

Automating the World

FACTORY AUTOMATION

MITSUBISHI ELECTRIC INDUSTRIAL ROBOT MELFA RH-10CRH/20CRH



- Reducing overall height for a compact design
- Less parts for a lightweight structure
- Batteryless motors ensure easy maintenance and stress-free operation

MELFACR Series

Features

Compact body

- Can be installed in a limited space
- · Can be incorporated into a wide variety of systems



Batteryless motor

- Eliminates the need for periodic battery replacement
- No risk of losing the origin due to a flat battery

Robot arm specifications

Model: RH-10CRH60/70/80XX-D (2D-TZ368 is pre-installed on the controller.)

RH-10CRH60/70/80XX-D-S15 (2D-TZ378 is pre-installed on the controller.)

RH-20CRH8542/10042-D (2D-TZ368 is pre-installed on the controller.)

RH-20CRH8542/10042-D-S15 (2D-TZ378 is pre-installed on the controller.)

Item		Unit	RH-10CRH60XX	RH-10CRH70XX	RH-10CRH80XX	RH-20CRH8542	RH-20CRH10042	
Environment		-	Normal environment specifications					
Brake		-	J1, J2 axes (without brake) J3, J4 axes (with brake)					
Arm length	Arm No. 1	mm	225	325	425	375	525	
	Arm No. 2	mm	375			475		
Reach radius (No. 1 + No. 2)		mm	600 700 800			850 1000		
Operating range	J1	deg	264 (±132)			340 (±170)		
	J2	deg	300 (±150)			290 (±145)	306 (±153)	
	J3 (Z)	mm	XX = 20:200 / XX = 30:300			420		
	J4 (θ)	deg	720 (±360)			720 (±360)		
Maximum speed ^{*1}	J1	deg/s	420			375		
	J2	deg/s	720			600		
	J3 (Z)	mm/s	1100			2300		
	J4 (θ)	deg/s	2700			1600		
Position repeatability	X-Y composite	mm	±0.02 ±0.02 ±0.025			±0.025		
	J3 (Z)	mm	±0.01			±0.01		
	J4 (θ)	deg	±0.01			±0.01		
Payload	Rating	kg	5			10		
	Maximum	kg	10			20		
Robot weight ^{'2}		kg	20	20	21	54	57	
Permissible inertia	Rating	kgm ²	0.02			0.05		
	Maximum	kgm ²	0.3			1.0		
Tool wiring		-	15-pin D-sub			15-pin D-sub, 9-pin D-sub		
Tool pneumatic pipe		-	$\phi 6 \times 2, \ \phi 4 \times 1$			$\phi 8 \times 2, \phi 6 \times 2$		
Protection specifications		-	IP20					
Ambient temperature		°C	0 to 40					
Connected controller		_	CR800-C2HD					

Simple and lightweight

- Easy installation
- Productivity enhanced due to improved continuous operation performance



*1: The values are taken when the robot is in MvTune2 (high-speed operation mode). Additionally, the values are taken under load conditions where no effect comes from automatic speed compensation due to the load mass. *2: The weight of the machine cable is not included.

Robot arm external dimensions / operating range



RH-10CRH6020/6030/7020/7030/8020/8030 External dimensions



Robot controller specifications / external dimensions

Model: CR800-C2HD (2D-TZ368 is pre-installed.) CR800-C2HD-S15 (2D-TZ378 is pre-installed.)

	,				
	Item	Unit	CR800-C2HD		
Number o	f axes		4 axes at a time (Up to 8 axes can be added.)		
Programm	ning language		MELFA-BASIC V, VI		
Position te	eaching method		Teaching or MDI		
Memory capacity	Number of teaching positions	Point	39,000		
	Number of steps	Step	78,000		
	Number of programs	Program	512		
External I/O	General-purpose I/O	Point	Input: 32 points/Output: 32 points		
	Dedicated I/O	Point	Assigned to general-purpose I/O		
	Hand I/O	Point	Input: 8/Output: 8		
	Emergency stop input	Point	1 (duplex)		
	Emergency stop output	Point	1 (duplex)		
	Mode selector switch input ^{*1}	Point	1 (duplex)		
	Mode output	Point	1 (duplex)		
	Robot error output	Point	1 (duplex)		
	Additional axis synchro- nization output	Point	1 (duplex)		
	Door switch input	Point	1 (duplex)		
	Encoder input	Channel	2		
Interface	Additional axis	Channel	1 (SSCNET III/H)		
	Remote I/O	Channel	1 (Ver. 1.0/2.0 compatible)		
	USB	Port	1 (Only the Ver. 2.0 High Speed device function is supported. USB mini-B)		
	Ethernet	Port	1 (for users: 1000BASE-T/100BASE-TX/10BASE-T) 1 (for T/B: 100BASE-TX/10BASE-T)		
	Option slot	Slot	2*2		
	SD memory card slot	Slot	1		
	RS-422	Port	1 (for T/B)		
Ambient temperature		°C	0 to 40		
Ambient humidity		%RH	45 to 85		
Power	Input voltage range ^{*3}	V	Single-phase 200 to 230 VAC		
supply	Power capacity ^{*4}	kVA	1.5		
External dimensions		mm	430 (width) \times 425 (depth) \times 99.5 (height)		
Weight		kg	Approx. 12.5		
Structure			Freestanding type, open structure, vertical/horizontal installation [IP20]		
Grounding	j ⁵	Ω	100 or less		



Ên:

RH-10CRH6020/6030/7020/7030/8020/8030 Operating range diagram

RH-20CRH8542/10042 Operating range diagram





- *1: The mode selector switch is to be supplied by the customer.
 *2: 2D-TZ368 is pre-installed in slot 1 of the two slots. 2D-TZ378 is pre-installed in the S15 with special specifications. Two connectors for 2D-TZ368/2D-TZ378 are included. The cable is to be supplied and connected by the
- customer.
- customer. *3: The power supply voltage fluctuation rate is 10% or less. *4: Recommended power capacity. The power capacity does not include the rush current when the power is turned on. The power capacity value is provided as a guide. *5: The robot must be grounded by the customer.

(Unit: mm)

MITSUBISHI ELECTRIC INDUSTRIAL ROBOT MELFA RH-10CRH/20CRH

Options



Trademarks or registered trademarks
 Ethernet is a registered trademark of FUJIFILM Business Innovation Corp.
 All other company names and product names mentioned in this document are either registered trademarks or trademarks of their respective companies.



Mitsubishi Electric's e-F@ctory concept utilizes both FA and IT technologies, to reduce the total cost of development, production and maintenance, with the aim of achieving manufacturing that is a "step ahead of the times". It is supported by the e-F@ctory Alliance Partners covering software, devices, and system integration, creating the optimal e-F@ctory architecture to meet the end users needs and investment plans.

MITSUBISHI ELECTRIC CORPORATION

HEAD OFFICE: TOKYO BLDG., 2-7-3, MARUNOUCHI, CHIYODA-KU, TOKYO 100-8310, JAPAN

actor

Alliańce