MITSUBISHI ELECTRIC ENGINEERING

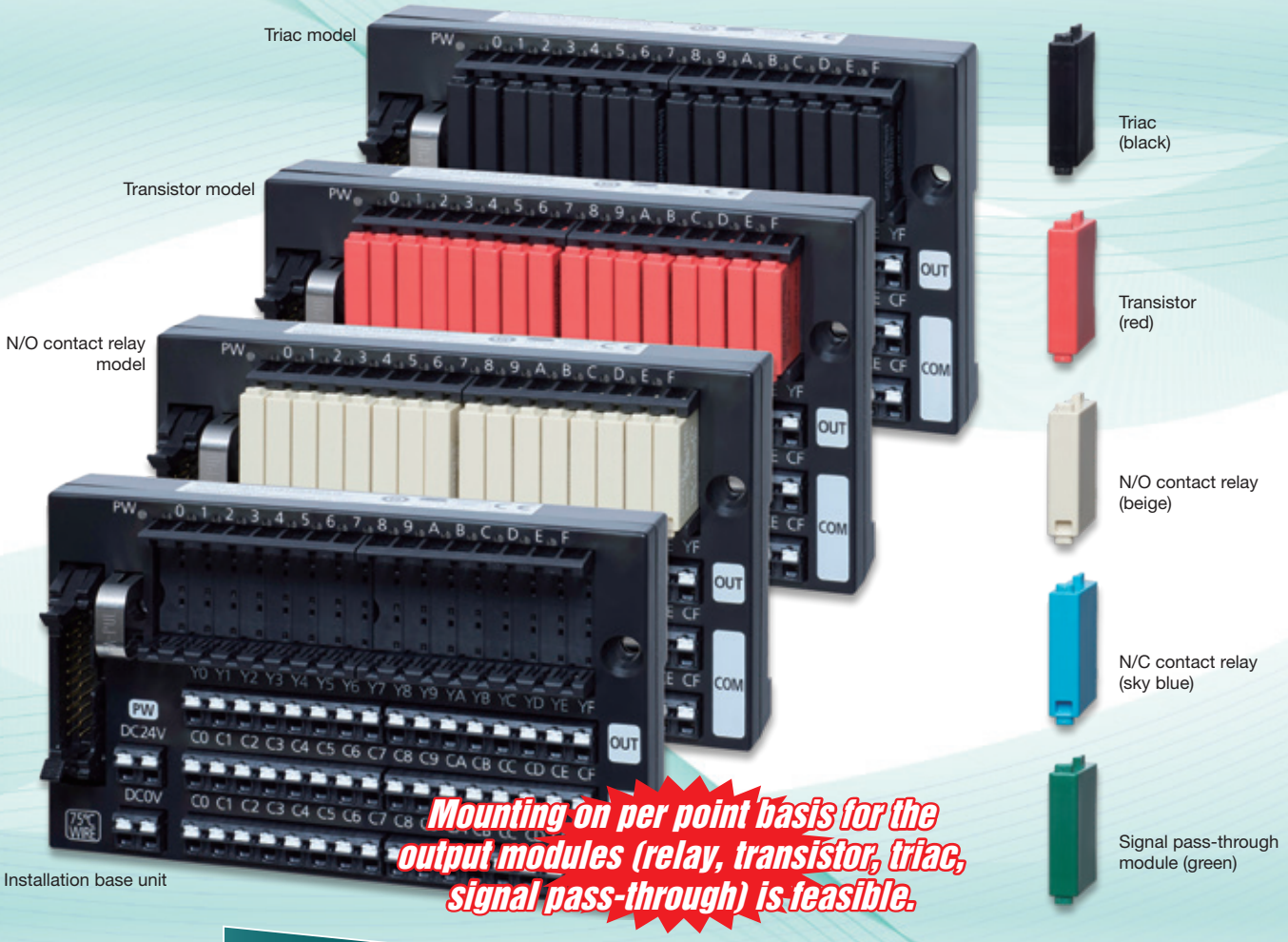
FA Goods

New Product Release

No.39

Spring Clamp Terminal Block Type Output Terminal Modules

New Spring Clamp Terminal Block Type Models Are Available.



Less wiring time

- Push-in connection allows **easy wiring without a screwdriver**.

Reliable wire connection

- There is **no risk of screw loosening** due to vibration or shocks, or long-term service.
- No screw-tightening skills are required.

Enhanced maintenance efficiency

- **Screw retightening is not necessary** for installation and maintenance of control panels and machines.

Flexible configuration to suit your system

- Using an installation base unit allows to customize **mounting of the output modules on per point basis**.

MITSUBISHI ELECTRIC ENGINEERING COMPANY LIMITED

Significant wiring time reduction by push-in connection or element wire connection

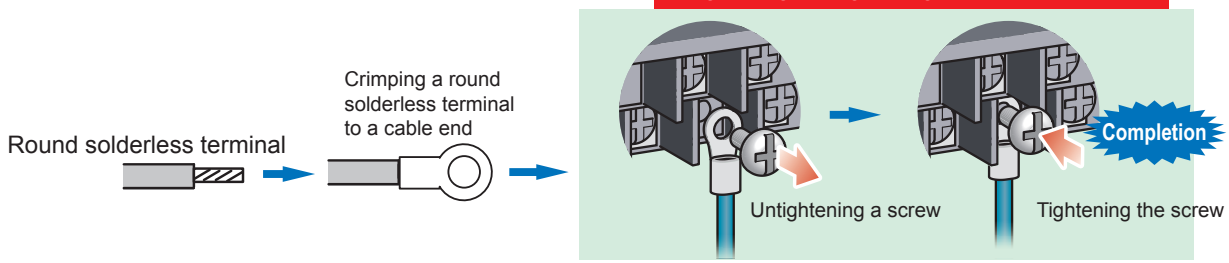
Less wiring time | Reliable wire connection | Enhanced maintenance efficiency

●Wiring to a screw terminal block

Wiring efficiency is improved compared to the wiring using solderless terminals.

Untightening and tightening the screw require time.

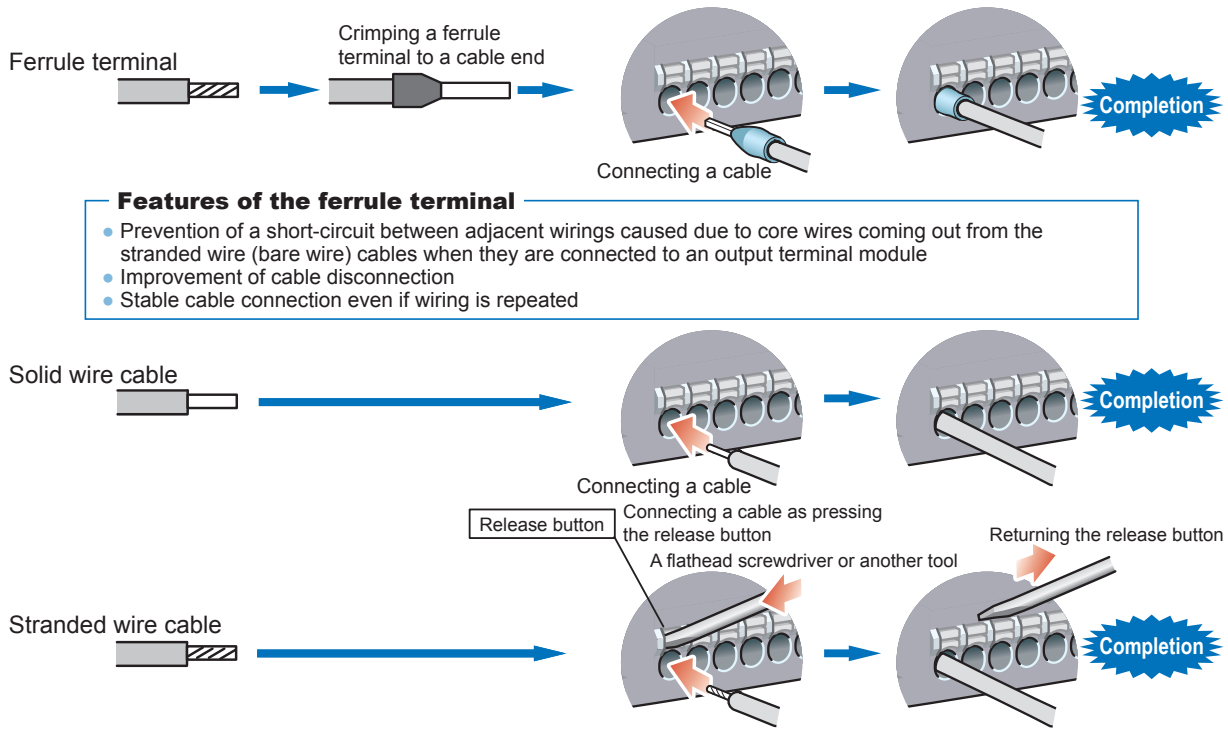
Existing output terminal module



●Wiring to a spring clamp terminal block

No screw retightening
No screwdriver

New output terminal module



Features of the ferrule terminal

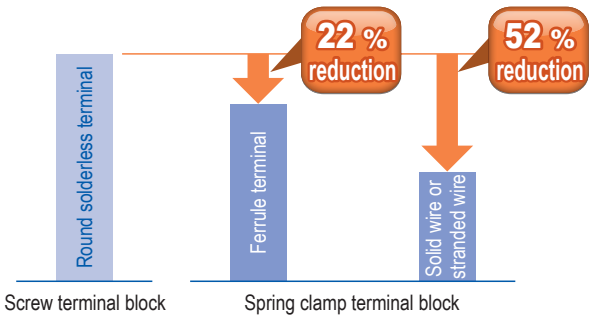
- Prevention of a short-circuit between adjacent wirings caused due to core wires coming out from the stranded wire (bare wire) cables when they are connected to an output terminal module
- Improvement of cable disconnection
- Stable cable connection even if wiring is repeated

■ Comparison of Wiring Time

Using the spring clamp terminal block improves difference in wiring quality caused by individual operators. Furthermore, connecting solid wires or stranded wires to spring clamp terminals reduces wiring time.

Total time for the spring clamp terminal block wiring was compared to that for the screw terminal block wiring (round crimp terminal). The following are the results.

- **The total time was reduced by 22 %**
when a ferrule terminal was connected to a spring clamp terminal block.
- **The total time was reduced by 52 %**
when a solid wire or a stranded wire was connected to a spring clamp terminal block.



* Wiring performed by non-experts (with 2-year experience) (The research conducted by Japan Switchboard & control system Industries Association)

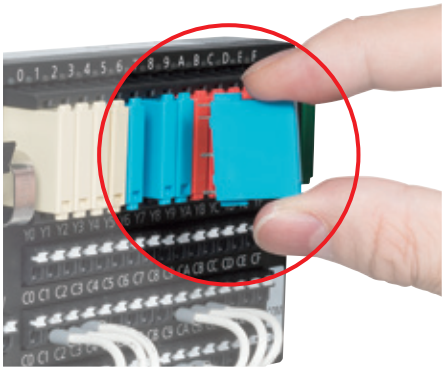
Customized mounting of output modules on an installation base unit

Flexible configuration to suit your system

With no pre-mounted output module

Mounting relays, transistors, and traics flexibly to suit your system

Module mixing



Mixing various output modules to be mounted on each slot to use together

Output modules

Selective output modules—N/O contact relay, N/C contact relay, transistor, triac, and signal pass-through module (DC output)—are available to be mounted flexibly to suit your system.

Output module	N/O contact relay	N/C contact relay	Transistor	Triac	Signal pass-through module (DC output) *1
Model	FA-NYP24WK4	FA-NYBP24WK4	FA-SN24D01HZS4	FA-SN24A01FS4	FA-SN00SS4
Rated voltage	24 V DC, 100 to 240 V AC	24 V DC, 100 to 240 V AC	3 to 30 V DC	30 to 240 V AC	24 V DC
Rated current	2 A (resistive load)	2 A (resistive load)	1 A	1 A	*2
Maximum number of operating modules	16	16	16	16	4 *3
Module color	Beige	Sky blue	Red	Black	Green
Quantity in package	4	4	4	4	4

*1: The signal pass-through module sends output signals, input from a programmable controller, directly to external devices. Thus, a power supply for load and an external power supply of a terminal module must be the same.
The signal pass-through module cannot be used for the source type output terminal modules (FA1-TH1E***).
*2: Refer to current specifications for a programmable controller used.
*3: Since there is a limit on internal component capacity of a terminal module, the maximum number is 4/per terminal module.

Point Benefit from using the installation base unit (for module mixing)

Issue

When various types of output signals are communicated, MELSEC series modules or terminal modules are required for each output type.

- Installation space is limited.
- Maintenance of multiple modules increases man-hours.
- Wiring of multiple modules increases man-hours.

Solution

Using an installation base unit enables to mount 5 types of the output modules together for one MLSEC series module.

Spring clamp terminal block type models reduce wiring and man-hours.

Point Module Selection

■ N/O contact relay, N/C contact relay
- When isolating electrical signals mechanically
- When driving a load with a large current capacity (max. 2 A)

■ Triac
- When driving a load which switches frequently (no mechanical life)
- When a load capacity exceeds the capacity driven by AC outputs of a programmable controller (max. 1 A)

■ Transistor
- When driving a load which switches frequently (no mechanical life)
- When a load capacity exceeds the capacity driven by DC outputs of a programmable controller (max. 1 A)

■ Signal pass-through module (DC output)
- When outputting DC output signals from a programmable controller without any conversion (max. 0.2 A when a pass-through module is connected to the RY41NT2P)

Flexible sharing of common terminals

Less wiring time

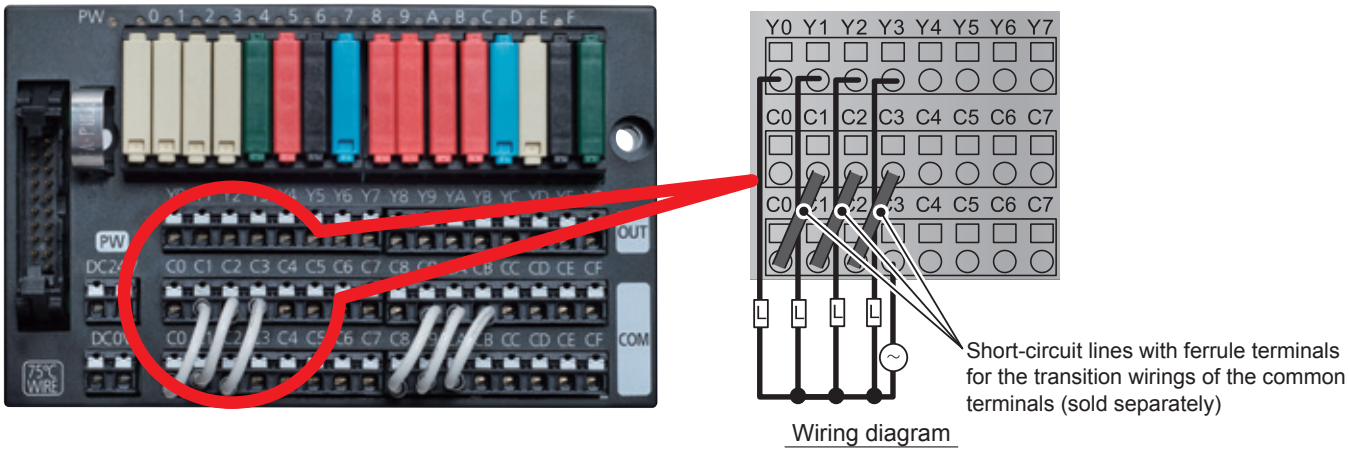
· Since new models have the built-in common terminals for sharing, a separate module is not required.

■ Flexible sharing of common terminals

Providing two common terminals per output signal allows flexible sharing of the common terminals.
Short-circuit lines with ferrule terminals for the transition wirings of the common terminals are available (sold separately).

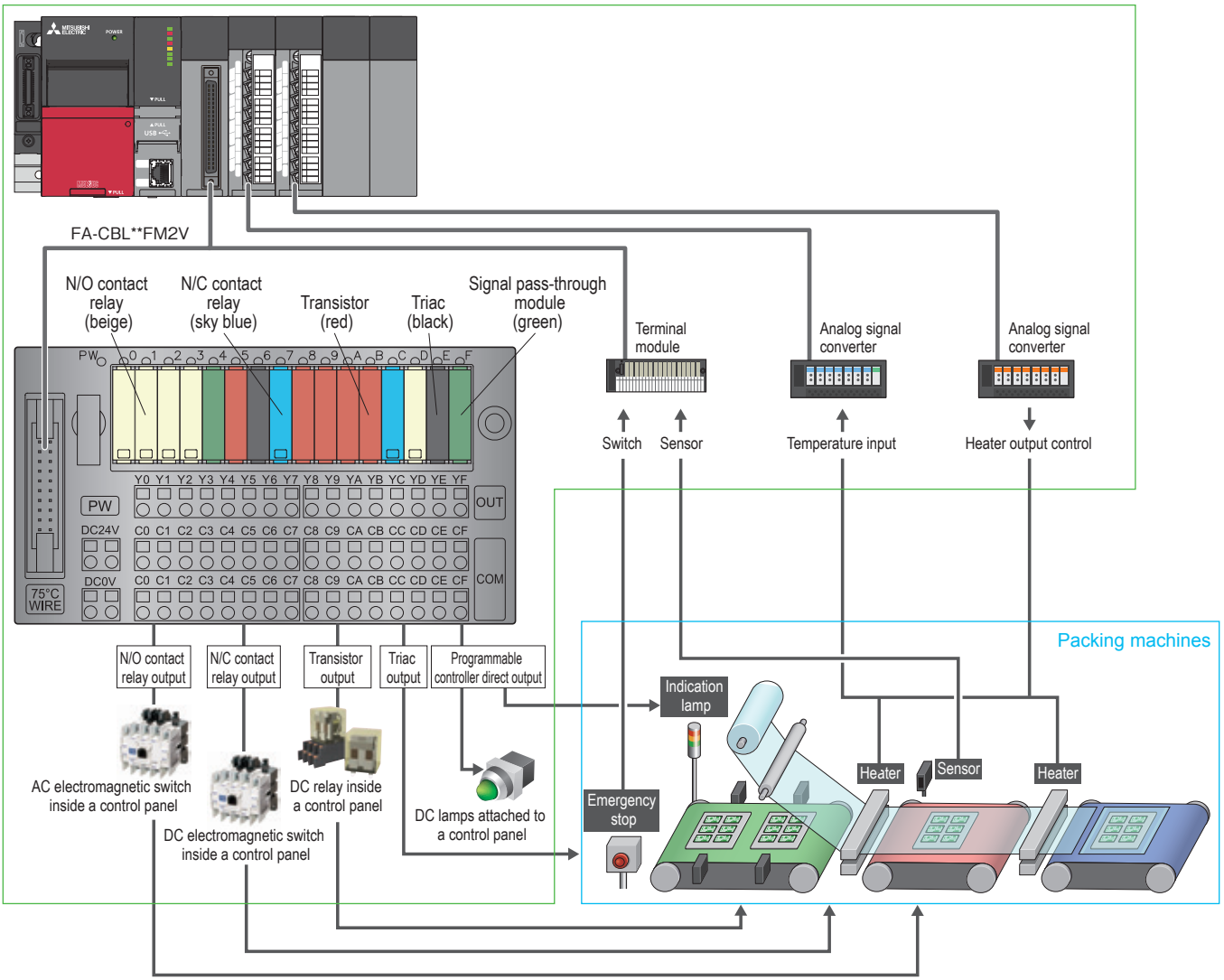
[Example] Wiring when the common terminals of Y0 to Y3 are shared

* Electrical current flowed through the transition wirings of the common terminals should be min. 8 A.



Example system

In the example system, packing machines operate together with a Mitsubishi Electric terminal module (I/O type) and analog signal converters.



■ Output modules and MELSEC output signals

Selective eight output modules fitting on your applications are available by the module types and MELSEC output signals.

	MELSEC output signal	
	Sink type	Source type
N/O contact relay (Pre-mounted output module)	FA1-TH16Y2RA20S1E	FA1-TH1E16Y2RA20S1E
Triac (Pre-mounted output module)	FA1-TH16Y1SR20S1E	FA1-TH1E16Y1SR20S1E
Transistor (Pre-mounted output module)	FA1-TH16Y1TR20S1E	FA1-TH1E16Y1TR20S1E
Installation base unit (No pre-mounted output module)	FA1-TH16Y2SC20S1E	FA1-TH1E16Y2SC20S1E

■ Specifications of the spring clamp terminal block type output terminal modules

Item \ Model		FA1-TH16 Y2RA20S1E	FA1-TH16 Y1SR20S1E	FA1-TH16 Y1TR20S1E	FA1-TH16 Y2SC20S1E	FA1-TH1E16 Y2RA20S1E	FA1-TH1E16 Y1SR20S1E	FA1-TH1E16 Y1TR20S1E	FA1-TH1E16 Y2SC20S1E
Standard mounted module		N/O contact relay	Triac	Transistor	No	N/O contact relay	Triac	Transistor	No
Terminal module output type		–	–	Sink output	–	–	–	Source output	–
Connected programmable controller		Sink-type 24 V DC transistor output module				Source-type 24 V DC transistor output module			
Number of points, output device numbers		16 points, Y0 to YF							
Wiring method for common		All points independent							
External power supply		24 V DC±10 % (ripple ratio: within 5 %, SELV and LIM or Class 2)							
Current consumption		Approx. 90 mA	Approx. 180 mA	Approx. 60 mA	Approx. 10 mA	Approx. 90 mA	Approx. 180 mA	Approx. 60 mA	Approx. 10 mA
Electrical specifications		Refer to "Specifications of the output modules" on the following page.							
Withstand voltage, insulation resistance		Between inputs/outputs, between each output: 2500 V AC 1 minute, between contacts: 750 V AC 1minute, 10 MΩ or higher							
Noise immunity		Simulator noise 1500 Vp-p, noise width 1 μs (based on noise simulator with noise frequency of 25 to 60 Hz)							
Operation indication		LED on with power supply ON and input ON							
Terminal block	Number of points	52 points							
	Applicable wire	0.2-1.5 mm^2 (24-16 AWG) Use copper wire only							
	Wire strip length	8 mm							
Installation method	Screw	M4 × 0.7 mm × 22 mm or more							
		Tightening torque range: 78 to 118 N·cm (8 to 12 kgf·cm)							
	DIN rail	Applicable DIN rail: TH35-7.5Fe, TH35-7.5Al (compliant with IEC 60715)							
Weight		Approx. 220 g	Approx. 220 g	Approx. 220 g	Approx. 160 g	Approx. 220 g	Approx. 220 g	Approx. 220 g	Approx. 160 g
Socket		Yes (relay module replaceable)							
Module replacement count		50 times							
Module mixing		Possible							
Connectable modules		N/O contact relay : FA-NYP24WK4, N/C contact relay : FA-NYBP24WK4, Triac : FA-SN24A01FS4, Transistor : FA-SN24D01HZS4, Signal pass-through module (DC output) : FA-SN00SS4				N/O contact relay : FA-NYP24WK4, N/C contact relay : FA-NYBP24WK4, Triac : FA-SN24A01FS4, Transistor : FA-SN24D01HZS4			

■ Specifications of the output modules (relay, transistor, triac, signal pass-through)

Item \ Output module		N/O contact relay	N/C contact relay
Output module model (quantity: 4)		FA-NYP24WK4	FA-NYBP24WK4
Module color		Beige	Sky blue
Insulation method		Relay	
Input	Rated voltage	24 V DC	
	Current consumption	Approx. 5 mA	
Output	Rated switching voltage	24 V DC, 100 to 240 V AC (50/60 Hz)	
	Rated switching current	2 A (resistive load, COSø=1)	
	Minimum switching load	5 V DC 1 mA	
	Maximum switching load	270 V AC, 150 V DC	
	Maximum switching frequency	1800 times/hr (ON for 1 second or longer, OFF for 1 second or longer)	
	Mechanical life	20000000 times or more	
	Electrical life	100000 times or more at rated switching voltage and current	
		100000 times or more at 200 V AC 1.5 A (COSø=0.7), 240 V AC 1 A (COSø=0.7)	
		100000 times or more at 200 V AC 1 A (COSø=0.35)	
		100000 times or more at 24 V DC 1 A (L/R=7 ms), 100 V DC 0.1 A (L/R=7 ms)	
Response time	OFF→ON	10 ms or less (excluding programmable controller response time)	
	ON→OFF	12 ms or less (excluding programmable controller response time)	

Item \ Output module		Triac	Transistor	Signal pass-through module (DC output)
Output module model (quantity: 4)		FA-SN24D01HZS4	FA-SN24A01FS4	FA-SN00SS4
Module color		Black	Red	Green
Insulation method		Photocoupler	Photocoupler	- (Non-isolation)
Input	Rated voltage	24 V DC		
	Current consumption	Approx. 10 mA	Approx. 3 mA	-
Output	Rated load voltage	30 to 240 V AC	3 to 30 V DC (SELV and LIM or Class 2)	24 V DC
	Maximum load current	1 A	1 A	*1
	Maximum inrush current	25 A (60 Hz, 1 cycle)	3 A 10 ms	*1
	Leakage current at OFF	1.5 mA rms or lower (at 100 V AC rms 60 Hz) 3.0 mA rms or lower (at 200 V AC rms 60 Hz)	0.1 mA or lower (at 30 V DC)	*1
	Maximum voltage drop at ON	2.5 V rms or lower	1.5 V or lower	*1
Response time	OFF→ON	1 ms or less (excluding programmable controller response time)		*1
	ON→OFF	1 ms+1/2 cycle or less (excluding programmable controller response time)	1 ms or less (excluding programmable controller response time)	*1
Surge suppressor		Varistor, snubber circuit	Zener diode	*1
Fuse		None		

*1: Refer to specifications for a programmable controller used.

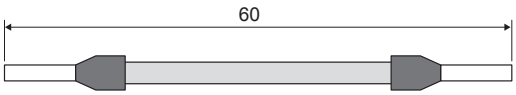
<Short-circuit lines with ferrule terminals for the transition wirings of common terminals>

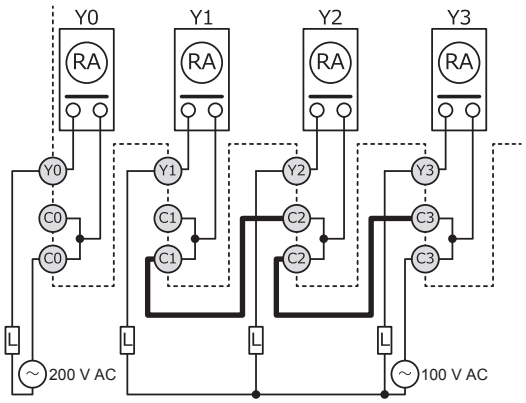
■ Specifications

Item \ Model	FA1-SC1W006F-15
Cable length	60 mm
Used cable	Stranded wire cable
Used solderless terminal	AI0, 75-8 GY: PHOENIX CONTACT
Conductor configuration	0.75 mm² (#18 AWG)
Maximum operating current	8 A
Conductor resistance (20 °C)	0.0226 Ω/m or less
Dielectric withstand voltage	2000 V AC for 1 minute
Insulation resistance	15 MΩ·km or more
UL standard (cable area)	UL STYLE No.10002 105 °C 300 V
Quantity in package	15
Weight	Approx 20 g

■ External dimensions

[Unit:mm]

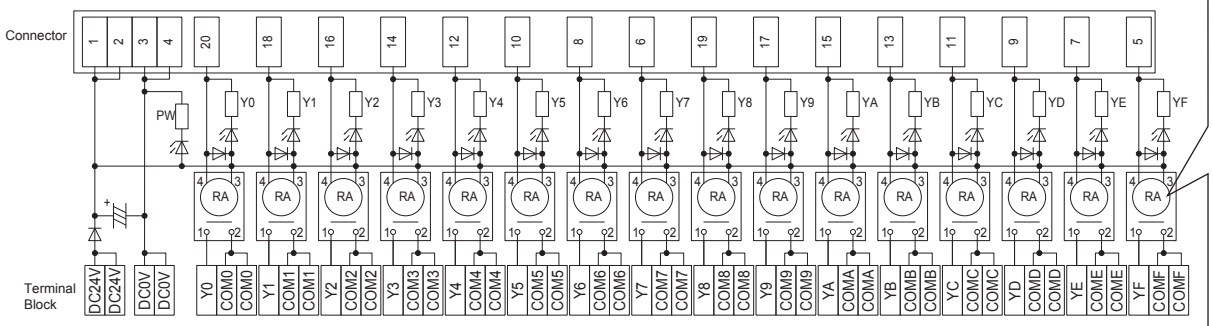




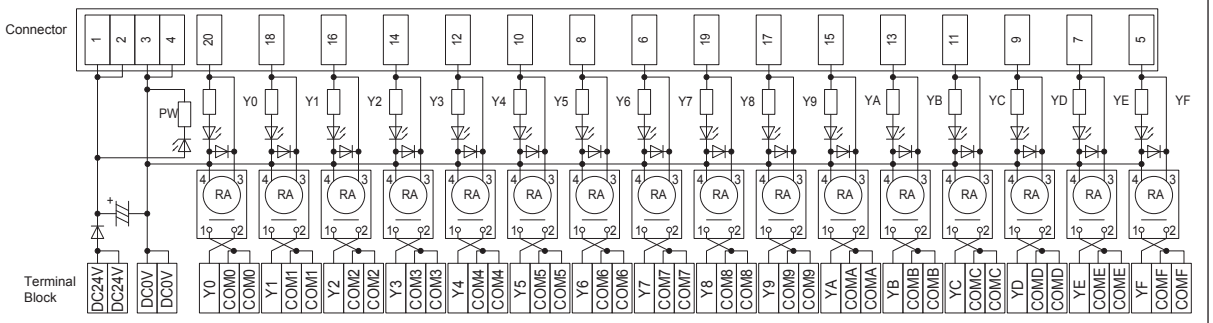
Circuit diagram

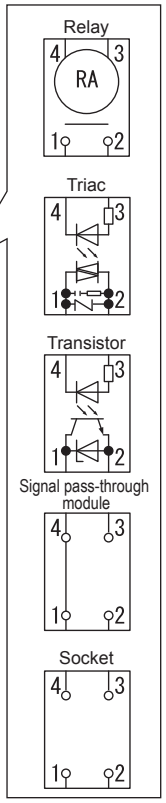
■Wiring diagram

●FA1-TH16Y2RA20S1E, FA1-TH16Y1SR20S1E, FA1-TH16Y1TR20S1E, FA1-TH16Y2SC20S1E



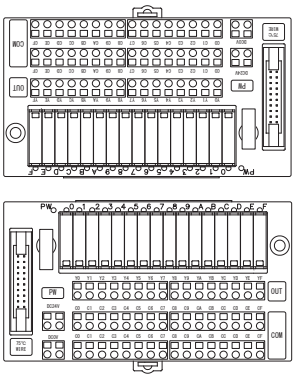
●FA1-TH1E16Y2RA20S1E, FA1-TH1E16Y1SR20S1E, FA1-TH1E16Y1TR20S1E, FA1-TH1E16Y2SC20S1E



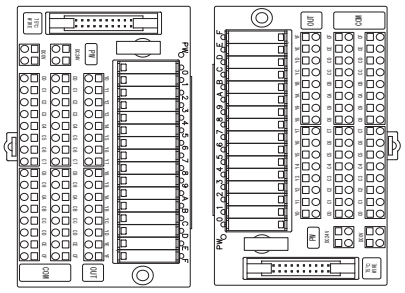


■Module installation direction

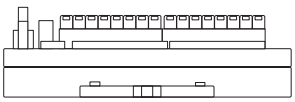
Horizontal installation



Vertical installation



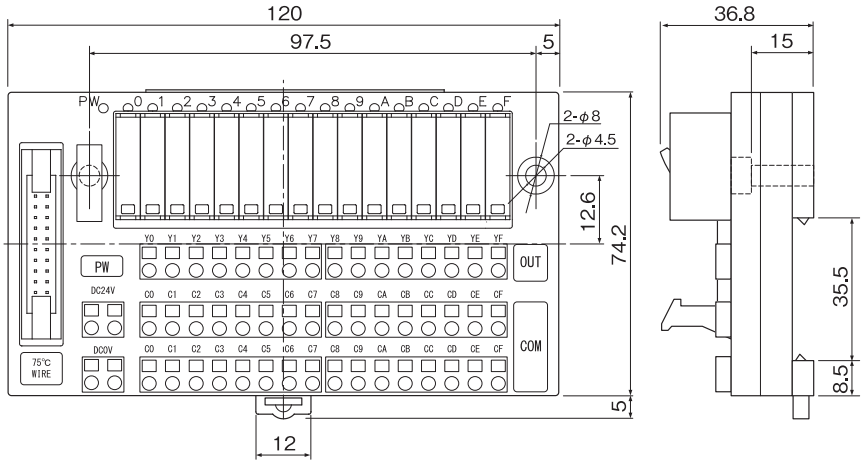
Upward installation



Note: Do not install the module in any direction other than the above.

■External dimensions

[Unit:mm]



■Product selection

Module model for a programmable controller *1				Cable model	Module model
MELSEC iQ-R series	Sink output module Connector type	RY41NT2P RY42NT2P		FA-CBL**FM2V *2 FA-CBL**FM2LV *2	FA1-TH16Y2RA20S1E FA1-TH16Y1SR20S1E FA1-TH16Y1TR20S1E FA1-TH16Y2SC20S1E
		RH42C4NT2P	Output side		
	Sink output module Screw terminal block type	RY40NT5P		FA-CBL**TMV20 FA-CBL**M20 FA-CBL**YM20	
	Source output module Connector type	RY41PT1P RY42PT1P		FA-CBL**FM2V *2 FA-CBL**FM2LV *2	FA1-TH1E16Y2RA20S1E FA1-TH1E16Y1SR20S1E FA1-TH1E16Y1TR20S1E FA1-TH1E16Y2SC20S1E
	Source output module Screw terminal block type	RY40PT5P		FA-CBL**TMV20 FA-CBL**M20 FA-CBL**YM20	
MELSEC iQ-F series	Sink output module Connector type	FX5UC-32MT/D FX5UC-64MT/D FX5UC-96MT/D FX5-C32ET/D	Output side	FA-FXCBL**MMH20 FA2-CB1LT**MM1H20 *3	FA1-TH16Y2RA20S1E FA1-TH16Y1SR20S1E FA1-TH16Y1TR20S1E FA1-TH16Y2SC20S1E
		FX5-C16EYT/D FX5-C32EYT/D			
	Source output module Connector type	FX5UC-32MT/DSS FX5UC-64MT/DSS FX5UC-96MT/DSS FX5-C32ET/DSS	Output side	FA2-CB1L**MM1H20E FA2-CB1LT**MM1H20E *4	FA1-TH1E16Y2RA20S1E FA1-TH1E16Y1SR20S1E FA1-TH1E16Y1TR20S1E FA1-TH1E16Y2SC20S1E
		FX5-C16EYT/DSS FX5-C32EYT/DSS			
MELSEC-Q series	Sink output module Connector type	QY41P QY42P		FA-CBL**FM2V *2 FA-CBL**FM2LV *2	FA1-TH16Y2RA20S1E FA1-TH16Y1SR20S1E FA1-TH16Y1TR20S1E FA1-TH16Y2SC20S1E
		QH42P QX41Y41P	Output side		
	Sink output module Screw terminal block type	QY40P		FA-CBL**TMV20 FA-CBL**M20 FA-CBL**YM20	
	Source output module Connector type	QY81P		FA-CBL**DM2FY *2	FA1-TH1E16Y2RA20S1E FA1-TH1E16Y1SR20S1E FA1-TH1E16Y1TR20S1E FA1-TH1E16Y2SC20S1E
		QY82P		FA-CBL**FM2V *2 FA-CBL**FM2LV *2	
	Source output module Screw terminal block type	QY80		FA-CBL**TMV20 FA-CBL**M20 FA-CBL**YM20	
MELSEC-L series	Sink output module Connector type	LY41NT1P LY42NT1P		FA-CBL**FM2V *2 FA-CBL**FM2LV *2	FA1-TH16Y2RA20S1E FA1-TH16Y1SR20S1E FA1-TH16Y1TR20S1E FA1-TH16Y2SC20S1E
		LH42C4NT1P	Output side		
	Sink output module Screw terminal block type	LY40NT5P		FA-CBL**M20 FA-CBL**YM20	
	Source output module Connector type	LY41PT1P LY42PT1P		FA-CBL**FM2V *2 FA-CBL**FM2LV *2	FA1-TH1E16Y2RA20S1E FA1-TH1E16Y1SR20S1E FA1-TH1E16Y1TR20S1E FA1-TH1E16Y2SC20S1E
		LH42C4PT1P	Output side		
	Source output module Screw terminal block type	LY40PT5P		FA-CBL**M20 FA-CBL**YM20	
MELSEC-F series	Sink output module Connector type	FX3GC-32MT/D FX3UC-16MT/D FX3UC-32MT/D FX3UC-32MT-LT FX3UC-32MT-LT2 FX3UC-64MT/D FX3UC-96MT/D	Output side	FA-FXCBL**MMH20 FA2-CB1LT**MM1H20 *3	FA1-TH16Y2RA20S1E FA1-TH16Y1SR20S1E FA1-TH16Y1TR20S1E FA1-TH16Y2SC20S1E
		FX2NC-16EYT FX2NC-32EYT			
	Source output module Connector type	FX3GC-32MT/DSS FX3UC-16MT/DSS FX3UC-32MT/DSS FX3UC-64MT/DSS FX3UC-96MT/DSS	Output side	FA2-CB1L**MM1H20E FA2-CB1LT**MM1H20E *4	FA1-TH1E16Y2RA20S1E FA1-TH1E16Y1SR20S1E FA1-TH1E16Y1TR20S1E FA1-TH1E16Y2SC20S1E
		FX2NC-16EYT-DSS FX2NC-32EYT-DSS			

*1: For use with 24 V DC only.
*2: Use the same power supply for the modules to be connected.
*3: When the operating ambient temperature is -20 to 55ºC, use the FA2-CB1LT**MM1H20
*4: When the operating ambient temperature is -20 to 55ºC, use the FA2-CB1LT**MM1H20E

■Product selection

Module model for a programmable controller *5				Cable model	Module model
CC-Link IE TSN series	Sink output module Screw terminal block type *8	NZ2GN2B1-32T		FA-CBL**M20 FA-CBL**YM20	FA1-TH16Y2RA20S1E FA1-TH16Y1SR20S1E FA1-TH16Y1TR20S1E FA1-TH16Y2SC20S1E
		NZ2GN2B1-32DT	Output side		
	Source output module Screw terminal block type *8	NZ2GN2B1-32TE			FA1-TH1E16Y2RA20S1E FA1-TH1E16Y1SR20S1E FA1-TH1E16Y1TR20S1E FA1-TH1E16Y2SC20S1E
		NZ2GN2B1-32DTE	Output side		
CC-Link IE Field Basic series	Sink output module Screw terminal block type *8	NZ2MFB1-32T		FA-CBL**M20 FA-CBL**YM20	FA1-TH16Y2RA20S1E FA1-TH16Y1SR20S1E FA1-TH16Y1TR20S1E FA1-TH16Y2SC20S1E
		NZ2MFB1-32DT	Output side		
	Source output module Screw terminal block type *8	NZ2MFB1-32TE			FA1-TH1E16Y2RA20S1E FA1-TH1E16Y1SR20S1E FA1-TH1E16Y1TR20S1E FA1-TH1E16Y2SC20S1E
		NZ2MFB1-32DTE	Output side		
CC-Link IE Field series	Sink output module Connector type	NZ2GFCF1-32T		FA-CBL**FM2H *6 FA-CBL**FM2LH *6	FA1-TH16Y2RA20S1E FA1-TH16Y1SR20S1E FA1-TH16Y1TR20S1E FA1-TH16Y2SC20S1E
		NZ2GFCM1-16T *7		FA-CBL**MMH20	
	Sink output module Screw terminal block type *8	NZ2GF2B1-32DT	Output side	FA-CBL**M20 FA-CBL**YM20	
	Source output module Screw terminal block type *8	NZ2GF2B1-32DTE	Output side	FA-CBL**M20 FA-CBL**YM20	FA1-TH1E16Y2RA20S1E FA1-TH1E16Y1SR20S1E FA1-TH1E16Y1TR20S1E FA1-TH1E16Y2SC20S1E
CC-Link series	Sink output module Connector type	AJ65BTCF1-32T		FA-CBL**FM2H *6 FA-CBL**FM2LH *6	FA1-TH16Y2RA20S1E FA1-TH16Y1SR20S1E FA1-TH16Y1TR20S1E FA1-TH16Y2SC20S1E
	Sink output module Screw terminal block type *8	AJ65SBTB1-16T		FA-CBL**M20 FA-CBL**YM20	
		AJ65SBTB1-32DT	Output side		
	Sink output module Spring clamp terminal block type *8	AJ65VBTS2-16T		FA-CBL**M20	
	Source output module Screw terminal block type *8	AJ65SBTB1-16TE		FA-CBL**M20 FA-CBL**YM20	FA1-TH1E16Y2RA20S1E FA1-TH1E16Y1SR20S1E FA1-TH1E16Y1TR20S1E FA1-TH1E16Y2SC20S1E
		AJ65SBTB1-32DTE	Output side		
General-purpose programmable controller	Sink output module Screw terminal block type *8			FA-CBL**M20 FA-CBL**YM20	FA1-TH16Y2RA20S1E FA1-TH16Y1SR20S1E FA1-TH16Y1TR20S1E FA1-TH16Y2SC20S1E
	Source output module Screw terminal block type *8			FA-CBL**M20 FA-CBL**YM20	FA1-TH1E16Y2RA20S1E FA1-TH1E16Y1SR20S1E FA1-TH1E16Y1TR20S1E FA1-TH1E16Y2SC20S1E

*5: For use with 24 V DC only.
*6: Use the same power supply for the modules to be connected.
*7: Use the same power supplies for an I/O power supply (+24 V, 24 G) of the NZ2GFCM1-16T and a power supply (24 V DC, 0 V DC) of the terminal module.
*8: Can be connected by connecting the FA-CBL**M20 (connection cable (discrete cable)) or FA-CBL**YM20 (connection cable with Y-shaped solderless terminal) to a terminal block.

■Model list

●Terminal module

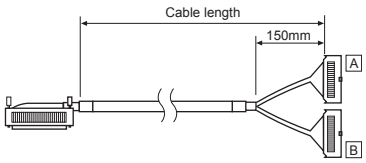
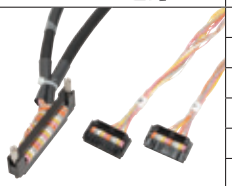
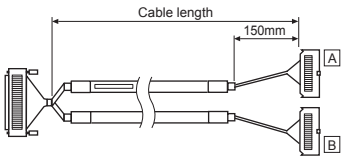
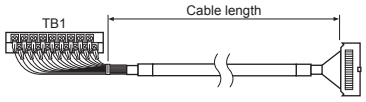
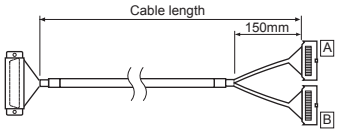
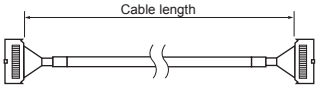
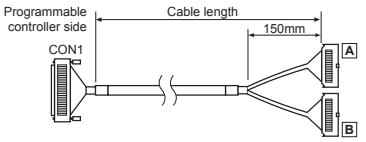
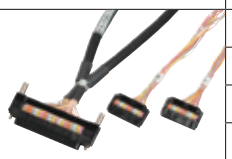
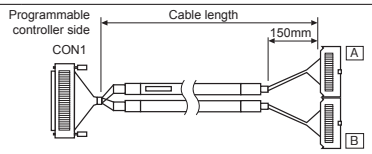
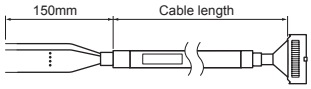
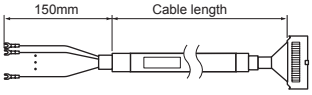
Product	Shape	Model	Remarks		
New Spring clamp terminal block type output terminal modules (Independent common)		FA1-TH16Y2RA20S1E	16 points	Relay (sink type)	● This terminal module converts output signals from a MELSEC sink-type transistor output module into 16-point N/O contact relay (2 A/point) outputs. ● Relays can be replaced on a per point basis.
		FA1-TH1E16Y2RA20S1E	16 points	Relay (source type)	● This terminal module converts output signals from a MELSEC source-type transistor output module into 16-point N/O contact relay (2 A/point) outputs. ● Relays can be replaced on a per point basis.
		FA1-TH16Y1SR20S1E	16 points	Triac (sink type)	● This terminal module converts output signals from a MELSEC sink-type transistor output module into 16-point triac (1 A/point) outputs. ● Triacs can be replaced on a per point basis.
		FA1-TH1E16Y1SR20S1E	16 points	Triac (source type)	● This terminal module converts output signals from a MELSEC source-type transistor output module into 16-point triac (1 A/point) outputs. ● Triacs can be replaced on a per point basis.
		FA1-TH16Y1TR20S1E	16 points	Transistor (sink type)	● This terminal module converts output signals from a MELSEC sink-type transistor output module into 16-point transistor (1 A/point) outputs. ● Transistors can be replaced on a per point basis.
		FA1-TH1E16Y1TR20S1E	16 points	Transistor (source type)	● This terminal module converts output signals from MELSEC source-type transistor output module into 16-point transistor (1 A/point) outputs. ● Transistors can be replaced on a per point basis.
		FA1-TH16Y2SC20S1E	16 points	No pre-mounted (sink type)	● This terminal module converts output signals from a MELSEC sink-type transistor output module using an output module mounted with sockets. ● Output modules are mounted and used depending on a load of a programmable controller used at a user. * The output modules are sold separately.
		FA1-TH1E16Y2SC20S1E	16 points	No pre-mounted (source type)	● This terminal module converts output signals from a MELSEC source-type transistor output module using an output module mounted with sockets. ● Output modules are mounted and used depending on a load of a programmable controller used at a user. * The output modules are sold separately.

* International standard compliance: CE marking and UL Standards (FA1-TH16Y1SR20S1E and FA1-TH1E16Y1SR20S1E are excluded.)

●Module

Product	Shape	Model	Remarks
Module		FA-NYP24WK4	N/O contact relay (quantity: 4, color: beige, module mixing: possible)
		FA-NYBP24WK4	N/C contact relay (quantity: 4, color: sky blue, module mixing: possible)
		FA-SN24A01FS4	Triac (quantity: 4, color: black, module mixing: possible)
		FA-SN24D01HZS4	Transistor (quantity: 4, color: red, module mixing: possible)
		FA-SN00SS4	Pass-through module (quantity: 4, color: green, module mixing: possible)

●Cable

Product		Shape	Model		Remarks
MELSEC iQ-R/Q/L series	Vertical branch cable (split at the end) for I/O module		FA-CBL06FM2V	0.6 m	
			FA-CBL10FM2V	1 m	
			FA-CBL15FM2V	1.5 m	
			FA-CBL20FM2V	2 m	
			FA-CBL30FM2V	3 m	
			FA-CBL50FM2V	5 m	
			FA-CBL100FM2V	10 m	
	Vertical branch cable (split at the base) for I/O module		FA-CBL06FM2LV	0.6 m	
			FA-CBL10FM2LV	1 m	
			FA-CBL20FM2LV	2 m	
			FA-CBL30FM2LV	3 m	
			FA-CBL50FM2LV	5 m	
			FA-CBL100FM2LV	10 m	
MELSEC iQ-R/Q series	Connection cable for terminal block I/O		FA-CBL06TMV20	0.6 m	
			FA-CBL10TMV20	1 m	
			FA-CBL20TMV20	2 m	
			FA-CBL30TMV20	3 m	
MELSEC-Q series	Horizontal branch cable (D-Sub connector type) for source output module		FA-CBL20DM2FY	2 m	
MELSEC iQ-F/F series	Sink type power supply straight-through cable		FA-FXCBL06MMH20	0.6 m	
			FA-FXCBL10MMH20	1 m	
			FA-FXCBL15MMH20	1.5 m	
			FA-FXCBL20MMH20	2 m	
			FA-FXCBL30MMH20	3 m	
	New Source type power supply crossover cable		FA2-CB1L06MM1H20E	0.6 m	
			FA2-CB1L10MM1H20E	1 m	
			FA2-CB1L15MM1H20E	1.5 m	
			FA2-CB1L20MM1H20E	2 m	
			FA2-CB1L30MM1H20E	3 m	
	Sink type power supply straight-through cable withstanding -20°C		FA2-CB1LT10MM1H20	1 m	
			FA2-CB1LT20MM1H20	2 m	
			FA2-CB1LT30MM1H20	3 m	
	Source type power supply crossover cable withstanding -20°C		FA2-CB1LT10MM1H20E	1 m	
			FA2-CB1LT20MM1H20E	2 m	
			FA2-CB1LT30MM1H20E	3 m	
CC-Link IE Field CC-Link series	Horizontal branch cable for I/O module		FA-CBL03FM2H	0.3 m	
			FA-CBL10FM2H	1 m	
			FA-CBL20FM2H	2 m	
			FA-CBL30FM2H	3 m	
	Horizontal branch cable (split at the base) for I/O module		FA-CBL10FM2LH	1 m	
			FA-CBL20FM2LH	2 m	
			FA-CBL30FM2LH	3 m	
			FA-CBL50FM2LH	5 m	
CC-Link IE TSN CC-Link IE Field Basic General-purpose programmable controller	Connection cable (discrete cable) for terminal block I/O		FA-CBL06M20	0.6 m	
			FA-CBL10M20	1 m	
			FA-CBL20M20	2 m	
	Connection cable (with Y-shaped solderless terminal) for terminal block I/O		FA-CBL10YM20	1 m	
			FA-CBL20YM20	2 m	
			FA-CBL30YM20	3 m	
			FA-CBL50YM20	5 m	
New Short-circuit line with ferrule terminals for the transition wirings of common terminals			FA1-SC1W006F-15	60 mm	Quantity: 15 cables ● This cable is used for transition wiring of common terminals on the spring clamp terminal block type output terminal module ● Common terminals can be shared depending on the usage status. Example) C0 to CF: 16 points/common (shared) C0 to C3: 4 points/common (shared)

■Applicable ferrule terminal, tool

Applicable wire (mm²／AWG)	Ferrule terminal/model	Crimping tool/model	Manufacturer
0.25/24	AI 0.25-8 YE	CRIMPFOX 6	PHOENIX CONTACT K.K.
0.3, 0.34/22	AI 0.34-8 TQ		
0.5/20	AI 0.5-8 WH		
0.75/18	AI 0.75-8 GY		
0.08 to 0.34/28 to 22	216-302	206-220	WAGO Company of Japan,Ltd
0.34/24, 22	216-302	206-204	
0.5/22, 20	216-201		
0.75/20, 18	216-202		

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