



Adaptive Robot Control



WITH ADAPTIVE
ROBOT CONTROL

WITHOUT ADAPTIVE
ROBOT CONTROL

Turn any robot into a high precision device



Features & Benefits

METRIS ADAPTIVE ROBOT CONTROL INTRODUCES FULL 6D CLOSED LOOP FEEDBACK FOR INDUSTRIAL ROBOTS. WHETHER THE ROBOT IS USED FOR MACHINING, INSPECTING, APPLYING BEADS OR MANIPULATING OBJECTS, ROBOTING TASKS ARE NOW EXECUTED WITH 0,1 MM ABSOLUTE ACCURACY, IRRESPECTIVE OF DEGRADING PHENOMENA LIKE PLAY, MECHANICAL FLEXIBILITY, BACKLASH OR THERMAL BEHAVIOR.

Adaptive Robot Control is developed by Metris in conjunction with Airbus and Kuka. This solution is based on the Metris K-Series Optical CMM that tracks the robot tool and possibly other objects in its environment in order to dynamically correct the robot tool position. OLP (Off-Line Programming) programs can be truly developed off-line and executed on the robot without cumbersome re-teaching while achieving absolute accuracy and repeatable precision.

KEY FEATURES & BENEFITS

- Time and cost savings
 - Automate repetitive, high accuracy tasks that previously needed to be done manually
 - Use standard industrial robots instead of expensive large scale CNC machining stations
 - Enable true off-line programming, eliminating time consuming robot teach-in process
- 0,1 mm absolute accuracy independent of
 - Play in robot joints (phenomena up to 0,3 mm)
 - Thermal robot behavior (phenomena up to 1 - 2 mm)
 - Variable loading robot deformation (up to 10 mm)
- Robot compatibility
 - Kuka: Off the shelf solution (KRC 5.2 or higher)
 - Other: real-time 6-DOF tool-to-part data available

APPLICATIONS

- Accurate drilling and riveting on wings and fuselages (part mounted)
- Robot machining (drilling/fettling/milling) (tool mounted)
- High precision placement
- Accurate material depositing (sealant, tape layering, etc.)
- High accuracy OLP commissioning (automotive)

TECHNICAL SPECIFICATIONS

- Global accuracy 0,1 mm (application and size dependent)
- Temperature range 15 to 35°C
- Measurement volume 17m³ -> 136 m³ (planned 2008)
- Optical CMM compatibility K500, K600 and K610



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