

Industry: **Plastics**

Products Used: **FX PLCs**

# PLCs help robots achieve short payback times

PHD Automation of Cleveland has developed a robot that uses a Mitsubishi FX PLC for fast unloading of finished components from injection moulding machines. The PLC controls all movements of PHD's 200 Series robot and exchanges data with the moulding machines via a Euromap interface.



PHD initially considered a custom built circuit board, but this proved too inflexible. A PC was flexible enough, but they thought it would not be reliable in dusty industrial environments. In the end they chose a Mitsubishi FX PLC for each of their robots as it is "rugged, versatile and well proven," according to Paul Hutchinson, Technical Director at PHD

Fitting a Mitsubishi PLC has helped make the 200 Series one of the least expensive pick and place systems on the market. Its built-in timers and counters eliminate the cost of additional components required with a customised circuit board or PC. The FX also has the capability of communicating with other equipment in the factory to give an integrated system.

Graham Alder of PHD states, "All our customers have found the machine a worthwhile investment, with some quoting payback times of seven weeks."

"Using the FX's large memory, we have programmed the robot with 64 extraction sequences, so if a non-standard routine is required, it will not be a problem for the customer," comments Alder.

The FX's 0.74 microsecond processing time makes the 200 Series Robot one of the fastest of its kind. The PLC's fast input response time has also eliminated the need for expensive pulse lengthening circuitry. Slower controllers need this, as they can sometimes miss rapid input signals from say, transistors that only last a fraction of a microsecond.

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With such fast reacting inputs and programme execution time, the new robot can unload the moulds in less than two seconds and has a complete cycle time of only ten.

*Application story first released August 1995 by Mitsubishi Electric UK*