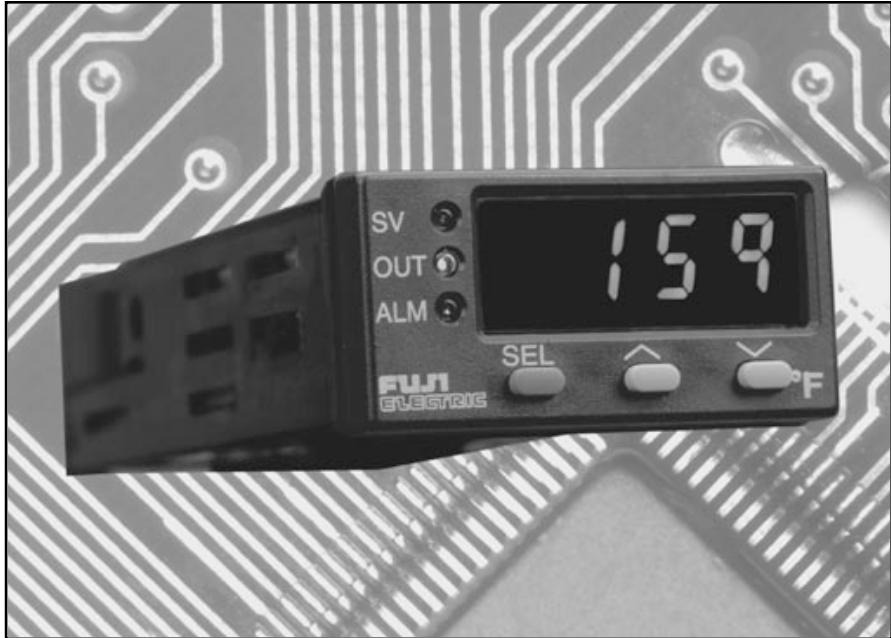


# It's Loaded *a plethora of features in a space- saving fuzzy logic controller*



The PXV3 is the smallest fuzzy logic controller on the market.

**G**REAT THINGS COME IN SMALL PACKAGES, and the PXV3 proves it. It's impressive how many features are packed into this tiny yet sophisticated controller. Don't let its size fool you.

Part of Fuji Electric's new PX Series, the PXV3  $\frac{1}{32}$  DIN controller with fuzzy logic control and PID Autotune utilizes Fuji's patented fuzzy logic algorithm to ensure that your process remains at setpoint, virtually eliminating overshoot on start-up and during in-process disturbances. Fuzzy logic technology enables a process to reach its pre-determined setpoint in the shortest time possible with an absolute minimum of overshoot. The fuzzy logic works in conjunction with the Autotune function so that the value of the PID parameters chosen by the controller is used as a starting point for all decisions made by the fuzzy logic intelligence. The end result is that your process will reliably achieve setpoint and maintain it.

Not only is this controller a sophisticated, precise device for controlling temperature and process, it's tough too. With a NEMA 4X rated faceplate, this controller will withstand harsh environments and applications where it might come in contact with water or corrosive chemicals. And, this  $\frac{1}{32}$  DIN controller is a space-saver as well, with a front panel as small as 1" by 2" and a depth of 4" behind the panel.

The PXV3 offers many standard features: PID Autotune and fuzzy logic control, NEMA 4X faceplate, 85 to 264V AC supply voltage or optional 24V AC/DC supply, multiple-input capability, relay and SSR drive outputs, eight-segment ramp/soak programming, and many levels of security to prevent unauthorized use.

# PXV3 SPECIFICATIONS

## CONTROL FUNCTIONS

**Fuzzy control:** Basic actions in PID control have been realized according to fuzzy control rules.

### PID control with autotuning:

Proportional band (P) 0–999.9% FS (ON/OFF action when P=0)  
Reset time (I) 0–3200 sec (No integral action when I=0)  
Rate time (D) 0–999.9 sec (No derivative action when D=0)

**Sampling cycle:** 0.5 sec

**Output cycle:** 1–150 sec

**Hysteresis width:** 0–50% (ON/OFF control)

**Ramping SV:** 8-segment ramp/soak

(SV: 0–100% FS/ Time: 0–99 hr. 59 min.)  
Power on start of ramping SV is possible

## INPUT

**TC/RTD:** J, K, R, B, S, T, E, N, PL-II, Pt100

**Voltage:** 1–5V DC, 0–5V DC

**Current:** 4–20mA DC, 0–20mA DC, used with supplied 250Ω resistor

**Standard range:**

Input type	Input range (max)	
	°C	°F
Pt100	-150 ~ 850	-238 ~ 1562
J	0 ~ 800	32 ~ 1472
K	0 ~ 1200	32 ~ 2192
R	0 ~ 1600	32 ~ 2912
B	0 ~ 1800	32 ~ 3272
S	0 ~ 1600	32 ~ 2912
T	-199.9 ~ 200	-328 ~ 392
T	-150 ~ 400	-238 ~ 752
E	-199.9 ~ 800	-328 ~ 1472
N	0 ~ 1300	32 ~ 2372
PL2	0 ~ 1300	32 ~ 2372

1–5V DC

0–5V DC

4–20mA DC

Scaling range: -1999–9999

Engineering units

## OUTPUT

**Relay contact output:** 220V AC/30V DC 2A (resistive load)

**SSR driver output:** On: 5V DC typ. (5.5V ±1V), 20mA max.  
Off: 0.5V or less

**Alarm output/2nd control output:** 220V AC/30V DC 2A (resistive load)

**Alarm:** Configurable from the front panel keys as Absolute, Deviation, Zone, or Combination alarms with or without the hold feature.

## RATING

**Power supply:** 85–264V AC, 50/60Hz, or 24V AC/DC ±10%

**Power consumption:** Approx. 8VA at 240V AC

**Dielectric strength:** 1500V AC for 1 min between power source terminal and input and output terminals.

500V AC for 1 min at other locations.

**Isolation resistance:** 20MΩ min. at 500V DC

## Protection from Power Failure

Nonvolatile memory. Parameter values remain unchanged with disruption of power. Ramp/soak function has to be re-initiated.

**Self-diagnosis:** Program error is monitored with a watchdog timer.

## OPERATING AND STORAGE CONDITIONS

**Ambient temperature:** -10 to 50°C (14 to 122°F)

**Ambient humidity:** 90% RH or less (non-condensing)

**Storage temperature:** -20 to 60°C (-4 to 140°F)

## SETTING AND INDICATION

**Accuracy:** ± 0.5% FS ±1 digit

R T/C: 0~400°C: ±1% FS ±1 digit

B T/C: 0~500°C: ±5% FS ±1 digit

**Setting method:** 3-key operation

**Indicator:** 4-digit, 7-segment LED (green)

## STRUCTURE

**Mounting method:** Panel mounting

**Enclosure:** Plastic housing

**Protection:** NEMA 4X/ IEC IP66 (front panel)

**External terminal:** Terminal block w/screw connection

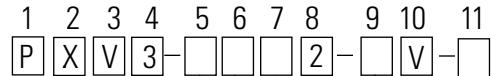
**External dimensions:** 48mm (W) x 24.5mm (H) x 99mm (D)

**Weight:** Approx. 100g

**Finish color:** Black (front panel)

**Warranty:** 3 years

## MODEL CONFIGURATION



Input Signal	Code
Thermocouple °C	T
Thermocouple °F	R
RTD (Pt100) °C	N
RTD (Pt100) °F	S
4–20mA DC, 1–5V DC	B
0–20mA DC, 0–5V DC	A

Control Output 1	Code
Relay (SPST) (reverse action)	A
Relay (SPST) (direct action)	B

Control Output 2	Code
None	Y
Relay (SPST) (reverse action)	A
Relay (SPST) (direct action)	B

Alarm Option	Code
None	4
High/Low alarm (SPST)*	5

\* Available with single output only

Power Supply Options	Code
85–264V AC	-
24V AC/DC	D

