

Mitsubishi Electric Safety Programmable Controller
MELSEC-QS Series Products Acquired Korean Safety Certification (S-mark)

Thank you for purchasing the Mitsubishi Electric MELSEC-QS series safety programmable controllers that have acquired the Korean safety certification (S-mark).

The differences between S-mark certified MELSEC-QS series products and MELSEC-QS series products are described below.

For other information, refer to the MELSEC-QS series manuals.

For the list of the MELSEC-QS series manuals, refer to Related manuals in the Safety Application Guide (SH(NA)-080613ENG (13JR90)).

1. Precautions for S-mark certified system configuration

To configure a system that meets the Korean safety certification, use the S-mark certified MELSEC-QS series products shown in Table 1 and PFD and PFH values in Table 2.

Table 1 S-mark certified products

Product	Model	Weight	Current consumption	Module technical version	Remarks
Safety CPU module	QS001CPU-K ^{*3}	0.30kg ^{*1}	0.58A ^{*1}	-	The model names are shown without "-K" in the related manuals.
CC-Link Safety system master module	QS0J61BT12-K	0.12kg	0.46A	-	
CC-Link Safety system remote I/O module	QS0J65BTB2-12DT-K	0.71kg ^{*1}	0.14A	A ^{*2}	
Safety power supply module	QS061P-A1-K	0.40kg	-	-	
	QS061P-A2-K				
Safety main base unit	QS034B-K	0.28kg	0.095A	-	

*1: Since the values differ from the ones shown in the related manuals, take care when referring to them.

*2: Specifications and functions of the QS0J65BTB2-12DT-K (module technical version A) in Table 5 are the same as those of the QS0J65BTB2-12DT (module technical version B).

*3: The functions that can be used for the QS001CPU-K vary depending on the serial number (first five digits) as shown below.

- Serial number (first five digits) of 11051 or later: Functions same as those for the QS001CPU with the serial number (first five digits) of 11042
- Serial number (first five digits) of 18042 or later: Functions same as those for the QS001CPU with the serial number (first five digits) of 14052

Table 2 PFD and PFH

Module	PFD	PFH (/h)
Total of safety CPU module, safety power supply module, safety main base unit, and CC-Link Safety system master module	1.29×10^{-4} ^{*1 *2}	4.77×10^{-9} ^{*1 *2}
QS0J65BTB2-12DT-K	0.27×10^{-4}	1.21×10^{-9}

*1: For the QS061P-A1-K with the serial number 20□□□4 or earlier (first six digits), the PFD and PFH values are as follows:
PFD= 8.67×10^{-5} and PFH= 3.80×10^{-9} . (□□□ contains any figure.)

*2: For the QS061P-A2-K with the serial number 20□□□5 or earlier (first six digits), the PFD and PFH values are as follows:
PFD= 8.67×10^{-5} and PFH= 3.80×10^{-9} . (□□□ contains any figure.)

2. Installing ferrite cores to CC-Link dedicated cables

(1) Install the ferrite cores shown in Table 3 (sold separately) to CC-Link dedicated cables (refer to Figure1).

(2) Wind the CC-Link dedicated cables when installing the ferrite cores.

CC-Link dedicated cables thicker than the one shown in Table 4 cannot be wound. Check the outside diameter and minimum bend radius of the cable. For the outside diameter and minimum bend radius, contact the manufacturer of the CC-Link dedicated cable. It is recommended that the cables in Table 4 are used with the ferrite cores in Table 3. Refer to the tables when selecting a cable.

(3) Install a ferrite core within 15cm (5.91 inches) of a terminal block.

Table 3 Recommended ferrite cores (sold separately)

Model	Manufacturer	Outside diameter×length (mm)	Inside diameter (mm)	Number of turns
ZCAT3035-1330	TDK Corporation	φ30×35	φ13	2 turns (1 time) Refer to Figure 2.

Table 4 CC-Link dedicated cables (sold separately)

Product	Model	Manufacturer	Cable outside diameter (mm)	Minimum bend radius (mm)
CC-Link-dedicated cable (Ver. 1.10)	FANC-110SBH	Mitsubishi Electric System & Service Co., Ltd.	φ7.6	35 (1.38 inches)
	FA-CBL200PSBH	Mitsubishi Electric Engineering Co., Ltd.		
	FANC-110SBH	Kuramo Electric Co., LTD.		

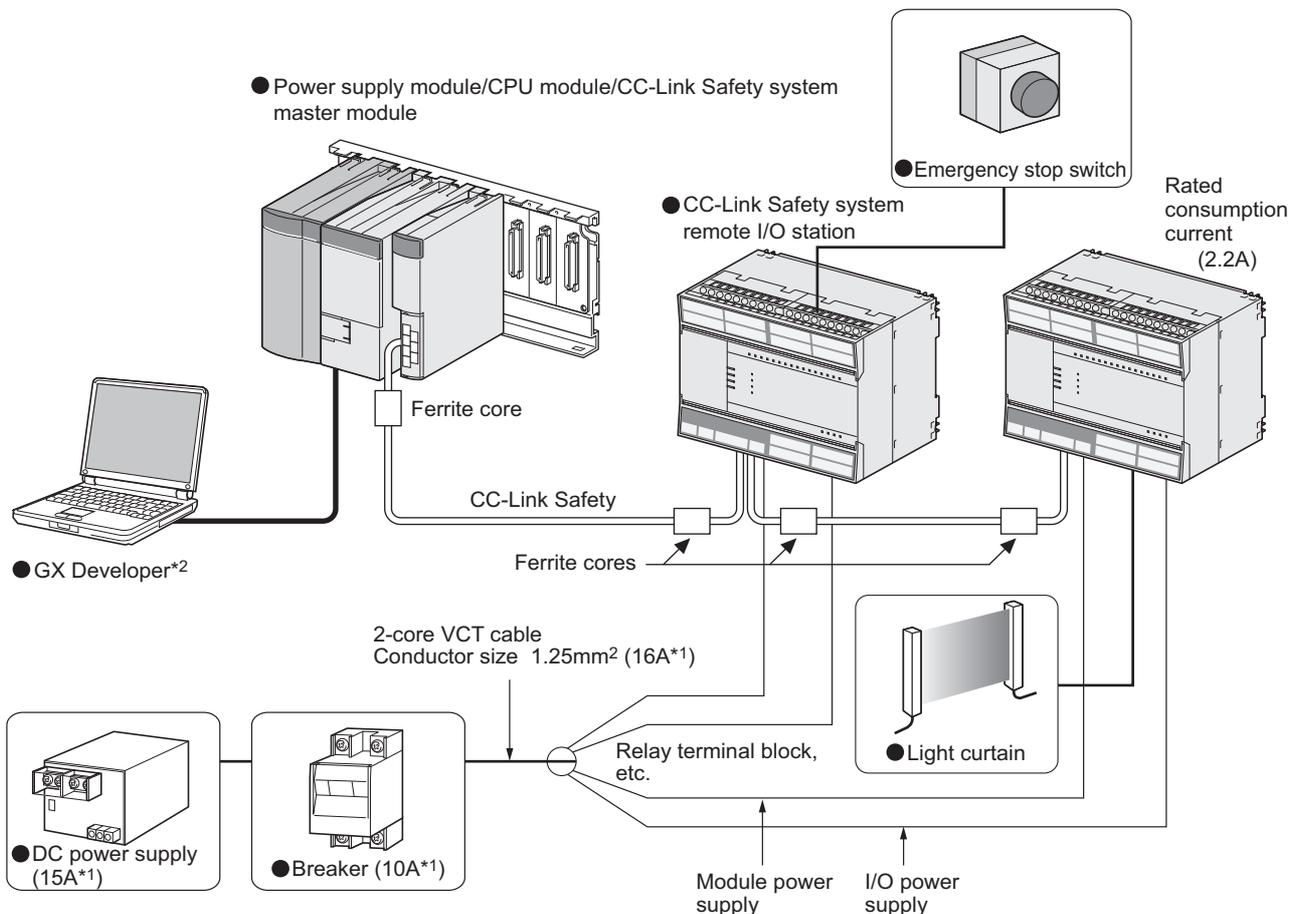
3. Breaker

It is recommended that a breaker such as a circuit protector is installed on a power supply cable connected to a remote I/O module to prevent accidents caused by overcurrent.

When selecting a breaker, consider the power supply capacity and the total rated current consumption value (at the maximum load) of modules connected to the power supply module. Select a breaker whose rated current value is smaller than the rated output current value of the power supply module, and is greater than the total rated current consumption value of modules to which power is supplied.

$$\left(\begin{array}{l} \text{Total rated current consumption value of} \\ \text{modules to which power is supplied} \end{array} \right) < \left(\begin{array}{l} \text{Rated current value} \\ \text{of the breaker} \end{array} \right) < \left(\begin{array}{l} \text{Rated output current value of} \\ \text{the power supply module} \end{array} \right)$$

Since a voltage drop occurs by connecting a breaker, check that the power supply voltage value of the remote I/O module at the maximum load meets the specifications. Also, check precautions of the breaker before wiring. Select a power supply cable whose allowable current value is greater than the rated current value of the breaker. The allowable current value depends on the outside diameter, number of cores, and wire material. Contact the manufacturer for the value.



*1: The current value is a reference value. Select a value according to the system.

*2: Use GX Developer Version 8.82L or later.

Use a safety CSP file compatible with the QS0J65BTB2-12DT-K.

Figure 1 System configuration example

Table 5 Specifications and functions of QS0J65BTB2-12DT-K

Item	Specifications and functions	
Safety refresh response processing time	9.6ms	
Safety remote station input response time	11.2ms or less + time of noise removal filter	
Safety remote station output response time	ON → OFF	10.4ms or less
	OFF → ON	11.2ms or less
Safety data monitoring time	Available	

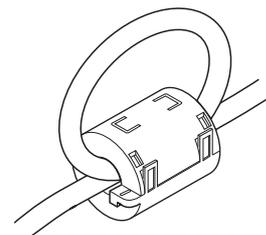


Figure 2 Ferrite core (2 turns)