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General Specifications

F3XH04 High-speed Input Module

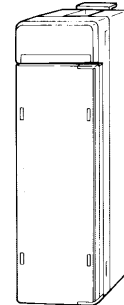
FA-M3



General

The F3XH04 is a high-speed input module which incorporates the pulse-capture features of the FA-M3.

- The pulse-capture features facilitate detection of pulse inputs with shorter on-time than the scan period, which allows the F3XH04 to carry out photo-micro switch input for high-speed sensing.
- The interrupt mechanism ensures reliable interrupt processing using a short on-time pulse input.
- The minimum pulse width is as short as 50 μs.
- The four-independent input system permits connection from different signal systems.
- The terminal block is provided with terminals for shielded cables.

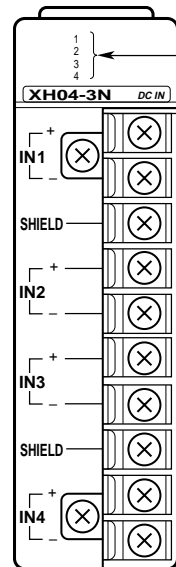


Specifications

Item	Specification	
Input type	DC voltage	
Number of inputs	4	
Common system	4 independent inputs	
Insulation method	Photocoupler insulation	
Rated input voltage	24 V DC	
Operating voltage range	20.4 - 26.4 V DC	
Rated input current	11.2 mA/point (24 V DC)	
Input impedance	2.1 KΩ	
Operating voltage/current	ON	16.0 V DC min. 7.2 mA min.
	OFF	6.0 V DC max. 2.5 mA max.
Input response time	OFF → ON	50 μs max.
	ON → OFF	50 μs max.
Minimum input pulse width	50 μs	
Pulse-capture features*	Selection	By DIP switches.
	Setting	Set for each point through Ladder Diagram Support Program M3
Interrupt features*	Selection	By DIP switches.
	Input hold time	The input signal is held for 512 μs after detection of an off-to-on transition.
Current consumption	20 mA (5 V DC)	
External connection	10-point terminal block, M3.5 screw	
Weight	120 g	

*: The pulse-catch and interrupt features are not available at the same time.

Components and Functions

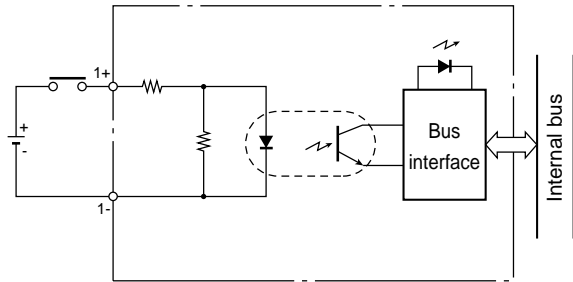


Input LEDs :
Indicates the on/off status of inputs.

Terminal block :
10-point detachable terminal block. The terminal screws are M3.5 screws with square captive washers.

Internal Circuit Diagram

F3XH04-3N (High-speed input module)

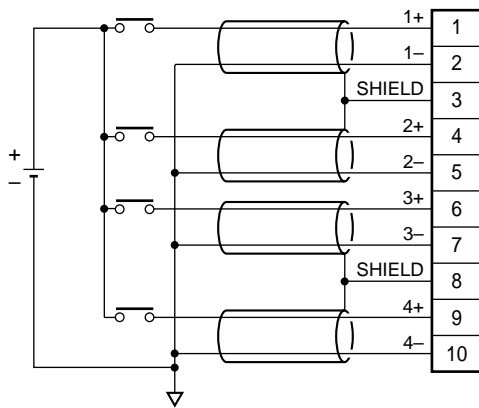


External Connection Method

		Terminal Block Type
Applicable conductor size		0.33-0.82 mm ²
Wire connection method		Solderless
Solderless terminal	Solderless terminal	For 3.5 mm terminals
	Crimping torque	0.8 N · m (8 kgf·cm, 6.9lbf·in)
	Applicable solderless terminal	Example: Japan Solderless Terminal Mfg. Co., Ltd.:V1.25-M3 Nippon Tanshi Co., Ltd.: RAV1.25-3.5

External Connection Diagram

F3XH04-3N (High-speed input module)



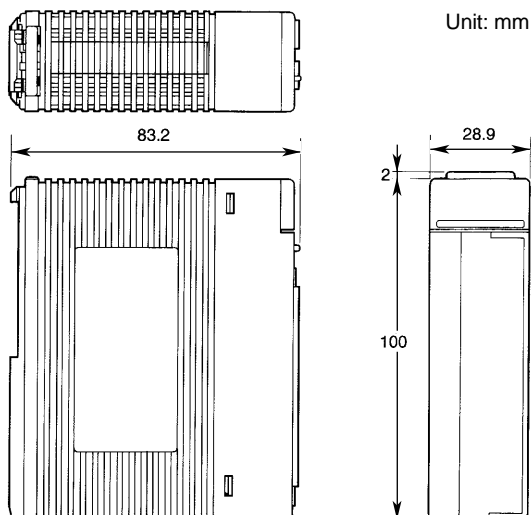
Operating Environment

There is no restriction on the type of CPU modules that can be used with this module.

Model and Suffix Codes

Model	Suffix Code	Style Code	Option Code	Description
F3XH04	-3N	.....	.....	High-speed inputs with pulse-capture feature, 24 V DC, 4 points

External Dimensions



General Specifications

F3XA08, F3XC08, F3XD08, F3XD16, F3XD32 and F3XD64 Input Modules

FA-M3

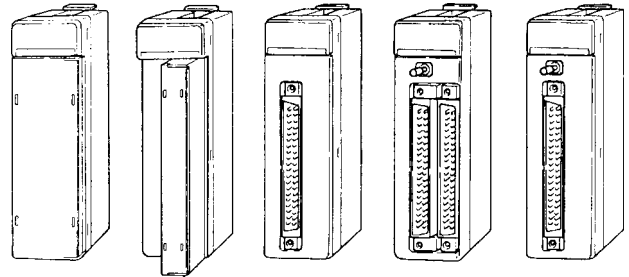


Note: The F3XD□□-□F and F3XD16-3H modules are scheduled to gain the UL certificate.

General

The input modules for the FA-M3 are listed below. Select the most appropriate modules according to your applications.

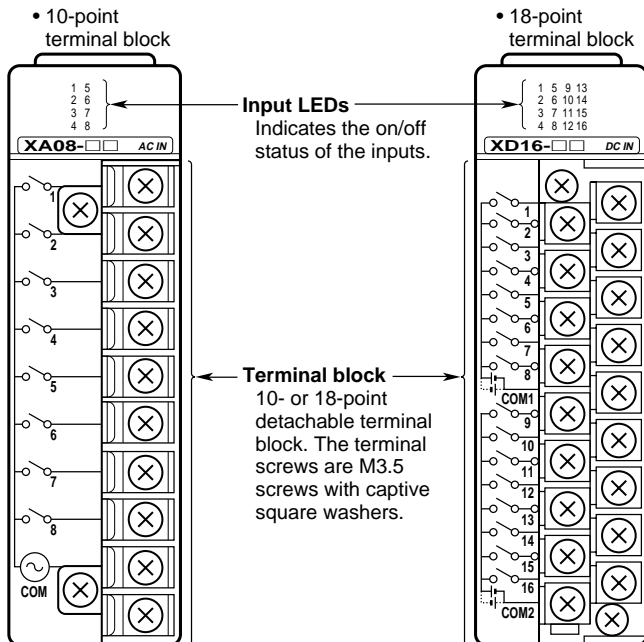
- F3XA08-1N AC input module
- F3XA08-2N AC input module
- F3XC08-0N No-voltage contact input module
- F3XD08-6F DC input module
- F3XD16-3F DC input module
- F3XD16-4F DC input module
- F3XD32-3F DC input module
- F3XD32-4F DC input module
- F3XD32-5F DC input module
- F3XD64-3F DC input module
- F3XD64-4F DC input module
- F3XD64-6M DC input module
- F3XD16-3H DC input module



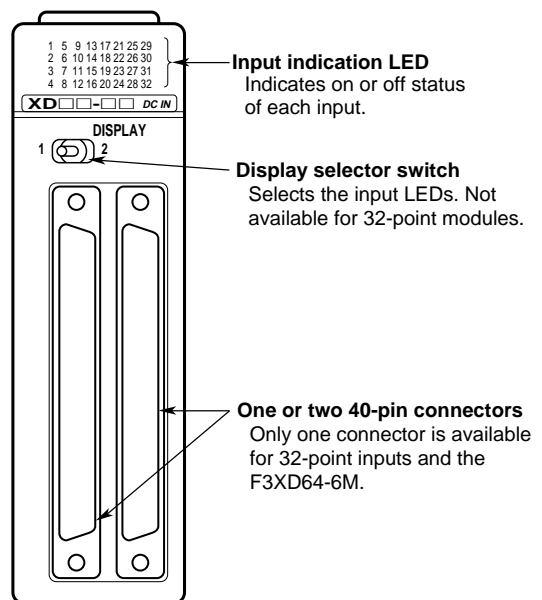
Components and Functions

The input modules are divided into terminal block and connector types as given below.

Terminal Blocks



Connector type



Display selector switch	LED Indication
1	Indicates the on/off status of inputs 1 to 32.
2	Indicates the on/off status of inputs 33 to 64.

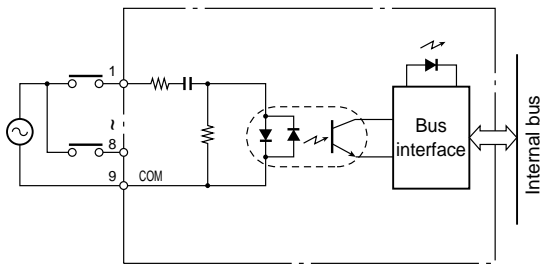
Specifications

Model	Input Type	Number of Inputs	Insulation Method	Rated Input Voltage	Rated Input Current	Operating Voltage Range	Operating Voltage/Current	
							ON	OFF
F3XA08-1N	AC voltage	8	Photo-coupler insulation	100 - 120 V AC 50/60 Hz	5.4 mA/point 100 V AC, 60 Hz	85 - 132 V AC 50/60 Hz	80 VAC min. 5 mA min.	40 V AC max. 1 mA max.
F3XA08-2N				200 - 240 V AC 50/60 Hz	5.1 mA/point 200 V AC, 60 Hz	170 - 264 V AC 50/60 Hz	160 VAC min. 4 mA min.	70 V AC max. 1 mA max.
F3XD08-6F	DC voltage (sink/source)	16		12 - 24 V DC	4.1 mA/point (12 V DC) 8.5 mA/point (24 V DC)	10.2 - 26.4 V DC	8.0 V DC min. 2.6 mA min.	3.4 V DC max. 1.0 mA max.
F3XD16-3F				24 V DC	4.1 mA/point 24 V DC	20.4 - 26.4 V DC	16.0 V DC min. 3.2 mA min.	5.8 V DC max. 0.9 mA max.
F3XD16-4F		12 V DC		4.1 mA/point 12 V DC	10.2 - 13.2 V DC	8.0 V DC min. 2.6 mA min.	3.4 V DC max. 1.0 mA max.	
F3XD32-3F		32		24 V DC	4.1 mA/point 24 V DC	20.4 - 26.4 V DC	16.0 V DC min. 3.2 mA min.	5.8 V DC max. 0.9 mA max.
F3XD32-4F				12 V DC	4.1 mA/point 12 V DC	10.2 - 13.2 V DC	8.0 V DC min. 2.6 mA min.	3.4 V DC max. 1.0 mA max.
F3XD32-5F		5 V DC		4.0 mA/point 5 V DC	4.5 - 5.5 V DC	3.5 V DC min. 2.0 mA min.	1.0 V DC max. 0.2 mA max.	
F3XD64-3F	64	24 V DC		4.1 mA/point 24 V DC	20.4 - 26.4 V DC	16.0 V DC min. 3.2 mA min.	5.8 V DC max. 0.9 mA max.	
F3XD64-4F		12 V DC		4.1 mA/point 12 V DC	10.2 - 13.2 V DC	8.0 V DC min. 2.6 mA min.	3.4 V DC max. 1.0 mA max.	
F3XD64-6M	Matrix scan			12 - 24 V DC	3.9 mA/point (12 V DC) 8.2 mA/point (24 V DC)	10.2 - 26.4 V DC	8.0 V DC min. 2.6 mA min.	3.4 V DC max. 1.0 mA max.
F3XD16-3H	DC voltage (+common)	16		24 V DC	4.7 mA/point 24 V DC	20.4 - 26.4 V DC	16 V DC min. 3.2 mA min.	5.8 V DC max. 0.9 mA max.

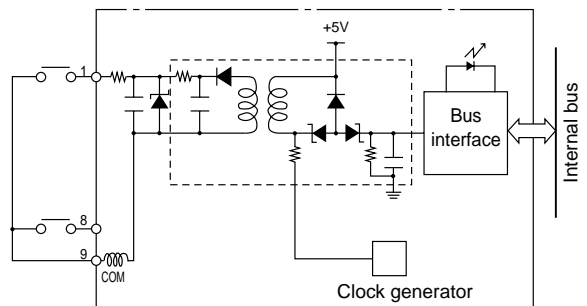
Model	Input Type	Number of Inputs	Insulation Method	Contact Ratings	ON Resistance	OFF Resistance
F3XC08-0N	No-voltage contact	8	Transformer insulation	50 V DC min. 20 mA min.	200 Ω max.	100 KΩ min.

Internal Circuit Diagram

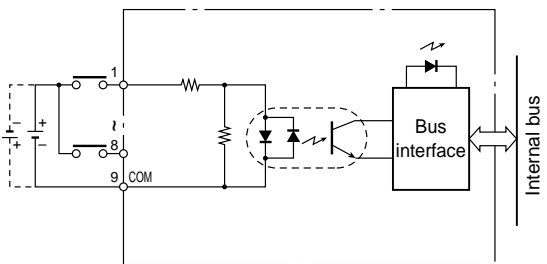
F3XA08-1N AC input module
F3XA08-2N AC input module



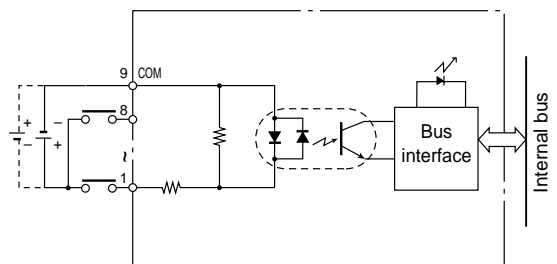
F3XC08-0N No-voltage contact input module



F3XD08-6F DC input module
F3XD16-3F DC input module
F3XD16-4F DC input module



F3XD32-3F DC input module
F3XD32-4F DC input module
F3XD32-5F DC input module



	Input response		External Connection	Points/Common	Interrupt *2	Current Consumption	Weight
	OFF → ON	ON → OFF					
	Selectable from 15 ms max. or 30 ms	Selectable from 25 ms max. or 40 ms	10-point terminal block M3.5 screw	8 points/common	Can be specified for each input point.	40 mA (5V DC)	130 g
	Input sampling period can be specified within 0-16 ms in 5 levels*1	Input sampling period can be specified within 0-16 ms in 5 levels*1	18-point terminal block M3.5 screw			65 mA (5V DC)	150 g
			One 40-pin connector			75 mA (5V DC)	120 g
	Input sampling period can be specified within 0-1 ms in 4 levels*1.	Input sampling period can be specified within 0-1 ms in 4 levels*1.	Two 40-pin connectors	None		100 mA (5V DC)	160 g
	16 ms max.	16 ms max.	One 40-pin connector			8 × 8 matrix	110 mA (5V DC)	130 g
	Input sampling period can be specified within 0-16 ms in 5 levels*1	Input sampling period can be specified within 0-16 ms in 5 levels*1		8 points/common	Can be specified for each input point.	65 mA (5V DC)	150 g

	Input response		External Connection	Points/Common	Interrupt	Current Consumption	Weight
	OFF → ON	ON → OFF					
	Selectable from 2.0 ms max. or 17 ms	Selectable from 2.0 ms max. or 17 ms	10-point terminal block M3.5 screw	8 points/common	Can be specified for each input point.	75 mA	140 g

Note: See external dimensions for dimensions of the modules.

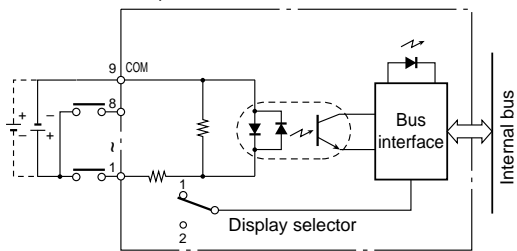
*1: When F3SP28, F3SP38, F3SP53 or F3SP58 is used. For other CPU modules, the specification is the same as the F3XD□□-□N. The actual response time can be obtained by adding the following values:

For F3XD□□-□F: 100 μs (OFF → ON)
300 μs (ON → OFF)

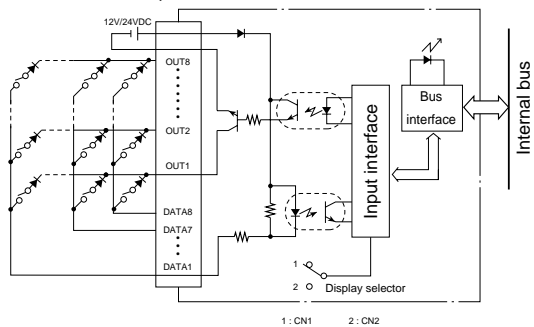
For F3XD16-3H: 10 μs

*2: If the input interrupt is to be used with the F3XD□□-□F, set the input sampling period to at least 62.5 μs.

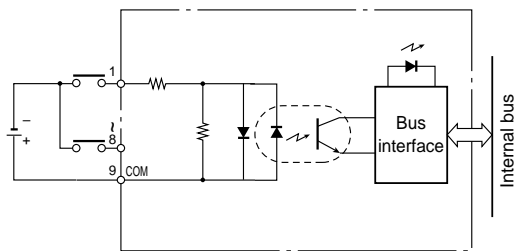
F3XD64-3F DC input module
F3XD64-4F DC input module



F3XD64-6M DC input module

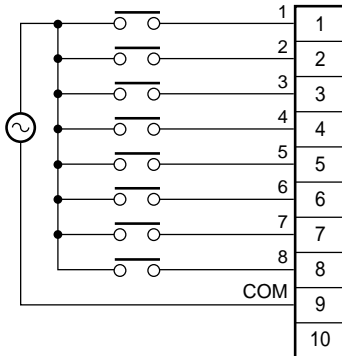


F3XD16-3H DC input module



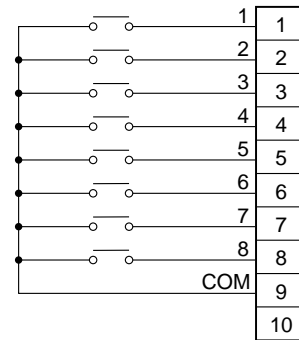
External Connection Diagram

F3XA08-1N AC input module
F3XA08-2N AC input module



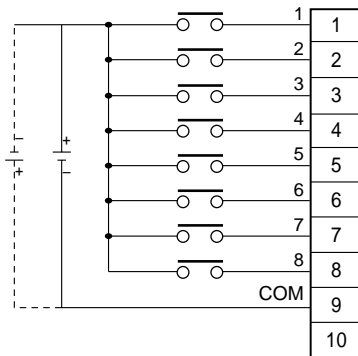
Note: Viewed from the front of the module.

F3XC08-0N No-voltage contact input module



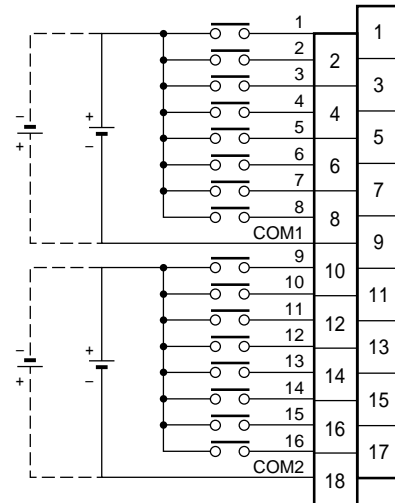
Note: Viewed from the front of the module.

F3XD08-6F DC input module



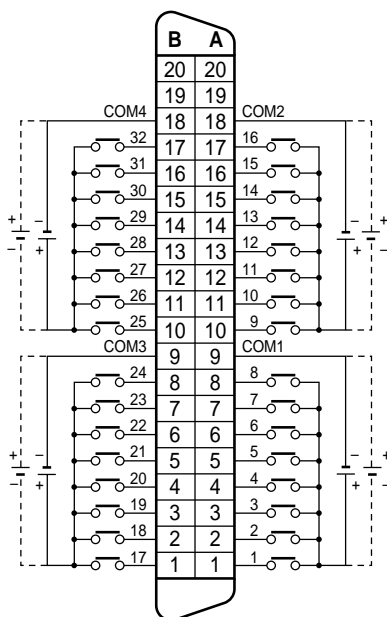
Note: Viewed from the front of the module.

F3XD16-3F DC input module
F3XD16-4F DC input module



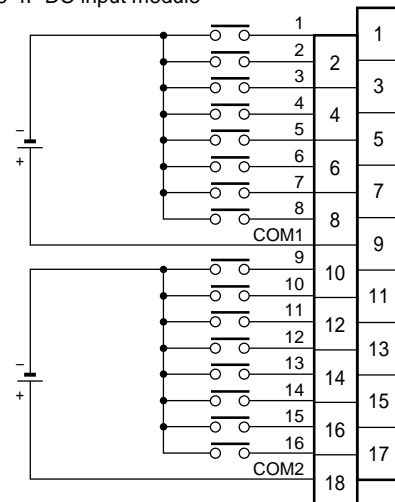
Note: Viewed from the front of the module.

F3XD32-3F DC input module
F3XD32-4F DC input module
F3XD32-5F DC input module



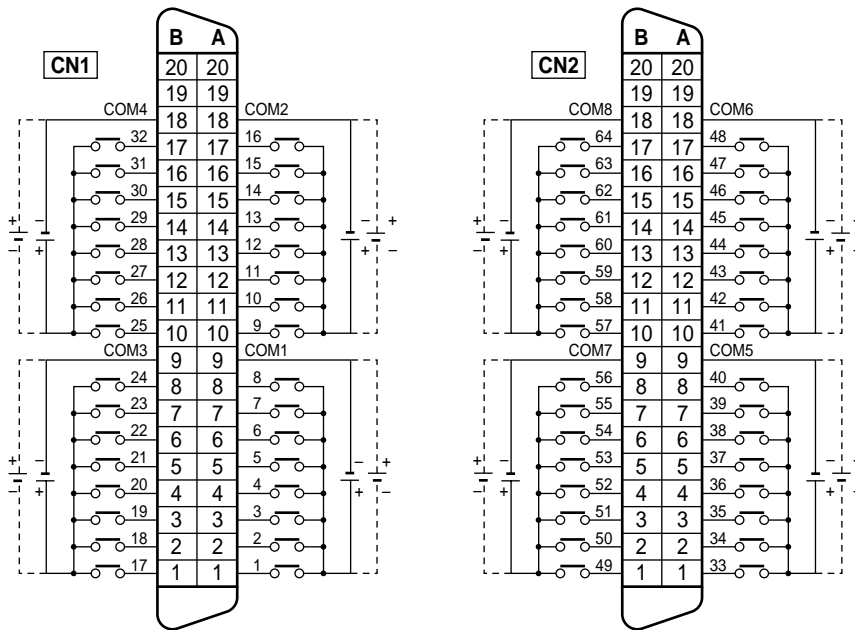
Note: Viewed from the front of the module.

F3XD16-3F DC input module
F3XD16-4F DC input module



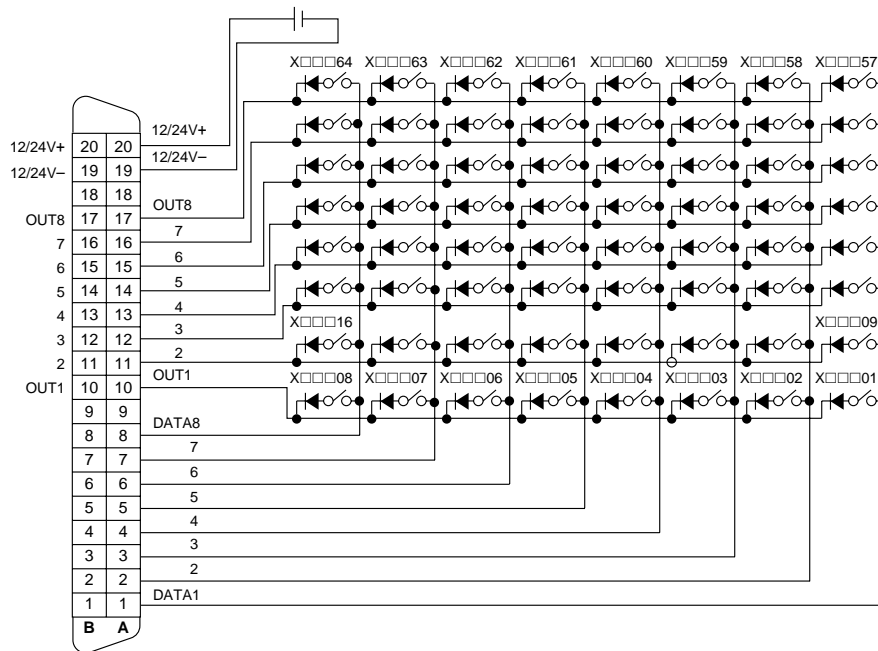
Note: Viewed from the front of the module.

F3XD64-3F DC input module
F3XD64-4F DC input module



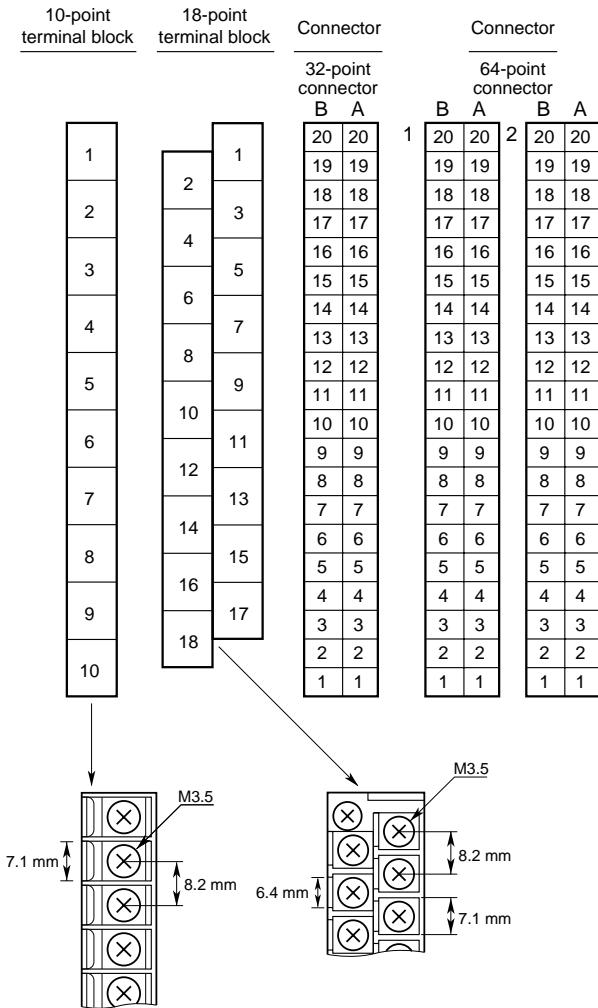
Note: Viewed from the front of the module.

F3XD64-6M DC input module



Note: Viewed from the front of the module.

■ Terminal Arrangement



■ External Connection Method

		Terminal Block Type	Connector Type		
Applicable conductor size		0.33-0.82 mm ²	0.26 mm ² max.	0.08 - 0.20 mm ²	Flat cable, 1.27 mm pitch, 0.08 mm ²
Wire connection method		Solderless	Soldered	Solderless	Pressure-welded
Rated wire temperature		75°C min.			
Wire Material		Copper			
Solderless terminal	Solderless terminal	For 3.5 mm terminals	-		
	Crimping torque	0.8 N·m (8 kgf·cm, 6.9 lbf·in)	-		
	Applicable solderless terminal	Example: Japan Solderless Terminal Mfg Co., Ltd.: V1.25-M3 Nippon Tanshi Co., Ltd.: RAV1.25-3.5	-		

■ Applicable External Connectors

Connection Method	Applicable Connector
Soldered type	Fujitsu : FCN-361J040-AU connector FCN-360C040-B connector cover
Solderless type	Fujitsu : FCN-363J040 housing FCN-363J-AU contact FCN-360C040-B connector cover
Pressure-welded type	Fujitsu : FCN-367J040-AU/F

Operating Environment

There is no restriction on the type of CPU modules that can be used with this module.

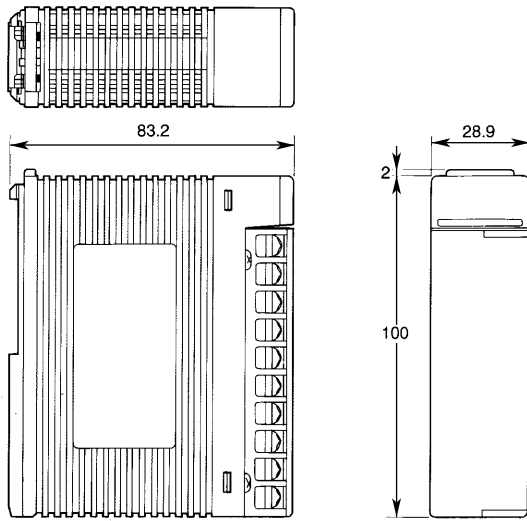
Model and Suffix Codes

Model	Suffix code	Style code	Option code	Description
F3XA08	-1N	.....	.....	100-120 V AC input, 8 points
F3XA08	-2N	.....	.....	200-240 V AC input, 8 points
F3XC08	-0N	.....	.....	No-voltage contact, 8 points
F3XD08	-6F	.....	.....	DC input sink/source, 12-24 V DC, 8 points
F3XD16	-3F	.....	.....	DC input sink/source, 24 V DC, 16 points
F3XD16	-4F	.....	.....	DC input sink/source, 12 V DC, 16 points
F3XD32	-3F	.....	.....	DC input sink/source, 24 V DC, 32 points*
F3XD32	-4F	.....	.....	DC input sink/source, 12 V DC, 32 points*
F3XD32	-5F	.....	.....	DC input sink/source, 5 V DC, 32 points*
F3XD64	-3F	.....	.....	DC input sink/source, 24 V DC, 64 points*
F3XD64	-4F	.....	.....	DC input sink/source, 12 V DC, 64 points*
F3XD64	-6M	.....	.....	DC input matrix scan 12-24 V DC, 64 points*
F3XD16	-3H	.....	.....	DC input (sink, +common), 24 V DC, 16 points (Quick response type)

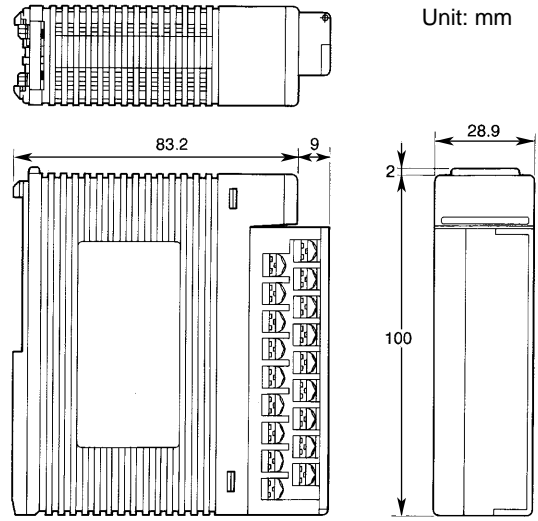
*: See the section on spare parts in FA-M3 Range-free Multi-controller (GS 34M6A01-01E) for information on connectors.

External Dimensions

F3XA08, F3XC08, F3XD08

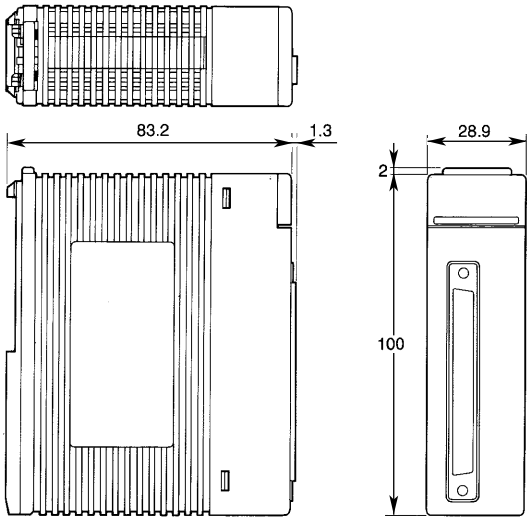


F3XD16

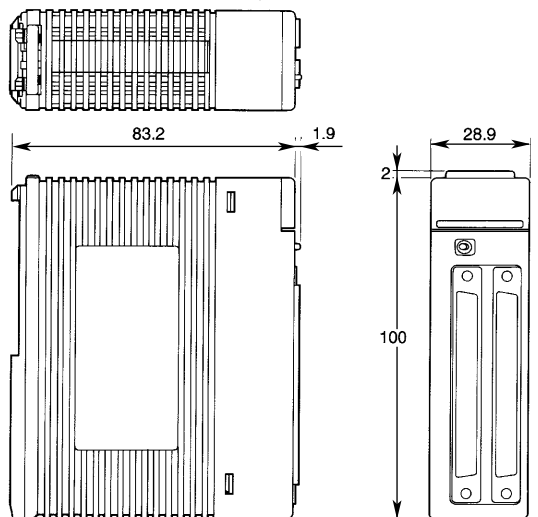


Unit: mm

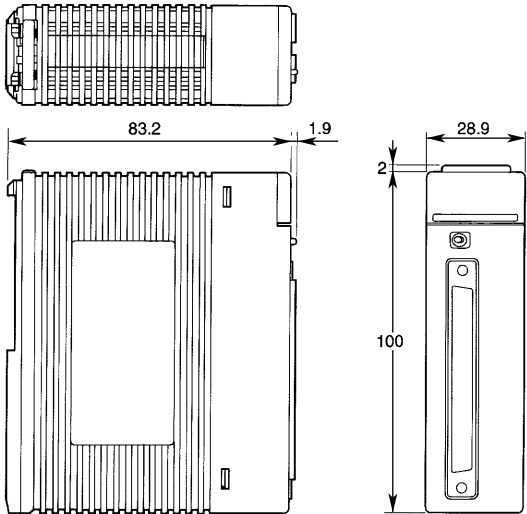
F3XD32



F3XD64-3F, F3XD64-4F



F3XD64-6M



General Specifications

F3XD□□-□N Input Module

FA-M3

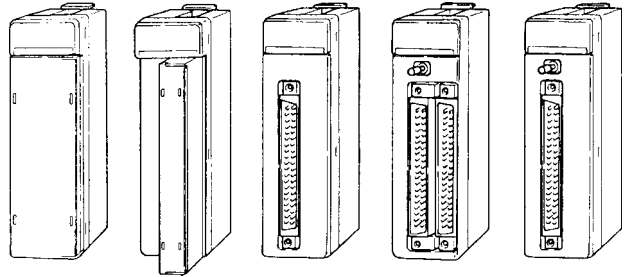


General

The F3XD□□-□N input modules for the FA-M3 are listed below.

Select the most appropriate modules according to your applications.

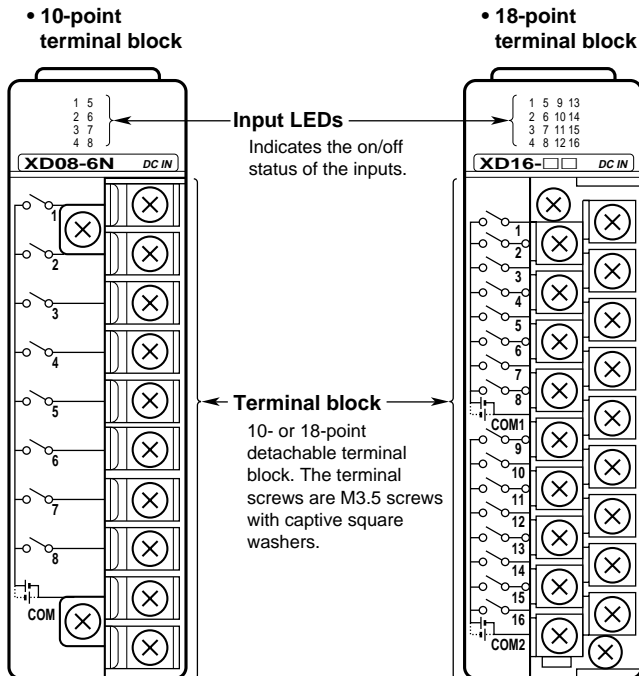
- F3XD08-6N DC input module
- F3XD16-3N DC input module
- F3XD16-4N DC input module
- F3XD32-3N DC input module
- F3XD32-4N DC input module
- F3XD32-5N DC input module
- F3XD64-3N DC input module
- F3XD64-4N DC input module



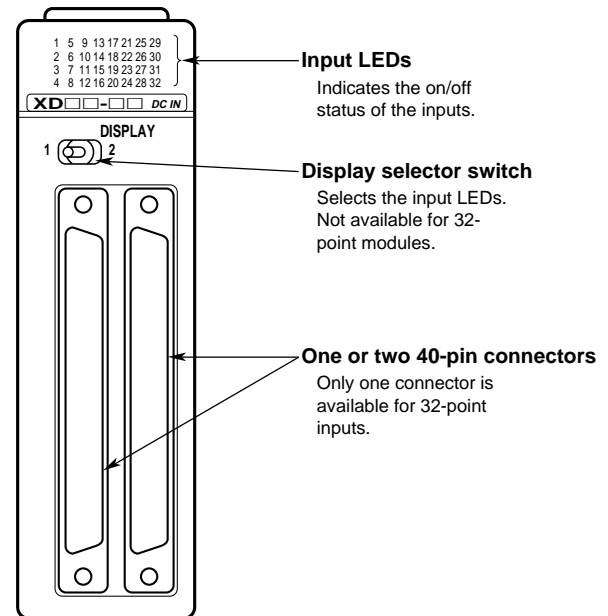
Components and Functions

The input modules are divided into terminal block and connector types as given below.

● Terminal block



● Connector



Display Selector Switch	LED Indication
1	Indicates the on/off status of inputs 1 to 32.
2	Indicates the on/off status of inputs 33 to 64.

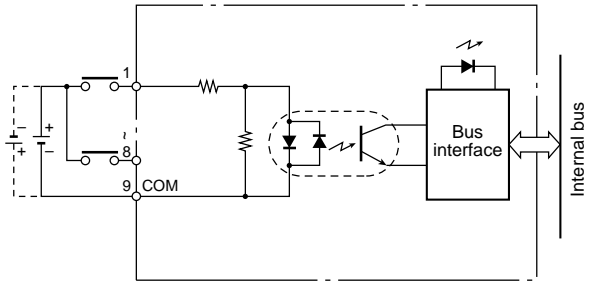
Specifications

Model	Input Type	Number of Inputs	Insulation Method	Rated Input Voltage	Rated Input Current	Operating Voltage Range	Operating Voltage/Current	
							ON	OFF
F3XD08-6N	DC voltage (sink/source)	8	Photo-coupler insulation	12 - 24 V DC	4.1 mA/point (12 V DC) 8.5 mA/point (24 V DC)	10.2 - 26.4 V DC	8.0 V DC min. 2.6 mA min.	3.4 V DC max. 1.0 mA max.
F3XD16-3N				16	24 V DC	4.1 mA/point 24 V AC	20.4 - 26.4 V DC	16.0 V DC min. 3.2 mA min.	5.8 V DC max. 0.9 mA max.
F3XD16-4N		32			12 V DC	4.1 mA/point 12 V DC	10.2 - 13.2 V DC	8.0 V DC min. 2.6 mA min.	3.4 V DC max. 1.0 mA max.
F3XD32-3N				64	24 V DC	4.1 mA/point 24 V DC	20.4 - 26.4 V DC	16.0 V DC min. 3.2 mA min.	5.8 V DC max. 0.9 mA max.
F3XD32-4N		32			12 V DC	4.1 mA/point 12 V DC	10.2 - 13.2 V DC	8.0 V DC min. 2.6 mA min.	3.4 V DC max. 1.0 mA max.
F3XD32-5N				64	5 V DC	4.0 mA/point 5 V DC	4.5 - 5.5 V DC	3.5 V DC min. 2.0 mA min.	1.0 V DC max. 0.2 mA max.
F3XD64-3N		12 V DC			24 V DC	4.1 mA/point 24 V DC	20.4 - 26.4 V DC	16.0 V DC min. 3.2 mA min.	5.8 V DC max. 0.9 mA max.
F3XD64-4N				12 V DC	4.1 mA/point 12 V DC	10.2 - 13.2 V DC	8.0 V DC min. 2.6 mA min.	3.4 V DC max. 1.0 mA max.

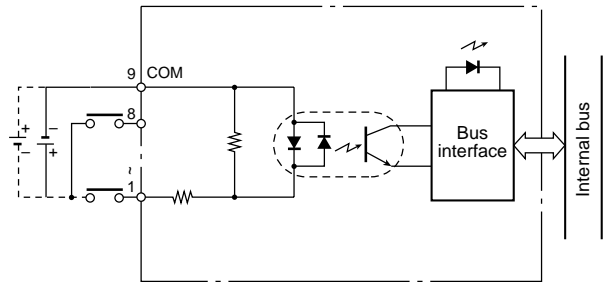
Note: See external dimensions for dimensions of the modules.

Internal Circuit Diagram

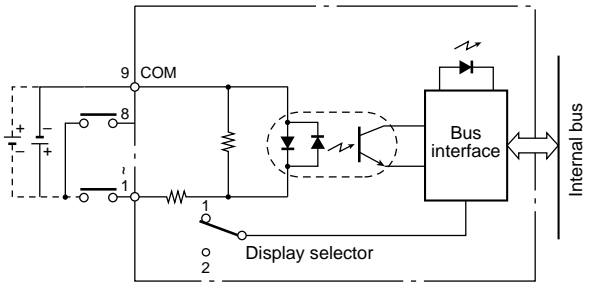
F3XD08-6N DC input module
F3XD16-3N DC input module
F3XD16-4N DC input module



F3XD32-3N DC input module
F3XD32-4N DC input module
F3XD32-5N DC input module



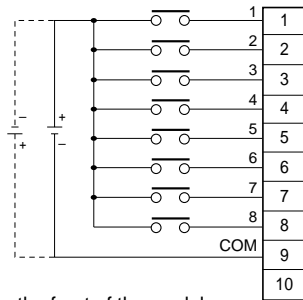
F3XD64-3N DC input module
F3XD64-4N DC input module



	Input response		External Connection	Points/Common	Interrupt *2	Current Consumption	Weight
	OFF→ON	ON→OFF					
Selectable from 2.0 ms max. or 17 ms	Selectable from 3.5 ms max. or 18.5 ms	10-point terminal block M3.5 screw	8 points/common	Can be specified for each input point.	40 mA (5V DC)	130 g	
		18-point terminal block M3.5 screw			65 mA (5V DC)	150 g	
		One 40-pin connector			75 mA (5V DC)	120 g	
1.0 ms max.	2.5 ms max.	Two 40-pin connectors		None	100 mA (5V DC)	160 g	

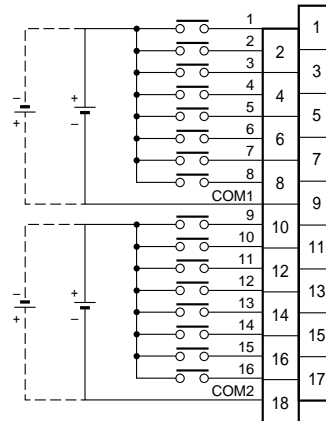
External Connection Diagram

F3XD08-6N DC input module



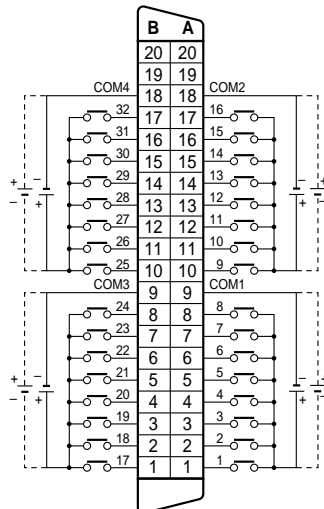
Note : Viewed from the front of the module.

F3XD16-3N DC input module
F3XD16-4N DC input module



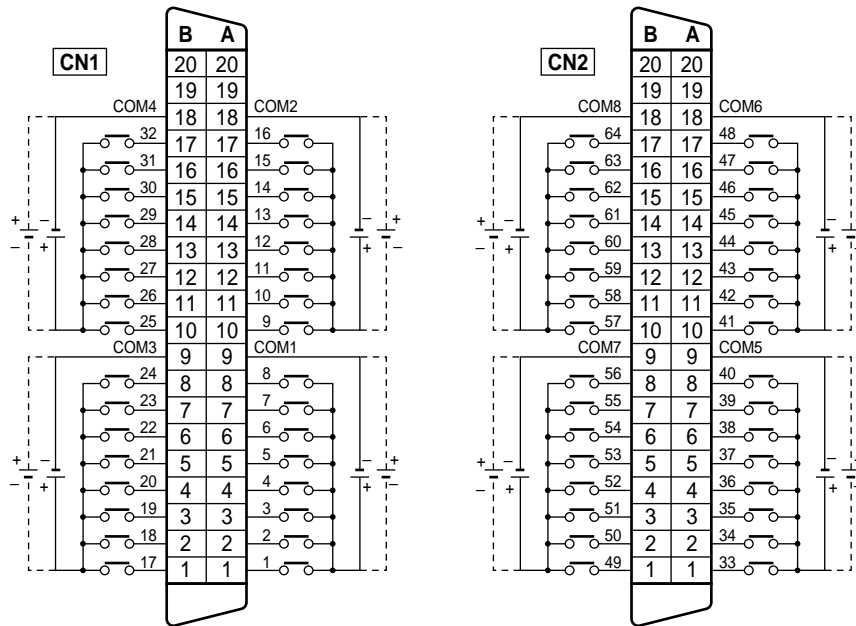
Note : Viewed from the front of the module.

F3XD32-3N DC input module
F3XD32-4N DC input module
F3XD32-5N DC input module



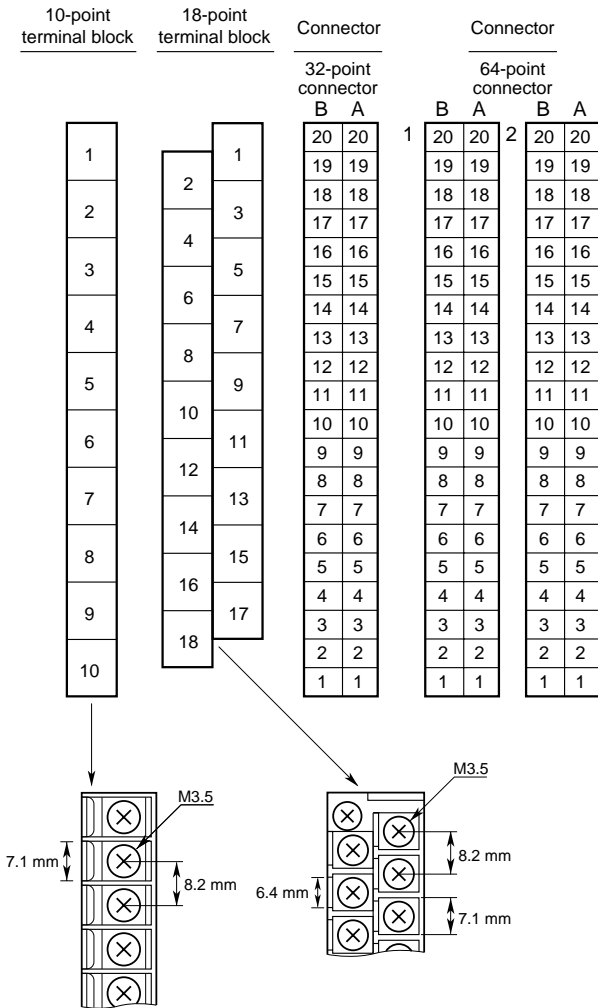
Note : Viewed from the front of the module.

F3XD64-3N DC input module
 F3XD64-4N DC input module



Note : Viewed from the front of the module.

■ Terminal Arrangement



■ External Connection Method

		Terminal Block Type	Connector Type		
Applicable conductor size		0.33-0.82 mm ²	0.26 mm ² max.	0.08 - 0.20 mm ²	Flat cable, 1.27 mm pitch, 0.08 mm ²
Wire connection method		Solderless	Soldered	Solderless	Pressure-welded
Rated wire temperature		75°C min.			
Wire Material		Copper			
Solderless terminal	Solderless terminal	For 3.5 mm terminals	-		
	Crimping torque	0.8 N·m (8 kgf·cm, 6.9 lbf·in)	-		
	Applicable solderless terminal	Example: Japan Solderless Terminal Mfg Co., Ltd.: V1.25-M3 Nippon Tanshi Co., Ltd.: RAV1.25-3.5	-		

■ Applicable External Connectors

Connection Method	Applicable Connector
Soldered type	Fujitsu : FCN-361J040-AU connector FCN-360C040-B connector cover
Solderless type	Fujitsu : FCN-363J040 housing FCN-363J-AU contact FCN-360C040-B connector cover
Pressure-welded type	Fujitsu : FCN-367J040-AU/F

Operating Environment

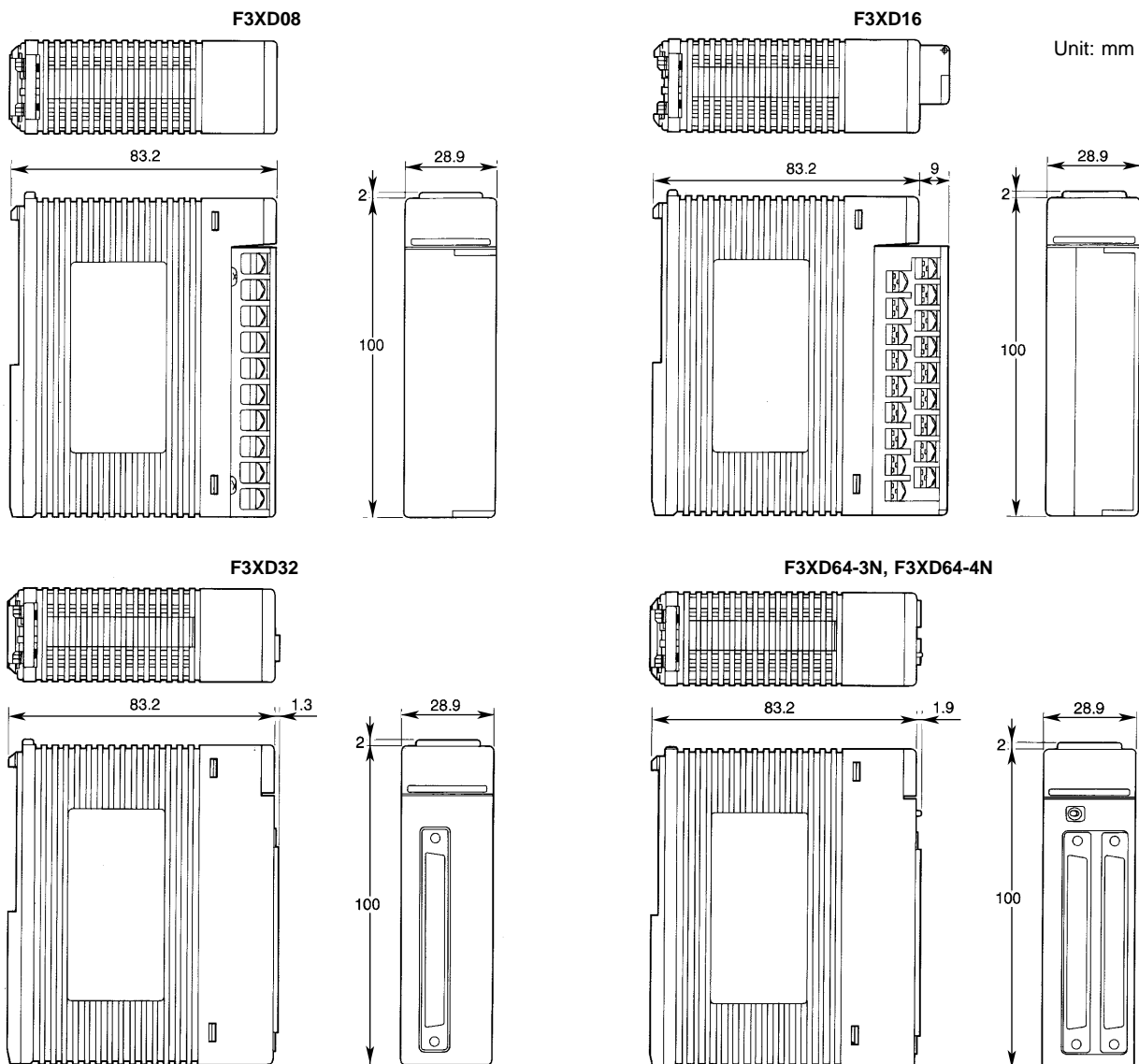
There is no restriction on the type of CPU modules that can be used with this module.

Model and Suffix Codes

Model	Suffix code	Style code	Option code	Description
F3XD08	-6N	.....	.....	DC input sink/source, 12-24 V DC, 8 points
F3XD16	-3N	.....	.....	DC input sink/source, 24 V DC, 16 points
F3XD16	-4N	.....	.....	DC input sink/source, 12 V DC, 16 points
F3XD32	-3N	.....	.....	DC input sink/source, 24 V DC, 32 points*
F3XD32	-4N	.....	.....	DC input sink/source, 12 V DC, 32 points*
F3XD32	-5N	.....	.....	DC input sink/source, 5 V DC, 32 points*
F3XD64	-3N	.....	.....	DC input sink/source, 24 V DC, 64 points*
F3XD64	-4N	.....	.....	DC input sink/source, 12 V DC, 64 points*

*: See the section on spare parts in the FA-M3 Range-free Multi-controller (GS 34M6A01-01E) for information on connectors.

External Dimensions



General Specifications

F3YD04, F3YA08, F3YC08, F3YC16, F3YD08, F3YD14, F3YD32 and F3YD64 Output Modules

FA-M3

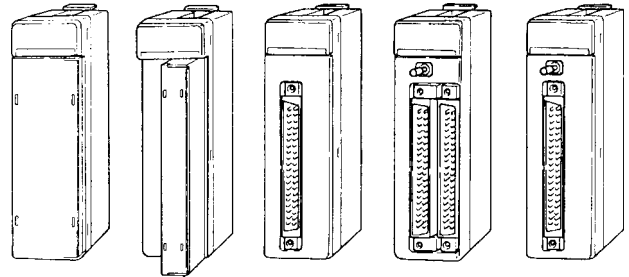


General

The output modules for the FA-M3 are listed below. Select the most appropriate modules according to your applications.

- F3YD04-7N Transistor output module
- F3YA08-2N TRIAC output module
- F3YC08-0C Relay output module
- F3YC08-0N Relay output module
- F3YC16-0N Relay output module
- F3YD08-6A Transistor output module
- F3YD08-6B Transistor output module
- F3YD14-5A Transistor output module
- F3YD14-5B Transistor output module
- F3YD32-1A Transistor output module
- F3YD32-1B Transistor output module
- F3YD32-1T TTL output module
- F3YD64-1A Transistor output module
- F3YD64-1F Transistor output module
- F3YD64-1M Transistor output module

Note: The F3YA08-2N and F3YC16-0N modules are not UL-certified.
The F3YD64-1F module is scheduled to gain the UL certificate.

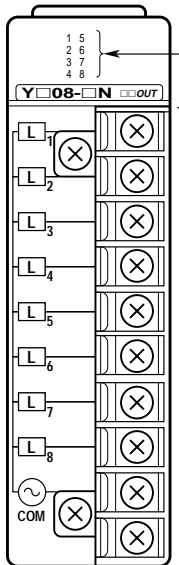


Components and Functions

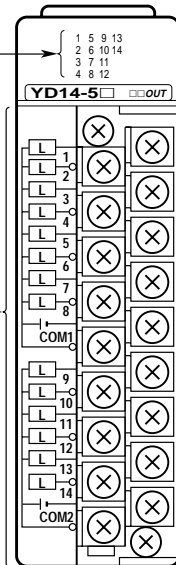
The output modules are divided into terminal block and connector types as given below.

Terminal block

- 10-point terminal block



- 18-point terminal block



Output LEDs
Indicates the on/off status of the outputs.

Terminal block
10- or 18-point detachable terminal block. The terminal screws are M3.5 screws with captive square washers.

Output LEDs
Indicates the on/off status of the outputs.

Display selector switch
Selects the output LEDs. Not available for 32-point modules.

One or two 40-pin connectors
Only one connector is available for 32-point inputs and the F3YD64-1M.

Display selector switch	LED Indication
1	Indicates the on/off status of inputs 1 to 32.
2	Indicates the on/off status of inputs 33 to 64.

Specifications

Model	Output Type	Number of Outputs	Points /Common	Insulation Method	Rated Load Voltage		Maximum Load Current	Output Response		
					DC	AC		OFF → ON	ON → OFF	
F3YD04-7N	Transistor contact	4	All points independent	Photocoupler Insulation	24 V DC		2 A/point	5 ms max.	3 ms max.	
F3YA08-2N	TRIAC contact	8	8 points /common		100 - 240 V AC		1 A/point (0°C - 40°C) 0.7 A/point (40°C - 55°C) 3 A/common	1 ms max.	1/2 cycle + 1 ms max.	
F3YC08-0C	Relay contact		All points independent	DC	AC	2 A/point	10 ms max.	10 ms max.		
F3YC08-0N			8 points /common	24 V	100-240 V	2 A/point 8 A/common				
F3YD08-6A	Transistor contact (sink type)		14	8 points /common 6 points /common	Photocoupler Insulation	12 - 24 V DC		1 A/point 4 A/common	1 ms max.	1 ms max.
F3YD08-6B	Transistor contact (source type)	0.5 A/point 2 A/common								
F3YD14-5A	Transistor contact (sink type)	16						Mechanical Insulation			DC	AC	2 A/point 8 A/common	10 ms max.	10 ms max.
F3YD14-5B	Transistor contact (source type)		24 V	100-240 V						
F3YD32-1A	Transistor contact (sink type)	32	8 points /common	Photocoupler Insulation	12 - 24 V DC		0.1 A/point 0.5 A/common	1 ms max.	1 ms max.	
F3YD32-1B	Transistor contact (source type)						5 V DC			16 mA/point 128 mA/common
F3YD32-1T	Transistor contact (TTL output)						64			8 × 8 matrix	12 - 24 V DC		0.1 A/point 0.4 A/common	16 ms max.	16 ms max.
F3YD64-1A	Transistor contact (sink type)	12 - 24 V DC	0.1 A							
F3YD64-1F ^{*1}	Transistor contact (matrix scan)									

Note: See external dimensions for dimensions of the modules.

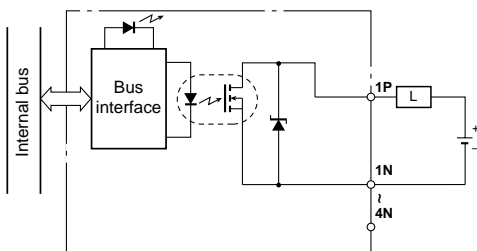
*1: When F3SP28, F3SP38, F3SP53 or F3SP58 is used, the output for CPU fatal errors can be set either to HOLD or RESET.

*2: When F3SP28, F3SP38, F3SP53 or F3SP58 is used, all points can be specified in 16-point units.

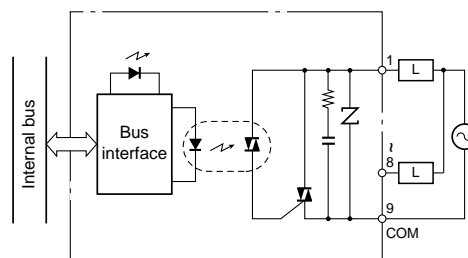
*3: For CPU errors, see the "Ranking of Errors and LED Display" in the FA-M3 Range-free Multi-controller (GS 34M6A01-01E).

Internal Circuit Diagram

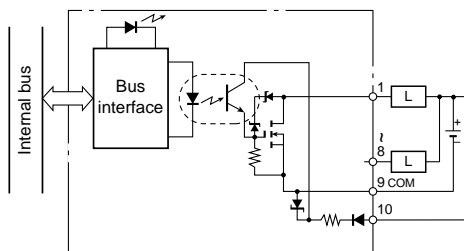
F3YD04-7N Transistor output module



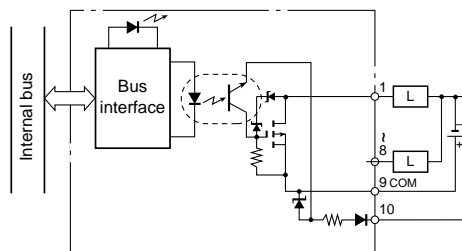
F3YA08-2N TRIAC output module



F3YD08-6A Transistor output module
F3YD14-5A Transistor output module

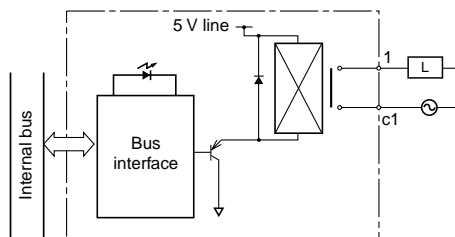


F3YD08-6B Transistor output module
F3YD14-5B Transistor output module

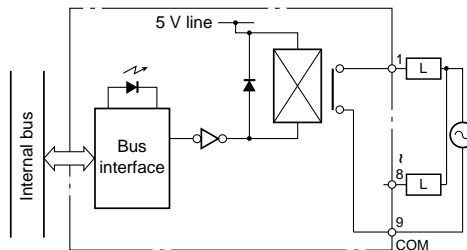


Life		On-time Voltage	Off-time Leakage Current	Surge Protector	CPU Error Output*3 HOLD/RESET	Current Consumption	External Power Supply	External Connection	Weight
-		0.5 V DC max.	0.1 mA max.	Zener diode	When a sequence CPU is used: Initial value: RESET All points can be specified in the block on a module basis*2.	65 mA (5 V DC)	Not required	10-point terminal block M3.5 screw	140 g
		1.5 V DC max.	3 mA max.	CR absorber Varistor		130 mA (5 V DC)			150 g
Mechanical 20,000,000 operations or more	Electrical 100,000 operations or more	-	-	None		205 mA (5 V DC)		18-point terminal block M3.5 screw	180 g
-		0.5 V DC max.	0.1mA max.	Zener diode		60 mA (5 V DC)		12-24 V DC 10 mA	10-point terminal block M3.5 screw	160 g
-		0.5 V DC max.	0.1mA max.	Zener diode	When a BASIC CPU is used: No setup function is enabled; always set to HOLD.	120 mA (5 V DC)	12-24 V DC 20 mA	18-point terminal block M3.5 screw	130 g
Mechanical 20,000,000 operations or more	Electrical 100,000 operations or more	-	-	None		380 mA (5 V DC)	Not required		220 g
-		0.5 V DC max.	0.1 mA max.	Zener diode		160 mA (5 V DC)	12-24 V DC 115 mA	One 40-pin connector	140 g
-		-	-			160 mA (5 V DC)	5 V DC 60 mA		110 g
-		0.5 V DC max.	0.1 mA max.		275 mA (5 V DC)	24 V DC 150 mA	Two 40-pin connectors	160 g	
-		1.5 V DC max.			125 mA (5 V DC)	12-24 V DC 40 mA	One 40-pin connector	110 g	

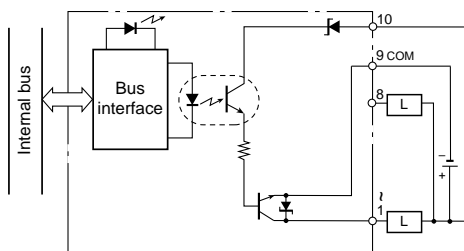
F3YC08-0C Relay output module



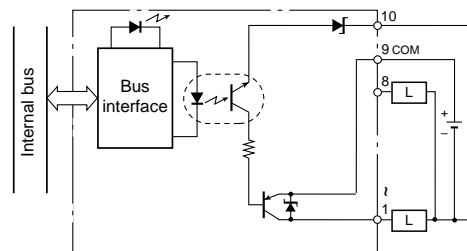
F3YC08-0N Relay output module
F3YC16-0N Relay output module



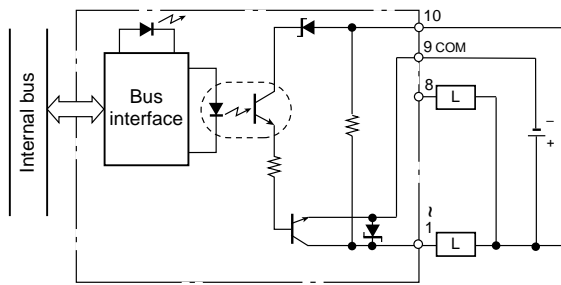
F3YD32-1A Transistor output module



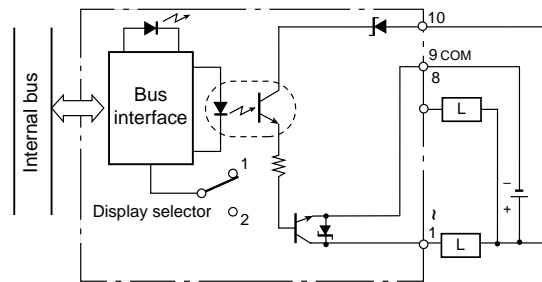
F3YD32-1B Transistor output module



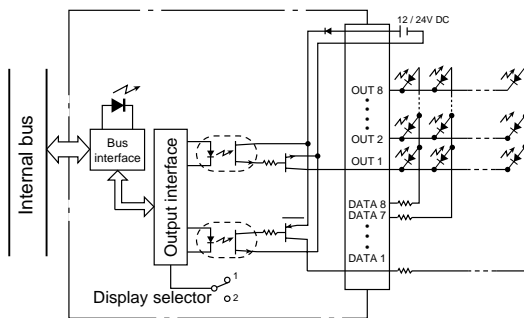
F3YD32-1T TTL output module



F3YD64-1A Transistor output module
F3YD64-1F Transistor output module

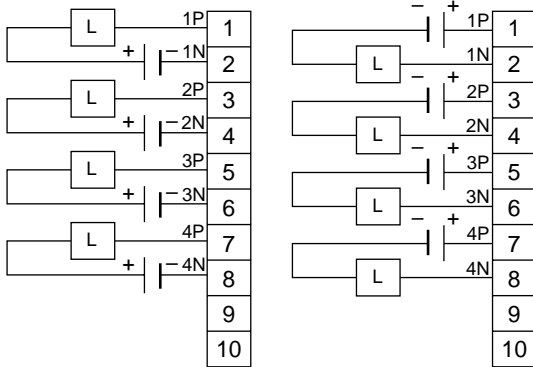


F3YD64-1M Transistor output module



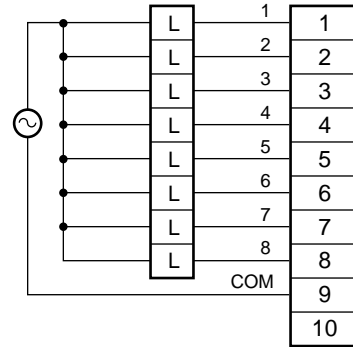
External Connection Diagram

F3YD04-7N Transistor output module



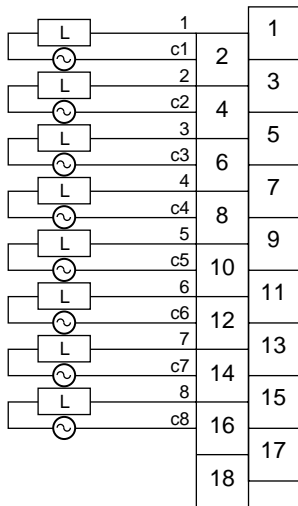
Note : Viewed from the front of the module.

F3YA08-2N TRIAC output module



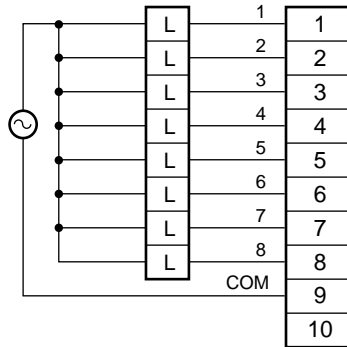
Note : Viewed from the front of the module.

F3YC08-0C Relay output module



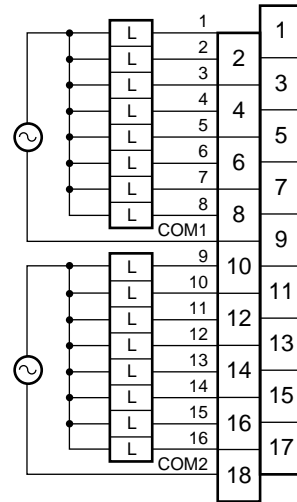
Note: Viewed from the front of the module.

F3YC08-0N Relay output module



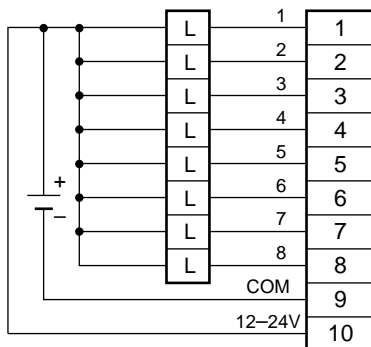
Note : Viewed from the front of the module.

F3YC16-0N Relay output module



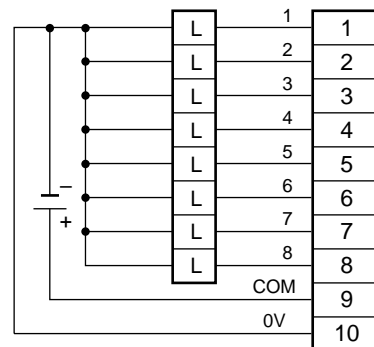
Note : Viewed from the front of the module.

F3YD08-6A Transistor output module



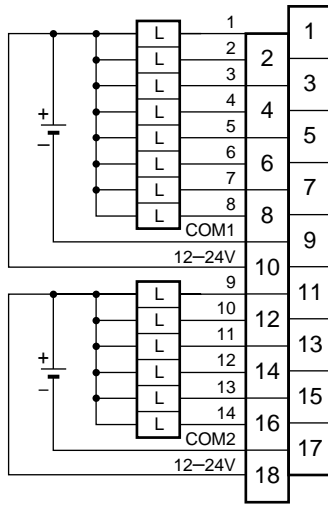
Note : Viewed from the front of the module.

F3YD08-6B Transistor output module



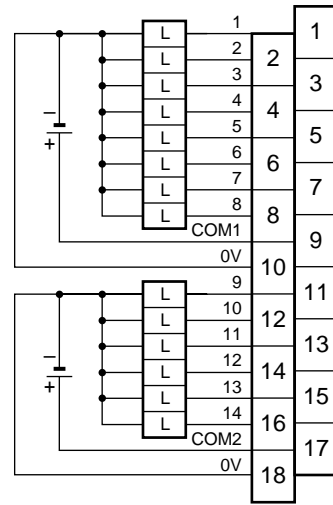
Note : Viewed from the front of the module.

F3YD14-5A Transistor output module



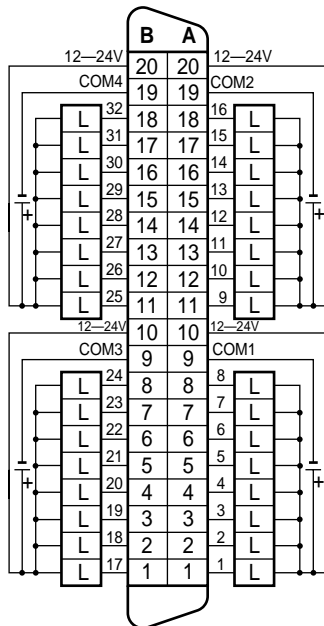
Note : Viewed from the front of the module.

F3YD14-5B Transistor output module



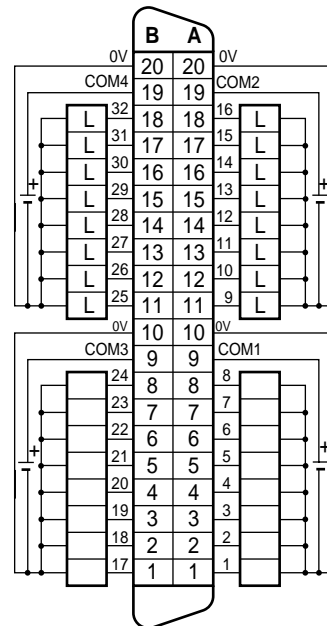
Note : Viewed from the front of the module.

F3YD32-1A Transistor output module



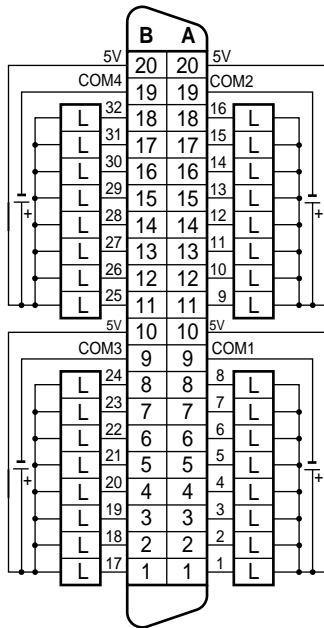
Note : Viewed from the front of the module.

F3YD32-1B Transistor output module



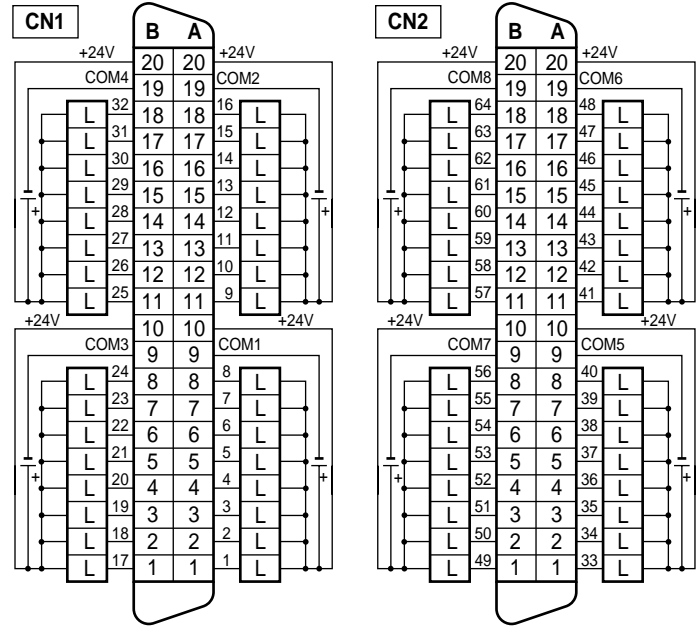
Note : Viewed from the front of the module.

F3YD32-1T TTL output module



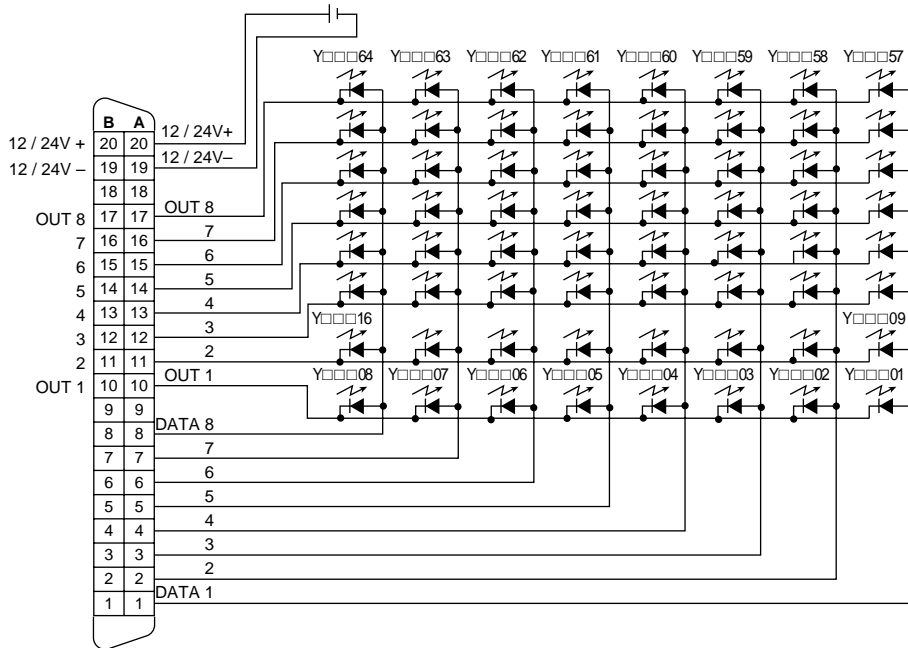
Note : Viewed from the front of the module.

F3YD64-1A Transistor output module
F3YD64-1F Transistor output module



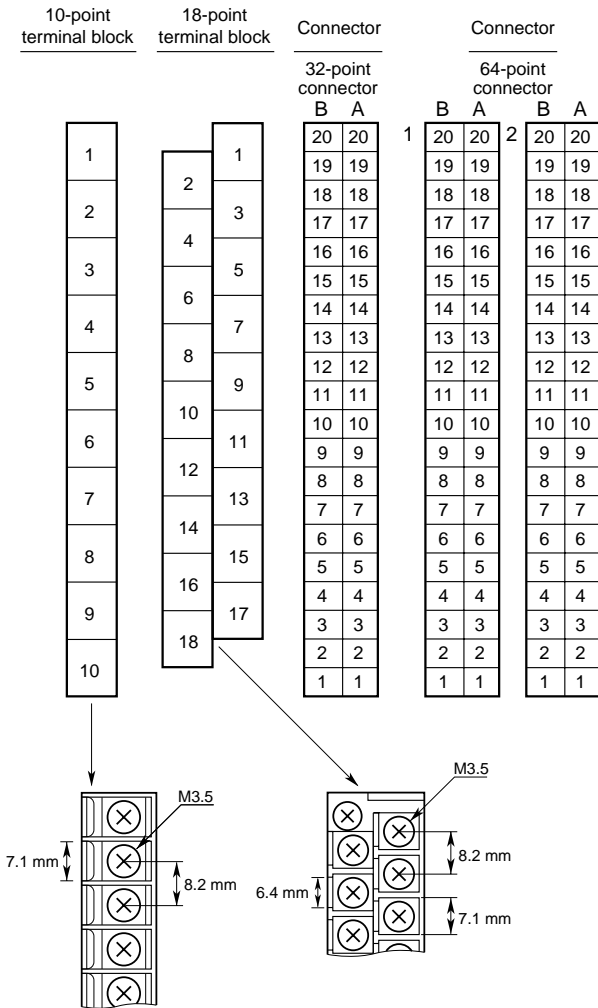
Note : Viewed from the front of the module.

F3YD64-1M Transistor output module



Note : Viewed from the front of the module.

■ Terminal Arrangement



■ External Connection Method

		Terminal Block Type	Connector Type		
Applicable conductor size		0.33-0.82 mm ²	0.26 mm ² max.	0.08 - 0.20 mm ²	Flat cable, 1.27 mm pitch, 0.08 mm ²
Wire connection method		Solderless	Soldered	Solderless	Pressure-welded
Rated wire temperature		75°C min.			
Wire Material		Copper			
Solderless terminal	Solderless terminal	For 3.5 mm terminals	-		
	Crimping torque	0.8 N-m (8 kgf-cm, 6.9 lbf-in)	-		
	Applicable solderless terminal	Example: Japan Solderless Terminal Mfg Co., Ltd.: V1.25-M3 Nippon Tanshi Co., Ltd.: RAV1.25-3.5	-		

■ Applicable External Connectors

Connection Method	Applicable Connector
Soldered type	Fujitsu : FCN-361J040-AU connector FCN-360C040-B connector cover
Solderless type	Fujitsu : FCN-363J040 housing FCN-363J-AU contact FCN-360C040-B connector cover
Pressure-welded type	Fujitsu : FCN-367J040-AU/F

Operating Environment

There is no restriction on the type of CPU modules that can be used with this module.

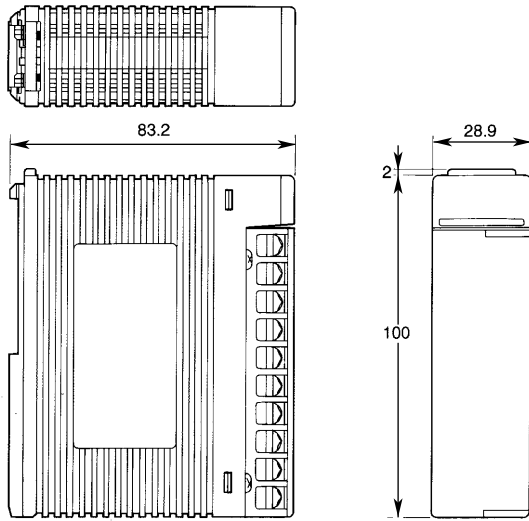
Model and Suffix Codes

Model	Suffix code	Style code	Option code	Description
F3YD04	-7N	.....	.....	Transistor output, 24 V DC, 2 A, 4 points, all points independent
F3YA08	-2N	.....	.....	TRIAC output, 100-240 VAC, 1 A, 8 points
F3YC08	-0C	.....	.....	Relay output, 24 V DC, 100-240 V AC, 2 A, 8 points, all points independent
F3YC08	-0N	.....	.....	Relay output, 24 V DC, 100-240 V AC, 2 A, 8 points
F3YC16	-0N	.....	.....	Relay output, 24 V DC, 100-240 V AC, 2 A, 16 points
F3YD08	-6A	.....	.....	Transistor output (sink type), 12-24 V DC, 1 A, 8 points
F3YD08	-6B	.....	.....	Transistor output (source type), 12-24 V DC, 1 A, 8 points
F3YD14	-5A	.....	.....	Transistor output (sink type), 12-24 V DC, 0.5 A, 14 points
F3YD14	-5B	.....	.....	Transistor output (source type), 12-24 V DC, 0.5 A, 14 points
F3YD32	-1A	.....	.....	Transistor output (sink type), 12-24 V DC, 0.1 A, 32 points*
F3YD32	-1B	.....	.....	Transistor output (sink type), 12-24 V DC, 0.1 A, 32 points*
F3YD32	-1T	.....	.....	TTL output, 5 V DC, 32 points*
F3YD64	-1A	.....	.....	Transistor output (sink type), 24 V DC, 0.1 A, 64 points*
F3YD64	-1F	.....	.....	Transistor output (sink type), 24 V DC, 0.1 A, 64 points*
F3YD64	-1M	.....	.....	Transistor output (matrix scan), 12-24 V DC, 0.1 A, 64 points

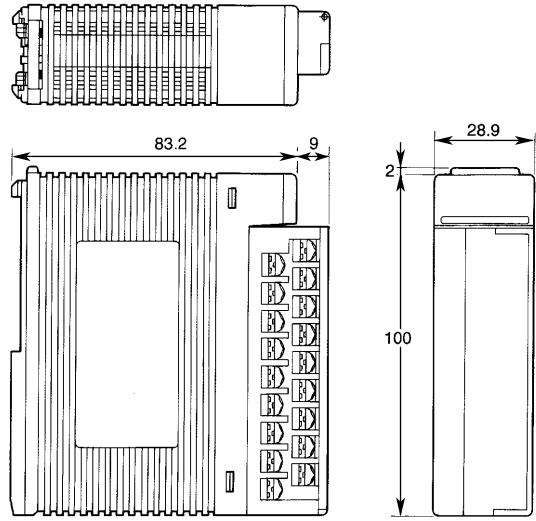
*: See the section on spare parts in the FA-M3 Range-free Multi-controller (GS 34M6A01-01E) for information on connectors.

External Dimensions

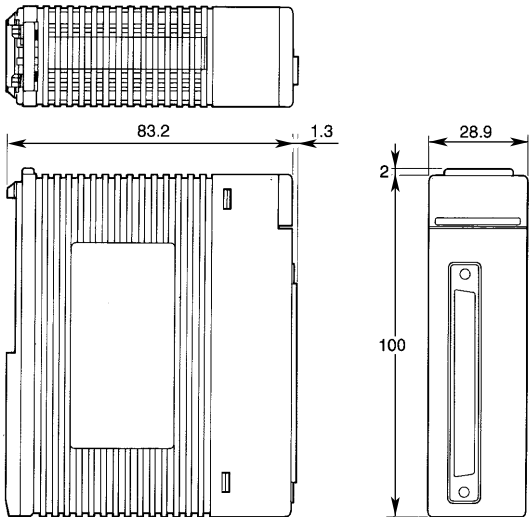
F3YA08, F3YD04, F3YD08



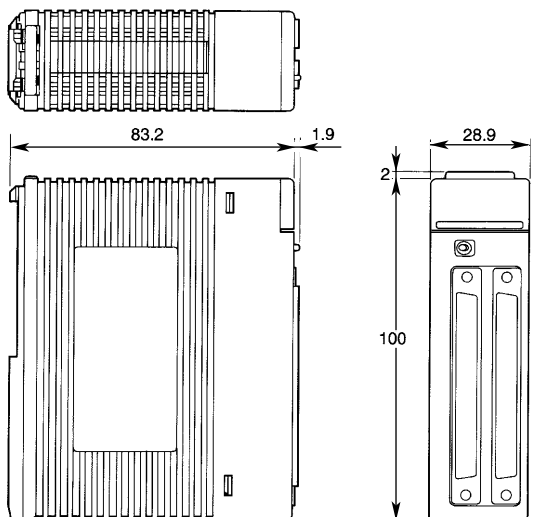
F3YD14, F3YC08-0C, F3YC08-0N, F3YC16



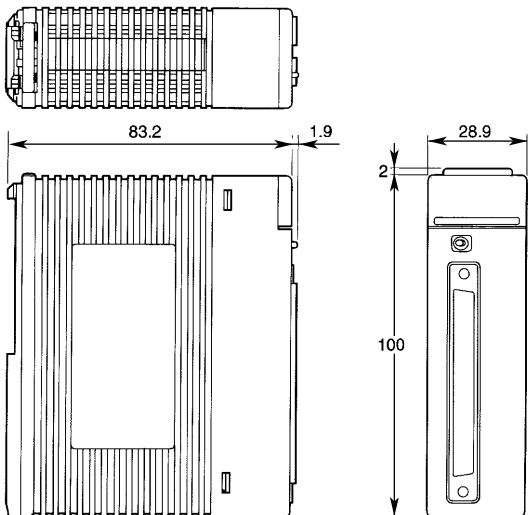
F3YD32



F3YD64-1A
F3YD64-1F



F3YD64-1M



General Specifications

F3WD64-□F Input/Output Module

FA-M3



General

The F3WD64 Input/Output Module is intended for use in an input/output slot of the FA-M3 Range-free Multi-controller. It has 32-point inputs and outputs (sink type) and is provided with two 40-pin connectors. Each input/output point is isolated from the internal circuit by a photocoupler. The F3WD64 input/output module uses an 8-point/common configuration for both input and output. The operating voltage is either 12 V DC or 24 V DC.

Specifications

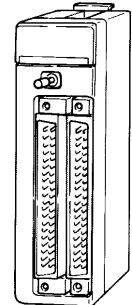
Item		F3WD64-3F*1	F3WD64-4F*1	
Input Block	Input type	DC voltage		
	Number of inputs	32 (Terminal Nos. 01 to 32)		
	Points/common	8 points/common		
	Insulation method	Photocoupler insulation		
	Rated input voltage	24 V DC	12 V DC	
	Operating voltage range	20.4 - 26.4 V DC	10.2 - 13.2 V DC	
	Rated input current	4.1 mA/point (24 V DC)		
	Operating voltage/current	ON	16.0 V DC min. 3.2 mA min.	8.0 V DC min. 2.6 mA min.
		OFF	5.8 V DC max. 0.9 mA max.	3.4 V DC max. 1.0 mA max.
	Response time	OFF→ON	Input sampling period can be specified within 0-1 ms in 4 levels*2.	
ON→OFF		Input sampling period can be specified within 0-1 ms in 4 levels*2.		
Interrupt	None			
Output Block	Output type	Transistor contact (sink type)		
	Number of outputs	32 (Terminal Nos. 33 to 64)		
	Points/common	8 points/common		
	Insulation method	Photocoupler insulation		
	Rated load voltage	24 V DC	12 V DC	
	Maximum load current	0.1 A/point, 0.4 A/common		
	Response time	OFF→ON	1 ms max.	
		ON→OFF	1 ms max.	
	ON-time voltage	0.5 V DC max.		
	OFF-time leakage current	0.1 mA max.		
	Surge protector	Zener diode		
CPU error output*4 HOLD/RESET	When a sequence CPU is used: Initial value: RESET All points can be specified in the block on a module basis*3. When a BASIC CPU is used: No setup function is enabled; always set to HOLD.			
External power supply	24 V DC, 60 mA	12 V DC, 60 mA		
Common	Input/Output status indication	Lit when on (indicates either input or output status by using the selecting switch.)		
	Current consumption	200 mA		
	External connection	Two 40-pin connectors		
	Weight	160 g		

*1: When F3SP28, F3SP38, F3SP53 or F3SP58 is used, the output for CPU fatal errors can be set either to HOLD or RESET.

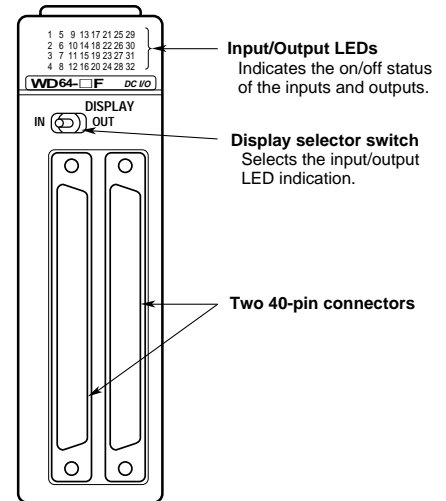
*2: When F3SP28, F3SP38, F3SP53 or F3SP58 is used. For other CPU modules, the specification is the same as the F3WD64-□N. The actual response time can be obtained by adding the following values:
- 100 μs (OFF → ON)
- 300 μs (ON → OFF)

*3: When F3SP28, F3SP38, F3SP53 or F3SP58 is used, all points can be specified in 16-point units.

*4: For CPU errors, see the "Ranking of Errors and LED Display" in the FA-M3 Range-free Multi-controller (GS 34M6A01-01E).

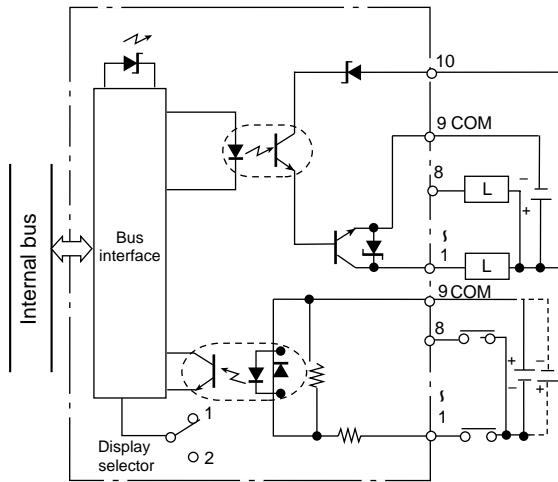


Components and Functions



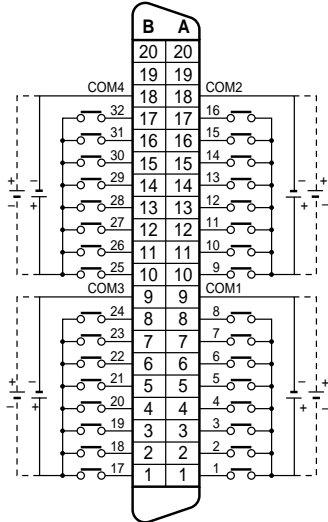
Display selector switch	LED Indication
IN	Indicates the on/off status of inputs 1 to 32.
OUT	Indicates the on/off status of inputs 33 to 64.

Internal Circuit Diagram

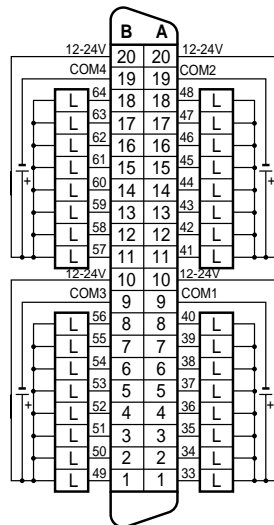


External Connection Diagram

CN1(Input block)



CN2(Output block)



Note: Viewed from the front of the module.

*: 24 V for F3WD64-3F and 12 V for F3WD64-4F.

External Connection Method

	Connector Type		
Applicable conductor size	0.26 mm ² max.	0.08-0.20 mm ²	Flat cable, 1.27 mm pitch, 0.08 mm ²
Wire connection method	Soldered	Solderless	Pressure-welded
Rated wire temperature	75°C min.		
Wire material	Copper		

Applicable External Connectors

Connection Method	Applicable Connector
Soldered type	Fujitsu : FCN-361J040-AU connector FCN-360C040-B connector cover
Solderless type	Fujitsu : FCN-363J040 housing FCN-363J-AU contact FCN-360C040-B connector cover
Pressure-welded type	Fujitsu : FCN-367J040-AU/F

Operating Environment

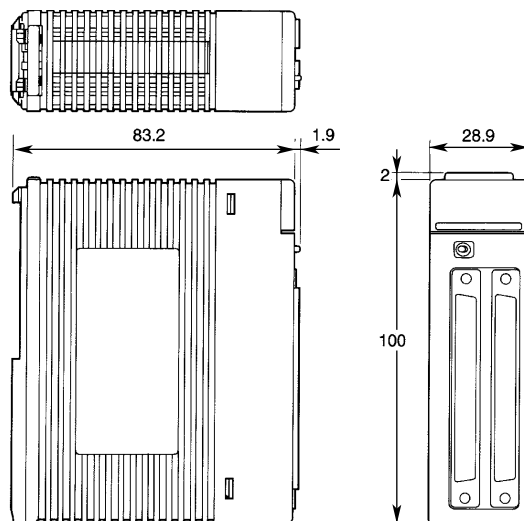
There is no restriction on the type of CPU modules that can be used with this module.

Model and Suffix Codes

Model	Suffix code	Style code	Option code	Description
F3WD64	-3N	.....	.....	24 V DC input/output
F3WD64	-4N	.....	.....	12 V DC input/output

*: See the section on spare parts in the FA-M3 Universal-range Multi-controller (GS 34M6A01-01E) for information on connectors.

External Dimensions



General Specifications

F3WD64-□N Input/Output Module

FA-M3



General

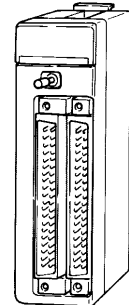
The F3WD64 Input/Output Module is intended for use in an input/output slot of the FA-M3. It has 32-point inputs and outputs (sink type) and is provided with two 40-pin connectors. Each input/output point is isolated from the internal circuit by a photocoupler. The F3WD input/output module uses an 8-point/common configuration for both input and output. The operating voltage is either 12 V DC or 24 V DC.

Specifications

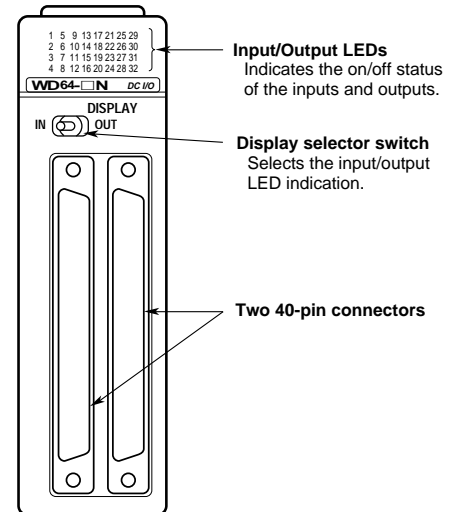
Item		F3WD64-3N	F3WD64-4N	
Input Block	Input type	DC voltage		
	Number of inputs	32 (Terminal Nos. 01 to 32)		
	Points/common	8 points/common		
	Insulation method	Photocoupler insulation		
	Rated input voltage	24 V DC	12 V DC	
	Operating voltage range	20.4 - 26.4 V DC	10.2 - 13.2 V DC	
	Rated input current	4.1 mA/point (24 V DC)	4.1 mA/point (12 V DC)	
	Operating voltage/current	ON	16.0 V DC min. 3.2 mA min.	8.0 V DC min. 2.6 mA min.
		OFF	5.8 V DC max. 0.9 mA max.	3.4 V DC max. 1.0 mA max.
	Response time	OFF→ON	1.0 ms max.	
ON→OFF		2.5 ms max.		
Interrupt	None			
Output Block	Output type	Transistor contact (sink type)		
	Number of outputs	32 (Terminal Nos. 33 to 64)		
	Points/common	8 points/common		
	Insulation method	Photocoupler insulation		
	Rated load voltage	24 V DC	12 V DC	
	Maximum load current	0.1 A/point, 0.4 A/common		
	Response time	OFF→ON	1 ms max.	
		ON→OFF	1 ms max.	
	ON-time voltage	0.5 V DC max.		
	OFF-time leakage current	0.1 mA max.		
	Surge protector	Zener diode		
	CPU error output**4 HOLD/RESET	When a sequence CPU is used: Initial value: RESET All points can be specified in the block on a module basis*1.		
		When a BASIC CPU is used: No setup function is enabled; always set to HOLD.		
External power supply	24 V DC, 60 mA	12 V DC, 60 mA		
Common	Input/Output status indication	Lit when on (indicates either input or output status by using the selecting switch.)		
	Current consumption	200 mA		
	External connection	Two 40-pin connectors		
	Weight	160 g		

*1: When F3SP28, F3SP38, F3SP53, or F3SP58 is used, all points can be specified in 16-point units.

*2: For CPU errors, see the "Ranking of Errors and LED Display" in the FA-M3 Universal-range Multi-controller (GS 34M6A01-01E).

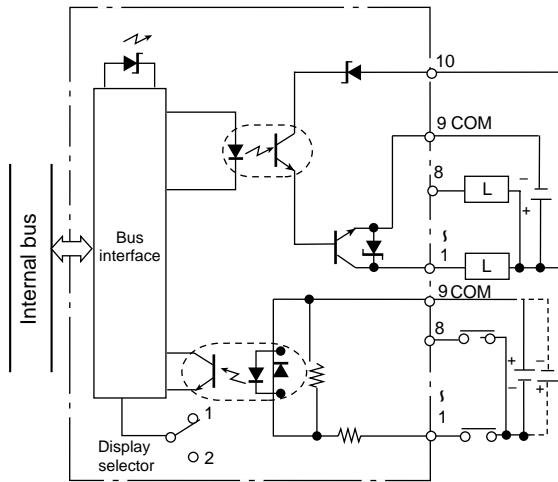


Components and Functions

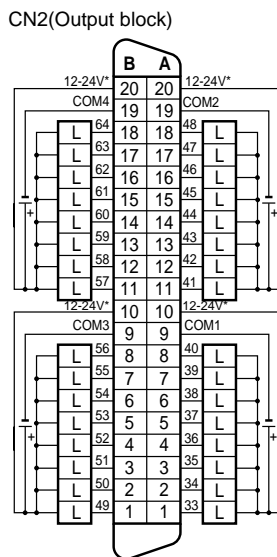
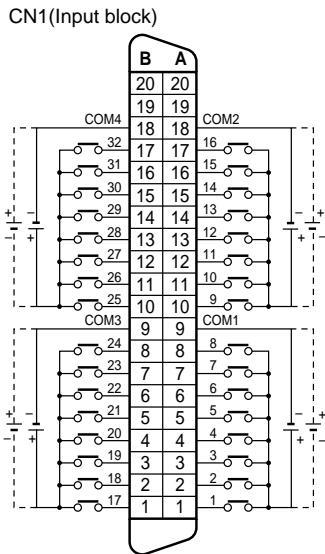


Display selector switch	LED Indication
IN	Indicates the on/off status of inputs 1 to 32.
OUT	Indicates the on/off status of inputs 33 to 64.

Internal Circuit Diagram



External Connection Diagram



Note: Viewed from the front of the module.
 *: 24 V for F3WD64-3N and 12 V for F3WD64-4N.

External Connection Method

	Connector Type		
Applicable conductor size	0.26 mm ² max.	0.08-0.20 mm ²	Flat cable, 1.27 mm pitch, 0.08 mm ²
Wire connection method	Soldered	Solderless	Pressure-welded
Rated wire temperature	75°C min.		
Wire material	Copper		

Applicable External Connectors

Connection Method	Applicable Connector
Soldered type	Fujitsu : FCN-361J040-AU connector FCN-360C040-B connector cover
Solderless type	Fujitsu : FCN-363J040 housing FCN-363J-AU contact FCN-360C040-B connector cover
Pressure-welded type	Fujitsu : FCN-367J040-AU/F

Operating Environment

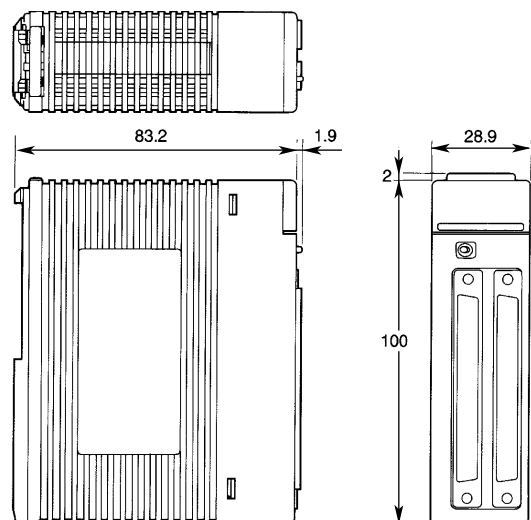
There is no restriction on the type of CPU modules that can be used with this module.

Model and Suffix Codes

Model	Suffix code	Style code	Option code	Description
F3WD64	-3N	.....	.....	24 V DC input/output
F3WD64	-4N	.....	.....	12 V DC input/output

*: See the section on spare parts in the FA-M3 Range-free Multi-controller (GS 34M6A01-01E) for information on connectors.

External Dimensions



General Specifications

TA40-0N Terminal Block Unit

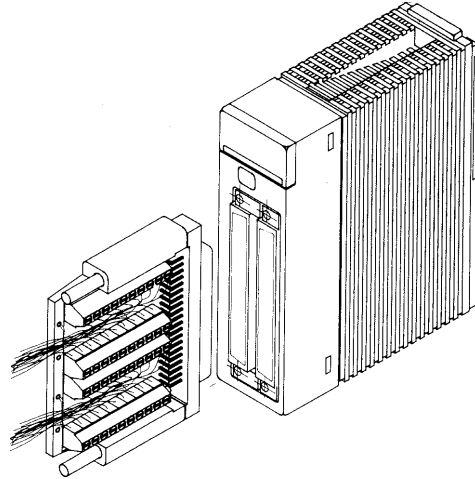
FA-M3



General

The TA40-0N Terminal Block Unit is intended for use in the input/output modules that conform to the connector specifications of the FA-M3 Range-free Multi-controller and the FA500 Intelligent Programmable Controller. It allows direct wiring for its slim connector profile. The TA40-0N can be used effectively not only for permanent connections but also for temporary connections such as during debugging.

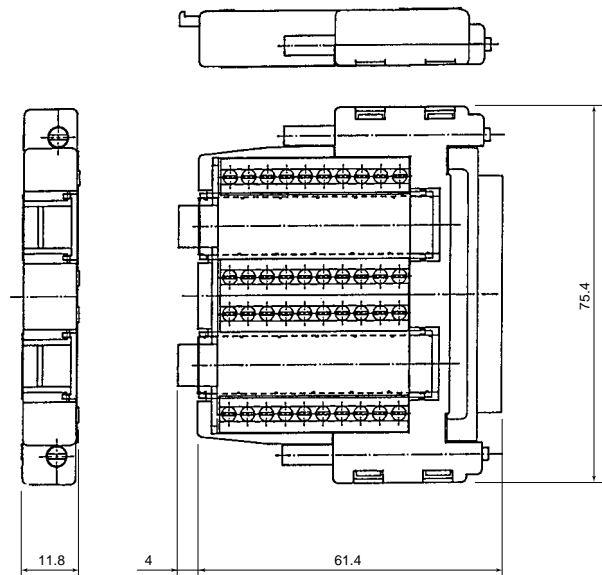
- The ultra-slim connector saves space on the power switch board.
- It permits direct mounting on an input/output module, which leads to cost reduction and dispenses with the need for cables.
- It can be used with all FA-M3 and FA500 40-pin input/output connectors.
- Using a European type terminal block relieves the user from the burden of soldering or crimping.
- It can be secured on an input/output module with screws to facilitate stable operation.



Specifications

Item	Specification
Number of points	40
Rated voltage	5-24 V DC
Operating voltage range	4.5-26.4 V DC
Maximum current	0.5 A DC/point
Applicable conductor size	0.08 to 0.26 mm ² (AWG 23 - 28)
Terminal block screw	M2 (slotted head screw)
Clamping screw	M2.6 (cross head screw)
Color	Black
Weight	50 g

External Dimensions



Environment Conditions

Item	Specification
Ambient operating temperature	0°C - 55°C
Ambient operating humidity	10 - 90% RH (non-condensing)
Operating atmosphere	Must be free from the presence of corrosive gases or heavy dust.

Model and Suffix Codes

Model	Suffix code	Style code	Option code	Description
TA40	-0N	.....	.....	Terminal block unit, 40 points

General Specifications

TA50-□N
 Connector Terminal Block Unit
 KM55-0□□
 Connector Terminal Block Cable

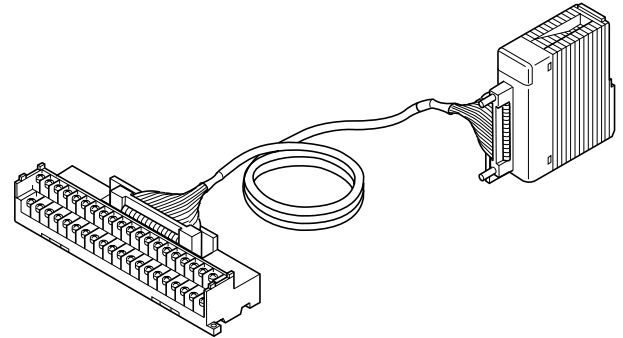
FA-M3



General

The TA50-0N and TA50-1N Connector Terminal Block Units are intended for use in the input/output modules that conform to the connector specifications of the FA-M3 Range-free Multi-controller or the FA500 Intelligent Programmable Controller.

- The TA50-0N and TA50-1N are connected to an input/output unit via the KM55-0□□ Connector Terminal Block, which saves space and reduces wiring on the power switch board.
- Use of the connector terminal block unit with the connector terminal block cable eliminates soldering work for wiring.
- The TA50-0N and TA50-1N can be secured with mounting screws or DIN rails.



Specifications (TA50-□N)

Item	Specification	
	TA50-0N	TA50-1N
Number of points	40	
Rated voltage	5 - 24 V DC	
Operating voltage range	4.5 - 26.4 V	
Maximum current	0.5 A DC/point	
Applicable conductor size	2 mm ² max.	1.25 mm ² max.
Applicable terminal screw	M3.5	M3
Applicable terminal	Solderless ø8 mm max.	Solderless ø5.8 mm max.
Connector	HIF3BA-40PA-2.54DSA (MIL standard compliant)	
Mounting method	35-mm wide DIN rail or screw mounting	
Clamping screw	M4 (2 points)	
Color	Black	Gray
Weight	300 g	175 g

Note: The connector terminal blocks cannot be used with the F3YP04 or F3YP08 module.

Environment Specifications (TA50-□N)

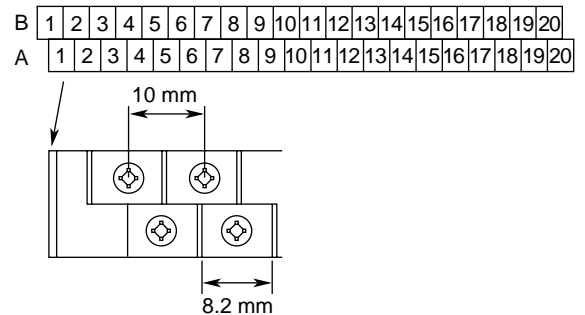
Item	Specification
Ambient operating temperature	0°C - 55°C
Ambient operating humidity	10 - 90% RH (non-condensing)
Operating atmosphere	Must be free from the presence of corrosive gases or heavy dust.

Specifications (KM55-0□□)

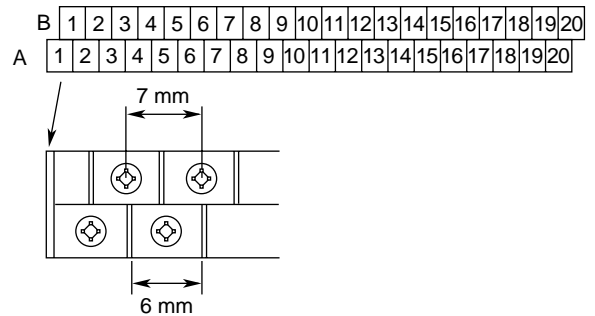
Item	Specification
KM55-005	0.5 m
KM55-010	1.0 m
KM55-015	1.5 m
KM55-020	2.0 m
KM55-025	2.5 m
KM55-030	3.0 m

Note: As the connector terminal block does not come with a cable for connecting a module and a connector terminal block, select a suitable cable from the list above.

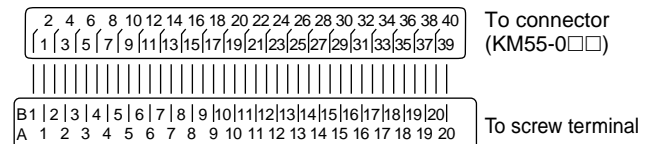
Terminal Arrangement (TA50-0N)



Terminal Arrangement (TA50-1N)



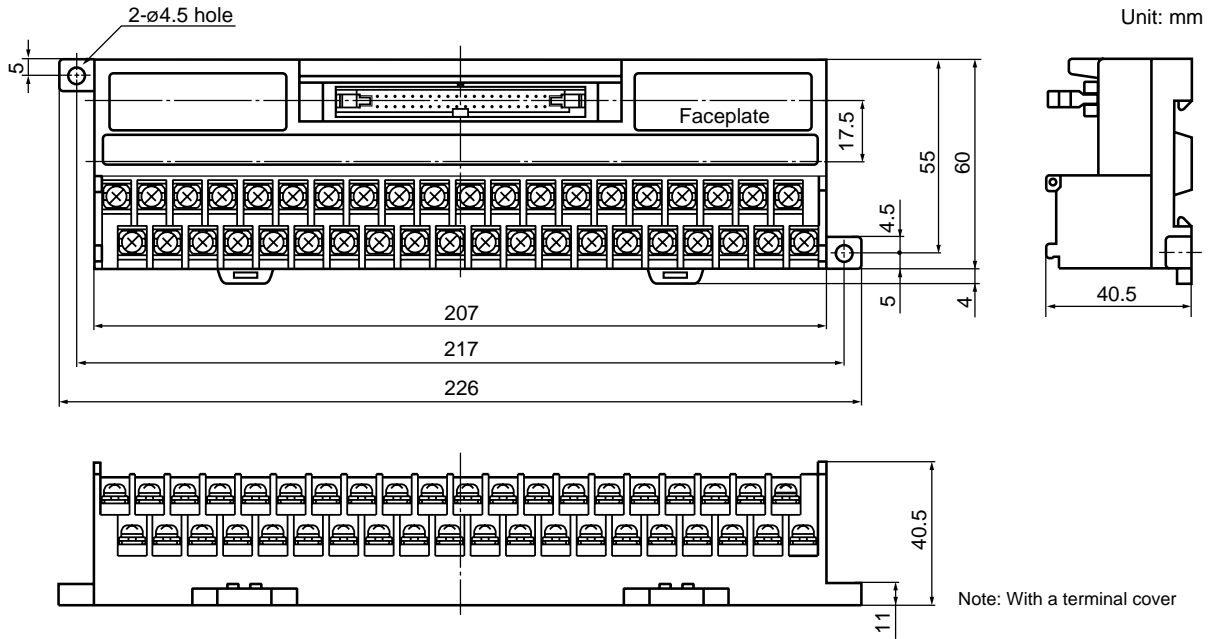
Internal Connection Diagram



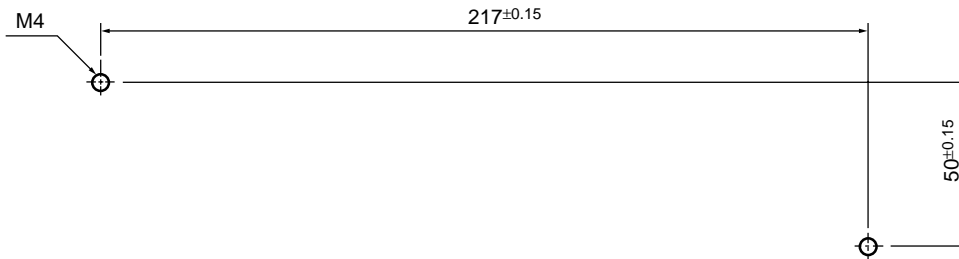
Note: The pin assignment of the screw terminal matches that of the module connectors.

External Dimensions

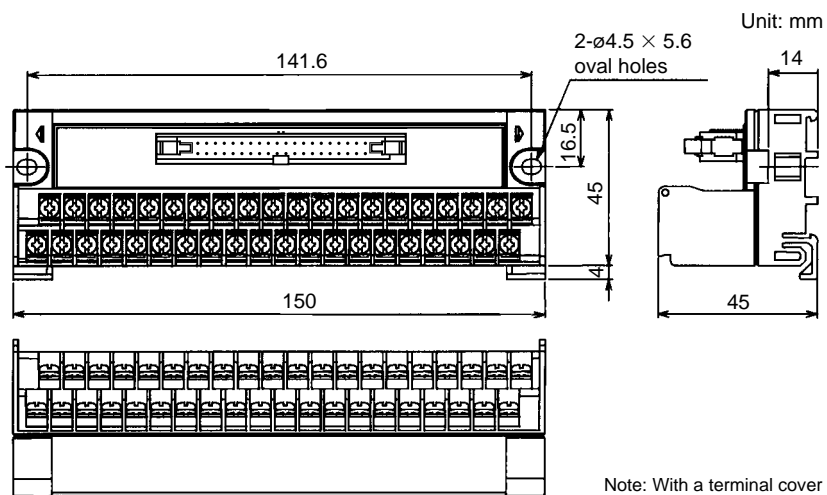
● TA50-0N



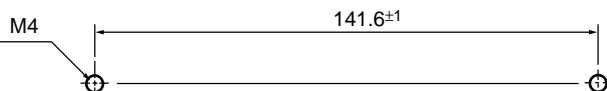
Mounting dimension



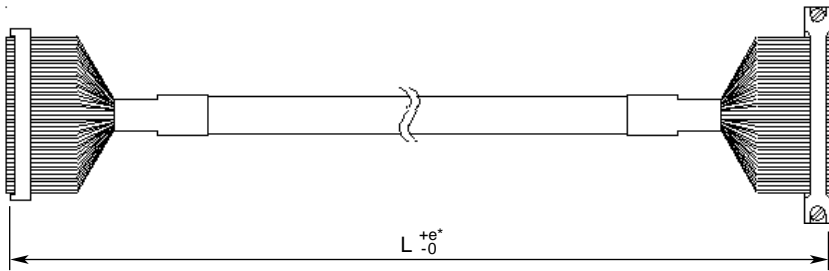
● TA50-1N



Mounting dimension



● KM55-0□□



Model	L	+e
KM55-005	0.5 m	5 cm
KM55-010	1.0 m	
KM55-015	1.5 m	10 cm
KM55-020	2.0 m	
KM55-025	2.5 m	
KM55-030	3.0 m	

Model and Suffix Codes

Model	Suffix code	Style code	Option code	Description
TA50	-0N	.....	.....	Connector terminal block unit, 40 points (M3.5 screw)
	-1N	.....	.....	Connector terminal block unit, 40 points (M3 screw)
KM55	-005	.....	.....	Connector terminal block cable, 0.5 m
	-010	.....	.....	Connector terminal block cable, 1.0 m
	-015	.....	.....	Connector terminal block cable, 1.5 m
	-020	.....	.....	Connector terminal block cable, 2.0 m
	-025	.....	.....	Connector terminal block cable, 2.5 m
	-030	.....	.....	Connector terminal block cable, 3.0 m

General Specifications

TA60-0N Connector Terminal Block Unit

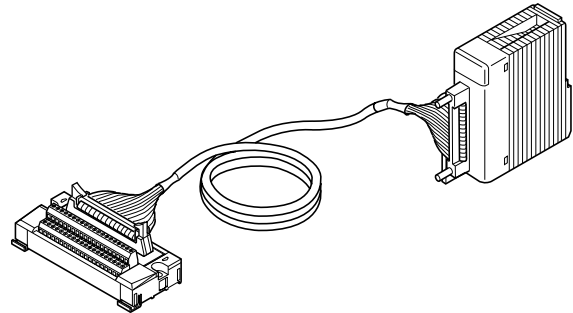
FA-M3



General

The TA60-0N Terminal Block Unit is intended for use in the input/output modules that conform to the connector specifications of the FA-M3 Range-free Multi-controller and the FA500 Intelligent Programmable Controller.

- The TA60-0N is connected to an input/output unit via the KM55-0□□ Connector Terminal Block, which saves space and reduces wiring on the power switch board.
- Use of the connector terminal block unit with the connector terminal block cable eliminates soldering work for wiring.
- The TA60-0N can be secured with mounting screws or DIN rails.
- Using a European type terminal block allows for an more compact and space-saving design.



Specifications

Item	Specification
Number of points	40
Rated voltage	5-24 V DC
Operating voltage range	4.5-26.4 V DC
Maximum current	0.5 A DC/point
Applicable conductor size	0.08 - 0.26 mm ² (AWG 23 - 28)
Applicable terminal screw	M2 (European type terminal)
Connector	HIF3BA-40PA-2.54DSA (MIL standard compliant)
Mounting method	35-mm wide DIN rail or screw mounting
Clamping screw	M4 (2 points)
Color	Gray
Weight	80 g

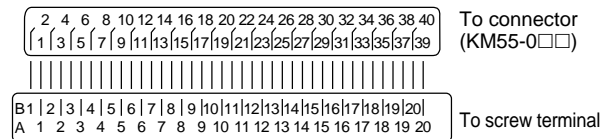
Note1: The connector terminal block cannot be used with the F3YP04 or F3YP08 module.

Note2: As the connector terminal block does not come with a cable for connecting a module and a connector terminal block, use the KM55-0□□ connector terminal block cable.

Environment Specifications

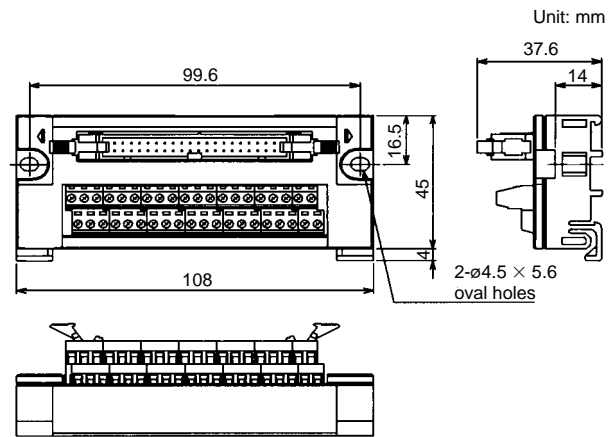
Item	Specification
Ambient operating temperature	0°C - 55°C
Ambient operating humidity	10 - 90% RH (non-condensing)
Operating atmosphere	Must be free from the presence of corrosive gases or heavy dust.

Internal Circuit Diagram

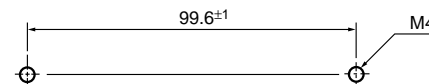


Note: The pin assignment of the screw terminal matches that of the module connectors.

External Dimension



Mounting dimension



Model and Suffix Codes

Model	Suffix code	Style code	Option code	Description
TA60	-0N	.....	.....	Terminal block unit, 40 points (European type terminal)

~~~~~ **Items to Specify When Ordering** ~~~~~

1. Model and suffix codes