

Process Instrumentation

Product overview





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Today, Bourdon® is one of the world leading brands for mechanical process instrumentation and belongs with its international business locations to the Baumer Group*. It was created in 2005 by the acquisition of the service portfolios and competences of the formerly well-known brands Bourdon-Sedeme and Haenni. Historically, this competence and passion is based on the Bourdon tube invented in 1843 by Eugène Bourdon, which is the central component for precise mechanical pressure measurement technology, today and in the future.

The company founded by Eugene Bourdon, today Baumer Bourdon-Haenni S.A.S. in Vendôme, Baumer Electric AG in Kirchberg as well as Bourdon-Haenni GmbH with its location in Stockach in southern Germany, are centers of competence for Bourdon process instrumentation.

The comprehensive product portfolio is manufactured with high vertical integration and state-of-the-art process methods in the company own production sites in France, Switzerland, Germany and India. In addition to the standard products such as thermometers, pressure gauges, pressure and temperature switches and diaphragm seals, this portfolio also comprises a large number of customer-specific solutions, which are mainly used in the sectors of oil and gas, energy / power plants, water supply, chemistry as well as heating, ventilation and air conditioning.

A worldwide distribution network with specialized Bourdon distributors and Baumer's own subsidiaries provides fast and reliable customer service with high product availability thanks to local presence.

*The Baumer Group is leading at international level in the development and production of sensors, shaft encoders, measuring instruments as well as components for automatic image processing. As an owner-managed family business, we employ about 2600 workers worldwide in 38 subsidiaries and 19 countries. With marked customer orientation, consistently high quality and vast innovation capability, Baumer develops specific solutions for many industries and applications worldwide.



High-Tech Center Bodensee with distribution center and head office of Bourdon-Haenni GmbH

Pressure gauges



Principle of a Bourdon® tube

A flattened tube tends to straighten or regain its circular form in cross-section when pressurized. Although this change in cross-section may be nearly imperceptible, and thus involving only moderate stresses within the elastic range of easily workable materials, the strain of the material of the tube is magnified by forming the tube into a C shape or even a helix, such that the entire tube tends to straighten out or uncoil, elastically, as it is pressurized.



MAT3



MIT3



MMX1



MEX2

General Data	For non corrosive gases and liquids	- For non corrosive gases and liquids - For applications with vibrations and pulsations	- For corrosive gases and liquids - Fully welded process connection	- For corrosive gases and liquids - Fully welded process connection
Industries	Machinery Pneumatic	Machinery Hydraulik	Food & Beverage Laboratory & Medical Oil & Gas / Chemical Water / Waste Water Energy Transport & Logistics Machinery	Food & Beverage Laboratory & Medical Oil & Gas / Chemical Water / Waste Water Energy Transport & Logistics Machinery
Nominal size (mm)	63	63	40	50
Measuring ranges	0 ... 1 bar bis 0 ... 250 bar	0 ... 1 bar bis 0 ... 600 bar	0 ... 1.6 bar to 0 ... 25 bar	–1 ... 0 bar to 0 ... 1000 bar
Accuracy (according to EN 837-1)	Class 2.5	Class 1.6	Class 2.5	Class 1.6
Wetted parts material	Cu alloy	Cu alloy	Stainless steel 1.4404 (316L)	Stainless steel 1.4404 (316L)
Measuring element	Bourdon tube	Bourdon tube	Bourdon tube	Bourdon tube
Case material	Black painted, steel	Stainless steel 1.4301 (304)	Stainless steel 1.4301 (304)	Stainless steel 1.4301 (304)
Process connection	G 1/4 1/4 NPT	G 1/4 1/4 NPT	G 1/8 G 1/4 1/8 NPT 1/4 NPT	G 1/8 G 1/4 1/8 NPT 1/4 NPT
Protection rating	IP 32	IP 65	IP 65	IP 65
Approval			ATEX II2GDc-IM2c	ATEX II2GDc-IM2c Lloyd's Register
Additional information		Option: With damping fluid		Option: With damping fluid

Bourdon® portfolio provides various pressure measuring technologies on mechanic instruments. With Bourdon® tube, diaphragm, capsule and bellow types we cover pressure ranges from 0 ... 4 mbar to 0 ... 1600 bar.


MEX3, MEM3

MEX5, MEM5

MIX7, MIM7

MEX8

General Data	- For corrosive gases and liquids - Fully welded process connection	- For corrosive gases and liquids - Fully welded process connection	- For corrosive gases and liquids - Long term reliability	- For corrosive gases and liquids - Long term reliability
Industries	Food & Beverage Laboratory & Medical Oil & Gas / Chemical Water / Waste Water Energy Transport & Logistics Machinery	Food & Beverage Laboratory & Medical Oil & Gas / Chemical Water / Waste Water Energy Transport & Logistics Machinery	Food & Beverage Laboratory & Medical Oil & Gas / Chemical Water / Waste Water Energy Transport & Logistics Machinery	Food & Beverage Laboratory & Medical Oil & Gas / Chemical Water / Waste Water Energy Transport & Logistics Machinery
Nominal size (mm)	63	100	150	160
Measuring ranges	-1 ... 0 bar to 0 ... 1000 bar	-1 ... 0 bar to 0 ... 1600 bar	-1 ... 0 bar to 0 ... 1600 bar	-1 ... 0 bar to 0 ... 1600 bar
Accuracy (according to EN 837-1)	Class 1.6	Class 1	Class 1	Class 1
Wetted parts material	Stainless steel or Monel 400	Stainless steel or Monel 400	Stainless steel or Monel 400	Stainless steel 1.4404 (316L)
Measuring element	Bourdon tube	Bourdon tube	Bourdon tube	Bourdon tube
Case material	Stainless steel 1.4301 (304)	Stainless steel 1.4301 (304)	Stainless steel 1.4301 (304)	Stainless steel 1.4301 (304)
Process connection	G 1/8 G 1/4 1/8 NPT 1/4 NPT	G 1/2 G 1/4 1/2 NPT 1/4 NPT	G 1/2 G 1/4 1/2 NPT 1/4 NPT	G 1/2 G 1/4 1/2 NPT 1/2 NPT
Protection rating	IP 65	IP 65	IP 65	IP 65
Approval	ATEX II2GDc-IM2c Lloyd's Register	ATEX II2GDc-IM2c Lloyd's Register	ATEX II2GDc-IM2c Lloyd's Register	ATEX II2GDc-IM2c Lloyd's Register
Additional information	Option: ■ With damping fluid	Option: ■ With damping fluid	Option: ■ With damping fluid	Option: ■ With damping fluid

Today, original Bourdon® products, firmly founded on the brand's history and over 160 years of technological development, can be purchased only from Bourdon®.



MEP5



MMN5



MPE6, MPG6



MPF6, MPJ6

General Data	■ For corrosive atmospheres and fluids ■ Long term reliability ■ Safety version S3 according to EN837-1	■ For corrosive atmospheres and fluids ■ Long term reliability ■ Safety version S3 according to EN837-1	■ For corrosive gases and liquids ■ With or without damping fluid ■ With or without dashpot ■ Solid front	■ For corrosive gases and liquids ■ With or without damping fluid ■ With or without dashpot ■ Solid front
Industries	Oil & Gas / Chemical Water / Waste Water Energy	Oil & Gas / Chemical Water / Waste Water Energy	Oil & Gas / Chemical Water / Waste Water Energy	Oil & Gas / Chemical Water / Waste Water Energy
Nominal size (mm)	100	100	130	130
Measuring ranges	–1 ... 0 bar to 0 ... 1600 bar	–1 ... 0 bar to 0 ... 600 bar	–1 ... 0 bar to 0 ... 1600 bar	–1 ... 0 bar to 0 ... 600 bar
Accuracy	Class 1 (according to EN 837-1)	Class 1 (according to EN 837-1)	Grade 2A (according to ASME B40.100)	Grade 2A (according to ASME B40.100)
Wetted parts material	Stainless steel 1.4404 (316L)	Monel 400	Stainless steel 1.4404 (316L)	Monel 400
Measuring element	Bourdon tube	Bourdon tube	Bourdon tube	Bourdon tube
Case material	Stainless steel 1.4301 (304)	Stainless steel 1.4301 (304)	Polypropylene / Phenolic	Polypropylene / Phenolic
Process connection	G 1/2 G 1/4 1/2 NPT 1/4 NPT OD 12	G 1/2 G 1/4 1/2 NPT 1/4 NPT OD 12	G 1/2 1/2 NPT	G 1/2 1/2 NPT
Protection rating	IP 67	IP 67	IP 67	IP 67
Approval	ATEX II2GDc-IM2c Lloyd's Register	ATEX II2GDc-IM2c Lloyd's Register		
Additional information	Option: ■ For oxygen applications	Option: ■ For oxygen applications	Option: ■ For oxygen applications ■ With damping fluid ■ With dashpot	Option: ■ With damping fluid ■ With dashpot

Bourdon® datasheets offer tables with full ordering details for each product line including typical options.



MS5, MR5



MG5



DPCE 100



MA35

General Data	- Local indication of pressure 1 or 2 setpoints for regulation or alarm setting	- Local indication of pressure 1 or 2 setpoints for regulation or alarm setting	- Local indication of pressure 1 or 2 setpoints for regulation or alarm setting	- Local indication of pressure - Output signal: 4 ... 20 mA
Industries	Food & Beverage Laboratory & Medical Oil & Gas / Chemical Water / Waste Water Energy Transport & Logistics, Machinery	Food & Beverage, Laboratory & Medical Oil & Gas / Chemical Water / Waste Water Energy Transport & Logistics, Machinery	Food & Beverage, Laboratory & Medical Oil & Gas / Chemical Water / Waste Water Energy Transport & Logistics, Machinery	Food & Beverage, Laboratory & Medical Oil & Gas / Chemical Water / Waste Water Energy Transport & Logistics, Machinery
Nominal size (mm)	100	100	100	100
Measuring ranges	-1 ... 0 bar to 0 ... 1600 bar	-1 ... 0 bar to 0 ... 1600 bar	0 ... 100 mbar to 0 ... 25 bar	0 ... 0.6 bar to 0 ... 600 bar
Accuracy	Class 1 (according to EN 837-1)	Class 1 (according to EN 837-1)	Class 1.6 (according to EN 837-3)	For gauge : Class 1 For output signal : $\pm 0.5\%$
Wetted parts material	Stainless steel 1.4404 (316L)	Stainless steel 1.4404 (316L)	Stainless steel 1.4571 (316Ti) Duratherm®	Stainless steel 1.4571 (316Ti)
Measuring element	Bourdon tube	Bourdon tube	Diaphragm	Bourdon tube and piezoresistive sensor
Contact type	Mechanical sliding contact or magnetic spring contact	Inductive contact	Mechanical sliding contact, magnetic spring contact or inductive contact	
Case material	Stainless steel 1.4301 (304)	Stainless steel 1.4301 (304)	Stainless steel 1.4301 (304)	Stainless steel 1.4301 (304)
Process connection	G 1/2 G 1/4 1/2 NPT 1/4 NPT	G 1/2 G 1/4 1/2 NPT 1/4 NPT	G 1/2 1/2 NPT flanges DIN or ANSI	G 1/2 G 1/4 1/2 NPT 1/4 NPT
Protection rating	IP 65	IP 65	IP 65	IP 54
Approval		ATEX II2G Ex ia T4	ATEX II2G Ex ia T4	
Additional information	Option: With damping fluid	Option: With damping fluid	Option: - PTFE coating - With damping fluid	Option: With damping fluid

Available for all pressure gauges:
Calibration certificates according
to EN 837-1 (11 points) and
simplified reports (5 points)



MCD7



MX7, MZ7, MT7, MQ7



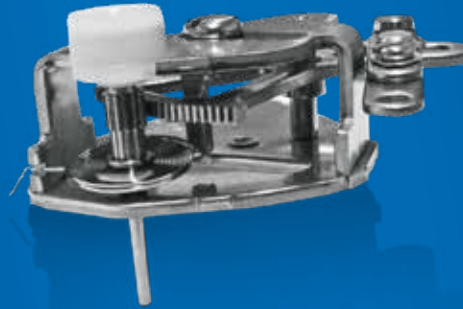
M21, M31



MFT5, MFT7

General Data	- Very low differential pressure range - Static pressure up to 250 mbar - Safety valve on high pressure side	- For corrosive process fluids and atmospheres - Static pressure up to 100 bar	- For corrosive process fluids and atmospheres - Static pressure up to 100 bar 1 or 2 setpoints for regulation or alarm setting	- For corrosive process fluids and atmospheres - Low differential pressure - Static pressure up to 400 bar
Industries	Laboratory & Medical Oil & Gas / Chemical Water / Waste Water Energy	Laboratory & Medical Oil & Gas / Chemical Water / Waste Water Energy	Laboratory & Medical Oil & Gas / Chemical Water / Waste Water Energy	Laboratory & Medical Oil & Gas / Chemical Water / Waste Water Energy
Nominal size (mm)	150	150	150	100 (MFT5), 150 (MFT7)
Measuring ranges	0 ... 10 mbar to 0 ... 250 mbar	0 ... 0.1 bar to 0 ... 25 bar	0 ... 0.25 bar to 0 ... 25 bar	0 ... 25 mbar to 0 ... 25 bar
Static pressure	Max. 250 mbar	Max. 100 bar	Max. 100 bar	Max. 400 bar
Accuracy	± 2%	± 2%	± 3%	± 1% (dry version) ± 1.6% (with damping fluid)
Wetted parts material	Stainless steel 1.4404 (316L)	Stainless steel 1.4404 (316L)	Stainless steel 1.4404 (316L)	Stainless steel 316L Monel Hastelloy C276
Measuring element	Capsule	Bellow	Bellow	Differential cell
Contact type	Mechanical sliding contact			
Case material	Stainless steel 1.4301 (304)	Stainless steel 1.4301 (304)	Stainless steel 1.4301 (304)	Stainless steel 1.4301 (304)
Process connection	2 × G 1/2 2 × 1/2 NPT	2 × G 1/2 2 × 1/2 NPT	2 × G 1/2 2 × 1/2 NPT	2 × G 1/2 2 × 1/2 NPT
Protection rating	IP 66	IP 65	IP 65	IP 65
Approval	ATEX II2GDc-IM2c			
Additional information	Option: - With damping fluid - With baffle wall			Option: - With damping fluid - With baffle wall

Minimizing vibrations or pulsations:
Filling with damping fluid
or dashpot in the movement.



DPC 100



DP 100 Hygienic

General Data	■ Welded with blow-out disc, back ■ For gaseous and liquid, aggressive, high and low viscosity media ■ High overpressure safety	■ Hygienic process connections without transmission fluid ■ No risk of media contamination
Industries	Laboratory & Medical Oil & Gas / Chemical Water / Waste Water Energy	Food & Beverage Laboratory & Medical
Nominal size (mm)	100	100
Measuring ranges	0 ... 60 mbar to 0 ... 25 bar	0 ... 6 bar 0 ... 10 bar -1 ... 5 bar -1 ... 9 bar
Accuracy (according to EN 837-3)	Class 1.6	Class 1.6
Wetted parts material	Stainless steel 1.4571 (316Ti) Duratherm®	Stainless steel 1.4435 (316L)
Measuring element	Diaphragm	Diaphragm
Case material	Stainless steel 1.4301 (304)	Stainless steel 1.4301 (304)
Process connection	G 1/2 1/2 NPT flanges DIN or ANSI	Clamp Varivent®
Protection rating	IP 65	IP 65
Approval	ATEX II2GDc-IM2c	
Additional information	Option: ■ With damping fluid ■ PTFE coating	Option: ■ Movement with silicone damping

Absolute and capsule pressure gauges

Various series of standard gauges according to EN 837-1 and ASME B40.100.



MA7



M61



MTA2



MTA3

General Data	■ Absolute pressure measurement for corrosive process fluids and atmospheres	■ Absolute pressure measurement for corrosive process fluids and atmospheres ■ 1 or 2 setpoints for regulation or alarm setting	■ Low pressure measurements for clean and non-corrosive gases	■ Low pressure measurements for clean and non-corrosive gases
Industries	Laboratory & Medical Oil & Gas / Chemical Water / Waste Water Energy	Laboratory & Medical Oil & Gas / Chemical Water / Waste Water Energy	Laboratory & Medical Machinery	Laboratory & Medical Machinery
Nominal size (mm)	150	150	50	63
Measuring ranges	0 ... 0.1 bar to 0 ... 16 bar abs	0 ... 0.25 bar to 0 ... 16 bar abs	0 ... 60 mbar to 0 ... 600 mbar	0 ... 60 mbar to 0 ... 600 mbar
Accuracy	± 2%	± 3%	Class 1.6	Class 1.6
Overpressure	Max. 25 bar	Max. 25 bar		
Wetted parts material	Stainless steel 1.4404 (316L)	Stainless steel 1.4404 (316L)	Bronze / Brass	Bronze / Brass
Measuring element	Bellow	Bellow	Capsule	Capsule
Contact type	Mechanical sliding contact			
Case material	Stainless steel 1.4301 (304)	Stainless steel 1.4301 (304)	Stainless steel 1.4301 (304)	Stainless steel 1.4301 (304)
Process connection	G 1/2 1/2 NPT	G 1/2 1/2 NPT	G 1/4 1/4 NPT	G 1/4 1/4 NPT
Protection rating	IP 65	IP 65	IP 33 / IP 44	IP 33 / IP 44
Approval	ATEX II2GDc-IM2c			
Additional information	Option: ■ With damping fluid		■ Zero adjustment	■ Zero adjustment

Unique method in order fulfillment within the Bourdon® production system: *BTrace*®



MTA5



MTX5



MCX5, MCF5



MCX7, MCF7

General Data	Low pressure measurements for clean and non-corrosive gases	Low pressure measurements for clean and non-corrosive gases	- Low pressure measurements - High overpressure protection - Suitable for corrosive gases	- Low pressure measurements - High overpressure protection - Suitable for corrosive gases
Industries	Laboratory & Medical Machinery	Laboratory & Medical Machinery	Laboratory & Medical Oil & Gas / Chemical Machinery	Laboratory & Medical Oil & Gas / Chemical Machinery
Nominal size (mm)	100	100	100	150
Measuring ranges	0 ... 16 mbar to 0 ... 600 mbar	0 ... 16 mbar to 0 ... 600 mbar	0 ... 10 mbar to 0 ... 600 mbar	0 ... 6 mbar to 0 ... 600 mbar
Accuracy (according to EN 837-3)	Class 1.6	Class 1.6	Class 1.6	Class 2.5
Wetted parts material	Bronze / Brass	Stainless steel	Stainless steel / FKM	Stainless steel / FKM
Measuring element	Capsule	Capsule	Capsule	Capsule
Case material	Stainless steel 1.4301 (304)	Stainless steel 1.4301 (304)	Stainless steel 1.4301 (304)	Stainless steel 1.4301 (304)
Process connection	G 1/2 1/2 NPT	G 1/2 1/2 NPT	G 1/2 1/2 NPT	G 1/2 1/2 NPT
Protection rating	IP 33 / IP 44	IP 33 / IP 44	IP 65	IP 65
Approval			ATEX II2GDc-IM2c	ATEX II2GDc-IM2c
Additional information	Zero adjustment	Zero adjustment	- Zero adjustment, integrated overpressure protection valve for short time overload of 20 × span - Option: With baffle wall	- Zero adjustment, integrated overpressure protection valve for short time overload of 20 × span - Option: With baffle wall

Refrigeration pressure gauges

For cooling systems – pressure gauges with 2nd scale in °C for all standard refrigerants.



DRO80



DRO100



MMD5

General Data	■ For refrigeration applications ■ Multiscaling for pressure and related temperature ■ For R407C, R134 A, ...	■ For refrigeration applications ■ Multiscaling for pressure and related temperature ■ For NH3	■ For non-corrosive gases and fluids ■ For applications with pulsations and vibrations
Industries	Food & Beverage Transport & Logistics Machinery	Food & Beverage Transport & Logistics Machinery	General applications Heating / ventilation / air conditioning
Nominal size (mm)	80	100	100
Measuring ranges	-1 ... 9 bar -1 ... 12.5 bar -1 ... 24 bar	-1 ... 9 bar -1 ... 12.5 bar -1 ... 24 bar	0 ... 1 bar to 0 ... 60 bar
Accuracy (according to EN 837-1)	Class 1	Class 1	Class 1
Wetted parts material	Copper alloy	Stainless steel	Copper alloy
Measuring element	Bourdon tube	Bourdon tube	Bourdon tube
Case material	Black painted steel	Stainless steel 1.4301 (304)	Stainless steel 1.4301 (304)
Process connection	7/16 UNF	G 1/2	G 1/2 1/2 NPT
Protection rating	IP 65	IP 65	IP 65
Additional information	Option: ■ With damping fluid	Option: ■ With damping fluid	Option: ■ With damping fluid

Pressure switches

Mechanical pressure switches
– a proven technology for
power plants.



RP2N, RP2Y, RP2E



**RPPN,
RPPY, RPPE**

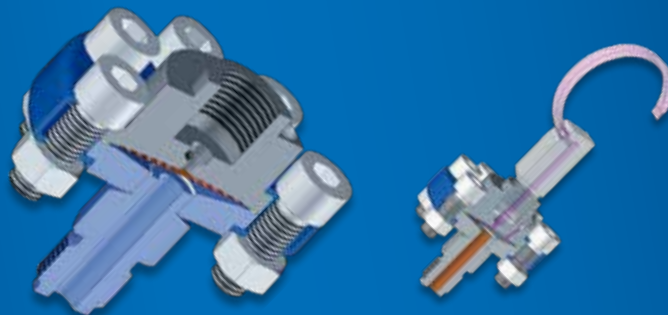


RDPN, RDY, RDE

General Data	■ Standard pressure switch ■ Good resistance to vibrations and overpressure	■ Pressure switch for low and high pressure ■ Adjustable setpoint(s) and deadband	■ Differential pressure switch ■ Adjustable setpoint(s) and deadband
Industries	Oil & Gas / Chemical Water / Waste Water Energy Transport & Logistics Machinery	Oil & Gas / Chemical Water / Waste Water Energy Transport & Logistics Machinery	Oil & Gas / Chemical Water / Waste Water Energy Transport & Logistics Machinery
Measuring ranges	0 ... 1 bar to 0 ... 100 bar	-50 ... 0 mbar to 60 ... 600 bar	-2.5 ... 2.5 mbar to 2.5 ... 30 bar
Wetted part material	Stainless steel	Steel FKM Stainless steel EPDM (depending on the pressure range)	Steel FKM Stainless steel EPDM (depending on the pressure range)
Set points	1	1	1
Overpressure / Static pressure	Max. 200 bar	Max. 800 bar	0.15 to 220 bar
Repeatability	± 1% F.S.	± 1% F.S.	± 1% F.S.
Process Connection	G 1/2 1/2 NPT 1/4 NPT	G 1/2 1/2 NPT 1/4 NPT	G 1/2 1/2 NPT 1/4 NPT
Protection rating	IP 66	IP 66	IP 66
Current rating	10 mA to 10 A max. 250 VAC / 220 VDC	5 mA to 10 A max. 250 VAC / 220 VDC	10 mA to 10 A max. 250 VAC / 220 VDC
Housing / body material	Polyamid PA6 Aluminum for EEx d	ZnAl - alloy Aluminum for EEx d	ZnAl - alloy Aluminum for EEx d
Protection rating	IP 66	IP 66	IP 66
Approval	Options: ■ ATEX, EEx ia (RP2Y) ■ ATEX, EEx d (RP2E)	Options: ■ ATEX, EEx ia (RPPY) ■ ATEX, EEx d (RPPE)	Options: ■ ATEX, EEx ia (RDY) ■ ATEX, EEx d (RDE)

Diaphragm seals

Chemical seals – separating the measuring instrument from corrosive, highly viscous or dangerous media and high temperature.



D030



D04x



D05x



DT1

General Data	■ Suitable for very aggressive media ■ No metallic part in contact with media	■ Robust and compact ■ Applicable for corrosive media	■ Flush mounted ■ Suitable for corrosive & viscous media ■ Limited space needed	■ For medium high pressure ■ Cleaning ring optional ■ Suitable for corrosive media ■ High temperature range
Industries	Oil & Gas / Chemical Water / Waste Water Energy Transport & Logistics Machinery	Oil & Gas / Chemical Water / Waste Water Energy Transport & Logistics Machinery	Oil & Gas / Chemical Water / Waste Water Energy Transport & Logistics Machinery	Oil & Gas / Chemical Water / Waste Water Energy Machinery
Process connection	G 1/2	G 1/4 G 1/2 1/4 NPT 1/2 NPT	G 1/2 1/2 NPT G 3/4 3/4 NPT G 1 1 NPT G 1 1/2 1 1/2 NPT G 2 2 NPT	G 1/4 G 1/2 1/4 NPT 1/2 NPT
Body material	PPT	Stainless steel	Stainless steel	Stainless steel Uranus B6 Hastelloy B Hastelloy C Tantalum Monel PVC PVDF PPH PTFE
Diaphragm material	EPDM / PTFE lining	Stainless steel	Stainless steel	Stainless steel Uranus B6 Hastelloy B Hastelloy C Tantalum Monel
Measuring ranges	0 ... 2.5 bar to 0 ... 10 bar	0 ... 1 bar to 0 ... 250 bar	0 ... 1 bar to 0 ... 600 bar	0 ... 10 bar to 0 ... 160 bar

Highly resistant membrane materials and coatings for extremely aggressive media.



DT2



DT3



DT5



DT8

General Data	■ For normal pressure ■ Cleaning ring optional ■ Suitable for corrosive media ■ High temperature range	■ For low pressure ■ Cleaning ring optional ■ Suitable for corrosive media ■ High temperature range	■ For very high pressure ■ Cleaning ring optional ■ Suitable for corrosive media ■ High temperature range	■ For high pressure ■ Cleaning ring optional ■ Suitable for corrosive media ■ High temperature range
Industries	Oil & Gas / Chemical Water / Waste Water Energy Machinery	Oil & Gas / Chemical Water / Waste Water Energy Machinery	Oil & Gas / Chemical Water / Waste Water Energy Machinery	Oil & Gas / Chemical Water / Waste Water Energy Machinery
Process connection	G 1/4 G 1/2 1/4 NPT 1/2 NPT	G 1/4 G 1/2 1/4 NPT 1/2 NPT	G 1/4 G 1/2 1/4 NPT 1/2 NPT	G 1/4 G 1/2 1/4 NPT 1/2 NPT
Body material	Stainless steel Uranus B6 Hastelloy B Hastelloy C Tantalum Monel PVC PVDF PPH PTFE	Stainless steel Uranus B6 Hastelloy B Hastelloy C Tantalum Monel PVC PVDF PPH PTFE	Stainless steel Uranus B6 Hastelloy B Hastelloy C Tantalum Monel	Stainless steel Uranus B6 Hastelloy B Hastelloy C Tantalum Monel
Diaphragm material	Stainless steel Uranus B6 Hastelloy B Hastelloy C Tantalum Monel	Stainless steel Uranus B6 Hastelloy B Hastelloy C Tantalum Monel	Stainless steel Uranus B6 Hastelloy B Hastelloy C Tantalum Monel	Stainless steel Uranus B6 Hastelloy B Hastelloy C Tantalum Monel
Measuring ranges	0 ...1 bar to 0 ... 40 bar	0 ...160 mbar to 0 ... 25 bar	0 ...160 bar to 0 ...1000 bar	0 ... 40 bar to 0 ... 400 bar

Flanged seals



Transmission fluids for
process temperatures from
–60 ... +400 °C.

	 D82x	 D4xx	 D6xx	 1650
General Data	■ Flush diaphragm ■ Cleaning ring optional ■ Coating optional	■ Small diameter flange ■ Cleaning ring optional ■ Coating optional	■ Many process connection standards available ■ Cleaning ring optional ■ Coating optional	■ In line seals for process industry ■ No dead volume
Industries	Oil & Gas / Chemical Water / Waste Water Energy Transport & Logistics	Oil & Gas / Chemical Water / Waste Water Energy Transport & Logistics	Oil & Gas / Chemical Water / Waste Water Energy Transport & Logistics	Laboratory & Medical Oil & Gas / Chemical Energy Machinery
Process connection	EN 1759-1 ASME B16.5 EN 1092-1	EN 1759-1 ASME B16.5 EN 1092-1	EN 1759-1 ASME B16.5 EN 1092-1	Cell mounting
Body material	Stainless steel	Steel Stainless steel Uranus B6 Hastelloy B Hastelloy C Monel	Stainless steel Uranus B6 Hastelloy B Hastelloy C Monel PVC PVDF PPH PTFE	Stainless steel
Diaphragm material	Stainless steel Uranus B6 Hastelloy B Hastelloy C Tantalum Monel	Stainless steel Uranus B6 Hastelloy B Hastelloy C Tantalum Monel	Stainless steel Uranus B6 Hastelloy B Hastelloy C Tantalum Monel	Stainless steel
Measuring ranges	0 ... 160 mbar to 0 ... 420 bar	0 ... 160 mbar to 0 ... 420 bar	0 ... 160 mbar to 0 ... 160 bar	0 ... 1.6 bar to 0 ... 250 bar
Nominal size	DN 15 ... 100 1/2" ... 4"	DN 10 ... 65 3/8" ... 2 1/2"	DN 10 ... 65 3/8" ... 2 1/2"	DN 25 ... 100
Pressure rating	PN 10 ... 420 class 150 ... 2500	PN 10 ... 420 class 150 ... 2500	PN 10 ... 150 class 150 ... 900	PN 10 ... 250

Oil and Gas – Highest safety and reliability standards for harsh environments and customized applications.



D92x



D912



D944



D918

General Data	■ Flush diaphragm ■ Cleaning ring optional ■ Coating optional	■ Pressure, level and flow measurement ■ max 400°C ■ Low static pressure	■ Pressure, level and flow measurement ■ max 400°C ■ medium static pressure	■ Pressure, level and flow measurement ■ max 400°C ■ High static pressure
Industries	Oil & Gas / Chemical Water / Waste Water Energy Transport & Logistics	Oil & Gas / Chemical Energy	Oil & Gas / Chemical Energy	Oil & Gas / Chemical Energy
Process connection	EN 1759-1 ASME B16.5 EN 1092-1	EN 1759-1 ASME B16.5	EN 1759-1 ASME B16.5	EN 1759-1 ASME B16.5
Flange material	Stainless steel	Stainless steel	Stainless steel	Stainless steel
Diaphragm material	Stainless steel Uranus B6 Hastelloy B Hastelloy C Tatalum	Stainless steel Hastelloy C	Stainless steel Hastelloy C	Stainless steel Hastelloy C
Measuring ranges	0 ... 25 mbar to 0 ... 400 bar	0 ... 10 mbar to 0 ... 100 bar	0 ... 500 mbar to 0 ... 250 bar	0 ... 10 mbar to 0 ... 420 bar
Nominal size	DN 50 ... 100 2" ... 4"	DN 15 ... 50 1/2" ... 2"	DN 20 ... 50 3/4" ... 2"	DN 15 ... 50 1/2" ... 2"
Pressure rating	PN 10 ... 100 Class 150 ... 2500	Class 150 ... 600	Class 1500	Class 1500 ... 2500
Approval	NACE MR0103, MR0175	NACE MR0103, MR0175	NACE MR0103, MR0175	NACE MR0103, MR0175

Optimized filling processes –
high accuracy and
low temperature coefficients.



D803



D853

General Data	■ Cell type ■ Flush diaphragm	■ Flange type with extended diaphragm
Industries	Oil & Gas / Chemical Water / Waste Water Energy Transport & Logistics	Oil & Gas / Chemical Water / Waste Water Energy Machinery
Process connection	Cell mounting	Flange with extension
Body material	Stainless steel	Stainless steel
Diaphragm material	Stainless steel Uranus B6 Hastelloy B Hastelloy C Tantalum Monel	Stainless steel Uranus B6 Hastelloy B Hastelloy C Tantalum Monel
Measuring ranges	0 ...160 mbar to 0 ... 400 bar	0 ...160 mbar to 0 ... 40 bar
Nominal size	DN 50 ... 100 2" ... 4"	DN 50 ... 100 2" ... 4"
Pressure rating	PN 10 ... 400 class 150 ... 2500	PN 10 ... 40 class 150 ... 600

Material certificates – full traceability of all wetted materials guaranteed by a dedicated material handling system.

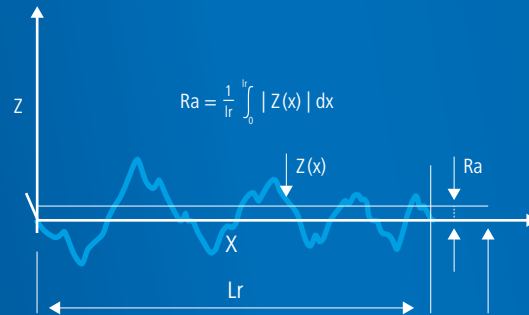


1500

1510

General Data	■ Longitudinal starshaped seal ■ Applicable for corrosive media ■ Compact diaphragm seal	■ Longitudinal starshaped seal ■ Applicable for corrosive media ■ Compact diaphragm seal
Industries	Oil & Gas / Chemical Water / Waste Water Energy Machinery	Oil & Gas / Chemical Water / Waste Water Energy Machinery
Process connection	G 3/4 DIN 3852 G 1/2 DIN 3852	Union nut G 3/4 or G1
Body material	Stainless steel	Stainless steel
Diaphragm material	Stainless steel	Stainless steel
Measuring ranges	0 ... 2.5 bar to 0 ... 1000 bar	0 ... 2.5 bar to 0 ... 1000 bar

For hygienic processes –
surface quality
 $Ra = 0.4 \dots 0.8 \mu m$



DANC



DAEL



DAEF



DAVA

General Data	■ Clamp connection ■ According NFE 29521, ISO 2852 ■ DIN 32676	■ SMS 1145 ■ With union nut	■ SMS 1145 ■ Threaded socket	■ Varivent®
Industries	Food & Beverage, Laboratory & Medical Water / Waste Water Machinery	Food & Beverage, Laboratory & Medical Water / Waste Water Machinery	Food & Beverage, Laboratory & Medical Water / Waste Water Machinery	Food & Beverage, Laboratory & Medical Water / Waste Water Machinery
Normal size	DN 25, 38, 40, 50, 51	DN 25, 38, 51, 1", 1 1/2", 2"	DN 38, 51, 1 1/2", 2"	DN 25, 40 / 125
Body material	Stainless steel 1.4435 (316L)	Stainless steel 1.4435 (316L)	Stainless steel 1.4435 (316L)	Stainless steel 1.4435 (316L)
Diaphragm material	Stainless steel 1.4435 (316L) Hastelloy C	Stainless steel 1.4435 (316L) Hastelloy C	Stainless steel 1.4435 (316L) Hastelloy C	Stainless steel 1.4435 (316L) Hastelloy C
Measuring ranges	0 ... 1 bar to 0 ... 40 bar	0 ... 1 bar to 0 ... 40 bar	0 ... 1 bar to 0 ... 40 bar	0 ... 1 bar to 0 ... 40 bar
Approval	3-A	3-A	3-A	
Additional information	■ $Ra < 0.8 \mu m$ ■ Option electropolished $Ra < 0.4 \mu m$	■ $Ra < 0.8 \mu m$ ■ Option electropolished $Ra < 0.4 \mu m$	■ $Ra < 0.8 \mu m$ ■ Option electropolished $Ra < 0.4 \mu m$	■ $Ra < 0.8 \mu m$ ■ Option electropolished $Ra < 0.4 \mu m$

Wetted materials and transmission fluids conform to hygienic requirements.



DAPH



DADF



DADL



1620, 1530, 1520, 1540

General Data	■ Clamp with extended membrane for flush mounting in tanks or pipes	■ DIN 11851 ■ Threaded socket	■ DIN 11851 ■ With union nut	■ In line seals for hygienic applications ■ No dead volume ■ DIN 32676 - ISO 2852 - SMS1146 - DIN 11851 - DIN 11864, ...
Industries	Food & Beverage, Laboratory & Medical Water / Waste Water	Food & Beverage, Laboratory & Medical Water / Waste Water	Food & Beverage, Laboratory & Medical Water / Waste Water	Food & Beverage Laboratory & Medical Machinery
Normal size	DN 38	DN 32, 40, 50	DN 25, 32, 40, 50	DN 15...80 1/2" ... 3"
Body material	Stainless steel 1.4404 (316L)	Stainless steel 1.4435 (316L)	Stainless steel 1.4435 (316L)	Stainless steel
Diaphragm material	Stainless steel 1.4435 (316L)	Stainless steel 1.4435 (316L) Hastelloy C	Stainless steel 1.4435 (316L) Hastelloy C	Stainless steel
Measuring ranges	0 ... 4 bar to 0 ... 25 bar	0 ... 1 bar to 0 ... 40 bar	0 ... 1 bar to 0 ... 40 bar	0 ... 1.6 bar to 0 ... 40 bar
Approval	3-A	3-A	3-A	
Additional information	■ Ra < 0.8 µm ■ Option electropolished Ra < 0.4 µm	■ Ra < 0.8 µm ■ Option electropolished Ra < 0.4 µm	■ Ra < 0.8 µm ■ Option electropolished Ra < 0.4 µm	■ Ra < 0.8 µm ■ Option electropolished Ra < 0.4 µm

Pressure accessories

On remote seals Bourdon® provides complete assembly with flushing ring and drain/vent valves.



ARPX



AMFD



AORP



ARA

General Data	- Shut off valves - Separation of gauge or transmitter from the process	- Manifold 2, 3 or 5 ways	- Pressure limiter - Protection of pressure gauges and transmitters from overpressure	- Pulsation dampener - Protection of pressure gauges and transmitters from pulsations
Industries	Oil & Gas / Chemical Water / Waste Water Energy Transport & Logistics Machinery	Oil & Gas / Chemical Water / Waste Water Energy	Oil & Gas / Chemical Water / Waste Water Energy Transport & Logistics Machinery	Oil & Gas / Chemical Water / Waste Water Energy Transport & Logistics Machinery
Process temperature	-20 ... +250 °C	Max. +200 °C	Max. +150 °C	Max. +250 °C
Max. pressure	400 bar	420 bar	700 bar	Max. 600 bar
Materials	Brass Steel Stainless steel PTFE	Stainless steel PTFE	Stainless steel Viton®	Brass Steel Stainless steel
Set points	-1 ... 400 bar			



ASIP



AKPL

General Data	- Siphon - Protects gauge from high fluid temperatures - Recommended for steam	- Capillary - Reduces medium temperature - Separates the instrument from heat sources - Reduces pulsations
Industries	Oil & Gas / Chemical Water / Waste Water Energy	Oil & Gas / Chemical Water / Waste Water Energy
Process temperature	Max. +400 °C	Max. +400 °C (depending on process pressure)
Max. pressure	Max. +400 bar	Max. +400 bar (depending on process temperature)
Materials	Steel Stainless steel	Stainless steel

Accurate and reliable temperature monitoring in heating, ventilation, and air-conditioning systems.



TB40, TB63



TB80, TB100, TB160



TBH



TBL

General Data	- Industrial applications - Small size - All stainless steel design	- Multi purpose standard thermometer - Zero adjustment	- HVAC applications - Short immersion tube for pipes up to Ø 2" - Zero adjustment	- For airducts in ventilation systems - Rear flange for wall mounting - Zero adjustment
Industries	Laboratory & Medical Energy Machinery	Water / Waste Water Energy Machinery HVAC	HVAC	HVAC
Nominal size (mm)	40, 63	80, 100, 160	80, 100	100
Measuring range	-30 ... +500 °C	-30 ... +500 °C	-20 ... +250 °C	-30 ... +80 °C
Accuracy (according to EN 13190)	Class 1 (≤ 250 °C) Class 2 (> 250 °C)	Class 1 (≤ 250 °C) Class 2 (> 250 °C)	Class 1	Class 1
Immersion tube material	Stainless steel 1.4571 (316Ti)	Cu-alloy (≤ 250 °C) Stainless steel 1.4571 (316Ti)	Cu-alloy (≤ 120 °C) Stainless steel 1.4571 (316Ti)	Cu-alloy
Immersion tube outlet	Center back	Center back or bottom	Center back	Center back
Immersion tube diameter	4 mm	8 mm	8 mm	8 mm
Immersion tube length	60 ... 400 mm	100 ... 1000 mm	48 ... 88 mm	165 mm
Case material	Stainless steel 1.4301 (304)	Stainless steel 1.4301 (304)	Stainless steel 1.4301 (304)	Stainless steel 1.4301 (304)
Sensing element	Bi-metal	Bi-metal	Bi-metal	Bi-metal
Protection rating	IP 52	IP 50	IP 50	IP 50

Bi-metal thermometers

Chemical and Petrochemical industry – thermometers for harsh environments.



TBX



TBI



TBHI



TBHA

General Data	■ HVAC applications ■ Conical immersion tube for good heat transfer ■ Zero adjustment	■ All stainless steel thermometer ■ For corrosive applications	■ Heavy industry version ■ Oil filling available as option	■ Clamp-on thermometer ■ For insulated pipes up to Ø 2" ■ Insulating material thickness 30...110 mm
Industries	HVAC	Oil & Gas / Chemical Water / Waste Water Energy	Oil & Gas / Chemical Water / Waste Water Energy	HVAC
Nominal size (mm)	80, 100, 160	80, 100, 130, 160	100, 130	80, 100
Measuring range	–20 ... +250 °C	–70 ... +600 °C	–70... +600 °C	–20 ... +160 °C
Accuracy (according to EN 13190)	Class 1	Class 1	Class 1	Class 1
Immersion tube material	Cu-alloy	Stainless steel 1.4571 (316Ti)	Stainless steel 1.4571 (316Ti)	Stainless steel 1.4571 (316Ti)
Immersion tube outlet	Center back or bottom	Bottom, center back, center back every angle	Center back every angle	Center back
Immersion tube diameter	Conical	6 mm, 8 mm	6 mm, 8 mm	n/a
Immersion tube length	60 mm	60 ... 1000 mm	60 ... 1000 mm	n/a
Case material	Stainless steel 1.4301 (304)	Stainless steel 1.4301 (304)	Stainless steel 1.4301 (304)	Stainless steel 1.4301 (304)
Sensing element	Bi-metal	Bi-metal	Bi-metal	Bi-metal
Protection rating	IP 50	IP 67	IP 68	IP 50
Approval		ATEX Ex II 2 GDC	ATEX Ex II 2 GDC	

Gas filled thermometers – remote temperature measurement and applications with setpoints.

**TSS****TSF****TSSE****TSFE**

General Data	■ Direct measurement industrial thermometer ■ Liquid filling as option ■ Zero adjustment	■ Remote measurement industrial thermometer ■ Liquid filling as option ■ Zero adjustment	■ Direct reading industrial thermometer ■ With contacts ■ Liquid filling as option	■ Remote measurement industrial thermometer ■ With contacts ■ Liquid filling as option
Industries	Oil & Gas / Chemical Water / Waste Water Energy Machinery	Oil & Gas / Chemical Water / Waste Water Energy Machinery	Oil & Gas / Chemical Water / Waste Water Energy Machinery	Oil & Gas / Chemical Water / Waste Water Energy Machinery
Nominal size (mm)	63, 80, 100, 160, 250	63, 80, 100, 160, 250	100, 160	100, 160
Measuring range	–200 ... +800 °C	–200 ... +800 °C	–200 ... +800 °C	–200 ... +800 °C
Accuracy (according to EN 13190)	Class 1	Class 1	Class 1	Class 1
Immersion tube material	Stainless steel 1.4541 (321)	Stainless steel 1.4541 (321)	Stainless steel 1.4541 (321)	Stainless steel 1.4541 (321)
Immersion tube diameter	6 mm, 8 mm, 11 mm, 14 mm	6 mm, 8 mm, 11 mm, 14 mm	6 mm, 8 mm, 11 mm, 14 mm	6 mm, 8 mm, 11 mm, 14 mm
Immersion tube length	100 ... 1000 mm	100 ... 1000 mm	100 ... 1000 mm	100 ... 1000 mm
Capillary	n/a	0.5 to 30 m	n/a	0.5 to 30 m
Contacts	n/a	n/a	1 or 2 set points sliding, magnetic spring or inductive contacts	1 or 2 set points sliding, magnetic spring or inductive contacts
Case and sleeve material	Stainless steel 1.4301 (AISI 304)	Stainless steel 1.4301 (AISI 304)	Stainless steel 1.4301 (AISI 304)	Stainless steel 1.4301 (AISI 304)
Sensing element	Gas filled plunger	Gas filled plunger and capillary	Gas filled plunger	Gas filled plunger and capillary
Protection rating	IP 65	IP 65	IP 65	IP 65
Approval	ATEX Ex II 2 GDC	ATEX Ex II 2 GDC	ATEX Ex ia IIC T4 Gb Ex ia IIIC T135°C ... T85°C Db	ATEX Ex ia IIC T4 Gb Ex ia IIIC T135°C...T85°C Db

Highest quality standards – thermowells produced, tested and certified up to 1 m length.



**T8410,
T9093, T9143, T9346**



T8416, T9144, T9367



AGW, AGF

General Data	■ HVAC and industrial applications ■ Fitting all TBx and TSx ■ Threaded process connection	■ HVAC and industrial applications ■ Fitting all TBx and TSx ■ Welded process connection	■ Process applications ■ DIN / ISO / ANSI / Flanges ■ Threaded connections (NPT or G)
Industries	Water / Waste Water Machinery HVAC	Water / Waste Water Machinery HVAC	Oil & Gas / Chemical Water / Waste Water Energy
Process temperature	Max. 650 °C	Max. 650 °C	Max. 600 °C (depending on process pressure)
Max. pressure	Max. 250 bar	Max. 250 bar	Max. 400 bar (depending on process temperature)
Materials	Brass / steel / stainless steel	Steel / stainless steel	Stainless steel
Length	50 ... 1000 mm	50 ... 1000 mm	100 ... 1000 mm
For immersion tube Ø	4, 6, 8 mm	6, 8 mm	7 to 18 mm



From mechanic to electronic.
From digital to analogue.
Bourdon® portfolio provides
various product families with
ATEX approvals.



**RT2N,
RT2Y, RT2E**



**RTN,
RTNY, RTNE**

General Data	■ Compact temperature switch ■ Good vibration resistance	■ Standard temperature switch ■ Adjustable setpoint(s) and deadband
Industries	Oil & Gas / Chemical Water / Waste Water Energy Machinery	Oil & Gas / Chemical Water / Waste Water Energy Machinery
Measuring ranges	−40 ... + 350 °C	−40 ... + 350 °C
Wetted parts material	Stainless steel	Stainless steel
Set points	1	1
Repeatability	± 1% F.S.	± 1% F.S.
Current rating	10 mA to 10 A max. 250 VAC / 220 VDC	5 mA to 10 A max. 250 VAC / 220 VDC
Sensor type	Stem 9.5 mm (rigid or with capillary)	Stem 14 mm (rigid or with capillary)
Connection	G 1/2 1/2 NPT	G 1/2 1/2 NPT
Body / Housing material	Polyamid PA6 Aluminum for EEx d	ZnAl - alloy Aluminum for EEx d
Protection rating	IP 66	IP 66
Approval	Options: ■ ATEX, EEx ia (RT2Y) ■ ATEX, EEx d (RT2E)	Options: ■ ATEX, EEx ia (RTNY) ■ ATEX, EEx d (RTNE)

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Mechanical pressure measurement

Pressure gauges

Industry segments								Product specifications								Certificates										
Food & Beverage	Medical- & Laboratory technology	Oil & Gas / Chemical industry	Water / Wastewater	Energy	Transport & Logistics	Machine building	HVAC	Nominal size mm	Minimum pressure range	Maximum pressure	Precision class	Pressure gauge	Differential pressure gauge	Wetted parts		Product family	Switching function	Local indicator	ATEX	EN-837	Gost-R	Marine	Page			
								63	0 ... 1 bar	0 ... 250 bar	2.5	■		C		Industrial pressure gauge		■		■				4		
								63	0 ... 1 bar	0 ... 600 bar	1.6	■		C		Industrial pressure gauge		■		■				4		
■	■	■	■					40	0 ... 1.6 bar	0 ... 25 bar	2.5	■		E		Industrial pressure gauge		■		■	■			4		
■	■	■						50	0 ... 1 bar	0 ... 1000 bar	1.6	■		E		Industrial pressure gauge		■		■	■	■		4		
■	■	■	■	■	■	■		63	0 ... 1 bar	0 ... 1000 bar	1.6	■		E		Industrial pressure gauge		■		■	■	■	■	5		
■	■	■	■	■	■	■		100	0 ... 0.6 bar	0 ... 1600 bar	1	■		E		Industrial pressure gauge		■		■	■	■	■	5		
■	■	■	■	■	■	■		150	0 ... 0.6 bar	0 ... 1600 bar	1	■		E		Industrial pressure gauge		■		■	■	■	■	5		
■	■	■	■	■	■	■		160	0 ... 0.6 bar	0 ... 1600 bar	1	■		E		Industrial pressure gauge		■		■	■	■	■	5		
		■		■				130	0 ... 0.6 bar	0 ... 1600 bar	2A	■		E		Phenolic / Polypropylen pressure gauge		■			■			6		
■	■	■	■	■	■	■		63	0 ... 1.6 bar	0 ... 400 bar	1.6	■		M		Industrial pressure gauge		■	■	■	■			5		
■	■	■	■	■	■	■		100	0 ... 1 bar	0 ... 600 bar	1	■		M		Industrial pressure gauge		■	■	■	■			5		
■	■	■	■	■	■	■		150	0 ... 1 bar	0 ... 600 bar	1	■		M		Industrial pressure gauge		■	■	■	■			5		
			■	■				130	0 ... 1 bar	0 ... 600 bar	2A	■		M		Phenolic / Polypropylen pressure gauge		■			■			6		
			■	■				100	0 ... 0.6 bar	0 ... 1600 bar	1	■		E		Safety pressure gauge		■	■	■	■			6		
■	■	■	■	■	■	■		100	0 ... 1 bar	0 ... 600 bar	1	■		M		Safety pressure gauge		■	■	■	■			6		
■	■	■	■	■	■	■		100	0 ... 100 bar	0 ... 25 bar	1.6	■		E		Diaphragm pressure gauge with contact		■	■					7		
■	■	■	■	■	■	■		100	0 ... 0.6 bar	0 ... 600 bar	1	■		E		Pressure gauge with analog output		■		■				7		
■	■	■	■	■	■	■		100	0 ... 1 bar	0 ... 1600 bar	1	■		E		Pressure gauge with inductive contact		■	■					7		
■	■	■	■	■	■	■		100	0 ... 1 bar	0 ... 1600 bar	1	■		E		Pressure gauge with mechanical contact		■	■					7		
■	■	■	■	■				100	0 ... 25 mbar	0 ... 25 bar	±1%		■	E, M, H		Differential pressure gauge		■	■	■				8		
■	■	■	■	■				150	0 ... 25 mbar	0 ... 25 bar	±1%		■	E, M, H		Differential pressure gauge		■	■	■				8		
■	■	■	■	■				150	0 ... 100 mbar	0 ... 25 bar	±2%		■	E		Differential pressure gauge		■	■	■				8		
■	■	■	■	■				150	0 ... 250 mbar	0 ... 25 bar	±3%		■	E		Differential pressure gauge with contact		■	■	■				8		
■	■	■	■	■				150	0 ... 10 mbar	0 ... 250 mbar	±2%		■	E		Low differential pressure gauge		■	■	■				8		
■	■	■	■	■				100	0 ... 60 mbar	0 ... 25 bar	1.6	■		E		Diaphragm pressure gauge		■	■	■				9		
■	■							100	0 ... 6 bar	0 ... 10 bar	1.6	■		E		Hygienic diaphragm pressure gauge		■	■	■				9		
	■	■	■	■				150	0 ... 100 mbar	0 ... 16 bar	±2%	■		E		Absolute pressure gauge		■		■				10		
		■	■	■				150	0 ... 250 mbar	0 ... 16 bar	±3%	■		E		Absolute pressure gauge with contact		■	■	■				10		
		■						50	0 ... 60 mbar	0 ... 600 mbar	1.6	■		C		Low pressure gauge		■	■	■				10		
		■						63	0 ... 60 mbar	0 ... 600 mbar	1.6	■		C		Low pressure gauge		■	■	■				10		
		■						100	0 ... 16 mbar	0 ... 600 mbar	1.6	■		C		Low pressure gauge		■	■	■				11		
		■						150	0 ... 10 mbar	0 ... 600 mbar	1.6	■		E		Low pressure gauge, overpressure resistant		■	■	■				11		
		■	■					150	0 ... 6 mbar	0 ... 600 mbar	2.5	■		E		Low pressure gauge, overpressure resistant		■	■	■				11		
		■	■					100	0 ... 16 mbar	0 ... 600 mbar	1.6	■		E		Low pressure gauge		■	■	■				11		
■	■							80	0 ... 6 bar	0 ... 60 bar	1	■		C		Refrigeration gauge		■	■	■				12		
■	■							100	0 ... 6 bar	0 ... 60 bar	1	■		C		Refrigeration gauge		■	■	■				12		
							■	100	0 ... 1 bar	0 ... 60 bar	1	■		C		Pressure gauges for HVAC		■	■	■				12		

E = Stainless steel, M = Monel, C = Copper alloy, H = Hastelloy

Diaphragm seals

Industry segments						Product specifications				
Food & Beverage	Medical- & Laboratory technology	Oil & Gas / Chemical industry	Water / Wastewater	Energy	Transport & Logistics	Machine building	Range of application		Product family	Page
							0 ... 2.5 bar to 0 ... 10 bar	Screwed connection, plastic	D030	14
							0 ... 1 bar to 0 ... 250 bar	Screwed connection, stainless steel	D04x	14
							0 ... 1 bar to 0 ... 600 bar	Screwed connction, flush diaphragm	D05x	14
							0 ... 10 bar to 0 ... 160 bar	Standard seal for medium high pressure	DT1	14
							0 ... 1 bar to 0 ... 40 bar	Standard seal for normal pressure	DT2	15
							0 ... 160 mbar to 0 ... 25 bar	Standard seal for low pressure	DT3	15
							0 ... 160 bar to 0 ... 1000 bar	Standard seal for very high pressure	DT5	15
							0 ... 40 bar to 0 ... 400 bar	Standard seal for high pressure	DT8	15
							0 ... 160 mbar to 0 ... 420 bar	Flange seal, flush diaphragm	D82x	16
							0 ... 160 mbar to 0 ... 420 bar	Flange seal, diaphragm not flush	D4xx	16
							0 ... 160 mbar to 0 ... 160 bar	Seal with extended flange	D6xx	16
							0 ... 1.6 bar to 0 ... 250 bar	Tubular seal for flange mounting	1650	16
							0 ... 10 mbar to 0 ... 250 bar	Process seal for transmitters	D92x	17
							0 ... 10 mbar to 0 ... 100 bar	Process seal for transmitters	D912	17
							0 ... 10 mbar to 0 ... 250 bar	Process seal for transmitters	D944	17
							0 ... 10 mbar to 0 ... 420 bar	Process seal for transmitters	D918	17
							0 ... 160 mbar to 0 ... 400 bar	Cell type	D803	18
							0 ... 160 mbar to 0 ... 40 bar	Flange type with extended diaphragm	D853	18
							0 ... 2.5 bar to 0 ... 1000 bar	Tongue seal with external thread	1500	19
							0 ... 2.5 bar to 0 ... 1000 bar	Tongue seal with union nut	1510	19
							0 ... 1 bar to 0 ... 40 bar	Clamp connection	DANC	20
							0 ... 1 bar to 0 ... 40 bar	SMS 1145 (union nut)	DAEL	20
							0 ... 1 bar to 0 ... 40 bar	SMS 1145 (threaded socket)	DAEF	20
							0 ... 1 bar to 0 ... 40 bar	Varivent®	DAVA	20
							0 ... 4 bar to 0 ... 25 bar	Clamp connection	DAPH	21
							0 ... 1 bar to 0 ... 40 bar	DIN 11851 (threaded socket)	DADF	21
							0 ... 1 bar to 0 ... 40 bar	DIN 11851 (union nut)	DADL	21
							0 ... 1.6 bar to 0 ... 40 bar	Tubular seal with clamp connection	1620	21
							0 ... 1.6 bar to 0 ... 40 bar	Tubular seal, connection A DIN 11887	1530	21
							0 ... 1.6 bar to 0 ... 40 bar	Tubular seal, connection SMS 1146	1520	21
							0 ... 1.6 bar to 0 ... 40 bar	Tubular seal, steril screwed connection ISO	1540	21

Pressure switches

Industry segments						Product specifications						Certificates			
Oil & Gas / Chemical industry	Water / Wastewater	Energy	Transport & Logistics	Machine building	HVAC	Range of application			Product family	Switching function	Local indicator	ATEX	Gost-R	Page	
						0 ... 1 bar to 0 ... 100 bar	Compact mechanic pressure switch	RP2N, RP2Y, RP2E						13	
						−50 ... 0 mbar to 60 ... 600 bar	Industrial mechanic pressure switch	RPPN, RPPY, RPPE						13	
						−2.5 ... 2.5 mbar to 2.5 ... 30 bar	Mechanic differential pressure switch	RDN, RDY, RDE						13	

Pressure switches accessories

Industry segments						Product specifications					
Oil & Gas / Chemical industry	Water / Wastewater	Energy	Transport & Logistics	Machine building	HVAC	Range of application			Product family	Page	
						−50 ... +250 °C	Max. 400 bar	Shutt-off valve	ARPX	22	
						Max. 200 °C	Max. 420 bar	Manifold	AMFD	22	
						Max. 150 °C	Max. 700 bar	Pressure limiter	AORP	22	
						Max. 250 °C	Max. 600 bar	Pulsation dampener	ARA	22	
						Max. 400 °C	Max. 400 bar	Syphon	ASIP	22	
						Max. 400 °C	Max. 400 bar	Capillary	AKPL	22	

Mechanical temperature measurement

Thermometers

Industry segments						Product specifications						Certificates					
Oil & Gas / Chemical industry	Water / Wastewater	Energy	Transport & Logistics	Machine building	HVAC	Bi-Metal thermometer	Gas filled thermometer	Nominal size mm	Range of application		Product family	Switching function	Local indicator	ATEX	Gost-R	Page	
						☒		40, 63	−30 ... +500 °C	Industrial standard type	TB40, TB63					23	
						☒		80, 100, 160	−30 ... +500 °C	Industrial standard type	TB80, TB100, TB160					23	
						☒		80, 100	−20 ... +250 °C	Short immersion tube	TBH					23	
						☒		100	−20 ... +250 °C	For airducts	TBL					23	
						☒		80 ... 160	−30 ... +80 °C	Conical immersion tube	TBX					24	
		☒	☒	☒		☒		80 ... 160	−70 ... +600 °C	Stainless steel, IP 67	TBI			☒	☒	24	
		☒	☒			☒		100, 130	−70 ... +600 °C	Heavy industry version, IP 68	TBHI			☒	☒	24	
						☒		80, 100	−20 ... +160 °C	Clamp-on thermometer	TBHA					24	

☒	☒	☒	☒		☒			63 ... 250	−200 ... +800 °C	Direct measurement	TSS			☒	☒	25	
☒	☒	☒	☒		☒			63 ... 250	−200 ... +800 °C	Remote measurement	TSF			☒	☒	25	
☒	☒	☒	☒		☒			100, 160	−200 ... +800 °C	Direct reading with contact	TSSE		☒	☒	☒	25	
☒	☒	☒	☒		☒			100, 160	−200 ... +800 °C	Remote measurement with contact	TSFE		☒	☒	☒	25	

Thermowells

Industry segments						Product specifications					
Oil & Gas / Chemical industry	Water / Wastewater	Energy	Transport & Logistics	Machine building	HVAC	Range of application			Product family	Page	
						Max. 650 °C	Max. 250 bar	Screwed connection	T8410, T8911, T9093, T9143, T9346	26	
						Max. 650 °C	Max. 250 bar	Welded connection	T8416, T8916, T9144, T9357	26	
						Max. 600 °C	Max. 400 bar	Process thermowells	AGW, AGF	26	

Temperature switches

Industry segments						Product specifications				Certificates				
Oil & Gas / Chemical Industry	Water / Wastewater	Energy	Transport & Logistics	Machine building	HVAC	Range of application		Product family	Switching function (digital)	Local indicator (analog)	ATEX	Gost-R	Page	
						−46 ... 0 °C to 160 ... 250 °C	Compact mechanic temperature switch	RT2N, RT2Y, RT2E					27	
						−46 ... 0 °C to 200 ... 270 °C	Industrial mechanic temperature switch	RTN, RTNY, RTNE					27	