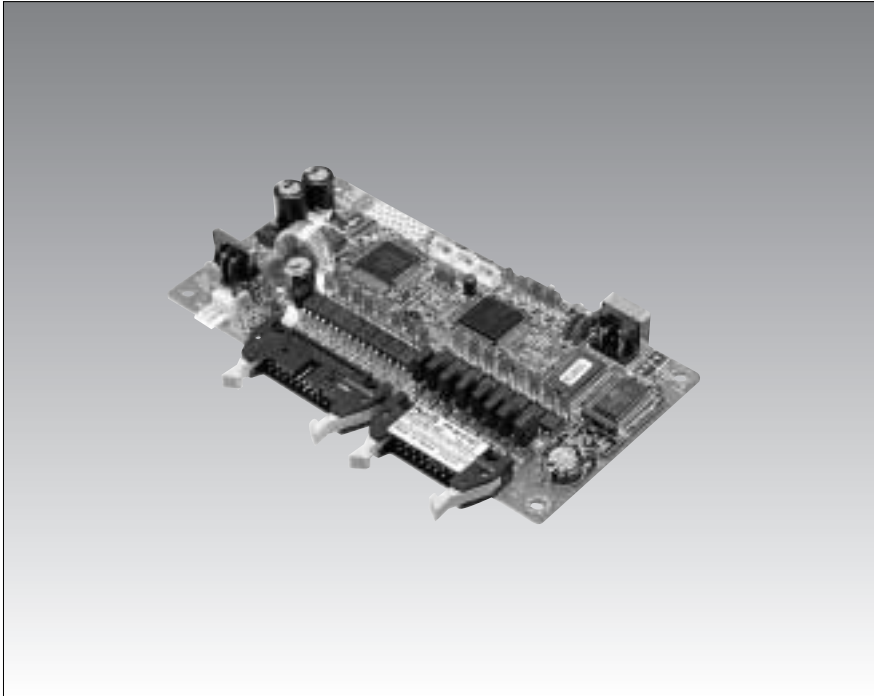


# FP-M (C16T)

The FP-M (C16T) is a compact board type PLC which can control temperature.



## ■ Features

**1. The board size (W140 × H75 mm W5.512 × H2.953 inch) offers space-savings.**

You can save more space by using this model than with the built-in type of the FP-M series.

**2. A volume input (manual dial-set register) enables the connection to a thermistor.**

The FP-M has three the volume input (manual dial-set register) for external outputs. One of them can be connected to a thermistor and used for simple temperature control. The volume input (manual dial-set register) can also be connected to external manual dial-set register to set the timer and so on.

**3. The terminal arrangement makes wiring easy.**

The output circuit uses an independent common circuit which enables connection to loads having different voltage. The sensor power supply can also be used on the input side.

## ■ Power Supply and I/O Specifications

Item	Description
Power supply	24 V DC <small>note)</small>
Input	24 V DC $\pm$ common
Output	Transistor 0.5 A

Note) 12 V DC models are also available.

## ■ Performance Specifications

Item	Description	
Number of I/O points	16 points	
Expansion	—	
Operation speed	1.6 $\mu$ s/step	
Internal memory	EEP-ROM	
Memory capacity	900 steps	
Operation memory	Internal relay	256 points
	Timer/Counter	128 points in total
	Data register	256 words

## ■ Applicable Functions

Item	Description
Pulse catch input	4 points
Interrupt input	2 points
Analog I/O	—
Volume input (Manual dial-set register)	3 points. One of them can be used for thermistor input. They can be used as external inputs by using a connector
High speed counter	1 point (1 phase: 10 kHz/ 2 phases: 10 kHz)
Pulse output	1 point (max. 4.9 kHz)
RS232C port	—

## ■ Applicable Network Functions

Item	Description
Remote I/O	—
Inter-PLC link	—
Computer link	Available by adding a tool port and C-NET adapter
Modem connection	—

## ■ Other Built-in Functions

Item	Description
Program block-edit during RUN	—
Constant scan	Available
Adjustable input time filtering	Available, from 1 to 128 ms (X0 to X3)
Clock/Calendar function	—

# FP-M (C16T) OPTION

## ■ Connection Cables



### I/O cables for FP-M C16T

Wire-pressed terminal cable with connector for FP-M C16T I/O. 1 set: each of input (20P) and output (16P).  
<Length: 50 cm 19.685 inch>

Part number: **AFC85705**



### Cable for FP-M C16T volume input

Cable with connector which is for volume input of FP-M C16T. 1 set: 10 cables  
<Length: 20 cm 7.874 inch>

Part number: **AFC85802**

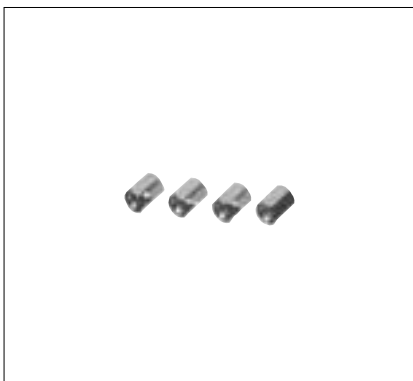
## ■ Additional Parts



### Power supply cable

Attached to control board

Part number: **AFC3541**



### Spacer (attached to control board)

For fastening board

<Port diameter of 10 mm .394 inch; 1 pc.>

Part number: **AFB88031**

# FP-M (C16T) Product Types

## 1. Control board

Product name	Built-in memory (Program capacity)	Specifications				Part number
		Number of I/O points	Operating voltage	Input	Output	
FP-M C16T Control Board	EEPROM (0.9k steps)	16 Input: 8 Output: 8	24 V DC	24 V DC + common	NPN Transistor output: 0.5 A	AFC12142
				24 V DC – common	PNP Transistor output: 0.5 A	AFC12152
			12 V DC	12 V DC + common	NPN Transistor output: 0.5 A	AFC12141
				12 V DC – common	PNP Transistor output: 0.5 A	AFC12151

Note: The FP-M C16T control board comes with a power cable (part number AFC3541) and 4 mounting spacers (10 cm 3.937 inch long).

## 2. C-NET adaptor

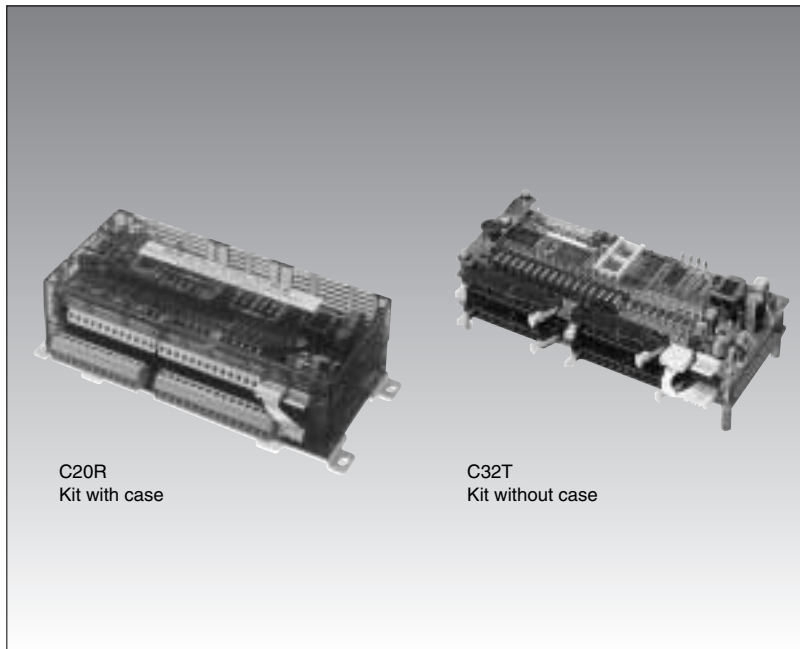
Product name	Specifications	Operating voltage	Part number
C-NET adapter S2 type (For FP-M side)	Used to link with a host computer on a C-NET network. With 30 cm 11.811 inch adapter cable. No power supply required.	—	AFP15402
C-NET adapter (For computer side)	Used to link a host computer to PCs on a C-NET network.	100 to 240 V AC	AFP8536
		24 V DC	AFP8532

### • Options (connection cable)

Product name	Specifications	Part number
FP-M C16T I/O cable	Wire-pressed terminal cable with input/output connector for the FP-M C16T Set with one input cable (20-pin connector) and one output cable (16-pin connector). 50 cm 19.685 inch long each	AFC85705
FP-M C16T cable for volume input	Cable with connector for the FP-M C16T's volume input A set of 10 cables 20 cm 7.874 inch long each	AFC85802

# FP-M (C20R/C20T/C32T)

Board type PLC ideal for incorporation in equipment



## ■ Features

### 1. The board size (W184 × H80 mm W7.244 × H3.150 inch) offers space savings.\*

Since the PLCs are of mounting type, additional space is not needed for expansion.  
\* Case type FP-M has 215 mm 8.465 inch width.

### 2. The models with RS232C and clock/calendar function are standardized

In anticipation of connection to operation display panel and linkage with upper grade PLCs, the model equipped with RS232C port is standardized. In addition, a clock/calendar function is equipped for necessity of timer control.  
(Only for the part numbers which end in C.)

### 3. RAM/ROM-switchable type program memory

RAM is adopted as internal memory. Optional ROM is also available for program copy and backup memory.

### 4. Terminal array for easy wiring

Power to I/O circuit is supplied from the internal circuit. No-voltage input is possible at the input side, and the sensor power supply is also supplied. (C20T/C32T)

## ■ Power Supply and I/O Specifications

Item	Description
Power supply	24 V DC <sup>(note)</sup>
Input	24 V DC <sup>(note)</sup>
Output	Relay 2 A / Transistor 0.8 A (varies with different models)

Note) 12 V DC models are also available in some models.

## ■ Performance Specifications

Item	Description (Relay output / Transistor output)	
Number of I/O points	20 points / 20 points, 32 points <sup>(note 1)</sup>	
Expansion	Max. 4 boards Total points; 100/192 points <sup>(note 1)</sup>	
Operation speed	1.6 μs/step	
Internal memory	RAM (Not included the optional ROM)	
Memory capacity	2.7k steps / 5k steps <sup>(note 2)</sup>	
Operation memory	Internal relay	1,008 points
	Timer/Counter	144 points in total
	Data register	1660 words/6144 words <sup>(note 2)</sup>

Notes

1) Relay/Transistor output

2) Standard model/model with RS232C port

## ■ Applicable Functions

Item	Description
Pulse catch input	8 points in total
Interrupt input	
Analog I/O	Available by adding expansion A/D and D/A boards
Volume input	2 points
High speed counter	2 points (ch 0: 1 phase 10 kHz / 2 phases 10 kHz ch 1: 1 phase 2.5 kHz / 2 phases 2 kHz <sup>(note)</sup> )
Pulse output	2 points (max. 4.9 kHz)
RS232C port	This is mounted on the model having part numbers which end in C. D sub 9-pin connector

Note) ch 1 is available for CPU Ver. 2.D or later.

## ■ Applicable Network Functions

Item	Description
Remote I/O	Max. 128-input and 96-output points can be controlled by adding transmitter master board. Available as a slave station of MEWNET-F by adding I/O link board.
Inter-PLC link	I/O link with mating station of FP-M, FP1 or FP3 is possible by adding transmitter master board.
Computer link	Available by adding a tool port and C-NET adapter. For C type, RS232C port can be used for computer link.
Modem connection	Available. Model with RS232C port can also send data.

## ■ Other Built-in Functions

Item	Description
Program block-edit during RUN	Available (CPU Ver.3.0 or later)
Constant scan	Available
Adjustable input time filtering	Available, from 1 to 128 ms
Clock/Calendar function	This is built in the control unit having part numbers which end in C. AFC*****C-F

# FP-M (C20R/C20T/C32T) Table of Boards

Small PLC  
FP-M (C20R/C20T/C32T)

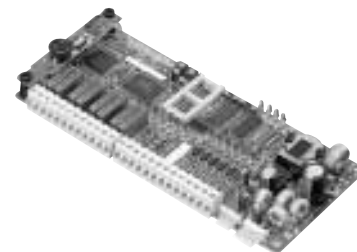
## Control Boards

Control boards are available in three types - C20R, C20T and C32T - according to the number of I/O points and type of output. C type which is equipped with a clock/calendar function and RS232C port is available for each of the three types.

Note The type with 12 V power supply voltage is also available.

### C20R(AFC12212-F)/C20RC(AFC22212C-F)

DC input 12 points/Relay output 8 points



Equipped with PA relay

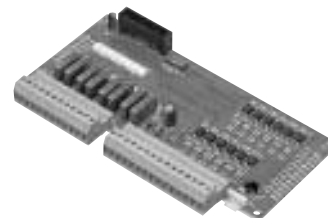
## Expansion Boards

Expansion is possible up to maximum 4 boards or maximum 192 points in terms of I/O points. The expansion board can be selected among the types as shown at right, depending on the I/O balance and type of output.

Note The type with 12 V power supply voltage is also available.

### FP-M-E20R expansion I/O board (AFC13012-F)

DC input 12 points/Relay output 8 points



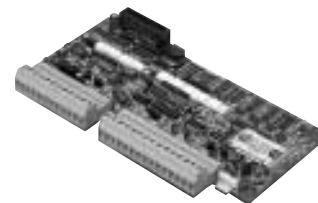
Equipped with PA relay

## Intelligent Boards

The board for input/output of analog data are available. They can be used for capture of the data of displacement sensor and inverter control.

### Analog I/O board (AFB6480)

Analog input: 4 channels, analog output: 1 channel



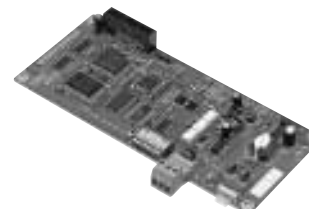
Range Voltage: 0 to 5 V, 0 to 10 V  
Current: 0 to 20 mA  
Resolution 8 bits (K0 to K255)

## Boards and Adapters for Network

Special boards and adapter are available each for remote I/O, I/O linking with host PLCs and small-scale computer network C-NET.

### FP-M transmitter master board (AFC1752)

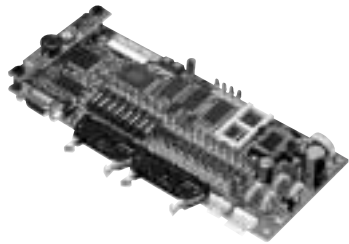
For remote I/O and I/O link (compatible with MEWNET-TR)



# FP-M (C20R/C20T/C32T)

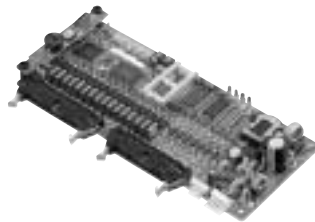
**C20T(AFC12242-F[NPN], AFC12252-F[PNP])  
C20TC(AFC22242C-F[NPN], AFC22252C-F[PNP])**

DC input 12 points/Transistor output 8 points



**C32T(AFC12342-F[NPN], AFC12352-F[PNP])  
C32TC(AFC22342C-F[NPN], AFC22352C-F[PNP])**

DC input 16 points/Transistor output 16 points

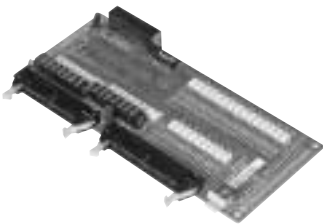


• Program capacity

Type	Program capacity
C20R / C20T / C32T	2,720 steps
C20RC / C20TC / C32TC	5,000 steps

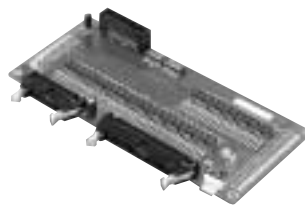
**M1T-E expansion I/O board  
(AFB6342-F[NPN], AFB6342P-F[PNP])**

DC input 24 points Transistor output 16 points



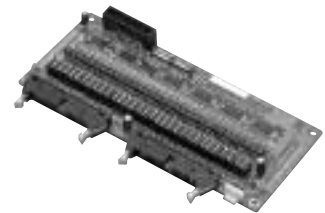
**M1T-EI expansion input board  
(AFB6392-F[+COM.])**

DC input 36 points



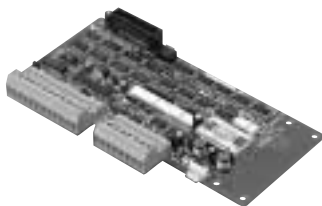
**M1T-EO expansion output board  
(AFB6340-F[NPN], AFB6345-F[PNP])**

Transistor output 32 points



**M1T A/D converter board (AFB6400)**

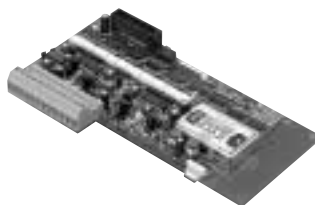
Analog input 4 channels



Range ... Voltage 0 to 5 V, 0 to 10 V Current 0 to 20 mA  
Resolution ... 10 bits (K0 to K1000)

**M1T D/A converter board (AFB6410)**

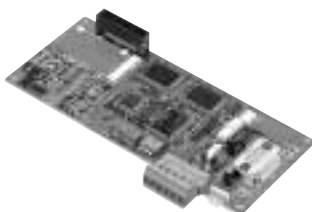
Analog output 2 channels



Range ... Voltage 0 to 5 V, 0 to 10 V Current 0 to 20 mA  
Resolution ... 10 bits (K0 to K1000)

**FP-M I/O link board (AFC1732)**

For I/O link to host PLC (Compatible with MEWNET-F)



**C-NET adapter S2 type (AFP15402)**

Computer link, for FP-M side



Equipped 30 cm 11.811 inch - special cable  
(Power supply is not required.)

**C-NET adapter (AFP8536/AFP8532)**

Computer link, for computer side



Power supply...AC/DC

# FP-M (C20R/C20T/C32T) Table of Kits

## Table of Kits

### Control board types

Shown below, there are six types of control boards that differ in number of I/O points, output type, and function.

Type	Number of I/O points	Output type	Program capacity
C20R	20 points (Input: 12 Output: 8)	Relay	2,720 steps
C20RC (with RS232C port and clock/calendar function)			5,000 steps
C20T	20 points (Input: 12 Output: 8)	Transistor	2,720 steps
C20TC (with RS232C port and clock/calendar function)			5,000 steps
C32T	32 points (Input: 16 Output: 16)	Transistor	2,720 steps
C32TC (with RS232C port and clock/calendar function)			5,000 steps

### Kit combinations

One board: only control board  
Two boards: control board plus one expansion I/O board  
Three boards: control board plus two expansion I/O boards

Type	Board	
	Control board	Expansion I/O board
C20R/C20RC Kit	C20R (AFC12212) or C20RC (AFC22212C) Input: 12 Output: 8	FP-M-E20R (AFC13012) Input: 12 Output: 8
C20T/C20TC Kit	C20T (AFC12242) or C20TC (AFC22242C) Input: 12 Output: 8	M1TE (AFB6342) Input: 24 Output: 16
C32T/C32TC Kit	C32T (AFC12342) or C32TC (AFC22342C) Input: 16 Output: 16	M1TE (AFB6342) Input: 24 Output: 16

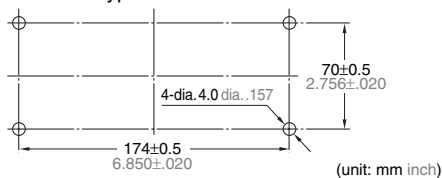
### There are kits with and without cases

- Kits with cases include the mounting plate with board, spacer, and case.
- Kits without cases include a board and spacer.  
(Mounting plate and cases are not available as sets.)

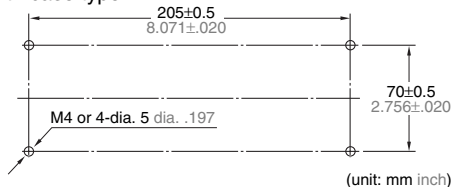
## Mounting Hole Dimensions

(General tolerance:  $\pm 1.0 \pm 0.039$ )

### Kit without case type



### Kit with case type

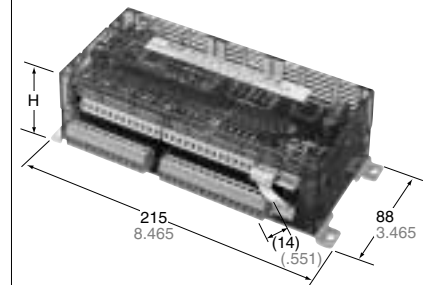


## C20R/C20RC Kits

Relay Output

I/O points: 20 to 60 points

Note:  
Expansion is possible up to 100 points.



Number of board	H (mm inch)
1	44.2 1.740
2	63.8 2.512
3	85.4 3.362

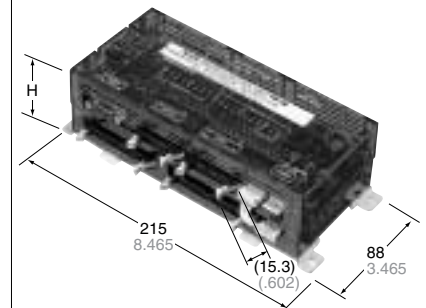
General tolerance:  $\pm 1.0 \pm 0.039$

## C20T/C20TC Kits

Transistor Output

I/O points: 20 to 100 points

Note:  
Expansion is possible up to 180 points.



Number of board	H (mm inch)
1	44.2 1.740
2	63.8 2.512
3	85.4 3.362

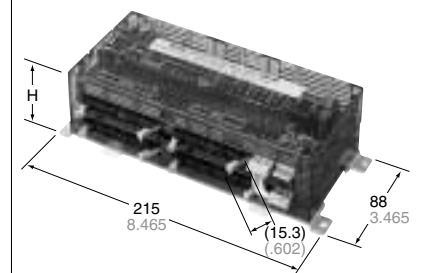
General tolerance:  $\pm 1.0 \pm 0.039$

## C32T/C32TC Kits

Transistor Output

I/O points: 32 to 112 points

Note:  
Expansion is possible up to 192 points.



Number of board	H (mm inch)
1	44.2 1.740
2	63.8 2.512
3	85.4 3.362

General tolerance:  $\pm 1.0 \pm 0.039$

### • Kit with case

Number of board	Input points	Output points	C20R Part number	C20RC Part number
1	12	8	AFC10212-F	AFC20212C-F
2	24	16	AFC10801-F	AFC20811C-F
3	36	24	AFC10802-F	AFC20812C-F

Note: A "C" at the end of a part number indicates types that have an RS232C port and clock/calendar timer function.

● C20R

Number of board	H (mm inch)
1	43.6 1.717
2	65.2 2.567
3	86.8 3.417

● C20RC

Number of board	H (mm inch)
1	45.5 1.791
2	67.1 2.642
3	88.7 3.492

General tolerance:  $\pm 1.0 \pm .039$

### • Kit without case

Number of board	Input points	Output points	C20R Part number	C20RC Part number
1	12	8	AFC12212-F	AFC22212C-F
2	24	16	AFC11801-F	AFC21811C-F
3	36	24	AFC11802-F	AFC21812C-F

Note: A "C" at the end of a part number indicates types that have an RS232C port and clock/calendar timer function.

### • Kit with case

Number of board	Input points	Output points	C20T Part number	C20TC Part number
1	12	8	AFC10242-F	AFC20242C-F
2	36	24	AFC10501-F	AFC20521C-F
3	60	40	AFC10502-F	AFC20522C-F

Note: A "C" at the end of a part number indicates types that have an RS232C port and clock/calendar timer function.

Number of board	H (mm inch)
1	43.6 1.717
2	65.2 2.567
3	86.8 3.417

General tolerance:  $\pm 1.0 \pm .039$

### • Kit without case

Number of board	Input points	Output points	C20T Part number	C20TC Part number
1	12	8	AFC12242-F	AFC22242C-F
2	36	24	AFC11501-F	AFC21521C-F
3	60	40	AFC11502-F	AFC21522C-F

Note: A "C" at the end of a part number indicates types that have an RS232C port and clock/calendar timer function.

### • Kit with case

Number of board	Input points	Output points	C32T Part number	C32TC Part number
1	16	16	AFC10342-F	AFC20342C-F
2	40	32	AFC10601-F	AFC20621C-F
3	64	48	AFC10602-F	AFC20622C-F

Note: A "C" at the end of a part number indicates types that have an RS232C port and clock/calendar timer function.

● C32T

Number of board	H (mm inch)
1	43.6 1.717
2	65.2 2.567
3	86.8 3.417

● C32TC

Number of board	H (mm inch)
1	45.5 1.791
2	67.1 2.642
3	88.7 3.492

General tolerance:  $\pm 1.0 \pm .039$

### • Kit without case

Number of board	Input points	Output points	C32T Part number	C32TC Part number
1	16	16	AFC12342-F	AFC22342C-F
2	40	32	AFC11601-F	AFC21621C-F
3	64	48	AFC11602-F	AFC21622C-F

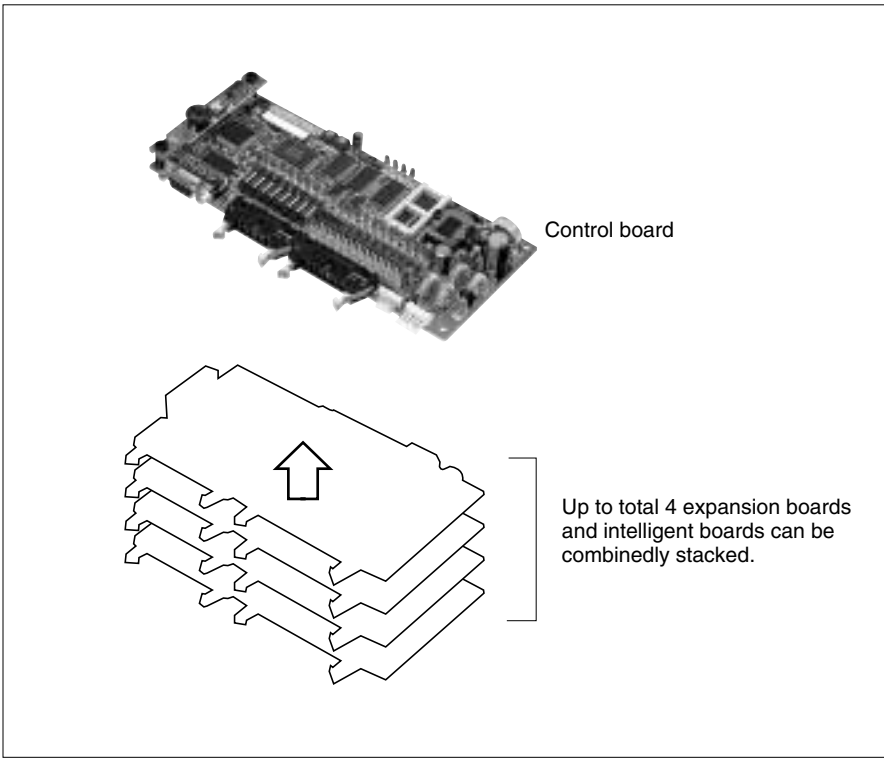
Note: A "C" at the end of a part number indicates types that have an RS232C port and clock/calendar timer function.



# FP-M (C20R/C20T/C32T) Combination of Boards

Small PLC

FP-M (C20R/C20T/C32T)



## ■ Combination of Boards

- Up to total 4 expansion boards and intelligent boards can be stacked.
- C20 series is expandable up to total maximum 180 points, and C32T series up to total maximum 192 points.
- The combination of I/O boards is selectively available in relay output type only and transistor output type only or the mixture of these types.
- Beside the general I/O boards, analog I/O boards, transmitter master board and I/O link board are also available.

## ■ Restriction of Combination

Be sure to check that the boards are combined according to the following restrictions:

### 1. Expansion input board (AFB6392-F) and expansion output board (AFB6340-F)

- Maximum 2 boards can be used. For details, refer to the "combination of I/O points" in the next page.

### 2. Analog I/O boards (AFB6480, AFB6400, AFB6410)

- Maximum 4 boards can be used in combination.
- Mount the analog I/O boards under the control and I/O boards. (For details, refer to the manual.)

### 3. Transmitter master board (AFC1752)

- Maximum 3 boards can be used. However, when using the expansion I/O board, expansion input board, expansion output board and I/O link board in combination, care to avoid I/O number duplication. (For details, refer to the manual.)

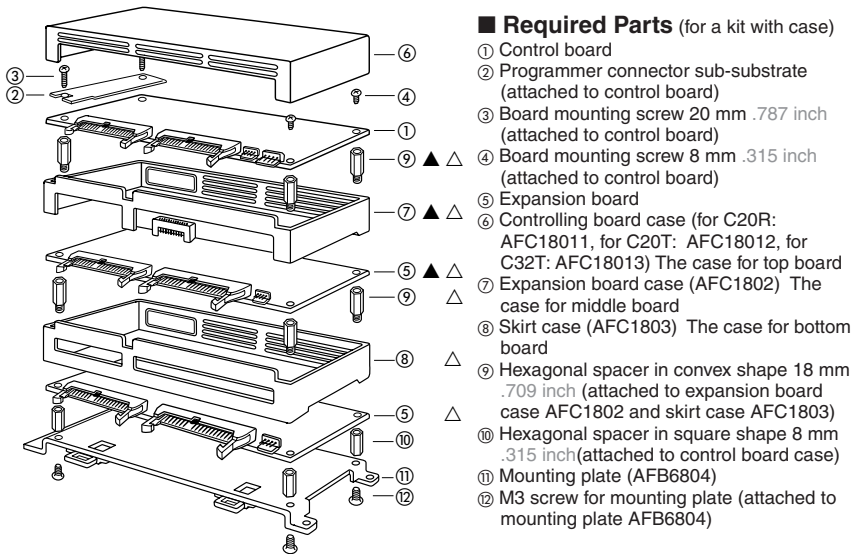
### 4. I/O link board (AFC1732)

- Only one board can be used.

## Configuration (A kit with case)

Combination of boards in 3 stacks is represented in the exploded view. The symbols stand for the following respectively:

△: Not needed for one stack ▲: Not needed for two stacks



The parts shown in the above figure are needed for mounting boards to a kit with case.

1. When placing order, specify "Board and Case (including spacer) and Mounting plate".
2. Use the spacer attached to the case. (Use the spacer attached to the board when setting a kit without case.)

■ **Combination of I/O Points (C20R/C20RC)**

The table shows the number of points when combining with the relay output type expansion board.

Total number of boards	Number of I/O points			Number of boards	
	Total	Input	Output	Control board C20R/C20RC (Input: 12 points, Output: 8 points)	Expansion I/O board (Relay output) FP-M E20R (Input: 12 points, Output: 8 points)
1	20	12	8	1	0
2	40	24	16	1	1
3	60	36	24	1	2
4	80	48	32	1	3
5	100	60	40	1	4

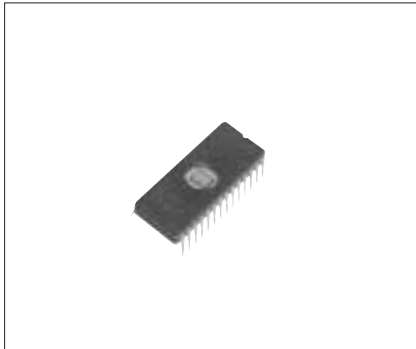
■ **Combination of I/O Points (C20T/C20TC/C32T/C32TC)**

The table shows the number of points when combining with the transistor output type expansion board.

Total number of boards	Number of I/O points			Number of boards				
	Total	Input	Output	Control board C20T/C20TC (Input: 12 points, Output: 8 points)	Control board C32T/C32TC (Input: 16 points, Output: 16 points)	Expansion I/O board (Transistor output) (Input: 24 points, Output: 16 points)	Expansion input board (Input: 36 points)	Expansion input board (Output: 32 points)
1	20	12	8	1	0	0	0	0
	32	16	16	0	1	0	0	0
2	52	12	40	1	0	0	0	1
	56	48	8	1	0	0	1	0
	60	36	24	1	0	1	0	0
	64	16	48	0	1	0	0	1
	68	52	16	0	1	0	1	0
	72	40	32	0	1	1	0	0
3	84	12	72	1	0	0	0	2
	88	48	40	1	0	0	1	1
	92	36	56	1	0	1	0	1
	92	84	8	1	0	0	2	0
	96	72	24	1	0	1	1	0
	96	16	80	0	1	0	0	2
	100	60	40	1	0	2	0	0
	100	52	48	0	1	0	1	1
	104	40	64	0	1	1	0	1
	104	88	16	0	1	0	2	0
4	108	76	32	0	1	1	1	0
	112	64	48	0	1	2	0	0
	120	48	72	1	0	0	1	2
	124	84	40	1	0	0	2	1
	132	60	72	1	0	2	0	1
	132	52	80	0	1	0	1	2
	136	96	40	1	0	2	1	0
	136	88	48	0	1	0	2	1
	140	84	56	1	0	3	0	0
	144	64	80	0	1	2	0	1
5	148	100	48	0	1	2	1	0
	152	88	64	0	1	3	0	0
	156	84	72	1	0	0	2	2
	168	96	72	1	0	2	1	1
	168	88	80	0	1	0	2	2
	180	108	72	1	0	4	0	0
	180	100	80	0	1	2	1	1
192	112	80	0	1	4	0	0	

# FP-M Options

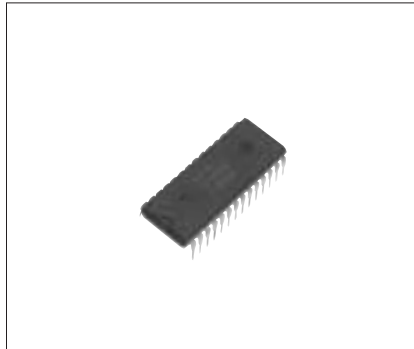
## ■ Optional Memories



### Memory (EPROM)

For program saving and ROM operation  
Two EPROMs (equivalent to 27C256A) per set  
Write is performed by commercially available ROM writer.

Part number: **AFP5202** (Two in set)

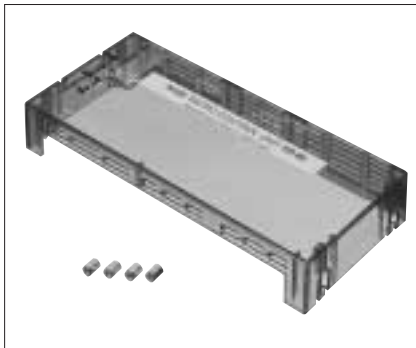


### Master memory (EEPROM)

For program copy and transmission  
One EEPROM (equivalent to X28C256PI-20)  
Write is performed by setting the master memory into FP-M.

Part number: **AFP5207** (One in set)

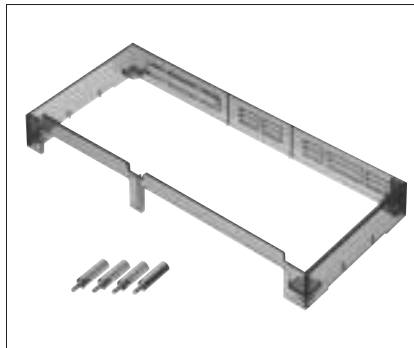
## ■ Mounting Parts (Kit with case type includes these parts.)



### Control board case

To be set to the top of a kit with case  
4 spacers (AFB88032) for case setting are attached.

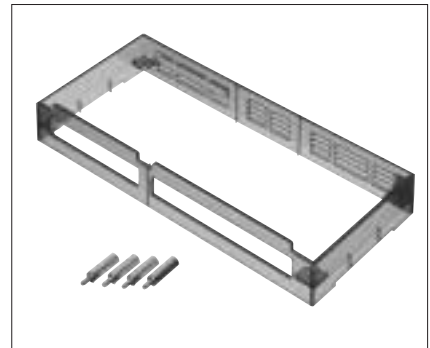
For C20R Part number : **AFC18011**  
For C20T Part number : **AFC18012**  
For C32T Part number : **AFC18013**



### Expansion I/O board case

To be set to the middle of a kit with case.  
4 spacers (AFB8803) for case setting are attached.

Part number: **AFC1802**



### Skirt case

To be set to the bottom of a kit with case.  
4 spacers (AFB8803) for case setting are attached.

Part number: **AFC1803**



### Mounting plate

Metal plate on which FP-M is fixed  
4 board mounting M3 screws are attached.  
DIN rail is mountable.

Part number: **AFB6804**

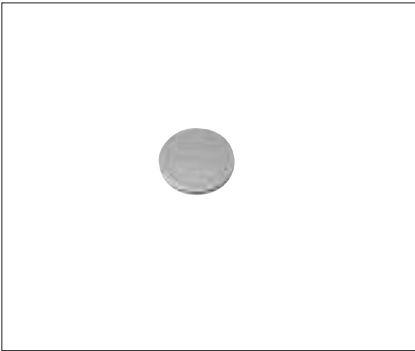


### Nameplate for expansion I/O board case

Nameplate indicating I/O number of the I/O LED. It should be installed at the side of the expansion I/O board when a kit is assembled.

For E20R Part number: **AFC18062**  
For M1T-E Part number: **AFC18061**  
For M1T-EI Part number: **AFC18063**  
For M1T-EO Part number: **AFC18064**

■ Additional Parts



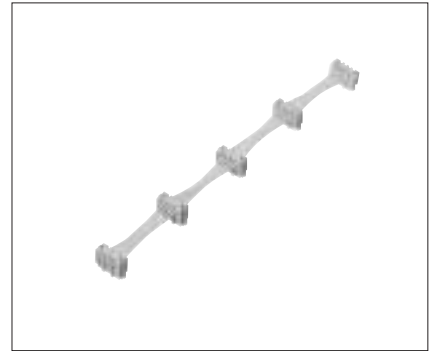
**Spare battery**  
Equivalent to BR2032/CR2032

Part number: **AFB8801**



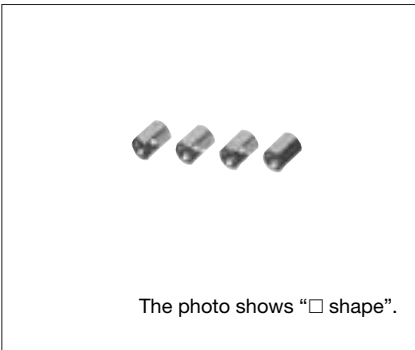
**Power supply cable**  
Attached to control board

Part number: **APL9511**



**Power supply jumper cable**  
Attached to control board  
Jumper cable for 5 stacks of board (Cut off the excess.)

Part number: **AFB8505**

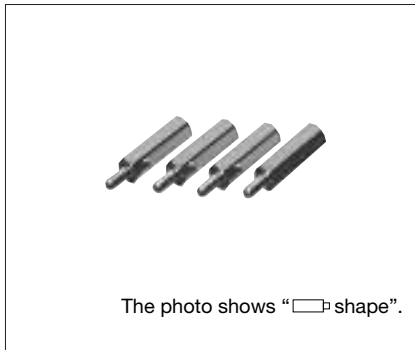


**Spacer (attached to case)**  
For fixing of the bottom board (square shape, 8 mm .315 inch long, one spacer)

Part number: **AFB88032**

For fixing of the top and middle board (convex shape, 18 mm .709 inch long, one spacer)

Part number: **AFB8803**



**Spacer (Attached to board)**  
For fixing of the top board (square shape, 20 mm .787 inch long, one spacer)

Part number: **AFB88021**

For fixing of the middle and bottom board (convex shape, 20 mm .787 inch long, one spacer)

Part number: **AFB8802**

# FP-M (C20R/C20T/C32T) Product Types

## 1. FP-M Kit with Case

Kit with case type consists of board, case, mounting plate, and spacers.

Product name	Board type for combination	Memory (Program capacity)	Specifications	Number of board	Number of I/O points			Part number
					Input	Output	Total	
FP-M C20R Kit with case	Control board: AFC12212-F Expansion I/O board: AFC13012-F	RAM (2.7k steps)	Power supply voltage: 24 V DC Input: 24 V DC, ±common Output: Relay 2 A	1	12	8	20	AFC10212-F
				2	24	16	40	AFC10801-F
				3	36	24	60	AFC10802-F
FP-M C20RC Kit with case	Control board: AFC22212C-F Expansion I/O board: AFC13012-F	RAM (5k steps)	Power supply voltage: 24 V DC Input: 24 V DC, ±common Output: Relay 2 A	1	12	8	20	AFC20212C-F
				2	24	16	40	AFC20811C-F
				3	36	24	60	AFC20812C-F
FP-M C20T Kit with case	Control board: AFC12242-F Expansion I/O board: AFB6342-F	RAM (2.7k steps)	Power supply voltage: 24 V DC Input: 24 V DC, +common Output: Transistor 0.8 A NPN type	1	12	8	20	AFC10242-F
				2	36	24	60	AFC10501-F
				3	60	40	100	AFC10502-F
	Control board: AFC12252-F Expansion I/O board: AFB6342P-F	RAM (2.7k steps)	Power supply voltage: 24 V DC Input: 24 V DC, -common Output: Transistor 0.8 A PNP type	1	12	8	20	AFC10252-F
				2	36	24	60	AFC10511-F
				3	60	40	100	AFC10512-F
FP-M C20TC Kit with case	Control board: AFC22242C-F Expansion I/O board: AFB6342-F	RAM (5k steps)	Power supply voltage: 24 V DC Input: 24 V DC, +common Output: Transistor 0.8 A NPN type	1	12	8	20	AFC20242C-F
				2	36	24	60	AFC20521C-F
				3	60	40	100	AFC20522C-F
	Control board: AFC22252C-F Expansion I/O board: AFB6342P-F	RAM (5k steps)	Power supply voltage: 24 V DC Input: 24 V DC, -common Output: Transistor 0.8 A PNP type	1	12	8	20	AFC20252C-F
				2	36	24	60	AFC20531C-F
				3	60	40	100	AFC20532C-F
FP-M C32T Kit with case	Control board: AFC12342-F Expansion I/O board: AFB6342-F	RAM (2.7k steps)	Power supply voltage: 24 V DC Input: 24 V DC, +common Output: Transistor 0.8 A NPN type	1	16	16	32	AFC10342-F
				2	40	32	72	AFC10601-F
				3	64	48	112	AFC10602-F
	Control board: AFC12352-F Expansion I/O board: AFB6342P-F	RAM (2.7k steps)	Power supply voltage: 24 V DC Input: 24 V DC, -common Output: Transistor 0.8 A PNP type	1	16	16	32	AFC10352-F
				2	40	32	72	AFC10611-F
				3	64	48	112	AFC10612-F
FP-M C32TC Kit with case	Control board: AFC22342C-F Expansion I/O board: AFB6342-F	RAM (5k steps)	Power supply voltage: 24 V DC Input: 24 V DC, +common Output: Transistor 0.8 A NPN type	1	16	16	32	AFC20342C-F
				2	40	32	72	AFC20621C-F
				3	64	48	112	AFC20622C-F
	Control board: AFC22352C-F Expansion I/O board: AFB6342P-F	RAM (5k steps)	Power supply voltage: 24 V DC Input: 24 V DC, -common Output: Transistor 0.8 A PNP type	1	16	16	32	AFC20352C-F
				2	40	32	72	AFC20631C-F
				3	64	48	112	AFC20632C-F

Notes: • Power supply cable (APL9511) and power jumper cable (AFB8505) are attached control board.  
• The 12 V DC power supply voltage type is available by special order. Please inquire with us regarding this item.

## 2. FP-M Kit without Case

Kit without case type consists of board and spacers

Product name	Board type for combination	Memory (Program capacity)	Specification	Number of board	Number I/O point			Part number
					Input	Output	Total	
FP-M C20R Kit without case	Control board: AFC12212-F Expansion I/O board: AFC13012-F	RAM (2.7k steps)	Power supply voltage: 24 V DC Input: 24 V DC, ±common Output: Relay 2 A	1	12	8	20	AFC12212-F
				2	24	16	40	AFC11801-F
				3	36	24	60	AFC11802-F
FP-M C20RC Kit without case	Control board: AFC22212C-F Expansion I/O board: AFC13012-F	RAM (5k steps)	Power supply voltage: 24 V DC Input: 24 V DC, ±common Output: Relay 2 A	1	12	8	20	AFC22212C-F
				2	24	16	40	AFC21811C-F
				3	36	24	60	AFC21812C-F
FP-M C20T Kit without case	Control board: AFC12242-F Expansion I/O board: AFB6342-F	RAM (2.7k steps)	Power supply voltage: 24 V DC Input: 24 V DC, +common Output: Transistor 0.8 A NPN type	1	12	8	20	AFC12242-F
				2	36	24	60	AFC11501-F
				3	60	40	100	AFC11502-F
	Control board: AFC12252-F Expansion I/O board: AFB6342P-F	RAM (2.7k steps)	Power supply voltage: 24 V DC Input: 24 V DC, -common Output: Transistor 0.8 A PNP type	1	12	8	20	AFC12252-F
				2	36	24	60	AFC11511-F
				3	60	40	100	AFC11512-F
FP-M C20TC Kit without case	Control board: AFC22242C-F Expansion I/O board: AFB6342-F	RAM (5k steps)	Power supply voltage: 24 V DC Input: 24 V DC, +common Output: Transistor 0.8 A NPN type	1	12	8	20	AFC22242C-F
				2	36	24	60	AFC21521C-F
				3	60	40	100	AFC21522C-F
	Control board: AFC22252C-F Expansion I/O board: AFB6342P-F	RAM (5k steps)	Power supply voltage: 24 V DC Input: 24 V DC, -common Output: Transistor 0.8 A PNP type	1	12	8	20	AFC22252C-F
				2	36	24	60	AFC21531C-F
				3	60	40	100	AFC21532C-F
FP-M C32T Kit without case	Control board: AFC12342-F Expansion I/O board: AFB6342-F	RAM (2.7k steps)	Power supply voltage: 24 V DC Input: 24 V DC, +common Output: Transistor 0.8 A NPN type	1	16	16	32	AFC12342-F
				2	40	32	72	AFC11601-F
				3	64	48	112	AFC11602-F
	Control board: AFC12352-F Expansion I/O board: AFB6342P-F	RAM (2.7k steps)	Power supply voltage: 24 V DC Input: 24 V DC, -common Output: Transistor 0.8 A PNP type	1	16	16	32	AFC12352-F
				2	40	32	72	AFC11611-F
				3	64	48	112	AFC11612-F
FP-M C32TC Kit without case	Control board: AFC22342C-F Expansion I/O board: AFB6342-F	RAM (5k steps)	Power supply voltage: 24 V DC Input: 24 V DC, +common Output: Transistor 0.8 A NPN type	1	16	16	32	AFC22342C-F
				2	40	32	72	AFC21621C-F
				3	64	48	112	AFC21622C-F
	Control board: AFC22352C-F Expansion I/O board: AFB6342P-F	RAM (5k steps)	Power supply voltage: 24 V DC Input: 24 V DC, -common Output: Transistor 0.8 A PNP type	1	16	16	32	AFC22352C-F
				2	40	32	72	AFC21631C-F
				3	64	48	112	AFC21632C-F

Notes: • Power supply cable (APL9511) and power jumper cable (AFB8505) are attached.  
• The 12 V DC power supply voltage type is available by special order. Please inquire with us regarding this item.

### 3. Memories (options)

Product name	Specifications	Part number
Memory (EPROM)	Used to store programs on ROM. EPROM (27C256A equivalent) 2 pcs./set Write a commercially available ROM writer.	AFP5202 (Two in set)
Master memory (EEPROM)	Used to copy and transfer programs. EEPROM (X28C256PI-20 equivalent) This master memory is for writing data by attaching it to an FP-M using programming tool.	AFP5207 (One in set)

Note: Recommended ROM writers on the market: Logi Pack-made Palette-22, Apal Data-made Pecker 11.

### 4. C-NET adapter

Product name	Specifications	Part number
C-NET adapter S2 type (For FP-M side)	Used to link with a host computer on a C-NET network. With 30 cm 11.811 inch adapter cable No power supply required.	AFP15402
C-NET adapter (For computer side)	Used to connect up PC to a C-NET network.	100–240 V AC
		24 V DC

### 5. Control boards

Product name	Built-in Memory (Program capacity)	Specifications				Part number
		Number of I/O points	Power supply voltage	Input	Output	
FP-M C20R Control board	RAM (2.7k steps)	20 Input: 12, Output: 8	24 V DC	24 V DC ±common	Relay 2A	AFC12212-F
FP-M C20RC Control board with RS232C port and Clock/ Calendar function	RAM (5k steps)	20 Input: 12, Output: 8	24 V DC	24 V DC ±common	Relay 2A	AFC22212C-F
FP-M C20T Control board	RAM (2.7k steps)	20 Input: 12, Output: 8	24 V DC	24 V DC +common	Transistor 0.8 A NPN type	AFC12242-F
				24 V DC -common	Transistor 0.8 A PNP type	AFC12252-F
FP-M C20TC Control board with RS232C port and Clock/Calendar function	RAM (5k steps)	20 Input: 12, Output: 8	24 V DC	24 V DC +common	Transistor 0.8 A NPN type	AFC22242C-F
				24 V DC -common	Transistor 0.8 A PNP type	AFC22252C-F
FP-M C32T Control board	RAM (2.7k steps)	32 Input: 16, Output: 16	24 V DC	24 V DC +common	Transistor 0.8 A NPN type	AFC12342-F
				24 V DC -common	Transistor 0.8 A PNP type	AFC12352-F
FP-M C32TC Control board with RS232C port and Clock/Calendar function	RAM (5k steps)	32 Input: 16, Output: 16	24 V DC	24 V DC +common	Transistor 0.8 A NPN type	AFC22342C-F
				24 V DC -common	Transistor 0.8 A PNP type	AFC22352C-F

Notes: • Power supply cable (APL9511), jumper cable (AFB8505) and spacer (□ shape: AFB88021) are attached each board.  
• The 12 V DC power supply voltage type is available by special order. Please inquire with us regarding this item.

### 6. Expansion I/O boards

Product name	Specifications			Part number
	Number of I/O points	Input	Output	
Expansion I/O Board Relay output type FP-M E20R	20 Input: 12, Output: 8	24 V DC Sink/Source (±common)	Relay, 2 A	AFC13012-F
Expansion I/O Board Transistor output type	40 Input: 24, Output: 16	24 V DC Source (+common)	Transistor 0.8 A NPN type	AFB6342-F
	40 Input: 24, Output: 16	24 V DC Sink (-common)	Transistor 0.8 A PNP type	AFB6342P-F
Expansion Input Board	Input: 36	24 V DC Source (+common)	—	AFB6392-F
Expansion Output Board	Output: 32	—	Transistor 0.8 A NPN type	AFB6340-F

Notes: • Spacer (□ shape: AFB8802) is attached each board.  
• The 12 V DC power supply voltage type is available by special order. Please inquire with us regarding this item.

### 7. Intelligent boards

Product name	Number of channel	Power supply voltage	Specifications	Part number
Analog I/O Board M1T-A	Input: 4 ch Output: 1 ch	24 V DC	For analog I/O Resolution 1/256 (8 bits)	AFB6480
A/D Converter Board M1T-AD	Input: 4 ch	24 V DC	For analog input Resolution 1/1000 (10 bits)	AFB6400
D/A Converter Board M1T-DA	Output: 2 ch	24 V DC	For analog output Resolution 1/1000 (10 bits)	AFB6410

Notes: • Spacer (□ shape: AFB8802) is attached each board.

# FP-M (C20R/C20T/C32T)

## 8. Remote I/O and I/O link boards

Product name	Number of channel	Power supply voltage	Specifications	Part number
FP-M Transmitter Master Board	Remote I/O points: 64 points Input: 32 points Output: 32 points	24 V DC	FP-M transmitter master board build up MEWNET-TR (Remote I/O) system. I/O link for FP-M to FP-M, FP-M to FP3 is available.	AFC1752
FP-M I/O Link Board	I/O link points: 64 points Input: 32 points Output: 32 points	24 V DC	The FP-M I/O link board is the interface board for exchanging I/O information between a host PLC (FP2/FP2SH/FP3/FP10SH) and FP-M on the MEWNET-F (Remote I/O system).	AFC1732

Note: Spacer ( shape: AFB8802) is attached each board.

## 9. Installation parts

Product name	Specifications	Part number	
Case for control board	Installed the case on the top of the control board Spacers supplied (AFB88032, 4 pcs.)	For C20R	AFC18011
		For C20T	AFC18012
		For C32T	AFC18013
Case for expansion board	Installed the case between stacked boards Spacers supplied (AFB8803, 4 pcs.)	AFC1802	
Skirt case	Installed the case on the bottom of the board Spacers supplied (AFB8803, 4 pcs.)	AFC1803	
I/O number seal for expansion I/O board	To indicate I/O location of expansion board	For expansion I/O board (FP-M E20R)	AFC18062
		For expansion I/O board (AFB6342-F)	AFC18061
		For expansion input board (AFB6392-F)	AFC18063
		For expansion output board (AFB6340-F)	AFC18064
Mounting plate	Metal plate for DIN rail mounting	AFB6804	
DIN rail	DIN standard rail (width 35 mm 1.378 inch/length 1 m 3.281 ft.)	ATA48011	
Fastening plate	To fix FP-M on the DIN rail	ATA4806	

## 10. Maintenance parts

Product name	Specifications	Part number	
Spare battery	BR2032/CR2032 or equivalent	AFB8801	
Power supply cable	Available with control board	APL9511	
Power jumper	Available with control board	AFB8505	
Spacers	Case type (FP-M Kit with case)	<input type="checkbox"/> Shape 8 mm .315 inch	AFB88032
		<input type="checkbox"/> Shape 18 mm .709 inch	AFB8803
	Board type (FP-M Kit without case)	<input type="checkbox"/> Shape 20 mm .787 inch	AFB88021
		<input type="checkbox"/> Shape 20 mm .787 inch	AFB8802