MELSERVO-J4

Model MR-CV11K to MR-CV55K/MR-CV11K4 to MR-CV75K4/ MR-CR55K/MR-CR55K4/MR-J4-DU700_ to MR-J4-DU37K_/ MR-J4-DU700_4 to MR-J4-DU55K_4

Instructions a	and Cautions for Safe Use of AC Servos	L
Country/Region	Sales office	Tel
USA	Mitsubishi Electric Automation, Inc. 500 Corporate Woods Parkway, Vernon Hills, IL 60061, U.S.A.	Tel : +1-847-478-2100
Germany	Mitsubishi Electric Europe B.V. German Branch Mitsubishi-Electric-Platz 1, 40882 Ratingen, Germany	Tel : +49-2102-486-0
China	Mitsubishi Electric Automation (China) Ltd. Mitsubishi Electric Automation Center, No.1386 Hongqiao Road, Shanghai, China	Tel : +86-21-2322-3030
Korea	Mitsubishi Electric Automation Korea Co., Ltd. 7F to 9F, Gangseo Hangang Xi-tower A, 401, Yangcheon-ro, Gangseo-Gu, Seoul, Korea	Tel : +82-2-6103-9474
Japan	Mitsubishi Electric Corporation Tokyo Building, 2-7-3, Marunouchi, Chiyoda-ku, Tokyo 100-8310, Japan	Tel : +81-3-3218-2111

MITSUBISHI ELECTRIC CORPORATION HEAD OFFIC

HEAD OFFICE: TOKYO BLDG., 2-7-3, MARUNOUCHI, CH	IYODA-KU, TOKYO 100-8310, JAPAN
	Specifications are subject to change without notice. Compliance with the indicated global standards and regulations is current as of the release date of this installation guide.
IB(NA)-0300228-H(2309)MEE	The original instructions for Europe are in English.
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C€EEE ® K

Capacity Symbol Capacity [KW] Symbol Capacity [KW] 11K 11 45K 45 18K 18 55K 55 30K 30 75K 75 37K 37

Drive unit -----

MR - J 4 - DU 30K B 4

(b) Drive unit

Model The following describes what each block of a model name indicates. Not all combinations of the symbols are available. (a) Converter unit MR - C R 5 5 K 4 Teacher State S

Η

marking is shown below

Hardware special specification Blank or 2 to 5 digit alphanumeric (RJ, ED, PX, RU, RZ, etc.)

Software special spe Blank, Jn, Sn, or Un (n = 00 to 999)

Hardware special specification Blank or 2 to 5 digit alphanumerii (RJ, ED, PX, RU, RZ, etc.)

Power supply Symbol Power supply None 3-phase 200 V AC to 240 V AI 4 3-phase 380 V AC to 480 V AI

Symbol Interface A General-purpose interface B SSCNET II/H

 Power supply

 Symbol
 Power supply

 None
 3-phase 200 V AC to 240 V AC

 4
 3-phase 380 V AC to 480 V AC

Contents of the package Unpack the product and check the rating plate to see if the servo amplifier is as you ordered (1) Converter unit (2) Drive unit

Eyeboli (55 KW of hiole)		Bus bal (30 kW of mole)	2
Connector set (Note)	1	Eyebolt (30 kW or more)	2
MR-CV/MR-CR/MR-J4-DU Instructions and Cautions for Safe Use of AC Servos (this guide)	1	MR-CV/MR-CR/MR-J4-DU Instructions and Cautions for Safe Use of AC Servos (this guide)	1
Note. A connector set for CN23 is packed together with M connector set for CN1 is packed together with MR-0			

Rating plate

The following shows an example of rating plate for e	explanation of each item.
Converter unit	Drive unit
Control C	ADDET IN A CONTRACT OF A
Warning plate An example of warning plate is shown below.	Regulation/legislation marking An example of regulation/legisla

Warning plate An example of warning plate is shown below.

WA	ARNING 警告
	RISK OF ELECTRIC SHOCK, DO NOT TOUCH DRIVE UNIT AND WRING INNEDIATELY AFTER POWER OFF, CAPACITOR DISCHARGE TIME IS APPROX 20 MINUTES.
	RISQUE DE CHOC ÉLECTRIQUE. NE PAS TOUCHER L'AMPLIFICATEUR ET LE CABLAGE JUSTE APRES L'EXTINCTION DE L'APPAREL. LE TEMPS DE DECHARGEMENT DES CONDENSATEUR EST DE 20 MINUTES.
	有触电的风险。电源断电后,请不要触碰模块和接线。 电容放电需要20分钟。
	・感覚の恐れあり。電源遮断直後にユニットや場子部を触れないこと。 コンテンリ放電時間:20分
6	ALWAYS CONNECT PROTECTIVE EARTH (PE) FOR PROTECTION AGAINST. TOUJOURS BRANCHER LA TERRE (PE) AU CONDUCTEUR DE PROTECTION.
	 为了防止触电,请务必进行保护接地(PE)。 感電防止の為、保護アース(PE)の接続を必ず行うこと。
	DON'T TOUCH HEATSINK. NE PAS TOUCHEZ LE DISSIPATEUR THERMIQUE.
	▶ 散熱片恐有高温。 ▶ 放熱フィン/に触らないこと。高温の恐れあり。
٨	ONLY B TYPE RCD IS ALLOWED. SEULEMENT DISJONCTEUR DE TYPE B RCD AUTORISÉ. 只有B类型的 (漏电保护器) RCD被允许。
	RCD(漏電遮断器)はタイプBであること。
- NER	FER TO MANUAL BEFORE INSTALLING OR SERVICING. CI DE CONSULTER LE MANUEL DUTILISATION AVANT INSTALLATION OU MAINTENANCE. 安装及進护前,请参考手册。
	文次及歩伊州, 明梦今十高。 9月6月 - 「フのかに マニュマリカ条座すること

・住女装及準护則, 请参考于者。 ・据付と保守サービスの前に、マニュアルを参照すること。

1. About the manuals

To use the MELSERVO-J4 series safely, read each instruction manual carefully. Converter units and drive units are written as servo amplifiers in this guide under certain circumstances.

In MELSERVO-J4 relevant manuals
 MELSERVO-J4 relevant manuals
 This installation guide explains how to mount MR-J4 servo amplifiers. You can also check it with our website for free.
 http://www.mitsubishielectric.com/fa/
 If you have any questions about the operation or programming of the equipment described in this guide, contact your
 local sales office.
 In addition, when you mount a protective device, specific technical skills which are not detailed in the guide will be
 required.

1.2 Purpose of this guide This installation guide explains the safe operation of MR-J4 servo amplifiers for engineers of machinery manufacturers and machine operators. This installation guide does not explain how to operate machines in which safety servo system is, or will be integrated. For detailed information of the products, refer to each servo amplifier instruction manual.

1.3 Terms related to safety
 1.3 Terms related to safety
 1.3 LEC 61800-5-2 Stop function
 STO function (Refer to IEC 61800-5-2: 2007 4.2.2.2 STO.)
 MR-J4 servo amplifiers have the STO function. The STO function shuts down energy to servo motors, thus removing torque. This function electronically cuts of power supply in the servo amplifier. The servo amplifiers without the CN& connector do not support this function. STO function does not support Stop category 1 and 2 for IEC/EN 60204-1.

2. About safety

This chapter explains safety of users and machine operators. Please read the chapter carefully before mounting the equipment. In this installation guide, the specific warnings and cautions levels are classified as follows.

Indicates that incorrect handling may cause hazardous conditions, resulting in death or severe injury.
Indicates that incorrect handling may cause hazardous conditions, resulting in medium or slight injury to personnel or may cause physical damage.

 2.1 Professional engineer
 Only professional engineers should mount MR-J4 servo amplifiers.
 Here, professional engineers should meet all the conditions below.
 (1) Persons who took a proper training of related work of electrical equipment or persons who can avoid risk based on
past experience. (2) Persons who have read and familiarized himself/herself with this installation guide and operating manuals for the

tive devices (e.g. light curtain) connected to the safety control syste

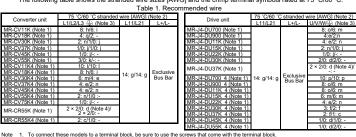
protective devices (e.g. light currain) connected to the safety control system. 22. Applications of the devices MR-J4 servo amplifiers are used to drive servo motors, and comply with the standards shown below. ISO/EN ISO 13849-1: 2015 Category 3 PL e, IEC/EN EIC 62061:2021 maximum SIL 3, IEC/EN 61800-5-2 (STO), IEC/EN 61800-5-1/GB 12668:501, IEC/EN 61800-3/GB 12668:3/KN 61800-3 (KS C 9800-3), IEC/EN 60204-1 MR-J4 servo amplifiers can be used with the MR-D30 functional safety unit, MR-J3-D05 safety logic unit, or safety PLCs. For combinations of the servo amplifier and MR-D30, refer to "MR-D30 Instruction Manual". For combinations of the servo amplifiers and MR-J3-D05, refer to each servo amplifier instruction manual.

2.3 Correct use Use the MR-J4 servo amplifiers within specifications. Refer to each instruction manual for specifications such as voltage, temperature, etc. Mitsubishi Electric Co. accepts no claims for liability if the equipment is used in any other way or if modifications are made to the device, even in the context of mounting and installation.

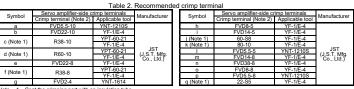
WARNING
 Hyou need to get close to the moving parts of the machine for inspection or others, ensure safety by confirming the power off, etc. Otherwise, it may cause an accident.
 It takes 20 minutes maximum for capacitor discharging. Do not touch the unit and terminals immediately after power off.

2.3.1 Selection of peripheral equipment and wire The followings are selected based on IEC/EN 61800-5-1, UL 508C, and CSA C22.2 No. 274.

Local wiring and crimping tool The following table shows the stranded wire sizes [AWG] and the crimp terminal symbols rated at 75 °C/60 °C.



To connect these models to a terminal block, be sure to use the screws that come with the terminal block. The alphabetical letters in the table indicate the symbols of the recommended crimp terminals.Refer to Table 2 for recommended crimp terminals. 3. Select wire sizes depending on the rated output of the servo motors. The values in the table are sizes based on rated output of the servo amplifiers. 4. When the rated current is less than 175 & 2012 does also be a service of the service of the



ding on their sizes. Make sure to use the recomm ended ones or equivalent one

2. Some crimp terminals may not be nounled depending on their sers, mank and to de un recommendation example of MCCB and fuse (2) Selection example of MCCB and fuse Use a fuse (T class) or the molded-case circuit breaker (ULL 489 Listed MCCB) indicated in the table below. The T class fuses and molded-case circuit breakers in the table are selected examples based on rated I/O of the servo amplifiers. When you select a smaller capacity servo motor to connect it to the servo amplifier, you can also use smaller capacity T class fuses or molded-case circuit breaker than ones in the table. For selecting ones other than Class T fuses and molded-case circuit breakers below, refer to each servo amplifier instruction manual.

			.,		
Converter unit	Molded-case circuit breaker (240 V AC)	Fuse (300 V)	Converter unit	Molded-case circuit breaker (480 V AC)	Fuse (600 V)
MR-CV11K	NF100-CVFU-60A (100 A frame 60 A)	80 A	MR-CV11K4	NF100-HRU-30A (100 A frame 30 A)	40 A
MR-CV18K	NF100-CVFU-100A (100 A frame 100 A)	150 A	MR-CV18K4	NF100-HRU-50A (100 A frame 50 A)	80 A
MR-CV30K	NF225-CVFU-150A (225 A frame 150 A)	225 A	MR-CV30K4	NF100-HRU-80A (100 A frame 80 A)	150 A
MR-CV37K	NF225-CVFU-200A (225 A frame 200 A)	300 A	MR-CV37K4	NF100-HRU-100A (100 A frame 100 A)	150 A
MR-CV45K	NF225-CWU-225A (225 A frame 225 A)	350 A	MR-CV45K4	NF250-SVU-125A (250 A frame 125 A)	200 A
MR-CV55K	NF400-SKW-300A (400 A frame 300 A)	400 A	MR-CV55K4	NF250-SVU-150A (250 A frame 150 A)	225 A
MR-CR55K	NF225-CWU-175A (225 A frame 175 A)	300 A	MR-CV75K4	NF250-SVU-200A (250 A frame 200 A)	300 A
			MR-CR55K4	NE125-SVII-1254 (125 & frame 125 A)	200 4

(3) Power supply This servo amplifier can be used on the condition of overvoltage category III set forth in IEC/EN 60664-1. For the interface power supply, use an external 24 V DC power supply with reinforced insulation on I/O terminals. (4) Grounding To prevent an electric shock, always connect the protective earth (PE) terminal (marked ()) of the serve amplifier to the protective earth (PE) of the serve amplifier to the protective earth (PE) of

PE terminal

terminal (marked (s)) of the serve amplitude of the policy are carding (L) of the cabinet. Do not connect two grounding cables to the same protective earth (PE) terminal. Always connect cables to the terminals one-to-one. This product can cause a DC current in the protective earthing conductor. Where a residual current-operated protective (RCD: earth-leakage current breaker) device is used for protection in case of direct or indirect contact, only an RCD of Type B is allowed on the supply side of this product.

only an RCD of Type B is allowed on the supply side of this product.
(5) Motor overlaad and Over temperature protection The overlaad protection of the servo motor does not include a thermal memory function, and is not speed sensitive. The servo amplifier cannot detect overheating of the servo motor. The servo motors are protected by the servo motor overheat protection function of the servo amplifier (a protection characteristic based on 120 % of the rated current). To provide the servo motor with overheat protection, use a magnetic contactor (electromagnetic switch) with a thermal relay. Alternatively, install a thermal sensor or equivalent equipment near the rating plate of the servo motor to check that the servo motor temperature is under 105 °C with sensing device. (Refer to Chapter 4).

2.3.2 Europe/UK compliance The CE/UKCA marking proves the compliance of the servo product with the essential requirements specified in the relevant EU Directives and UK Regulations, and this marking also applies to machines and equipment incorporating

EMC requirement
 (1) EMC requirement
 (2) EMC requirement
 (3) EMC requirement
 (4) EMC requirement
 (3) EMC requirement
 (3) EMC requirement
 (4) EMC requirement
 (4) EMC requirement
 (5) EMC requirement
 (6) EMC requirement
 (6) EMC requirement
 (6) EMC requirement
 (7) EMC requirement
 (8) EMC req

2.3.3 USA/Canada compliance This servo amplifier is designed in compliance with UL 508C and CSA C22.2 No. 274.

- Installation
 The minimum cabinet size is 150 % of each MR-J4 servo amplifier's volume. Also, design the cabinet so that the ambient temperature in the cabinet is 55 °C or less. The servo amplifier must be installed in a metal cabinet. Additionally, mount the servo amplifier on a cabinet that the protective earth based on the standard of EC/EN 60204-1 is correctly connected. For environment, the units should be used in open type (UL 50) and overvoltage category shown in table in chapter 8. The servo amplifier needs to be installed at or below pollution degree 2. Use only copper wires or copper bus bars for wiring.
 Short-circuit current rating (SCCR) Suitable For Use On A Circuit Capable Of Delivering Not More Than 100 kA rms Symmetrical Amperes, 500 Volts Maximum
- (3) Branch circuit protection For installation in United States, branch circuit protection must be provided, in accordance with the National
- to installation in Onitee Ostates, branch of Curr, protection must be provided, in accordance with the National Technical Code and any applicable local codes. Ode and any applicable provincial codes.

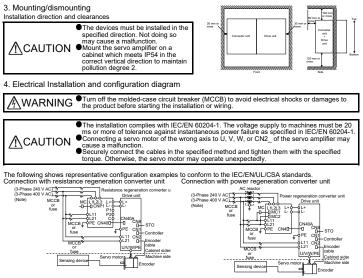
Looe and any applicable provincial codes. 2.3.4 South Korea compliance (MR-CR55K(4) and 30 kW or more of MR-J4-DU) Products that bear the KC mark comply with the Radio Wave Law. Please note the following to use the product. 이 기기는 업무용 (A급) 전자파력합기기로서 판매자 또는 사용자는 이 점을 주의하시기 바라며, 가정의의 지역에서 사용하는 것을 목적으로 합니다. (The product is for business use (Class A) and meets the electromagnetic compatibility requirements. The seller and the user must note the above point, and use the product in a place except for home.) In addition, use an EMC filter, surge protector, ferrite core, and line noise filter on the primary side for inputs. Use a ferrite core and line noise filter for outputs. Use a distance greater than 30 m between the product and third party sensitive radio communications.

2.4 General cautions for safety protection and protective measures Observe the following items to ensure proper use of the MR-J4 servo amplifiers.

- For safety components and installing systems, only qualified personnel and professional engineers should perform. When mounting, installing, and using the MR-J4 servo amplifier, always observe standards and directives applicable in the country.

- Periodus in talk
 Be sure that all safety related switches, relays, sensors, etc., meet the required safety standards.
 Perform all risk assessments and safety level certification to the machine or the system as a whole.
- (3) If the upper and lower power modules in the servo amplifier are shorted and damaged simultaneously, the servo motor may make a half revolution at a maximum.
- (4) Only qualified personnel are authorized to install, start-up, repair or adjust the machines in which these components are installed. Only trained engineers should install and operate the equipment. (ISO 13849-1: 2015 Table E 1 No. 5).
- (5) Separate the wiring for safety observation function from other signal wirings. (ISO 13849-1: 2015 Table F.1 No. 1)
- (6) Protect the cables with appropriate ways (routing them in a cabinet, using a cable guard, etc.).(7) Keep the required clearance/creepage distance depending on voltage you use.
- 2.6 Disposal

2.6 Disposal do unusable or irreparable devices should always occur in accordance with the applicable country-specific waste disposal regulations. (Example: European Waste 16 02 14) 2.7 Lithium battery transportation To transport lithium batteries, take actions to comply with the instructions and regulations such as the United Nations (UN), the International Civil Aviation Organization (ICAO), and the International Maritime Organization (IMO). The batteries (MR-BATEV15ET, MR-BATEV1, and MR-BATEV14.) are assembled batteries from two batteries (lithium metal battery CR17335A) which are not subject to the dangerous goods (Class 9) of the UN Recommendations.



Note Supply neutral needs to be earthed

The connectors described by rectangles are safely separated from the main circuits described by circles. The connected motors will be limited as follows.

(1) HG/HF/HC/HA series servo motors (Mfg.: Mitsubishi Electric)
 (2) Using a servo motor complied with IEC 60034-1 and Mitsubishi Electric encoder (OBA, OSA)

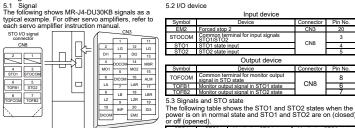
5. Signals

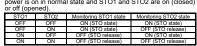
STO I/O signal connector

CN8

4 3 TO1 STOCOM

B 7 COM TOFB2





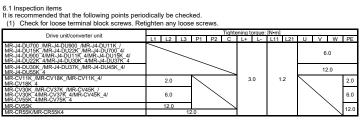
CN8

CN8

8

6 Maintenance service and trouble shooting

WARNING To avoid an electric shock, only qualified personnel should attempt inspections. For repair



(2) Check servo motor bearings, brake section, etc. for unusual noise.
 (3) Check the cables and the like for scratches or cracks. Perform periodic inspection according to operating

- conditions. Check that the connectors are securely connected to the servo motor Check that the wires are not coming out from the connector.

Check that the Wires are not coming out from the connector. Check for dust accumulation on the servo amplifier. Check for unusual noise generated from the servo amplifier. Check the servo motor shaft and coupling for connection. Make sure that the emergency stop circuit operates properly such that an operation can be stopped immediately and a power is shut off by the emergency stop switch.

7. Transportation and storage

Ambient temperature

Pollution degree

rating

6.2 Parts having service life Service life of the following parts is listed below. However, the service life varies depending on operating methods and environment. If any fault is found in the parts, they must be replaced immediately regardless of their service life. For parts replacement, please contact your local sales office.

Part name	Life guideline								
Smoothing capacitor	10 years (Note 3)								
Relay	Number of power-on, forced stop and controller forced stop times: 100,000 times Number of on and off for STO: 100,000 times								
Cooling fan	10,000 hours to 30,000 hours (2 years to 3 years)								
Battery backup time (Note 1)	Approximately 20,000 hours (equipment power supply: off, ambient temperature: 20 °C)								
Battery life (Note 2)	5 years from date of manufacture								
Note 1. The time is for using MR-J4 servo amplifier with a rotary servo motor using MR-BAT6V1SET or MR-BAT6V1BJ. For details and other battery backup time, refer to each instruction manual.									

Dattery backup time, refer to each instruction manual.
2. Quality of the batteries degrades by the storage condition. The battery life is 5 years from the production date regardless of the connection

CAUTION Criterwise, it may drop. • For detailed information on transportation and handling of the battery, refer to the servo amplifier instruction manual. • Install the product in a load-bearing place of servo amplifier and servo motor in accordance

Do not put excessive load on the machine.

When you keep or use it, please fulfill the following environment

Transportation (Note) Storage (Note) Operation, transportation

eration

est condition

status. 3. If a 3-phase power supply is used, the service life of the capacitor is 10 years under continuous operation in air-conditioned environments (ambient temperatures of 40 °C or less at altitudes of up to 1000 m and 30 °C or less at altitudes of over 1000 m and up to 2000 m). The characteristic of smoothing capacitor is deteriorated due to ripple currents, etc. The service life of the capacitor greatily varies depending on ambient temperatures and operating conditions. All other is a sequence of the second sec

• Transport the products correctly according to their mass. • Stacking in excess of the limited number of product packages is not allowed. • Do not hold the front cover, cables, or connectors when carrying the servo amplifier.

0 to 55 Class 3K3 (IEC/EN 60 20 to 65 Class 2K12 (IEC/EN

-20 to 65 Class 1K4 (EC/EN 60/21-3-1) -20 to 65 Class 1K4 (EC/EN 60/21-3-1) 5 %RH to 90 %RH 10 Hz to 57 Hz with constant amplitude of 0.075 mm 57 Hz to 150 Hz with constant amplitude of 0.075 mm (Test F coll EC 90068-2-6)

5.9 m/s² Class 2M3 (IEC/EN 60721-3-2) Class 1M2 (IEC/EN 60721-3-2)

2 P20 (IEC/EN 60529), Terminal block IP00

										MR-								
	Item			CR CV (CR CV							
			55K	11K	18K	30K	37K	45K	55K	55K4	11K4	18K4	30K4	37K4	45K4	55K4	75K4	
0	Rated voltage	je			270 V D	C to 32	4 V DC					513	V DC t	o 648 V	DC			
Output	Rated curre	nt [A]	215.9	41	76	144	164	198	238	113.8	21	38	72	82	99	119	150	
	Main circuit (line	Voltage, Frequency	3-pł	nase 20	00 V AC	to 240	V AC, 5	i0 Hz/60) Hz		3-phas	e 380 V	AC to 4	AC to 480 V AC, 50 Hz/60 Hz				
Power	voltage)	Current [A]	191.3	35	65	107	121	148	200	100.7	18	35	61	70	85	106	130	
supply	Control circu voltage)	uit (line	1-phas	-phase 200 V AC to 240 V AC, 50 Hz/60 Hz, 0.3 A 1-phase 380 V AC to 480 V AC, 50 Hz/60 Hz, 0.2 A														
	Interface (SI	ELV)		24 V DC ± 10 % (required current capacity: MR-CR , 150 mA; MR-CV , 350 mA)														
Pollution	n degree									C/EN 60								
Overvol	tage category						3-pha	ase 200		00 V AC		C/EN 60	664-1)					
Protecti	ve class							I (IEC	/EN 618	00-5-1)								
Short-ci (SCCR)	Short-circuit current rating (SCCR)									100 kA								

8.2 Drive unit

			MR-J4-DU_ 700_ 900_ 11K_ 15K_ 22K_ 30K_ 37K_ 700_4 900_4 11K_4 15K_4 22K_4 30K_4 37K_4 45K_4 55K_4														
	Item	700_	900_	11K_	15K_	22K_	30K_	37K_	700_4	900_4	11K_4	15K_4	22K_4	30K_4	37K_	445K_	4 55K_4
.	Rated voltage		3-	phase 1	170 V A	C, 360	Hz				3-	phase 3	323 V A	C, 360	Hz		
Output	Rated current [A]	87	126	174	204	17	25	32	41	63	87	102	131	143			
	Main circuit	The main circuit power of the drive unit is supplied by the converter unit.															
Power supply	Control circuit (line voltage)		1-phase 200 V AC to 240 V AC, 50 Hz/60 Hz. 0.3 A 1-phase 380 V AC to 480 V AC,									AC, 50	Hz/60	Hz, 0.2	А		
	Interface (SELV)		24 V DC ± 10 % (required current capacity: MR-J4-DU A , 500 mA; MR-J4-DU B , 300 mA)														
Control					Si	ne-wav	e PWM				ol meth	nod					
	sub-function		STO (IEC/EN 61800-5-2)														
Compliance with standards (Note 1)		EN ISO 13849-1: 2015 Category 3 PL e, IEC 61508 SIL 3, EN IEC 62061:2021 maximum SIL 3, and EN 61800-5-2															
Mean tir (MTTFd	me to dangerous failure	MTTFd ≥ 100 [years] (314a)															
	stic coverage (DC)	DC = Medium, 97.6 [%]															
Probabi per hour	lity of dangerous failures r (PFH)	PFH = 6.4 × 10 ⁻⁹ [1/h]															
	time (T _M) (Note 2)	T _M = 20 [years]															
	se performance	8 ms or less (STO input off → energy shut off)															
Pollution	2 (IEC/EN 60664-1)																
Overvol	3-phase 200 V AC/400 V AC: III (IÉC/EN 60664-1)																
Protectiv	ve class	I (IEC/EN 61800-5-1)															
Short-circuit current rating (SCCR)		100 kA															

 Servo amplifiers manufactured in August 2015 or later comply with SIL 3 requirements.
 The performance of special proof tests within the mission time of the product is regarded as not necessary, however, the diagnostic interval is an end test three monthe for Catacovy 3PI as 181 3 on IFC 61800-52 2016 8.3 Dimensions/mounting hole process drawing

T S			Variab	le dimens	sions (n	nml		
	Converter unit/drive unit	W		н	1	D		Mass [kg]
H Front Side	MR-CR55K/MR-CR55K4	30	0	380		300		22
	MR-CV11K/MR-CV18K/ MR-CV11K4/MR-CV18K4	90)	380		270		7.0
	MR-CV30K/MR-CV37K/MR-CV45K/ MR-CV30K4/MR-CV37K4/MR-CV45K4	15	0	380		300		10.7
	MR-CV55K/MR-CV55K4/MR-CV75K4	30	0	380		300		26.5
W1 Approx. W5 W5 W4 Approx. W3 U7 W3 W2 U2	MR-J4-DU700 / MR-J4-DU900 / MR-J4-DU11K /MR-J4-DU700 4/ MR-J4-DU900 4/MR-J4-DU11K 4	15	0	380		300		9.9
	MR-J4-DU15K_/MR-J4-DU22K MR-J4-DU15K_4_/MR-J4-DU22K_4	24	-	380		300		15.2
	MR-J4-DU30K_/MR-J4-DU37K_	30		380		300		21
	MR-J4-DU30K_4/MR-J4-DU37K_4	24		380		300		16
SSS Drive unit	MR-J4-DU45K 4/MR-J4-DU55K 4	30	0	380		300		19
888 Dive dire 188								
Opening	Converter unit/Drive unit		W1	Variable W2	dimens W3	sions [mm] W4	W5	Screw size
			VV I	VV2	VV 3	VV4	644	A
	MR-CR55K/MR-CR55K4/ MR-J4-DU30K //MR-J4-DU37K / MR-J4-DU45K 4/MR-J4-DU55K	ı.	300	260	20	281	9.5	M6
Approx. 19 Approx. 10 Approx. 10	MR-CV11K/MR-CV18K/ MR-CV11K4/MR-CV18K4		90	-	45	82	4	M5
	MR-CV30K/MR-CV37K/ MR-CV45K/MR-CV30K4/ MR-V37K4/MR-CV45K4/ MR-J4-DU700 //MR-J4-DU900 / MR-J4-DU700 //MR-J4-DU700 4/ MR-J4-DU900 //MR-J4-DU11K /		150	60	45	142	4	M5
	MR-CV55K/MR-CV55K4/MR-CV7	5K4	300	180	60	282	9	M5
	MR-J4-DU15K /MR-J4-DU22K / MR-J4-DU15K 4/MR-J4-DU22K / MR-J4-DU30K 4/MR-J4-DU37K		240	120	60	222	9	M5

9.Check list for user documentation

MR-CV/MR-CR/MR-J4-DU installation checklist for manufacturer/installer
 MR-CV/MR-CR/MR-J4-DU installation checklist for manufacturer/installer
 The following items must be satisfied by the initial test operation at least. The manufacturer/installer must be
 responsible for checklist with related documents of machines to use this for periodic inspection.
 Is it based on directive/standard applied to the machine?
 So directive/standard contained in Declaration of Conformity (DoC)?
 Yes [], No []
 So Does the protection instrument conform to the category required?
 Yes [], No []

3.	Does the protection instrument conform to the category required?	Yes	[, NO]	
4.	Are electric shock protective measures (protective class) effective?	Yes	Î. No î î	1
5.	Is the STO function checked (test of all the shut-off wiring)?	Yes], NO [], NO [], NO [
hec	king the items will not be instead of the first test operation or periodic	inspectio	n by profe	essional engineers

Warranty

Warranty period and coverage

Warranty period and coverage We will repart any failure or defect hereinafter referred to as "failure" in our FA equipment hereinafter referred to as the "Product" arisen during warranty period at no charge due to causes for which we are responsible through the distributor from which you purchased the Product or our service provider. However, we will charge the actual cost of dispatching our engineer for an on-site repair work on request by customer in Japan or overseas countries. We are not responsible for any on-site readjustment and/or trial run that may be required after a defective unit are repaired or replaced. [Term] For terms of warranty, please contact your original place of purchase.

- Por terms of Waitering, prese context you organize the set of the [Limitations] (1) You are requested to conduct an initial failure diagnosis by yourself, as a general rule. It can also be carried out by us or our service company upon your request and the actual cost will be charged. However, it will not be charged if we are responsible for the cause of the failure. (2) This limited warranty applies only when the condition, method, environment, etc. of use are in compliance with the terms and conditions and instructions that are set forth in the instruction manual and user manual for the Product and the caution label affixed to the Product. (3) Even during the term of warranty, the repair cost will be charged on you in the following cases; 1. a failure caused by your improper strong or handling, carelessness or negligence, etc., and a failure caused by your hardware or software problem 2. a failure requised her warve alteration, etc, to the Product made on your side without our approval
- a raining course up any ane adult, etc. to the riduct index on your side window the approval 3. a failure which may be regarded as avoidable; if your equipment in which the Product is incorporated is equipped with a safety device required by applicable laws and has any function or structure considered to be indispensable according to a common sense in the industry 4. a failure which may be regarded as avoidable if consumable parts designated in the instruction manual, etc. are duly maintained and replaced

- and replaced 5. any replacement of consumable parts (battery, fan, smoothing capacitor, etc.) 6. a failure caused by avternal factors such as inevitable accidents, including without limitation fire and abnormal fluctuation of voltage, and acts of God, inducting without limitation arthroughes, lighting and natural disasters 7. a failure generated by an unforeseable cause with a scientific technology that was not available at the time of the shipment of the Product from our comparison 8. any other failures which we are not responsible for or which you acknowledge we are not responsible for
- 2. Term of warranty after the stop of production
- (1) We may accept the repart later and charge for another seven (7) years after the production of the product is disc announcement of the stop of production for each model can be seen in our Sales and Service, etc. (2) Please note that the Product (including its spare parts) cannot be ordered after its stop of production.
- 3. Service in overseas countries
- Our regional FA Center in overseas countries will accept the repair work of the Product. However, the terms and conditions of the repair work may differ depending on each FA Center. Please ask your local FA center for details. 4. Exclusion of loss in opportunity and secondary loss from warranty liability
- Regardless of the gratis warranty term, Mitsubishi shall not be liable for compensation to: (1) Damages caused by any cause found not to be the responsibility of Mitsubishi. (2) Loss in opportunity, lost profits incurred to the user by Failures of Mitsubishi products.
- Does in opportunity, tas points include to use so by railines or missions products.
 Special damages and secondary damages whether foreseable or not, compensation for accidents, and compensation for damages to products other than Misubishi products.
 Replacement by the user, maintenance of on-site equipment, stark-up test run and other tasks.
 <u>Change of Product specifications</u>

- Specifications listed in our catalogs, manuals or technical documents may be changed without notice.

- (a) Application and use of the Product
 (1) For the use of our AC servo, its applications should be those that may not result in a serious damage even if any failure or maifunction occurs in AC servo, and a backup or fail-safe function should operate on an external system to AC servo when any failure or maifunction occurs.
- (a) Our AC Servo is designed and manufactured as a general purpose product for use at general industries. Therefore, applications substantially influential on the public interest for such as atomic power plants and other power plants of electric power companies, and also which require a special quality assurance system, including applications for railway companies and government or public offices are not recommended, and we assume no responsibility for any failure caused by these anolications when used
- applications when used. In addition, applications which may be substantially influential to human lives or properties for such as airlines, medical treatments In addition, applications which may be substantially influential to human lives or properties for such as airlines, medical treatment railway service, incineration and fuel systems, man-operated material handling equipomet, entertainment machines, safety machines, etc. are not recommended, and we assume no responsibility for any failure caused by these applications when used. We will review the acceptability of the abovementioned applications, if you agree not to require a specific quality for a specific application. Please contact us for consultation. (3) Mitsubishi Electric shall have no responsibility or liability for any problems involving programmable controller trouble and system trouble caused by Dös attacks, unauthorized access, computer vinces, and other cyberattacks.