

Digital Signal Converters (Terminal Modules)

Input/output type installation base unit, 4-point/8-point spring clamp terminal block type

New Product Release | No. 22-02E

**Minimum required configuration achieved
by selecting the type and the number of modules**

**Optimal configuration
and easy wiring**

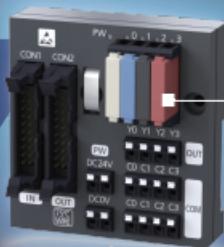
**Easy startup
and maintenance**

**Visualization
of device data**

Installation base units

New models added

4-point installation base unit
Module selectable type Spring
Module pre-mounted type Spring



New models added

8-point installation base unit
Module selectable type Spring
Module pre-mounted type Spring



16-point installation base unit
Module selectable type Spring
Module pre-mounted type Spring, Screw
Module built-in type Screw



Modules

Slim module



- Input model
- Output model

Functional module



- Input model

FAgoods Products

e-F@ctory



Source: Mitsubishi Electric Corporation

Eliminate waste by optimizing the system

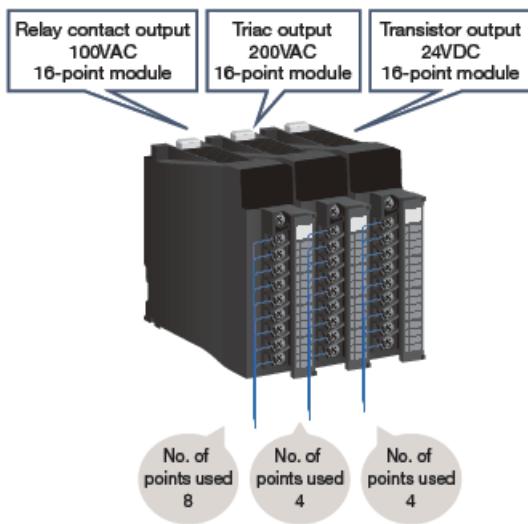
Optimal configuration and easy wiring

Optimal combination of devices

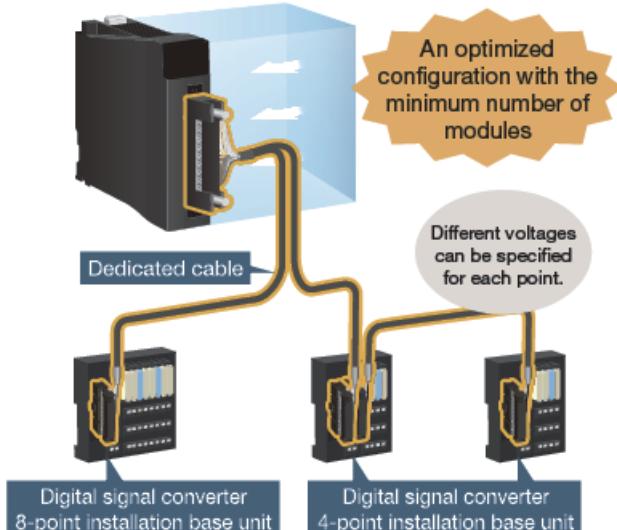
The digital signal converter (terminal module) converts various input voltages into 24VDC voltage, thereby optimizing or reducing the number of programmable controller modules. Thus, the cost required for keeping spare modules will be reduced. By using the installation base unit with selectable number of modules which enables specifying modules individually, extra unused points can be eliminated.

Configuration

Before



After



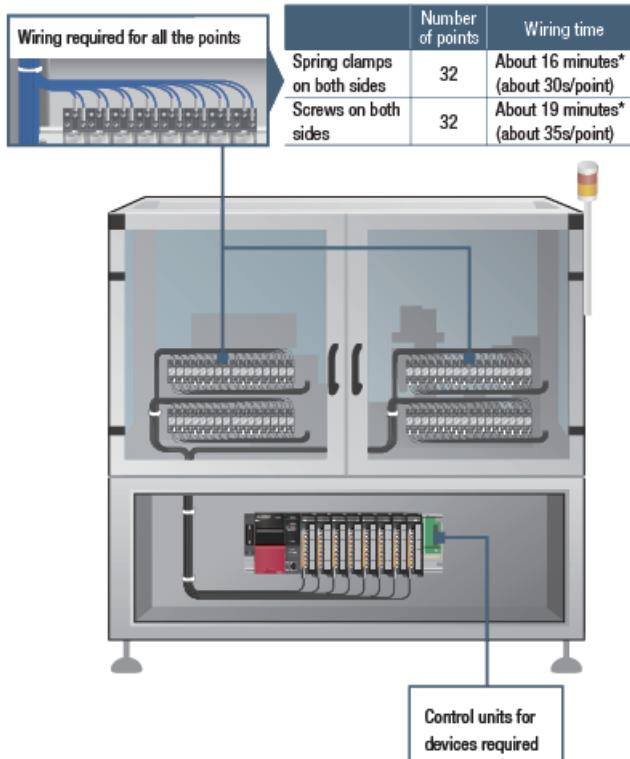
Installation suitable for your usage

Multiple digital signals can be assigned to the module terminals individually. The module can be installed near devices such as switches and lamps. By using dedicated cables or network connection, time required for wiring work can be reduced.

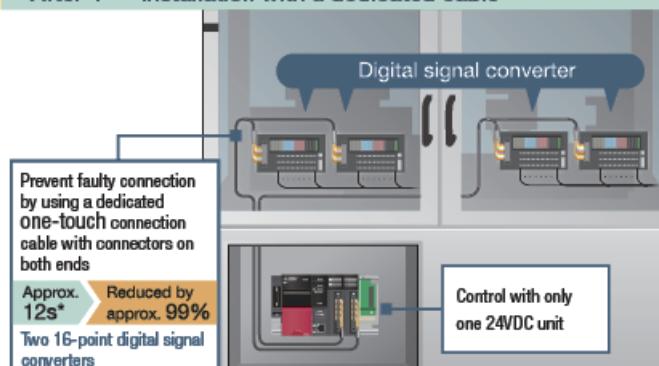
Installation

* Result of in-house testing

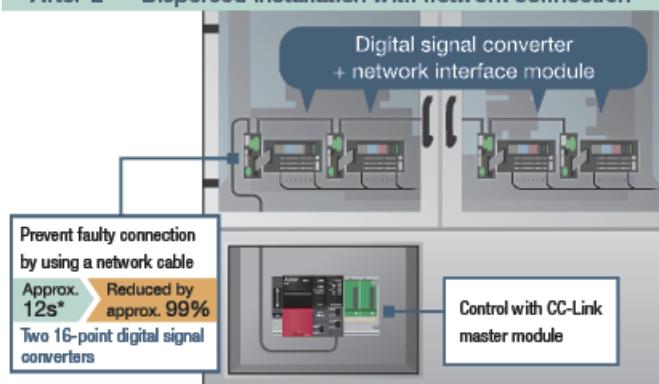
Before



After-1 Installation with a dedicated cable



After-2 Dispersed installation with network connection



Selection of optimal installation base unit and modules

The new 4-point and 8-point units are useful to optimize the number of points and enable dispersed installation near devices such as switches. Modules can be mounted or replaced individually to meet the system needs.

Installation base unit suited to the number of I/O points

The chart compares three sizes of installation base units:

- 4-point installation base unit**: Includes a **Spring clamp terminal block** (Input/Output) and a **Slim type terminal block**.
- 8-point installation base unit**: Includes a **Spring clamp terminal block** (Input/Output) and a **Function type terminal block**.
- 16-point installation base unit**: Includes a **Spring clamp terminal block** (Input/Output) and a **Slim type terminal block**.

New is indicated in red boxes above the first two units.

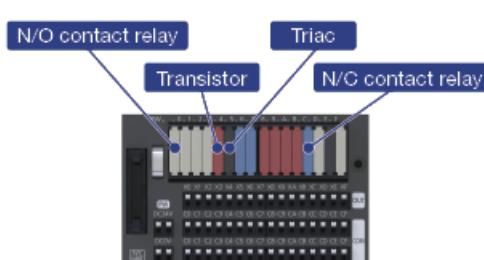
*1: For details, refer to the product lists on page 20.

Installation base unit				Module		
	Number of points	Terminal	Module mounting	Type	Replacement	Mixing
Input	4	Spring clamp terminal block	User selectable	Function type	Possible	Possible
			Pre-mounted New	Slim type	Possible	Possible
	8	Spring clamp terminal block	User selectable	Function type	Possible	Possible
			Pre-mounted New	Slim type	Possible	Possible
	16	Spring clamp terminal block	Pre-mounted	Slim type	Possible	Possible
			Pre-mounted	Slim type	Possible	Possible
		Screw type terminal block ¹	Built-in	-	Not possible	Not possible
Output	4	Spring clamp terminal block	User selectable New	Slim type	Possible	Possible
	8	Spring clamp terminal block	User selectable New	Slim type	Possible	Possible
	16	Spring clamp terminal block	User selectable	Slim type	Possible	*1
			Pre-mounted	Slim type	Possible	Possible
		Screw type terminal block ¹	Pre-mounted	Slim type	*1	*1
			Built-in	-	Not possible	Not possible

- **Module selectable type:** Modules are not pre-mounted. Separately sold modules are available for various applications.
 - **Module pre-mounted type:** Modules are pre-mounted. Modules can be replaced or mixed with separately sold modules.
 - **Module built-in type:** Modules are built in. Modules cannot be replaced or mixed. The unit itself has a cost advantage.

Optimized module configuration

Different control methods can be specified for each terminal according to the device type.



16-point spring clamp terminal type
digital signal converter (terminal module)

Module product line

Appearance	Type		Product line
	Slim module	Input, output	N/O contact N/C contact
		Output	C/O (change-over) contact Triac Transistor Signal pass-through
	Functional module	Input	Relay isolation: 24VDC relay Photocoupler isolation: 24/48/100VDC, 100/200VAC Dummy module (dust protector)

Slim module: The compact module is useful to save space.

Functional module: The module has 1 FDs and can be replaced without tools.

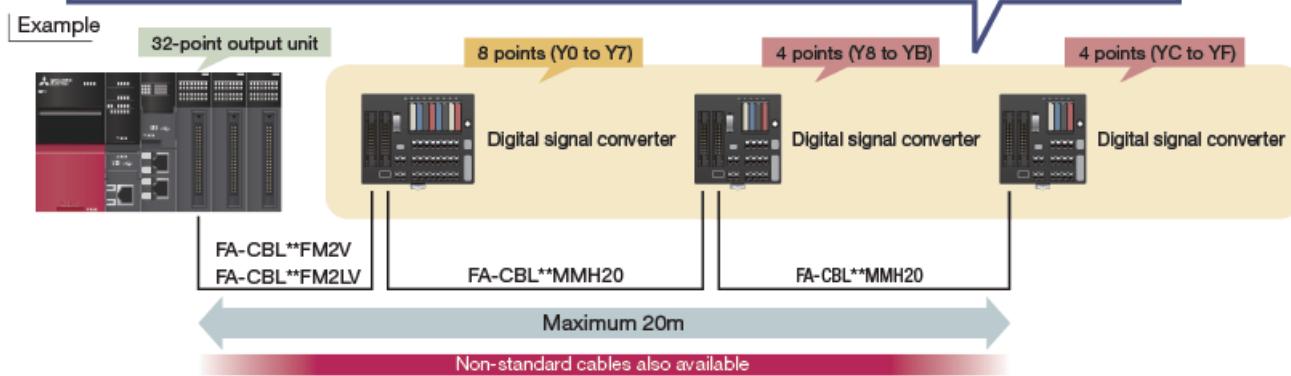
Dispersed installation to meet the system needs

The digital signal converter (terminal module) can be installed near input devices using a dedicated cable and a network interface module. More flexible dispersed installation is enabled by selecting the number of modules suitable for the system structure.

Connection with the programmable controller using a dedicated cable

A dedicated cable can be used between the programmable controller's input/output module and the signal converter. Input/output numbers are automatically assigned according to the order in which units are connected to the programmable controller.

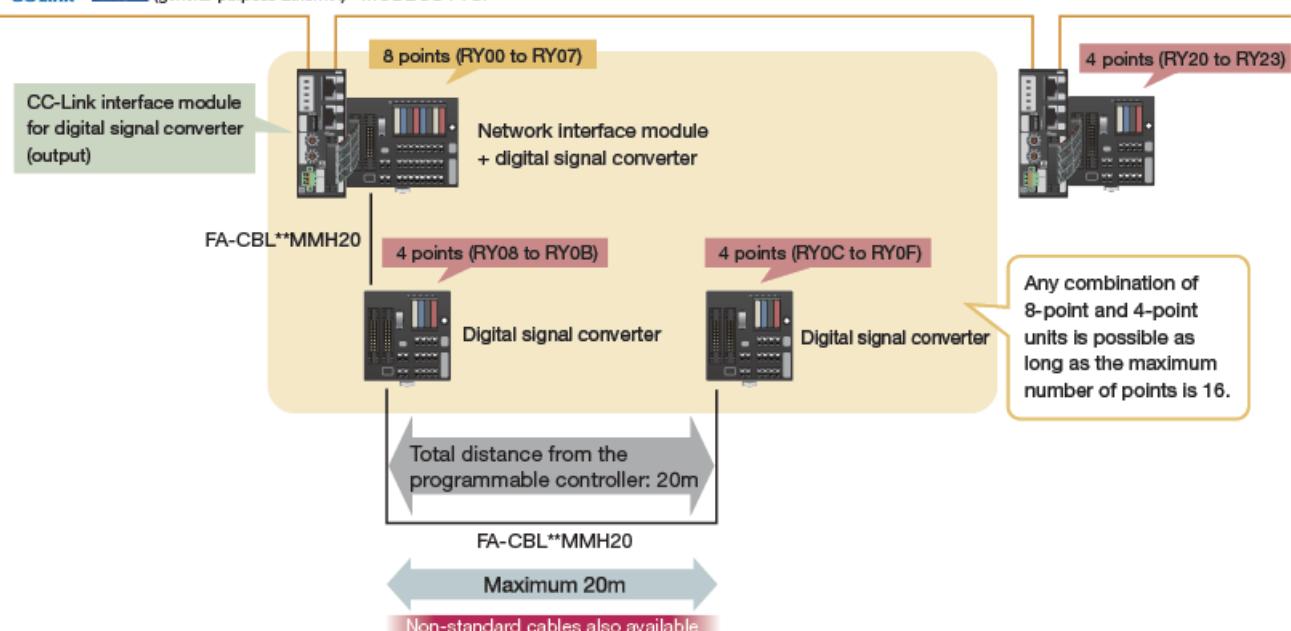
Flexible arrangement with listed configurations					
4 points total	4 points		16 points		
8 points total	8 points		8 points		
12 points total	4 points		8 points		
	4 points	4 points	4 points	4 points	4 points
	4 points	4 points	4 points	4 points	4 points



Dispersed installation with network connection

Dispersed installation with connection to CC-Link IE TSN, CC-Link IE Field, CC-Link IE Field Basic, CC-Link, SLMP (general-purpose Ethernet), or MODBUS/TCP. Using the digital signal converter (terminal module) enables dispersed installation.

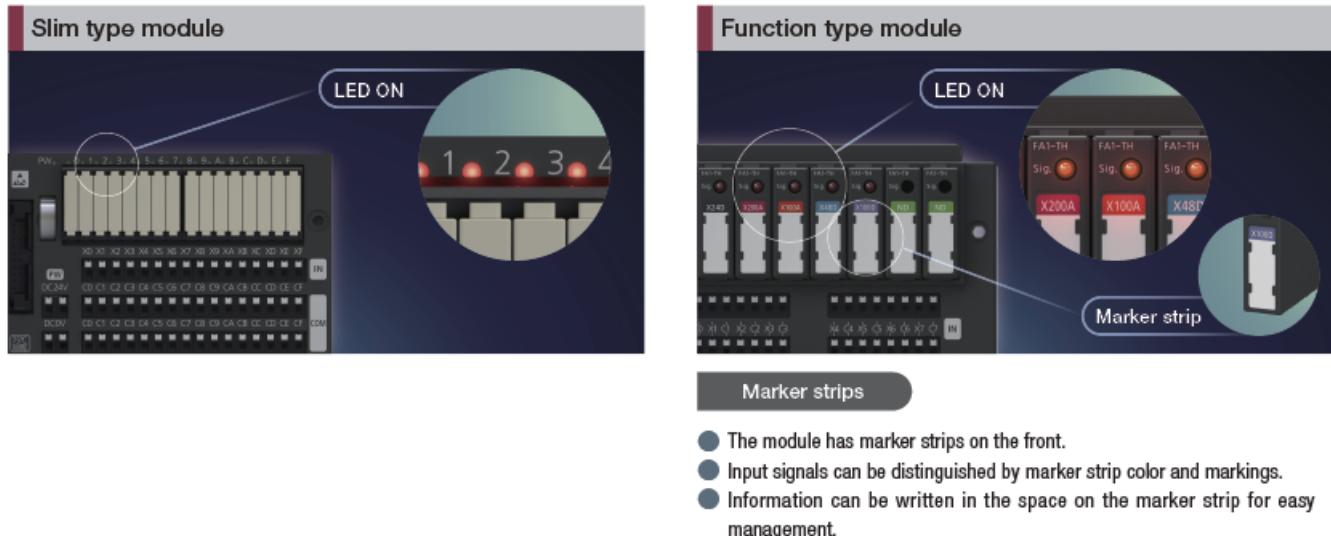
CC-Link IE TSN CC-Link IE Field CC-Link IE Field Basic
CC-Link SLMP (general-purpose Ethernet) MODBUS/TCP



Easy startup and maintenance

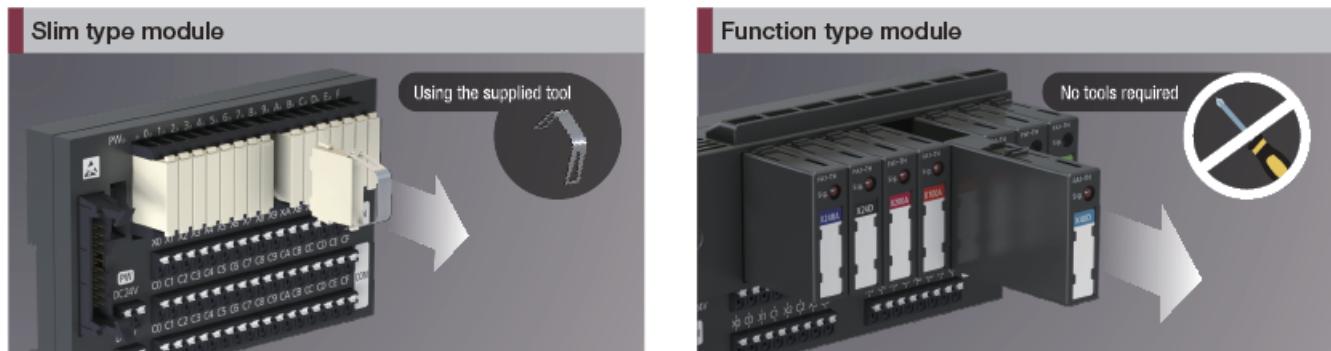
LED status indicator

The LED status indicator (red) helps identify whether input signals are on or off. Additionally, modules can be distinguished by marker strip color, model name, or module color.



Module replacement

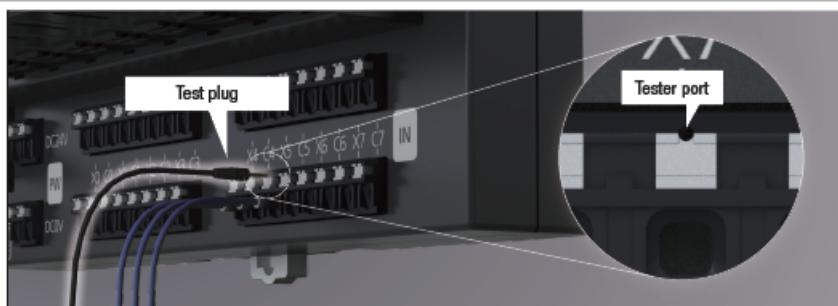
If a module malfunctions or reaches the end of its service life, the module can be replaced using the supplied tool or without tools.



Continuity check using the tester port

The spring clamp terminal type product has a tester port. Using the tester port reduces the time for continuity checks.

(The test plug used here is the recommended product on page 23.)



Sharing common terminals

Two sets of common terminals per input signal allows for common terminals to be shared.

Pre-fabricated cables with ferrules for wiring common terminals are sold separately. (Refer to page 23.)

Visualization of device data (small-scale IoT)

The operation data recording function is available for preventing and solving troubles.
(A function dedicated for CC-Link IE TSN/Ethernet network interface modules)

Preventive maintenance is possible because information such as the life of relays can be visualized.

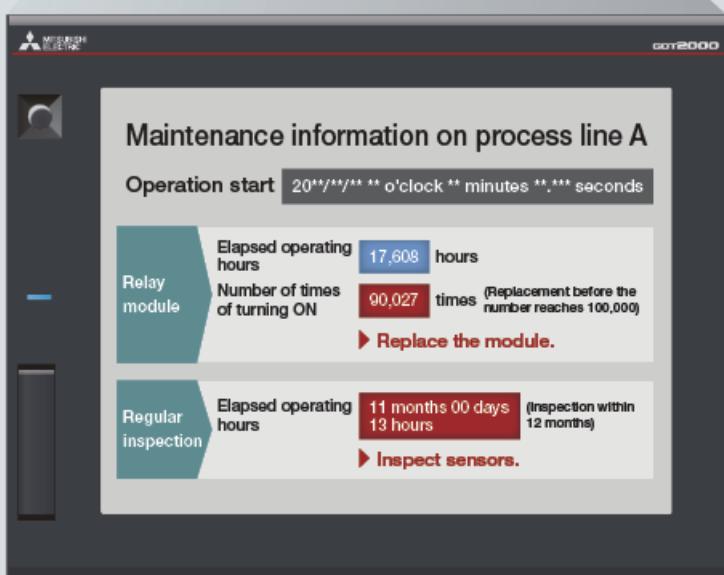
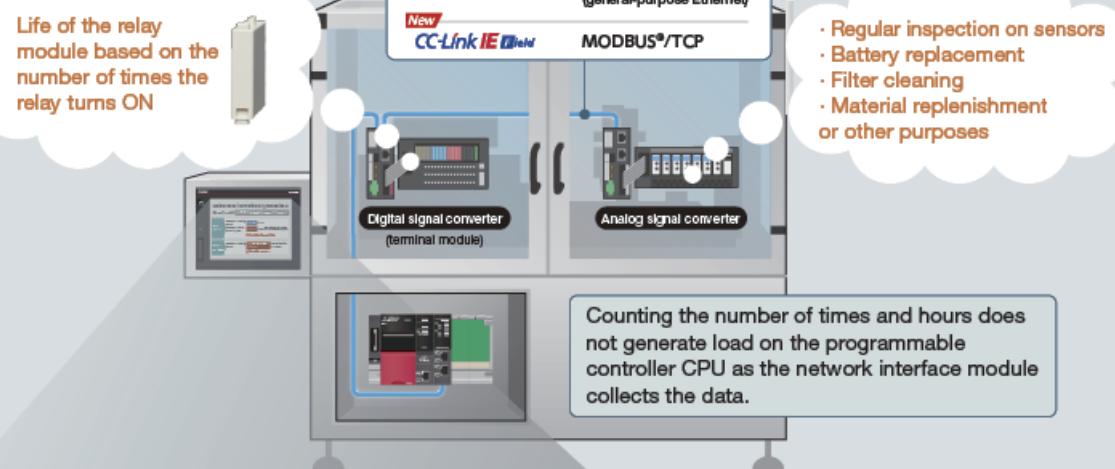
Maintenance time notification is based on how many times relay signals turn ON and operating hours. This helps prevent troubles.

Maintenance information recording function

This function records the operation start date^{*1} and elapsed operating hours^{*1} of the network interface module and the number of times I/O signal relays of the digital signal converter turn ON^{*2}.

Maintenance alarm function

This function outputs an alarm signal to the master station when the specified operating hours^{*1} have elapsed or the number of times a relay turns ON^{*2} has exceeded the preset value.



Using the panel mount HMI speaker allows you to hear important information accurately in addition to visual information.



*1: Recording of the operation start date (year, month, and day) and elapsed operating hours is available for CC-Link IE TSN, CC-Link IE Field Network, CC-Link IE Field Network Basic, and SLMP (general-purpose Ethernet).

*2: Available for network interface modules for digital signal converters.

The cause of troubles can be investigated through analysis of operation history.

Recording the operation history of digital and analog signals allows you to investigate the cause of troubles.

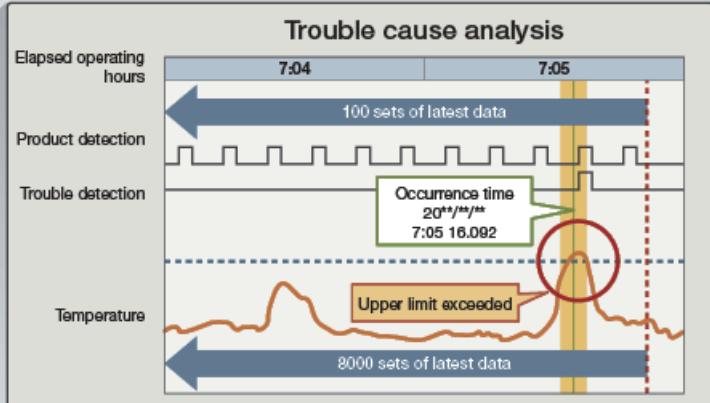
Operation history recording function (digital signal converters)

This function records the times at which I/O signals turn ON or OFF^{*1} (up to 100 data sets per signal).

Logging function (analog signal converters)

For analog input, this function records digital values at intervals specified with a digital conversion value^{*2} (1 ms to 3600 s) and occurrence times^{*1}. For analog output, it records the digital value settings and occurrence times^{*1} (a total of 8000 data sets in all I/O channels).

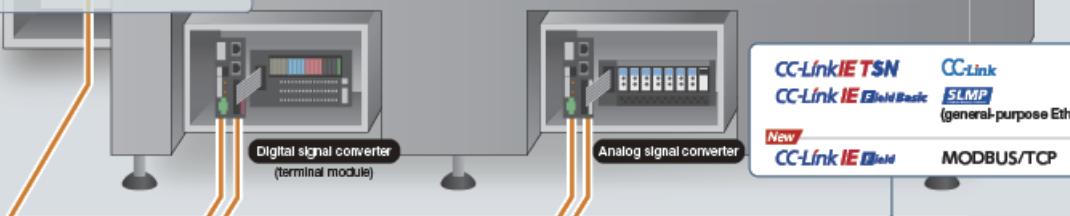
Maintenance and management



Production site

An error^{*3} triggers to store recorded data in an SD memory card^{*4}.

Recording operation history does not generate load on the programmable controller CPU as the network interface module collects the data.



*1: The function to record occurrence times is available for CC-Link IE TSN, CC-Link IE Field Network, and CC-Link IE Field Network Basic.

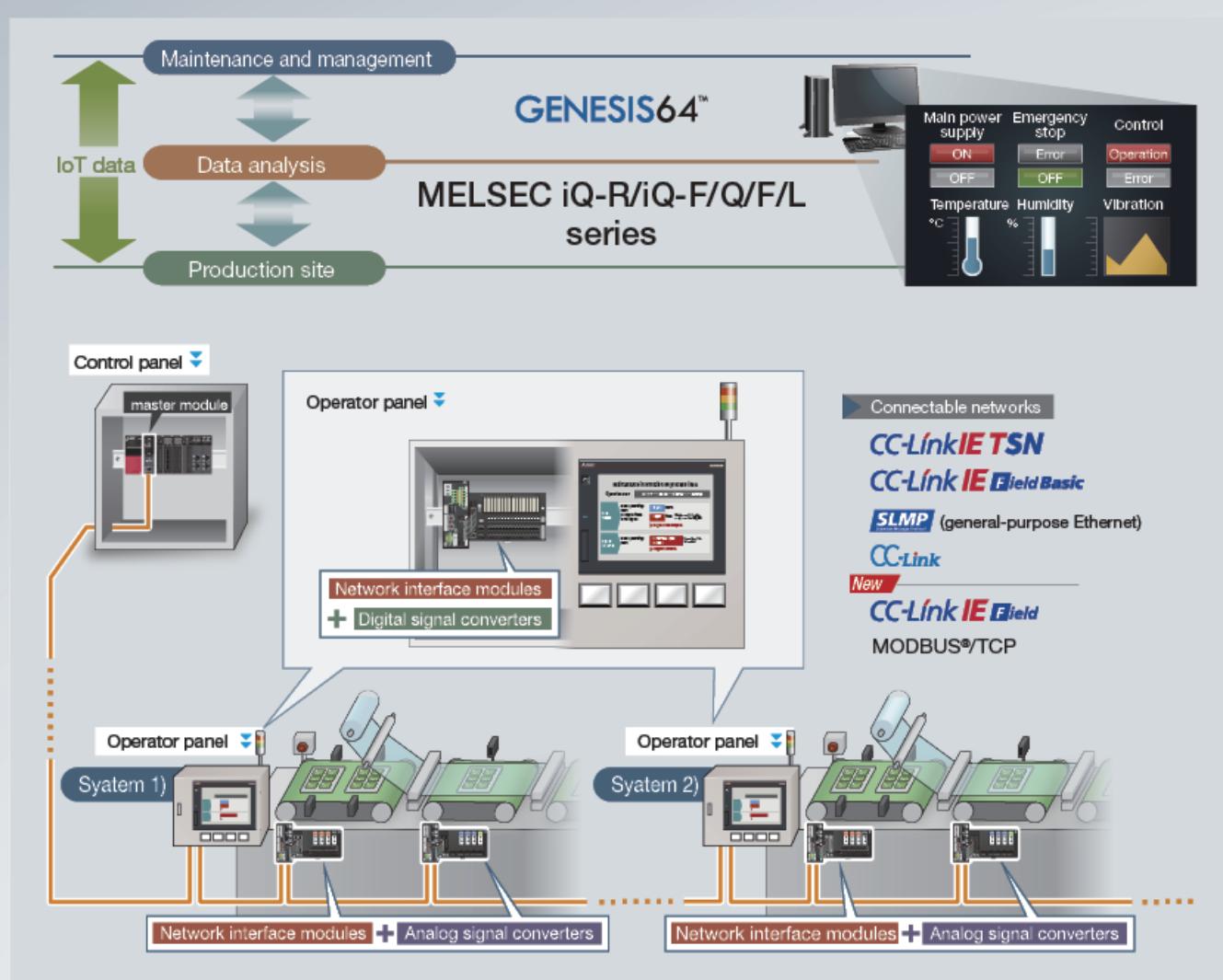
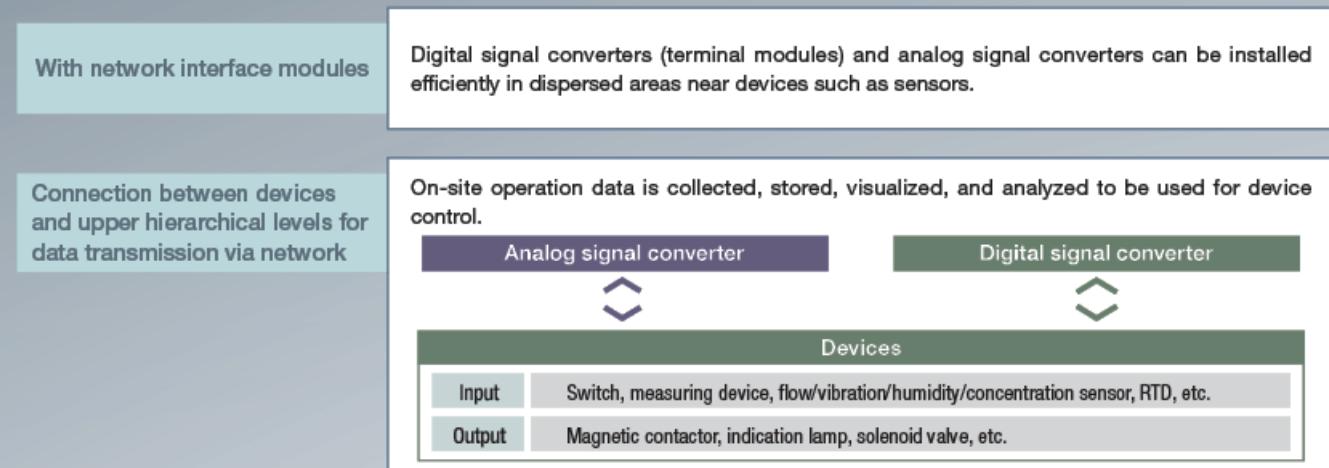
*2: Numerical data digitally converted by the network interface module

*3: Configure your system so that it detects errors.

*4: The sequence program (function block) saves data in the SD memory card inserted into the programmable controller CPU as a CSV file.

Small IoT system using a digital signal converter (terminal module)/analog signal converter

Using network interface modules for signal converters enables dispersed installation in small areas and integrated management of device data using IoT systems.



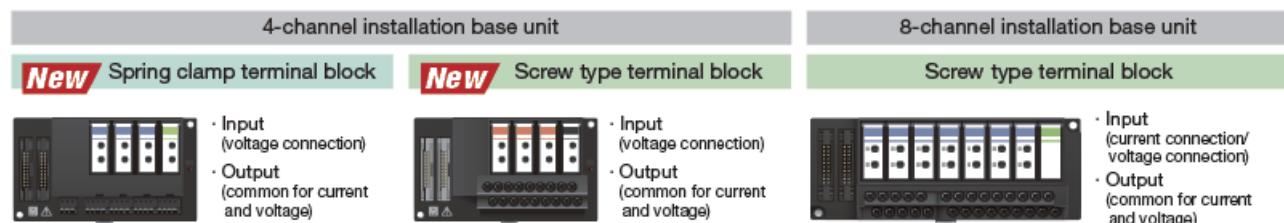
■ Network interface module (for digital signal converter)

Name		Dedicated cable	Model
CC-Link IE TSN/Ethernet network interface module (MODBUS/TCP compatible product)	Input	Included	FA3-TH1M16XC-01C New
	Output (sink)		FA3-TH1M16Y-01C New
	Output (source)		FA3-TH1M16YE-01C New
	Input	Not included	FA3-TH1M16XC New
	Output (sink)		FA3-TH1M16Y New
	Output (source)		FA3-TH1M16YE New
CC-Link IE TSN/Ethernet network interface module	Input	Included	FA3-TH1T16XC-01C
	Output (sink)		FA3-TH1T16Y-01C
	Output (source)		FA3-TH1T16YE-01C
	Input	Not included	FA3-TH1T16XC
	Output (sink)		FA3-TH1T16Y
	Output (source)		FA3-TH1T16YE
CC-Link network interface module	Input	Included	FA3-TH1C16XC-01C
	Output (sink)		FA3-TH1C16Y-01C
	Output (source)		FA3-TH1C16YE-01C
	Input	Not included	FA3-TH1C16XC
	Output (sink)		FA3-TH1C16Y
	Output (source)		FA3-TH1C16YE

*1: For analog signal converters, check our catalog.

Analog signal converter

This converter is used to convert analog signals sent between the network interface module and temperature sensors or other devices. The channels are isolated from each other.



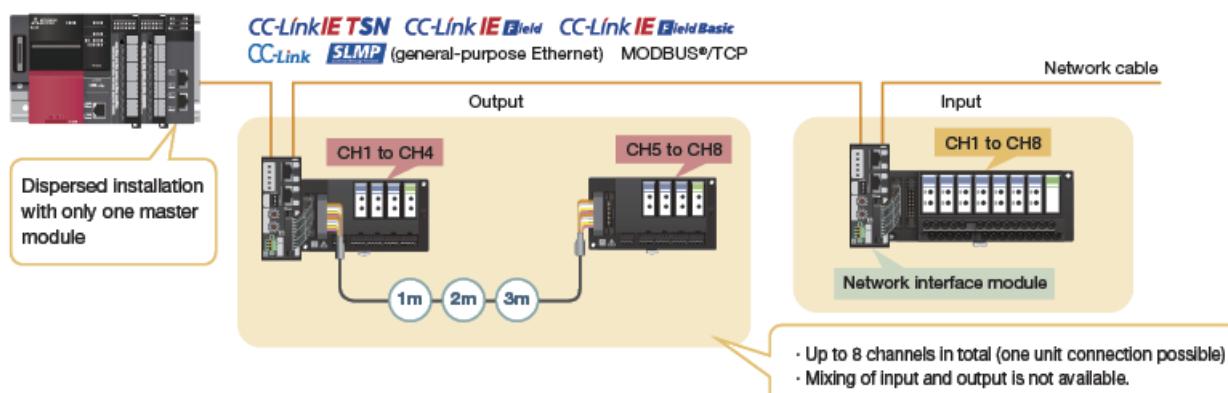
Input models: Different types of analog inputs (voltage, current, distributor, thermocouple, resistance temperature detector) can be specified for each channel.

Output models: Different types of analog outputs (voltage, current) can be specified for each channel.

Dispersed installation with network connection ▶ Refer to page 8.

This product can be installed dispersedly using one programmable controller network master module and one network cable, allowing you to configure a system with both input and output units.

Using just one network cable simplifies the wiring between the control panel and devices/relay box and the wiring for additional device installation.



Selection chart

4-point/8-point input, slim type, module pre-mounted unit

Programmable controller module			Unit type				Unit model name	Connection cable
MELSEC IQ-R series	RX40C7	Positive common	Spring clamp	24VDC N/O contact relay (positive common)	Module mixing possible	Independent	FA1-THDX24RA1L20S1E	FA-CBL**M20 FA-CBL**YM20 FA-CBL**TMV20 FA-CBL**MMH20 (for dispersed installation)
				24VDC N/O contact relay (negative common)			FA1-THDX24RA1H20S1E	FA-CBL**MMH20 (for dispersed installation)
	RX41C4 RX41CeHS RX42C4 RH42C4NT2P ¹	Positive common	Spring clamp	24VDC N/O contact relay (positive common)	Module mixing possible	Independent	FA1-THDX24RA1L20S1E	FA-CBL**FM2V FA-CBL**FM2LV FA-CBL**MMH20 (for dispersed installation)
				24VDC N/O contact relay (negative common)			FA1-THDX24RA1H20S1E	FA-CBL**MMH20 (for dispersed installation)
	RX40C7-TS	Positive common	Spring clamp	24VDC N/O contact relay (positive common)	Module mixing possible	Independent	FA1-THDX24RA1L20S1E	FA1-CB1L**EM1F18 FA-CBL**MMH20 (for dispersed installation)
				24VDC N/O contact relay (negative common)			FA1-THDX24RA1H20S1E	FA1-CB1L**EM2F34 FA-CBL**MMH20 (for dispersed installation)
	RX41C4-TS	Positive common	Spring clamp	24VDC N/O contact relay (positive common)	Module mixing possible	Independent	FA1-THDX24RA1L20S1E	FA1-CB1L**EM2F34 FA-CBL**MMH20 (for dispersed installation)
				24VDC N/O contact relay (negative common)			FA1-THDX24RA1H20S1E	FA1-CB1L**EM2F34 FA-CBL**MMH20 (for dispersed installation)
MELSEC IQ-F series	FX5-C32ET/D ¹ FX5-C16EV/D FX5-C32EV/D FX5UC-32MT/D ¹ FX5UC-64MT/D ¹ FX5UC-96MT/D ¹	Sink input	Spring clamp	24VDC N/O contact relay (positive common)	Module mixing possible	Independent	FA1-THDX24RA1L20S1E	FA-FXCBL**MMH20 FA2-CB1LT**MM1H20 FA-CBL**MMH20 (for dispersed installation)
				24VDC N/O contact relay (negative common)			FA1-THDX24RA1H20S1E	FA-FXCBL**MMH20 FA2-CB1LT**MM1H20 FA-CBL**MMH20 (for dispersed installation)
	FX5-C16EV/DS FX5-C32EV/DS FX5-C32ET/DSS ¹ FX5UC-32MT/DSS ¹ FX5UC-64MT/DSS ¹ FX5UC-96MT/DSS ¹	Sink input	Spring clamp	24VDC N/O contact relay (positive common)	Module mixing possible	Independent	FA1-THDX24RA1L20S1E	FA-FXCBL**MMH20E FA2-CB1LT**MM1H20E FA-CBL**MMH20 (for dispersed installation)
				24VDC N/O contact relay (negative common)			FA1-THDX24RA1H20S1E	FA-FXCBL**MMH20E FA2-CB1LT**MM1H20E FA-CBL**MMH20 (for dispersed installation)
	FX5-C32ET/DS-TS FX5-C32ET/DSS-TS FX5UC-32MT/DS-TS FX5UC-32MT/DSS-TS FX5-C32EV/DS-TS	Sink input	Spring clamp	24VDC N/O contact relay (positive common)	Module mixing possible	Independent	FA1-THDX24RA1L20S1E	FA2-CB1L**EM1F18E FA-CBL**MMH20 (for dispersed installation)
				24VDC N/O contact relay (negative common)			FA1-THDX24RA1H20S1E	FA2-CB1L**EM1F18E FA-CBL**MMH20 (for dispersed installation)
MELSEC-Q series	QX40 QX40-S1	Positive common	Spring clamp	24VDC N/O contact relay (positive common)	Module mixing possible	Independent	FA1-THDX24RA1L20S1E	FA-CBL**M20 FA-CBL**YM20 FA-CBL**TMV20 FA-CBL**MMH20 (for dispersed installation)
				24VDC N/O contact relay (negative common)			FA1-THDX24RA1H20S1E	FA-CBL**M20 FA-CBL**YM20 FA-CBL**TMV20 FA-CBL**MMH20 (for dispersed installation)
	QX41 QX41-S1 QX41-S2 QX42 QX42-S1 QH42P ¹ QX41Y41P ¹	Positive common	Spring clamp	24VDC N/O contact relay (positive common)	Module mixing possible	Independent	FA1-THDX24RA1L20S1E	FA-CBL**FM2V FA-CBL**FM2LV FA-CBL**MMH20 (for dispersed installation)
				24VDC N/O contact relay (negative common)			FA1-THDX24RA1H20S1E	FA-CBL**FM2V FA-CBL**FM2LV FA-CBL**MMH20 (for dispersed installation)
MELSEC-F series	FX3GC-32MT/D ¹ FX3UC-16MT/D ¹ FX3UC-32MT/D ¹ FX3UC-32MT-LT ¹ FX3UC-32MT-LT2 ¹ FX3UC-64MT/D ¹ FX3UC-96MT/D ¹ FX2NC-16EX FX2NC-32EX	Sink input	Spring clamp	24VDC N/O contact relay (positive common)	Module mixing possible	Independent	FA1-THDX24RA1L20S1E	FA-FXCBL**MMH20 FA2-CB1LT**MM1H20 FA-CBL**MMH20 (for dispersed installation)
				24VDC N/O contact relay (negative common)			FA1-THDX24RA1H20S1E	FA-FXCBL**MMH20 FA2-CB1LT**MM1H20 FA-CBL**MMH20 (for dispersed installation)
	FX3GC-32MT/DSS ¹ FX3UC-16MT/DSS ¹ FX3UC-32MT/DSS ¹ FX3UC-64MT/DSS ¹ FX3UC-96MT/DSS ¹ FX2NC-16EX-DS FX2NC-32EX-DS	Sink input	Spring clamp	24VDC N/O contact relay (positive common)	Module mixing possible	Independent	FA1-THDX24RA1L20S1E	FA2-CB1L**MM1H20E FA2-CB1LT**MM1H20E FA-CBL**MMH20 (for dispersed installation)
				24VDC N/O contact relay (negative common)			FA1-THDX24RA1H20S1E	FA2-CB1L**MM1H20E FA2-CB1LT**MM1H20E FA-CBL**MMH20 (for dispersed installation)
MELSEC-L series	LX40C6	Positive common	Spring clamp	24VDC N/O contact relay (positive common)	Module mixing possible	Independent	FA1-THDX24RA1L20S1E	FA-CBL**M20 FA-CBL**YM20 FA-CBL**MMH20 (for dispersed installation)
				24VDC N/O contact relay (negative common)			FA1-THDX24RA1H20S1E	FA-CBL**MMH20 (for dispersed installation)
	LX41C4 LX42C4 LH42C4NT1P ¹ LH42C4PT1P ¹	Positive common	Spring clamp	24VDC N/O contact relay (positive common)	Module mixing possible	Independent	FA1-THDX24RA1L20S1E	FA-CBL**FM2V FA-CBL**FM2LV FA-CBL**MMH20 (for dispersed installation)
				24VDC N/O contact relay (negative common)			FA1-THDX24RA1H20S1E	FA-CBL**FM2V FA-CBL**FM2LV FA-CBL**MMH20 (for dispersed installation)

¹: Input side only

□ = 4: 4-point type, 8: 8-point type

Programmable controller module			Unit type			Unit model name	Connection cable	
CC-Link IE TSN series	NZ2GNCF1-32D	Positive common	Spring clamp	24VDC N/O contact relay (positive common)	Module mixing possible	Independent	FA1-TH□X24RA1L20S1E	
				24VDC N/O contact relay (negative common)			FA1-TH□X24RA1H20S1E	
	NZ2GNB2B1-32D NZ2GNB2B1-32DT ¹	Positive common	Spring clamp	24VDC N/O contact relay (positive common)	Module mixing possible	Independent	FA1-TH□X24RA1L20S1E	
				24VDC N/O contact relay (negative common)			FA1-TH□X24RA1H20S1E	
	NZ2GN2S1-16D	Positive common	Spring clamp	24VDC N/O contact relay (positive common)	Module mixing possible	Independent	FA1-TH□X24RA1L20S1E	
				24VDC N/O contact relay (negative common)			FA1-TH□X24RA1H20S1E	
	NZ2GN2S1-32D	Positive common	Spring clamp	24VDC N/O contact relay (positive common)	Module mixing possible	Independent	FA1-TH□X24RA1L20S1E	
				24VDC N/O contact relay (negative common)			FA1-TH□X24RA1H20S1E	
	NZ2GN2S1-32DT ¹	Positive common	Spring clamp	24VDC N/O contact relay (positive common)	Module mixing possible	Independent	FA1-TH□X24RA1L20S1E	
				24VDC N/O contact relay (negative common)			FA1-TH□X24RA1H20S1E	
CC-Link IE Field series	NZ2GF2B1N1-16D NZ2GF2B1-32D NZ2GF2B1-32DT ¹	Positive common	Spring clamp	24VDC N/O contact relay (positive common)	Module mixing possible	Independent	FA1-TH□X24RA1L20S1E	
				24VDC N/O contact relay (negative common)			FA1-TH□X24RA1H20S1E	
	NZ2GFCF1-32D	Positive common	Spring clamp	24VDC N/O contact relay (positive common)	Module mixing possible	Independent	FA1-TH□X24RA1L20S1E	
				24VDC N/O contact relay (negative common)			FA1-TH□X24RA1H20S1E	
CC-Link IE Field Basic series	NZ2MF2B1-32D NZ2MF2B1-32DT	Positive common	Spring clamp	24VDC N/O contact relay (positive common)	Module mixing possible	Independent	FA1-TH□X24RA1L20S1E	
				24VDC N/O contact relay (negative common)			FA1-TH□X24RA1H20S1E	
	NZ2MF2S1-32D	Positive common	Spring clamp	24VDC N/O contact relay (positive common)	Module mixing possible	Independent	FA1-TH□X24RA1L20S1E	
				24VDC N/O contact relay (negative common)			FA1-TH□X24RA1H20S1E	
	NZ2MF2S1-32DT ¹	Positive common	Spring clamp	24VDC N/O contact relay (positive common)	Module mixing possible	Independent	FA1-TH□X24RA1L20S1E	
				24VDC N/O contact relay (negative common)			FA1-TH□X24RA1H20S1E	
CC-Link	AJ65SBTB1-16D AJ65SBTB1-16D1 AJ65SBTB3-16D AJ65SBTB3-16KD AJ65SBTB1-32D AJ65SBTB1-32D1 AJ65SBTB1-32KD AJ65SBTB1-32DT ¹	Positive common	Spring clamp	24VDC N/O contact relay (positive common)	Module mixing possible	Independent	FA1-TH□X24RA1L20S1E	
				24VDC N/O contact relay (negative common)			FA1-TH□X24RA1H20S1E	
	AJ65VBTS3-16D	Positive common	Spring clamp	24VDC N/O contact relay (positive common)	Module mixing possible	Independent	FA1-TH□X24RA1L20S1E	
				24VDC N/O contact relay (negative common)			FA1-TH□X24RA1H20S1E	
Anywire	BL265SB-16F-2-20 BL265SB-32F-2-20	Positive common	Spring clamp	24VDC N/O contact relay (positive common)	Module mixing possible	Independent	FA1-TH□X24RA1L20S1E	
				24VDC N/O contact relay (negative common)			FA1-TH□X24RA1H20S1E	
General-purpose controller		Positive common	Spring clamp	24VDC N/O contact relay (positive common)	Module mixing possible	Independent	FA1-TH□X24RA1L20S1E	
				24VDC N/O contact relay (negative common)			FA1-TH□X24RA1H20S1E	

*1: Input side only

□ = 4-point type, 8: 8-point type

4-point/8-point output, slim type, module selectable unit

Programmable controller module			Unit type			Unit model name	Connection cable	
MELSEC IQ-R series	RY40NT5P	Spring clamp	Installation base unit	Module selectable type	Independent	FA1-TH□Y2SC20S1E	FA-CBL**M20 FA-CBL**YM20 FA-CBL**TMV20 FA-CBL**MMH20 (for dispersed installation)	
	RY40PT5P RY40PT5B					FA1-TH1E□Y2SC20S1E		
	RY41NT2P RY42NT2P RY41NT2H RH42C4NT2P ²	Spring clamp	Installation base unit	Module selectable type	Independent	FA1-TH□Y2SC20S1E	FA-CBL**FM2V FA-CBL**FM2LV FA-CBL**MMH20 (for dispersed installation)	
	RY41PT1P RY42PT1P RY41PT2H					FA1-TH1E□Y2SC20S1E		
	RY40NT5P-TS	Spring clamp	Installation base unit	Module selectable type	Independent	FA1-TH□Y2SC20S1E	FA1-CB1L**EM1F18 FA-CBL**MMH20 (for dispersed installation)	
	RY40PT5P-TS					FA1-TH1E□Y2SC20S1E		
	RY41NT2P-TS	Spring clamp	Installation base unit	Module selectable type	Independent	FA1-TH□Y2SC20S1E	FA1-CB1L**EM2F34 FA-CBL**MMH20 (for dispersed installation)	
	RY41PT1P-TS					FA1-TH1E□Y2SC20S1E		
MELSEC IQ-F series	FX5UC-32MT/D FX5-C32ET/D FX5UC-64MT/D FX5UC-96MT/D FX5-C16EYT/D FX5-C32EYT/D	Sink output	Spring clamp	Installation base unit	Module selectable type	Independent	FA1-TH□Y2SC20S1E	FA-FXCBL**MMH20 FA2-CB1LT**MM1H20 FA-CBL**MMH20 (for dispersed installation)
	FX5UC-32MT/DS-TS FX5-C32ET/DS-TS FX5-C32EYT/D-TS	Sink output	Spring clamp	Installation base unit	Module selectable type	Independent	FA1-TH□Y2SC20S1E	FA2-CB1L**EM1F18 FA-CBL**MMH20 (for dispersed installation)
	FX5UC-32MT/DSS FX5-C32ET/DSS FX5UC-64MT/DSS FX5UC-96MT/DSS FX5-C16EYT/DSS FX5-C32EYT/DSS	Source output	Spring clamp	Installation base unit	Module selectable type	Independent	FA1-TH1E□Y2SC20S1E	FA2-CB1L**MM1H20E FA2-CB1LT**MM1H20E FA-CBL**MMH20 (for dispersed installation)
	FX5UC-32MT/DSS-TS FX5-C32ET/DSS-TS FX5-C32EYT/DSS-TS	Source output	Spring clamp	Installation base unit	Module selectable type	Independent	FA1-TH1E□Y2SC20S1E	FA2-CB1L**EM1F18E FA-CBL**MMH20 (for dispersed installation)
MELSEC-Q series	QY40P QY50	Spring clamp	Installation base unit	Module selectable type	Independent	FA1-TH□Y2SC20S1E	FA-CBL**M20 FA-CBL**YM20 FA-CBL**TMV20 FA-CBL**MMH20 (for dispersed installation)	
	QY41H QY41P QY42P QH42P ² QX41Y41P ²	Spring clamp	Installation base unit	Module selectable type	Independent	FA1-TH□Y2SC20S1E	FA-CBL**FM2V FA-CBL**FM2LV FA-CBL**MMH20 (for dispersed installation)	
	QY80	Spring clamp	Installation base unit	Module selectable type	Independent	FA1-TH1E□Y2SC20S1E	FA-CBL**M20 FA-CBL**YM20 FA-CBL**TMV20 FA-CBL**MMH20 (for dispersed installation)	
	QY81P	Spring clamp	Installation base unit	Module selectable type	Independent	FA1-TH1E□Y2SC20S1E	FA-CBL**DM2FY FA-CBL**MMH20 (for dispersed installation)	
	QY82P	Spring clamp	Installation base unit	Module selectable type	Independent	FA1-TH1E□Y2SC20S1E	FA-CBL**FM2V FA-CBL**FM2LV FA-CBL**MMH20 (for dispersed installation)	
MELSEC-F series	FX3GC-32MT/D FX3UC-16MT/D FX3UC-32MT/D FX3UC-32MT-LT FX3UC-32MT-LT2 FX3UC-64MT/D FX3UC-96MT/D FX2NC-16EYT FX2NC-32EYT	Sink output	Spring clamp	Installation base unit	Module selectable type	Independent	FA1-TH□Y2SC20S1E	FA-FXCBL**MMH20 FA2-CB1LT**MM1H20 FA-CBL**MMH20 (for dispersed installation)

²: Output side only

□ = 4: 4-point type, 8: 8-point type

Programmable controller module			Unit type			Unit model name	Connection cable
MELSEC-L series	LY41NT1P LY42NT1P LH42C4NT1P (output side)		Spring clamp	Installation base unit	Module selectable type	Independent	FA1-TH□Y2SC20S1E
	LY41PT1P LY42PT1P LH42C4PT1P (output side)		Spring clamp	Installation base unit	Module selectable type	Independent	FA1-TH1E□Y2SC20S1E
	LY40NT5P		Spring clamp	Installation base unit	Module selectable type	Independent	FA1-TH□Y2SC20S1E
	LY40PT5P		Spring clamp	Installation base unit	Module selectable type	Independent	FA1-TH1E□Y2SC20S1E
CC-Link IE TSN series	NZ2GN2S1-16T		Spring clamp	Installation base unit	Module selectable type	Independent	FA1-TH□Y2SC20S1E
	NZ2GN2S1-16TE		Spring clamp	Installation base unit	Module selectable type	Independent	FA1-TH1E□Y2SC20S1E
	NZ2GN2S1-32T NZ2GN2S1-32TE NZ2GN2S1-32DT NZ2GN2S1-32DTE		Spring clamp	Installation base unit	Module selectable type	Independent	FA1-TH□Y2SC20S1E
CC-Link IE Field series	NZ2GFCF1-32T	Sink output	Spring clamp	Installation base unit	Module selectable type	Independent	FA1-TH□Y2SC20S1E
	NZ2GF2B1N1-16TE NZ2GF2B1-32TE	Source output	Spring clamp	Installation base unit	Module selectable type	Independent	FA1-TH1E□Y2SC20S1E
CC-Link IE Field Basic series	NZ2MF2S1-32T NZ2MF2S1-32DT		Spring clamp	Installation base unit	Module selectable type	Independent	FA1-TH□Y2SC20S1E
	NZ2MF2S1-32TE1 NZ2MF2S1-32DTE1		Spring clamp	Installation base unit	Module selectable type	Independent	FA1-TH1E□Y2SC20S1E
CC-Link series	AJ65SBTB1-16T AJ65SBTB1-16T1 AJ65SBTB2-16T AJ65SBTB2-16T1 AJ65SBTB1-32T AJ65SBTB1-32T1		Sink output	Spring clamp	Installation base unit	Module selectable type	Independent
	AJ65SBTCF1-32T AJ65BTC1-32T		Sink output	Spring clamp	Installation base unit	Module selectable type	Independent
Anywire	BL265PB-16F-2-20 BL265PB-32F-2-20		Sink output	Spring clamp	Installation base unit	Module selectable type	Independent
	BL265PB-16FS-2-20 BL265PB-32FS-2-20		Source output	Spring clamp	Installation base unit	Module selectable type	Independent
General-purpose controller Terminal block type		Sink output	Spring clamp	Installation base unit	Module selectable type	Independent	FA1-TH□Y2SC20S1E
		Source output	Spring clamp	Installation base unit	Module selectable type	Independent	FA1-TH1E□Y2SC20S1E

□ = 4: 4-point type, 8: 8-point type

Connection with the network interface module

Ensure compliance with required international standards also for other products used in combination.

4-point/8-point input, slim type, module pre-mounted unit

Network	Module	Interface module dedicated cable		Unit
CC-Link IE TSN CC-Link IE Field CC-Link IE Field Basic General-purpose Ethernet (SLMP) MODBUS/TCP	FA3-TH1M16XC-01C	Dedicated cable (Included with the CC-Link interface module)	FA-CBL**MMH20 ¹ (for dispersed installation)	FA1-TH4X24RA1L20S1E FA1-TH4X24RA1H20S1E FA1-TH8X24RA1L20S1E FA1-TH8X24RA1H20S1E
		Signal converter connection extension cable	FA3-CB2L**MM1H20 FA-CBL**MMH20 ¹ (for dispersed installation)	
	FA3-TH1M16XC	Signal converter connection extension cable	-	
CC-Link IE TSN CC-Link IE Field CC-Link IE Field Basic General-purpose Ethernet (SLMP)	FA3-TH1T16XC-01C	Dedicated cable (Included with the CC-Link interface module)	FA-CBL**MMH20 ¹ (for dispersed installation)	FA1-TH4X24RA1L20S1E FA1-TH4X24RA1H20S1E FA1-TH8X24RA1L20S1E FA1-TH8X24RA1H20S1E
		Signal converter connection extension cable	FA3-CB2L**MM1H20 FA-CBL**MMH20 ¹ (for dispersed installation)	
	FA3-TH1T16XC	Signal converter connection extension cable	-	
CC-Link	FA3-TH1C16XC-01C	Dedicated cable (Included with the CC-Link interface module)	FA-CBL**MMH20 ¹ (for dispersed installation)	FA1-TH4Y2SC20S1E FA1-TH8Y2SC20S1E
		Signal converter connection extension cable	FA3-CB2L**MM1H20 FA-CBL**MMH20 ¹ (for dispersed installation)	
	FA3-TH1C16XC	Signal converter connection extension cable	-	

*1: Use the same power supply for two digital signal converters (terminal modules) to be connected.

4-point/8-point input, slim type, module pre-mounted unit

Network	Module	Interface module dedicated cable		Unit
CC-Link IE TSN CC-Link IE Field CC-Link IE Field Basic General-purpose Ethernet (SLMP) MODBUS/TCP	FA3-TH1M16Y-01C	Dedicated cable (Included with the CC-Link interface module)	FA-CBL**MMH20 ² (for dispersed installation)	FA1-TH4Y2SC20S1E FA1-TH8Y2SC20S1E
		Signal converter connection extension cable	FA3-CB2L**MM1H20 FA-CBL**MMH20 ² (for dispersed installation)	
	FA3-TH1M16Y	Signal converter connection extension cable	-	
CC-Link IE TSN CC-Link IE Field CC-Link IE Field Basic General-purpose Ethernet (SLMP)	FA3-TH1M16YE-01C	Dedicated cable (Included with the CC-Link interface module)	FA-CBL**MMH20 ² (for dispersed installation)	FA1-TH1E4Y2SC20S1E FA1-TH1E8Y2SC20S1E
		Signal converter connection extension cable	FA3-CB2L**MM1H20 FA-CBL**MMH20 ² (for dispersed installation)	
	FA3-TH1M16YE	Signal converter connection extension cable	-	
CC-Link IE TSN CC-Link IE Field CC-Link IE Field Basic General-purpose Ethernet (SLMP)	FA3-TH1T16Y-01C	Dedicated cable (Included with the CC-Link interface module)	FA-CBL**MMH20 ² (for dispersed installation)	FA1-TH4Y2SC20S1E FA1-TH8Y2SC20S1E
		Signal converter connection extension cable	FA3-CB2L**MM1H20 FA-CBL**MMH20 ² (for dispersed installation)	
	FA3-TH1T16Y	Signal converter connection extension cable	-	
CC-Link	FA3-TH1T16YE-01C	Dedicated cable (Included with the CC-Link interface module)	FA-CBL**MMH20 ² (for dispersed installation)	FA1-TH1E4Y2SC20S1E FA1-TH1E8Y2SC20S1E
		Signal converter connection extension cable	FA3-CB2L**MM1H20 FA-CBL**MMH20 ² (for dispersed installation)	
	FA3-TH1T16YE	Signal converter connection extension cable	-	
CC-Link	FA3-TH1C16Y-01C	Dedicated cable (Included with the CC-Link interface module)	FA-CBL**MMH20 ² (for dispersed installation)	FA1-TH4Y2SC20S1E FA1-TH8Y2SC20S1E
		Signal converter connection extension cable	FA3-CB2L**MM1H20 FA-CBL**MMH20 ² (for dispersed installation)	
	FA3-TH1C16Y	Signal converter connection extension cable	-	
CC-Link	FA3-TH1C16YE-01C	Dedicated cable (Included with the CC-Link interface module)	FA-CBL**MMH20 ² (for dispersed installation)	FA1-TH1E4Y2SC20S1E FA1-TH1E8Y2SC20S1E
		Signal converter connection extension cable	FA3-CB2L**MM1H20 FA-CBL**MMH20 ² (for dispersed installation)	
	FA3-TH1C16YE	Signal converter connection extension cable	-	

*2: Use the same power supply for two digital signal converters (terminal modules) to be connected.

■ Product specifications

• Installation base units

Common specifications

Item	Specification			
Ambient operating temperature	-20 to 55°C			
Ambient operating humidity	5 to 95%RH, non-condensing			
Compliance with global standards	UL, CE, KC			

4-point/8-point input, slim type, module pre-mounted unit

Item	FA1-TH4X24RA1L20S1E	FA1-TH4X24RA1H20S1E	FA1-TH8X24RA1L20S1E	FA1-TH8X24RA1H20S1E
Pre-mounted module			FA-NYP24WK*	
Programmable controller connected		(* is replaced with a number that corresponds to the number of modules. It is replaced with "2" when two modules are included and "4" when four modules are included.)	Positive common, 24VDC, input module	
Load-side wiring type	Positive common input	Negative common input	Positive common input	Negative common input
Number of points		4		8
Common type			Independent common	
Isolation method			Relay	
External power supply		24VDC ±10% (ripple rate within 5%, CLASS 2 or SELV + LIM)		
Unit current draw	Approx. 3mA at 24VDC (not including the current draw of the connected module and programmable controller)		Approx. 5mA at 24VDC (not including the current draw of the connected module and programmable controller)	
Operating voltage	21.6 to 26.4VDC (24VDC ±10% (ripple rate within 5%), CLASS 2 or SELV + LIM)			
Max. simultaneous ON points		100% (5-directional attachment)		
ON voltage/ON current		19.2VDC or more/8.1mA or more		
OFF voltage/OFF current		2.4VDC or less/1.0mA or less		
Input impedance			Approx. 2.2kΩ	
Response time	OFF → ON ON → OFF	10ms or less (not including programmable controller response time) 12ms or less (not including programmable controller response time)		
Min. switching load		24VDC, 1mA or more		
Max. switching frequency		1800 times/hour (ON for 1 second or more and OFF for 1 second or more)		
Mechanical service life		20 million times or more		
Electrical service life		24VDC 100mA for one hundred thousand times or more		
Dielectric strength voltage and resistance		Between inputs and between external power supply and input: 510VAC rms/1 minute (altitude 0 to 2000m), 10MΩ or more		
Noise immunity		Simulator noise 500Vp-p, noise width 1μs (measured by a noise simulator with a noise frequency of 25 to 60Hz)		
Operating status		The LED is lit when the power and input turn ON.		
Socket		Attached (relay modules replaceable)		
Number of times that modules can be replaced		50		
Module mixing		Possible		
Terminal block (spring clamp type)	Number of terminals	16 points (power supply: 4 points, input: 12 points)	28 points (power supply: 4 points, input: 24 points)	
	Applicable wire	Without ferrule (stranded/solid wire)	0.2 to 1.5mm² (24 to 16 AWG)	Copper wire with a temperature rating of 75°C or more
		With ferrule (stranded/solid wire)	0.08 to 0.75mm² (28 to 18 AWG)	Copper wire with a temperature rating of 75°C or more
Module installation	Wire strip length		8mm	
	Installation screw		M4 × 0.7mm × 22mm or longer	Tightening torque: 78 to 118N·cm (8 to 12kgf·cm)
	DIN rail		Applicable DIN rail: TH35-7.5Fe, TH35-7.5Al (JIS C 2812 compliant)	
Weight		Approx. 105g		Approx. 145g

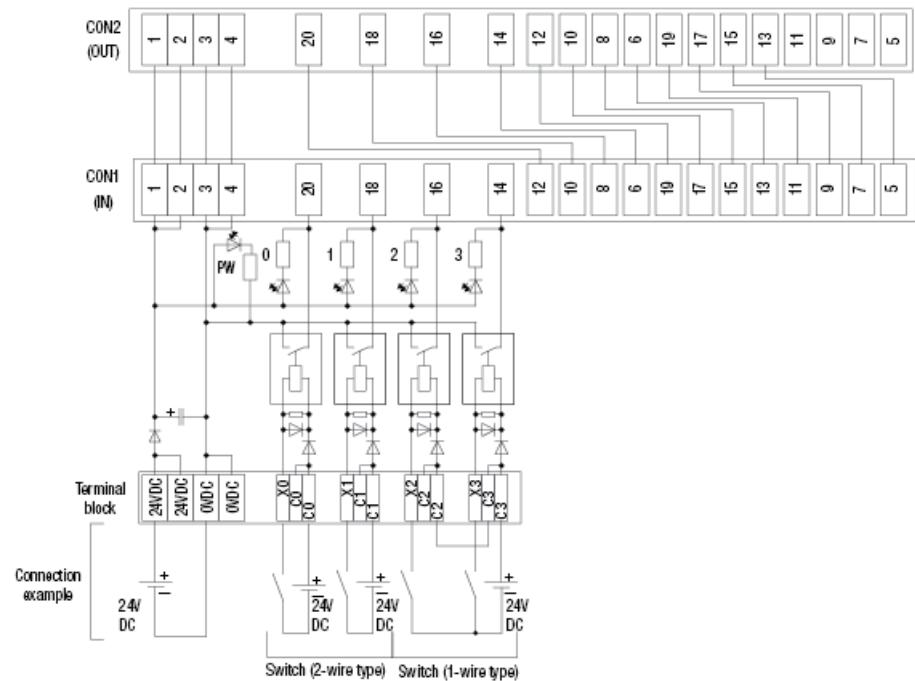
4-point/8-point output, slim type, module selectable unit

Item	FA1-TH4Y2SC20S1E	FA1-TH1E4Y2SC20S1E	FA1-TH8Y2SC20S1E	FA1-TH1E8Y2SC20S1E
Pre-mounted module	None			
Programmable controller connected	Sink type 24VDC transistor output	Source type 24VDC transistor output	Sink type 24VDC transistor output	Source type 24VDC transistor output
Digital signal converter output type	Sink	Source	Sink	Source
Number of points	4			8
Common type	Independent common			
External power supply	24VDC ±10% (ripple rate within 5%, CLASS 2 or SELV + LIM)			
Unit current draw	Approx. 3mA at 24VDC (not including the current draw of the connected module and programmable controller)		Approx. 5mA at 24VDC (not including the current draw of the connected module and programmable controller)	
Electrical specifications	Varies depending on the mounted module			
Dielectric strength voltage and resistance	3000VAC rms/1 minute (altitude 0 to 2000m), 10MΩ or more			
Noise immunity	Simulator noise 500Vp-p, noise width 1μs (measured by a noise simulator with a noise frequency of 25 to 60Hz)			
Operating status	The LED is lit when the power and output turn ON.			
Max. simultaneous ON points	100%. However, the percentage depends on load current characteristics when triac or transistor modules are installed.			
Connectable module	N/O contact relay: FA-NYP24WK* N/C contact relay: FA-NYBP24WK* Triac: FA-SN24A01FS* Transistor: FA-SN24D01HZS*			
	(* is replaced with a number that corresponds to the number of modules. It is replaced with "2" when two modules are included and "4" when four modules are included.)			
Number of times that modules can be replaced	50			
Module mixing	Possible			
Terminal block	Number of terminals		16 points (power supply: 4 points, output: 12 points)	28 points (power supply: 4 points, output: 24 points)
	Applicable wire	Without ferrule (stranded/solid wire)	0.2 to 1.5mm² (24 to 16 AWG) Copper wire with a temperature rating of 75°C or more	
		With ferrule (stranded/solid wire)	0.08 to 0.75mm² (28 to 18 AWG) Copper wire with a temperature rating of 75°C or more	
Wire strip length		8mm		
Module installation	Installation screw		M4 × 0.7mm × 22mm or longer Tightening torque: 78 to 118N·cm (8 to 12kgf·cm)	
	DIN rail		Applicable DIN rail: TH35-7.5Fe, TH35-7.5Al (JIS C 2812 compliant)	
Weight	Approx. 85g		Approx. 110g	

■ Connection diagram (installation base units)

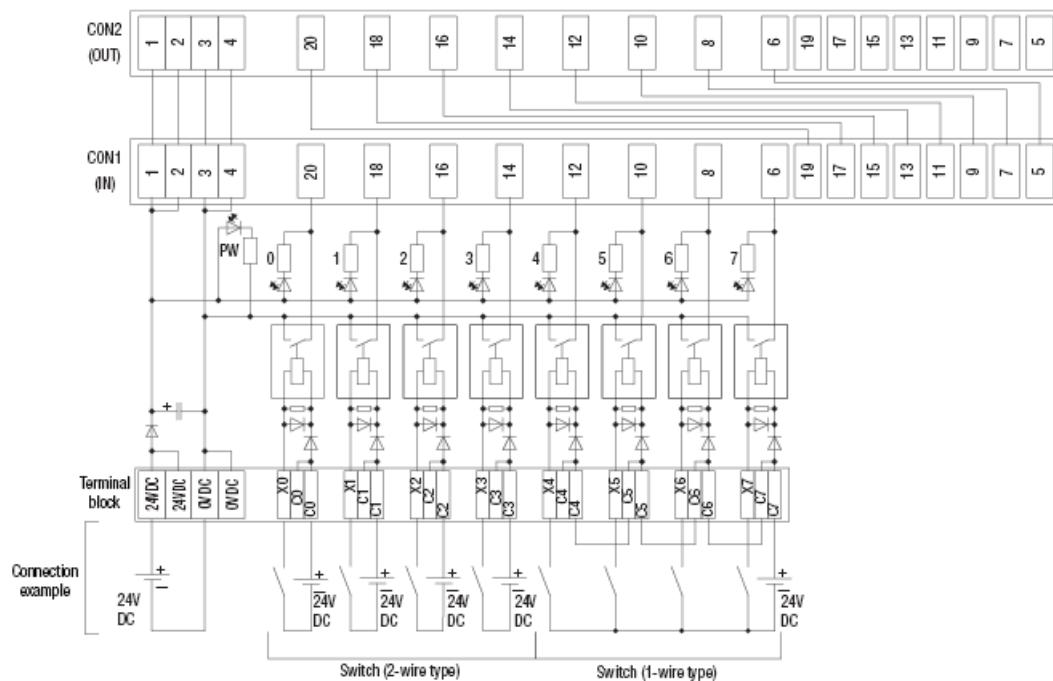
4-point input, slim type, module pre-mounted installation base unit (positive common)

- FA1-TH4X24RA1L20S1E



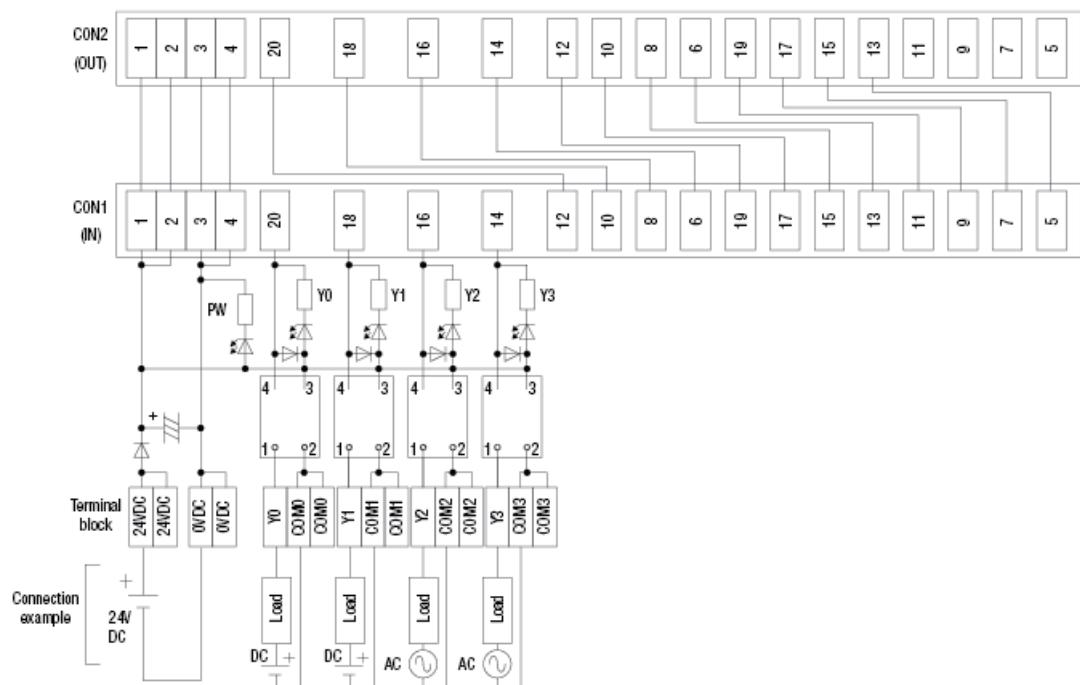
8-point input, slim type, module pre-mounted installation base unit (positive common)

- FA1-TH8X24RA1L20S1E



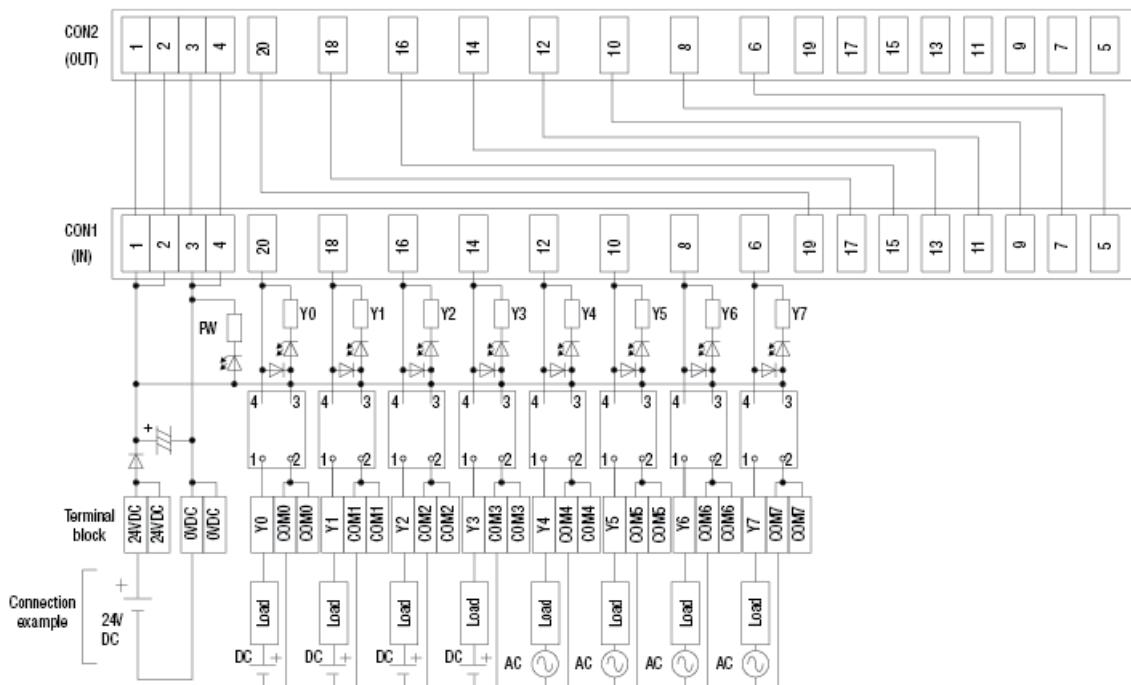
4-point output, slim type, module selectable installation base unit (sink)

- FA1-TH4Y2SC20S1E



8-point output, slim type, module selectable installation base unit (sink)

- FA1-TH8Y2SC20S1E

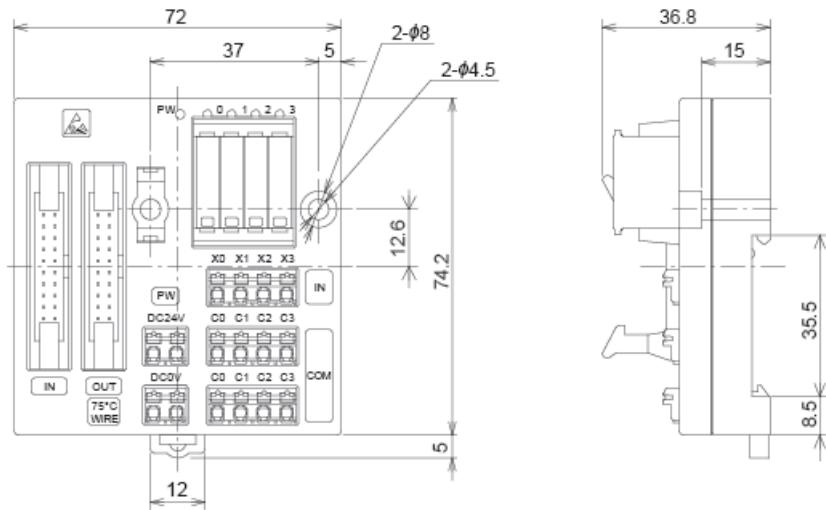


■ External dimensions (installation base units)

(Unit: mm)

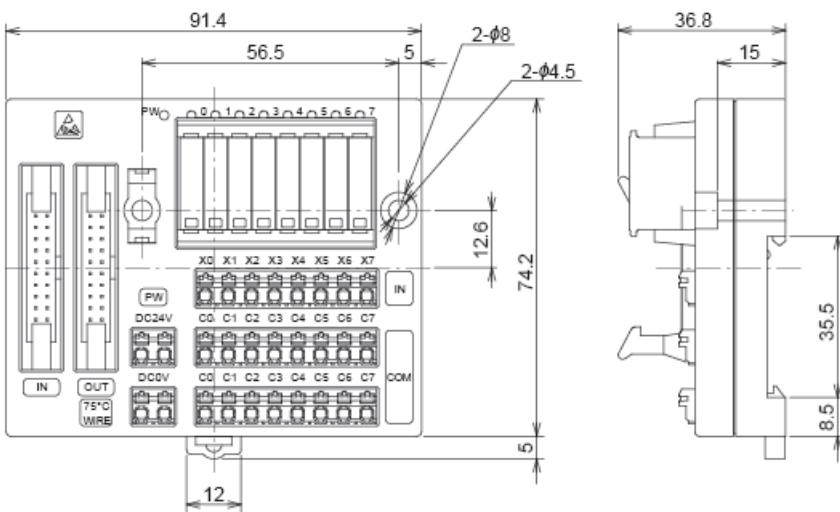
4-point input, slim type, module pre-mounted unit

4-point output, slim type, module selectable installation base unit



8-point input, slim type, module pre-mounted unit

8-point output, slim type, module selectable installation base unit



■ Product list

Digital signal converter (terminal module)

Input Spring clamp terminal type

Programmable controller control method	Unit			Module		Model
	Shape	Control method		Replacement (type)	Mixing	
Positive common		Module pre-mounted unit (24VDC, N/O contact)	4 points, independent (positive common)	Possible (slim type)	(1)	FA1-TH4X24RA1L20S1E
			4 points, independent (negative common)	Possible (slim type)	(1)	FA1-TH4X24RA1H20S1E
			8 points, independent (positive common)	Possible (slim type)	(1)	FA1-TH8X24RA1L20S1E
			8 points, independent (negative common)	Possible (slim type)	(1)	FA1-TH8X24RA1H20S1E
			16 points, independent (positive common)	Possible (slim type)	(1)	FA1-TH16X24RA1L20S1E
		Installation base unit (Module selectable type)	16 points, independent (negative common)	Possible (slim type)	(1)	FA1-TH16X24RA1H20S1E
			4 points, independent	Possible (function type)	Possible	FA1-TH4X2SC20S1E
			8 points, independent	Possible (function type)	Possible	FA1-TH8X2SC20S1E

(1): Only N/O and N/C contact modules can be mixed.

Input Screw terminal type

Programmable controller control method	Unit			Module		Model
	Shape	Control method		Replacement (type)	Mixing	
Positive common		Module pre-mounted unit (24VDC, N/O contact)	16 points, independent	Possible (slim type)	(1)	FA1-TH16XRA20S
			16 points/common, 2-wire type	Not possible	Not possible	FA1-TH16X24D31
			16 points/common, 2-wire type	Not possible	Not possible	FA1-TH16X24D31L
			16 points/common, 2-wire type	Not possible	Not possible	FA1-TH16X48D31L
			16 points/common, 2-wire type	Not possible	Not possible	FA1-TH16X100D31L
		Module built-in unit (48VDC)	16 points/common, 2-wire type	Not possible	Not possible	FA1-TH16X100A31
			16 points/common, 2-wire type	Not possible	Not possible	FA1-TH16X100A31L
			16 points/common, 2-wire type	Not possible	Not possible	FA1-TH16X200A31
			16 points/common, 2-wire type	Not possible	Not possible	FA1-TH16X200A31L

(1): Only N/O and N/C contact modules can be mixed.

Output Spring clamp terminal type

Programmable controller control method	Unit			Module		Model
	Shape	Control method		Replacement (type)	Mixing	
Sink		Installation base unit (Module selectable type)	4 points, independent (sink)	Possible (slim type)	(2)	FA1-TH4Y2SC20S1E
			8 points, independent (sink)	Possible (slim type)	(2)	FA1-TH8Y2SC20S1E
			16 points, independent (sink)	Possible (slim type)	(2)	FA1-TH16Y2SC20S1E
			Module pre-mounted unit (N/O contact)	16 points, independent	Possible (slim type)	FA1-TH16Y2RA20S1E
			Module pre-mounted unit (triac)	16 points, independent	Possible (slim type)	FA1-TH16Y1SR20S1E
		Module pre-mounted unit (transistor)	16 points, independent (sink)	Possible (slim type)	(2)	FA1-TH16Y1TR20S1E
			4 points, independent (source)	Possible (slim type)	(2)	FA1-TH1E4Y2SC20S1E
			8 points, independent (source)	Possible (slim type)	(2)	FA1-TH1E8Y2SC20S1E
			16 points, independent (source)	Possible (slim type)	(3)	FA1-TH1E16Y2SC20S1E
			Module pre-mounted unit (N/O contact relay)	16 points, independent	Possible (slim type)	FA1-TH1E16Y2RA20S1E
Source		Module pre-mounted unit (triac)	16 points, independent	Possible (slim type)	(3)	FA1-TH1E16Y1SR20S1E
			16 points, independent	Possible (slim type)	(3)	FA1-TH1E16Y1TR20S1E
			16 points, independent (source)	Possible (slim type)	(3)	FA1-TH1E16Y1TR20S1E

(2): Only N/O contact, N/C contact, triac, transistor, and signal pass-through modules can be mixed. (3): Only N/O contact, N/C contact, triac, and transistor modules can be mixed.

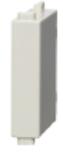
Output Screw terminal type

Programmable controller control method	Unit			Module		Model
	Shape	Control method		Replacement (type)	Mixing	
Sink		Module pre-mounted unit (N/O contact relay)	16 points, independent	Possible (slim type)	(2)	FA-TH16YRA20S
				Not possible		FA-TH16YRA20
				Possible (slim type)	(2)	FA-TH16YRA20SL
		Module pre-mounted unit (N/C contact relay)	16 points/common, 1-wire type	Possible (slim type)	Not possible	FA-TH16YRA11S
				Not possible		FA-TH16YRA11
		Module pre-mounted unit (C/O contact relay)	16 points/common, 2-wire type	Possible (slim type)	Not possible	FA-TH16YRA21S
				Not possible		FA-TH16YRA21
		Module pre-mounted unit (triac)	16 points, independent	Possible (slim type)	(2)	FA-TH16YSR20S
		Module pre-mounted unit (transistor)	16 points/common, 1-wire type	Possible (slim type)	(2)	FA-TH16YSR11S
			16 points/common, 2-wire type	Possible (slim type)	Not possible	FA-TH16YSR21S
			16 points/common, 2-wire type (sink)	Possible (slim type)	Not possible	FA-TH16YTL11S
		Module built-in unit (transistor)	16 points/common, 1-wire type (source)	Possible (slim type)	Not possible	FA-TH16YTL21S
			16 points/independent (sink/source common)	Possible (slim type)	(2)	FA-TH16YTR20S
			16 points/independent 2 A (sink/source common)	Not possible		FA-TH16Y2TR20
Source		Module pre-mounted unit (N/O contact relay)	16 points, independent (source)	Possible (slim type)	(3)	FA1-TH1E16Y2RA20S
		Module pre-mounted unit (transistor)	16 points, independent (sink/source common)	Possible (slim type)	(3)	FA1-THE16YTR20S
			16 points/common, 1-wire type (source)	Possible (slim type)	Not possible	FA1-THE16YTH11S

(2): Only N/O contact, N/C contact, triac, transistor, and signal pass-through modules can be mixed. (3): Only N/O contact, N/C contact, triac, and transistor modules can be mixed.

Module

Slim type

Connection method	Shape	Input/output voltage	Color	Quantity	Model
Input Output		N/O contact relay (24VDC, 100 to 240VAC, 2A)	Beige	2	FA-NYP24WK2
				4	FA-NYP24WK4
		N/C contact relay (24VDC, 100 to 240VAC, 2A)	Sky blue	2	FA-NYBP24WK2
				4	FA-NYBP24WK4
		C/O contact relay (24VDC, 100 to 240VAC, 6A)	White	4	FA-LYCA024VSK4
		Triac (30 to 240VAC, 1A)	Black	2	FA-SN24A01FS2
Output		Transistor (3 to 30VDC, 1A)	Red	2	FA-SN24D01HZS2
				4	FA-SN24D01HZS4
		Signal pass-through ¹	Green	2	FA-SN00SS2
				4	FA-SN00SS4

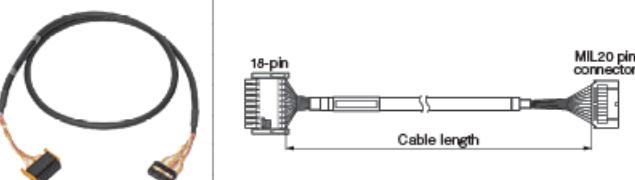
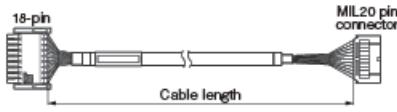
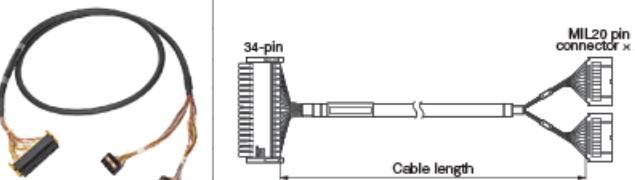
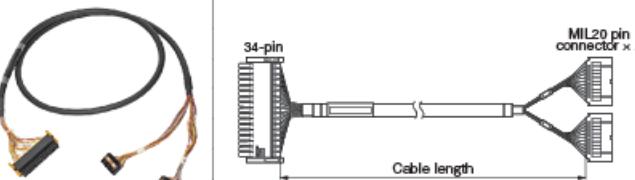
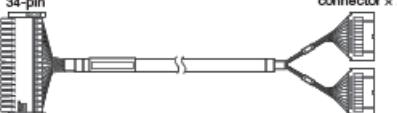
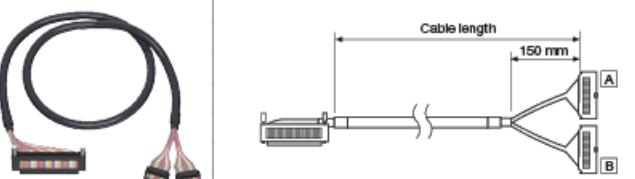
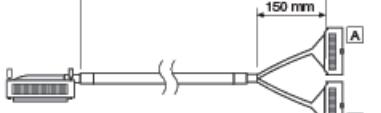
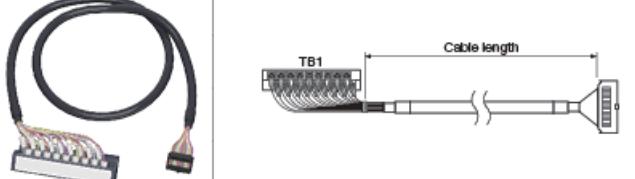
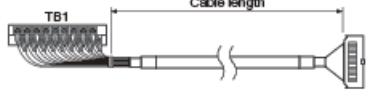
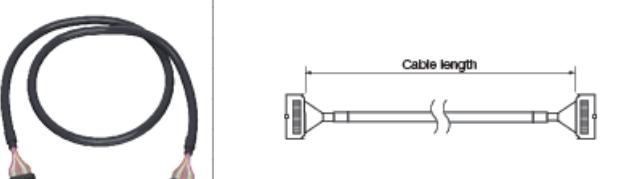
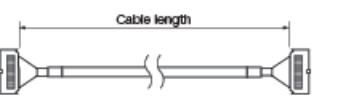
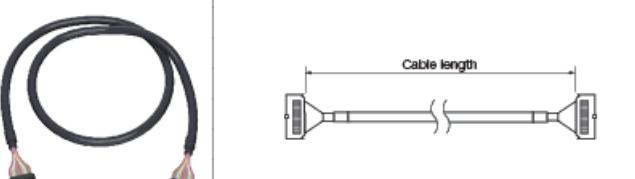
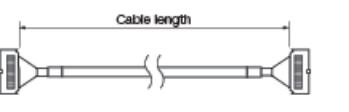
*1: Not available when the signal converter interface module (FA3-TH1C16Y, FA3-TH1C16Y-01C) is connected.

Function type

Connection method	Shape	Input voltage	Color	Quantity	Model
Input		24VDC (relay isolation)	Navy blue	1	FA1-TM1X24RA
				2	FA1-TM1X24RA-2
				4	FA1-TM1X24RA-4
		24VDC (photocoupler isolation)	Black	1	FA1-TM1X24D
				2	FA1-TM1X24D-2
				4	FA1-TM1X24D-4
		48VDC (photocoupler isolation)	Sky blue	1	FA1-TM1X48D
				2	FA1-TM1X48D-2
				4	FA1-TM1X48D-4
		100VDC (photocoupler isolation)	Purple	1	FA1-TM1X100D
				2	FA1-TM1X100D-2
				4	FA1-TM1X100D-4
		100VAC (photocoupler isolation)	Orange	1	FA1-TM1X100A
				2	FA1-TM1X100A-2
				4	FA1-TM1X100A-4
		200VAC (photocoupler isolation)	Red	1	FA1-TM1X200A
				2	FA1-TM1X200A-2
				4	FA1-TM1X200A-4
		Dummy module (dust protector)	Green	4	FA1-TM1ND4

Cable

Connection cable

	Name	Shape	Remarks	Cable length	Model
MELSEC IQ-R series	Cable for I/O module, 18-pin			1m	FA1-CB1L10EM1F18
	Cable for sink I/O, 18-pin			2m	FA1-CB1L20EM1F18
MELSEC IQ-F series	Cable for source I/O, 18-pin			3m	FA1-CB1L30EM1F18
	Cable for input module, 18-pin			1m	FA2-CB1L10EM1F18
CC-Link IE TSN series	Cable for output module, 18-pin			2m	FA2-CB1L20EM1F18E
	Cable for input module, 18-pin			3m	FA2-CB1L30EM1F18E
MELSEC IQ-R series	Cable for I/O module, 34-pin			1m	FA1-CB1L10EM2F34
	Cable for input module, 34-pin			2m	FA1-CB1L20EM2F34
CC-Link IE TSN/ CC-Link IE Field Basic series	Cable for output module, 34-pin			3m	FA1-CB1L30EM2F34
	Cable for input module, 34-pin			1m	FA3-CB1L10EM2F34X
MELSEC IQ-R/Q/L series	Branch cable for I/O (vertical connector)			0.6m	FA-CBL06FM2V
	Split cable for I/O (vertical connector)			1m	FA-CBL10FM2V
MELSEC IQ-R/Q series	Terminal block cable for I/O			0.6m	FA-CBL06TM20
	Straight power cable (sink)			1m	FA-CBL10TM20
MELSEC IQ-F/F series	Crossover power cable (source)			0.6m	FA-FXCBL06MMH20
	Straight power cable for temperatures down to -20°C (sink)			1m	FA-FXCBL10MMH20
	Crossover power cable for temperatures down to -20°C (source)			1.5m	FA-FXCBL15MMH20
	Straight power cable for temperatures down to -20°C (sink)			2m	FA-FXCBL20MMH20
MELSEC IQ-F/F series	Crossover power cable for temperatures down to -20°C (source)			3m	FA-FXCBL30MMH20
	Straight power cable for temperatures down to -20°C (sink)			0.6m	FA2-CB1L06MM1H20E
	Crossover power cable for temperatures down to -20°C (source)			1m	FA2-CB1L10MM1H20E
	Straight power cable for temperatures down to -20°C (sink)			1.5m	FA2-CB1L15MM1H20E
	Crossover power cable for temperatures down to -20°C (source)			2m	FA2-CB1L20MM1H20E
	Straight power cable for temperatures down to -20°C (sink)			3m	FA2-CB1L30MM1H20E
	Crossover power cable for temperatures down to -20°C (source)			1m	FA2-CB1LT10MM1H20
	Straight power cable for temperatures down to -20°C (sink)			2m	FA2-CB1LT20MM1H20
	Crossover power cable for temperatures down to -20°C (source)			3m	FA2-CB1LT30MM1H20
	Straight power cable for temperatures down to -20°C (sink)			1m	FA2-CB1LT10MM1H20E
	Crossover power cable for temperatures down to -20°C (source)			2m	FA2-CB1LT20MM1H20E
	Straight power cable for temperatures down to -20°C (sink)			3m	FA2-CB1LT30MM1H20E

	Name	Shape	Remarks	Cable length	Model
CC-Link IE Field Network CC-Link series	Branch cable for I/O (horizontal connector)		Programmable controller connection side CON1 Cable length 150 mm	0.3m	FA-CBL03FM2H
	Split cable for I/O (horizontal connector)		Programmable controller connection side CON1 Cable length 150 mm	1m	FA-CBL10FM2H
				2m	FA-CBL20FM2H
				3m	FA-CBL30FM2H
				1m	FA-CBL10FM2LH
				2m	FA-CBL20FM2LH
				3m	FA-CBL30FM2LH
				5m	FA-CBL50FM2LH
CC-Link IE TSN CC-Link IE Field Network Basic CC-Link IE Field Network General-purpose controller	Discrete cable for I/O		150 mm Cable length	0.6m	FA-CBL06M20
	Y-shaped crimp terminal cable for I/O		150 mm Cable length	1m	FA-CBL10YM20
				2m	FA-CBL20YM20
				1m	FA-CBL10YM20
				2m	FA-CBL20YM20
				3m	FA-CBL30YM20
				5m	FA-CBL50YM20

Cable for dispersed installation of 8-point/4-point installation base units

Name	Shape	Remarks	Cable length	Model
Cable for dispersed installation of 8-point/4-point installation base units		150 mm Cable length	0.6m	FA-CBL06MMH20
			1m	FA-CBL10MMH20
			2m	FA-CBL20MMH20
			3m	FA-CBL30MMH20
			5m	FA-CBL50MMH20

Cable for transition wiring of common terminals

Name	Shape	Remarks	Quantity	Cable length	Model
Pre-fabricated cable with ferrules for wiring common terminals		<ul style="list-style-type: none"> This is used to wire the common terminals of spring clamp terminals. Common terminals can be shared according to the customer's needs. Example: Connecting C0 through CF indicates 16 points/common Example: Connecting C0 through C3 indicates 4 points/common	A set of 15 cables	60mm	FA1-SC1W006F-15

■ Applicable ferrules and crimping tools

Applicable wire size	Applicable ferrule	Crimping tool	Manufacturer
0.25mm ² / 24 AWG	AI 0,25-8 YE	CRIMPFOX 6	PHOENIX CONTACT GmbH & Co. KG
0.3 and 0.34mm ² / 22 AWG	AI 0,34-8 TQ		
0.5mm ² / 20 AWG	AI 0,5-8 WH		
0.75mm ² / 18 AWG	AI 0,75-8 GY		
0.08 to 0.34mm ² / 28 to 22 AWG	216-302	206-220	WAGO Kontakttechnik GmbH & Co. KG
0.34mm ² / 24 and 22 AWG	216-302	206-204	
0.5mm ² / 22 and 20 AWG	216-201	206-1204	
0.75mm ² / 20 and 18 AWG	216-202		

■ Recommended product

Item	Specifications
Name	Test plug
Model	MPS-MT 1-S
Manufacturer	PHOENIX CONTACT GmbH & Co. KG
Shape	
Test pin	Ø 1.0mm
Socket ¹	Ø 2.0mm
Cable length	150mm

¹: The socket into which the end of the test lead is inserted

■ Related catalogs

Digest edition

Time and Wire Saving Devices



■ Related leaflets

Analog Signal Converters
(MEIC220E-21Y)

Network Interface Modules
(MEIC215E-214)



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