

# Programmable Controller FP0R





## Pocket-size ultra-compact controller

### Features

- Large capacity program / data memory**  
 Program capacity: 32 k steps max.  
 Data register: 32 k words max.
- Ultra-high speed processing**  
 80 ns/step (ST instruction)  
 \* Within a range of 0 to 3,000 program steps
- USB tool port provided as standard equipment**  
 Capable of high-speed program transfer with USB 2.0
- Multi-axis control available without expansion units**  
 Built-in pulse outputs for four axes (50 kHz max. each)
- Battery-less automatic backup of all data**  
 The F type has a built-in FeRAM, that allows the automatic saving of all data without a backup battery.
- Makeover for FP0R analog units. Greatly improved performance, extended functions**  
 Higher resolution: 14 bits (previously 12 bits)  
 Up to 8-channel input: Easier transition to multi-channel systems.

### SPECIFICATIONS

Product type of FP0R control unit		C10 (Relay output type only)	C14 (Relay output type only)	C16 (Transistor output type only)	C32 (Transistor output type only)	T32 (Transistor output type only)	F32 (Transistor output type only)	
Programming method / Control method		Relay symbol / Cyclic operation						
Number of I/O points	Control unit only (No expansion)	10 points [Input: 6, Relay Output: 4]	14 points [Input: 8, Relay Output: 6]	16 points [Input: 8, Transistor Output: 8]	32 points [Input: 16, Transistor Output: 16]	32 points [Input: 16, Transistor Output: 16]		
	With expansion 1 Same type of control and expansion units (Note)	Max. 58 points	Max. 62 points	Max. 112 points	Max. 128 points	Max. 128 points		
	With expansion 2 Mix type of relay and transistor units (Note)	Max. 106 points	Max. 110 points	Max. 112 points	Max. 128 points	Max. 128 points		
Program memory		EEPROM (no backup battery required)						
Program capacity		16 k steps			32 k steps			
Number of instructions	Basic instructions	110 types approx.						
	High-level instructions	210 types approx.						
Operation speed		Up to 3,000 steps 3,001st. and later steps						
		Basic instructions: 0.08 $\mu$ s min. Timer instructions: 2.2 $\mu$ s min. High-level instructions: 0.32 $\mu$ s (MV instruction) min. Basic instructions: 0.58 $\mu$ s min. Timer instructions: 3.66 $\mu$ s min. High-level instructions: 1.62 $\mu$ s (MV instruction) min.						
Operation memory	Relay	Internal relay (R)		4,096 points				
		Timer / Counter (T/C)		1,024 points				
	Memory area	Data register (DT)			32,765 words			
		Index register (IX, IY)			14 words (IO to ID)			
Master control relay points (MCR)		256 words						
Number of labels (JMP and LOOP)		256 labels						
Differential points		Equivalent to the program capacity						
Number of step ladder		1,000 stages						
Number of subroutines		500 subroutines						
Special functions	High speed counter	Single-phase: 6 points (50 kHz max. each) 2-phase: 3 channels (15 kHz max. each) (Note)						
	Pulse output	Not available		4 points (50 kHz max. each) 2 channels can be controlled individually. (Note)				
	PWM output	Not available		4 points (6 Hz to 4.8 kHz)				
	Pulse catch input / interrupt input	Total 8 points (with high speed counter)						
	Interrupt program	Input: 8 programs (6 programs for C10 only) / Periodic: 1 program / Pulse match: 4 programs						
	Periodical interrupt	In units of 0.5 ms: 0.5 ms to 1.5 sec. / In units of 10 ms: 10 ms to 30 sec.						
	Constant scan	In units of 0.5 ms: 0.5 ms to 600 ms						
RS-232C port		One RS-232C port is mounted on each of C10CRS, C10CRM, C14CRS, C14CRM, C16CT, C16CP, C32CT, C32CP, T32CT, T32CP, F32CT and F32CP type (3P terminal block) Transmission speed (Baud rate): 2,400 to 115,200 bits/sec., Transmission distance: 15 m 9.843 ft. Communication method: half duplex						
Maintenance	Memory backup	Program and system register				Stored program and system register in EEPROM		
		Operation memory				Backup of the entire area by FeRAM (without the need for a battery)		
			Stored fixed area in EEPROM Counter: 16 points Internal relay: 128 points Data register: 315 words					
	Self-diagnostic function		Watchdog timer (690 ms approx.), program syntax check					
	Real-time clock function		Not available				Available	
Other functions		Rewriting in RUN mode, download in RUN mode (incl. comments) 8-character password setting, and program upload protection						

Note: For the limitations while operating units, refer to the manual.

## Disclaimer

The applications described in the catalog are all intended for examples only. The purchase of our products described in the catalog shall not be regarded as granting of a license to use our products in the described applications. We do NOT warrant that we have obtained some intellectual properties, such as patent rights, with respect to such applications, or that the described applications may not infringe any intellectual property rights, such as patent rights, of a third party.

**Panasonic**  
INDUSTRY

**Panasonic Industry Co., Ltd.**

Industrial Device Business Division  
7-1-1, Morofuku, Daito-shi, Osaka 574-0044, Japan  
[industrial.panasonic.com/ac/e/](http://industrial.panasonic.com/ac/e/)