

Agricultural Processor Saves \$7300 in Regulatory Compliance Costs with Meter Verification Diagnostic

RESULTS

- Improved ease of regulatory compliance
- Lowered maintenance costs
- Reduced spare inventory
- Decreased process downtime

APPLICATION

Effluent flow

CUSTOMER

Major North American agricultural processor

CHALLENGE

As part of the state Environmental Protection Agency (EPA) requirements, this large agricultural processor is required to accurately account for the amount of waste water from their processing plant that is returned to the environment. The waste water is treated, pH balanced, and brought to the correct temperature before it is discharged into a nearby river. An 8-in. magnetic flowmeter located on the water discharge line measures and totalizes the amount of water returning to the river. In order to confirm that the meter is measuring accurately, the EPA requires that the meter calibration be verified on an annual basis. To satisfy the EPA requirements, this company would have to send the meter to a flow lab each year to ensure that the calibration had not changed. This process requires a shutdown so that an instrument technician could remove the flowmeter from the line and ship it to a certified flow lab for verification, adding additional cost to the process. Lastly, a spare meter would be required to replace the existing meter so that the process could continue to operate while the original meter was being verified, resulting in increased inventory costs to the operation.

SOLUTION

In order to reduce the costs associated with meter verification, it was recommended that this customer use Rosemount 8700 Magnetic Flowmeters with 8714i in situ meter verification diagnostic capabilities. The 8714i meter verification diagnostic performed a full meter verification of the sensor and transmitter. The diagnostic takes a



By using meter verification diagnostics, the customer eliminated flow lab costs, maintenance costs, and shipping costs.



The Rosemount 8732 flowmeter

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EMERSON[™]
Process Management

baseline signature of the sensor when it is first installed and stores the initial reference values in the non-volatile memory of the transmitter.

Running the 8714i meter verification diagnostic compares the original signature valves to the current measurements taken during the diagnostic test. Since the values were within the user set parameters, the flowmeter was certified to be within specification, verifying the performance of the flowmeter. The 8714i meter verification diagnostic was completed in minutes providing verification that the flowmeter was still within specified accuracy, without removing the flowmeter and shutting the process down. By eliminating the need to send the flowmeter out for verification, the customer eliminated the cost of a spare meter, flow lab costs, maintenance costs, and shipping costs resulting in a \$7,300 savings.

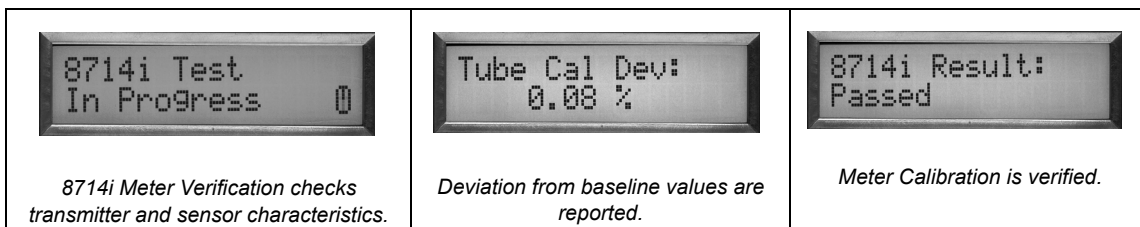
A meter verification report can be printed from AMS® Suite: Intelligent Device Manager, or the calibration values can be taken from the local operator interface or field communicator and written into a report by hand. This report can then be submitted to any regulatory agency as certification by the manufacturer that the flowmeter calibration has not changed, satisfying EPA requirements.

The screenshot shows the '8714i Calibration Verification Report' window in the AMS Suite software. The window title is 'Device Diagnostics of FT-101 [8732E Rev. 2]'. The report includes the following information:

- Customer:** [Blank]
- Tag:** [Blank]
- Calibration Number:** 1035006610326005
- Line Size:** 1.50 in
- Calibration Conditions:** Internal External
- Test Conditions:** [No Flow, Full Pipe]
- Flowmeter Information and Configuration:**
 - PV URV: 75.00 gal/min
 - PV LRV: 0.00 gal/min
 - PV Damping: 2.00 s
- Transmitter Calibration Verification Results:**

Simulated Velocity	Actual Velocity	Dev %	Result
30.000000	30.016661	0.06	Pass
- Flowtube Sensor Calibration Verification Results:**
 - Flowtube Deviation %: 0.490468
 - Tube Calibration Test: Pass
 - Coil Circuit Test: Pass
 - Electrode Circuit Test (if applicable): Pass
- Summary of Calibration Verification Results:**
 - Verification Results: The result of the flowmeter verification test is: Pass
 - Verification Criteria: This meter was verified to be functioning within 1 % of deviation from the original test parameters
 - Signed: [Blank]
 - Date: [Blank]

8714i meter verification report in AMS Device Manager.



8714i Meter Verification checks transmitter and sensor characteristics.

Deviation from baseline values are reported.

Meter Calibration is verified.

RESOURCES

Emerson Process Management Food & Beverage Industry

<http://www2.emersonprocess.com/en-us/plantweb/customerproven/pages/FoodBeverage.aspx>

Rosemount 8700 Magnetic Flowmeter Transmitters

<http://www2.emersonprocess.com/en-US/brands/rosemount/Flow/Magnetic-Flowmeters/E-Series-Transmitters/Pages/index.aspx>

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