PVX

FUJI ELECTRIC

PROGRAMMABLE CONTROLLER HOLDS NINE DIFFERENT PATTERNS WITH 20 SEGMENTS EACH

If you find yourself reprogramming the same controller over and over again to run a variety of different processes, take a look at how Fuji's PVX can save a lot of time. The PVX has the ability to store a number of process control "patterns" to call up and run at any time without re-entering control variables. Besides saving time, the stored patterns ensure that the same process is run according to specification each time without the risk of entering incorrect values on reprogramming.

The PVX is perfect for manufacturers using the same system to make a variety of products—each requiring its own unique control "recipe." A total of nine separate patterns can be stored with up to 20 segments each. Individual patterns can even be linked with other patterns or set to repeat in a continuous cycle. Each pattern can contain up to nine individual PID settings with Ramp/Soak up to 180 segments.

The PVX also offers you the convenience of a three-parameter simultaneous display. At a glance, the current temperature (process variable, PV), the setpoint (set variable, SV), and the unit's current output level (manipulated variable, MV) are clearly visible. Front panel indicators tell what pattern is used and what individual segment the process is currently on; also whether the current segment is ramping up, holding steady, or ramping down.

FEATURES

- **Nine 20-Segment Control Patterns**
  Allows you to store, link or recall individual programs for separate runs
- **Program Loader Option**
  Windows-based program allows for easy configuration
- **Independent PID Setting for Each Pattern Setting**
- **100ms Sampling Rate**
  Handles fast responding processes like flow and pressure
- **Triple Display**
  Shows PV, SV, and MV simultaneously
- **Inputs**
  E, J, K, R, T, S, B, PL-II, RTD, 0-10mV, 0-100mV, 0-1V, 0-5V, 0-10V, 1-5V, 4-20mA
- **Outputs**
  Relay, DC voltage pulse, 4 to 20mA
- **PID Autotuning**
  Automatically calculates PID control settings for you, thereby optimizing system performance
- **Auto/Manual Operation**
  Manual override allows you to take control of the process at any time
- **Several Digital Inputs/Outputs**
  Used for external command inputs, pattern selection, time signal outputs and status outputs
- **Programmable Alarms**
  Two points standard; two points optional
- **Auxiliary Analog Outputs**
  Up to two available: 1-5V, 0-5V, 0-10V
- **Password Protection**
  Prevents accidental or unauthorized changing of parameters
- **Digital Filtering**
  Prevents external noise from affecting the input signal
- **Sensor Break Protection**
  Protects your process if the input sensor fails
- **Three-Year Warranty**
  Protects against manufacturing defects

PVX SPECIFICATIONS

PROGRAM SETTING

PROGRAM FUNCTION	Number of Patterns: 9 patterns max. Number of Segments/Patterns: 20 segments Multimemory (PID, Etc.): 9 sets Pattern Linkage/Repeat Function: Possible Time Setting: Hour/minute or minutes/seconds
OPERATION MODE	Program operation, Fixed value (FIX) operation, Manual (MAN) operation
PROGRAM OPERATION	Pattern selection, program reset, start, stop, and skip are possible with front panel key, digital input
TIME SETTING	Setting of hours/minutes or minutes/seconds Hours/Minutes: 0 hrs 0 min to 99 hrs 59 min Minutes/Seconds: 0 min 0 sec to 99 min 59 sec

INPUT

INPUT SIGNAL	Thermocouple: J, K, R, B, T, E, S, N, U, WRe5-26, PL-11 RTD: Pt100Ω Voltage/Current: 0-10mV DC, 0-100mV DC, 0-1 VDC, 0-5 VDC, 1-5 VDC, 0-10 VDC, 4-20mA DC
INPUT ACCURACY	±0.2% FS, ±1 digit, Cold junction compensation error: ±1°C
INPUT SAMPLING CYCLE	100ms

CONTROL ACTION

AUTOTUNING PID ACTION	P: 0.0 to 999.9% (On/Off control, P=0) I: 0 to 3200 seconds (integral action Off, I=0) D: 0.0 to 900.0 seconds (derivative action Off, D=0)

CONTROL/ALARM OUTPUT

RELAY CONTACT OUTPUT	220 VAC/30 VDC, 3A (resistive load) SPDT contact
SSR DRIVE OUTPUT	On: 10 to 18 VDC Off: Max. 0.5V Max. current: 20mA DC
CURRENT OUTPUT	4 to 20mA DC (allowable load: 600Ω or less)
ALARM OUTPUT	2 relay contacts, 220 VAC/30 VDC, 1A (resistive load)

DIGITAL INPUTS/OUTPUTS

DIGITAL INPUT	Rating: 16 VDC, 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)
DIGITAL OUTPUT	Time Signal Output: Open collector output: 4 points (TS1, TS2, TS3, TS4), 24 VDC, 50mA Status Output: Open-collector output – 3 points, 24 VDC, 50mA Reset – Program reset status Run/hold – Program start/stop status End – Program end status

OPTIONAL OUTPUTS

EXPANSION DIGITAL OUTPUT	Expansion Alarm Output: Open-collector output – 2 points (ALM3, ALM4), 24 VDC, 50mA Expansion Time Signal Outputs – Open-collector output: 2 points (TS5, TS6), 24 VDC, 50mA
AUXILIARY ANALOG OUTPUT	Output Points: 1 or 2 points Output Data: Measured value, set value, or manipulated value Output Accuracy: ±0.2% FS Kinds of output: 1-5 VDC, 0-5 VDC, 0-10 VDC

GENERAL SPECIFICATIONS

POWER SUPPLY VOLTAGE	85 to 264 VAC, 50/60 Hz
POWER CONSUMPTION	30 VA or less
AMBIENT TEMPERATURE	0 to 50°C
AMBIENT HUMIDITY	90% relative humidity or less (non-condensing)
MEMORY BACKUP	Lithium battery (5 years expected: 0 to 40°C)
DIMENSIONS (HXWXD)	96 x 96 x 173.5mm
MOUNTING METHOD	Panel mounting

PVX ORDERING INFORMATION

P	V	X	A	B	T	S	1	–	C	R	D	Y	E

To create a part number fill in the boxes above with the appropriate number and/or letter from the corresponding box below.

Box A: Control Output

1	= Relay contact output	$ 699
2	= SSR/SSC drive output	699
3	= Current output (4–20mA DC)	699

Box B: Digital Input

Y	= None	N/C
C	= External command input (four points)	150
P	= Pattern select input (four points)	150
D	= External command input plus pattern select input	250

Box C: Expansion Digital Output

(Open-collector output, two points)

Y	= None	N/C
T	= Used as time signal (TS5, TS6)	$ 85
A	= Used as alarm (ALM3, ALM4)	85

Box D: Auxiliary Analog Output

0	= None	N/C
1	= Voltage output, one point	125
2	= Voltage output, two points *(Prior to delivery from factory: 0–10 VDC)*	210

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

ACCESSORIES

PVX LOADER	Loader cable (free Windows-based software provided)	$ 75