Pressure
Temperature
Level
Flow
Calibration

Power Generation

Pressure, Temperature, Level, Flow, & Calibration Measurement

WIKA

Part of your business

"The success of our customers is our motivation. This is a long tradition. When my grandfather, Alexander Wiegand, founded WIKA in 1946, he devoted himself to absolute quality, reliability, and customer focus. Although much has changed since then, it is precisely these values that form the core of the WIKA Group today."

Alexander Wiegand,
Chairman and CEO, WIKA

Ability to Meet any Challenge

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.

Founded in 1946, WIKA is a reliable partner for all the requirements of industrial measurement technology, thanks to a broad portfolio of high-precision instruments and comprehensive services. With manufacturing locations around the globe, WIKA ensures flexibility and the highest performance. Every year, over 50 million quality products in standard or customer-specific configurations are delivered in batches of 1 to over 10,000 units.

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

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WIKA – Your Partner in the Power Industry

In all areas of power generation-conventional power plants, nuclear plants, and decentralized systems such as CHP and biomass plants-pressure, temperature, level, and flow measurement elements from WIKA are in use.

The demands on measuring instruments are as diverse as their fields of application. In hazardous areas, nuclear plants, aggressive, and non-aggressive environments; our measuring instruments fullfill the highest requirements. WIKA offers both an extensive portfolio of standard products and services, as well as customized, specially engineered solutions.

Our expertise and dependability, along with our worldwide sales and service network, has made WIKA a global partner with major power utilities and engineering contractors in the global power plant industry.

All Around the World
Close to the Customer

With manufacturing locations around the globe, we ensure the highest flexibility and delivery performance. Some WIKA manufacturing locations: Germany (HQ), Australia, Brazil, Canada, China, India, Italy, Korea, Malaysia, Poland, Russia, Singapore, Switzerland, South Africa and USA

Proximity to our customers is essential for efficient logistics

To meet demand wherever it arises, we are a network of manufacturing facilities with a worldwide presence through our wholly-owned subsidiaries. Our experienced engineers and sales specialists are your competent and reliable local contacts.

Our customers have access to the best of both worlds: a global network of facilities and resources with local manufacturing and service. Regardless of your customization or engineering needs, rest assured that WIKA can provide the correct solution.

WIKA:
Your Reliable Partner for Measurement Technology

WIKA offers a wide range of approvals and certificates.

Global Business With Local Presence
We are active in over 40 countries via local subsidiaries. Therefore, we can ensure we meet your needs with regional manufacturing and stocking.

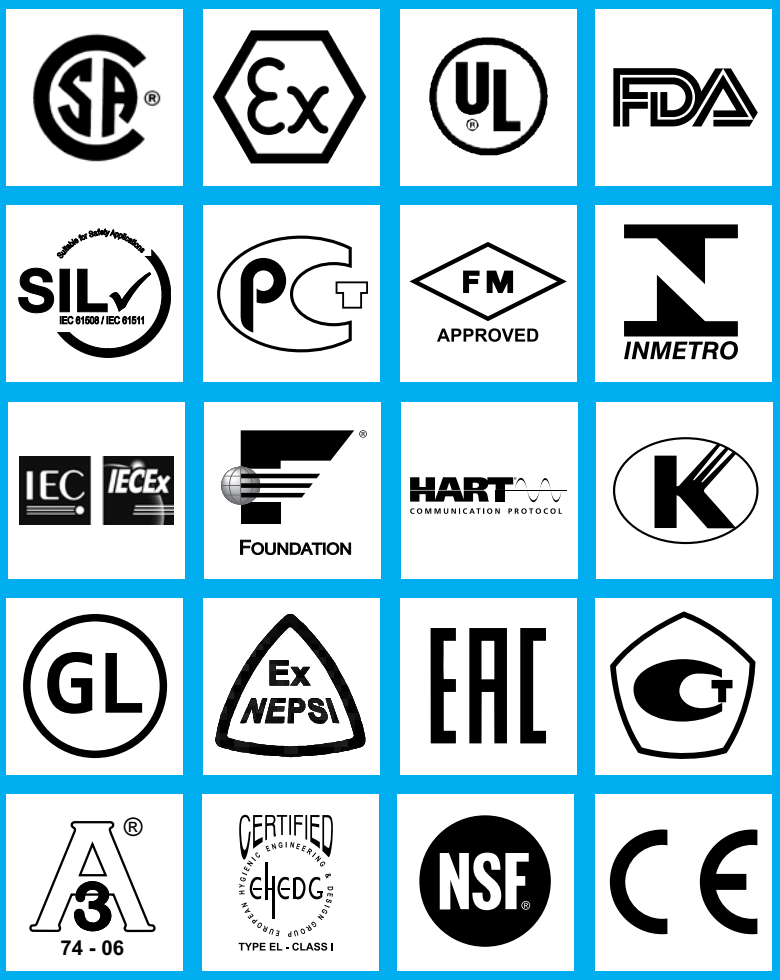
Our Employees
More that 9,000 highly qualified employees work at WIKA every day, with a customer-first attitude.

Breadth Of Technology
20 million product variants are produced in our one-piece flow.

Private Ownership
We have been family owned since we started operation in 1946.

Continuous Improvement
We plan and improve our production processes continuously in accordance with the Kaizen philosophy. Complex problems are resolved by in-house Black Belts using the Six Sigma Method to ensure lasting solutions.

Partnership Mentality
We manufacture standard products and develop customer-specific solutions, providing long-term stability of supply.



Certified Safety & Reliability

Quality measurement technologies are essential for safe, reliable operations. WIKA's pressure, temperature, level, and flow solutions have met rigorous testing of national and international authorizing bodies, and have earned a wide range of approvals and certifications worldwide.

Pressure Measurement

The WIKA portfolio contains a number of product lines and is suited to the widest range of applications. In addition, many instruments can be customized or combined with other components to create customized solutions.

Transmitters

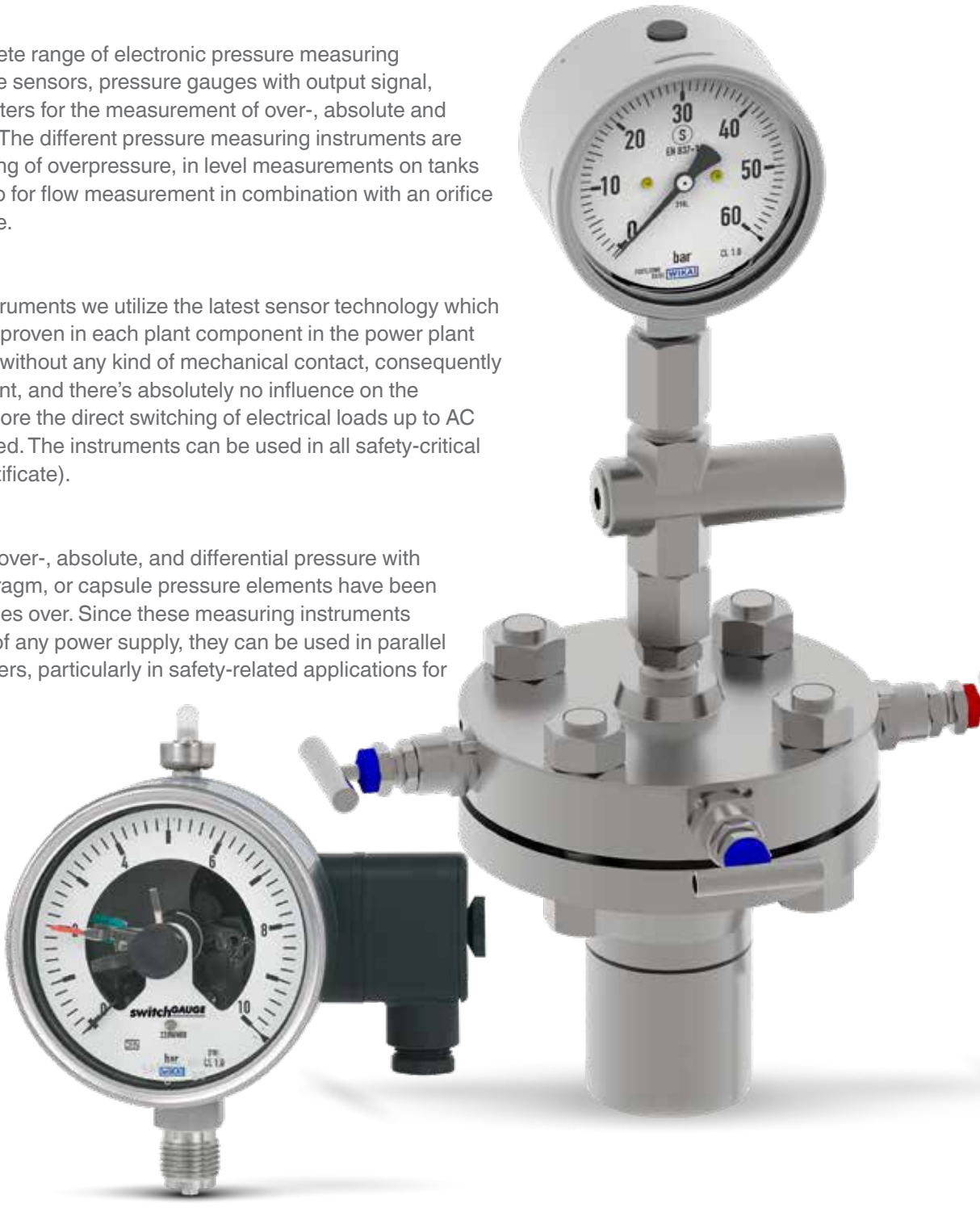
WIKA offers a complete range of electronic pressure measuring instruments: Pressure sensors, pressure gauges with output signal, and process transmitters for the measurement of over-, absolute and differential pressure. The different pressure measuring instruments are used for the monitoring of overpressure, in level measurements on tanks and vessels, and also for flow measurement in combination with an orifice plate or a Venturi tube.

Switch Output

In our measuring instruments we utilize the latest sensor technology which has been tested and proven in each plant component in the power plant industry. These work without any kind of mechanical contact, consequently they are wear-resistant, and there's absolutely no influence on the mechanics. Furthermore the direct switching of electrical loads up to AC 250 V / 20 A is enabled. The instruments can be used in all safety-critical applications (SIL certificate).

Display

Pressure gauges for over-, absolute, and differential pressure with Bourdon tube, diaphragm, or capsule pressure elements have been proven millions of times over. Since these measuring instruments work independently of any power supply, they can be used in parallel to electrical transmitters, particularly in safety-related applications for pressure monitoring.



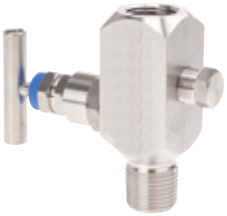
Instrumentation Valves and Accessories

WIKA offers a wide range of valves, valve manifolds and monoflanges, which can perform shut-off, venting, and compensating functions.

A variety of sizes and connection types, such as NPT, G and IEC connection, and also mounting brackets for wall or pipe mounting are available.

Very often, pressure measuring instruments are installed in combination with valves to enable an easy separation from the process for recalibration or replacement.

Instrumentation Valves & Manifolds



Protective Devices (Siphons, Snubbers, etc.)

Power Generation
Selected Products

Field Indicator
With HART® Communication
Model DIH50, DIH52

The DIH series field indicators are 4 ... 20 mA current loop indicators which can, in addition, offer a superimposed HART® communication between the connected transmitter and the control room. The indication range and units are automatically adopted dependent on the settings of the connected HART® transmitter.

All-Stainless Industrial Gauge
Bayonet Bezel Ring
Model 23X.54

This gauge is intended specifically for adverse service conditions where pulsating or vibration exists, which makes it an ideal solution for many power industry applications.

XSEL® Process Gauge
Field Liquid Fillable
Model 232.34, 233.34

The 232 series process gauge is suitable for corrosive environments. Further, it can be customized with a liquid filled case and socket restrictor for applications with high dynamic pressure pulsations.

InSight glow in the dark and reflective dials also available upon request.

Temperature Measurement

Temperature plays an important role in the power industry, as it is used in almost all circuits. Regardless of the application, WIKA has the right sensors and transmitters.

Transmitters

Our range of products include thermocouples, resistance thermometers, and both analog and digital temperature transmitters for all temperature measurement applications in power plants.

Display

Our dial thermometers work on the bimetal, expansion, or gas actuation principles. This enables scale ranges of -200 ... +1000 °F in different class accuracies, response times, and resilience to environmental influences. Diverse connection designs, stem diameters, and individual stem lengths enable a flexible measuring point design. Dial thermometers with capillaries are particularly versatile. All thermometers are suited for operation in a thermowell if necessary.

Switch Output

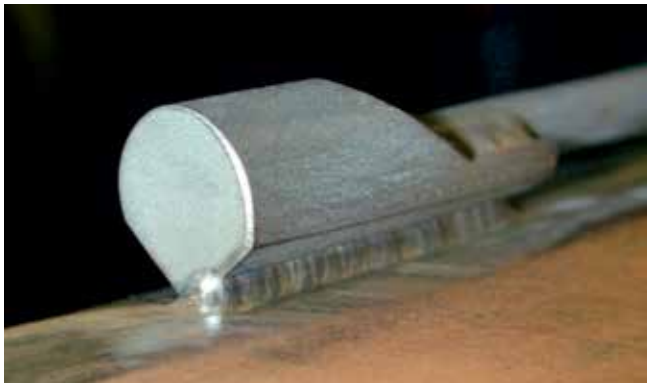
The integration of switch contacts and output signals into our mechanical temperature measuring instruments yields a wide variety of combined instruments for our customers to choose from. Additionally, the direct switching of electrical loads up to AC 250 V/20 A is enabled. The instruments have been developed especially for safety-critical applications in accordance with IEC 61508 (SIL 2). On customer request the use of high-quality and corrosion-resistant wetted materials is confirmed by a 3.1 certificate.

Thermowells

To enable thermometers to work even under extreme process loads, we offer a wide range of thermowells. Our thermowells can be customized using special materials such as Hastelloy and titanium or with various coatings depending on the process requirements.

Tubeskin temperature measurement

The primary goal of tubeskin temperature measurement is monitoring the maximum permissible temperature curves with the aim of preventing premature overheating of the piping. Due to the accuracy of the tubeskin thermocouples, the operator can ensure the boiler operation of their plant, increase the service life of the boiler tubes and optimize the efficiency.



A simple installation is ensured through a secure weld fitting to the pipe wall, suitable for every nominal width of pipe. This also offers a fast replacement during the tight maintenance schedules of a shutdown.

Temperature measurements within gas turbines

Modern gas turbines are designed to use the energy from gases as efficiently as possible. The most important criterion is to operate combustion at as high of a temperature as possible, without exceeding the limits of use of both the blades and case. Of course, the turbine must also respond quickly to changes in load, thus, in addition to the accuracy, response time also becomes increasingly important. Inside a gas

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turbine, conditions are extreme: Temperatures of up to 1472 °F, high flow rates, and strong vibrations. WIKA thermocouples and thermowells also work safely and reliably in these harsh cases of application.

Temperature Measurement

Digital Temperature Transmitter

Model T32.1S, T32.3S

These temperature transmitters are designed for universal use in the process industry. They offer high accuracy, galvanic isolation, and excellent protection against electromagnetic influences (EMI). Via HART® protocol, the T32 temperature transmitters are configurable (interoperable) with a variety of open configuration tools. In addition to the different sensor types, e.g. sensors in accordance with DIN EN 60751, JIS C1606, DIN 43760, IEC 60584 or DIN 43710, customer-specific sensor characteristics can also be defined, through the input of value pairs (user-defined linearisation).

Bimetal Thermometer

All Stainless Steel

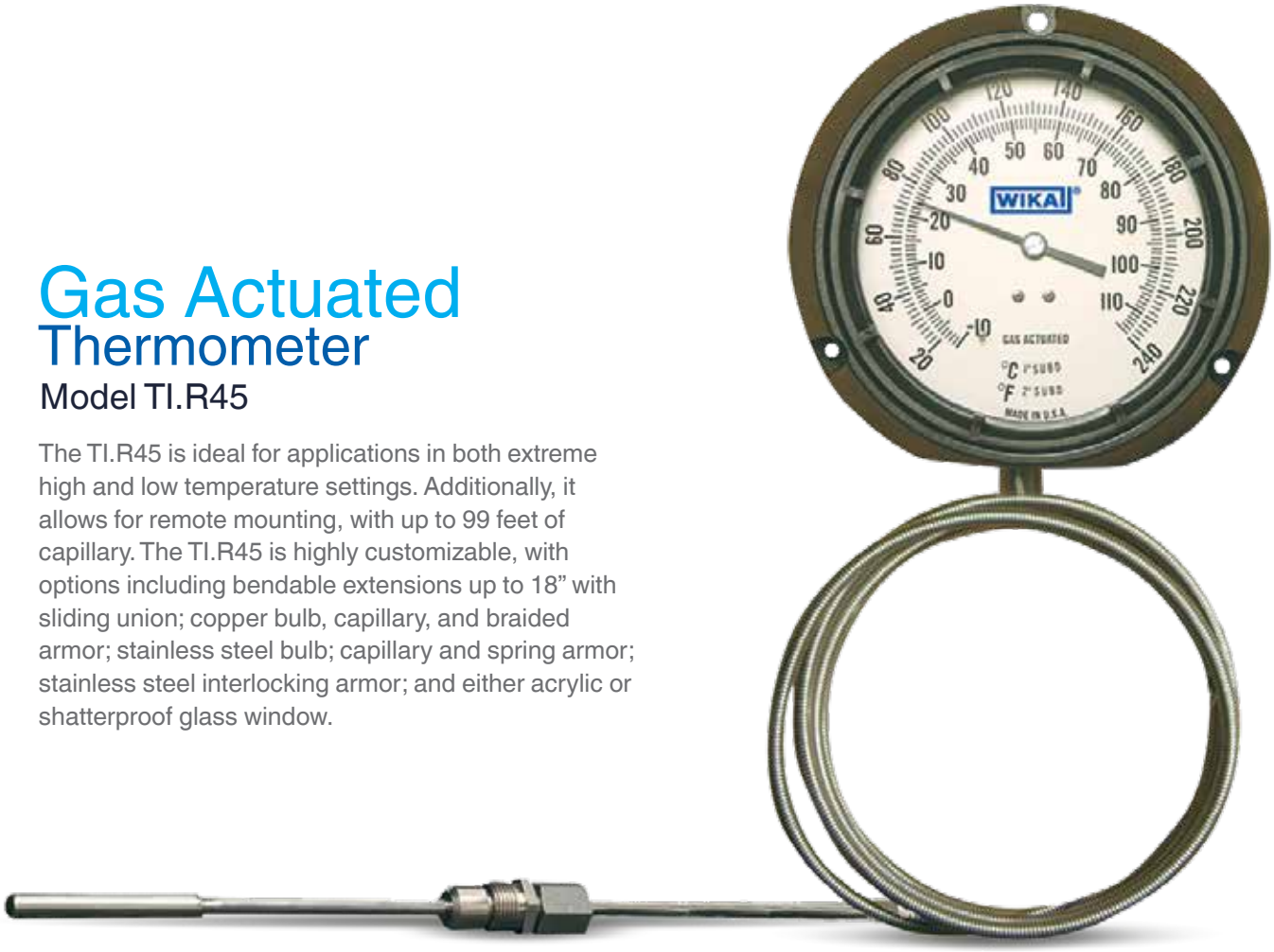
Model TI.30

The TI.30 bimetal thermometer is designed specifically for temperature measurement in harsh and aggressive environments, and includes liquid dampening suitable for applications with high vibrations.

Gas Actuated Thermometer

Model TI.R45

The TI.R45 is ideal for applications in both extreme high and low temperature settings. Additionally, it allows for remote mounting, with up to 99 feet of capillary. The TI.R45 is highly customizable, with options including bendable extensions up to 18” with sliding union; copper bulb, capillary, and braided armor; stainless steel bulb; capillary and spring armor; stainless steel interlocking armor; and either acrylic or shatterproof glass window.



Wake Frequency Calculation

Wake frequency calculations are carried out as a mathematical confirmation of the strength of thermowells regarding the static and dynamic loads under process conditions. Traditionally, experience was called upon to inform thermowell design, however these calculations provide a more accurate and safe method of design.

The most prevalent basis for this calculation worldwide is ASME PTC 19.3. Using this standard to inform calculations and design ensures that measuring point failures, associated risks, and resulting downtimes are prevented.

When more complex measuring points are necessary, WIKA is able to provide personalized, intensive sessions with plant operators.

Increased safety with high process loads

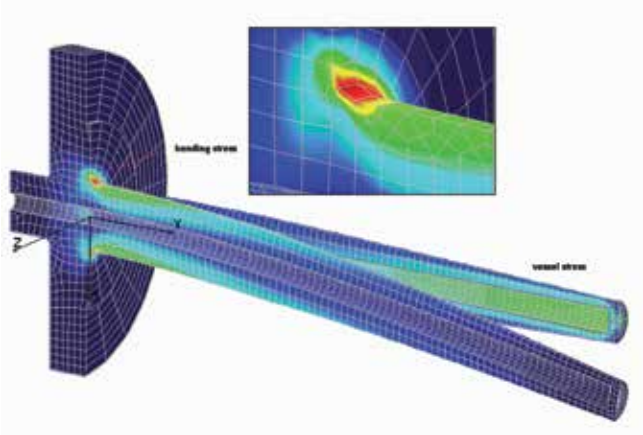
Using calculations to establish stable thermowells results in minimizing or entirely eliminating the possibility of damage to those thermowells. Calculations should be made in accordance with ASME PTC 19.3 or Dittrich/Klotter. These process parameters are required to complete the calculations:

- Flow rate in ft/s
- Medium density in lb/ft^3
- Temperature in °F
- Pressure in psi

Regardless of thermowell manufacturing method, wake frequency calculation results are always considered in two parts: the dynamic view of vibration failures through operation at resonance and the static load through external pressure.

Non-destructive tests

The most common non-destructive tests for thermowells are the pressure test, the liquid penetrant inspection, and the PMI test.



Hydrostatic pressure test

This test is carried out using external pressure on flanged thermowells, and using an internal pressure test for welded or threaded thermowells. The level of the test pressure is determined according to the construction of the thermowell and the flange used. Common pressures used are between 875 to 7,350 psi (1.5 times the flange pressure rating) for between 3 and 15 minutes.

Level Measurement

WIKA offers a wide range of level measuring instruments for temperatures up to 840 °F and pressure ranges up to 580 psi. We have a comprehensive range of bypass level indicators, level sensors, and magnetic float switches available.

Display

- Bypass level indicators
- Sight glass level indicators

Transmitters

- Submersible pressure sensors
- Continuous measurement with float
- Magnorestrictive

Switch Output

- Float switches
- Optoelectronic switches

Sight glass level indicators on steam generators

This level indicator design uses liquid encapsulated between two transparent sight glasses. Transparent level indicators are available in double-cover plate design for pressure ranges up to 1450 psi. They are the most suitable indicators for steam applications around 507 psi, where mica shields have to be used to protect sight glasses from corrosion as a result of steam boiler water.

Bypass level indicators on low-pressure pre-heaters or feedwater tanks

When a communicating bypass chamber has been mounted to the side of a vessel, a float is used to indicate the level of the medium.

The magnetic field of the radial-symmetric magnetic system activates the magnetic roller display attached to the outside of the bypass chamber, along with the switching and measuring elements. This proven measurement system can be combined with additional independent measurement devices, such as guided-wave radar, reed measurement chain, or a limit switch. So, for independent measurements, only two process connections are required, a full redundancy in the measurement is possible, and a visual level measurement is permanently available.

Replacement Service for Diaphragm Seal Systems

WIKA diaphragm seals systems are well-known and respected across industries and nations. Diaphragm seal systems are available with a wide variety of designs, materials, and filling media to suit the most challenging requirements and applications.

Diaphragm seals allow instrumentation to be used at extreme temperatures, from -130 to 752 °F and with aggressive, corrosive, heterogeneous, abrasive, highly viscous, or toxic media.

WIKA recommends implementing regular service intervals, with the media being used informing timing, to ensure proper performance, maintenance, and replacement.

Advantages of our replacement service

Occasionally, a defective diaphragm seal system must be replaced completely. With testing, repair, and replacement services, WIKA offers clear cost savings by replacing only the diaphragm seal system and allowing you to keep the process transmitter in service.

Further advantages

- New calibration of the system
- Hydrostatic pressure test for differential pressure
- Current material certificate
- Current approvals, e.g. for power plants
- State-of-the-art weld seam at the system (AD 2000)

Primary
Flow Elements

Our primary flow element portfolio is vast, including orifice plates, meter runs, flow nozzles, Venturi tubes, pitot tubes, and restriction orifices.

WIKA's flow product range is extensive, and is backed by years of experience in developing customized solutions to meet our customers' specific needs.

Typical applications

- Feedwater volume measurement
- Injection volume measurement
- Steam volume measurement
- Lubricating oil volume measurement
- High-pressure meter run

Calibration

Accuracy in measurement is a key criterion for most customers. Best-in-class measurement is needed for accuracy, precision, and reproducibility. Keeping these needs in mind, WIKA's team provides support throughout planning and manufacturing phases, with a focus on the best solutions for your project. Calibration certificates are provided in accordance with ASME, PTC6, ISPESL, and IBR standards.

WeGrid Solutions for SF_6 Gas Measurement

Leading in SF_6 gas solutions

In order to operate plants with SF_6 gas properly, a variety of specialized equipment is needed. WIKA is uniquely positioned by offering a complete product portfolio and the necessary application experience in SF_6 solutions. Describe your application to us and we will offer the right solution from a single source.

Worldwide, there are over 1,000,000 WIKA gas density monitoring instruments in use. This number stems from the high quality of our products (which are manufactured and tested throughout to the 5-Sigma quality level) and customer satisfaction. Our measuring instruments are hermetically sealed and temperature-compensated, so that reliable measuring results are achieved even under the harshest operating conditions.

The plant safety of SF_6 gas-insulated switchgear is reduced significantly through low concentrations of decomposition products. These decomposition products arise during operation through arcing in moist or impure SF_6 gas. In order to detect even the smallest leakages or to warn ahead of gas emissions, we have a range of high-quality gas detectors and emission monitors. WIKA offers a complete product line for SF_6 gas analysis, including accessories.

Self-sealing valves and permanently gas-tight connections take care that no environmentally hazardous SF_6 gas escapes, but rather remains safely contained in the designated containers.

The service operations, such as evacuation and filling of SF_6 tanks or the processing of SF_6 gas must be carried out with the appropriate equipment. The WIKA product portfolio of filling and processing instruments covers the range of SF_6 gas handling in the electric power transmission and distribution area.

Precision Digital
Gas Density Indicator
Model GDI-100-D

The model GDI-100-D precision digital gas density indicator adopts the concept of an analog SF_6 gas density indicator, but operates, however, at such a high level that only digital sensor technology can cope with. The accuracy of digital measurement technology and the simplicity of an analog gauge are brought together in the GDI-100-D, which in terms of performance, ease-of-use, and instrument features, is unmatched in SF_6 gas density measurement.

Calibration Technology

From individual components ...

WIKA is the ideal partner for solutions in calibration technology, whether our customers require a single service instrument or a fully automated calibration system to be designed for the laboratory or production.

Portable pressure generation

Test pumps serve as pressure generators for the testing of mechanical and electronic pressure measuring instruments through comparative measurements. These pressure tests can take place in the laboratory or workshop, or on site at the measuring point.

Measuring components

High-accuracy pressure sensors and very stable standard thermometers are ideal for applications as references in industrial laboratories. Due to their analog or digital interfaces, they can be connected to existing evaluation instruments.

Hand-helds, calibrators

Our hand-held measuring instruments (process tools) offer a simple capability for measurement or simulation of all established measurands on site. They can be operated with a wide variety of pressure sensors or thermometers.

HART COMMUNICATION PROTOCOL

... to a fully automated system

Digitally indicating precision measuring instruments

High-accuracy digital precision measuring instruments are ideal for applications as reference standards in industrial laboratories, enabling high-accuracy calibration. They feature exceptionally simple handling and an extensive range of functionality.

Digital precision instruments and controllers

Due to their integrated controller, these instruments offer exceptional convenience. Typically, a fully automated setting of the required value can be set via the interface.

Fully automated calibration systems as complete solutions

Fully automated calibration systems are customer-specific, turnkey installations which can be fitted in laboratories as well as in the production environment. With integrated reference instruments and calibration software, calibration certificates can be generated and archived in a simple and reproducible way.

■ Pressure ■ Temperature ■ Current, voltage, resistance

EPC/Project Business

WIKA has been active in the contractor business for more than 30 years. We act as a partner, executing large projects all over the world. We are more than a reliable supplier of high-quality measuring instruments: we develop products and solutions custom-fit to our customers‘ requirements.

Support from the very beginning

WIKA supports our EPC partners throughout all phases of a project: from planning and detail engineering, through implementation, and continuing with robust after-sales support.

Tag signs

At WIKA, the measuring point numbers required within the project business can be engraved onto stainless steel tags or onto flanges. Furthermore, they can be printed onto adhesive labels or dials.

Project-related documentation

Not only can we prepare data sheets, dimensional drawings and operating instructions especially for your project, but we can also provide material certificates, product certificates, quality plans, welding procedure tests, PMI tests, etc. to your design, in many languages and in either digital or print format.

Acceptance tests

Our customers have the opportunity to perform acceptance tests on WIKA products prior to delivery. This increases the security in the product coordination. This means that you can be sure that all instruments will also arrive at the place of use in excellent condition.

WIKA USA

For over 70 years, WIKA has continuously advanced instrumentation for pressure, temperature, level, flow, and force measurement. Our broad selection of standard and custom solutions, as well as services, work to support operational safety, productivity and profitability. A global leader in lean manufacturing, WIKA can be your reliable partner anywhere in the world.

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