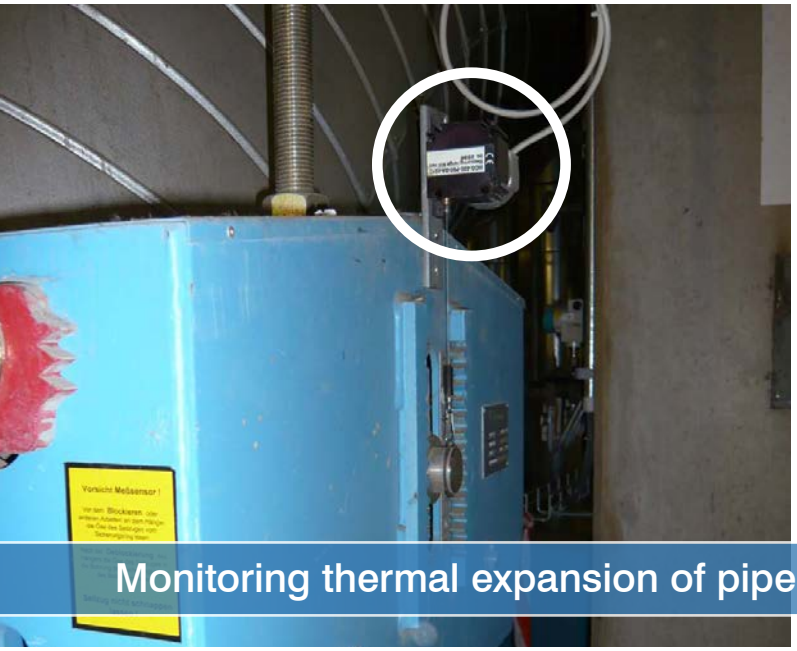
A164

# Draw-wire sensors
# wireSENSOR




## Monitoring thermal expansion of pipelines in power stations

Pipelines in power stations have to withstand pressures of 300bar and temperatures of up to 620°C. These extreme conditions cause the pipes to vibrate and result in thermal line movements of up to 1 metre in some places. Constant supports are required in order to compensate for these thermal movements. Previously, this was only possible by spending a lot of time and effort manually inspecting the mechanically and thermally stressed pipelines on the surface of a power station. Experienced personnel therefore had to assess whether pipeline vibrations or movements were still within specified tolerance limits. Miscalculations or recognising that tolerances had been exceeded too late could result in damaging, costly consequences.

Using a well devised concept, the Technip company under the management of Dr. rer. nat, Ulrich Reiners succeeded in eliminating this risk. The solution was found in the central monitoring of the respective vibrations and the thermal movements of the pipelines at the sensitive locations within the power station. Mr. Reiners relies on draw-wire sensors from Micro-Epsilon to reliably and safely transmit movement information to a central control room. The combination of mature monitoring software and long service life of Micro-Epsilon's WDS-P60 draw-wire sensor have enabled the previous time-consuming manual checks of pipe movement to become more flexible and accurate.

**Requirements for the measurement system**
- Measuring range: 500mm to 1,000mm
- Service life up to 5,000,000 cycles

**Ambient conditions**
- Temperature: 0°C to 60°C
- Medium: Air

**Suitable sensor series**
- WDS-500-P60 with conductive plastic potentiometer
- WDS-1000-P60