

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-Factory**

↓
wire-cutting and
process time reduction



Source: Mitsubishi Electric Corporation

Eliminate waste by optimizing the system

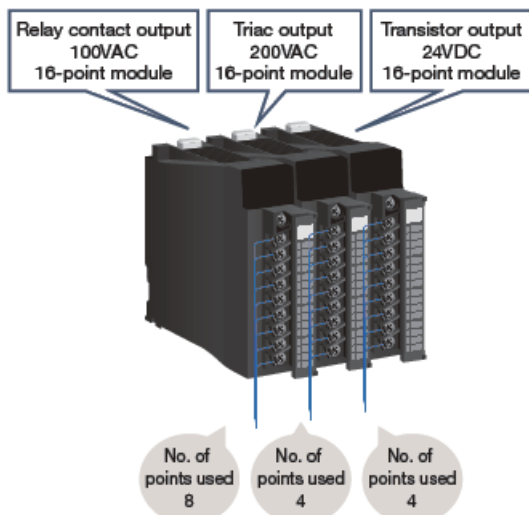
Optimal configuration and easy wiring

Optimal combination of devices

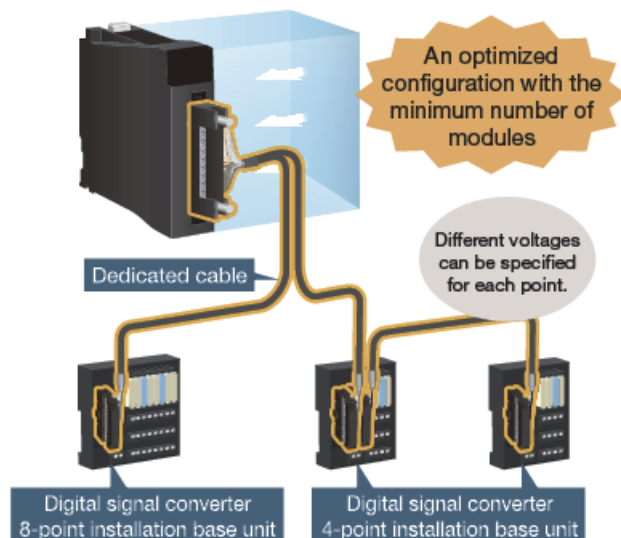
The digital signal converter (terminal module) converts various input voltages into 24VDC voltage, thereby optimizing or reducing the number of programmable controller modules. Thus, the cost required for keeping spare modules will be reduced. By using the installation base unit with selectable number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

Configuration

Before



After



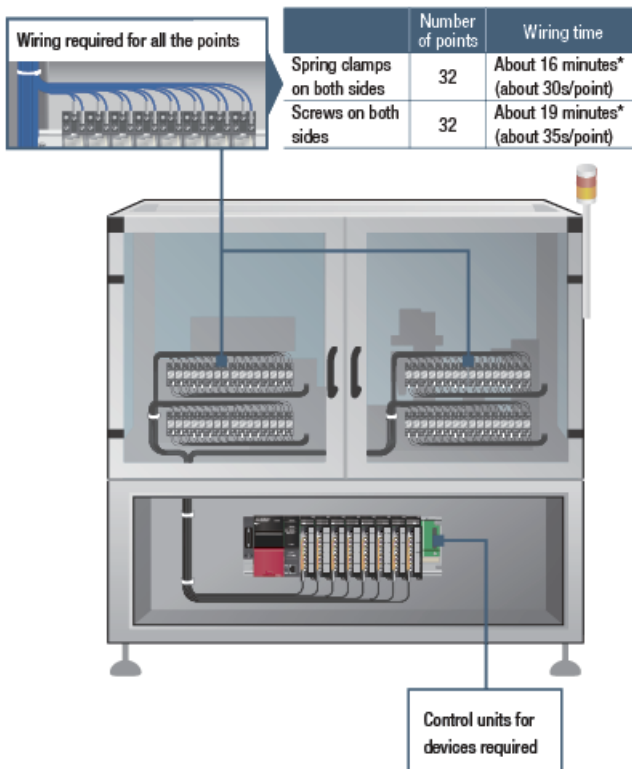
Installation suitable for your usage

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.

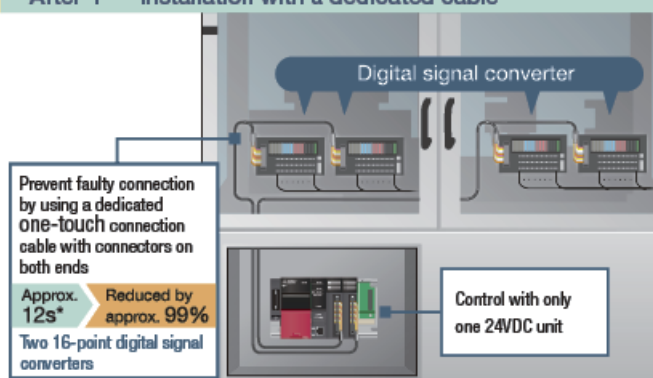
Installation

* Result of in-house testing

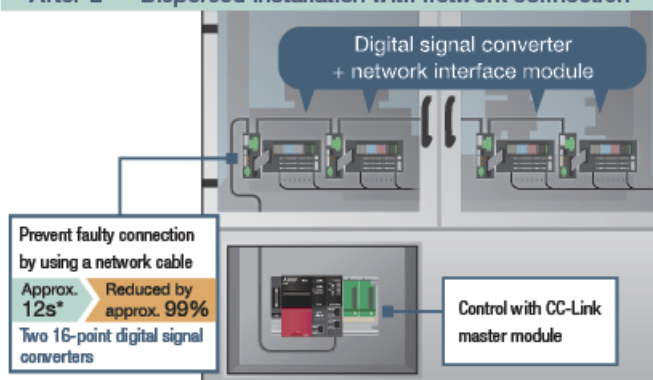
Before



After-1 Installation with a dedicated cable



After-2 Dispersed installation with network connection



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

4-point installation base unit		8-point installation base unit		16-point installation base unit			
New			New				
Spring clamp terminal block		Spring clamp terminal block		Spring clamp terminal block		Spring clamp terminal block	
Input	Output	Input	Output	Input	Output	Input	Output
Slim type		Function type		Function type		Slim type	

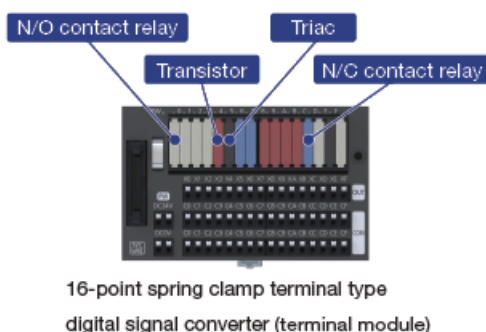
*1: For details, refer to the product lists on page 20.

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
		Screw type terminal block ¹⁾	Pre-mounted	Slim type	Possible	Possible
			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.



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.

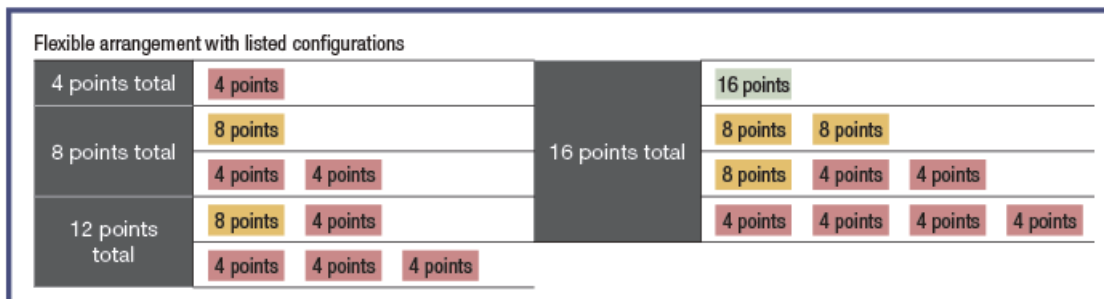
Functional module: The module has LEDs and can be replaced without tools.

Dispersed installation to meet the system needs

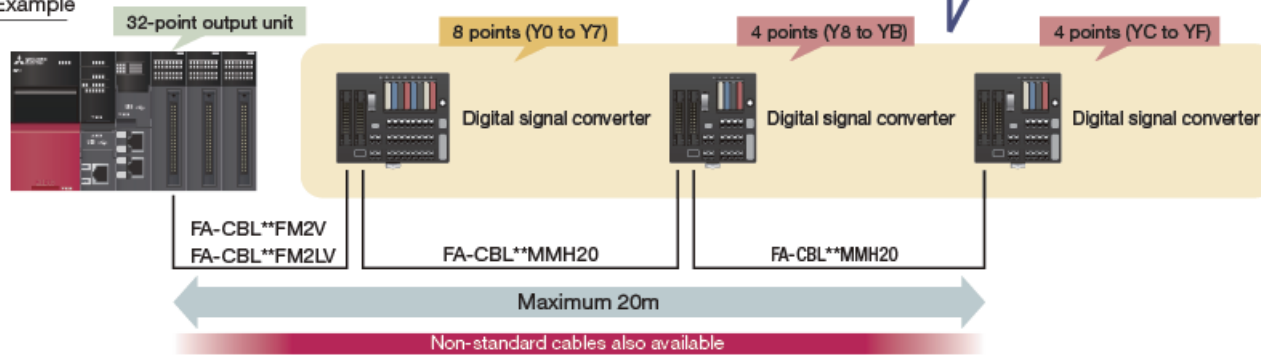
The digital signal converter (terminal module) can be installed near input devices using a dedicated cable and a network interface module. More flexible dispersed installation is enabled by selecting the number of modules suitable for the system structure.

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.



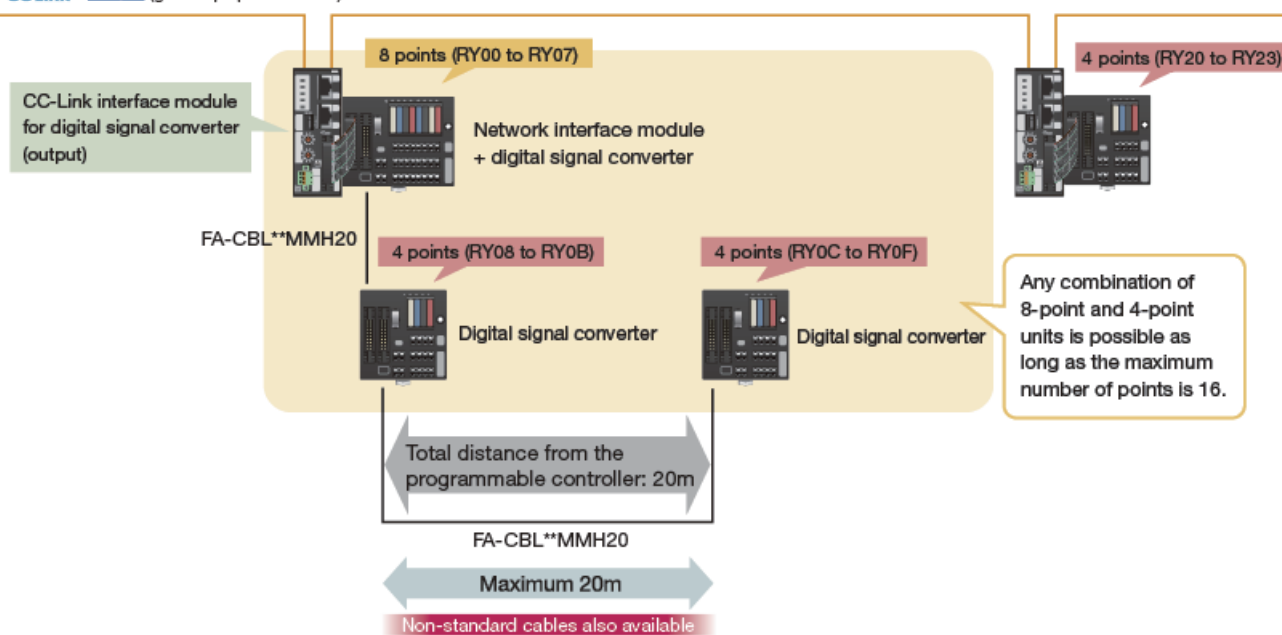
Example



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.

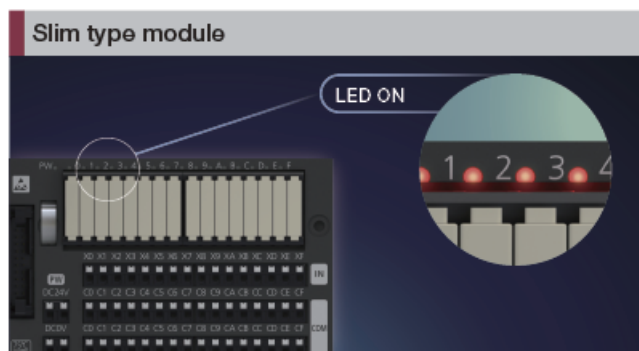
CC-Link IE TSN CC-Link IE Field CC-Link IE Field Basic
CC-Link SLMP (general-purpose Ethernet) MODBUS[®]/TCP



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.

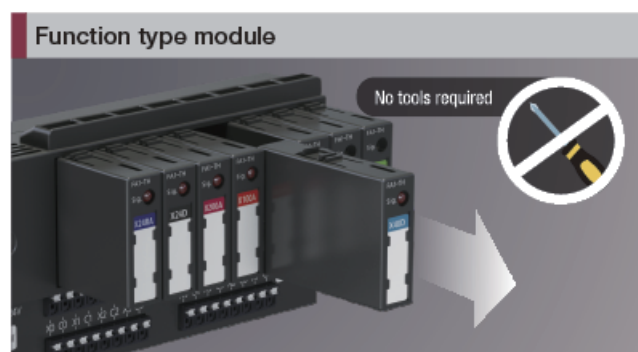
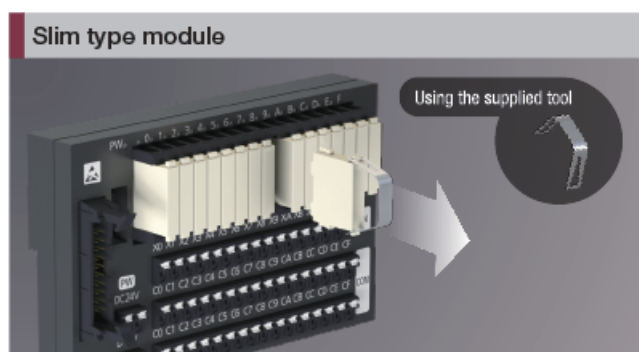


Marker strips

- The module has marker strips on the front.
- Input signals can be distinguished by marker strip color and markings.
- Information can be written in the space on the marker strip for easy management.

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.

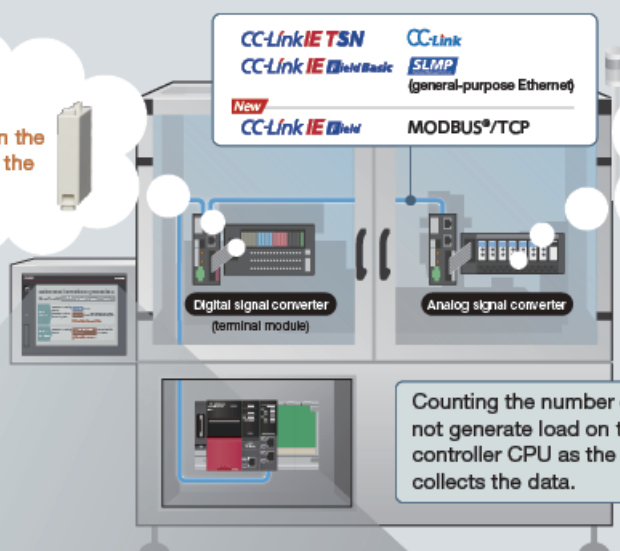
Maintenance information recording function

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

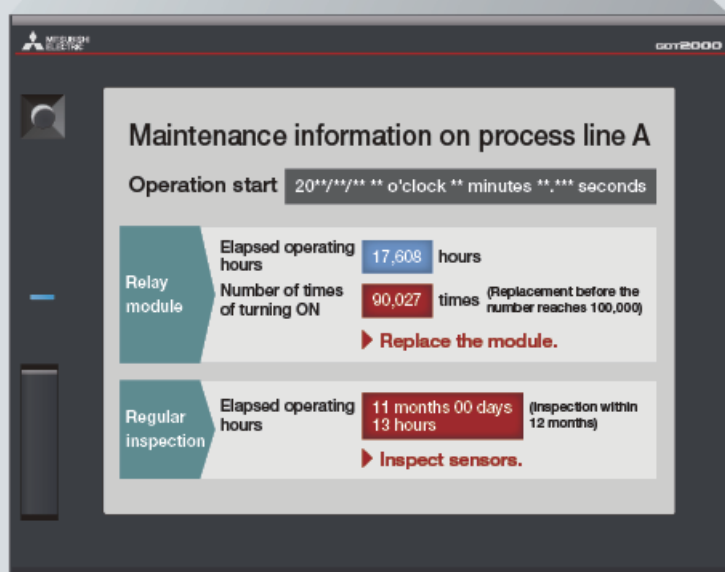
This function outputs an alarm signal to the master station when the specified operating hours^{*1} have elapsed or the number of times a relay turns ON^{*2} has exceeded the preset value.

Life of the relay module based on the number of times the relay turns ON

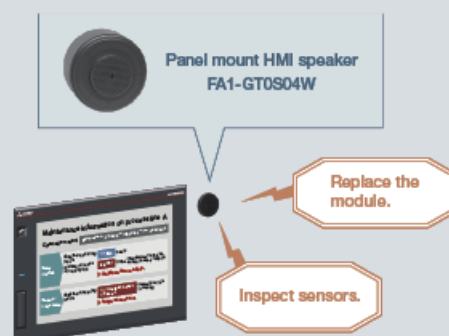


- Regular inspection on sensors
- Battery replacement
- Filter cleaning
- Material replenishment or other purposes

Counting the number of times and hours does not generate load on the programmable controller CPU as the network interface module collects the data.



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.

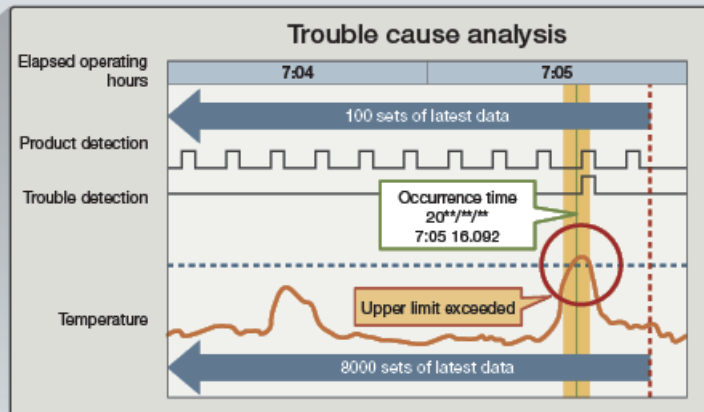
Operation history recording function (digital signal converters)

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

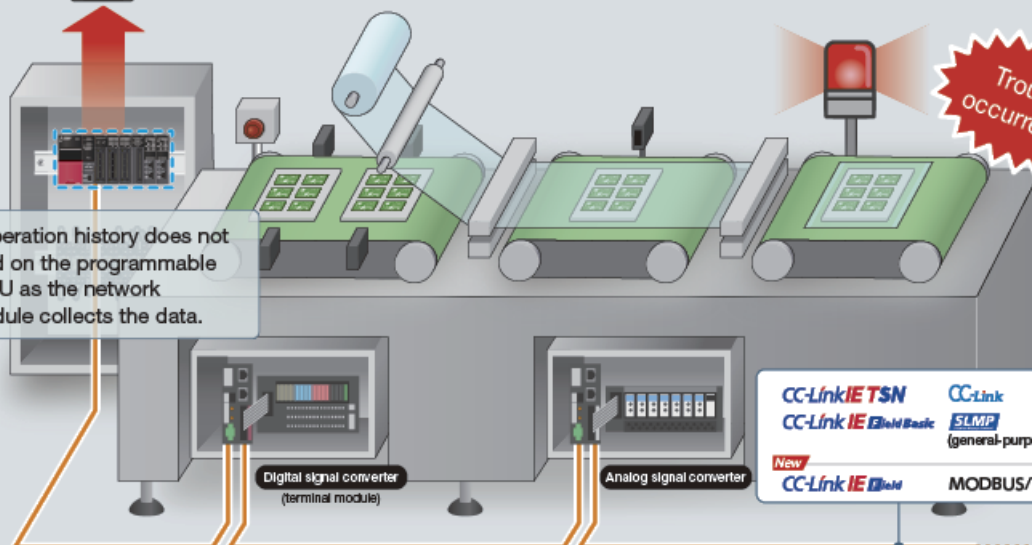


Production site



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.



CC-Link I^{ET}SN CC-Link
CC-Link I^EField Basic SLMP
(general-purpose Ethernet)
New
CC-Link I^EBasic MODBUS/TCP

*1: The function to record occurrence times is available for CC-Link I^ETSN, CC-Link I^EField Network, and CC-Link I^EField 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

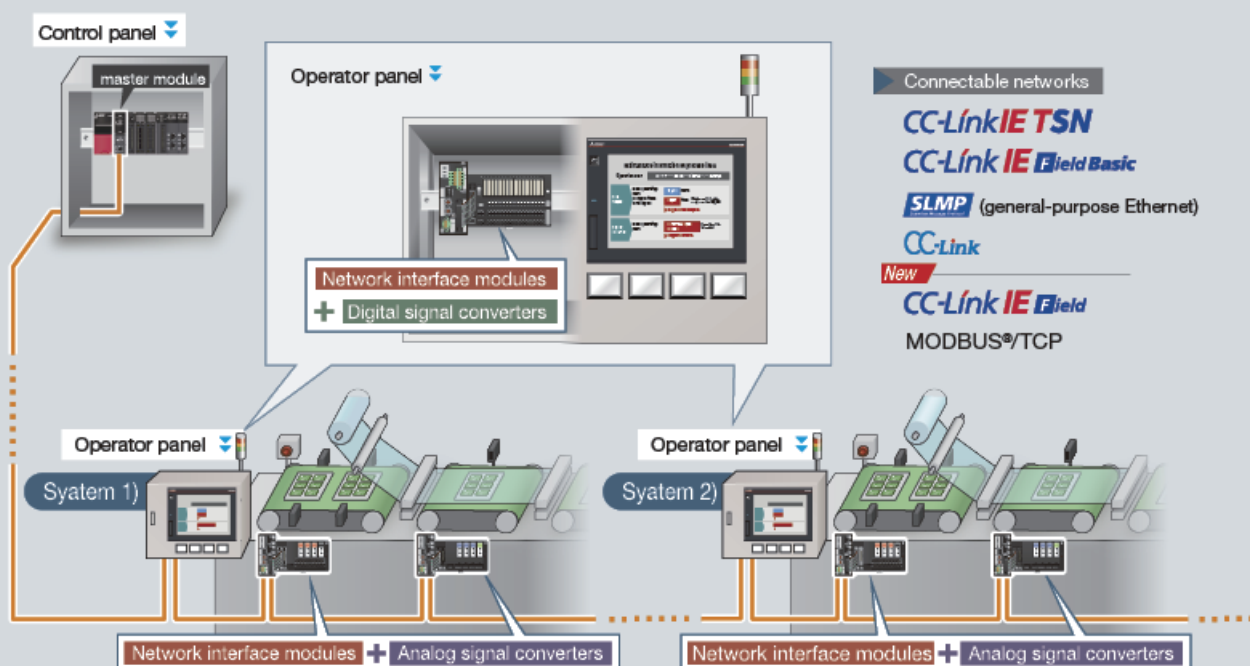
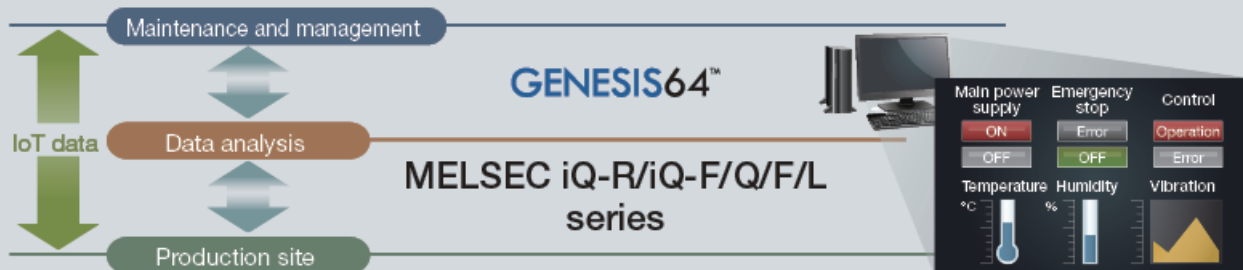
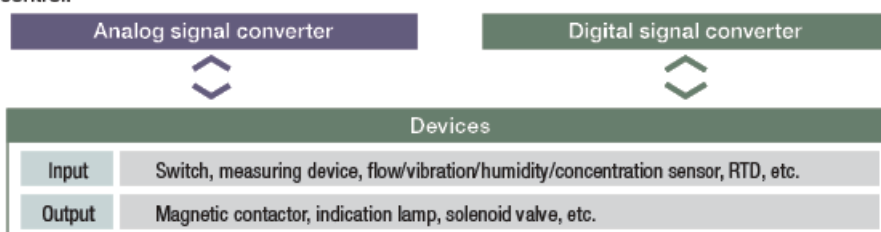
Using network interface modules for signal converters enables dispersed installation in small areas and integrated management of device data using IoT systems.

With network interface modules

Digital signal converters (terminal modules) and analog signal converters can be installed efficiently in dispersed areas near devices such as sensors.

Connection between devices and upper hierarchical levels for data transmission via network

On-site operation data is collected, stored, visualized, and analyzed to be used for device control.



■ 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.

4-channel installation base unit	8-channel installation base unit
New Spring clamp terminal block	New Screw type terminal block
 - Input (voltage connection) - Output (common for current and voltage)	 - Input (current connection/voltage connection) - Output (common for current and voltage)

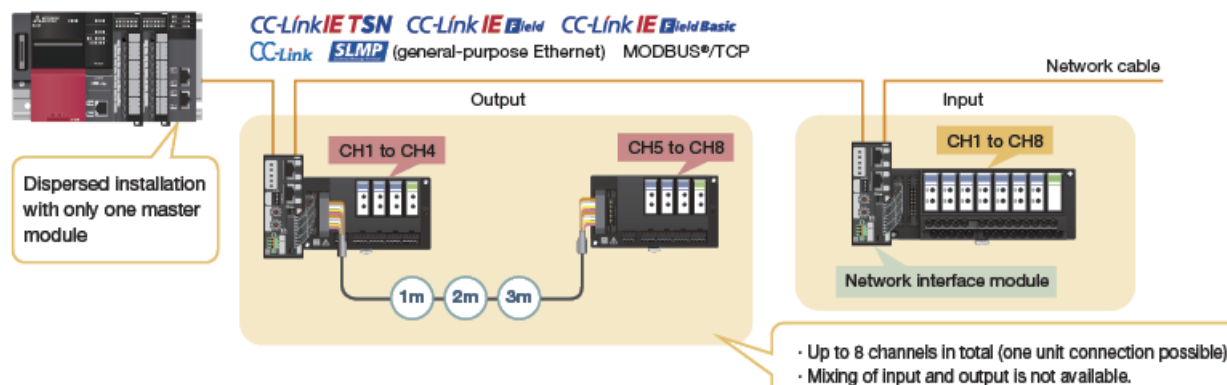
Input models: Different types of analog inputs (voltage, current, distributor, thermocouple, resistance temperature detector) can be specified for each channel.

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-TH□X24RA1L20S1E	FA-CBL**M20 FA-CBL**YM20 FA-CBL**TMV20 FA-CBL**MMH20 (for dispersed installation)
				24VDC N/O contact relay (negative common)			FA1-TH□X24RA1H20S1E	
	RX41C4 RX41C6HS RX42C4 RH42C4NT2P ^{*1}	Positive common	Spring clamp	24VDC N/O contact relay (positive common)	Module mixing possible	Independent	FA1-TH□X24RA1L20S1E	FA-CBL**FM2V FA-CBL**FM2LV FA-CBL**MMH20 (for dispersed installation)
				24VDC N/O contact relay (negative common)			FA1-TH□X24RA1H20S1E	
	RX40C7-TS	Positive common	Spring clamp	24VDC N/O contact relay (positive common)	Module mixing possible	Independent	FA1-TH□X24RA1L20S1E	FA1-CB1L**EM1F18 FA-CBL**MMH20 (for dispersed installation)
				24VDC N/O contact relay (negative common)			FA1-TH□X24RA1H20S1E	
	RX41C4-TS	Positive common	Spring clamp	24VDC N/O contact relay (positive common)	Module mixing possible	Independent	FA1-TH□X24RA1L20S1E	FA1-CB1L**EM2F34 FA-CBL**MMH20 (for dispersed installation)
				24VDC N/O contact relay (negative common)			FA1-TH□X24RA1H20S1E	
MELSEC IQ-F series	FX5-C32ET/D ^{*1} FX5-C16EX/D FX5-C32EX/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-TH□X24RA1L20S1E	FA-FXCBL**MMH20 FA2-CB1LT**MM1H20 FA-CBL**MMH20 (for dispersed installation)
				24VDC N/O contact relay (negative common)			FA1-TH□X24RA1H20S1E	
	FX5-C16EX/DS FX5-C32EX/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-TH□X24RA1L20S1E	FA-FXCBL**MMH20E FA2-CB1LT**MM1H20E FA-CBL**MMH20 (for dispersed installation)
				24VDC N/O contact relay (negative common)			FA1-TH□X24RA1H20S1E	
	FX5-C32ET/DS-TS FX5-C32ET/DSS-TS FX5UC-32MT/DS-TS FX5UC-32MT/DSS-TS FX5-C32EX/DS-TS	Sink input	Spring clamp	24VDC N/O contact relay (positive common)	Module mixing possible	Independent	FA1-TH□X24RA1L20S1E	FA2-CB1L**EM1F18E FA-CBL**MMH20 (for dispersed installation)
				24VDC N/O contact relay (negative common)			FA1-TH□X24RA1H20S1E	
MELSEC-Q series	QX40 QX40-S1	Positive common	Spring clamp	24VDC N/O contact relay (positive common)	Module mixing possible	Independent	FA1-TH□X24RA1L20S1E	FA-CBL**M20 FA-CBL**YM20 FA-CBL**TMV20 FA-CBL**MMH20 (for dispersed installation)
				24VDC N/O contact relay (negative common)			FA1-TH□X24RA1H20S1E	
	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-TH□X24RA1L20S1E	FA-CBL**FM2V FA-CBL**FM2LV FA-CBL**MMH20 (for dispersed installation)
				24VDC N/O contact relay (negative common)			FA1-TH□X24RA1H20S1E	
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-TH□X24RA1L20S1E	FA-FXCBL**MMH20 FA2-CB1LT**MM1H20 FA-CBL**MMH20 (for dispersed installation)
				24VDC N/O contact relay (negative common)			FA1-TH□X24RA1H20S1E	
	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-TH□X24RA1L20S1E	FA2-CB1L**MM1H20E FA2-CB1LT**MM1H20E FA-CBL**MMH20 (for dispersed installation)
				24VDC N/O contact relay (negative common)			FA1-TH□X24RA1H20S1E	
MELSEC-L series	LX40C6	Positive common	Spring clamp	24VDC N/O contact relay (positive common)	Module mixing possible	Independent	FA1-TH□X24RA1L20S1E	FA-CBL**M20 FA-CBL**YM20 FA-CBL**MMH20 (for dispersed installation)
				24VDC N/O contact relay (negative common)			FA1-TH□X24RA1H20S1E	
	LX41C4 LX42C4 LH42C4NT1P ^{*1} LH42C4PT1P ^{*1}	Positive common	Spring clamp	24VDC N/O contact relay (positive common)	Module mixing possible	Independent	FA1-TH□X24RA1L20S1E	FA-CBL**FM2V FA-CBL**FM2LV FA-CBL**MMH20 (for dispersed installation)
				24VDC N/O contact relay (negative common)			FA1-TH□X24RA1H20S1E	

*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	24/DC N/O contact relay (positive common)	Module mixing possible	Independent	FA1-TH□X24RA1L20S1E	FA-CBL**FM2H FA-CBL**FM2LH FA-CBL**MMH20 (for dispersed installation)
				24/DC N/O contact relay (negative common)			FA1-TH□X24RA1H20S1E	
	NZ2GN2B1-32D NZ2GN2B1-32DT*	Positive common	Spring clamp	24/DC N/O contact relay (positive common)	Module mixing possible	Independent	FA1-TH□X24RA1L20S1E	FA-CBL**M20 FA-CBL**YM20 FA-CBL**MMH20 (for dispersed installation)
				24/DC N/O contact relay (negative common)			FA1-TH□X24RA1H20S1E	
	NZ2GN2S1-16D	Positive common	Spring clamp	24/DC N/O contact relay (positive common)	Module mixing possible	Independent	FA1-TH□X24RA1L20S1E	FA3-CB1L**EM1F18X FA-CBL**MMH20 (for dispersed installation)
				24/DC N/O contact relay (negative common)			FA1-TH□X24RA1H20S1E	
	NZ2GN2S1-32D	Positive common	Spring clamp	24/DC N/O contact relay (positive common)	Module mixing possible	Independent	FA1-TH□X24RA1L20S1E	FA3-CB1L**EM2F34X FA-CBL**MMH20 (for dispersed installation)
				24/DC N/O contact relay (negative common)			FA1-TH□X24RA1H20S1E	
	NZ2GN2S1-32DT*	Positive common	Spring clamp	24/DC N/O contact relay (positive common)	Module mixing possible	Independent	FA1-TH□X24RA1L20S1E	FA3-CB1L**EM2F34Y FA-CBL**MMH20 (for dispersed installation)
				24/DC N/O contact relay (negative common)			FA1-TH□X24RA1H20S1E	
CC-Link IE Field series	NZ2GF2B1N1-16D NZ2GF2B1-32D NZ2GF2B1-32DT*	Positive common	Spring clamp	24/DC N/O contact relay (positive common)	Module mixing possible	Independent	FA1-TH□X24RA1L20S1E	FA-CBL**M20 FA-CBL**YM20 FA-CBL**MMH20 (for dispersed installation)
				24/DC N/O contact relay (negative common)			FA1-TH□X24RA1H20S1E	
	NZ2GFCF1-32D	Positive common	Spring clamp	24/DC N/O contact relay (positive common)	Module mixing possible	Independent	FA1-TH□X24RA1L20S1E	FA-CBL**FM2H FA-CBL**FM2LH FA-CBL**MMH20 (for dispersed installation)
				24/DC N/O contact relay (negative common)			FA1-TH□X24RA1H20S1E	
CC-Link IE Field Basic series	NZ2MFB1-32D NZ2MFB1-32DT	Positive common	Spring clamp	24/DC N/O contact relay (positive common)	Module mixing possible	Independent	FA1-TH□X24RA1L20S1E	FA-CBL**M20 FA-CBL**YM20 FA-CBL**MMH20 (for dispersed installation)
				24/DC N/O contact relay (negative common)			FA1-TH□X24RA1H20S1E	
	NZ2MF2S1-32D	Positive common	Spring clamp	24/DC N/O contact relay (positive common)	Module mixing possible	Independent	FA1-TH□X24RA1L20S1E	FA3-CB1L**EM2F34X FA-CBL**MMH20 (for dispersed installation)
				24/DC N/O contact relay (negative common)			FA1-TH□X24RA1H20S1E	
	NZ2MF2S1-32DT*	Positive common	Spring clamp	24/DC N/O contact relay (positive common)	Module mixing possible	Independent	FA1-TH□X24RA1L20S1E	FA3-CB1L**EM2F34Y FA-CBL**MMH20 (for dispersed installation)
				24/DC 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*	Positive common	Spring clamp	24/DC N/O contact relay (positive common)	Module mixing possible	Independent	FA1-TH□X24RA1L20S1E	FA-CBL**M20 FA-CBL**YM20 FA-CBL**MMH20 (for dispersed installation)
				24/DC N/O contact relay (negative common)			FA1-TH□X24RA1H20S1E	
	AJ65VBTS3-16D	Positive common	Spring clamp	24/DC N/O contact relay (positive common)	Module mixing possible	Independent	FA1-TH□X24RA1L20S1E	FA-CBL**M20 FA-CBL**MMH20 (for dispersed installation)
				24/DC N/O contact relay (negative common)			FA1-TH□X24RA1H20S1E	
Anywire	BL265SB-16F-2-20 BL265SB-32F-2-20	Positive common	Spring clamp	24/DC N/O contact relay (positive common)	Module mixing possible	Independent	FA1-TH□X24RA1L20S1E	FA-CBL**MMH20 (also used for unit dispersion)
				24/DC N/O contact relay (negative common)			FA1-TH□X24RA1H20S1E	
General-purpose controller		Positive common	Spring clamp	24/DC N/O contact relay (positive common)	Module mixing possible	Independent	FA1-TH□X24RA1L20S1E	FA-CBL**M20 FA-CBL**YM20 FA-CBL**MMH20
				24/DC N/O contact relay (negative common)			FA1-TH□X24RA1H20S1E	

*1: Input side only

□ = 4: 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/DSS-TS FX5-C32ET/DSS-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	FA-CBL**FM2V FA-CBL**FM2LV FA-CBL**MMH20 (for dispersed installation)
	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	FA-CBL**M20 FA-CBL**YM20 (for dispersed installation)
	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	FA3-CB1L**EM1F18Y FA-CBL**MMH20 (for dispersed installation)
	NZ2GN2S1-16TE		Spring clamp	Installation base unit	Module selectable type	Independent	FA1-TH1E□Y2SC20S1E	FA3-CB1L**EM1F18Y FA-CBL**MMH20 (for dispersed installation)
	NZ2GN2S1-32T NZ2GN2S1-32TE NZ2GN2S1-32DT NZ2GN2S1-32DTE		Spring clamp	Installation base unit	Module selectable type	Independent	FA1-TH□Y2SC20S1E	FA3-CB1L**EM2F34Y FA-CBL**MMH20 (for dispersed installation)
CC-Link IE Field series	NZ2GFCF1-32T	Sink output	Spring clamp	Installation base unit	Module selectable type	Independent	FA1-TH□Y2SC20S1E	FA-CBL**FM2H FA-CBL**FM2LH FA-CBL**MMH (for dispersed installation)
	NZ2GF2B1N1-16TE NZ2GF2B1-32TE	Source output	Spring clamp	Installation base unit	Module selectable type	Independent	FA1-TH1E□Y2SC20S1E	FA-CBL**M20 FA-CBL**YM20
CC-Link IE Field Basic series	NZ2MF2S1-32T NZ2MF2S1-32DT		Spring clamp	Installation base unit	Module selectable type	Independent	FA1-TH□Y2SC20S1E	FA3-CB1L**EM2F34Y FA-CBL**MMH20 (for dispersed installation)
	NZ2MF2S1-32TE1 NZ2MF2S1-32DTE1		Spring clamp	Installation base unit	Module selectable type	Independent	FA1-TH1E□Y2SC20S1E	FA3-CB1L**EM2F34Y FA-CBL**MMH20 (for dispersed installation)
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	FA1-TH□Y2SC20S1E	FA-CBL**M20 FA-CBL**YM20 FA-CBL**MMH20 (for dispersed installation)
	AJ65SBTCF1-32T AJ65BTC1-32T	Sink output	Spring clamp	Installation base unit	Module selectable type	Independent	FA1-TH□Y2SC20S1E	FA-CBL**FM2H FA-CBL**FM2LH FA-CBL**MMH (for dispersed installation)
Anywire	BL265PB-16F-2-20 BL265PB-32F-2-20	Sink output	Spring clamp	Installation base unit	Module selectable type	Independent	FA1-TH□Y2SC20S1E	FA-CBL**MMH20 (also used for unit dispersion)
	BL265PB-16FS-2-20 BL265PB-32FS-2-20	Source output	Spring clamp	Installation base unit	Module selectable type	Independent	FA1-TH1E□Y2SC20S1E	FA2-CB1L**MM1H20E (also used for unit dispersion)
General-purpose controller Terminal block type		Sink output	Spring clamp	Installation base unit	Module selectable type	Independent	FA1-TH□Y2SC20S1E	FA-CBL**M20 FA-CBL**YM20
		Source output	Spring clamp	Installation base unit	Module selectable type	Independent	FA1-TH1E□Y2SC20S1E	FA-CBL**MMH20 (also used for unit dispersion)

□ = 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)	-	FA1-TH4X24RA1L20S1E FA1-TH4X24RA1H20S1E FA1-TH8X24RA1L20S1E FA1-TH8X24RA1H20S1E
		Signal converter connection extension cable	FA3-CB2L**MM1H20	
	FA3-TH1M16XC	Signal converter connection extension cable	FA-CBL**MMH20 ^{*1} (for dispersed installation)	
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)	-	
		Signal converter connection extension cable	FA3-CB2L**MM1H20	
	FA3-TH1T16XC	Signal converter connection extension cable	FA-CBL**MMH20 ^{*1} (for dispersed installation)	
CC-Link	FA3-TH1C16XC-01C	Dedicated cable (Included with the CC-Link interface module)	-	
		Signal converter connection extension cable	FA3-CB2L**MM1H20	
	FA3-TH1C16XC	Signal converter connection extension cable	FA-CBL**MMH20 ^{*1} (for dispersed installation)	

*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)	-	FA1-TH4Y2SC20S1E FA1-TH8Y2SC20S1E
		Signal converter connection extension cable	FA3-CB2L**MM1H20	
	FA3-TH1M16Y	Signal converter connection extension cable	FA-CBL**MMH20 ^{*2} (for dispersed installation)	FA1-TH1E4Y2SC20S1E FA1-TH1E8Y2SC20S1E
	FA3-TH1M16YE-01C	Dedicated cable (Included with the CC-Link interface module)	-	FA1-TH1E4Y2SC20S1E FA1-TH1E8Y2SC20S1E
		Signal converter connection extension cable	FA3-CB2L**MM1H20	
CC-Link IE TSN CC-Link IE Field CC-Link IE Field Basic General-purpose Ethernet (SLMP)	FA3-TH1M16YE	Signal converter connection extension cable	FA-CBL**MMH20 ^{*2} (for dispersed installation)	FA1-TH4Y2SC20S1E FA1-TH8Y2SC20S1E
	FA3-TH1T16Y-01C	Dedicated cable (Included with the CC-Link interface module)	-	FA1-TH1E4Y2SC20S1E FA1-TH1E8Y2SC20S1E
		Signal converter connection extension cable	FA3-CB2L**MM1H20	
	FA3-TH1T16Y	Signal converter connection extension cable	FA-CBL**MMH20 ^{*2} (for dispersed installation)	FA1-TH1E4Y2SC20S1E FA1-TH1E8Y2SC20S1E
CC-Link	FA3-TH1C16Y-01C	Dedicated cable (Included with the CC-Link interface module)	-	FA1-TH4Y2SC20S1E FA1-TH8Y2SC20S1E
		Signal converter connection extension cable	FA3-CB2L**MM1H20	
	FA3-TH1C16Y	Signal converter connection extension cable	FA-CBL**MMH20 ^{*2} (for dispersed installation)	FA1-TH1E4Y2SC20S1E FA1-TH1E8Y2SC20S1E
	FA3-TH1C16YE-01C	Dedicated cable (Included with the CC-Link interface module)	-	FA1-TH1E4Y2SC20S1E FA1-TH1E8Y2SC20S1E
		Signal converter connection extension cable	FA3-CB2L**MM1H20	
CC-Link	FA3-TH1C16YE	Signal converter connection extension cable	FA-CBL**MMH20 ^{*2} (for dispersed installation)	FA1-TH1E4Y2SC20S1E FA1-TH1E8Y2SC20S1E
	FA3-TH1C16Y	Dedicated cable (Included with the CC-Link interface module)	-	FA1-TH4Y2SC20S1E FA1-TH8Y2SC20S1E
		Signal converter connection extension cable	FA3-CB2L**MM1H20	
	FA3-TH1C16Y	Signal converter connection extension cable	FA-CBL**MMH20 ^{*2} (for dispersed installation)	FA1-TH1E4Y2SC20S1E FA1-TH1E8Y2SC20S1E

*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* (* 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.)			
Programmable controller connected			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		10ms or less (not including programmable controller response time)			
	ON → OFF		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 1.5mm ² (24 to 16 AWG)			
		With ferrule (stranded/solid wire)	Copper wire with a temperature rating of 75°C or more			
			0.08 to 0.75mm ² (28 to 18 AWG)			
Module installation	Wire strip length		8mm			
	Installation screw	M4 × 0.7mm × 22mm or longer				
		Tightening torque: 78 to 118N-cm (8 to 12kgf-cm)				
Weight	DIN rail		Applicable DIN rail: TH35-7.5Fe, TH35-7.5Al (JIS C 2812 compliant)			
			Approx. 105g		Approx. 145g	

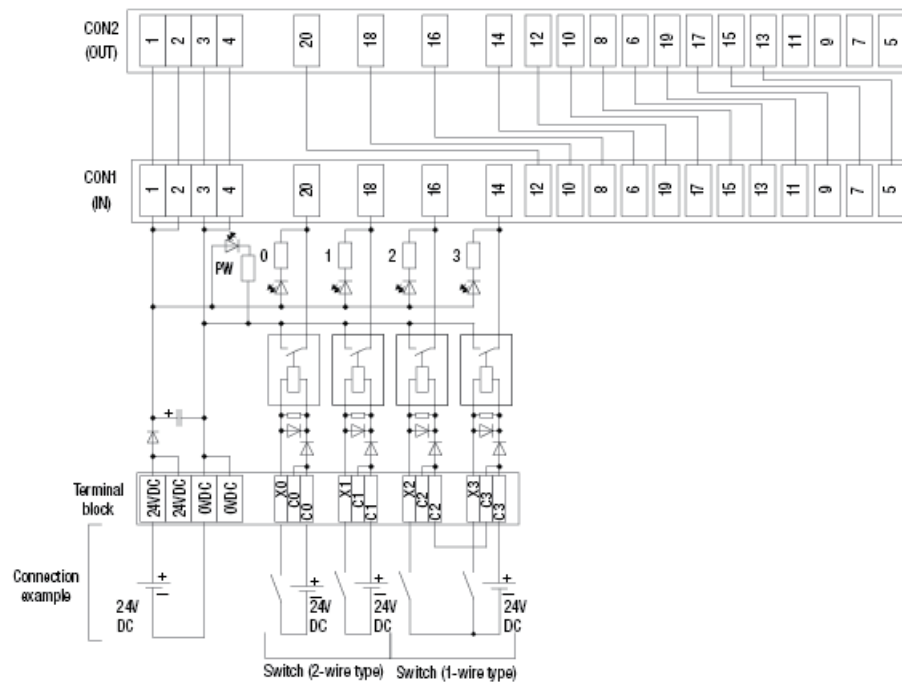
4-point/8-point output, slim type, module selectable unit

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 $\pm 10\%$ (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), 10M Ω or more			
Noise immunity			Simulator noise 500Vp-p, noise width 1 μ s (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 1.5mm ² (24 to 16 AWG) Copper wire with a temperature rating of 75°C or more			
		With ferrule (stranded/solid wire)	0.08 to 0.75mm ² (28 to 18 AWG) Copper wire with a temperature rating of 75°C or more			
		Wire strip length		8mm		
Module installation	Installation screw		M4 $\times$ 0.7mm $\times$ 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)

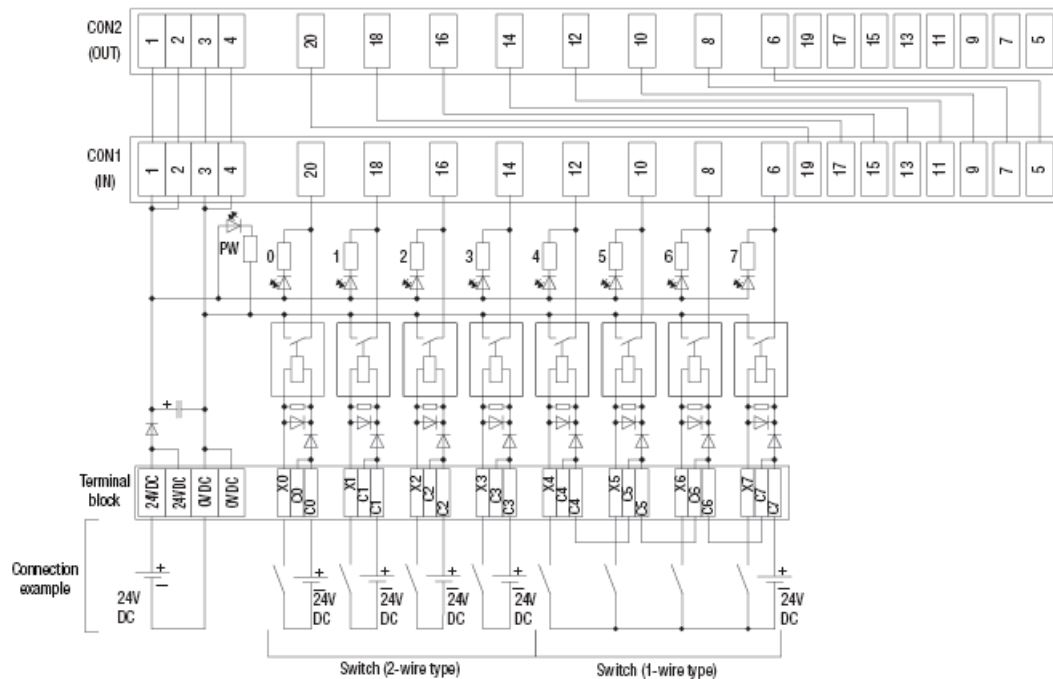
4-point input, slim type, module pre-mounted installation base unit (positive common)

- FA1-TH4X24RA1L20S1E



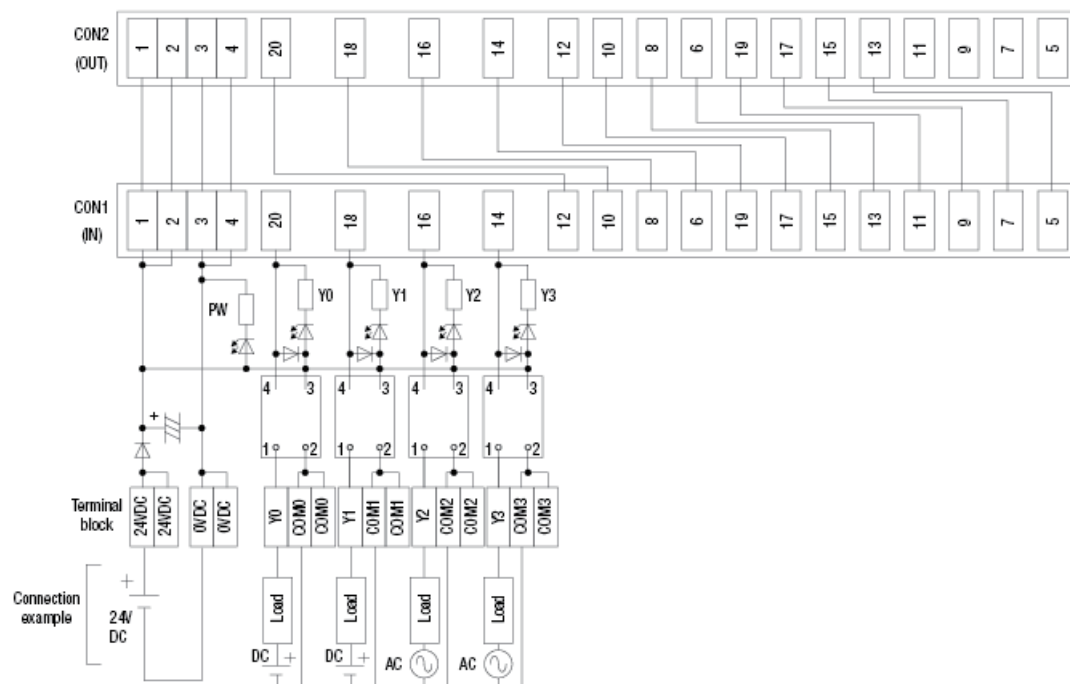
8-point input, slim type, module pre-mounted installation base unit (positive common)

- FA1-TH8X24RA1L20S1E



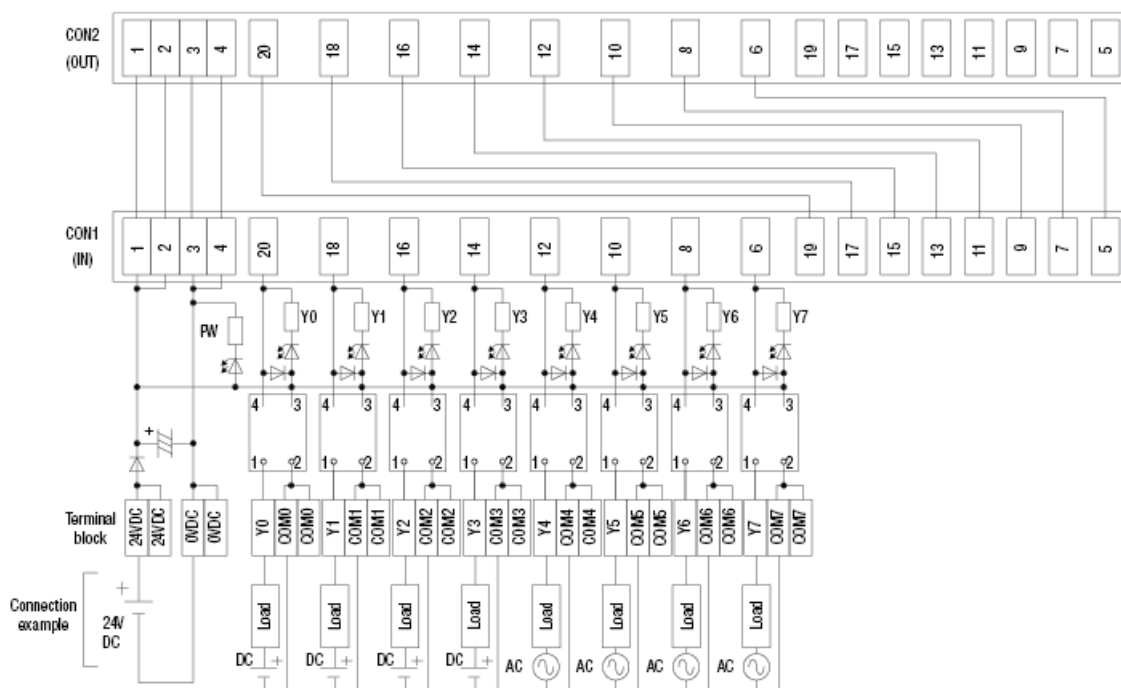
4-point output, slim type, module selectable installation base unit (sink)

• FA1-TH4Y2SC20S1E



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

• FA1-TH8Y2SC20S1E

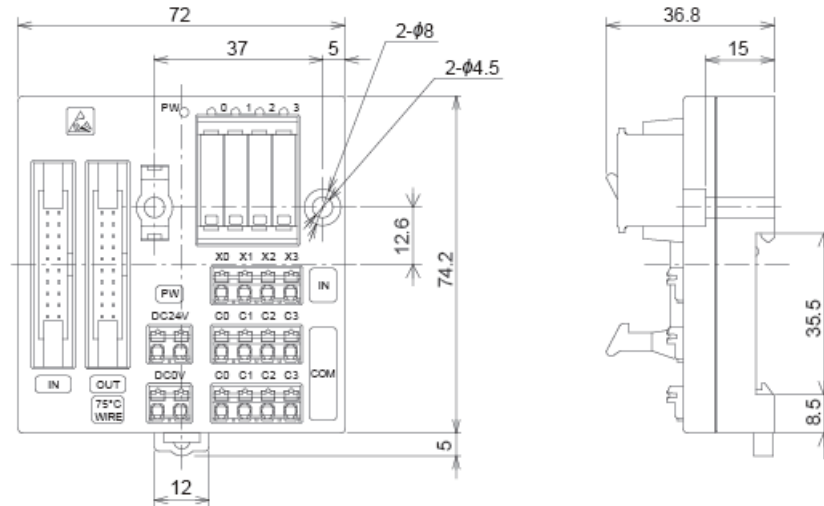


■ External dimensions (installation base units)

(Unit: mm)

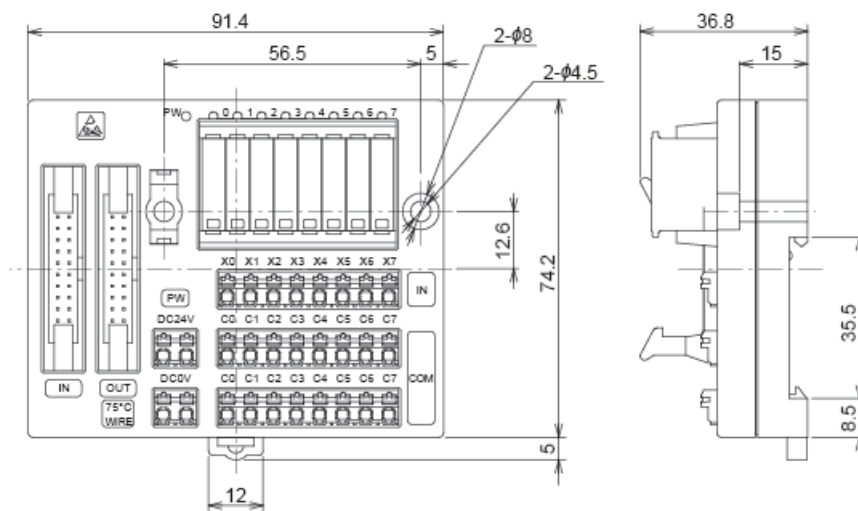
4-point input, slim type, module pre-mounted unit

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	New 	4 points, independent (positive common)	Possible (slim type)	(1)	FA1-TH4X24RA1L20S1E
		4 points, independent (negative common)	Possible (slim type)	(1)	FA1-TH4X24RA1H20S1E
	New 	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
		16 points, independent (negative common)	Possible (slim type)	(1)	FA1-TH16X24RA1H20S1E
	 Module mixing example	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)	FA-TH16XRA20S
		Module built-in unit (24VDC)	16 points/common, 2-wire type	Not possible	Not possible	FA-TH16X24D31
				Not possible	Not possible	FA-TH16X24D31L
		Module built-in unit (48VDC)	16 points/common, 2-wire type	Not possible	Not possible	FA-TH16X48D31L
		Module built-in unit (100VDC)	16 points/common, 2-wire type	Not possible	Not possible	FA-TH16X100D31L
		Module built-in unit (100VAC)	16 points/common, 2-wire type	Not possible	Not possible	FA-TH16X100A31
				Not possible	Not possible	FA-TH16X100A31L
		Module built-in unit (200VAC)	16 points/common, 2-wire type	Not possible	Not possible	FA-TH16X200A31
			Not possible	Not possible	FA-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	New  Module mixing example	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)	(2)	FA1-TH16Y2RA20S1E
		Module pre-mounted unit (triac)	16 points, independent	Possible (slim type)	(2)	FA1-TH16Y1SR20S1E
		Module pre-mounted unit (transistor)	16 points, independent (sink)	Possible (slim type)	(2)	FA1-TH16Y1TR20S1E
Source	New  Module mixing example	Installation base unit (module selectable type)	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)	(3)	FA1-TH1E16Y2RA20S1E
		Module pre-mounted unit (triac)	16 points, independent	Possible (slim type)	(3)	FA1-TH1E16Y1SR20S1E
		Module pre-mounted unit (transistor)	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	Not possible	FA-TH16YRA20
			16 points/common, 1-wire type	Possible (slim type)	(2)	FA-TH16YRA20SL
				Possible (slim type)	Not possible	FA-TH16YRA11S
				Not possible	Not possible	FA-TH16YRA11
				Possible (slim type)	Not possible	FA-TH16YRA21S
		16 points/common, 2-wire type	Not possible	Not possible	FA-TH16YRA21	
			Module pre-mounted unit (N/C contact relay)	16 points, independent	Possible (slim type)	(2)
		Module pre-mounted unit (C/O contact relay)	16 points, independent	Possible (slim type)	Not possible	FA-TH16YRAC20S
		Module pre-mounted unit (triac)	16 points, independent	Possible (slim type)	(2)	FA-TH16YSR20S
			16 points/common, 1-wire type	Possible (slim type)	Not possible	FA-TH16YSR11S
			16 points/common, 2-wire type	Possible (slim type)	Not possible	FA-TH16YSR21S
		Module pre-mounted unit (transistor)	16 points/common, 1-wire type (sink)	Possible (slim type)	Not possible	FA-TH16YTL11S
			16 points/common, 2-wire type (sink)	Possible (slim type)	Not possible	FA-TH16YTL21S
			16 points/common, 1-wire type (source)	Possible (slim type)	Not possible	FA-TH16YTH11S
			16 points, independent (sink/source common)	Possible (slim type)	(2)	FA-TH16YTR20S
Module built-in unit (transistor)	16 points, independent 2 A (sink/source common)		Not possible	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)	FA-THE16YTR20S	
		16 points/common, 1-wire type (source)	Possible (slim type)	Not possible	FA-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
Output		C/O contact relay (24VDC, 100 to 240VAC, 6A)	White	4	FA-LYCA024VSK4
		Triac (30 to 240VAC, 1A)	Black	2	FA-SN24A01FS2
				4	FA-SN24A01FS4
		Transistor (3 to 30VDC, 1A)	Red	2	FA-SN24D01HZS2
				4	FA-SN24D01HZS4
		Signal pass-through [†]	Green	2	FA-SN00SS2
				4	FA-SN00SS4

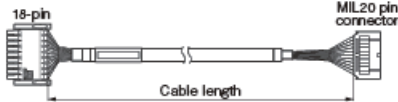
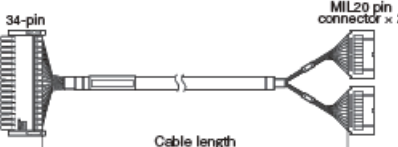
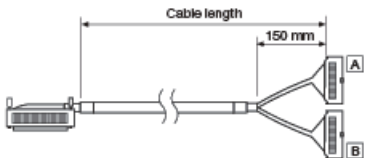
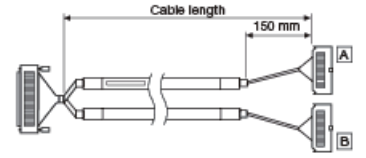
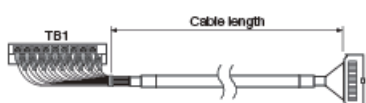
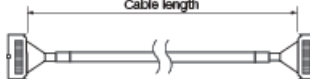
*1: Not available when the signal converter interface module (FA3-TH1C16Y, FA3-TH1C16Y-01C) is connected.

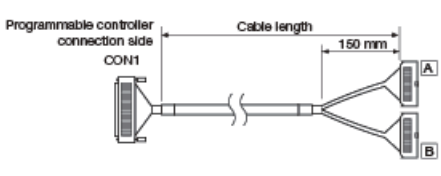
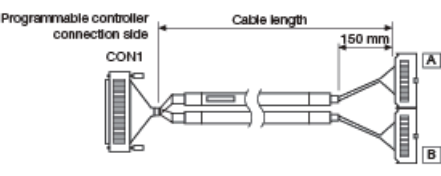
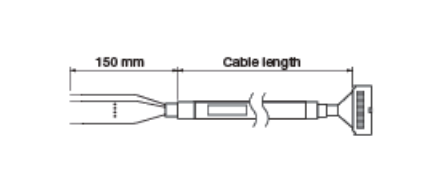
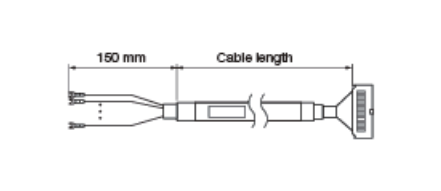
Function type

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

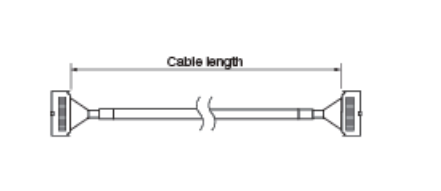
Cable

Connection cable

	Name	Shape	Remarks	Cable length	Model	
MELSEC iQ-R series	Cable for I/O module, 18-pin			1m	FA1-CB1L10EM1F18	
				2m	FA1-CB1L20EM1F18	
				3m	FA1-CB1L30EM1F18	
MELSEC iQ-F series	Cable for sink I/O, 18-pin			1m	FA2-CB1L10EM1F18	
	Cable for source I/O, 18-pin			2m	FA2-CB1L20EM1F18	
				3m	FA2-CB1L30EM1F18	
				1m	FA2-CB1L10EM1F18E	
				2m	FA2-CB1L20EM1F18E	
				3m	FA2-CB1L30EM1F18E	
CC-Link IETSN series	Cable for input module, 18-pin			1m	FA3-CB1L10EM1F18X	
	Cable for output module, 18-pin			2m	FA3-CB1L20EM1F18X	
				3m	FA3-CB1L30EM1F18X	
				1m	FA3-CB1L10EM1F18Y	
				2m	FA3-CB1L20EM1F18Y	
				3m	FA3-CB1L30EM1F18Y	
MELSEC iQ-R series	Cable for I/O module, 34-pin			1m	FA1-CB1L10EM2F34	
CC-Link IETSN/ CC-Link IE Field Basic series	Cable for input module, 34-pin			2m	FA1-CB1L20EM2F34	
	Cable for output module, 34-pin			3m	FA1-CB1L30EM2F34	
				1m	FA3-CB1L10EM2F34X	
				2m	FA3-CB1L20EM2F34X	
				3m	FA3-CB1L30EM2F34X	
MELSEC iQ-R/Q/L series	Branch cable for I/O (vertical connector)			0.6m	FA-CBL06FM2V	
				1m	FA-CBL10FM2V	
				1.5m	FA-CBL15FM2V	
				2m	FA-CBL20FM2V	
				3m	FA-CBL30FM2V	
				5m	FA-CBL50FM2V	
	Split cable for I/O (vertical connector)			10m	FA-CBL100FM2V	
				0.6m	FA-CBL06FM2LV	
				1m	FA-CBL10FM2LV	
				2m	FA-CBL20FM2LV	
				3m	FA-CBL30FM2LV	
				5m	FA-CBL50FM2LV	
MELSEC iQ-R/Q series	Terminal block cable for I/O			0.6m	FA-CBL06TMV/20	
				1m	FA-CBL10TMV/20	
				2m	FA-CBL20TMV/20	
				3m	FA-CBL30TMV/20	
MELSEC iQ-F/F series	Straight power cable (sink)			0.6m	FA-FXCBL06MMH20	
				1m	FA-FXCBL10MMH20	
				1.5m	FA-FXCBL15MMH20	
				2m	FA-FXCBL20MMH20	
				3m	FA-FXCBL30MMH20	
	Crossover power cable (source)			0.6m	FA2-CB1L06MM1H20E	
				1m	FA2-CB1L10MM1H20E	
				1.5m	FA2-CB1L15MM1H20E	
				2m	FA2-CB1L20MM1H20E	
				3m	FA2-CB1L30MM1H20E	
	Straight power cable for temperatures down to -20°C (sink)			1m	FA2-CB1LT10MM1H20	
				2m	FA2-CB1LT20MM1H20	
				3m	FA2-CB1LT30MM1H20	
				Crossover power cable for temperatures down to -20°C (source)	1m	FA2-CB1LT10MM1H20E
					2m	FA2-CB1LT20MM1H20E
					3m	FA2-CB1LT30MM1H20E

Name	Shape	Remarks	Cable length	Model
CC-Link IE Field Network CC-Link series	Branch cable for I/O (horizontal connector) 		0.3m	FA-CBL03FM2H
			1m	FA-CBL10FM2H
			2m	FA-CBL20FM2H
			3m	FA-CBL30FM2H
	Split cable for I/O (horizontal connector) 		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 		0.6m	FA-CBL06M20
			1m	FA-CBL10M20
			2m	FA-CBL20M20
	Y-shaped crimp terminal cable for I/O 		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 			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 		- 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	206-204 206-1204	
0.5mm ² / 22 and 20 AWG	216-201		
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	φ 1.0mm
Socket ^{*1}	φ 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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