

3 Axis Motion Control Upgrade

Requirements

Implementation

Benefits

Solution Partner: **Cleveland Systems Engineering**

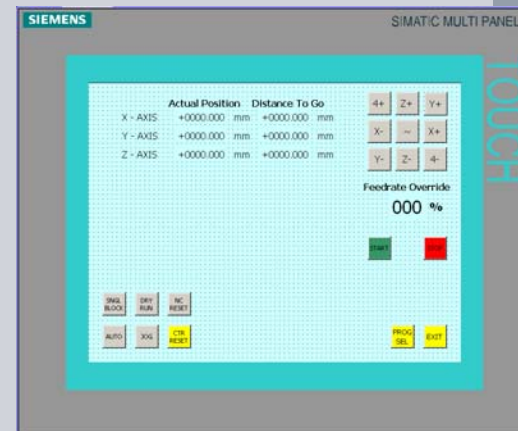
Customer: Cummins Engines, Darlington

Segment: Automotive

Requirements of the customer:

- Replace Siemens Sinumerik NC controller and S5 PLC with S7-300 and FM357-2 motion controller.
- Interface with Bosch Rexroth drives and servo motors. (Cummins standard drives and motor supplier.)
- Simple operator interface and built in fault diagnostics.

The two multi axis machines were originally controlled with a Siemens Sinumerik NC and S5 PLC. Due to minimal maintenance resource with experience using these controls, and S5 becoming obsolete Cummins made the decision to upgrade the machines control systems to allow for easier product integration and reduced downtime.



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Implementation by the Solution Partner:

- All testing was carried out off site to minimise disruption to the customers production. Installation and commissioning was completed over one weekend per machine.
- Cleveland Systems Engineering provided electrical and software design including NC programming, panel design and build, installation, commissioning and handover support to the customer.
- To maintain standardisation within the plant an S7-315-2DP PLC was used with a rack mounted FM357-2 4 axis motion controller, and a MP277 HMI.
- Bosch Rexroth EcoDrive C's drives and motors were integrated into the control system with absolute positioning.



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Benefits for the customer:

- Downtime has been reduced due to the improved fault diagnostics.
- Removal of the necessity to reference the machine improves machine start up procedure.
- Status of all machine sensors and actuators are visualised on custom HMI screens increasing operator awareness.
- Failsafing software to ensure the correct program is started for each component type.
- Integration of new production assemblies simplified by using programming software already used by customers engineers.

