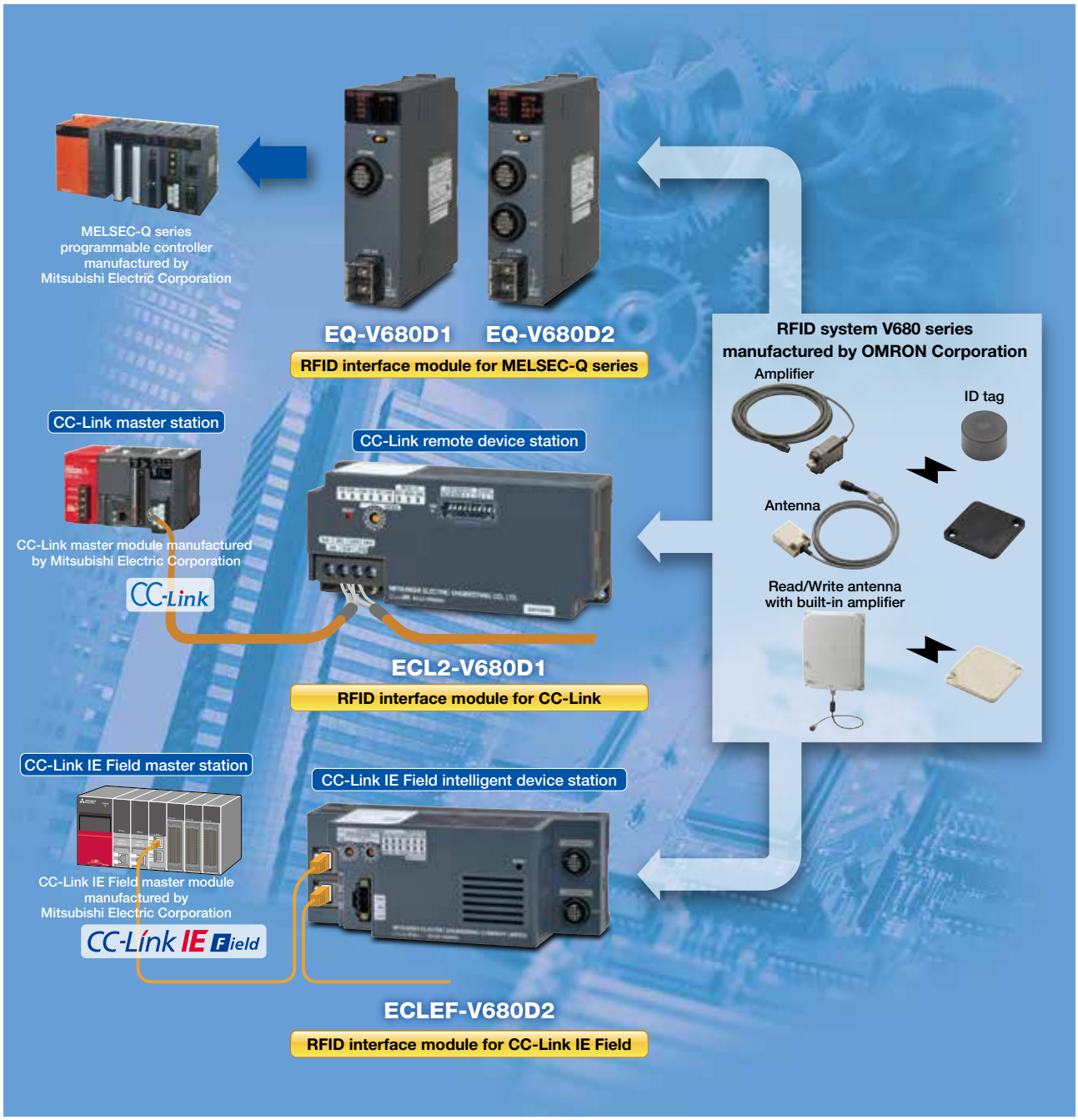
RFID Interface Module
for OMRON RFID System V680 Series

MELSEC-Q Series
Model: EQ-V680D1 1-Channel RFID Interface Module
Model: EQ-V680D2 2-Channel RFID Interface Module

CC-Link Remote Device
Model: ECL2-V680D1 1-Channel RFID Interface Module

CC-Link IE Field Intelligent Device
Model: ECLEF-V680D2 2-Channel RFID Interface Module

Mitsubishi Electric Corporation
Connecting the MELSEC-Q Series/CC-Link/CC-Link IE Field
OMRON Corporation
System and the RFID System V680 Series!



MITSUBISHI ELECTRIC ENGINEERING

Supporting System Variations

A variety of RFID interface modules are available according to the intended purpose and the system configuration.

High-speed Communications with MELSEC-Q Series

MELSEC-Q

As the RFID interface module for the MELSEC-Q series, EQ-V680D1 and EQ-V680D2 are available.
The modules achieve high-speed communications with the programmable controller CPU.

Distributed Control via CC-Link

CC-Link

As the RFID interface module for the CC-Link remote device station, ECL2-V680D1 is available.
The distance from the CC-Link master station to the RFID interface module can be extended up to 1,200 m.

High-speed Communications and Distributed Control via CC-Link IE Field

CC-Link IE Field

As the RFID interface module for the CC-Link IE Field intelligent device station, ECLEF-V680D2 is available.
The distance from the CC-Link IE Field master station to the RFID interface module can be extended up to 12,000 m.

In this catalog, the contents related to the MELSEC-Q Series module are marked with MELSEC-Q, those related to the CC-Link module are marked with CC-Link, and those related to the CC-Link IE Field module are marked with CC-Link IE Field.

▶ Features

■Achieved high-speed communications with the MELSEC-Q series programmable controller CPU manufactured by Mitsubishi Electric Corporation

MELSEC-Q

You can mount the RFID interface module directly to the MELSEC-Q series to enable high-speed communications with the programmable controller CPU.

■Achieved distributed arrangement as the CC-Link remote device station

CC-Link

Using the RFID interface module as the CC-Link remote device station achieves connections with the RFID system V680 series manufactured by OMRON Corporation. The module can be placed at a distance of up to 1,200 m from the CC-Link master station.

■Achieved distributed arrangement as the CC-Link IE Field intelligent device station

CC-Link IE Field

Using the RFID interface module as the CC-Link IE Field intelligent device station achieves connections with the RFID system V680 series manufactured by OMRON Corporation. The module can be placed at a distance of up to 12,000 m from the CC-Link IE Field master station.

■1-channel and 2-channel modules

MELSEC-Q

The 1-channel module, EQ-V680D1 is connectable to a read/write antenna with a separate amplifier or a read/write antenna with a built-in amplifier. The 2-channel module, EQ-V680D2, is connectable to two read/write antennas with separate amplifiers.

■1-channel modules

CC-Link

The 1-channel module, ECL2-V680D1 is connectable to a read/write antenna with a separate amplifier or a read/write antenna with a built-in amplifier.

■2-channel module

CC-Link IE Field

The 2-channel module, ECLEF-V680D2, is connectable to two antennas with separate amplifier or one antenna with a built-in amplifier.

■Equipped with tests and measurement functions required for the start-up and maintenance

MELSEC-Q CC-Link CC-Link IE Field

You can perform some diagnoses such as "tag communication test" and "distance level measurement"* between antennas and ID tags for start-up and maintenance.

* CC-Link IE Field module is not supported.

■iQSS (iQ Sensor Solution) reducing the time for development, debugging and start-up

CC-Link

Since the RFID interface module is compatible with Mitsubishi iQSS, on the screen of Mitsubishi MELSOFT GX Works2, you can easily perform the tests and measurement functions, including the "communications test" and the "distance level measurement".
You can also check the module status (including the ON/OFF status of each signal and device values) to reduce the time for development, debugging, and start-up.

■Function Block (FB) enabling the simple program development

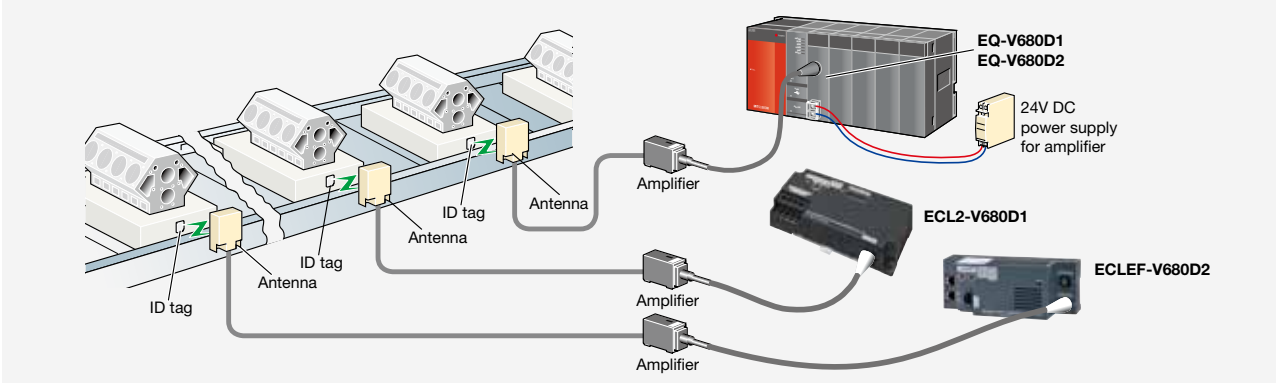
MELSEC-Q CC-Link CC-Link IE Field

We offer some programs such as the parameter settings or the programs for executing the function which includes date reading/writing as Function Block (FB).
You can develop the programs easily by installing FB to your programs.
You can download the FB library applicable to the Mitsubishi MELSOFT PLC Engineering Software from the MEEFAN or Mitsubishi Electric Factory Automation Website.

In regions other than Japan, please consult your local Mitsubishi representative.

▶What is RFID system?

RFID (Radio Frequency Identification) system communicates information with ID tag that is capable of storing information, via short-distance wireless communication using inductive and radio waves.



•*V680 Series RFID System Features*

Frequency band and type

Inductive type, HF band: 13.56MHz, Batteryless type tag

Supported volume of data

Four types of ID tags are available: 1-kbyte, 2-kbyte, and 8-kbyte. The systems support a volume of data equivalent to approx.1000, 2000, 8000, and 32000 characters (1-byte characters, such as alphanumeric characters), respectively.

Communications distance

A communications distance between an antenna and ID tag is determined by the antenna size and a combination of the antenna and ID tag.
A module can communicate from 0mm to 150mm (guaranteed value).

ID tag service life

1-kbyte memory tag: 100,000 writes to EEPROM

2-kbyte or 8-kbytes memory tag: 10 billion accesses to FRAM

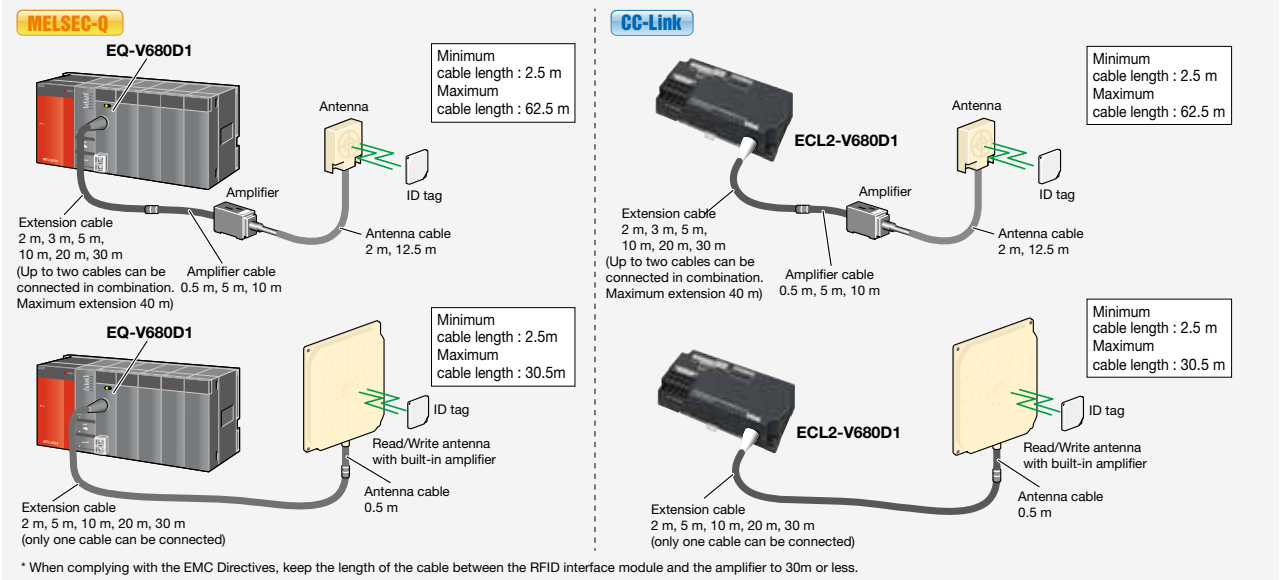
Heat resistance temperature

1-kbyte memory tag:
Operating ambient temperature : -25 to +85°C
Storage ambient temperature : -40 to +125°C (maximum)

2-kbyte, 8-kbyte memory tag:
Operating ambient temperature : -25 to +85°C
Storage ambient temperature : -40 to +85°C

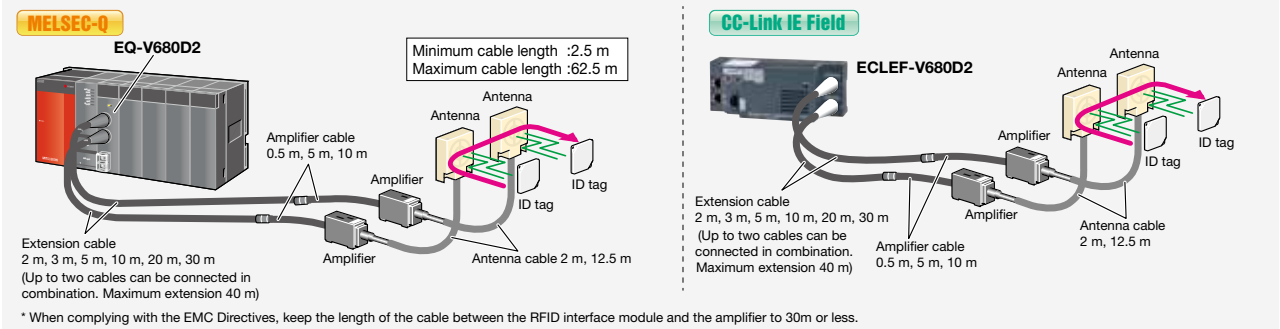
▶Two module types: 1-channel type and 2-channel type

•The 1-channel module, **EQ-V680D1** or **ECL2-V680D1**, is connectable to a read/write antenna with a separate amplifier or with a built-in amplifier.



* When complying with the EMC Directives, keep the length of the cable between the RFID interface module and the amplifier to 30m or less.

•The 2-channel module, **EQ-V680D2** or **ECLEF-V680D2**, is connectable to two read/write antennas with separate amplifiers. Data between ID tags can be copied when two antennas are connected. The ECLEF-V680D2 is connectable only to one antenna with built-in amplifier.



* When complying with the EMC Directives, keep the length of the cable between the RFID interface module and the amplifier to 30m or less.

System configuration

Basic model QCPU
High-performance model QCPU
Process CPU
Universal model QCPU
*

EQ-V680D1

EQ-V680D2

Remote device station

CC-Link Master station

ECL2-V680D1

Intelligent device station

CC-Link IE Field Master station

ECLEF-V680D2

Basic model QCPU
High-performance model QCPU
Process CPU
Universal model QCPU
*

EQ-V680D1

Remote device station

CC-Link Master station

ECL2-V680D1

Intelligent device station

CC-Link IE Field Master station

ECLEF-V680D2
* Only one antenna with built-in amplifier can be connected.

Extension cable

Model: V700-A40 2M
Cable length: 2 m
Model: V700-A41 3M
Cable length: 3 m
Model: V700-A42 5M
Cable length: 5 m
Model: V700-A43 10M
Cable length: 10 m
Model: V700-A44 20M
Cable length: 20 m
Model: V700-A45 30M
Cable length: 30 m

1-kbyte ID tag amplifier

Model: V680-HA63A
Cable length:
0.5 m/5 m/10 m

Extension cable

Model: V700-A40 2M
Cable length: 2 m
Model: V700-A41 3M
Cable length: 3 m
Model: V700-A42 5M
Cable length: 5 m
Model: V700-A43 10M
Cable length: 10 m
Model: V700-A44 20M
Cable length: 20 m
Model: V700-A45 30M
Cable length: 30 m

2-/8-kbyte ID tag amplifier

Model: V680-HA63B
Cable length:
0.5 m/5 m/10 m

Read/Write antenna

Model: V680-HS52

Model: V680-HS51

Model: V680-HS63

Model: V680-HS65
Cable length:
2 m/12.5 m

Extension cable

Model: V700-A40-W 2M
Cable length: 2 m
Model: V700-A40-W 5M
Cable length: 5 m
Model: V700-A40-W 10M
Cable length: 10 m
Model: V700-A40-W 20M
Cable length: 20 m
Model: V700-A40-W 30M
Cable length: 30 m

Read/Write antenna with built-in amplifier

Model: V680-H01-V2
Cable length: 0.5 m

ID tag

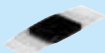
1-kbyte

Model: V680-D1KP52MT

Model: V680-D1KP53M

Model: V680-D1KP54T

Model: V680-D1KP66MT
Model: V680-D1KP66T



Model: V680-D1KP66T-SP

Model: V680-D1KP58HTN

Model: V680-D1KP52M-BT01

Model: V680-D1KP52M-BT11

2-kbyte

Model: V680-D2KF52M

Model: V680-D2KF52M-BT01

Model: V680-D2KF52M-BT11

Model: V680S-D2KF67M
Model: V680S-D2KF67

Model: V680S-D2KF68M
Model: V680S-D2KF68

8-kbyte

Model: V680S-D8KF67M
Model: V680S-D8KF67

Model: V680S-D8KF68M
Model: V680S-D8KF68

* When complying with the EMC Directives, keep the length of the cable between the RFID interface module and the amplifier to 30m or less.

OMRON Corporation RFID System V680 Series

*MELSEC iQ-R series can be used on an RQ extension base unit (RQ65B, RQ68B, or RQ612B).

Combination of Amplifiers, Antennas, and ID Tags

Amplifier	Antenna	ID tag																			
		EEPROM Type								FRAM Type											
		1-kbyte								2-kbyte						8-kbyte			
		Model: V680-D1KP52MT	Model: V680-D1KP53M	Model: V680-D1KP54T	Model: V680-D1KP66MT	Model: V680-D1KP66T	Model: V680-D1KP66T-SP	Model: V680-D1KP58HTN	Model: V680-D1KP52M-BT01 Model: V680-D1KP52M-BT11	Model: V680-D2KF52M	Model: V680-D2KF52M-BT01 Model: V680-D2KF52M-BT11	Model: V680S-D2KF67M	Model: V680S-D2KF68M	Model: V680S-D2KF67	Model: V680S-D2KF68	Model: V680S-D8KF67M	Model: V680S-D8KF67	Model: V680S-D8KF68M	Model: V680S-D8KF68
1-kbyte model for ID tag V680-HA63A	Model: V680-HS52	√	√	√	√	√	√		√										
	Model: V680-HS51	√	√						√										
	Model: V680-HS63	√		√	√	√	√												
	Model: V680-HS65			√	√	√	√	√											
2-/8-kbyte model for ID tag V680-HA63B	Model: V680-HS52									√	√	√		√		√	√		
	Model: V680-HS51									√	√								
	Model: V680-HS63									√		√	√	√	√	√	√	√	√
	Model: V680-HS65											√	√	√	√	√	√	√	√
Model V680-H01-V2 (Read/Write antenna with built-in amplifier)						√		√						√	√		√		√

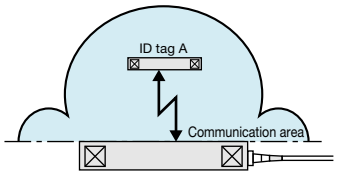
- **For details of RFID Interface Module (EQ-V680D1, EQ-V680D2, ECL2-V680D1, ECLEF-V680D2), contact Mitsubishi Electric Engineering Co., Ltd.**
- **For details of V680 series amplifiers, antennas, and ID tags, contact OMRON Corporation.**

▶ID tag communication method

There are seven methods for communicating with ID tag. The communication method can be specified according to purpose.

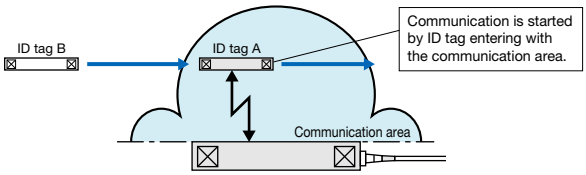
1) Trigger MELSEC-Q CC-Link CC-Link IE Field

With the trigger communication method, communication is performed with ID tag stopped inside an antenna communication area. Only one ID tag can exist inside a communications area.



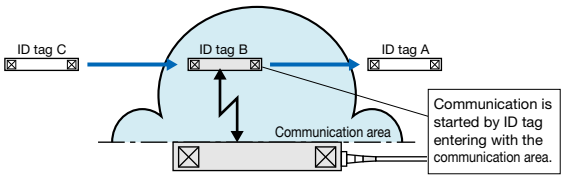
2) Single auto MELSEC-Q CC-Link CC-Link IE Field

With the auto communication method, communication is performed upon automatic detection of a moving ID tag that has entered an antenna communications area. Only one ID tag can exist inside a communication area.



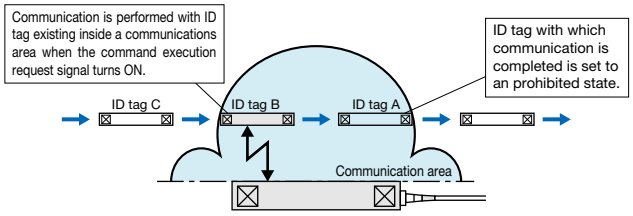
3) Repeat auto MELSEC-Q CC-Link CC-Link IE Field

With the repeat auto communication method, communication is performed upon automatic detection of a moving ID tag that has entered an antenna communications area. Communication is performed consecutively with ID tags that enter a communications area until the command execution request signal is turned OFF. Only one ID tag can exist inside a communications area.



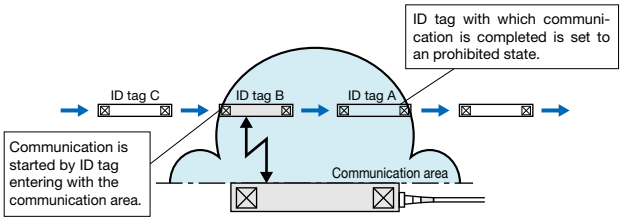
4) FIFO trigger MELSEC-Q CC-Link CC-Link IE Field

With the FIFO trigger communication method, communication is performed with an ID tag stopped inside an antenna communications area. This method can be used in cases where ID tags are close to each other. Only one operable ID tag can exist inside a communications area.



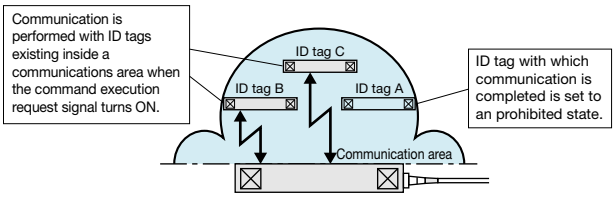
5) FIFO repeat MELSEC-Q CC-Link CC-Link IE Field

With the FIFO repeat communication method, communication is performed upon automatic detection of a moving ID tag that has entered an antenna communications area. Communication is performed consecutively with ID tags that enter a communications area until the command execution request signal is turned OFF.
This method can be used in cases where ID tags are close to each other. Only one operable ID tag can exist inside a communications area.



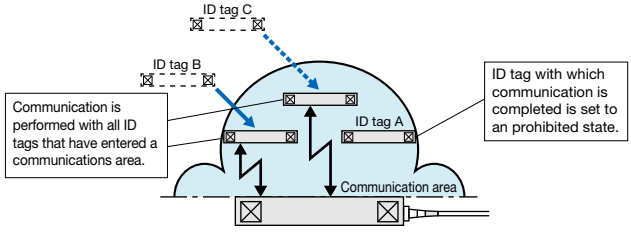
6) Multi-access trigger MELSEC-Q

With the multi-trigger communication method, communication is performed with multiple ID tags stopped inside an antenna communications area.



7) Multi-access repeat MELSEC-Q

With the multi-access repeat communication method, communication is performed upon automatic detection of multiple moving ID tags that have entered an antenna communications area.
Communication is performed consecutively with ID tags that enter the communications area until the command execution request signal is turned OFF.



Note) The FIFO trigger, FIFO repeat, multi-access trigger, and multi-access repeat methods are not available for the ID tags of V680-D1KP□□(EEPROM type).

▶Function list

Function			Description	MELSEC-Q EQ-V680D1 EQ-V680D2	CC-Link ECL2-V680D1	CC-Link IE Field ECLEF-V680D2
Command	Read	Read	Reads data from ID tag.	√	√	√
		Read with Error Correction	Reads data and check codes from ID tag, inspects data reliability, and corrects any 1-bit errors.	√	–	–
		Read UID	Reads the UID (unit identification number) of ID tag.	√	√	√
		Read Initial Data Setting	Reads the value set in the initial data setting.	–	√	√
	Write	Write	Writes data to ID tag.	√	√	√
		Bit Set	Sets the bit specified in the data of ID tag to "1".	√	–	–
		Bit Clear	Clears the bit specified in the data of ID tag to "0".	√	–	–
		Mask Bit Write	Protects data that is not to be overwritten within ID tag data, and writes data.	√	–	–
		Calculation Write	Writes an addition or subtraction calculation result (data) to ID tag data.	√	–	–
		Write with Error Correction	Writes data and check codes for inspecting data reliability to ID tag.	√	–	–
	Duplicate	Copy	Copies data of ID tag between channel 1 and channel 2. <Only possible with EQ-V680D2 and ECLEF-V680D2>	√	–	√
	Initialize	Data Fill	Initializes data of ID tag of specified data.	√	√	√
	Manage	Data Check	Checks whether or not an error occurred in ID tag data.	√	–	–
		Overwrite Count Control	Sets the number of writes to ID tag (EEPROM-type), and assesses whether or not the number of writes of the ID tag has been exceeded.	√	–	–
		Measure Noise	Measures a noise level of an area surrounding an antenna.	√	√	√
Test Function	Test /Measure	Tag Communications Test	Reads data from ID tag.	√	√	√
		Distance Level Measurement	Measures ID tag distance (level) with respect to an antenna communications area.	√	√	–
		Communications Success Rate Measurement	Executes communication 100 times, and measures a success rate.	√	–	–
		Speed Level Measurement	Measures the number of times communication can be performed continuously with ID tags that pass through an antenna communications area.	√	–	–
		Noise Level Measurement	Measures a noise level in an area surrounding an antenna.	√	√	√

▶Data read / write time period

When using the MELSEC-Q series module MELSEC-Q

With the communications speed in normal mode and a 1-kbyte memory tag, the read/write time period is as follows:

Read 100 bytes: 169 ms + 2 scans*1
1,000 bytes: 1,339 ms + 2 scans*1
Write 100 bytes: 289 ms + 2 scans*1
1,000 bytes: 2,296 ms + 2 scans*1

When using the CC-Link module CC-Link

With the communications speed in normal mode, a 10-Mbps CC-Link transmission speed, one connected module, and a 1-kbyte memory tag, the read/write time period is as follows:

Read 10 bytes: 59ms + 2 scans*1 (Remote net Ver.1 mode, 2 stations occupied)
122 bytes: 306ms + 2 scans*1 (Remote net Ver.2 mode, 2 stations occupied, octuple)
Write 10 bytes: 93ms + 2 scans*1 (Remote net Ver.1 mode, 2 stations occupied)
122 bytes: 407ms + 2 scans*1 (Remote net Ver.2 mode, 2 stations occupied, octuple)

When using the CC-Link IE Field module CC-Link IE Field

With the communications speed in normal mode and a 1-kbyte memory tag, the read/write time period is as follows:

Read 100 bytes: 161ms + transmission delay time 1*2 + transmission delay time 2*3
1,000 bytes: 1331ms + transmission delay time 1*2 + transmission delay time 2*3
Write 100 bytes: 278ms + transmission delay time 1*2 + transmission delay time 2*3
1,000 bytes: 2258ms + transmission delay time 1*2 + transmission delay time 2*3

*1: The maximum number of scans from the time the request signal for ID instruction request of the sequence program turns ON until the ID instruction completion signal receives ON.
*2: Refer to the User's Manual (Details Section) for details on the maximum time from when the request signal for ID instruction execution of the sequence program turns ON to when communication with the RFID interface module and amplifier/antenna starts.
*3: Refer to the User's Manual (Details Section) for details on the maximum time from when the RFID interface module and amplifier/antenna communication ends to when the sequence program ID instruction completion signal turns ON.

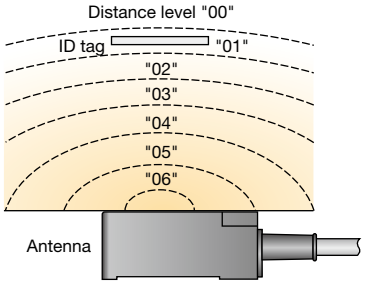
▶ Multiple tests and measurement functions

Tag communications test MELSEC-Q CC-Link CC-Link IE Field

The communication test function reads ID tag data without operating a sequence program.
When data reading from ID tag fails, the function allows you to check whether the cause lies in the sequence program or the antenna and ID tag.

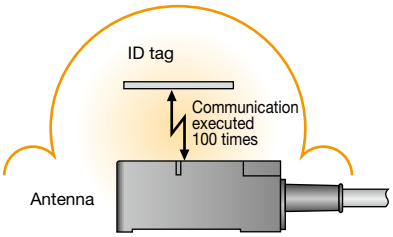
Distance level measurement MELSEC-Q CC-Link

The distance level measurement function measures a level of a distance between ID tag and an antenna communications area. Measurement results identify the distance as one of seven levels: 00 to 06.



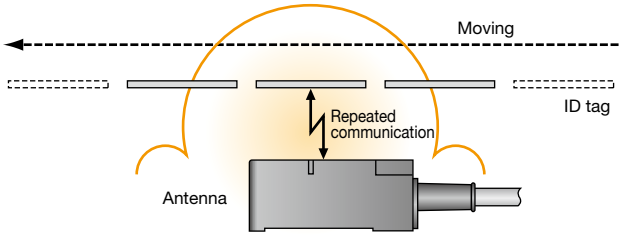
Communications success rate measurement MELSEC-Q

The communication success rate measurement function executes communication with a static ID tag 100 times and measures a communication success rate.
Measurement results identify a success rate using values 0 to 100 (%).



Speed level measurement MELSEC-Q

The speed level measurement function measures the number of times communication can be performed continuously while ID tag is moving.
Measurement results identify a speed level using values 0 to 99 (times).

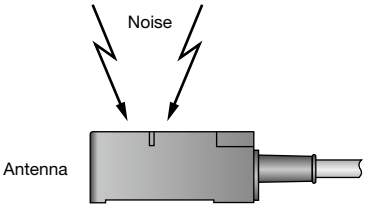


Noise level measurement MELSEC-Q CC-Link CC-Link IE Field

The noise level measurement function measures a noise level in an area surrounding an antenna.
Measurement results identify a noise level using values 0 to 99. Results should be used only for reference.

This function indicates a current noise level at an antenna installation site. It has been designed to help an operator identify changes under a situation where a noise countermeasure has been taken for errors, such as communication failure with ID tag. The noise level measurement function does not guarantee communication at a certain noise level.

Note) Measurement results of the various measurement functions can be confirmed by reading the corresponding indicator on the amplifier main body or information from the interface module buffer memory or remote register.



▶ Function Block (FB) enabling the simple program development

You can simply develop a program by downloading the FB library applicable to the Mitsubishi MELSOFT PLC Engineering Software from the MEEFAN or Mitsubishi Electric Factory Automation Website. MELSEC-Q CC-Link CC-Link IE Field

FB library list

MELSEC-Q

FB Name	Function Nama
P+EQ-V680D_ParameterSet	Set parameters
P+EQ-V680D_Read	Read ID tag
P+EQ-V680D_Write	Write ID tag
P+EQ-V680D_BitSet	Set ID tag bits
P+EQ-V680D_BitClear	Clear ID tag bits
P+EQ-V680D_MaskBitWrite	Write ID tag mask bit
P+EQ-V680D_CalculationWrite	Write ID tag calculation
P+EQ-V680D_Fill	Fill ID tag data
P+EQ-V680D_DataCheck	Check ID tag data
P+EQ-V680D_CounterWrite	Overwrite count control to ID tag
P+EQ-V680D_Copy	Copy between ID tags
P+EQ-V680D_ErrorCorrectionRead	Read ID tag with error correction
P+EQ-V680D_ErrorCorrectionWrite	Write to ID tag with error correction
P+EQ-V680D_UIDRead	Read ID tag UID
P+EQ-V680D_MeasureNoise	Measure noise
P+EQ-V680D_StatusRead	Read module status

Note) We support FB library by only GXWorks2 Japanese version.
You can get sample ladder programs writing in the user's manual by downloading from MEEFAN.
For more information of the FB Library and sample ladder programs, please contact your local Mitsubishi representative for details.

CC-Link

FB Name	Function Nama
P+MEE-ECL2-V680D1_InitDateSet	Set initial data
P+MEE-ECL2-V680D1_Read	Read ID tag
P+MEE-ECL2-V680D1_Write	Write ID tag
P+MEE-ECL2-V680D1_Fill	Fill ID tag data
P+MEE-ECL2-V680D1_UIDRead	Read ID tag UID
P+MEE-ECL2-V680D1_MeasureNoise	Measure noise
P+MEE-ECL2-V680D1_InitDateRead	Read initial data
P+MEE-ECL2-V680D1_StatusRead	Read module status

CC-Link IE Field

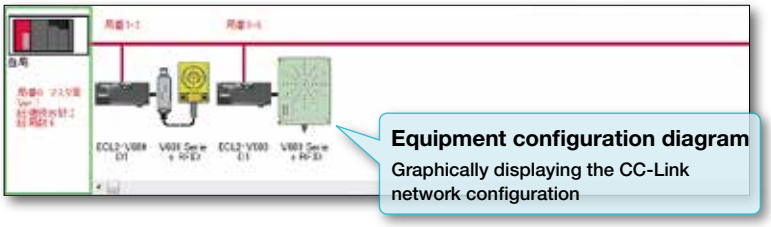
FB Name	Function Nama
P+MEE-ECLEF-V680D2_InitDateSet	Set initial data
P+MEE-ECLEF-V680D2_Read	Read ID tag
P+MEE-ECLEF-V680D2_Write	Write ID tag
P+MEE-ECLEF-V680D2_Fill	Fill ID tag data
P+MEE-ECLEF-V680D2_Copy	Copy between ID tags
P+MEE-ECLEF-V680D2_UIDRead	Read ID tag UID
P+MEE-ECLEF-V680D2_MeasureNoise	Measure noise
P+MEE-ECLEF-V680D2_InitDateRead	Read initial data
P+MEE-ECLEF-V680D2_StatusRead	Read module status

▶ Compatible with iQSS (iQ Sensor Solution)

The CC-Link RFID interface module, **ECL2-V680D1**, is compatible with Mitsubishi iQSS to achieve the easy start-up, monitoring, and programming of the RFID system. CC-Link

Easy start-up

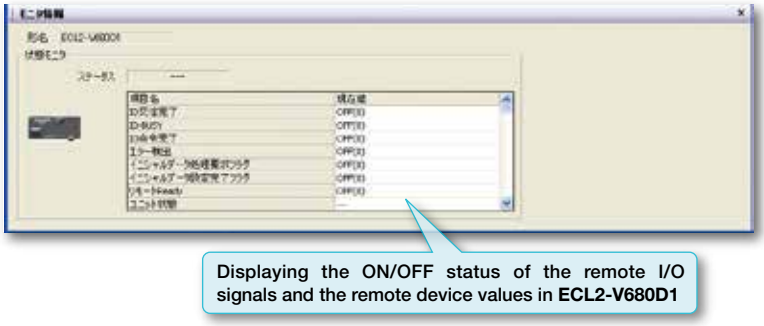
When you start up or modify the system, the RFID interface module detects the slave stations connected to the CC-Link master/local modules in the actual system configuration, and reflects the detected data to the CC-Link configuration window on the PLC Engineering Software.
In this window, you can easily perform the "communications test", the "distance level measurement", or others.



Sensor monitor

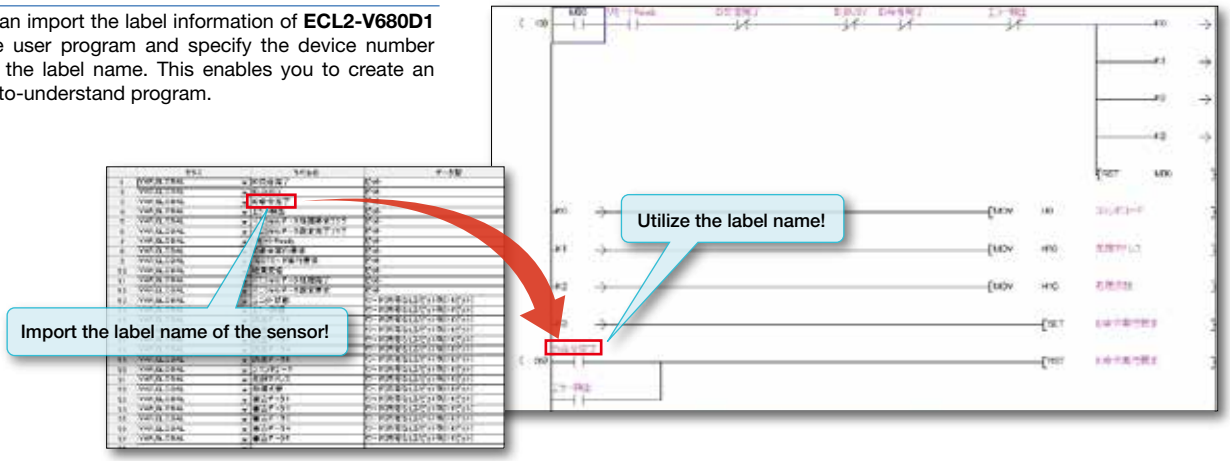
The status of the iQSS (iQ Sensor Solution) -compatible equipment connected to the CC-Link master/local modules appears in the monitor information window of the PLC Engineering Software.
In this window, you can easily check the status of the module (including the ON/OFF status of each signal and device values).

Note) We support the function of iQSS by only GXWorks2 Japanese version.



Easy programming

You can import the label information of **ECL2-V680D1** to the user program and specify the device number using the label name. This enables you to create an easy-to-understand program.



■Performance specifications

EQ-V680D1, EQ-V680D2 MELSEC-Q

Item	Specifications	
	EQ-V680D1	EQ-V680D2
Number of connectable antennas	1	2
Data transfer volume (number of communicated data bytes per a transfer)	2048 bytes, maximum	
Number of occupied IO points	32 points (IO assignments: 32 intelligent module points)	
5 V DC internal power supply current consumption	0.42 A	0.52 A
24 V DC external power supply current consumption (20.4 to 26.4 V DC)	0.25 A	0.37 A
Recommended 24 V DC power supply	S8VS-03024 (Manufactured by OMRON Corporation)	
Weight	0.2 kg	0.2 kg
Outer dimensions	98 (H) x 27.4 (W) x 106.5 (D) mm (for module unit excluding connected antenna cable)	

ECL2-V680D1 CC-Link

Item		Specifications				
		ECL2-V680D1				
Number of connectable antennas		1				
CC-Link side	Station type	Remote device station				
	Version	Version 1.10 and Version 2.0				
	Station number selection	For 2 stations occupied: Station numbers 1 to 63 For 4 stations occupied: Station numbers 1 to 61				
	Transmission speed	156 kbps/625 kbps/2.5 Mbps/5 Mbps/10 Mbps (Selectable)				
	Number of occupied stations and data transfer size	CC-Link version	Number of occupied stations	Extended cyclic settings	Data transfer size	Writable/readable data size per ID instruction
		Version 1.10	2 stations occupied		8 words	10 bytes
			4 stations occupied		16 words	26 bytes
		Version 2.0	2 stations occupied	Double	16 words	26 bytes
				Quadruple	32 words	58 bytes
				Octuple	64 words	122 bytes
	Connection cable	Ver.1.10-compatible CC-Link dedicated cable CC-Link dedicated cable (Ver.1.00-compatible) CC-Link dedicated high-performance cable (Ver.1.00-compatible)				
Power supply		20.4 to 26.4 V DC (24 V DC -15%, +10%) (Ripple ratio: within 5%) Current consumption: 0.33 A or less				
Weight		0.3 kg				
Outer dimensions		65 (H) x 150(W) x 45 (D) mm (for module unit excluding connected antenna cable)				

ECLEF-V680D2 CC-Link IE Field

Item		Specifications
		ECLEF-V680D2
Number of connectable antennas		2
CC-Link IE Field side	Station type	Intelligent device station
	Station number selection	1 to 120
	Network number	1 to 239
	Communication speed	1 Gbps
	Data transmission volume	Data volume writable/readable with one ID command
		8 to 1016 bytes (variable), set with parameters
	Connection cable	1000BASE-T Standard compliant Ethernet cable Category 5e or higher (with double shield, STP), straight cable
Power supply		20.4 to 28.8 V DC (24 V DC -15%, +20%) (Ripple ratio: within 5%) Current consumption: 0.60 A
Weight		0.3 kg
Outer dimensions		55 (H) x 180(W) x 70 (D) mm (for module unit excluding connected antenna cable)

■Product configuration

EQ-V680D1, EQ-V680D2 MELSEC-Q

Product Name	Product Name	Remarks
1-channel RFID interface module	EQ-V680D1	•EQ-V680D1 (main unit) •User's Manual (Hardware)
2-channel RFID interface module	EQ-V680D2	•EQ-V680D2 (main unit) •User's Manual (Hardware)
EQ-V680D1/D2 RFID Interface Module User's Manual	EQ-V680D-MAN-JP	EQ-V680D1 / D2 RFID Interface Module Specifications / Programming Method Descriptions
EQ-V680D1/D2 RFID Interface Module User's Manual [English version]	EQ-V680D-MAN-E	

ECL2-V680D1 CC-Link

Product Name	Product Name	Remarks
1-channel RFID interface module	ECL2-V680D1	•ECL2-V680D1 (main unit) •User's Manual (Hardware)
ECL2-V680D1 RFID Interface Module User's Manual	ECL2-V680D1-MAN-JP	ECL2-V680D1 RFID Interface Module Specifications / Programming Method Descriptions
ECL2-V680D1 RFID Interface Module User's Manual [English version]	ECL2-V680D1-MAN-E	

ECLEF-V680D2 CC-Link IE Field

Product Name	Product Name	Remarks
2-channel RFID interface module	ECLEF-V680D2	•ECLEF-V680D2 (main unit) •User's Manual (Hardware)
ECLEF-V680D2 RFID Interface Module User's Manual	ECLEF-V680D-M1J	ECLEF-V680D2 RFID Interface Module Specifications / Programming Method Descriptions
ECLEF-V680D2 RFID Interface Module User's Manual [English version]	ECLEF-V680D-M1E	

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Precautions for Choosing the Products

This catalog explains the typical features and functions of the MELSEC-Q Series EQ-V680D1 1-channel RFID Interface Module, EQ-V680D2 2-channel RFID Interface Module, CC-Link ECL2-V680D1 1-channel RFID Interface Module, and CC-Link IE Field ECLEF-V680D2 2-channel RFID Interface Module. Restrictions and other information on usage and module combinations are not provided. When using the products, always read the user's manuals of the products. Mutsubushi Electric Engineering will not be held liable for damage caused by factors found not to be the cause of Mutsubushi Electric Engineering; machine damage or lost profits caused by faults in the Mutsubushi Electric Engineering products; damage, secondary damage, accident compensation caused by special factors unpredictable by Mutsubushi Electric Engineering; damages to products other than Mutsubushi Electric Engineering products; and to other duties.

⚠ For safe operations

- This product has been manufactured as a general-purpose part for general industries, and has not been designed or manufactured to be incorporated in a device or system used in purposes related to human life.
- Before using the product for special purposes such as nuclear power, electric power, aerospace, medicine or passenger movement vehicles, consult with Mitsubishi.
- This product has been manufactured under strict quality control. However, when installing the product where major accidents or losses could occur if the product fails, install appropriate backup or failsafe functions in the system.

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