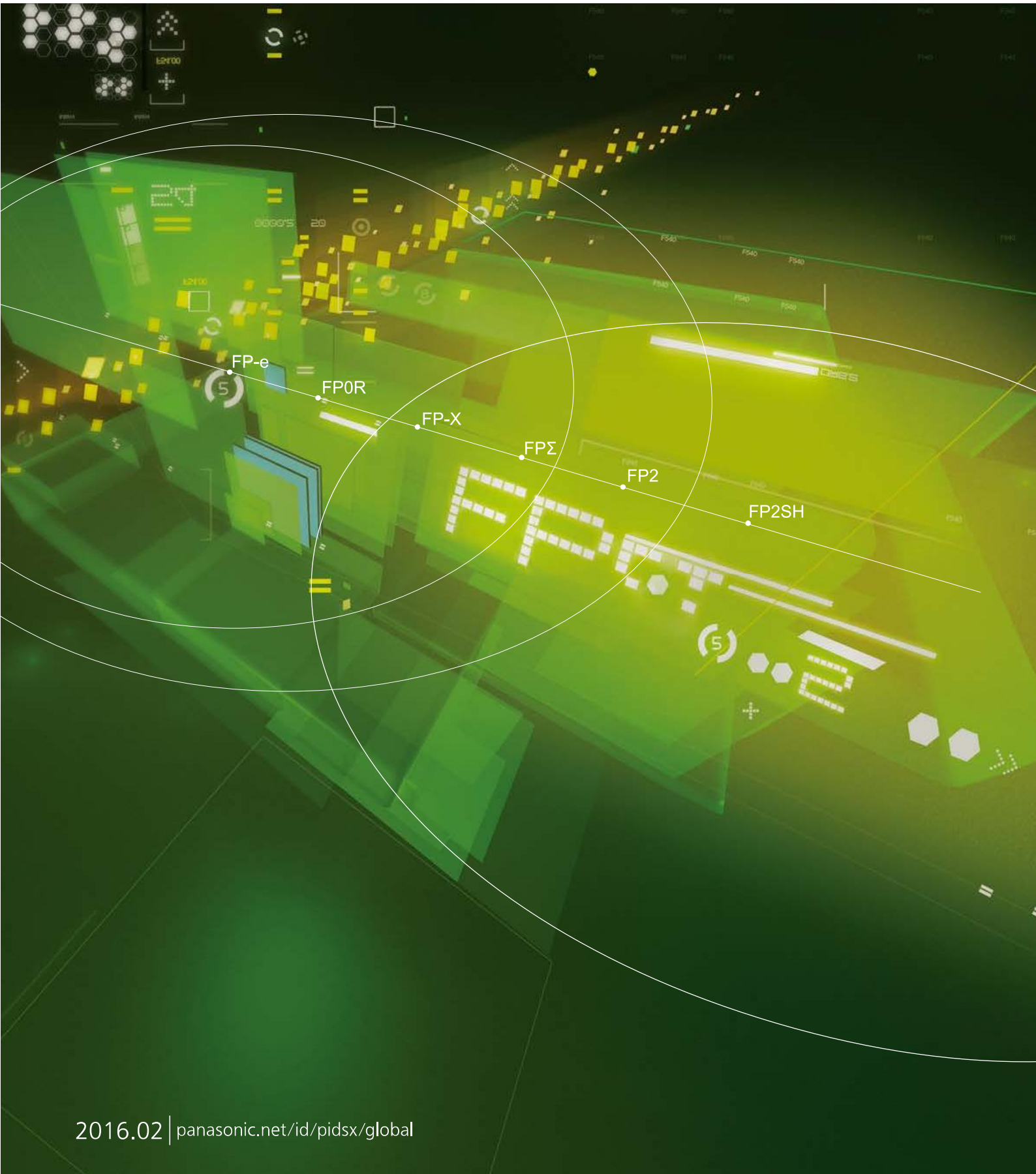
Panasonic

Programmable Controller

FP SERIES DIGEST



2016.02 | panasonic.net/id/pidsx/global

FP2SH

I/O units

16 points DC input
AFP23023 (FP2-X16D2)

16 points NPN transistor output
AFP23403 (FP2-Y16T)

16 points PNP transistor output
AFP23503 (FP2-Y16P)

6 points Relay output
AFP23101 (FP2-Y6R)

16 points Relay output
AFP23103 (FP2-Y16R)

32 points DC input
AFP23064 (FP2-X32D2)

32 points NPN transistor output
AFP23404 (FP2-Y32T)

32 points PNP transistor output
AFP23504 (FP2-Y32P)

64 points DC input
AFP23067 (FP2-X64D2)

64 points NPN transistor output
AFP23407 (FP2-Y64T)

64 points PNP transistor output
AFP23507 (FP2-Y64P)

32 points input / 32 points NPN output mixed
AFP23467 (FP2-XY64D2T)
AFP23477 (FP2-XY64D7T)

32 points input / 32 points PNP output mixed
AFP23567 (FP2-XY64D2P)
AFP23577 (FP2-XY64D7P)

Analog I/O units

Voltage / Current input
AFP2400L
(FP2-AD8VI)

Multiple analog input
AFP2401
(FP2-AD8X)

R.T.D. input
AFP2402
(FP2-RTD)

Analog output
AFP2410
(FP2-DA4)

Positioning units RTEX

(2 axes) **AFP243610**
(FP2-PN2AN)

(4 axes) **AFP243620**
(FP2-PN4AN)

(8 axes) **AFP243630**
(FP2-PN8AN)

Positioning units

(2 axes)
AFP2432 (FP2-PP21) **AFP2434** (FP2-PP22)

(4 axes)
AFP2433 (FP2-PP41) **AFP2435** (FP2-PP42)

Positioning units interpolation type

(2 axes) **AFP243710**
(FP2-PP2T)

AFP243711
(FP2-PP2L)

(4 axes) **AFP243720**
(FP2-PP4T)

AFP243721
(FP2-PP4L)

Pulse I/O units

High-speed counter
AFP2441 (FP2-HSCT) **AFP2451** (FP2-HSCP)

Pulse I/O
AFP2442 (FP2-PXYT) **AFP2452** (FP2-PXYP)

Multi-communication unit

Multi-communication
AFP2465 (FP2-MCU)
* The communication blocks are available separately.

Link-related units

Multi-wire link
AFP2720 (FP2-MW)

Remote I/O slave unit
AFP2745 (FP2-RMS)

Link-related units

VE2-LINK
AFP279601 (FP2-VE2)

ET-LAN2
AFP27901 (FP2-ET2)

S-LINK
AFP2780 (FP2-SL2)

S-LINK V
SL-VFP2

FP2SH — Optional memories

Expansion memory unit
AFP2208

IC memory card (2 MB)
AFP2209

FP memory loader

Data clear type
AFP8670
Data hold type
AFP8671

*FP memory loader will be discontinued at the end of September, 2019.

FP2SH — AC servomotor MINAS Series

* Panasonic Corporation Motor business unit

FP2SH — Motor driver I/F terminal II

AFP8503

1-axis type

AFP8504

2-axis type

Part Number List

FP-e

*The FP-e will be discontinued at the end of September, 2019.

Control units

Product name	Specifications	Calendar timer	Thermocouple input	Communication port	Product No.	Part No.
FP-e Control Unit	RS232C Basic type	Not available	Not available	RS232C	**AFPE224300**	**AFPE224300**
	RS232C Calendar timer type	Available	Not available	RS232C	**AFPE224305**	**AFPE224305**
	RS232C Thermocouple input type	Available	Available	RS232C	**AFPE214325**	**AFPE214325**
	RS485 Basic type	Not available	Not available	RS485	**AFPE224302**	**AFPE224302**
	RS485 Thermocouple input type	Not available	Available	RS485	**AFPE214322**	**AFPE214322**

Options

Product name	Part No.
Backup battery	**AFPG804**
Rubber gasket	**ATC18002**
Mounting frame	**ATA4811**
Panel cover (Black) 20 pcs	**AFPE803**

Product name	Part No.
Protective cover	**AQM4803**
Terminal screwdriver	**AFP0806**
Terminal socket set (4 terminal blocks)	**AFPE804**

FP0R

Control units

Product name	Built-in memory (Program capacity)	Specifications						Part No.
		Number of I/O points		Power supply voltage	Input	Output	Connection type	
FP0R-C10 Control Unit	Flash EEPROM (16 k steps)	10	Input: 6 Output: 4	24 V DC	24 V DC Sink/Source (± common)	Relay: 2 A	Terminal block	**AFP0RC10RS**
							Molex connector	**AFP0RC10RM**
FP0R-C10 Control Unit with RS232C port	Flash EEPROM (16 k steps)	10	Input: 6 Output: 4	24 V DC	24 V DC Sink/Source (± common)	Relay: 2 A	Terminal block	**AFP0RC10CRS**
							Molex connector	**AFP0RC10CRM**
FP0R-C10 Control Unit with RS485 port	Flash EEPROM (16 k steps)	10	Input: 6 Output: 4	24 V DC	24 V DC Sink/Source (± common)	Relay: 2 A	Terminal block	**AFP0RC10MRS**
FP0R-C14 Control Unit	Flash EEPROM (16 k steps)	14	Input: 8 Output: 6	24 V DC	24 V DC Sink/Source (± common)	Relay: 2 A	Terminal block	**AFP0RC14RS**
							Molex connector	**AFP0RC14RM**
FP0R-C14 Control Unit with RS232C port	Flash EEPROM (16 k steps)	14	Input: 8 Output: 6	24 V DC	24 V DC Sink/Source (± common)	Relay: 2 A	Terminal block	**AFP0RC14CRS**
							Molex connector	**AFP0RC14CRM**
FP0R-C14 Control Unit with RS485 port	Flash EEPROM (16 k steps)	14	Input: 8 Output: 6	24 V DC	24 V DC Sink/Source (± common)	Relay: 2 A	Terminal block	**AFP0RC14MRS**
FP0R-C16 Control Unit	Flash EEPROM (16 k steps)	16	Input: 8 Output: 8	24 V DC	24 V DC Sink/Source (± common)	Transistor NPN: 0.2 A	MIL connector	**AFP0RC16T**
						Transistor PNP: 0.2 A		**AFP0RC16P**
FP0R-C16 Control Unit with RS232C port	Flash EEPROM (16 k steps)	16	Input: 8 Output: 8	24 V DC	24 V DC Sink/Source (± common)	Transistor NPN: 0.2 A	MIL connector	**AFP0RC16CT**
						Transistor PNP: 0.2 A		**AFP0RC16CP**
FP0R-C16 Control Unit with RS485 port	Flash EEPROM (16 k steps)	16	Input: 8 Output: 8	24 V DC	24 V DC Sink/Source (± common)	Transistor NPN: 0.2 A	MIL connector	**AFP0RC16MT**
						Transistor PNP: 0.2 A		**AFP0RC16MP**
FP0R-C32 Control Unit	Flash EEPROM (32 k steps)	32	Input: 16 Output: 16	24 V DC	24 V DC Sink/Source (± common)	Transistor NPN: 0.2 A	MIL connector	**AFP0RC32T**
						Transistor PNP: 0.2 A		**AFP0RC32P**
FP0R-C32 Control Unit with RS232C port	Flash EEPROM (32 k steps)	32	Input: 16 Output: 16	24 V DC	24 V DC Sink/Source (± common)	Transistor NPN: 0.2 A	MIL connector	**AFP0RC32CT**
						Transistor PNP: 0.2 A		**AFP0RC32CP**
FP0R-C32 Control Unit with RS485 port	Flash EEPROM (32 k steps)	32	Input: 16 Output: 16	24 V DC	24 V DC Sink/Source (± common)	Transistor NPN: 0.2 A	MIL connector	**AFP0RC32MT**
						Transistor PNP: 0.2 A		**AFP0RC32MP**
FP0R-T32 Control Unit with RS232C port and Real-time clock function	Flash EEPROM (32 k steps)	32	Input: 16 Output: 16	24 V DC	24 V DC Sink/Source (± common)	Transistor NPN: 0.2 A	MIL connector	**AFP0RT32CT**
						Transistor PNP: 0.2 A		**AFP0RT32CP**
FP0R-T32 Control Unit with RS485 port and Real-time clock function	Flash EEPROM (32 k steps)	32	Input: 16 Output: 16	24 V DC	24 V DC Sink/Source (± common)	Transistor NPN: 0.2 A	MIL connector	**AFP0RT32MT**
						Transistor PNP: 0.2 A		**AFP0RT32MP**
FP0R-F32 Control Unit with RS232C port and Battery-less automatic all data backup function	Flash EEPROM (32 k steps)	32	Input: 16 Output: 16	24 V DC	24 V DC Sink/Source (± common)	Transistor NPN: 0.2 A	MIL connector	**AFP0RF32CT**
						Transistor PNP: 0.2 A		**AFP0RF32CP**
FP0R-F32 Control Unit with RS485 port and Battery-less automatic all data backup function	Flash EEPROM (32 k steps)	32	Input: 16 Output: 16	24 V DC	24 V DC Sink/Source (± common)	Transistor NPN: 0.2 A	MIL connector	**AFP0RF32MT**
						Transistor PNP: 0.2 A		**AFP0RF32MP**

Note: A power cable (Part number: AFPG805) is supplied with the control units.

FP0

Control units

Product name	Built-in memory (Program capacity)	Specifications						Product No.	Part No.
		Number of I/O points		Power supply voltage	Input	Output	Connection type		
FP0-S-LINK Control Unit with RS232C port	EEPROM (5 k steps)	128 (S-LINK section)	Input: 64 Output: 64	24 V DC	–	–	Terminal block	**FP0-SL1**	**AFP02700**

FPΣ

Control units

Product name	Built-in memory (Program capacity)	Specifications	Product No.	Part No.
FPΣ C32 Control Unit	Flash EEPROM (32 k steps)	Input 16 points DC, Transistor output (NPN) 16 points I/O control points when expanded: 128 points max.	FPG-C32TH	AFPG2543H
FPΣ C32 Left-side Expansion Type Control Unit	Flash EEPROM (32 k steps)	Input 16 points DC, Transistor output (NPN) 16 points I/O control points when expanded: 384 points max. Built-in linear interpolation and circular interpolation functions	FPG-C32T2H	AFPG2643H
FPΣ C24 Left-side Expansion Type Control Unit	Flash EEPROM (32 k steps)	Input 16 points DC, Relay output 8 points I/O control points when expanded: 376 points max. (transistor output)	FPG-C24R2H	AFPG2423H
FPΣ C28 Left-side Expansion Type Control Unit (PNP)	Flash EEPROM (32 k steps)	Input 16 points DC, Transistor output (PNP) 12 points I/O control points when expanded: 380 points max. Built-in linear interpolation and circular interpolation functions	FPG-C28P2H	AFPG2653H
FPΣ C32 Control Unit with Thermistor input	Flash EEPROM (32 k steps)	Input 16 points DC, Transistor output (NPN) 16 points I/O control points when expanded: 128 points max.	FPG-C32THTM	AFPG2543HTM
FPΣ C32 Left-side Expansion Type Control Unit with Thermistor input	Flash EEPROM (32 k steps)	Input 16 points DC, Transistor output (NPN) 16 points I/O control points when expanded: 384 points max. Built-in linear interpolation and circular interpolation functions	FPG-C32T2HTM	AFPG2643HTM
FPΣ C24 Left-side Expansion Type Control Unit with Thermistor input	Flash EEPROM (32 k steps)	Input 16 points DC, Relay output 8 points I/O control points when expanded: 376 points max. (transistor output)	FPG-C24R2HTM	AFPG2423HTM
FPΣ C28 Left-side Expansion Type Control Unit (PNP) with Thermistor input	Flash EEPROM (32 k steps)	Input 16 points DC, Transistor output (PNP) 12 points I/O control points when expanded: 380 points max. Built-in linear interpolation and circular interpolation functions	FPG-C28P2HTM	AFPG2653HTM

* Thermistors with a resistance from 200 Ω to 75 k Ω can be used.

Expansion I/O units for FPΣ and FP0R (right-side expansion types)

Product name	Specifications	Part No.
FP0R-E8 Expansion Unit	Input 8 points DC, MIL connector type	AFP0RE8X
	Input 4 points DC, Relay output 4 points, Terminal block type	AFP0RE8RS
	Input 4 points DC, Relay output 4 points, Connector type	AFP0RE8RM
	Relay output 8 points, Terminal block type	AFP0RE8YRS
	Transistor output (NPN) 8 points, MIL connector type	AFP0RE8YT
	Transistor output (PNP) 8 points, MIL connector type	AFP0RE8YP
FP0R-E16 Expansion Unit	Input 16 points DC, MIL connector type	AFP0RE16X
	Input 8 points DC, Relay output 8 points, Terminal block type	AFP0RE16RS
	Input 8 points DC, Relay output 8 points, Connector type	AFP0RE16RM
	Input 8 points DC, Transistor output (NPN) 8 points, MIL connector type	AFP0RE16T
	Input 8 points DC, Transistor output (PNP) 8 points, MIL connector type	AFP0RE16P
	Transistor output (NPN) 16 points, MIL connector type	AFP0RE16YT
	Transistor output (PNP) 16 points, MIL connector type	AFP0RE16YP
FP0R-E32 Expansion Unit	Input 16 points DC, Transistor output (NPN) 16 points, MIL connector type	AFP0RE32T
	Input 16 points DC, Transistor output (PNP) 16 points, MIL connector type	AFP0RE32P

Intelligent units for FPΣ and FP0R (right-side expansion types)

Product name	Specifications	Product No.	Part No.
FP0R Analog Input Unit	<Input specifications> Number or channels: 4 channels Voltage -10 to +10 V, -5 to +5 V, 0 to +10 V, 0 to +5 V (Resolution: 1/16,000) Current 0 to 20 mA (Resolution: 1/16,000)	–	NEW AFP0RAD4
FP0R Analog Input Unit	<Input specifications> Number or channels: 8 channels Voltage -10 to +10 V, -5 to +5 V, 0 to +10 V, 0 to +5 V (Resolution: 1/16,000) Current 0 to 20 mA (Resolution: 1/16,000)	–	NEW AFP0RAD8
FP0R Analog I/O Unit	<Input specifications> Number or channels: 2 channels Voltage -10 to +10 V, -5 to +5 V, 0 to +10 V, 0 to +5 V (Resolution: 1/16,000) Current 0 to 20 mA (Resolution: 1/16,000) <Output specifications> Number or channels: 1 channel Voltage -10 to +10 V, -5 to +5 V, 0 to +10 V, 0 to +5 V (Resolution: 1/16,000) Current 0 to 20 mA, 4 to 20 mA (Resolution: 1/16,000)	–	NEW AFP0RA21
FP0R Analog I/O Unit	<Input specifications> Number or channels: 4 channels Voltage -10 to +10 V, -5 to +5 V, 0 to +10 V, 0 to +5 V (Resolution: 1/16,000) Current 0 to 20 mA (Resolution: 1/16,000) <Output specifications> Number or channels: 2 channels Voltage -10 to +10 V, -5 to +5 V, 0 to +10 V, 0 to +5 V (Resolution: 1/16,000) Current 0 to 20 mA, 4 to 20 mA (Resolution: 1/16,000)	–	NEW AFP0RA42
FP0R Analog Output Unit	<Output specifications> Number or channels: 4 channels Voltage -10 to +10 V, -5 to +5 V, 0 to +10 V, 0 to +5 V (Resolution: 1/16,000) Current 0 to 20 mA, 4 to 20 mA (Resolution: 1/16,000)	–	NEW AFP0RDA4
FP0 Thermocouple Unit	K, J, T, R thermocouple, Resolution: 0.1 °C 32.18 °F, 4-ch	FP0-TC4	AFP0420
	K, J, T, R thermocouple, Resolution: 0.1 °C 32.18 °F, 8-ch	FP0-TC8	AFP0421
FP WEB-SERVER2	Unit for connecting FP series RS232C interface and Ethernet Web-server function and E-mail sending function, Compatible with 100BASE-TX (100 Mbps).	FP0-WEB2	AFP0611
Control FP WEB Configurator Tool 2	Setting tool software for FP Web-server 2 — Japanese version	AFPS30120	AFPS30120
	Setting tool software for FP Web-server 2 — English version	AFPS30520	AFPS30520
FP0 I/O Link Unit	This is a link unit designed to connect FP0 as a station to MEWNET-F (our remote I/O system).	FP0-IOL	AFP0732
FP0 CC-link Slave Unit (Note)	Unit to connect to FP0 CC-link	FP0-CCLS	AFP07943
KS1 Signal Converter	RS232C/RS485 data can be easily monitored by LAN.	–	AKS1202

Note: It will be discontinued at the end of September, 2019.

Expansion units for FPΣ (left-side expansion type)

Product name	Specifications	Product No.	Part No.
FPΣ 64 points Expansion I/O Unit	Input 32 points DC, Transistor output (NPN) 32 points, Maximum possible expansion is with a total of 4 units to the left side of the FPΣ control units	FPG-XY64D2T	AFPG3467
	Input 32 points DC, Transistor output (PNP) 32 points, Maximum possible expansion is with a total of 4 units to the left side of the FPΣ control units	FPG-XY64D2P	AFPG3567

FPΣ

Intelligent units for FPΣ (left-side expansion types)

Product name	Specifications		Product No.	Part No.
FPΣ Positioning Unit	Pulse output type	1 axis, Transistor output	FPG-PP11	AFPG430
FPΣ Positioning Unit	Pulse output type	1 axis, Line driver output	FPG-PP12	AFPG432
FPΣ Positioning Unit	Pulse output type	2 axes, Transistor output	FPG-PP21	AFPG431
FPΣ Positioning Unit	Pulse output type	2 axes, Line driver output	FPG-PP22	AFPG433
FPΣ Positioning Unit RTEX	Network type	2-axis type	FPG-PN2AN	AFPG43610
FPΣ Positioning Unit RTEX	Network type	4-axis type	FPG-PN4AN	AFPG43620
FPΣ Positioning Unit RTEX	Network type	8-axis type	FPG-PN8AN	AFPG43630
Control Configurator PM	Dedicated tool software for positioning unit RTEX, Japanese version		–	AFPS66110
	Dedicated tool software for positioning unit RTEX, English version		–	AFPS66510
FPΣ CC-Link Slave Unit	Unit to connect to CC-Link		FPG-CCLS	AFPG7943
FPΣ S-LINK Unit	Unit to connect to SUNX S-LINK I/O devices		FPG-SL	AFPG780

Communication cassettes

Product name	Specifications	Product No.	Part No.
FPΣ Communication Cassette 1 channel, RS232C type	Cassette for control unit installation. Enables communications with devices with RS232C interface.	FPG-COM1	AFPG801
FPΣ Communication Cassette 2 channels, RS232C type	Cassette for control unit installation. Enables communications with devices with RS232C interface.	FPG-COM2	AFPG802
FPΣ Communication Cassette 1 channel, RS485 type	Cassette for control unit installation. PLC linking between FPΣs or communication with devices with RS485 interface possible.	FPG-COM3	AFPG803
FPΣ Communication Cassette 1 channel, RS232C and 1 channel, RS485 type	Cassette for control unit installation. Enables communications with devices with RS232C interface and RS485 interface.	FPG-COM4	AFPG806

Options for FP0 and FPΣ

C-NET

Product name		Specifications	Part No.
For connection with a PLC (with cable)	C-NET Adapter S2 type	Connects FP0 to C-NET. Connects the FP0 programmer with the supplied cable. Requires no power supply	AFP15402

Options and maintenance parts

Product name	Specifications		Part No.
Backup battery for FPΣ	Battery for full-time back up of operation memory and clock/calendar function		AFPG804
FPΣ High capacity battery holder	Battery does not come with battery holder. Purchase a commercially available CR123A battery.		AFPG807
FP0 Slim 30 type mounting plate	Plastic plate to mount FPΣ units and FPΣ expansion units on a panel (including 10 pieces)		AFP0811
FP0 Slim type mounting plate	Plastic plate to mount FP0 expansion units on a panel (including 10 pieces)		AFP0803
Power cable for FP0	Included with FP0 unit. Maintenance part. 1 m 3.3 ft length (including 1 piece)		AFP0581
Power cable for FPΣ	Included with control unit. Maintenance part. 1 m 3.3 ft length		AFPG805
FP memory loader (Note)	Data clear type		AFP8670
	Data hold type		AFP8671
Terminal screwdriver	Relay output type Necessary when wiring terminals block (Phoenix).		AFP0806
Multi-wire connector pressure contact tool	Necessary when wiring transistor output type connectors.		AXY52000FP
I/O cable for relay output molex type	Loose-wiring cable (9 leads) AWG20, with Molex socket attached at one end, 0.5 mm^2, 1 set: 2 cables (blue & white).	Length: 1 m 3.3 ft	AFP0551
		Length: 3 m 9.8 ft	AFP0553
I/O cable for transistor output type	Wire-pressed terminal cable (10 leads) AWG22, 0.3 mm^2 with connectors attached at one end, 1 set: 2 cables (blue & white).	Length: 1 m 3.3 ft	AFP0521
		Length: 3 m 9.8 ft	AFP0523
Connector set for flat cable (10 leads)	If you are using flat cable connector, request the part specified below for a connector with an asymmetrical design to prevent mistaken polarity. (including 4 pieces)		AFP0808
Terminal socket	Attaches to relay output and terminal block type. Maintenance part. (2 sokets per pack)		AFP0802
Molex socket	Attaches to relay output and Molex connector types. Maintenance part. (2 sokets per pack)		AFP0801
Wire-press socket (10 leads)	Attaches to transistor output type. Maintenance part. (2 sokets per pack)		AFP0807

Note: FP memory loader will be discontinued at the end of September, 2019.

Motor driver I/F terminal II

Product name	Specifications	Part No.
Motor driver I/F terminal II 1-axis type	I/F terminal for connecting the MINAS series and FPΣ positioning unit / FP2 multi function type positioning unit.	AFP8503
Motor driver I/F terminal II 2-axis type		AFP8504
Exclusive cable for MINAS A4 / A5 series, 1 m 3.281 ft	Cable for connecting the MINAS A4 / A5 series and motor driver I/F terminal II.	AFP85151
Exclusive cable for MINAS A4 / A5 series, 2 m 6.562 ft		AFP85152
Connection cable for posiotioning unit, 0.5 m 1.640 ft	Cable for connecting the FPΣ positioning unit / FP2 multi function type positioning unit and motor driver I/F terminale II.	AFP85100
Connection cable for posiotioning unit, 1 m 3.281 ft		AFP85101

FP-X

Control units

	Product name	Power supply	Specifications	Program capacity	Potentio-meter	USB port	Part No.
Relay output	FP-X C14R	100 to 240 V AC	8-point input of 24 V DC, 6-point relay output of 2 A	16 k steps	2-point	Not available	**AFPX-C14R**
Relay output	FP-X C14RD	24 V DC	8-point input of 24 V DC, 6-point relay output of 2 A	16 k steps	2-point	Not available	**AFPX-C14RD**
Relay output	FP-X C30R	100 to 240 V AC	16-point input of 24 V DC, 14-point relay output of 2 A	32 k steps	2-point	Available	**AFPX-C30R**
Relay output	FP-X C30RD	24 V DC	16-point input of 24 V DC, 14-point relay output of 2 A	32 k steps	2-point	Available	**AFPX-C30RD**
Relay output	FP-X C60R	100 to 240 V AC	32-point input of 24 V DC, 28-point relay output of 2 A	32 k steps	4-point	Available	**AFPX-C60R**
Relay output	FP-X C60RD	24 V DC	32-point input of 24 V DC, 28-point relay output of 2 A	32 k steps	4-point	Available	**AFPX-C60RD**
Transistor output	FP-X C14T	100 to 240 V AC	8-point input of 24 V DC, 0.5 A / 5 to 24 V DC, 6-point output of transistor (NPN)	16 k steps	2-point	Not available	**AFPX-C14T**
Transistor output	FP-X C14TD	24 V DC	8-point input of 24 V DC, 0.5 A / 5 to 24 V DC, 6-point output of transistor (NPN)	16 k steps	2-point	Not available	**AFPX-C14TD**
Transistor output	FP-X C14P	100 to 240 V AC	8-point input of 24 V DC, 0.5 A / 24 V DC, 6-point output of transistor (PNP)	16 k steps	2-point	Not available	**AFPX-C14P**
Transistor output	FP-X C14PD	24 V DC	8-point input of 24 V DC, 0.5 A / 24 V DC, 6-point output of transistor (PNP)	16 k steps	2-point	Not available	**AFPX-C14PD**
Transistor output	FP-X C30T	100 to 240 V AC	16-point input of 24 V DC, 0.5 A / 5 to 24 V DC, 14-point output of transistor (NPN)	32 k steps	2-point	Available	**AFPX-C30T**
Transistor output	FP-X C30TD	24 V DC	16-point input of 24 V DC, 0.5 A / 5 to 24 V DC, 14-point output of transistor (NPN)	32 k steps	2-point	Available	**AFPX-C30TD**
Transistor output	FP-X C30P	100 to 240 V AC	16-point input of 24 V DC, 0.5 A / 24 V DC, 14-point output of transistor (PNP)	32 k steps	2-point	Available	**AFPX-C30P**
Transistor output	FP-X C30PD	24 V DC	16-point input of 24 V DC, 0.5 A / 24 V DC, 14-point output of transistor (PNP)	32 k steps	2-point	Available	**AFPX-C30PD**
Transistor output	FP-X C60T	100 to 240 V AC	32-point input of 24 V DC, 0.5 A / 5 to 24 V DC, 28-point output of transistor (NPN)	32 k steps	4-point	Available	**AFPX-C60T**
Transistor output	FP-X C60TD	24 V DC	32-point input of 24 V DC, 0.5 A / 5 to 24 V DC, 28-point output of transistor (NPN)	32 k steps	4-point	Available	**AFPX-C60TD**
Transistor output	FP-X C60P	100 to 240 V AC	32-point input of 24 V DC, 0.5 A / 24 V DC, 28-point output of transistor (PNP)	32 k steps	4-point	Available	**AFPX-C60P**
Transistor output	FP-X C60PD	24 V DC	32-point input of 24 V DC, 0.5 A / 24 V DC, 28-point output of transistor (PNP)	32 k steps	4-point	Available	**AFPX-C60PD**

Note: The 24 V DC inputs of all units are bi-directional (sink/source) inputs.

Expansion units

		Product name	Power supply	Specifications	Part No.
Input		FP-X E16X Expansion Input Unit	(Power is supplied from the left-side unit.)	16-point input of 24 V DC	**AFPX-E16X**
Relay output	Output	FP-X 14YR Expansion Output Unit	(Power is supplied from the left-side unit.)	14-point output of 24 V DC	**AFPX-E14YR**
Relay output	Input and output	FP-X E16R Expansion I/O Unit	(Power is supplied from the left-side unit.)	8-point input of 24 V DC, 8-point relay output of 2 A Remarks; Two or more units can't be connected serially because it can't supply the power to other units. With an 8 cm 3.15 in extension cable	**AFPX-E16R**
Relay output	Input and output	FP-X E30R Expansion I/O Unit	100 to 240 V AC	16-point input of 24 V DC, 14-point relay output of 2 A Remarks; Possible to connect up to 8 units including E16 and AFPX-EFP0. With an 8 cm 3.15 in extension cable	**AFPX-E30R**
Relay output	Input and output	FP-X E30RD Expansion I/O Unit	24 V DC	16-point input of 24 V DC, 14-point relay output of 2 A Remarks; Possible to connect up to 8 units including E16 and AFPX-EFP0. With an 8 cm 3.15 in extension cable	**AFPX-E30RD**
Transistor output	Input and output	FP-X E16T Expansion I/O Unit	(Power is supplied from the left-side unit.)	8-point input of 24 V DC, 0.5 A / 5 to 24 V DC, 8-point output of transistor (NPN) Remarks; Two or more units can't be connected serially because it can't supply the power to other units. With an 8 cm 3.15 in extension cable	**AFPX-E16T**
Transistor output	Input and output	FP-X E16P Expansion I/O Unit	(Power is supplied from the left-side unit.)	8-point input of 24 V DC, 0.5 A / 24 V DC, 8-point output of transistor (PNP) Remarks; Two or more units can't be connected serially because it can't supply the power to other units. With an 8 cm 3.15 in extension cable	**AFPX-E16P**
Transistor output	Input and output	FP-X E30TD Expansion I/O Unit	24 V DC	16-point input of 24 V DC, 0.5 A / 5 to 24 V DC, 14-point output of transistor (NPN) Remarks; Possible to connect up to 8 units including E16 and AFPX-EFP0. With an 8 cm 3.15 in extension cable	**AFPX-E30TD**
Transistor output	Input and output	FP-X E30T Expansion I/O Unit	100 to 240 V AC	16-point input of 24 V DC, 0.5 A / 5 to 24 V DC, 14-point output of transistor (NPN) Remarks; Possible to connect up to 8 units including E16 and AFPX-EFP0. With an 8 cm 3.15 in extension cable	**AFPX-E30T**
Transistor output	Input and output	FP-X E30PD Expansion I/O Unit	24 V DC	16-point input of 24 V DC, 0.5 A / 24 V DC, 14-point output of transistor (PNP) Remarks; Possible to connect up to 8 units including E16 and AFPX-EFP0. With an 8 cm 3.15 in extension cable	**AFPX-E30PD**
Transistor output	Input and output	FP-X E30P Expansion I/O Unit	100 to 240 V AC	16-point input of 24 V DC, 0.5 A / 24 V DC, 14-point output of transistor (PNP) Remarks; Possible to connect up to 8 units including E16 and AFPX-EFP0. With an 8 cm 3.15 in extension cable	**AFPX-E30P**
Expansion FP0 Adapter			24 V DC	Up to three FP0 expansion units can be connected via an adapter. With an 8 cm 3.15 in extension cable and power cable	**AFPX-EFP0**

Note: The 24 V DC inputs of all units are bi-directional (sink/source) inputs.

FP-X

Add-on cassettes

Product name	Specifications	Part No.
FP-X I/O cassette	4-point input of 24 V DC, bi-directional (sink/source), 3-point output of NPN transistor 0.3 A/24 V DC	**AFPX-IN4T3**
FP-X Input cassette	8-point input of 24 V DC, bi-directional (sink/source)	**AFPX-IN8**
FP-X Output cassette	8-point output of NPN transistor, 0.3 A / 24 V DC	**AFPX-TR8**
	6-point output of PNP transistor, 0.5 A / 24 V DC	**AFPX-TR6P**
FP-X Pulse I/O cassette	High-speed counter input: single-phase 2 channels, each 80 k Hz or two-phase 1 channel, 30 k Hz Pulse output: one axis 100 kHz / channel (Use restriction is applied for a two-unit installation) Cannot be used with a transistor output type control unit.	**AFPX-PLS**
FP-X Analog input cassette	2-point analog input, 0 to 10 V / 0 to 20 mA, 12-bit, 2 ms / 2 channels (non-insulated)	**AFPX-AD2**
FP-X Analog output cassette	2-point analog output, 0 to 10 V / 0 to 20 mA, 12-bit, 2 ms / 2 channels (insulated)	**AFPX-DA2**
FP-X Analog I/O cassette	2-point analog input, 0 to 5 V / 0 to 10 V or 0 to 20 mA, 12-bit, 2 ms / 2 channels (insulated) 1 point analog output, 0 to 10 V / 0 to 20 mA, 12-bit, 1 ms / 1 channel (insulated)	**AFPX-A21**
FP-X Thermocouple input cassette	2-point thermocouple input, K / J type, Resolution: 0.2 °C 32.36 °F, 200 ms / 2 channels (between channels: insulated)	**AFPX-TC2**
FP-X R.T.D. input cassette	2-points R.T.D. input, Pt100, Resolution: 0.1 °C 32.18 °F, 200 ms (between channels: insulated)	**AFPX-RTD2**
FP-X Master memory cassette with a real-time clock	Master memory: Capable of storing all program steps and comments simultaneously. Storage of FPWIN Pro source files Real time clock: Year, month, day, hour, minute, second, day of week (optional battery required)	**AFPX-MRTC**
FP-X COM1 Communication cassette	RS232C 1 channel, RS and CS control signal equipped (non-insulated)	**AFPX-COM1**
FP-X COM2 Communication cassette	RS232C 2 channels (non-insulated)	**AFPX-COM2**
FP-X COM3 Communication cassette	RS485 / RS422 selectable 1 channel (insulated)	**AFPX-COM3**
FP-X COM4 Communication cassette	RS485 1 channel (insulated) and RS232C 1 channel (non-insulated)	**AFPX-COM4**
FP-X COM5 Communication cassette	Ethernet 1 channel (10BASE-T, 100BASE-TX) and RS232C 1 channel (non-insulated)	**AFPX-COM5**
FP-X COM6 Communication cassette	RS485 2 channels (insulated)	**AFPX-COM6**
Control Configurator WD	Tool software for setting the Ethernet port of the COM5 communication cassette (Can be downloaded free of charge from our website)	

Options and maintenance parts

Product name	Specifications	Part No.
FP-X Backup battery	Battery for backing up the operation memory and real-time clock	**AFPX-BATT**
FP-X Expansion cable	Expansion unit connection cable, 8 cm 3.15 in	**AFPX-EC08**
	Expansion unit connection cable, 30 cm 11.81 in	**AFPX-EC30**
	Expansion unit connection cable, 80 cm 31.50 in	**AFPX-EC80**
FP-X Terminal block	Terminal block for C30, C60 and E30, 21 pins, cover with no marking, four units included	**AFPX-TAN1**

FP2SH

CPU units (Built-in RAM)

Product name		Operation speed	Built-in RAM	Optional memory			Other		Product No.	Part No.
				Expansion RAM	ROM	IC memory card	Clock/ calendar	Comment memory		
FP2SH	32 k Standard type	From 0.03 µs	32 k steps	Not available	Available (separately sales)	Not available	Available (built-in)	Available (built-in)	**FP2-C2L**	**AFP2221**
	60 k Standard type		60 k steps	Not available	Available (separately sales)	Not available	Available (built-in)	Available (built-in)	**FP2-C2**	**AFP2231**
	60 k type with IC memory card interface		60 k steps	Not available	Available (built-in)	Available (separately sales)	Available (built-in)	Available (built-in)	**FP2-C2P**	**AFP2235**
	120 k type with IC memory card interface		120 k steps	Not available	Available (built-in)	Available (separately sales)	Available (built-in)	Available (built-in)	**FP2-C3P**	**AFP2255**

FP2SH

Optional memories for FP2SH

Product name		Specifications	Product No.	Part No.
Expansion memory unit		Memory board in which the nonvolatile memory was mounted beforehand	AFP2208	AFP2208
IC memory card (Small PC card) for FP2SH CPU unit with IC memory card interface	SRAM	Perfect for data memory Can also be used for program backup. Battery backups.	AFP2209	AFP2209

Backplanes

Product name		Specifications	Product No.	Part No.
FP2 Backplane	Conventional type	5-module type (for master)	FP2-BP05	AFP25005
		7-module type (for master and expansion)	FP2-BP07	AFP25007
		9-module type (for master and expansion)	FP2-BP09	AFP25009
		12-module type (for master and expansion)	FP2-BP12	AFP25012
		14-module type (for master and expansion)	FP2-BP14	AFP25014
	H type	8 slots (for master)	FP2-BP11MH	AFP25011MH
		8 slots (for expansion)	FP2-BP10EH	AFP25010EH
FP2 Expansion Cable		0.6 m 2.0 ft	FP2-EC	AFP2510
		2 m 6.6 ft	FP2-EC2	AFP2512

Power supply units

Product name	Specifications	Product No.	Part No.
FP2 Power Supply Unit	Input: 100 to 120 V AC, Output: 2.5 A	FP2-PSA1	AFP2631
	Input: 200 to 240 V AC, Output: 2.5 A	FP2-PSA2	AFP2632
	Input: 100 to 240 V AC, Output: 5 A	FP2-PSA3	AFP2633
	Input: 24 V DC, Output: 5 A	FP2-PSD2	AFP2634

I/O units

Product name	Type	Number of point	Connection method	Specifications	Product No.	Part No.
FP2 Input Unit	DC input	16 points	Terminal block	12 to 24 V DC	FP2-X16D2	AFP23023
		32 points	Connector	24 V DC	FP2-X32D2	AFP23064
		64 points	Connector	24 V DC	FP2-X64D2	AFP23067
FP2 Output Unit	Relay output	6 points	Terminal block	5 A, 2 points per one common	FP2-Y6R	AFP23101
		16 points	Terminal block	2 A, 8 points per one common	FP2-Y16R	AFP23103
	Transistor output NPN	16 points	Terminal block	0.5 A (12 to 24 V DC), 0.1 A (5 V DC)	FP2-Y16T	AFP23403
		32 points	Connector	0.1 A (12 to 24 V DC), 50 mA (5 V DC)	FP2-Y32T	AFP23404
		64 points	Connector	0.1 A (12 to 24 V DC), 50 mA (5 V DC)	FP2-Y64T	AFP23407
	Transistor output PNP	16 points	Terminal block	0.5 A (12 to 24 V DC), 0.1 A (5 V DC)	FP2-Y16P	AFP23503
		32 points	Connector	0.1 A (12 to 24 V DC), 50 mA (5 V DC)	FP2-Y32P	AFP23504
		64 points	Connector	0.1 A (12 to 24 V DC), 50 mA (5 V DC)	FP2-Y64P	AFP23507
FP2 I/O Mixed Unit	DC input, Transistor output NPN	Input: 32 points Output: 32 points	Connector	Input: 24 V DC Output: 0.1 A (12 to 24 V DC), 50 mA (5 V DC)	FP2-XY64D2T	AFP23467
				Input: 24 V DC Output: 0.1 A (12 to 24 V DC), 50 mA (5 V DC) with ON pulse catch input	FP2-XY64D7T	AFP23477
	DC input, Transistor output PNP	Input: 32 points Output: 32 points	Connector	Input: 24 V DC Output: 0.1 A (12 to 24 V DC), 50 mA (5 V DC)	FP2-XY64D2P	AFP23567
				Input: 24 V DC Output: 0.1 A (12 to 24 V DC), 50 mA (5 V DC) with ON pulse catch input	FP2-XY64D7P	AFP23577

* Pressure welding socket is supplied. A special tool (Part No.: AXY52000FP) is needed for connection. Please purchase separately if you are using a terminal or flat cable socket.

Intelligent units for Analog I/O

Product name		Specifications	Number of I/O points	Product No.	Part No.
FP2 Analog Input Unit	FP2-AD8VI	Between channels: not insulated, Voltage: 1 to 5 V, ±10 V Current: 4 to 20 m A, ±20 mA	Analog input: 8 channels	FP2-AD8VI	AFP2400L
	FP2-AD8X	Between channels: insulated, Voltages, Currents, Thermocouples, R.T.D. (Resistance Thermometer Devices)	Analog input: 8 channels	FP2-AD8X	AFP2401
	FP2-RTD	R.T.D. type: Pt100, JPt100, JPt1000 type	R.T.D. input: 8 channels	FP2-RTD	AFP2402
FP2 Analog Output Unit		Voltage: -10 to +10 V, Current: 0 to 20 mA, Resolution: 1/4,096	Analog output: 4 channels	FP2-DA4	AFP2410

FP2SH

Positioning units, High-speed counter units and Pulse I/O units

Product name	Specifications			Product No.	Part No.
	Output type	Number of axes controlled	Speed command		
FP2 Positioning Unit RTEX	Network	2 axes type	1 pps to 32 Mpps	FP2-PN2AN	AFP243610
		4 axes type		FP2-PN4AN	AFP243620
		8 axes type		FP2-PN8AN	AFP243630
Control Configurator PM	Dedicated tool software for positioning unit RTEX, Japanese version			AFPS66110	AFPS66110
	Dedicated tool software for positioning unit RTEX, English version			AFPS66510	AFPS66510
FP2 Positioning Unit Multi function type (Note 3)	Transistor	2 axes, independent	1 pps to 500 kpps	FP2-PP21	AFP2432
		4 axes, independent		FP2-PP41	AFP2433
	Line driver	2 axes, independent	1 pps to 4 Mpps	FP2-PP22	AFP2434
		4 axes, independent		FP2-PP42	AFP2435
FP2 Positioning Unit Interpolation type	Transistor	2 axes (Linear, circular interpolation and synchronization)	1 pps to 500 kpps	FP2-PP2T	AFP243710
		4 axes (2-axis linear, 2-axis circular, 3-axis linear, 3-axis helical interpolation and 2-axis synchronization)		FP2-PP4T	AFP243720
	Line driver	2 axes (Linear, circular interpolation and synchronization)	1 pps to 4 Mpps	FP2-PP2L	AFP243711
		4 axes (2-axis linear, 2-axis circular, 3-axis linear, 3-axis helical interpolation and 2-axis synchronization)		FP2-PP4L	AFP243721
FP2 High-speed Counter Unit	8 interrupt inputs, 4-channel high-speed counter, 8 comparison outputs, Input: 24 V DC, Output: 5 to 24 V DC (0.1 A, 12 points / 0.8 A, 4 points)		NPN output	FP2-HSCT	AFP2441
			PNP output	FP2-HSCP	AFP2451
FP2 Pulse I/O Unit	8 interrupt inputs, 4-channel high-speed counter, 8 comparison outputs, 4-channel pulse output, 4-channel PWM output, Input: 24 V DC, Output: 5 to 24 V DC (0.1 A, 12 points / 0.8 A, 4 points)		NPN output	FP2-PXYT	AFP2442
			PNP output	FP2-PXYP	AFP2452

Notes:
1) Pressure welding socket is supplied. A special tool (Part No. AXY52000FP) is needed for connection. Please purchase separately if you are using a terminal or flat cable socket.
2) Please refer to "FPΣ Part Number List" for Motor driver I/F terminal II.
3) Previous FP2 positioning units AFP2430 (FP2-PP2) and AFP2431 (FP2-PP4) are not compatible with the multi function type FP2 positioning unit. Please contact us.

Open network, serial communication and link-related intelligent units

Product name	Specifications	Number of channel	Product No.	Part No.
FP2 VE2 Link Unit	10 Mbps, 8,192 points / 8,192 words, 99 units max. (VE mode), 254 units max. (FL-net), 2,500 m 8,202.1 ft	1 channel	FP2-VE2	AFP279601
FP2 ET-LAN2 Unit	Ethernet-compatible unit To be mounted on the CPU backplane	1 channel	FP2-ET2	AFP27901
Control Configurator ET	ET-LAN unit setting software, Japanese version	–	AFPS32110	AFPS32110
	ET-LAN unit setting software, English version	–	AFPS32510	AFPS32510
FP2 Multi-wire Link Unit	For PLC links Compatible with MEWNET-W / MEWNET-W2	1 channel	FP2-MW	AFP2720
FP2 Multi-Communication Unit	Up to two blocks to be attached can be selected among RS232C, RS422, and RS485 blocks. General-purpose serial communications, computer links, PLC links (MEWNET-W0)	2 channels	FP2-MCU	AFP2465
RS232C block	(For the multi-communication unit) 230 kbps, 15 m 49.0 ft max.	1 channel	FP2-CB232	AFP2803
RS422 block	(For the multi-communication unit) 230 kbps, 1,200 m 3,937.0 ft max.	1 channel	FP2-CB422	AFP2804
RS485 block	(For the multi-communication unit) For PLC links (MEWNET-W0): 115 kbps, 16 stations, 1,200 m 3,937.0 ft	1 channel	FP2-CB485	AFP2805

Intelligent units for remote I/O control

Product name	Specifications	Controllable I/O points	Product No.	Part No.
FP2 Multi-wire Link Unit	Can connect as the remote I/O system MEWNET-F master station. Perfect for remote I/O systems using many points	Max. 2,048 points per one unit	FP2-SMW	AFP2720
FP2 Remote I/O Slave Unit	Can connect as the remote I/O system MEWNET-F slave station. Digital I/O unit and positioning unit can be attached.	Max. 2,048 points per one unit	FP2-RMS	AFP2745
FP I/O Terminal Board [MIL connector type]	12 V DC input / 0.2 A Transistor output	Input: 16 points, Output: 16 points	AFP87445	AFP87445
	24 V DC input / 0.2 A Transistor output	Input: 16 points, Output: 16 points	AFP87446	AFP87446
FP I/O Terminal Board [Terminal type]	24 V DC input / 0.2 A Transistor output	Input: 16 points, Output: 16 points	AFP87444	AFP87444
	24 V DC input / 2 A Relay output	Input: 16 points, Output: 8 points	AFP87432	AFP87432