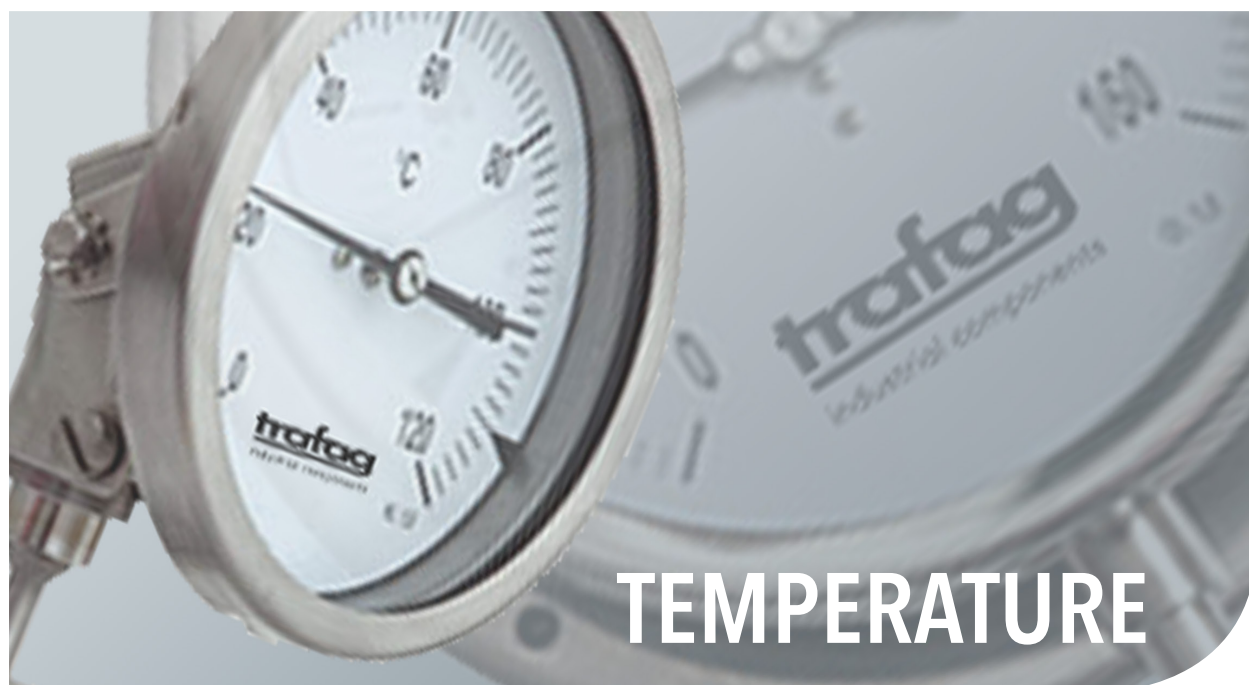


PRESSURE & TEMPERATURE GAUGES



PRESSURE

Catalogue H20200a



TEMPERATURE

Applications

The label *Trafag Industrial Components* extends the Trafag brand name to instruments manufactured by qualified partner companies.

Trafag Industrial Components complement the genuine Trafag product range to offer customers a complete portfolio from one single source.

Pressure and temperature applications



Oil & Gas



Petrochemical



Food and Beverages



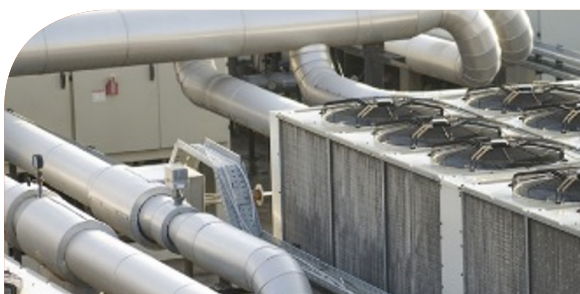
Water and waste water treatment



Steel and power



Cement



Glass



Pharmaceutical

Product lines: pressure gauges

In order to get a precise pressure measurement in a wide range of different application, it's possible to choose between different measurement systems as Bourdon tube, diaphragm or capsule. Pressure elements are also available in different materials as copper alloy, stainless steel or special alloys, in order to satisfy requirements of every industrial applications.



Bourdon tube pressure gauges for generic applications

These gauges are used for liquid or gaseous fluids, not highly viscous or crystallizing and are manufactured according to EN 837-1.

For any measurements with high dynamic loads, we recommend the use of liquid filling with glycerin or silicone oil.



Diaphragm pressure gauges for aggressive fluids

The application areas for these gauges with diaphragm measuring element are aggressive gaseous and liquid fluids. Gauges are also available with flanged connections for highly viscous and contaminated fluids, also suitable for aggressive environments.

Special materials for wetted parts are available as option.



Capsule pressure gauges for very low pressures

This type of pressure gauges is particularly suitable for gaseous fluids. These instruments are mainly used in medical, vacuum technology and laboratories applications.



Pressure gauges for differential pressure

Differential pressure gauges are available with a wide range of measuring elements.

They are used to monitor the degree of clogging in filter systems, the level in closed tanks and the flow of gaseous and liquid fluids.

TMP101

The TMP101 All Stainless Steel Pressure Gauge with bourdon tube sensing element offers a robust design in housing size \geq DN100.

Features

- All SS measuring system
- Socket-case, direct welded
- Dry / liquid filled
- CE marking

Reference

- EN 837-1
- PED 97/23/EC



Standard parameters

Accuracy	CL 1.0	
Ambient temperature	-40 ... +65°C (without dampening liquid)	-20 ... +65°C (with dampening liquid)
Service temperature	300°C max	
Pressure limits	Steady pressure up to FS value Fluctuating pressure up to 90% of FS value	Short time 1.3 x FS value for range up to 100 bar Short time 1.15 x FS value for range above 100 bar
Measuring range	-1 ... 0 to 0 ... 1600 bar	
Weld joints	TIG argon arc welding	

TMP102

The TMP102 All Stainless Steel Pressure Gauge with bourdon tube sensing element offers a robust design with external zero adjustment.

Features

- All SS measuring system
- Socket-case, direct welded
- Threaded / Flanged connection
- Over-pressure safety up to 10 times FS max. 40 bar

Reference

- EN 837-1
- PED 97/23/EC



Standard parameters

Accuracy	CL 1.0	
Ambient temperature	-40 ... + 65°C (without dampening liquid)	-20 ... + 65°C (with dampening liquid)
Service temperature	300°C max	
Pressure limits	Steady pressure up to FS value Fluctuating pressure up to 90% of FS value	Short time 1.3 x FS value for range up to 100 bar Short time 1.15 x FS value for range above 100 bar
Measuring range	-1 ... 0 to 0 ... 1600 bar	
Weld joints	TIG argon arc welding	

TMP103

The TMP103 All Stainless Steel Pressure Gauge with bourdon tube sensing element offers a robust design in housing size \leq DN100.

Features

- All SS measuring system
- Socket-case, direct welded
- Dry / liquid filled

Reference

- EN 837-1



Standard parameters

Accuracy	CL 1.6 (DN63 / DN80 / DN100) & CL 2.5 (DN50)	
Ambient temperature	-40 ... + 65°C (without dampening liquid)	-20 ... + 65°C (with dampening liquid)
Service temperature	300°C max	
Pressure limits	Steady pressure up to FS value Fluctuating pressure up to 90% of FS value	Short time 1.3 x FS value for range up to 100 bar Short time 1.15 x FS value for range above 100 bar
Measuring range	-1 ... 0 to 0 ... 1000 bar	
Weld joints	TIG argon arc welding	

TMP104

The TMP102 All Stainless Steel Pressure Gauge with bourdon tube sensing element offers a robust design in DIN style case and ring.

Features

- All SS measuring system
- Socket-case, direct welded
- Dry / liquid filled
- CE marking

Reference

- EN 837-1
- PED 97/23/EC



Standard parameters

Accuracy	CL 1.0 (DN100 / DN150) & CL 1.6 (DN63)	
Ambient temperature	-40 ... + 65°C (without dampening liquid)	-20 ... + 65°C (with dampening liquid)
Service temperature	300°C max	
Pressure limits	Steady pressure up to FS value Fluctuating pressure up to 90% of FS value	Short time 1.3 x FS value for range up to 100 bar Short time 1.15 x FS value for range above 100 bar
Measuring range	-1 ... 0 to 0 ... 1600 bar	
Weld joints	TIG argon arc welding	

TMP201

The TMP201 High Safety Pressure Gauge is equipped with a solid front with full blow-out back.

Features

- Safety pattern type
- All stainless steel system
- Dry / liquid filled
- CE marking

Reference

- EN 837-1
- PED 97/23/EC



Standard parameters

Accuracy	CL 1.0	
Ambient temperature	-40 ... + 65°C (without dampening liquid)	-20 ... + 65°C (with dampening liquid)
Service temperature	300°C max	
Pressure limits	Steady pressure up to FS value Fluctuating pressure up to 90% of FS value	Short time 1.3 x FS value for range up to 100 bar Short time 1.15 x FS value for range above 100 bar
Measuring range	-1 ... 0 to 0 ... 1600 bar	
Weld joints	TIG argon arc welding	

TMP202

The TMP202 All Stainless Steel Pressure Gauge is equipped with a solid front with external zero adjustment.

Features

- Solid front with full blow back
- All stainless steel system
- External zero adjustment
- Dry / liquid filled
- CE marking

Reference

- EN 837-1
- PED 97/23/EC



Standard parameters

Accuracy	CL 1.0	
Ambient temperature	-40 ... + 65°C (without dampening liquid)	-20 ... + 65°C (with dampening liquid)
Service temperature	300°C max	
Pressure limits	Steady pressure up to FS value Fluctuating pressure up to 90% of FS value	Short time 1.3 x FS value for range up to 100 bar Short time 1.15 x FS value for range above 100 bar
Measuring range	-1 ... 0 to 0 ... 1600 bar	
Weld joints	TIG argon arc welding	

TMP203

 Data sheet
www.trafag.com/H20007

The TMP203 High Safety Pressure Gauge in miniature design DN63 is ideally suited where space is tight.

Features

- All SS measuring system
- Socket-case, direct welded
- Dry / liquid filled

Reference

- EN 837-1



Standard parameters

Accuracy	CL 1.6	
Ambient temperature	-40 ... + 65°C (without dampening liquid)	-20 ... + 65°C (with dampening liquid)
Service temperature	300°C max	
Pressure limits	Steady pressure up to FS value Fluctuating pressure up to 90% of FS value	Short time 1.3 x FS value for range up to 100 bar Short time 1.15 x FS value for range above 100 bar
Measuring range	-1 ... 0 to 0 ... 1000 bar	
Weld joints	TIG argon arc welding	

TMP204

 Data sheet
www.trafag.com/H20008

The TMP204 Pressure Gauge Phenol case with a solid front, with full blow back.

Features

- Solid front with full blow back
- All stainless steel system
- Dry / liquid filled
- Light weight
- Stabilized accuracy

Reference

- ANSI B 40.100



Standard parameters

Accuracy	Grade 2A ($\pm 0.5\%$)	
Ambient temperature	-20 ... + 65°C (without dampening liquid)	10 ... + 65°C (with dampening liquid, glycerin)
Service temperature	120°C max	
Pressure limits	Steady pressure up to FS value Fluctuating pressure up to 90% of FS value	Short time 1.3 x FS value for range up to 100 bar Short time 1.15 x FS value for range above 100 bar
Measuring range	-1 ... 0 to 0 ... 1600 bar	
Weld joints	TIG argon arc welding	

TMP301

The TMP301 All Stainless Steel Differential Pressure Gauge with double diaphragm type Single Side static up to 200 bar sustainable.

Features

- Single side static sustainable
- Static pressure 400 bar max.
- External Zero adjustment
- Electric contact version
- Dry / liquid filled
- ATEX certified

Reference

- EN 837-3



Standard parameters

Accuracy ¹	CL 1.6 (AISI 316L SS / Hastelloy C276)	CL 2.5 (Monel 400)
Ambient temperature	-40 ... + 60°C (without dampening liquid)	-20 ... + 60°C (with dampening liquid)
Service temperature	100°C max	
Static pressure limits (on either side)	100 bar / 250 bar / 400 bar	
Over-pressure safety	400 bar for ranges 0 ... 0.4 bar up to 0 ... 40 bar	
Zero shift	Max. ± 2% at 20°C and max. static pressure	
Measuring range	0 ... 60 mbar to 0 ... 40 bar	

TMP501

The TMP501 All Stainless Steel Pressure Gauge with bourdon tube sensing element offers a robust design with electric contact, dome style.

Features

- All SS measuring system
- Socket-case, direct welded
- CE marked contacts
- Liquid filled versions

Reference

- EN 837-1



Standard parameters

Accuracy	CL 1.0	
Ambient temperature	-40 ... + 65°C (without dampening liquid)	-20 ... +65°C (with dampening liquid)
Service temperature	200°C max	
Pressure limits	Steady pressure up to FS value	Fluctuating pressure up to 90% of FS value
Weld joint	TIG argon arc welding	
Measuring range	-1 ... 0 to 0 ... 1600 bar	

TMP502

The TMP502 All Stainless Steel Pressure Gauge with bourdon tube sensing element offers a robust design with electric contact, hi-version case.

Features

- All SS measuring system
- Socket-case, direct welded
- CE marked contacts
- Liquid filled versions

Reference

- EN 837-1



Standard parameters

Accuracy	CL 1.0	
Ambient temperature	-40 ... + 65°C (without dampening liquid)	-20 ... + 65°C (with dampening liquid)
Service temperature	200°C max	
Pressure limits	Steady pressure up to FS value	Fluctuating pressure up to 90% of FS value
Weld joint	TIG argon arc welding	
Measuring range	-1 ... 0 to 0 ... 1600 bar	

TMP601

The TMP601 All Stainless Steel Pressure Gauge with welded capsule allows the monitoring of low pressures down to 6 mbar.

Features

- All SS measuring system
- Socket-case, direct welded
- Low pressure application (<0.6 bar)
- Zero adjustment on dial

Reference

- EN 837-3



Standard parameters

Accuracy	CL 1.6	
Ambient temperature	-40 ... + 65°C	
Service temperature	150°C max	
Pressure limits	Steady pressure up to FS value	Fluctuating pressure up to 90% of FS value
Weld joints	TIG argon arc welding	
Measuring range	-600 ... 0 mbar to 0 ... 600 mbar	

TMP602

The TMP602 All Stainless Steel Pressure Gauge with diaphragm sensor allows the monitoring of low pressures down to 6 mbar.

Features

- All SS measuring system
- Socket-case, direct welded
- Threaded / Flanged connection
- External zero adjustment

Reference

- EN 837-3



Standard parameters

Accuracy	CL 1.6	
Ambient temperature	-40 ... + 65°C	
Service temperature	100°C max	
Pressure limits	Steady pressure up to FS value	Fluctuating pressure up to 90% of FS value
Weld joints	TIG argon arc welding	
Measuring range	-1 ... 0 to 0 ... 25 bar 0 ... 6 to 0 ... 600 mbar	

TMP603

The TMP603 Stainless Steel Case Brass Pressure Gauge with welded capsule allows the monitoring of low pressures with external zero adjustment.

Features

- Compact design
- Stainless steel case
- Zero adjustment on dial
- Low pressure application (<0.6 mbar)

Reference

- EN 837-3



Standard parameters

Accuracy	CL 1.6	
Ambient temperature	-40 ... +65°C	
Service temperature	100°C max	
Pressure limits	Steady pressure up to 75% of FS value, No over-pressure	
Weld joint	Silver alloy brazing	
Measuring range	-600 ... 0 to 0 ... 600 mbar	

TMP604

The TMP604 All Stainless Steel Pressure Gauge with diaphragm sensor allows the monitoring of low pressures down to 6 mbar with one or two micro switches.

Features

- All SS measuring system
- Socket-case, direct welded
- Threaded / Flanged connection
- Over-pressure safety up to 10 times FS max. 40 bar

Reference

- EN 837-3



Standard parameters

Accuracy	CL 1.6	
Ambient temperature	-20 ... +60°C / -40 ... +60°C with silicon oil dampening	
Service temperature	100°C max	
Pressure limits	Over pressure up to 1.3 FS value Steady pressure up to FS value	Fluctuating pressure up to 90% of FS value
Weld joint	TIG argon arc welding	
Measuring range	0 ... 10 to 0 ... 250 mbar 0 ... 0,4 to 0 ... 40 bar	

TMP801

The TMP801 Test Gauge with high accuracy CL0.25 is designed for calibration and test applications.

Features

- Precision measuring system
- High resolution dial
- Knife Edge pointer
- Anti-parallax mirror band
- Jewel bearing movement
- Easy to read scale

Reference

- EN 837-1



Standard parameters

Accuracy	CL 0.25	
Ambient temperature	20 ... +65°C	
Service temperature	65°C max	
Pressure limits	Steady pressure up to 75% of FS value	
Weld joints	Silver alloy brazing	
Measuring range	-1 ... 0 to 0 ... 700 bar	

Product line: temperature gauges

Temperature gauges work with bimetallic or gas expansion measuring principle and temperature ranges from -200°C to $+700^{\circ}\text{C}$ with different classes of accuracy, response time and the ability to withstand environmental changes. They are available with different process connection, diameter and length of the bulb, allowing a flexible design for reaching the measuring point. If required by the application, the thermometers can be installed inside a thermowell.



Bimetal temperature gauges

Temperature measurement is made by a bimetal system placed inside the thermometric sensor.

The temperature variation causes the bimetal spiral or helix to rotate on its axis: value of this rotation is then indicated on a graduated temperature scale. Bimetal thermometers are available for temperature ranges from -70°C up to 500°C with an accuracy according to class 1, standard EN 13190.



Inert gas temperature gauges

These thermometers are made with a bulb sensor, a capillary and a case containing a tubular spring filled with a pressurized inert gas. Any temperature change causes a change in the inner gas pressure: this pressure variation is then measured by a Bourdon tube system and indicated on a dial with a scale with temperature units. Inert gas temperature gauges are available for temperature ranges from -200°C to 700°C with an accuracy according to class 1. They are designed for heavy applications, and can sustain severe shocks, vibrations and resist to high ambient temperatures and humidity.

TMT501

The TMT501 Industrial Bimetal Thermometer offers a wide range of options and features for general purpose applications.

Features

- Bimetal helix system
- Hermetically sealed
- Stem length max 1.5 Mtr
- Optional External Zero adjustment

Reference

- EN 13190



Standard parameters

Accuracy	CL 1.0 (Class 1)	
Ambient temperature	-20 ... +60°C	
Over range limits	110% full scale	
Stem pressure rating	25 bar (Without thermowell)	
Weld joints	TIG argon arc welding	
Measuring range	-80 ... 0 to 0 ... 600°C	-110 ... 0 to 0 ... 1100°F

TMT502

The TMT502 Industrial Bimetal Thermometer offers a wide range of options and features for general purpose applications.

Features

- Bimetal helix system
- Hermetically sealed
- Every angle entry
- External zero adjustment

Reference

- EN 13190



Standard parameters

Accuracy	CL 1.0 (Class 1)	
Ambient temperature	-20 ... +60°C	
Over range limits	110% full scale	
Stem pressure rating	25 bar (Without thermowell)	
Weld joints	TIG argon arc welding	
Measuring range	-80 ... 0 to 0 ... 600°C	-110 ... 0 to 0 ... 1100°F

TMT701

The TMT701 Industrial Filled System Thermometer, with external zero adjustment offers a wide range of options and features for general purpose applications.

Features

- Inert gas filled expansion
- Filled versions
- Bi-metal compensation

Reference

- EN 13190



Standard parameters		
Accuracy	CL 1.0 (Class 1)	
Permissible ambient temperature	-40 ... +60°C with/without dampening	
Storage & Transport temperature	-50 ... +70°C without liquid dampening	-20 ... +60°C with liquid dampening
Over range limits	110% full scale	
Stem pressure rating	25 bar (Without thermowell)	
Weld joints	TIG argon arc welding	
Measuring range	-200 ... 0 to 0 ... 700°C	-330 ... 0 to 0 ... 1290°F

TMT702

The TMT702 Industrial Filled System Thermometer offers a wide range of options and features for general purpose applications.

Features

- Inert gas filled expansion
- Filled versions
- Bi-metal compensation

Reference

- EN 13190



Standard parameters		
Accuracy	CL 1.0 (Class 1)	
Permissible ambient temperature	-40 ... +60°C with/without dampening	
Storage & Transport temperature	-50 ... +70°C without liquid dampening	-20 ... +60°C with liquid dampening
Over range limits	110% full scale	
Stem pressure rating	25 bar (Without thermowell)	
Weld joints	TIG argon arc welding	
Measuring range	-200 ... 0 to 0 ... 700°C	-330 ... 0 to 0 ... 1290°F

TMT703

The TMT702 Industrial Filled System Thermometer with electric contact, offers a wide range of options and features for general purpose applications

Features

- Inert gas filled expansion
- Filled versions
- Bi-metal compensation

Reference

- EN 13190



Standard parameters

Accuracy	CL 1.0 (Class 1)	
Permissible ambient temperature	-40 ... +60°C with/without dampening	
Storage & Transport temperature	-50 ... +70°C without liquid dampening	-20 ... +60°C with liquid dampening
Over range limits	110% full scale	
Stem pressure rating	25 bar (Without thermowell)	
Weld joints	TIG argon arc welding	
Measuring range	-200 ... 0 to 0 ... 700°C	-330 ... 0 to 0 ... 1290°F

Accessories

TA102

GAUGE SIPHON



Data sheet
www.trafag.com/H20022

Standard specifications	
Type	Coiled type
Material	AISI 316 SS
Instrument connection ¹	1/2" BSP or 1/2" NPT (F)
Pipe size & schedule	Pipe 1/2" Schedule 80
Connection type	Weld-in connection
Process connection ¹	1/2" BSP or 1/2" NPT (M)
Maximum working pressure	200 bar
Maximum working temperature	400°C

1) Other process/instruments connections are available through adaptors.



Data sheet
www.trafag.com/H20022

TA201

PULSATION DAMPENER / GAUGE SNUBBER

Standard specifications	
Type	Adjustable needle
Material	AISI 316 SS
Instrument connection ¹	1/2" NPT (F)
Process connection ¹	1/2" NPT (M)
Gaskets / Seals	Viton
Maximum working pressure	400 bar
Maximum working temperature	180°C

1) Other process/instruments connections are available through adaptors.



Data sheet
www.trafag.com/H20022

TA202

OVERLOAD PROTECTOR / GAUGE SAVER

Standard specifications	
Type	Bellow or Piston
Working range	200 mbar ... 400 bar
Material	AISI 316 SS
Instrument connection ¹	1/2" NPT (F)
Process connection ¹	1/2" NPT (M)
Gaskets / Seals	Viton
Maximum working pressure	600 bar
Operating temperature	180°C

1) Other process/instruments connections are available through adaptors.



TA203

COOLING TOWER

 Data sheet
www.trafag.com/H20022

Standard specifications	
Type	5 cooling fins
Material	AISI 316 SS
Instrument connection ¹	1/2" NPT or 1/2" BSP (F)
Process connection ¹	1/2" NPT or 1/2" BSP (M)
Maximum working pressure	1000 bar
Maximum working temperature	300°C

1) Other process/instruments connections are available through adaptors.



Diaphragm seal

TD101

THREADED DIAPHRAGM SEAL

 Data sheet
www.trafag.com/H20022

Standard specifications	
Range	-1 ... 0 to 0 ... 400 bar
Top chamber material	AISI304 SS
Diaphragm	AISI 316 SS, laser welded on upper parts
Gaskets	PTFE
Bottom chamber material	AISI 316 L SS
Instrument connection ¹	1/2" NPT (F) or 1/2" BSP (F)
Sealing fluid	Silicon DN200 (-40 ... + 205°C)
Process connection ¹	1/2" NPT (M) or 1/2" BSP (M)
Assembly	Direct

1) Other process/instruments connections are available.



TD103

THREADED DIAPHRAGM SEAL

 Data sheet
www.trafag.com/H20022

Standard specifications	
Range	-1 ... 0 to 0 ... 600 bar
Chamber material	AISI316 SS
Diaphragm	AISI 316 L SS
Instrument connection ¹	1/2" NPT (F) or 1/2" BSP (F)
Sealing fluid	Silicon DN200 (-40 ... + 205°C)
Process connection ¹	1/2" NPT (M) or 1/2" BSP (M)
Assembly	Direct

1) Other process/instruments connections are available.



TD104

THREADED DIAPHRAGM SEAL

Standard specifications	
Range	0 ... 4 to 0 ... 600 bar
Body material	AISI316 SS
Diaphragm	AISI 316 L SS
Instrument connection ¹	½" NPT (F) or ½" BSP (F)
Sealing fluid	Silicon DN200 (-40 ... + 205°C)
Process connection ¹	½" NPT (M) or ½" BSP (M)
Assembly	Direct

1) Other process/instruments connections are available.



Data sheet
www.trafag.com/H20022



TD202

FLANGED DIAPHRAGM SEAL

Standard specifications	
Range	-1 ... 0 to 0 ... 400 bar
Chamber / Flange material	AISI316 SS
Diaphragm	AISI 316 L SS
Instrument connection ¹	½" NPT (F) or ½" BSP (F)
Sealing fluid	Silicon DN200 (-40 ... + 205°C)
Process connection ¹	Flange as for ANSI B16.5 / EN1092-1 / JIS B 2210
Flange facing type	Raised face
Assembly	Direct

1) Other process/instruments connections are available.



Data sheet
www.trafag.com/H20022



TD301

SANITARY DIAPHRAGM SEAL

Standard specifications	
Range	-1 ... 0 to 0 ... 40 bar Tri-Clover
Chamber material	AISI316 SS
Diaphragm	AISI 316 L SS
Instrument connection ¹	½" NPT (F) or ½" BSP (F)
Sealing fluid	Food Grade oil (-20 ... + 140°C)
Process connection ¹	1" up to 2.5" Connection
Assembly	Direct

1) Other process/instruments connections are available.



Data sheet
www.trafag.com/H20022



TD302

SANITARY DIAPHRAGM SEAL



Data sheet
www.trafag.com/H20022

Standard specifications	
Range	0 ... 1 to 0 ... 40 bar
Chamber material	AISI316 SS
Diaphragm	AISI 316 LSS
Instrument connection ¹	1/2" NPT (F) or 1/2" BSP (F)
Sealing fluid	Food Grade oil (-20 ... + 140°C)
Process connection ¹	Union-nut (DIN 11851 / SMS / RJT / APV / IDF / ISS)
Assembly	Direct

1) Other process/instruments connections are available.



TD303

SANITARY DIAPHRAGM SEAL



Data sheet
www.trafag.com/H20022

Standard specifications	
Range	0 ... 1,6 to 0 ... 40 bar DIN 11851
Chamber material	AISI316 SS
Diaphragm	AISI 316 LSS
Instrument connection ¹	1/2" NPT (F) or 1/2" BSP (F)
Sealing fluid	Glycerine (10 ... + 150°C)
Process connection ¹	1.5" Connection
Assembly	Direct
Capillary	Optional
Armour	Optional
Remote mounting length	Optional

1) Other process/instruments connections are available.



Pressure and Temperature Gauges

The label *Trafag Industrial Components* extends the Trafag brand name to instruments manufactured by qualified partner companies. *Trafag Industrial Components* complement the genuine Trafag product range to offer customers a complete portfolio from one single source.

- **Main contact for Trafag Manometers and Temperature Gauges**

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