

WIK A

Standard product portfolio

Pressure | Temperature | Level | Force | Flow | Calibration technology





Alexander Wiegand,
Chairman and CEO, WIKA

About us

As a family-run business acting globally, with over 9,300 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.

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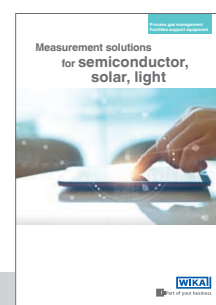
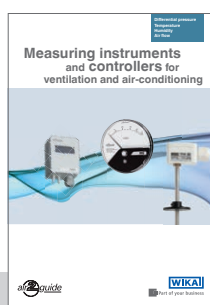
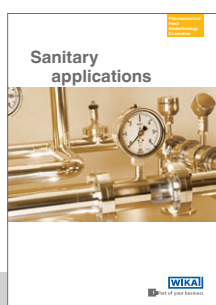
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You can find our industry-specific products with a lot of additional information in our segment brochures at www.wika.com.

- Sanitary applications
- Ventilation and air-conditioning
- SF₆ lifecycle solutions
- High purity & ultra high purity



Bourdon tube pressure gauges

Copper alloy

These pressure gauges are suitable for liquid and gaseous media, so long as they are not highly viscous or crystallising and do not attack copper alloy parts. The scale ranges cover pressures from 0.6 ... 1,000 bar. These instruments are manufactured in accordance with the European standard EN837-1 (except for model 116.15 and 111.12 in NS 27).

For the individual models, various approvals such as EAC, GL and KBA exist. For measuring points with high dynamic loads, such as fast load cycles or vibrations, a liquid-filled design should be used.

111.10, 111.12

Standard version



Nominal size	27, 40, 50, 63, 80, 100, 160 mm
Scale range	<ul style="list-style-type: none"> ■ NS 27: 0 ... 4 to 0 ... 25 bar and 0 ... 100 to 0 ... 400 bar ■ NS 40 ... 100: -1 ... 0 to 0 ... 400 bar ■ NS 160: 0 ... 40 bar
Accuracy class	2.5, 1.6 optional NS 27: 4.0
Data sheet	PM 01.01, PM 01.17

111.11

Welding gauge ISO 5171



Nominal size	40, 50, 63 mm
Scale range	0 ... 0.6 to 0 ... 400 bar
Accuracy class	2.5
Data sheet	PM 01.03

111.16, 111.26

Panel mounting series



Nominal size	40, 50, 63 mm, model 111.26 also 80 mm
Scale range	-1 ... 0 to 0 ... 400 bar
Accuracy class	2.5
Data sheet	PM 01.10

113.13

Plastic case, liquid filling



Nominal size	40, 50, 63 mm
Scale range	-1 ... 0 to 0 ... 400 bar
Accuracy class	2.5
Data sheet	PM 01.04

214.11

Edgewise panel design



Nominal size	96 x 96, 72 x 72
Scale range	<ul style="list-style-type: none"> ■ NS 96 x 96: 0 ... 0.6 to 0 ... 1,000 bar ■ NS 72 x 72: 0 ... 0.6 to 0 ... 400 bar
Accuracy class	1.6, 1.0
Data sheet	PM 02.07

116.15

DirectDrive, spiral tube



Nominal size	36, 41 mm
Scale range	0 ... 185 to 0 ... 450 bar
Accuracy class	4.0
Data sheet	PM 01.16

212.20

Stainless steel case



ERC GL

Nominal size	100, 160 mm
Scale range	0 ... 0.6 to 0 ... 1,000 bar
Accuracy class	1.0
Data sheet	PM 02.01

213.40

Heavy-duty version, liquid filling



ERC GL

Nominal size	63, 80, 100 mm
Scale range	-1 ... 0 to 0 ... 1,000 bar
Accuracy class	1.0 (NS 100), 1.6 (NS 63 and 80)
Data sheet	PM 02.06

113.53, 213.53

Stainless steel case, liquid filling



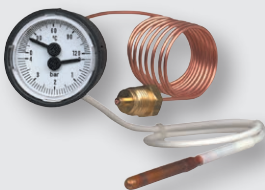
ERC GL PG

Nominal size	113.53: 40, 80 mm 213.53: 50, 63, 100 mm
Scale range	-1 ... 0 to 0 ... 1,000 bar
Accuracy class	113.53: 1.6 (NS 80), 2.5 (NS 40) 213.53: 1.0 (NS 100), 1.6 (NS 50, 63)
Data sheet	PM 01.08, PM 02.12

Thermomanometer

MFT

With capillaries, for pressure and temperature measurement



ERC GL

Nominal size	40, 42, 52 mm
Scale range	■ Pressure 0 ... 4 bar ■ Temperature 0 ... 120 °C
Accuracy class	■ Pressure 2.5 (EN 837-1) ■ Temperature 2.5
Data sheet	PM 01.20

THM10

Eco version, for pressure and temperature measurement



ERC GL

Nominal size	63, 80 mm
Scale range	■ Pressure 0 ... 4 to 0 ... 10 bar ■ Temperature 0 ... 120 °C
Connection location	Lower mount or back mount
Accuracy class	■ Pressure 2.5 (EN 837-1) ■ Temperature 2 (EN 13190)
Data sheet	PM 01.24

100.02

For pressure and temperature measurement



ERC GL

Nominal size	63, 80 mm
Scale range	■ Pressure 0 ... 1 to 0 ... 16 bar ■ Temperature 0 ... 100 to 0 ... 150 °C
Accuracy class	■ Pressure 2.5 (EN 837-1) ■ Temperature 2.5
Data sheet	PM 01.23

Bourdon tube pressure gauge

Stainless steel

The application areas for these pressure gauges, manufactured entirely in stainless steel, are gaseous and liquid aggressive media that are not highly viscous or crystallising, also in aggressive environments. They are suitable for scale ranges from 0 ... 0.6 to 0 ... 7,000 bar.

Dependant upon the pressure range and the instrument model, overload safety of up to a maximum of 5 x full scale value is possible. To this point, the measurement accuracy is maintained. Liquid filling the case ensures a precise instrument display, even with high dynamic pressure loads and vibrations.

131.11

Compact version



Ex

Nominal size	40, 50, 63 mm
Scale range	■ NS 40, 50: 0 ... 1 to 0 ... 600 bar. ■ NS 63: 0 ... 1 to 0 ... 1,000 bar
Accuracy class	2.5
Ingress protection	IP65
Data sheet	PM 01.05

232.50, 233.50

For the process industry, standard version



Ex EAC GL

Nominal size	63, 100, 160 mm
Scale range	■ NS 63: 0 ... 1 to 0 ... 1,000 bar ■ NS 100: 0 ... 0.6 to 0 ... 1,000 bar ■ NS 160: 0 ... 0.6 to 0 ... 1,600 bar
Accuracy class	1.0 (NS 100, 160), 1.6 (NS 63)
Ingress protection	IP65
Data sheet	PM 02.02

232.30, 233.30

For the process industry, safety version



Ex EAC GL S

Nominal size	63, 100, 160 mm
Scale range	■ NS 63: 0 ... 1 to 0 ... 1,000 bar ■ NS 100: 0 ... 0.6 to 0 ... 1,000 bar ■ NS 160: 0 ... 0.6 to 0 ... 1,600 bar
Accuracy class	1.0 (NS 100, 160), 1.6 (NS 63)
Ingress protection	IP65
Data sheet	PM 02.04

232.36, 233.36

High overload safety up to the 4-fold full scale value, safety version



Ex EAC S

Nominal size	100, 160 mm
Scale range	0 ... 0.6 to 0 ... 40 bar
Overload safety	Up to 4 times the measuring range
Accuracy class	1.0
Data sheet	PM 02.15

232.34, 233.34

Process Gauge, safety version per ASME B40.100



Nominal size	4 1/2"
Scale range	0 ... 0.6 bar to 0 ... 1,000 bar
Accuracy class	Grade 2A
Ingress protection	IP54 per EN 60529 / IEC 529 (with liquid filling IP65)
Data sheet	PM 02.10

Test gauge

For highest accuracy

Depending upon the instrument model, accuracies of 0.1, 0.25 or 0.6 % of full scale value can be measured.

The pressure ranges cover from 0 ... 6 mbar to 0 ... max. 1,600 bar and are suitable for calibration tasks. For each of the pressure gauges specified here, a DKD/DAkkS certificate can be provided.

312.20

Copper alloy, class 0.6



ERC

Nominal size	160 mm
Scale range	0 ... 0.6 to 0 ... 600 bar
Accuracy class	0.6
Ingress protection	IP54
Data sheet	PM 03.01

332.50, 333.50

Stainless steel, standard version, class 0.6



ERC

Nominal size	160 mm
Scale range	0 ... 0.6 to 0 ... 1,600 bar
Accuracy class	0.6
Ingress protection	IP65
Data sheet	PM 03.06

332.30, 333.30

Stainless steel, safety version, class 0.6



ERC (S)

Nominal size	160 mm
Scale range	0 ... 0.6 to 0 ... 1,600 bar
Accuracy class	0.6
Ingress protection	IP65
Data sheet	PM 03.05

342.11

Class 0.1, with transport case and acceptance test certificate



ERC

Nominal size	250 mm
Scale range	0 ... 1 to 0 ... 1,600 bar
Accuracy class	0.1
Ingress protection	IP54
Data sheet	PM 03.03

610.20, 630.20

For low pressure ranges to 600 mbar, class 0.6



ERC

Nominal size	160 mm
Scale range	0 ... 10 to 0 ... 600 mbar
Accuracy class	0.6
Ingress protection	IP54
Data sheet	PM 06.09

Diaphragm pressure gauge

The application areas for diaphragm pressure gauges are very versatile. They are the specialists in the process industry when it comes to critical measuring tasks such as with highly corrosive or viscous media or when it comes to low pressures and high overload. The scale ranges are from as low as 0 ... 16 mbar to typically 0 ... 25 to 0 ... 40 bar. Dependant upon the pressure range and the instrument model, overload safety of 3 x or 5 x full scale value is possible as standard.

For special designs, an overload safety of up to 400 bar is possible, with the measurement accuracy maintained. Diaphragm pressure gauges are even suitable for highly viscous or contaminated media by using an open connecting flange (per DIN/ASME). For measuring particularly aggressive media, the complete wetted surface can be lined with a large selection of special materials (e.g. PTFE, Hastelloy, tantalum, and many more).

422.12, 423.12

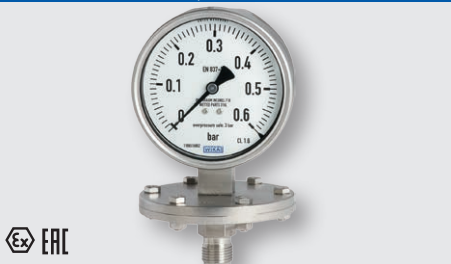
Grey cast iron case



Nominal size	100, 160 mm
Scale range	0 ... 16 mbar to 0 ... 40 bar
Accuracy class	1.6
Ingress protection	IP54, with liquid filling IP65
Data sheet	PM 04.02

432.50, 433.50

For the process industry, high overload safety up to the 10-fold full scale value, max. 40 bar



Nominal size	100, 160 mm
Scale range	0 ... 16 mbar to 0 ... 25 bar
Accuracy class	1.6
Ingress protection	IP54, with liquid filling IP65
Data sheet	PM 04.03

432.36, 432.56

For the process industry, high overload safety to 40, 100 or 400 bar



Nominal size	100, 160 mm
Scale range	0 ... 16 mbar to 0 ... 40 bar
Accuracy class	1.6
Ingress protection	IP54, with liquid filling IP65
Data sheet	PM 04.07

Capsule pressure gauge

For very low pressures

These measuring instruments are particularly suited to gaseous media. The scale ranges are between 0 ... 2.5 mbar and 0 ... 1,000 mbar in accuracy classes from 0.1 to 2.5. Capsule pressure gauges consist of two circular, corrugated diaphragms, joined together around the edge with a pressure-tight seal. Overload protection is possible in certain cases.

These capsule pressure gauges are used mainly within medical, vacuum, environmental and laboratory technology for contents measurement and filter monitoring.

611.10

Standard version



Nominal size	50, 63 mm
Scale range	0 ... 25 to 0 ... 600 mbar
Accuracy class	1.6
Ingress protection	IP54
Data sheet	PM 06.01

611.13

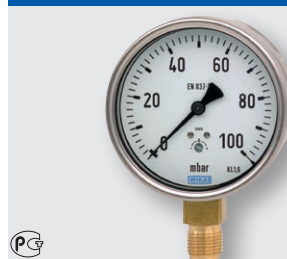
Plastic case



Nominal size	50, 63 mm
Scale range	0 ... 60 to 0 ... 600 mbar
Accuracy class	2.5
Ingress protection	IP53
Data sheet	PM 06.12

612.20

Stainless steel case



Nominal size	63, 100, 160 mm
Scale range	0 ... 6 to 0 ... 600 mbar
Accuracy class	1.6
Ingress protection	IP54
Data sheet	PM 06.02

614.11, 634.11

Edgewise panel design



Nominal size	72 x 72, 96 x 96, 144 x 144, 144 x 72 mm
Scale range	■ NS 72 x 72: 0 ... 25 to 0 ... 600 mbar ■ NS 96 x 96: 0 ... 10 to 0 ... 600 mbar ■ NS 144 x 144: 0 ... 6 to 0 ... 600 mbar ■ NS 144 x 72: 0 ... 4 to 0 ... 600 mbar
Accuracy class	1.6
Data sheet	PM 06.05

632.50

For the process industry



Nominal size	63, 100, 160 mm
Scale range	■ NS 63: 0 ... 40 to 0 ... 600 mbar ■ NS 100: 0 ... 16 to 0 ... 600 mbar ■ NS 160: 0 ... 2.5 to 0 ... 600 mbar
Accuracy class	1.6
Ingress protection	IP54, with liquid filling IP65
Data sheet	PM 06.03

632.51

For the process industry, high overload safety



Nominal size	100, 160 mm
Scale range	0 ... 2.5 mbar to 0 ... 100 mbar
Accuracy class	1.6
Ingress protection	IP54
Data sheet	PM 06.06

Differential pressure gauge

Differential pressure gauges work with a wide range of pressure elements. With this variety, measuring ranges from 0 ... 0.5 mbar to 0 ... 1,000 bar and static overlay pressures up to 400 bar are possible.

These measuring instruments monitor

- the pollution degree in filter systems
- the level in closed tanks
- the overpressure in clean rooms
- the flow of gaseous and liquid media
- and they control pumping plants

700.01, 700.02

With magnetic piston or with magnetic piston and separating diaphragm



EAC

Nominal size	80 mm
Scale range	700.01: 0 ... 400 mbar to 0 ... 10 bar 700.02: 0 ... 160 mbar to 0 ... 2.5 bar
Accuracy class	700.01: $\pm 3\%$ 700.02: $\pm 5\%$ with increasing differential pressure
Ingress protection	IP54
Data sheet	PM 07.14

711.12, 731.12

With parallel entry, copper alloy or stainless steel



EAC

Nominal size	100, 160 mm
Scale range	0 ... 0.6 to 0 ... 1,000 bar
Accuracy class	1.6
Ingress protection	IP33
Data sheet	PM 07.02

DPG40

With integrated working pressure indication (DELTA-plus)



Ex EAC IEC IECEx

Nominal size	100 mm
Scale range	0 ... 0.16 to 0 ... 10 bar
Accuracy class	2.5
Ingress protection	IP65
Data sheet	PM 07.20

716.11, 736.11

For very low differential pressures from 2.5 mbar, copper alloy or stainless steel



EAC

Nominal size	100, 160 mm
Scale range	NS 100: 0 ... 10 to 0 ... 250 mbar NS 160: 0 ... 2.5 to 0 ... 250 mbar
Accuracy class	1.6
Ingress protection	IP66
Data sheet	PM 07.07

732.51

For the process industry, all-metal media chamber



Ex EAC

Nominal size	100, 160 mm
Scale range	0 ... 16 mbar to 0 ... 25 bar
Accuracy class	1.6
Ingress protection	IP54, with liquid filling IP65
Data sheet	PM 07.05

732.14

For the process industry, high overload safety to 40, 100, 250 or 400 bar



Ex EAC

Nominal size	100, 160 mm
Scale range	<ul style="list-style-type: none"> ■ 0 ... 60 to 0 ... 250 mbar (measuring cell DN 140) ■ 0 ... 0.25 to 0 ... 40 bar (measuring cell DN 82)
Accuracy class	1.6
Ingress protection	IP54, with liquid filling IP65
Data sheet	PM 07.13

Absolute pressure gauge

Absolute pressure gauges are used when measured pressures are independent of the natural fluctuations in atmospheric pressure. The pressure of the measured media is determined against a reference pressure, which corresponds to the absolute pressure zero point. For this, the reference chamber is completely evacuated, so that there is a near-perfect vacuum in it.

Applications for these high-precision measuring instruments are, for example, monitoring of vacuum pumps and vacuum packing machines. They are also used in laboratories, in order to monitor condensation pressures or to determine the vapour pressure of liquids.

532.52, 532.53, 532.54

High overload safety



Nominal size	100, 160 mm
Scale range	0 ... 25 mbar to 0 ... 25 bar abs., high overload safety
Accuracy class	1.0 ... 2.5
Ingress protection	IP54, with liquid filling IP65
Data sheet	PM 05.02

Digital pressure gauge

DG-10

Digital pressure gauge for general industrial applications



EAC

Accuracy (% of span)	≤ 0.5 ± 1 digit
Measuring range	<ul style="list-style-type: none"> 0 ... 5 bar to 0 ... 600 bar -1 ... +5 bar to -1 ... +10 bar
Special feature	<ul style="list-style-type: none"> Robust stainless steel case, nominal size 80 mm Battery operation (2 x 1.5 V AA cell) Option: Rotatable instrument head, backlighting
Data sheet	PE 81.66

CPG500

Digital pressure gauge



EAC

Accuracy (% of span)	0.25 ± 1 digit
Measuring range	<ul style="list-style-type: none"> 0 ... 60 to 0 ... 1,000 bar -1 ... +20 to -1 ... +40 bar
Special feature	<ul style="list-style-type: none"> Robust case with protective rubber cap Simple operation using four buttons
Data sheet	CT 09.01

CPG1500

Precision digital pressure gauge



Ex EAC

Accuracy (% of span)	Down to 0.05 % FS
Measuring range	-1 ... +1,000 bar
Special feature	<ul style="list-style-type: none"> Integrated data logger WIKI-Cal compatible Data transfer via WIKI-Wireless Robust case IP65
Data sheet	CT 10.51

Process transmitters

UPT-20

Universal process transmitter with standard connection, Ex intrinsically safe



Non-linearity (% of span)	≤ 0.1
Output signal	4 ... 20 mA, HART®
Measuring range	<ul style="list-style-type: none"> 0 ... 0.4 to 0 ... 10,000 bar 0 ... 1.6 to 0 ... 40 bar abs. -0.2 ... +0.2 to -1 ... +40 bar
Special feature	<ul style="list-style-type: none"> Multi-functional display Freely scalable measuring range Simple menu navigation Conductive plastic case or stainless steel case Large LC display, rotatable
Data sheet	PE 86.05

UPT-21

Universal process transmitter with flush process connection



Non-linearity (% of span)	≤ 0.1
Output signal	4 ... 20 mA, HART®
Measuring range	<ul style="list-style-type: none"> 0 ... 0.4 to 0 ... 600 bar 0 ... 1.6 to 0 ... 40 bar abs. -0.2 ... +0.2 to -1 ... +40 bar
Special feature	<ul style="list-style-type: none"> Multi-functional display (optional) Freely scalable measuring range Simple menu navigation Conductive plastic case or stainless steel case in hygienic design Large LC display, rotatable
Data sheet	PE 86.05

IPT-10, IPT-11

Process pressure transmitter, intrinsically safe or with flame-proof enclosure



Non-linearity (% of span)	≤ 0.075 ... 0.1
Output signal	4 ... 20 mA, HART® protocol (optional), PROFIBUS® PA, FOUNDATION™ Fieldbus
Measuring range	<ul style="list-style-type: none"> 0 ... 0.1 to 0 ... 4,000 bar 0 ... 0.1 to 0 ... 60 bar abs. -1 ... 0 to -1 ... +60 bar
Special feature	<ul style="list-style-type: none"> Freely scalable measuring ranges (turndown to 30:1) Case from plastic, aluminium or stainless steel Flush process connection (optional) With integrated display and instrument mounting bracket for wall/pipe mounting (optional)
Data sheet	PE 86.11

DPT-10

Differential pressure transmitter, intrinsically safe or with flame-proof enclosure



Non-linearity (% of span)	≤ 0.075 ... 0.15
Output signal	4 ... 20 mA, HART® protocol (optional), PROFIBUS® PA
Measuring range	0 ... 10 mbar to 0 ... 40 bar
Special feature	<ul style="list-style-type: none"> Freely scalable measuring ranges (turndown to 30:1) Static load 160 bar, optionally 420 bar Case from plastic, aluminium or stainless steel With integrated display and instrument mounting bracket for wall/pipe mounting (optional)
Data sheet	PE 86.21

Pressure sensors

A-10

For industrial applications



Non-linearity (± % of span)	≤ 0.25 or 0.5 BFSL
Measuring range	<ul style="list-style-type: none"> ■ 0 ... 0.05 to 0 ... 1,000 bar ■ 0 ... 0.1 to 0 ... 25 bar abs. ■ -0.025 ... +0.025 to -1 ... +24 bar
Special feature	<ul style="list-style-type: none"> ■ Compact design ■ Free test report ■ 2 million possible variants
Data sheet	PE 81.60

S-20

For superior industrial applications



Non-linearity (± % of span)	≤ 0.125, 0.25 or 0.5 BFSL
Measuring range	<ul style="list-style-type: none"> ■ 0 ... 0.4 to 0 ... 1,600 bar ■ 0 ... 0.4 to 0 ... 40 bar abs. ■ -1 ... 0 to -1 ... +59 bar
Special feature	<ul style="list-style-type: none"> ■ Extreme operating conditions ■ Customer-specific variants ■ Free test report
Data sheet	PE 81.61

S-11

Flush diaphragm



Non-linearity (± % of span)	≤ 0.2 BFSL
Measuring range	<ul style="list-style-type: none"> ■ 0 ... 0.1 to 0 ... 600 bar ■ 0 ... 0.25 to 0 ... 16 bar abs. ■ -1 ... 0 to -1 ... +24 bar
Special feature	<ul style="list-style-type: none"> ■ Flush process connection ■ Medium temperature up to 150 °C ■ Comprehensive stocks
Data sheet	PE 81.02

IS-3

Intrinsic safety Ex i



Accuracy (± % of span)	≤ 0.5
Measuring range	<ul style="list-style-type: none"> ■ 0 ... 0.1 to 0 ... 6,000 bar ■ 0 ... 0.25 to 0 ... 25 bar abs. ■ -1 ... 0 to -1 ... +24 bar
Special feature	<ul style="list-style-type: none"> ■ Further worldwide Ex approvals ■ High-pressure version (optional) ■ Flush process connection (optional) ■ Suitable for SIL 2 per IEC 61508/ IEC 61511
Data sheet	PE 81.58

E-10, E-11

Flameproof enclosure Ex d



Accuracy (± % of span)	≤ 0.5
Measuring range	<ul style="list-style-type: none"> ■ 0 ... 0.4 to 0 ... 1,000 bar ■ 0 ... 0.4 to 0 ... 16 bar abs. ■ -1 ... 0 to -1 ... +25 bar
Special feature	<ul style="list-style-type: none"> ■ Low-power version ■ For sour gas applications (NACE) ■ Flush process connection (optional) ■ Worldwide Ex approvals
Data sheet	PE 81.27

HP-2

For highest pressure applications to 15,000 bar



Accuracy (± % of span)	≤ 0.25 or 0.5
Measuring range	0 ... 1,600 to 0 ... 15,000 bar
Special feature	<ul style="list-style-type: none"> Very high long-term stability Excellent load cycle stability Cavitation protection (optional)
Data sheet	PE 81.53

M-10, M-11

Spanner width 19



Non-linearity (± % of span)	≤ 0.2 BFSL
Measuring range	0 ... 6 to 0 ... 1,000 bar
Special feature	<ul style="list-style-type: none"> Small spanner width 19 mm Flush connection G 1/4 available
Data sheet	PE 81.25

P-30, P-31

For precision measurements



Accuracy (± % of span)	≤ 0.1 or 0.05
Measuring range	<ul style="list-style-type: none"> 0 ... 0.25 to 0 ... 1,000 bar 0 ... 0.25 to 0 ... 25 bar abs. -1 ... 0 to -1 ... +15 bar
Special feature	<ul style="list-style-type: none"> No additional temperature error in the range 10 ... 60 °C Flush process connection (optional) Analogue, CANopen® or USB
Data sheet	PE 81.54

MHC-1

For mobile working machines, CANopen® or J1939



Accuracy (± % of span)	≤ 1 or 0.5
Measuring range	0 ... 60 to 0 ... 1,000 bar
Special feature	<ul style="list-style-type: none"> Tested for harsh environmental conditions Robust instrument design Version with integrated Y-connector
Data sheet	PE 81.49

OEM pressure sensors

O-10

For industrial applications



Non-linearity (± % of span)	≤ 0.5 BFLS
Measuring range	<ul style="list-style-type: none"> 0 ... 6 to 0 ... 600 bar -1 ... +5 to -1 ... +59 bar
Special feature	<ul style="list-style-type: none"> For OEM quantities Customer-specific variants Special version for applications with water as medium
Data sheet	PE 81.65

MH-3

For mobile working machines



Accuracy (± % of span)	≤ 1
Measuring range	0 ... 6 to 0 ... 600 bar
Special feature	<ul style="list-style-type: none"> For extreme operating conditions Compact and robust design Diagnostic function (optional) Signal clamping (optional) Customer-specific adaptations possible
Data sheet	PE 81.59

R-1

For refrigeration and air-conditioning applications



Accuracy (± % of span)	≤ 2
Measuring range	<ul style="list-style-type: none"> 0 ... 6 to 0 ... 160 bar -1 ... +7 to -1 ... +45 bar
Special feature	<ul style="list-style-type: none"> Special case design for the best possible condensation tightness Resistant to all common refrigerants
Data sheet	PE 81.45

C-2

For air compressors



Accuracy (± % of span)	≤ 1 or 2
Measuring range	<ul style="list-style-type: none"> 0 ... 6 to 0 ... 60 bar -1 ... +10 to -1 ... +45 bar
Special feature	<ul style="list-style-type: none"> Robust design Compact design Long service life and high reliability
Data sheet	PE 81.47

MG-1

For medical gases



Accuracy (± % of span)	≤ 2
Measuring range	<ul style="list-style-type: none"> 0 ... 6 to 0 ... 400 bar -1 ... +6 bar
Special feature	Cleaned, packed and labelled for oxygen per international standards
Data sheet	PE 81.44

Sensor assemblies and modules

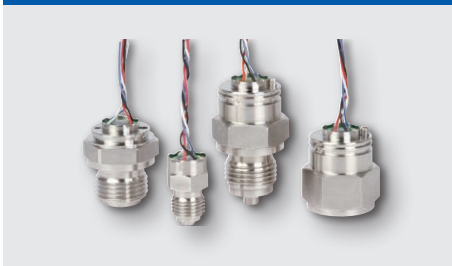
Customer-specific electronic pressure measurement solutions

We see ourselves not only as a provider of top quality measurement technology, but also as a highly competent partner that is able to create individually designed solutions together with you. We are ready to develop products for you that are tailor made to cater for your individual needs. Create your perfect pressure sensor solution together with us. Here, the experience from a multitude of completed projects is incorporated - thus we can refer back to numerous proven solutions and components. As required, we will adapt our systems to your individual application or develop new ones.

Talk to us – we are happy to provide you with advice!

TTF-1

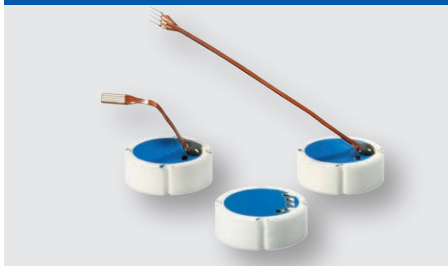
Metal thin-film sensor assembly



Non-linearity (± % of span)	≤ 0.1 ... 0.5
Measuring range	0 ... 10 to 0 ... 1,000 bar
Special feature	<ul style="list-style-type: none"> ■ Excellent resistance to media ■ Very good pressure spike and burst pressure safety
Signal	mV/V
Data sheet	PE 81.16

SCT-1

Ceramic sensor assembly



Non-linearity (± % of span)	≤ 0.25 ... 0.5
Measuring range	0 ... 2 to 0 ... 100 bar
Special feature	Excellent resistance to media
Signal	mV/V
Data sheet	PE 81.40

SPR-2, TPR-2

Piezo sensor element and sensor assembly



Non-linearity (± % of span)	≤ 0.3
Measuring range	0 ... 0.4 to 0 ... 25 bar
	0 ... 0.4 to 0 ... 25 bar abs.
Special feature	<ul style="list-style-type: none"> ■ Gauge and absolute pressure measurement ■ High output signal ■ High overpressure safety
Signal	mV/V
Data sheet	PE 81.62

TI-1

Piezo or metal thin-film sensor module



Accuracy (± % of span)	≤ 0.25
Measuring range	0 ... 0.4 to 0 ... 1,000 bar
Special feature	<ul style="list-style-type: none"> ■ Processed signal ■ High variance in process connections
Signal	Analogue and digital
Data sheet	PE 81.57

Pressure gauges with output signal

The multi-functional intelliGAUGE[®]s present a cost-effective and, at the same time, reliable solution for nearly all pressure measurement applications. They combine the analogue indication of a mechanical pressure gauge, needing no external power, with the electrical output signal of a pressure sensor. These hybrid instruments are available with all commonly used electrical signals. The sensor works in a non-contact way, without any influence on the measuring signal. Many of the instruments can be delivered in accordance with ATEX Ex ia.

Depending on the pressure gauge, the following electrical output signals are possible:

- 0.5 ... 4.5 V (ratiometric)
- 4 ... 20 mA, 2-wire
- 4 ... 20 mA, 2-wire with Ex approvals
- 0 ... 20 mA, 3-wire
- 0 ... 10 V, 3-wire

For pressure gauges with nominal sizes 100 and 160 mm, the electrical output signals can also be combined with switch contacts.

PGT21

Bourdon tube, stainless steel case



Nominal size	50, 63 mm
Scale range	0 ... 1.6 to 0 ... 400 bar
Accuracy class	2.5
Ingress protection	IP65, optional IP67
Data sheet	PV 11.03

PGT23.063

Bourdon tube, for the process industry, safety version



Nominal size	63 mm
Scale range	0 ... 1 to 0 ... 1,000 bar
Accuracy class	1.6
Ingress protection	IP54, filled IP65
Data sheet	PV 12.03

PGT23.100, PGT23.160

Bourdon tube, for the process industry, standard or safety version



Nominal size	100, 160 mm
Scale range	0 ... 0.6 to 0 ... 1,600 bar
Accuracy class	1.0
Ingress protection	IP54, filled IP65
Data sheet	PV 12.04

PGT43

Diaphragm element, for the process industry, high overload safety up to the 10-fold full scale value, max. 40 bar



Nominal size	100, 160 mm
Scale range	0 ... 16 mbar to 0 ... 25 bar
Accuracy class	1.6
Ingress protection	IP54, with liquid filling IP65
Data sheet	PV 14.03

PGT43HP

Diaphragm element, for the process industry, high overload safety to 40, 100 or 400 bar



Nominal size	100, 160 mm
Scale range	0 ... 16 mbar to 0 ... 40 bar
Accuracy class	1.6
Ingress protection	IP54, with liquid filling IP65
Data sheet	PV 14.07

PGT63HP

Capsule element, for the process industry, high overload safety



Nominal size	100, 160 mm
Scale range	2.5 ... 100 mbar
Accuracy class	1.6
Ingress protection	IP54
Data sheet	PV 16.06

intelliGAUGE®

DPGT43

Differential pressure, for the process industry, all-metal media chamber



Nominal size	100, 160 mm
Scale range	0 ... 16 mbar to 0 ... 25 bar
Accuracy class	1.6
Ingress protection	IP54, filled IP65
Data sheet	PV 17.05

DPGT43HP

Differential pressure, for the process industry, high overload safety to 40, 100, 250 or 400 bar



Nominal size	100, 160 mm
Scale range	0 ... 60 mbar to 0 ... 40 bar
Accuracy class	1.6
Ingress protection	IP54, filled IP65
Data sheet	PV 17.13

DPGT40

Differential pressure, with integrated working pressure indication (DELTA-trans)



Nominal size	100 mm
Scale range	0 ... 0.16 to 0 ... 10 bar
Accuracy class	2.5 (optional 1.6)
Ingress protection	IP65
Data sheet	PV 17.19

APGT43

Absolute pressure, for the process industry



Nominal size	100, 160 mm
Scale range	0 ... 25 mbar to 0 ... 25 bar abs.
Accuracy class	2.5
Ingress protection	IP54, with liquid filling IP65
Data sheet	PV 15.02

Contact pressure gauge

Control systems are gaining more and more importance in industrial applications. Consequently, mere pressure indication on the measuring instrument itself is no longer sufficient, rather the measured value must be transferred to the control system via an electrical signal, e.g. by closing or opening of a circuit. WIKA is focusing on its contact pressure gauges in order to satisfy this trend.

All instruments with inductive contacts are certified in accordance with ATEX Ex ia.

Depending on the model the following contacts are built-in:

- Magnetic snap-action contact, e.g. model 821, for general applications
- Inductive contact model 831, for hazardous areas
- Electronic contact model 830E, for PLC
- Reed contact model 851, for general applications and PLC
- Micro switch model 850
- Transistor output NPN or PNP

PGS21

Bourdon tube, stainless steel case



Nominal size	40, 50, 63 mm
Scale range	0 ... 2.5 to 0 ... 400 bar
Accuracy class	2.5
Ingress protection	IP65
Special feature	NS 50: Version with VdS or LPCB approval possible
Data sheet	PV 21.02

PGS25

Bourdon tube, with electronic pressure switch, stainless steel case



Nominal size	50, 63 mm
Scale range	0 ... 1.6 to 0 ... 400 bar
Accuracy class	2.5
Ingress protection	IP65
Data sheet	PV 21.04

PGS21.100, PGS21.160

Bourdon tube, stainless steel case



Nominal size	100, 160 mm
Scale range	0 ... 0.6 to 0 ... 600 bar
Accuracy class	1.0
Ingress protection	IP54
Data sheet	PV 22.01

PGS23.100, PGS23.160

Bourdon tube, for the process industry, standard or safety version



Nominal size	100, 160 mm
Scale range	0 ... 0.6 to 0 ... 1,600 bar
Accuracy class	1.0
Ingress protection	IP65 or IP66
Data sheet	PV 22.02

PGS23.063

Bourdon tube, for the process industry, safety version



Nominal size	63 mm
Scale range	0 ... 4 to 0 ... 400 bar
Accuracy class	1.6
Ingress protection	IP54
Data sheet	PV 22.03

PGS43.100, PGS43.160

Diaphragm element, for the process industry, high overload safety up to the 10-fold full scale value, max. 40 bar



Nominal size	100, 160 mm
Scale range	0 ... 25 mbar to 0 ... 25 bar
Accuracy class	1.6
Ingress protection	IP54, with liquid filling IP65
Data sheet	PV 24.03

432.36, 432.56 with 8xx

Diaphragm element, for the process industry, high overload safety to 100 or 400 bar



Nominal size	100, 160 mm
Scale range	0 ... 25 mbar to 0 ... 40 bar
Accuracy class	1.6
Ingress protection	IP54, with liquid filling IP65
Data sheet	PV 24.07

532.53 with 8xx

Absolute pressure, for the process industry, high overload safety



Nominal size	100, 160 mm
Scale range	0 ... 25 mbar to 0 ... 25 bar abs.
Accuracy class	1.6
Ingress protection	IP54, with liquid filling IP65
Data sheet	PV 25.02

632.51 with 8xx

Capsule element, for the process industry, high overload safety



Nominal size	100, 160 mm
Scale range	0 ... 2.5 to 0 ... 100 mbar
Accuracy class	1.6
Ingress protection	IP54
Data sheet	PV 26.06

DPGS40

Differential pressure, with micro switches, with integrated working pressure indication (DELTA-comb)



Nominal size	100 mm
Scale range	0 ... 0.25 to 0 ... 10 bar
Accuracy class	2.5 (optional 1.6)
Ingress protection	IP65
Data sheet	PV 27.20

DPGS43

Differential pressure, for the process industry, all-metal media chamber



Nominal size	100, 160 mm
Scale range	0 ... 16 mbar to 0 ... 25 bar
Accuracy class	1.6
Ingress protection	IP54, filled IP65
Data sheet	PV 27.05

DPGS43HP

Differential pressure, for the process industry, high overload safety to 400 bar



Nominal size	100, 160 mm
Scale range	0 ... 60 mbar to 0 ... 40 bar
Accuracy class	1.6
Ingress protection	IP54, filled IP65
Data sheet	PV 27.13

Pressure switches

Electronic pressure switches

PSD-4

Electronic pressure switch with display



Accuracy (± % of span)	≤ 0.5
Measuring range	<ul style="list-style-type: none">■ 0 ... 0.4 to 0 ... 1,000 bar■ 0 ... 0.4 to 0 ... 25 bar abs.■ -1 ... 0 to -1 ... +24 bar
Special feature	<ul style="list-style-type: none">■ Easily readable, robust display■ Intuitive and fast setup■ Easy and flexible mounting configurations■ Flexibly configurable and scalable output signals
Data sheet	PE 81.86

Mechanical pressure switches for industrial applications

PSM01

OEM compact pressure switch, standard version



Setting range	-0.85 ... -0.15 bar 0.2 ... 2 bar to 40 ... 400 bar
Switching function	Change-over contact (SPDT)
Material	Galvanised steel, stainless steel
Switching power	1A/4A, AC 48 V 0.5A/2A, DC 24 V
Data sheet	PV 34.81

PSM02

OEM compact pressure switch, with settable hysteresis



Setting range	-0.85 ... -0.15 bar 0.2 ... 2 bar to 40 ... 400 bar
Switching function	Change-over contact (SPDT)
Material	Galvanised steel, stainless steel
Switching power	1A/4A, AC 250 V 0.5A/2A, DC 24 V
Data sheet	PV 34.82

Mechanical pressure switches for the process industry

Due to the use of high-quality micro switches, the mechanical pressure switches are notable for their high precision and long-term stability. Furthermore, the direct switching of electrical loads up to AC 250 V / 20 A is enabled, while simultaneously ensuring a high switch point reproducibility.

The instruments come with a SIL certificate and are thus particularly suited for safety-critical applications. In addition, with their 'intrinsically safe' and 'flameproof enclosure' ignition protection types the pressure switches are ideally suited for permanent use in hazardous environments.

All mechanical pressure switches for the process industry are available with EAC certificate and technical passport.

PXS, PXA

Mini pressure switch



Ex EAC Ex SIL IEC IECEx Ks

Setting range	1 ... 2.5 to 50 ... 400 bar
Ignition protection type	Ex ia or Ex d
Switch	1 x SPDT
Switching power	AC 250 V / 5 A DC 24 V / 5 A
Data sheet	PV 34.36, PV 34.38

PCS, PCA

Compact pressure switch



Ex EAC Ex SIL IEC IECEx Ks

Setting range	-0.2 ... 1.2 to 100 ... 600 bar
Ignition protection type	Ex ia or Ex d
Switch	1 x SPDT or DPDT
Switching power	AC 250 V / 15 A DC 24 V / 2 A
Data sheet	PV 33.30, PV 33.31

MW, MA

Diaphragm pressure switch

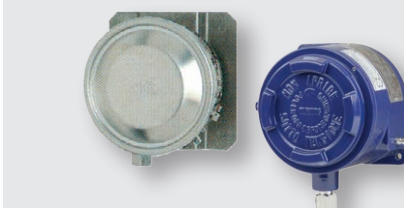


Ex EAC Ex SIL IEC IECEx Ks

Setting range	0 ... 16 mbar to 30 ... 600 bar
Ignition protection type	Ex ia or Ex d
Switch	1 or 2 x SPDT or 1 x DPDT
Switching power	AC 250 V / 20 A DC 24 V / 2 A
Data sheet	PV 31.10, PV 31.11

BWX, BA

Bourdon tube pressure switch



Ex EAC Ex SIL IEC IECEx Ks

Setting range	0 ... 2.5 to 0 ... 1,000 bar
Ignition protection type	Ex ia or Ex d
Switch	1 or 2 x SPDT or 1 x DPDT
Switching power	AC 250 V / 20 A DC 24 V / 2 A
Data sheet	PV 32.20, PV 32.22

DW, DA

Differential pressure switch



Ex EAC Ex SIL IEC IECEx Ks

Setting range	0 ... 16 mbar to 0 ... 40 bar, static pressure to 160 bar
Ignition protection type	Ex ia or Ex d
Switch	1 or 2 x SPDT or 1 x DPDT
Switching power	AC 250 V / 20 A DC 24 V / 2 A
Data sheet	PV 35.42, PV 35.43

APW, APA

Absolute pressure switch



Ex EAC Ex SIL IEC IECEx Ks

Setting range	0 ... 25 mbar to 0 ... 1.5 bar abs.
Proof pressure	11 bar abs.
Ignition protection type	Ex ia or Ex d
Switch	1 or 2 x SPDT or 1 x DPDT
Data sheet	PV 35.49 PV 35.48

Diaphragm seal systems

These combinations of diaphragm seals and pressure gauges or pressure sensors feature fast availability. They are particularly suitable for demanding measuring tasks in the pharmaceutical and biotechnology industries, food and beverage industries, and through to the oil & gas, chemical, petrochemical and semiconductor industries.

The diaphragm seal systems can be used for processes with gases, compressed air or vapour, with liquid, paste-like, powdery and crystallising media and also with aggressive, adhesive,

corrosive, highly viscous, environmentally hazardous or toxic media.

The diaphragm seal is directly welded to the pressure gauge or pressure sensor. The diaphragm made of stainless steel provides for the separation from the medium. The pressure is transmitted to the measuring instrument via the system fill fluid which is inside the diaphragm seal system.

With flange connection

DSS26M

With pressure gauge per EN 837-1, internal diaphragm



Applications with small flange process connections in the process industry

PN max	40 bar
System fill fluid	KN2
Data sheet	DS 95.09

DSS26T

With high-quality pressure sensor, internal diaphragm



Applications with small flange process connections in the process industry

PN max	40 bar
System fill fluid	KN2
Data sheet	DS 95.10

DSS27M

With pressure gauge per EN 837-1, flush diaphragm



Applications with high requirements in the process industry, in machine building and in plant construction

PN max	40 bar
System fill fluid	KN2
Data sheet	DS 95.12

DSS27T

With high-quality pressure sensor, flush diaphragm



Applications with high requirements in the process industry, in machine building and in plant construction

PN max	40 bar
System fill fluid	KN2
Data sheet	DS 95.13

With threaded connection

DSS10M

With pressure gauge per EN 837-1, threaded design



General applications in the process industry

PN max	60 bar
System fill fluid	KN2 for general applications
Data sheet	DS 95.01

DSS10T

With high-quality pressure sensor, threaded design



General applications in the process industry

PN max	60 bar
System fill fluid	KN2 for general applications
Data sheet	DS 95.02

DSS34M

With pressure gauge per EN 837-1, welded design



Applications with high requirements in the chemical, petrochemical and water treatment industries

PN max	60 bar
System fill fluid	KN2 for general applications
Data sheet	DS 95.15

DSS34T

With high-quality pressure sensor, welded design



Applications with high requirements in the chemical, petrochemical and water treatment industries

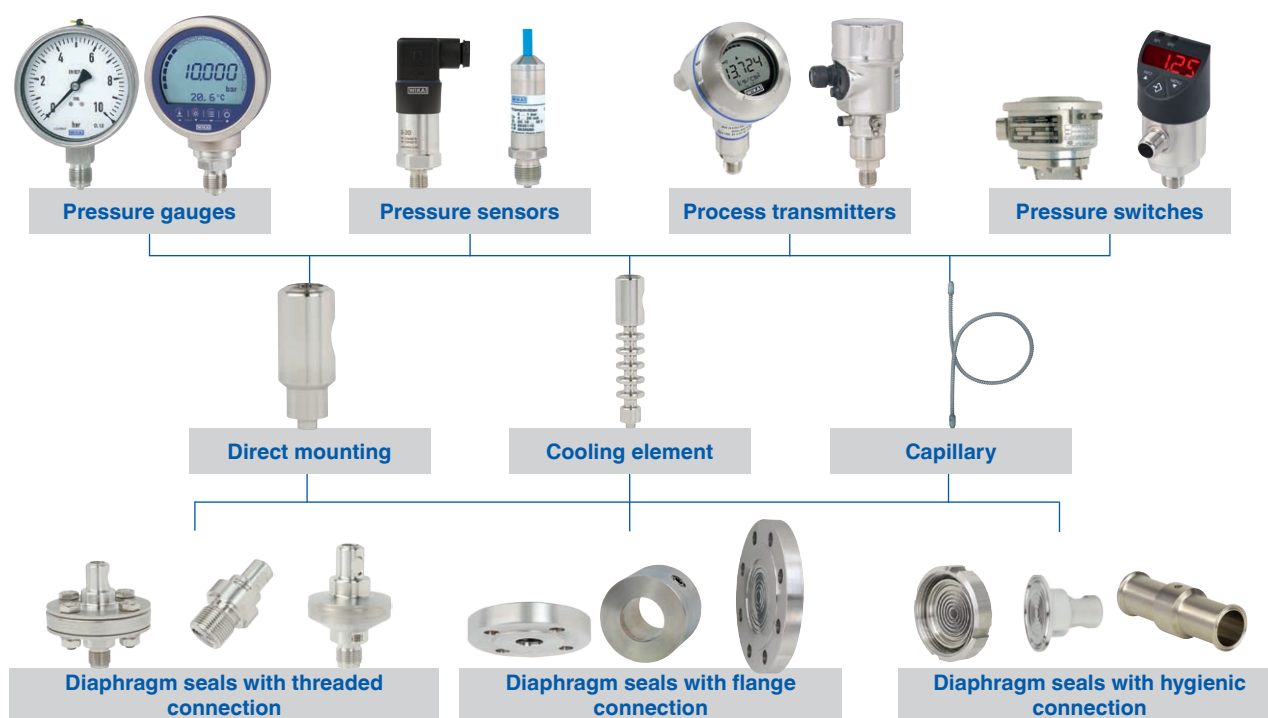
PN max	60 bar
System fill fluid	KN2 for general applications
Data sheet	DS 95.16

Diaphragm seals – combinations and accessories

WIKA diaphragm seals can be connected to almost all pressure gauges, process transmitters, pressure switches or pressure sensors. Mounting may be made via a direct connection, a cooling element or a corresponding capillary.

The combined systems can therefore withstand a pressure of 10 mbar up to 3,600 bar at extreme temperatures (-130 ... +400 °C)

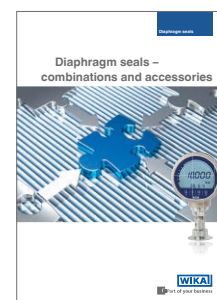
and with a wide variety of media, thus enabling pressure measurements under extreme conditions. The optimal diaphragm seal designs, materials, system fill fluids and accessories are available for each application. The diaphragm seals can be supplied with test certificates and approvals for special applications.



Accessories

- Sealings (also with approvals)
- Clamp connections
- Flushing rings
- Plug screws
- Valves
- Instrument mounting brackets and adapters
- Union nuts
- Transition pieces
- Connection adapters, e.g. VARIVENT®, clamp, aseptic, welding sleeves, weld stubs

Extensive information can be found in our brochure "Diaphragm seals – combinations and accessories" at www.wika.de.



Electrical accessories

A-AI-1, A-IAI-1

LCD attachable indicator,
50 x 50 mm



Input	4 ... 20 mA, 2-wire
Power supply	From the 4 ... 20 mA current loop
Special feature	Model A-IAI-1 intrinsically safe per ATEX
Data sheet	AC 80.07

M12 x 1 cable

Cable assemblies M12 x 1



■ Circular connector M12 x 1, 4- and 5-pin
■ Straight and angled version
■ 2, 5 or 10 m cable
■ Ingress protection IP67

IS Barrier

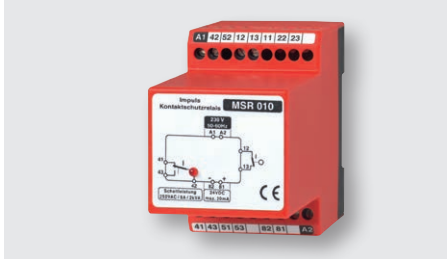
Intrinsically safe repeater power
supply



■ 1-channel input 0/4 ... 20 mA
■ Intrinsically safe [Ex ia], supplying and non-supplying
■ Galvanic isolation
■ Bidirectional HART® signal transmission
■ Suitable for SIL 2 per IEC 61508/IEC 61511
■ Data sheet AC 80.14

905

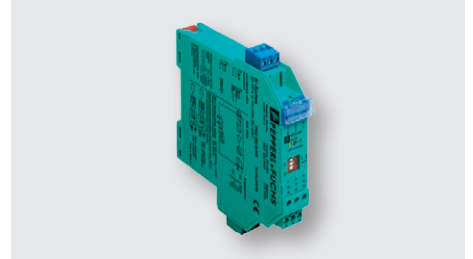
Contact protection relay
for model 821 switch contacts



Application	For optimal contact protection and highest switching reliability
Data sheet	AC 08.01

904

Control unit for inductive contacts
model 831



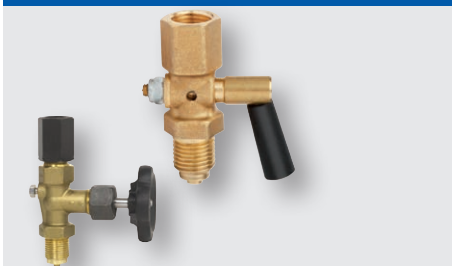
Application	For operating measuring instruments with inductive switch contacts
Data sheet	AC 08.01

Valves and protective devices

Valves

910.10, 910.11

Stopcock and DIN shut-off valve



Application	For shutting off pressure measuring instruments with threaded connection
Version	Per DIN 16270, DIN 16271, DIN 16272
Material	Brass, steel, stainless steel
Nominal pressure	910.10: to 25 bar 910.11: to 400 bar
Data sheet	AC 09.01, AC 09.02

IV10, IV11

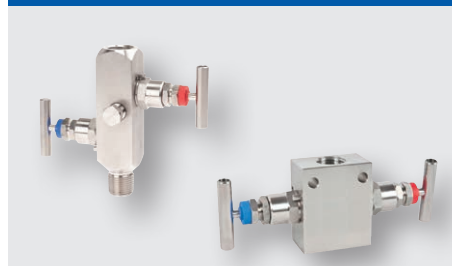
Needle valve and multiport valve



Application	For shutting off pressure measuring instruments with threaded connection
Version	Needle valve and multiport valve
Material	Stainless steel
Nominal pressure	To PN 420 (6,000 psi) Option: To PN 680 (10,000 psi)
Data sheet	AC 09.22

IV20, IV21

Block-and-bleed valve, square or flat form



Application	For shutting off and venting pressure measuring instruments with threaded connection
Version	Block-and-bleed valve
Material	Stainless steel
Nominal pressure	To PN 420 (6,000 psi) Option: To PN 680 (10,000 psi)
Data sheet	AC 09.19

IV30, IV31, IV50, IV51

Valve manifold for differential pressure measuring instruments



Application	For shutting off, pressure compensating as well as purging and venting differential pressure measuring instruments
Version	Three-way and five-way valves
Material	Stainless steel
Nominal pressure	To PN 420 (6,000 psi) Option: To PN 680 (10,000 psi)
Data sheet	AC 09.23

910.80

Monoflanges

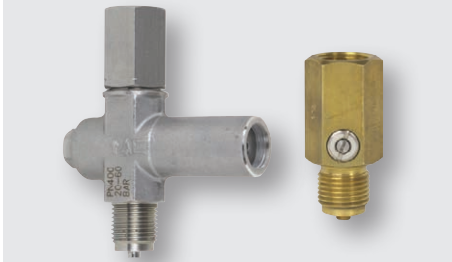


Application	For shutting off and venting pressure measuring instruments with flange connection
Version	Flange connection per ASMI or EN
Material	Stainless steel
Nominal pressure	To 160 bar
Data sheet	AC 09.17

Protective devices

910.12, 910.13

Snubbers and overpressure protectors



Application	For the protection of pressure measuring instruments from pressure surges and pulsations or overpressures
Version	910.13: Version with LH-RH union or fixed bushing
Material	Brass, steel, stainless steel
Nominal pressure	910.12: to 400 bar 910.13: To 600 bar (overload safety to 1,000 bar)
Data sheet	AC 09.03, AC 09.04

910.15

Syphons



Application	For the protection of pressure measuring instruments from excessive pulsation and heat
Version	U-form, trumpet form, compact form, standard
Material	Steel, stainless steel
Nominal pressure	To 160 bar
Data sheet	AC 09.06

Mounting accessories

910.14, 910.16, 910.17

Adapters, instrument mounting brackets and sealings



Application	For mounting and sealing pressure gauges
Data sheet	AC 09.05, AC 09.07, AC 09.08

Dial thermometers

Our dial thermometers work on the bimetal, expansion or gas actuation principle. This enables scale ranges of -200 ... +700 °C in different class accuracies, response times and resilience to environmental influences. Diverse connection designs, stem diameters and individual stem lengths enable a flexible measuring point design.

Dial thermometers with capillaries are particularly versatile. All thermometers are suited for operation in a thermowell if necessary.

Bimetal thermometer

A43

Heating technology



Nominal size	63, 80, 100 mm
Scale range	-30 ... +120 °C
Permissible operating pressure at thermowell/stem	Max. 6 bar
Wetted parts	Copper alloy
Data sheet	TM 43.01

A48

Refrigeration and air-conditioning technology



Nominal size	63, 80, 100, 160 mm
Scale range	-30 ... +120 °C
Wetted parts	Copper alloy
Data sheet	TM 48.01

A51

Heating technology, high-quality version



Nominal size	63, 80, 100 mm
Scale range	-30 ... +250 °C
Connection	<ul style="list-style-type: none"> Smooth, with surface mounting flange Smooth, with sliding plastic flange Smooth, with 18 mm collar Ø for thermowell mounting
Wetted parts	Copper alloy
Data sheet	TM 51.01

52

Industrial series, axial and radial



Nominal size	25, 33, 40, 50, 63, 80, 100, 160 mm
Scale range	-30 ... +50 to 0 ... +500 °C
Permissible operating pressure at thermowell/stem	Max. 25 bar
Wetted parts	Stainless steel
Data sheet	TM 52.01

53

Industrial series, axial, adjustable stem and dial



Nominal size	3", 5"
Scale range	-70 ... +70 to 0 ... +600 °C
Wetted parts	Stainless steel
Option	Liquid damping to max. 250 °C (case and probe)
Data sheet	TM 53.01

54

Process version to EN 13190

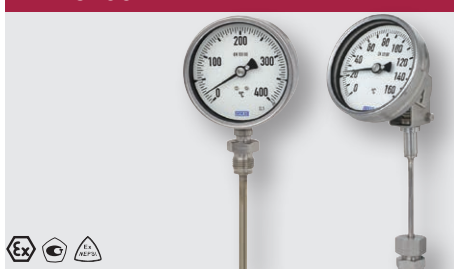


Nominal size	63, 80, 100, 160 mm
Scale range	-70 ... +70 to 0 ... +600 °C
Wetted parts	Stainless steel
Option	Liquid damping to max. 250 °C (case and probe)
Data sheet	TM 54.01

Bimetal thermometer

55

High-quality Process version per EN 13190



Nominal size	63, 100, 160 mm
Scale range	-70 ... +70 to 0 ... +600 °C
Wetted parts	Stainless steel
Option	Liquid damping to max. 250 °C (case and probe)
Data sheet	TM 55.01

Machine glass thermometer

32

V shape



Nominal size	110, 150, 200 mm
Scale range	-30 ... +200 °C
Wetted parts	Copper alloy
Option	■ Dual scale °F/°C ■ 3 variants straight, 90° and 135°
Data sheet	TM 32.02

Expansion thermometers

TF58, TF59

With capillary, edgewise panel design



Nominal size	58 x 25 mm, 62 x 11 mm
Scale range	-50 ... 250 °C
Wetted parts	Copper alloy
Option	■ Vertical arrangement ■ Special scales ■ Other case materials
Data sheet	TM 80.02

70

With capillary, stainless steel version



Nominal size	63, 100, 160 mm
Scale range	-60 ... +400 °C
Wetted parts	Stainless steel
Option	■ Liquid damping (case) ■ Indication accuracy class 1 ■ With micro switch
Data sheet	TM 81.01

IFC

With capillary, standard version



Nominal size	52, 60, 80, 100 mm 48 x 48, 72 x 72, 96 x 96 mm
Scale range	-100 ... +400 °C
Wetted parts	Copper alloy
Option	■ Square case version ■ Other case materials ■ With micro switch
Data sheet	TM 80.01

Dial thermometers

Gas-actuated thermometers

R73, S73, A73

Axial and radial, adjustable stem and dial



Nominal size	100, 160 mm
Scale range	-200 ... +100 to 0 ... +700 °C
Wetted parts	Stainless steel
Option	<ul style="list-style-type: none"> ■ Liquid damping (case) ■ Contact bulb
Data sheet	TM 73.01

F73

With capillary



Nominal size	100, 160 mm
Scale range	-200 ... +100 to 0 ... +700 °C
Wetted parts	Stainless steel
Option	<ul style="list-style-type: none"> ■ Armoured or coated capillary (PVC coating) ■ Liquid damping (case) ■ Contact bulb
Data sheet	TM 73.01

75

Highly vibration resistant



Nominal size	100 mm
Scale range	0 ... +700 or -50 ... +650 °C
Wetted parts	Stainless steel
Option	Various neck-tube and insertion lengths
Data sheet	TM 75.01

Thermomanometers

MFT

With capillaries, for pressure and temperature measurement



Nominal size	40, 42, 52 mm
Scale range	<ul style="list-style-type: none"> ■ Pressure 0 ... 4 bar ■ Temperature 0 ... 120 °C
Accuracy class	<ul style="list-style-type: none"> ■ Pressure 2.5 (EN 837-1) ■ Temperature 2.5
Data sheet	PM 01.20

THM10

Eco version, for pressure and temperature measurement



Nominal size	63, 80 mm
Scale range	<ul style="list-style-type: none"> ■ Pressure 0 ... 4 to 0 ... 10 bar ■ Temperature 0 ... 120 °C
Connection location	Lower mount or back mount
Accuracy class	<ul style="list-style-type: none"> ■ Pressure 2.5 (EN 837-1) ■ Temperature 2 (EN 13190)
Data sheet	PM 01.24

100.02

For pressure and temperature measurement



Nominal size	63, 80 mm
Scale range	<ul style="list-style-type: none"> ■ Pressure 0 ... 1 to 0 ... 16 bar ■ Temperature 0 ... 100 to 0 ... 150 °C
Accuracy class	<ul style="list-style-type: none"> ■ Pressure 2.5 (EN 837-1) ■ Temperature 2.5 °C
Data sheet	PM 01.23

Dial thermometers with output signal

TGT70

Expansion thermometer with output signal



Nominal size	63, 100 mm
Scale range	-40 ... +60 to 0 ... 250 °C
Wetted parts	Stainless steel
Option	<ul style="list-style-type: none"> ■ Capillary ■ Output signals 4 ... 20 mA or 0.5 ... 4.5 V ■ Other connection designs
Data sheet	TV 18.01

TGT73

Gas-actuated thermometer with output signal



Nominal size	100, 160 mm
Scale range	-200 ... +100 to 0 ... 700 °C
Wetted parts	Stainless steel
Option	<ul style="list-style-type: none"> ■ Capillary ■ Liquid damping (case) ■ Output signal 4 ... 20 mA or 0 ... 10 V
Data sheet	TV 17.10

Digital indicators

DI10

For panel mounting, current loop display, 96 x 48 mm



Input	4 ... 20 mA, 2-wire
Alarm output	2 electronic contacts (optional)
Special feature	Wall-mounting case (optional)
Power supply	From the 4 ... 20 mA current loop
Data sheet	AC 80.06

DI25

For panel mounting, 96 x 48 mm



Input	Multi-function input for resistance thermometers, thermocouples and standard signals
Alarm output	<ul style="list-style-type: none"> 3 relays 2 relays for instruments with integrated transmitter power supply DC 24 V
Power supply	<ul style="list-style-type: none"> AC 100 ... 240 V AC/DC 24 V
Special feature	Analogue output signal
Data sheet	AC 08.02

DI30

For panel mounting, 96 x 96 mm



Input	Standard signals
Alarm output	2 relays
Special feature	<ul style="list-style-type: none"> Integrated transmitter power supply Wall-mounting case (optional)
Power supply	AC 230 V or AC 115 V
Data sheet	AC 80.05

DI32-1

For panel mounting, 48 x 24 mm



Input	Multi-function input for resistance thermometers, thermocouples and standard signals
Alarm output	2 electronic contacts
Power supply	DC 9 ... 28 V
Data sheet	AC 80.13

DI35

For panel mounting, 96 x 48 mm



Input	<ul style="list-style-type: none"> Multi-function input for resistance thermometers, thermocouples and standard signals Alternatively double input for standard signals with calculation function (+ - x /) for two transmitters
Alarm output	2 or 4 relays (optional)
Special feature	<ul style="list-style-type: none"> Integrated transmitter power supply Analogue output signal (optional)
Power supply	<ul style="list-style-type: none"> AC/DC 100 ... 240 V DC 10 ... 40 V, AC 18 ... 30 V
Data sheet	AC 80.03

DIH10

Connection head with digital indicator



Input	4 ... 20 mA
Power supply	From the 4 ... 20 mA current loop
Data sheet	AC 80.11

DIH50, DIH52

For current loops with HART® communication



Dimensions	150 x 127 x 127 mm
Case	Aluminium, stainless steel
Special feature	<ul style="list-style-type: none"> ■ Adjustment of indication range and unit via HART® communication ■ Model DIH52 additionally suitable for multidrop operation and with local master function
Approval	<ul style="list-style-type: none"> ■ Intrinsically safe per ATEX ■ Flameproof enclosure
Data sheet	AC 80.10

TF-LCD

Longlife digital thermometer



Measuring range	-40 ... +120 °C
Feature	<ul style="list-style-type: none"> ■ Dust and waterproof case, IP68 ■ Battery or solar powered ■ Extremely long service life
Data sheet	TE 85.01

Thermocouples

Thermocouples generate a voltage directly dependent on temperature. They are particularly suitable for high temperatures to 1,700 °C and for very high oscillating stresses. For thermocouples, the accuracy classes 1 and 2 apply (ASTM: Standard and special). They are available with a tolerance value in accordance with IEC 60584-4 / ASTM E230.

In our range of products you will find all market-standard instrument versions. If required, a temperature transmitter can be installed in the connection head.

TC10-A

Measuring insert



Sensor element	Type K, J, E, N or T
Measuring range	-200 ... +1,200 °C
Measuring point	Ungrounded or grounded
Data sheet	TE 65.01

TC10-B

For additional thermowell



Sensor element	Type K, J, E, N or T
Measuring range	-200 ... +1,200 °C
Measuring point	Ungrounded or grounded
Data sheet	TE 65.02

TC10-C

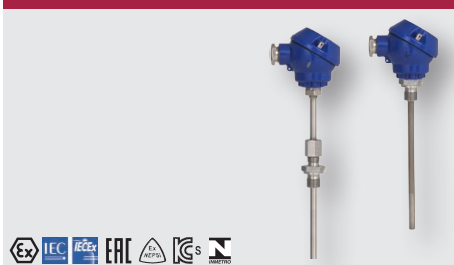
Threaded, with fabricated thermowell



Sensor element	Type K, J, E, N or T
Measuring range	-200 ... +600 °C
Measuring point	Ungrounded or grounded
Process connection	Mounting thread
Data sheet	TE 65.03

TC10-D

Threaded, miniature design



Sensor element	Type K, J, E, N or T
Measuring range	-200 ... +600 °C
Measuring point	Ungrounded or grounded
Process connection	Mounting thread
Data sheet	TE 65.04

TC10-F

Flanged thermocouple, with fabricated thermowell



Sensor element	Type K, J, E, N or T
Measuring range	-200 ... +600 °C
Measuring point	Ungrounded or grounded
Process connection	Flange
Data sheet	TE 65.06

TC10-H

Without thermowell



Sensor element	Type K, J, E, N or T
Measuring range	-200 ... +1,200 °C
Measuring point	Ungrounded or grounded
Process connection	Mounting thread
Data sheet	TE 65.08

TC10-K

Measuring insert,
for installation in TC10-L



Sensor element	Type K, J, E, N or T
Measuring range	-200 ... +1,200 °C
Measuring point	Ungrounded or grounded
Data sheet	TE 65.11

TC10-L

Flameproof enclosure,
for additional thermowell



Sensor element	Type K, J, E, N or T
Measuring range	-200 ... +1,200 °C
Measuring point	Ungrounded or grounded
Data sheet	TE 65.12

TC12-A

Measuring insert for
process thermocouple



Sensor element	Type K, J, N or T
Measuring range	-200 ... +1,200 °C
Measuring point	Ungrounded or grounded
Data sheet	TE 65.16

TC12-B

Process thermocouple,
for additional thermowell



Sensor element	Type K, J, E, N or T
Measuring range	-200 ... +1,200 °C
Measuring point	Ungrounded or grounded
Option	Ex i, Ex d
Data sheet	TE 65.17

TC12-M

Process thermocouple,
basic module

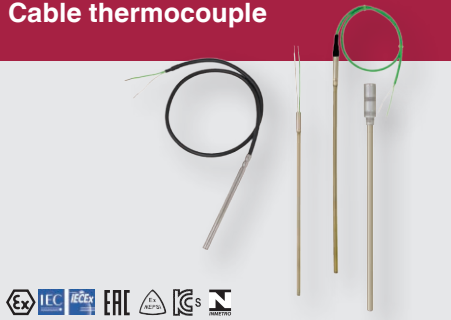


Sensor element	Type K, J, E, N or T
Measuring range	-200 ... +1,200 °C
Measuring point	Ungrounded or grounded
Option	Ex i, Ex d
Data sheet	TE 65.17

Thermocouples

TC40

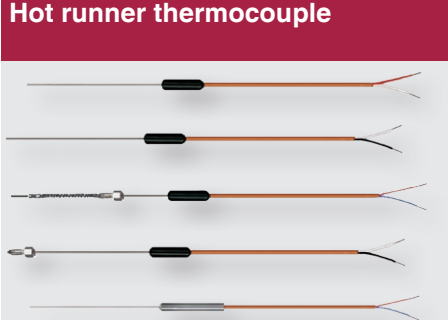
Cable thermocouple



Sensor element	Type K, J, E, N or T
Measuring range	-200 ... +1,200 °C
Measuring point	Ungrounded or grounded
Cable	PVC, silicone, PTFE, fibreglass
Data sheet	TE 65.40

TC46

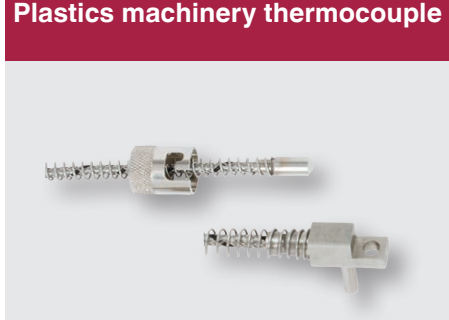
Hot runner thermocouple



Sensor element	Type J or K
Measuring range	-25 ... +400 °C
Measuring point	Ungrounded or grounded
Feature	<ul style="list-style-type: none"> ■ Probe diameter 0.5 ... 3.0 mm ■ Plastic-moulded transition
Data sheet	TE 65.46

TC47

Plastics machinery thermocouple



Measuring range	-25 ... +400 °C
Measuring element	Type J or K
Measuring point	Ungrounded or grounded
Feature	<ul style="list-style-type: none"> ■ Various process connections ■ Connection lead fibreglass with stainless steel braid
Data sheet	TE 67.20

TC50

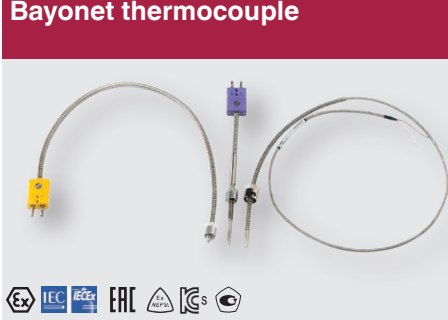
Surface thermocouple



Sensor element	Type K, J, E, N or T
Measuring range	-200 ... +400 °C
Measuring point	Ungrounded or grounded
Process connection	Surface mounting
Data sheet	TE 65.50

TC53

Bayonet thermocouple



Measuring element	Model K, J, N, E or T
Measuring range	-200 ... +1,200 °C
Measuring point	Ungrounded or grounded
Feature	<ul style="list-style-type: none"> ■ Single and dual thermocouple ■ Explosion-protected versions

TC59

Tubeskin thermocouple



Sensor element	Type K or N
Measuring range	0 ... +1,200 °C
Measuring point	Welded or exchangeable
Process connection	Surface mounting
Data sheet	TE 65.56 - TE 65.59

TC80

High-temperature thermocouple



ERC

Sensor element	Type S, R, B, K, N or J
Measuring range	0 ... 1,700 °C
Measuring point	Ungrounded
Process connection	Stop flange, threaded bushing
Data sheet	TE 65.80

TC81

For flue gas temperature measurements



Ex IEC ENEC ERC CE

Sensor element	Type K, N or J
Measuring range	0 ... 1,200 °C
Measuring point	Ungrounded or grounded
Process connection	Stop flange, threaded bushing
Data sheet	TE 65.81

TC84

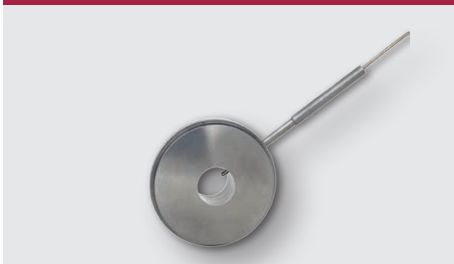
Sapphire-design thermocouple



Sensor element	Type S, R, B
Measuring range	0 ... 1,700 °C
Thermowell	Sapphire (monocrystalline)
Case	Highest safety thanks to 2-chamber system
Data sheet	TE 65.84

TC90

High-pressure thermocouple



Thermocouples	Types K, J, or E
Measuring range	0 ... 350 °C, 0 ... 662 °F
Tip	Ungrounded or grounded
Process connection	Various high-pressure connections
Data sheet	TE 65.90

TC95

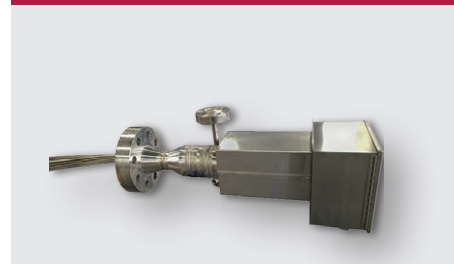
Multipoint thermocouple in band design



Thermocouples	Types K, J, E, N or T
Measuring range	0 ... +1,200 °C, 32 ... 2,192 °F
Tip	Ungrounded or grounded
Process connection	Various process connections
Data sheet	TE 70.01

TC96-R

Flexible multipoint thermometer



Thermocouples	Types K, J, E, or N
Measuring range	0 ... +1,200 °C, 32 ... 2,192 °F
Tip	Ungrounded or grounded
Process connection	Various process connections
Data sheet	TE 70.10

Resistance thermometers

Resistance thermometers are equipped with platinum sensor elements which change their electrical resistance as a function of temperature. In our range of products you will find resistance thermometers with connected cable as well as versions with connection head. A temperature transmitter can be installed directly in the connection head.

Resistance thermometers are suitable for applications between $-196 \dots +600 \text{ }^{\circ}\text{C}$ (dependent on instrument model, sensor element, accuracy class and materials coming into contact with the medium).

Resistance thermometers are available in classes AA, A and B in accordance with IEC 60751.

TR10-A

Measuring insert, MI cable



Sensor element	1 x Pt100, 2 x Pt100
Measuring range	$-196 \dots +600 \text{ }^{\circ}\text{C}$
Connection method	2-, 3- and 4-wire
Design	MI cable
Data sheet	TE 60.01

TR10-B

For additional thermowell



Sensor element	1 x Pt100, 2 x Pt100
Measuring range	$-196 \dots +600 \text{ }^{\circ}\text{C}$
Connection method	2-, 3- and 4-wire
Measuring insert	MI cable
Data sheet	TE 60.02

TR10-C

Threaded, with fabricated thermowell



Sensor element	1 x Pt100, 2 x Pt100
Measuring range	$-196 \dots +600 \text{ }^{\circ}\text{C}$
Connection method	2-, 3- and 4-wire
Process connection	Mounting thread
Data sheet	TE 60.03

TR10-D

Threaded, miniature design



Sensor element	1 x Pt100, 2 x Pt100
Measuring range	$-196 \dots +500 \text{ }^{\circ}\text{C}$
Connection method	2-, 3- and 4-wire
Process connection	Mounting thread
Data sheet	TE 60.04

TR10-F

Flanged resistance thermometer, with fabricated thermowell



Sensor element	1 x Pt100, 2 x Pt100
Measuring range	$196 \dots +600 \text{ }^{\circ}\text{C}$
Connection method	2-, 3- and 4-wire
Process connection	Flange
Data sheet	TE 60.06

TR10-H

Without thermowell



Sensor element	1 x Pt100, 2 x Pt100
Measuring range	$-196 \dots +600 \text{ }^{\circ}\text{C}$
Connection method	2-, 3- and 4-wire
Process connection	Mounting thread
Data sheet	TE 60.08

TR10-J

Threaded, with perforated thermowell



Sensor element	1 x Pt100, 2 x Pt100
Measuring range	-196 ... +600 °C
Connection method	2-, 3- and 4-wire
Process connection	Mounting thread
Data sheet	TE 60.10

TR11-A

Measuring insert, tubular design



Sensor element	1 x Pt100, 2 x Pt100
Measuring range	-50 ... +250 °C
Connection method	2-, 3- and 4-wire
Design	Tubular design
Data sheet	TE 60.13

TR10-K

Measuring insert, for installation in TR10-L



Sensor element	1 x Pt100, 2 x Pt100
Measuring range	-196 ... +600 °C
Connection method	2-, 3- and 4-wire
Data sheet	TE 60.11

TR10-L

Flameproof enclosure, for additional thermowell



Sensor element	1 x Pt100, 2 x Pt100
Measuring range	-196 ... +600 °C
Connection method	2-, 3- and 4-wire
Data sheet	TE 60.12

TR12-A

Measuring insert for process resistance thermometer TR12-B



Sensor element	1 x Pt100, 2 x Pt100
Measuring range	-196 ... +600 °C
Connection method	2-, 3- and 4-wire
Data sheet	TE 60.16

TR12-B

Process resistance thermometer, for additional thermowell



Sensor element	1 x Pt100, 2 x Pt100
Measuring range	-196 ... +600 °C
Connection method	2-, 3- and 4-wire
Option	Ex i, Ex d
Data sheet	TE 60.17

TR12-M

Process resistance thermometer, basic module



Sensor element	1 x Pt100, 2 x Pt100
Measuring range	-196 ... +600 °C
Connection method	2-, 3- and 4-wire
Option	Ex i, Ex d
Data sheet	TE 60.17

Resistance thermometers

TR30

Compact version



ERC

CE

Sensor element	1 x Pt100
Measuring range	-50 ... +250 °C
Output	Pt100, 4 ... 20 mA
Data sheet	TE 60.30

TR31

OEM miniature design



Ex

IEC

IECEx

ERC


CE

UL

Sensor element	1 x Pt100, 1 x Pt1000
Measuring range	-50 ... +250 °C
Output	Pt100, Pt1000, 4 ... 20 mA
CSA	Ordinary and hazardous locations
Data sheet	TE 60.31

TR33

Miniature design, standard version



Ex

IEC

IECEx

ERC


CE

UL

Sensor element	1 x Pt100, 1 x Pt1000
Measuring range	-50 ... +250 °C
Output	Pt100, Pt1000, 4 ... 20 mA
CSA	Ordinary locations
Data sheet	TE 60.33

TR34

Miniature design, explosion-protected



Ex

IEC

IECEx

ERC


CE

UL

Sensor element	1 x Pt100, 1 x Pt1000
Measuring range	-50 ... +250 °C
Output	Pt100, Pt1000, 4 ... 20 mA
CSA	Hazardous locations
Data sheet	TE 60.34

TR40

Cable resistance thermometer



Ex

IEC

IECEx

ERC

CE

UL

Sensor element	1 x Pt100, 2 x Pt100
Measuring range	-196 ... +600 °C
Connection method	2-, 3- and 4-wire
Cable	PVC, silicone, PTFE
Data sheet	TE 60.40

TR50

Surface resistance thermometer



Ex

IEC

IECEx

ERC

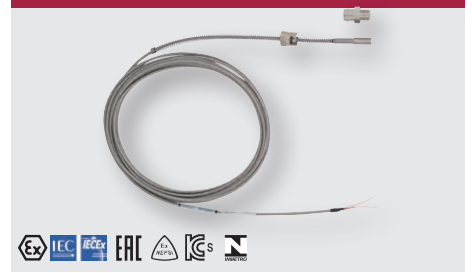
CE

UL

Sensor element	1 x Pt100, 2 x Pt100
Measuring range	-50 ... +250 °C
Connection method	2-, 3- and 4-wire
Process connection	Surface mounting
Data sheet	TE 60.50

TR53

Bayonet resistance thermometer



Sensor element	1 x Pt100, 2 x Pt100
Measuring range	-50 ... +400 °C
Connection method	2-, 3- and 4-wire
Process connection	Bayonet
Data sheet	TE 60.53

TR55

With spring-loaded tip



Sensor element	1 x Pt100, 2 x Pt100
Measuring range	-50 ... +450 °C
Connection method	2-, 3- and 4-wire
Process connection	Compression fitting
Data sheet	TE 60.55

TR57-M

Pipe surface resistance thermometer, for clamping



Sensor element	1 x Pt100
Measuring range	-20 ... +150 °C
Connection method	Pt100 3-wire, 4 ... 20 mA
Data sheet	TE 60.57

TR60

Indoor and outdoor resistance thermometer



Sensor element	1 x Pt100, 2 x Pt100
Measuring range	-40 ... +80 °C
Connection method	2-, 3- and 4-wire
Process connection	Wall mounting
Data sheet	TE 60.60

TR75

DiwiTherm® with digital indicator



Measuring range	-40.0 ... +199.9 °C/+200 ... +450 °C with automatic measuring range changeover (autorange)
Power supply	Battery operation
Data sheet	TE 60.75

TR81

For flue gas temperature measurements



Sensor element	1 x Pt100, 2 x Pt100
Measuring range	-196 ... +600 °C
Connection method	2-, 3- and 4-wire
Thermowell	Metal
Data sheet	TE 60.81

TR95

Multipoint resistance thermometer in band design



Sensor	Pt100
Measuring range	-196 ... +600 °C, -320.8 ... +1,112 °F
Connection method	2-, 3- and 4-wire
Process connection	Various process connections
Data sheet	TE 70.01

Resistance thermometers

TF35

OEM screw-in thermometer, with plug connection



Measuring range	-50 ... +250 °C
Measuring element	Pt100, Pt1000, NTC, KTY, Ni1000
Feature	<ul style="list-style-type: none"> ■ Compact design ■ Very high vibration resistance ■ Ingress protection of IP54 to IP69K, depending on the connector ■ Brass or stainless steel thermowell
Data sheet	TE 67.10

TF37

Screw-in thermometer with connection lead



Measuring range	-50 ... +260 °C
Measuring element	Pt100, Pt1000, NTC, KTY, Ni1000
Feature	<ul style="list-style-type: none"> ■ High vibration resistance ■ Connection lead from PVC, silicone, PTFE ■ Brass or stainless steel thermowell
Data sheet	TE 67.12

TF40

Duct thermometer



Measuring range	-50 ... +200 °C
Measuring element	Pt100, Pt1000, NTC
Feature	<ul style="list-style-type: none"> ■ Smallest case design, UV-resistant ■ Protected against dust and water jets, IP65 ■ Mounting flange from plastic
Data sheet	TE 67.16

TF41

Outdoor thermometer



Measuring range	-40 ... +100 °C
Measuring element	Pt100, Pt1000, NTC
Feature	<ul style="list-style-type: none"> ■ Smallest case design, UV-resistant ■ Protected against dust and water jets, IP65 ■ Clip-on sun protector
Data sheet	TE 67.17

TF43

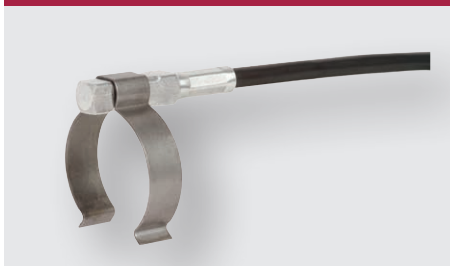
OEM insertion thermometer for refrigeration technology



Measuring range	-50 ... +105 °C
Measuring element	Pt100, Pt1000, NTC
Feature	<ul style="list-style-type: none"> ■ Plastic-moulded measuring element ■ Waterproof ■ Compatible with market-standard refrigeration controllers
Data sheet	TE 67.13

TF44

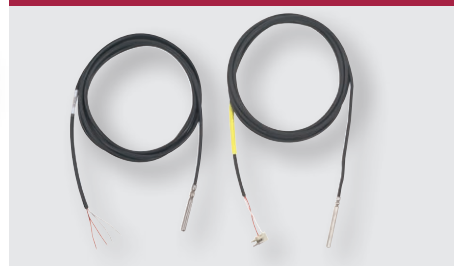
Strap-on thermometer with connection lead



Measuring range	-50 ... +200 °C
Measuring element	Pt100, Pt1000, NTC, KTY
Feature	<ul style="list-style-type: none"> ■ Connection lead from PVC, silicone ■ Aluminium probe sleeve ■ Protected against dust and water jets, IP65 ■ With quick-mounting clip
Data sheet	TE 67.14

TF45

OEM insertion thermometer with connection lead

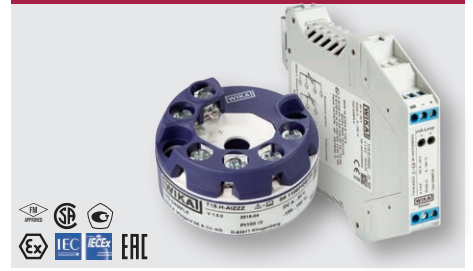


Measuring range	-50 ... +250 °C
Measuring element	Pt100, Pt1000, NTC, KTY, Ni1000
Feature	<ul style="list-style-type: none"> ■ Connection lead from PVC, silicone, PTFE ■ Probe sleeve from stainless steel ■ Protected against dust and water jets, IP65
Data sheet	TE 67.15

Temperature transmitters

T15

Digital temperature transmitter for resistance sensors



Input	Resistance thermometers, potentiometers
Accuracy	< 0.1 %
Output	4 ... 20 mA
Special feature	The fastest and simplest configuration on the market
Data sheet	TE 15.01

T16

Digital temperature transmitter for thermocouples



Input	All commercially available thermocouples
Accuracy	Typical < 2 K
Output	4 ... 20 mA
Special feature	The fastest and simplest configuration on the market
Data sheet	TE 16.01

T32

HART® temperature transmitter



Input	Resistance thermometers, thermocouples, potentiometers
Accuracy	< 0.1 %
Output	4 ... 20 mA, HART® protocol
Special feature	TÜV certified SIL version (full assessment)
Data sheet	TE 32.04

T53

FOUNDATION™ Fieldbus and PROFIBUS® PA transmitter



Input	Resistance thermometers, thermocouples, potentiometers
Accuracy	< 0.1 %
Special feature	PC configurable
Data sheet	TE 53.01

T91

Analogue temperature transmitter 3-wire, 0 ... 10 V



Input	Resistance thermometers, thermocouples
Accuracy	< 0.5 or < 1 %
Output	0 ... 10 V, 0 ... 5 V
Special feature	Fixed measuring range
Data sheet	TE 91.01, TE 91.02

TIF50, TIF52

HART® field temperature transmitter



Input	Resistance thermometers, thermocouples, potentiometers
Accuracy	< 0.1 %
Output	4 ... 20 mA, HART® protocol
Special feature	PC configurable
Data sheet	TE 62.01

TFT35

Compact temperature transmitter



Measuring range	-50 ... +200 °C
Feature	<ul style="list-style-type: none"> Output signal 4 ... 20 mA, 0 ... 10 V, 0.5 ... 4.5 V Factory configured Measuring insert exchangeable Electr. connection via plug connection
Data sheet	TE 76.18

Temperature switches

Temperature switches for industrial applications

TSD-30

Electronic temperature switch with display



IO-Link

Measuring range	-20 ... +80 °C, -20 ... +120 °C
Output	<ul style="list-style-type: none"> Switching outputs PNP or NPN 4 ... 20 mA 0 ... 10 V IO-Link 1.1
Data sheet	TE 67.16

TFS35

Bimetal temperature switch



Switching temperature	50 ... 200 °C, fixed
Features	<ul style="list-style-type: none"> Switching voltage to AC 48 V, DC 24 V Compact version: Normally closed (NC), normally open (NO) Electr. connection via plug connection
Data sheet	TV 35.01

TFS135

Bimetal temperature switch for voltages to AC 250 V



Switching temperature	50 ... 135 °C, fixed
Features	<ul style="list-style-type: none"> Switching voltages up to AC 250 V Contact version normally closed (NC) Electr. connection via plug connection
Data sheet	TV 35.02

Temperature switches for the process industry

TXS, TXA

Mini temperature switches



Ex EAC

Setting range	-15 ... +20 to +180 ... +250 °C
Ignition protection type	Ex ia or Ex d
Switch	1 x SPDT
Switching power	AC 220 V / 5 A DC 24 V / 5 A
Data sheet	TV 31.70, TV 31.72 (Ex)

TCS, TCA

Compact temperature switches



Ex EAC SIL

Setting range	-30 ... +10 to +160 ... +250 °C
Ignition protection type	Ex ia or Ex d
Switch	1 x SPDT or 1 x DPDT
Switching power	AC 250 V / 15 A DC 24 V / 2 A
Data sheet	TV 31.64, TV 31.65 (Ex)

TWG, TAG

Heavy-duty version



Ex EAC SIL

Setting range	-30 ... +70 to 0 ... 600 °C
Ignition protection type	Ex ia or Ex d
Switch	1 or 2 SPDT or 1 x DPDT
Switching power	AC 250 V / 20 A DC 24 V / 2 A
Data sheet	TV 31.60, TV 31.61

Thermometers with switch contacts

SC15

Expansion thermometer with micro switch, indicating temperature controller



EAC

Nominal size	60, 80, 100 mm 45 x 45, 72 x 72, 96 x 96 mm
Scale range	-100 ... +400 °C
Wetted parts	Copper alloy
Option	Sheet steel version
Data sheet	TV 28.02

SW15

Expansion thermometer with micro switch, Safety temperature controller



EAC

Nominal size	60, 80, 100 mm 72 x 72, 96 x 96 mm
Scale range	0 ... 400 °C
Wetted parts	Copper alloy
Option	Sheet steel version
Data sheet	TV 28.04

SB15

Expansion thermometer with micro switch, Safety temperature limiter



EAC

Nominal size	60, 80, 100 mm 72 x 72, 96 x 96 mm
Scale range	0 ... 400 °C
Wetted parts	Copper alloy
Option	Sheet steel version
Data sheet	TV 28.03

55 with 8xx

Bimetal thermometer, stainless steel version



Ex C

Nominal size	100, 160 mm
Scale range	-70 ... +30 to 0 ... 600 °C
Wetted parts	Stainless steel
Option	Liquid damping to max. 250 °C (case and probe)
Data sheet	TV 25.01

70 with 8xx

Expansion thermometer with micro switch



EAC

Nominal size	100 mm
Scale range	-60 ... +40 to 0 ... 250 °C
Wetted parts	Stainless steel
Option	Various contact versions
Data sheet	TV 28.01

73 with 8xx

Gas-actuated thermometer, stainless steel version



Ex C

Nominal size	100, 160, 144 x 144 mm
Scale range	-80 ... +60 to 0 ... 700 °C
Wetted parts	Stainless steel
Option	■ Capillary ■ Liquid damping (case)
Data sheet	TV 27.01

Temperature controllers

CS4M

For panel mounting,
48 x 24 mm



Input	Multi-function input for resistance thermometers, thermocouples and standard signals
Control mode	PID, PI, PD, P, ON/OFF (configurable)
Monitoring output	Relay or logic level DC 0/12 V for 3-point control to control an electronic switch relay (SSR) or analogue current signal 4 ... 20 mA
Power supply	<ul style="list-style-type: none"> ■ AC 100 ... 240 V ■ AC/DC 24 V
Data sheet	AC 85.06

CS4R

For rail mounting, 22.5 x 75 mm



Input	Multi-function input for resistance thermometers, thermocouples and standard signals
Control mode	PID, PI, PD, P, ON/OFF (configurable)
Monitoring output	Relay or logic level DC 0/12 V to control an electronic switch relay (SSR) or analogue current signal 4 ... 20 mA
Power supply	<ul style="list-style-type: none"> ■ AC 100 ... 240 V ■ AC/DC 24 V
Data sheet	AC 85.05

CS6S, CS6H, CS6L

For panel mounting,
48 x 48, 48 x 96, 96 x 96 mm



Input	Multi-function input for resistance thermometers, thermocouples and standard signals
Control mode	PID, PI, PD, P, ON/OFF (configurable)
Monitoring output	Relay (AC 250 V, 3A, (R) or 1A (L)) or logic level DC 0/12 V for 3-point control to control an electronic switch relay (SSR) or analogue current signal 4 ... 20 mA
Power supply	<ul style="list-style-type: none"> ■ AC 100 ... 240 V ■ AC/DC 24 V
Data sheet	AC 85.08

SC58

For panel mounting, 62 x 28 mm



Input	Pt100 or PTC
Control mode	Simple 2-point controller
Monitoring output	Relay switching output 12 A, 250 V
Power supply	<ul style="list-style-type: none"> ■ AC 230 V ■ AC 12 ... 24 V or DC 16 ... 32 V
Data sheet	AC 85.24

SC64

For panel mounting, 64 mm, round



Input	Pt100 or PTC
Control mode	Simple 2-point controller
Monitoring output	Relay switching output 16 A, 250 V
Power supply	<ul style="list-style-type: none"> ■ AC 230 V ■ AC 12 ... 24 V or DC 16 ... 32 V
Data sheet	AC 85.25

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 probes to the medium, thermowells that suit each application are available. Thermowells can be machined from solid-body material 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, 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 tantalum as special material a removable jacket is used, which is slid over the supporting thermowell from stainless steel.

TW10

Solid-machined with flange



Thermowell form	Tapered, straight or stepped
Nominal width	ASME 1 ... 4 inch DIN/EN DN 25 ... 100
Pressure rating	ASME to 2,500 lbs (DIN/EN to PN 100)
Data sheet	TW 95.10, TW 95.11, TW 95.12

TW15

Solid-machined to screw in



Thermowell form	Tapered, straight or stepped
Head version	Hexagon, round with hexagon, or round with spanner flats
Process connection	½, ¾ or 1 NPT
Data sheet	TW 95.15

TW20

Socket weld (solid-machined)



Thermowell form	Tapered, straight or stepped
Welding diameter	1.050, 1.315 or 1.900 inch (26.7, 33.4 or 48.3 mm)
Pressure rating	3,000 or 6,000 psi
Data sheet	TW 95.20

Thermowells

TW25

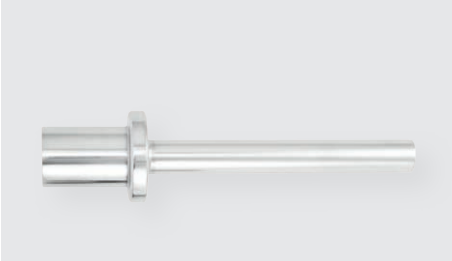
Weld-in (solid-machined)



Thermowell form	Tapered, straight or stepped
Head diameter	Up to 2 inch (50.8 mm)
Data sheet	TW 95.25

TW30

Vanstone (solid-machined) for lap flanges



Thermowell form	Tapered, straight or stepped
Nominal width	ASME 1, 1½ or 2 inch
Pressure rating	ASME up to 2,500 lbs
Data sheet	TW 95.30

TW35

Threaded (fabricated) (DIN 43772 form 2, 2G, 3, 3G)



Thermowell form	Form 2, 2G, 3 or 3G
Material	Stainless steel
Connection to thermometer	M24 x 1.5 rotatable
Data sheet	TW 95.35

TW40

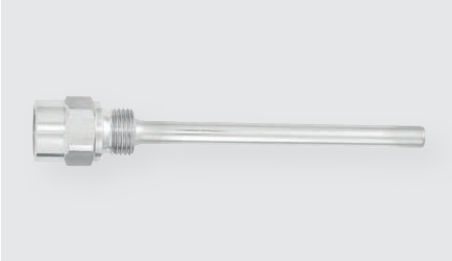
Fabricated with flange (DIN 43772 form 2F, 3F)



Thermowell form	Form 2F or 3F
Nominal width	DIN/EN DN 25 ... 50 ASME 1 ... 2 inch
Pressure rating	DIN/EN up to PN 100 (ASME up to 1,500 psig)
Data sheet	TW 95.40

TW45

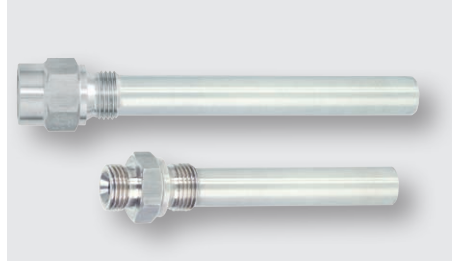
Threaded (fabricated, DIN 43772 form 5, 8)



Thermowell form	Form 5 or 8
Material	Stainless steel or copper alloy
Data sheet	TW 95.45

TW50

Threaded (solid-machined, DIN 43772 form 6, 7, 9)



Thermowell form	Form 6, 7 or 9
Data sheet	TW 95.50

TW55

Solid-machined for weld-in or with flange (DIN 43772 form 4, 4F)



Thermowell form	Form 4 or 4F
Nominal width	DIN/EN DN 25 ... 50 ASME 1 ... 2 inch
Pressure rating	DIN/EN up to PN 100 (ASME up to 2,500 psig)
Data sheet	TW 95.55

Accessories

PU-548

Programming unit for temperature transmitters



- LED status display
- Compact design
- No further voltage supply needed, neither for the programming unit nor for the transmitter
- Due to the magWIK quick connector, fast connection to the transmitter possible
- Data sheet AC 80.18

magWIK

Magnetic quick connector



- For accelerated connection for all configuration and calibration processes
- Connection of 2-mm plug contacts or 4-mm plug contacts with adapter
- Data sheet AC 80.15

905

Contact protection relay for model 821 switch contacts



- | | |
|-------------|--|
| Application | For optimal contact protection and highest switching reliability |
| Data sheet | AC 08.01 |

904

Control unit for inductive contacts



- | | |
|-------------|---|
| Application | For operating measuring instruments with inductive contacts |
| Data sheet | AC 08.01 |

Coupler connector



Fittings



Wires & cables



Bypass level indicators

Continuous level measurement via visual indication of the level without power supply

Applications

- Continuous level indication without power supply
- Indication of the level proportional to height
- Individual design and corrosion-resistant materials make the products suitable for a broad range of applications
- Chemical, petrochemical industry, oil and natural gas extraction (on- and offshore), shipbuilding, machine building, power generating equipment, power plants
- Process water and drinking water treatment, food and beverage industry, pharmaceutical industry



Special features

- Process- and system-specific production
- Operating limits:
 - Operating temperature: $T = -196 \dots +450 \text{ }^{\circ}\text{C}$
 - Operating pressure: $P = \text{vacuum to } 400 \text{ bar}^{1)}$
 - Limit density: $\rho \geq 340 \text{ kg/m}^3$
- Wide variety of different process connections and materials
- Mounting of level sensors and magnetic switches possible as an option
- Explosion-protected versions

¹⁾ Individual limit values. For application limits, the joint consideration of temperature and pressure is required.

BNA-S

Standard version



Chamber	■ Ø 60.3 x 2 mm ■ Ø 60.3 x 2.77 mm
Material	■ Stainless steel 1.4571/316Ti ■ 1.4404/316L
Process connection	■ Flange DIN, ANSI, EN ■ Thread ■ Weld stub
Pressure	Max. 64 bar
Temperature	-196 ... +450 °C
Data sheet	LM 10.01

BNA-P

Plastic version



Chamber	Ø 60.3 x 3 mm
Material	■ PVDF ■ PP
Process connection	■ Flange DIN, ANSI, EN
Pressure	Max. 6 bar
Temperature	-10 ... +100 °C
Data sheet	LM 10.01

BNA-SD, BNA-HD DUplus

Standard/high-pressure version



Chamber	<ul style="list-style-type: none"> ■ BNA-SD: Ø 60.3 x 2 mm ■ Ø 60.3 x 2.77 mm ■ BNA-HD: Ø 60.3 x 3.91 mm
Material	<ul style="list-style-type: none"> ■ 1.4571/316Ti ■ 1.4404/316L
Process connection	<ul style="list-style-type: none"> ■ Flange DIN, ANSI, EN ■ Thread ■ Weld stub
Pressure	<ul style="list-style-type: none"> ■ BNA-SD: max. 64 bar ■ BNA-HD: max. 160 bar
Temperature	-196 ... +450 °C
Data sheet	LM 10.01

BNA-L

Liquid/KOplus version



Chamber	<ul style="list-style-type: none"> ■ Ø 88.9 x 2 mm ■ Ø 88.9 x 2,9 mm
Material	■ Stainless steel 1.4404/316L
Process connection	<ul style="list-style-type: none"> ■ Flange DIN, ANSI, EN ■ Thread ■ Weld stub
Pressure	Max. 64 bar
Temperature	-196 ... +300 °C
Data sheet	LM 10.01

BNA-X

Special materials



Chamber	<ul style="list-style-type: none"> Ø 60.3 x 2 mm Ø 60.3 x 2.77 mm Ø 60.3 x 3.91 mm Ø 60.3 x 5.54 mm
Material	<ul style="list-style-type: none"> ■ Titanium 3.7035 ■ Hastelloy C276 ■ 6Mo 14547 ■ Monel ■ Inconel
Process connection	<ul style="list-style-type: none"> ■ Flange DIN, ANSI, EN ■ Thread ■ Weld stub
Pressure	Max. 250 bar
Temperature	-196 ... +450 °C
Data sheet	LM 10.01

Sight glass level indicators

Direct level indication without power supply

Applications

- Continuous level indication without power supply
- Direct indication of the level
- Individual design and corrosion-resistant materials make the products suitable for a broad range of applications
- Chemical, petrochemical industry, oil and natural gas extraction (on- and offshore), shipbuilding, machine building, power generating equipment, power plants
- Oil and gas, heat transfer and refrigeration systems, plants for cryogenics



Special features

- Process- and system-specific production
- Operating limits: □ Operating temperature: $T = -196 \dots +374 \text{ }^{\circ}\text{C}$ ¹⁾
□ Operating pressure: Vacuum to 250 bar ¹⁾
- Wide variety of different process connections and materials
- Illumination optional
- Heating and/or insulation optional

¹⁾ Individual limit values. For application limits, the joint consideration of temperature and pressure is required.

LGG-E

Compact version



Display type	Reflex
Material	<ul style="list-style-type: none"> ■ Steel 1.0460 ■ A105, 1.0570
Process connection	Flange DIN, ANSI, EN
Pressure	Max. 40 bar
Temperature	-10 ... +243 °C (steam)
Glass size	2 ... 11
Number of segments	1 ... 3
Data sheet	LM 33.01

LGG-RP, LGG-RT



Display type	Reflex/transparent
Material	Steel A350 LF2
Process connection	<ul style="list-style-type: none"> ■ Flange DIN, ANSI, EN ■ Male thread 1/2" NPT, 3/4" NPT ■ Weld stub 1/2", 3/4"
Pressure	Max. 100 bar
Temperature	<ul style="list-style-type: none"> ■ -40 ... +243 °C (steam) ■ -40 ... +300 °C
Glass size	4 ... 9
Number of segments	1 ... 5
Data sheet	LM 33.01

LGG-RE, LGG-TE

Standard version



Display type	Reflex/transparent
Material	<ul style="list-style-type: none"> ■ Steel 1.0570, A350 LF2 ■ Stainless steel 1.4404/316L
Process connection	<ul style="list-style-type: none"> ■ Flange DIN, ANSI, EN ■ Male thread 1/2" NPT, 3/4" NPT ■ Weld stub 1/2", 3/4"
Pressure	Max. 160 bar
Temperature	<ul style="list-style-type: none"> ■ -196 ... +243 °C (steam) ■ -196 ... +300 °C
Glass size	2 ... 11
Number of segments	1 ... 5 (others on request)
Data sheet	LM 33.01

LGG-RI, LGG-TI

High-pressure version



Display type	Reflex/transparent
Material	<ul style="list-style-type: none"> ■ Steel 1.5415 ■ Stainless steel 1.4404/316L
Process connection	<ul style="list-style-type: none"> ■ Flange DIN, ANSI, EN ■ Male thread 1/2" NPT, 3/4" NPT ■ Weld stub 1/2", 3/4"
Pressure	Max. 250 bar
Temperature	-196 ... +100 °C
Glass size	2 ... 9
Number of segments	1 ... 5
Data sheet	LM 33.01

LGG-M

Refraction version



Display type	Refraction
Material	Steel 1.5415
Process connection	<ul style="list-style-type: none"> ■ Flange DIN, ANSI, EN ■ Male thread G 1/2, G 3/4, 1/2" NPT, 3/4" NPT ■ Weld stub 1/2", 3/4"
Pressure	Max. 250 bar
Temperature	-10 ... +374 °C
Glass size	2 ... 11
Number of segments	1 ... 9
Data sheet	LM 33.01

Submersible pressure sensors

Hydrostatic level measurement

Applications

- Level measurement in rivers and lakes
- Control of sewage lift and pumping stations
- Monitoring of sewage, settling and rainwater retention basins
- Level measurement in vessel and storage systems for oils and fuels

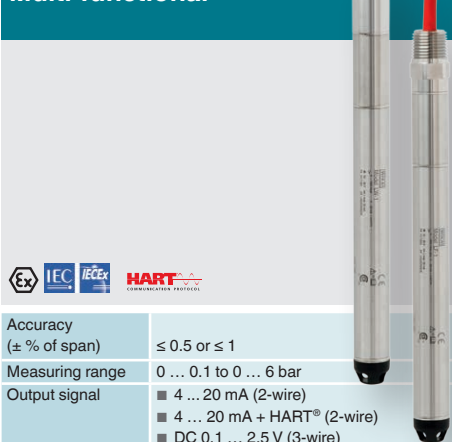
Special features

- Slimline and hermetically sealed design up to 300 m water column
- Highly resistant versions available
- Explosion protection per ATEX, IECEx, FM and CSA
- Drinking water conformity per KTW and ACS
- Temperature output, HART® and low-power output signal for battery operation



LF-1

Multi-functional



Accuracy (± % of span)	≤ 0.5 or ≤ 1
Measuring range	0 ... 0.1 to 0 ... 6 bar
Output signal	<ul style="list-style-type: none"> ■ 4 ... 20 mA (2-wire) ■ 4 ... 20 mA + HART® (2-wire) ■ DC 0.1 ... 2.5 V (3-wire)
Special feature	<ul style="list-style-type: none"> ■ Temperature output -40 ... +80 °C (optional) ■ Explosion protection per ATEX (optional) and IECEx (optional) ■ Hastelloy sensor and FEP cable for especially high resistance (optional)
Data sheet	LM 40.04

LS-10

Standard version



Accuracy (± % of span)	≤ 0.5
Measuring range	0 ... 0.25 to 0 ... 10 bar
Output signal	4 ... 20 mA (2-wire)
Data sheet	PE 81.55

LH-20

High performance



Non-linearity (± % of span)	≤ 0.2 or 0.1
Measuring range	<ul style="list-style-type: none"> ■ 0 ... 0.1 to 0 ... 25 bar ■ 0 ... 1.6 to 0 ... 25 bar abs.
Special feature	<ul style="list-style-type: none"> ■ Slimline design ■ HART® (optional) ■ Drinking water compliant per KTW and ACS ■ Reliable and secure by double-sealed design ■ Titanium case and FEP cable for especially high resistance (optional)
Data sheet	PE 81.56

Continuous measurement with float for industrial applications

With reed measuring chain

Applications

- Level measurement of liquids in machine building
- Control and monitoring tasks for hydraulic power packs, compressors and cooling systems

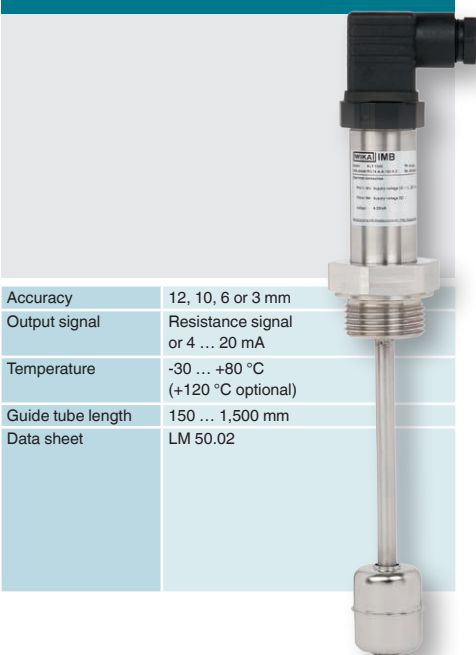
Special features

- Media compatibility: Oil, water, diesel, refrigerants and other liquids
- Permissible medium temperature: -30 ... +120 °C
- Output signals for level and temperature (optional) as resistance output signal or 4 ... 20 mA current output
- Measuring principle: Reed-chain technology
- Accuracy, resolution: 12, 10, 6 or 3 mm



RLT-1000

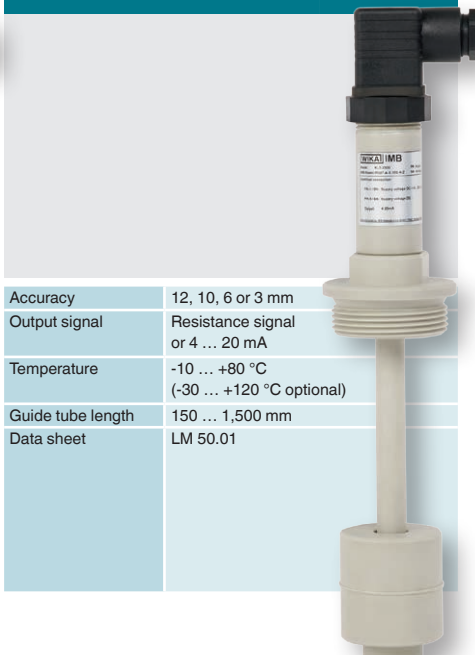
Stainless steel version



Accuracy	12, 10, 6 or 3 mm
Output signal	Resistance signal or 4 ... 20 mA
Temperature	-30 ... +80 °C (+120 °C optional)
Guide tube length	150 ... 1,500 mm
Data sheet	LM 50.02

RLT-2000

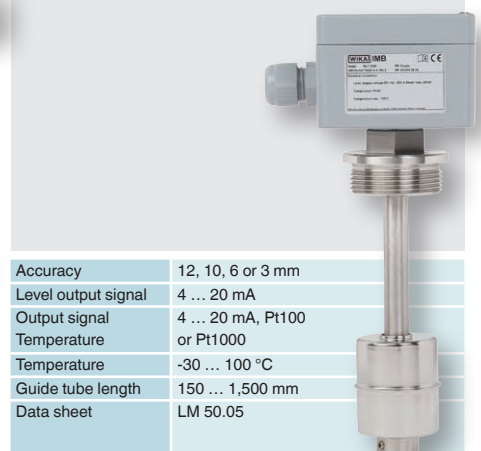
Plastic version



Accuracy	12, 10, 6 or 3 mm
Output signal	Resistance signal or 4 ... 20 mA
Temperature	-10 ... +80 °C (-30 ... +120 °C optional)
Guide tube length	150 ... 1,500 mm
Data sheet	LM 50.01

RLT-3000

Stainless steel version with temperature output signal



Accuracy	12, 10, 6 or 3 mm
Level output signal	4 ... 20 mA
Output signal	4 ... 20 mA, Pt100 or Pt1000
Temperature	-30 ... 100 °C
Guide tube length	150 ... 1,500 mm
Data sheet	LM 50.05

Continuous measurement with float for the process industry

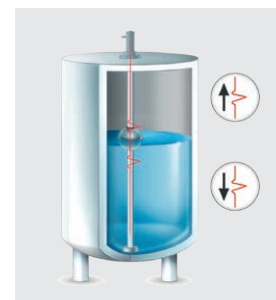
Magnetostrictive

Applications

- High-accuracy level measurement for almost all liquid media
- Chemical, petrochemical industry, natural gas, offshore, shipbuilding, machine building, power generating equipment, power plants
- Process water and drinking water treatment, food and beverage industry, pharmaceutical industry

Special features

- Process- and system-specific solutions possible
- Operating limits:
 - Operating temperature: $T = -90 \dots +400 \text{ }^{\circ}\text{C}$
 - Operating pressure: $P = \text{vacuum to } 100 \text{ bar}$
 - Limit density: $\rho \geq 400 \text{ kg/m}^3$
- Resolution $< 0.1 \text{ mm}$
- Wide variety of different electrical connections, process connections and materials
- Explosion-protected versions



FLM-S

Stainless steel version



Process connection	<ul style="list-style-type: none"> ■ Mounting thread ■ Flange: DIN, ANSI
Guide tube length	Max. 6,000 mm
Pressure	0 ... 200 bar
Temperature	$-90 \dots +450 \text{ }^{\circ}\text{C}$
Density	$\geq 400 \text{ kg/m}^3$
Data sheet	LM 20.01

FLM-SP

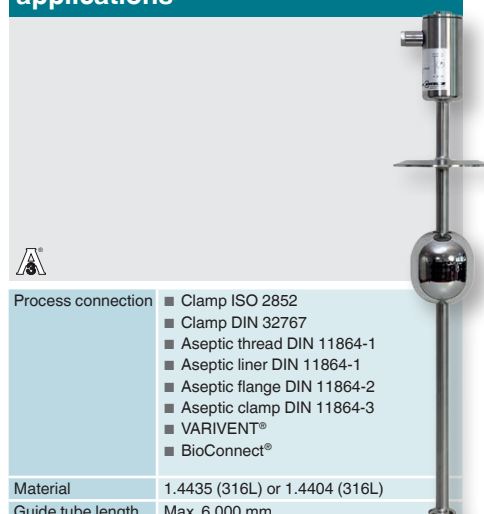
Plastic version



Process connection	<ul style="list-style-type: none"> ■ Mounting thread ■ Flange DIN, ANSI
Guide tube length	Max. 5,000 mm
Pressure	0 ... 16 bar
Temperature	$-10 \dots +100 \text{ }^{\circ}\text{C}$
Density	$\geq 800 \text{ kg/m}^3$
Data sheet	LM 20.01

FLM-H

Hygienic version, for sanitary applications



Process connection	<ul style="list-style-type: none"> ■ Clamp ISO 2852 ■ Clamp DIN 32767 ■ Aseptic thread DIN 11864-1 ■ Aseptic liner DIN 11864-1 ■ Aseptic flange DIN 11864-2 ■ Aseptic clamp DIN 11864-3 ■ VARIVENT® ■ BioConnect®
Material	1.4435 (316L) or 1.4404 (316L)
Guide tube length	Max. 6,000 mm
Pressure	10 bar
Temperature	$-40^{\circ}\text{C} \dots +250 \text{ }^{\circ}\text{C}$
Density	$\geq 770 \text{ kg/m}^3$
Data sheet	LM 20.01

With reed measuring chain

Applications

- Level measurement for almost all liquid media
- Chemical, petrochemical industry, natural gas, offshore, shipbuilding, machine building, power generating equipment, power plants
- Process water and drinking water treatment, food and beverage industry, pharmaceutical industry

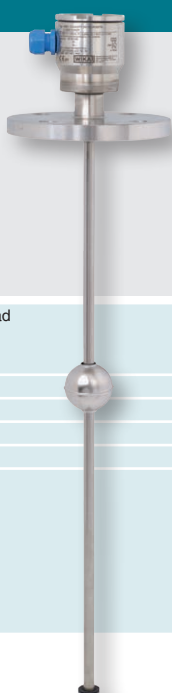
Special features

- Process- and system-specific solutions possible
- Operating limits:
 - Operating temperature: $T = -80 \dots +200 \text{ }^{\circ}\text{C}$
 - Operating pressure: $P = \text{vacuum to } 80 \text{ bar}$
 - Limit density: $\rho \geq 400 \text{ kg/m}^3$
- Wide variety of different electrical connections, process connections and materials
- Optionally with programmable and configurable head-mounted transmitter for 4 ... 20 mA field signals, HART®, PROFIBUS® PA and FOUNDATION™ Fieldbus
- Explosion-protected versions



FLR-SA, FLR-SB

Stainless steel version



Process connection	<ul style="list-style-type: none"> ■ Mounting thread ■ Flange DIN, ANSI, EN
Guide tube length	Max. 6,000 mm
Pressure	0 ... 100 bar
Temperature	-80 ... +200 °C
Density	$\geq 400 \text{ kg/m}^3$
Data sheet	LM 20.02

FLR-PA, FLR-PB

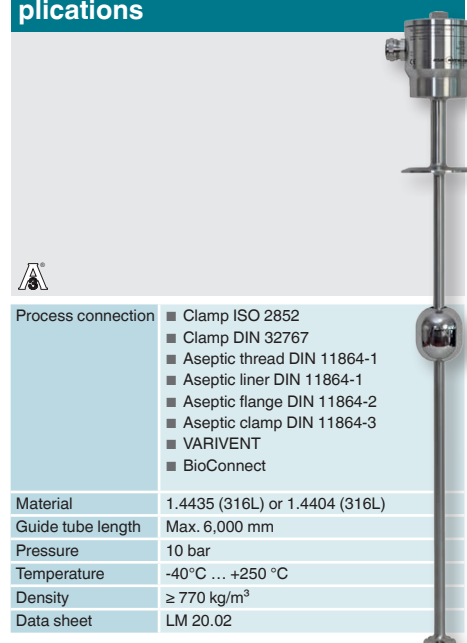
Plastic version, PP, PVDF, PP



Process connection	<ul style="list-style-type: none"> ■ Mounting thread ■ Flange DIN, ANSI, EN
Guide tube length	Max. 5,000 mm
Pressure	0 ... 3 bar
Temperature	-10 ... +100 °C
Density	$\geq 800 \text{ kg/m}^3$
Data sheet	LM 20.02

FLR-HA3

Hygienic version, for sanitary applications



Process connection	<ul style="list-style-type: none"> ■ Clamp ISO 2852 ■ Clamp DIN 32767 ■ Aseptic thread DIN 11864-1 ■ Aseptic liner DIN 11864-1 ■ Aseptic flange DIN 11864-2 ■ Aseptic clamp DIN 11864-3 ■ VARIVENT ■ BioConnect
Material	1.4435 (316L) or 1.4404 (316L)
Guide tube length	Max. 6,000 mm
Pressure	10 bar
Temperature	-40°C ... +250 °C
Density	$\geq 770 \text{ kg/m}^3$
Data sheet	LM 20.02

Float switches for industrial applications

Applications

- Level measurement of liquids in machine building
- Control and monitoring tasks for hydraulic power packs, compressors and cooling systems

Special features

- Media compatibility: Oil, water, diesel, refrigerants and other liquids
- Permissible medium temperature range: -30 ... +150 °C
- Up to 4 switching outputs freely definable as normally open, normally closed or change-over contact
- Optional temperature output signal, selectable as preconfigured bimetal switch or either Pt100 or Pt1000



RLS-1000

Stainless steel version



Switch points	Up to 4 (normally closed, normally open, change-over contact)
Medium temperature	-30 ... +80 °C -30 ... +150 °C optional
Guide tube length	60 ... 1,500 mm
Data sheet	LM 50.03

RLS-2000

Plastic version



Switch points	Up to 4 (normally closed, normally open, change-over contact)
Medium temperature	-10 ... +80 °C -30 ... +120 °C optional
Guide tube length	100 ... 1,500 mm
Data sheet	LM 50.04

RLS-3000

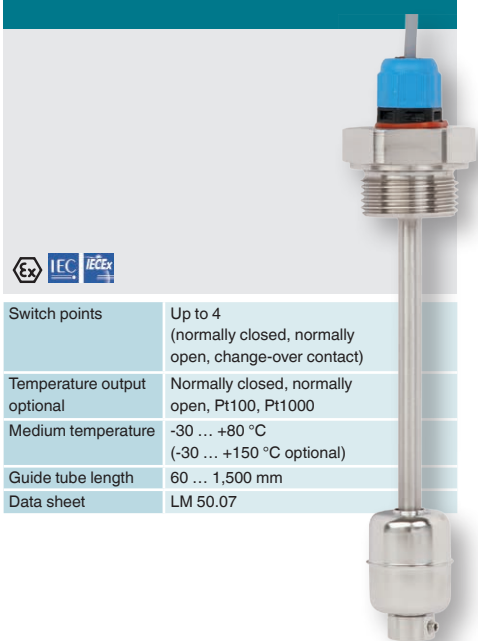
Stainless steel version, with temperature output signal



Switch points	Up to 3 (normally closed, normally open, change-over contact)
Temperature output	Normally closed, normally open, Pt100, Pt1000
Medium temperature	-30 ... +80 °C (-30 ... +150 °C optional)
Guide tube length	60 ... 1,500 mm
Data sheet	LM 50.06

RLS-4000

Intrinsic safety Ex i



Switch points	Up to 4 (normally closed, normally open, change-over contact)
Temperature output optional	Normally closed, normally open, Pt100, Pt1000
Medium temperature	-30 ... +80 °C (-30 ... +150 °C optional)
Guide tube length	60 ... 1,500 mm
Data sheet	LM 50.07

RLS-5000

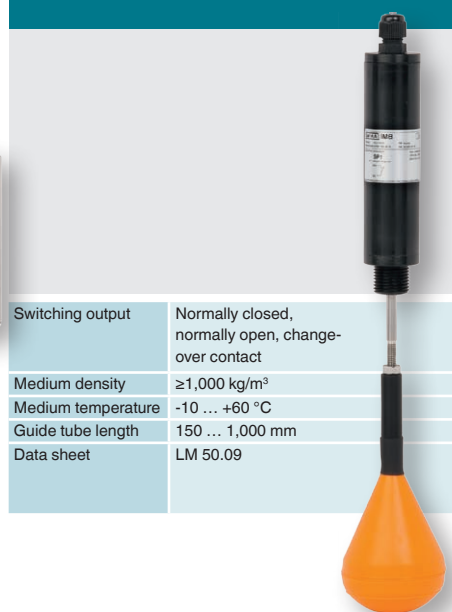
For the shipbuilding industry
(bilge water tanks)



Material	Stainless steel 1.4571
Switching output	Normally closed, normally open, change-over contact
Medium temperature	-40 ... +80 °C
Electrical output	Marine cable, IP68 (8 m)
Test device	optional
Data sheet	LM 50.08

RLS-6000

For water and wastewater



Switching output	Normally closed, normally open, change-over contact
Medium density	≥1,000 kg/m³
Medium temperature	-10 ... +60 °C
Guide tube length	150 ... 1,000 mm
Data sheet	LM 50.09

LSD-30

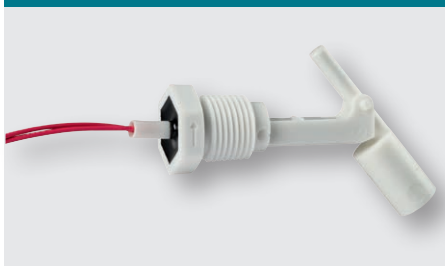
Electronic level switch, with display



Measuring range	Probe length 250, 370, 410, 520, 730 mm
Density	≥ 0.7 g/cm³ (NBR float)
Output signal	■ 1 or 2 switching outputs (PNP or NPN) ■ Analogue output (optional)
Process connection	G ¾ A, ¾ NPT
Data sheet	LM 40.01

HLS-M1

Plastic version, with cable outlet



Process connection	■ ½" NPT (installation in the tank from outside) ■ G ¼" (installation in the tank from inside)
Pressure	1 bar
Temperature	-10 ... +80 °C
Material	PP
Electrical connection	Cable
Data sheet	LM 30.06

HLS-M2

Stainless steel version, with cable outlet



Process connection	■ ½" NPT (installation in the tank from outside) ■ G ¼" (installation in the tank from inside)
Pressure	5 bar
Temperature	-40 ... +120 °C
Material	Stainless steel 1.4301
Electrical connection	Cable or connector
Data sheet	LM 30.06

Float switches for the process industry

Robust switches for liquid media

Applications

- Level measurement for almost all liquid media
- Pump and level control and monitoring of distinct filling levels
- Chemical, petrochemical industry, natural gas, offshore, shipbuilding, machine building, power generating equipment, power plants
- Process water and drinking water treatment, food and beverage industry

Special features

- Large range of application due to the simple, proven functional principle
- For harsh operating conditions, long service life
- Operating limits:
 - Operating temperature: $T = -196 \dots +350 \text{ }^{\circ}\text{C}$
 - Operating pressure: $P = \text{vacuum to } 40 \text{ bar}$
 - Limit density: $\rho \geq 300 \text{ kg/m}^3$
- Wide variety of different electrical connections, process connections and materials
- Explosion-protected versions



FLS-SA, FLS-SB

**Stainless steel version,
for vertical installation**



Switch points	Max. 8 switch points
Process connection	<ul style="list-style-type: none"> ■ Mounting thread ■ Flange DIN, ANSI, EN
Guide tube length	Max. 6,000 mm
Pressure	0 ... 100 bar
Temperature	-196 ... +300 °C
Density	$\geq 390 \text{ kg/m}^3$
Data sheet	LM 30.01

FLS-PA, FLS-PB

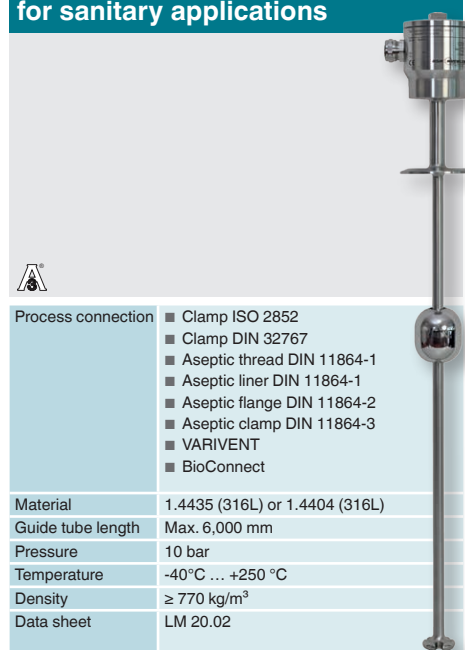
**Plastic version,
for vertical installation**



Switch points	Max. 8 switch points
Process connection	<ul style="list-style-type: none"> ■ Mounting thread ■ Flange DIN, ANSI, EN
Guide tube length	Max. 5,000 mm
Pressure	0 ... 3 bar
Temperature	-10 ... +100 °C
Density	$\geq 400 \text{ kg/m}^3$
Data sheet	LM 30.01

FLR-HA3

**Hygienic version,
for sanitary applications**



Process connection	<ul style="list-style-type: none"> ■ Clamp ISO 2852 ■ Clamp DIN 32767 ■ Aseptic thread DIN 11864-1 ■ Aseptic liner DIN 11864-1 ■ Aseptic flange DIN 11864-2 ■ Aseptic clamp DIN 11864-3 ■ VARIVENT ■ BioConnect
Material	1.4435 (316L) or 1.4404 (316L)
Guide tube length	Max. 6,000 mm
Pressure	10 bar
Temperature	-40°C ... +250 °C
Density	$\geq 770 \text{ kg/m}^3$
Data sheet	LM 20.02

ELS-S

For lateral mounting
with external chamber



External chamber	Stainless steel
Process connection	Threaded pipe connection GE10-LR galvanised steel
Pressure	Up to 6 bar
Temperature	-30 ... +300 °C
Data sheet	LM 30.03

ELS-A

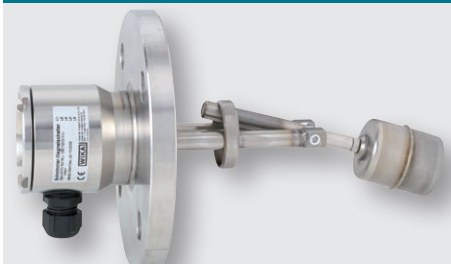
For lateral mounting
with external chamber



External chamber	Aluminium
Process connection	Threaded pipe connection GE10-LR galvanised steel
Pressure	Max. 1 bar
Temperature	150 °C
Data sheet	LM 30.03

HLS-S

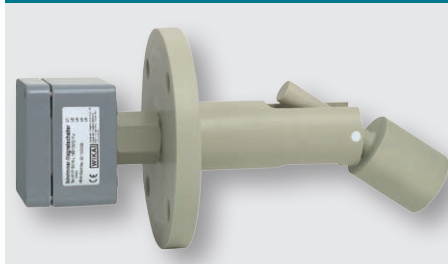
Stainless steel version, for
horizontal installation



Process connection	Flange DIN, ANSI, EN
Pressure	0 ... 232 bar
Temperature	-196 ... +350 °C
Density	≥ 600 kg/m ³
Material	Stainless steel, titanium
Data sheet	LM 30.02

HLS-P

Plastic version,
for horizontal installation



Process connection	Flange DIN, ANSI, EN
Pressure	0 ... 3 bar
Temperature	-10 ... +80 °C
Density	≥ 750 kg/m ³
Material	PP
Data sheet	LM 30.02

HLS-S Ex i

Intrinsically safe stainless steel
version for horizontal installation



Process connection	<ul style="list-style-type: none"> ■ Mounting flange: DIN DN 50 ... DN 100, PN 6 ... 160 EN 1092 DN 50 ... DN 100, PN 6 ... PN 160 ANSI 2" ... 4", class 150 ... 900 ■ Square flange: DN 80 and DN 92 (other flanges on request) 				
Pressure	Max. 6 bar				
Temperature					
Temperature class	T2	T3	T4	T5	T6
Process temperature	180 °C	160 °C	108 °C	80 °C	65 °C
Ambient temperature at case	80 °C				
Density	600 kg/m ³				
Material	Stainless steel 1.4571				
Data sheet	LM 30.02				

Optoelectronic switches for the process industry

For applications with limited mounting space

Applications

- Chemical, petrochemical, natural gas, offshore industries
- Shipbuilding, machine building, refrigerator units
- Power generating equipment, power plants
- Process water and drinking water treatment
- Wastewater and environmental engineering

Special features

- Temperature ranges from -269 ... +400 °C
- Versions for pressure ranges from vacuum to 500 bar
- Special versions: High pressure, interface measurement
- Explosion-protected versions
- Signal processing is made using a separate model OSA-S switching amplifier



OLS-S, OLS-H

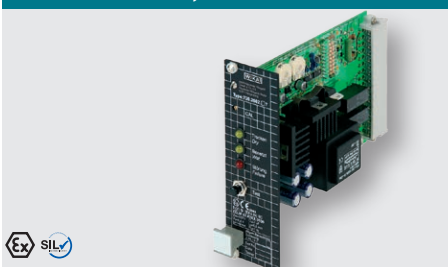
Standard and high-pressure version



Material	Stainless steel, Hastelloy, KM-glass, quartz glass, sapphire, graphite
Process connection	■ G 1/2 A ■ 1/2 NPT
Pressure	0 ... 500 bar
Temperature	-269 ... +400 °C
Approval	Ex i
Data sheet	LM 31.01

OSA-S

Switching amplifier, for models OLS-S, OLS-H



Output	1 signal relay, 1 failure relay
Function	High or low alarm
Time delay	Up to 8 s
Voltage supply	AC 24/115/120/230 V DC 24 V
Approval	Ex i
Data sheet	LM 31.01

OLS-C20

Compact design, high-pressure version



Material	Stainless steel, quartz glass
Process connection	■ M16 x 1.5 ■ G 1/2 A ■ 1/2 NPT
Insertion length	24 mm
Pressure	0 ... 50 bar
Temperature	-30 ... +135 °C
Data sheet	LM 31.02

Optoelectronic switches for industrial applications

Applications

- Limit detection of liquids
- Machine tools
- Hydraulics
- Machine building
- Water technology

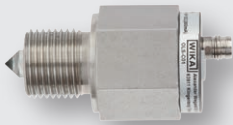
Special features

- For liquids such as oils, water, distilled water, aqueous media
- Compact design
- Mounting position as required
- Accuracy ± 2 mm
- No moving components

Optoelectronic limit level switches – for general applications in machine building

OLS-C01

Level switch, standard version



Material	Stainless steel, borosilicate glass
Process connection	G 3/8", G 1/2" or M12 x 1
Pressure	Max. 25 bar
Temperature	-30 ... +100 °C
Switching output	1 x PNP
Data sheet	LM 31.31

OLS-C02

Level switch, with selectable switch length



Material	Stainless steel, borosilicate glass
Process connection	G 1/2"
Pressure	Max. 25 bar
Temperature	-30 ... +100 °C
Switch length	65 ... 1,500 mm
Switching output	1 x PNP
Data sheet	LM 31.32

OLS-C05

Level switch, high-temperature version



Material	Stainless steel, borosilicate glass
Process connection	G 1/2"
Pressure	Max. 25 bar
Temperature	-40 ... +170 °C
Switching output	1 x PNP
Data sheet	LM 31.33

Optoelectronic limit level switches – application specialists

OLS-C51

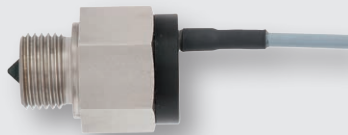
Intrinsic safety Ex i



Material	Stainless steel, borosilicate glass
Process connection	G 1/2"
Pressure	Max. 40 bar
Temperature	-30 ... +135 °C
Approval	Ex i
Output signal	4 ... 20 mA low/high
Data sheet	LM 31.04

OLS-C04

For refrigeration technology



Material	Steel, nickel-plated; glass
Process connection	G 1/2", 1/2" NPT
Pressure	Max. 40 bar
Temperature	-40 ... +100 °C
Switching output	1 x PNP
Data sheet	LM 31.34

OLS-5200

For the shipbuilding industry





Material	Stainless steel, borosilicate glass
Process connection	Male thread G 1/2" or M18 x 1.5
Pressure	Max. 25 bar
Temperature	-40 ... +130 °C
Switching output	1 x PNP
Vibration resistance	10 ... 5,000 Hz, 0 ... 60 g
Data sheet	LM 31.06

Accessories for bypass

Combines the tried-and-trusted bypass with further independent measuring principles


BLM-S






Material	Stainless steel 1.4404
Guide tube length	Max. 5,800 mm
Temperature	-60 °C ... +185 °C
Output signal	4 ... 20 mA, HART
Data sheet	LM 10.05

BLM-SF-FM





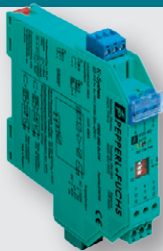
Material	Stainless steel
Guide tube length	Max. 4,000 mm
Temperature	-200 °C ... +180 °C
Output signal	4 ... 20 mA, HART
Data sheet	LM 10.05

Accessories

The comprehensive accessory programme includes a wide variety of electronic equipment required for the evaluation and indication of our sensors.

904

Control unit for inductive contacts



Application	For operating measuring instruments with inductive contacts
Data sheet	AC 08.01

IS Barrier

Intrinsically safe repeater power supply



- 1-channel input 0/4 ... 20 mA
- Intrinsically safe [Ex ia], supplying and non-supplying
- Galvanic isolation
- Bidirectional HART® signal transmission
- Suitable for SIL 2 per IEC 61508/IEC 61511
- Data sheet AC 80.14

DI35

For panel mounting, 96 x 48 mm



Input	<ul style="list-style-type: none"> ■ Multi-function input for resistance thermometers, thermocouples and standard signals ■ Alternatively double input for standard signals with calculation function (+ - x /) for two transmitters
Alarm output	■ 2 or 4 relays (optional)
Special feature	<ul style="list-style-type: none"> ■ Integrated transmitter power supply ■ Analogue output signal
Power supply	<ul style="list-style-type: none"> ■ AC/DC 100 ... 240 V ■ DC 10 ... 40 V, AC 18 ... 30 V
Data sheet	AC 80.03

DI32-1

Digital indicator for panel mounting, 48 x 24 mm



Input	Multi-function input for resistance thermometers, thermocouples and standard signals
Alarm output	2 electronic contacts
Power supply	DC 9 ... 28 V
Data sheet	AC 80.13

Force transducer

Force transducers from WIKA can be delivered with affixed strain gauges or thin-film sensors. The strain gauge technology offers a large geometrical variety and high accuracy, and it is well suited for detecting even the smallest forces.

The span of the measuring ranges that can be delivered stretches from 0.5 N to over 10,000 kN. Force transducers with thin-film sensors are very cost-effective for customer-specific solutions or OEM applications and also for safety-related applications.

F1211

Compression force transducer to 1,000 kN



Nominal force F_{nom}	0 ... 1 to 0 ... 1,000 kN
Relative linearity error	$\leq \pm 0.2 \% F_{nom}$
Output signal	2 mV/V
Ingress protection	IP67
Data sheet	FO 51.10

F1222

Miniature compression force transducer from 0.5 N



Nominal force F_{nom}	0 ... 0.5 to 0 ... 5,000 N
Relative linearity error	$\pm 1 \% F_{nom}$
Output signal	1 ... 10 mV/V/N
Ingress protection	IP65
Data sheet	FO 51.11

F1224

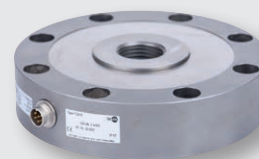
Miniature compression force transducer from 1 kN



Nominal force F_{nom}	0 ... 1 to 0 ... 500 kN
Relative linearity error	$\pm 1.0 \% F_{nom}$
Output signal	1.5 mV/V
Ingress protection	IP65
Data sheet	FO 51.12

F2210

Tension/compression force transducer, flat bar to 2,000 kN



Nominal force F_{nom}	0 ... 0.5 to 0 ... 2,000 kN
Relative linearity error	$\square \leq \pm 0.15 \% F_{nom}$ tension o. pressure $\blacksquare \pm 0.30 \% F_{nom}$ tension a. pressure
Output signal	2 mV/V
Ingress protection	IP67
Data sheet	FO 51.14

F2211

Tension/compression force transducer, S-type to 50 kN



Nominal force F_{nom}	0 ... 0.02 to 0 ... 50 kN
Relative linearity error	$\leq \pm 0.2 \% F_{nom}$
Output signal	2 mV/V (1 mV/V at 0.02 kN)
Ingress protection	IP67, to 1 kN IP65
Data sheet	FO 51.15

F2220

Miniature tension/compression force transducer, from 1.5 N



Nominal force F_{nom}	0 ... 1.5 to 0 ... 5,000 N
Relative linearity error	$\pm 0.5 \% F_{nom}$
Output signal	2 mV/V (to 5 N 15 mV/V)
Ingress protection	IP65
Data sheet	FO 51.16

F2221

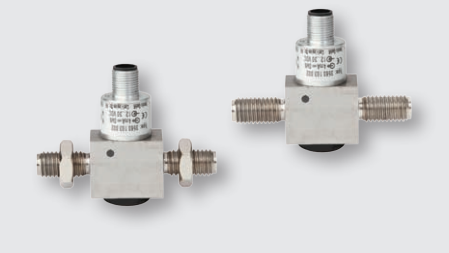
Tension/compression force transducer from 0.01 kN



Nominal force F_{nom}	0 ... 0.01 to 0 ... 50 kN
Relative linearity error	$\pm 0.2 \% F_{nom}$
Output signal	2 mV/V
Ingress protection	IP65
Data sheet	FO 51.26

F2301, F23C1, F23S1

Tension/compression force transducer with thin-film technology to 500 kN



Nominal force F_{nom}	0 ... 1 to 0 ... 500 kN
Relative linearity error	$\pm 0.2 \% F_{nom}$
Output signal	<ul style="list-style-type: none"> 4 ... 20 mA, 2-wire/3-wire 2 x 4 ... 20 mA redundant 0 ... 10 V, 3-wire 2 x 0 ... 10 V redundant
Ingress protection	IP67 (optional IP69k)
Data sheet	FO 51.17

F6210

Ring force transducer to 500 kN



Nominal force F_{nom}	0 ... 15 to 0 ... 500 kN
Relative linearity error	<ul style="list-style-type: none"> $\leq \pm 1 \% F_{nom}$ for compression force measurement 3 % F_{nom} for preload force measurement
Output signal	0.8 ... 1.2 mV/V
Ingress protection	IP65
Data sheet	FO 51.20

F6212

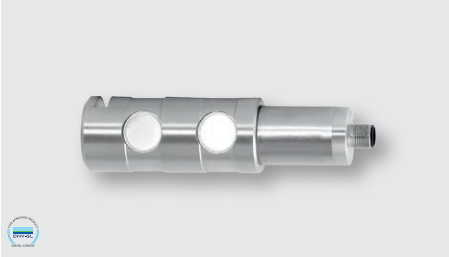
Ring force transducer to 100 kN



Nominal force F_{nom}	0 ... 2 to 0 ... 100 kN
Relative linearity error	$\pm 0.2 \% F_{nom}$
Output signal	0.8 ... 1.2 mV/V
Ingress protection	IP65
Data sheet	FO 51.27

F5301, F53C1, F53S1

Load pin with thin-film technology to 500 kN



Nominal force F_{nom}	0 ... 10 to 0 ... 70 kN
Relative linearity error	$\pm 1 / \pm 1.5 \% F_{nom}$
Output signal	<ul style="list-style-type: none"> 4 ... 20 mA, 2-wire/3-wire, CANopen® 2 x 4 ... 20 mA redundant, CANopen® 0 ... 10 V, 3-wire, CANopen® 2 x 0 ... 10 V redundant, CANopen®
Ingress protection	IP67, IP69k (optional)
Data sheet	FO 51.18

F3831

Shear beam to 10 t



Nominal force F_{nom}	0 ... 500 to 0 ... 10,000 kg
Relative linearity error	0.03 % F_{nom}
Output signal	<ul style="list-style-type: none"> $2.0 \pm 1 \% mV/V$ $3.0 \pm 1 \% mV/V$ (option)
Ingress protection	IP65 (< 500 kg), IP67 (500 kg)
Data sheet	FO 51.21

F3833

Bending beam to 500 kg



Nominal force F_{nom}	0 ... 20 to 0 ... 500 kg
Relative linearity error	0.02 % F_{nom}
Output signal	$2.0 \pm 1 \% mV/V$
Ingress protection	IP68
Data sheet	FO 51.22

Force transducers

F5302

Shackle load cell, measuring ranges to 15 t



Nominal force F_{nom}	<ul style="list-style-type: none"> ■ 1.5 % for rated loads from 0.5 ... 5 t ■ 1 % for rated loads from 7.5 t
Relative linearity error	$\leq \pm 1 \% F_{nom}$
Output signal	<ul style="list-style-type: none"> ■ 4 ... 20 mA, 2-wire, CANopen® ■ DC 0 ... 10 V, 3-wire, CANopen®
Ingress protection	IP67
Data sheet	FO 51.23

F9204

Wire rope force transducer to 15 t



Nominal force F_{nom}	0 ... 1 to 0 ... 15 t
Relative linearity error	$\pm 3 \% F_{nom}$
Output signal	4 ... 20 mA, 2-wire
Ingress protection	IP66
Data sheet	FO 51.25

F9302

Strain transducer to 1,000 $\mu\epsilon$



Nominal force F_{nom}	0 ... ± 200 , 0 ... ± 500 , 0 ... $\pm 1,000 \mu\epsilon$
Relative linearity error	$\leq \pm 1 \% F_{nom}$
Output signal	4 ... 20 mA
Ingress protection	<ul style="list-style-type: none"> ■ IP67 ■ IP69k (optional)
Data sheet	FO 54.10

F1119, F1136

Hydraulic compression force transducer to 500 kN



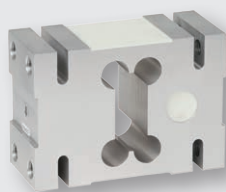
Nominal force F_{nom}	0 ... 320 N to 0 ... 500 kN
Relative linearity error	<ul style="list-style-type: none"> ■ Analogue $\leq \pm 1.6 \% F_{nom}$ ■ Digital $\leq \pm 0.5 \% F_{nom}$
Output signal	Analogue o. digital display
Ingress protection	<ul style="list-style-type: none"> ■ IP65 analogue display ■ IP65 digital display
Data sheet	FO 52.10

Load cells

Load cells are designed as a special form of force transducers for use in weighing equipment. They enable very high measurement accuracies between 0.01 % and 0.05 % FS. Typical and widely used load cell geometries are single-point load cells, bending and shear beam load cells, S-type load cells, pendulum load cells and compression force load cells. In addition, there are corresponding mounting kits and complete weighing modules available.

F4817

Single-point load cell to 2,000 kg



Nominal force F_{nom}	0 ... 100 to 0 ... 2,000 kg
Relative linearity error	0.02 % F_{nom}
Output signal	2.0 ± 10 % mV/V
Ingress protection	IP65
Data sheet	FO 53.12

F4801

Single-point load cell to 250 kg



Nominal force F_{nom}	0 ... 3 to 0 ... 250 kg
Relative linearity error	0.02 % F_{nom}
Output signal	2.0 ± 10 % mV/V
Ingress protection	IP65
Data sheet	FO 53.10

F4812

Single-point load cell to 650 kg



Nominal force F_{nom}	0 ... 50 to 0 ... 650 kg
Relative linearity error	0.02 % F_{nom}
Output signal	2.0 ± 10 % mV/V
Ingress protection	IP65
Data sheet	FO 53.11

Your needs ... our solutions

Primary flow elements

The most common way to measure flow is differential-pressure flow measurement. This measuring principle has proven itself over many years and is applicable for all common types of media.

Our portfolio of primary flow elements includes orifice plates, orifice assemblies, meter runs, flow nozzles, Venturi tubes and averaging pitot tubes.

Restriction orifices

When the process requires a pressure drop, a restriction orifice can be installed in the line. The design must take into consideration the flow conditions, and the differential pressure required to avoid issues (cavitation, choking and noise).

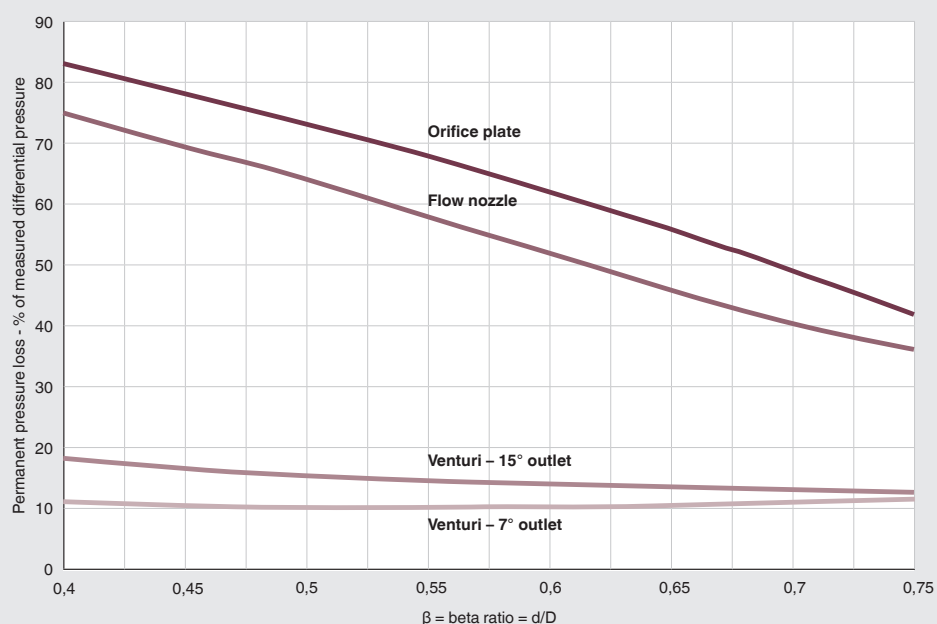
Single- or multi-step restriction orifice solutions are selected depending on the differential pressure and medium. Single-bore or multi-bore options must be selected to ensure an acceptable noise level.

Pressure drop

When using a differential pressure flow meter a permanent pressure drop is always generated. The graph shows a comparison between the different types of differential-pressure flow measurement instruments. Pressure loss is shown as a percentage of the measured differential pressure.

The graph can assist in the selection of the best instrument for your application.

Example:
Orifice plate
Differential pressure at full scale 1,000 mbar
 $\beta = d/D = 0.65$
% of permanent pressure loss = 58 %
Permanent pressure loss = 580 mbar



Medium characteristics

Not all instruments can be used in all applications. The type of medium (gas, liquid or steam) and its conditions must be taken into account when selecting the right instrument for your medium condition.

The following selection chart will assist in choosing the right instrument:

		Orifice plate and related assemblies (Orifice flange / Meter run / Annular chambers)					Flow nozzle	Venturi tube	Averaging pitot tube
		Square edge	Quarter circle	Conical entrance	Eccentric	Segmental			
Gas	Clean	++	—	—	+	+	++	++	++
	Dirty	—	—	—	++	++	+	+	—
Liquid	Clean	++	++	++	+	+	++	++	++
	Viscous	—	++	++	—	—	+	+	+
	Dirty	+	+	+	++	++	+	+	—
	Corrosive	+	+	+	+	+	+	+	+
Steam		+	+	+	+	+	++	+	—
Page		6 ... 8					9	10	11

++ Preferred + Suitable — Not suitable

Reynolds number

It is difficult to evaluate the many variables affecting the velocity profile for all flow meters and for all pipeline conditions.

To combine medium properties (density and viscosity), flow rate and geometrical aspects the Reynolds number is used.

		Dimensions		Reynolds number
		N	ND	
Orifice plate and related assemblies Orifice flange Meter run Annular chambers	Integral	< 1.5"	< 40	> 100
	Square edge	> 1.5"	> 40	> 2,000
	Quarter circle	> 1.5"	> 40	> 200
	Conical entrance	> 1.5"	> 40	> 200
	Eccentric	> 4"	> 100	> 10,000
	Segmental	> 4"	> 100	> 1,000
Flow nozzle		> 2"	> 50	> 75,000
Venturi tube		> 2"	> 50	> 12,500
Averaging pitot tube		> 4"	> 100	no limits

The table shows you the smallest possible Reynolds number that can be used with each instrument.

Orifice plates and assemblies

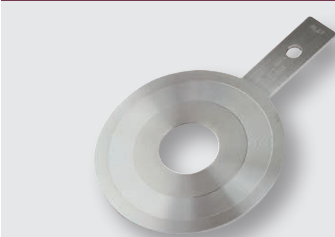
Orifice plates represent the most common primary flow elements in the world due to their proven technology and ease of installation and maintenance.

Main characteristics

- Maximum operating temperature up to 800 °C
- Maximum operating pressure up to 400 bar
- Suitable for liquid, gas and steam flow measurement
- Accuracy: Uncalibrated $\pm 0.5 \dots 2.5 \%$
- Repeatability of measurement 0.1 %

FLC-OP

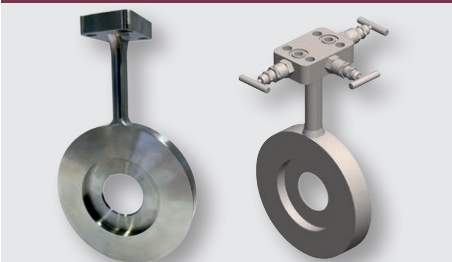
Orifice plate



Standards	<ul style="list-style-type: none"> ■ ISO 5167-2 ■ ASME MFC3M
Pipe size	<ul style="list-style-type: none"> ■ $\geq 2"$ ■ $\geq 50 \text{ mm}$
β	Depending on version
Accuracy ¹⁾	Uncalibrated $\pm 0.5 \dots 2.5 \%$
Data sheet	FL 10.01

FLC-CO

Compact orifice plate for the direct mounting of differential pressure transmitters

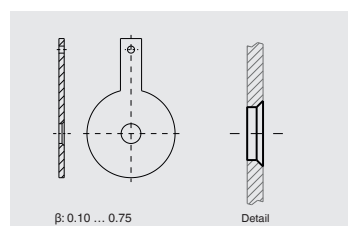


Standards	<ul style="list-style-type: none"> ■ ISO 5167-2 ■ ANSI/ASME B16.5
Pipe size	<ul style="list-style-type: none"> ■ 2 ... 14" ■ DN 50 ... 350
β	Depending on version
Accuracy	$\leq \pm 0.5 \%$
Data sheet	FL 10.10

Versions

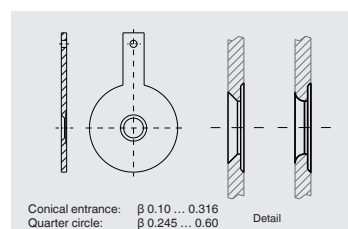
■ Square edge orifice plates (standard version)

This design is intended for general applications in clean liquids and gases.



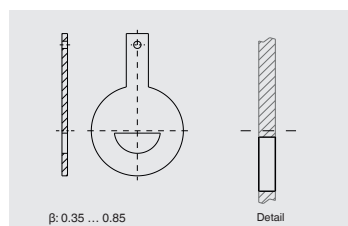
■ Quarter circle and conical entrance orifice plates

The best choice for measurement of liquids with low Reynolds number.



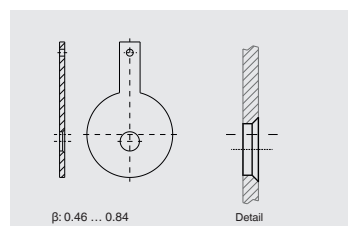
■ Segmental orifice plates

For measurements with two-phase, dirty and particle-laden media.



■ Eccentric orifice plates

The application areas are similar to the segmental version. However, an eccentric orifice plate is the better solution for smaller pipe diameters.



¹⁾ The actual measuring deviation is specified during the engineering phase

Orifice flanges are intended for use instead of standard pipe flanges when an orifice plate or flow nozzle must be installed. Pairs of pressure tapings are machined into the orifice flange, making separate orifice carriers or tapings in the pipe wall unnecessary.

Main characteristics

- Wide range of materials available
- The number and type of pressure tapping (flange tap or corner tap) can be manufactured to customer requirements
- Special assemblies can be designed on request

FLC-FL

Orifice flanges



Standards	ISO 5167-2
Pipe size	<ul style="list-style-type: none"> ■ $\geq 2"$ ■ ≥ 50 mm
β	Depending on version
Accuracy ¹⁾	Uncalibrated $\pm 0.5 \dots 2.5$ %
Data sheet	FL 10.01

FLC-AC

Annular chambers



Standards	ISO 5167-2
Pipe size	<ul style="list-style-type: none"> ■ $\geq 2"$ ■ ≥ 50 mm
β	Depending on version
Accuracy ¹⁾	Uncalibrated $\pm 0.5 \dots 2.5$ %
Data sheet	FL 10.01

Annular chambers are designed to be mounted between standard pipe flanges. Versions are available to suit all common flange standards, including DIN and ANSI B16.5.

Main characteristics

- Standard material is 316/316L stainless steel, but a wide range of alternative materials is available
- Gaskets are included in the scope of delivery (as standard, 4.4 mm thick spiral-wound gasket 316/graphite filler, unless requested otherwise)

Meter runs

To ensure high accuracy in the flow measurement of liquids, gases and steam the primary flow element is supplied as an assembly incorporating the upstream and downstream pipe sections required by ISO 5167-1:2003. This assembly is known as a "meter run".

Main characteristics

- Nominal width < 1 ½"
- Nominal pressure rating 300 ... 2,500 depending on model/version
- Wide range of materials available

A calibration of the instrument can be performed if higher accuracy is required.

An integral orifice plate is normally selected when the pipe diameter is 1 ½" or smaller and the medium is clean. An extremely compact installation can be ensured as the pressure sensor can be mounted directly onto the meter run. Without a calibration, an accuracy of ±1 ... 2 % can be expected, the actual values will be confirmed during the engineering phase.

FLC-MR

Meter run



Standards	ISO 5167-2
Pipe size	<ul style="list-style-type: none"> ■ ½ ... 1½ in ■ 12 ... 40 mm
β	0.2 ... 0.75
Accuracy	Uncalibrated ±1 ... 2 %
Data sheet	FL 10.02

Special assemblies

FLC-HHR-PP

ProPak flow meter for oil and gas



Pipe size	2", 3", 4", 6" or 8"
β and pipe length	0.75 or 0.40
Special feature	No need for straight upstream and downstream pipes
Data sheet	FL 10.07

FLC-HHR-FP

FlowPak flow meter



Pipe size	3 ... 24"
β and pipe length	0.75 or 0.40
Special feature	No need for straight upstream and downstream pipes
Data sheet	FL 10.09

FLC-WG

Wedge flow meter for slurries and highly viscous media



Pipe size	½ ... 24"
H/D ratios	0.2 / 0.3 / 0.4 / 0.5
Special features	<ul style="list-style-type: none"> ■ Low maintenance through robust design ■ For very high and very low Reynolds numbers ■ Bidirectional measurement possible
Data sheet	FL 10.08

Flow nozzles

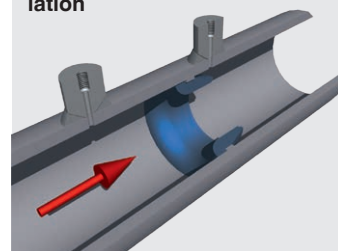
A flow nozzle consists of a convergent section with a rounded profile and a cylindrical throat. This design is generally selected for steam flow measurement at high velocity.

To reduce pressure loss an axisymmetric solution, called a Venturi nozzle, can be offered. It combines the standard features of a flow nozzle with a divergent section.

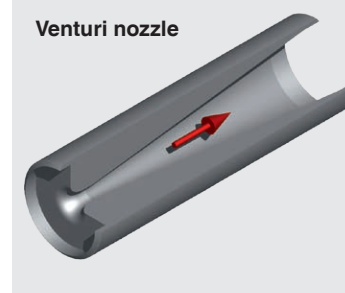
Main characteristics

- Suitable for liquid, gas and steam flow measurement
- Optimum solution for measuring the flow of steam
- Accuracy: Uncalibrated $\pm 0.8 \dots 2 \%$
- Repeatability of measurement 0.1%
- Ensure a lower pressure loss compared to orifice plate family.

Flow nozzle for in-pipe installation



Venturi nozzle



FLC-FN-PIP

Flow nozzle for in-pipe installation



Pipe size	<ul style="list-style-type: none"> ■ ≥ 2 in ■ ≥ 50 mm
β	0.2 ... 0.8
Accuracy ¹⁾	Uncalibrated $\pm 2 \%$
Data sheet	FL 10.03

FLC-FN-FLN

Flow nozzle for flange assembly



Pipe size	<ul style="list-style-type: none"> ■ ≥ 2 in ■ ≥ 50 mm
β	0.3 ... 0.8
Accuracy ¹⁾	Uncalibrated $\pm 0.8 \%$
Data sheet	FL 10.03

FLC-VN

Venturi nozzle



Pipe size	<ul style="list-style-type: none"> ■ ≥ 2 in ■ ≥ 50 mm
β	0.2 ... 0.8
Accuracy ¹⁾	Uncalibrated $\pm 1 \%$
Data sheet	FL 10.03

¹⁾ The actual measuring deviation is specified during the engineering phase

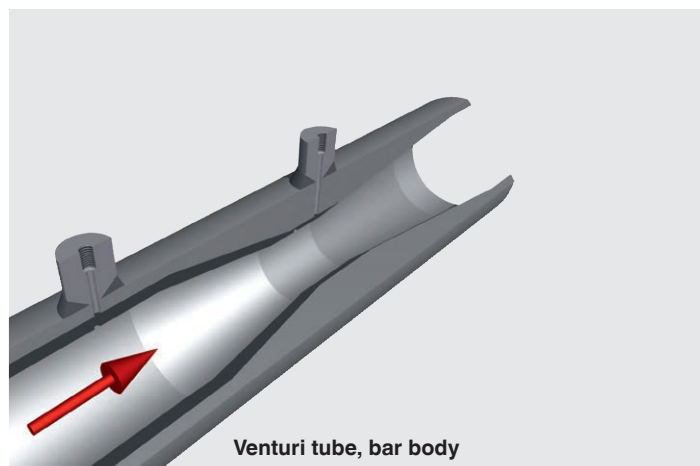
Venturi tubes

A Venturi tube is a reliable and easily-managed and maintained instrument that can measure a wide range of clean liquids and gases.

The main advantage of a Venturi tube over other differential pressure flow measuring instruments is the higher pressure recovery and the lower upstream and downstream straight tube length requirements.

Main characteristics

- In accordance with ISO 5167-4 & ASME MFC-3M standards
- Fabricated from plate or machined from bar/forgings
- Flanged or weld-in construction
- Wide range of materials available
- Pipe sizes from 50 ... 1,200 mm
- Wide variety of pressure tapings available
- Calibration possible on request
- Accuracy: Uncalibrated $\pm 1 \dots 1.5 \%$



FLC-VT-BAR

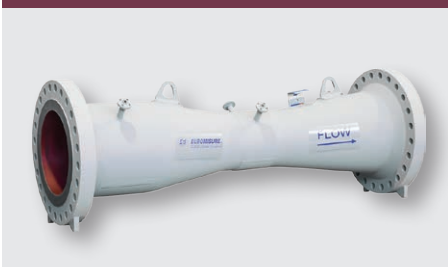
Venturi tube, bar body



Pipe size	<ul style="list-style-type: none"> ■ 2 ... 32 in ■ 50 ... 250 mm
β	0.4 ... 0.75
Accuracy ¹⁾	Uncalibrated $\pm 1.25 \%$
Data sheet	FL 10.04

FLC-VT-WS

Venturi tube, welded sheet



Pipe size	<ul style="list-style-type: none"> ■ ≥ 14 in ■ 200 ... 1,200 mm
β	0.4 ... 0.7
Accuracy ¹⁾	Uncalibrated $\pm 1.5 \%$
Data sheet	FL 10.04

FloTec (averaging pitot tubes)

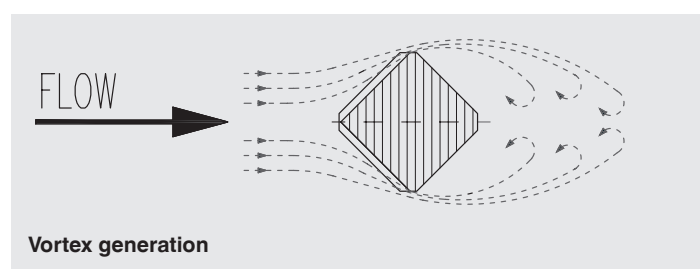
Flotec (a multi-port, averaging pitot tube) measures the difference between the static pressure and the dynamic pressure of the media in the pipe. The volumetric flow is calculated from that difference using Bernoulli's principle and taking into account the pipe inner diameter. Using four dynamic ports this instrument is able to evaluate a better velocity profile inside the pipe. This ensures a higher accuracy in the flow measurement.

Main characteristics

- Low installation costs
- Long-term accuracy
- Minimal permanent pressure loss
- Fixed and extractable versions available

Vortex shedding frequency

Depending on the inner diameter, the medium characteristics and the Reynolds number, a vortex will be generated around the pitot tube. A support mounted on the opposite side of the pipe can be supplied should the natural frequency of the pitot coincide with the vortex shedding frequency. The necessity test is performed during the design phase.



FLC-APT-E

FloTec, extractable

Pipe size	<ul style="list-style-type: none"> ■ ≥ 3 in ■ $\geq 50 \dots 1,800$ mm
β	n.a.
Accuracy	Uncalibrated ± 3 %
Data sheet	FL 10.05



FLC-APT-F

FloTec, fixed

Pipe size	<ul style="list-style-type: none"> ■ ≥ 3 in ■ $\geq 50 \dots 1,800$ mm
β	n.a.
Accuracy	Uncalibrated ± 3 %
Data sheet	FL 10.05

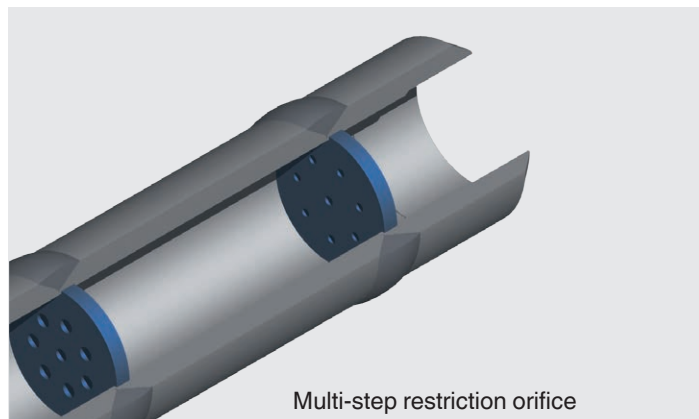
Restriction orifices

When a reduction of pressure or a limitation of the flow rate is required, a restriction orifice must be inserted into the pipeline. Our technical department will produce the correct design for the restriction orifice, depending on customer requirements and flow conditions.

If high differential pressures, a change in phase or sonic issues can occur, a more-complex design will be required. The solution in these cases is to decrease the differential pressure in several steps, avoiding all the issues created by these factors. This solution is called multi-step restriction orifice.

Main characteristics

- Multi-step restriction orifices to reduce the pressure by more than 50 % of the inlet value
- Multi-bore designs to reduce the noise level



Multi-step restriction orifice

FLC-RO-ST

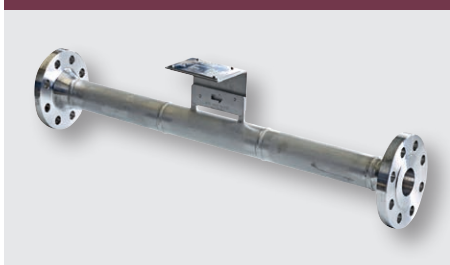
Single-step restriction orifice



Nominal size	½ ... 24"
Special features	<ul style="list-style-type: none"> ■ Suitable for liquids, gases and steam ■ Single-step version
Data sheet	FL 10.06

FLC-RO-MS

Multi-step restriction orifice



Nominal size	½ ... 24"
Special features	<ul style="list-style-type: none"> ■ Suitable for liquids, gases and steam ■ Single-step version
Data sheet	FL 10.06

Flow switches

For each flow monitoring the right flow switch

Flow switches are used for the display and monitoring of the flow of liquid and gaseous media. The instruments feature a high switching accuracy and functional safety, low switch hysteresis and continuous switch point setting by the operator.

The wide selection of WIKA flow switches also includes viscosity-compensated models and ATEX-certified instruments for use in hazardous environments.

FWS

For liquid and gaseous media



Material	Stainless steel, brass
Process connection	G ¼ ... G 1½
Flow range	<ul style="list-style-type: none"> ■ 0.005 ... 250 l/min (water) ■ 0.2 ... 1,450 NL/min (air)
Output	Optionally pointer, sight glass, reed contact
Data sheet	LM 31.31

FSD-3

For liquid media



Measuring range	<ul style="list-style-type: none"> ■ Water: 5 ... 150 cm/s ■ Oil: 3 ... 300 cm/s
Output signal	For flow and temperature <ul style="list-style-type: none"> ■ PNP or NPN ■ Analogue output (optional)
Process connection	<ul style="list-style-type: none"> ■ G ¼ A, G ½ A ■ ¼ NPT, ½ NPT ■ M18 x 1.5
Data sheet	FL 80.01

Digital pressure gauges

High-quality digital pressure gauges from WIKA

Precision digital pressure gauges are suitable for stationary and also mobile measurement and display of pressures. In addition, a digital pressure gauge can be used as a pressure reference and enables the easy testing, adjustment and calibration of other pressure measuring equipment directly on site. Through efficient measuring cells with electronic linearisation of the characteristic curve, a high accuracy is achieved.

CPG500

Digital pressure gauge



Measuring range	-1 ... +16 to 0 ... 1,000 bar
Accuracy	0.25 %
Special feature	<ul style="list-style-type: none"> Simple operation using 4 buttons Robust case with protective rubber cap, IP67
Data sheet	CT 09.01

CPG1500

Precision digital pressure gauge



App „myWIKa device“
Play Store



Measuring range	-1 ... 10,000 bar
Accuracy	down to 0.05 FS
Special feature	<ul style="list-style-type: none"> Integrated data logger WIKAL-Cal compatible Data transfer via WIKAL-Wireless Password protection possible Robust case IP65
Data sheet	CT 10.51

WIKAL-Cal

Calibration software, accessories for digital pressure gauges



<ul style="list-style-type: none"> Creation of calibration certificates for mechanical and electronic pressure measuring instruments Fully automatic calibration with pressure controllers For the recording of certificate-relevant data in combination with the CalibratorUnits of the CPU6000 series Determination of the required mass loads for pressure balances Calibration of gauge pressure measuring instruments with absolute pressure references and vice versa
Data sheet: CT 95.10

CPG-KITH

Hydraulic service kit



- Simple testing and adjustment of pressure measuring instruments
- Kit consists of a CPG1500 reference instrument and a CPP-700H hand pump (hydraulic Pmax. 700 bar) or CPP-1000H (hydraulic, Pmax. 1,000 bar)

CPG-KITP

Pneumatic service kit



- Simple testing and adjustment of pressure measuring instruments
- Kit consists of a CPG1500 reference instrument and a CPP-30 hand pump (pneumatic Pmax. 30 bar)

Hand-helds, calibrators

Hand-helds are portable calibration instruments for mobile use for the accurate measurement and recording of pressure profiles. There are interchangeable pressure sensors with measuring ranges of up to 10,000 bar available for the instruments. Through this, hand-helds are particularly suitable as test instruments for a

large variety of applications in the widest range of industries. Data recorded in the hand-held can be evaluated via PC software, some instruments document calibrations in the internal memory, which can later be read on a PC. Optionally, a calibration certificate can be generated with our calibration software WIKA-Cal.

CPH6200

Hand-held pressure indicator



Measuring range	0 ... 0.025 to 0 ... 1,000 bar
Accuracy	0.2 %, 0.1 % (optional)
Special feature	<ul style="list-style-type: none"> ■ Integrated data logger ■ Differential pressure measurement (optional)
Data sheet	CT 11.01

CPH6510

Intrinsically safe hand-held pressure calibrator



Measuring range	-1 ... +700 bar
Accuracy	0.025 % FS
Special feature	<ul style="list-style-type: none"> ■ 2 internal reference sensors ■ Differential pressure ■ Measuring current from 4 ... 20 mA ■ Pressure switch function ■ Temperature measurement with Pt100 probe
Data sheet	■ CT 14.51

CPH6300

Hand-held pressure indicator



Measuring range	0 ... 0.025 to 0 ... 1,000 bar
Accuracy	0.2 %, 0.1 % (optional)
Special feature	<ul style="list-style-type: none"> ■ Robust and waterproof case with IP65, IP67 ■ Integrated data logger ■ Differential pressure measurement (optional)
Data sheet	CT 12.01

CPH6400

Precision hand-held pressure indicator



Measuring range	0 ... 0.25 to 0 ... 6,000 bar
Accuracy	0.025 %
Special feature	<ul style="list-style-type: none"> ■ Integrated data logger ■ Temperature measurement (optional)
Data sheet	CT 14.01

CPH6000

ProcessCalibrator



Measuring range	0 ... 0.25 to 0 ... 6,000 bar
Accuracy	0.025 %
Special feature	<ul style="list-style-type: none"> ■ Calibration function ■ Pressure switch test ■ Transmitter supply
Data sheet	CT 15.01

Complete test and service cases



These cases can be assembled exactly to your requirements. Thus you will be fully equipped on site!

Hand-helds, calibrators

CPH7000

Portable process calibrator



Measuring range	-1 ... 25 bar (-1 ... 10,000 bar with CPT7000)
Accuracy	0.025 % FS
Special feature	<ul style="list-style-type: none"> ■ Integrated pressure generation ■ Measurement of pressure, temperature, current, voltage, ambient conditions ■ Supply of pressure, current and voltage ■ Calibration function/data logger/switch test
Data sheet	CT 15.51

Pascal ET

Hand-held multi-function calibrator



Measuring range	<ul style="list-style-type: none"> ■ 0 ... 100 mA, 0 ... 80 V, 5 ... 10,000 Ω ■ 0 ... 50 kHz ■ -190 ... +1,200 °C (type J) ■ -200 ... +850 °C (Pt100)
Accuracy	0.025 % FS
Special feature	<ul style="list-style-type: none"> ■ Large display with touchscreen ■ Integrated data logger and calibration function ■ Measurement and simulation of temperature, current, voltage, resistance, frequency, pressure ■ HART® communication
Data sheet	CT 18.02

Pascal100

Hand-held multi-function calibrator



Measuring range	<ul style="list-style-type: none"> ■ -1 ... 100 bar ■ 0 ... 50 kHz ■ 0 ... 10 kOhm ■ -100 ... +100 mA ■ -100 ... +100 mV
Accuracy	0.025 % FS
Special feature	<ul style="list-style-type: none"> ■ Large display with touchscreen ■ Internal pressure/vacuum generation ■ Integrated data logger and calibration function ■ Measurement and simulation of pressure, current, voltage, resistance, frequency, temperature and pulses ■ HART® communication
Data sheet	CT 18.01

WIKI-Cal

Calibration software, accessories for hand-helds/calibrators



<ul style="list-style-type: none"> ■ Creation of calibration certificates for mechanical and electronic pressure measuring instruments ■ Fully automatic calibration with pressure controllers ■ For the recording of certificate-relevant data in combination with the CalibratorUnits of the CPU6000 series ■ Determination of the required mass loads for pressure balances ■ Calibration of gauge pressure measuring instruments with absolute pressure references and vice versa
Data sheet: CT 95.10

Precision pressure measuring instruments

Precision pressure measuring instruments are electrical measuring systems which convert pressure into an electrical signal and optionally visualise it. Precise pressure transmitters and process transmitters are used for the monitoring and control of particularly sensitive processes.

Due to the low, DKD/DAkkS certified measurement uncertainty of down to 0.008 % of the entire measuring chain, the particularly accurate instruments find their primary applications as a factory/working standard for testing and/or calibrating a variety of pressure measuring instruments.

CPT2500

USB pressure transmitter



Measuring range	0 ... 0.025 to 0 ... 1,000 bar
Accuracy	0.2 %, 0.1 % (optional)
Special feature	<ul style="list-style-type: none"> ■ Recording interval adjustable from 1 ms ... 10 s ■ No external voltage supply required ■ Data storage and evaluation directly via PC
Data sheet	CT 05.01

CPT61x0

Precision pressure sensor



Measuring range	0 ... 0.025 to 0 ... 400 bar
Accuracy	0.01 %
Special feature	<ul style="list-style-type: none"> ■ RS-232 or RS-485 connection ■ Analogue output (optional)
Data sheet	CT 25.10

CPG2500

Precision pressure indicator



Measuring range	0 ... 0.025 to 0 ... 2,890 bar
Accuracy	0.01 %
Medium	Non-corrosive gases, > 1 bar liquids
Special feature	<ul style="list-style-type: none"> ■ Up to 2 internal sensors and 1 external sensor ■ Barometric reference (optional)
Data sheet	CT 25.02

CPA2501

Precision air data test indicator



Measuring range	<ul style="list-style-type: none"> ■ Altitudes to 100,000 ft ■ Speeds to 1,150 knots
Accuracy	Down to 0.01 % FS
Special feature	<ul style="list-style-type: none"> ■ RVSM-compliant ■ Ps, Qc, Ps/Pt or Ps/Qc configuration
Data sheet	CT 29.02

WIKA-Cal

Calibration software, accessories for precision measuring instruments



<ul style="list-style-type: none"> ■ Creation of calibration certificates for mechanical and electronic pressure measuring instruments ■ Fully automatic calibration with pressure controllers ■ For the recording of certificate-relevant data in combination with the CalibratorUnits of the CPU6000 series ■ Determination of the required mass loads for pressure balances ■ Calibration of gauge pressure measuring instruments with absolute pressure references and vice versa
Data sheet: CT 95.10

Pressure controllers

WIKA pressure controllers: Always the right calibration solution

Pressure controllers are electronic controllers which quickly and automatically provide a pressure based on a supply pressure. Due to the high accuracy and control stability, pressure controllers are especially suitable as references for production lines and laboratories, in order to carry out automatic testing and/or calibration of all types of sensors.

CPC2000

Low-pressure version

mentor



Measuring range	0 ... 1 to 0 ... 1,000 mbar
Accuracy	0.1/0.3 % (for 0 ... 1 mbar)
Medium	Ambient air
Special feature	<ul style="list-style-type: none"> ■ Integrated pressure generation ■ Integrated rechargeable battery
Data sheet	CT 27.51

CPC4000

Industrial pressure controller

mentor



Measuring range	0 ... 0.35 to 0 ... 210 bar
Accuracy	0.02 %
Medium	Dry clean air or nitrogen
Special feature	<ul style="list-style-type: none"> ■ Up to 2 sensors ■ Fast control speed
Data sheet	CT 27.40

CPC6050

Modular pressure controller

mentor



Measuring range	0 ... 0.025 to 0 ... 210 bar
Accuracy	0.01 %
Medium	Dry clean air or nitrogen
Special feature	<ul style="list-style-type: none"> ■ Up to 2 control/measuring channels with 2 sensors each ■ Sensors exchangeable
Data sheet	CT 27.62

Pneumatic high-pressure controllers

CPC8000

Precision version

mensor



Measuring range	0 ... 0.025 to 0 ... 400 bar
Accuracy	0.01 ... 0.008 %
Medium	Dry clean air or nitrogen
Special feature	<ul style="list-style-type: none"> ■ Excellent control stability and pressure control without overshooting ■ Up to three interchangeable sensors
Data sheet	CT 28.01

CPC7000

Pneumatic high-pressure controller

mensor



Measuring range	0 ... 100 bar to 0 ... 700 bar
Accuracy	0.01 %
Medium	Nitrogen
Special feature	<ul style="list-style-type: none"> ■ Robust and low-wear valve technology with long-term stability ■ Up to three interchangeable sensors
Data sheet	CT 27.63

CPC8000-H

High-pressure version

mensor



Measuring range	0 ... 700 to 0 ... 1,600 bar
Accuracy	0.01 %
Medium	Hydraulic oil or water
Special feature	<ul style="list-style-type: none"> ■ High stability, also for large volumes ■ Up to two interchangeable reference sensors
Data sheet	CT 28.05

For aviation

WIKI-Cal

Calibration software, accessories for pressure controllers



<ul style="list-style-type: none"> ■ Creation of calibration certificates for mechanical and electronic pressure measuring instruments ■ Fully automatic calibration with pressure controllers ■ For the recording of certificate-relevant data in combination with the CalibratorUnits of the CPU6000 series ■ Determination of the required mass loads for pressure balances ■ Calibration of gauge pressure measuring instruments with absolute pressure references and vice versa
Data sheet: CT 95.10

CPA8001

Air data test set

mensor



Measuring range	<ul style="list-style-type: none"> ■ Altitudes to 100,000 ft ■ Speeds to 1,150 knots
Accuracy	0.009 %
Medium	Dry, clean air or nitrogen
Special feature	<ul style="list-style-type: none"> ■ Excellent control stability, even with rate control ■ Overshoot-free control
Data sheet	CT 29.01

An air data test set is an electronic controller which, based on a supply pressure, provides a pressure at a variable and adjustable rate.

Air data test sets are specifically developed to convert the pressure to be controlled into a height or rate of climb and velocity. As a result of the high accuracy, control stability and ability to simulate altitude and velocity, an air data test set is particularly suitable as a reference for aircraft workshops and also for instrument manufacturers and calibration laboratories in the aviation industry, in order to make calibrations on sensors and displays.

Pressure balances

Industrial series

Compact and competitively priced dead-weight testers for use on site or for maintenance and service

The compact dimensions and low weight are key features of these dead-weight testers for their daily use in service and maintenance. With their integrated pressure generation and purely mechanical measuring principle, they are also specifically suited to on-site applications.

CPB3500

Pneumatic compact version



Measuring range	0.015 ... 1 to 1 ... 120 bar
Accuracy	0.015 ... 0.006 %
Medium	Non-corrosive gases
Special feature	<ul style="list-style-type: none"> ■ Compact dimensions and low weight ■ 1 bar piston can be used for positive and negative overpressure
Data sheet	CT 31.22

CPB3800

Hydraulic compact version



Measuring range	1 ... 120 to 10 ... 1,200 bar
Accuracy	0.05 ... 0.025 %
Medium	Special oil
Special feature	<ul style="list-style-type: none"> ■ Compact dimensions and low weight ■ Instrument base can now also be combined with the CPB5800 piston-cylinder systems
Data sheet	CT 31.06

CPB3800HP

Compact, high-pressure version with dual-range piston-cylinder system



Measuring range	1 ... 2,600 bar
Accuracy	0.025 ... 0.007 %
Medium	Special oil or others on request
Special feature	<ul style="list-style-type: none"> ■ Dual-range piston-cylinder systems with fully automated changing between ranges ■ Compact dimensions and low weight
Data sheet	CT 31.07

Laboratory version

High-performance primary standards with excellent running characteristics for use in calibration laboratories

Through modern instrument design with excellent equipment features, the highest demands of operator convenience and performance are fulfilled. The selection of dual-range piston-cylinder systems with automated changing between ranges can ensure this measurement uncertainty over a large pressure range, even with a single measuring system.

CPB5000

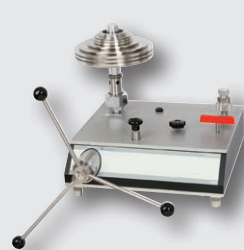
Pneumatic version



Measuring range	-0.03 ... -1 to 0.4 ... 100 bar
Accuracy	0.015 ... 0.008 %
Medium	Non-corrosive gases
Special feature	Patented system for fast piston-cylinder exchange
Data sheet	CT 31.01

CPB5000HP

High-pressure version



Measuring range	25 ... 2,500 to 25 ... 6,000 bar
Accuracy	0.025 ... 0.02 %
Medium	Special oil
Special feature	Robust instrument base with integrated high-pressure generation
Data sheet	CT 31.51

CPB5800

Hydraulic version with dual-range piston-cylinder systems



Measuring range	1 ... 120 to 1 ... 1,400 bar
Accuracy	0.015 ... 0.006 %
Medium	Special oil or others on request
Special feature	<ul style="list-style-type: none"> ■ Dual-range piston-cylinder systems with fully automated changing between ranges ■ Instrument base can now also be combined with the CPS5000 piston-cylinder systems
Data sheet	CT 31.11

CPB5600DP

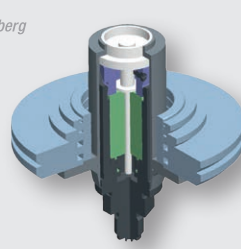
Differential pressure version



Measuring range	0.03 ... 2 to 25 ... 1,600 bar
Accuracy	0.015 ... 0.008 %
Medium	Non-corrosive gases or special oil
Special feature	Two complete pressure balances within one case for real differential pressure measurements under static pressure
Data sheet	CT 31.56

CPS5000

Hydraulic single-range piston-cylinder systems



Special feature	<ul style="list-style-type: none"> ■ For the highest demands on accuracy and performance ■ Can be combined with the CPB5800 instrument base
Data sheet	CT 31.01

Pressure balances

High-end version

High-accuracy and powerful primary standards with excellent operating characteristics, based on the physical principle of Pressure = Force/Area

The direct measurement of the pressure ($p = F/A$), as well as the use of high-quality materials enable this small measurement uncertainty, in conjunction with an excellent long-term stability (recommended recalibration interval of five years in accordance with the German Calibration Service DKD/DAkKS). Furthermore, an automatic mass handling system and pressure generation ensure fully automated calibration. The pressure balance has therefore been used for years in factory and calibration laboratories in industry, national institutes and research laboratories, and also in production by sensor and transmitter manufacturers.

CPB6000

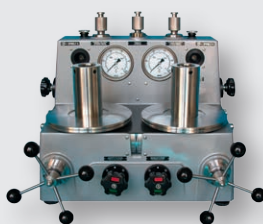
Highest-accuracy primary standard



Measuring range	4 ... 5,000 bar
Accuracy	0.0035 ... 0.0015 %
Medium	Dry, clean air, nitrogen or special oil
Special feature	Different instrument variants for the highest demands
Data sheet	CT 32.01

CPB6000DP

Primary standard for differential pressure



Measuring range	30 ... 800 bar
Accuracy	0.005 ... 0.002 %
Medium	Non-corrosive gases
Special feature	For differential pressure measurements from 10 Pa to 800 bar
Data sheet	CT 32.02

CPB8000

Automatic primary standard



Measuring range	<ul style="list-style-type: none"> 500 ... 5,000 bar Others on request
Accuracy	0.005 ... 0.003 %
Medium	<ul style="list-style-type: none"> Sebacate oil Others on request
Special feature	Automated calibration of the highest-accuracy pressure sensors, integrated pressure generation
Data sheet	CT 32.03

Accessories for pressure balances

CPD8000

Digital pressure balance



Measuring range	1 ... 500 bar (abs. and rel.)
Accuracy	0.005 ... 0.002 %
Medium	Non-corrosive, dry gases
Special feature	Unique operating principle, ideal for automatic calibrations, no mass handling needed
Data sheet	CT 32.04

CPU6000 series

CalibratorUnit



<ul style="list-style-type: none"> Determination of the required mass loads or the reference pressure for calibration with pressure balances Recording of certificate-relevant data Calibration of gauge pressure measuring instruments with absolute pressure references and vice versa Easy calibration of pressure transmitters through the voltage supply and multimeter function
Data sheet: CT 35.02

WIKA-Cal

Calibration software, accessories for pressure balances



<ul style="list-style-type: none"> Creation of calibration certificates for mechanical and electronic pressure measuring instruments Fully automatic calibration with pressure controllers For the recording of certificate-relevant data in combination with the CalibratorUnits of the CPU6000 series Determination of the required mass loads for pressure balances Calibration of gauge pressure measuring instruments with absolute pressure references and vice versa
Data sheet: CT 95.10

Portable pressure generation

Simple manual pressure generation

Test pumps serve as pressure generators for the testing, adjustment and calibration of mechanical and electronic pressure measuring instruments through comparative measurements. These pressure tests can take place in the laboratory or workshop, or on site at the measuring point.

CPP7-H

Pneumatic hand test pump



Measuring range	-850 mbar ... +7 bar
Medium	Ambient air
Special feature	<ul style="list-style-type: none"> ■ Pressure and vacuum generation switchable ■ Low weight ■ Compact dimensions
Data sheet	CT 91.04

CPP30

Pneumatic hand test pump



Measuring range	-950 mbar ... +35 bar
Medium	Ambient air
Special feature	<ul style="list-style-type: none"> ■ Pressure and vacuum generation switchable ■ Compact dimensions
Data sheet	CT 91.06

CPP700-H, CPP1000-H

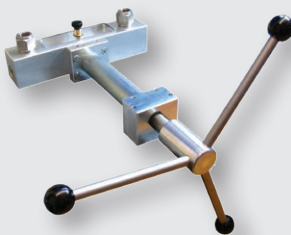
Hydraulic hand test pump



Measuring range	0 ... 700 or 0 ... 1,000 bar
Medium	Oil or water
Special feature	<ul style="list-style-type: none"> ■ Integrated medium reservoir ■ Ergonomic handling
Data sheet	CT 91.07

CPP1000-M, CPP1000-L

Hydraulic hand spindle pump



Measuring range	0 ... 1,000 bar
Medium	Oil or water
Special feature	<ul style="list-style-type: none"> ■ Smooth-running internal precision spindle ■ Compact dimensions
Data sheet	CT 91.05

CPP120-X

Pneumatic comparison test pump



Measuring range	0 ... 120 bar
Medium	Clean, dry, non-corrosive gases
Special feature	<ul style="list-style-type: none"> ■ Accurate pressure setting ■ Robust industrial series
Data sheet	CT 91.03

CPPxx00-X

Hydraulic comparison test pump



Measuring range	0 ... 1,000 to 0 ... 7,000 bar
Medium	Oil or water
Special feature	<ul style="list-style-type: none"> ■ Integrated tank ■ Robust laboratory version with priming pump ■ Compact industrial series with dual-area spindle pump
Data sheet	CT 91.05, CT 91.08 and CT 91.09

Reference thermometers

Highly accurate temperature measurement with reference thermometers

Reference thermometers (standard thermometers) are, due to their excellent stability and their geometrical adaptations, ideally suited for applications in industrial laboratories. They enable easy comparative calibration in baths, in tube furnaces and in dry-well calibrators. The advantage of reference thermometers is the wide temperature range, and with this, their flexible operation. Furthermore, with their low drift, a long service life is ensured.

CTP2000

Platinum resistance thermometer



Measuring range	-200 ... +450 °C
Stability	< 50 mK after 100 h at 450 °C
Dimensions	Ø 4 mm, l = 500 mm
Special feature	■ 4-wire connection ■ Ends with 4 mm banana plugs
Data sheet	CT 61.10

CTP5000

Reference thermometer



Measuring range	-196 ... +660 °C
Probe type	Pt100, Pt25
Dimensions	Depending on version
Special feature	■ Free cable ends ■ DIN or SMART connector
Data sheet	CT 61.20

CTP5000-T25

Reference thermometer



Measuring range	-189 ... +660 °C
Probe type	Pt25
Dimensions	d = 7 mm, l = 480 mm
Special feature	■ Free cable ends ■ DIN or SMART connector
Data sheet	CT 61.25

CTP9000

Thermocouple



Measuring range	0 ... 1,300 °C
Thermocouple	Type S per IEC 584, class 1
Dimensions	Ø 7 mm, l = 600 mm (incl. handle)
Special feature	■ Cold junction optional ■ 1.500 mm cable ■ Ends with 4 mm banana plugs
Data sheet	CT 61.10

Hand-helds

Hand-helds are portable calibration instruments for mobile use for the accurate measurement and recording of temperature profiles. For the instruments there are various designs of thermometers available. Through this, hand-helds are particularly suitable as test instruments for a large variety of applications in the widest range of industries.

Data recorded in the hand-held can be evaluated via PC software, some instruments document calibrations in the internal memory, which can later be read on a PC. Optionally, a calibration certificate can be generated with our calibration software WIKA-Cal.

CTR1000

Infrared hand-held thermometer



Measuring range	-60 ... +1,000 °C
Accuracy	2 K or 2 % of reading
Special feature	Thermocouple connection (optional)
Data sheet	CT 55.21

CTH6200

Hand-held thermometer



Measuring range	-50 ... +250 °C
Accuracy	< 0.2
Probe type	Pt100
Special feature	Integrated data logger
Data sheet	CT 51.01

CTH6300

Hand-held thermometer



Measuring range	-200 ... +1,500 °C
Accuracy	0.1 ... 1 K
Probe type	Pt100, TC
Special feature	2 channels (optional), Ex version (optional)
Data sheet	CT 51.05

CTH6500

Hand-held thermometer



Measuring range	-200 ... +1,500 °C
Accuracy	0.03 ... 0.2 K
Probe type	Pt100, TC
Special feature	Ex version (optional)
Data sheet	CT 55.10

CTH7000

Hand-held thermometer



Measuring range	-200 ... +962 °C
Accuracy	0.015 K
Probe type	Pt100, Pt25 and NTC
Special feature	Integrated data logger
Data sheet	CT 55.50

Calibration baths

Calibration baths are electronic controllers which automatically, quickly and with the help of a liquid supply a temperature. Due to the high reliability, accuracy and exceptional homogeneity in the measuring chamber, calibration baths are particularly suitable as a factory/working standard for the automatic testing and/or calibration of the widest range of temperature probes - independent of diameter. A special micro calibration bath design enables on-site applications.

CTB9100

Micro calibration bath



Measuring range	-35 ... +255 °C
Accuracy	0.2 ... 0.3 K
Stability	±0.05 K
Special feature	<ul style="list-style-type: none"> ■ Short heating and cooling times ■ Easy to use
Data sheet	CT 46.30

CTM9100-150

Multi-function calibrator



Measuring range	-35 ... +165 °C depending on the application
Accuracy	0.3 ... 1 K depending on the application
Immersion depth	150 mm
Special feature	Use as a dry-well calibrator, micro calibration bath, infrared calibrator and surface calibrator
Data sheet	CT 41.40

CTB9400

Calibration bath, medium measuring range



Measuring range	28 ... 300 °C
Stability	0.02 K
Immersion depth	200 mm
Medium	Water, oil or similar media
Data sheet	CT 46.20

CTB9500

Calibration bath, low measuring range



Measuring range	-45 ... +200 °C
Stability	0.02 K
Immersion depth	200 mm
Medium	Water, oil or similar media
Data sheet	CT 46.20

Portable temperature calibrators

Efficient calibration with temperature calibrators from WIKA

Portable temperature calibrators (dry-well calibrators) are electronic controllers which automatically, quickly and dryly supply a temperature. Due to the high reliability, accuracy and simple operation, portable temperature calibrators are particularly suitable as a factory/working standard for the automatic testing and/or calibration of temperature measuring instruments of all types.

CTD9100

Temperature dry-well calibrator



Measuring range	-55 ... +650 °C
Accuracy	0.15 ... 0.8 K
Stability	0.01 ... 0.05 K
Immersion depth	150 mm
Data sheet	CT 41.28

CTD9100-1100

High-temperature dry-well calibrator



Measuring range	200 ... 1,100 °C
Accuracy	3 K
Stability	0.3 K
Immersion depth	220 mm, bore depth 155 mm
Data sheet	CT 41.29

CTD9300

Temperature dry-well calibrator



Measuring range	-35 ... +650 °C
Accuracy	0.1 ... 0.65 K
Stability	0.01 ... 0.1 K
Immersion depth	150 mm
Data sheet	CT 41.38

CTD9100-375

Compact temperature dry-well calibrator



Measuring range	t_{amb} ... 375 °C
Accuracy	0.5 ... 0.8 K
Stability	0.05 K
Immersion depth	100 mm
Data sheet	CT 41.32

CTI5000

Infrared calibrator



Measuring range	50 ... 500 °C
Stability	0.1 ... 0.4 K
Special feature	Large diameter of measuring surface
Data sheet	CT 41.42

CTM9100-150

Multi-function calibrator



Measuring range	-35 ... +165 °C depending on the application
Accuracy	0.3 ... 1 K depending on the application
Immersion depth	150 mm
Special feature	Use as a dry-well calibrator, micro calibration bath, infrared calibrator and surface calibrator
Data sheet	CT 41.40

Resistance thermometry bridges

By using built-in or external standard resistors, resistance thermometry bridges measure resistance ratios with high accuracy, which are indicative of the temperature, among other things. These instruments are not only used in the field of temperature measurement, but – due to their high accuracy – also in electrical laboratories.

CTR2000

Precision thermometer



Measuring range	-200 ... +850 °C
Accuracy	0.01 K (4-wire), 0.03 K (3-wire)
Probe type	Pt100, Pt25
Special feature	<ul style="list-style-type: none"> 3-wire measurement (optional) Up to 8 channels integrated in the instrument (optional)
Data sheet	CT 60.10

CTR3000

Multi-functional precision thermometer



Measuring range	-210 ... +1,820 °C
Accuracy	<ul style="list-style-type: none"> 0.005 K (4-wire) ±0.03 K (3-wire) ±0.004 % + 2 µV for thermocouples
Probe type	Pt100, Pt25
Special feature	<ul style="list-style-type: none"> Versatile applications by measuring thermocouples and resistance thermometers Logger and scan functions Up to 44 channels possible
Data sheet	CT 60.15

CTR5000

Precision thermometer



Measuring range	-200 ... +962 °C
Accuracy	0.01 K, optional 0.005 K
Probe type	Pt100, Pt25
Special feature	<ul style="list-style-type: none"> Integrated data logger (optional) Up to 64 channels
Data sheet	CT 60.20

CTR6000

DC resistance thermometry bridge



Measuring range	-200 ... +962 °C
Accuracy	±3 mK (full range)
Probe type	PRT, thermistors or fixed resistors
Special feature	<ul style="list-style-type: none"> Expendable to up to 60 channels (optional) Internal resistors 25 Ω, 100 Ω, 10 kΩ, 100 kΩ
Data sheet	CT 60.30

CTR6500

AC resistance thermometry bridge



Measuring range	-200 ... +962 °C
Accuracy	0.1 ... 1.25 mK depending on resistance ratio
Probe type	SPRT, PRT or fixed resistors
Special feature	<ul style="list-style-type: none"> Expendable to up to 60 channels (optional) Internal resistors 25 Ω, 100 Ω AC technology
Data sheet	CT 60.40

CTR9000

Primary-standard resistance thermometry bridge



Measuring range	0 ... 260 Ω
Accuracy	0.01 K, optional 0.005 K
Probe type	SPRT, PRT or fixed resistors
Special feature	<ul style="list-style-type: none"> Expendable to up to 60 channels (optional) 4 selectable standby currents possible (optional) AC technology
Data sheet	CT 60.80

Standard reference resistors, AC/DC

Electrical comparison standard

Reference resistors with high-accuracy, fixed resistance values, which are used in connection with resistance thermometry bridges. They are also used as standards in accredited electrical laboratories.

CER6000-RR

Reference resistor



Resistance value	1, 10, 25, 100, 300, 400, 500, 1,000 and 10,000 Ω
Long-term stability	< ± 5 ppm per year
Special feature	<ul style="list-style-type: none">■ Low temperature coefficient■ Rugged stainless steel construction
Data sheet	CT 70.30

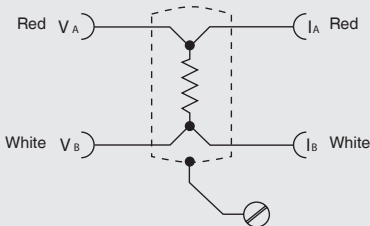
CER6000-RW

Standard reference resistor



Resistance value	1, 10, 25, 100, 300, 400, 500, 1,000 and 10,000 Ω
Long-term stability	2 ppm per year (HS version 0.5 ppm per year)
Special feature	<ul style="list-style-type: none">■ Low temperature coefficient■ Rugged stainless steel construction
Data sheet	CT 70.30

Connections of the reference resistor, model CER6000-RR



Reference resistor, model CER6000-RR with 100 Ω



Reference resistor, model CER6000-RR with different resistance range

Electrical calibration instruments

Electrical calibration instruments are used for calibration in industry (laboratories, production, workshops), in calibration service companies and in quality assurance. They are portable and mobile and are particularly notable for their low measurement uncertainty and high scope of operation. For the electrical calibration, the multi-function calibrators CPH7000, Pascal ET and Pascal 100 can also be used.

CEP3000

Hand-held temperature calibrator



Measuring range	<ul style="list-style-type: none"> ■ -10 ... +75 mV, 5 ... 3,200 Ω ■ -200 ... +1,200 °C (type J) ■ -200 ... +800 °C (Pt100)
Accuracy	0.4 °C (type J), 0.33 °C (Pt100)
Special feature	Measurement and simulation of thermocouples and resistance thermometers
Data sheet	CT 82.01

CEP6000

Hand-held multi-function calibrator



Measuring range	<ul style="list-style-type: none"> ■ 0 ... 24 mA, 0 ... 30 V, 5 ... 4,000 Ω ■ 2 CPM ... 10 kHz ■ -210 ... +1,200 °C (type J) ■ -200 ... +800 °C (Pt100)
Accuracy	0.015 %
Special feature	Measurement and simulation of thermocouples, resistance thermometers, resistance, current, voltage, frequency, pulse and pressure
Data sheet	CT 83.01

CED7000

High-precision process calibrator



Measuring range	<ul style="list-style-type: none"> ■ 0 ... 100 mA, 0 ... 100 V, 5 ... 4,000 Ω ■ -210 ... +1,200 °C (type J) ■ -200 ... +800 °C (Pt100)
Accuracy	0.003 %
Special feature	High-precision measurement and simulation of thermocouples and resistance thermometers, resistance, current, voltage and pressure
Data sheet	CT 85.51

Accessories

From individual components ... to complete turnkey kits

The following accessory components are the ideal complement to the individual calibration instruments. Thus a complete solution is not only quickly and easily configured, but can also be installed in the same manner. The various packages complete the product programme for calibration technology and can be used in many different applications.

Customer-specific drilled inserts, silicone oil suited for calibration in micro calibration baths and interface cables complete the product portfolio for temperature.

You can find a detailed description in our catalogue "Accessories for calibration technology".



Pressure supply cases



Pressure and vacuum supply packages



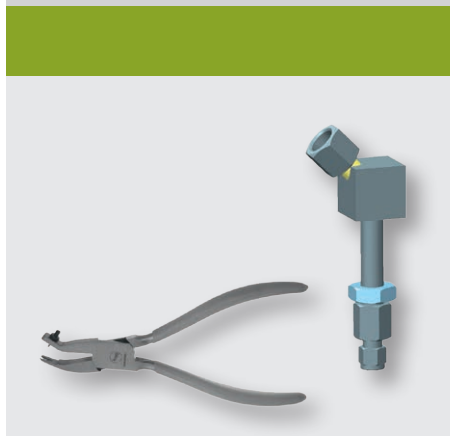
Connection components



Pressure control



Calibration and adjustment tools



Temperature accessories



Engineered solutions

Test and calibration systems for workshops and laboratories

Turnkey customer-specific systems for adjustment and calibration of pressure and temperature measuring instruments

Precise calibration instruments are the starting point for resolving your test requirements, even though they are only one component of a high-performance calibration system. From our extensive product range, we can design you a complete and individual solution with adaptability for test items, pressure and vacuum supply, components for pressure control and fine adjustment, through to voltage supply and multimeters for the calibration of electrical test items.

Whether built-in to test benches, mobile test carts or 19" racks and supplemented with user-friendly calibration software, you will get a complete system, tailored to your requirements with the desired level of automation.

The use of high-quality proven components, ergonomic usability and a cost-effective overall concept with high customer benefit are made a priority. Take advantage of our experience and the proven operation of such systems in WIKA's own accredited laboratories and manufacturing facilities.

Adjustment and calibration benches



Measuring range	<ul style="list-style-type: none"> 1 ... 400 bar pneumatic 10 ... 1,600 bar hydraulic
Accuracy	Depending on the measuring devices used
Medium	Compressed air, nitrogen, oil or water
Special feature	Provision of pressure in workshops and laboratories

Mobile calibration benches



Measuring range	Customer-specific
Accuracy	Down to 0.008 %
Medium	Compressed air, nitrogen, oil or water
Special feature	Self-contained, mobile calibration system for workshops and on-site service

Test systems



Measuring range	Customer-specific
Accuracy	Down to 0.008 %
Medium	Compressed air, nitrogen, oil or water
Special feature	Measurement parameters pressure, temperature and electrical measurands

Automated pressure calibration systems



Measuring range	Customer-specific
Accuracy	Down to 0.008 %
Medium	Compressed air, nitrogen, oil or water
Special feature	Complete turnkey system

Automated temperature calibration systems



Measuring range	Customer-specific
Stability	Up to 0.001 K
Medium	Water, alcohol, silicone oil or salt
Special feature	Complete turnkey system

Complete setup of laboratories



Measuring range	Customer-specific
Accuracy	<ul style="list-style-type: none"> Measurand pressure up to 0.008 % Measurand temperature up to 0.001 K
Special feature	Complete solutions from one source - from factory calibration laboratories through calibration vehicles up to national laboratories

Test stands and calibration systems for production

From consultation through design to implementation - all from one source.

Our particular strength lies in the project planning, development and the building of complete, individual, application-specific systems - from simple manual work stations through to fully automated test systems in production lines - for the following applications:

Calibration and adjustment of

- Pressure sensors
- Pressure transmitter
- Process transmitters

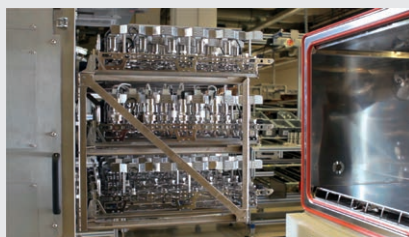
The precise interaction of measurement technology, test system mechanics and control components is a top priority here. The complete solutions are available in the widest variety of build stages incl. tempering units, workpiece transport systems, workpiece fixtures and electrical and pressure-side contacting. Furthermore, there is also the possibility of integrating mounting or labelling operations on the test components into the overall concept. You can be assured of our capabilities.

19" test and calibration racks for pressure sensors



Measuring range	Customer-specific <ul style="list-style-type: none"> ■ Up to 400 bar pneumatic ■ Up to 1,600 bar hydraulic
Accuracy	Down to 0.008 %
Special feature	Compact units with CPC series pressure controllers, working pressure supply, electrical supply and signal evaluation for the test items

Batch testing systems for pressure sensors



Measuring range	Customer-specific <ul style="list-style-type: none"> ■ Up to 1,050 bar pneumatic ■ Up to 6,000 bar hydraulic
Accuracy	Down to 0.008 %
Temperature range	-40 ... +140 °C
Special feature	With retractable tempering chamber, workpiece carrier for up to 200 pressure sensors, electrical and pressure-side contacting

Inline calibration systems for pressure sensors



Measuring range	Customer-specific <ul style="list-style-type: none"> ■ Up to 1,050 bar pneumatic ■ Up to 6,000 bar hydraulic
Accuracy	Down to 0.008 %
Temperature range	-40 ... +140 °C
Special feature	Integration into customer's production line, linking multiple tempering chambers, automatic changeover of electrical and pressure-side contacts

Calibration services

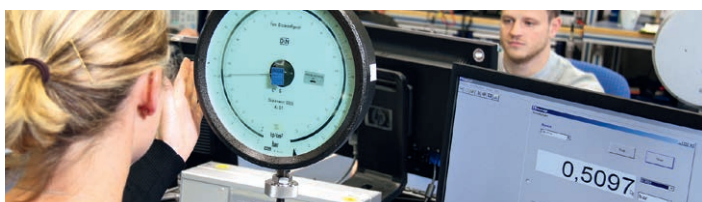


Our calibration laboratories have been calibrated for pressure and temperature for over 30 years. Since 2014, our calibration laboratory has also been accredited for the electrical measurands DC current, DC voltage and DC resistance. Since 2017, the factory calibration for length measuring instruments has been expanding our portfolio.

- ISO 9001 certified
- DKD/DAkkS accredited (in accordance with DIN EN ISO/IEC 17025)
- Co-operation in the DKD/DAkkS working groups
- Over 60 years of experience in pressure and temperature measurement
- Highly qualified, individually trained personnel
- Latest reference instruments with the highest accuracy

Manufacturer-independent calibration - fast and precise for ...

Pressure



- -1 bar ... +8,000 bar (to +9,500 bar possible with factory calibration)
- Calibration using working standards (precise electrical pressure measuring instruments) or high-accuracy reference standards (pressure balances)
- With an accuracy of 0.003 % ... 0.01 % of reading
- In accordance with the directives DIN EN 837, DAkkS-DKD-R 6-1 or EURAMET cg-3

Temperature



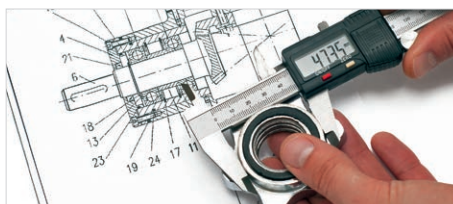
- -196 °C ... +1,200 °C
- Comparison calibration in calibration baths and tube furnaces with an accuracy of down to 1.5 mK
- Calibration at fixed points of ITS90 with the smallest possible measurement uncertainties
 - Triple point of mercury (-38.8344 °C)
 - Triple point of water (0.01 °C)
 - Melting point of gallium (29.7646 °C)
 - Solidification point of tin (231.928 °C)
 - Solidification point of zinc (419.527 °C)
 - Solidification point of aluminium (660.323 °C)
- In accordance with the appropriate DKD/DAkkS directives

Current, voltage, resistance



- DC current from 0 mA ... 100 mA
- DC voltage from 0 V ... 100 V
- DC resistance from 0 Ω ... 10 kΩ
- In accordance with the directives VDI/VDE/DGQ/DKD 2622

Length



- Factory calibration within 10 working days
- Replacement of the measuring device if required
- Calibration of special-purpose gauges according to customer drawings
- Calibratable measuring devices
 - Caliper gauges to 800 mm
 - Testing pins to 100 mm
 - Ring gauges and plug gauges to 150 mm
 - Tapered thread gauges to 150 mm
 - Gauge blocks to 170 mm (also possible as a set)
 - others on request

On site (pressure and temperature)

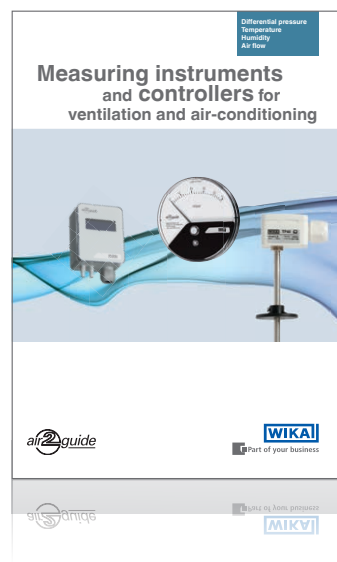


In order to have the least possible impact on the production process, we offer you a time-saving, on-site DAkkS calibration throughout Germany.

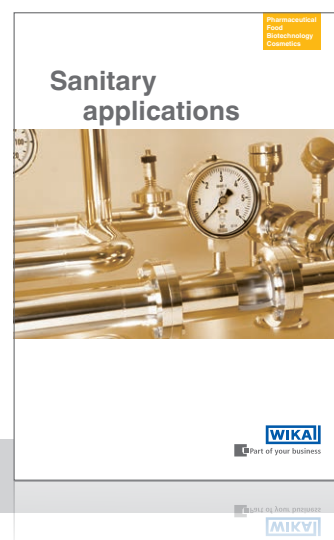
- In our calibration van or on your workbench
- With a DAkkS accreditation for pressure
 - from -1 bar ... +8,000 bar
 - with accuracies between 0.025 % and 0.1 % of full scale for the standard used
- With a DAkkS accreditation for temperature
 - from -55 °C ... +1,100 °C

In our segment brochures, you will find the entire product families for the areas of “ventilation and air-conditioning”, “sanitary applications”, “SF₆ lifecycle solutions” and “high purity & ultra high purity” and also their technical distinctions.

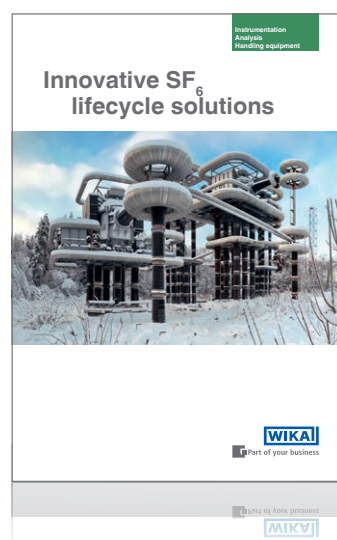
Ventilation and air-conditioning



Sanitary applications



SF₆ lifecycle solutions



High purity & ultra high purity

