Appleton Finds Lower Installation Cost, Greater Safety with Micro Motion 2-Wire Coriolis

BENEFITS

- Reduced installation cost
- Improved safety of personnel
- Integrated easily with AMS Suite

2-wire Coriolis delivered outstanding performance even with high viscosity and high density fluids.

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PROCESS

Appleton, headquartered in Appleton, WI, is a leading specialty paper producer that makes carbonless, thermal, security and performance packaging products. For years Appleton has used Micro Motion Coriolis devices in their product lines, and currently employs over 600 Micro Motion meters. They have been moving processes over from batching to in-line blending in order to improve consistency.

CHALLENGE

Running power and signal wiring out to each new in-line installation was an expense that Appleton wanted to reduce, if possible. Appleton undertook a research-and-development project for an encapsulation process to determine whether it could employ Micro Motion 2-wire Coriolis meters in that application. Because 2-wire Coriolis meters have no need for separate power-supply wiring, the installation savings could be significant. The principal question was whether 2-wire Coriolis could perform adequately with high-density and high-viscosity fluids.

SOLUTION

Appleton used five Micro Motion 2-wire Coriolis meters in its test. They ran processes of varying viscosity, flow rate, and density through the meters to gauge the meter performance. The test data are shown in Table 1. All of the tests were run at approximately 100 psi.

Appleton found that 2-wire Coriolis delivered outstanding performance even under difficult conditions. They now plan to move to production with portable meter skids. Two-wire cable will be run

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out to each measurement point, so that the portable meters can be connected and disconnected easily. Because no live power wires are required, this is a safety win for Appleton as well as a significant installation cost savings.

Table 1: 2-Wire Coriolis Test Data

Line Number	Viscosity (cps)	Flow Rate lb/min (kg/h)	Density lb/gal (kg/m³)
1	95	6.19 (168.5)	8.5 (1019)
2	1200	0.15 (4.1)	10.5 (1258)
3	5	5.12 (139.3)	7.94 (951)
4	225	2.9 (79)	8.77 (1051)
5	1200	0.42 (11.4)	10.5 (1258)

In the future, Appleton plans to integrate portable Micro Motion 2-wire Coriolis meters into an AMS system. Simply plugging in a meter skid will connect it automatically to the control system.