

Problem found! Monitoring system identified pipeline issue

Rotterdam, Netherlands

Pipeline transportation of sulfur requires heated pipelines, so that the sulfur remains in liquid form. At the Q8 Kuwait refinery in Rotterdam a reliable and well-performing DTS (Distributed Temperature Sensing) system was needed to diagnose a heating issue in a sulfur pipeline.

As shown in the diagram below, 2 sets of heated cables are installed adjacent to the pipeline, inside the insulation material. These maintain the necessary temperature between 135 °C and 155 °C, to keep the sulfur liquid.

At the top of the pipeline a steel-armored sensor cable is installed, with a multimode optical fiber enclosed.

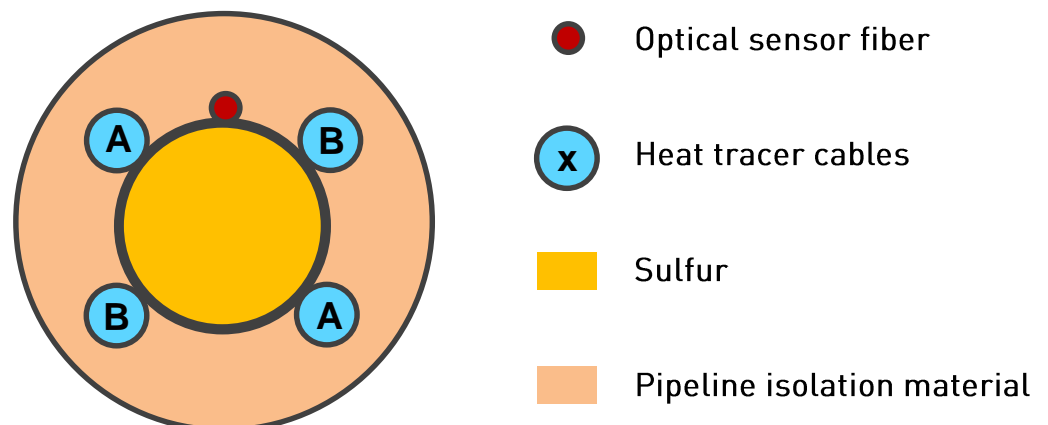
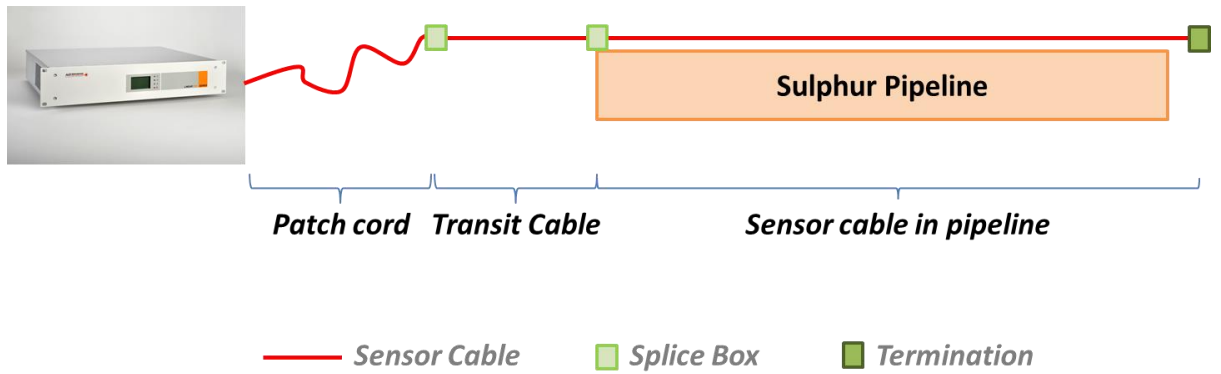


Diagram of a pipeline section

A different manufacturer's DTS had been used in the past, but the operators discovered some unidentified problems with the heat tracer cables, which had not been identified. The tracers became too warm and were threatening to burn the isolation material. So first they wanted to determine which set of tracers was not running properly. Second, there was a known fiber break that they needed to locate precisely.

An AP Sensing *Linear Pro Series*, installed in a rugged IP66 outdoor housing unit, successfully carried out the tracer tests and precisely identified the fiber break location.



With accurate temperature profiles the installation could be completed and normal operations resumed. The AP Sensing Support team gave an onsite product training for the operators.



The remote end of the sulfur pipeline

The installation and tests were carried out together with our expert worldwide partner Pentair, together with a team of engineers from Q8 KPE.

