

Simple  friendly

Kawasaki Robot

EUROPE



RA-SERIES

Arc welding robots up to 10 kg payload

**»Simple and friendly«
INTO THE FUTURE**

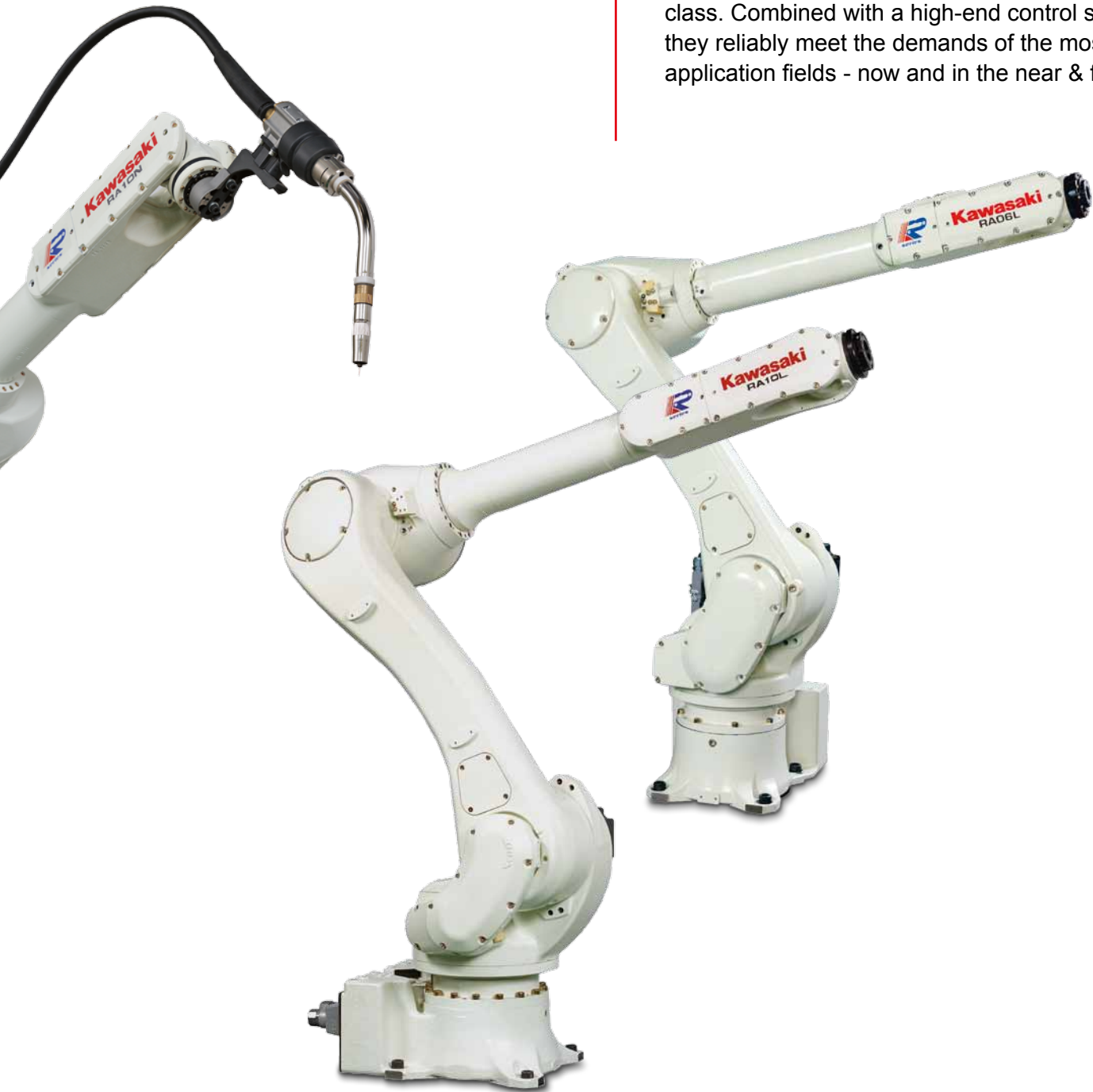
Kawasaki Robotics reinvents itself. The RA-Series – dedicated arc welding robots – stands for easy adaption and optimized arc welding processing.

»40 years of experience and state-of-the-art robot technology«

An extremely compact and light-weight design forms the basis for high speeds and rigidity as well as an enormous reach.

»Your goal is our task«

It was Kawasaki's intelligence and flexibility which made them build the most powerful robots in their class. Combined with a high-end control system, they reliably meet the demands of the most varied application fields - now and in the near & far future.



The Kawasaki RA-Series

1. Wisely extended

These dedicated arc welding robots are based on the approved R-Series. Slim design, high availability and reliability as well as the approved easy operation makes it ideal and efficient welders.

2. Useful standards

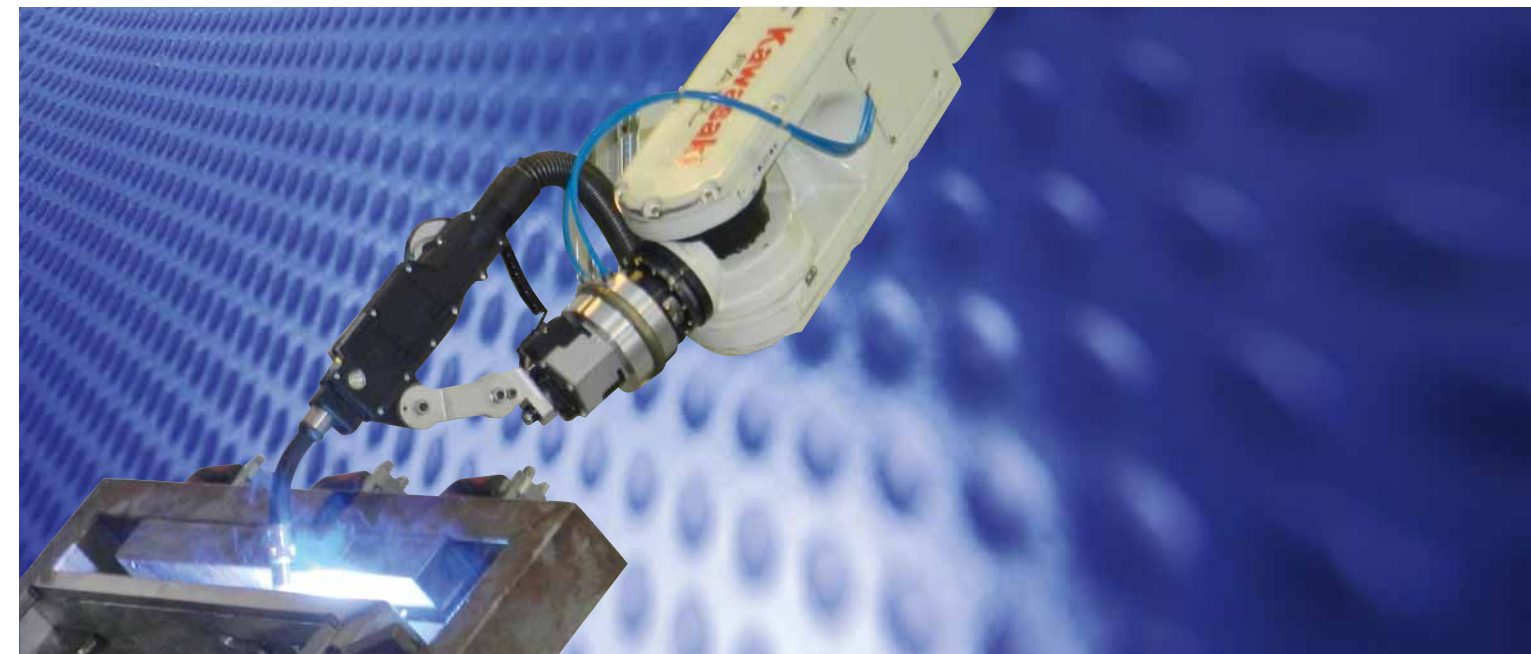
Broad standard equipment and a simplified teaching screen helps to realize a fast startup and shorten the setting time.

3. Clever basic features

Within the integrated data base welding data and parameters can easily be stored and the integrated welding interface realizes direct connection between welding controller and robot. Additional functions as the "start sequence function" lead to an easy operation. The "restart sequence function" sends the robot back to the position where the welding was interrupted and restarts the process with an automatically overlapping welding.

4. Resistance

The RA-Series is designed for a high resistance against electrical noise. TIG welding or plasma cutting can easily be adapted and processed.

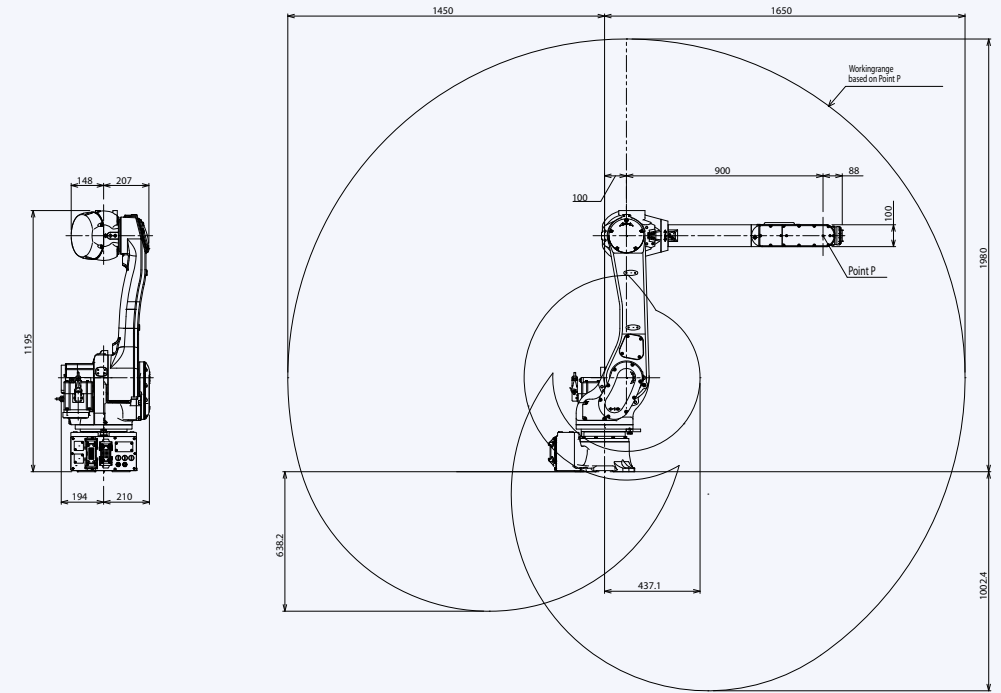


| MODEL | RA006L | RA010N | RA010L |
|---|------------------|---|-----------------------|
| Degrees of Freedom | | | |
| Maximal Reach*1 | 1650 mm | 1450 mm | 1925 mm |
| Maximum Payload | 6 kg | 10 kg | 10 kg |
| Maximum Stroke | Axis 1 | ±180 ° | ±180 ° |
| | Axis 2 | +145 ° ~ -105 ° | +145 ° ~ -105 ° |
| | Axis 3 | +150 ° ~ -163 ° | +150 ° ~ -163 ° |
| | Axis 4 | ±270 ° | ±270 ° |
| | Axis 5 | ±145 ° | ±145 ° |
| | Axis 6 | ±360 ° | ±360 ° |
| Maximum Speed | Axis 1 | 250 °/s | 250 °/s |
| | Axis 2 | 250 °/s | 250 °/s |
| | Axis 3 | 215 °/s | 215 °/s |
| | Axis 4 | 365 °/s | 365 °/s |
| | Axis 5 | 380 °/s | 380 °/s |
| | Axis 6 | 700 °/s | 700 °/s |
| Moment | Axis 4 | 13,0 N·m | 22,0 N·m |
| | Axis 5 | 13,0 N·m | 22,0 N·m |
| | Axis 6 | 7,5 N·m | 10,0 N·m |
| Moment of Inertia | Axis 4 | 0,45 kg·m ² | 0,7 kg·m ² |
| | Axis 5 | 0,45 kg·m ² | 0,7 kg·m ² |
| | Axis 6 | 0,14 kg·m ² | 0,2 kg·m ² |
| Repeatability (Measure Point: Middle of Flange) | ± 0,06 mm | ± 0,06 mm | ± 0,06 mm |
| Weight | 150 kg | 150 kg | 230 kg |
| Max. linear Speed (Measure Point: Middle of Flange) | 13.700 mm/s | 11.800 mm/s | 13.100 mm/s |
| Controller | E40 | | |
| Color | Munsell 10GY9/1 | | |
| Installation | Floor or Ceiling | | |
| Ambient Conditions | Temperature | 0 ~ 45 °C | |
| | Humidity | 35 ~ 85 % (no Dew, nor Frost allowed) | |
| | Vibration | < 0.5 G | |
| | Others | Installation Ambience must be free of: • Inflammable or corrosive Liquid or Gas • Electric Noise Interferences | |
| Protection Class | IP65 | | |

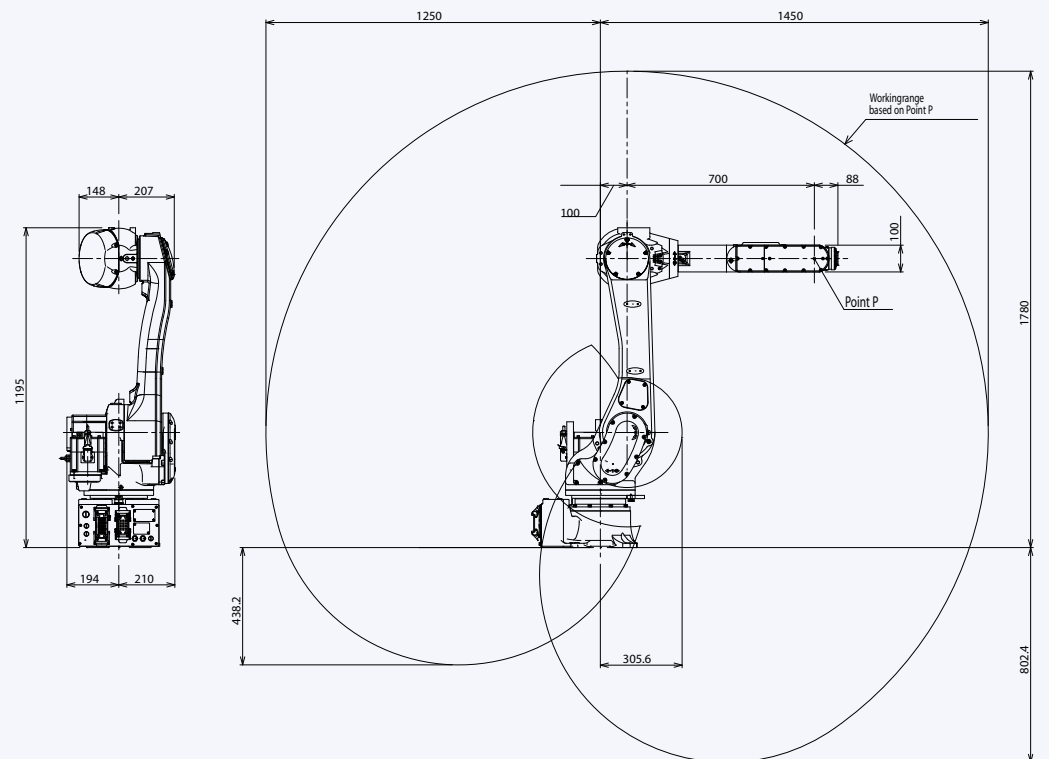
*1 Distance between Centre of Axis 1 and Axis 5

Motion Range & Dimensions

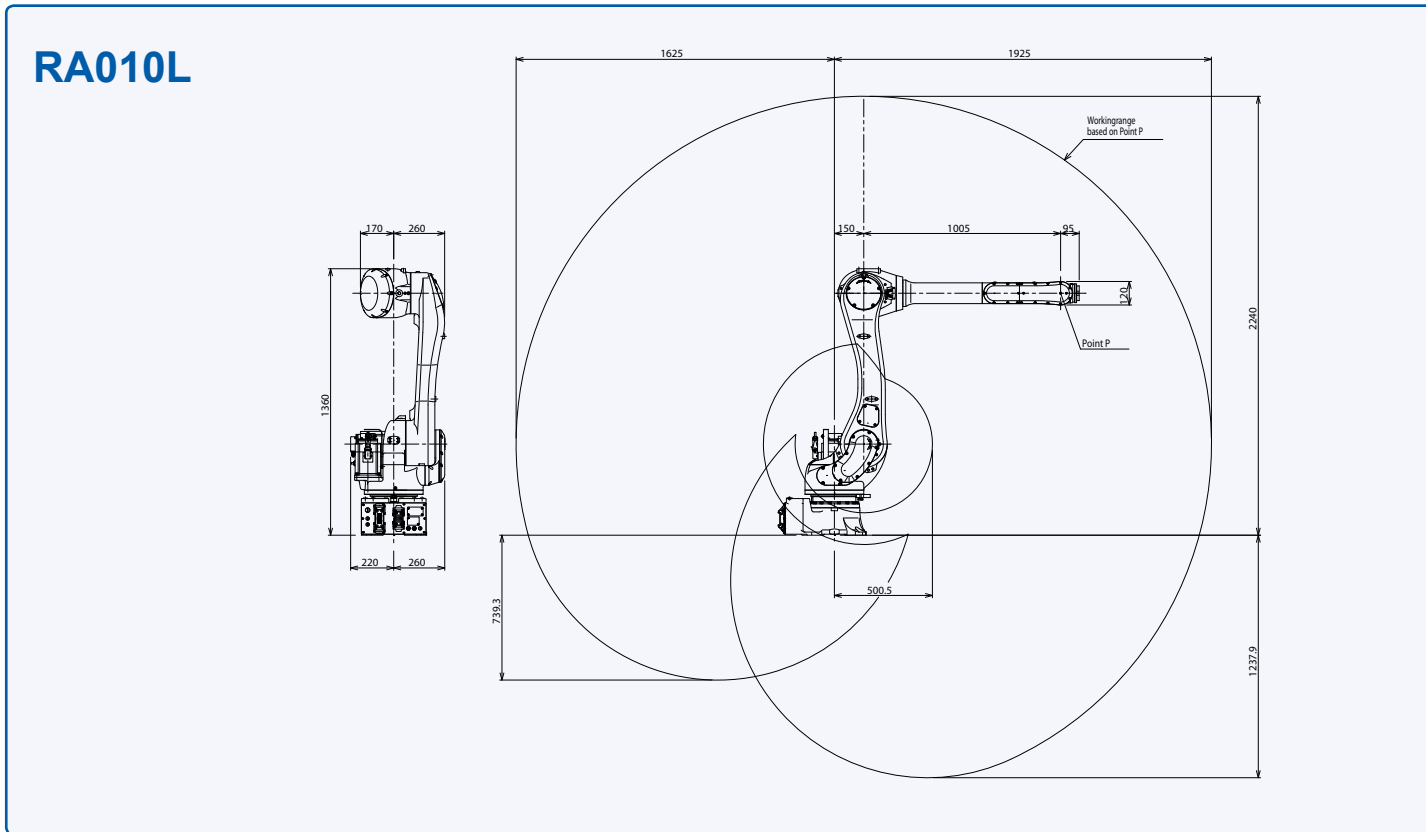
RA006L



RA010N



Motion Range & Dimensions



The E-Controller – technically mature, easy to operate and powerful

Compact, upgradeable and user-friendly

A maximum of 10 external axes may be integrated, up to three of which in the controller housing (E4x). All established bus systems (Interbus, Profibus, ProfiNet...) are supported. The integrated Soft PLC may be edited via Teach Pendant or even more comfortably at the PC (option). Custom-tailored user interfaces may be programmed and used for the simplified control of the robot and also peripheral devices.

Motor power ON and program start may be activated directly via the manual control unit. The parallel display of two information screens (e.g. position and signal data) facilitates the process control.

System

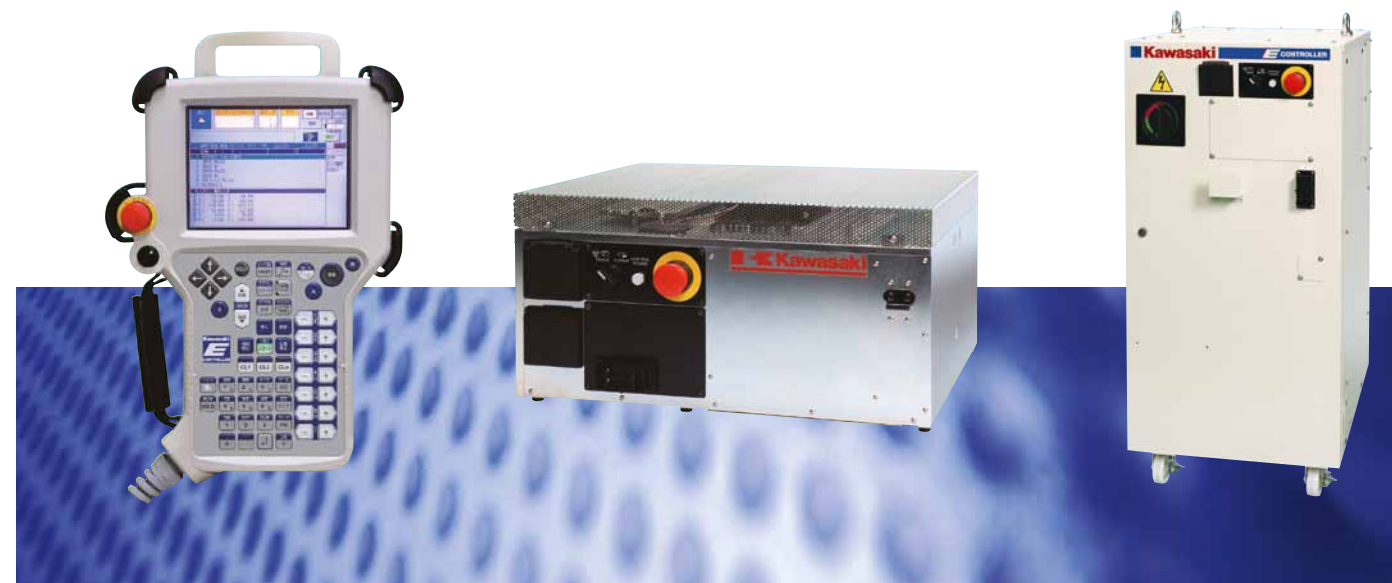
Ultra-fast execution of programs, loading and storing processes as well as a precise continuous-path control and much more thanks to the up-to-date processor design and powerful components. 8 MB RAM (80,000 steps) and USB interface as standard.

Maintenance

»Simple and friendly« – Due to the optimized modular configuration of the Kawasaki control, maintenance work is exceptionally user-friendly. Furthermore integrated service and diagnosis tools guarantee increased safety in operation. Remote diagnosis via Ethernet is also included in the standard package.

| MODEL | E40 | |
|---|--|---|
| Number of Controlled Axes | 6 (optional 16) | |
| Servo Motors | Brushless AC Servomotors | |
| Position Detectors | Absolute Encoder | |
| Servo System | Full digital servo system | |
| Programming | Block or AS-Language | |
| Coordinate Systems | Joint, Base, Tool (Option: external Tool) | |
| Motion Control | Joint-, Linear- and Circular interpolated | |
| Signals | External Input | 32 (optional 128) |
| | External Output | 32 (optional 128) |
| | Analogue Input (optional) | 8/16 |
| | Analogue Output (optional) | 4/8/12/16 |
| Memory | 8 MB (ca. 80.000 steps) | |
| External Memory | 2 x USB | |
| Data Interfaces | PC, Network, etc. | 2 x RS-232C, 2 x Ethernet |
| | Fieldbus (optional) | DeviceNet, PROFIBUS, PROFINET, INTERBUS-S, Ethernet/IP, CC-Link, CANopen, Modbus TCP, Control Net |
| Teach Pendant | 6.4" LCD with Touch Panel, Emergency Stop SW, Teach-Lock, Deadman SW, Motor power, Program start, Hold/Run | |
| Operation Panel | Emergency Stop SW, Control Power, TEACH/REPEAT | |
| Cable Length (Controller – Arm), (Controller – Teach Pendant) | 10 m (Arm: optional up to 15 m), (TP: optional up to 15 m) | |
| Dimensions (WxDxH mm) | 550 x 550 x 1200 | |
| Weight (kg) | 145 | |
| Power Requirements | AC 380-415V ± 10%, 50/60 Hz, 3 Phases, 4,9 kVA (E40) / 9,9 kVA (E42) | |
| Ground | < 100 Ω, Leakage Current max. 10 mA | |
| Safety Category | 3, Performance Level d (EN ISO13849-1:2008) | |
| Ambience Temperature / Humidity | 0-45°C, 35-85% (no Dew, nor Frost allowed) | |
| Surface | Color: Munsell 10GY9/1 | |
| Arc Welding functions | Welding sequence setup, build-in Arc Welding interface and data base, wire inching/retracting, gas on | |

Note: Not all Options can be combined.



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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.

ATTENTION: All photos 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.

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