



Before Using the Product

Please read this document before use. Keep the document in a safe place for future reference. Make sure that the end users read the document.

SAFETY PRECAUTIONS

(Read these precautions before using this product.) Before using this product, please read this manual and the relevant manuals carefully and pay full attention to safety to handle the product correctly. The precautions given in this manual are concerned with this product only. For the safety precautions of the programmable controller system, refer to the MELSEC iQ-R CPU Module User's Manual (Startup). In this manual, the safety precautions are classified into two levels: \* ⚠ WARNING and ⚠ CAUTION.

Table with 2 columns: Warning level and description of hazard.

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Under some circumstances, failure to observe the precautions given under ⚠ CAUTION may lead to serious consequences. Observe the precautions of both levels because they are important for personal and system safety. Make sure that the end users read this manual and then keep the manual in a safe place for future reference.

[Design Precautions]

- ⚠ WARNING
When the safety remote I/O module detects an error in an external power supply or a failure in the module, it turns off the outputs.
When a load current exceeding the rated current or an overcurrent caused by a load short-circuit flows, the safety remote I/O module defines it as a fault and turns off the outputs.
At the start-up of the system, if the external power supply is short-circuited by the output wiring of the safety remote I/O module...

[Design Precautions]

- ⚠ WARNING
When a communication failure occurs in the network, the failed station becomes the following station.
(1) Remote stations turn off all output from terminals.
(2) Remote stations suspend safety communications.
Do not use any "use prohibited" signals as a remote I/O signal since they are used by the system.

[Design Precautions]

- ⚠ CAUTION
Do not install the cables connected to external devices or the communication cables together with the main circuit lines or power cables.
Select the external devices to be connected to the module by referring to the performance specifications in the CC-Link IE TSN Remote I/O Module (With Safety Functions) User's Manual.

[Installation Precautions]

- ⚠ WARNING
Shut off the external power supply (all phases) used in the system before mounting or removing the module. Failure to do so may result in electric shock or cause the module to fail or malfunction.

[Installation Precautions]

- ⚠ CAUTION
Use the module in an environment that meets the general specifications in the CC-Link IE TSN Remote I/O Module (With Safety Functions) User's Manual.
Do not directly touch any conductive parts and electronic components of the module.
After the first use of the product, do not connect/remove the connectors more than 50 times.

[Wiring Precautions]

- ⚠ WARNING
Shut off the external power supply (all phases) used in the system before wiring. Failure to do so may result in electric shock or cause the module to fail or malfunction.

[Wiring Precautions]

- ⚠ CAUTION
Individually ground the FG terminal of the programmable controller with a ground resistance of 100 ohms or less.
Check the rated voltage and terminal layout before wiring to the module.
Tighten the terminal block mounting screws within the specified torque range.
When disconnecting the cable from the module, do not pull the cable by the cable part.

[Startup and Maintenance Precautions]

- ⚠ WARNING
Do not touch any terminal while power is on.
Shut off the external power supply (all phases) used in the system before cleaning the module or retightening the terminal block mounting screws.

[Startup and Maintenance Precautions]

- ⚠ CAUTION
Do not disassemble or modify the modules.
Use any radio communication device such as a cellular phone or PHS (Personal Handy-phone System) more than 25cm away from wiring as well as away in all directions from the module.
Check the module once a day, by turning on output signals and confirming that no error occurs.

[Disposal Precautions]

- ⚠ CAUTION
When disposing of this product, treat it as industrial waste.

[Precautions for Using Products]

- ⚠ CAUTION
Although MELCO has obtained the certification for Product's compliance to the international safety standards IEC 61508 and ISO 13849-1 from TÜV Rheinland, this fact does not guarantee that Product will be free from any malfunction or failure.
With very small probability shown in PFDavg / PFH, the safety remote I/O module has residual risk that input and output may remain on or off.

[Transportation Precautions]

- ⚠ CAUTION
For shipping, always use the original packaging.

[Precautions lors de la conception]

- ⚠ AVERTISSEMENT
Quand un module E/S distant de sécurité détecte une erreur dans une alimentation externe, il désactive les sorties.
En cas de circulation d'un courant de charge dépassant la valeur nominale ou d'une surintensité causée par un court-circuit de la charge...
(1) Les stations distantes désactivent toutes les sorties en provenant des bornes.
(2) Les stations distantes suspendent les communications de sécurité.

[Précautions de mise en service et de maintenance]

- ⚠ AVERTISSEMENT
Ne toucher à aucun des bornes quand le système est sous tension.
Couper l'alimentation externe du système (sur toutes les phases) avant le nettoyage du module ou avant le serrage des vis de fixation de plaque à bornes.
Ne pas faire tomber le module et ne pas le soumettre à des chocs.

[Précautions de mise en service et de maintenance]

- ⚠ ATTENTION
Ne pas démonter ni modifier le module.
Tous les appareils de communication portable ou PHS (Personal Handy-phone system) doivent être tenus éloignés de plus de 25 cm du câblage.
Couper l'alimentation externe du système (sur toutes les phases) avant de mettre en place ou de retirer un module.

[Précautions de mise au rebut]

- ⚠ ATTENTION
Lors de sa mise au rebut, ce produit doit être traité comme un déchet industriel.

[Précautions pour l'utilisation des produits]

- ⚠ ATTENTION
Bien que MELCO ait obtenu la certification que le produit est conforme aux normes de sécurité internationales CEI 61508 et ISO 13849-1 de la part de TÜV Rheinland, ceci ne garantit pas que le produit sera exempt de défaut ou de panne.
Avec une très faible probabilité indiquée dans PFDavg/PPFH, le module d'E/S distant de sécurité présente un risque résiduel que l'entrée et la sortie puissent rester actives ou désactivées.

[Précautions de transport]

- ⚠ ATTENTION
Pour l'expédition, toujours utiliser l'emballage d'origine.

CONDITIONS OF USE FOR THE PRODUCT

- (1) Although MELCO has obtained the certification for Product's compliance to the international safety standards IEC61508, ISO13849-1 from TÜV Rheinland, this fact does not guarantee that Product will be free from any malfunction or failure.
(2) MELCO prohibits the use of Products with or in any application involving, and MELCO shall not be liable for a default, a liability for defect warranty, a quality assurance, negligence or other tort and a product liability in these applications.
(a) power plants,
(b) trains, railway systems, airplanes, airline operations, other transportation systems,

1. Relevant manuals

Table with 2 columns: Manual name and Manual number. Lists manuals for MELSEC I-Q-R CPU Module, MELSEC I-Q-R CPU Module User's Manual (Startup), MELSEC iQ-R CC-Link IE TSN User's Manual (Startup), and MELSEC iQ-R CC-Link IE TSN User's Manual (Application).

For the latest manuals, download them from MITSUBISHI ELECTRIC FA Global Website: www.MitsubishiElectric.com/ifa

2. Packing list

Table with 2 columns: Item and Quantity. Lists the module and manuals included in the package.

3. This product

This product has Hardware Fault Tolerance (HFT) of 1, and complies with following requirements of international safety standards: SIL3 (IEC 61508: 2010), Category 4 PL-e (EN ISO 13849-1: 2015).

4. Operating ambient temperature

Use the module in the ambient temperatures of 0 to 55°C.
Température ambiante de fonctionnement
Utiliser ce produit avec une température ambiante entre 0 et 55 °C.

5. Storage ambient temperature

Store the module under the ambient temperatures of -40 to 75°C.
Température ambiante de stockage
Stocker le module à une température ambiante entre -40 et 75 °C.

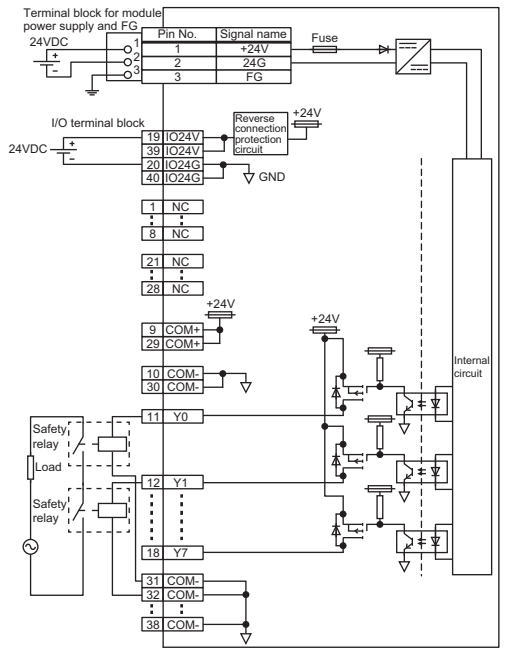
6. System configuration

A 24V power supply, power supply module, base unit, safety CPU module, and network module are required to start up the safety remote I/O module. For configuration of CC-Link IE TSN, refer to "System configuration" in the MELSEC iQ-R CC-Link IE TSN User's Manual (Application).

7. Wiring



7.1 Wiring diagrams



[Précautions lors de la conception]

- ⚠ ATTENTION
Ne pas installer les câbles connectés aux appareils externes ou les câbles de communication avec les lignes de circuit principal ou les câbles d'alimentation.
Garder une distance d'au moins 100 mm entre eux.
Sélectionner les appareils externes à connecter au module en se référant aux spécifications de performances dans le manuel de l'utilisateur du module d'E/S distant CC-Link IE TSN.

[Précautions d'installation]

- ⚠ AVERTISSEMENT
Couper l'alimentation externe du système (sur toutes les phases) avant de mettre en place ou de retirer un module.
Avant le câblage, couper l'alimentation externe du système (sur toutes les phases).
Après la première mise en service du produit, le nombre maximum admissible d'opérations de connexion/retrait des connecteurs est de 50.

[Précautions d'installation]

- ⚠ ATTENTION
Utiliser le module dans un environnement en conformité avec les spécifications générales dans le manuel de l'utilisateur du module d'E/S distant CC-Link IE TSN.
Éviter tout contact direct avec les parties conductrices et les composants électroniques du module.
Après la première mise en service du produit, le nombre maximum admissible d'opérations de connexion/retrait des connecteurs est de 50.

[Précautions de câblage]

- ⚠ AVERTISSEMENT
Avant le câblage, couper l'alimentation externe du système (sur toutes les phases).
Après la première mise en service du produit, le nombre maximum admissible d'opérations de connexion/retrait des connecteurs est de 50.

[Précautions de câblage]

- ⚠ ATTENTION
Mettre à la terre individuellement la borne FG de l'automate programmable avec une résistance de terre inférieure à 100Ω.
Vérifier la tension nominale et l'affectation des bornes avant le câblage du module et raccorder les câbles correctement.
Les câbles doivent être placés dans un conduit de câbles ou doivent être attachés.
Ne pas installer les lignes de commande ou les câbles de communication avec les lignes du circuit principal ou les câbles d'alimentation.



### 7.3 Setting switches

#### Setting the IP address setting switches

Set the fourth octet (decimal) of IP address using x1 and x16 (hexadecimal) of the IP address setting switches.  
The setting range of IP address is 1 to 254.  
Do not set 0. When 255 is set, the module operates in unit test mode.  
Combinations of x1 and x16 are as follows.

	x1															
	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
0	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
1	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31
2	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47
3	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63
4	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79
5	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95
6	96	97	98	99	100	101	102	103	104	105	106	107	108	109	110	111
x16	112	113	114	115	116	117	118	119	120	121	122	123	124	125	126	127
8	128	129	130	131	132	133	134	135	136	137	138	139	140	141	142	143
9	144	145	146	147	148	149	150	151	152	153	154	155	156	157	158	159
A	160	161	162	163	164	165	166	167	168	169	170	171	172	173	174	175
B	176	177	178	179	180	181	182	183	184	185	186	187	188	189	190	191
C	192	193	194	195	196	197	198	199	200	201	202	203	204	205	206	207
D	208	209	210	211	212	213	214	215	216	217	218	219	220	221	222	223
E	224	225	226	227	228	229	230	231	232	233	234	235	236	237	238	239
F	240	241	242	243	244	245	246	247	248	249	250	251	252	253	254	255

### 8. EMC and Low Voltage Directives

For EMC and Low Voltage Directives, refer to the manual described in 1. Relevant manuals.

### 9. Information and services

For further information and services, please consult your local Mitsubishi representative.

### 10. WARRANTY

Please confirm the following product warranty details before using this product.

#### 1. Limited Warranty and Product Support

- Mitsubishi Electric Company ("MELCO") warrants that for a period of eighteen (18) months after date of delivery from the point of manufacture or one year from date of Customer's purchase, whichever is less, Mitsubishi MELSEC Safety programmable logic controllers (the "Products") will be free from defects in material and workmanship.
- At MELCO's option, for those Products MELCO determines are not as warranted, MELCO shall either repair or replace them or issue a credit or return the purchase price paid for them.
- For this warranty to apply:
  - Customer shall give MELCO (i) notice of a warranty claim to MELCO and the authorized dealer or distributor from whom the Products were purchased, (ii) the notice shall describe in reasonable details the warranty problem, (iii) the notice shall be provided promptly and in no event later than thirty (30) days after the Customer knows or has reason to believe that Products are not as warranted, and (iv) in any event, the notice must be given within the warranty period.
  - Customer shall cooperate with MELCO and MELCO's representatives in MELCO's investigation of the warranty claim, including preserving evidence of the claim and its causes, meaningfully responding to MELCO's questions and investigation of the problem, grant MELCO access to witnesses, personnel, documents, physical evidence and records concerning the warranty problem, and allow MELCO to examine and test the Products in question onsite or at the premises where they are installed or used; and
  - If MELCO requests, Customer shall remove Products it claims are defective and ship them to MELCO or MELCO's authorized representative for examination and, if found defective, for repair or replacement. The costs of removal, shipment to and from MELCO's designated examination point, and reinstallation of repaired or replaced Products shall be at Customer's expense.
  - If Customer requests and MELCO agrees to effect repairs onsite at any domestic or overseas location, the Customer will pay for the costs of sending repair personnel and shipping parts. MELCO is not responsible for any re-commissioning, maintenance, or testing on-site that involves repairs or replacing of the Products.

- Repairs of Products located outside of Japan are accepted by MELCO's local authorized service facility centers ("FA Centers"). Terms and conditions on which each FA Center offers repair services for Products that are out of warranty or not covered by MELCO's limited warranty may vary.
- Subject to availability of spare parts, MELCO will offer Product repair services for (7) years after each Product model or line is discontinued, at MELCO's or its FA Centers' rates and charges and standard terms in effect at the time of repair. MELCO usually produces and retains sufficient spare parts for repairs of its Products for a period of seven (7) years after production is discontinued.
- MELCO generally announces discontinuation of Products through MELCO's Technical Bulletins. Products discontinued and repair parts for them may not be available after their production is discontinued.

#### 2. Limits of Warranties.

- MELCO does not warrant or guarantee the design, specify, manufacture, construction or installation of the materials, construction criteria, functionality, use, properties or other characteristics of the equipment, systems, or production lines into which the Products may be incorporated, including any safety, fail-safe and shut down systems using the Products.
- MELCO is not responsible for determining the suitability of the Products for their intended purpose and use, including determining if the Products provide appropriate safety margins and redundancies for the applications, equipment or systems into which they are incorporated.
- Customer acknowledges that qualified and experienced personnel are required to determine the suitability, application, design, construction and proper installation and integration of the Products. MELCO does not supply such personnel.
- MELCO is not responsible for designing and conducting tests to determine that the Product functions appropriately and meets application standards and requirements as installed or incorporated into the end-user's equipment, production lines or systems.
- MELCO does not warrant any Product:
  - repaired or altered by persons other than MELCO or its authorized engineers or FA Centers;
  - subjected to negligence, carelessness, accident, misuse, or damage;
  - improperly stored, handled, installed or maintained;
  - integrated or used in connection with improperly designed, incompatible or defective hardware or software;
  - that fails because consumable parts such as batteries, backlights, or fuses were not tested, serviced or replaced;
  - operated or used with equipment, production lines or systems that do not meet applicable and commensurate legal, safety and industry-accepted standards;
  - operated or used in abnormal applications;
  - installed, operated or used in contravention of instructions, precautions or warnings contained in MELCO's user, instruction and/or safety manuals, technical bulletins and guidelines for the Products;
  - used with obsolete technologies or technologies not fully tested and widely accepted and in use at the time of the Product's manufacture;
  - subjected to excessive heat or moisture, abnormal voltages, shock, excessive vibration, physical damage or other improper environment; or
  - damaged or malfunctioning due to Acts of God, fires, acts of vandals, criminals or terrorists, communication or power failures, or any other cause or failure that results from circumstances beyond MELCO's control.
- All Product information and specifications contained on MELCO's website and in catalogs, manuals, or technical information materials provided by MELCO are subject to change without prior notice.
- The Product information and statements contained on MELCO's website and in catalogs, manuals, technical bulletins or other materials provided by MELCO are provided as a guide for Customer's use. They do not constitute warranties and are not incorporated in the contract of sale for the Products.
- These terms and conditions constitute the entire agreement between Customer and MELCO with respect to warranties, remedies and damages and supersede any other understandings, whether written or oral, between the parties. Customer expressly acknowledges that any representations or statements made by MELCO or others concerning the Products outside these terms are not part of the basis of the bargain between the parties and are not factored into the pricing of the Products.
- THE WARRANTIES AND REMEDIES SET FORTH IN THESE TERMS ARE THE EXCLUSIVE AND ONLY WARRANTIES AND REMEDIES THAT APPLY TO THE PRODUCTS.
- MELCO DISCLAIMS THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE.

#### 3. Limits on Damages.

- MELCO'S MAXIMUM CUMULATIVE LIABILITY BASED ON ANY CLAIMS FOR BREACH OF WARRANTY OR CONTRACT, NEGLIGENCE, STRICT TORT LIABILITY OR OTHER THEORIES OF RECOVERY REGARDING THE SALE, REPAIR, REPLACEMENT, DELIVERY, PERFORMANCE, CONDITION, SUITABILITY, COMPLIANCE, OR OTHER ASPECTS OF THE PRODUCTS OR THEIR SALE, INSTALLATION OR USE SHALL BE LIMITED TO THE PRICE PAID FOR PRODUCTS NOT AS WARRANTED.
- MELCO has obtained the certification for Product's compliance to the international safety standards IEC61508 and EN954-1/ISO13849-1 from TÜV Rheinland, this fact does not guarantee that Product will be free from any malfunction or failure. The user of this Product shall comply with any and all applicable safety standard, regulation or law and take appropriate safety measures for the system in which the Product is installed or used and shall take the second or third safety measures other than the Product. MELCO is not liable for damages that could have been prevented by compliance with any applicable safety standard, regulation or law.
- MELCO prohibits the use of Products with or in any application involving power plants, trains, railway systems, airplanes, airline operations, other transportation systems, amusement equipments, hospitals, medical care, dialysis and life support facilities or equipment, incineration and fuel devices, handling of nuclear or hazardous materials or chemicals, mining and drilling, and other applications where the level of risk to human life, health or property are elevated.
- MELCO SHALL NOT BE LIABLE FOR SPECIAL, INCIDENTAL, CONSEQUENTIAL, INDIRECT OR PUNITIVE DAMAGES, FOR LOSS OF PROFITS, SALES, OR REVENUE, FOR INCREASED LABOR OR OVERHEAD COSTS, FOR DOWNTIME OR LOSS OF PRODUCTION, FOR COST OVERRUNS, OR FOR ENVIRONMENTAL OR POLLUTION DAMAGES OR CLEAN-UP COSTS, WHETHER THE LOSS IS BASED ON CLAIMS FOR BREACH OF CONTRACT OR WARRANTY, VIOLATION OF STATUTE, NEGLIGENCE OR OTHER TORT, STRICT LIABILITY OR OTHERWISE.
- In the event that any damages which are asserted against MELCO arising out of or relating to the Products or defects in them, consist of personal injury, wrongful death and/or physical property damages as well as damages of a pecuniary nature, the disclaimers and limitations contained in these terms shall apply to all three types of damages to the fullest extent permitted by law. If, however, the personal injury, wrongful death and/or physical property damages cannot be disclaimed or limited by law or public policy to the extent provided by these terms, then in any such event the disclaimer of and limitations on pecuniary or economic consequential and incidental damages shall nevertheless be enforceable to the fullest extent allowed by law.
- In no event shall any cause of action arising out of breach of warranty or otherwise concerning the Products be brought by Customer more than one year after the cause of action accrues.
- Each of the limitations on remedies and damages set forth in these terms is separate and independently enforceable, notwithstanding the unenforceability or failure of essential purpose of any warranty, undertaking, damage limitation, other provision of these terms or other terms comprising the contract of sale between Customer and MELCO.

#### 4. Delivery/Force Majeure.

- Any delivery date for the Products acknowledged by MELCO is an estimated and not a promised date. MELCO will make all reasonable efforts to meet the delivery schedule set forth in Customer's order or the purchase contract but shall not be liable for failure to do so.
- Products stored at the request of Customer or because Customer refuses or delays shipment shall be at the risk and expense of Customer.
- MELCO shall not be liable for any damage to or loss of the Products or any delay in or failure to deliver, service, repair or replace the Products arising from shortage of raw materials, failure of suppliers to make timely delivery, labor difficulties of any kind, earthquake, fire, windstorm, flood, theft, criminal or terrorist acts, war, embargoes, governmental acts or rulings, loss or damage or delays in carriage, acts of God, vandals or any other circumstances reasonably beyond MELCO's control.

#### 5. Choice of Law/Jurisdiction.

These terms and any agreement or contract between Customer and MELCO shall be governed by the laws of the State of New York without regard to conflicts of laws. To the extent any action or dispute is not arbitrated, the parties consent to the exclusive jurisdiction and venue of the federal and state courts located in the Southern District of the State of New York. Any judgment there obtained may be enforced in any court of competent jurisdiction.

#### 6. Arbitration.

Any controversy or claim arising out of, or relating to or in connection with the Products, their sale or use or these terms, shall be settled by arbitration conducted in accordance with the Center for Public Resources (CPR) Rules for Non-Administered Arbitration of International Disputes, by a sole arbitrator chosen from the CPR's panels of distinguished neutrals. Judgment upon the award rendered by the Arbitrator shall be final and binding and may be entered by any court having jurisdiction thereof. The place of the arbitration shall be New York City, New York. The language of the arbitration shall be English. The neutral organization designated to perform the functions specified in Rule 6 and Rules 7.7(b), 7.8 and 7.9 shall be the CPR.

## Machinery Directive (2006/42/EC) Compliance

This product is suitable for establishing safety functions for general industrial machinery and complies with the Machinery Directive (2006/42/EC). Before using this product, please read this manual, the relevant manuals, and the safety standards carefully and pay full attention to safety to handle the product correctly.

### 11. Safety Standards

Use the product according to the following safety standards.

Region	Safety standards
International	IEC 61508 (SIL3), IEC 62061 (SIL3), ISO 13849-1 (Category 4 PL.e) IEC 61131-2 IEC 61000-6-2, IEC 61000-6-4 IEC 61784-3 IEC 60204-1
Europe	EN ISO 13849-1 (Category 4 PL.e) EN 61131-2 EN 61000-6-2, EN 61000-6-4
North America	UL 61010-1, UL 61010-2-201

### Normes de sécurité

Observer les normes de sécurité suivantes.

Région	Norme
Global	IEC 61508(SIL3), IEC 62061(SIL3), ISO 13849-1(Catégorie 4 PL.e) IEC 61131-2 IEC 61000-6-2, IEC 61000-6-4 IEC 61784-3 IEC 60204-1
Europe	EN ISO 13849-1(Catégorie 4 PL.e) EN 61131-2 EN 61000-6-2, EN 61000-6-4
Amérique du Nord	UL 61010-1, UL 61010-2-201

### 12. Safety Parameters

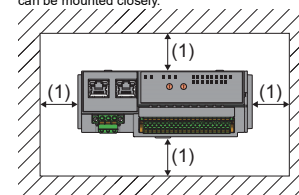
For details on the safety parameters of this product, refer to "VARIOUS SETTINGS" in the CC-Link IE TSN Remote I/O Module (With Safety Functions) User's Manual.

### 13. Installation

When installing this product to a control panel, fully consider its operability, maintainability, and environmental resistance. For details, refer to "General Specifications", "PROCEDURES BEFORE OPERATION", "INSTALLATION AND WIRING", and "MAINTENANCE AND INSPECTION" in the CC-Link IE TSN Remote I/O Module (With Safety Functions) User's Manual.

#### Installing modules

When installing the safety remote I/O module in a control panel, provide clearance of 60mm or longer between the safety remote I/O module and the sides of the neighboring structures or parts to ensure good ventilation and to replace the safety remote I/O module easily.  
When two or more safety remote I/O modules are mounted next to each other, they can be mounted closely.



(1) 60mm or longer

#### Installation orientations

The safety remote I/O module can be installed in six directions. Use the DIN rail to install the module.  
For details, refer to "INSTALLATION AND WIRING" in the CC-Link IE TSN Remote I/O Module (With Safety Functions) User's Manual.

### Installation precautions

- Install the safety remote I/O module on the flat surface. When the installation surface is uneven, excessive force is applied to the printed-circuit board and may cause a defect.
- Do not install the safety remote I/O module to the place where:
  - Ambient temperature is outside the range of 0 to 55°C;
  - Ambient humidity is outside the range of 5 to 95% of RH;
  - Condensation occurs due to rapid temperature change;
  - Corrosive gas or combustible gas is present;
  - Filled with conductive powder such as dust and iron powder, oil mist, salinity, or organic solvent;
- The safety remote I/O module is exposed to direct sunlight.
- A strong electric field or strong magnetic field is generated (For details, refer to "EMC and Low Voltage Directives" in the CC-Link IE TSN Remote I/O Module (With Safety Functions) User's Manual); and
- The safety remote I/O module is subject to vibration and shock (For details, refer to "General Specifications" in the CC-Link IE TSN Remote I/O Module (With Safety Functions) User's Manual).

### 14. Module Status after Power-on and LED Indication

No.	Name	Application
(1)	PW LED	Indicates the status of the power supply. On: Power supply ON Off: Power supply OFF
(2)	RUN LED	Indicates the operating status. On: Operating normally, in initial processing Flashing: Operating in unit test mode Off: A major error has occurred.
(3)	D LINK LED	Indicates the data link status of the safety remote I/O module. On: Cyclic transmission being performed, in initial processing Flashing: Cyclic transmission stopped <sup>1</sup> Off: Disconnected
(4)	SAFETY LED	Indicates the safety communication status of the safety remote I/O module. On: Safety communication established, in initial processing Flashing: Checking the position of the setting target module Off: Safety communication not established
(5)	ERR. LED	Indicates the error status of the safety remote I/O module. On: A moderate error or major error has occurred, in initial processing Flashing: A minor error has occurred. <sup>2</sup> Off: Operating normally
(6)	I/O LED	When error points are not indicated: Indicates the ON/OFF status of the outputs. On: Output ON Off: Output OFF When error points are indicated: Flashes to indicate the error points. On: Output ON Flashing: An error has occurred. <sup>3</sup> Off: Output OFF
(7)	I/O PW LED	Indicates the status of the power supplied from the external power supply. On: External power supply ON Off: External power supply OFF

<sup>1</sup> When cyclic transmission is stopped only for the master station, the safety remote I/O module maintains the cyclic transmission. Thus, the D LINK LED remains on.  
<sup>2</sup> After a minor error has been eliminated, the LED flashes for 5 seconds or longer and turns off.  
<sup>3</sup> Flashing indicates that a minor error has occurred in the safety remote I/O module.

### 15. Precautions for Use of Safety Programmable Controller

Users must prove that their entire safety system complies with the safety standards and the Machinery Directive. The third-party certification organization will validate the safety of product for the entire safety system, including a safety programmable controller and safety components.

#### Target failure measure (PFDavg/PFH) calculation

To establish a safety system, calculate the target failure measure (PFDavg/PFH) for each safety application (safety function) based on the PFDavg/PFH values of the safety programmable controller and connected safety components. The target failure measure (PFDavg/PFH) is the reliability target value for each Safety Integrity Level (SIL) defined in IEC 61508 and can be calculated by the following formula.  
PFDavg/PFH = A + B + C + D.....Calculation formula of PFDavg/PFH

Variable	Definition
A	Total PFDavg/PFH of the safety CPU module, power supply module, base unit, and CC-Link IE TSN master module
B	PFDavg/PFH of the CC-Link IE TSN remote I/O module (with safety functions) (1) When safety input device(s) and safety output device(s) are connected to the same CC-Link IE TSN remote I/O module (with safety functions): B = B1 (2) When safety input device(s) and safety output device(s) are connected to the different CC-Link IE TSN remote I/O modules (with safety functions): B = B1 + B2
B1	PFDavg/PFH of the CC-Link IE TSN remote I/O module (with safety functions) to which safety input device(s) is connected
B2	PFDavg/PFH of the CC-Link IE TSN remote I/O module (with safety functions) to which safety output device(s) is connected
C <sup>1</sup>	PFDavg/PFH of safety input device(s)
D <sup>1</sup>	PFDavg/PFH of safety output device(s)

<sup>1</sup> For the values of PFDavg/PFH, refer to the manuals for the safety components used.

The following table lists the PFDavg/PFH of safety remote I/O module.

Module	PFDavg	PFH(h) <sup>2</sup>
NZZGNSS2-8TE	1.37×10 <sup>-5</sup>	5.49×10 <sup>-9</sup>

<sup>2</sup> Proof test interval is 5 years.

#### PL evaluation described in ISO 13849-1

For the PL evaluation described in ISO 13849-1, use the MTTFD (mean time to dangerous failure) and the DCavg (average diagnostic coverage) listed in the following table.

Module	MTTF <sub>D</sub>	DCavg
Safety remote I/O module	NZZGNSS2-8TE	271 years 96.8%

### 16. EU DECLARATION OF CONFORMITY

MITSUBISHI ELECTRIC  
Changes for the Better

EU DECLARATION OF CONFORMITY

Manufacturer : MITSUBISHI ELECTRIC CORPORATION  
Address : TOKYO 100-8310, JAPAN  
(Place of Declare)  
Brand Name : MITSUBISHI ELECTRIC

declare under our sole responsibility that the product  
Description : Programmable Logic Controller  
Type of Model : Remote I/O module  
Notice : Refer to next page about each type name

to which this declaration relates is in conformity with the following standard and directive

Directive	Harmonized Standard	Notified Body
EMC Directive 2014/53/EU	EN61321-2:2007	—
Machinery Directive 2006/42/EC	EN ISO 13849-1 : 2015	1
RoHS Directive 2011/65/EU (EU/2015/863)*1	EN IEC63000:2018	—

\*1 Category 9 "Industrial monitoring and control instruments" is applicable.

This declaration is based on the conformity assessment of following Notified Body

No.	Name and Address	Identification Number	Issued certificate No
1	TÜV RHEINLAND INDUSTRIE SERVICE GMBH, Am Grauen Stern, 51105 Köln, Germany	0035	012055872.0021

Authorized representative in Europe  
(The person authorized to compile the Technical file or relevant Technical documentation)  
Hisatumi Komoto  
FA Product Marketing Director, MITSUBISHI ELECTRIC EUROPE B.V., German Branch  
Mitsubishi Electric Platz 1, 40882, Ratingen, Germany  
Issue Date (Date of Declaration): 28 Sep. 2022

Signed for and on behalf of  
(Signature) Hisatumi Komoto  
Hisatumi Komoto  
Senior Manager, FA Remote I/O Module Development Section  
FA Systems Dept 2  
MITSUBISHI ELECTRIC CORPORATION NAGOYA WORKS

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#### Appendix List of type name to declare

Type name	Serial No.
NZZGNSS2-16DTE	#####00000000
NZZGNSS2-16DTE(C)	#####00000000
NZZGNSS2-8D	#####00000000
NZZGNSS2-8D(C)	#####00000000
NZZGNSS2-8TE	#####00000000
NZZGNSS2-8TE(C)	#####00000000
NZZGNSS2-16DTE-K	#####14000000
NZZGNSS2-8D-K	#####01200000
NZZGNSS2-8TE-K	#####01300000

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### 17. UK DECLARATION OF CONFORMITY

MITSUBISHI ELECTRIC  
Changes for the Better

UK DECLARATION OF CONFORMITY

Manufacturer : MITSUBISHI ELECTRIC CORPORATION  
Address : TOKYO 100-8310, JAPAN  
(Place of Declare)  
Brand Name : MITSUBISHI ELECTRIC

declare under our sole responsibility that the product  
Description : Programmable Controller  
Type of Model : Remote I/O module  
Notice : Refer to next page about each type name

to which this declaration relates is in conformity with the following standard and legislation

Legislation	Designated Standard	Approved Body
Electromagnetic Compatibility Regulations 2016	EN 61321-2:2007	—
Supply of Machinery (Safety) Regulations 2008	EN ISO 13849-1:2015	1
The Restriction of the Use of Certain Hazardous Substances in Electrical and Electronic Equipment Regulations 2012	EN IEC 63000:2018	—

This declaration is based on the conformity assessment of following Approved Body

No.	Name and Address	Identification Number	Issued certificate No
1	TÜV Rheinland UK Ltd, Friars Gate (Third Floor), 101 Sturford Road, Shirley, South East B90 4BN, United Kingdom	2571	01206U5872.0022

Issue Date (Date of Declaration): 31 Aug. 2022

Signed for and on behalf of  
(Signature) Hisatumi Komoto  
Hisatumi Komoto  
Senior Manager, FA Remote I/O Module Development Section  
FA Systems Dept 2  
MITSUBISHI ELECTRIC CORPORATION NAGOYA WORKS

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#### Appendix List of type name to declare

Type name	Serial No.
NZZGNSS2-16DTE	#####00000000
NZZGNSS2-16DTE(C)	#####00000000
NZZGNSS2-8D	#####00000000
NZZGNSS2-8D(C)	#####00000000
NZZGNSS2-8TE	#####00000000
NZZGNSS2-8TE(C)	#####00000000
NZZGNSS2-16DTE-K	#####04000000
NZZGNSS2-8D-K	#####01200000
NZZGNSS2-8TE-K	#####01300000

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