Pressure and temperature measuring instruments for hazardous areas
Our knowledge for your success

In the course of the last six decades the name WIKA has become a symbol for sophisticated solutions in the field of pressure and temperature measurement.

Our ever increasing ability is the basis for implementation of innovative technologies in the form of reliable products and efficient system solutions.

Our top ranking in the world market today owes itself to the consistent devotion to ensure first class quality backed by 6,000 employees in the WIKA group of companies. Right from the outset more than 500 experienced distribution employees alone ensure that our customers are competently advised and individually serviced throughout the world.

Certified quality

The WIKA quality assurance management system has been certified in accordance with ISO 9001:2000 since 1994. The quality and safety standards of our company meet the standard systems of several countries.

Made by WIKA

The development and high-tech production in our owned modern production facilities (Germany, Brazil, China, India, Canada, Poland, Switzerland, South Africa and U.S.A.) is the best warranty for our flexibility.

Whether SMD automatic insertion machines, CNC automatic machining centres, welding robots, laser welding, sputterers, thermotransfer printing or thin film production - we exploit all possibilities to achieve above-average results.

And the end result: More than 43 million quality products are delivered year in, year out, in more than 100 countries. This means some 350 million WIKA measuring instruments in use all over the globe.
With certainty. Worldwide.

Approvals and Certificates
High-quality components are essential for safe and reliable production processes. They are a precondition for highly-efficient processes, helping to avoid danger to people, environment and material.

Rigorous testing of the instruments used, by national and international authorised bodies, results in reliability and stable processes. WIKA instruments offer a wide range of approvals and certification, worldwide.

Electronic, mechatronic and mechanical measuring instruments for pressure and temperature are not only suitable for general industrial applications in aggressive and non-aggressive ambience, WIKA also offers a wide variety of solutions for hazardous areas.

Comprehensive product range
This brochure contains the standard versions of our explosion-protected pressure and temperature measuring instruments.

Depending on the application, we offer optimised solutions in different types of protection (e.g. Ex ia, Ex ib, Ex nA, Ex nL, Ex d, etc.). Further explosion-protected measuring instruments can be found at www.wika.de.
Pressure transmitters, level probes and process transmitters

**N-10**

**Pressure transmitter**

Ex nA

- **ATEX mark:** II 3 G Ex nA IIC T6
- **Non-linearity (± % of span):** 0.2 % BFSL
- **Measuring ranges:** 0 … 0.1 to 0 … 1,000 bar relative
  0 … 0.25 to 0 … 25 bar absolute
- **Special features:** Low-power version
- **Flush diaphragm available**
- **Data sheet:** PE 81.26

**IL-10**

**Level probe**

Ex la

- **ATEX mark:** II 1 G Ex la IIC T4 ... T6
- **Non-linearity (± % of span):** 0.2 % BFSL
- **Measuring ranges:** 0 … 0.1 to 0 … 25 bar relative
- **Special features:** Hastelloy version
- **Data sheet:** PE 81.23

**IUT-10**

**Universal process transmitter**

Ex la

- **ATEX mark:** II 1 G Ex la IIC T4/T5/T6
- **Accuracy (± % of span):** 0.1% of span
- **Measuring ranges:** 0 … 0.4 to 0 … 4000 bar
  -1 … 0 to -1 … +15 bar
  0 … 0.4 to 0 … 16 bar absolute
- **Special features:** Freely scaleable measuring ranges (turndown to 1 : 20)
- **Case made of plastic or aluminium**
- **Flush diaphragm available**
- **Data sheet:** PE 86.02

**IS-20-S / IS-20-F**

**Pressure transmitter**

Ex ia

- **ATEX mark:** II 1 G Ex ia IIC T6
- **Non-linearity (± % of span):** 0.2 % BFSL
- **Measuring ranges:** 0 … 0.1 to 0 … 25 bar absolute
  0 … 0.25 to 0 … 25 bar absolute
- **Special features:** Suitable for SIL 2 according to IEC 61508/IEC 61511
- **High-pressure version available**
- **Flush diaphragm available**
- **Data sheet:** PE 81.50

**Ex ia** – Intrinsic safety

**Ex d** – Flameproof enclosure

**Ex nA** – Non-sparking

**Ex nA nL** – Self-protected Energy-limited

**Ex nL** – Energy-limited
WUC-1X

Ultra high purity transducer
Ex nA nL

- ATEX mark: II 3 G Ex nA nL IIC T4/T5/T6 X
- Measuring ranges: -1 ... 1 to -1 ... 250 bar
  0 ... 1 to 0 ... 400 bar relative, absolute
- Process connection: Single end
  Flow through
  Modular surface mount
- Data sheet: PE 87.06

NWU-1X

Ultra high purity transducer
Ex nL, Ex nA

- ATEX mark: II 3 G Ex nL IIC T4 or II 3 G Ex nA IIC T4
- Measuring ranges: -1 ... 1 to -1 ... 250 bar
  0 ... 2 bar to 0 ... 400 bar relative, absolute
- Process connection: Single end
  Flow through
  Modular surface mount
- Data sheet: PE 87.10

GCS-1

Gas cylinder scale
Ex nL, Ex nA

- ATEX mark: II 3 G Ex nL IIC T4/T5 X
- Accuracy (± % of span): 0.5 % (0.25 % BFSL)
- Measuring ranges: 0 ... 60 lbs (27.22 kg),
  0 ... 100 lbs (45.36 kg),
  0 ... 300 lbs (136.08 kg)
- Special features: Meets highest EMC requirements
- Data sheet: PE 87.19

DPT-10

Differential pressure transmitter
Ex ia, Ex d

- ATEX mark: II 1 G, 1/2 G, 2 G Ex ia IIC T6
  II 1/2 G, 2 G Ex d ia IIC T6
- Accuracy (± % of span): 0.075 ... 0.15 %
- Measuring ranges: 0 ... 10 mbar to 0 ... 40 bar
  at max. stat. pressure of 160 or 420 bar
- Special features: Freely scalable measuring ranges
  Case made of plastic, aluminium
  or stainless steel
  Optionally with integrated display
  and instrument mounting bracket for
  wall/pipe mounting
- Data sheet: PE 86.21

For information about further explosion-protected application areas,
please refer to the respective data sheet and to our approvals database at www.wika.de.
Pressure measuring instruments with electrical output signal

**Ex ia – Intrinsic safety**

**PGT23.1x0**
Bourdon tube, stainless steel version
Ex ia

- ATEX mark: II 2 G Ex ia IIC T4 ... T6 bzw. I M2 Ex ia I
- Accuracy class: 1.0
- Scale range: 0 ... 0.6 to 0 ... 1600 bar
- Data sheet: PV 12.04

**PGT43.1x0**
Diaphragm element, stainless steel version
Ex ia

- ATEX mark: II 2 G Ex ia IIC T4 ... T6 bzw. I M2 Ex ia I
- Accuracy class: 1.6
- Scale range: 0 ... 16 mbar to 0 ... 40 bar
- Data sheet: PV 14.03

**PGT43HP.1x0**
Diaphragm element, stainless steel version
Ex ia

- ATEX mark: II 2 G Ex ia IIC T4 ... T6 bzw. I M2 Ex ia I
- Accuracy class: 1.6
- Scale range: 2.5 ... 100 mbar
- Overpressure safety: to 400 bar
- Data sheet: PV 16.06

**DPGT43.1x0**
Differential pressure, stainless steel version
Ex ia

- ATEX mark: II 2 G Ex ia IIC T4 ... T6 bzw. I M2 Ex ia I
- Accuracy class: 1.6
- Scale range: 0 ... 16 mbar to 0 ... 25 bar
- Data sheet: PV 17.05

**DPGT43HP.1x0**
Differential pressure, stainless steel version, highly overpressure safe, Ex ia

- ATEX mark: II 2 G Ex ia IIC T4 ... T6 bzw. I M2 Ex ia I
- Accuracy class: 1.6
- Scale range: 0 ... 60 mbar to 0 ... 40 bar
- Data sheet: PV 17.13

**PGT63HP.1x0**
Capsule element, stainless steel version
Ex ia

- ATEX mark: II 2 G Ex ia IIC T4 ... T6 bzw. I M2 Ex ia I
- Accuracy class: 1.6
- Scale range: 0 ... 20 mbar to 0 ... 100 bar
- Data sheet: PV 16.06
### APGT43.1x0
- **Absolute pressure, stainless steel version**
- **Ex ia**

- ATEX mark: II 2 G Ex ia IIC T4 ... T6 bzw. I M2 Ex ia I
- Accuracy class: 2.5
- Scale range: 0 ... 25 mbar to 0 ... 25 bar absolute pressure
- Data sheet: PV 15.02

### 712.15 with 892.44
- **Cryo Gauge® Ex ia**

- ATEX mark: II 2 G Ex ia IIC T4 ... T6 bzw. I M2 Ex ia I
- Especially for level measurement in cryogenic technology
- Scale selection switch for multiple scales
- Synchronous span adjustment for mechanical and electrical output signal
- Data sheet: PM 07.30

---

For information about further explosion-protected application areas, please refer to the respective data sheet and to our approvals database at www.wika.de.
## Pressure measuring instruments with switch contacts

Ex c – Constructive safety

<table>
<thead>
<tr>
<th>Model Number</th>
<th>Description</th>
<th>Accuracy Class</th>
<th>Scale Range</th>
<th>Data Sheet</th>
</tr>
</thead>
<tbody>
<tr>
<td>212.20 with 831</td>
<td>Bourdon tube, industrial series</td>
<td>1.0</td>
<td>0 ... 0.6 to 0 ... 600 bar</td>
<td>PV 22.01</td>
</tr>
<tr>
<td>23x.50 with 831</td>
<td>Bourdon tube, stainless steel version</td>
<td>1.0</td>
<td>0 ... 0.6 to 0 ... 1600 bar</td>
<td>PV 22.02</td>
</tr>
<tr>
<td>23x.30 with 831</td>
<td>Bourdon tube, stainless steel safety version</td>
<td>1.0</td>
<td>0 ... 0.6 to 0 ... 1600 bar</td>
<td>PV 22.03</td>
</tr>
<tr>
<td>43x.30 with 831</td>
<td>Diaphragm element, stainless steel safety version</td>
<td>1.6</td>
<td>0 ... 16 mbar to 0 ... 40 bar</td>
<td>PV 24.03</td>
</tr>
<tr>
<td>43x.50 with 831</td>
<td>Diaphragm element, stainless steel version</td>
<td>1.6</td>
<td>0 ... 16 mbar to 0 ... 40 bar</td>
<td>PV 24.03</td>
</tr>
<tr>
<td>432.x6 with 831</td>
<td>Diaphragm element, stainless steel version, highly overpressure safe</td>
<td>1.6</td>
<td>0 ... 16 mbar to 0 ... 40 bar</td>
<td>PV 24.07</td>
</tr>
</tbody>
</table>
Mechatronic pressure measuring instruments

632.51 with 831
Capsule element, stainless steel version
Ex c
- ATEX mark: 632.51II 2 GD c TX
  831: II 2 G Ex ia IIC T6
- Accuracy class: 1.6
- Scale range: 0 ... 2.5 to 0 ... 100 mbar
- Data sheet: PV 26.06

73x.51 with 831
Differential pressure, stainless steel version
Ex c
- ATEX mark: 73x.51: II 2 GD c TX
  831: II 2 G Ex ia IIC T6
- Accuracy class: 1.6
- Scale range: 0 ... 16 mbar to 0 ... 25 bar

732.14 with 831
Differential pressure, highly overpressure safe
Ex c
- ATEX mark: 732.14: II 2 GD c TX
  831: II 2 G Ex ia IIC T6
- Accuracy class: 1.6
- Scale range: 0 ... 60 mbar to 0 ... 40 bar
- Overpressure safety: to 400 bar

For information about further explosion-protected application areas, please refer to the respective data sheet and to our approvals database at www.wika.de.
Pressure switches

Ex ia – Intrinsic safety
Ex d – Flameproof enclosure

PCS / PCA

Compact design
Ex ia, Ex d

ATEX mark:
PCS: II 1 G Ex ia IIC T6/T4
II 1 D Ex iaD 20 IP65 T85 °C/135 °C
PCA: II 1/2 G Ex d IIC T6 IP 65 T85 °C
II 1/2 G Ex d IIC T6 IP 65 T85 °C
Repeatability: better than 1 %
Measuring range: -1 ... 0.1 to 100 ... 600 bar
Data sheet: SP 08.36, SP 08.31, SP 08.32, SP 08.33

MW / MA

Diaphragm element
Ex ia, Ex d

ATEX mark:
MW: II 1 G Ex ia IIC T6/T4
II 1 D Ex iaD 20 IP65 T85 °C/135 °C
MA: II 1/2 G Ex d IIC T6
II 1/2 G Ex tD A21 IP65 T85 °C
Repeatability: better than 1 %
Measuring range: 0.2 ... 0 to 0 ... 40 bar
Data sheet: PV 31.10, SP 08.11

BWX / BAX

Bourdon tube
Ex ia, Ex d

ATEX mark:
BWX: II 1 G Ex ia IIC T6/T4
II 1 D Ex iaD 20 IP65 T85 °C/135 °C
BAX: II 1/2 G Ex d IIC T6
II 1/2 G Ex d A21 IP65 T85 °C
Repeatability: better than 1 %
Measuring range: 0 ... 2.5 to 0 ... 600 bar
Data sheet: SP 08.20, SP 08.21, SP 08.22

MWB / MAB

Diaphragm element, low pressure range
Ex ia, Ex d

ATEX mark:
MWB: II 1 G Ex ia IIC T6/T4
II 1 D Ex iaD 20 IP65 T85 °C/135 °C
MAB: II 1/2 G Ex d IIC T6
II 1/2 G Ex d A21 IP65 T85 °C
Repeatability: better than 1 %
Measuring range: 0 ... 16 to 0 ... 100 bar
Data sheet: SP 08.12, SP 08.13
Mechatronic pressure measuring instruments

**MWH / MAH**

Diaphragm piston system, for high pressure ranges Ex ia, Ex d

- ATEX mark:
  - MWH: II 1 G Ex ia IIC T6/T4
  - MAH: II 1/2 G Ex d IIC T6

- Repeatability: better than 1 %
- Measuring range: 4 … 40 to 30 … 600 bar
- Data sheet: SP 08.14, SP 08.15

**DW10 / DA10**

Differential pressure, low pressure range Ex ia, Ex d

- ATEX mark:
  - DW10: II 1 G Ex ia IIC T6
  - DA10: II 1/2 G Ex d IIC T6

- Repeatability: better than 1 %
- Measuring range: 0 … 160 mbar to 0 … 40 bar
- Data sheet: SP 08.44, SP 08.45

**DW / DA**

Differential pressure Ex ia, Ex d

- ATEX mark:
  - DW: II 1 G Ex ia IIC T6/T4
  - DA: II 1/2 G Ex d IIC T6

- Repeatability: better than 1 %
- Measuring range: 0 … 160 mbar to 0 … 40 bar
- Data sheet: SP 08.42, SP 08.43

**DC / DE**

Differential pressure, compact design Ex ia, Ex d

- ATEX mark:
  - DC: II 1 G Ex ia IIC T6/T4
  - DE: II 1/2 G Ex d IIC T6

- Repeatability: better than 1 %
- Measuring range: 0 … 160 mbar to 0 … 40 bar
- Data sheet: SP 08.40, SP 08.41

For information about further explosion-protected application areas, please refer to the respective data sheet and to our approvals database at www.wika.de.
Pressure gauges with Bourdon tube

- **111.10**
  - Standard version
  - Ex c
  - ATEX mark: II 2 GD c TX
  - Accuracy class: 2.5
  - Scale range: 0 ... 0.6 to 0 ... 400 bar (max. 40 bar with 160 mm)
  - Data sheet: PM 01.01

- **111.12**
  - Standard version, back mount connection
  - Ex c
  - ATEX mark: II 2 GD c TX
  - Accuracy class: 2.5
  - Scale range: 0 ... 0.6 to 0 ... 400 bar (max. 40 bar with 160 mm)
  - Data sheet: PM 01.09

- **111.16**
  - Panel mounting series, back mount connection
  - Ex c
  - ATEX mark: II 2 GD c TX
  - Accuracy class: 2.5
  - Scale range: 0 ... 0.6 to 0 ... 400 bar
  - Data sheet: PM 01.10

- **113.53**
  - Standard version with liquid filling
  - Ex c
  - ATEX mark: II 2 GD c TX
  - Accuracy class: NS 40: 2.5, NS 80, 100: 1.6
  - Scale range: 0 ... 1 to 0 ... 400 bar
  - Data sheet: PM 01.08

- **213.40**
  - Forged brass case with liquid filling, Ex c
  - ATEX mark: II 2 GD c TX
  - Accuracy class: NS 63: 1.6, NS 100: 1.0
  - Scale range: 0 ... 0.6 to 0 ... 1000 bar
  - Data sheet: PM 02.06

- **213.53**
  - Stainless steel case with liquid filling, Ex c
  - ATEX mark: II 2 GD c TX
  - Accuracy class: NS 50, 63: 1.6, NS 100: 1.0
  - Scale range: NS 50: 0 ... 1 to 0 ... 600 bar, NS 63, 100: 0 ... 0.6 to 0 ... 1000 bar
  - Data sheet: PM 02.12
All pressure gauges on this page can be delivered in combination with a flame-arresting gap so they can also be mounted to Zone 0 hazardous areas.

<table>
<thead>
<tr>
<th>Model</th>
<th>Description</th>
<th>ATEX Mark</th>
<th>Accuracy Class</th>
<th>Scale Range</th>
<th>Overpressure Safety</th>
<th>Data Sheet</th>
</tr>
</thead>
<tbody>
<tr>
<td>23x.30</td>
<td>Bourdon tube, safety version, stainless steel Ex c</td>
<td>II 2 GD c TX</td>
<td>1.0</td>
<td>0 ... 1600 bar</td>
<td>Data sheet: PM 02.04</td>
<td></td>
</tr>
<tr>
<td>23x.36</td>
<td>Bourdon tube, safety version, stainless steel Ex c</td>
<td>II 2 GD c TX</td>
<td>1.0</td>
<td>0 ... 40 bar</td>
<td>Overpressure safety: to 100 bar</td>
<td>Data sheet: PM 02.15</td>
</tr>
<tr>
<td>23x.50</td>
<td>Bourdon tube, stainless steel version Ex c</td>
<td>II 2 GD c TX</td>
<td>1.0</td>
<td>0 ... 1600 bar</td>
<td>Data sheet: PM 02.02</td>
<td></td>
</tr>
</tbody>
</table>

For information about further explosion-protected application areas, please refer to the respective data sheet and to our approvals database at www.wika.de.
Pressure gauges for relative, absolute and differential pressure

All pressure gauges on this page can be delivered in combination with a flame-arresting gap so they can also be mounted to Zone 0 hazardous areas.

**43x.30**
Diaphragm element safety version, stainless steel
Ex c

- ATEX mark: II 2 GD c TX
- Accuracy class: 1.6
- Scale range: 0 ... 16 mbar to 0 ... 40 bar
- Data sheet: PM 04.03

**43x.50**
Diaphragm element, stainless steel version
Ex c

- ATEX mark: II 2 GD c TX
- Accuracy class: 1.6
- Scale range: 0 ... 16 mbar to 0 ... 40 bar
- Data sheet: PM 04.03

**73x.14**
Differential pressure, stainless steel, highly overpressure safe up to max. 400 bar, Ex c

- ATEX mark: II 2 GD c TX
- Accuracy class: 1.6
- Scale range: 0 ... 60 mbar to 0 ... 40 bar
- Overpressure safety: to 400 bar
- Data sheet: PM 07.13

Ex c – Constructive safety
For information about further explosion-protected application areas, please refer to the respective data sheet and to our approvals database at www.wika.de.
Resistance thermometers

Ex ia – Intrinsic safety
Ex d – Flameproof enclosure
Ex nA nL – Self-protected Energy-limited

**TR10**

For industrial applications
Ex ia, Ex d, Ex nAL

- ATEX mark: II 1 G Ex ia IIC T3 ... T6 Ga
- II 1 D Ex ia IIC T65/T95/T125°C Da
- II 1/2 GD EEx d IIC TX °C IP65
- II 3 GD EEx nAL IIC TX °C IP65
- Sensor element: Pt100, Pt1100
- Measuring range: -200 ... +600 °C
- Data sheet: e.g. TE 60.03

**TR22**

For sanitary applications
Ex ia, Ex nAL

- ATEX mark: II 1 G Ex ia IIC T3 ... T6 Ga
- II 1 D Ex ia IIC T65/T95/T125°C Da
- II 3 GD EEx nAL IIC TX °C IP65
- Sensor element: Pt100
- Measuring range: -50 ... +250 °C
- Data sheet: TE 60.22

**TR25**

In-line version
Ex ia

- ATEX mark: II 1 G Ex ia IIC T3 ... T6 Ga
- II 1 D Ex ia IIC T65/T95/T125°C Da
- II 3 GD EEx nAL IIC TX °C IP65
- Sensor element: Pt100
- Measuring range: -50 ... +250 °C
- Data sheet: TE 60.25

**TR30**

Compact design
Ex ia

- ATEX mark: II 1 G Ex ia IIC T3 ... T6 Ga
- II 1 D Ex ia IIC T65/T95/T125°C Da
- II 2D Ex ia 21 T
- Sensor element: Pt100
- Measuring range: -50 ... +450 °C
- Output: Pt100, 4 ... 20 mA
- Data sheet: TE 60.30

**TR40**

Cable version
Ex ia, Ex nAL

- ATEX mark: II 1 G Ex ia IIC T3 ... T6 Ga
- II 1 D Ex ia IIC T65/T95/T125°C Da
- II 3 GD EEx nAL IIC TX °C IP65
- Sensor element: Pt100, Pt1100
- Measuring range: -200 ... +600 °C
- Data sheet: TE 60.40

**TR50**

Surface version
Ex ia, Ex nAL

- ATEX mark: II 1 G Ex ia IIC T3 ... T6 Ga
- II 1 D Ex ia IIC T65/T95/T125°C Da
- II 3 GD EEx nAL IIC TX °C IP65
- Sensor element: Pt100, Pt1100
- Measuring range: -200 ... +600 °C
- Data sheet: TE 60.50
Electrical temperature measuring instruments

For information about further explosion-protected application areas, please refer to the respective data sheet and to our approvals database at www.wika.de.

**TR53**
Bayonet version
Ex ia, Ex nAL
- ATEX mark: II 1 G Ex ia IIC T3 ... T6 Ga
- II 1 D Ex ia IIC T65/T95/T125°C Da
- III 3 GD EEx nAL IIC TX °C IP65
- Sensor element: Pt100, Pt1000
- Measuring range: -200 ... +600 °C
- Data sheet: TE 60.53

**TR55**
With spring-loaded measurement tip
Ex ia, Ex nAL
- ATEX mark: II 1 G Ex ia IIC T3 ... T6 Ga
- II 1 D Ex ia IIC T65/T95/T125°C Da
- III 3 GD EEx nAL IIC TX °C IP65
- Sensor element: Pt100
- Measuring range: -200 ... +600 °C
- Data sheet: TE 60.55

**TR60-A**
For ambient temperature
Ex ia, Ex nAL
- ATEX mark: II 1 G Ex ia IIC T3 ... T6 Ga
- II 1 D Ex ia IIC T65/T95/T125°C Da
- III 3 GD EEx nAL IIC TX °C IP65
- Sensor element: Pt100
- Measuring range: -40 ... +80 °C
- Data sheet: TE 60.60
Thermocouples

Ex ia, ib, ic – Intrinsic safety
Ex d – Flameproof enclosure
Ex nA – Non-sparking
Ex nA nL – Self-protected Energy-limited
Ex nL – Energy-limited

TC10
For industrial applications
Ex ia, Ex d, Ex nAL

- ATEX mark: II 1 G Ex ia IIC T3 ... T6 Ga
  II 1 D Ex ia IIC T65/T95/T125°C Da
  II 1/2 GD EEx d IIIC TX °C IP65
  II 3 GD EEx nAL IIC TX °C IP65
- Sensor element: Type K, N, E, J or T
- Measuring range: -200 ... +1260 °C
- Data sheet: e.g. TE 65.03

TC40
Cable version
Ex ia, Ex nAL

- ATEX mark: II 1 G Ex ia IIC T3 ... T6 Ga
  II 1 D Ex ia IIC T65/T95/T125°C Da
  II 3 GD EEx nAL IIC TX °C IP65
- Sensor element: Type K, N, E, J or T
- Measuring range: -200 ... +1260 °C
- Data sheet: TE 65.40

TC50
Surface version
Ex ia, Ex nAL

- ATEX mark: II 1 G Ex ia IIC T3 ... T6 Ga
  II 1 D Ex ia IIC T65/T95/T125°C Da
  II 3 GD EEx nAL IIC TX °C IP65
- Sensor element: Type K, N, E, J or T
- Measuring range: -200 ... +1260 °C
- Data sheet: TE 65.50

TC 53
Bayonet version
Ex ia, Ex nAL

- ATEX mark: II 1 G Ex ia IIC T3 ... T6 Ga
  II 1 D Ex ia IIC T65/T95/T125°C Da
  II 3 GD EEx nAL BC TX °C IP65
- Sensor element: Type K, N, E, J or T
- Measuring range: -200 ... +600 °C
- Data sheet: TE 65.53
Temperature transmitters

**T12**
4 ... 20 mA, digital
Ex ia, Ex nL

- ATEX mark: II 1 G EEx ia IIC T6
- ATEX mark: II 3 G EEx nL IIC T6
- Accuracy: < 0.25 %
- Input: Pt100, thermocouple
- PC configurable
- Data sheet: TE12.03

**T24**
4 ... 20 mA, analogue
Ex ia, Ex nL

- ATEX mark: II 1 G EEx ia IIC T6
- ATEX mark: II 3 G EEx nL IIC T6
- Accuracy: < 0.20 %
- Input: only Pt100
- PC configurable
- Data sheet: TE 24.01

**T32**
4 ... 20 mA, HART®, digital
Ex ia, Ex nL

- ATEX mark: II 1G Ex ia IIC T6
- ATEX mark: II 1 D Ex iaD
- ATEX mark: II 3GD Ex nA [nL] IIC T6
- ATEX mark: II 3GD Ex ic IIC T6
- Accuracy: < 0.12 %
- Input: Pt100, thermocouple, potentiometer, duplex sensor
- PC configurable
- Data sheet: TE 32.04

**T53**
FOUNDATION Fieldbus™, PROFIBUS PA
Ex ia, Ex ic, Ex nA [nL]

- ATEX mark: II 1 G Ex ia IIC T6
- ATEX mark: II 1 D Ex iaD
- ATEX mark: II 3 GD Ex nA [nL] IIC T6
- Accuracy: < 0.10 %
- Input: Pt100, thermocouple, potentiometer, duplex sensor
- PC configurable
- Data sheet: TE 53.01

For information about further explosion-protected application areas, please refer to the respective data sheet and to our approvals database at www.wika.de.
Dial indicating thermometers with switch contacts

**55 with 831**
- Bimetal
- Ex c

- ATEX mark: 55: II 2 GD c TX
- Nominal size: 100, 160
- Wetted parts: stainless steel 1.4571
- Option: liquid damping up to max. 250 °C (sensor)
- Data sheet: TV 25.01

**73 with 831**
- Gas actuated
- Ex c

- ATEX mark: 73: II 2 GD c TX
- Nominal size: 100
- Wetted parts: stainless steel 1.4571
- Option: capillary liquid damping (case)
- Data sheet: TV 27.01

**74 with 831**
- Gas actuated, for sanitary applications
- Ex c

- ATEX mark: 74: II 2 GD c TX
- Nominal size: 100
- Wetted parts: stainless steel 1.4435
- Option: surface of wetted parts electropolished liquid damping (case)
- Data sheet: TV 27.02

Temperature switches

**TXS / TXA**
- Mini version
- Ex ia, Ex d

- ATEX mark:
  - TXS: II 1 G Ex ia IIC T6/T4
  - TXA: II 2 G Ex d IIC T6
- Measuring range: -15 ... +210 to +180 ... 250 °C
- Data sheet: SP 08.70, SP 08.72

**TCS / TCA**
- Compact design
- Ex ia, Ex d

- ATEX mark:
  - TCS: II 1 G Ex ia IIC T6/T4
  - TCA: II 2 G Ex d IIC T6
- Measuring range: -30 ... +10 °C to 160 ... 250 °C
- Data sheet: SP 08.64, SP 08.65

**TWG / TAG**
- Heavy-duty version
- Ex ia, Ex d

- ATEX mark:
  - TWG: II 1 G Ex ia IIC T6/T4
  - TAG: II 2 G Ex d IIC T6
- Measuring range: -30 ... +70 °C to 0 ... 600 °C
- Data sheet: SP 08.60, SP 08.61
Dial indicating thermometers

**53 / 54**

**Bimetal**

*Ex c*

- ATEX mark: II 2 GD c TX
- Nominal size: 53: 3", 5"; 54: 63, 80, 100, 160
- Wetted parts: stainless steel 1.4571
- Option: liquid damping up to max. 250 °C (sensor)
- Data sheet: TM 53.01, TM 54.01

**55**

**Bimetal, Case rotating and swivelling**

*Ex c*

- ATEX mark: II 2 GD c TX
- Nominal size: 53: 3", 5"; 54: 63, 80, 100, 160
- Wetted parts: stainless steel 1.4571
- Option: liquid damping up to max. 250 °C (sensor)
- Data sheet: TM 55.01

**73**

**Gas actuated, stainless steel version**

*Ex c*

- ATEX mark: II 2 GD c TX
- Nominal size: 100, 160
- Wetted parts: stainless steel 1.4435
- Option: capillary liquid damping (case)
- Data sheet: TM 73.01

**74**

**Gas actuated, for food, bio and pharmaceutical industries**

*Ex c*

- ATEX mark: II 2 GD c TX
- Nominal size: 100
- Wetted parts: stainless steel 1.4435
- Option: surface of wetted parts electropolished liquid damping (case)
- Data sheet: TM 74.01

For information about further explosion-protected application areas, please refer to the respective data sheet and to our approvals database at www.wika.de.
Calibration technology for pressure and temperature

<table>
<thead>
<tr>
<th>Product Code</th>
<th>Product Description</th>
<th>Ex Mark</th>
<th>ATEX Mark</th>
<th>Accuracy</th>
<th>Measuring Range</th>
<th>Features</th>
</tr>
</thead>
<tbody>
<tr>
<td>CPH6200-Ex</td>
<td>Hand-Held pressure indicator</td>
<td>Ex ib</td>
<td>II 2 G Ex ib IIC T4</td>
<td>0.2 %</td>
<td>0 ... 0.1 to 0 ... 1000 bar</td>
<td>Integrated data logger, Data sheet: CT 11.02</td>
</tr>
<tr>
<td>CTH65I0</td>
<td>Hand-Held thermometer</td>
<td>Ex ib</td>
<td>II 2 G Ex ib IIC T4</td>
<td>50 ... 800 mK</td>
<td>-200 ... 800 °C</td>
<td>Pt100, Data sheet: CT 55.10</td>
</tr>
<tr>
<td>CPG1000</td>
<td>Precision digital pressure gauge</td>
<td>Ex nA</td>
<td>II 3 G Ex nA IIB T6</td>
<td>0.05 %</td>
<td>0 ... 0.07 to 0 ... 700 bar</td>
<td>Integrated data logger, robust stainless steel case, IP 65, Data sheet: CT 10.01</td>
</tr>
</tbody>
</table>
**Accessories**

**DIH50-F / DIH52-F**

- **HART® current loop display**
- **Ex ia, Ex d**

- ATEX mark: II (1) G Ex ia IIC T4 ... T6 (Ga) Gb
- Accuracy (+ % of span): 0.1 % ± 1 digit
- Display: measured value (5-digit), bargraph (20 segments) unit and info line (6-digit)
- Special features: automatic adjustment of display range and unit via HART® communication, Model DIH52-F suitable for multidrop operation and with local master function
- Data sheet: AC 80.10, AC 80.11

**DIH62-F**

- **HART® current loop display**
- **Ex ia**

- ATEX mark: II (1) G Ex ia IIC T4 ... T6 (Ga) Gb
- Accuracy (+ % of span): 0.1 % ± 1 digit
- Display: measured value (5-digit), bargraph (20 segments) unit and info line (6-digit)
- Special features: automatic adjustment of display range and unit via HART® communication
- Suitable for multidrop operation
- Local master function
- Data sheet: AC 80.12

**A-IAI-1**

- **LCD attachable indicator for transmitters**
- **Ex ib**

- ATEX mark: II (1) G Ex ia IIC T4
- Accuracy: (+ % of span): 0.2 % ± 1 digit
- Indication range: -1999 ... 9999
- Input signal: 4 ... 20 mA
- Data sheet: AC 80.07

**NWUR-1**

- **Ultra high purity LED attachable indicator for transmitters**, **Ex nA**

- ATEX mark: II 3 G Ex nA IIC T6 X
- Accuracy (+ % of span): (0.25 % BFSL) ± 1 digit
- Scale range: -999 ... 6000
- 0 ... 2 to 0 ... 400 bar relative, absolute
- Input and output signal: 4 ... 20 mA
- 2xNPN Open Collector (potential-free)
- Data sheet: PE 87.21

**Control unit for inductive switch contacts**

- **Ex ia**

- ATEX mark: II (1) GD [Ex ia] IIC
- For 1 or 2 contacts
- Rated voltage: 230 V AC or 20 ... 35 V DC
- Also available in safety version
- Data sheet: AC 08.01

**Transmitter supply isolator**

- **Ex ia**, **Ex nA**

- ATEX mark: II (1) GD [Ex ia] IIC
- II 3G Ex nA II T4
- Input/output signal: 0/4 ... 20 mA
- HART®
- Rated voltage: DC 20 ... 35 V DC

For information about further explosion-protected application areas, please refer to the respective data sheet and to our approvals database at www.wika.de.
Combination possibilities pressure for measuring instruments with diaphragm seals

The diaphragm seal can be mounted to the measuring instruments either by direct mounting or via a capillary, as desired. Rigid mounting is made by a direct threaded connection or welding the measuring instrument into the diaphragm seal or via an adapter. At high temperatures, a cooling element can be connected in-between.
Combination possibilities for temperature measuring instruments with thermowells

Whether in aggressive or abrasive process media, whether in high- or low-temperature ranges: For electrical or mechanical thermometers, to prevent direct exposure of their temperature sensors to the medium, thermowells that suit each application are available.

Thermowells can be machined from solid barstock or assembled from tube sections and can either be screw-, weld- or flange-fitted. They are offered in standard and special materials such as stainless steel 1.4571, 316/316L, hastelloy or titanium. Each version, depending on its construction type and its mounting to the process, has certain advantages and drawbacks with respect to its load limits and the special materials that can be used.

In order to manufacture thermowells for flange mounting at low cost from special materials, the designs used differ from standard thermowells in accordance with DIN 43772. Thus, only the wetted parts of the thermowell are manufactured from special materials, whereas the non-wetted flange is made of stainless steel and is welded to the special material.

This design is used both for fabricated and solid-machined thermowells. With the special material, tantalum, a removable jacket is used, which is slid over the supporting thermowell from stainless steel.

For the separation of ex-zones in accordance with ATEX, thermowells can be used in combination with the process connections per EN 60079-26 shown below.
### Conditions in the hazardous area

<table>
<thead>
<tr>
<th>Material Groups</th>
<th>Temporary behaviour of the flammable material in the hazardous area</th>
<th>Classification of hazardous areas</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>IEC</td>
<td>EPL*</td>
</tr>
<tr>
<td>Gases, vapours</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Are present continuously, for long periods or frequently</td>
<td>Zone 0</td>
<td>Ga</td>
</tr>
<tr>
<td>Occur occasionally</td>
<td>Zone 1</td>
<td>Gb</td>
</tr>
<tr>
<td>Probably do not occur at all, but if they do, only rarely or for short periods</td>
<td>Zone 2</td>
<td>Gc</td>
</tr>
<tr>
<td>Dust</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Are present continuously, for long periods or frequently</td>
<td>Zone 21</td>
<td>Db</td>
</tr>
<tr>
<td>Occur occasionally</td>
<td>Zone 22</td>
<td>Dc</td>
</tr>
<tr>
<td>Probably do not occur at all, due to suspended dust, but if they do, only rarely or for short periods</td>
<td>--</td>
<td>Ma</td>
</tr>
<tr>
<td>Methane, dust</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Hazardous areas</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Potentially hazardous areas</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Fibres / flyings</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

(*) Equipment Protection Level per IEC 2007 and CENELEC 2009

### Ignition protection types (examples)

<table>
<thead>
<tr>
<th>Ignition protection type</th>
<th>Marking</th>
<th>Definition</th>
<th>IEC</th>
<th>ATEX approval</th>
<th>FM / UL</th>
</tr>
</thead>
<tbody>
<tr>
<td>Flameproof enclosure</td>
<td>Ex d</td>
<td>Propagation of an explosion to the outside is prevented.</td>
<td>IEC 60079-1</td>
<td>EN 60079-1</td>
<td>FM 3615 UL 1203</td>
</tr>
<tr>
<td>Intrinsic safety</td>
<td>Ex i</td>
<td>Limitation of the energy of sparks and temperatures</td>
<td>IEC 60079-11</td>
<td>EN 60079-11</td>
<td>FM 3610 UL 913</td>
</tr>
<tr>
<td>n</td>
<td>Ex n</td>
<td>Different protection principles only for Zone II/Div. 2</td>
<td>IEC 60079-15</td>
<td>EN 60079-15</td>
<td>FM 3611 ANSI/ISA 12.12.01</td>
</tr>
</tbody>
</table>

### Temperature classes and max. surface temperatures

<table>
<thead>
<tr>
<th>Class</th>
<th>T1</th>
<th>T2</th>
<th>T2A, T2B, T2C, T2D</th>
<th>T3</th>
<th>T3A, T3B, T3C</th>
<th>T4</th>
<th>T4A</th>
<th>T5</th>
<th>T6</th>
</tr>
</thead>
<tbody>
<tr>
<td>IEC/ATEX/NEC 505</td>
<td>450 °C</td>
<td>300 °C</td>
<td>--</td>
<td>200 °C</td>
<td>--</td>
<td>135 °C</td>
<td>--</td>
<td>100 °C</td>
<td>85 °C</td>
</tr>
<tr>
<td>NEC 500/CEC</td>
<td>450 °C</td>
<td>300 °C</td>
<td>280 °C 260 °C 230 °C 215 °C</td>
<td>200 °C</td>
<td>180 °C 165 °C 160 °C</td>
<td>135 °C</td>
<td>120 °C</td>
<td>100 °C</td>
<td>85 °C</td>
</tr>
</tbody>
</table>
# Technical Information

## Groups

<table>
<thead>
<tr>
<th>IEC/ATEX/NEC 505</th>
<th>NEC 500 /CEC</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Gas groups</strong></td>
<td></td>
</tr>
<tr>
<td>Group I</td>
<td></td>
</tr>
<tr>
<td>I Methane</td>
<td>- *</td>
</tr>
<tr>
<td>Group II</td>
<td>Class I</td>
</tr>
<tr>
<td>IIA propane</td>
<td>Propane</td>
</tr>
<tr>
<td>IIB ethylene</td>
<td>Ethylene</td>
</tr>
<tr>
<td>IIB + H2 ethylene+hydrogen</td>
<td>Acetylene</td>
</tr>
<tr>
<td>IIC acetylene</td>
<td>Hydrogen</td>
</tr>
<tr>
<td>IIC hydrogen</td>
<td></td>
</tr>
<tr>
<td><strong>Dust groups</strong></td>
<td>Class II/III</td>
</tr>
<tr>
<td>Group III**</td>
<td></td>
</tr>
<tr>
<td>IIIA combustible flyings</td>
<td>Fibres, flyings</td>
</tr>
<tr>
<td>IIIB non-conducting dust</td>
<td>Non-carbon-containing dust</td>
</tr>
<tr>
<td>IIIC conducting dust</td>
<td>Carbon-containing dust</td>
</tr>
</tbody>
</table>

*A are not within the scope of NEC or CEC

**per IEC 2007 and CENELEC 2009