Programmable Controller

FP-X

RoHS compliance

Operation speed: 320 ns | Maximum I/O points: 382 points | Program capacity: 32 k steps | Tool port: USB | Ethernet | Add-on cassette x 3 | Transistor output: 0.5 A

Equipped with a USB port for easy connection to a PC. Also compatible with Ethernet.

Features

- **Abundant program capacity: 32 k steps**
  The 32 k steps program capacity can accommodate an increase in the number of programs accompanying functionality enhancements, expansions, or changes of equipment.
- **Equipped with an independent comment memory**
  All of 100,000 I/O comments, 5,000 lines of block comments, and 5,000 lines of remark comments are saved in FP-X together with programs.
- **Equipped with a high-speed RISC processor**
  Equipped with a RISC processor, achieving high-speed processing with a scan time of less than 2 ms approx. for 5,000 steps
- **Add-on cassettes can expand the functionality, maintaining the space-saving size.**
  Up to three add-on cassettes can be attached to the control unit. Functionality can be enhanced without increasing the required footprint. The 17 types of add-on cassettes, including the communication and analog types, cover a wide variety of applications.
- **Multi-axis control by the built-in pulse output**
  The transistor output type controller has a built-in pulse output that allows multi-axis control of the servo and stepping motors. C14: 3 axes, C30/C60: 4 axes

SPECIFICATIONS

■ Performance specifications

Item			Specifications		
			C14	C30	C60
Number of controllable I/O points	Control unit	Relay output type	DC input: 8 points, relay output: 6 points	DC input: 16 points, relay output: 14 points	DC input: 32 points, relay output: 28 points
		Transistor output type	DC input: 8 points, transistor output : 6 points	DC input: 16 points, transistor output : 14 points	DC input: 32 points, transistor output : 28 points
	Maximum I/O points when expanded		254 points (Max. 366 points when using add-on cassettes and FP0R expansion units)	270 points (Max. 352 points when using add-on cassettes and FP0R expansion units)	300 points (Max. 382 points when using add-on cassettes and FP0R expansion units)
Programming method / Control method			Relay symbol / Cyclic operation		
Program memory			Built-in flash ROM (no backup battery required)		
Program capacity			16 k steps	32 k steps	32 k steps
Number of instructions	Basic instructions		89 types		
	High-level instructions		226 types		
Operation speed			Basic instruction: 0.32 μs min. / step		
I/O refresh + base time			0.2 ms [When using FP0R expansion units: 1 ms + (1.5 × Number of expansion units) ms]		
Operation memory	Relay	External inputs (X)	1,760 points (The actual usable number of points is restricted by the hardware.)		
		External outputs (Y)	1,760 points (The actual usable number of points is restricted by the hardware.)		
		Internal relay (R)	4,096 points (R0 to R255F)		
		Special internal relay (R)	192 points		
		Timer / Counter (T / C)	1,024 points: timer capable of counting (units: 1 ms, 10 ms, 100 ms or 1 sec) × 32,767, Counter capable of counting 1 to 32,767		
		Link relay (L)	2048 points		
	Memory area	Data register (DT)	12,285 words (DT0 to DT12284)	32,765 words (DT0 to DT32764)	
		Special data register (DT)	374 words		
		Link data register (LD)	256 words		
		Index register (I)	14 words		
High-speed counter (Note 1)			Built-in (transistor output): Single-phase 8 channels (50 kHz × 4 channels + 10 kHz × 4 channels) Built-in (relay output): Single-phase 8 channels (10 kHz x 8 channels) Pulse I/O cassette: Single-phase 2 channels (80 kHz × 2 channels)		
Pulse output (Note 2) / PWM output			Built-in (transistor output): 100 kHz × 2 channels + 20 kHz × 2 channels Pulse I/O cassette: One unit (one axis) 100 kHz, or two units (two axes) 80 kHz		
Time measurement			10 μs, ring counter		
Potentiometer (volume) input			2 points (K0 to K1000)	2 points (K0 to K1000)	4 points (K0 to K1000)
Constant scan			Possible		
Real-time clock			When AFPX-MRTC is attached: Year (last two digits), month, day, hours (24-hour display), minutes, seconds, day of week (However, operates only when a battery is installed.)		
Flash ROM backup	Backup by instruction P13		Data register (32,765 words)		
	Auto-backup at power failure		Counter 16 points (1,008 to 1,023), Internal relay 128 points (R2480 to R255F), Data register 55 words (C30/C60: 32,710 to 32,764, C14: 12,230 to 12,284)		
Battery backup			The memory allocated in the storage area by the system register (However, only when a battery is installed)		

Notes: 1) Specification at the rated input voltage of 24 V DC, 25 °C 77 °F. Frequency may be lower due to the voltage and temperature.
2) Maximum frequency may vary by the method of operation. Please refer to the manual for details.