

Testcenter Maulburg

Oil tank facility

DCS System

PlantPAx Process Automation System

Hardware

- ControlLogix Redundancy System
- ControlLogix I/O Modules
- Stratix Industrial Managed Ethernet-Switches
- Fault Tolerant Server Hardware (Stratus Technologies)

VMware

- VMware vSphere Hypervisor
- PlantPAx Virtual Image Templates

Software

- PlantPAx Process Library
- Studio 5000
- FactoryTalk View SE
- FactoryTalk VantagePoint
- FactoryTalk Historian
- FactoryTalk AssetCentre
- FactoryTalk Batch

Communication Protocols

- EtherNet/IP
- Ring Protocol (DLR and REP)
- Modbus TCP
- Profibus DP
- Profibus PA
- Fieldbus Foundation
- Analog HART
- Wireless HART
- OPC UA



The oil tank facility is located on two levels. It consists of two tanks with a capacity of 24,000 liters. Another tank with a capacity of 1,600 liters facilitates filling a main tank up to the lid.

The filling is needed for testing time-of-flight instrumentation in the close-up range. On the lower level, four pumps supply oil with maximum 200m³/h.

The pipe system enables the test team to fill the tank from the top or bottom. A circulation mode is also available. The control system is located on the upper level. All relevant measured process data (flow, density, temperature, viscosity and current level in the tanks) is monitored, controlled and displayed here.

A fault-tolerant server unit with fully redundant hardware is used. Different virtual machines are installed on the server unit.

The control system was realized in cooperation with the strategic alliance partner "Rockwell Automation".

An agitator generates a turbulent surface in the tank. The simulated heating units produce interference signals for the time-of-flight instruments.

Technical data

- Filling from the top and bottom
- Batch control system
- Medium: Transformer oil (DC = 1.9)
- Content main tank: 24,000 liters
- Content buffer tank: 1,600 liters
- Pump speed: Max. 200m³/h
- Agitator max. 60rpm