



COX TECHNICAL TIP: Flow Range Affect on Cost and Performance

When specifying the flow range for your precision turbine flowmeter application, a more detailed description may reduce the cost of the calibration and/or increase the accuracy of the measurement.

In a flow application, the expected flow range is the first thing considered to “size” the meter. However, once the size or model has been identified, the description of the flow range may also influence how the flowmeter is calibrated. The flow range, along with other parameters such as fluid type and temperature range, may lead the manufacturer to recommend more calibration points or multiple fluid calibrations when they are unnecessary.

The flow range can also affect the resolution of the calibration data by spreading it over a wider range than necessary

Following are some tips for specifying the flow range for your application:

- ∞ Don't specify the minimum flow rate as zero.
- ∞ Don't use the manufacturer's data sheet to define your flow range. For example, if your flow

range is 2 to 8 GPM and the data sheet has a 1 to 10 GPM model, specify your actual flow rate of 2 to 8 GPM.

- ∞ If applicable, differentiate between the minimum non-zero flow rate and the minimum flow rate for which an accurate measurement is required.
- ∞ If applicable, define the accuracy requirements in subsets of the overall flow range. For example, you may be able to differentiate between the accuracy required for idle, cruise and full power in a fuel flow application.
- ∞ Describe the flow profile (flow rate versus time) if it is consistent and known. For example, a filling application may quickly ramp to full-scale flow, maintain that rate for an extended period of time, and then quickly return to zero.

In those cases where you have a detailed understanding of the fluid flow rates, there can be benefits to describing it in detail.

COX Instruments' application engineers will assist you in maximizing your flowmeters performance.

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