

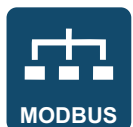
Multi-Purpose Temperature Controller with Graphic Display

Zenex Plus 96

128 X 64 Monochrome Graphic Display
 Universal Temperature Input (RTD & Thermocouple)
 Self-Tune PID / On-Off Control with Built-in Timer
 Compressor Control with Setable Time Delay
 ¼ DIN (96x96) Compact Enclosure

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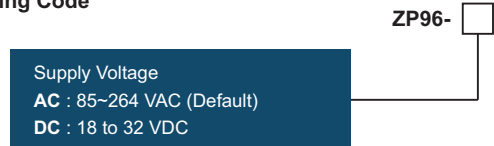
Salient Features

- 128 X 64 Monochrome Graphic Display for Comprehensive Process Information
- Universal Temperature Input :
J, K, R, S, T, B, N, E Thermocouple & RTD Pt100
- Built-in Lead Resistance Compensation for RTD Input & CJC for Thermocouple Input
- Programmable Input Signal Conditioning (Digital Filter & Zero Offset)
- Selectable Self Tune PID & On-Off Control
- 'Heat Only', 'Cool Only' & 'Heat + Cool' Control
- PV / SP Based Compressor Control with Settable Time Delay
- 4 SSR (12 VDC @ 20 mA) Outputs :
Heater Control, Compressor Control, Process & Event Alarms
- Built-in Programmable Soak Timer
- Door Open Monitoring with Status Indication & Alarm Output
- Built-in Audio Buzzer (Beeper) for Alarm Alerts
- RS 485 MODBUS RTU Serial Communication Port
- Universal Supply Voltage : 85 ~ 264VAC, 50/60 Hz
- Size (mm) : 96(H) X 96 (W) X 84 (D)

General Information

Product Type Multi-Purpose Temperature Controller with Graphic Display

Ordering Code



Example Code : ZP96-AC
 Supply Voltage : 85~264 VAC

Quantity 1 Unit

Accessories (Optional) USB to RS485 Converter

Similar Products Zenex Pro 96
 Zenex Plus

Multi-Purpose Temperature Controller with Graphic Display

Operator Interface

Display	128 X 64 Monochrome Graphic LCD (Black Font on White Background)
Keys	4 Tactile Switches PAGE, DOWN, UP, ENTER

Input Specifications

Temperature Sensors (User Configurable)	Thermocouple : J, K, T, R, S, B, N, E RTD : Pt100, 3 wire
Accuracy	Thermocouples : ± 0.2% of reading for J, K, T, E (Excluding CJC) ± 0.4% of reading for R, S, B, N (Excluding CJC) CJC : ± 1.5 °C (Specified over 18 to 37 °C) RTD Pt100 : ± 0.2% of reading. Lead Resistance Compensation : Max. 5Ω per Lead for 3-wire RTD
Display Resolution	Thermocouples : 1°C RTD Pt100 : 0.1°C
Range	Refer Table-1 for Thermocouples & RTD Inputs
Zero Offset	User Adjustable over Full Range
ADC	16 Bit (± 32,768 Counts), Sigma-Delta (ΣΔ)
Sampling Time	280mS (3.6 Samples per Second)
Input Resistance	> 8 MΩ
Common Mode Rejection	> 100dB at 50/60 Hz
Input Protection	ESD : 8KV EFT : 2KV Surge : 1KV
Input Conditioning	First Order Analog R-C Low-Pass Filter & Settable Digital Low-Pass Filter

Programmable Timer

Operation Mode	Free Running or Soak at Setpoint with Hold Band
Range	Settable in HH:MM from 00:01 to 249:59
Power-fail Recovery	Resume, Reset, Abort

Door Status Monitoring

Input	Digital Input (Potential-free Contacts) from Door Switch (can be enabled / disabled by user)
Function	Alarm Alert on Door Opening for Longer than Set Time

Alarm System

Process Alarm	Independent High/Low Deviation Process Alarms
Door Open Alarm	Alarm on Equipment Door Remaining Open for More than Set Time Period (Alarm can be disabled if not desired)
Timer-End Alarm	Alarm on End-of-Time (Timer Function) (Alarm can be disabled if not desired)
Audio Alert	Built-in Buzzer (Beeper)
Output	Separate SSR Outputs for Process Alarm (High/Low Deviation) & Event Alarm (Door Open/Timer End)
Alarm Acknowledge	<ul style="list-style-type: none"> Rear Panel Digital Input for Connecting Remote Alarm Acknowledge (Mute) Button Front Panel Alarm Acknowledge (Mute) on Enter Key

Multi-Purpose Temperature Controller with Graphic Display

Temperature Control Loop

Type	User Selectable : Self Tune PID or ON-OFF
Control Parameters	PID : Proportional Band, Integral Time, Derivative Time, Cycle Time ON-OFF : Hysteresis
Output	SSR Drive Voltage

Compressor Control

Type	On-Off with Programmable Time Delay & Hysteresis
Control Parameters	1) Can be Switched ON-OFF Manually. 2) Based on Programmable Temperature SP Threshold. Compressor is ON for Temperature SP Below Threshold & OFF Above. 3) Cool Control. Switches ON-OFF Based on Temperature PV & SP
Output	SSR Drive Voltage

Serial Communication

Port	RS485, 2-wire, Half Duplex, Start-Stop Synchronized
Protocol	MODBUS RTU
Slave ID	Settable : 1 to 127
Baud Rate	Selectable : 9600, 19200, 38400 bps
Parity	Selectable : None, Even, Odd
Max. Units per Loop	31
Max. Distance	1200 Meters

Power Supply

Type	Switch Mode (SMPS)
Line Voltage	Standard : 85~264 VAC, 50/60Hz Optional : 18 to 32 VDC
Consumption	5 VA Max

Physical

Mounting	Plug-in with Panel Mounting Clamps
Overall Dimensions	96(H) X 96(W) X 84(D), mm
Panel Cutout	92(H) X 92(W), mm
Terminals	Screw Type
Weight	400 gm, Appx.

Environmental

Operating Ambient	0 to 55°C & 5 to 90%RH Non-condensing
Storage Temperature	-10 to +70°C
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.

Back Panel Terminations

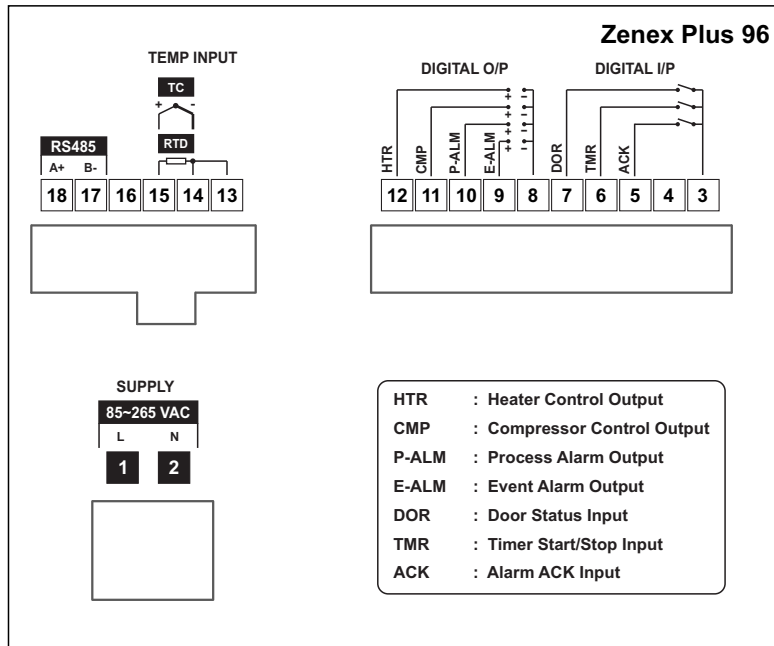


Table 1 : Thermocouple & RTD Input Ranges

Input Type	Range (Min. to Max.)
2 / 3-wire, RTD Pt100	-99.9 to +850.0 °C
Type J Thermocouple (Fe-K)	0 to +960°C
Type K Thermocouple (Cr-Al)	-200 to +1376°C
Type T Thermocouple (Cu-Con)	-200 to +387°C
Type R Thermocouple (Pt / Pt-Rh13%)	0 to +1771°C
Type S Thermocouple (Pt / Pt-Rh10%)	0 to +1768°C
Type B Thermocouple (Pt-Rh6% / Pt-Rh30%)	0 to +1826°C
Type N Thermocouple (NiCrSi / NiSi)	0 to +1314°C
Type E Thermocouple (NiCr / Con)	-200 to +1000°C

Process Precision Instruments (An ISO 9001 : 2008 Company)

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