HVAC & Refrigeration Applications
Pressure and Temperature Measurement
Refrigeration Gauge
WIKAs type 111.11RF 2½" gauges, which have an accuracy of ±1/2/5% of span, are designed as replacement gauges on refrigerant test manifolds. They have brass wetted parts and feature a twist-lock polycarbonate window and adjustment screw on the dial that allows for simple re-zeroing in the field. Additionally, this gauge has a special movement design to eliminate flutter, making the gauge easy to read.

111.11RF
Size
2½"
Case
Blue or red ABS
Wetted parts
Copper alloy
Window
Twist-lock polycarbonate
Accuracy
±1/2/5% of span

XSEL™ Process Gauge
WIKAs XSEL™ process gauges are specifically designed for the petrochemical and processing industries. These durable gauges are engineered to provide reliable service in harsh and rugged environments.

212.34
Size
4½", 6"
Case
Black fiberglass reinforced thermoplastic
Ring
Threaded thermoplastic
Wetted parts
Copper alloy
Window
Acrylic
Accuracy
±0.5% of span (ASME B40.100 accuracy Grade 2A)

Low Pressure Gauge
Extremely sensitive and highly accurate, the type 611.10 capsule gauge is designed to measure very low pressure. It is especially well suited for systems where air or other gases are the measured media, as well as other applications requiring exceptional sensitivity, precision and reliability.

611.10
Size
2½"
Case
Black painted steel
Wetted parts
Copper alloy
Window
Snap-in acrylic/zero adjustment screw on dial
Accuracy
±1.5% of span

Panel Mount Gauge
WIKAs type 111.11PM is designed for a 2½" U-clamp panel mounting. It features a black ABS case and low friction Swiss movement to ensure a long, reliable service life. The 111.11PM design fits into 2½" U. S. size panel cut-outs.

111.11PM
Size
2½"
Case
Black ABS
Wetted parts
Copper alloy
Window
Twist-lock polycarbonate (twist-off, removable)
Accuracy
±3/2/3% of span (ASME B40.100 Grade B)

Ammonia Gauge
The WIKA type 232.53 refrigeration ammonia gauge is suitable for refrigeration ammonia or other liquid or gaseous media which are compatible with 316 SS and will not obstruct the pressure system. They can be liquid-filled in the field when used with refrigeration ammonia. The 232.53 2½" has an accuracy of ±2/1/2% of span and the 232.53 4" has an accuracy of ±1.0% of span.

232.53
Size
2½", 4"
Case
Stainless steel
Ring
Stainless steel crimped-on
Wetted parts
316 SS
Window
Polycarbonate
Liquid fill
Glycerine (233.53)
Accuracy
±2/1/2% of span (2½") (ASME B40.100 accuracy Grade A);
±1.0% of span (4") (ASME B40.100 accuracy Grade 1A)

Low Pressure Gauge
This low pressure DP gauge is designed to measure dry, clean non-aggressive gases and air. It is ideally suited to measure differential pressure in filtration systems, pressure monitoring for HVAC, air handlers, ventilation systems, clean rooms, gas scrubbers and dust collection systems.

A2G-10, A2G-15
Size
4½" (115 mm)
Case
Fiberglass reinforced, thermoplastic
Movement
Magnetic assist, non-contact
Window
Polycarbonate
Accuracy
± 3.0% of span

A2G-10 shown
Mechanical Pressure

**Contractor Gauge**

WIKA's type 111.25CT 4½” gauges are specifically designed for the HVAC market as a contractor's gauge. This gauge features a stainless steel case, snap-in acrylic window, brass wetted parts, an adjustable pointer and has an accuracy of ± 1.0% of span.

### 111.25CT

<table>
<thead>
<tr>
<th>Size</th>
<th>4½”</th>
</tr>
</thead>
<tbody>
<tr>
<td>Case</td>
<td>Stainless steel</td>
</tr>
<tr>
<td>Wetted parts</td>
<td>Copper alloy</td>
</tr>
<tr>
<td>Window</td>
<td>Snap-in acrylic</td>
</tr>
<tr>
<td>Accuracy</td>
<td>±1.0% of span (ASME B40.100 accuracy Grade 1A)</td>
</tr>
</tbody>
</table>

**Hydraulic Gauge**

The WIKA type 212.53 2½” gauge, with an accuracy of ±2/1/2% of span, features a stainless steel case and brass wetted parts for protection in harsh environments. The O-ring seal around the connection makes this gauge prepared for liquid filling; however, the type 213.53 2½” gauge is available with glycerine liquid-fill.

### 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”) (ASME B40.100, accuracy Grade A); ±1.0% of span (4”) (ASME B40.100, accuracy Grade 1A)</td>
</tr>
</tbody>
</table>

**Sprinkler Gauge**

WIKA type 111.10SP 4” gauges are specifically designed and UL and FM approved for fire sprinkler service. This gauge features a black polycarbonate case, acrylic window and brass wetted parts. The 111.10SP has an accuracy of ± 3/2/3% of span.

### 111.10SP

<table>
<thead>
<tr>
<th>Size</th>
<th>4”</th>
</tr>
</thead>
<tbody>
<tr>
<td>Case</td>
<td>Black polycarbonate</td>
</tr>
<tr>
<td>Wetted parts</td>
<td>Copper alloy</td>
</tr>
<tr>
<td>Window</td>
<td>Snap-in polycarbonate</td>
</tr>
<tr>
<td>Accuracy</td>
<td>±3/2/3% of span (ASME B40.100, Grade B)</td>
</tr>
</tbody>
</table>

**Utility Gauge**

WIKA's 111.10 lower mount (LM) and 111.12 center back mount (CBM) gauges are designed for long and reliable service under rugged conditions. The type 111.10 and 111.12 have an accuracy of ± 3/2/3% of span. Both gauges are available in 1½”, 2”, 2½” and 4” to offer a wide variety of ranges and options.

### 111.10, 111.12

<table>
<thead>
<tr>
<th>Size</th>
<th>1½”, 2”, 2½”, 4”</th>
</tr>
</thead>
<tbody>
<tr>
<td>Case</td>
<td>Black ABS plastic</td>
</tr>
<tr>
<td>Wetted parts</td>
<td>Copper alloy</td>
</tr>
<tr>
<td>Window</td>
<td>Snap-in acrylic</td>
</tr>
<tr>
<td>Liquid fill</td>
<td>Not applicable</td>
</tr>
<tr>
<td>Accuracy</td>
<td>±3/2/3% of span (ASME B40.100 accuracy Grade B)</td>
</tr>
</tbody>
</table>

**Differential Gauges**

This piston-style differential pressure gauge is designed for use with clean liquid or gaseous media where high differential pressure/static process pressures are required. The 700.04 and 700.05 are suitable for measuring pressure drops across a variety of devices, including filters, strainers, separators and heat exchangers. Switches are also available.

### 700.04, 700.05

<table>
<thead>
<tr>
<th>Size</th>
<th>2½”, 4½”</th>
</tr>
</thead>
<tbody>
<tr>
<td>Case &amp; bezel</td>
<td>Reinforced plastic</td>
</tr>
<tr>
<td>Sensor housing</td>
<td>316L SS or anodized aluminum</td>
</tr>
<tr>
<td>Wetted parts</td>
<td>Aluminum or 316 SS &amp; ceramic magnet Buna N separating membrane (700.05 only)</td>
</tr>
<tr>
<td>Window</td>
<td>Acrylic or shatter-resistant glass</td>
</tr>
<tr>
<td>DP range</td>
<td>0-5 psi thru 0-100 psi</td>
</tr>
<tr>
<td>Working pressure</td>
<td>700.04 - 6,000 psig (400 bar) 700.05 - 3,000 psig (200 bar)</td>
</tr>
<tr>
<td>Accuracy</td>
<td>±2% of span (increasing)</td>
</tr>
</tbody>
</table>
Mechanical Temperature

3” Industrial Tamper-proof Thermometer

**TI.33**
WIKA's type TI.33 is an economical, industrial grade bimetal thermometer ideally used when a weather-resistant, tamper-proof thermometer is required. The TI.33 offers performance equal to WIKA's process grade thermometers and are warranted for one year.

3” Process Grade Thermometer

**TI.30**
The type TI.30, WIKA's process grade thermometer, is ideal for most rugged industrial temperature measurement applications. It is hermetically sealed and offers protection from both weather and dust. The TI.30 also has an external reset screw and a 7-year warranty.

3” Lower Mount Process Grade Thermometer

**TI.31**
WIKA's process grade type TI.31 features a lower mount connection and all the standard process grade bimetal features including a hermetic seal, an external reset and a 7-year warranty.

<table>
<thead>
<tr>
<th>TI.30, TI.31, TI.33</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Size</strong></td>
</tr>
<tr>
<td><strong>Case &amp; stem</strong></td>
</tr>
<tr>
<td><strong>Stem lengths</strong></td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td><strong>Case configuration</strong></td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td><strong>Connection</strong></td>
</tr>
<tr>
<td><strong>Dial</strong></td>
</tr>
<tr>
<td><strong>Pointer</strong></td>
</tr>
<tr>
<td><strong>Accuracy scale</strong></td>
</tr>
<tr>
<td><strong>Ranges</strong></td>
</tr>
</tbody>
</table>

Vapor Thermometers

WIKA's vapor actuated thermometers are highly accurate and provide remote reading. They are available in U-clamp, front flange or back flange case configurations. WIKA's vapor actuated thermometers are well suited for refrigeration, solar heating and water treatment applications.

<table>
<thead>
<tr>
<th>TI.V20, TI.V25, TI.V35, TI.V45</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Dial</strong></td>
</tr>
<tr>
<td><strong>Case connection</strong></td>
</tr>
<tr>
<td><strong>Connection</strong></td>
</tr>
<tr>
<td><strong>Capillary lengths</strong></td>
</tr>
<tr>
<td><strong>Accuracy</strong></td>
</tr>
<tr>
<td><strong>Ranges</strong></td>
</tr>
<tr>
<td><strong>Capillary</strong></td>
</tr>
</tbody>
</table>

Surface Mount Thermometer

The type TI.ST is an economical, easy-to-use and accurate surface mount thermometer which attaches to any ferrous metal surface to give localized temperature indication.

**TI.ST**

<table>
<thead>
<tr>
<th><strong>Dial</strong></th>
<th>2”</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Depth</strong></td>
<td>1/2”</td>
</tr>
<tr>
<td><strong>Accuracy</strong></td>
<td>±2% of full scale</td>
</tr>
<tr>
<td><strong>Ranges</strong></td>
<td>0 to 500 °F (-20 to 120 °C)</td>
</tr>
</tbody>
</table>
Industrial Glass Thermometer
WIKA's industrial glass thermometers offer easy-to-read temperature measurements in tough applications. Their molded housings are impact resistant and offer excellent rigidity. The glass tubes are also shock resistant.

**Tl.701, Tl.901, Tl.61102, Tl.61104, Tl.62102, Tl.62104**

**Features**
- Blue spirit fill (non-mercury); guaranteed accuracy to within ±1% of full scale range; spring-mounted glass window to reduce rattles
- 7” & 9”
  - Completely adjustable locking case & stem;
  - ranges to 550 °F (288 °C) in Fahrenheit, Celsius, and dual scale; available with or without thermowell
- 6”
  - Available with brass dual-threaded thermowell socket that fits both ½” and ¾” NPT; ranges 40 °F (-40 °C) to 400 °F (200 °C) in Fahrenheit, Celsius and dual scale

Solar Digital Thermometer
WIKA's solar industrial thermometer is an excellent alternative to mercury-in-glass. It eliminates toxic mercury and offers fast, accurate, easy-to-read temperature indications. Retro-fit design is a drop-in replacement for glass thermometers.

**Tl.D01**

**Range**
- 50 to 300 °F (-50/150 °C)

**Accuracy**
- ±1% of reading or 1” (whichever is greater)

**Sensor**
Glass passivated thermistor - NTC

**Lux rating**
10 lux (one foot candle)

**Stem**
In full compliance with Fed Spec GG-T-321D

Pocket Test Thermometer
Type Tl.1005 is a bimetal dial thermometer requiring no power to deliver its quick, accurate readings. The 1” dial is easy-to-read. Stem length is 5”. Thermometer includes pocket case which can be used to hold the stem.

**Tl.1005**

**Range**
-40/160 °F, 0/200 °F, 50/550 °F

**Accuracy**
±1% of full scale

**Stem**
.142: diameter

Thermowells
Thermowells for temperature instruments are recommended for all processes with pressure, flow or where corrosive media is present. WIKA thermowells are available from a complete selection of base materials and for threaded, flanged or welded.

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

**Process connections**
- Threaded, flanged, welded, sanitary

**Instrument connection**
- ½” NPSM standard

**Shank configurations**
- Stepped, straight, tapered

**Bore diameter**
- 260°, 385°

**Materials**
- Brass, AISI 304, AISI 316, (other materials available)

WIKA also carries a full line of thermowells for standard industrial glass and solar industrial thermometers. The thermowells are available in a variety of materials and lengths, and are manufactured to fit stems in compliance with Fed Spec GG-T-321D.

Thermowell Conversion Kit
**T-85**
This conversion kit offers an easy, inexpensive way to install a WIKA bimetal thermometer in a glass industrial thermometer's thermowell. To order, specify part number TA800-0T85.

**Part Number**- TA800-0T85

2” Utility Grade Thermometer
WIKA's type Tl.20 bimetal thermometer is a high-quality, tamper-proof and economical thermometer designed for limited space and OEM applications.

**Size**
2”

**Case & stem**
304 SS

**Stem lengths**
2½” to 24”

**Case configuration**
Center back mount

**Connection**
- ½” NPT

**Dial**
White aluminum; anti-parallax

**Pointer**
Black aluminum

**Accuracy**
±1.0% of full scale (ASME B40.3 Grade A)

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

**Ranges**
-100 ° to 1000 °F (and equivalent Celsius)
Electronic Pressure, Accessories

Refrigeration and Air Conditioning
The R-1 and AC-1 pressure transmitters are specifically designed for refrigeration and air conditioning pressure monitoring applications. The R-1 features stainless steel construction and a completely welded measuring cell. The economical AC-1 features a brass case and ceramic sensing element. Both provide condensation-proof construction for long service life.

**R-1, AC-1**

- **Ranges**: 100 psi - 850 psi, compound
- **Output**: 4-20 mA, 0-10 V, 0.5 - 4.5 V ratiometric
- **Accuracy**: <1% B.F.S.L

Special Purpose Transmitter
The WIKA DP-10 pressure transmitter is designed for the measurement of extremely low gauge and differential pressures of clean, dry, inert, gaseous media. The transmitter uses a linear variable differential transformer (LVDT sensor) for exceptional sensitivity and performance at extremely low pressures. Applications for the DP-10 include HVAC draft flow control and monitoring, pollution control monitoring systems, dust collection systems and medical equipment.

**DP-10**

- **Ranges**: 30” - 0 HgVac to 15,000 psi
- **Output**: 4-20 mA
- **Accuracy**: ±1% of full scale

Snubbers
- **910.12.100 Porous Snubbers**
  WIKA’s porous snubbers are intended to suppress the effect of pressure pulses and pressure peaks and incorporate a fixed mesh disk.
- **910.12.200 Piston Snubbers**
  WIKA’s piston snubbers are suitable for general purpose applications and are supplied with five pistons to adapt to different applications.
- **910.12.300 Throttling Snubbers**
  WIKA’s adjustable snubbers include an adjustable needle valve which will considerably increase the service life of a pressure gauge in extreme operating conditions.

**910.12.100, 910.12.200, 912.12.300**

- **Pressure connection**: ¼" NPT or ½" NPT male x female
- **Material**: Brass or stainless steel
- **O-ring material (adjustable snubber only)**: Brass: Buna-N Stainless steel: Viton®
- **Pressure rating**: Brass: 3,400 psi to 5,800 psi; Stainless Steel: 5,800 psi to 15,000 psi
- **Temperature rating**: 14 °F to 248 °F (-10 °C to 120 °C)

Siphons
- **910.15.100, 910.15.200**

Gauge siphons protect gauges 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 (pigtailed) installations.

**910.15.100**

- **Material**: Brass, steel A120 (schedule 40), Steel A106B (schedule 80 & 160), 316 SS (schedules 80 & 160), Chrome Moly steel (A335 P22), XX Heavy
- **Media temperature reduction**: Approximately 75 °F for each 1 foot linear section of pipe; Actual reduction dependent on process/application variables.

- **910.15.200**

- **910.24**

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.
Mini-needle Valve

Mini-needle valves isolate the pressure gauge from the pressure medium and act as a throttling device. They can also effectively dampen pulsation.

**Type 910.11.100**

**Operating temperature**
Media: max. 200 °F (+93 °C); min. 0 °F (-18 °C)

**Flow rate**
Max. Cv = 0.42

**Orifice size**
0.172" (4.37mm)

**Brass model**

**Pressure rating**
3,000 psi

**Valve body, bonnet, valve stem**
Brass

**Handle**
Knurled knob, brass

**Handle bolt**
Brass, 360

**Stem seals**
Viton® O-ring, Teflon® back-up ring

**Carbon steel model**

**Pressure rating**
6,000 psi

**Valve body**
Carbon steel

**Bonnet**
Carbon steel, 12L14

**Valve stem**
316 SS

**Handle**
“T”, carbon steel

**Handle bolt**
Carbon steel, 12L14

**Stem seals**
Viton® O-ring, Teflon® back-up ring

**Stainless steel model**

**Pressure rating**
6,000 psi

**Valve body, bonnet, valve stem**
316 SS, electropolished

**Handle**
“T”, 316 SS, electropolished

**Handle bolt**
Stainless steel

**Stem seals**
Viton® O-ring, Teflon® back-up ring

Gauge Cock

WIKA gauge cocks provide an economical method for isolating the instrument from the process. They also provide an adjustable flow orifice and are rated at 200 psi.

**910.10**

**Pressure rating**
Brass: 200 psi

**Operating temperature**
Media: max. 140 °F (+93 °C); min. 0 °F (-18 °C)

**Valve body**
Brass

**Handle**
Brass, available with “T” or lever type handle

**Stem seals**
None

**Standard threaded connection size**
¼" NPT or ½" NPT M & F

Pressure & Temperature Plug (P & T)

Pressure & Temperature plugs allow multiple process sampling ports, with the addition of instruments. Equipped with a self-sealing pierceable rubber diaphragm and rated at 1,000 psi and 200 °F (350 °F available).

**910.14.100**

**Pressure rating**
1,000 psi

**Pressure connection**
¼" NPT or ½" NPT male

**Material**
Brass body; neoprene or nordel diaphragm core

**Self-sealing**
Neoprene or nordel diaphragm material

**Temperature rating**
Neoprene 32-200 °F max.; Nordel 32-350 °F max.

Couplings for Siphons

WIKA offers couplings in a variety of connection sizes and materials. Couplings can be used for adapting siphons and gauges to the process to be measured.

**910.14.300**

**Male-male adaptor**
For joining two male connections (e.g. pressure gauge and gauge siphon)

**Pressure connection**
¼" and ½" NPT female

**Materials**
Brass, carbon steel, 316 SS
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