

INQUIRIES

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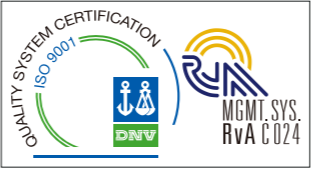
Agent

* Materials and specifications are subject to change without notice.



CAUTIONS TO BE TAKEN TO ENSURE SAFETY

- For those persons involved with the operation / service of your system, including Kawasaki Robot, they must strictly observe all safety regulations at all times. They should carefully read the Manuals and other related safety documents.
- Products described in this catalogue are general industrial robots. Therefore, if a customer wishes to use the Robot for special purposes, which might endanger operators or if the Robot has any problems, please contact us. We will be pleased to help you.
- Be careful as Photographs illustrated in this catalogue are frequently taken after removing safety fences and other safety devices stipulated in the safety regulations from the Robot operation system.



ISO certified in Akashi Works.

Kawasaki Robot

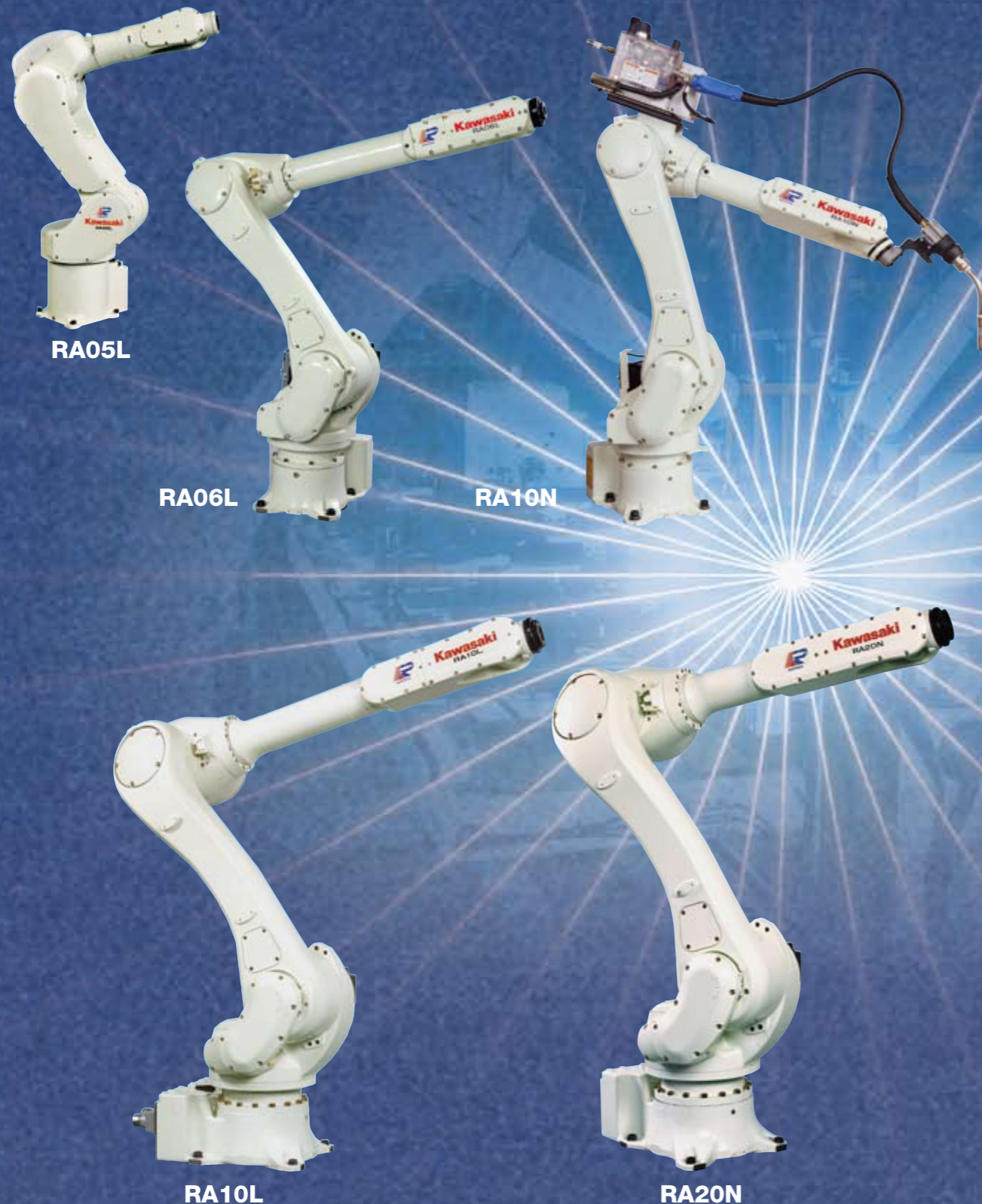
Kawasaki Robot RA series

Arc welding robots

RA series
Japan & Asia



Kawasaki arc welding robots demonstrate the potential of a skilled operator from the moment they are installed.



Simple and friendly Kawasaki Robot RA series

Features

1. Hassle-free operation

Equipped standard with a simplified teaching screen that is dedicated to welding and easy operation, the system conducts welding like a skilled human welder. The teach pendant is even equipped with an easy-to-view, easy-to-operate color LCD touch-screen.

2. Optimized welding machine connected via a single cable

With a built-in interface dedicated to welding machine, the system can readily be linked to the robots via a single cable.

3. Your welding conditions are stored and can be called up as a data base

Welding conditions can be classified and registered in a database, where they are ready to be used again whenever needed at the touch of a button.

4. Minor stoppages have been substantially reduced

The system comes equipped standard with a dedicated start sequence function that improves the arc start ratio, as well as a restart sequence function that sends the robot back to the point where welding was interrupted and automatically conducts overlapped welding, thereby restarting the welding operation.

5. A full section of specific options

(1) Servo-torch, (2) Touch-sensing (15VDC; 400VDC), (3) Special weaving pattern, (4) RTPM (Arc sensor), (5) Start-point sensing, (6) Multilayer welding function, (7) AVC (Arc-sensor dedicated to TIG welding), and more.

6. Allows use in environment with a lot of electrical noise

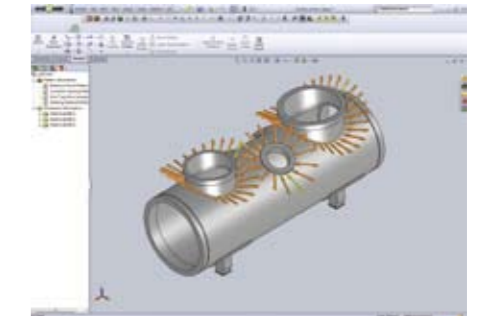
The system incorporates a range of innovations, developed from the design phase to cope with noise generation in TIG welding, plasma cutting, etc., so it can be operated without about having to worry about noise-related constraints.

7. Realize a fully "Teaching-less" welding system

Combining the robots with KCONG realizes a fully "Teaching-less" welding system.

KCONG

Kawasaki Common Offline NC data Generator



KCONG, our automatic robot teaching software, automatically converts 3D CAD data into robot operation data (CAM data).

Features

1) No need for troublesome robot teaching

KCONG generates robot operation programs easily and quickly from general-use 3D CAD data such as DXF, IGES, STEP or VRML.

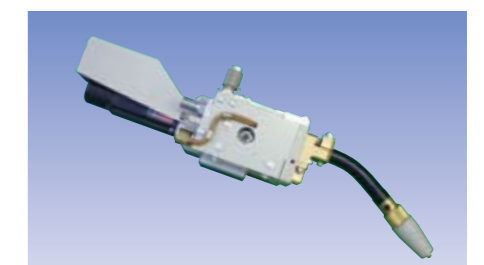
2) Preliminary verification

KCONG uses a robot simulator to verify the automatically generated operation programs. The simulator also checks for collisions, helps to prevent malfunctions, and allows users to fine adjust the parts to be processed.

3) Editing teaching points

After verifying the operation program and making the necessary adjustments, the final edit is performed. The completed operation program can then be downloaded to the robot controller.

Servo Torch



Servo Torch realizes high quality welding.

Features

1) Can be used with small-gauge iron or aluminum wire

Feeds small-gauge iron wire (ϕ 0.6 mm) or aluminum wire steadily with no buckling.

2) Excellent arc stability

The constant-speed wire feed control improves wire feeding performance, resulting in excellent arc stability.

3) Improved arc ignition performance

The Servo Torch can control complex wire feeding at the start and end of welding operations, resulting in improved arc ignition.

● Standard specifications

Model		RA05L	RA06L	RA10N	RA10L	RA20N
Type		Articulated robot				
Degree of freedom		6				
Max. payload (kg)		5	6	10	10	20
Motion range (°)	Arm rotation (JT1)	±180	±180	±180	±180	±180
	Arm out-in (JT2)	+135 ~ -80	+145 ~ -105	+145 ~ -105	+155 ~ -105	+155 ~ -105
	Arm up-down (JT3)	+118 ~ -172	+150 ~ -163	+150 ~ -163	+150 ~ -163	+150 ~ -163
	Wrist swivel (JT4)	±360	±270	±270	±270	±270
	Wrist bend (JT5)	±145	±145	±145	±145	±145
	Wrist twist (JT6)	±360	±360	±360	±360	±360
Max. speed (°/s)	Arm rotation (JT1)	300	250	250	190	190
	Arm out-in (JT2)	300	250	250	205	205
	Arm up-down (JT3)	300	215	215	210	210
	Wrist swivel (JT4)	460	365	365	400	400
	Wrist bend (JT5)	460	380	380	360	360
	Wrist twist (JT6)	740	700	700	610	610
Moment (N·m)	Wrist swivel (JT4)	12.3	13	22	22	45
	Wrist bend (JT5)	12.3	13	22	22	45
	Wrist twist (JT6)	7	7.5	10	10	29
Moment of Inertia (kg·m ²)	Wrist swivel (JT4)	0.4	0.45	0.7	0.7	0.9
	Wrist bend (JT5)	0.4	0.45	0.7	0.7	0.9
	Wrist twist (JT6)	0.12	0.14	0.2	0.2	0.3
Positional repeatability (mm) ※1		±0.03	±0.06	±0.06	±0.06	±0.06
Max. reach (mm)		903	1,650	1,450	1,925	1,725
Mass (kg)		37	150	150	230	230
Body color		Munsell 10GY9/1 equivalent				
Installation		Floor, Ceiling				
Environmental condition	Ambient Temperature (°C)	0 ~ 45				
	Relative Humidity (%)	35 ~ 85 (No dew, nor frost allowed)				
Power requirements (kVA) ※2		1.5	2.0	2.0	3.0	3.0
Degree of protection		IP65				
Matching controller		E74	E20			

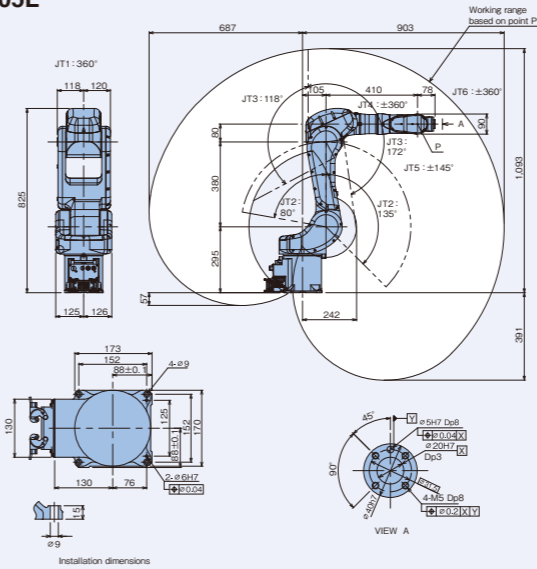
※1 : conforms to ISO9283
※2 : depends on the payload and motion patterns

● Optional equipment

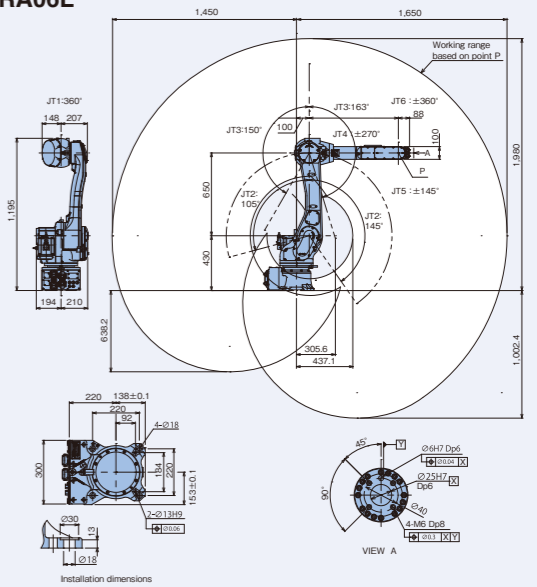
- Shock sensor
- Torch bracket (350 A/500 A)
- Installation base (600mm/300mm)
- Base plate (750mm×750mm×25mm)
- Liner slide
- Positioner
- Servo-torch
- RTPM (Arc sensor)
- AVC (Arc-sensor dedicated to TIG welding)
- 3D laser sensor
- Wall mounting

● Motion range & dimensions (mm)

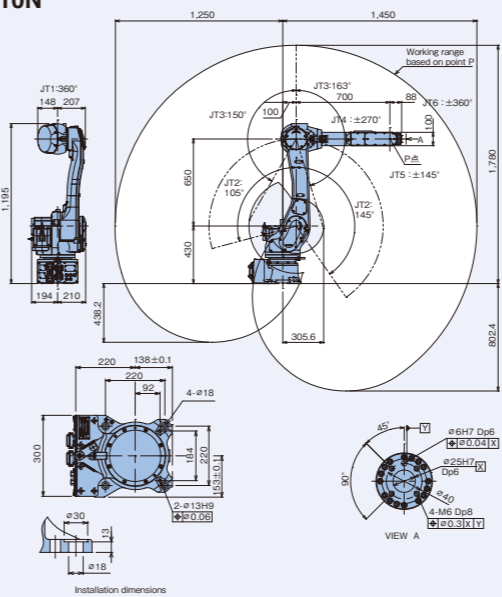
RA05L



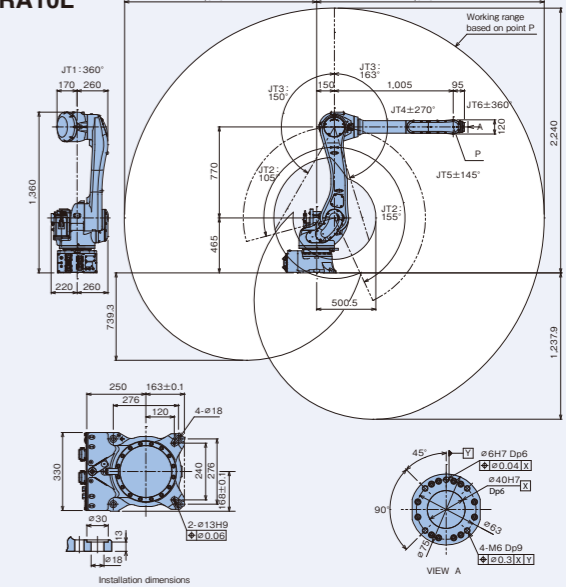
RA06L



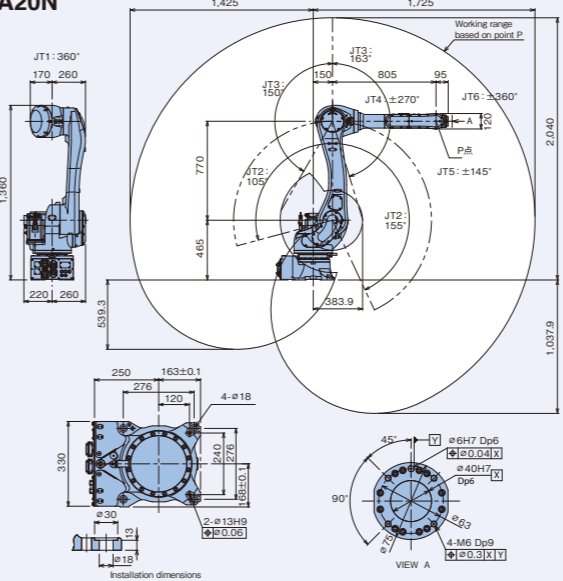
RA10N



RA10L



RA20N



E CONTROLLER

Controller
E74/E20

The E-Controller, with unprecedented quality and compact size, was created in response to customer demand. Kawasaki's collaboration of past achievements and experience has lead to the development of the most technically advanced controller available. This industry leading design provides increased performance and easy operation that exceeds expectations.



● Features

1. Compact

By reducing the controller's footprint and overall volume, high-density layouts are more easily achieved in the E controller.

2. User-friendly operation system

The operation system has now fully developed into a more user-friendly design. The operator can turn on the motors and activate the cycle start all from the teach pendant, thereby realizing a more convenient system control. The two information screens can be displayed simultaneously, enabling the operator to view different types of information easily (for example, positional and signal information).

3. Abundance of functions

The large variety of unique functions makes it possible to support a wide range of applications. These functions can be combined and easily configured within a system to suit a particular application. Likewise, the built-in Kawasaki "AS Language" provides sophisticated robot motion and sequence controls.

4. Incorporating the latest technologies

The enhanced CPU capacity allows for more accurate trajectory control, faster program execution, and quicker saving and loading of files, and countless other advantages. In addition, the memory has been expanded to answer the need for higher program storage capacity. A USB port is equipped as a standard external storage conduit.

5. Easier maintenance

With modular components and fewer cables, Kawasaki has developed a controller that is compact and easy to maintain. A host of maintenance functions are available, including the DIAG function for self-diagnostics, a maintenance support function that can handle not only hardware errors but also application errors. In addition to the DIAG function, there are other additional functions, such as a Web server that enables engineers to perform remote diagnostics.

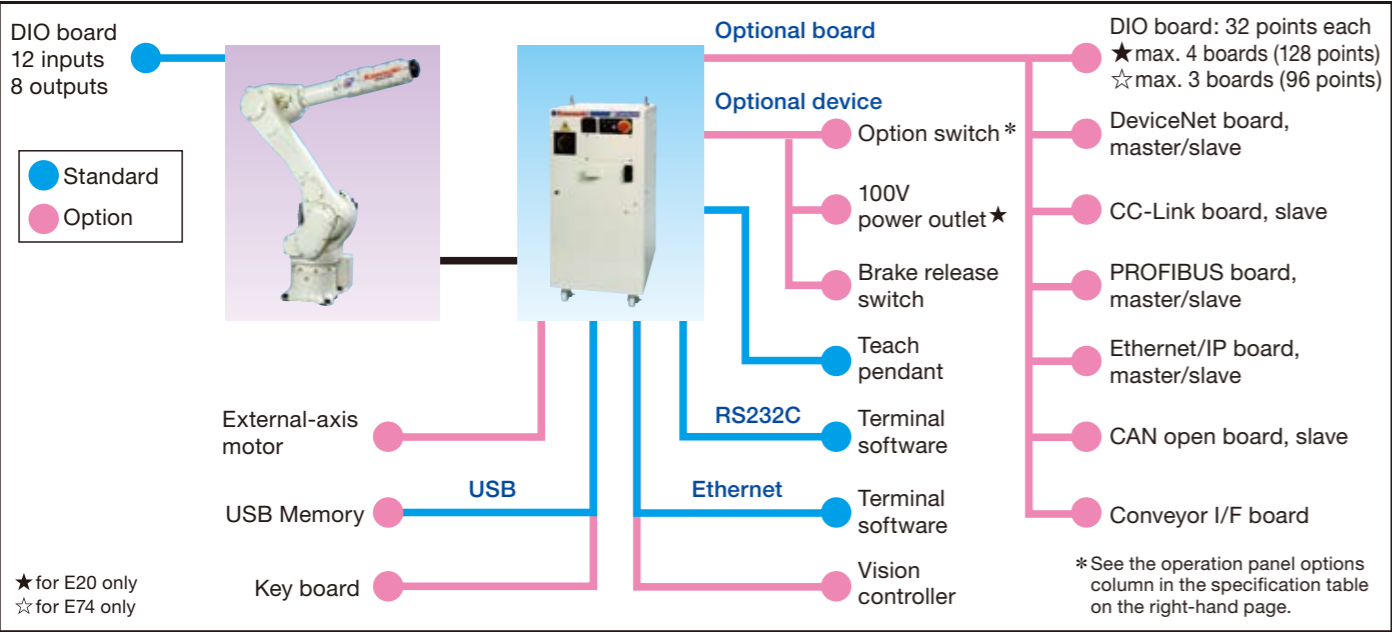
6. Highly expandable

The controller can accommodate 2 external axes inside the cabinet. In addition, by adding an expansion board, the controller can control up to 16 external axes. The system is compatible with a large number of field buses that are used for controlling peripheral devices. Users can combine the Kawasaki KLogic software sequencer function, which can be edited on the teach pendant, with the user-customizable interface panels to create a highly sophisticated system.

● Specifications

Model	Standard		Option
	E74	E20	
Dimensions (mm)	W500 x D420 x H250	W450 x D550 x H950	
Structure	enclosed structure/Indirect cooling system		
Number of controlled axes	6		Max. 8 (E74). Max 16 (E20). (expandable inside cabinet up to 8. Externally expandable beyond 9.)
Drive system	Full digital servo system		
Coordinate systems	Joint, Base, Tool		Fixed tool point
Types of motion control	Joint/Linear/Circular Interpolated motion		
Programming	Point to point teaching or language based programming		
Memory capacity (MB)	8		
General purpose signals	External operation		
	Input (Channels)	32	Max. 96 (E74), Max. 128 (E20)
	Output (Channels)	32	Max. 96 (E74), Max. 128 (E20)
Operation panel	E-Stop switch, teach/repeat switch, control power light (Cycle start, motor-on, hold/run, and error reset are activated from the teach pendant.)		Cycle start switch, motor-on switch, hold/run switch, error light, error reset switch
Cable length	Robot-controller (m)	5	10, 15
	Teach pendant (m)	5	10, 15
Mass (kg)	30	95	
Power requirements	AC200-240V ±10%, 50/60Hz, 1Ø		
	AC200-220V ±10%, 50/60Hz, 3Ø		
Environmental condition	Class-D earth connection (Earth connection dedicated to robots), leakage current: Maximum 100mA		
	Ambient temperature (°C)	0~45 (0~40 for E74 in vertical use)	
	Relative humidity (%)	35~85 (no dew, nor frost allowed)	
Body color	-	Munsell 10GY9/1 equivalent	
Teach pendant	TFT color LCD display with touch-panel, E-Stop switch, teach lock switch, Dead man's switch		
Auxiliary storage unit			USB Memory
Interface	USB, Ethernet (100BASE-TX), RS232C		
Dedicated features for arc welding	Welding sequence setup, built-in welding condition database, built-in welder interface, wire inching/retracting, and gas on.		
Power supply for arc interface	Externally supplied	Supplied by internal power source	

● System configuration diagram



● External view & dimensions

