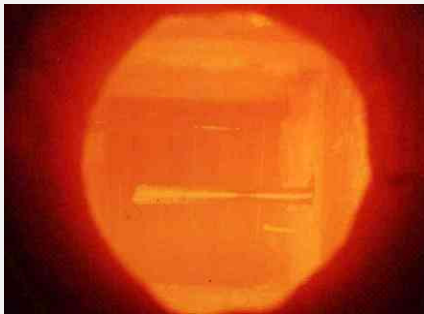


VTER Probe Systems for Corrosion/Erosion Monitoring

Intrusive Probes for Monitoring at Point Locations

VTER (Variable Temperature Electrical Resistance) probe systems use single corrosion elements mounted on the end of air-cooled probes. The closely-controlled air cooling allows the elements to be maintained at the same temperature as the surrounding surfaces. The systems monitor the element corrosion using proven and well-established electrical resistance techniques. These high sensitivity systems are designed for use in high temperature applications such as boilers and incinerators: tubular or flush mounting elements are available for this purpose. The systems are also suitable for low temperature applications: probes and temperature control are tailored to suit individual requirements.

Aspects of the VTER technology form some of the fundamental building blocks for our more recently-developed scanner systems.



PRINCIPLE FEATURES AND BENEFITS

- Monitors corrosion and erosion in high and low temperature environments.
- Direct on-line monitoring.
- Element temperatures are closely controlled.
- Thin corrosion elements for increased sensitivity.
- Accurate and sensitive instrumentation.
- Measures both short and long term trends.
- Increased confidence in safe plant operation over extended time periods.

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VTER SYSTEM TECHNICAL OVERVIEW

- Element temperature is maintained at a preset temperature by closed-loop air flow control. Thermocouple control accuracy typically less than 0.5°C; element temperatures may be controlled up to about 800°C.
- Up to six probes can be operated by a single system.
- Continuous data acquisition with dedicated data logger. Optional (remote) Ethernet communications.
- Corrosion element thickness depends on application: a thinner element increases sensitivity to corrosion but shortens element life, so there is usually a trade-off between operating life and sensitivity.
- Electronics sensitivity to changes in measured electrical resistance roughly 50ppm (0.005%) under laboratory conditions.
- Measured resistance values are temperature-compensated for small element temperature variations.



Courtesy SRI



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