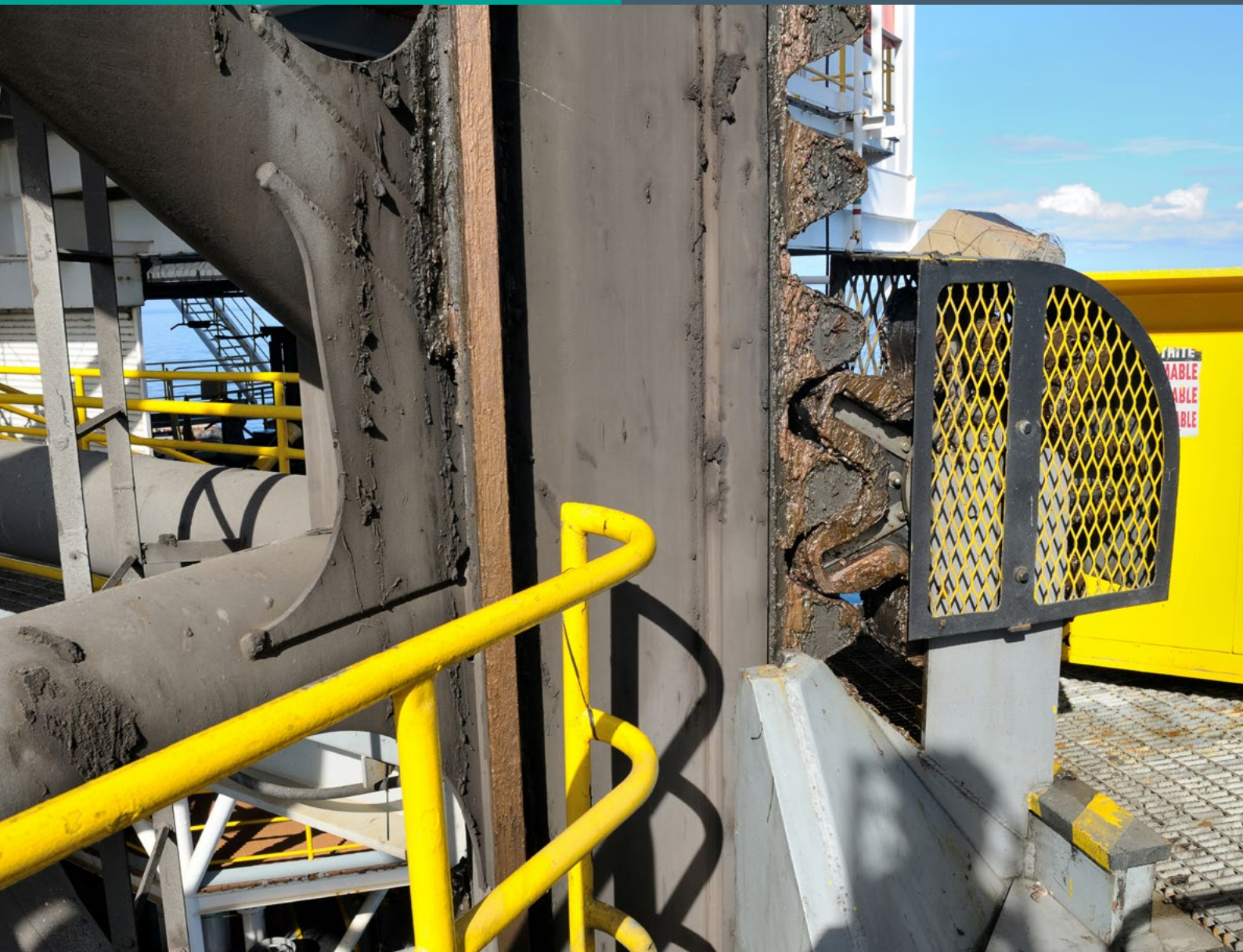


Digital Signal Processing on Offshore Drilling Rigs

The FieldConnex®
multi-input/output processes
up to 12 discrete input signals

At a Glance

- Connects up to 12 discrete signals to the control technology
- Additional diagnostic monitor for lead breakages and short circuits
- Integrated breakaway time and runtime monitoring for valves
- Automatic partial stroke test for extended maintenance intervals
- Allows predictive maintenance



The Application

Production platforms in the oil and gas industry use large mechanical equipment that invariably depends on lubricants for smooth operation. Automatic lubrication systems guarantee optimum availability and a long service life of the systems.

These systems enable lubrication to be carried out automatically while the equipment is running, with no intervention required. This guarantees maximum efficiency and occupational safety for employees on site at all times. For this manufacturer of lubrication and oil systems shall connect the automatic lubrication system to the process control system using digital communication via fieldbus.

The Goal

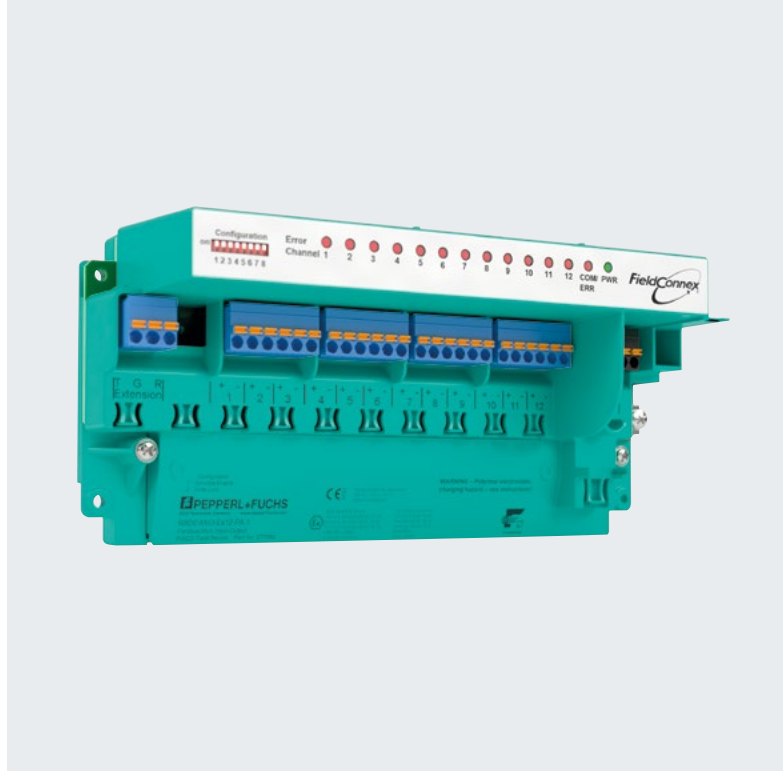
Valves and other discrete signals from the lubrication system should be connected to the control system via PROFIBUS.

The Solution

The mechanical engineer and their system integrator have opted to connect the lubrication systems via FieldConnex® infrastructure from Pepperl+Fuchs. This involves using the new basic Segment Coupler, the FieldBarrier, and, in particular, the multi-input/output (MIO) from the FieldConnex® portfolio.

The various signals from simple, discrete sensors are connected to the digital infrastructure via MIO. The FieldConnex® multi-input/output is therefore installed in the immediate vicinity of the sensors in the hazardous area, Zone 1, minimizing the cabling required.

Up to four valves can be controlled via the MIO and automatically monitored for jams. The integrated breakaway time and runtime monitoring for the valves issues an alarm signal when limit values are exceeded, providing a reliable status diagnostics. Partial stroke tests ensure that valves that are rarely actuated—such as safety valves—are always operational. The MIO monitors all connections for lead breakages and short circuits.



The Benefits

The FieldConnex® MIO connects four different signal types via end-to-end digital communication with the control system. This means that almost all applications can be implemented, ensuring maximum flexibility for the plant design. The sensors require no additional current source, which delivers additional significant cost savings.

The comprehensive diagnostics of the MIO allow proactive, need-based maintenance. In addition, partial stroke tests maximize efficiency by extending the maintenance intervals for valves. Overall, these functions prevent unplanned downtime, and ensure the economic efficiency of the plant.

Both the mechanical engineer and the system integrator were convinced to use digital communication after intensive consulting and good support from Sales. The ease with which the project was implemented means that the system integrator will also propose the MIO in projects with other business partners.