

ABB Offshore Systems chooses EOTec 2000 Fiber Optic Modems for its critical Sub-Sea applications using GE Fanuc 90-70 PLC System.

About the Customer:

ABB Offshore Systems (ABB OS) design and manufacture a full range of Ultra Deepwater Drilling Control Systems. These systems can operate in water depths up to 10,000 feet or 3,300 meters. ABB OS can offer the Oil and Gas industry a broad range of drilling and sub-sea products and services.

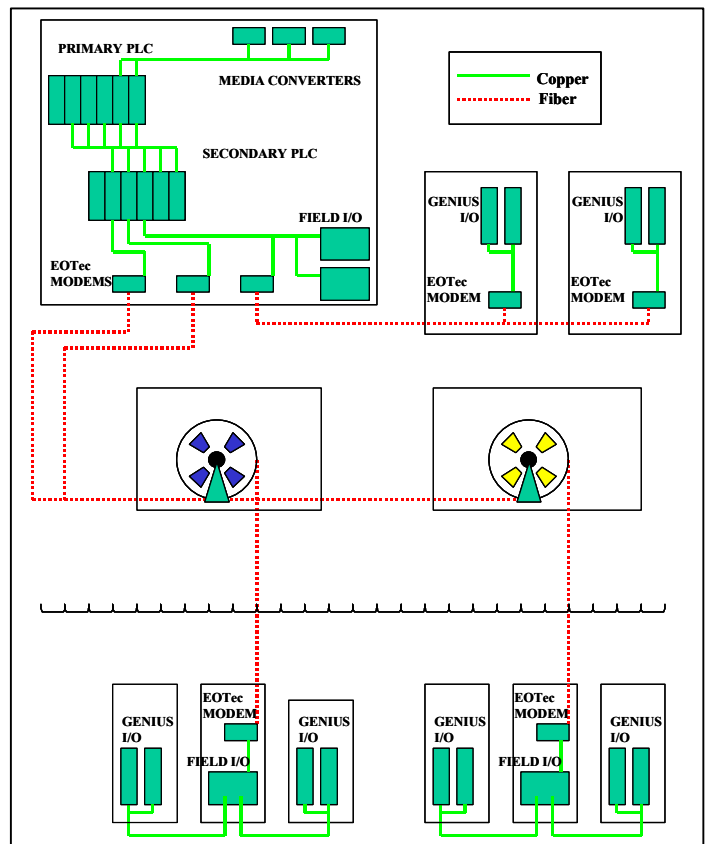
The Application:

ABB OS was designing the next generation of deepwater control pods. PLC s in control rooms located on the surface of the ocean were needed to control dozens of valves and end devices located in a control pod on the ocean floor to support the drilling operation. Fiber optics were required for the long distances and for its electrical isolation properties. Two fiber optic reels were deployed to achieve redundancy in the fiber path to the control pods. They also needed a reliable way to handle communications from the PLC s to the Remote I/O s, since a loss of communications meant expensive downtime for the end user. In addition, the equipment being used on the surface needed to be located in a Class 1, Division 2 hazardous location.

The Solution:

ABB OS engineers chose to implement a redundant GE Fanuc Series 90-70 PLC system on the surface to communicate with Genius I/O blocks located in the control

Pods to take advantage of the diagnostic features of the GE PLC s. They also needed a fiber optic modem that fit into the constraints of their system. For surface operations, ABB OS engineers specified the EOTec 2000 platform with 2C02 Genius Electrical Interface, 2E07, 850 nm, multi-mode optical modules, and the 2C30 for a redundant self-healing ring topology. For below the surface, they specified the 2E09, 1300 nm, multimode optical modules. They use the 2A08, 24VDC power supply to connect to the existing 24VDC power line in



the control pod. ABB OS engineers decided on the EOTec 2000 platform for several reasons:

1. Its small, lightweight package fit well into the small space of the pre-designed control pods.
2. EOTec 2000 modems are approved for Class 1, Division 2 hazardous locations.
3. The EOTec 2000 Fiber Optic Modem line is interchangeable, reconfigurable, expandable, and requires no external inter-modular wiring.

More about EOTec 2000:

The EOTec 2000 fiber optic product line offers redundancy in many aspects of the communication networks. The patented self-healing ring (Ref. Patent #6,307,652) solution allows the system to remain active if a failure occurs in one of the fiber links. This enables engineers to do repairs during regularly scheduled maintenance without shutting the system down. Once the broken fiber(s) is repaired and reconnected in the network, the modem automatically re-establishes communications along the repaired fiber (automatic reset). Also, the ability to stack two power supplies and have the modem load shared by each insures that if one failed, the other would take over. Furthermore, the EOTec 2000 comes with a new series of optical modules, which offers a

4-20mA diagnostic output signal for monitoring the strength of the optical signal to prevent the disastrous fiber optic cable failure by environmental degradation factors.

About Weed Instrument Company:

Weed Instrument Company is a leading manufacturer of fiber optic products for PLC s and DCS s. EOTec products are installed in over 10,000 locations worldwide and are compatible with any network configuration or topology. Weed Instrument, Fiber Optic Division has consistently demonstrated a pioneering spirit through such achievements as being the first company to receive FM approval for fiber optic based products to be utilized in hazardous areas, and developing new technologies such as single fiber bi-directional communications. Weed fiber optics has been a mainstay in the industrial and nuclear power generation markets for many years, and its strength lies in the ability to custom design products to customer specifications, as well as provide proven designs for off-the-shelf applications.



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