

Application story

Druck pressure sensors enhance operational efficiency and performance of natural gas turbines



Druck business
Configurable modular pressure sensors



Application
Power generation



Customer type
Overspeed protective device for turbines



Product/service
UNIK 5000 configurable silicon pressure sensing platform and UNIK5800 flameproof/explosion-proof pressure sensor



Benefits
High level of accuracy over a wide operating temperature

Excellent long-term stability

Hazardous area certifications

Druck's customer

Druck's customer is a global leader in industrial controls that deliver control and safety systems for gas turbines.

Druck's customer's challenge

Gas turbines employ overspeed devices that are designed to automatically stop the machine if they exceed the design speed. The overspeed device must respond fast enough in order to safely protect the gas turbine and reduce the possibility of malfunction. A gas turbine overspeed event can lead to costly and catastrophic failures, therefore it is essential the overspeed device has the adequate response time to protect the machine and personnel.

Ensuring gas turbines operate at maximum efficiency, without the need for costly unscheduled downtime is a primary goal for operators.

Gas turbines are equipped with pressure sensors to assure safe operation and to monitor performance. In order for the overspeed device to be fast acting, it must receive pressure information continuously and quickly.

Druck's customer required a fast response pressure device that could provide a 4-20mA signal at update rates in the order of 3,000 times per second. Transmitter style pressure devices were considered by the customer but were deemed inadequate for providing pressure-related data at a sufficient speed.

Druck's solution

Druck's UNIK5000 configurable modular pressure sensors and UNIK5800 flameproof/explosion-proof pressure sensors (a compact and rugged version of the UNIK 5000 pressure sensor) were an ideal fit for this application due to their piezo resistive technology and analogue circuitry, providing accurate and reliable pressure data to the assembly at rates up to 3,000 times per second.



Picture 1: UNIK5000 pressure sensing platform

Druck's UNIK5000 and UNIK5800 pressure sensors operate much faster than traditional process transmitters, supplying the overspeed device with information at an optimum rate. Given their high performance, together with advanced signal, both pressure sensors could provide the monitoring response time the customer required, all in a cost effective and compact package.



Picture 2: UNIK5800 flameproof/explosion-proof pressure sensor

Druck's added value

Druck's UNIK5000 and UNIK5800 provided the following benefits:

Increased efficiency: The customer can detect and monitor pressure data in real time, giving gas operators insight into if there could be an overspeed event, which could cause a malfunction and result in costly unscheduled downtime for the operator.

Savings in time and costs: The UNIK5000 and UNIK5800 pressure sensors provide accurate data quickly and continuously, permitting the overspeed device to shut down gas turbines if they exceed the design speed. The results of such an event can be costly, therefore it was vital to use pressure sensors with a quick response time to protect the integrity and the operability of the gas turbines.

Safety: Both sensors are able to provide early warning of overspeed in the system. By implementing these sensors, gas operators can have peace of mind knowing that their gas turbines are operating safely and securely.

For more information

To learn more about this product and Druck, please visit:

Datasheet: <https://bit.ly/3fXerkC>

Online: <https://bit.ly/3dUCY84>

LinkedIn: [linkedin.com/company/druckcompany](https://www.linkedin.com/company/druckcompany)