

# FA Goods for MELSEC iQ-F Series Programmable Controller Connection Cables

**New connection cables withstanding -20°C are now available for MELSEC iQ-F series!**

New Release

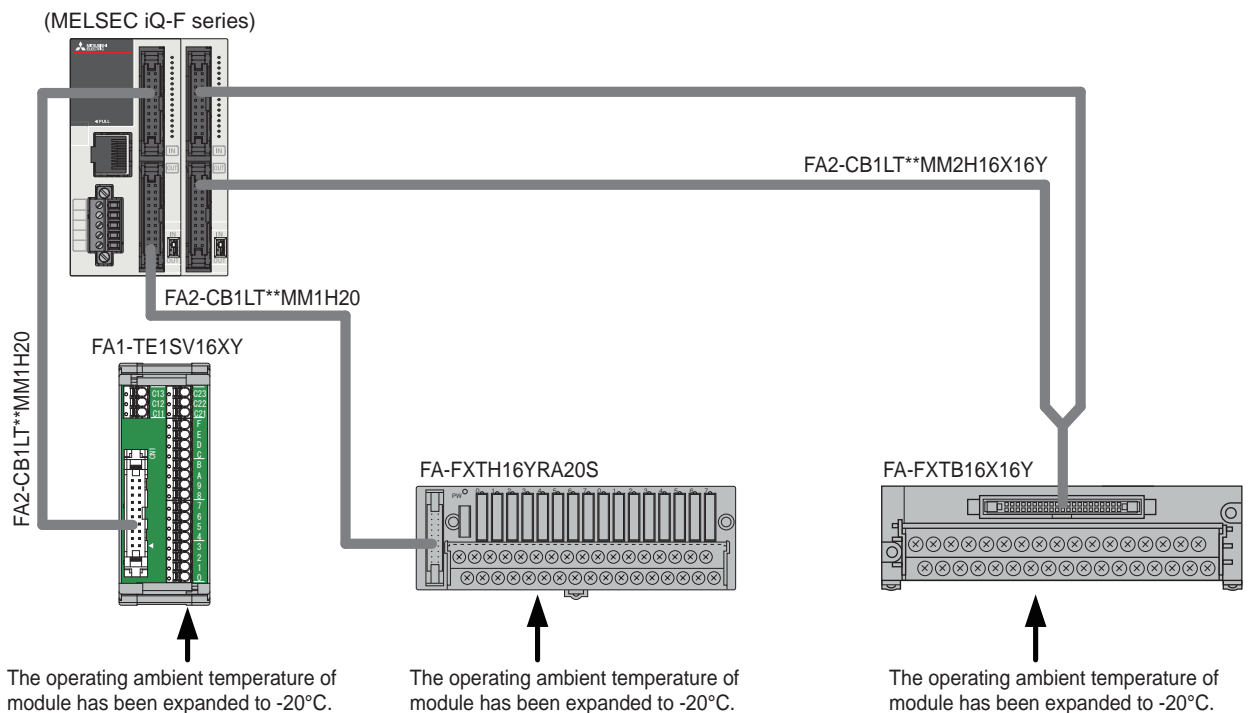


## ■ Features

- Cables resist ambient temperatures up to -20°C.
- The operating ambient temperature of modules has been expanded to -20°C.
- A module can be connected to a MELSEC iQ-F series programmable controller with a dedicated cable. This helps to reduce man-hours.

(For connectable programmable controllers and cables, refer to "■Connectable programmable controllers".)

## ■ Example of use



## Connectable programmable controllers

<MELSEC iQ-F series>

Programmable controller module model		Module model	Connection cable
FX5UC-32MT/D, FX5-C32ET/D	Input/Output	FA-FXTB16XY, FA1-TE1SV16XY	FA2-CB1LT**MM1H20
	Combined	FA-FXTB16X16Y	FA2-CB1LT**MM2H16X16Y
	Input	FA-TH16XRA20S, FA-TH16X24D31, FA-TH16X24D31L, FA-TH16X48D31L, FA-TH16X100D31L, FA-TH16X100A31, FA-TH16X100A31L, FA-TH16X200A31, FA-TH16X200A31L	FA2-CB1LT**MM1H20
	Output	FA-FXTH16YRA11S, FA-FXTH16YRA20, FA-FXTH16YRA20S	FA2-CB1LT**MM1H20
FX5UC-64MT/D, FX5UC-96MT/D	Input/Output	FA-FXTB16XY, FA1-TE1SV16XY	FA2-CB1LT**MM1H20
	Combined	FA-FXTB16X16Y	FA2-CB1LT**MM2H16X16Y
	Input	FA-FXTB32X FA-TH16XRA20S, FA-TH16X24D31, FA-TH16X24D31L, FA-TH16X48D31L, FA-TH16X100D31L, FA-TH16X100A31, FA-TH16X100A31L, FA-TH16X200A31, FA-TH16X200A31L	FA2-CB1LT**MM2H FA2-CB1LT**MM1H20
	Output	FA-FXTB32Y FA-FXTH16YRA11S, FA-FXTH16YRA20, FA-FXTH16YRA20S	FA2-CB1LT**MM2H FA2-CB1LT**MM1H20
FX5UC-32MT/DSS, FX5-C32ET/DSS	Input/Output	FA-FXTB16XY, FA1-TE1SV16XY	FA2-CB1LT**MM1H20
	Combined	FA-FXTB16X16Y	FA2-CB1LT**MM2H16X16Y
	Input	FA-TH16XRA20S, FA-TH16X24D31, FA-TH16X24D31L, FA-TH16X48D31L, FA-TH16X100D31L, FA-TH16X100A31, FA-TH16X100A31L, FA-TH16X200A31, FA-TH16X200A31L	FA2-CB1LT**MM1H20E
	Output	FA1-TH1E16Y2RA20S	FA2-CB1LT**MM1H20E
FX5UC-64MT/DSS, FX5UC-96MT/DSS	Input/Output	FA-FXTB16XY, FA1-TE1SV16XY	FA2-CB1LT**MM1H20
	Combined	FA-FXTB16X16Y	FA2-CB1LT**MM2H16X16Y
	Input	FA-FXTB32X FA-TH16XRA20S, FA-TH16X24D31, FA-TH16X24D31L, FA-TH16X48D31L, FA-TH16X100D31L, FA-TH16X100A31, FA-TH16X100A31L, FA-TH16X200A31, FA-TH16X200A31L	FA2-CB1LT**MM2H FA2-CB1LT**MM1H20E
	Output	FA-FXTB32Y FA1-TH1E16Y2RA20S	FA2-CB1LT**MM2H FA2-CB1LT**MM1H20E
FX5-C16EX/D		FA-FXTB16XY, FA1-TE1SV16XY	FA2-CB1LT**MM1H20
		FA-TH16XRA20S, FA-TH16X24D31, FA-TH16X24D31L, FA-TH16X48D31L, FA-TH16X100D31L, FA-TH16X100A31, FA-TH16X100A31L, FA-TH16X200A31, FA-TH16X200A31L	FA2-CB1LT**MM1H20
FX5-C32EX/D		FA-FXTB16XY, FA1-TE1SV16XY	FA2-CB1LT**MM1H20
		FA-FXTB32X	FA2-CB1LT**MM2H
		FA-TH16XRA20S, FA-TH16X24D31, FA-TH16X24D31L, FA-TH16X48D31L, FA-TH16X100D31L, FA-TH16X100A31, FA-TH16X100A31L, FA-TH16X200A31, FA-TH16X200A31L	FA2-CB1LT**MM1H20
FX5-C16EX/DS		FA-FXTB16XY, FA1-TE1SV16XY	FA2-CB1LT**MM1H20
		FA-TH16XRA20S, FA-TH16X24D31, FA-TH16X24D31L, FA-TH16X48D31L, FA-TH16X100D31L, FA-TH16X100A31, FA-TH16X100A31L, FA-TH16X200A31, FA-TH16X200A31L	FA2-CB1LT**MM1H20E
FX5-C32EX/DS		FA-FXTB16XY, FA1-TE1SV16XY	FA2-CB1LT**MM1H20
		FA-FXTB32X	FA2-CB1LT**MM2H
		FA-TH16XRA20S, FA-TH16X24D31, FA-TH16X24D31L, FA-TH16X48D31L, FA-TH16X100D31L, FA-TH16X100A31, FA-TH16X100A31L, FA-TH16X200A31, FA-TH16X200A31L	FA2-CB1LT**MM1H20E
FX5-C16EYT/D		FA-FXTB16XY, FA1-TE1SV16XY	FA2-CB1LT**MM1H20
		FA-FXTH16YRA11S, FA-FXTH16YRA20, FA-FXTH16YRA20S	FA2-CB1LT**MM1H20
FX5-C32EYT/D		FA-FXTB16XY, FA1-TE1SV16XY	FA2-CB1LT**MM1H20
		FA-FXTB32Y	FA2-CB1LT**MM2H
		FA-FXTH16YRA11S, FA-FXTH16YRA20, FA-FXTH16YRA20S	FA2-CB1LT**MM1H20
FX5-C16EYT/DSS		FA-FXTB16XY, FA1-TE1SV16XY	FA2-CB1LT**MM1H20
		FA1-TH1E16Y2RA20S	FA2-CB1LT**MM1H20E
FX5-C32EYT/DSS		FA-FXTB16XY, FA1-TE1SV16XY	FA2-CB1LT**MM1H20
		FA-FXTB32Y	FA2-CB1LT**MM2H
		FA1-TH1E16Y2RA20S	FA2-CB1LT**MM1H20E

## Model list

### ● Cable (Cables resist temperatures up to -20°C.)

Product	Shape	Model	Length	Remarks
16-point I/O module programmable controller connection cable withstanding -20°C (straight-through cable)		FA2-CB1LT10MM1H20	1.0m	<ul style="list-style-type: none"> <li>● [Programmable controller side] 20-pin MIL connector attached</li> <li>● [Module side] 20-pin MIL connector attached</li> </ul>
		FA2-CB1LT20MM1H20	2.0m	
		FA2-CB1LT30MM1H20	3.0m	
16-point I/O module programmable controller connection cable withstanding -20°C (crossover cable)		FA2-CB1LT10MM1H20E	1.0m	<ul style="list-style-type: none"> <li>● [Programmable controller side] 20-pin MIL connector attached</li> <li>● [Module side] 20-pin MIL connector attached</li> </ul>
		FA2-CB1LT20MM1H20E	2.0m	
		FA2-CB1LT30MM1H20E	3.0m	
32-point I/O module programmable controller connection cable withstanding -20°C		FA2-CB1LT10MM2H	1.0m	<ul style="list-style-type: none"> <li>● [Programmable controller side] Two 20-pin MIL connectors attached</li> <li>● [Module side] 40-pin MIL connector attached</li> </ul>
		FA2-CB1LT20MM2H	2.0m	
		FA2-CB1LT30MM2H	3.0m	
16-point input / 16-point output combined module programmable controller connection cable withstanding -20°C		FA2-CB1LT10MM2H16X16Y	1.0m	<ul style="list-style-type: none"> <li>● [Programmable controller side] Two 20-pin MIL connectors attached</li> <li>● [Module side] 40-pin MIL connector attached</li> </ul>
		FA2-CB1LT20MM2H16X16Y	2.0m	
		FA2-CB1LT30MM2H16X16Y	3.0m	

### ● Module (All modules resist temperatures ranging from -20 to 55°C.) Refer to "TECHNICAL BULLETIN No.FAB3-044".

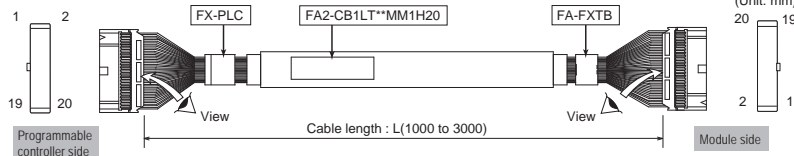
Product	Shape	Model	Input/Output	Remarks	
16-point I/O terminal block conversion module		FA-FXTB16XY	Input/Output 16 points	<ul style="list-style-type: none"> <li>● When connected to the input connector of a programmable controller, this module converts the connector input signals (24VDC inputs) of the programmable controller into terminal block inputs.</li> <li>● When connected to the output connector of a programmable controller, this module converts the connector output signals (transistor outputs) of the programmable controller into terminal block outputs.</li> </ul>	
32-point input terminal block conversion module		FA-FXTB32X	Input 32 points	<ul style="list-style-type: none"> <li>● This module converts connector input signals (24VDC inputs) of a programmable controller into terminal block inputs.</li> </ul>	
32-point output terminal block conversion module		FA-FXTB32Y	Output 32 points	<ul style="list-style-type: none"> <li>● This module converts connector output signals (transistor outputs) of a programmable controller into terminal block outputs.</li> </ul>	
16-point input / 16-point output combined terminal block conversion module		FA-FXTB16X16Y	Input 16 points/ output 16 points combined	<ul style="list-style-type: none"> <li>● This module converts connector input signals (24VDC inputs) and connector output signals (transistor outputs) of a programmable controller into 32-point terminal block inputs and outputs.</li> </ul>	
Programmable controller sink output relay isolation socket-type N/O contact output module		FA-FXTH16YRA11S	Output 16 points	16 points/ common 1-wire type	<ul style="list-style-type: none"> <li>● This module converts connector output signals (sink-type transistor outputs) of a programmable controller into socket-type relay output terminal block (2A/point) outputs.</li> <li>Accessory: Module extraction tool × 1</li> </ul>
		FA-FXTH16YRA20S	Output 16 points	Independent common	
Programmable controller sink output relay isolation type N/O contact output module		FA-FXTH16YRA20	Output 16 points	Independent common	<ul style="list-style-type: none"> <li>● This module converts connector output signals (sink-type transistor outputs) of a programmable controller into terminal block outputs.</li> </ul>
Programmable controller source output relay isolation socket-type N/O contact output module		FA1-TH1E16Y2RA20S	16 points	Independent common	<ul style="list-style-type: none"> <li>● This module converts connector output signals (source-type transistor outputs) of a programmable controller into socket-type relay output terminal block (2A/point) outputs.</li> <li>Accessory: Module extraction tool × 1.</li> </ul>
M3-screw 24VDC relay isolation type N/O contact input module		FA-TH16XRA20S	Input 16 points	2-wire type, WET type	<ul style="list-style-type: none"> <li>● This module inputs 24VDC input signals (relay isolation) to connector input signals (24VDC inputs) of a programmable controller.</li> <li>Accessory: Module extraction tool × 1</li> </ul>
M3-screw 24VDC photocoupler isolation type input module		FA-TH16X24D31	Input 16 points		<ul style="list-style-type: none"> <li>● This module inputs 24VDC input signals (photocoupler isolation) to connector input signals (24VDC inputs) of a programmable controller.</li> </ul>
M3.5-screw 24VDC photocoupler isolation type input module		FA-TH16X24D31L	Input 16 points		<ul style="list-style-type: none"> <li>● This module inputs 24VDC input signals (photocoupler isolation) to connector input signals (24VDC inputs) of a programmable controller.</li> </ul>
M3.5-screw 48VDC photocoupler isolation type input module		FA-TH16X48D31L	Input 16 points		<ul style="list-style-type: none"> <li>● This module inputs 48VDC input signals (photocoupler isolation) to connector input signals (24VDC inputs) of a programmable controller.</li> </ul>
M3.5-screw 100VDC photocoupler isolation type input module		FA-TH16X100D31L	Input 16 points		<ul style="list-style-type: none"> <li>● This module inputs 100VDC input signals (photocoupler isolation) to connector input signals (24VDC inputs) of a programmable controller.</li> </ul>
M3-screw 100VAC photocoupler isolation type input module		FA-TH16X100A31	Input 16 points		<ul style="list-style-type: none"> <li>● This module inputs 100VAC input signals (photocoupler isolation) to connector input signals (24VDC inputs) of a programmable controller.</li> </ul>
M3.5-screw 100VAC photocoupler isolation type input module		FA-TH16X100A31L	Input 16 points		<ul style="list-style-type: none"> <li>● This module inputs 100VAC input signals (photocoupler isolation) to connector input signals (24VDC inputs) of a programmable controller.</li> </ul>
M3-screw 200VAC photocoupler isolation type input module		FA-TH16X200A31	Input 16 points		<ul style="list-style-type: none"> <li>● This module inputs 200VAC input signals (photocoupler isolation) to connector input signals (24VDC inputs) of a programmable controller.</li> </ul>
M3.5-screw 200VAC photocoupler isolation type input module		FA-TH16X200A31L	Input 16 points		<ul style="list-style-type: none"> <li>● This module inputs 200VAC input signals (photocoupler isolation) to connector input signals (24VDC inputs) of a programmable controller.</li> </ul>
DC-dedicated 16-point small type connector ⇔ spring clamp terminal block conversion module		FA1-TE1SV16XY	Input/Output 16 points		<ul style="list-style-type: none"> <li>● When connected to the input connector of a programmable controller, this module converts the connector input signals (24VDC inputs) of the programmable controller into spring clamp terminal block inputs.</li> <li>● When connected to the output connector of a programmable controller, this module converts the connector output signals (transistor outputs) of the programmable controller into spring clamp terminal block outputs.</li> </ul>
General-purpose 38-point small type Spring clamp common terminal block module		FA1-TESV38COM	38 points	<ul style="list-style-type: none"> <li>● The C10 to C1J terminals and C20 to C2J terminals can be used as common terminals for the two lines (negative and positive).</li> </ul>	

# Performance specifications

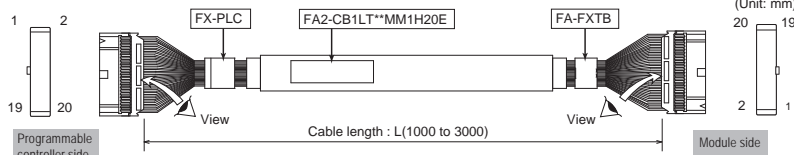
Item	Model	Specifications			
		FA2-CB1LT**MM1H20	FA2-CB1LT**MM1H20E	FA2-CB1LT**MM2H	FA2-CB1LT**MM2H16X16Y
Cable length		1.0m/2.0m/3.0m			
Operating ambient temperature		-20 to 55°C			
Cable outer diameter, color		8.1mm (standard), black	8.1mm (standard), black	9.8mm (standard), black	8.1mm (standard), black
Rated current		1A			
Conductor resistance (20°C)		0.232Ω/m or less			
Withstand voltage		500VAC for 1 minute			
Insulation resistance		50MΩ·km or more			
UL standard (cable area)		UL STYLE No.2464 80°C 300V			

## External dimensions

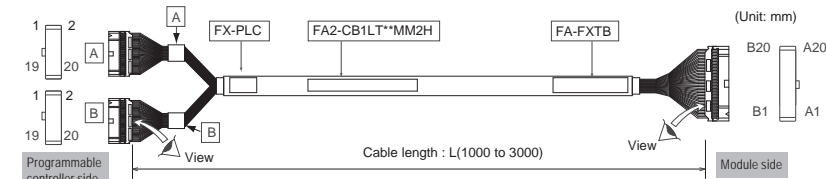
- 16-point I/O module programmable controller connection cable withstanding -20°C (straight-through cable)  
<FA2-CB1LT\*\*MM1H20>



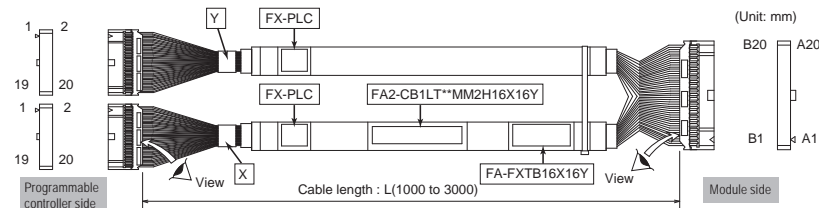
- 16-point I/O module programmable controller connection cable withstanding -20°C (crossover cable)  
<FA2-CB1LT\*\*MM1H20E>



- 32-point I/O module programmable controller connection cable withstanding -20°C  
<FA2-CB1LT\*\*MM2H>

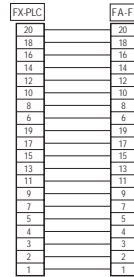


- 16-point input / 16-point output combined module programmable controller connection cable withstanding -20°C  
<FA2-CB1LT\*\*MM2H16X16Y>

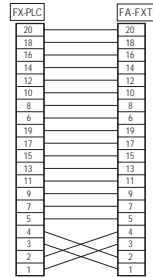


## Wiring examples

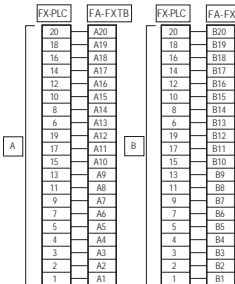
- FA2-CB1LT\*\*MM1H20



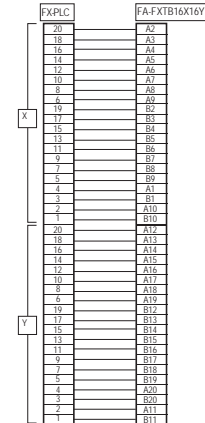
- FA2-CB1LT\*\*MM1H20E



- FA2-CB1LT\*\*MM2H



- FA2-CB1LT\*\*MM2H16X16Y



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New publication, effective Jul. 2019  
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