Instrumentation for Oil & Gas Applications
Pressure and Temperature Measurement
Mechanical Pressure Measurement

Type 212.53, 213.53 and 213.40 are ideal choices for Oil and Gas applications requiring an economical dry or liquid-filled pressure gauge. When vibration and/or pulsation are present, the glycerine fill dampens the Bourdon tube and minimizes pointer oscillation, which reduces wear on the gauge movement.

### Stainless Steel Case, Brass Internals, Field Liquid-fillable

**212.53, 213.53**

<table>
<thead>
<tr>
<th>Size</th>
<th>2”, 2½”, 4”</th>
</tr>
</thead>
<tbody>
<tr>
<td>Case</td>
<td>304 SS</td>
</tr>
<tr>
<td>Ring</td>
<td>Polished stainless steel, crimped-on</td>
</tr>
<tr>
<td>Wetted parts</td>
<td>Copper alloy</td>
</tr>
<tr>
<td>Window</td>
<td>Polycarbonate</td>
</tr>
<tr>
<td>Liquid fill</td>
<td>Dry (212.53); glycerine (213.53)</td>
</tr>
<tr>
<td>Accuracy</td>
<td>±2/1/2% of span (2”, 2½”); ±1.0% of span (4”)</td>
</tr>
</tbody>
</table>

### Industrial Gauge, Factory-filled Case

**213.40**

<table>
<thead>
<tr>
<th>Size</th>
<th>2½”, 4”</th>
</tr>
</thead>
<tbody>
<tr>
<td>Case</td>
<td>Forged brass</td>
</tr>
<tr>
<td>Ring</td>
<td>Gold-plated ABS (2½”); chrome-plated brass (4”)</td>
</tr>
<tr>
<td>Wetted parts</td>
<td>Copper alloy</td>
</tr>
<tr>
<td>Window</td>
<td>Acrylic</td>
</tr>
<tr>
<td>Liquid fill</td>
<td>Glycerine</td>
</tr>
<tr>
<td>Accuracy</td>
<td>±2/1/2% of span (2½”); ±1.0% of span (4”)</td>
</tr>
</tbody>
</table>

### All Stainless Steel Bourdon Tube

- **232.54 XMAS Tree**
  
<table>
<thead>
<tr>
<th>Size</th>
<th>4”</th>
</tr>
</thead>
<tbody>
<tr>
<td>Case</td>
<td>304 SS with vent plug</td>
</tr>
<tr>
<td>Ring</td>
<td>Polished stainless steel bayonet</td>
</tr>
<tr>
<td>Wetted parts</td>
<td>316 SS</td>
</tr>
<tr>
<td>Window</td>
<td>Laminated safety glass</td>
</tr>
<tr>
<td>Accuracy</td>
<td>±1.0% of span</td>
</tr>
</tbody>
</table>

All Stainless Steel, Field Repairable, Field Liquid-fillable

Featuring all stainless steel construction, these industrial and process grade gauges ensure long service life in the harshest, most demanding environments. Typical applications include process and chemical industries that require high quality precision instruments.

**232.54, 233.54**

<table>
<thead>
<tr>
<th>Size</th>
<th>2½”, 4”</th>
</tr>
</thead>
<tbody>
<tr>
<td>Case</td>
<td>Stainless steel</td>
</tr>
<tr>
<td>Ring</td>
<td>Stainless steel bayonet, twist-on</td>
</tr>
<tr>
<td>Wetted parts</td>
<td>316 SS</td>
</tr>
<tr>
<td>Window</td>
<td>Safety glass</td>
</tr>
<tr>
<td>Liquid fill</td>
<td>Dry (232.54); glycerine (233.54)</td>
</tr>
<tr>
<td>Accuracy</td>
<td>±2/1/2% of span (2½”); ±1.0% of span (4”)</td>
</tr>
</tbody>
</table>

All Stainless Steel, Field Liquid-fillable

WIKA stainless steel liquid-filled gauges are recognized worldwide as the standard of accuracy and durability for use in fluid power and hydraulic systems. These gauges are ideal for skid systems, panels, compressors and pumps which may produce excessive vibration and pulsation.

**232.53, 233.53**

<table>
<thead>
<tr>
<th>Size</th>
<th>2”, 2½”, 4”</th>
</tr>
</thead>
<tbody>
<tr>
<td>Case</td>
<td>304 SS</td>
</tr>
<tr>
<td>Ring</td>
<td>Polished stainless steel, crimped-on</td>
</tr>
<tr>
<td>Wetted parts</td>
<td>316 SS</td>
</tr>
<tr>
<td>Window</td>
<td>Polycarbonate</td>
</tr>
<tr>
<td>Liquid fill</td>
<td>Dry (232.53); glycerine (233.53)</td>
</tr>
<tr>
<td>Accuracy</td>
<td>±2/1/2% of span (2 and 2½”); ±1.0% of span (4”)</td>
</tr>
</tbody>
</table>

- call 1-888-WIKA-USA
**Low Pressure Process Gauge**

WIKA type 6X2.34 low pressure process gauges offer accurate readings in harsh ambient conditions. They are able to measure the pressure of gaseous media from as low as 10” H₂O to 275” H₂O (10 psi) or other equivalent units of pressure or vacuum. The finely polished nickel-silver pinion gear and shaft of the movement ensure repeatable accuracy.

**6X2.34**

- **Size:** 4½”
- **Case:** Black plastic reinforced thermoplastic
- **Ring:** Threaded thermoplastic
- **Wetted parts:**
  - 612.34 - brass
  - 632.34 - 316 SS
- **Window:** Acrylic
- **Liquid fill:** Silicone (633.34) for ranges 40” WC and up
- **Accuracy:** ± 2/1/2% of full span per ASME B40.1 Grade A

**Differential Pressure Gauge, Piston Style**

These piston-style differential pressure gauges are suited for use in applications requiring low/medium differential pressure ranges in combination with high working pressures. The 700.04/05 series is intended for measuring pressure drops across filters, strainers, separators, heat exchangers and gas recovery systems.

**700.04 / 700.05**

- **Size:** 2½”, 4½”
- **Case & bezel:**
  - Reinforced plastic
- **Sensor housing:**
  - 316L SS or black anodized aluminum
- **Wetted parts:**
  - Aluminum or 316 SS sensor housing
  - 316 SS spring, ceramic magnet, Buna-N separation diaphragm (700.05)
  - Viton® sealing rings (700.04)
- **Window:** Acrylic or shatter-resistant safety glass
- **DP ranges:**
  - 0…5 psid thru 0…100 psid (700.04)
  - 0…50” H₂O thru 0…100 psid (700.05)
- **Max. working pressure:**
  - 6,000 psig (700.04)
  - 3,000 psig (700.05)
- **Accuracy (applied to ascending pressure only):**
  - 700.04: ± 2% of full span
  - 700.05: ± 3% of full span (ranges 0…15 psid and up)
  - ±5% of full span (ranges below 0…15 psid)
  - ±5% of span (increasing), ranges 50” H₂O thru 300” H₂O

**Differential Pressure Gauge, Process Industry**

This stainless steel differential pressure gauge is suitable for corrosive environments and gaseous and liquid media that will not obstruct the pressure system.

**732.51**

- **Size:** 4”, 6”
- **Ranges:**
  - 7” H₂O to 400 psi.
- **Scale range:** 7” H₂O: Full scale length approximately 180° or equivalent other units of pressure or vacuum.
- **Max. working pressure:**
  - 600 psig
- **Accuracy:** ±1.5% of span
- **Case:** Stainless steel with stainless steel bayonet ring. Blow-out plug in back of case.
- **Window:** Laminated safety glass
- **Dial:**
  - White aluminum with black lettering
- **Pointer:**
  - Black aluminum, adjustable

**Differential Pressure Gauge, Dual Diaphragm Style**

This dual diaphragm / liquid filled sensor element type gauge is designed for applications requiring low / medium differential pressure ranges in combination with high working pressures. The 732.26 is standard suitable for O₂ service and is ideally for cryogenic applications, such as liquid level measurement.

**732.26**

- **Size:** 4½”, 6”
- **Case:**
  - Black powder-coated aluminum
- **Bezel:** Stainless steel polished
- **Sensor housing:**
  - 316L SS
- **Wetted parts:**
  - 316 SS diaphragm
- **Window:** Acrylic or shatter-resistant safety glass
- **DP ranges:**
  - 0…100” H₂O thru 0…400 psid
- **Max. working pressure:**
  - 600 psig
- **Accuracy:** ±1% of span
Explosion-proof Hazardous Area Pressure Transmitter
The E series transmitters are CSA, FM-approved explosion-proof for Class I, Division I hazardous environments.

**E-10, E-11**

- **Ranges**: 5 psi to 15,000 psi, vacuum, compound, absolute
- **Output**: 4-20 mA or 1-5V low power
- **Accuracy**: ≤0.25% B.F.S.L.

Non-incendive Hazardous Area Pressure Transmitter
Type N-10/N-11 pressure transmitters are specifically designed for gas compressor systems. These transmitters are engineered to meet Class I, Division 2 non-incendive protection in hazardous environments.

**N-10, N-11**

- **Ranges**: 5 psi to 15,000 psi, vacuum, compound, absolute
- **Output**: 4-20 mA or 1-5V low power
- **Accuracy**: ≤0.25% B.F.S.L.

Intrinsically Safe Hazardous Area Pressure Transmitter
WIKA’s intrinsically safe transmitters are FM, ATEX and CSA-approved. They are designed for installation in Class I, Division 1 hazardous locations.

**IS-20, IS-21**

- **Ranges**: 50 inWC to 15,000 psi (IS-20), 50 inWC to 8,000 psi (IS-21) vacuum, compound, absolute
- **Output**: 4-20 mA
- **Accuracy**: ≤0.25% B.F.S.L.

Intrinsically Safe IL-10
WIKA IL-10 intrinsically safe submersible liquid level transmitters are engineered for a wide variety of industrial and municipal liquid level measurement applications installed in hazardous areas. Each transmitter undergoes extensive quality control testing and calibration to achieve high accuracy and reliability.

**IL-10**

- **Ranges**: 50 inWC to 400 psi
- **Output**: 4-20 mA, 2-wire
- **Accuracy**: ≤0.125% B.F.S.L.
Intrinsically Safe Hazardous Area Pressure Transmitter

Wika’s intrinsically safe transmitters are FM, ATEX and CSA-approved. They are designed for installation in Class I, Division 1 hazardous locations.

The IS-20-F has an all stainless steel integral junction box for installation in harsh environments.

The IS-21-F transmitter features a flush diaphragm process connection and is specifically designed for the measurement of viscous fluids or medias containing solids that may clog a NPT process connection.

**IS-20-F, IS-21-F**

**Ranges**
- 50 InWC to 15,000 psi (IS-20-F),
- 50 InWC to 8,000 psi (IS-21-F)

**Output**
4-20 mA

**Accuracy**
\( \leq 0.25\% \text{ B.F.S.L} \)

Digital Temperature Transmitter

The T12 digital temperature transmitter is designed for universal use in the oil and gas industry. It offers a high accuracy, galvanic isolation and an excellent EMI protection.

The transmitter can be delivered with either a basic configuration or configured according to customer’s specifications.

**T12**

**Input**
RTD, Thermocouple

**Programming**
Ranges and sensor programmable with Windows software

**Measurement error**
\( \pm 0.2^\circ\text{C} \)

**EMC**
CE

**Output**
4-20 mA 2-wire

**Environmental conditions**
-40...+85°C, -50...+85°C opt.
95% Rh protection

Digital Temperature Transmitter

Via HART® protocol, the T32 temperature transmitter is configurable (interoperable) with a variety of open configuration tools. In addition to the different sensor types (e.g. sensors in accordance with DIN EN 60 751, JIS C1606, DIN 43 760, IEC 60 584 or DIN 43 710), customer specific sensor-curves can also be defined through the input of user-defined linearization data.

**T32 HART®**

**Input**
RTD, Thermocouple

**Programming**
Ranges and sensor programmable with Windows software and common asset management systems, and HART® Communicator

**Measurement error**
\( \pm 0.08^\circ\text{C} \)

**EMC**
CE, NAMUR NE21

**Output**
4-20 mA, HART® protocol

**Environmental conditions**
-40...+85°C, -50...+85°C opt.
95% Rh protection

Digital Temperature Transmitter

The Fieldbus temperature transmitter type T53.10 with FOUNDATION™ and PROFIBUS® PA Fieldbus Communication is suitable for temperature measurement with resistance thermometers and thermocouples. Resistance and mV measurements with or without customer specific linearization are possible. Difference, average or redundancy temperature measurements can be provided.

**T53.10 PROFIBUS® PA**

**Input**
Pt 25, Thermocouple

**Programming**
Ranges and sensor programmable with Windows software

**Measurement error**
\( \pm 0.2^\circ\text{C} \)

**EMC**
CE

**Output**
FOUNDATION™ Fieldbus, PROFIBUS® PA

**Environmental conditions**
-40...+85°C
95% Rh protection
**Mechanical Temperature Measurement**

**High Precision & Calibration**

**Process Grade Bimetal Thermometers**
WIKA’s bimetal process grade thermometers are suitable for nearly every direct-reading thermometer application. Their durable construction ensures reliable readings and long-lasting service. The superior quality of the WIKA types 30, 31, 32, 50, 51 and 52 is reflected in the seven-year warranty.

**TI.30, TI.31, TI.32, TI.50, TI.51, TI.52**

**Size**
3", 5"

**Case & stem**
304 SS

**Stem lengths**
2½” to 72” (call factory for lengths over 72”)

**Case configuration**
Back-connected, bottom-connected, adjustable angle

**Connection**
½” NPT on 3” and 5” dials (std.)

**Window**
Flat instrument glass

**Dial**
White aluminum; anti-parallax

**Pointer**
Black aluminum

**Accuracy**
±1.0% of span ASME B40.3 Grade A

**Scale**
Single °F or °C or dual scale

**Ranges**
-100°F (-70°C) to 1000°F (500°C), available in dual scale F&C, Fahrenheit only or Celsius only

**External reset**
A slotted hex adjustment head offers screwdriver or wrench use to field calibrate the thermometer

**Fill policy**
WIKA does not recommend continued use of filled instruments at operating temperatures above 400°F(204°C) or below -100°F(-70°C)

**Hermetic seal**
Hermetically sealed per ASME B40.3.; ingress protection IP 65; NEMA 4X; guaranteed not to fog

**Immersion**
For accurate temperature readings, immerse stem a minimum of 2” in agitated liquid or 4” in moving air or gas

**Options**
Dampened movement; min-max pointer; 3/8” stem; 316 SS wetted parts; safety glass; Lexan® and acrylic windows; silicone fill

**Gas Actuated Thermometers**
WIKA gas actuated dial thermometers are easy-to-read and provide excellent performance throughout their ranges. They provide extremely accurate temperature readings from remote locations or mercury-sensitive environments.

**TI.R45, TI.R60**

**Dial**
4½”, 6”

**Case connection**
Front flange, back flange, u-clamp, phenolic turret, direct reading adjustable angle

**Connection**
Variety of connection systems

**Capillary lengths**
Up to 99”

**Ranges**
-320°F(-200°C) to 1200°F(650°C)

**Options**
Dampened movement; bendable extensions up to 18” with sliding union; copper bulb, capillary & braided armor; stainless steel bulb; capillary & spring armor; stainless steel interlocking armor; acrylic or shatterproof glass window

**Digital Test Gauge**
WIKA has calibration test equipment available for temperature or pressure, mechanical or electronic, field use, or use in labs. With EN and N.I.S.T. traceable products, WIKA can provide the required equipment to maintain metrology and calibration laboratories.

**CPG 1000**

**Pressure units**
Displays in 18 standard pressure units with 1 custom unit

**Features**
MIN/MAX, TARE, dampering

**Approvals**
CSA/US intrinsically safe, Class 1, Div. 2 Groups A,B, C, & D; CE approved

**Accuracy**
±0.05% full scale

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call 1-888-WIKA-USA
Thermowells

Thermowells for temperature instruments are recommended for all processes where measurement is of a corrosive medium, high pressure or high flow application. WIKA thermowells are available from a complete selection of base materials, as well as shields and coatings, and in threaded, flanged, welded and sanitary connections. WIKA thermowells are offered in .260” and .385” bores. WIKA sanitary thermowells meet the criteria for 3A sanitary standard 09-09 requirements. WIKA also manufactures thermowell conversion kits to adapt different thermowells to new types of thermometers.

**TW.FL / TW10, TW.TH / TW15, TW.SW / TW20, TW.WI / TW25, TW.SC / TW30**

**Mini-siphon**

The WIKA type 910.24 mini-siphon is specifically designed to replace the old pigtail and coil siphon. The mini-siphon has a thermal barrier which protects the pressure gauge from harmful steam, hot vapors and liquids, and contains a unique inner chamber that reduces pressure surges and “water hammer”. By mounting the gauge closer to the process, the mini–siphon is designed to eliminate gauge whip and vibration that is typically found on traditional siphons.

**Adjustable Over-pressure Protector**

Over-pressure protectors protect the pressure gauge from damaging spikes and surges that exceed the rated capacity of the instrument. WIKA over-pressure protectors come in seven selectable ranges from 6 psi to 8,700 psi. Available in 316 SS.

**Pressure Snubbers**

Pressure snubbers dampen pressure oscillations, allowing easy reading of the “average” pressure. They also protect the gauge from damaging pulsation and spikes. Available in brass and 316 SS with porous, piston and throttling types.

**Siphons**

Siphons protect instruments from high temperature mediums such as saturated steam. The high temperature steam condenses in the siphon, preventing it from damaging the gauge internals. Available in brass, steel or 316 SS. For horizontal (coil) or vertical (pigtail) installations.

**or visit www.wika.com**
For over 60 years, WIKA Instrument Corporation has continuously advanced pressure gauge, transmitter and temperature measurement instrumentation. As the global leader in lean manufacturing, WIKA offers a broad selection of stock and custom instrumentation solutions, which are often available for distribution within days. Producing over 43 million gauges, diaphragm seals, transmitters and thermometers worldwide annually, WIKA's extensive product line provides measurement solutions for any application. The WIKA sales team, along with its customer service and technical staff members, are ready to share their extensive product and industry knowledge to make your business experience with WIKA productive and progressive.

WIKA provides distinctive service and support to our channel partners and customers:
- Award winning U.S.-based manufacturing, sales and ordering customer service and technical support
- Certified technical specialists who conduct Best Practice Instrument Reviews with performance improvement reports
- An in-house engineering team for product customization and innovation
- Proven capabilities to connect with customer business processes for ordering and inventory management
- Web-based customer service features, including RFQs, literature request and competitor product cross reference

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