Most Powerful Compact PLC!

This compact PLC offers the processing power and expandability of larger PLCs.

USB & RS232

Programming Port*

Now available in a NEW transistor output model with 4-axis integrated control! The FP-X offers a set of features and functions that rivals all the competition. With processor speeds of 0.32 usec and 32K of program memory, the FP-X is suitable to replace both small and expensive high speed PLCs. The FP-X comes with built-in 24v sensor power supply, removable terminal strips and relay outputs. The FP-X is directly powered by AC input. The expandability is endless. There are communication, analog, discrete I/O, and motion expansions. The FP-X can also use all the expansions available in the FP0 series PLC.

Key Features

- Modbus Master and Slave (63 stations)
- Run-Time Editing
- 50 Micro Second Throughput
- 3 Serial Ports
- Floating Point Math
- Expansion Cassettes - Using FP-X Cassettes and FP0 Expansion Units
- USB and RS232 Programming Port*
- 100 KHz of Motion, 8 High Speed Counters
- PID with Auto Tuning
- PLC to PLC Networking - Up to 16 station PLC networks!

*USB available with the AFPX-C30 and C60 CPU only

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FP-X Models

You may sort models by clicking the arrows in the appropriate column. If you are searching for a particular model but can't find it, give our model search utility a try. All downloads have moved to our separate downloads center.

Click one of the links below to view all related models. Models will appear below the links.

- Control Units
- Digital Cassettes
- Digital Expansions
- Communication Cassettes
- Motion Expansions
- Communication Expansions
- Communication/Network
- Memory Units And Rtc
- Analog Cassettes
- Analog Expansions
- Accessories
- Manuals And Software

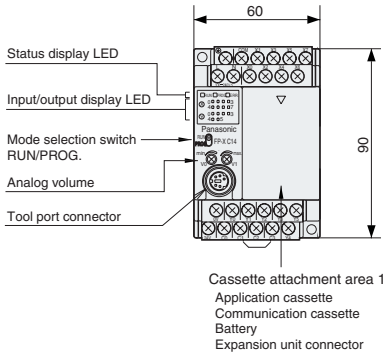
Currently viewing: FP-X Control Units

Model Name	Power	Pulse Outputs	Modbus Rtu	Dc Inputs	Npn Outputs	Pnp Outputs	Relay Outputs	Program Size (K)
Sort	Sort	Sort	Sort	Sort	Sort	Sort	Sort	Sort
AFPX-C14P	AC100-240V	3 Axis	Yes	8		6		12
AFPX-C14PD	24VDC	3 Axis	Yes	8		6		12
AFPX-C14R	AC100-240V	No	Yes	8			6	12
AFPX-C14T	AC100-240V	3 Axis	Yes	8	6			12
AFPX-C14TD	24VDC	3 Axis	Yes	8	6			12
AFPX-C30P	AC100-240V	4 Axis	Yes	16		14		32
AFPX-C30PD	24VDC	4 Axis	Yes	16		14		32
AFPX-C30R	AC100-240V	No	Yes	16			14	32
AFPX-C30T	AC100-240V	4 Axis	Yes	16	16			32
AFPX-C30TD	24VDC	4 Axis	Yes	16	16			32
AFPX-C60P	AC100-240V	4 Axis	Yes	32		28		32

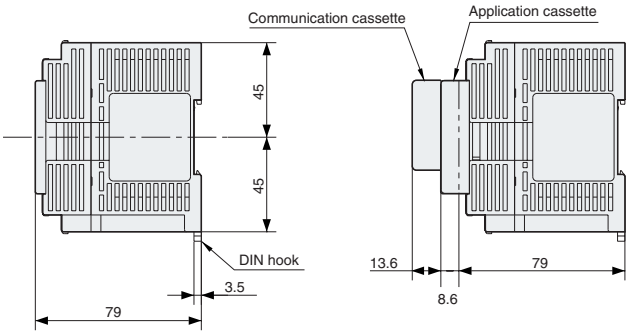
AFPX-C60PD	24VDC	4 Axis	Yes	32		28		32
AFPX-C60R	AC100-240V	No	Yes	32			28	32
AFPX-C60T	AC100-240V	4 Axis	Yes	32	28			32
AFPX-C60TD	24VDC	4 Axis	Yes	32	28			32

■ FP-X Control Unit Dimensions (Unit: mm)

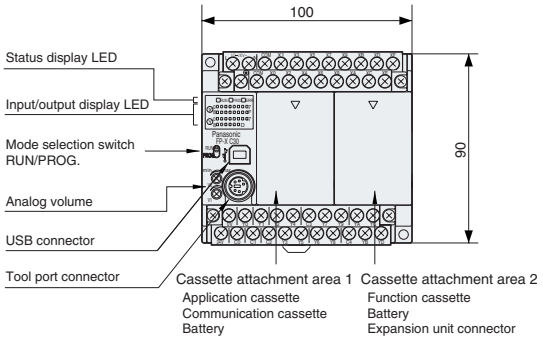
●AFPX-C14＊＊ (The same dimensions apply to the expansion I/O unit AFPX-E16＊)



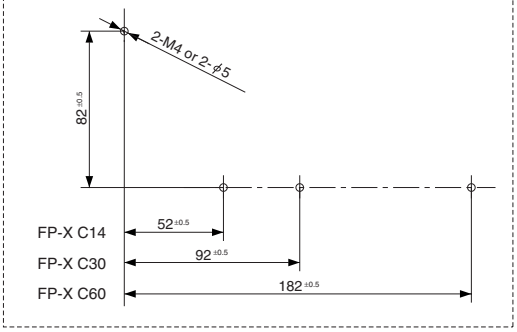
Dimensions when expansion cassettes (function and communication) are installed



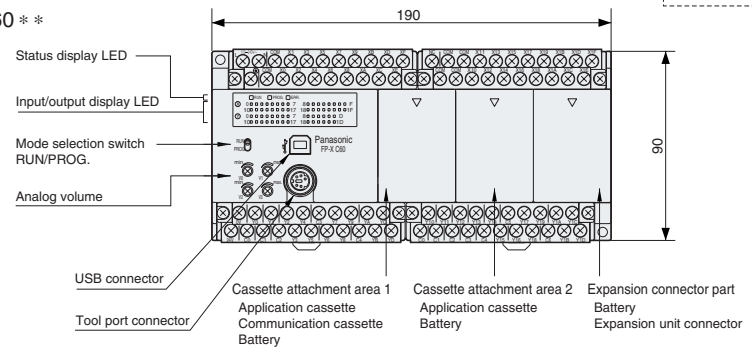
●AFPX-C30＊＊ (The same dimensions apply to the expansion I/O unit AFPX-E30＊＊)



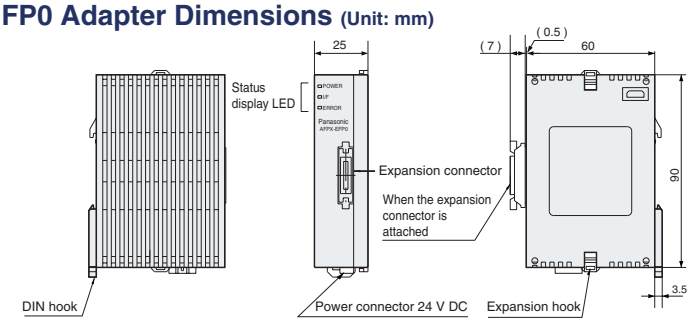
Mounting dimension diagram

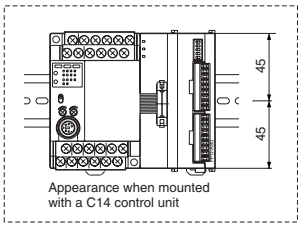


●AFPX-C60＊＊



■ FP-X Expansion FP0 Adapter Dimensions (Unit: mm)





Appearance when mounted with a C14 control unit

Panasonic

Related Products

Related Products List

Programmable Controllers FP-X

FP Memory Loader

Product name	Part number
Data non-hold type	AFP8670
Data hold type	AFP8671

PCWAY Ver. 2.7 (Operation Data Managing Software)

Product name	Part number
PCWAY IBM printer port version	AFW10011
PCWAY USB port version	AFW10031
PCWAY Version upgrade	AFW10401

* Charged version upgrade for Ver. 2.0 to 2.6.

Control CommX Ver. 1.3 (OCX for Communication)

Product name	Part number
Control CommX IBM printer port	AFW20011
Control CommX USB port	AFW20031

FP Web-Server Unit

Product name	Part number
FP Web-Server unit	AFP0610
FP Web Configurator Tool	AFPS30510

Key Unit

Economical type is available for secondary key.
The key unit is available for PCWAY and Control CommX.

Product name	Part number
Key unit IBM printer port version	AFW1031*
Key unit USB port version	AFW1033

*The discontinuation of AFW1031 production is scheduled for August 2007.

Specifications

Programmable Controllers FP-X

1. General Specifications

Item	Description
Rated voltage	100 to 240 V AC (AC power), 24 V DC (DC power)
Operating voltage range	85 to 264 V AC (AC power), 20.4 to 28.8 V DC (DC power)
Rush current	40 A or less (C14), 45 A or less (C30, C60) at 25°C (AC power) 12 A or less at 25°C (DC power)
Allowed momentary power off time	10 ms or more
Ambient temperature	0 to +55°C
Storage temperature	-40 to +70°C
Ambient humidity	10 to 95% RH (at 25 °C, non-condensing)
Storage humidity	10 to 95% RH (at 25 °C, non-condensing)
Breakdown voltage	Combined input/output terminals - Combined power and ground terminals, 2300 V AC 1 minute (AC power), 500 V AC*1 1 minute (DC power)
	Input terminals - Relay output terminals, 2300 V AC*1 1 minute
	Input terminals - Transistor output terminals, 500 V AC*1 1 minute
	Power terminals - Ground terminals, 1500 V AC*1 1 minute (AC power), 500 V AC*1 1 minute (DC power)
Insulation resistance	Combined input/output terminals - Combined power and ground terminals, 100 MΩ or higher (500 V DC using an insulation resistance meter)
	Input terminals - Output terminals, 100 MΩ or higher (500 V DC using an insulation resistance meter)
	Power terminals - Ground terminals, 100 MΩ or higher (500 V DC using an insulation resistance meter)
Vibration resistance	5 to 9 Hz, single amplitude 3.5 mm/9 to 150 Hz, constant acceleration 9.8 m/s^2, 1 sweep/min, 10 sweeps in each XYZ direction
Shock resistance	147 m/s^2
Noise immunity	1500 V [P-P] pulse width 50 ns, 1 µs (AC power), 500 V [P-P] pulse width 50 ns, 1 µs (DC power) (per noise simulator method) (power terminals)
Operating condition	No corrosive gas and no excessive dust
EC Directive Compliance Standard	Conforming to EN61131-2
Level of contamination	2
Over-voltage category	II

*1 Cutoff current 5 mA

2. Power Consumption, Weight

Product name	Part number	Current consumption	Weight
Control unit	AFPX-C14❍❍	26 W or less *2	Approx. 280 g or less
	AFPX-C30❍❍	52 W or less *2	Approx. 490 g or less
	AFPX-C60❍❍	64 W or less *2	Approx. 780 g or less
Expansion I/O unit	AFPX-E16❍❍	8 W or less *2	Approx. 195 g or less
	AFPX-E30❍❍	42 W or less *2	Approx. 430 g or less
Expansion FP0 adapter	AFPX-EFP0	0.24 W or less *3	Approx. 65 g
FP-X communication cassette	AFPX-COM1	2 W or less *2	Approx. 20 g
	AFPX-COM2	2 W or less *2	Approx. 20 g
	AFPX-COM3	2 W or less *2	Approx. 20 g
	AFPX-COM4	2 W or less *2	Approx. 20 g
	AFPX-COM5	2 W or less *2	Approx. 20 g
FP-X analog input cassette	AFPX-AD2	2 W or less *2	Approx. 25 g
FP-X input cassette	AFPX-IN8	1 W or less *2	Approx. 25 g
FP-X output cassette	AFPX-TR8	1 W or less *2	Approx. 25 g
	AFPX-TR6P	1 W or less *2	Approx. 25 g
FP-X pulse I/O cassette	AFPX-PLS	2 W or less *2	Approx. 25 g
FP-X master memory cassette	AFPX-MRTC	2 W or less *2	Approx. 20 g

*2 Power consumption by the AC power supply connected to the control unit *3 Power consumption by the DC power supply connected to the expansion FP0 adapter
*4 Please refer to FP0 users manual for FP0 expansion units.

Please refer to the user manual and specifications for further details.

Specifications

3. Controls Specifications

Item		Specifications
Program method		Relay symbol method
Control method		Cyclic operation method
Program memory		Flash ROM built-in (no battery backup required)
Program capacity		16 ksteps (C14), 32 ksteps (C30, C60)
Operation processing speed		Basic instruction 0.32 μs/step
Basic instructions		111
Applied instructions		216
External inputs (X)		1760 points *4
External outputs (Y)		1760 points *4
Internal relay (R)		4096 points
Special internal relay (R)		192 points
Link relay (L)		2048 points
Timer/counter (T/C)		Total 1024 points: timer capable of counting (1 ms, 10 ms, 100 ms, 1 s) x 32767 Counter capable of counting 1 to 32767
Data register (DT)		12285 words (C14), 32765 words (C3R, C60)
Link data register (LD)		256 words
Special data register (DT)		374 words
Index register (I0 to ID)		14 words
Master control relay (MCR)		256 points
Number of labels (LOOP)		256 labels
Number of differentiations		Up to program capacity
Number of stepladders		1000 stages
Number of subroutines		500 subroutines
Number of interruption programs		Relay output type: 15 programs (14 external, 1 constant) Transistor output type: 9 programs (8 external, 1 constant)
High-speed counter *5		Built-in (Transistor output): single-phase 8 ch (50 kHz x 4 ch + 10 kHz x 4 ch) Built-in (Relay output): single-phase 8 ch (10 kHz x 8 ch) Pulse I/O cassette (AFPX-PLS) for relay output type: single-phase 2 ch (80 kHz x 2 ch)
Pulse output *6		Built-in (Transistor output): 100 kHz x 2 ch + 20 kHz x 2 ch Pulse I/O cassette (AFPX-PLS) for relay output type: One unit (one axis) 100 kHz, or two units (two axes) 80 kHz
Pulse catch input / interrupt input		Relay output type: Total 14 points (including the high-speed counter) Transistor output type: Total 8 points (including the high-speed counter)
Periodical interrupt		0.5 ms to 30 s
Potentiometer		2 points (0 to 1000) (C14, C30) 4 points (0 to 1000) (C60)
Constant scan		Possible
Real-time clock		Equipped (usable only when AFPX-MRTC is installed) *7
Flash ROM backup *9	Backup by F12, P13 commands	Data register (32765 words)
	Auto-backup at power failure	Counter 16 points (1008 to 1023), Internal relay 128 points (R2470 to R255F), Data register 55 words
Battery backup		The memory allocated in the storage area by the system register (only when a battery is installed) *8
Battery life (when no power is supplied)		Before installing AFPX-MRTC C14: 1230 days (actual operation 10 years at 25°C) C30, C60: 990 days (actual operation 10 years at 25°C) After installing AFPX-MRTC C14: 780 days (actual operation 10 years at 25°C) C30, C60: 680 days (actual operation 10 years at 25°C) (More than two batteries can be installed in C30 and C60. In this case, the battery life is extended several times)
Password		Capable (4 or 8 characters selectable)
Self-diagnosis function		Watch dog timer, program syntax check
Comment storage		Capable (328 KB) (backup battery not required)
PLC link function		Max 16 units, link relay 1024 points, link register 128 words (No data transfer or remote programming)
Rewriting in RUN mode		Capable

*4 The actual usable number of points is restricted by the hardware.
*5 Specification at the rated input voltage of 24 V DC, 25°C. Frequency may be lower due to the voltage and temperature.
*6 Max frequency may vary by the method of operation. Please refer to the manual for details.
*7 Calendar accuracy at 0°C: 119 sec/month or less, 25°C: 51 sec/month or less, 55°C: 148 sec/month or less (Real-time clock requires a battery.)
*8 When data is stored in the storage area while the battery is not installed, the data is not cleared and the data value may be indefinite.
The same condition occurs when the battery is exhausted.
*9 The number of possible rewrites is 10,000 or less.

Specifications

4. Input Specifications (Control unit, expansion unit)

Item		Description	
		Relay output	Transistor output
Insulation method		Photo-coupler	
Rated input voltage		24 V DC	
Operating voltage range		21.6 to 26.4 V DC	
Rated input current		Approx. 4.7 mA (Control unit X0 to X7)	Approx. 8 mA (Control unit X0 to X3)
			Approx. 4.7 mA (Control unit X4 to X7)
		Approx 4.3 mA (Control unit X8 and after, expansion unit)	Approx. 4.3 mA (Control unit X8 and after, expansion unit)
Input points per common		8 points/common (C14, E16) 16 points/common (C30, C60)	
		(Input power polarity either positive or negative)	
Min. ON voltage/ON current		19.2 V/3 mA	19.2 V/6 mA (Control unit X0 to X3) 19.2 V/3 mA (Control unit X4 and after, expansion unit)
Max. OFF voltage/OFF current		2.4 V/1 mA	2.4 V/1.3 mA (Control unit X0 to X3) 2.4 V/1 mA (Control unit X4 and after, expansion unit)
Input impedance		Approx. 5.1 kΩ (Control unit X0 to X7) Approx. 5.6 kΩ (Control unit X8 and after, expansion unit)	Approx. 3 kΩ (Control unit X0 to X3) Approx. 5.1 kΩ (Control unit X4 to X7) Approx. 5.6 kΩ (Control unit X8 and after, expansion unit)
Response time	OFF → ON	Control unit X0 to X7 0.6 ms or less: Normal input 50 ms or less: High-speed counter, pulse catch, interruption input setting *1 Control unit X8 and after, expansion unit 0.6 ms or less	Control unit X0 to X3 135 µs or less: Nominal input 5 µs or less: High-speed counter, pulse catch, interruption input setting*1 Control unit X4 to X7 135 µs or less: Nominal input 50 µs or less: High-speed counter, pulse catch, interruption input setting*1 Control unit X8 and after, expansion unit 0.6 ms or less
	ON → OFF	Same as above	
Operating indicator		LED display	

*1 Specification at the rated input voltage of 24 V DC, 25°C.

5. Relay Output Specifications (Control units, Expansion units)

Item		Description
Output type		1a contact
Rated control capacity (Resistive load)		2 A 250 V AC, 2 A 30 V DC (8 A or less/common)
Output points per common		4 points/common
Response time	OFF → ON	Approx. 10 ms
	ON → OFF	Approx. 8 ms
Life time	Mechanical	20 million operations or more (Operation frequency 180 times/min)
	Electrical	100,000 operations or more (Operation frequency 20 times/min at the rated control capacity)
Surge absorber		None
Operating indicator		LED display

6. Transistor Output Specifications

Item		Description	
Insulation method		Photocoupler	
Output type		Open collector	
Rated loadf voltage		NPN type: 5 to 24 V DC, PNP type: 24 V DC	
Load voltage allowable range		NPN type: 4.75 to 26.4 V DC, PNP type: 21.6 to 26.4 V DC	
Max. load current		0.5 A	
Max. inrush current		1.5 A	
Output points per common		8 points/common (C14, E16)	8 points/common, 6 points/common (C30, C60, E30)
OFF state leakage current		1 µA or less	
ON state voltage drop		0.3 V DC or less	
Response time	OFF → ON	1 ms or less*2	
	ON → OFF	1 ms or less*2	
Voltage range for external power supply		21.6 to 26.4 V DC	
Surge absorber		Zener diode	
Operating indicator		LED display	

*2 Please refer to the user manual for Y0 to Y7 of the transistor output type.