

Emerson Asia Flow Technology Center

ISO 17025 accredited flow calibration laboratory for superior customer service and support



The Emerson Asia Flow Technology Center is a state-of-the-art flow measurement facility supporting world-leading Micro Motion®, and Rosemount® Flow measurement products. The 12,500 square meter facility is based in Nanjing, China and is one of the highest accuracy flow calibration laboratories in Asia Pacific. The Emerson Asia Flow Technology Center offers high quality testing capabilities including X-ray, dye penetration, positive material identification, hydrostatic testing, pneumatic testing and ISO 17025 calibration/recalibration services. In addition, calibration witness inspections are also available.



ISO 17025 Accreditation

Calibration facilities at the Asia Flow Technology Center have been accredited to IEC 17025 as issued by the Singapore Accreditation Council (SAC-SINGLAS). The Asia Flow Technology Center facilities can calibrate flowmeters to the published accuracy specifications. The Asia Flow Technology Center is also certified to ISO 9001:2008 for quality management systems.

What differentiates ISO 17025 from ISO 9001?

ISO 17025 was developed specifically to give guidance to laboratories on both quality management and the technical requirements for proper operation. This standard is considered the technical complement to ISO 9001.

While the ISO 9001 requirements are generic and intended to be applicable to any type of organization, the ISO 17025 requirements are specific to testing and calibration laboratories. This standard addresses issues such as: the technical competence of personnel, ethical behavior of staff, use of well-defined test and calibration procedures, participation in proficiency testing, and contents of test reports and certificates.

Another reason for development of the ISO 17025 standard was to harmonize laboratory accreditation and acceptance of test data worldwide. All participating countries will be required to accept the test results performed by accredited members of these other countries.

All Micro Motion Coriolis meters that are purchased and calibrated through the Emerson Asia Flow Technology Center have the option of the initial calibration certificate in accordance with either ISO 17025 accredited (for both ISO 17025 and ISO 9001), or with only ISO 9001 (the previous format) for applications that only require ISO 9001 requirements or less. This choice is specified at the time of ordering.

Uncertainty Calibration Solutions

The Asia Flow Technology Center in Nanjing is a complete service designed for the flow and density calibration of Micro Motion Coriolis meters. The Center is one of the most advanced of its kind in the world and relies on TSM calibration as its reference method. Flow ranges from 70g/min to 4500 ton/hr allow calibration and certification of the full range of Micro Motion Coriolis flowmeters up to line sizes of a nominal diameter from 0.1" (2mm) to 12" (300mm).

Calibration of the high precision Micro Motion ELITE® Coriolis meters, with flow stands achieving 0.03% uncertainty, is available and useful for critical applications or when the meters are used as master meters to calibrate others in the field. The Center laboratory is certified to ISO 9001:2000 and accredited to ISO 17025 and has an overall system for technical and quality management. Customers benefit from:

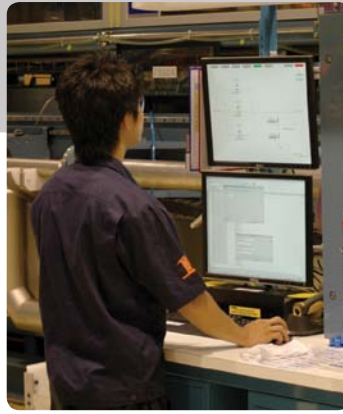
- Quality information for each measurement made during the calibration process
- Assess the relative quality and capability of different calibration laboratories and suppliers from around the world
- Lower costs by reducing or eliminating the need for product retesting in Asia Pacific
- Avoid supplier auditing as calibration suppliers are independently verified through the accreditation process



Measurement Uncertainty

ISO 17025 mandates that measurement data and associated uncertainties must be recorded and available to customers. Emerson's calibration data reports, based on ISO 17025, are found in the 'Uncertainty' columns of the calibration certificate.

All uncertainties represent the expanded uncertainties as referenced in the GUM: Guide to the Expression of Uncertainty in Measurement. The coverage factor (k) is 2, with coverage probability of approximately 95%.

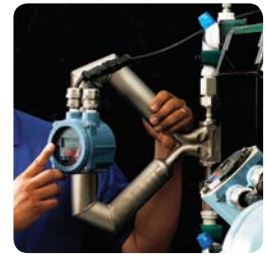


Periodic Return Calibration Services

The Asia Flow Technology Center offers several options to check and calibrate meters on a scheduled basis to support customer quality procedures and practices.

- **Just as new devices** are calibrated with ISO17025 accredited reporting. Certificates can be ordered either in accordance with ISO17025 accreditation or in accordance to the previous format. This choice permits continuity of the format of calibration report history for all meters - new or old.
- **Type 1 Calibration Service:** As Found and As Left - No adjustment unless required. The device will be tested with the original metrological settings, as received by Emerson. No adjustment will be made unless an adjustment is required to meet specifications. When no adjustment is required, a single calibration certificate will document both the As Found and As Left results. If an adjustment is required, the results will be documented in two separate certificates.
- **Type 2 Calibration Service:** As Found and As Left - Always make adjustment. The device will be tested with the original metrological settings, as received by Emerson. Following the As Found check, the calibration will always be fine tuned, no matter how small the adjustment, to render the device as close to zero average uncertainty in the As Left results as possible. Two separate certificates are always provided.
- **As Left only.** The device will not be checked in the As Found condition. It will be calibrated as if it were a new device and returned with only the As Left certificate.
- **As Found only.** The device will be tested with the original metrological settings, as received by Emerson. The device will then be immediately returned with only the As Found certificate, and under no circumstances will any adjustment be made unless a separate order is placed with further instructions.

AFTC Capabilities	Model Code
Radiographic Examination	
X-ray (test only)	RO
X-ray (test and customer copy)	RC
X-ray (test process connection only)	RF
X-ray (test process connection and customer copy)	RG
Pressure Testing	
Hydrostatic test	HT
Pneumatic test	PN
Dye Penetrant Examination	
Dye penetrant test – case only	DC
Dye penetrant test – sensor only	DS
Positive Material Testing	
Positive material test (without carbon content)	PM
Positive material test (including carbon content)	PC
Accredited Calibration	
ISO17025 Accredited Calibration and Certificates (9 points total)	IC
Witnessing	
Witness calibration	MMWITNESCAL
Witness hydrostatic test	MMWITNESHYDRO



Micro Motion and Rosemount, divisions of Emerson Process Management, are known globally in over 85 countries for its quality and reliability. As part of the Emerson PlantWeb® digital plant architecture, Micro Motion products enable increased plant availability, decreased costs and enhanced safety. Emerson delivers application expertise, service and technical support not available elsewhere.



Benefit from the wide range of Micro Motion solutions available

- In-line meter verification of electronics and sensor – without the need for tools or downtime
- Exceptional measurement and operating performance in entrained gas conditions
- World-leading dedicated density measurement devices
- Solutions for high and extreme temperature applications
- Best-in-class compact and drainable Coriolis
- IEC 61508 safety-certified Coriolis for SIL-2 and SIL-3 applications

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Emerson Process Management Asia Pacific Organization

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