

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 °C °F °F (Default : °C)
Temperature Range RANG	Min. to Max. specified for the selected Input Type (Refer Table 1) (Default : 1376)
Control Output Type C_OUT	Refer Table 2 (Default : Relay)
Control Mode CTRL	OnOff On-Off PID PID (Default : PID)
Control Logic CLOG	dir Direct rev 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 No YES Yes (Default : No)
Tune / Optimize Abort Command Abt	no No YES Yes (Default : No)
Overshoot Inhibit OS.ih	dsbl Disable enbl Enable (Default : Disable)
Overshoot Inhibit Factor O.hf	1.0 to 2.0 (Default : 1.2)
Self-tune on Setpoint Change enSP	dsbl Disable enbl 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	dsbl Disable enbl Enable (Default : Enable)
Soak Abort Command on Operator Page SOXA	dsbl Disable enbl Enable (Default : Enable)
Soak Time Adjustment on Operator Page SOKE	dsbl Disable enbl Enable (Default : Enable)

Parameters	Settings (Default Value)
Utility Option OPTn	none None stbt Soak Start LEUL Water Level Low Detection (Default : None)
Water Level-Low Detection Logic LLD	OPEN Open CLOS Close (Default : Open)
Slave ID id	1 to 127 (Default : 1)
Baud Rate BAUD	4800, 9600, 19200 (Default : 9600)
Parity PARi	none None Even Even Odd Odd (Default : Even)
Communication Write Enable ConE	no No YES 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 None ALrn Alarm CTRL Control BLOR Blower (Default : None)
OP2 Function : Alarm-1	
Type AL-1	P_Lo Process Low P_Hi Process High dE Deviation Band band Window Band EOs End of Soak (Default : Process Low)
Setpoint ALSP	Min. to Max. Range for the selected Input type (Default : 0)
Deviation Band ALdE	-199 to 999 or -199.9 to 999.9 (Default : 0)
Window Band ALbA	3 to 999 or 0.3 to 999.9 (Default : 3)

Parameters	Settings (Default Value)
Logic ALLO	norm Normal rev Reverse (Default : Normal)
Inhibit ALih	YES Yes no No (Default : Yes)
Alarm Timer ALtn	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 CLOG.2	norm Normal rev Reverse (Default : Normal)
OP2 Function : Blower / Compressor Control	
Offset Value BLSP	0 to 250 or 0.0 to 25.0 (Default : 0)
Hysteresis BLHY	1 to 250 or 0.1 to 250.0 (Default : 2 or 0.2)
Time Delay bdLY	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 None ALrn Alarm CTRL Control LLD Water Level Low Alarm (Default : None)
OP3 Function : Alarm-2	
Type AL-2	P_Lo Process Low P_Hi Process High dE Deviation Band band Window Band EOs End of Soak (Default : Process Low)
Setpoint A2SP	Min. to Max. Range for the selected Input type (Default : 0)
Deviation Band A2dE	-199 to 999 or -199.9 to 999.9 (Default : 0)
Window Band A2bA	3 to 999 or 0.3 to 999.9 (Default : 3)
Logic A2LO	norm Normal rev Reverse (Default : Normal)
Inhibit A2.ih	YES Yes no No (Default : Yes)
Alarm Timer A2tn	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 CLOG.3	norm Normal rev Reverse (Default : Normal)

SOAK TIMER PARAMETERS : PAGE-15	
Parameters	Settings (Default Value)
Timer Enable SEnb	no No YES Yes (Default : No)
Time Units UNIT	nnSS Min:Sec HHnn Hours:Min HoUr Hours (Default : Min:Sec)
Time Duration SoPE	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 Sbnd	0 to 9999 or 0.0 to 999.9 (Default : 5 or 0.5)
Holdback Strategy HOLD	none None UP Up dn Down both Both (Default : None)
Hold Band Hbnd	1 to 9999 or 0.1 to 999.9 (Default : 5 or 0.5)
Switch-Off Control Output at Timer End OPOF	no No YES Yes (Default : No)
Power-fail Recovery Method Pr.FL	Abt Abort stbt (Re)Start Cont Continue (Default : Continue)

OPERATOR PAGE AND PARAMETERS	
Parameters	Settings
Timer Start Command stbt	no No YES Yes
Timer Abort Command Abt	no No YES Yes
Time Duration SoPE	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 ALSP	Min. to Max. Range for the Input Type
Alarm-1 Deviation Band ALdE	-199 to 999 or -199.9 to 999.9
Alarm-1 Window Band ALbA	3 to 999 or 0.3 to 999.9

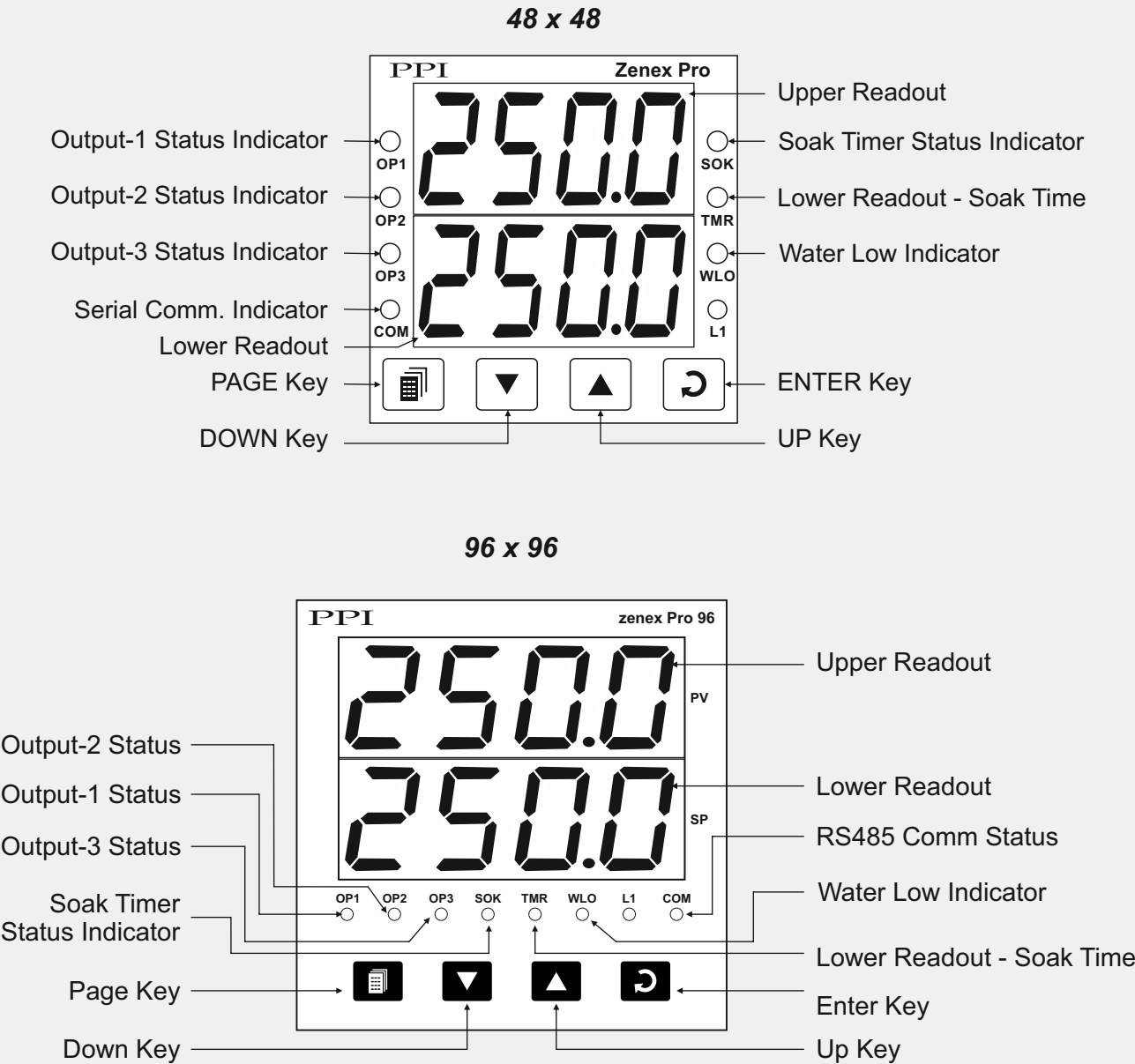
Parameters	Settings
OP2 Function : Auxiliary Control	
Auxiliary Control Setpoint SP2	(Min. Range - SP) to (Max. Range - SP) for selected Input
OP2 Function : Blower / Compressor Control	
Blower / Compressor Setpoint BLSP	0 to 250 or 0.0 to 25.0
OP3 Function : Alarm-2	
Alarm-2 Setpoint A2SP	Min. to Max. Range for the Input Type
Alarm-2 Deviation Band A2dE	-1999 to 9999 or -199.9 to 999.9
Alarm-2 Window Band A2bA	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 No YES 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	
rtd 3-wire, RTD Pt100	-199 to +600°C / -328 to +1112°F	0.1°C / 0.1°F
rtd.i 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

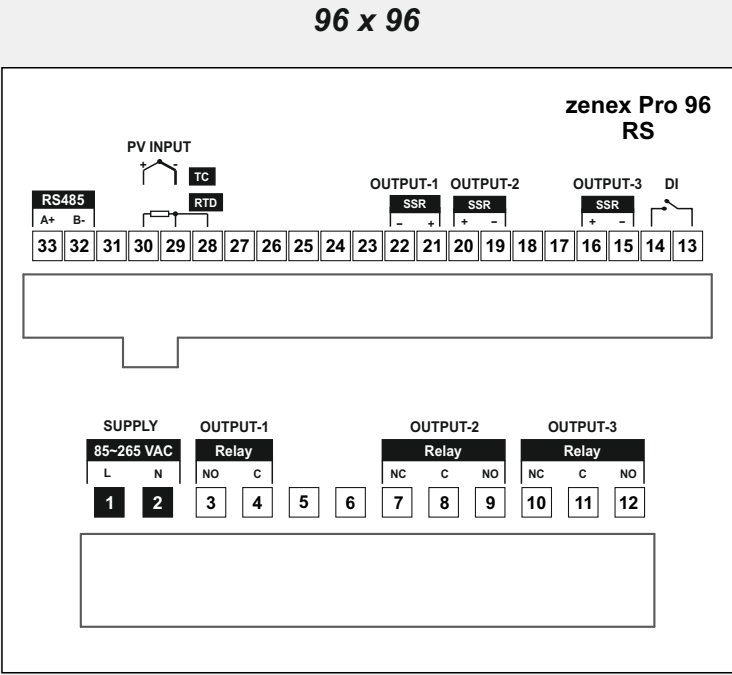
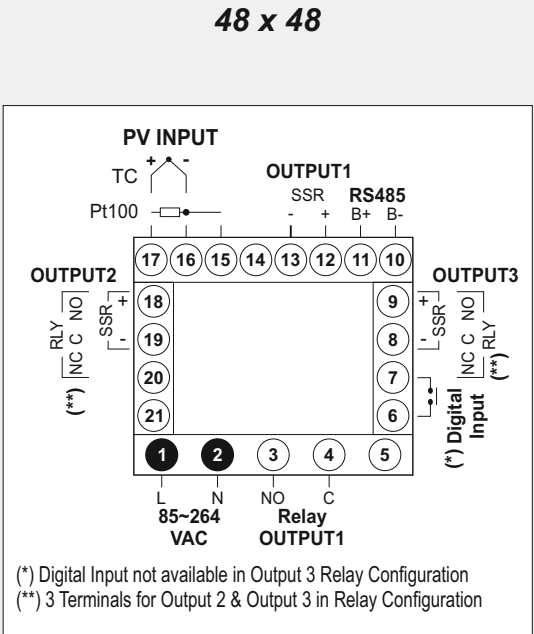
Symbol	Key	Function
	PAGE	Press to enter or exit set-up mode.
	DOWN	Press to decrease the parameter value. Pressing once decreases the value by one count; keeping pressed speeds up the change.
	UP	Press to increase the parameter value. Pressing once increases the value by one count; keeping pressed speeds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



DC mA/V Control Output Version

