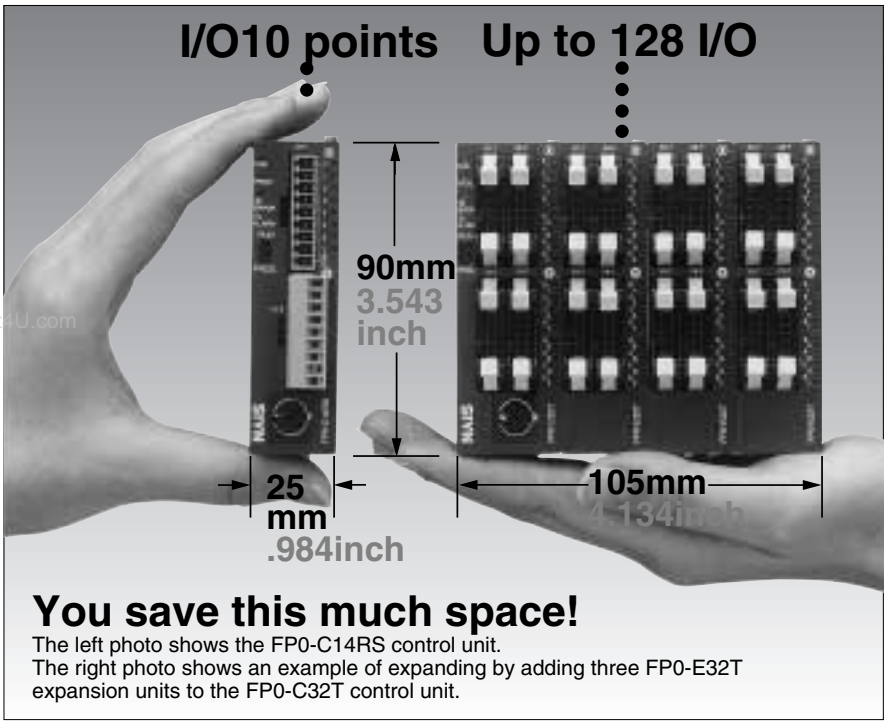
FP0

Suitable for installation virtually anywhere.



You save this much space!

The left photo shows the FP0-C14RS control unit.
The right photo shows an example of expanding by adding three FP0-E32T expansion units to the FP0-C32T control unit.

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■ Features

1. Measures only W25 × H90 × D60 mm
W.984 × H3.543 × D2.362 inch *
The unit's compact sizing which has never been thought possible on conventional small PLCs makes it very easy for incorporation into equipment and helps reduce the size of control panels.
* C32 series is 30 mm 1.181inch wide.

2. Expandable 128 points by adding three units.
This PLC is a stacking expansion type which requires no cables for expansion. The total width is only 105 mm 4.134inch when three units are added.

3. High-speed operation: Scanning speed is approx. 1 ms.
A 500-step program can be processed only in 1 ms, a speedy processing time for small PLCs.

4. Terminals are designed for tidy styling.
The relay output terminals use European style terminal blocks, so it is possible for the terminals to be connected without terminal blocks. Molex connector type is also available for mass-production equipment. Transistor output type is supplied with wire-pressed terminal cable connectors.

5. Allows the use of the programming capacity "10k steps" type
Standard equipped with clock/calendar function timer and RS232C port. Operation memory is backed up by secondary battery.

■ Power Supply Specifications

Item	Description
Power supply	24 V DC
Input	24 V DC ±common
Output	Relay 2 A (resistor load)/Transistor 0.1 A (varies with different models)

■ Performance Specifications

Item		Description (Relay type/Transistor type)
Number of I/O points		10 points/14 points/16 points/32 points
Expansion		Max. 3 units Total points: Max. 128 points
Operation speed		0.9 μs/step
Internal memory		EEP-ROM
Memory capacity		2.7k steps/5k steps/10k steps (varies with different types)
Operation memory	Internal relay	1008 points
	Timer/Counter	144 points in total
	Data register	1660 words/6144 words/16384 words (varies with different types)

■ Applicable Functions

Item	Description
Pulse catch/Interrupt input	6 points in total
Analog I/O	Available by adding analog unit
Volume input	—
High-speed counter	1 phase 4 points/ 2 phases 2 points (10 kHz in total)
Pulse output note)	2 points (10 kHz in total)
RS232C port	1 ch is equipped to the models having part numbers which end in C or 10k type. 3P terminal blocks (made by Phoenix Contact Co.)

Note) Transistor type only

■ Applicable Network

Item	Description
Remote I/O	CC-Link, Slave station of MEWNET-F (use CC-Link unit/I/O link unit)
Inter-PLC link	—
Computer link	Linkable with tool port or RS232C port (C type)
Modem connection	Available, Type with RS232C port can also send data.

■ Other Built-in Functions

Item	Description
Program block-edit during RUN	Available
Constant scan	Available
Adjustable input time filtering	—
Clock/Calendar function	— (built-in with 10k type)

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FP0 Line up

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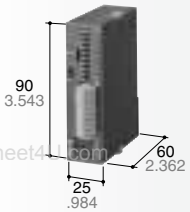
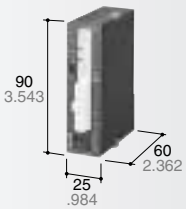
FP0 Control Unit

10 points (Input 6 points / Relay output 4 points)

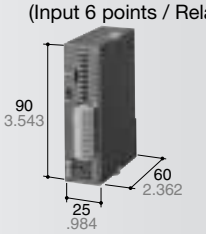


Terminal block type
FP0-C10RS
(AFP02123)

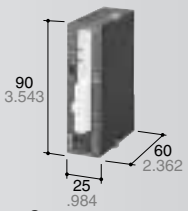


Connector type
FP0-C10RM
(AFP02113)

10 points with RS232C
(Input 6 points / Relay output 4 points)

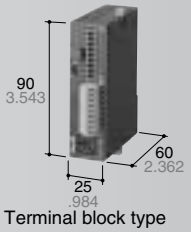


Terminal block type
FP0-C10CRS
(AFP02123C)

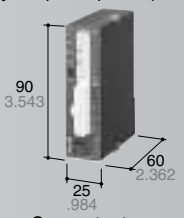


Connector type
FP0-C10CRM
(AFP02113C)

14 points
(Input 8 points / Relay output 6 points)

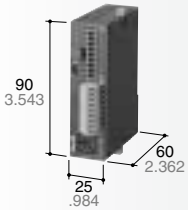


Terminal block type
FP0-C14RS
(AFP02223)

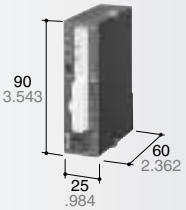


Connector type
FP0-C14RM
(AFP02213)

14 points with RS232C
(Input 8 points / Relay output 6 points)

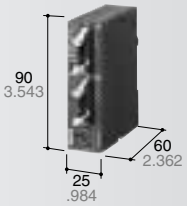


Terminal block type
FP0-C14CRS
(AFP02223C)



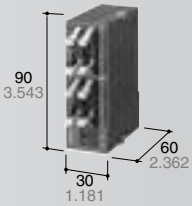
Connector type
FP0-C14CRM
(AFP02213C)

16 points (Input 8 points / Transistor output 8 points)



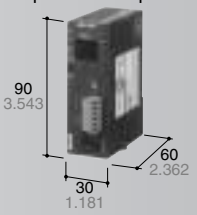
MIL connector
FP0-C16T (NPN)
(AFP02343)
FP0-C16P (PNP)
(AFP02353)

32 points (Input 16 points / Transistor output 16 points)



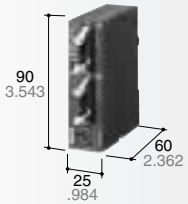
MIL connector
FP0-C32T (NPN)
(AFP02543)
FP0-C32P (PNP)
(AFP02553)

S-LINK
(Input 64 points / Output 64 points)



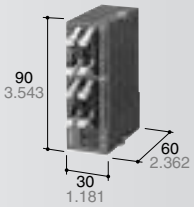
S-LINK exclusive flat cable
(* Equipped with RS232C port.)
FP0-SL1
(AFP02700)

16 points with RS232C
(Input 8 points / Transistor output 8 points)



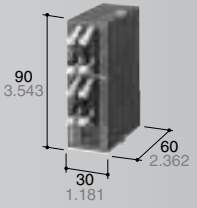
MIL connector
FP0-C16CT (NPN)
(AFP02343C)
FP0-C16CP
(AFP02353C)

32 points with RS232C
(Input 16 points / Transistor output 16 points)



MIL connector
FP0-C32CT (NPN)
(AFP02543C)
FP0-C32CP
(AFP02553C)

32 points with RS232C 10 k type
(Input 16 points / Transistor output 16 points)



MIL connector
FP0-T32CT
(AFP02643C)
FP0-T32CP
(AFP02653C)

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FP0 Expansion Units (Up to 3 units can be added at the FPΣ/FP0 control unit.)

Input/Output Units

8 points: Input 4/Relay output 4

Terminal block
FP0-E8RS
(AFP03023)

Connector
FP0-E8RM
(AFP03013)

16 points: Input 8/Relay output 8

Terminal block
FP0-E16RS
(AFP03323)

Connector
FP0-E16RM
(AFP03313)

16 points: Input 8/
Transistor output 8

MIL connector
FP0-E16T (AFP03343)
FP0-E16P (AFP03353)

32 points: Input 16/
Transistor output 16

MIL connector
FP0-E32T (AFP03543)
FP0-E32P (AFP03553)

8 points: Input 8

MIL connector
FP0-E8X
(AFP03003)

16 points: Input 16

MIL connector
FP0-E16X
(AFP03303)

8 points: Relay output 8

Terminal block
FP0-E8YRS
(AFP03020)

8 points: Transistor output 8

MIL connector
FP0-E8YT (AFP03040)
FP0-E8YP (AFP03050)

16 points: Transistor output 16

MIL connector
FP0-E16YT (AFP03340)
FP0-E16YP (AFP03350)

FP Memory Loader

Data clear type/Data hold type
(AFP8670)/(AFP8671)

Communication unit

FP Web-Server unit
FP-WEB
(AFP0610)

Intelligent Units (The intelligent units can be added at the right of FPΣ Control unit.)

FP0
Thermocouple units
4ch FP0-TC4 (AFP0420)
8ch FP0-TC8 (AFP0421)

FP0 Analog I/O unit
(Input: 2-channel/
Output: 1-channel)
FP0-A21
(AFP0480)

FP0 A/D
converter unit
(Input: 8-channel)
FP0-A80
(AFP0401)

FP0 D/A
converter unit
(Output: 4-channel)
FP0-A04V (AFP04121)
FP0-A04I (AFP04123)

FP0 I/O link unit
FP0-IOL
(AFP0732)

FP0 CC-Link
slave unit
FP0-CCLS
(AFP07943)

C-NET Adapter S2 type
(AFP15402)

Power supply units

FP0-PSA4 (AFP0634)
Input: 100 to 240 V AC
Output: 24 V DC, 0.7 A

FP0-PSA1 (AFP0631)
Input: 100 to 240 V AC
Output: 24 V DC, 0.6 A

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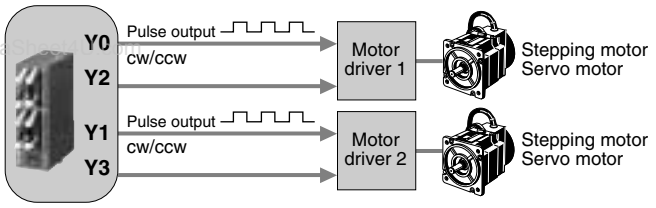
FP0 Features

Equipped with 2-axis independent positioning, high-speed counter and PWM output

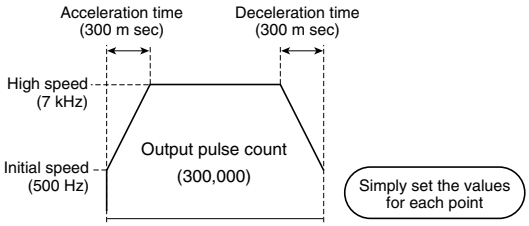
■ Pulse output function (For transistor output type only *)

The FP0 comes equipped with 2 channels of pulse output up to 10 kHz (5 kHz during 2-channel output). Since these two channels can be separately controlled, the FP0 is also suitable for 2-axis independent positioning. Setting for automatic trapezoid control, automatic return to home position and JOG operation are very easy, by using special instructions.



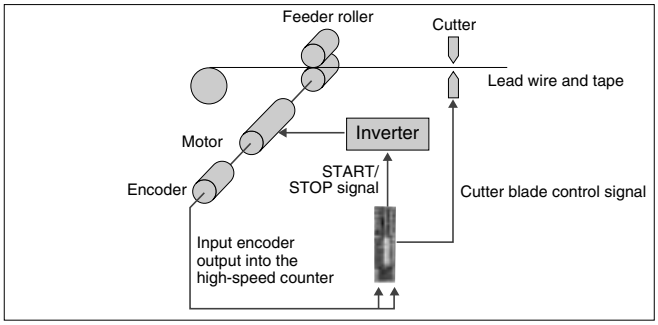
Position control is a breeze with the auto trapezoid control instruction F168!

```
R0
 ├─(DF)─[F0   MV     H102,DT0]  Control code
        [F0   MV     K500,DT1]  Initial speed (500 Hz)
        [F0   MV     K7000,DT2] High speed (7 kHz)
        [F0   MV     K300,DT3]  Deceleration/Acceleration time (300 m sec)
        [F1   DMV    K300000,DT4] Output pulse count (300,000)
        [F0   MV     K0,DT6]
        [F168 SPD1   DT0,K0]    Pulse output starts from Y0
```



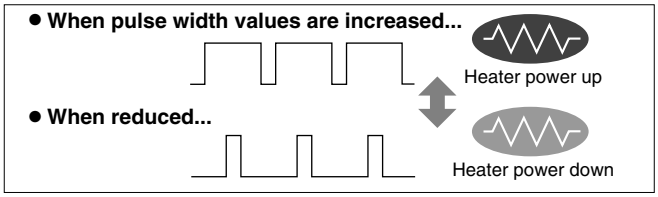
■ High-speed counter function*

The high-speed counter is prepared for 4 channels in single phase, and 2 channels in 2-phase. In single phase, the 4-channel total is 10 kHz, and in 2-phase the 2-channel total is 2 kHz total speed, making the unit suitable for inverter control, and so forth.



■ PWM output function (For transistor output type only*)

Its PWM output (Pulse Width Modulation output) function makes it possible to provide temperature control with a single compact FP0 unit.



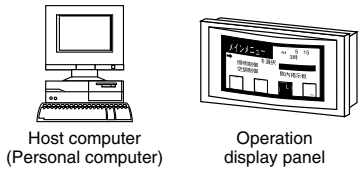
* NPST-GR Ver. 3 and earlier and FP Programmer II are not applicable. Please check the user manual regarding other conditions.

Second serial RS232C port is equipped. (Part No. C10CR, C14CR, C16CT, C16CP, C32CT, C32CP, T32CT, T32CP and SL1)

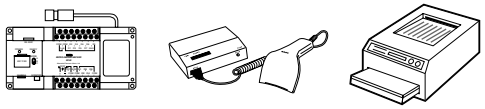
The RS232C port allows the direct connection to computers and operation display panels. Also, bi-directional data communication with bar-code readers and other RS232C devices is made easy.

* The port block is connected by three S.R.G. (SD, RD, SG) terminals. Operation display panels can also be connected using the tool port.
* RS232C port is equipped on the control units for both relay types and transistor output types.

● For connecting to computers and operation display panels



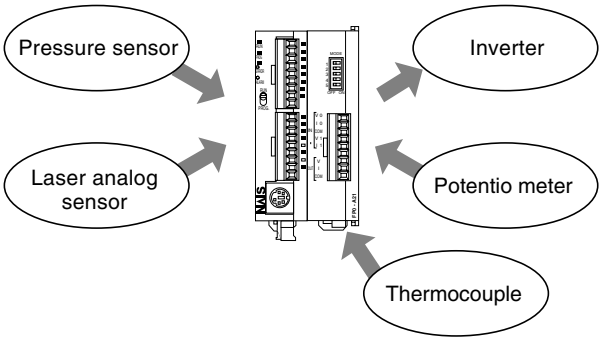
● For data communication with RS232C devices



Plenty of analog units

Even with compact body, the following analog units are available.

FP0-A21 (AFP0480) : 2 input, 1 output
FP0-A80 (AFP0401) : 8 input
FP0-A04V (AFP04121) : Voltage 4 output
FP0-A04I (AFP04123) : Current 4 output
FP0-TC4 (AFP0420) : Thermocouple 4 input
FP0-TC8 (AFP0421) : Thermocouple 8 input



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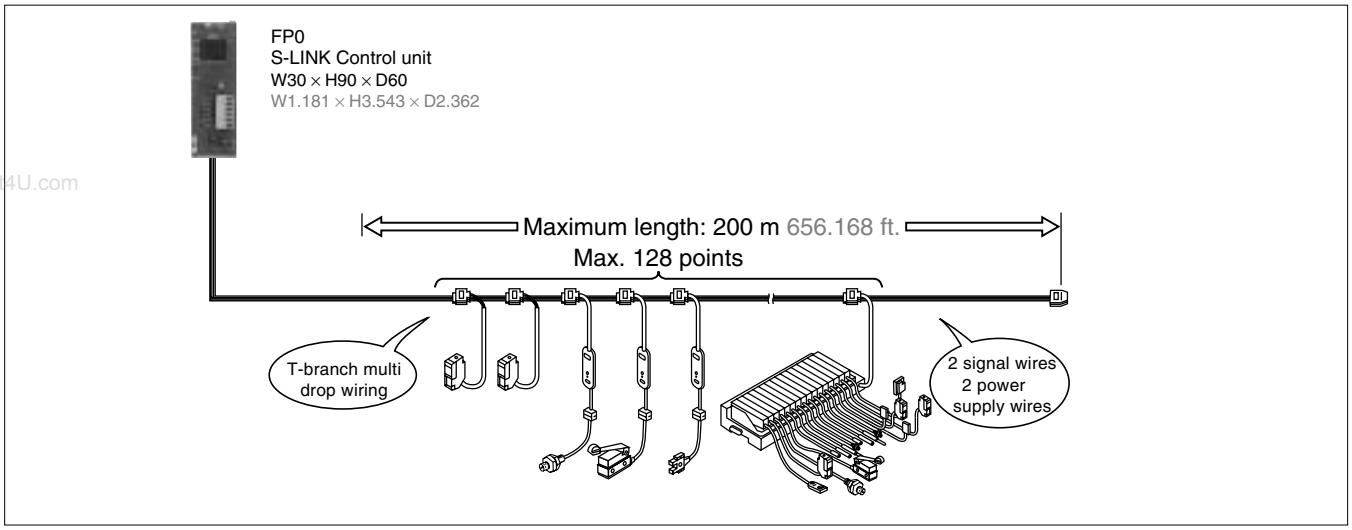
FP0 S-LINK control unit for simple sensor wiring system

The FP0 S-Link control unit makes sensor wiring and control panel simple by using easy T-shape connectability and 4-wire cable. It can control up to 128 input/output of S-Link I/O devices. Adding up to three FP0 Expansion units you can have flexible I/O configuration capability.



*Up to 400 m using a booster.

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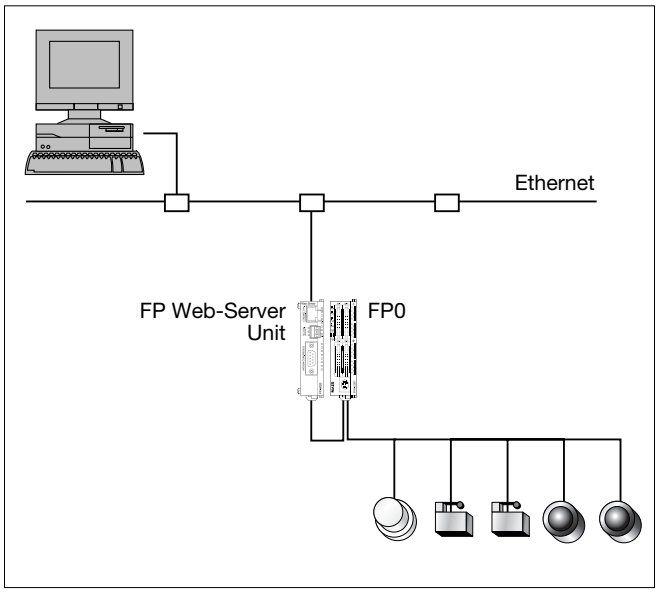
Surveillance possible of FP0 operation status from a Web browser using FP Web-Server Unit

Connecting an FP0 to the FP Web-Server unit with an RS232C cable and then setting up using the dedicated software (FP Web Configurator Tool) makes surveillance possible of the FP0 running conditions from a PC Web browser.

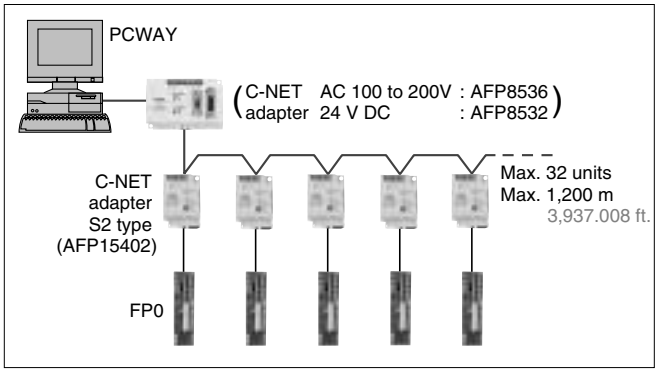


By using C-NET, you can use multiple FP0s as data collection terminals.

By using the C-NET network and exclusive adapters, you can connect multiple FP0s by multi-drop connection with 2-wire cables. You can use computers for distributed control or have network terminals for a centralized management system.

● PCWAY

The Excel add-in software “PCWAY” is available for data collection of the networked PLCs. PLC status and data registers value can be simply shown and managed on Excel worksheets, which also makes it possible to transmit Email when malfunctions occur or to make status inquiries.



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FP0 Specifications

■ Performance Specifications

Item \ Model			C10 series (Relay output type only)	C14 series (Relay output type only)	C16 series (Transistor output type only)	C32 series (Transistor output type only)	S-LINK type	T32 series (Transistor output type only)
Programming method / Control method			Relay symbol/Cyclic operation					
Number of I/O points	No expansion (control unit only)		10 points [Input: 6, NPN Output: 4]	14 points [Input: 8, NPN Output: 6]	16 points [Input: 8, NPN Output: 8]	32 points [Input: 16, NPN Output: 16]	S-LINK section: max.128 points [Input: 64, NPN Output: 64]	32 points [Input: 16, NPN Output: 16]
	W/expansion 1 *Same type of control and expansion units		Max. 58 points	Max. 62 points	Max. 112 points	Max. 128 points	Expansion section: Max.96 points	Max. 128 points
	W/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			EEP-ROM(no back up battery required)					
Program capacity			2.7k steps			5k steps		10k steps
Number of instructions	Basic		83					
	High-level		115					
Operation speed (central value/step)			0.9 μs/step (for basic instrction)					
Operation memory points	Relay	Internal relay (R)	1008 points					
		Timer/Counter (T/C)	144 points Timer: Counts up to (units: 1 ms, 10 ms, 100 ms, or 1 s) × 32767. Counter: Counts up to 32767.					
	Memory area	Data register (DT)	1660 words			6144 words		16384 words
		Index register (IX,IY)	2 words					
Master control relay points (MCR)			32 points					
Number of labels (JMP and LOOP)			64 labels					255 labels
Differential points			Unlimited number of points					
Number of step ladder			128 stages					704 stages
Number of subroutines			16 subroutines					100 subroutines
Special functions	High speed counter		1 phase/4 points (10kHz in total) or 2 phases / 2 points (2 kHz in total)*				—	Available(same as 32 points series)
	Pulse output		—		2 points(10 kHz* in total) ,enable to control 2 channels individually*		—	Available (same as 32 points series)
	PWM output		—		0.15 Hz to 1kHz		—	Available(same as 32 points series)
	Pulse catch input/interrupt input		6 points(with high speed counter)				—	Available(same as 32 points series)
	Interrupt program		7 programs (external 6 points, internal 1 point)				1 program (internal 1 point)	Available(same as 32 points series)
	Periodical interrupt		0.5 ms to 30s					
	Constant scan		Available					
	RS232C port		One RS232C port is mounted on each of the models FP0- C10CR, C14CR,C16CT, C16CP, C32CT, C32CP, T32CT, T32CP and SL1 type (3P terminal block) Transmission speed (Baud rate): 300 to 19200 bit/s, Transmission distance: 15 m 9.843 ft Communication method: half duplex					
Maintenance	Memory back up	Program and system register	Stored program and system register in EEP-ROM					
		Operation memory	Stored fixed area in EEP-ROM Counter: 4 points Internal relay: 32 points Data register: 8 words			Stored fixed area in EEP-ROM Couner: 16 points Internal relay: 128 points Date register: 32 words		Backup is provided by secondary battery. The holding range for the timers, counters, internal relays, and data registers are specified with the programming tool.
						(By using exclusive instructions, the EEP-ROM is possible to write and read data register.)		
	Self-diagnostic function		Watchdog timer, program syntax check					
	Clock/Calender function		—					Available
	Other functions		Runtime editing, password setting					

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

■ General Specifications

Item		Description
Rated voltage		24 V DC
Operating voltage range		21.6 to 26.4 V DC
Allowed momentary power off time	10 points, 14 points type	5 ms (at 21.6 V), 10 ms (at 24 V)
	16 points, 32 points, S-LINK type	10 ms (at 21.6 V / 24 V)
Ambient temperature		0 to +55°C 32 to +131°F
Storage temperature		–20 to +70°C –4 to +158°F
Ambient humidity		30 to 85% RH (non-condensing)
Storage humidity		30 to 85% RH (non-condensing)
Breakdown voltage		Between input/output terminals and power/ground terminals: 500 V AC for 1 minute (for the relay output type, 1500 V AC for 1 minute) Between input terminals and output terminals: 500 V AC for 1 minute (for the relay output type, 1500 V AC for 1 minute)
Insulation resistance		Between input/output terminals and power/ground terminals: Over 100 MΩ (using a 500V DC megger) Between input terminals and output terminals: Over 100 MΩ (using a 500V DC megger)
Vibration resistance		10 to 55 Hz, 1 sweep/min. Double amplitude of 0.75 mm .030 inch, 10 min. on 3 axes
Shock resistance		98 m/s^2 or more, 4 times on 3 axes
Noise immunity		1,000 V(p-p) with pulse widths 50 ns and 1 μs (using a noise simulator)
Operating condition		Free from corrosive gasses and excessive dust

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■ Input Specification (As for the limitation on the number of simultaneous ON points, please refer to the manual.)

Item		Description
Rated input voltage		24 V DC
Operating voltage range		21.6 to 26.4 V DC
Rated input current		Approx. 4.3 mA (at 24 V DC)
Input impedance		Approx. 5.6 kΩ
Input points per common		±common, 4 points/common (E8R), 6 points/common (C10R), 8 points/common (C14R/ C16T/E16T/E16R/E8X), 16 points/common (C32T/T32T/E32T/E16X)
Min. ON voltage/ON current		19.2 V / 3 mA
Max. OFF voltage/OFF current		2.4 V / 1 mA
Response time	OFF → ON	50 μs or less (at X0, X1) note 1) (at 24V DC and under the ambient temperature of 25°C 77°F)
		100 μs or less (at X2 to X5) (at 24 V DC and under the ambient temperature of 25°C 77°F)
		2 ms or less (at X6 onward)
	ON → OFF	Same as above
Insulation method		Photocoupler

Note 1) Since the response time of X0 to X5 is very fast (for high-speed counter input), the FP0 happens to catch chattering noise as an input signal. To prevent this, it is recommended that the timer should be put in the ladder program.

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■ Output Specification

1. Relay output type

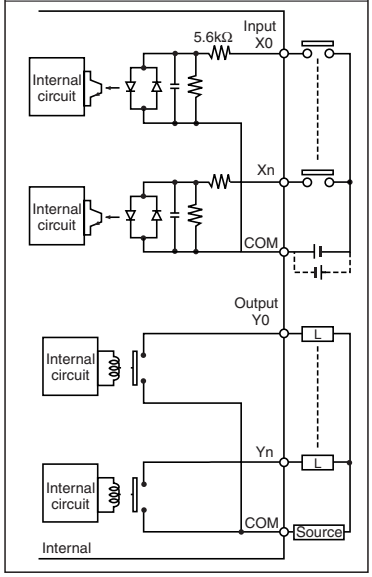
Item		Description
Output type		1a (1 form A, normally open)
Rated control capacity		2 A 250 V AC, 2 A 30 V DC (4.5 A/common)
Response time	OFF → ON	Approx. 10 ms
	ON → OFF	Approx. 8 ms
Life time	Mechanical	Min. 2×10^7 operations
	Electrical	Min. 10^5 operations
Surge absorber		None
Operating indicator		LED display

2. Transistor output type

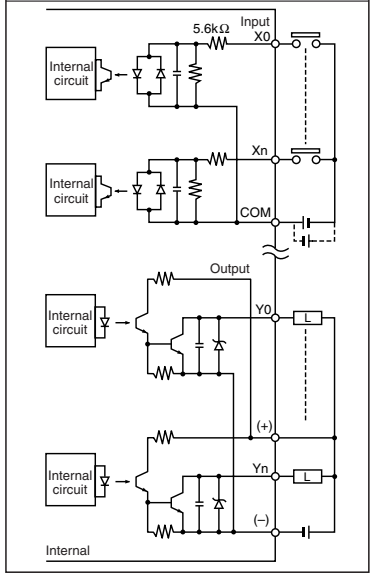
Item		Description
Output type		Open collector
Rated load voltage		NPN type: 5 to 24 V DC, PNP type: 24 V DC
Load voltage allowable range		NPN type: 4.75 to 26.4 V DC PNP type: 21.6 to 26.4 V DC
Max. load current		0.1 A/point (1 A/common)
Max. inrush current		0.3 A
OFF state leakage current		100 μA or less
ON state voltage drop		1.5 V or less
Response time	OFF → ON	1 ms or less (50 μs or less at Y0 and Y1 only)
	ON → OFF	
Voltage range for external power supply		21.6 to 26.4 V DC
Surge absorber		Zener diode
Output points per common		8 points/common (C16T, C16P, C16CT, C16CP, E16T, E16P, E8YT, E8YP) 16 points/common (C32T, C32P, C32CT, C32CP, E32T, E32P, E16YT, E16YP)
Insulation method		Photocoupler

■ I/O Circuit Diagram

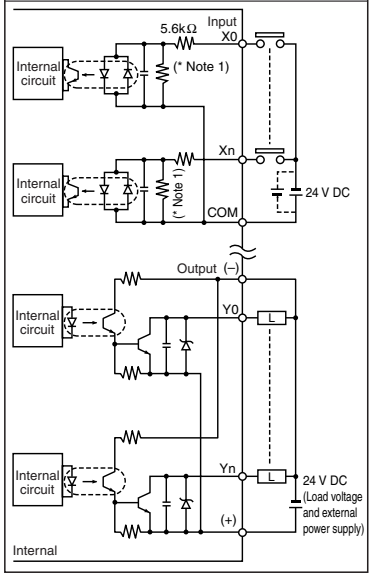
Relay output



Transistor output (NPN)



Transistor output (PNP)



Note: For transistor output types, make sure that the externally supplied voltage between the (+) and (–) terminal is between 21.6 and 26.4 V DC.

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FP0 Analog I/O Units

Multi-channel analog control of current and voltage is possible

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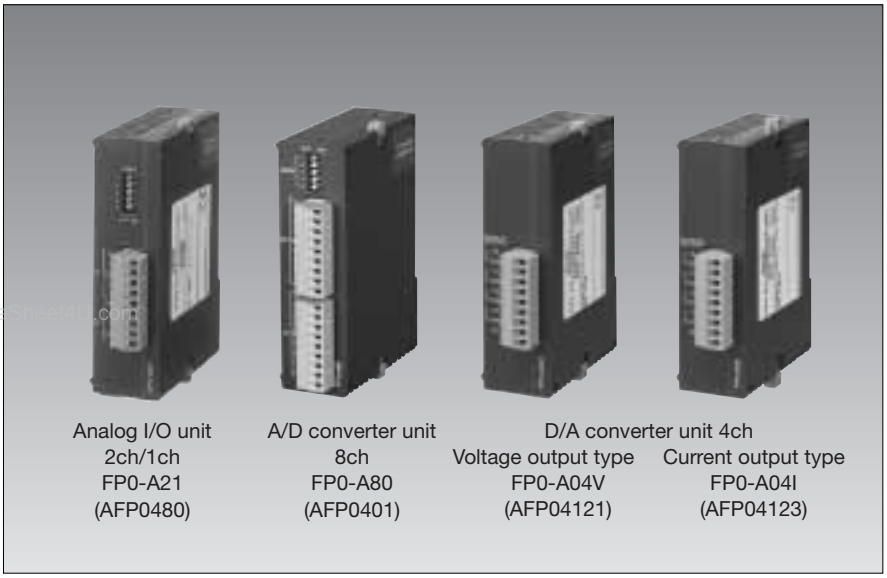


Analog I/O unit 2ch/1ch FP0-A21 (AFP0480)

A/D converter unit 8ch FP0-A80 (AFP0401)

D/A converter unit 4ch Voltage output type FP0-A04V (AFP04121)

D/A converter unit 4ch Current output type FP0-A04I (AFP04123)

■ Features

1. Can be used with the FP0 and FPΣ so wide range applications are possible from small-scale machines to factory production system.
Expanding the breadth of analog control possibilities is,
- 4ch output
- 8ch input
- 2ch/output, 1ch/input

2. Multi-channel analog control possible with FP0 and FPΣ
Eight input channels or four output channels are built into one unit so multi-channel analog control is possible with the ability to connect up to three units.

3. High-speed conversion of 500 μs per channel (D/A Converter Unit)
With a current and voltage output conversion time of 500 μs, the D/A converter unit is capable of high-speed processing.

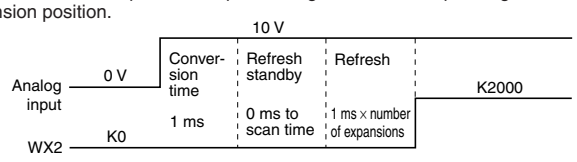
■ Analog I/O Unit Specifications

●FP0-A21 (AFP0480)

1. Analog input specifications

Item		Description
Number of input points		2 channels/unit
Input range	Voltage range	0 to 5 V/–10 to +10 V
	Current range	0 to 20 mA
Digital output	0 to 5 V or 0 to 20 mA range	K 0 to K 4000 note 1)
	–10 to +10 V range	K –2000 to K +2000 note 1)
Resolution		1/4000 (12 bits)
Conversion speed		1 ms/channel note 2)
Overall precision		±1% F.S. or less (0 to 55°C), ±0.6% F.S. or less (25°C)
Input impedance	Voltage range	1 MΩ or more
	Current range	250 Ω
Absolute maximum input	Voltage range	±15 V
	Current range	+30 mA
Insulation method		Between analog input terminal and FP0 internal circuit: optical coupler insulation (non-insulated between analog inputs) Between analog input terminal and analog I/O unit external power supply: based on insulation-type DC/DC converter Between analog input terminal and analog output terminal: based on insulation-type DC/DC converter
Number of I/O contact points		32 input contact points

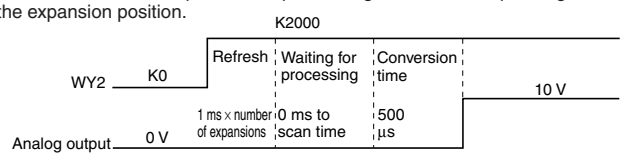
Notes
1) If the analog input value exceeds the upper or lower limit, the digital value will preserve the upper or lower limit.
2) The number for the input contact point being used varies depending on the expansion position.



2. Analog output specifications

Item		Description
Number of output points		1 channel/unit
Output range	Voltage range	–10 to +10 V
	Current range	0 to 20 mA
Digital input	–10 to +10 V range	K –2000 to K +2000 note 1)
	0 to 20 mA range	K0 to K 4000 note 1)
Resolution		1/4000 (12 bits)
Conversion speed		500 μs note 2)
Overall precision		±1% F.S. or less (0 to 55°C), ±0.6% F.S. or less (25°C)
Output impedance		Voltage range: 0.5 Ω
Max. output current		Voltage range : ±10 mA
Allowable output load resistance		Current range: 300 Ω or less
Insulation method note 2)		Between analog output terminal and FP0 internal circuit: optical coupler insulation Between analog output terminal and analog I/O unit external power supply: based on insulation-type DC/DC converter Between analog output terminal and analog input terminal: based on insulation-type DC/DC converter
Number of I/O contact points		16 output contact points

Notes
1) If the digital input value exceeds the upper or lower limit, D/A conversion will not take place. (Analog output will remain as the previous data.)
2) The number for the output contact point being used varies depending on the expansion position.



3. General specifications

Item	Description
Rated voltage	24 V DC
Allowable voltage fluctuation range	21.6 to 26.4 V DC
Rated current consumption	100 mA or less (at 24 V DC) note)

Note
If the analog I/O unit is connected to the control unit, the current consumption on the control unit side increases by not more than 20 mA for each analog I/O unit.

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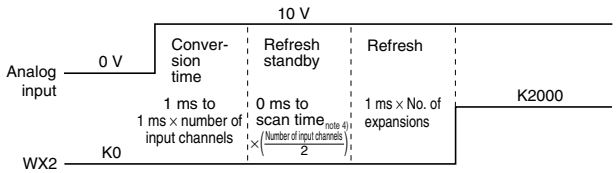
●FP0-A80 (AFP0401)

1. Analog input specifications

Item		Description
Number of input points		8 channels/unit (Number of input points can be changed 2, 4, 6 and 8 channels.)
Input range	Voltage range	0 to 5 V/–10 to +10 V/–100 to +100 mv
	Current range	0 to 20 mA
Digital output	0 to 5 V or 0 to 20 mA range	K 0 to K 4000 note 1)
	–10 to +10 V range –100 to +100 mv range	K –2000 to K +2000 note 1)
Resolution		1/4000 (12 bits)
Conversion speed		1 ms/channel note 2)
Overall precision		±1% F.S. or less (0 to 55°C), ±0.6% F.S. or less (25°C)
Input impedance	Voltage range	1 MΩ or more
	Current range	250 Ω
Absolute max. input	Voltage range	±15 V
	Current range	+30 mA
Insulation method		Between analog input terminal and FP0 internal circuit: optical coupler insulation (non-insulated between channels) Between analog input terminal and A/D converter unit external power supply: based on insulation-type DC/DC converter
Number of FP0 input contact points		32 input contact points
Averaging function		Can be switched on and off.

Notes
1) If the analog input value exceeds the upper or lower limit, the digital value will preserve the upper or lower limit.
2) The time noted below is required before the analog data is reflected in the control unit input.



3) Settings value switch for the number of input channels.
4) With each one scan of the control unit, the data for two channels will be loaded into it. In other words, if the input channel number switch is set to 8-channel, the data in the control unit will be updated once every four scans.

2. General specifications

Item	Description
Rated voltage	24 V DC
Allowable voltage fluctuation range	21.6 to 26.4 V DC
Rated current consumption	60 mA or less (at 24 V DC) note)

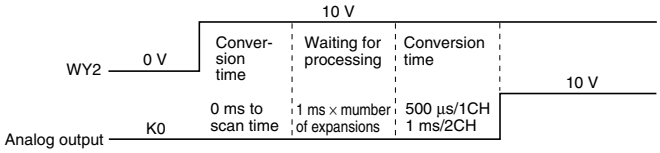
Note
If the A/D converter unit is connected to the control unit, the current consumption on the control unit side increases by not more than 20 mA for each A/D converter unit.

●FP0-A04V (AFP04121), FP0-A04I (AFP04123)

1. Analog output specifications

Item	Description	
	FP0-A04V (Voltage output type)	FP0-A04I (Current output type)
Number of intput points	Voltage output: 4 channels	Current output: 4 channels
Output range	–10 to +10 V	4 to 20 mA
Digital input	K –2000 to K2000 note 1)	K 0 to K4000 note 1)
Resolution	1/4000	
Conversion speed	500 µs/channel note 2)	
Overall precision	±1% F.S or less (0 to 55°C), ±0.6% F.S. or less (25°C)	
Output impedance	0.5 Ω or less	–
Allowable output load resistance	1000 Ω or more	500 Ω or less
Max. output current	±10 mA	–
Insulation method	Between analog output terminal and FP0 internal circuit: optical coupler insulation (non-insulated between channels) Between analog output terminal and D/A converter unit external power supply: based on insulation-type DC/DC converter	
Number of FP0 input contact points	16 input contact points 32 output contact points note 3)	

Notes
1) If the digital input value exceeds the upper or lower limit, an error flag will be written to WX2 and D/A conversion will not take place. (Analog output will remain as the previous data.)
2) The time shown below is required to update the actual analog output.



3) The data for two channels will be output to the D/A converter unit with one scan of the control unit.

2. General specifications

Item	Description	
	FP0-A04 V (Voltage output type)	FP0-A04I (Current output type)
Rated voltage	24 V DC	
Allowable voltage fluctuation range	21.6 to 26.4 V DC	
Rated current consumption	100 mA or less (at 24 V DC) note)	130 mA or less (at 24 V DC) note)

Note
If the D/A converter unit is connected to the control unit, the current consumption on the control unit increases by not more than 20 mA for each D/A converter unit.

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FP0 Thermocouple Unit

Highly accurate multiple-point temperature control

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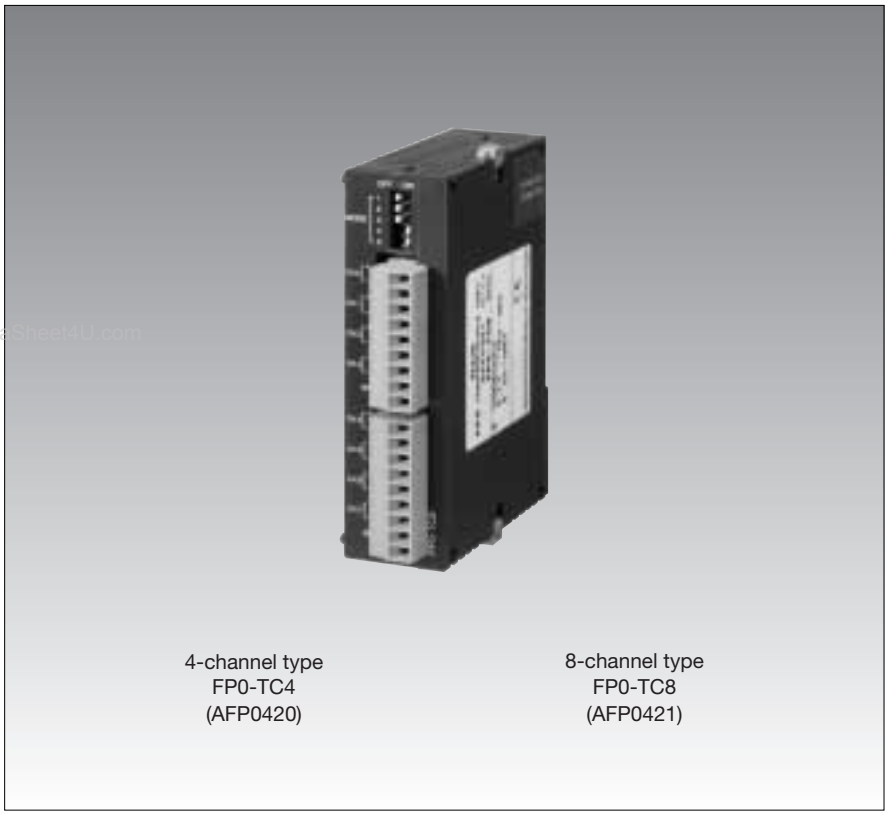

4-channel type
FP0-TC4
(AFP0420)

8-channel type
FP0-TC8
(AFP0421)

■ Features

1. Highly accurate temperature control
Overall accuracy of ±0.8°C (K, J, T range) enables highly accurate temperature control.

2. Temperature control up to 24 channels
Four and eight channel units are available to make temperature control up to 24 channels possible.

3. Easy multi-stage temperature control
By combining with PID instruction, temperature profiling control is realized.

4. Support K, J, T and R thermocouples to cover all major applications
K and J (–100 to 500°C)
T (–100 to 400°C)
R (0 to 1500°C)

■ Performance Specifications

Item	Description	
Input points	4-channel, 8-channel (The number of input points can be changed 2, 4, 6 and 8 channels.)	
Input range	Thermocouple types K and J	–100.0 to 500.0°C/–148.0 to 790.0°F note 1)
	Thermocouple type T	–100.0 to 400.0°C/–148.0 to 752.0°F
	Thermocouple type R	0.0 to 1500.0°C/32.0 to 1590.0°F note 1)
Digital output	K and J (when using °C): K –1000 to K 5000 K and J (when using °F): K –1480 to K 7900 note 1) (When range over using °C: K-1001, K5001 or K8000) (When range over using °F: K-1481, K7901 or K8000) (When the thermocouple broken: K8000) note 2) (Until the temperature can be measured at the initial startup: K8001) note 3)	
	T (when using °C): K –1000 to K 4000 T (when using °F): K –1480 to K 7520 note 1) (When range over using °C: K-1001, K4001 or K8000) (When range over using °F: K-1481, K7521 or K8000) (When the thermocouple broken: K8000) note 2) (Until the temperature can be measured at the initial startup: K8001) note 3)	
	R (when using °C): K 0 to K 15000 R (when using °F): K 320 to K 15900 note 1) (When range over using °C: K0, K15001 or K16000) (When range over using °F: K0, K15901 or K16000) (When the thermocouple broken: K16000) note 2) (Until the temperature can be measured at the initial startup: K16001) note 3)	
Resolution	0.1°C	
Sampling cycle note 5)	300 ms: when using 2 channels for an input points note 4) 500 ms: when using 4 channels for an input points note 4) 700 ms: when using 6 channels for an input points note 4) 900 ms: when using 8 channels for an input points note 4)	
Overall accuracy	Range for K and J (–100 to 500°C): ±0.8°C Range for T (–100 to 400°C): ±0.8°C Range for R (0 to 99.9°C): ±3°C (100 to 299.9°C): ±2.5°C (300 to 1500°C): ±2°C	
Input impedance	more than 1 MΩ	
Insulation method	• Between thermocouple input terminals and control unit internal circuits: Photo-coupler insulation/DC-DC insulation • Between thermocouple input terminal channels: PhotoMOS relay insulation	
Input/Output points	Input: 32 points note 6)	

Notes
1) The measurement range available for degree Celsius is not available for degree Fahrenheit, of which the upper-limit measurement is set lower than degree Celsius, since the digital value (temperature value displayed) for degree Fahrenheit is bigger than that for degree Celsius.
2) When the thermocouple is broken, the digital value will become K8000 or K16000 within 70 seconds since broken. Practice in the ladder program a process for avoiding a risk, would be resulting from a broken thermocouple, and exchange the thermocouple.
3) Until the conversion data will be ready after the initial startup was made, the digital value shows K8001 or K16001. Those are not a temperature data. Create a ladder program, so that they are not acquired as a temperature data.
4) The settings of the input channel selection switch.
5) Conversion values for 6-time measurements (6 from the latest 8 measurements, excluding the max. and min.) are averaged, so that it takes time for the digital value to be displayed due to the rapid temperature change.
6) The control unit reads the data for 2 channels per 1 scan by the control unit. Read data by utilizing the sample program given in the product specifications and manual.

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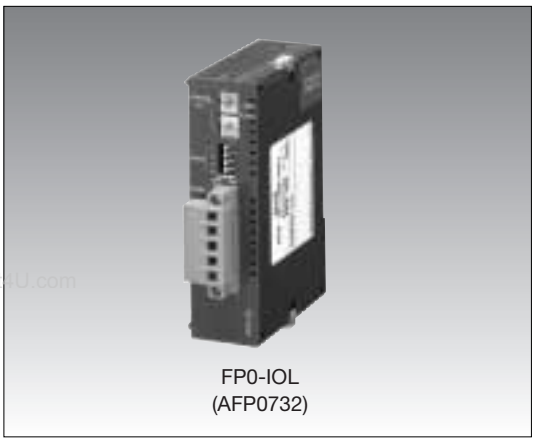
■ I/O Link unit



FP0-IOL
(AFP0732)

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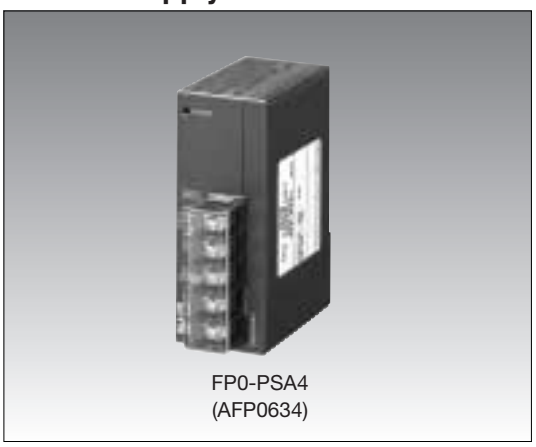
■ Specifications

Item	Description
Communication method	Two-wire, half duple
Synchronous method	Asynchronous method
Transmission line	2-wire cable (Twisted-pair cable or VCTF 0.75 mm² × 2C equivalent)
Transmission distance (Total distance)	Max. 700 m 2,296.588 ft. (using twisted pair cable) Max. 400 m 1,312.336 ft. (using VCTF cable)
Transmission speed (Baud rate)	0.5 Mbit/s
Number of control I/O point per an I/O link unit	64 points (Input: 32 points and Output: 32 points) note)
Remote I/O map allocation	32X/32Y
Interface	Conforming to RS485
Transmission error check	CRC (Cyclic Redumdancy Check) method

Note
This point number is the number of points that can be linked for inputting and outputting via the host PLC and network MEWNET-F. If the output for the I/O link unit error flag is set to ON, this number becomes 63 points (31 input points and 32 output points).

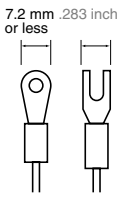
■ Power supply unit



FP0-PSA4
(AFP0634)

Applicable crimp terminals

Manufacturer	Part number	Applicable wiring
JST Mfg.Co.,Ltd.	V1.25-M3 (round type) V1.25-S3A (fork type)	0.35 to 1.65 mm² AWG #22 to #15
	V2-M3 (round type) V2-S3A (fork type)	1.04 to 2.00 mm² AWG #17 to #14



■ Specifications

Product number		FP0-PSA4	FP0-PSA1
Part number		AFP0634	AFP0631
Input	Rated voltage	100 to 240 V AC	
	Variable input voltage range	85 to 264 V AC	
	Rated frequency	50/60 Hz	
	Frequency range	47 to 63 Hz	
	Number of phases	Single-phase	
	Surge current	30 A (0 - P) or less, with cold start	
	Leakage current	0.75 mA or less	
	Allowable momentary power off time	10 ms or more	
Output	Rated voltage	24 V DC	
	Voltage accuracy	±5%	
	Rated current	0.7 A	0.6 A
	Output current range	0 to 0.7 A	0 to 0.6 A
	Ripple voltage	500 mV or less	
Protective functions	Over-current protection	0.735 A or more	0.63 A or more
	Over-voltage protection	Available	

Note
Start up may not be possible if a device with a large inrush current is connected even if below the rated current. In such a case, we recommend suppressing the inrush current by inserting a 1 to 2Ω resister between the power supply unit and the device.

Please see the network page for information on the FP0 CC-Link slave unit.

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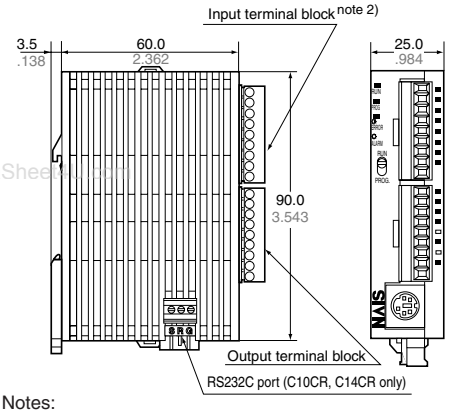
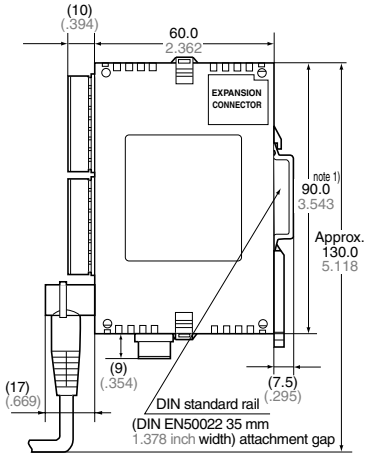
FP0 Dimensions

■ Control Units and Expansion Units * For the relay output type, the terminal block type is listed as the representative type.

FP0-C10RS/C10RM/C10CRS/C10CRM/C14RS/C14RM/C14CRS/C14CRM
FP0-E8RS/E8RM/E8YRS/E16RS/E16RM

● **External dimensions** (unit: mm inch) <Reference measuring for wiring>





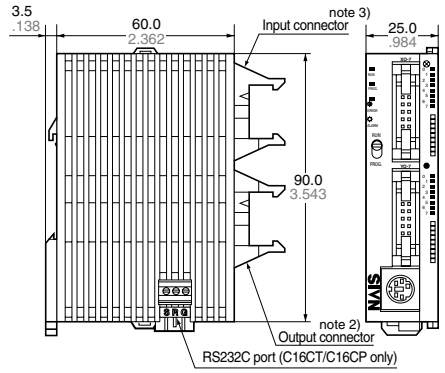
Notes:
1) DIN rail is attached on the center of the unit.
2) The FP0-E8YRS is not equipped with an input terminal block.

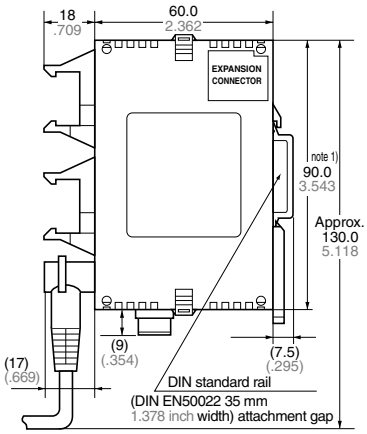
● **Terminal array**

	C10RS/C10RM/ C10CRS/C10CRM	C14RS/C14RM/ C14CRS/C14CRM	E8RS/E8RM	E16RS/E16RM/E8YRS
Input	X0	X0	X0	X0
	X1	X1	X1	X1
	X2	X2	X2	X2
	X3	X3	X3	X3
	X4	X4	(NC)	X4
	X5	X5	(NC)	X5
	(NC)	X6	(NC)	X6
	(NC)	X7	(NC)	X7
	COM	COM	COM	COM
Output	Y0	Y0	Y0	Y0
	Y1	Y1	Y1	Y1
	(NC)	Y2	Y2	Y2
	(NC)	Y3	Y3	Y3
	COM	COM	(NC)	Y4
	Y2	Y4	(NC)	Y5
	COM	COM	(NC)	Y6
	Y3	Y5	(NC)	Y7
	COM	COM	COM	COM

FP0-C16T/C16P/C16CT/C16CP/E16T/E16P/E8X/E8YT/E8YP

● **External dimensions** (unit: mm inch) <Reference measuring for wiring>





Notes:
1) DIN rail is attached on the center of the unit.
2) The FP0-E8X has no output connector.
3) The FP0-E8YT and E8YP has no input connector.

● **Terminal array**

Input (8 points/common)

X0	X1
X2	X3
X4	X5
X6	X7
COM	COM

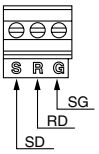
Output (8 points/common)

Y0	Y1
Y2	Y3
Y4	Y5
Y6	Y7
(+)	(–)

Note: Two COM terminals on the input circuit are connected inside the unit.

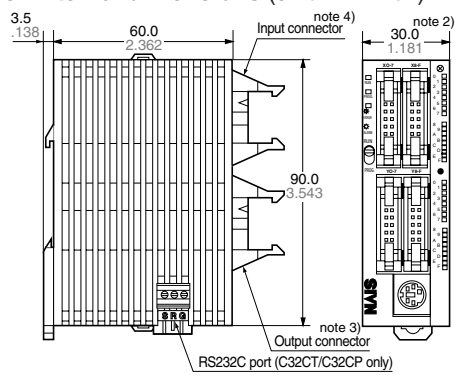
● **RS232C port**

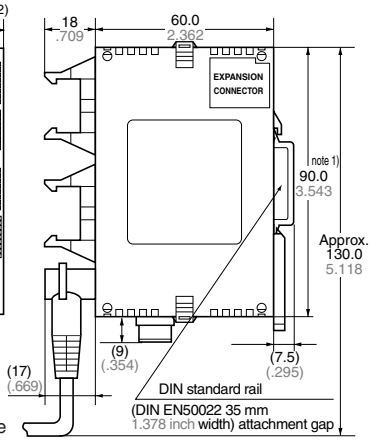
Terminal array



FP0-C32T/C32P/C32CT/C32CP/E32T/E32P/E16X/E16YT/E16YP

● **External dimensions** (unit: mm inch) <Reference measuring for wiring>





Notes:
1) DIN rail is attached on the center of the unit.
2) The FP0-E32T, E32P, E16X, E16YT and E16YP are 25 mm .984 inch each.
3) The FP0-E16X has no output connector.
4) The FP0-E16YT and E16YP have no input connector.

● **Terminal array**

Input (16 points/common)

X0	X1	X8	X9
X2	X3	XA	XB
X4	X5	XC	XD
X6	X7	XE	XF
COM	COM	COM	COM

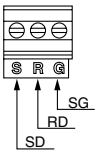
Output (16 points/common)

Y0	Y1	Y8	Y9
Y2	Y3	YA	YB
Y4	Y5	YC	YD
Y6	Y7	YE	YF
(+)	(–)	(+)	(–)

Notes:
1) Four COM terminals on the input circuit are connected inside the unit.
2) Two (+) terminals and two (–) terminals on the output circuit are connected respectively inside the unit.

● **RS232C port**

Terminal array



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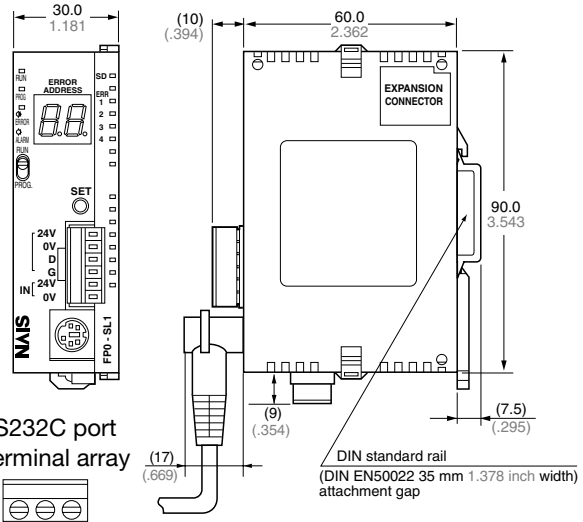
FP0 S-LINK Control Unit

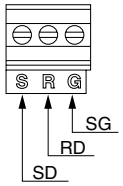
● External dimensions (unit: mm inch)

<Reference measuring for wiring>



● RS232C port

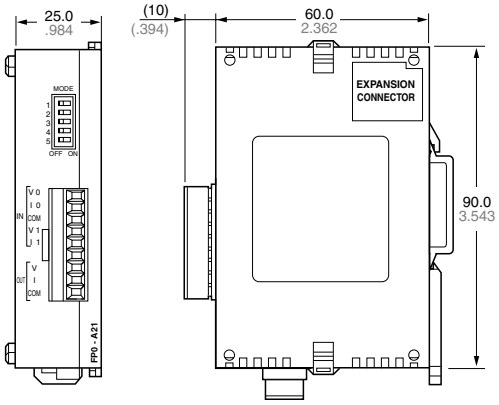
Terminal array



FP0 Analog I/O Unit, A/D Converter Unit, D/A Converter Unit

● External dimensions (unit: mm inch)

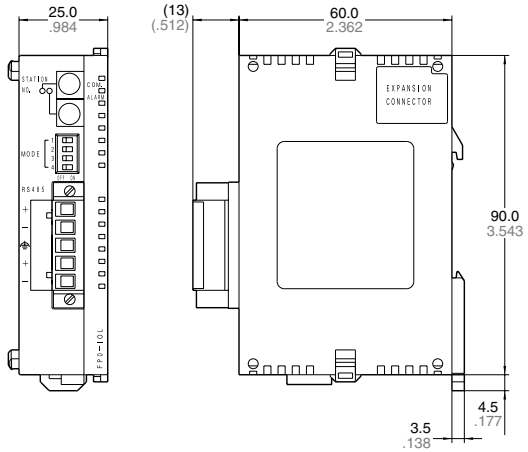
<Reference measuring for wiring>



FP0 I/O Link Unit

● External dimensions (unit: mm inch)

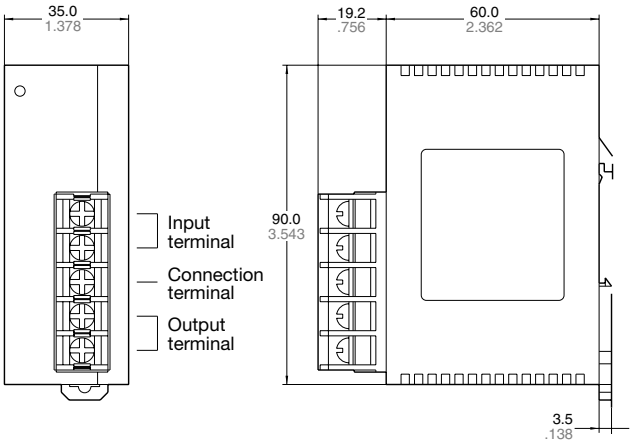
<Reference measuring for wiring>



FP0 Power Supply Unit

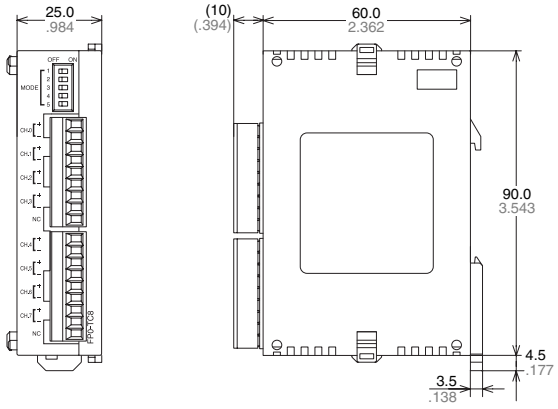
● External dimensions (unit: mm inch)

<Reference measuring for wiring>



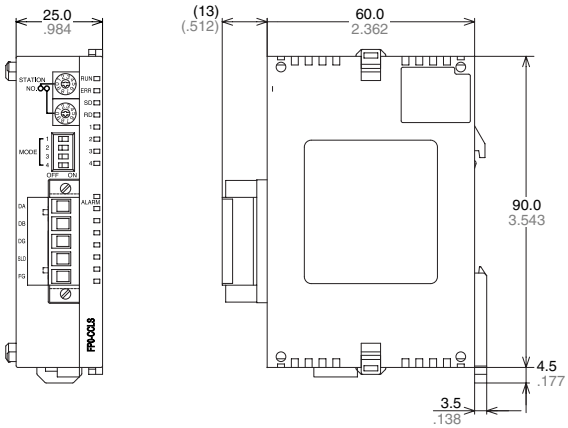
FP0 Thermocouple Unit

FP0-TC4/FP0-TC8 (unit: mm inch)



FP0 CC-Link Unit

FP0-CCLS (unit: mm inch)



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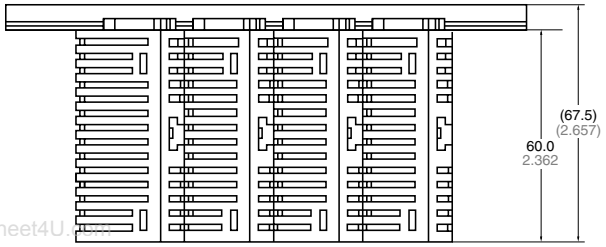
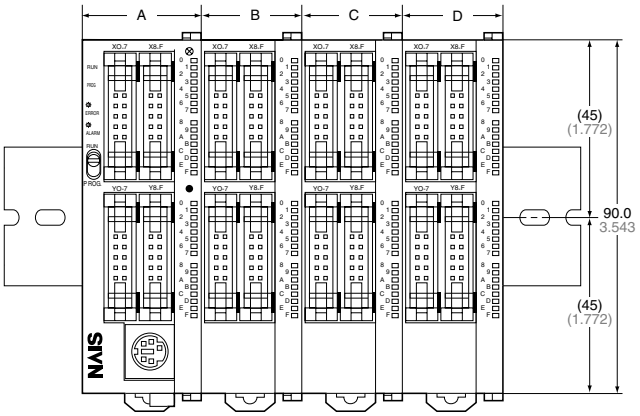
■ External Dimensions During Expansions

●Top view (with DIN rail attached)



●Front view



A+B+C+D dimensions

Control unit type	A Control unit only	A+B 1 expansion unit connected	A+B+C 2 expansion units connected	A+B+C+D 3 expansion units connected
FP0-C10CRS	25 mm .984 inch	50 mm 1.969 inch	75 mm 2.953 inch	100 mm 3.937 inch
FP0-C10CRS				
FP0-C10RM				
FP0-C10CRM				
FP0-C14RS				
FP0-C14CRS				
FP0-C14RM				
FP0-C14CRM				
FP0-C16T				
FP0-C16P				
FP0-C16CT				
FP0-C16CP				
FP0-C32T	30 mm 1.181 inch	55 mm 2.165 inch	80 mm 3.150 inch	105 mm 4.134 inch
FP0-C32P				
FP0-C32CT				
FP0-C32CP				
FP0-SL1				
FP0-T32CT				
FP0-T32CP				

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FP0 Options

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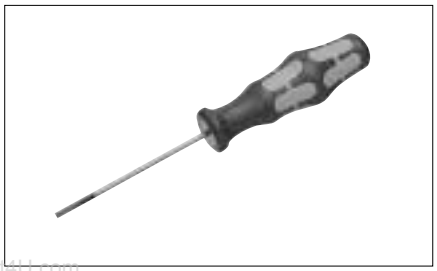
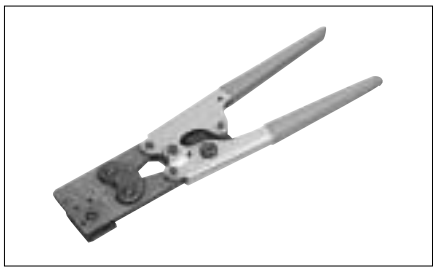
■ Wiring Tools



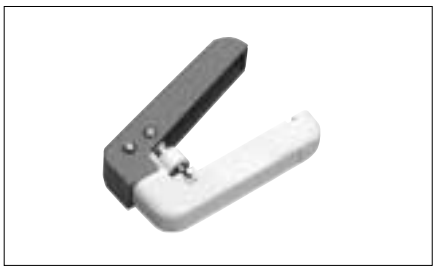
Terminal screwdriver
Necessary when wiring relay output type and terminals block (Phoenix).

Part number: **AFP0806**



Molex connector pressure contact tool
Necessary when wiring connector type and relay output type.

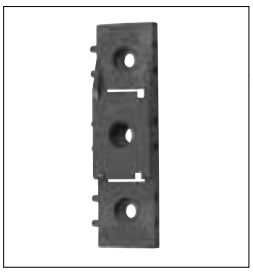
Part number: **AFP0805**
(Molex: 57189-5000)

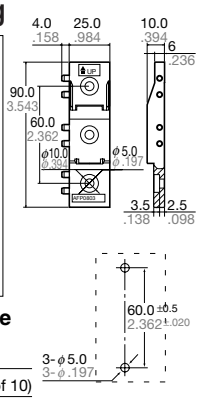


Multi-wire connector pressure contact tool
Necessary when wiring transistor output type connectors.

Part number: **AXY52000**

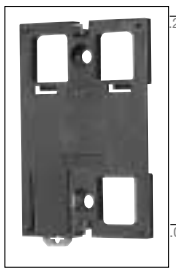
■ Parts For Mounting

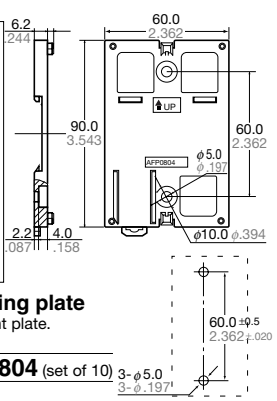




Slim type mounting plate
Screw-stop attachment plate.
Slim model.

Part number: **AFP0803** (set of 10)

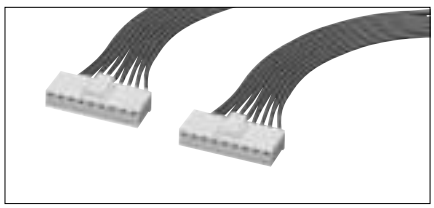




Flat type mounting plate
Screw-stop attachment plate.
Flat model.

Part number: **AFP0804** (set of 10)

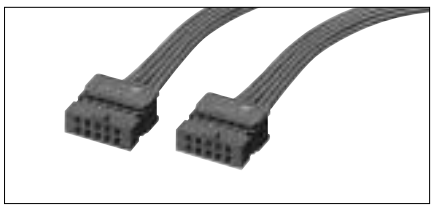
■ I/O Cables



Relay output Molex type I/O cable
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 3.281 ft.>
2 cable set
Part number: **AFP0551**

<Length: 3 m 9.843 ft.>
2 cable set
Part number: **AFP0553**



Transistor output type I/O cable
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 3.281 ft.>
2 cable set
Part number: **AFP0521**

<Length: 3 m 9.843 ft.>
2 cable set
Part number: **AFP0523**

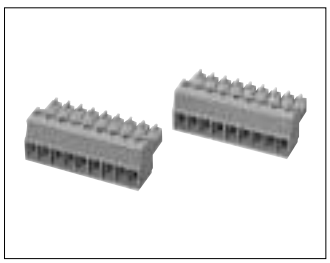
■ Flat Cable Connector

If you are using flat cable connector, request the part specified below for a connector with an asymmetrical design to prevent mistaken polarity.

Part number: **AXM110915**

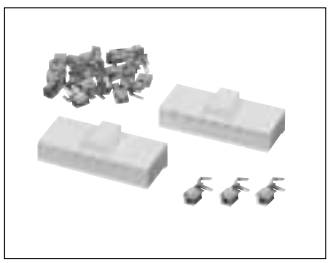
Notes:
- One I/O cable set (2 cables) is necessary with the following models: FP0-C10RS/C10RM, C14RS/C14RM, E8RS/E8RM, E16RS/E16RM
- One I/O cable set (2 cables) is necessary with the following models: FP0-C16T/C16P/E16X/E16T/E16P/E16YT/E16YP
- Two I/O cable sets (total 4 cables) are necessary with the following models: FP0-C32T/C32P/E32T/E32P

■ Additional Parts



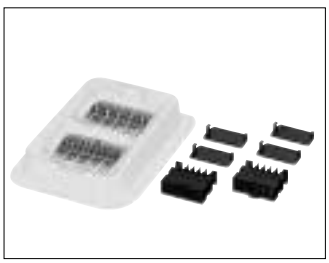
Terminal socket
Attaches to relay output and terminal block type. Additional part

Part number: **AFP0802**
(2 sockets per pack)



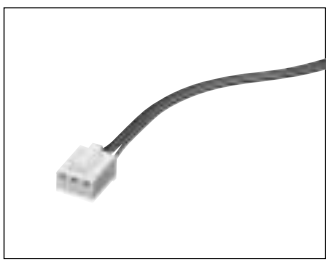
Molex socket
Attaches to relay output and Molex connector types. Additional part

Part number: **AFP0801**
(2 sockets per pack)



FP0 Wire-press socket
Attaches to transistor output type. Additional part

Part number: **AFP0807**
(2 sockets per pack)



Power cable for FP0
Attaches to control unit and relay output type expansion unit. Additional part

Length: 1 m 3.281ft.
Part number: **AFP0581**
(1 cable per pack)

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FP0 Product Types

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1. FP0 Control units

Product name	Built-in memory (Program capacity)	Specifications						Product number	Part number
		Number of I/O points		Power supply voltage	Input	Output	Connection type		
FP0 C10 Control Unit	EEPROM (2.7k steps)	10	Input: 6 Output: 4	24 V DC	24 V DC Sink/Sourse (±common)	Relay output: 2 A	Terminal block	FP0-C10RS	AFP02123
							Molex connector	FP0-C10RM	AFP02113
FP0 C10 Control Unit with RS232C port	EEPROM (2.7k steps)	10	Input: 6 Output: 4	24 V DC	24 V DC Sink/Sourse (±common)	Relay output: 2 A	Terminal block	FP0-C10CRS	AFP02123C
							Molex connector	FP0-C10CRM	AFP02113C
FP0 C14 Control Unit	EEPROM (2.7k steps)	14	Input: 8 Output: 6	24 V DC	24 V DC Sink/Sourse (±common)	Relay output: 2 A	Terminal block	FP0-C14RS	AFP02223
							Molex connector	FP0-C14RM	AFP02213
FP0 C14 Control Unit with RS232C port	EEPROM (2.7k steps)	14	Input: 8 Output: 6	24 V DC	24 V DC Sink/Sourse (±common)	Relay output: 2 A	Terminal block	FP0-C14CRS	AFP02223C
							Molex connector	FP0-C14CRM	AFP02213C
FP0 C16 Control Unit	EEPROM (2.7k steps)	16	Input: 8 Output: 8	24 V DC	24 V DC Sink/Sourse (±common)	Transistor output: NPN 0.1 A	MIL connector	FP0-C16T	AFP02343
						Transistor output: PNP 0.1 A		FP0-C16P	AFP02353
FP0 C16 Control Unit with RS232C port	EEPROM (2.7k steps)	16	Input: 8 Output: 8	24 V DC	24 V DC Sink/Sourse (±common)	Transistor output: NPN 0.1 A	MIL connector	FP0-C16CT	AFP02343C
						Transistor output: PNP 0.1 A		FP0-C16CP	AFP02353C
FP0 C32 Control Unit	EEPROM (5k steps)	32	Input: 16 Output: 16	24 V DC	24 V DC Sink/Sourse (±common)	Transistor output: NPN 0.1 A	MIL connector	FP0-C32T	AFP02543
						Transistor output: PNP 0.1 A		FP0-C32P	AFP02553
FP0 C32 Control Unit with RS232C port	EEPROM (5k steps)	32	Input: 16 Output: 16	24 V DC	24 V DC Sink/Sourse (±common)	Transistor output: NPN 0.1 A	MIL connector	FP0-C32CT	AFP02543C
						Transistor output: PNP 0.1 A		FP0-C32CP	AFP02553C
FP0 T32 Control Unit with RS232C port and Clock/Calendar function	EEPROM (10k steps)	32	Input: 16 Output: 16	24 V DC	24 V DC Sink/Sourse (±common)	Transistor output: NPN 0.1 A	MIL connector	FP0-T32CT	AFP02643C
						Transistor output: PNP 0.1 A		FP0-T32CP	AFP02653C
FP0 S-LINK Control Unit with RS232C port	EEPROM (5k steps)	128 (S-LINK section)	Input: 64 Output: 64 (S-LINK section)	24 V DC	—	—	Terminal block	FP0-SL1	AFP02700

2. FP0 Expansion units

Product name	Specifications						Product number	Part number
	Number of I/O points		Power supply voltage	Input	Output	Connection type		
FP0 E8 Expansion Unit	8	Input: 8	—	24 V DC Sink/Sourse (±common)	—	MIL connector	FP0-E8X	AFP03003
	8	Input: 4 Output: 4	24 V DC	24 V DC Sink/Sourse (±common)	Relay output: 2 A	Terminal block	FP0-E8RS	AFP03023
						Molex connector	FP0-E8RM	AFP03013
	8	Output: 8	24 V DC	—	Relay output: 2 A	Terminal block	FP0-E8YRS	AFP03020
	8	Output: 8	—	—	Transistor output: NPN 0.1 A	MIL connector	FP0-E8YT	AFP03040
					Transistor output: PNP 0.1 A		FP0-E8YP	AFP03050
FP0 E16 Expansion Unit	16	Input: 16	—	24 V DC Sink/Sourse (±common)	—	MIL connector	FP0-E16X	AFP03303
	16	Input: 8 Output: 8	24 V DC	24 V DC Sink/Sourse (±common)	Relay output: 2 A	Terminal block	FP0-E16RS	AFP03323
						Molex connector	FP0-E16RM	AFP03313
	16	Input: 8 Output: 8	—	24 V DC Sink/Sourse (±common)	Transistor output: NPN 0.1 A	MIL connector	FP0-E16T	AFP03343
					Transistor output: PNP 0.1 A		FP0-E16P	AFP03353
	16	Output: 16	—	—	Transistor output: NPN 0.1 A	MIL connector	FP0-E16YT	AFP03340
					Transistor output: PNP 0.1 A		FP0-E16YP	AFP03350
FP0 E32 Expansion Unit	32	Input: 16 Output: 16	—	24 V DC Sink/Sourse (±common)	Transistor output: NPN 0.1 A	MIL connector	FP0-E32T	AFP03543
					Transistor output: PNP 0.1 A		FP0-E32P	AFP03553

Notes
1) The control units and relay output type expansion units come with a power cable (part number AFP0581).
   (The transistor output type expansion units need no power cable.)
2) The terminal block type relay output units have 2 terminal blocks (9 pins) made by Phoenix. Use a 2.5 mm .098 inch wide screwdriver.
   Preferably use the specific terminal block screwdriver (part number AFP0806, Phoenix type code SZS0, 4 × 2.5 mm .098 inch) or equivalent.
3) The connector-type relay output units have 2 connectors made by Nihon Molex (Molex type code 51067-0900, 9 pins).
   Use the specific Molex connector press-fit tool (part number AFP0805, Nihon Molex type code 57189-5000) or equivalent.
4) The transistor output units have a press-fit socket for wire-pressed terminal cable and contacts.
   Use the press-fit tool (part number AXY52000) for wire-pressed terminal cable.

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3. Intelligent units

Product name	Specifications	Product number	Part number
FP0 Thermocouple unit	K, J, T, R thermocouple, Resolution: 0.1°C	FP0-TC4	AFP0420
	K, J, T, R thermocouple, Resolution: 0.1°C	FP0-TC8	AFP0421
FP Web-Server unit	Unit for connecting FP series/RS232C interface and Ethernet Web-Server function and E-mail sending function	FP-WEB	AFP0610
FP0 Analog I/O unit	Input specifications — Number or channels : 2 channels Input range : 0 to 5 V, –10 to +10 V (Resolution: 1/4000) 0 to 20 mA (Resolution: 1/4000)	FP0-A21	AFP0480
	Output specifications — Number or channels : 1 channels Output range : –10 to +10 V (Resolution: 1/4000) 0 to 20 mA (Resolution: 1/4000)		
FP0 A/D Converter Unit	Input specifications — Number or channels : 8 channels Input range : 0 to 5, –10 to +10 V (Resolution: 1/4000) 0 to 20 mA (Resolution: 1/4000)	FP0-A80	AFP0401
FP0 D/A Converter Unit	Output specifications — Number or channels : 4 channels Output range : –10 to +10 V (Resolution: 1/4000) 4 to 20 mA (Resolution: 1/4000)	FP0-A04V	AFP04121
		FP0-A04I	AFP04123

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4. Link units

Product name	Specifications	Power supply voltage	Product number	Part number
FP0 CC-Link Slave unit	This unit is for making the FP0 function as a slave station of the CC-Link. Only one unit can be connected to the furthest right edge of the FP0 expansion bus. Note: Accuracy will change if an FP0 thermocouple unit is used at the same time. For details, please refer to the catalog or to the CC-Link Unit manual.	24 V DC	FP0–CCLS	AFP07943
FP0 I/O Link unit	This is a link unit designed to make the FP0 function as a station to MEWNET-F (remote I/O system).	24 V DC	FP0–IOL	AFP0732
C-NET adapter S2 type (for FP0 side)	This is an RS485 adapter designed to allow use of the Computer link function for connecting to a host computer via C-NET. It comes with a 30 cm FP0 tool port cable. A power supply is not required.	—	—	AFP15402
C-NET adapter (RS485) (for computer side)	This is an RS485 adapter designed to allow use of the Computer link function for connecting to a network-connected PLC via C-NET from a host computer.	100 to 240 V AC	—	AFP8536
		24 V DC	—	AFP8532

5. Power supply unit

Product name	Specifications		Product number	Part number
FP0 Power supply unit	Input voltage: 100 to 240 V AC	Output: 0.7 A, 24 V DC	FP0-PSA4	AFP0634
		Output: 0.6 A, 24 V DC	FP0-PSA1	AFP0631

6. Options and Additional parts

Product name	Specifications		Part number
FP Memory loader	Data clear type		AFP8670
	Data hold type		AFP8671
Terminal screwdriver	Relay output type Necessary when wiring terminals block (Phoenix).		AFP0806
Molex connector pressure contact tool	Necessary when wiring relay output type and Molex connectors. (MOLEX: 57189-5000)		AFP0805
Multi-wire connector pressure contact tool	Necessary when wiring transistor output type connectors.		AXY52000
FP0 Slim 30 type mounting plate	Screw-stop attachment plate for 30 mm 1.181 inch width the unit.		AFP0811 (set for 10)
Slim type FP0 mounting plate	Screw-stop attachment plate for FP0 expansion unit. Slim model.		AFP0803 (set for 10)
Flat type FP0 mounting plate	Screw-stop attachment plate for FP0 control unit. Flat model.		AFP0804 (set for 10)
Relay output Molex type I/O cable	Loose-wiring cable (9 leads) AWG20, with Molex socket attached at one end, 0.5 mm², 1 set: 2 cables (blue & white).	Length: 1 m 3.281 ft.	AFP0551 (2 cable set)
		Length: 3 m 9.843 ft.	AFP0553 (2 cable set)
Transistor output type I/O cable	Wire-pressed terminal cable (10 leads) AWG22, 0.3 mm² with connectors attached at one end, 1 set: 2 cables (blue & white).	Length: 1 m 3.281 ft.	AFP0521 (2 cable set)
		Length: 3 m 9.843 ft.	AFP0523 (2 cable set)
Flat cable connector for FPΣ/FP0 transistor type unit	If you are using flat cable connector, request the part specified below for a connector with an asymmetrical design to prevent mistaken polarity. (10-pin)		AXM110915
Terminal socket	Attaches to relay output and terminal block type. Additional part		AFP0802 (2 sockets per pack)
Molex socket	Attaches to relay output and Molex connector types. Additional part		AFP0801 (2 sockets per pack)
Wire-press socket	Attaches to transistor output type. Additional part		AFP0807 (2 sockets per pack)
FP0 Power cable	Attaches to FP0 various units. Additional part Length: 1 m 3.281 ft.		AFP0581 (1 socket per pack)

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