



Energy | Chemical/petrochemical industry | Oil & gas | Water/wastewater

# Pressure gauges in the process industry



**Smart in sensing**

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Alexander Wiegand,  
Chairman and CEO

## About us

As a family-run business acting globally, with over 10,200 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, force and flow, and in calibration technology.

Founded in 1946, WIKA is today a strong and 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 delivery performance. Every year, over 50 million quality products, both standard and customer-specific solutions, are delivered in batches of 1 to over 10,000 units.

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.



# Global player for mechanical pressure measuring instruments



## Presence in over 80 countries

Think global, act local: WIKA is represented around the world by numerous wholly owned subsidiaries and other sales agencies. And because we are local, we understand the relevant country-specific requirements, standards and applications. This is how we ensure individual support to our customers.

## This makes us unique

- Global production sites
- Qualified technological know-how
- Unrivalled breadth and depth of products
- Practical expertise in manufacturing processes
- Perfected lean management
- Customer-focused consulting and service

# Quality made by WIKA

## Global production sites

The high-tech production in our owned modern production facilities (Germany, Brazil, China, India, Poland, Switzerland, South Africa and USA) is the best guarantee for short delivery times throughout the world. It also enables a high flexibility for country or customer-specific special features. WIKA also stands for excellent quality: Since 1994 the quality

management system has been certified to ISO 9001. The effectiveness of the quality management system is regularly evaluated and improved upon through internal and external audits. Through WIKA's corporate quality standards, uniform and effective worldwide, we set the benchmark here.

## Qualified technological know-how

The three resilient pressure element technologies (with Bourdon tube, diaphragm element or capsule element measuring systems) have been developed, qualified and manufactured by WIKA themselves. Equally important for a reliable measured value display is the movement, which converts the elastic element travel into an angle of rotation. Our "Swiss Movement" movements are not only as precise as a Swiss clockwork, but they are also especially robust and durable.

These elementary parts are the perfect basis for the development of new products. When the product design is defined, the production line is also planned and implemented within WIKA's equipment construction. Finally, the product and process development is extensively qualified within our own test laboratory. Many of WIKA's internal test standards are even specified to higher levels than, for example, the European basic standard EN 837.

## Unrivalled breadth and depth of products

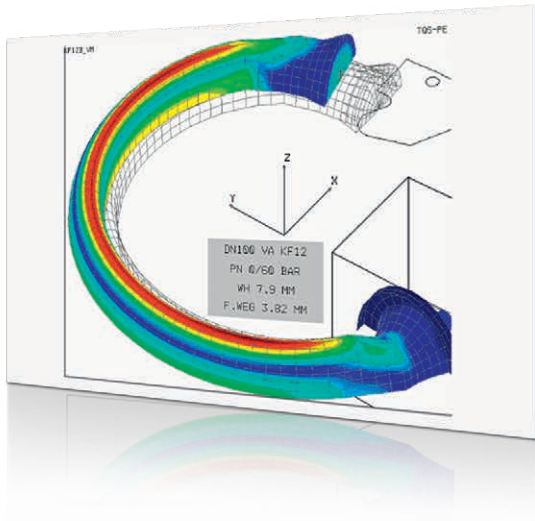
WIKA's indicating pressure measuring instruments for gauge, absolute and differential pressure have been proven millions of times over. For the various requirements in process instrumentation, pressure elements from stainless steel or special materials are available. Accepted around the world, a variety of measuring ranges, process connections,

approvals, nominal sizes, safety versions, measuring cells with overload safety or liquid fillings for critical applications are a guarantee for the optimal measuring point design. The ideal addition is the extensive range of accessories, which includes pressure gauge valves, stopcocks, syphons, adapters and much more.



WIKA offers a comprehensive range of measuring instruments for process technology

# Benefit from our many years of experience



## Practical expertise in manufacturing processes

Manufacturing processes and procedures at WIKA are based on many years of experience. This technical expertise in processes is typically documented within process control plans as well as documented procedures and work instructions. New or modified processes are evaluated with regard to performance and quality and released for manufacturing by process sign-offs.

Core processes within the pressure gauge production are, for example, welding with subsequent 100 % leak test as well as a 100 % calibration and adjustment of the instruments. It is not only the processes that are clearly defined, but also the employees who are appropriately trained. Here, WIKA has placed a high value on the internal training in the "Welding Academy" and the "Adjustment Academy".

## Perfected lean management

Production processes are designed and continuously improved in accordance with the WIKA Production System (WPS), based on the KAIZEN philosophy. The environment and energy programme is also refined continuously within the meaning of "continual improvement". Complex problems are dealt with in a structured way by in-house Black Belts using the Six Sigma Method, thus ensuring lasting solutions.

Through the WPS, we pursue the objective of improving the quality of the products and processes, and thus to achieve the highest possible customer satisfaction through the best quality, the highest delivery reliability as well as attractive delivery times and prices. Customer orientation is at the centre of all our efforts at WIKA.

## Customer-focused consulting and service

Our sales organisation not only offers you standard products, but also our consulting competence for complete mounting arrangements. As a reliable partner in the contractor business, we can support you through all phases of the project, from planning, through the realisation and implementation of the project to technical inspections, logistics solutions, on-site support and after-sales service. We also offer you a

comprehensive range of services in calibration technology through our worldwide subsidiaries which are accredited to country-specific regulations, on-site service of your instruments, calibration equipment and also consulting and training in the field of calibration.

# 7 selection criteria lead you to the right standard

1

2

3

Model	Pressure type			Scale range					Aggregate state of the medium			
	Absolute pressure	Gauge pressure	Differential pressure	< 16 mbar	≤ 0.6 bar	≤ 40 bar	≤ 650 bar	≤ 1,600 bar	Gas or vapour	Liquid with low viscosity	Liquid with high viscosity	
232.50	○	●	○	○	○	●	●	●	●	●	○	
232.30	○	●	○	○	○	●	●	●	●	●	○	
432.50	○	●	○	○	●	●	○	○	●	●	●	
532.51	●	○	○	○	●	●	○	○	●	●	○	
632.50	○	●	○	●	●	○	○	○	●	○	○	
732.51	○	○	●	○	●	●	○	○	●	●	○	
732.14	○	○	●	○	●	●	●	○	●	●	○	

● possible

○ not possible



**Model 232.50**

The first choice for scale ranges from 0.6 bar



**Model 232.30**

For the highest safety Category S3 in accordance with EN 837



**Model 432.50**

For low pressure ranges, high overload safety, critical media

4

5

6

7

Wetted materials				Indication accuracy				Nominal size			Special features		
Stainless steel	Monel	Special materials		0.6 %	1.0 %	1.6 %	2.5 %	63 mm	100 mm	160 mm	Safety version in accordance with EN 837, category S3	Liquid filling	Increased overload safety
●	●	●		○	●	●	○	●	●	●	○	●	○
●	●	●		○	●	●	○	●	●	●	●	●	○
●	●	●		●	●	●	●	○	●	●	●	●	●
●	●	○		●	●	●	●	○	●	●	●	●	●
●	○	○		○	●	●	○	●	●	●	○	●	○
●	○	○		○	○	●	○	○	●	●	●	●	○
●	○	●		○	○	●	○	○	●	●	○	●	●



**Model 632.50**

For very low pressure ranges



**Model 532.51 – 532.54**

Absolute pressure measurement



**Model 732.51**

Differential pressure with  
all-welded media chamber



**Model 732.14**

Differential pressure with  
overload safety



# The products in detail

These measuring instruments for the process industry are manufactured completely from stainless steel for increased corrosion resistance. They are developed, qualified and process-monitored in production in line with the EN 837 standard. The core components are WIKA's internally developed measuring systems and the Swiss precision movement. For harsh operating conditions, all instruments are also available with liquid filling.

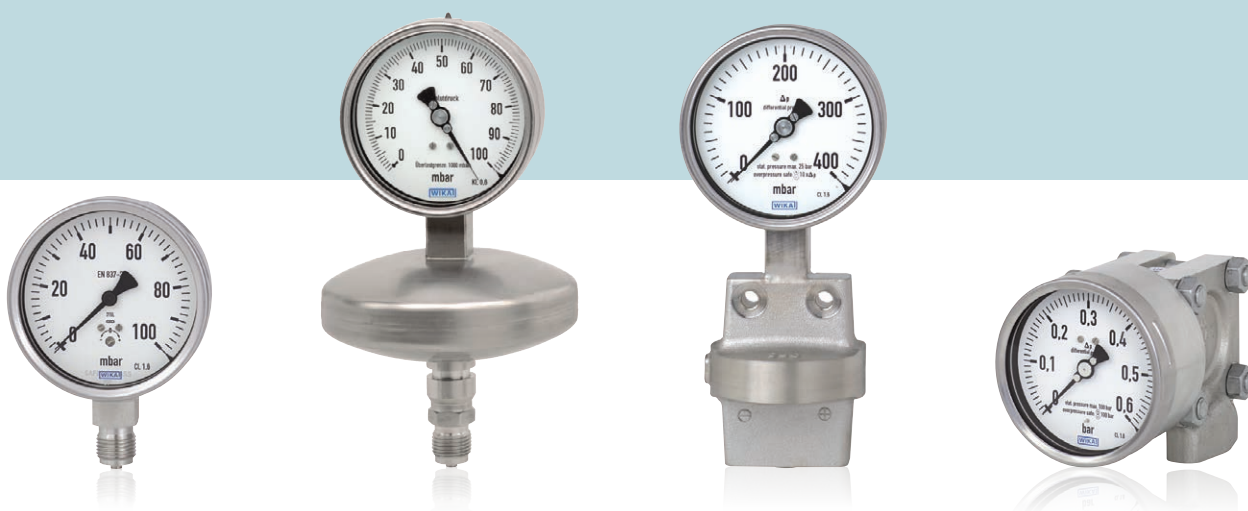
All instruments are also available with electrical output signals or switch contacts. Thus, not only does a measuring point provide an on-site display without the need for a power supply, but also it provides an electrical output signal for monitoring or control.



Mechanical version	Model 232.50	Model 232.30	Model 432.50	
Pressure type	Gauge pressure	Gauge pressure	Gauge pressure	
Scale range	0 ... 0.6 to 0 ... 1,600 bar	0 ... 0.6 to 0 ... 1,600 bar	0 ... 16 mbar to 0 ... 25 bar	
Medium	<ul style="list-style-type: none"> <li>■ Gaseous</li> <li>■ Liquid</li> <li>■ Corrosive</li> <li>■ Aggressive</li> </ul>	<ul style="list-style-type: none"> <li>■ Gaseous</li> <li>■ Liquid</li> <li>■ Corrosive</li> <li>■ Aggressive</li> </ul>	<ul style="list-style-type: none"> <li>■ Gaseous</li> <li>■ Liquid</li> <li>■ Corrosive</li> <li>■ Aggressive</li> <li>■ Highly viscous</li> <li>■ Crystallising</li> </ul>	
Nominal size [mm]	63, 100, 160	63, 100, 160	100, 160	
Accuracy class	1.6 / 1.0	1.6 / 1.0	1.6 / 2.5 optional 0.6 / 1.0	
Safety version	Category S1 in accordance with EN 837	Category S3 in accordance with EN 837	Category S1 in accordance with EN 837	
Overload safety	<b>NS 63</b> <ul style="list-style-type: none"> <li>■ Full scale value</li> </ul> <b>NS 100, 160</b> <ul style="list-style-type: none"> <li>■ 1.3 x full scale value</li> </ul>	<b>NS 63</b> <ul style="list-style-type: none"> <li>■ Full scale value</li> </ul> <b>NS 100, 160</b> <ul style="list-style-type: none"> <li>■ 1.3 x full scale value</li> </ul>	5 x full scale value, max. 40 bar, optional 10 x full scale values	

Mechatronic version				
With switch contacts	Model PGS23	Model PGS23	Model PGS43	
With electrical output signals		Model PGT23	Model PGT43	





	Model 632.50	Models 532.51, 532.52, 532.53, 532.54	Model 732.51	Model 732.14
	Gauge pressure	Absolute pressure	Differential pressure	Differential pressure
	0 ... 2.5 to 0 ... 600 mbar	0 ... 25 mbar to 0 ... 25 bar	0 ... 16 mbar to 0 ... 25 bar	0 ... 60 mbar to 0 ... 40 bar
	<ul style="list-style-type: none"> <li>■ Gaseous</li> <li>■ Dry</li> <li>■ Corrosive</li> <li>■ Aggressive</li> </ul>	<ul style="list-style-type: none"> <li>■ Gaseous</li> <li>■ Liquid</li> <li>■ Corrosive</li> <li>■ Aggressive</li> <li>■ Highly viscous</li> <li>■ Crystallising</li> </ul>	<ul style="list-style-type: none"> <li>■ Gaseous</li> <li>■ Liquid</li> <li>■ Corrosive</li> <li>■ Aggressive</li> </ul>	<ul style="list-style-type: none"> <li>■ Gaseous</li> <li>■ Liquid</li> <li>■ Corrosive</li> <li>■ Viscous</li> <li>■ Aggressive</li> </ul>
	63, 100, 160	100, 160	100, 160	100, 160
	1.6 optional 1.0	0.6 / 1.0 / 1.6 / 2.5	1.6	1.6 / 2.5
	Category S1 in accordance with EN 837	Category S1 in accordance with EN 837	Category S1 in accordance with EN 837	
	Full scale value	max. 25 bar	max. 40 bar	40, 100, 250 or 400 bar

Model 632.50 with 8xx	Model 532.53 with 8xx	Model DPGS43	Model DPGS43HP
Model PGT63HP	Model APGT43	Model DPGT43	Model DPGT43HP

# Mechatronic versions

## Pressure gauges with electrical output signal

**intelliGAUGE®**

A pressure gauge with an electrical output signal from the intelliGAUGE series combines all the advantages of a local display, without the need for a power supply, with the requirements of an electrical signal transfer for a modern electronic measured value registration.

A magnet on the pointer shaft rotates proportionally to the instrument pointer as a direct linear function of the process pressure. The electronics positioned opposite the magnet register the rotary motion of the magnet. A magnetic-field-dependent sensor picks up this change on the electronic side, contact-free, wear-free and without influence on the pressure element. The sensor signal, proportional to the deflection, is converted to an electrical output signal via an amplifier (US patent no. 8.030.990).



## Pressure gauges with switch contacts

**switchGAUGE**

Switch contacts built into mechanical pressure measuring instruments close or open circuits depending on the process pressure. They can be used for various monitoring functions when a measured value either falls below or exceeds a preset value. Switch contacts are fitted behind the dial and can be set over the entire scale range using the set pointer. The instrument pointer (actual value pointer) moves freely across the entire scale range, independent of the setting. The contacts can be adjusted individually, using a removable adjustment key in the window.



For general applications	For hazardous areas	For PLC	For general applications and PLC
Magnetic snap-action contact	Inductive contact	Electronic contact	Reed contact
			
Model 821	Model 831	Model 830 E	Model 851

# More possibilities due to numerous extras

## Options

- Liquid fillings
- Special materials such as Monel, Hastelloy, PTFE, nickel, tantalum, titanium, silver
- Mounting and fitting solutions (e. g. clamping ring, ...)

## Certificates, approvals

- 2.2 test report, 3.1 inspection certificate
- Approvals such as GOST, NACE, DVGW, VdTÜV and many others
- CE conformity (ATEX, PED, EMC, LVD)

# Instrument hook-ups with valves and diaphragm seals

On request, WIKA offers the professional assembly of pressure measuring instruments with valves, diaphragm seals and also other accessories into a ready-to-install solution.



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