

- FIBER SENSORS
- LASER SENSORS
- PHOTOELECTRIC SENSORS
- MICRO PHOTOELECTRIC SENSORS
- AREA SENSORS
- SAFETY LIGHT CURTAINS / SAFETY COMPONENTS
- PRESSURE / FLOW SENSORS
- INDUCTIVE PROXIMITY SENSORS
- PARTICULAR USE SENSORS
- SENSOR OPTIONS
- SIMPLE WIRE- SAVING UNITS
- WIRE- SAVING SYSTEMS
- MEASUREMENT SENSORS
- STATIC CONTROL DEVICES
- LASER MARKERS

Related Information ■ General terms and conditions..... F-3



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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 μs min. Timer instructions: 2.2 μs min. High-level instructions: 0.32 μs (MV instruction) min. Basic instructions: 0.58 μs min. Timer instructions: 3.66 μs min. High-level instructions: 1.62 μs (MV instruction) min.					
Operation memory	Relay	Internal relay (R)		4,096 points			
		Timer / Counter (T/C)		1,024 points			
	Memory area	Data register (DT)		12,315 words		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		Backup of the entire area by a built-in secondary battery		
			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.