

Rosemount Meter Verification Diagnostics Eliminate Calibration Costs, and Decrease Production Delays

RESULTS

- Saved \$4,000 per year in magnetic flowmeter meter verification costs
- Eliminated production delays due to meter verification
- Increased customer confidence in magnetic flowmeter performance

APPLICATION

Pump performance verification

CUSTOMER

A large pump manufacturer

CHALLENGE

A manufacturer of large pumps is required to verify pump performance as part of their quality assurance process. Before every pump is shipped to a customer, the pump must be certified that it is functioning within design specifications. In order to accurately measure the pump flow rate, various sized magnetic flowmeters are used. Since this is a critical measurement that is used to certify every pump is within specification, the pump manufacturer must also certify that the magnetic flowmeter is measuring within specifications, and that the calibration has not shifted. In order to verify the magnetic flowmeters, each meter is sent to a third party flow lab for re-calibration on an annual basis. This costs approximately \$1000 per meter. The typical turn around time is approximately 4 weeks. The long turnaround time causes production scheduling conflicts and leads to production delays while the meter is out for calibration. Occasionally, the pump manufacturer was unable to ship a pump since the flowmeter required to certify its performance was out for calibration.

SOLUTION

It was recommended that this customer use Rosemount E-Series magnetic flowmeters with 8714i meter verification diagnostic capabilities. Rosemount E-Series transmitters have the capability to perform a full meter verification of the flowtube by taking a "fingerprint" or signature of the flowtube sensor when it is first installed. Running the 8714i Internal Meter Verification will then compare the original signature to the current measurements. If values are within user set parameters, the flowmeter is within specification and the verification is complete. A meter verification report can be printed from AMS[®] Suite: Intelligent Device Manager, or alternatively the calibration values can be taken from the local operator interface or field communicator and written into the report by hand.



Rosemount 8714i meter verification diagnostics certify pump performance, while eliminating meter verification costs.



The Rosemount 8705 Magnetic Flowtube

ROSEMOUNT[®]

For more information:
www.rosemount.com


EMERSON[™]
 Process Management

OTHER INDUSTRIES

The 8714i meter verification diagnostic can be run with the flowmeter operating in a flowing condition, full pipe not flowing, or empty pipe condition eliminating the need to remove the flowmeter from the line.

The 8714i meter verification diagnostic eliminated the need for this customer to remove their flowmeters from the line and send them out to a third party for calibration, saving \$4,000 per year in meter verification costs. Since the 8714i meter verification diagnostic can be run anytime and within minutes, the meter verification diagnostic provides an increased level of confidence that the magnetic flowmeter is operating within specifications, ensuring that each pump has been correctly certified. Previously, the old flowmeters would have only been checked once per year. Since the 8714i meter verification diagnostic can be run without removing the meter from the line, this customer can operate more efficiently by not having to schedule calibrations around their production schedule.

The screenshot shows the '8714i Calibration Verification Report' window in the AMS Device Manager. It contains 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

<p>8714i Calibration Verification checks transmitter and flowtube sensor characteristics.</p>	<p>Deviation from baseline values are reported.</p>	<p>Meter Calibration is verified.</p>
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RESOURCES

<http://www.emersonprocess.com/rosemount/products/flow/index.html>

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