AperCal

Calibration rig for FLEXIM clamp-on ultrasonic transducers

Patented technology

Equal precision to FLEXIM factory calibration

Faster and more accurate than conventional wet flow calibration

Traceable to national standards

Highly automated and software-controlled calibration process

Easy to operate

Saves shipping of transducers, time and money

FLEXIM Sets Standards
when measuring matters
Autonomous calibration of FLEXIM clamp-on ultrasonic transducers at your site

Measuring accuracy relies on calibration and in many applications demands on accuracy are high. Therefore, periodical recalibrations should be performed and the results well documented. With FLEXIM’s AperCal, this can be easily done at your site.

AperCal stands for aperture calibration. The patented technology is nothing less than a revolution in ultrasonic flow calibration.

Aperture calibration vs. wet flow calibration

Commonly, calibration consists of a comparison of the device under test (DUT) with a reference measuring instrument, such as you can compare the time on your watch with the time indicated by the clock of Big Ben. Accordingly, the calibration of flow meters is usually done on a wet flow calibration rig. But the flow profile in every flow rig is influenced by pipe characteristics and installation conditions, leading to an increased measuring uncertainty.

FLEXIM’s AperCal eliminates those uncertainties by funding the calibration process on the basics of clamp-on ultrasonic flow measurement according to the transit-time principle: When an ultrasonic signal is emitted through a flowing medium, it gets carried by the flow and experiences a spatial shift. This shift results in a change of the signal path length and therefore in a difference of the transit time.

FLEXIM’s AperCal produces the same effect without flow through defined displacement of the transducers. This reduces the calibration procedure to the measurement of length and time. Both can be performed with extreme precision. And this results in an extremely accurate calibration and one that is not influenced by pipe or installation characteristics.

Exact and efficient

FLEXIM’s sophisticated AperCal technology comes with some additional benefits: The calibration process is simple and fast. There is no need to pump tons of water around. One trained person is sufficient to execute the computer-controlled operation.

By applying the patented, PTB and NIST traceable certified Aperture Calibration method, FLEXIM once again sets the standard in terms of accuracy of non-intrusive flow measurement instrumentation.

Technical specification

Calibration system for FLEXIM clamp-on ultrasonic transducers

- Accuracy of acoustical calibration factor 0,15 %
- Dimensions 800 x 1300 x 2960 mm
- Weight 550 kg (without water)
  1250 kg (with water)
- Operating system Windows PC (by customer)
- Scope of delivery
  FLEXIM AperCal
  Control cabinet
  Label printer
  50 transducer modules (Sensprons)

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