

Rofin Sinar - Fiber Lasers - flow monitoring of cooling system

THE SITUATION

With more than 35 years of experience in laser technology, ROFIN has successfully focused its strategy on being an innovative leader in the industrial laser market and has consistently demonstrated its determination to deliver the most powerful and innovative manufacturing tools to a wide range of industries. ROFIN's global outlook, which started very early on, combined with acquisitions of other companies, contributed to ROFIN's expansion efforts and is a key element of their corporate philosophy.

In 2009 ROFIN developed a new product line of Fiber Lasers with more functionality than in the products before. It has been decided at that time to integrate more sensors into the system to get more information about the condition of the laser system. At the same time this should ensure more safeness and give possibility to monitor and control important values.

One of the most important and also most critical values is the flow of the cooling circuit. To find a reliable, but also competitive flow sensor, was one of the tasks at that time.

THE GRUNDFOS SOLUTION

Grundfos Direct Sensors™ introduced a new line of Vortex flow sensors in 2006 and made good experiences with the sensors in various domestic heating applications, but also in industrial usage. Based on the Vortex principle (von Karman VortexStreet), the flow sensor offers a measuring functionality without any moving parts.

The direct contact of the sensor chip to the media enables a fast response time on the signals. At the same time the resistance

TOPIC:

Lasers and flow metering of cooling for lasers

LOCATION:

Germany

COMPANY:

Rofin Sinar

to aggressive media due to a “metal-glass” coating on the sensor chip is very high.

The compact design of the Vortex Flow Sensor Type VFS and the combination of measuring flow and temperature in only one sensor could bring the amount of needed sensors down. Within the ROFIN application “Fiber Lasers” the Grundfos flow sensor versions VFS 1-20 and VFS 2-40 have been chosen.

THE OUTCOME

The very compact design of the Grundfos Vortex Flow Sensors and the ability to offer two sensors in one –flow and temperature – enabled ROFIN to integrate the sensors under good conditions.

Another request of the complete laser system design was for space-saving. Another benefit of the sensor is the measuring principle without moving parts. Because of this, the sensor will not tend drift or to worse accuracy.

Furthermore there is no risk of wear and tear over the sensor lifetime, which gives a high reliability and safety for this important measurement values. Because of having no sensor fallouts within the first years of usage, Grundfos Direct Sensors™ will be more and more integrated in laser systems from ROFIN SINAR.