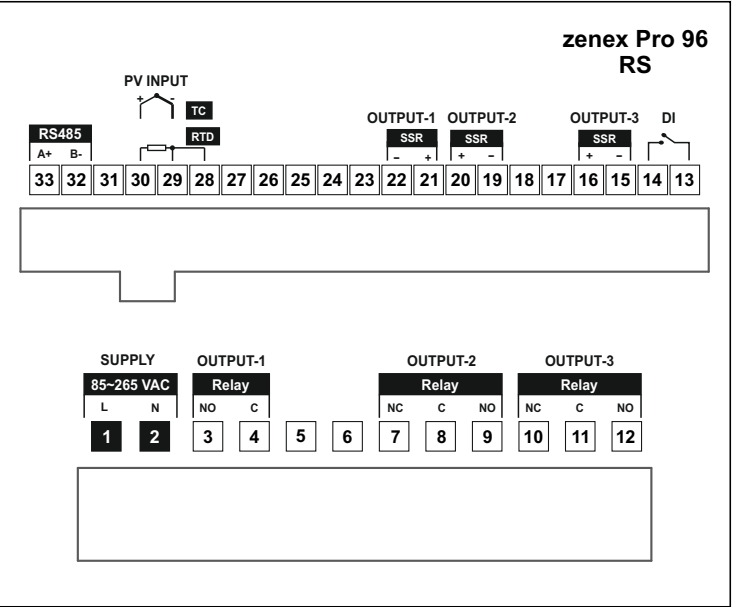
Message	PV Error Type
	Over-range (PV above Max. Range)
	Under-range (PV below Min. Range)
	Open (Sensor open / broken)

ELECTRICAL CONNECTIONS

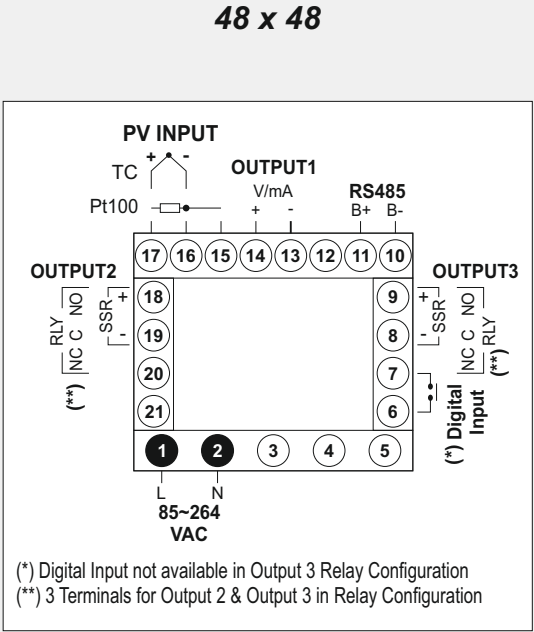
Relay / SSR Control Output Version



96 x 96



DC mA/V Control Output Version



96 x 96

