



APPLICATION SPOTLIGHT

Automotive Noise-Dampening Adhesive – Reliable Flow Measurement with Coriolis Technology



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APPLICATION:

An automotive supplier uses a specialty adhesive coating containing specialty filler to produce noise-dampening components for vehicle assembly. Maintaining the correct adhesive mixture and application rate is critical to achieving consistent coating quality and meeting the automaker's production standards.

Accurate flow measurement is an important part of the process, helping verify that the adhesive and filler are being delivered at the required rate throughout production.

PRODUCT SUPPLIED:

- TCM 0325 Coriolis Mass Flow Meters

CHALLENGE:

Previously installed flow meters were unable to maintain reliable performance when measuring the abrasive adhesive mixture. The specialty filler in the media caused internal wear, gradually reducing measurement accuracy and system reliability.

As meter performance deteriorated, the adhesive coating no longer consistently met specification. A high rejection rate during incoming inspection created costly scrap, production delays, and financial penalties for the supplier.

The replacement flow technology needed to reliably measure the adhesive under demanding operating conditions:

- **Flow range:** 2–3 ml/s
- **Viscosity:** 30–50 cSt
- **Density:** 940 kg/m³ at 20°C
- **Temperature:** 20–40°C (68–104°F)
- **Pressure:** 0.3–1.5 bar (4.3–21.7 psi)

SOLUTION:

AW-Lake TCM CLASSIC Coriolis Mass Flow Meters were selected to provide accurate, repeatable measurement of the filled adhesive.

Unlike meters with internal moving components, the Coriolis design has no rotating or sliding parts subject to mechanical wear from the media. This helped eliminate a primary source of measurement degradation and provided a more reliable solution for continuous production.

The meter also measures mass flow directly, independent of changes in fluid density and temperature. Integrated density measurement provides an additional process variable that can be used to monitor mixture consistency and support coating quality.

Frequency output and Modbus communication allow flow and process data to be integrated into the production monitoring system for real-time visibility.



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RESULTS:

The TCM Coriolis meters provided the manufacturer with:

- Reliable measurement without moving parts subject to wear
- High measurement accuracy for consistent adhesive application
- Direct mass flow measurement independent of density and temperature
- Integrated density measurement for additional mixture-quality monitoring
- Modbus communication for real-time production visibility
- Reduced maintenance associated with worn or failed flow meters

By improving both measurement reliability and process visibility, the Coriolis meters helped the supplier maintain more consistent coating quality and reduce the risk of rejected components reaching the automotive customer.

KEY TAKEAWAY:

For filled adhesives used in automotive manufacturing, meter durability can be just as important as measurement accuracy. Coriolis technology from AW-Lake provides direct mass flow measurement with no moving parts to wear, helping manufacturers maintain consistent coating quality while reducing maintenance and production risk.