

## Features:

- Universal input with two separate outputs for dual loop control in direct or reverse acting
- Select relay, voltage, or current output combined with a second relay output
- Units can be programmed for On/Off, PID, auto-tuning or manual tuning
- PID control is supported by 64 ramp/soak actions
- Also includes two additional alarm outputs
- Second relay output can be reconfigured as a third alarm output
- Alarm type can be selected from 13 different preprogrammed alarm functions
- Dual LED displays for local indication of process and setpoint values
- Output status, engineering scale, auto tuning and alarm status also indicated on the front panel
- Selectable °F/°C and resolution
- Built-in RS-485 interface
- 1/16 DIN housing



## Specifications (con'd):

Output Ratings: Relay: SPDT, 5A @ 250 VAC resistive; Voltage Pulse: 14V, 10 to -20% (40mA max); Current: 4 to 20mA

Communications: RS-485 Modbus A-5-11/RTU communication protocol

Front Panel Rating: IP66

Weight: 4 oz (114 g)

### INPUTS TYPES

Type K T/C -328 to 2372°F (-200 to 1300°C)  
 Type J T/C -148 to 2192°F (-100 to 1200°C)  
 Type T T/C -328 to 752°F (-200 to 400°C)  
 Type E T/C 32 to 1112°F (0 to 600°C)  
 Type W T/C -328 to 2372°F (-200 to 1300°C)  
 Type R T/C 32 to 3092°F (0 to 1700°C)  
 Type S T/C 32 to 3092°F (0 to 1700°C)  
 Type B T/C 212 to 3272°F (100 to 1800°C)  
 Type L T/C -328 to 1562°F (-200 to 850°C)  
 Type U T/C -328 to 932°F (-200 to 500°C)  
 Pt100 RTD -328 to 1112°F (-200 to 600°C)  
 0-50mV -999 to 9999  
 0-5V -999 to 9999  
 0-10V -999 to 9999  
 0-20mA\* -999 to 9999  
 4-20mA\* -999 to 9999

### RANGE

\* Requires 250Ω precision resistor

## Specifications:

Inputs: Thermocouple, RTD, DC voltage or current

Display: Two 4-digit, 7-segment, 1/4" (6.4mm) high LEDs. Process: red; Setpoint: green

Accuracy: ±0.25% span ±1 least significant digit

Supply Voltage: 100 to 240 VAC, 50/60 Hz

Power Consumption: 5 VA max.

Memory Backup: Nonvolatile memory

Model	Description	Price
16B-23	Voltage Pulse/Relay Controller	\$151
16B-33	Relay/Relay Controller	\$151
16B-53	Current/Relay Controller	\$151
SCD-SW	Configuration Software	\$82
A-277	250Ω Precision Resistor	\$15

# Limit Controllers

## Features:

- Universal input (10 thermocouple types, 4 RTD types, voltage and current)
- Single or dual setpoints
- Selectable high or low input
- Adjustable differential
- Programmable sensor break protection
- Outputs include normally open (form A) or normally closed (form B) relays
- Form A and form B relays can be set up one for each set point output and logically linked to emulate a C output
- Dual LED displays with Peak/Valley indication
- Dedicated, illuminated reset key
- Remote reset capability standard
- Four password protected security levels
- 1/16 DIN housing • FM approved



## Specifications:

Inputs: Selectable, 10 thermocouple, 4 RTD, DC voltage or current

Display: Two 4-digit, 7-segment, 0.3" (7.6mm) high LEDs

Accuracy: ±0.25% span ±1 least significant digit

Supply Voltage: 100 to 240 VAC nominal, +10 -15% 50 to 400 Hz, single phase; 132 to 240 VDC nominal, +10 -20%

Power Consumption: 5 VA max.

Memory Backup: Nonvolatile memory

Output Ratings: Relay: SPST, 3A @ 240 VAC resistive; 1.5A @ 240 VAC inductive

Weight: 8 oz (227 g)

Model	Description	Price
16L2030	Limit Control, N.O. Relays	\$346
16L2034	Limit Control, N.O./N.C. Relays	\$374



## Features:

- Designed to accept thermocouple, RTD, current or voltage input and to provide dual outputs for control
- Available outputs include relay/relay, voltage pulse/relay, current/relay, or linear voltage/relay
- Units can be programmed for On/Off, PID, auto-tuning or manual tuning
- PID control is supported by 64 ramp/soak actions
- Also includes two additional alarm outputs
- Second relay output can reconfigured as a third alarm output
- Alarm type can be selected from 13 different preprogrammed alarm functions
- Dual LED displays for local indication of process and setpoint values
- Output status, engineering scale, auto tuning and alarm status also indicated on the front panel
- Selectable °F/°C and resolution
- Built-in RS-485 interface
- 1/4 DIN housing

## Specifications:

Inputs:	Thermocouple, RTD, DC voltage or current
Display:	Two 4-digit, 7-segment LEDs. Process: 3/4" (19mm) high red; Setpoint: 1/2" (12.7mm) high green
Accuracy:	±0.25% span ±1 least significant digit
Supply Voltage:	100 to 240 VAC, 50/60 Hz
Power Consumption:	5 VA max.
Memory Backup:	Nonvolatile memory
Output Ratings:	Relay: SPDT, 5A @ 250 VAC resistive; Voltage Pulse: 14V, 10 to -20% (40mA max); Current: 4 to 20mA; Linear Voltage: 0-5V, 0-10V
Communications:	RS-485 Modbus A-5-11/RTU communication protocol
Front Panel Rating:	IP66
Weight:	15 oz (425 g)

## INPUTS TYPES

Type K T/C	-328 to 2372°F (-200 to 1300°C)
Type J T/C	-148 to 2192°F (-100 to 1200°C)
Type T T/C	-328 to 752°F (-200 to 400°C)
Type E T/C	32 to 1112°F (0 to 600°C)
Type W T/C	-328 to 2372°F (-200 to 1300°C)
Type R T/C	32 to 3092°F (0 to 1700°C)
Type S T/C	32 to 3092°F (0 to 1700°C)
Type B T/C	212 to 3272°F (100 to 1800°C)
Type L T/C	-328 to 1562°F (-200 to 850°C)
Type U T/C	-328 to 932°F (-200 to 500°C)
Pt100 RTD	-328 to 1112°F (-200 to 600°C)
0-50mV	-999 to 9999
0-5V	-999 to 9999
0-10V	-999 to 9999
0-20mA*	-999 to 9999
4-20mA*	-999 to 9999

\* Requires 250Ω precision resistor

## RANGE

Model	Description	Price
4B-23	Voltage Pulse/Relay Controller	\$236
4B-33	Relay/Relay Controller	\$236
4B-53	Current/Relay Controller	\$236
4B-63	Linear Voltage/Relay Controller	\$236
SCD-SW	Configuration Software	\$82
A-277	250Ω Precision Resistor	\$15

# Fuzzy Logic Controllers

## Features:

- PID with fuzzy control of self-tuning
- 16 Ramp/soak segments
- Large LED display
- Digital input
- Auto-tune
- Timer function
- Heater burnout alarm



The **PXR** series comes in several sizes – 1/32 DIN, 1/16 DIN, 1/8 DIN and 1/4 DIN. In addition to auto-tuning and fuzzy control, it comes with self-tuning — an innovation in the control field. It automatically retunes the controller under certain conditions, without the need to revert to auto-tuning. The standard 8-segment ramp/soak feature has been expanded to include two patterns that can be linked to create a 16-step profile. The **PXR** accepts temperature and process inputs and offers a choice of three kinds of outputs to meet a wide variety of needs in the process industries. Low-cost options include dual outputs, programmable alarms, remote setpoint, RS485 communications, analog retransmission, digital input, timer function, heater burnout alarm and 24V AC/DC supply voltage. One of the most impressive features is the large LED display. The faceplate, designed for NEMA 4X (IP66 equivalent) is watertight and corrosion-resistant. The easy-to-use 3-button keypad allows for programming similar to the popular PXW controller. The screw-terminal on the back further reduces the cost by eliminating the need for sockets. The **PXR3** can be DIN-rail mounted with the optional adapter. Remote monitoring of up to 31 controllers at a time is possible with the RS485 option that uses the industry-standard Modbus™ protocol. The communications option comes with our free Windows®-based software, **PXR-LITE™**. The software allows you to program the controller from the PC and view real-time data and trend graph while logging the data into a text file. A powerful tool for the OEM customer is the Program Loader option with Windows®-based software. Programs for different applications can be saved to and from the controller.

## Specifications:

- Input Signal: TC, RTD, Voltage, mA  
 Control Action: PID control (with auto-tuning, self-tuning); Fuzzy control (with auto-tuning)
- Proportional Band (P): 0 to 999.9% of measuring range settable in 0.1% steps  
 Integral Time (I): 0 to 3200 sec settable in 1 sec steps  
 Differential Time (D): 0 to 999.9 sec settable in 1 sec steps On/Off action if P = 0. Proportional action when I, D = 0
- Sampling Cycle: 0.5 sec  
 Control Output 1 (Select 1 type out of 3 below)  
 Relay Contact (SPDT): 220 VAC/30 VDC, 3A (resistive load)  
 Mechanical life: 10 million operations; Min. switching current: 100 mA (24 VDC)  
 Voltage Pulse: ON: 17 to 25 VDC; OFF: 0.5 VDC or less; 20mA or less  
 4 to 20 mA DC: Allowable load resistance: 600Ω or less  
 Power Supply: 100V (-15%) to 240V (+10%) AC, 50/60Hz  
 Reference Junction  
 Compensation Acc'y: ±1°C at 23°C  
 Input Filter: 0-900.0 sec settable in 0.5 sec steps (first order lag filter)
- Alarms (Optional): Absolute alarm, deviation alarm, zone alarm w/ upper & lower limits for ea. Hold function available. Alarm latch function provided.

Model	Description	Price
PXR3-TAY1-4V0A1	1/32 DIN, T/C (°C), Relay, 100-240 VAC	\$143
PXR3-TEY1-4V0A1	1/32 DIN, T/C (°C), 4-20 mADC, 100-240 VAC	\$143
PXR3-AAAY1-4V0A1	1/32 DIN, 0-20 mADC, 0-5 VDC, Relay, 100-240 VAC	\$143
PXR3-TCY1-4V0A1	1/32 DIN, T/C (°C), SSR or SSC, 100-240 VAC	\$143
PXR3-NCY1-5V0A1	1/32 DIN, 3-wire Pt100Ω RTD (°C), SSR/SSC, 1-pt. alarm, 100-240 VAC	\$174
PXR4-TAY1-4V0A1	1/16 DIN, T/C (°C), Relay, 100-240 VAC	\$184
PXR4-TEY1-GV0A1	1/16 DIN, T/C (°C), 4-20 mADC, 2-pt. alarm, 100-240 VAC	\$215

Model	Description	Price
PXR4-TCY1-GV0A1	1/16 DIN, T/C (°C), SSR/ SSC, 2-pt. alarm, 100-240 VAC	\$215
PXR4-TAY1-GV0A1	1/16 DIN, T/C (°C), Relay, 2-pt. alarm, 100-240 VAC	\$215
PXR5-TCY1-GV0A1	1/8 DIN, T/C (°C), SSR/SSC, 2-pt. alarm, 100-240 VAC	\$255
PXR5-TAA1-4V0A1	1/8 DIN, T/C (°C), Relay, 100-240 VAC	\$261
PXR9-TAY1-4V0A1	1/4 DIN, T/C (°C), Relay, 100-240 VAC	\$245
PXR9-TAY1-GV0A1	1/4 DIN, T/C (°C), Relay, 2-pt. alarm, 100-240 VAC	\$276
PXR9-TEY1-GV0A1	1/4 DIN, T/C (°C), 4-20 mADC, 2-pt. alarm, 100-240 VAC	\$276