

PROGRAM CONTROLLER X (96mm)

DATA SHEET
PVX

The program controller X (PVX) is a high performance controller designed on the basis of many years of Fuji's successful experience and advanced technologies.

FEATURES

1. **Display of 3 different datas**
Three different datas such as measured value (PV), set value (SV) and time can be monitored simultaneously.
2. **20-segment program patterns (9 patterns)**
Program patterns can be linked in series or repeated.
3. **Full multi-input type**
The program controller accepts a large number of inputs (full multi-input). Up to 11 kinds of thermocouples, 1 resistance bulb, 6 different voltage inputs and a current input can be connected.
4. **Wide input/output functions (option)**
The program controller is able to expand the input/output functions up to 8 points of digital inputs, 11 points of digital outputs and 2 points of auxiliary analog outputs.



SPECIFICATIONS

Panel size:	96 × 96mm
Input:	Full multi-input <ul style="list-style-type: none"> • Thermocouple: J, K, R, B, T, E, S, N, U, WRe5-26, PL-II • Platinum resistance bulb: Pt100 • DC voltage/current
Input accuracy:	±0.2% of full scale, ±1 digit
Input sampling cycle:	100ms
Control action:	PID with auto-tuning
Control output:	<ul style="list-style-type: none"> • Relay contact • Voltage pulse output (for SSR drive) • Current output
Alarm output:	2 points (ALM1, ALM2)
Program function:	<ul style="list-style-type: none"> • Number of patterns: 9 patterns (max.) • Number of segments/patterns: 20 segments • Multi-memory (PID, etc.): 9 sets • Pattern linkage/repeat function: possible • Time setting: hour/minute or minute/second

- Operation mode:**
- Program operation
 - Fixed value (FIX) operation
 - Manual (MAN) operation

- Digital input/output:**
- Time signal output: 4 points (TS1, TS2, TS3, TS4)
 - External command input: 4 points (Reset, Run, Hold, Advance)
 - Pattern select input: BCD 1 digit (2³, 2², 2¹, 2⁰)
 - Status output (Output informations): 3 points (Reset, Run/Hold, End)

- Option:**
- Auxiliary analog output: 2 points (AO1, AO2)
 - Expansion digital output: 2 points (TS5, TS6 or ALM3, ALM4)

- Power source:** Flexible supply voltage: 100 to 240V AC

FUNCTIONS AND PERFORMANCE

1. Input

(1) Input accuracy:

±0.2% of full scale, ±1 digit (under standard condition), cold junction compensation error: ±1°C

(2) Input:

Thermocouple (range code setting)	Resistance bulb (range code setting)
J : 0 to 400°C	Pt100Ω(*): 0 to 150°C
J : 0 to 800°C	0 to 300°C
K : 0 to 400°C	0 to 500°C
K : 0 to 800°C	0 to 600°C
K : 0 to 1200°C	-50 to 100°C
R : 0 to 1600°C	-100 to 200°C
B : 0 to 1800°C	-199.9 to 600°C
T : -199.9 to 200°C	-199.9 to 850°C
T : -150 to 400°C	
E : 0 to 800°C	
E : -199.9 to 800°C	
S : 0 to 1600°C	
N : 0 to 1300°C	
U : -199.9 to 400°C	
WRe5-26 : 0 to 2300°C	
PL-II : 0 to 1300°C	

(R: ±1% within the range of 0 to 400°C)
 (B: ±5% within the range of 0 to 500°C)

°F display; possible
 0.1°C/°F display; possible
 (1000°C/°F span or less)

DC voltage/current (full programmable scale; -999 to 9999)

0 to 10mV DC, 0 to 100mV DC, 0 to 1V DC, 0 to 5V DC
 1 to 5V DC, 0 to 10V DC, 4 to 20mA DC

Note: * Pt100...IEC Pub751-1983

(3) Input sampling cycle: 100ms

2. Output

(1) Control output

Relay contact output :

220V AC/30V DC, 3A (resistive load)
 SPDT contact
 Electrical expected life: more than 10⁵ operations
 Minimum ON/OFF current: 0.1A (24V DC)

SSR drive output :

ON: 10 to 18V DC
 OFF: max. 0.5V
 Max. current: 20mA DC

Current output :

4 to 20mA DC (allowable load: 600Ω or less)

(2) Alarm output (ALM1, ALM2)

Relay contact output :

2 points
 220V AC/30V DC, 1A (resistive load)
 SPST contact
 Electrical expected life: more than 10⁵ operations
 Minimum ON/OFF current: 0.1A(24V DC)

3. Program setting

(1) Program function

Number of patterns: 9 patterns (max.)

Number of segments/patterns: 20 segments

Multi-memory (PID, etc.): 9 sets

(2) Operation mode

Program operation
 Fixed value (FIX) operation
 Manual (MAN) operation

(3) Program operation

Pattern selection, program reset, start, stop and skip are possible with front panel key, digital input.

(4) Time setting

Setting of hour/minute or minute/second
 Hour/minute: 0 (hr) 0 (min) to 99 (hr) 59 (min)
 Minute/second: 0 (min) 0 (sec) to 99 (min) 59 (sec)

4. Control action

(1) Auto-tuning PID action

P: 0.0 to 999.9% (ON/OFF control, P=0)

I: 0 to 3200sec (integral action OFF, I=0)

D: 0.0 to 900.0sec (derivative action OFF, D=0)

(2) Multi-memory

PID, etc; up to 9 sets

5. Digital input/output

(1) Digital input

Usual specification :

16V DC, 15mA

External command input :

Reset: Program reset

Run: Program start

Hold: Program stop

Advance: Segment feed

Pattern select input :

BCD input; 1 digit (2³, 2², 2¹, 2⁰)

(2) Digital output

Time signal output (TS1, TS2, TS3, TS4)

Open-collector output: 4 points, 24V DC, 50mA

Status output :

Open-collector output: 3 points, 24V DC, 50mA

Reset: Program reset status

Run/Hold: Program start/stop status

End: Program end status

6. Option output

(1) Expansion digital output

Expansion alarm output (ALM3, ALM4) or expansion time signal output (TS5, TS6)

Open-collector output: 2 points, 24V DC, 50mA

(2) Auxiliary analog output

Output points : 1 or 2 points

Output data : Measured value, set value or manipulated value

Output accuracy : ±0.2% of full scale

Kinds of output :

1 to 5V DC

0 to 5V DC

0 to 10V DC

Additional function : Scaling

7. Operating conditions, etc.

Power supply voltage: 100 (-15%) to 240 (+10%) VAC, 50/60Hz

Power consumption: 30VA or less

Ambient temperature: 0 to 50°C

Ambient humidity: 90%RH or less (free from condensation)

Memory backup: Lithium battery
(5 years expected: 0 to 40°C)

Dimensions (H × W × D): 96 × 96 × 173.5mm

Mass(weight): 1kg (approx.)

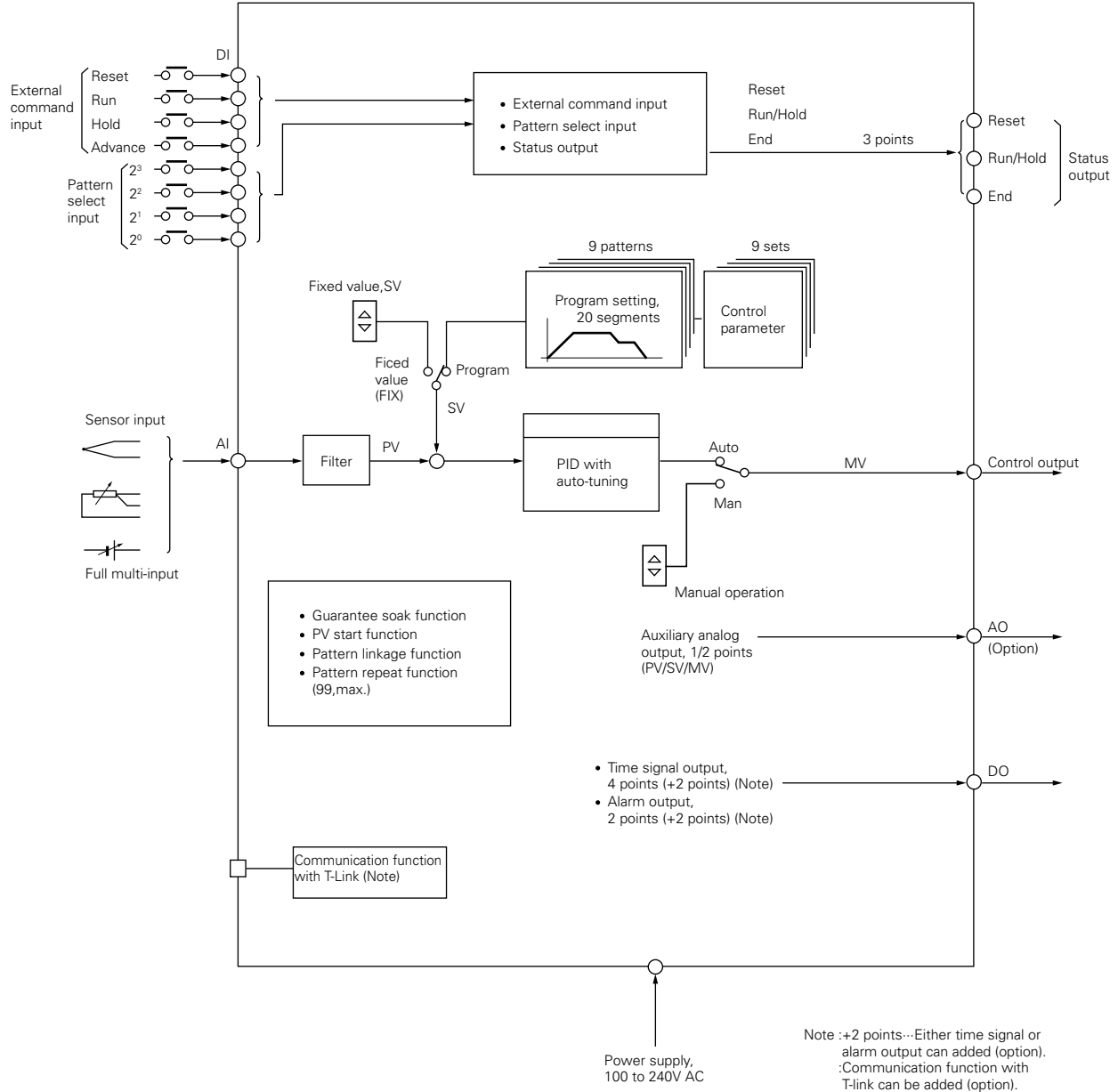
Mounting angle: Backward inclination within 15°

CODE SYMBOLS

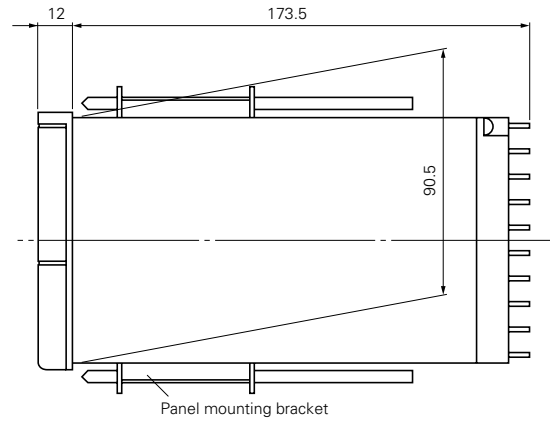
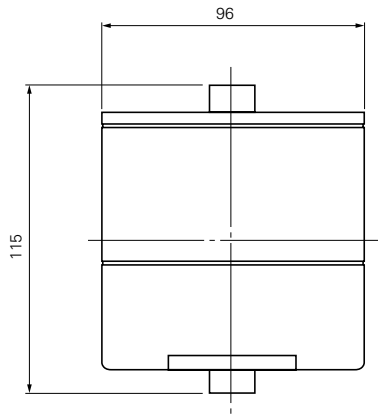
1 2 3 4 5 6 7 8 9 10 11 12 13													Description
P	V	X			T	S	1	-	Y			E	Control output Relay contact output SSR/SSC drive output Current output (4 to 20mA DC)
					1								
					2								
					3								
			C										Digital input External command input (4 points)
			P										Pattern select input (4 points)
			D										External command input +Pattern select input
					T								Time signal output, 1 to 4
						S							Output status
									Y				Expansion digital output (open-collector output, 2 points)
									T				Without
									A				Used as time signal (TS5, 6)
													Used as alarm (ALM3, 4)
												0	Auxiliary analog output signal
												1	Without
												2	Voltage output, 1 point
													Voltage output, 2 points
													Note:Prior to delivery from factory: 0 to 10V DC
													Communication function
									Y				Without
									T				With T-link
													Front panel indication and instruction manual (option)
												E	English

Note : If the range is not designated on order, the product will be delivered with the following range selected.
K thermocouple 0 to 400°C.

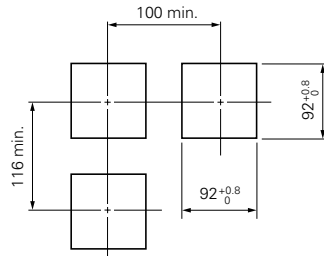
FUNCTIONAL BLOCK DIAGRAM



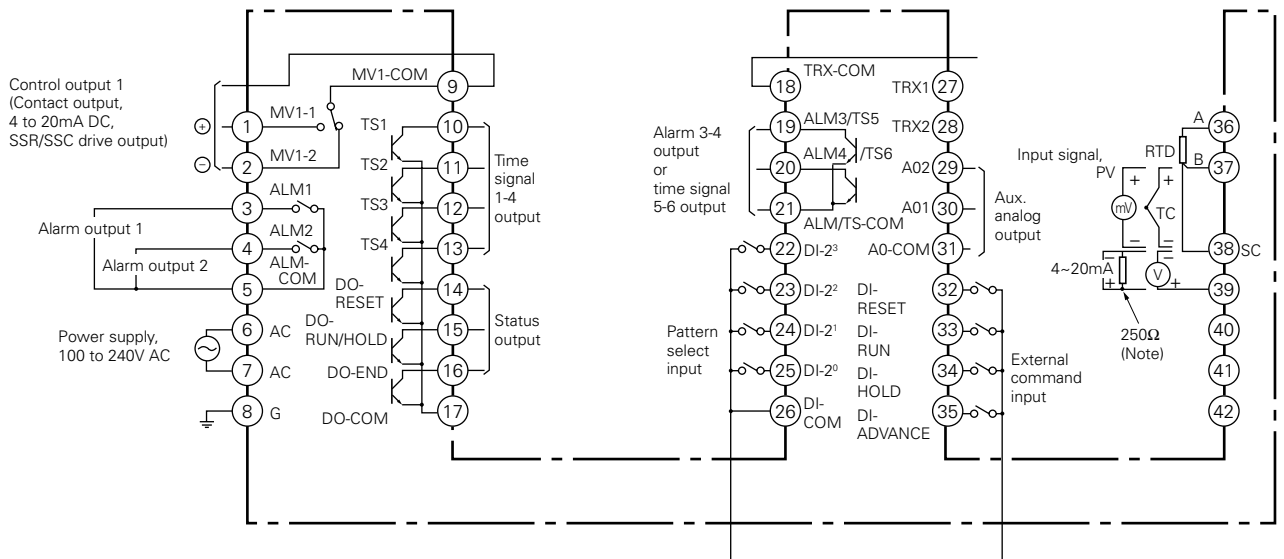
OUTLINE DIAGRAM (Unit:mm)



Panel cutout



Connection diagram



Note: A resistor (250Ω±0.1%) should be used for 4 to 20mA DC input.

SCOPE OF DELIVERY

Main unit and panel mounting bracket

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