

Enhanced Autoclave Sterilization Controller

Clavex Pro / Clavex Pro 96

Dual Analog Input Channels for Temperature & Pressure Measurement
Digital Inputs for Cycle Start & Low Water Level Detection
Digital Outputs (SSR Drive/Relay) for Heating, Air Exhaust & Alarm
1/16 DIN (48x48) & 1/4 DIN (96x96) Size Options

Process Precision Instruments

Vasai Road (E), Dist. Palghar - 401210,
Maharashtra, India

www.ppiindia.net



Salient Features

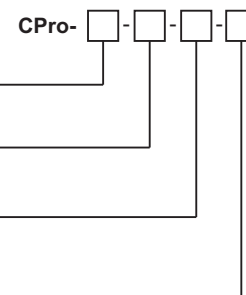
- 1/16 DIN (48x48) & 1/4 DIN (96x96) Size Options
- 2 Rows of Bright Green 7-Segment LED Display, Designed for Sunlight Readability (0.36" for 48 x 48 / 0.8" for 96 x 96)
- RTD Pt100 Temperature Input with 0.1°C or 1°C Resolution
- DC mA / V Input for Pressure Measurement (96x96 only)
- Programmable Input Signal Conditioning (Digital Filter & Zero Offset)
- Digital Inputs for Low Water Level Detection & Remote Cycle Start Command
- Digital Outputs for Heating, Air Exhaust & Alarm
- Programmable Sterilization Timer with Guaranteed Soak Time
- High Temperature Safety Alarm
- Automatic Cycle Abortion at High Temperature Limit
- Computed Saturated Steam Pressure Display
- RS485 MODBUS RTU Serial Communication Port
- Universal Supply Voltage : 85~264 VAC, 50/60 Hz
- DIN Standard Dimensions (mm) :
Clavex Pro : 48(H) X 48(W) X 94(D)
Clavex Pro 96 : 96(H) X 96(W) X 84(D)
- Available in Flame-proof (Gas Group IIA & IIB) Enclosure

General Information

Product Type Enhanced Autoclave Sterilization Controller

Ordering Code

Size	48 : 48 x 48 96 : 96 x 96
Heater Output	1 : Relay 2 : SSR
Air Exhaust Output	1 : Relay 2 : SSR
Option (96x96 only)	0 : None 1 : Pressure Input (mA/V)



Example Code : CPro-48-2-1-0

Size : 48 x 48

Heater Output : SSR

Air Exhaust Output : Relay

Option : None

Quantity 1 Unit

Accessories (Optional) USB to RS485 Converter

Enhanced Autoclave Sterilization Controller

Operator Interface

Display	Clavex Pro : 2 Rows of 4 Digits, 0.36" Height Luminous Green, 7 Segment LED Clavex Pro 96 : 2 Rows of 4 Digits, 0.8" Height Luminous Green, 7 Segment LED
Status Indicators	8 Red LEDs
Keys	4 Tactile Switches PAGE, DOWN, UP, ENTER

PV Inputs

Temperature Input	RTD Pt100, 3 wire
Pressure Input (Optional)	User Programmable : 0-20 mA, 4-20 mA, 0-5 V, 0-10 V, 1-5 V (Available only in Clavex Pro 96)
Transmitter Excitation	24 VDC @ 30 mA (Available only if Pressure Input is ordered)
Accuracy	RTD Pt100 : $\pm 0.25\%$ of reading. Lead Resistance Compensation : Max. 5 Ω per Lead for 3-wire RTD DC Linear V/mA : $\pm 0.1\%$ of reading
Display Resolution	RTD Pt100 : 0.1 / 1°C (Settable) DC Linear V/mA : 0.001 / 0.01 / 0.1 / 1 Counts (Settable)
Range	RTD Pt100 : -199 to +600°C or -199.9 to 600.0°C DC Linear V/mA : Adjustable from -1999 to 9999 Counts
Zero Offset	User Adjustable over Full Range
ADC	16 Bit ($\pm 32,768$ Counts), Sigma-Delta ($\Sigma\Delta$)
Sampling Time	200mS (5 Samples per Second)
Input Resistance	> 8 M Ω for RTD Pt100 Inputs > 47 K Ω for Voltage Input 249 Ω Precision Shunt for mA Input
Input Protection	ESD : 8KV EFT : 2KV Surge : 1KV
Input Conditioning	First Order Analog R-C Low-Pass Filter & Settable Digital Low-Pass Filter

Sterilization Timer

Operation Mode	Soak Time at Sterilization Setpoint with Hold Band
Range	1 to 999 Minutes
Power-fail Recovery	Settable : Resume / Reset / Abort

Heater (Sterilization) Control

Type	ON-OFF
Mode	Heat Control
Control Parameters	Sterilization Setpoint, Hysteresis
Output	Relay or SSR (Factory Settable)

Enhanced Autoclave Sterilization Controller

Air Exhaust Control

Control Type	ON-OFF
Control Parameters	Air Outlet Temperature Setpoint
Output	Relay or SSR (Factory Settable)

Water Level Monitoring

Input	Digital Potential-free Contacts Input with programmable OPEN or CLOSE Logic.		
Function	Alarm Alert, Cycle Abort & Control Outputs Cut-off on Low Water Level Detection		
Input Protection	ESD : 8KV	EFT : 2KV	Surge : 1KV

Cycle Start Digital Input

Input	Potential-free Contacts Input with programmable OPEN or CLOSE Logic.		
Function	Start Autoclave Cycle		
Input Protection	ESD : 8KV	EFT : 2KV	Surge : 1KV

Alarms

Functions	High Temperature Deviation, End-of-Sterilization, Low Water Level
Output	Relay Change-over Contacts

Electrical Specifications for Outputs

Relay	Contact Type : Potential-free Change-over Contacts Contact Rating : 5A Resistive @ 250 VAC Contact Life : > 5,00,000 Operations at Rated Voltage / Current
SSR Drive	12 VDC @ 30 mA

Serial Communication

Port	RS485, 2-wire, Half Duplex, Start-Stop Synchronized
Protocol	MODBUS RTU
Baud Rate	Settable : 4800, 9600, 19200 bps
ID	Settable : 1 to 127
Parity	Settable : None, Even, Odd
Max. Units per Loop	31
Max. Distance	1200 Meters

Power Supply

Type	Switch Mode (SMPS)
Line Voltage	85~264 VAC, 50/60Hz
Consumption	5 VA Max

Enhanced Autoclave Sterilization Controller

Physical

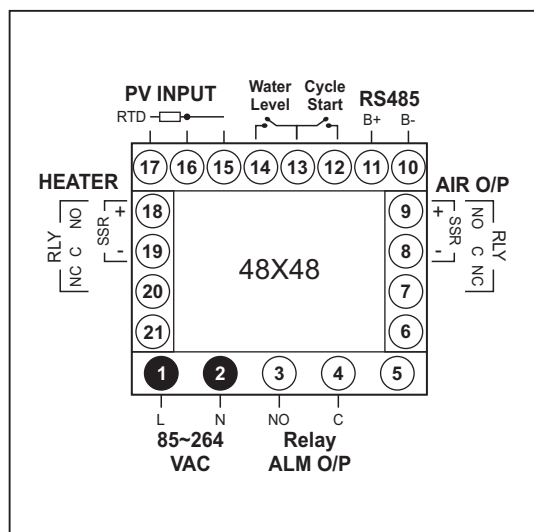
Mounting	Plug-in with Panel Mounting Clamps	
Overall Dimensions	Clavex Pro : 48(H) X 48(W) X 94(D), mm	Clavex Pro 96 : 96(H) X 96(W) X 84(D), mm
Panel Cutout	Clavex Pro : 45(H) X 45(W), mm	Clavex Pro 96 : 92(H) X 92(W), mm
Terminals	Screw Type, Pluggable	
Weight	Clavex Pro : 200 gm, Approx.	Clavex Pro 96 : 400 gm, Approx

Environmental

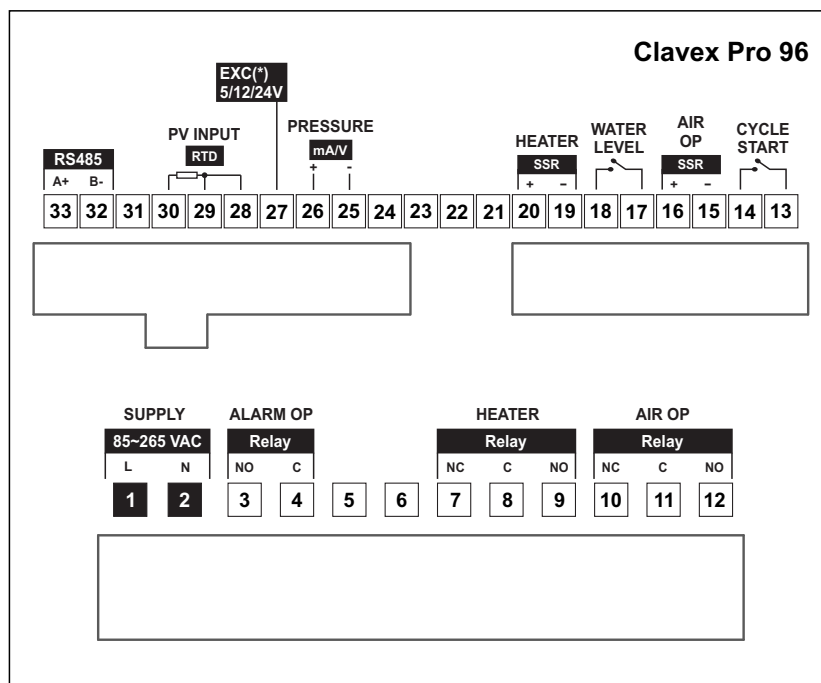
Operating Ambient	0 to 55°C & 5 to 90%RH Non-condensing	
Storage Temperature	-10 to +70°C	
EMC Standards	EN50081-2 & EN 50082-2 Generic Stds for Industrial Environment	
Safety Standards	Meets EN61010, Installation Catagory II	
Atmospheres	Not Suitable for use in Corrosive or Explosive Atmospheres. The Panel in which the Instrument is Mounted must be free of Electrically Conductive Pollution.	

Terminations

Clavex Pro : 48x48



Clavex Pro : 96x96



Process Precision Instruments (An ISO 9001 : 2008 Company)

101, Diamond Industrial Estate, Navghar, Vasai Road (E), Dist. Palghar - 401210, Maharashtra, India

Sales : 8208199048 / 8208141446 Support : 07498799226 / 08767395333

sales@ppiindia.net www.ppiindia.net