FANUC ROBOTICS' SYSTEM R-30iA MATE CONTROLLER OFFERS A VERY SMALL SIZE FOR THE LR MATE 200iC ROBOT. THE CONTROLLER PROVIDES AN INTEGRATED 2D VISION SYSTEM TO SPEED-UP THE INSTALLATION OF VISION APPLICATIONS, THIS CAN BE EASILY UPGRADED TO PROVIDE A 3D VISION SYSTEM.

FEATURES AND BENEFITS

COMMUNICATION FEATURES R-30iA Mate
- Simple download and upload of robot programs to server!
- PCMCIA interface inside the controller
- 1 serial interface connection (RS232C, RS422)
- FANUC I/O-link [slave or master]
- FANUC I/O unit model A (option)
- Ethernet (100 BaseTX)
- Fieldbus (optional)
  - PROFIBUS (Master and slave, separated)
  - DEVICE NET (Master and slave, separated)
  - CCLINK

I/O FEATURES FOR R-30iA MATE
- Input / Output (I/O) are electrical signals through which the robot can control grippers and other external tools. It is also needed for the communication with external machines (e.g., CNC machines) which the robot may load or unload.
  - Available types of I/O
    - D/I/O (digital)
    - R/I/O at the robot arm (digital)
    - GI/GO [grouped digital I/O]
    - UI/UO (digital I/O for remote control by external PLC)
    - AI/AO (analog)
  - I/O setup can be separately backed up and restored using PCMCIA memory card

FAST START-UP
- R-30iA Mate controller needs less than 1 minute to start (and even less with the basic software only)
  - In case of power failure:
    - Robot program restarts much quicker than with any PC-based program (non-Windows operating system).
    - The resume hotstart function allows to restarting safely and continuing production after power failure: no need to re-do the whole movement.
    - Unique resume tolerance check: in case of any program interruption, the robot automatically memorises its position before failure. When the program continues, it checks whether the robot has been moved outside of a preset tolerance. This avoids unexpected movements and collisions.
    - Increased up-time [robot availability]

INTEGRATED INTELLIGENT VISION SOLUTION rVISION (OPTION)
- The controller provides integrated 2D vision to speed-up the installation of vision applications.
  (See chapter rVision)

R-30iA Mate Controller
Weight approx. 55 Kg
FEATURES AND BENEFITS

MINIMAL MAINTENANCE REQUIREMENTS
- Controller size allows quick access to all components
- Minimal number of components
- No air-filters
- Emergency stop and I/O connections facilitate fast component change
- Special quick-change design for the 6-axes servo amplifier
  - All cables attached have connectors, thus allowing an easy change
  - Quick exchange frame for the amplifier fixed with only 2 bolts
- All components can be changed without special tools
  - Low MTTR (Mean Time To Repair)
- Remote diagnostics features

SAFETY CLASS 4
Safety Class 4 (EN 954-1) is offered with Dual Check Safety.
DCS consists of 2 I/O security channels running on 2 independent processors which mutually check each other. Dual Check Safety is the embedded safety conformed to European safety standards. Two processors monitor real position and velocity of servo motor for safety redundantly. The embedded safety provides conformance to the safety standards without any sacrifice on machine efficiency and cost.

Dual Check Safety in the robot has the following features:
- 2 channel safety inputs for FENCE, emergency stop, servo off
- 2 channel safety output for emergency stop
- Same safety inputs and outputs as R-J3B and R-J3
- Safely cuts the servo motor power using magnetic contactors
- Safety classification according to EN 954-1 risk assessment class 4
  (highest level as needed for manual press loading)

SEVERO MONITORING - OVERLOAD, OVERHEAT AND COLLISION DETECTION
Continuous monitoring of the motor current by the servo control for enhanced predictive maintenance
- Overheat monitoring: the power dissipation and capacity of each motor is continuously monitored, as well as the robot duty cycle. In case of overheat, an alarm is issued and stops the robot.
- Collision detection (disturbance torque monitoring): the difference between real and expected motor current is monitored. Collisions and electrical/mechanical problems to the robot can be detected quickly before serious damages occur. Disturbance excess alarm warns the operator while the collision alarm stops the robot. Collision events are recorded to allow further analysis.
- Overload monitoring (OVC): the commanded torque is monitored and overload detected when the value gets too big.
- Position monitoring: the following error of the servo control is constantly monitored. It triggers move error excess and stop error excess alarms.

iPENDANT AS STANDARD
The FANUC iPendant is an intelligent teach pendant and is available as standard (except for PaintTool). Touch screen is available as option.
- Access via Ethernet to web sites
- Pendant view status of peripheral equipment and other robots’ html web server pages (when available)
- Coloured, multi-windows display
- Customizable screen
- Easier work with the robot, enhanced productivity.