

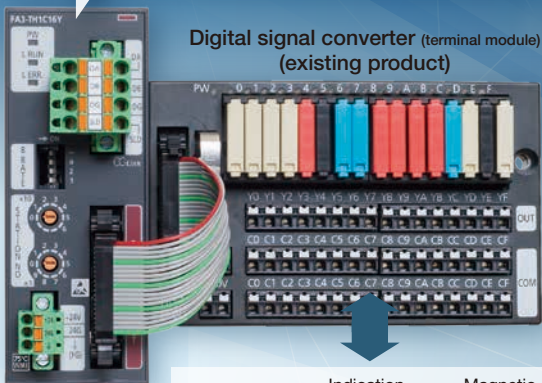
CC-Link System Interface Modules

For digital signal converters (terminal modules) and analog signal converters

New Product Release | No. 20-05E

IoT Solutions for Manufacturing by Connecting Equipment and Sensors or Other Devices through Network

CC-Link system interface module for digital signal converter (terminal module)



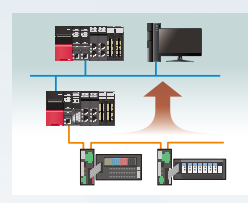
Digital signal converter (terminal module) (existing product)



Devices

Small IoT system for integrated data management

CC-Link network used to collect data of devices in upper hierarchical levels, enabling visualization of the data



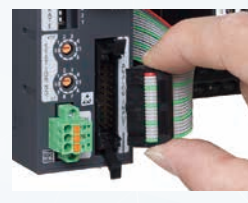
Less time and effort for the entire system wiring

One-cable connection between the control panel and the system using the CC-Link network



Easy wiring

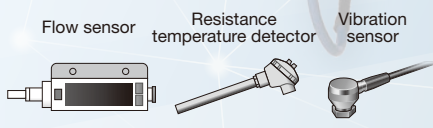
One-touch connection in the system using a cable provided with the module



CC-Link system interface module for analog signal converter



Analog signal converter (existing product)



Devices

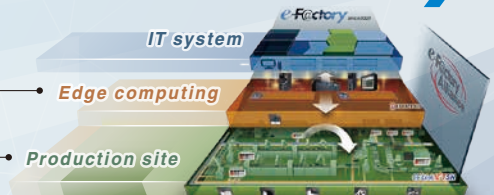
Module type

Individual selection of modules, contributing to cost reduction and space saving



FA Goods Products

e-Factory



Do you have any concerns or requests?

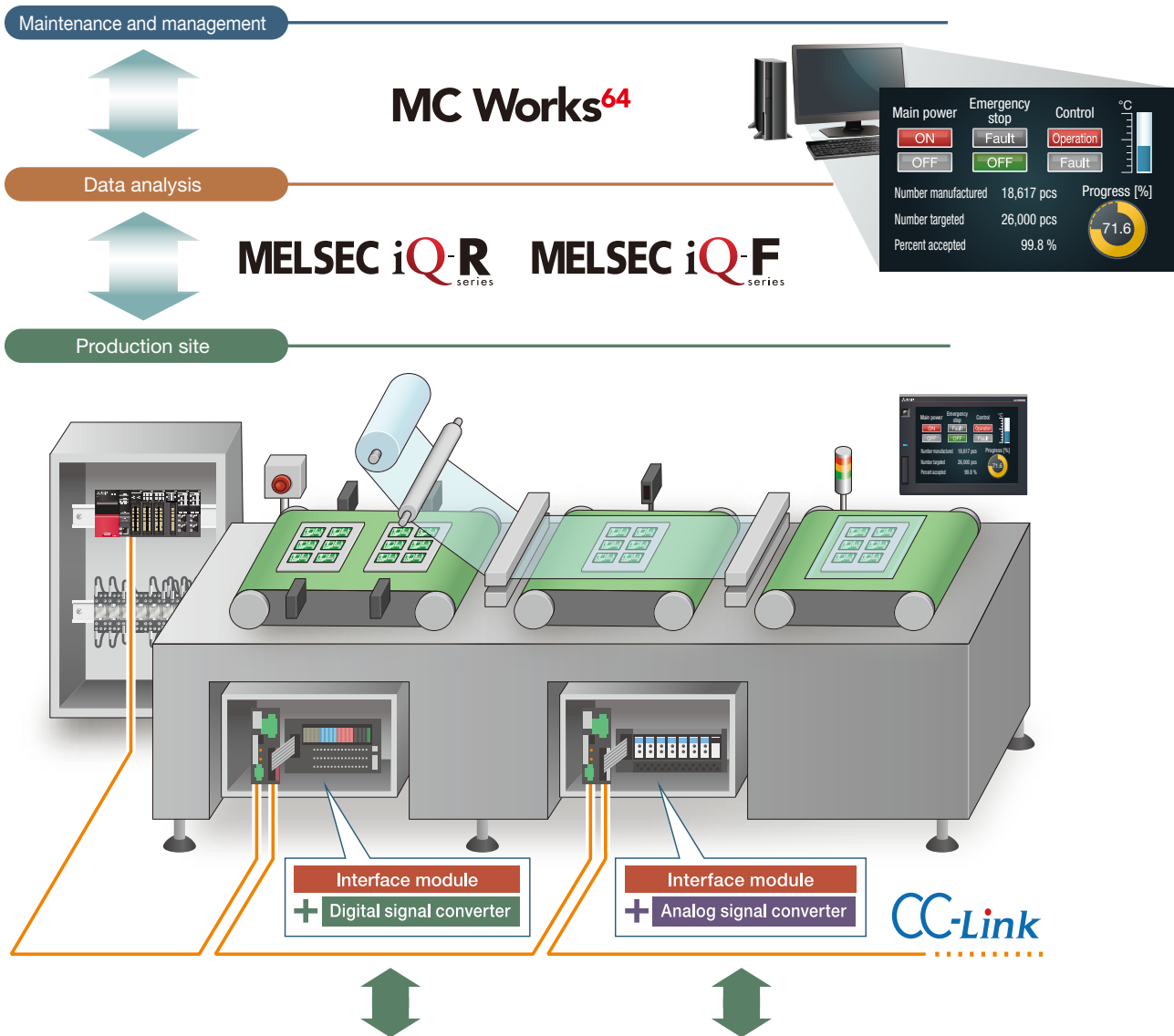
- Monitoring on-site operating conditions
- Reducing initial cost and maintenance cost
- Facilitating wiring from the control panel to the system

Use the CC-Link system interface module with the

Digital signal converter (terminal module) /
Analog signal converter

Small IoT system for integrated management of device data

Using interface modules enables dispersed installation of digital signal converters (terminal modules) and analog signal converters near devices such as sensors. The CC-Link network is used to connect devices and upper hierarchical levels for data transmission. On-site operation data are collected, stored, visualized, and analyzed to be used for device control.

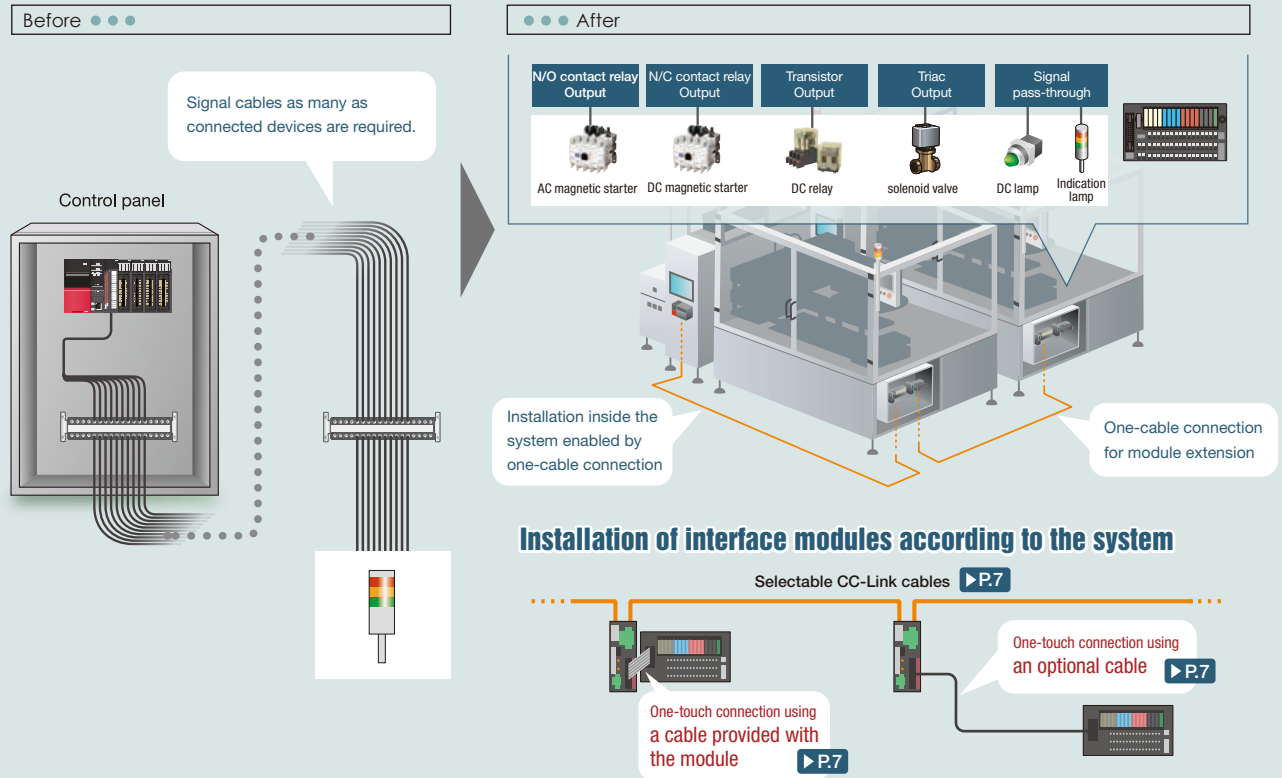


Devices

Input	Switch, instrument, flow/vibration/humidity/concentration sensor, resistance temperature detector etc.
Output	Magnetic contactor, indicator, solenoid valve etc.

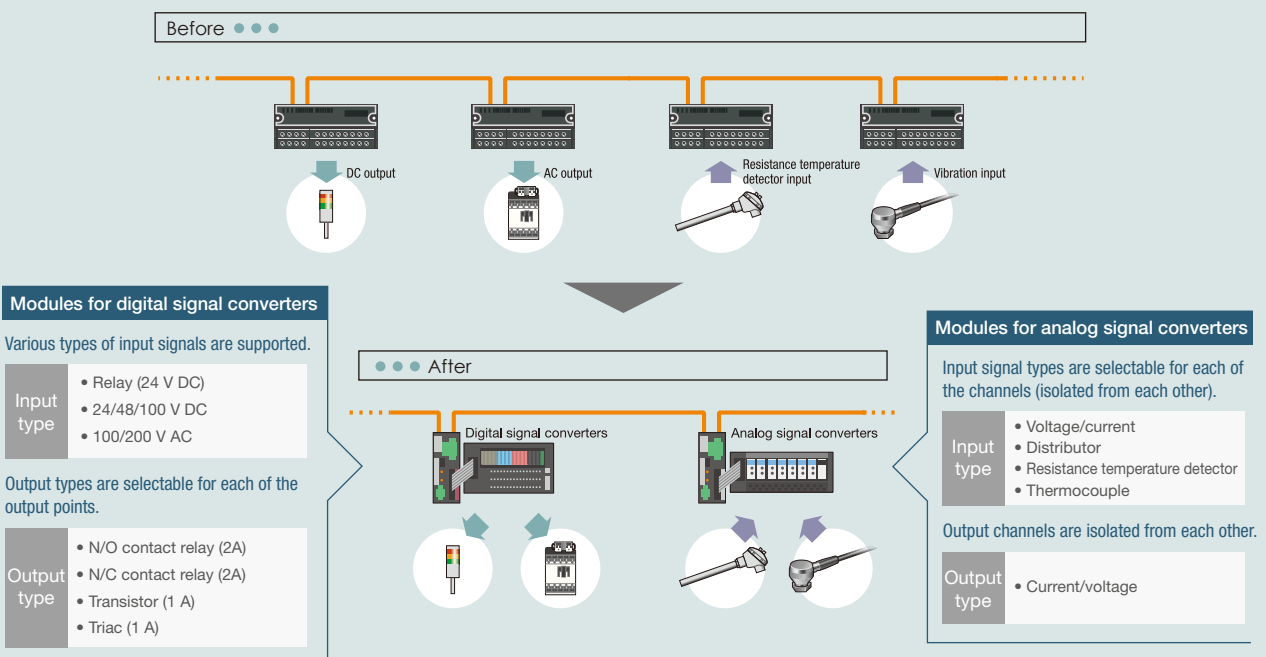
Facilitating wiring from the control panel to the system

The module and the programmable controller are connected with one CC-Link dedicated cable. The module can be installed near the devices used. When devices are added to the system, it is easy to support the extended system. When a dedicated cable is used, one-touch connection is possible for the module and a digital signal converter (terminal module) or analog signal converter.







Optimum system configuration using modules

Users can select modules to control devices one by one to establish optimum system configuration, which contributes to cost reduction and space saving.




■ Products and combinations

When a digital signal converter (terminal module) is used




CC-Link master module		CC-Link interface module		Digital signal converter (terminal module)													
																	
										Type	Model	Control method		Terminal block type	Module replacement	Module mixing	Model
										For digital signal converter input	FA3-TH1C16XC-01C FA3-TH1C16XC	24 V DC (N/O contact)	16 points, independent	Screw type (M3)	Possible	(1)	FA-TH16XRA20S
MELSEC iQ-R MELSEC iQ-F MELSEC-Q MELSEC-L MELSEC-FX 	+	For digital signal converter output (sink)	FA3-TH1C16Y-01C FA3-TH1C16Y	+	Base unit (user selectable modules)	16 points, independent (sink)	Spring clamp type	Possible	(2)	FA1-TH16Y2SC20S1E							
						N/O (normally-open) contact relay	16 points, independent	Spring clamp type	Possible	(2)	FA1-TH16Y2RA20S1E						
								Screw type (M3)	Not possible	Not possible	FA-TH16YRA20S						
								Screw type (M3.5)	Possible	(2)	FA-TH16YRA20SL						
							16 points/common, 1-wire type	Screw type (M3)	Possible	(1)	FA-TH16YRA11S						
								Screw type (M3)	Not possible	Not possible	FA-TH16YRA11						
									Possible	(1)	FA-TH16YRA21S						
						16 points/common, 2-wire type	Screw type (M3)	Not possible	Not possible	FA-TH16YRA21							
						N/C (normally-closed) contact relay	16 points, independent	Screw type (M3.5)	Possible	(2)	FA-TH16YRAB20SL						
						C/O (change-over) contact relay	16 points, independent	Screw type (M3)	Possible	Not possible	FA-TH16YRAC20S						
						Triac	16 points, independent	Spring clamp type	Possible	(2)	FA1-TH16Y1SR20S1E						
								Screw type (M3)	Possible	(2)	FA-TH16YSR20S						
Screw type (M3)	Possible	Not possible	FA-TH16YSR11S														
16 points/common, 1-wire type	Screw type (M3)	Possible	Not possible	FA-TH16YSR21S													
	16 points, independent (sink)	Spring clamp type	Possible	(2)	FA1-TH16Y1TR20S1E												
		Screw type (M3)	Possible	Not possible	FA-TH16YTL11S												
Screw type (M3)		Possible	Not possible	FA-TH16YTL21S													
Transistor (sink)	16 points/common, 1-wire type (sink)	Screw type (M3)	Possible	Not possible	FA-TH16YTH11S												
		Screw type (M3)	Possible	Not possible	FA-TH16YTH11S												
	16 points, independent, 2 A (sink/source common)	Screw type (M3)	Not possible	Not possible	FA-TH16Y2TR20												
	16 points, independent (sink/source common)	Screw type (M3)	Possible	(2)	FA-TH16YTR20S												
For digital signal converter output (source)	FA3-TH1C16YE-01C FA3-TH1C16YE	+	Base unit (module selectable type)	+	16 points, independent (source)	Spring clamp type	Possible	(2)	FA1-TH1E16Y2SC20S1E								
					N/O contact relay	16 points, independent (source)	Spring clamp type	Possible	(2)	FA1-TH1E16Y2RA20S1E							
					Triac	16 points, independent (source)	Spring clamp type	Possible	(2)	FA1-TH1E16Y1SR20S1E							
					Transistor (source)	16 points, independent (source)	Spring clamp type	Possible	(2)	FA1-TH1E16Y1TR20S1E							
						16 points, independent (sink/source common)	Screw type (M3)	Possible	(2)	FA-THE16YTR20S							
						16 points/common, 1-wire type (source)	Screw type (M3)	Possible	Not possible	FA-THE16YTH11S							

(1): Only mixing of N/O and N/C contact modules is allowed. (2): Mixing is allowed for modules other than signal pass-through modules and C/O contact modules.

 Connection cable: Refer to page 7.

Module			
Specifications (Signal pass-through modules are not supported.)	Model		
	N/O contact relay (beige)	24 V DC, 100 to 240 V AC, 2 A	Quantity: 4
N/C contact relay (sky blue)	24 V DC, 100 to 240 V AC, 2 A	FA-NYBP24WK4	
C/O contact relay (white)	24 V DC, 100 to 240 V AC, 6 A	FA-LYCA024VSK4	
Triac (black)	30 to 240V AC, 1 A	FA-SN24A01FS4	
Transistor (red)	3 to 30 V DC, 1 A	FA-SN24D01HZS4	

When an analog signal converter is used

CC-Link master module		CC-Link interface module		Analog signal converter																																																														
																																																																		
<p>MELSEC iQ-R MELSEC iQ-F MELSEC-Q MELSEC-L MELSEC-FX</p> <p>CC-Link master station</p>		<p>For analog signal converter input</p> <table border="1"> <thead> <tr> <th>Type</th> <th>Model</th> </tr> </thead> <tbody> <tr> <td></td> <td>FA3-AT1C8X-01C FA3-AT1C8X</td> </tr> </tbody> </table>		Type	Model		FA3-AT1C8X-01C FA3-AT1C8X	<p>Installation base</p> <table border="1"> <thead> <tr> <th>Model</th> <th>Terminal block type</th> </tr> </thead> <tbody> <tr> <td>FA-ATB8XTB</td> <td>Screw type (M3)</td> </tr> </tbody> </table>		Model	Terminal block type	FA-ATB8XTB	Screw type (M3)	<p>Connectable module (Pass-through modules are not supported.)</p> <table border="1"> <thead> <tr> <th colspan="2">Specifications</th> <th>Model</th> </tr> </thead> <tbody> <tr> <td rowspan="3">Voltage input</td> <td>0 to 5 V</td> <td>FA-ATSVM1XV05</td> </tr> <tr> <td>1 to 5 V</td> <td>FA-ATSVM1XV15</td> </tr> <tr> <td>-10 to 10 V</td> <td>FA-ATSVM1XV1010</td> </tr> <tr> <td>Current input</td> <td>4 to 20 mA</td> <td>FA-ATSVM1XA420</td> </tr> <tr> <td>Distributor</td> <td>4 to 20 mA</td> <td>FA-ATSVM1XD</td> </tr> <tr> <td rowspan="4">Resistance temperature detector input</td> <td>Pt100 -200 to +650°C</td> <td>FA-ATSVM1XRPT</td> </tr> <tr> <td>Pt100 0 to +100°C</td> <td>FA-ATSVM1XRPT0010</td> </tr> <tr> <td>Pt100 0 to +200°C</td> <td>FA-ATSVM1XRPT0020</td> </tr> <tr> <td>JPt100 -200 to +600°C</td> <td>FA-ATSVM1XRJPT</td> </tr> <tr> <td rowspan="12">Thermocouple input</td> <td>Type B thermocouple +600 to +1700°C</td> <td>FA-ATSVM1XTB</td> </tr> <tr> <td>Type R thermocouple 0 to +1600°C</td> <td>FA-ATSVM1XTR</td> </tr> <tr> <td>Type S thermocouple 0 to +1600°C</td> <td>FA-ATSVM1XTS</td> </tr> <tr> <td>Type K thermocouple -200 to +1200°C</td> <td>FA-ATSVM1XTK</td> </tr> <tr> <td>Type K thermocouple 0 to +400°C</td> <td>FA-ATSVM1XTK0040</td> </tr> <tr> <td>Type K thermocouple 0 to +600°C</td> <td>FA-ATSVM1XTK0060</td> </tr> <tr> <td>Type K thermocouple 0 to +800°C</td> <td>FA-ATSVM1XTK0080</td> </tr> <tr> <td>Type E thermocouple -200 to +900°C</td> <td>FA-ATSVM1XTE</td> </tr> <tr> <td>Type J thermocouple -40 to +750°C</td> <td>FA-ATSVM1XTJ</td> </tr> <tr> <td>Type T thermocouple -200 to +350°C</td> <td>FA-ATSVM1XTT</td> </tr> <tr> <td>Type N thermocouple -200 to +1250°C</td> <td>FA-ATSVM1XTN</td> </tr> <tr> <td>Dummy</td> <td>Quantity: 5</td> <td>FA-ATNDM5</td> </tr> </tbody> </table>		Specifications		Model	Voltage input	0 to 5 V	FA-ATSVM1XV05	1 to 5 V	FA-ATSVM1XV15	-10 to 10 V	FA-ATSVM1XV1010	Current input	4 to 20 mA	FA-ATSVM1XA420	Distributor	4 to 20 mA	FA-ATSVM1XD	Resistance temperature detector input	Pt100 -200 to +650°C	FA-ATSVM1XRPT	Pt100 0 to +100°C	FA-ATSVM1XRPT0010	Pt100 0 to +200°C	FA-ATSVM1XRPT0020	JPt100 -200 to +600°C	FA-ATSVM1XRJPT	Thermocouple input	Type B thermocouple +600 to +1700°C	FA-ATSVM1XTB	Type R thermocouple 0 to +1600°C	FA-ATSVM1XTR	Type S thermocouple 0 to +1600°C	FA-ATSVM1XTS	Type K thermocouple -200 to +1200°C	FA-ATSVM1XTK	Type K thermocouple 0 to +400°C	FA-ATSVM1XTK0040	Type K thermocouple 0 to +600°C	FA-ATSVM1XTK0060	Type K thermocouple 0 to +800°C	FA-ATSVM1XTK0080	Type E thermocouple -200 to +900°C	FA-ATSVM1XTE	Type J thermocouple -40 to +750°C	FA-ATSVM1XTJ	Type T thermocouple -200 to +350°C	FA-ATSVM1XTT	Type N thermocouple -200 to +1250°C	FA-ATSVM1XTN	Dummy	Quantity: 5	FA-ATNDM5
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 Connection cable: Refer to page 7.

■ Specifications

• Individual specifications

For digital signal converter (terminal module)

Input model

Item	FA3-TH1C16XC
Input type	Positive/negative common shared type
CC-Link station type	Remote I/O station
Number of occupied stations	32 points are assigned to a station. (16 points are used.)
Number of input points	16 points
Input response time	OFF → ON
	ON → OFF
Current consumption	90 mA
Weight	160 g

*1: The module response time is not included.

Output model

Item	FA3-TH1C16Y	FA3-TH1C16YE
Output type	Sink type	Source type
CC-Link station type	Remote I/O station	
Number of occupied stations	32 points are assigned to a station. (16 points are used.)	
Number of output points	16 points	
Response time	OFF → ON	0.5 ms or less ^{*2}
	ON → OFF	1.5 ms or less ^{*2}
Current consumption	100 mA	90 mA
Weight	160 g	160 g

*2: The module response time is not included.

For analog signal converter

Input model

Item	FA3-AT1C8X	
Number of analog input points	8 channels/module	
CC-Link station type	Remote device station	
CC-Link version	Ver.1.10	
Number of occupied stations	2	
I/O characteristics	Analog input range	1 to 5 V
	Digital output value	0 to 16000
Accuracy (accuracy for the maximum digital output value)	Ambient temperature: 0 to 55°C	±0.3% (±48 digits) ^{*3}
	Ambient temperature: 25 ±5°C	±0.1% (±16 digits) ^{*3}
	Maximum resolution	0.25 mV
Maximum conversion speed	1 ms/channel ^{*4}	
Current consumption	120 mA	
Weight	170 g	

*3: The module's accuracy is not taken into account.

*4: The module response time is not included.

Output model

Item	FA3-AT1C8Y	
Number of analog output points	8 channels/module	
CC-Link station type	Remote device station	
CC-Link version	Ver.1.10	
Number of occupied stations	2	
I/O characteristics	Digital input value	0 to 16000
	Analog output range	1 to 5 V
Accuracy	Ambient temperature: 0 to 55°C	±0.3% (±12 mV) ^{*5}
	Ambient temperature: 25 ±5°C	±0.1% (±4 mV) ^{*5}
	Maximum resolution	0.25 mV
Maximum conversion speed	1 ms/channel ^{*6}	
Current consumption	120 mA	
Weight	170 g	

*5: The module's accuracy is not taken into account.

*6: The module response time is not included.

• Common specifications

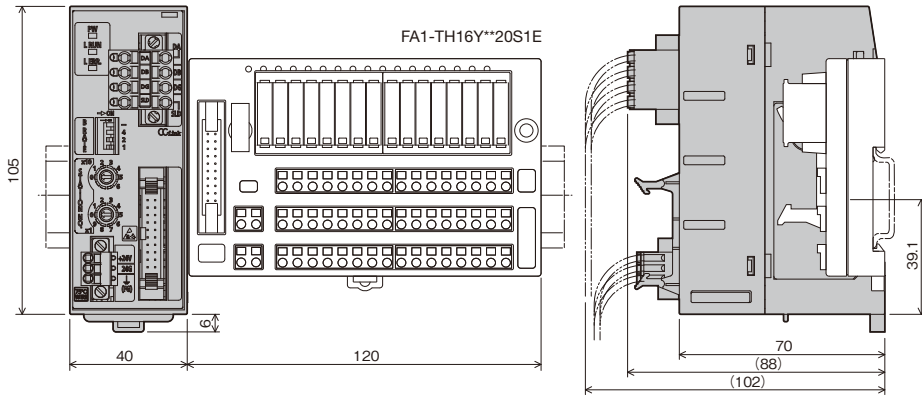
Item	Specifications				
Operating ambient temperature	0 to 55°C				
Operating ambient humidity	5 to 95%RH, non-condensing				
External interface	Communication part	Two-piece spring clamp terminal block			
	Module power supply part				
Module installation	DIN rail installation or installation using the mounting bracket provided with the module				
Terminal block for communications	Connection cable	CC-Link dedicated cable (refer to page 5)			
	Applicable ferrule terminal	Applicable ferrule terminal type (sleeve length)	Target wire	Crimping tool	Manufacturer
		AI 0.5-10 WH (10 mm), AI 0.5-8 WH (8 mm)	Signal line	CRIMPFOX 6	PHOENIX CONTACT GmbH & Co. KG
		AI 2.5-10 BU (10 mm), AI 2.5-8 BU (8 mm)	Shielded cable		
216-201 (8 mm)	Signal line	206-1204	WAGO Kontakttechnik GmbH & Co. KG		
Terminal block for module power supply and FG	Applicable wire size	Stranded wire or solid wire, 0.14 to 1.5 mm ² (26 to 16 AWG)			
	Applicable ferrule terminal	Applicable ferrule terminal type (sleeve length)	Applicable wire size	Crimping tool	Manufacturer
		AI 0.34-10 TQ (10 mm), AI 0.34-8 TQ (8 mm)	0.34 mm ² (22 AWG)	CRIMPFOX 6	PHOENIX CONTACT GmbH & Co. KG
		AI 0.5-10 WH (10 mm), AI 0.5-8 WH (8 mm)	0.5 mm ² (20 AWG)		
		216-302 (8 mm)	0.34 mm ² (24 to 22 AWG)	206-1204	WAGO Kontakttechnik GmbH & Co. KG
216-201 (8 mm)	0.5 mm ² (22 to 20 AWG)				
Module power supply ^{*7}	Voltage	24 V DC (20.4 to 28.8 V DC)			
	Current	Refer to the individual specifications.			
External dimensions	105 (H) × 40 (W) × 70 (D) mm (not including the projections)				
Applicable standards	CE, KC, UL				

*7: The digital signal converter or the analog signal converter requires a separate 24 V DC power supply. For details on specifications, refer to the manual of each module.

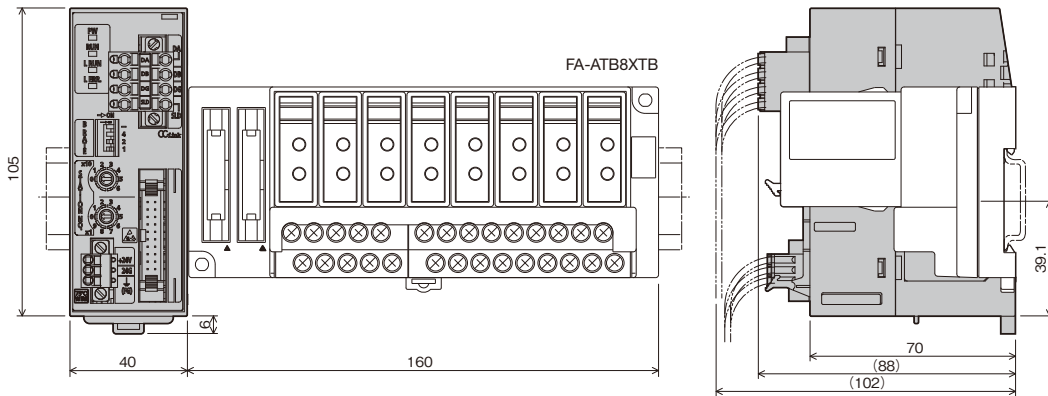
■ External dimensions

(Unit: mm)

Interface module and digital signal converter (terminal module)



Interface module and analog signal converter



■ Product line

Name	Type	Dedicated cable	Model	Remarks		
CC-Link interface module	For digital signal converter	Included	Input	FA3-TH1C16XC-01C	Included items: · Module · User's Manual (Hardware Edition) · Terminating resistor kit (110-ohm: 2 pcs, 130-ohm: 2 pcs) · Mounting bracket · Dedicated cable (for connection with signal converter)	
			Output (sink)	FA3-TH1C16Y-01C		
			Output (source)	FA3-TH1C16YE-01C		
	For analog signal converter	Included	Input	FA3-AT1C8X-01C		
			Output	FA3-AT1C8Y-01C		
	For digital signal converter	Not included Use an optional cable.	Input	FA3-TH1C16XC		Included items: · Module · User's Manual (Hardware Edition) · Terminating resistor kit (110-ohm: 2 pcs, 130-ohm: 2 pcs) · Mounting bracket
			Output (sink)	FA3-TH1C16Y		
	Output (source)		FA3-TH1C16YE			
For analog signal converter	Included	Input	FA3-AT1C8X			
		Output	FA3-AT1C8Y			

■ Connection cable

Interface module dedicated cable

Name	Length	Model	Remarks
Dedicated cable	0.1 m	-	Provided with the product (FA3-□□-01C)
Extension cable for connection with signal converter ^{*1}	1 m	FA3-CB2L10MM1H20	Optional cables for CC-Link interface modules for which dedicated cables are not provided with modules.
	2 m	FA3-CB2L20MM1H20	
	3 m	FA3-CB2L30MM1H20	

*1: For information on other cables, contact your sales representative.

CC-Link cable

CC-Link related products including CC-Link cables with or without end treatment and waterproof connectors are also available.

Name	Length	Model
CC-Link cable	200 m ^{*2}	FA-CBL200SB
High-performance CC-Link cable	200 m ^{*2}	FA-CBL200SBH
Vibration-resistant CC-Link cable for moving parts	200 m ^{*2}	FA-CBL200SBZ
Ver.1.10-compatible CC-Link cable	200 m ^{*2}	FA-CBL200PSBH
Ver.1.10-compatible vibration-resistant CC-Link cable for moving parts	200 m ^{*2}	FA-CBL200PSBZ
Ver.1.10-compatible cold-resistant CC-Link cable	200 m ^{*2}	FA-CBL200LTPSBH
Coaxial CC-Link cable with 24 V DC power cable	100 m ^{*3}	FA-CBL100PWSB
Ver.1.10-compatible coaxial CC-Link cable with 24 V DC power cable	100 m ^{*3}	FA-CBL100PWSBH

*2: Custom lengths are not available, but a 1000-meter option is available.

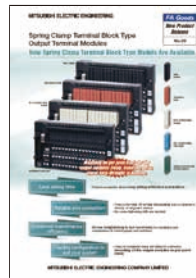
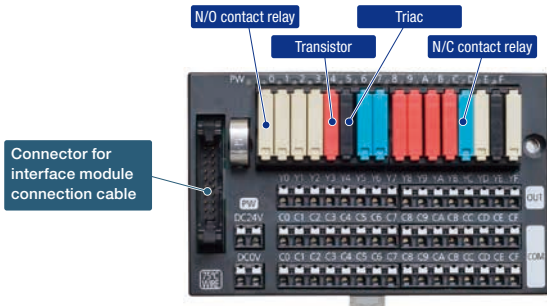
*3: Custom lengths are not available, but a 500-meter option is available.

Product list

Digital signal converter (terminal module)

- This converter is used to convert digital signals sent between the CC-Link interface module and sensors or other devices.
- Various outputs with different input voltages (24 V DC, 48 V DC, 100 V DC, 100 V AC, 200 V AC) are supported.
- Different control methods (relay, triac, transistor) can be specified for each terminal according to the device type.

Output type (FA1-TH16Y2SC20S1E)



Spring Clamp Terminal Block Type Output Terminal Modules
New Product Release
(MEIC180E-199)

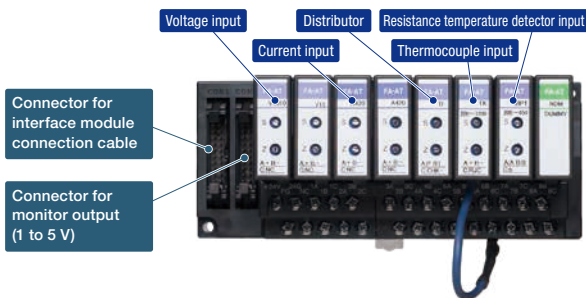


Output Terminal Module (Relay Output) FA-TH Series
(MEI C151E-18X)

Analog signal converter

- This converter is used to convert analog signals sent between the CC-Link interface module and devices such as temperature sensors.
- Distributor input or isolation between channels are supported.
- Different types of analog inputs (voltage, current, distributor, thermocouple, resistance temperature detector) and analog outputs (voltage, current) can be specified for each channel.

Input type



Analog Signal Converter FA-AT Series
(MEI C152E-18X)

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