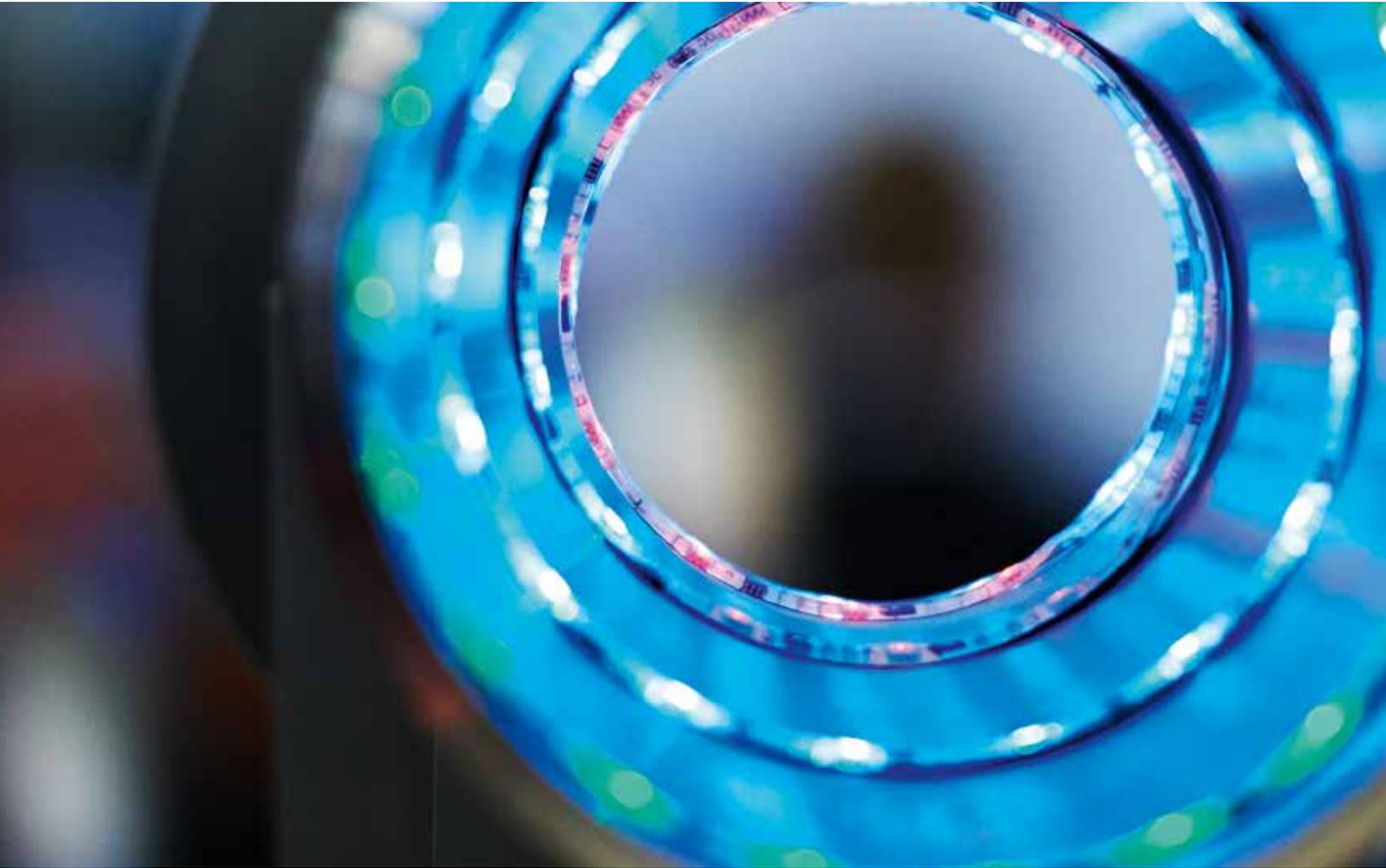


Flow Measurement Capabilities



About Us

As a family-run business acting globally, with over 10,000 highly qualified employees, the WIKA group of companies is a worldwide leader in pressure and temperature measurement. The company also sets the standard in the measurement of level, flow, force, and in calibration technology.

With numerous wholly owned subsidiaries and partners, WIKA competently and reliably supports its customers worldwide. Our experienced engineers and sales experts are your competent and dependable contacts locally.



Alexander Wiegand,
Chairman and CEO, WIKA

Able to Meet Any Challenge

WIKA Flow offers a broad portfolio of flow measuring instruments and support services, from the planning phase through process integration. We provide tailored flow measurement solutions for our customers worldwide

- Extensive primary flow component product range
- Global production and engineering network
- Subsidiary calculation center and flow calibration laboratory certified in accordance with ISO 17025

In addition to technical implementation and engineering, WIKA Flow also pays attention to our customers' operating costs and budgets, contributing to value creation.

- High accuracy
- Ease of maintenance
- Low pressure loss
- Small footprint

Manufacturing locations



Euromisure, Italy



Euromisure, Italy



Micro Precision, India



WIKI Flow, USA

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Competent and Reliable

High accuracy is a decisive criterion in many applications for flow measurement, especially in high-tech fields. It creates the conditions for the functionality and cost-effectiveness of each process.

In order to fulfill accuracy requirements consistently, measuring instruments must be calibrated regularly. Our calibration laboratory can check all types of flow meters, both primary (Venturi tubes, orifice plates) and secondary (MAG and ultrasonic flow meters). The calibration is carried out in accordance with ISO/EC 17025 on the basis of gravimetric method (reference standard: ISO-4185:1980).



Calibration testing line

	RIG 1	RIG 2	RIG 3	RIG 4
Max. overall weight	32,000 kg	7,000 kg	1,500 kg	400 kg
Flow range	300 ... 2,700 m ³ /h	50 ... 700 m ³ /h	10 ... 125 m ³ /h	0.8 ... 25 m ³ /h
Line size	12 ... 20"	6 ... 10"	4 ... 6"	< 6"

Flow Measuring Instruments at a Glance

The most common method for measuring flow is based on the differential pressure principle. This principle is proven and applicable for all common types of media. Therefore WIKA Flow primary flow elements use the differential pressure principle to effectively measure flow.

We can combine flow elements with differential pressure measuring instruments or accessories to create economical complete solutions. Additionally, WIKA Flow is able to assemble other measurement technology to meet our customers' needs.

Primary flow elements

		
Orifice plates and flanges	Nozzles	Cone flow meters
		
Restriction orifices	Venturi tubes	Wedge flow meters
		
Meter runs	Pitot tubes	Engineered solutions

With our extensive product range, from standard to customer-specific solutions, we are able to meet all challenges in the flow measurement. WIKA Flow measurement instruments and accessories comply with all major international directives, feature worldwide approvals, and meet the highest standards of quality and safety.

Additional products



Air flow sensors



Flow switches

Accessories



Utility feed headers



Condensate and seal pots

Compact and Smart

We make it easier for our customers to implement their measuring points by supplying ready-made measuring arrangements, consisting of the respective flow element and high-quality measurement technology (differential pressure transmitters, electrical thermometer for temperature compensation). The compact assemblies can be effortlessly integrated into the process.

Orifice plates

Simple to install and easy to maintain: Orifice plates are the most commonly used flow element. Depending on the application, there are also versions with measuring flanges and annular chambers.



With smart solutions like this, not only do our customers reduce both their acquisition and installation costs, but they also lower their maintenance costs, since the number of leakages can be reduced by up to 70 percent with professionally installed and tested measuring systems.

FloTec pitot tube

The pitot tube measures media in closed lines using multiple sensing. Due to its small footprint, permanent pressure loss is significantly reduced. (Fixed version pictured here.)



HHR ProPak

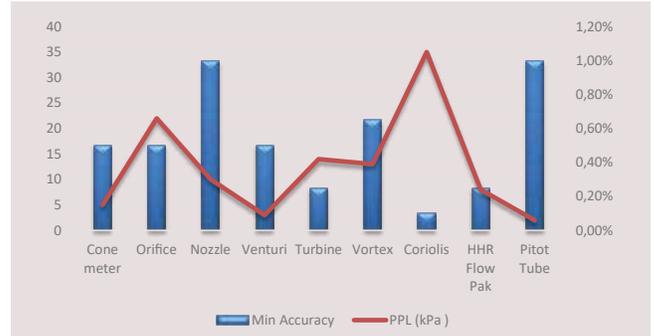
The ProPak flow meter has defined new performance standards for applications in the oil and gas industries. The instrument is approved for measurements requiring verification in accordance with API 22.2.



Energy Efficient

Differential pressure flow meters generally cause a permanent pressure drop in the process. This must be compensated by additional pumping capacity. The required energy demand for this can increase the annual operating costs, sometimes significantly.

HHR flow tubes, Venturi tubes, and pitot tubes demonstrate that they can reduce the pressure drop and thus operate energy efficiently. They have been designed for a wide range of applications.

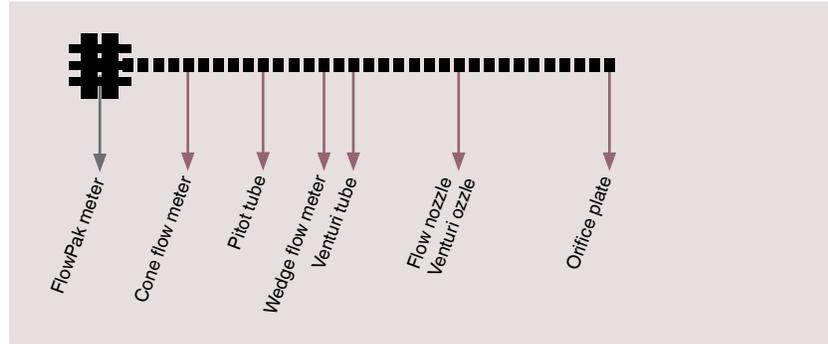


Venturi tubes and HHR flow tubes provide the highest level of traceable accuracy with minimal pressure loss. The main advantage of the FloTec pitot tubes lies in an even lower pressure drop (<10 % of the differential pressure) as well as in the constant measurement accuracy over a wide range of Reynolds numbers.



Space Saving

A flow measurement with primary elements requires, as a rule, a straight upstream and downstream pipe. This can be comparatively long, depending on the flow conditions and accuracy requirements, and calls for the corresponding space requirement. WIKA has therefore developed flow meters specifically for applications with limited mounting space which also offer a high accuracy without long meter runs.

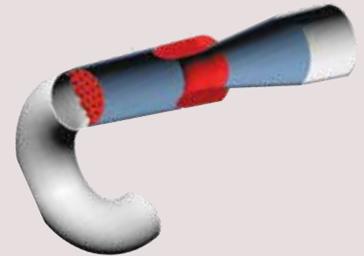


HHR FlowPak

The HHR FlowPak flow meter is a technological advancement in flow profile formation.

It does not require any upstream and downstream pipes and can even be fitted following two 90° pipe elbows.

The HHR FlowPak is thus the optimal solution for applications with limited space. At the same time, the instrument meets the requirements for high accuracy, low operating costs, and a long service life.



FloCone cone flow meter

The cone flow meter is also ideal for compact installation situations. Due to an optimized flow profile, only a very short upstream and downstream pipe is required. Nevertheless, the robust instrument offers a wide and stable turndown and, at the same time, a high accuracy and repeatability.



The FLC-FC cone flow meter is produced in accordance with the ISO 5167 reference standard. Part 5 of this standard refers to the installation and operating conditions and gives further information for calculating the flow rate and its uncertainties.

Critical Media

For every flow measurement, critical media represent a special challenge. Whether aggressive liquids, highly viscous liquids, or erosive slurries: We have a solution for each application with corresponding measurement characteristics and durability.

Special orifice plates

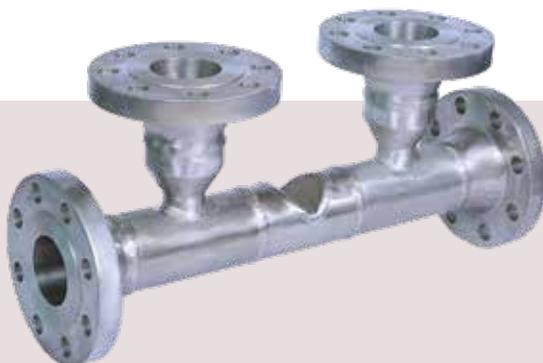
Quarter circle and conical entrance orifice plates, segmental orifice plates and eccentric orifice plates are, in many cases, the best choice for measuring liquids with low Reynolds numbers and liquids with higher densities. These instruments, which are as simple as they are effective, are proven over a long time. These orifice plates are also available in versions with orifice flanges and annular chambers.



Wedge flow meter

Due to its construction with a V-shaped wedge, the wedge flow meter is well suited for measuring the flow of slurry and highly viscous media. It is also extremely robust against particle-laden, abrasive, and erosive media.

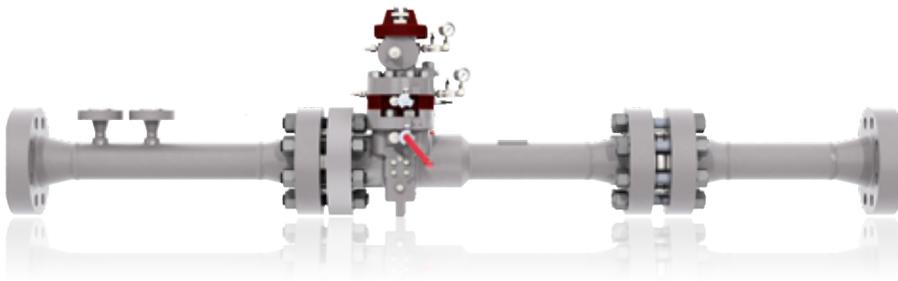
In the case of aggressive media, the differential pressure measuring instrument installed on the wedge element is subject to influences that can lead to measuring errors and damage the instrument. For continuous and problem-free measured value registration, WIKA therefore offers a complete solution with a diaphragm seal system. In this way, the process transmitter is securely separated from the process.



Meter Runs

For the highest possible accuracy, primary flow elements are generally integrated into the process as meter runs, thus as a unit with upstream and downstream pipes. Meter runs are also available in a threaded design with a flow measurement add-on. If a higher accuracy is required, the instrument must be calibrated.

With the implementation of meter runs, WIKA relieves its customers of all effort: Even before the order is placed, our qualified on-site service team records all required dimensions and parameters. We design, build, and test the meter run to the desired specification. Subsequently, we will then install it professionally and ready-for-operation into the plant.



Designed in accordance with the following standards: ISO5167-1:2003, ASME MFC-3M or AGA3

Flow nozzle test sections

These precise measuring instruments are manufactured exactly in accordance with the provisions of the ASME PTC6 standard for steam turbines. They are used in the acceptance testing of power plant turbines.

The nozzles measure the flow of boiler feed water and condensate. WIKA has already delivered more than 300 assemblies of this type to energy companies.



Restriction Orifices

To correctly perform the measurement task, in some processes, the flow rate must be limited or the pressure reduced. For this purpose, a restriction orifice is installed in the pipeline, either in a single-step design or – particularly in the case of high differential pressures – as a multi-step restrictor.

Each restriction orifice is an application-specific solution. It is designed by our experienced specialists, depending on media properties, pressure loss, and process data. Performance and dimensions are calculated to exclude the potential negative effects of sound, noise levels, and cavitation.

Safety is a top priority at WIKA. Since, in the chemical and pharmaceutical industries, different substances and active ingredients are often produced in the same plant, there must be no risk of leakage from the measuring instruments used in the process. For such processes, there is the multi-step restriction orifice as a special design without dissimilar material welds, which prevents potential media leakage.

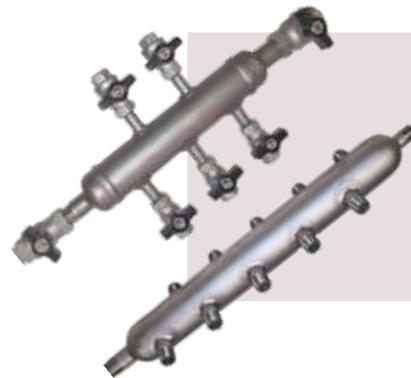


Accessories

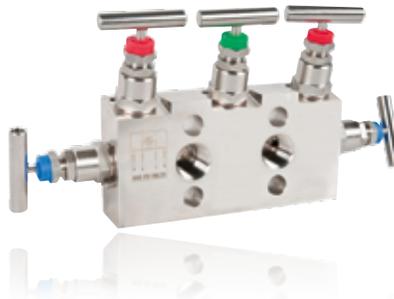
Our comprehensive accessory program includes a wide variety of equipment to complement the individual instruments. A complete solution is not only quickly and easily configured, but can also be installed in the same manner.



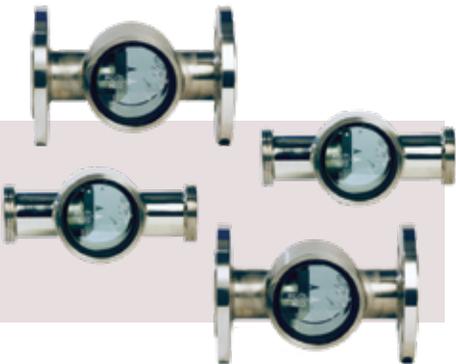
Flow straighteners: Tube bundles, perforated plates, and internal tab types



Utility feed headers



Valve manifolds for shutting off, pressure compensating as well as purging and venting differential pressure measuring instruments



Flap indicators for the flow measurement of transparent liquids, sight glass version (for flow only) also available



Condensate and seal pots are used as a barrier between the main line and the secondary instruments in the flow and pressure measurement of liquids, steam, or other vapours that can affect secondary instruments.

Long-Term Reliability

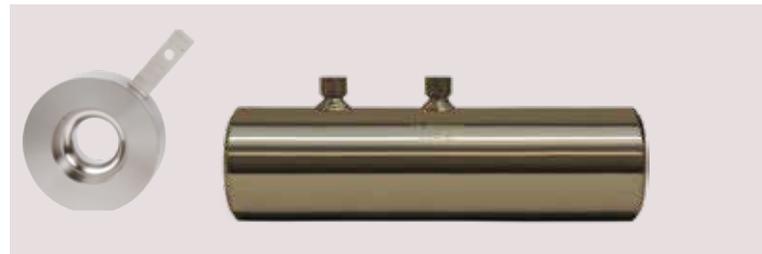
The technical reliability of our products for an accurate and repeatable flow measurement is critical to safe and efficient plant operation. Our solutions have been designed for long life without performance restrictions, even under harsh operating conditions.

This is ensured by simple configuration, process integration, and maintenance as well as carefully selected materials and components.

Our delivery reliability doesn't allow for the creation of any bottlenecks. All flow measurement products are available in the long term and are delivered to customers on time.

High velocity

Flow nozzles provide reliable, accurate flow measurement and long-term repeatability, particularly in steam applications with high flow velocities.



Even distribution

Radiant Venturi nozzles are used, for example, in steam cracking furnaces and are installed there at the inlet of each radiant coil. The nozzles provide even flow distribution, even when the pressure loss increases due to uneven coking in one or more coils.

Control of the media mix

In the blower systems of combustion furnaces, the adjustment of the fuel-air ratio to the firing capacity is controlled by Venturi tubes.

In such cases, the flow meters are referred to as aspirators or proportional mixers.



We Have the Experts for Your Requirements

Many measuring tasks can be fulfilled with standard products. However, for a large number of requirements, an individual approach is essential. With our comprehensive technological know-how and a unique level of in-house production depth, we can provide you with the optimum solution for your application.

When developing a measurement solution, our experts around the world rely on internet-based dimensioning software that is protected by copyright. It enables a design calculation in accordance with the ISO 5167: 2003, ASME MFC-3M and AGA3 standards. In addition, there is an interface for the calculation of flow elements and restriction orifices, in the latter with special consideration of the problems of throttling, sound, noise and cavitation. In addition, the software includes a multi-stage calculation option for liquid and gas.

The parameters required for dimensioning the measurement solution can be transmitted by the customer via the input mask.



Trust through quality

We offer our customers outstanding quality, which is maintained through permanent checks. We place the same high demands on our suppliers. For only with excellent initial and intermediate products can we deliver consistently reliable products to you.

Extensive Test Procedures

Liquid penetrant inspection (LPI) is used to locate surface defects on relatively smooth and non-porous materials. This test method is normally used for welded parts to guarantee a good quality of the weld surface.

Magnetic particle inspection (MPI) is a non-destructive test method for the detection of surface and sub-surface discontinuities in ferrous materials.

X-ray testing based on the differing absorption of penetrating radiation. Thus it can detect differences in density due to material composition, thickenings, flaws and welded or soldered joints. X-ray tests are normally used for components that must fulfil critical requirements.

Hydrostatic pressure tests (HT) are used to (statically) test assemblies, piping systems and Venturi tubes under their working pressure. The hydrostatic pressure and strength test is conducted with water at ambient temperatures.

Ultrasonic testing is a method in which high-frequency sound waves are introduced into a material. Any surface or subsurface discontinuities or flaws that are present interrupt the sound waves and reflect a proportion of them. Ultrasonic testing often replaces X-ray methods.

Positive material identification commonly applies spectroscopy with X-ray fluorescence analysis. This testing of material composition is ideally suited for proving the accuracy of material certificates or for identifying material.

All Around the World – Close to Our Customers

Capability and flexibility

Proximity to our customers is essential for efficient solutions. Whether standard products or custom designs: Working with you we'll find the right concepts for your requirements.

As a provider of high added-value solutions to our customers, WIKA offers a quick dimensioning service combined with localized fast delivery shops.

Whether it be scheduled maintenance or unplanned urgent replacement, WIKA can always meet your needs.



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Part of your business