



APPLICATION NOTE: Ultrasonic Meters Provide Accurate Flow Testing of Agricultural Spraying Systems

Today's agricultural industry relies on advanced automated spraying systems for applying fertilizers and pesticides to fields. These automated systems can provide feedback and control to ensure proper amounts of chemicals are being applied. Advances in the system and software make it possible to exercise exact control over the complete operation, from the tractor's turning radius and speed down to the location of a nozzle on the sprayer bar.

To achieve this level of control, the system components (valves, nozzles, spray bar, and feed lines) need to perform accurately and repeatably. FTI Flow Technology, Inc., has worked with multiple agricultural spraying system original equipment manufacturers (OEM) to test full spraying systems and individual components. FTI's Q Series of in-line ultrasonic flow meters were used for measuring low flow rates of individual spray lines in testing water and commercial fertilizers, and pesticides, on test stands and tractor-mounted systems.



QCT Series in-line ultrasonic meter on tractor-mounted spray system

The Q Series ultrasonic meters were selected because of their small footprint, lightweight and low maintenance design, and high accuracy and repeatability. The meters' low pressure drop and wide turndown were useful in not disrupting system operation.

HIGHLIGHTS

Industry: Agricultural
Service: Crop spray bar and nozzles
Fluid: Water and fertilizer

Application

Flow testing of agricultural spraying system and components

Problems

- Need highly accurate and reliable flow meter to measure low flow rates of individual spray lines
- Meters with wide turn-down and low pressure drop needed to avoid system disruption

Solutions

QCT Series Flow Meter

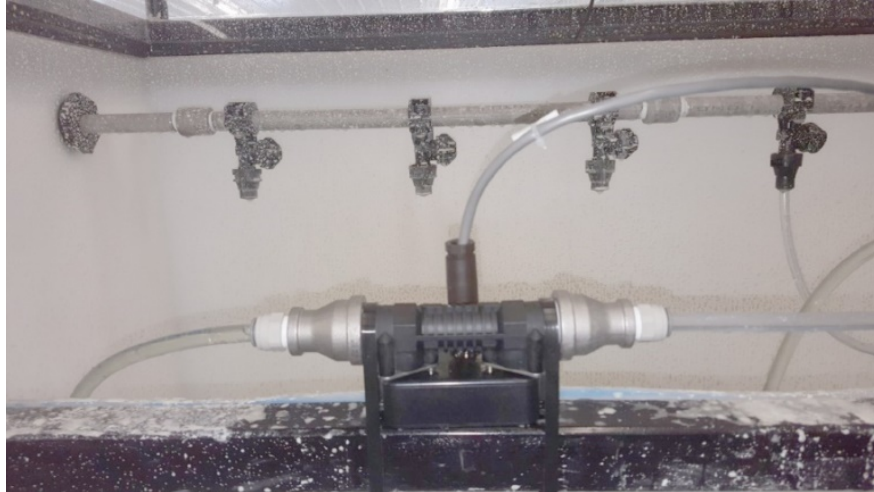
- Small footprint, lightweight design, and MODBUS output

QEM Series Flow Meter

- Wide turndown, low pressure drop at an economical price

QLF Series Flow Meter

- Low flow range



QEM Series in-line ultrasonic meter in spray line testing

FTI's Q Series of in-line ultrasonic flow meters met these application needs:

QCT Series: Selected for an onboard application for its small footprint, lightweight design and Modbus output

QEM Series: Selected for a spray system test stand that needed to utilize a wide turndown and low pressure drop at an economical price for consideration for production systems

QLF Series: Selected for the low flow range in order to test individual spray nozzles