



Mitsubishi Safety Programmable Controller

MELSEC **QS** series

MELSEC-QS CC-Link IE Field Network Master/Local Module

User's Manual
(Hardware)

QS0J71GF11-T2

Thank you for purchasing the Mitsubishi safety programmable controller, MELSEC-QS series. The MELSEC-QS programmable controller is suitable for establishing safety functions for general industrial machinery.

Prior to use, please read both this manual and detailed manual thoroughly to fully understand the product.

MODEL	QS0J71GF11-T2-U-HW
MODEL CODE	13J258
IB(NA)-0800467-C(1406)MEE	

● SAFETY PRECAUTIONS ●

(Read these precautions before using this product.)

Before using this product, please read the Safety Guidelines included with the base unit.

Also, please read this manual, the relevant manuals, the manuals for standard programmable controllers, and the relevant safety standards carefully, and pay full attention to safety to handle the product correctly.

● PRÉCAUTIONS DE SÉCURITÉ ●

(Lire ces précautions avant toute utilisation du produit.)

Avant d'utiliser ce produit, prière de lire les "Safety Guidelines" (directive de sécurité) dans la documentation fournie avec l'unité de base.

De plus, prière de lire ce manuel et la documentation à laquelle il renvoie, les manuels des automates programmables standard et les normes de sécurité pertinentes, de façon à traiter le produit correctement.

● CONDITIONS OF USE FOR THE PRODUCT ●

- (1) Although MELCO has obtained the certification for Product's compliance to the international safety standards IEC61508, EN954-1/ISO13849-1 from TUV 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.

- (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,
 - (c) hospitals, medical care, dialysis and life support facilities or equipment,
 - (d) amusement equipments,
 - (e) incineration and fuel devices,
 - (f) handling of nuclear or hazardous materials or chemicals,
 - (g) mining and drilling,
 - (h) and other applications where the level of risk to human life, health or property are elevated.

CONTENTS

1. OVERVIEW.....	1
1.1 Safety Programmable Controller Product List	1
2. SPECIFICATIONS	2
2.1 Performance Specifications	2
2.2 Safety Standards	3
2.3 Module Replacement.....	3
3. MOUNTING AND INSTALLATION	4
3.1 Handling Precautions	4
3.2 Installation Environment	4
4. PART NAMES.....	5
5. EXTERNAL WIRING.....	7
5.1 Ethernet Cable Wiring	7
6. EXTERNAL DIMENSIONS	10
7. EC DECLARATION OF CONFORMITY FOR MACHINERY DIRECTIVE	11

MANUAL

The manual related to this product is shown below. Please place an order as needed.

User's manual

Manual name	Manual number (model code)
MELSEC-QS CC-Link IE Field Network Master/Local Module User's Manual	SH-080969ENG (13JZ53)

COMPLIANCE WITH THE EMC, LOW VOLTAGE, AND MACHINERY DIRECTIVES

(1) Method of ensuring compliance

To ensure that Mitsubishi programmable controllers maintain EMC, Low Voltage, and Machinery Directives when incorporated into other machinery or equipment, certain measures may be necessary. Please refer to the manual included with the base unit. The CE mark on the side of the programmable controller indicates compliance with EMC, Low Voltage, and Machinery Directives.

(2) Additional measures

This product complies with the EMC, Low Voltage, and Machinery Directives. Before using this product, please read this manual, the relevant manuals, the manuals for standard programmable controllers, and the safety standards carefully and pay full attention to safety to handle the product correctly.

The descriptions are based on the requirements of the Directives and the harmonized standards. However, they do not guarantee that the entire machinery constructed according to the descriptions complies with the EMC, Low Voltage, and Machinery Directives. The manufacture of the machinery must determine the testing method for compliance and declare conformity to the EMC, Low Voltage, and Machinery Directives.

1. OVERVIEW

This manual describes the specifications, part names, and settings of the QS0J71GF11-T2 CC-Link IE Field Network master/local module (hereinafter referred to as the QS0J71GF11-T2), which is used with the MELSEC-QS series safety CPU module.

After unpacking, confirm that the following items are enclosed.

Part name	Quantity
QS0J71GF11-T2	1
Module fixing screw	1
MELSEC-QS CC-Link IE Field Network Master/Local Module User's Manual (Hardware)	1

1.1 Safety Programmable Controller Product List

Product name	Model	Description
MELSEC-QS CC-Link IE Field Network master/local module	QS0J71GF11-T2	A module which is mounted on a safety main base unit and establishes connection to CC-Link IE Field Network

2. SPECIFICATIONS

2.1 Performance Specifications

Table 2.1 shows the performance specifications of the QS0J71GF11-T2. For the general specifications of the QS0J71GF11-T2, refer to the user's manual for the safety CPU module used.

Table 2.1 Performance specifications

Item		Specifications
Number of connectable stations per network	Master station (safety station)	1 station (Up to 120 slave stations can be connected to the master station (safety station).)
	Local station (standard station)	120 stations
Number of connectable safety stations per network		32 stations
Maximum number of networks		239
Maximum number of safety connections per station	Asynchronous mode	31 connections
	Synchronous mode	8 connections
Number of safety inputs/outputs per safety connection	Input	8 words
	Output	8 words
Ethernet	Communication speed	1Gbps
	Network topology	Line topology, star topology (Coexistence of line topology and star topology is possible.), and ring topology
	Connection cable	An Ethernet cable that meets the 1000BASE-T standard: Category 5e or higher (double shielded, STP), straight cable
	Maximum station-to-station distance	100m max. (Compliant with ANSI/TIA/EIA-568-B (Category 5e))
	Overall cable distance	<ul style="list-style-type: none"> • Line topology: 12000m (when cables are connected to 1 master station and 120 slave stations) • Star topology: Depends on the system configuration. • Ring topology: 12100m (when cables are connected to 1 master station and 120 slave stations)
Number of cascade connections		Up to 20
Number of occupied I/O points		32 points (I/O assignment: Intelligent 32 points)
Internal current consumption (5VDC)		0.85A
External dimensions		98(H) × 27.4(W) × 115(D) [mm]
Weight		0.18kg

For transmission delay time or other specifications, refer to the following.
 MELSEC-QS CC-Link IE Field Network Master/Local Module User's Manual

2.2 Safety Standards

Normes de sécurité

Use the product according to the following safety standards.

Region	Safety standards
International	IEC61508 Parts 1-7:1998-2000, ISO13849-1: 2006, IEC61131-2: 2007, IEC61000-6-2: 2005, IEC61000-6-4: 2006, IEC61784-3:2010, IEC60204-1:2006
Europe	EN954-1: 1996, EN ISO13849-1: 2008, EN61131-2: 2007, EN61000-6-2: 2005, EN61000-6-4: 2007
North America	UL508, NFPA79-2007

Utiliser le produit dans le respect des normes de sécurité suivantes.

Région	Normes de sécurité
International	IEC61508 Parts 1-7:1998-2000, ISO13849-1:2006, IEC61131-2:2007, IEC61000-6-2:2005, IEC61000-6-4:2006, IEC61784-3:2010, IEC60204-1:2006
Europe	EN954-1:1996, EN ISO13849-1:2008, EN61131-2:2007, EN61000-6-2:2005, EN61000-6-4:2007
Amérique du Nord	UL508, NFPA79-2007

2.3 Module Replacement

Replace the module according to the following replacement cycle.

Module	Replacement cycle
MELSEC-QS CC-Link IE Field Network master/local module	10 years

3. MOUNTING AND INSTALLATION

3.1 Handling Precautions

The following is a list of precautions for handling the master/local module:

- (1) Do not drop or apply strong shock to the module case since it is made from resin. Doing so may cause failure.
- (2) Do not remove the printed-circuit board of the module from the case. Doing so may cause failure.
- (3) Prevent foreign matter such as dust or wire chips from entering the module. Such foreign matter can cause a fire, failure, or malfunction.
- (4) A protective film is attached to the top of the module to prevent foreign matter, such as wire chips, from entering the module during wiring. Do not remove the film during wiring. Remove it for heat dissipation before system operation.
- (5) Before handling the module, touch a grounded metal object to discharge the static electricity from the human body. Failure to do so may cause the module to fail or malfunction.
- (6) Tighten the screws such as module fixing screws within the following range.

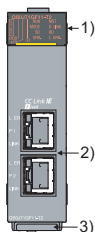
Screw	Tightening torque range
Module fixing screw (M3 × 12)	0.36 to 0.48N·m

- (7) To mount the module, while pressing the module mounting lever located in the lower part of the module, fully insert the module fixing projection(s) into the hole(s) in the base unit and press the module until it snaps into place. Be sure to tighten the module fixing screw within the specified tightening torque range.
Incorrect mounting may cause malfunction, failure or drop of the module.

3.2 Installation Environment

For details on installation environment, refer to the following.
QSCPU User's Manual (Hardware Design, Maintenance and Inspection)

4. PART NAMES



No.	Name	Application
1)	RUN LED	Indicates the operating status.
	ON	Operates normally.
	OFF	A hardware failure or a watchdog timer error has occurred.
	MST LED	Indicates the station type.
	ON	Operates as a master station (safety station).
	OFF	Operates as a local station.
	MODE LED	Indicates the mode.
	ON	In online mode.
	Flashing	In test mode (The module is performing a hardware test, self-loopback test, or loop test.)
	OFF	In offline mode. (Data link not performed)
	D LINK LED	Indicates the status of the data link.
	ON	Data link in operation (cyclic transmission in progress)
	Flashing	Data link in operation (cyclic transmission stopped)
	OFF	Data link not performed (disconnected)
	SD LED	Displays the sending status of data.
ON	Sending data.	
OFF	Data not sent.	
RD LED	Displays the reception status of data.	
ON	Receiving data.	
OFF	Data not received.	

No.	Name	Application	
1)	ERR. LED	Indicates the error status of the master/local module.	
		ON	One of the following errors has occurred: <ul style="list-style-type: none"> • A stop error occurs in the safety CPU module. • An error was detected in all stations. • Modules with same station number exist on the network. • A network parameter is corrupted. • The network parameter does not match the installation status. (Reserved station specification, number of connected stations, network number etc.)
		Flashing	A data link faulty station was detected.
		OFF	Working normally.
	L ERR. LED	ON	<ul style="list-style-type: none"> • The module has received abnormal data. • The module is performing loopback.
		OFF	<ul style="list-style-type: none"> • The module has received normal data. • The module is not performing loopback.
		ST.NO.	Displays the station number of the master/local module.
	ON	Displays the station number. (Ex.) Station No. 15	
		OFF	Operates as a master station (safety station). (station No. 0)
	2)	P1	
L ER LED		ON	<ul style="list-style-type: none"> • The module has received abnormal data. • The module is performing loopback.
		OFF	<ul style="list-style-type: none"> • The module has received normal data. • The module is not performing loopback.
LINK LED		ON	Linkup in progress.
		OFF	Linkdown in progress.
P2		PORT2 connector for CC-Link IE Field Network (RJ45 connector) Connect an Ethernet cable.	
L ER LED	(Same as the "P1" connector)		
LINK LED	(Same as the "P1" connector)		
3)	Serial number display	Displays the serial number printed on the rating plate.	

5. EXTERNAL WIRING

5.1 Ethernet Cable Wiring

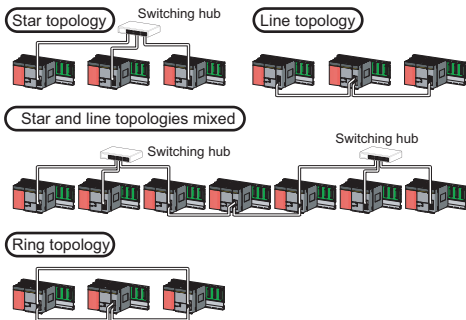
Câblage pour câble Ethernet

(1) Network topology

Topologie du réseau

This section describes available network topologies.

Cette section présente les topologies réseau disponibles.



English	French
Switching hub	<i>Concentrateur de commutation</i>
Star topology	<i>Topologie en étoile</i>
Line topology	<i>Topologie en ligne</i>
Star and line topologies mixed	<i>Topologies mixtes en étoile et en ligne</i>
Ring topology	<i>Topologie en anneau</i>

For details on the network topologies, refer to the following.
MELSEC-QS CC-Link IE Field Network Master/Local Module
User's Manual

Pour le détail des topologies réseau, voir ce qui suit.

*MELSEC-QS CC-Link IE Field Network Master/Local Module
User's Manual*

(2) Connecting the cable

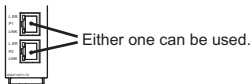
Raccordement du câble

PORT1 and PORT2 need not to be distinguished.

Il n'y a pas de distinction particulière à faire entre PORT1 et PORT2.

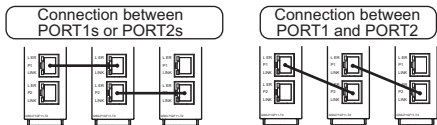
- (a) When only one connector is used in star topology, either PORT1 or PORT2 is applicable.

Si on utilise un seul connecteur en topologie étoile, PORT1 ou PORT2 peuvent être utilisés indifféremment.



- (b) When using two connectors for line topology and ring topology, an Ethernet cable can be connected to the connectors in any combination.

Si on utilise deux connecteurs pour la topologie en ligne et pour la topologie en anneau, la combinaison de raccordement des câbles Ethernet aux connecteurs est indifférente.



English	French
Either one can be used.	<i>On peut utiliser l'un comme l'autre.</i>
Connection between PORT1s or PORT2s	<i>Raccordement entre PORT1s ou PORT2s</i>
Connection between PORT1 and PORT2	<i>Connexion entre PORT1 et PORT2</i>

(3) Precautions

This section describes wiring precautions.

(a) Handling

- Place the Ethernet cable in a duct or clamp them. If not, dangling cable may swing or inadvertently be pulled, resulting in damage to the module or cables or malfunction due to poor contact.
- Do not touch the core of the cable-side or module-side connector, and protect it from dirt or dust. If oil from your hand, dirt or dust is attached to the core, it can increase transmission loss, arising a problem in data link.
- Check the following:
 - Is any Ethernet cable disconnected?
 - Is any of the Ethernet cables shorted?
 - Are the connectors securely connected?

(b) Broken cable latch

Do not use Ethernet cables with broken latches. Doing so may cause the cable to unplug or malfunction.

(c) Connecting and disconnecting the Ethernet cable

Hold the connector part when connecting and disconnecting the Ethernet cable. Pulling a cable connected to the module may damage the module or cable, or result in malfunction due to poor contact.

(d) Connectors without Ethernet cable

Attached connector cover should be placed to prevent foreign matter such as dirt or dust.

(e) Maximum station-to-station distance (maximum cable length)

The maximum station-to-station distance is 100m. However, the distance may be shorter depending on the operating environment of the cable. For details, contact your cable manufacturer.

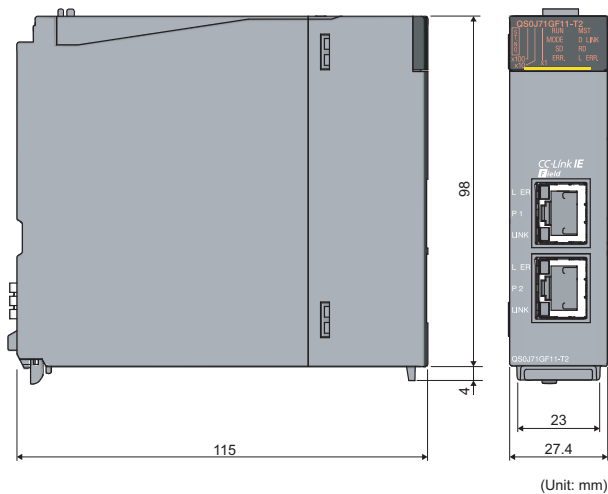
(f) Bend radius

The bend radius of the Ethernet cable is limited. For details, see the specifications of the Ethernet cable to be used.

(g) Network configuration

For wiring, check (1), (2), and (3) in this section to prevent incorrect wiring.

6. EXTERNAL DIMENSIONS



7. EC DECLARATION OF CONFORMITY FOR MACHINERY DIRECTIVE

EC Declaration of Conformity

Manufacturer: Mitsubishi Electric Corporation, Nagoya Works
Address: 1-14, 5-chome, Yada-Minami, Higashi-ku, Nagoya
461-8670, Japan

Products: Type: Programmable Controller
(Open Type equipment, Installation category II)
Model: QS0-Series
(Applicable units identified in Appendix)

These products comply with the following European directives:

Directive	Name
2006/42/EC	Machinery Directive

Further details of conformity to these directives are contained in the appendices (BCN-P9999-0618-B later).

Authorised Signature:

T. Takahashi
Senior Manager, FA System Department

Date: (signature)

11 / 03 / 2011



Authorised Representative: Mitsubishi Electric Europe BV
in the European Community Gothaer Str. 8, 40880 Ratingen, Germany
through Responsible person

Signature:

H. Pütz
Executive Vice President &
Deputy Product Marketing Director,
FA European Business Group

Date: (signature)

02 / 03 / 2011



The appendices are part of this declaration. This declaration certifies the conformity with the directives mentioned, but does not contain any warranted qualities. The installation, usage and safety directions of the product documentation have to be observed.

BCN-P9999-0617-B

Appendix

QS0-Series Programmable Controllers

Range of products:

QS001CPU	5	QS061P-A1-K	5	QS0J65BTB2-12DT-K	5
QS001CPU-K	5	QS061P-A2	5	QS0J65BTS2-4T	5
QS034B	5	QS061P-A2-K	5	QS0J65BTS2-8D	5
QS034B-E	5	QS0J61BT12	5	QS0J71GF11-T2	5
QS034B-K	5	QS0J61BT12-K	5		
QS061P-A1	5	QS0J65BTB2-12DT	5		

The conformity of the above mentioned products with the regulations of the directive 2006/42/EC for machinery is shown by the application of a Technical Construction File. This is supported by selected product tests to the following standards directly and indirectly (when Generic standards are used).

Note: The mentioned products must be used as directed by the associated documentation in order to provide full compliance.

Harmonized European Standards

Reference No.	Date of Issue
EN ISO13849-1	2008

Modules marked with a mark 5 have been tested to EN ISO13849-1(2008)

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

TÜV RHEINLAND INDUSTRIE SERVICE GMBH - TÜV Rheinland Group Am Grauen Stein D-51105 Köln Germany Phone : +49:221:8060 Fax : +49:221:806114 Email : is@de.tuv.com Website : http://www.tuv.com	NB 0035
EC Type-Examination Certificate	01/205/5201.01/13

Signature

Mitsushiro Fujishima
Manager, Safety Products Strategy planning group
FA Systems Dept.2

Revision record

B 30 March 2011	QS0J71GF11-T2 added to the list.
C 12 June 2013	EC Type-Examination Certificate has been updated.
D 20 December 2013	EC Type-Examination Certificate has been updated.

BCN-P9999-0618-D

WARRANTY

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

1. Limited Warranty and Product Support.

- a. 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.
- b. 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.
- c. For this warranty to apply:
 - (1) 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;
 - (2) 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
 - (3) 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.
 - (4) 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.
- d. 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.
- e. 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.
- f. 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.

- a. 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.

- b. 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.
- c. 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.
- d. 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.
- e. MELCO does not warrant any Product:
 - (1) repaired or altered by persons other than MELCO or its authorized engineers or FA Centers;
 - (2) subjected to negligence, carelessness, accident, misuse, or damage;
 - (3) improperly stored, handled, installed or maintained;
 - (4) integrated or used in connection with improperly designed, incompatible or defective hardware or software;
 - (5) that fails because consumable parts such as batteries, backlights, or fuses were not tested, serviced or replaced;
 - (6) exchange of a consumable part such as batteries, backlights, or fuses;
 - (7) operated or used with equipment, production lines or systems that do not meet applicable and commensurate legal, safety and industry-accepted standards;
 - (8) operated or used in abnormal applications;
 - (9) 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;
 - (10) used with obsolete technologies or technologies not fully tested and widely accepted and in use at the time of the Product's manufacture;
 - (11) subjected to excessive heat or moisture, abnormal voltages, shock, excessive vibration, physical damage or other improper environment; or
 - (12) 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.
- f. 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.
- g. 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.
- h. 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.
- i. THE WARRANTIES AND REMEDIES SET FORTH IN THESE TERMS ARE THE EXCLUSIVE AND ONLY WARRANTIES AND REMEDIES THAT APPLY TO THE PRODUCTS.
- j. MELCO DISCLAIMS THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE.

3. Limits on Damages.

- a. 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.
- b. Although MELCO has obtained the certification for Product's compliance to the international safety standards IEC61508 and EN954-1/ISO13849-1 from TUV 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.
- c. 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.
- d. 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.
- e. 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.
- f. 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.
- g. 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.

- a. 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.
- b. Products stored at the request of Customer or because Customer refuses or delays shipment shall be at the risk and expense of Customer.

c. 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.

Country/Region	Sales office/Tel	Country/Region	Sales office/Tel
USA	Mitsubishi Electric Automation Inc. 500 Corporate Woods Parkway, Vernon Hills, IL 60061, USA Tel : +1-847-478-2100	South Africa	CBI-Electric. Private Bag 2016, ZA-1600 Isando, South Africa Tel : +27-11-977-0770
Brazil	MELCO-TEC Representacao Comercial e Assessoria Tecnica Ltda. Av. Paulista, 1439, cj74, Bela Vista, Sao Paulo CEP: 01311-200-SP Brazil Tel : +55-11-3146-2200	China	Mitsubishi Electric Automation (China) Ltd. No.1386 Hongqiao Road, Mitsubishi Electric Automation Center, Changning District, Shanghai, China Tel : +86-21-2322-3030
Germany	Mitsubishi Electric Europe B.V. German Branch Gothaer Strasse 8, D-40880 Ratingen, Germany Tel : +49-2102-486-0	Taiwan	Setsuyo Enterprise Co., Ltd. 6F., No. 105, Wugong 3rd Road, Wugu District, New Taipei City 24889, Taiwan, R.O.C. Tel : +886-2-2299-2499
UK	Mitsubishi Electric Europe B.V. UK Branch Travellers Lane, Hatfield, Hertfordshire, AL10 8XB, UK. Tel : +44-1707-27-6100	Korea	Mitsubishi Electric Automation Korea Co., Ltd. 3F, 1480-6, Gayang-Dong, Gangseo-Gu, Seoul, 157-200, Korea Tel : +82-2-3660-9530
Italy	Mitsubishi Electric Europe B.V. Italian Branch Viale Colleoni 7-20864 Agrate Brianza (Milano), Italy Tel : +39-039-60531	Singapore	Mitsubishi Electric Asia Pte, Ltd. Industrial Division 307, Alexandra Road, Mitsubishi Electric Building, Singapore, 159943 Tel : +65-6470-2308
Spain	Mitsubishi Electric Europe B.V. Spanish Branch Carretera de Rubi 76-80.AC.420, E-08190 Sant Cugat del Valles (Barcelona), Spain Tel : +34-93-565-3131	Thailand	Mitsubishi Electric Automation (Thailand) Co., Ltd. Bang-Chan Industrial Estate No.111 Soi Serithai 54, T.Kannayao, A.Kannayao, Bangkok 10230 Thailand Tel : +66-2906-3238
France	Mitsubishi Electric Europe B.V. French Branch 25, Boulevard des Bouvets, F-92741 Nanterre Cedex, France Tel : +33-1-5568-5568	Indonesia	P. T. Autoteknindo Sumber Makmur Muara Karang Selatan, Block A / Utara No.1 Kav. No. 11, Kawasan Industri Pergudangan, Jakarta-Utara 14440, P.O. Box 5045, Indonesia Tel : +62-21-663-0833
Czech Republic	Mitsubishi Electric Europe B.V.-o.s.Czech office Avenir Business Park, Radicka 751/113e, 158 00 Praha5, Czech Republic Tel : +420-251-551-470	India	Mitsubishi Electric India Pvt. Ltd. 2nd Floor, Tower A & B, Cyber Greens, DLF Cyber City, DLF Phase-III, Gurgaon-122002 Haryana, India Tel : +91-124-463-0300
Poland	Mitsubishi Electric Europe B.V. Polish Branch ul. Krakowska 50, 32-083 Balice, Poland Tel : +48-12-630-47-00	Australia	Mitsubishi Electric Australia Pty. Ltd. 348 Victoria Road PO BOX11, Rydalmere, N.S.W 2116, Australia Tel : +61-2-9684-7777
Russia	Mitsubishi Electric Europe B.V. Russian Branch St.Petersburg office Piskarevsky pr. 2, bld 2, lit "Sch", BC "Benuea", office 720; 195027, St. Petersburg, Russia Tel : +7-812-633-3497		

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