Meet the Challenge of Extreme Temperature and Pressure Applications

Extreme temperature and pressure level applications require more than just general purpose switches and transmitters with thicker material or additional cooling capacity. These applications call for a design that can adapt to thermal expansion and contraction, retain strength and provide efficient feedthrough of sensor signals. Rosemount High Performance GWR and Vibrating Fork Switches meet these requirements. They also offer the highest sensitivity needed for measuring low dielectric or low density fluids such as liquified gases. We’ve even included additional safety measures to prevent leakage under extreme temperature or pressure conditions.

Minimize Risk in the Most Demanding Process Conditions
Rosemount GWR and vibrating fork switches are designed to prevent leakage and perform reliably when exposed to extreme process conditions. Materials and design are selected to avoid stress fractures commonly induced by changes in temperature and pressure conditions.

Superior Sensitivity
The 5300 series GWR transmitters have superior sensitivity due to Direct Switch Technology. This is required for applications with low dielectric products such as hydrocarbons and in process conditions such as boiling, turbulence or vapor. Where coating is a risk, the single probe is recommended.

Enhanced Low Density Performance
With enhanced low density performance, the 2130 vibrating fork switches detect levels in applications with liquid densities down to min. 31.2lb/ft³ (500kg/m³) or an SG of 0.5 such as LPG.

Accuracy in saturated steam applications
Saturated steam under high pressure slows down radar wave propagation giving an incorrect distance. This, together with varying pressure and/ or temperature is a challenge. The Rosemount 5300 with Dynamic Vapor Compensation (DVC) automatically compensates for this and maintains the level accuracy.

By using a probe with a reference reflector, the vapor dielectric can be measured and the 5300 can compensate for any changes. The illustration on the right shows the signal curve without DVC. With DVC, however, the measurements correspond with the actual levels.

The GWR Probe Design Provides Multiple Layers of Protection

Brazed hermetic/gas-tight ceramic seal is isolated from the process and is unaffected by temperature shocks, variations and outside forces on the probe.

Flexible probe load and locking system compensates for stress and protects the ceramics.

Ceramic insulators and graphite gaskets provide a robust thermal and mechanical barrier and offer chemical resistance.

Probe Sleeve for condensation and dirt protection
Flexible and Reliable for Easy Maintenance

The detachable head of the GWR transmitters and the interchangeable cassettes of the vibrating fork switches allow for the replacement of electronics without breaching the tank atmosphere.

Guided Wave Radar is not influenced by changing material characteristics such as density, dielectric properties or viscosity. Vibrating fork switches are virtually unaffected by liquid properties.

With no moving parts, these devices are almost maintenance free. For more information on the most reliable Guided Wave Radar and vibrating fork switches available, go to www.rosemount.com/level

High Temperature and Pressure Range Specifications

For higher temperatures and pressures, there are other Rosemount switches available.
Roemount Level Solutions for Extreme Temperature and Pressure Environments

Guided wave radar level applications include:
• Refinery distillation columns
• Liquified gases and freons
• Power plants and industrial utility heater vessels
• Gas-oil production separators and compressor tanks
• Liquefied anhydrous ammonia

Guided wave radar interface applications include:
• Separators with hydrocarbons and water
• Accumulators with hydrocarbons and waters
• Biodiesel and glycerin

Switch level applications include:
• Overfill protection
• High and low level alarm
• Pump control (limit detection)
• Pump protection or empty pipe detection

The Emerson logo is a trademark and service mark of Emerson Electric Co. Standard Terms and Conditions of Sale can be found at www.rosemount.com/terms_of_sale

Rosemount and the Rosemount logotype are registered trademarks of Rosemount Inc.

PlantWeb is a registered trademark of the Emerson Process Management group of companies.

All other marks are the property of their respective owners.

We reserve the right to modify or improve the designs or specifications of product and services at any time without notice.

© 2009 Rosemount, Inc.

Emerson Process Management
Rosemount Inc.
8200 Market Boulevard
Chanhassen, MN 55317 USA
T (U.S.) 1-800-999-9307
T (International) (952) 906 8888
F (952) 949 7001
www.rosemount.com

Emerson Process Management
Blegistrasse 23
P.O. Box 1046
CH 6341 Baar
Switzerland
T +41 (0) 41 768 6111
F +41 (0) 41 768 6300

Emerson Process Management
AsiaPacific Pte Ltd
1 Pandan Crescent
Singapore 128461
T +65 6777 8211
F +65 6777 0947

Emerson FZE
P.O. Box 17033
Jebel Ali Free Zone
Dubai, UAE
T +971 4 883 5235
F +971 4 883 5312

Literature reference number : 00807-0100-4852 Rev BA, 03/09