

DECOMA SYBEX BANBURY - PLASTICS PAINT PLANT ROBOT INTEGRATION

Sales Value	£ 130,000
Control Media Networks	Rockwell GuardLogix Ethernet IP, RIO, ProfiNet
Project Duration	Sep'12 - Dec'12



CUSTOMER

Decoma Sybex is part of the Magna group, where in Banbury they produce automotive parts for BMW Mini, Land Rover and Honda. They invested in a new Paint Plant for the production of Plastic Parts for Land Rover which consisted of 4x Fanuc Painting Robots with an allowance for a further 2x Robots.

REQUIREMENTS

To supply a turnkey electrical and software solution (project management, design, supply, install, program and commission) for the Integration of the Robots within their environment including the following:

- Spray Booth Safeties
- Parts Tracking through 4x Spray Booths
- Conveyor
- Paint Mix Systems
- Plant ARP's and Desludge Systems
- Fanuc Robot Controllers

OVERVIEW

Phoenix has enjoyed a long association with Decoma Sybex at Banbury where our engineers who designed, installed and commissioned their original Bumper Paint Plant in 1994 continue to support the facility to this day.

The project was on a very tight schedule following receipt of order cover in late September to the commissioning phase in late October/November.

The communication interfaces to the respective parts of the Plant are as follows:

Fanuc Robot Controllers	Ethernet IP
Conveyor	ProfiNet
Plant ARP's/Desludge	Volt Free Contact
Dynaflow Paint Mix	RIO & 4-20mA Analogue (High Speed Flow Rate set points)

We had to design and manage the installation of power supplies to the Robot Controllers, Dynaflow Paint Mix System and distribute the Encoder Tracking signals to an allowance of up to 6x Robots.

2x Control Desks containing Rockwell PV+ HMI communicating on Ethernet IP with the Rockwell PLC GuardLogix situated in the Central Control Panel located in the Control Room

Distributed Flex I/O located in Field Enclosures and the 2x Control Desks controlled Paint Pipe Valves, Air and Solvent Valves and Colour Change sequencing and process.

Emergency Stop and Booth Door Key Interlock Safeties were communicated to the PLC via Safety I/O Modules.



The system was designed to cater for up to 100 Body Styles with up to 99x Basecoat Colours across 16x Paint Lines where each colour can be associated with up to 2x Primer Colours and 2x Primer Catalyst Colours and also 3x Clearcoat Colours and 2x Clearcoat Catalysts. All permutations and combinations are available and changeable from the HMI application.

We undertook the contract knowing that because of the tightness of the schedule we had to design, procure parts and build the Control Panels and Desks concurrently. The installation started prior to the Control Panel, Control Desks and other parts of manufacture not present on site, and we coordinated commissioning activities of all parties.

The Paint Shop was completed on schedule and within the client's budget with Body trials taking place in December and full production parts being produced in January.

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