

Gas distribution systems | Chip-tool support | Facilities support equipment

Measurement solutions for semiconductor, solar, light



Smart in sensing



WIKA in brief

A family business
since 1946

> 11,200 employees

Global service and
distribution

1.2 billion euro turnover

Quality management:
ISO 9001, ISO 13485

Environmental
management: ISO 14001

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WIKA's unique experience
and know-how make
sensing technology
smarter, add more value
and prepare it for a
sustainable future.

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WIKA – YOUR RELIABLE PARTNER

WIKA's UHP pressure gauge and transducer product lines offer customers in the semiconductor, photovoltaic and flat panel display industries a comprehensive portfolio of pressure measurement solutions for gas delivery systems and on-tool gas panels of the highest purity requirements.

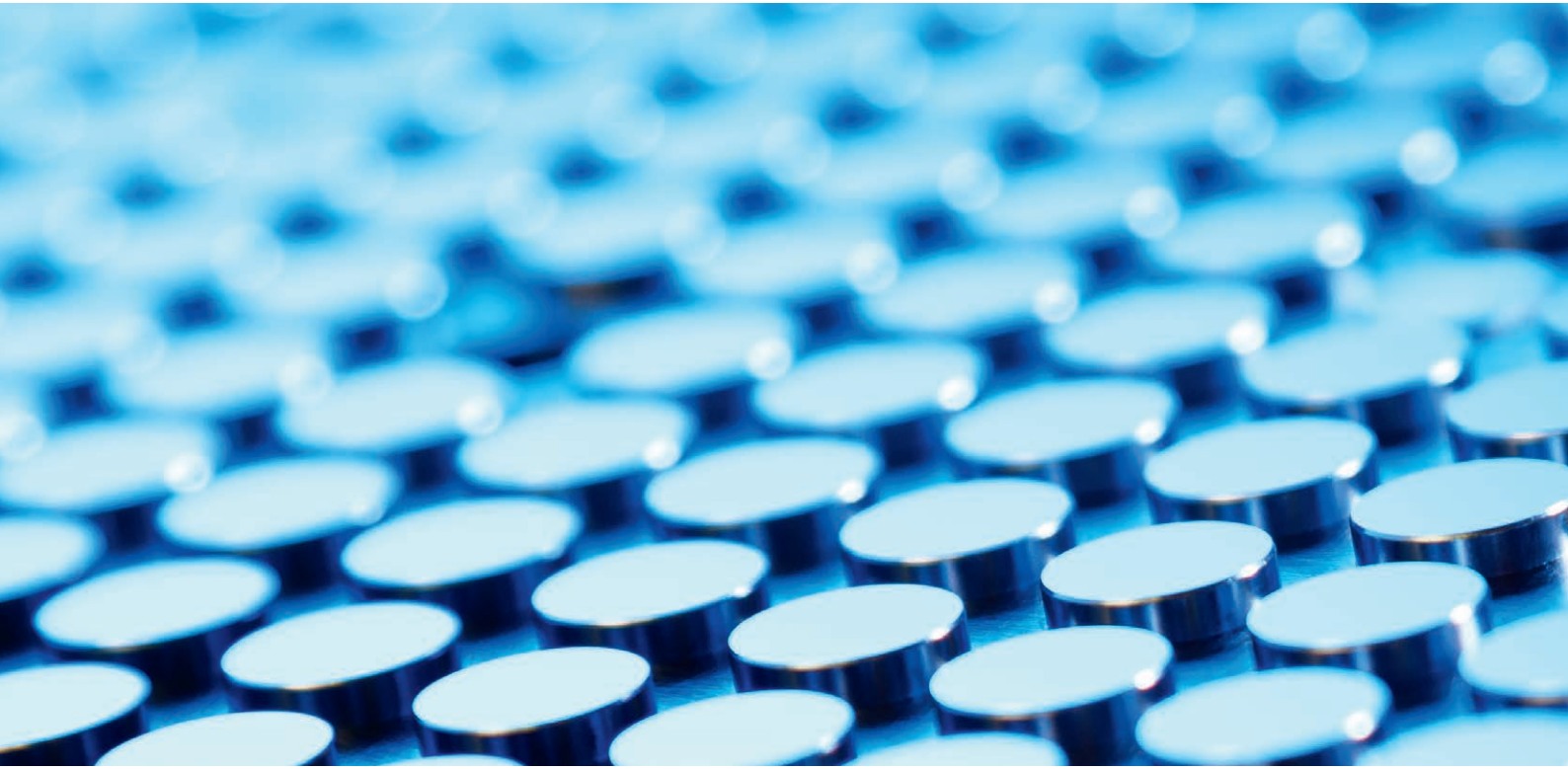
A team of development engineers provide customised designs to meet customer-specific applications and requirements. Comprehensive quality control and engineering efforts ensure that every WIKA instrument is built to last.

As the market leader in measurement technology, we support your transformation with a broad portfolio of innovative and high-precision products, IIoT solutions and services, which we are continuously developing with more than 100 development engineers. Together with our global service and distribution network and our own production, we offer smart, efficient, and sustainable top quality for your requirements.

In this way, we can continue to grow together. That is "Smart in sensing" and you can rely on it now and in the future.

Alexander Wiegand,
Chairman and CEO, WIKA

DESIGN AND MATERIALS

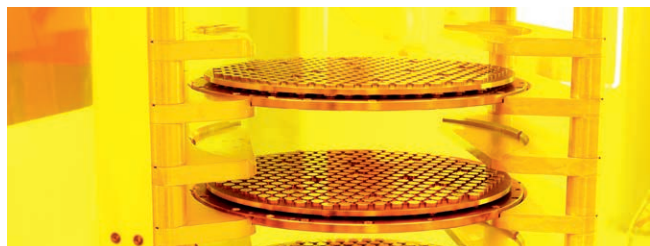


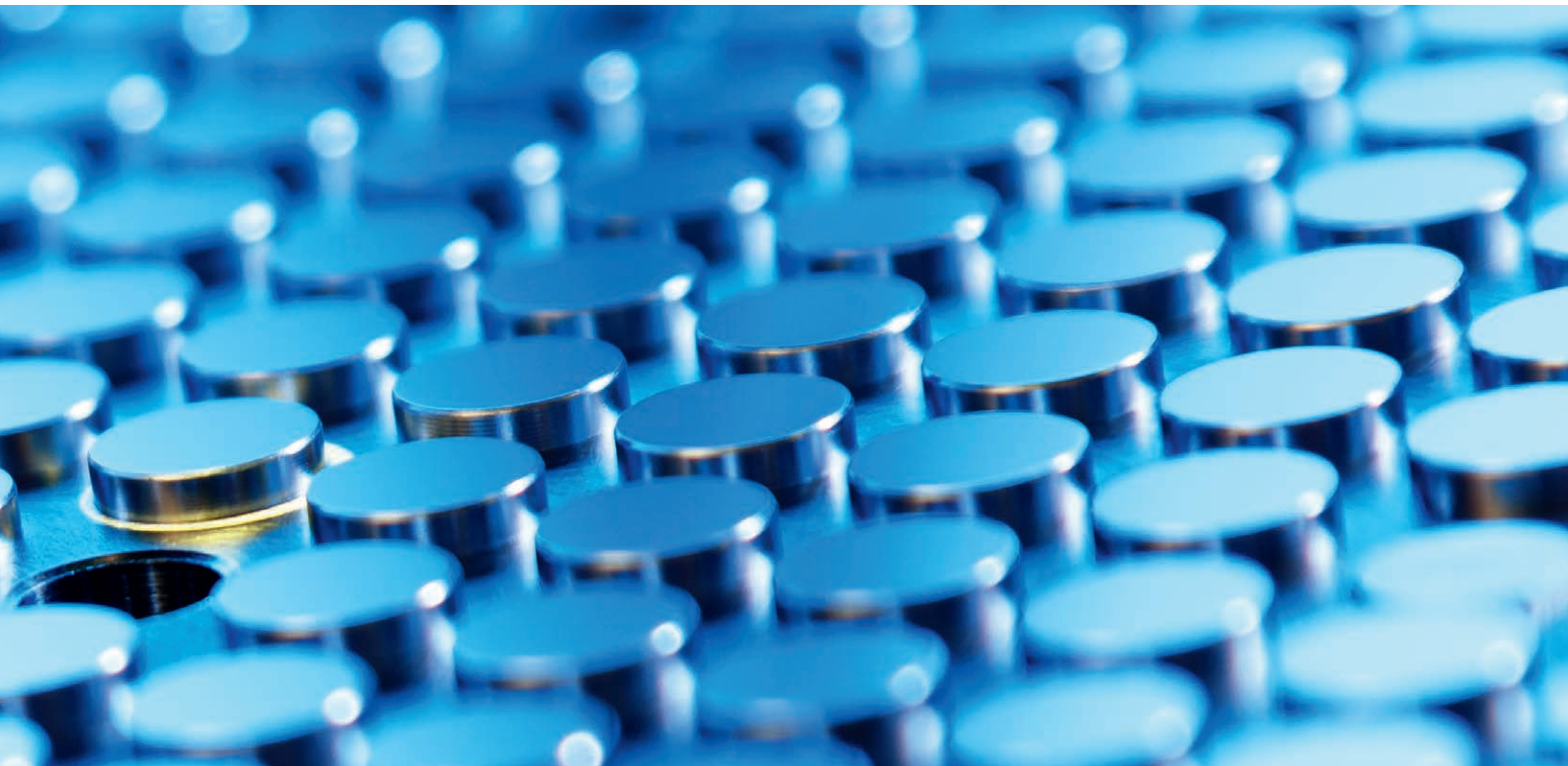
WIKA's High Purity and Ultra High Purity products are designed to the rigorous standards and recommendations relevant to the semiconductor market and its governing agencies. UHP Bourdon tube pressure gauges have electropolished internal surfaces and are the standard gauge of gas distribution systems installed in semiconductor FABs.

The bourdon tube UHP pressure gauge series is complemented by a diaphragm-based UHP pressure gauge offering the smallest possible dead space and shortest purge cycle times.

WIKA's UHP pressure transducers are electronic instruments of the smallest footprint which meet the highest ex protection requirements. They enable the increasingly compact design of gas cabinets or valve manifold panels that are installed in modern chip production.

A patented design provides the semiconductor industry with the only true vacuum-referenced, non-capacitance based UHP pressure transducer in the market. WIKA's proven monolithic thin-film pressure sensor technology serves advanced requirements in pressure measurement for gas distribution and point of use on chip tools.





Media-wetted surfaces are designed to comply with SEMI standards and are compatible with semiconductor flammable, toxic and corrosive gases. While all reputable manufacturers comply with SEMI specifications, WIKA products go one step further incorporating technology with customer preference into every design. By allowing to select wetted surface area materials comprised of 316L double-melt stainless steel or proprietary VIM/VAR materials, the extensive configurability in terms of electrical and process connections makes the UT01 transducers perfect for both design-ins and retrofits.

The accuracy of all WIKA products is reported in accordance with national ASME and international IEC standards to address industry expectations for non-linearity, hysteresis, non-repeatability and reproducibility.

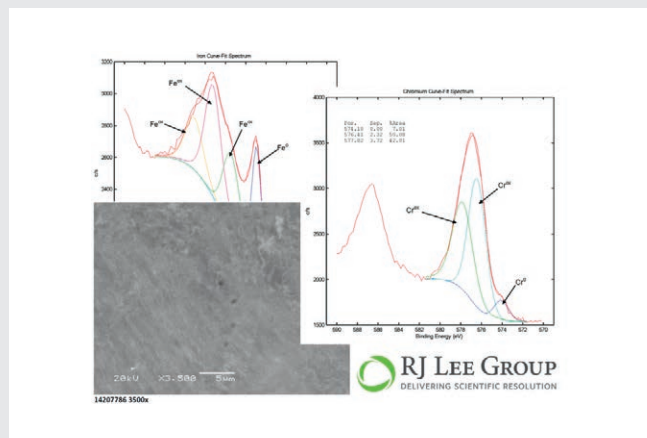


TESTING, PACKAGING AND PRESERVATION



In order to comply with the High Purity and Ultra High Purity (UHP) requirements of the semiconductor industry, WIKA UHP and HP products are cleaned, packaged and preserved in accordance with SEMI specifications. All UHP products are 100% helium leak tested to 1×10^{-9} scc/sec in an ISO class 6 cleanroom or better.

Ensuring continued SEMI conforming quality of UHP products and manufacturing processes, WIKA assigns periodic analytical assessments carried out by RJ Lee Group, Inc. using analytical methods corresponding to SEMI F72 and SEMATECH 91060573B (AES), SEMATECH 90120403B (XPS) and SEMATECH 90120401B and SEMI F73 (SEM).



CERTIFICATES AND APPROVALS



Given the increasing requirements in terms of quality and product safety, WIKA offers a wide range of approvals and certificates to best meet customer expectations and regulatory compliances. For hazardous applications, WIKA offers a host of international approvals for key locations in Asia, US and the EU.



Ultra High Purity pressure transducers

Compact

WUC-10, WUC-15, WUC-16



The most compact design of the WUC series transducer meets the smallest product footprint requirements. The space-saving design and extensive configurability makes it the perfect fit for new, as well as retrofit projects.

- Accuracy class: $\leq 0.5\%$ FS per IEC 61298-2 ($\leq 0.2\%$ RSS)
- Measuring range: 30 ... 5,000 psi / 2 ... 360 bar
(further pressure units available),
Compound, absolute, gauge
- Special features: 4 ... 20 mA, DC 0 ... 5 V, DC 0 ... 10 V,
IP67 (NEMA 4),
Manual zero point setting
- Data sheet: PE 87.06



True vacuum reference

WU-20, WU-25, WU-26



The WU-2 series transducer combines state-of-the-art digital transducer concepts with analogue-like output signals to provide the safest and most accurate pressure measurements necessary for today's demanding market requirements.

- Accuracy class: $\leq 0.3\%$ FS per IEC 61298-2 ($\leq 0.15\%$ RSS)
- Measuring range: 30 ... 5,000 psi / 2 ... 360 bar
(further pressure units available),
Compound, absolute, gauge
- Special features: 4 ... 20 mA, DC 0 ... 5 V, DC 0 ... 10 V,
Vacuum reference,
IP67 (NEMA 4),
Manual zero point setting
- Data sheet: PE 87.07



Intrinsically safe

iWU-2x



With its Ex ia zone 0 approval the iWU-2x series transducer can be used in almost all hazardous semiconductor applications. That, coupled with its excellent performance, makes it the perfect choice for demanding applications.

- Accuracy class: $\leq 0.3\%$ FS per IEC 61298-2 ($\leq 0.15\%$ RSS)
- Measuring range: 30 ... 5,000 psi / 2 ... 360 bar
(further pressure units available),
Compound, absolute, gauge
- Special features: Zone 0 Ex ia,
Vacuum reference
IP67
Manual zero point setting
- Data sheet: PE 87.09



Integrated display, EtherCAT

WUD-2x-E



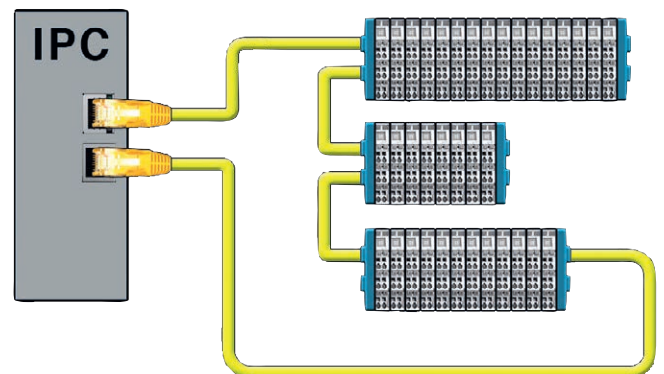
The WUD-2x-E brings EtherCAT® down to the transducer level, enabling customers to gather more data, reduce cabling cost and increase tool reliability by leveraging the built-in cable redundancy.

- Accuracy class: $\leq 0.3\%$ FS per IEC 62828-2
- Measuring range: 30 ... 5,000 psi / 2 ... 360 bar (further pressure units available), Compound, absolute, gauge
- Special features: EtherCAT, Cable redundancy, Vacuum reference, Manual or electronic zero point setting
- Data sheet: PE 87.12

EtherCAT 

Cable redundancy

Due to the designated “IN” and “OUT” ports of the WUD-2x-E it can be connected to the main device in a ring topology. This, together with the full duplex capability of the network, allows for a cable redundant setup. In the event of a failure, all remaining devices can be addressed both in receiving and transmitting direction. Therefore every device up until the failed device can be addressed.



Integrated display & switch

WUD-20, WUD-25, WUD-26



Optional alarm contacts are available for programming two user-defined switch points

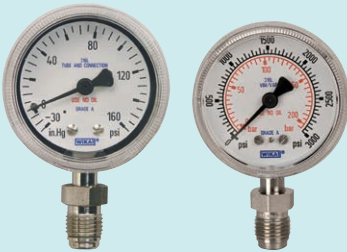
The WUD-2x incorporates a local, rotatable, and programmable display with the state-of-the-art electronics of the WU-2x. The WUD-2x transducer with integrated display provides a local reading of the process pressure measurement as well as the associated analogue output signal (current or voltage) from the transducer.

- Accuracy class: $\leq 0.3\%$ FS per IEC 61298-2 ($\leq 0.15\%$ RSS)
- Measuring range: 30 ... 5,000 psi / 2 ... 360 bar (further pressure units available), Compound, absolute, gauge
- Special features: 4 ... 20 mA, DC 0 ... 5 V, DC 0 ... 10 V, Vacuum reference, IP67, Manual zero point setting, Optional 2 switching outputs (NPN)
- Data sheet: PE 87.08

Pressure gauges and switches

Ultra High Purity Bourdon tube pressure gauge

230.15, 230.25



The 230.15 is the right choice for specialty gas, Ultra High Purity, PV and SEMI applications in gas distribution systems using face seal fittings. The 230.25 is best suited for applications that require VIM/VAR wetted parts and face seal fittings. Both product variants have electropolished media-wetted stainless steel surfaces, as well as electropolished stainless steel cases.

- Nominal size: 2" (53 mm), 1½" (40 mm)
- Scale range: Vacuum / compound and positive pressure ranges
- Accuracy class: 2": Grade A per ASME B40.1, 1½": Grade B per ASME B40.1
- Data sheet: PM 02.20

UHP Bourdon tube pressure gauge with switch contact

230.15, 230.25 with 851.3



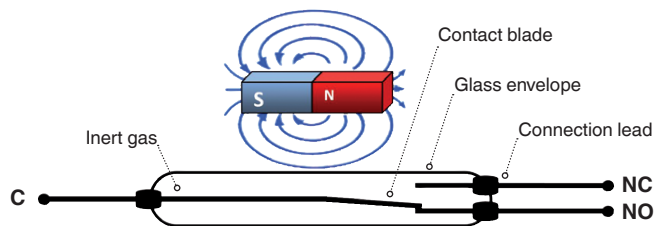
The 230.15 and 230.25 series are complemented by a reed switch option allowing for monitoring pressure levels by electrical alert output. The WIKA switch option offers normally open (NO) and normally closed (NC) functionality in one single instrument.

- Nominal size: 2" (53 mm), 1½" (40 mm)
- Scale range: Vacuum / compound and positive pressure ranges
- Accuracy class: 2": Grade A per ASME B40.1, 1½": Grade B per ASME B40.1 (other accuracy classes upon request)
- Data sheet: PV 22.05

Functional diagram

Reed contact SPDT (change-over) not actuated

C = common
NC = normally closed
NO = normally open



High Purity Bourdon tube pressure gauge

130.15



The 130.15 series is designed for specialty gas installations where High Purity gas distribution systems are assembled using NPT connections.

- Nominal size: 2" (53 mm), 1½" (40 mm)
- Scale range: Vacuum / compound and positive pressure ranges
- Accuracy class: 2": Grade A per ASME B40.1, 1½": Grade B per ASME B40.1
- Data sheet: PM 02.19

Diaphragm pressure gauges

Diaphragm gauges are the perfect mechanical pressure gauge for low-pressure, point-of-use applications. The gauge's design allows for use in potentially corrosive gases in etch applications, reduces particle generation and decreases dry-down times.

UHP Flow-Through-Gauge

432.25



Sensitive installations, such as hook-up in chip fabs, require a specific focus on particle prevention. Using a flow-through gauge in a GDS eliminates any dead space and shortens purge cycles after installation or maintenance.

- Nominal size: 2" (53 mm), 1½" (40 mm), 1 1/8" (28 mm)
- Scale range: -1 ... 4 bar / -30 inHg ... 60 psi, -1 ... 9 bar / -30 inHg ... 130 psi
- Accuracy class: Grade B per ASME B40.1, (other accuracy classes upon request)
- Data sheet: PM 04.12

UHP mini diaphragm pressure gauge

432.15 1.3"



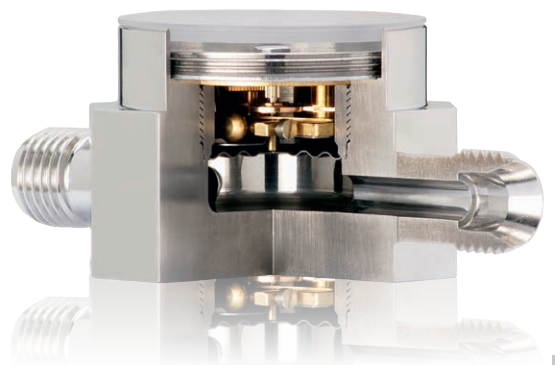
Gas distribution systems on chip production tools combine the need for an excellent Ultra High Purity class with the need for a minimal footprint. These applications are addressed by the mini diaphragm pressure gauges (MDG).

- Nominal size: 1.3" (33 mm)
- Scale range: -1 ... 4 bar / -30 inHg ... 60 psi, -1 ... 9 bar / -30 inHg ... 130 psi, -30 inHg ... 160 psi, 0 ... 160 psi
- Accuracy class: Grade B per ASME B40.1,
- Data sheet: PM 04.18

432.10 1"



- Nominal size: 1" (25.4 mm)



Displays and scales

Remote digital display

DI30



- Input: Standard signals
- Alarm output: 2 relays
- Special features: TARE Function
- Power supply: AC 230 V or AC 115 V
- Data sheet: AC 80.05

Gas cylinder scale Specialty gas filling level control

GCS-1



Gas cylinder scales are engineered and designed for liquid delivery sources used in both indoor and outdoor hazardous and non-hazardous applications.

- Nominal size: $\leq 0.1\%$ FS
- Measuring range: 0 ... 60 lb (0 ... 27.22 kg),
0 ... 100 lb (0 ... 45.36 kg),
0 ... 300 lb (0 ... 136.08 kg)
- Output signal: 4 ... 20 mA, DC 0 ... 5 V, DC 0 ... 10 V,
- Ingress protection: IP65
- Data sheet: PE 87.19



Installation and testing

UHP high-accuracy test gauge

332.54-UHP



The 332.54-UHP is a high-accuracy “Inspector’s Test Gauge” used to qualify equipment installations serving UHP upstream source and point-of-use applications within semiconductor fabrication facilities.

- Nominal size: 4" (100 mm)
- Scale range: -1 ... 1 bar / -30 inHg ... 15 psi,
-1 ... 360 bar / -30 inHg ... 5,000 psi
- Accuracy class: -30 inHg ... 600 psi: ± 0.25 % of span (ASME B40.1 Grade 3A),
600 ... 2,000 psi: ± 0.5 % of span (ASME B40.1 Grade 2A),
2,000 ... 5,000 psi: ± 0.25 % of span (ASME B40.1 Grade 3A)
- Data sheet: 332.54-UHP

Pneumatic hand pump

CPP7-H



- Pressure range: -0.8 ... +7 bar
-11.6 ... 101.5 psi
- Medium: Ambient air
- Special features: Pressure and vacuum generation switchable,
Low weight,
Compact dimensions
- Data sheet: CT 91.02

Exhaust and abatement monitoring

Clean room monitoring

A2G-10



- Measuring range: 0 ... 6.000 Pa
- Accuracy class: ≥ 250 Pa = 3.0
101 ... 249 Pa = 5.0
 ≤ 100 Pa = 10.0
- Ingress protection: IP65
- Data sheet: PM 07.40

Differential pressure sensor

A2G-50



ERC

- Output signal: 0 ... 10 V (3-wire),
4 ... 20 mA (3-wire)
- Measuring range: 100 ... 2.500 Pa
- Accuracy class: ± 1.5 % +1 Pa of reading
- Ingress protection: IP54
- Data sheet: PE 88.02

Pressure sensors for general industrial applications

Standard version

A-10



ERC

- Non-linearity (\pm % of span): ≤ 0.25 or 0.5 BFSL
- Measuring range: 0 ... 0.05 to
0 ... 1,000 bar
- Special features: Compact design,
Free test certificate
- Data sheet: PE 81.60

Superior version

S-20



ERC

- Non-linearity (\pm % of span): ≤ 0.25 BFSL
(optional ≤ 0.125 or 0.5 BFSL)
- Measuring range: 0 ... 0.4 to 0 ... 1,600 bar
- Special features: Extreme operating conditions,
Customer-specific variants,
Free test certificate
- Data sheet: PE 81.61

CDA, pneumatics and general purity gas sticks

Welding gauge

111.11



■ Data sheet: PM 01.03

Pressure gauge, stainless steel

131.11



■ Data sheet: PM 01.05

Utility gauge, lower mount and centre back mount

111.10, 111.12



■ Data sheet: PM 01.01

Process cooling water

Bimetal thermomanometer

100.02.063



■ Data sheet: PM 01.23

Bourdon tube pressure gauge, stainless steel with VCR®-compatible process connections

232.35



■ Data sheet: PM 02.11

Process cooling water gauge

232.53



■ Data sheet: 23X.53

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9028064 07/2024 EN



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