

FP-e

- FIBER SENSORS
- LASER SENSORS
- PHOTOELECTRIC SENSORS
- MICRO PHOTOELECTRIC SENSORS
- AREA SENSORS
- LIGHT CURTAINS
- PRESSURE / FLOW SENSORS
- INDUCTIVE PROXIMITY SENSORS
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- SENSOR OPTIONS
- SIMPLE WIRE- SAVING UNITS
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- HUMAN MACHINE INTERFACES
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- UV CURING SYSTEMS
- PLC
- I/F Terminals
- FP-e**
- FP0R
- FPΣ
- FP-X
- FP2SH
- FPWIN PRO
- FPWIN GR
- PCWAY
- FP Memory Loader



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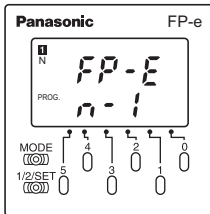
Features

- Display 5-character, 2-line, 3-color
- Front operation switch
- Equipped FP0-C14 Intelligence into small body
- Easy programming with wizard function
- Smooth debug
- Panel-mount type

Panel-mount type all-in-one controller - Combination of PLC and display

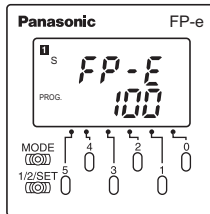
DISPLAY MODES AND FUNCTIONS

1 N mode (Normal mode)



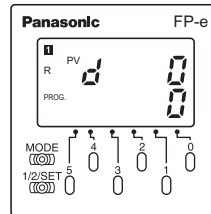
Displays any characters and numerical values. Numerical data can be changed.

2 S mode (Switch mode)



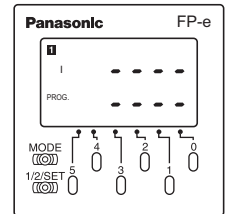
Display characters and numerical values. Operation switches can be used for input.

3 R mode (Register mode)



Operation memory in the controller can be monitored. Operational data can be changed.

4 I mode (I/O monitor mode)



I/O status (X, Y) can be monitored.

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SPECIFICATIONS

Part No.		AFPE224300 Basic type (RS232C)	AFPE224302 Basic type (RS485)	AFPE224305 Calendar timer type (RS232C)	AFPE214325 Thermocouple input type (RS232C)	AFPE214322 Thermocouple input type (RS485)
Number of controllable I/O points	Control unit	14 points [Input: 8, Output: 6 (Tr. NPN: 5/Ry: 1)]			12 points [Input: 6, Output: 6 (Tr. NPN: 5/Ry: 1)]	
	Front switch input	8 points				
Program memory	Built-in memory	Built-in EEPROM				
Program capacity		2720 steps				
Operation speed		0.9 μs/step (for basic instruction)				
Clock / calendar function		Not available		Year, month, day, hour, minute, second and day of week (This function is only used when a battery has been installed.)		Not available
Battery life		Not available		220 days or more [actual usage value: approx. 870 days (25 °C 77 °F)] Periodic replacement interval: 1 year (Value applies when no power is supplied at all.)		Not available
Pulse catch input		[6 points in total X0 and X1: 50 μs, X2 to X5: 100 μs]				
Interrupt input						
COM. Port		RS232C	RS485	RS232C	RS232C	RS485
Periodical interrupt		0.5 ms to 30 s				
Constant scan		Available				
Password		Available				
Special functions	High-speed counter * The combination of 1-phase × 2 ch. and 2-phase × 1 ch. is also possible for the high-speed counter.		Counter mode: Addition / subtraction (1-phase) , Input points: 4 ch. (Max.)			
			Max. speed: 10 kHz (total of 4 ch.)		Max. speed: 5 kHz	
			Counter mode: 2-phase / Individual / direction decision (2-phase), Input points: 2 ch (Max.)			
			Max. speed: 2 kHz (total of 2 ch.)		Max. speed: 1 kHz	
	Pulse output function	Output points	2 independent points (Y0 and Y1) (No interpolation function)			
		Output frequency	40 Hz to 10 kHz (Y0/Y1: 1-point), 40 Hz to 5 kHz (Y0/Y1: 2-point)		40 Hz to 5 kHz (1-point), 40 Hz to 2.5 kHz (2-point)	
PWM output function	Output points	2 points (Y0 and Y1)				
	Output frequency	Frequency: 0.15 Hz to 1 kHz, Duty: 0.1 % to 99.9 %				

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Features

- **Large capacity of program and data memory**
 Program capacity: 32 k steps
 Data register: 32 k words
- **Ultra-high speed processing**
 80nsec/step (Basic instruction)
 * Within a range of 0 to 3,000 program steps
- **All types equipped USB tool port**
 Capable of high-speed program transfer using USB 2.0
- **Multi-axis control available without expansion units**
 Built-in pulse outputs for four axes (50 kHz each)
- **Battery-less automatic backup of all data**
 The F type has a built-in FeRAM, industry's first that allows the automatic saving of all data without a backup battery.

Pocket-size ultra-compact controller

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	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	Max. 106 points	Max. 110 points	Max. 112 points	Max. 128 points	Max. 128 points		
Program memory		EEPROM (no back up battery required)						
Program capacity		16 k steps			32 k steps			
Number of instructions	Basic instructions	Approx. 110						
	High-level instructions	Approx. 210						
Operation speed		Up to 3000 steps						
		3001st and later steps						
Operation memory	Relay	Internal relay (R)						
		Timer / Counter (T/C)						
Memory area	Data register (DT)	12315 words			32765 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		1000 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)*						
	Pulse output	Not available			4 points (50 kHz max. each) Two channels can be controlled individually.*			
	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 msec: 0.5 msec to 1.5 sec / In units of 10 msec: 10 msec to 30 sec						
Constant scan		In units of 0.5 msec: 0.5 msec to 600 msec						
RS232C port		One RS232C 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): 2400 to 115200 bits/s, 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				Backup of the entire area by FeRAM (without the need for a battery)	
		Operation memory	Stored fixed area in EEPROM Counter: 16 points Internal relay: 128 points Data register: 315 words			Backup of the entire area by a built-in secondary battery		
	Self-diagnostic function		Watchdog timer (Approx. 690 msec), 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					

* For the limitations while operating units, see the manual.

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FPΣ (SIGMA)



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Features

- Abundant program capacity - 32 k steps**
The 32-K step program capacity can accommodate an increase in the number of programs accompanying functionality enhancements, expansions, or changes of equipment.
- Independent comment memory**
All of 100,000 I/O comments, 5,000 lines of line-space comments, and 5,000 lines of remark comments are saved in FPΣ together with programs.
- High-speed RISC processor**
Equipped with a RISC processor, achieving high-speed processing with a scan time of less than 2 ms for 5,000 steps.
- High-speed positioning unit**
The 4-Mbps maximum frequency and startup speed of 0.005 ms allow use for linear servo control.
- Easy temperature controlling**
A temperature control program can be written in only one line by using the PID F356 (EZPID) instruction, facilitating temperature control by a PLC, which had previously been considered difficult.

High-performance and ultra-compact PLC

SPECIFICATIONS

Item		Descriptions			
		AFPG2543H / AFPG2543HTM	AFPG2643H / AFPG2643HTM	AFPG2423H / AFPG2423HTM	AFPG2653H / AFPG2653HTM
Number of controllable I/O points	Control unit	32 points (DC input: 16, NPN output: 16)	32 points (DC input: 16, NPN output: 16)	24 points (DC input: 16, relay output: 8)	28 points (DC input: 16, PNP output: 12)
	With FP0 expansion units	Max. 128 points (up to 3 units) * When using transistor output type expansion units	Max. 128 points (up to 3 units) * When using transistor output type expansion units	Max. 120 points (up to 3 units) * When using transistor output type expansion units	Max. 124 points (up to 3 units) * When using transistor output type expansion units
	With FPΣ expansion units	Not possible	Max. 288 points (up to 4 units) * When using transistor output type expansion units	Max. 280 points (up to 4 units) * When using transistor output type expansion units	Max. 284 points (up to 4 units) * When using NPN output type expansion units
	With FP0 and FPΣ expansion units	Max. 128 points * When using transistor output type expansion units	Max. 384 points * When using transistor output type expansion units	Max. 376 points * When using transistor output type expansion units	Max. 380 points * When using NPN output type expansion units
Programming method / Control method		Relay symbol / Cyclic operation			
Program memory		Built-in flash ROM (without backup battery)			
Program capacity		32 k steps			
Number of instructions	Basic instructions	93			
	High-level instructions	216	218	216	218
Operation speed		Basic instruction: 0.32 μs/step			
Operation memory Memory area	Relay	4096 points: R0 to R255F ^{*1}			
	Timer / Counter (T/C)	1024 points ^{*1, *2} [for initial setting, timer: 1008 points (T0 to T1007), counter: 16 points (C1008 to C1023)] Timer: Counts each unit up to 32767 times (units: 1 ms, 10 ms, 100 ms, or 1 s). Counter: Counts 1 to 32767.			
	Link relays (L)	2048 points			
	Data register (DT)	32765 words (DT0 to DT32764) ^{*1}			
	Link data register (LD)	256 words			
	Index register (I)	14 words (I0 to I14)			
Differential points		Unlimited			
Master control relay points (MCR)		256			
Number of labels (JP and LOOP)		256			
Number of step ladders		1,000 stages			
Number of subroutines		100 subroutines			
Pulse catch input		8 points (X0 to X7)			
Number of interrupt programs		9 programs (8 external input points (X0 to X7), 1 periodical interrupt point '0.5 ms to 30 s')			
Self-diagnosis function		E. g. watchdog timer, program syntax check			
Clock / calendar function		Available (year, month, day, hour, minute, second and day of week); however, this function can only be used when a battery has been installed. ^{*3}			
Potentiometer (Volume) input		2 points, resolution: 10 bits (K0 to K1000)			
Battery life		220 days or more* (actual usage value: approx. 840 days (25 °C 77 °F). Suggested replacement interval: 1 year. * Value applies when no power is supplied at all.			
Comment storage		All kinds of comments, including I/O comments, remarks, and block comments, can be stored (without backup battery).			
Link function		Computer link (1:1, 1:N) ^{*4} , General-purpose communication (1:1, 1:N) ^{*4, *5} , PLC link ^{*6}			
Other functions		Program edition during RUN, constant scan, forced on/off, password, floating-point operation, and PID processing			
Linear / Circular interpolation for positioning		Not available	Available	Not available	Available

*1. If no battery is used, only the fixed area is backed up (counters 16 points: C1008 to C1023, internal relays 128 points: R2480 to R255F, data registers 55 words: DT32710 to DT32764). When the optional battery is used, data can be backed up. Areas to be held and not held can be specified using the system registers. (Exclusive instructions allow writing and reading data in flash ROM.)

*2. The number of points can be increased by using an auxiliary timer.

*3. Precision of calendar timer: - At 0 °C 32 °F, less than 119 seconds error per month.
- At 25 °C 77 °F, less than 51 seconds error per month.
- At 55 °C 131 °F, less than 148 seconds error per month.

*4. An optional communication cassette (RS232C type) is required in order to use 1:1 communication.

*5. An optional communication cassette (RS485 type) is required in order to use 1:N communication.

*6. An optional communication cassette (RS485 type) is required. When the communication cassette is attached and it communicates, re-send processing is recommended.

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SENSORSMICRO
PHOTOELECTRIC
SENSORSAREA
SENSORSLIGHT
CURTAINSPRESSURE /
FLOW
SENSORSINDUCTIVE
PROXIMITY
SENSORSPARTICULAR
USE SENSORSSENSOR
OPTIONSSIMPLE
WIRE-
SAVING
UNITSWIRE-
SAVING
SYSTEMSMEASUREMENT
SENSORSSTATIC CONTROL
DEVICES

ENDOSCOPE

LASER
MARKERSPLC /
TERMINALSHUMAN MACHINE
INTERFACESENERGY CONSUMPTION
VISUALIZATION
COMPONENTS

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MACHINE VISION
SYSTEMSUV CURING
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FP Memory
Loader
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USB port for easy connection to a PC.
Also compatible with Ethernet.

Features

- **Abundant program capacity - 32 k steps**
- **Independent comment memory**

All of 100,000 I/O comments, 5,000 lines of line-space comments, and 5,000 lines of remark comments are saved in FP-X together with programs.

- **High-speed RISC processor**

Equipped with a RISC processor, achieving high-speed processing with a scan time of less than 2 ms for 5,000 steps.

- **Expansion cassettes increase the functionality, maintaining the space-saving size**

Up to three add-on cassettes can be attached to the control unit. The 17 types of add-on cassettes, including the communication and analog types, cover a wide variety of applications.

- **Multi-axis controlling 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.

SPECIFICATIONS

Item			Descriptions		
			C14	C30	C60
Number of controllable I/O points	Control unit	Relay output type	DC input: 8, relay output: 6	DC input: 16, relay output: 14	DC input: 32, relay output: 28
		Transistor output type	DC input: 8, transistor output: 6	DC input: 16, transistor output: 14	DC input: 32, transistor output: 28
	Max. I/O points when expanded	254 points (366 points max. when using add-on cassettes and FP0 expansion units)	270 points (352 points max. when using add-on cassettes and FP0 expansion units)	300 points (382 points max. when using add-on cassettes and FP0 expansion units)	
Programming method / Control method			Relay symbol / Cyclic operation		
Program memory			Built-in flash ROM (without backup battery)		
Program capacity			16 k steps	32 k steps	32 k steps
Number of instructions	Basic instructions		89		
	High-level instructions		226		
Operation speed			Basic instruction: 0.32 μs/step		
I/O refresh + base time			0.2 ms [When using FP0 expansion units: 1 ms + (1.5 × Number of expansion units) ms]		
Operation memory	Relay	External inputs (X)	1760 points (The actual usable number of points is restricted by the hardware.)		
		External outputs (Y)	1760 points (The actual usable number of points is restricted by the hardware.)		
		Internal relay (X)	4096 points (R0 to R255F)		
		Special internal relay (R)	192 points		
		Timer / counter (T/C)	1024 points: timer capable of counting (1 ms, 10 ms, 100 ms, 1 s) × 32767, Counter capable of counting 1 to 32767		
		Link relay (L)	2048 points		
	Memory area	Data register	12285 words (DT0 to DT12284)	32765 words (DT0 to DT32764)	
Special data register (DT)		374 words			
Link register (LD)		256 words			
Index register (I)		14 words			
High-speed counter ^{*1}			Built-in (Transistor output): single-phase 8 ch (50 kHz × 4 ch + 10 kHz × 4 ch) Built-in (Relay output): single-phase 8 ch (10 kHz × 8 ch) Pulse I/O cassette: single-phase 2 ch (80 kHz × 2 ch)		
Pulse output ^{*2} / PWM output			Built-in (Transistor output): 100 kHz × 2 ch + 20 kHz × 2 ch Pulse I/O cassette: One unit (one axis) 100 kHz, or two units (two axes) 80 kHz		
Time measurement			10 μsec ring counter		
Potentiometer			2 points (K0 to K1000)	2 points (K0 to K1000)	4 points (K0 to K1000)
Constant scan			Available		
Real-time clock			When AFPX-MRTC is attached: Year (last two digits), month, day, hours (24-hour display), minutes, seconds, day of week Operates only when a battery is installed.		
Flash ROM backup	Backup by P13 commands		Data register (32765 words)		
	Auto-backup at power failure		Counter 16 points (1008 to 1023), Internal relay 128 points (R2480 to R255F), Data register 55 words (C30/C60 = 32710 to 32764, C14 = 12230 to 12284)		
Battery backup			The memory allocated in the storage area by the system register (only when a battery is installed)		

*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. Max frequency may vary by the method of operation. Please refer to the manual for details.

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Features

- Scanning time of 1 ms for 20 k steps**
 With an operating speed at the top of its class, super high-speed processing is made possible. It will dramatically decreased tact time and high-speed device.
- Large programming capacity: Maximum 120 k steps**
 Both the large programming capacities of 60 k and 120 k are available depending on the model.
- Optional small PC card is also available**
 The small PC card is available for programming backup or data memory expansion. This allows data processing of great amounts of data.
- Built-in comment and calendar timer functions**
 These functions, options with the FP2, are built right into the FP2SH.
 - * The I/O unit and intelligent unit are the same for the FP2 series.



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Scanning time of 1 ms for 20 k steps.
A high-performance model for high-speed operation.

POWER SUPPLY / I/O SPECIFICATIONS

Item	Descriptions
Power supply	100-120 V AC/200-240 V AC/ 100-240 V AC/24 V DC (varies with different models)
Input	12-24 V DC/24 V DC ±common
Output	Relay 2 A to 5 A, Transistor 0.1 A to 0.5 A (varies with different models)

SPECIFICATIONS

Item	Descriptions	
Number of I/O points	Up to 768 points	
Expansion	Standard Up to 1 backplane, Units: 25 max., I/O points: 1600 max., Remote I/O points: 8192 max.	
	H type Up to 3 backplane, Units: 32 max., I/O points: 2048 max., Remote I/O points: 8192 max.	
Operation speed	0.03 μs/step (Basic instruction)	
Built-in memory	RAM (ROM / small PC card is optional)	
Memory capacity	Approx. 32 k steps / Approx. 60 k steps / Approx. 120 k steps (varies with different models)	
Operation memory	Internal relay	14192 points
	Timer / Counter (T/C)	3072 points in total
	Data register	10240 words
	File register	32765 words × 3

SPECIAL FUNCTIONS

Item	Descriptions
Analog I/O	Available by adding analog input and analog output units.
High speed counter	Available by adding high-speed counter unit. (Max. 200 kHz)
Positioning	Available by adding positioning unit. (Max. 4 Mpps) * The positioning unit for RTEX can be used.
Serial	RS232C port Standard equipped with CPU unit. Expandable by adding C.C.U., serial data unit and M.C.U.
	RS422 RS485 Expandable by adding M.C.U.
Interrupt input	Available by adding high-speed counter unit or pulse I/O unit.

SPECIAL NETWORK FUNCTIONS

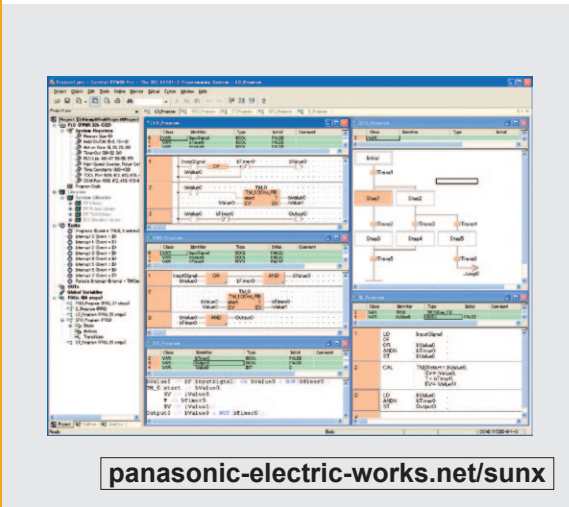
Item	Descriptions
Remote I/O	S-LINK, MEWNET-F
PLC Link	MEWNET-W2 (Wire) MEWNET-W0 MEWNET-VE FL-NET
Computer Link	Linkable by using tool port or COM. port on CPU unit. Also available by adding M.C.U. and C.C.U.
Modem connection	Available

OTHER BUILT-IN FUNCTIONS

Item	Descriptions
Program block-edit during RUN	Available
Constant scan	Available
Clock / Calendar function	Built-in type

Control FPWIN Pro

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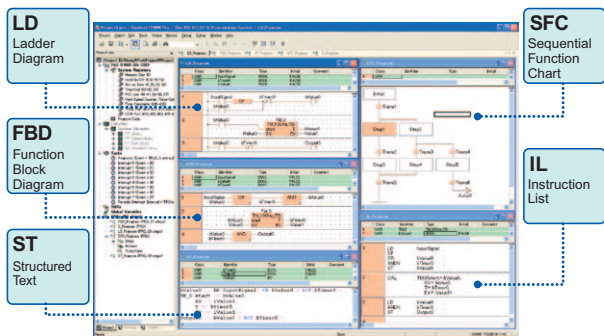
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Compliant with international standard IEC61131-3 Programming software approved by PLC Open

Features

- **Five programming languages are available**
Programming can be done using the language most familiar to the developer or using the language most suited to the process to be performed. High-level (structured text) languages that allow structuring, such as C, are supported.
- **Easy to reuse well-proven programs**
Efficiency when writing programs has been greatly increased by being able to split programming up for each function and process using structured programming.
- **Keep your own program from getting out**
By "black boxing" a part of a program, you can prevent know-how from leaking out and improve the program's maintainability.
- **Uploading the source programs from PLC is available**
Maintainability increased by being able to load programs and comments from the PLC.
- **Programming for all models in the FP series is available**

Control FPWIN Pro (IEC61131-3 compliant Windows version software)

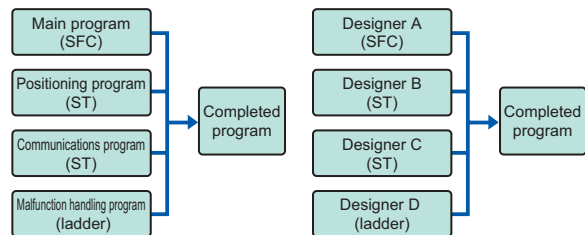


Programming in the language most suited to the process

Easy-to-understand, efficient programs can be created, for example, by using a ladder program for machine control or ST for communications control.

Programming in the language you are good at

Programming time will be greatly reduced by the easy ability to split and then integrate programming for each function and process.

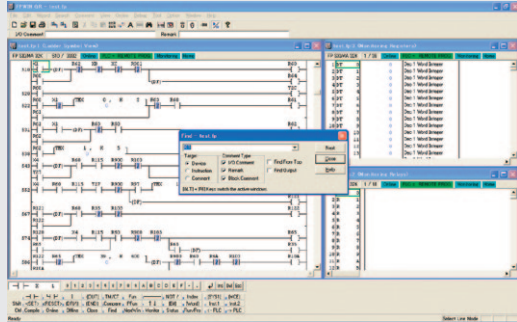


OPERATIONAL ENVIRONMENT

OS	Windows2000/XP/Vista
Hard disk capacity	At least 120 MB
CPU	Pentium III 700 MHz or higher
Onboard memory	At least 256 MB (depends on OS)
Screen resolution	At least 1024 × 768
Display colors	High Color (16-bit) or higher
Applicable PLC	FP0R/FP0/FPΣ/FP-X/FP-e/FP1/FP-M/FP2/FP2SH/FP3/FP10SH

PRODUCT TYPE

Product name		Part No.
FPWIN Pro for Windows	Japanese	AFPS50160
	English	AFPS50560



panasonic-electric-works.net/sunx

Features

- Easy field operations not requiring the use of a mouse for data entry, search, writing, monitoring and timer changes, all carried out only from the keyboard.
- All FP series PLCs are supported.
- Easy programming with wizard functions.
- Communication with CommX, GTWIN, PCWAY simultaneously through the same port.

The ladder programming software for FP series
Highly operational software tool for maximizing
convenience in the field

OPERATIONAL ENVIRONMENT

OS	Windows98/Me/2000/XP/Vista
Hard disk capacity	At least 40 MB
CPU	Pentium 100 MHz or higher
Onboard memory	At least 64 MB (depends on OS)
Screen resolution	At least 1024 × 768
Display colors	High Color (16-bit) or higher
Applicable PLC	FP0R/FP0/FPΣ/FP-X/FP-e/FP1/FP-M/ FP2SH/FP3/FP10SH

PRODUCT TYPES

Product name		Part No.
FPWIN GR for Windows	Japanese	AFPS10122
	English: Full type	AFPS10520
	English: Small type	AFPS11520
	Chinese	AFPS10820
	Korean	AFPS10920

FIBER SENSORS

LASER SENSORS

PHOTOELECTRIC SENSORS

MICRO PHOTOELECTRIC SENSORS

AREA SENSORS

LIGHT CURTAINS

PRESSURE / FLOW SENSORS

INDUCTIVE PROXIMITY SENSORS

PARTICULAR USE SENSORS

SENSOR OPTIONS

SIMPLE WIRE-SAVING UNITS

WIRE-SAVING SYSTEMS

MEASUREMENT SENSORS

STATIC CONTROL DEVICES

ENDOSCOPE

LASER MARKERS

PLC / TERMINALS

HUMAN MACHINE INTERFACES

ENERGY CONSUMPTION VISUALIZATION COMPONENTS

FA COMPONENTS

MACHINE VISION SYSTEMS

UV CURING SYSTEMS

PLC

I/F Terminals

FP-e

FP0R

FPΣ

FP-X

FP2SH

FPWIN PRO

FPWIN GR

PCWAY

FP Memory Loader

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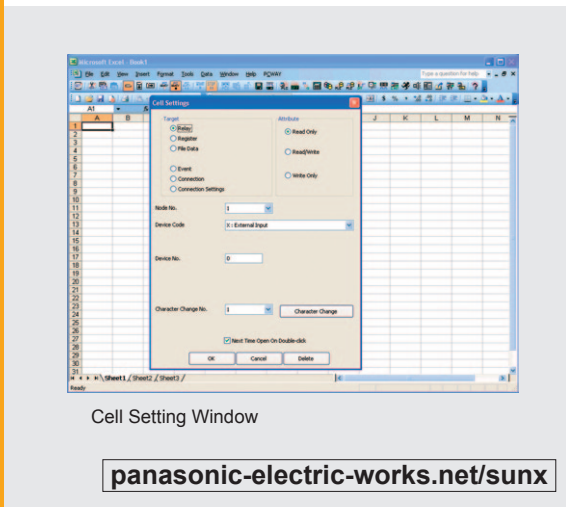
FP2SH

FPWIN PRO

FPWIN GR

PCWAY

FP Memory Loader



Features

- Effective link between a cell of Excel and PLC relay / register
- Display change in accordance with the values of the register and relay without using the macro program
- Automatic data storage with a text format

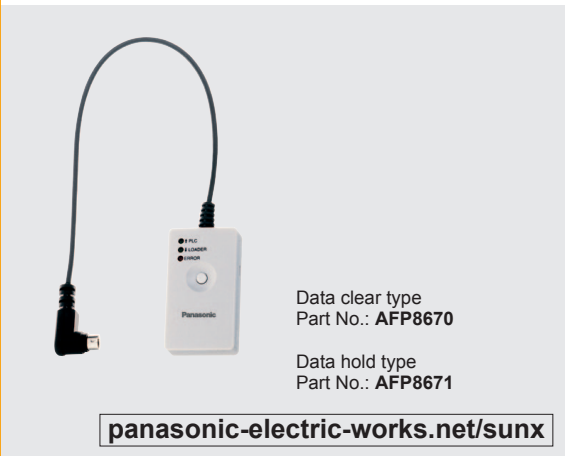
Data acquisition timing can be set flexibly. (Examples: when an event and relay turn to ON, and when periodical processing is performed using a weekly timer)

Add-in Software for Acquiring PLC Data and Combining it with Microsoft Excel, Spreadsheet Software.

PRODUCT TYPES

Product name	Part No.
PCWAY Ver.2.7 Japanese: IBM printer port	AFW1001
PCWAY Ver.2.7 Japanese: USB port	AFW1003
PCWAY Ver.2.7 English: IBM printer port	AFW10011
PCWAY Ver.2.7 English: USB port	AFW10031
PCWAY Ver.2.7 Japanese: Version upgrade	AFW1040
PCWAY Ver.2.7 English: Version upgrade	AFW10401
Key unit USB port for PCWAY	AFW1033

FP Memory Loader



Features

- Program upload / download is available by simple button operation
- Ideal for program maintenance at user visits.

Compatible models

FP-e, FP0R, FP0, FPΣ, FP-X, FP2SH

Upload / download programs of the FP series without using a PC

PRODUCT TYPES

Product name	Description	Part No.
FP Memory Loader	Data clear type	AFP8670
	Data hold type	AFP8671

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UV CURING SYSTEMS

PLC

I/F Terminals

FP-e

FP0R

FPΣ

FP-X

FP2SH

FPWIN PRO

FPWIN GR

PCWAY

FP Memory Loader

- FIBER SENSORS
- LASER SENSORS
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- MICRO PHOTO-ELECTRIC SENSORS
- AREA SENSORS
- LIGHT CURTAINS
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- INDUCTIVE PROXIMITY SENSORS
- PARTICULAR USE SENSORS
- SENSOR OPTIONS
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- WIRE-SAVING SYSTEMS
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- ENERGY CONSUMPTION VISUALIZATION COMPONENTS
- FA COMPONENTS
- MACHINE VISION SYSTEMS
- UV CURING SYSTEMS
- PLC I/F Terminals
- FP-e
- FP0R
- FPΣ
- FP-X
- FP2SH
- FPWIN PRO
- FPWIN GR
- PCWAY
- FP Memory Loader

FP-e

Control Unit

Product name		Product No.	Part No.
FP-e control unit	RS232C Basic type	_____	AFPE224300
	RS232C Calendar timer type	_____	AFPE224305
	RS232C Thermocouple input type	_____	AFPE214325
	RS485 Basic type	_____	AFPE224302
	RS485 Thermocouple input type	_____	AFPE214322

Options

Product name	Product No.	Part No.
Backup battery	_____	AFPG804
Rubber gasket	_____	ATC18002
Mounting frame	_____	AT8-DA4
Panel cover (Black) 20 pcs	_____	AFPE803
Protective cover	_____	AQM4803
Terminal screwdriver	_____	AFP0806
Terminal socket set (4 terminal blocks)	_____	AFPE804

FP0

Control Unit

Product name	Product No.	Part No.
FP0-C10 Control unit	FP0-C10RS	AFP02123
	FP0-C10RM	AFP02113
FP0-C10 Control unit with RS232C port	FP0-C10CRS	AFP02123C
	FP0-C10CRM	AFP02113C
FP0-C14 Control unit	FP0-C14RS	AFP02223
	FP0-C14RM	AFP02213
FP0-C14 Control unit with RS232C port	FP0-C14CRS	AFP02223C
	FP0-C14CRM	AFP02213C
FP0-C16 Control unit	FP0-C16T	AFP02343
FP0-C16 Control unit with RS232C port	FP0-C16CT	AFP02343C
FP0-C32 Control unit	FP0-C32T	AFP02543
FP0-C32 Control unit with RS232C port	FP0-C32CT	AFP02543C
FP0-T32 Control unit with RS232C port and Clock / Calendar function, 10 k steps	FP0-T32CT	AFP02643C
FP0-S-LINK Control unit with RS232C port	FP0-SL1	AFP02700

FP0R

Control Unit

Product name	Product No.	Part No.
FP0R-C10 Control unit	_____	AFP0RC10RS
	_____	AFP0RC10RM
FP0R-C10 Control unit with RS232C port	_____	AFP0RC10CRS
	_____	AFP0RC10CRM
FP0R-C14 Control unit	_____	AFP0RC14RS
	_____	AFP0RC14RM
FP0R-C14 Control unit with RS232C port	_____	AFP0RC14CRS
	_____	AFP0RC14CRM
FP0R-C16 Control unit	_____	AFP0RC16T
	_____	AFP0RC16P
FP0R-C16 Control unit with RS232C port	_____	AFP0RC16CT
	_____	AFP0RC16CP
FP0R-C32 Control unit	_____	AFP0RC32T
	_____	AFP0RC32P
FP0R-C32 Control unit with RS232C port	_____	AFP0RC32CT
	_____	AFP0RC32CP
FP0R-T32 Control unit with RS232C port and Real-time clock function	_____	AFP0RT32CT
	_____	AFP0RT32CP
FP0R-F32 Control unit with RS232C port	_____	AFP0RF32CT
	_____	AFP0RF32CP

FPΣ

Control Unit

Product name	Product No.	Part No.
FPΣ C32 Control unit	FPG-C32TH	AFPG2543H
FPΣ C32 Left-side expansion type Control unit	FPG-C32T2H	AFPG2643H
FPΣ C24 Left-side expansion type Control unit	FPG-C24R2H	AFPG2423H
FPΣ C28 Left-side expansion type Control unit (PNP)	FPG-C28P2H	AFPG2653H
FPΣ C32 Control unit with thermistor input	FPG-C32THTM	AFPG2543HTM
FPΣ C32 Left-side expansion type Control unit with thermistor input	FPG-C32T2HTM	AFPG2643HTM
FPΣ C24 Left-side expansion type Control unit with thermistor input	FPG-C24R2HTM	AFPG2423HTM
FPΣ C28 Left-side expansion type Control unit (PNP) with thermistor input	FPG-C28P2HTM	AFPG2653HTM

Expansion Units for FPΣ (Left-side expansion types)

Product name	Product No.	Part No.	
64-points expansion I/O unit	NPN	FPG-XY64D2T	AFPG3467
	PNP	FPG-XY64D2P	AFPG3567

FPΣ

Expansion Units for FPΣ, FP0 and FP0R (Right-side expansion types)

Product name		Product No.	Part No.
FP0-E8 Expansion unit	Input 8 points DC	FP0-E8X	AFP03003
	Input 4 points DC, Relay output 4 points	FP0-E8RS	AFP03023
	Relay output 8 points	FP0-E8YRS	AFP03020
	Transistor output (NPN) 8 points	FP0-E8YT	AFP03040
FP0-E16 Expansion unit	Input 16 points DC	FP0-E16X	AFP03303
	Input 8 points DC, Relay output 8 points	FP0-E16RS	AFP03323
	Input 8 points DC, Transistor output (NPN) 8 points	FP0-E16T	AFP03343
	Transistor output (NPN) 16 points	FP0-E16YT	AFP03340
FP0-E32 Expansion unit	Input 16 points DC, Transistor output (NPN) 16 points	FP0-E32T	AFP03543

Intelligent Units for FPΣ, FP0 and FP0R (Right-side expansion types)

Product name		Product No.	Part No.
FP0 Thermocouple unit		FP0-TC4	AFP0420
		FP0-TC8	AFP0421
FP Web-Server 2		FP0-WEB2	AFP0611
Control FP Web Configurator Tool 2	Japanese version	—	AFPS30120
	English version	—	AFPS30520
FP0 I/O Link unit		FP0-IOL	AFP0732
FP0 CC-Link Slave unit		FP0-CCLS	AFP07943
FP0 A/D Converter unit		FP0-A80	AFP0401
FP0 D/A Converter unit		FP0-A04V	AFP04121
		FP0-A04I	AFP04123
FP0 Analog I/O unit		FP0-A21	AFP0480
FP0 RTD (resistance thermometer device) unit		FP0-RTD6	AFP0430

FP0, FP0R and FPΣ Options

C-NET

Product name		Product No.	Part No.
For connection with a computer	C-NET adapter (for computer)	100-240 V AC	AFP8536
		24 V DC	AFP8532
For connection with a PLC (with cable)	C-NET adapter S2 type		AFP15402

Power Supply Unit

Product name	Product No.	Part No.
FP0 Power supply unit	FP0-PSA4	AFP0634

Motor Driver I/F Terminal II

Product name	Product No.	Part No.
Motor Driver I/F Terminal II 1-axis type	—	AFP8503
Motor Driver I/F Terminal II 2-axis type	—	AFP8504
Exclusive cable for MINAS AIII Series, 1 m 3.281 ft	—	AFP85131
Exclusive cable for MINAS AIII Series, 2 m 6.562 ft	—	AFP85132
Exclusive cable for MINAS S Series, 1 m 3.281 ft	—	AFP85141
Exclusive cable for MINAS S Series, 2 m 6.562 ft	—	AFP85142
Connection cable for Positioning unit, 0.5 m 1.640 ft	—	AFP85100
Connection cable for Positioning unit, 1 m 3.281 ft	—	AFP85101

Intelligent Units for FPΣ (Left-side expansion types)

Product name		Product No.	Part No.
FPΣ Positioning unit Pulse output type	1 axis, Transistor output	FPG-PP11	AFPG430
	1 axis, Line driver output	FPG-PP12	AFPG432
	2 axes, Transistor output	FPG-PP21	AFPG431
	2 axes, Line driver output	FPG-PP22	AFPG433
FPΣ Positioning unit RTEX	2-axis type	FPG-PN2AN	AFPG43610
	4-axis type	FPG-PN4AN	AFPG43620
	8-axis type	FPG-PN8AN	AFPG43630
FPΣ Data memory expansion unit		FPG-EM1	AFPG201
FPΣ CC-LINK slave unit		FPG-CCLS	AFPG7943
FPΣ S-LINK unit		FPG-SL	AFPG780
FPΣ FNS unit		FPG-FNS	AFPG7930
	FP-FNS block (PROFIBUS DP)	—	AFPN-AB6200
	FP-FNS block (DeviceNet)	—	AFPN-AB6201
	FP-FNS block (CANopen)	—	AFPN-AB6218
FPΣ PROFIBUS DP Master unit		—	AFPG7971
FPΣ DeviceNet Master unit		—	AFPG7972
FPΣ CANopen Master unit		—	AFPG7973

Communication Cassettes

Product name	Product No.	Part No.
FPΣ Communication cassette 1 ch, RS232C type	FPG-COM1	AFPG801
FPΣ Communication cassette 2 ch, RS232C type	FPG-COM2	AFPG802
FPΣ Communication cassette 1 ch, RS485 type	FPG-COM3	AFPG803
FPΣ Communication cassette 1 ch, RS232C / 1 ch, RS485 type	FPG-COM4	AFPG806

Options and Maintenance Parts

Product name	Product No.	Part No.
Backup battery for FPΣ	—	AFPG804
FPΣ High capacity battery holder	—	AFPG807
FP0 Slim 30 type mounting plate (including 10 pieces)	—	AFP0811
FP0 Slim type mounting plate (including 10 pieces)	—	AFP0803
Power cable for FP0 (including 1 piece)	—	AFP0581
Power cable for FPΣ	—	AFPG805
FP Memory loader	—	AFP8670
	—	AFP8671
Terminal screwdriver	—	AFP0806
Molex connector pressure contact tool	—	AFP0805
Multi-wire connector pressure contact tool	—	AXY52000FP
Relay output molex type I/O cable (1 set: 2 cables)	—	AFP0551
	—	AFP0553
Transistor output type I/O cable (1 set: 2 cables)	—	AFP0521
	—	AFP0523
Flat cable connector set (10-pin)	—	AFP0808
Terminal socket (2 sokets per pack)	—	AFP0802
Molex socket (2 sokets per pack)	—	AFP0801
Wire-press socket (2 sokets per pack)	—	AFP0807

FIBER SENSORS
LASER SENSORS
PHOTO-ELECTRIC SENSORS
MICRO PHOTO-ELECTRIC SENSORS
AREA SENSORS
LIGHT CURTAINS
PRESSURE / FLOW SENSORS
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FA COMPONENTS
MACHINE VISION SYSTEMS
UV CURING SYSTEMS

PLC
I/F Terminals
FP-e
FP0R
FPΣ
FP-X
FP2SH
FPWIN PRO
FPWIN GR
PCWAY
FP Memory Loader

FP-X

Control Unit

	Product name	Product No.	Part No.
Relay output	FP-X C14R	_____	AFPX-C14R
	FP-X C14RD	_____	AFPX-C14RD
	FP-X C30R	_____	AFPX-C30R
	FP-X C30RD	_____	AFPX-C30RD
	FP-X C60R	_____	AFPX-C60R
	FP-X C60RD	_____	AFPX-C60RD
Transistor output	FP-X C14T	_____	AFPX-C14T
	FP-X C14TD	_____	AFPX-C14TD
	FP-X C14P	_____	AFPX-C14P
	FP-X C14PD	_____	AFPX-C14PD
	FP-X C30T	_____	AFPX-C30T
	FP-X C30TD	_____	AFPX-C30TD
	FP-X C30P	_____	AFPX-C30P
	FP-X C30PD	_____	AFPX-C30PD
	FP-X C60T	_____	AFPX-C60T
	FP-X C60TD	_____	AFPX-C60TD
	FP-X C60P	_____	AFPX-C60P
	FP-X C60PD	_____	AFPX-C60PD

Expansion Unit

	Product name	Product No.	Part No.	
Input	FP-X E16X Expansion input unit	_____	AFPX-E16X	
	Output			
Relay output	FP-X 14YR Expansion output unit	_____	AFPX-E14YR	
	FP-X E16R Expansion I/O unit	_____	AFPX-E16R	
	FP-X E30R Expansion I/O unit	_____	AFPX-E30R	
I/O	FP-X E31RD Expansion I/O unit	_____	AFPX-E30RD	
	Transistor output	FP-X E16T Expansion I/O unit	_____	AFPX-E16T
		FP-X E16P Expansion I/O unit	_____	AFPX-E16P
		FP-X E30TD Expansion I/O unit	_____	AFPX-E30TD
	FP-X E30T Expansion I/O unit	_____	AFPX-E30T	
	FP-X E30PD Expansion I/O unit	_____	AFPX-E30PD	
	FP-X E30P Expansion I/O unit	_____	AFPX-E30P	
	Expansion FP0 adapter	_____	AFPX-EFP0	

Add-on Cassette

Product name	Product No.	Part No.
FP-X I/O cassette	_____	AFPX-IN4T3
FP-X Input cassette	_____	AFPX-IN8
FP-X Output cassette	_____	AFPX-TR8
	_____	AFPX-TR6P
FP-X Pulse I/O cassette	_____	AFPX-PLS
FP-X Analog input cassette	_____	AFPX-AD2
FP-X Analog output cassette	_____	AFPX-DA2
FP-X Analog I/O cassette	_____	AFPX-A21
FP-X Thermocouple input cassette	_____	AFPX-TC2
FP-X RTD cassette	_____	AFPX-RTD2
FP-X Master memory cassette with a real-time clock	_____	AFPX-MRTC
FP-X COM1 Communication cassette	_____	AFPX-COM1
FP-X COM2 Communication cassette	_____	AFPX-COM2
FP-X COM3 Communication cassette	_____	AFPX-COM3
FP-X COM4 Communication cassette	_____	AFPX-COM4
FP-X COM5 Communication cassette	_____	AFPX-COM5
FP-X COM6 Communication cassette	_____	AFPX-COM6
Control Configurator WD	_____	_____

Options and Maintenance Parts

Product name	Product No.	Part No.
FP-X Backup battery	_____	AFPX-BATT
	_____	AFPX-EC08
FP-X Expansion cable	_____	AFPX-EC30
	_____	AFPX-EC80
FP-X Terminal block	_____	AFPX-TAN

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FP2SH

FPWIN PRO

FPWIN GR

PCWAY

FP Memory Loader

FP2/FP2SH

CPU Units (Built-in RAM)

Product name		Product No.	Part No.
FP2SH	32 k Standard type	FP2-C2L	AFP2221
	60 k Standard type	FP2-C2	AFP2231
	60 k type with IC memory card interface	FP2-C2P	AFP2235
	120 k type with IC memory card interface	FP2-C3P	AFP2255

Optional Memories

Product name		Product No.	Part No.
FP2SH Expansion memory unit		—	AFP2208
IC memory card (Small PC card) for FP2SH CPU unit with IC memory card interface	SRAM	—	AFP2209

Backplane

Product name		Product No.	Part No.
FP2 Backplane	Conventional type	FP2-BP05	AFP25005
		FP2-BP07	AFP25007
		FP2-BP09	AFP25009
		FP2-BP12	AFP25012
	H type	FP2-BP14	AFP25014
		FP2-BP11MN	AFP25011MH
FP2 Expansion cable		FP2-BP10EH	AFP25010EH
		FP2-EC	AFP2510
		FP2-EC2	AFP2512

Power Supply Unit

Product name		Product No.	Part No.
FP2 Power supply unit		FP2-PSA1	AFP2631
		FP2-PSA2	AFP2632
		FP2-PSA3	AFP2633
		FP2-PSD2	AFP2634

I/O Unit

Product name		Product No.	Part No.
FP2 Input unit	DC input	FP2-X16D2	AFP23023
		FP2-X32D2	AFP23064
		FP2-X64D2	AFP23067
FP2 Output unit	Relay output	FP2-Y6R	AFP23101
		FP2-Y16R	AFP23103
	Transistor output NPN	FP2-Y16T	AFP23403
		FP2-Y32T	AFP23404
		FP2-Y64T	AFP23407
	Transistor output PNP	FP2-Y16P	AFP23503
		FP2-Y32P	AFP23504
		FP2-Y64P	AFP23507
FP2 I/O mixed unit	DC input, Transistor output NPN	FP2-Y64P	AFP23467
		FP2-XY64D2T	AFP23477
	DC input, Transistor output PNP	FP2-XY64D2P	AFP23567
		FP2-XY64D7P	AFP23577

Intelligent Units for Analog I/O

Product name		Product No.	Part No.
FP2 Analog input unit	FP2-AD8VI	FP2-AD8VI	AFP2400L
	FP2-AD8X	FP2-AD8X	AFP2401
	FP2-RTD	FP2-RTD	AFP2402
FP2 Analog output unit		FP2-DA4	AFP2410

Positioning Unit, High-speed Counter Unit and Pulse I/O Unit

Product name		Product No.	Part No.
FP2 Positioning unit RTEX		FP2-PN2AN	AFP243610
		FP2-PN4AN	AFP243620
		FP2-PN8AN	AFP243630
Control Configurator PM	Japanese	—	AFPS66110
	English	—	AFPS66510
FP2 Positioning unit Multifunction type		FP2-PP21	AFP2432
		FP2-PP41	AFP2433
		FP2-PP22	AFP2434
		FP2-PP42	AFP2435
FP2 Positioning unit Interpolation type		FP2-PP2T	AFP243710
		FP2-PP4T	AFP243720
		FP2-PP2L	AFP243711
		FP2-PP4L	AFP243721
FP2 High-speed counter unit		FP2-HSCT	AFP2441
		FP2-HSCP	AFP24451
FP2 Pulse I/O unit		FP2-PXYT	AFP2442
		FP2-PXYT	AFP2452

- FIBER SENSORS
- LASER SENSORS
- PHOTO-ELECTRIC SENSORS
- MICRO PHOTO-ELECTRIC SENSORS
- AREA SENSORS
- LIGHT CURTAINS
- PRESSURE / FLOW SENSORS
- INDUCTIVE PROXIMITY SENSORS
- PARTICULAR USE SENSORS
- SENSOR OPTIONS
- SIMPLE WIRE-SAVING UNITS
- WIRE-SAVING SYSTEMS
- MEASURE-MENT SENSORS
- STATIC CONTROL DEVICES
- ENDOSCOPE
- LASER MARKERS
- PLC / TERMINALS
- HUMAN MACHINE INTERFACES
- ENERGY CONSUMPTION VISUALIZATION COMPONENTS
- FA COMPONENTS
- MACHINE VISION SYSTEMS
- UV CURING SYSTEMS
- PLC
- I/F Terminals
- FP-e
- FP0R
- FPΣ
- FP-X
- FP2SH
- FPWIN PRO
- FPWIN GR
- PCWAY
- FP Memory Loader

FP2/FP2SH

Open Network, Serial Communication and Link-related Intelligent Units

Product name	Product No.	Part No.	
FP2 VE2-Link unit	FP2-VE2	AFP279601	
FP2 ET-LAN2 unit	FP2-ET2	AFP27901	
Control Configurator ET	Japanese	AFPS32110	
	English	AFPS32510	
FP2 Multi-wire link unit	FP2-MW	AFP2720	
FP2 PROFIBUS DP Master unit	————	AFP27971	
FP2 DeviceNet Master unit	————	AFP27972	
FP2 CANopen Master unit	————	AFP27973	
FP2 FNS unit	FP2-FNS	AFP27930	
	Communication block	————	AFPN-AB6200
		————	AFPN-AB6201
		————	AFPN-AB6218
FP2 Multi-communication unit	FP2-MCU	AFP2465	
RS232C block	FP2-CB232	AFP2803	
RS422 block	FP2-CB422	AFP2804	
RS485 block	FP2-CB485	AFP2805	
FP2 Computer communication unit	FP2-CCU	AFP2462	
FP2 Serial data unit	FP2-SDU	AFP2460	

Options / Maintenance Parts

Product name	Product No.	Part No.
Battery	————	AFC8801
	————	AFP8801
IC memory card (For AFP2209)	————	AFP2806
Dummy unit	FP2-DM	AFP2300
FP2 I/O unit attached terminal block (5 block per pack)	————	AFP2800
Multi-wire connector set (2 pcs)	————	AFP2801
Flat cable connector set (40-pin) (2 pcs)	————	AFP2802

Intelligent Units for Remote I/O Control

Product name	Product No.	Part No.
FP2 Multi-wire link unit	FP2-SMW	AFP2720
FP2 Remote I/O slave unit	FP2-RMS	AFP2745
FP I/O terminal board [MIL connector type]	————	AFP87445
	————	AFP87446
FP I/O terminal board [Terminal type]	————	AFP87444
	————	AFP87432
FP I/O terminal unit	————	AFP87421
	————	AFP87422
	————	AFP87423
	————	AFP87424
	————	AFP87425
	————	AFP87426
	————	AFP87427
FP2 S-LINK unit	FP2-SL2	AFP2780

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LASER SENSORS

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