



Subsea Power Cable Monitoring with SmartVision™ and RTTR

Netherlands

The oil platform operator Engie needed a monitoring solution for their medium voltage (35kV) subsea power cable, which provides the power for the platform operations. The cable runs some 14 km subsea and is monitored for about 1 km above ground. AP Sensing was selected not only because of their ruggedness, reliability and superior support services, but also for their SmartVision™ and RTTR capabilities.

The operators selected the AP Sensing Long Range / Singlemode DTS (Distributed Temperature Sensing) solution with a **30 km measurement range and 2 channels**: A longer range and 1 channel more than was necessary, to be prepared for potential future expansion.

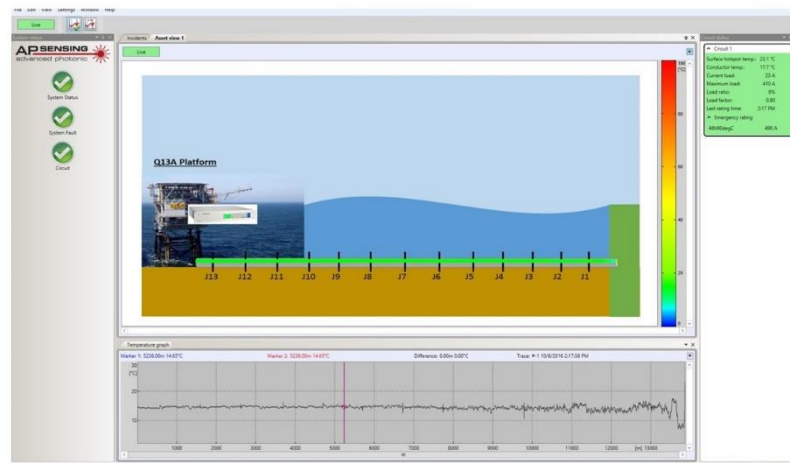
The DTS unit itself is located on the offshore platform (pictured below). The DTS measurements are sent along singlemode fiber to the onshore Engie IT infrastructure.



The offshore platform

The DTS is integrated into their existing rack panel as shown on the following page. The **AP Sensing software (DTS Configurator, SmartVision™ and RTTR (Real Time Thermal Rating))** are installed on a virtual server, which allows access and operation from any of the operators' offices. This also made the commissioning project easier, as it could be carried out at the company's headquarters.

The circuit load is recorded using the **Modbus TCP protocol**. In turn, the alarm values and hotspot temperature values are provided via the Modbus TCP interface to the client's **DCS system**.



The AP Sensing SmartVision™ asset visualization software

AP Sensing's **SmartVision™ software suite integrates monitoring data from multiple sources** and intelligently analyzes it, stores it in a central database, and provides a **schematic asset visualization**.

The operators also selected the **RTTR (Real Time Thermal Rating, also known as DCR for Dynamic Cable Rating) software**. RTTR continuously calculates the conductor temperature, and also **predicts the maximum permissible load** for steady state and emergency situations. Based on the industry standards IEC 60287 and IEC 60853, it allows **network operation at the highest possible safe ampacity levels**.



The AP Sensing Linear Power Series in a rack setup

Training sessions were held for the operators to familiarize them with the software and alarming features. AP Sensing is proud to have been selected for this important infrastructure project. The installation was planned to be prepared for possible future expansions in terms of both distance and the number of channels. **A very valuable infrastructure remains protected.**



The AP Sensing Linear Power Series (Long Range Singlemode)