



Gauges, Sensors & Transmitters

Staitech offer a comprehensive range of pressure and temperature gauges, sensors and transmitters suitable for high purity applications typically found in the Pharmaceutical and Biotechnology industries.

Wetted parts on all products are manufactured in 316/316L stainless steel and can be supplied with covering material certification if required. Various grades of surface finish are offered allowing product specifications to be matched to individual system requirements.

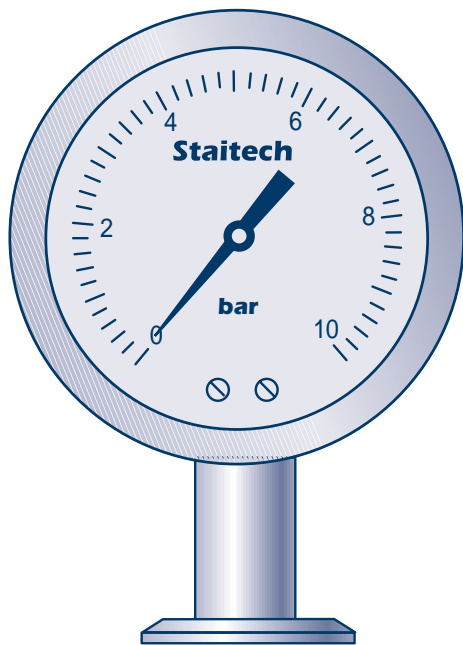
All products are designed to operate at elevated medium temperatures thus making them an ideal choice for steam system applications.

Sensors and transmitters are available with a range of output signals compatible with electronic controllers, PLC's and chart recorders.

Features offered by the gauge, sensor & transmitter ranges include:

- 316/316L stainless steel wetted parts - ensures system compatibility
- Wide range of connection options - simplifies installation
- Choice of surface finishes - allows product to be matched to individual system requirements
- Various output signals - ensured compatibility with electronic controllers, PLC's and chart recorders
- High media temperature threshold - ideally suited to steam system applications
- Material and calibration certification available - satisfies validation criteria

DN100 Pressure Gauges



Key features

- Large easy-to-read dial
- Suitable for medium temperatures up to 200°C
- Choice of surface finish options
- Temperature compensated
- High accuracy
- Material & calibration certification available

When specifying state:

- ✓ Connection size & orientation
- ✓ Case & diaphragm surface finish
- ✓ Pressure range
- ✓ Operating temperature
- ✓ Damping fill
- ✓ Certification requirements

The DN100 pressure gauge range utilise a fully welded stainless steel diaphragm seal to separate the process medium from the instrument measuring system. Gauges are available with either a 1-1/2" or 2" Tri-Clamp® compatible connection in a wide range of pressure scales, and gauge options.

Offering a high degree of accuracy, the DN100 gauge utilises a unique temperature compensation system which counters the effect on pressure reading caused by variations in ambient temperature.

Dial size

- DN100 - 108mm

System connection

- DN100 gauges are available with either a bottom or back entry Tri-Clamp® compatible connection in 1-1/2" and 2" sizes

Materials of construction

- Case - 316 stainless steel
- Diaphragm seal assembly - 316L stainless steel
- Lens - Acrylic or toughened glass
- Transmission fill - Glycerine (FDA compliant)

Surface finish

- Case - satin or electropolished
- Diaphragm - 0.8 microns Ra or 0.5 microns Ra and electropolished

Pressure ranges(bar)

- -1-0-0.6, -1-0-1, -1-0-1.5, -1-0-3, -1-0-5, -1-0-9, -1-0-15, 0-1, 0-1.6, 0-2.5, 0-4, 0-6, 0-10, 0-16, 0-25

Temperature rating

- Medium: -5°C to 130°C or 5°C to 200°C
- Ambient: ≤2 bar range - 0-50°C, >2 bar range - 0-60°C

Limiting design criteria

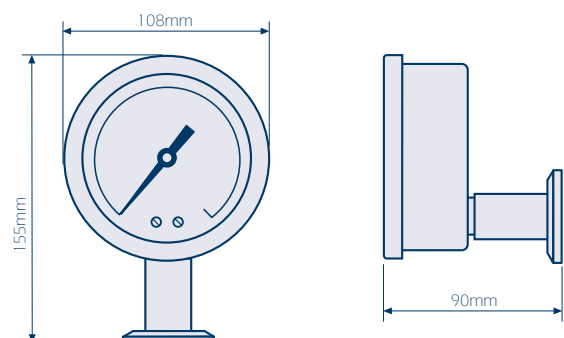
- Maximum allowable over-pressure: 30% above selected range
- Accuracy: ±1% selected range @ 20°C

Damping fill

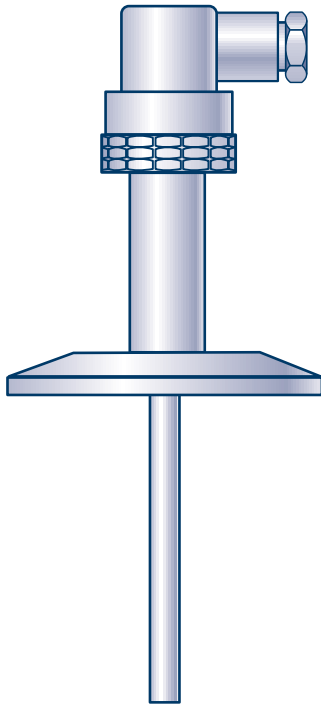
- Dry, Silicone oil or Glycerine

Available options

- Alternative connection types
- In-built contact switches or angular position transmitter
- Memory or maximum pressure pointers
- Lower pressure ranges - mbar
- Dual scale ranges - bar/psi



Temperature Sensors



Temperature sensors are available with either a PT100 or 4-20mA output in a range of Tri-Clamp® compatible and weld neck connection options. Both sensors and transmitters utilise a replaceable probe insert which allows in-line welding and easy sensor removal. Probe length is specifiable from 20mm, in addition to three standard lengths. Utilising a 4-wire PT100 element, high accuracy is assured over wide operating temperature conditions. Where a 4-20mA output is employed, the sensing range can be factory set or programmed using a DOS PC interface.

System connection

- 1/2"/3/4", 1"/1-1/2" or 2" Tri-Clamp® compatible
- Ø12mm weld neck

Materials of construction

- Sensor probe & connection - 316L stainless steel
- Connector(PT100 output) - Thermoplastic
- Transmitter head(4-20mA output) - Enamelled aluminium

Probe detail

- Diameter: 5mm
- Insertion length(L): 20, 35 or 50mm
- Surface finish: 0.5 microns Ra and electropolished

Sensor

- 4-wire PT100
- Measuring range: -50°C to 250°C
- Accuracy: DIN IEC 751 Class B
- Ambient temperature range: -40°C to 85°C

Limiting design criteria

- Linearity: $<\pm 0.1\%$ selected range @ 20°C
- Temperature drift: $<\pm 0.01\%/^{\circ}\text{C}$

Electrical connection

PT100 output

- 4-wire IP67 rated PG9 plug or 4-wire IP68 rated 2m or 5m long insulated cable

4-20mA output

- IP65 rated DIN form B head with PG16 stainless steel cable gland

Voltage supply

- 8-35Vdc

Electrical loading

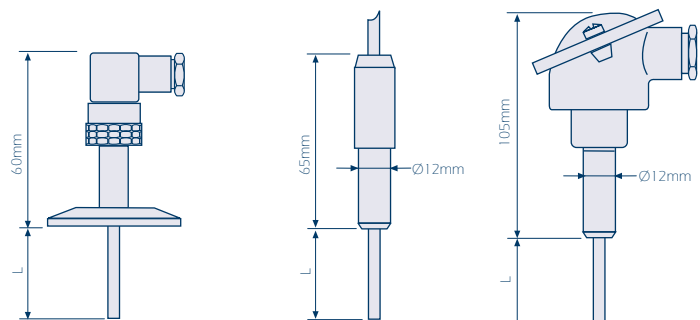
- 750W @ 24Vdc supply

Key features

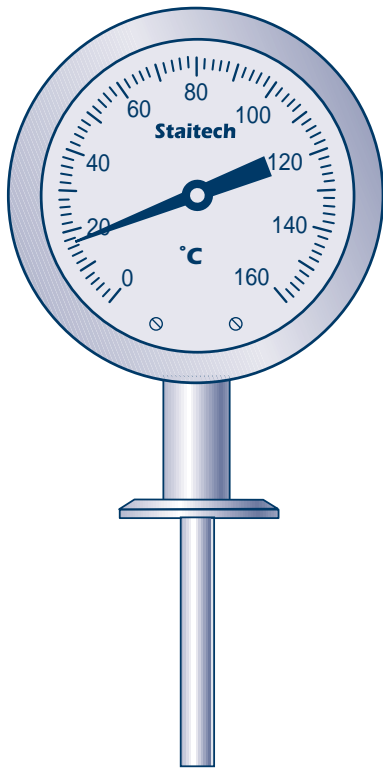
- Wide range of connections
- Replaceable insert
- 4-20mA output available
- Specifiable insertion length
- Calibration certification available

When specifying state:

- ✓ Connection size/type
- ✓ Probe length
- ✓ Temperature range
- ✓ Output signal
- ✓ Cable length (if applicable)
- ✓ Certification requirements



DN100 Thermometers



DN100 thermometers are available with either a 10mm or 13mm diameter sensor probe in lengths up to 550mm. Probes are charged with an inert gas making them ideal for use in high purity applications. An in-built compensation system ensures that readings are unaffected by changes in ambient temperature.

Dial size

- DN100 - 108mm

System connection

- DN100 thermometers can be supplied with either a bottom or back entry Tri-Clamp® compatible connection in 1-1/2" and 2" sizes

Materials of construction

- Case and probe - 316 stainless steel
- Lens - Polycarbonate or toughened glass
- Sensor fill - Inert gas
- Case fill - Silicone oil

Surface finish

- Case - electropolished
- Probe - 0.8 microns Ra or 0.5 microns Ra and electropolished

Temperature ranges (°C)

- 0-60, 0-80, 0-100, 0-120, 0-150, 0-160, 0-200

Limiting design criteria

- Maximum allowable over-temperature: 30% above selected range
- Ambient temperature range: -40°C to 100°C
- Accuracy: ±1% selected range @ 20°C

Insertion length (L)

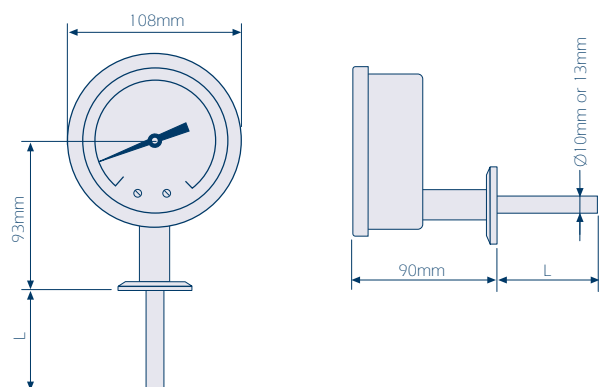
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|----------------------------|----------------------|
| ▪ 0-100°C ranges | Ø10mm: L = 100-550mm |
| | Ø13mm: L = 70-550mm |
| ▪ 0-120°C - 0-200°C ranges | Ø10mm: L = 63-550mm |
| | Ø13mm: L = 50-550mm |

Key features

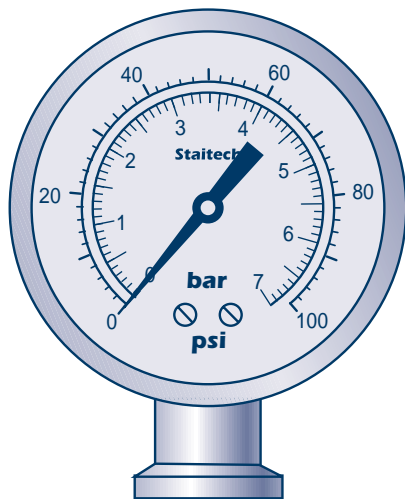
- Large easy-to-read dial
- Wide range of sensing temperatures
- Specifiable probe dimensions
- Choice of surface finish options
- Temperature compensated
- Calibration certification available

When specifying state:

- ✓ Connection size & orientation
- ✓ Probe diameter & length
- ✓ Probe surface finish
- ✓ Temperature range
- ✓ Certification requirements



DN63 Pressure Gauges



Key features

- 3/4" Tri-Clamp® compatible connection
- Fully autoclavable
- Suitable for medium temperatures up to 150°C
- Temperature compensated
- High accuracy
- Material & calibration certification available

When specifying state:

- ✓ Connection orientation
- ✓ Pressure range
- ✓ Operating temperature
- ✓ Damping fill
- ✓ Certification requirements

The DN63 gauge utilises a 3/4" Tri-Clamp® compatible fully welded diaphragm seal and is designed to be autoclavable at temperatures up to 125°C. Employing a similar temperature compensating system to the larger DN100 gauges, high accuracy is again guaranteed over wide pressure and ambient temperature ranges.

Dial size

- DN63 - 68mm

System connection

- DN63 gauges are available with either a bottom or back entry 3/4" Tri-Clamp® compatible connection

Materials of construction

- Case - 316 stainless steel
- Diaphragm seal assembly - 316L stainless steel
- Lens - Toughened glass
- Transmission fill - Glycerine(FDA compliant)

Surface finish

- Case - electropolished
- Diaphragm - 0.5 microns Ra and electropolished

Pressure ranges(dual scale only - bar/psi)

- -1-0-3/-30"Hg-0-40, -1-0-4/-30"Hg-0-60, 0-4/0-60, 0-7/0-100, 0-11/0-160, 0-20/0-300

Temperature rating

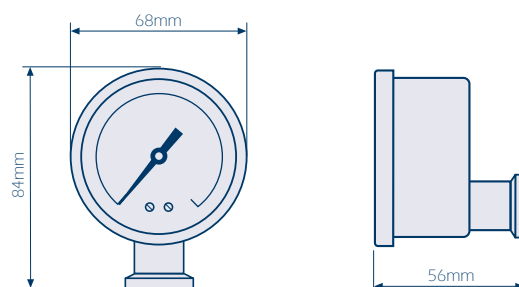
- Medium: 5°C to 150°C
- Ambient: 5°C to 80°C
- Autoclaving: 125°C

Limiting design criteria

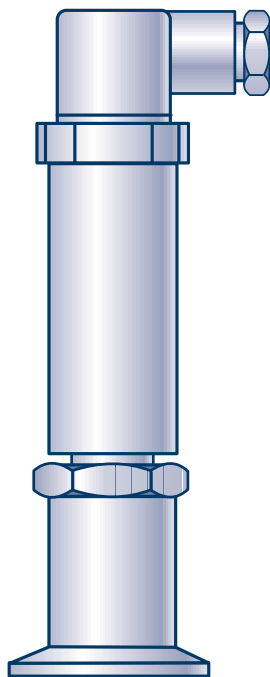
- Maximum allowable over-pressure: 30% above selected range
- Accuracy: $\pm 1.6\%$ selected range @ 20°C

Damping fill

- Dry, Silicone oil or Glycerine



Pressure Transmitters



Key features

- Suitable for medium temperatures up to 200°C
- Wide range of output options
- Choice of diaphragm surface finish
- Excellent long term stability
- Material & calibration certification available

When specifying state:

- ✓ Connection size
- ✓ Diaphragm surface finish
- ✓ Pressure range
- ✓ Output signal
- ✓ Operating temperature
- ✓ Electrical connection
- ✓ Cable length (if applicable)
- ✓ Certification requirements

* Denotes pressure ranges available for 3/4" unit

The pressure transmitter range offered by Staitech is designed to ensure long term stability and accuracy over wide pressure spans. Giving a temperature compensated output, 1-1/2" and 2" transmitters are suitable for use in systems operating up to 200°C when fitted with cooling tower.

Transmitters are available with either a 3/4", 1-1/2" or 2" Tri-Clamp® compatible fully welded diaphragm seal having a 0.8 or 0.5 micron Ra surface finish. Electrical connection is via an IP65 rated plug or water tight cable of specifiable length.

System connection

- 3/4", 1-1/2" or 2" Tri-Clamp® compatible

Materials of construction

- Case - stainless steel
- Diaphragm seal assembly - 316L stainless steel
- Transmission fill - Glycerine (FDA compliant)

Surface finish

- Case - satin polish
- Diaphragm - 0.8 microns Ra or 0.5 microns Ra and electropolished*

Pressure ranges(bar)

- 0-250 mbar, 0-400 mbar, 0-600 mbar: -1-0, -1-0-1, -1-0-1.5, -1-0-3, -1-0-5*, -1-0-9*, -1-0-15, 0-1, 0-1.6, 0-2.5, 0-4, 0-6*, 0-10*, 0-16* 0-25*

Output

- 4-20mA, 0-20mA, 0-5Vdc, 1-5Vdc, 1-6Vdc, 0-10Vdc

Voltage supply

- 10-32Vdc, 16-32Vdc for 0-10Vdc output

Electrical loading

- 4-20mA output: ≤750W @ 24Vdc supply
- Insulation resistance at 500Vdc: >500MΩ

Temperature rating

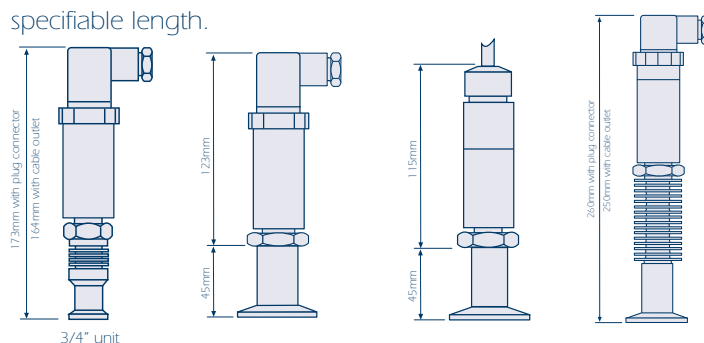
- Medium: -5°C to 130°C or 5°C to 200°C, -5°C to 135°C for 3/4" unit
- Ambient: -5°C to 125°C, -5°C to 80°C for 3/4" unit

Limiting design criteria

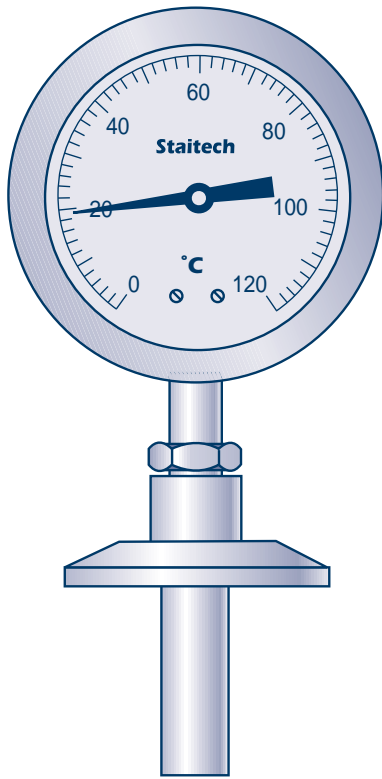
- Maximum allowable over-pressure: 30% above selected range
- Linearity, hysteresis and repeat accuracy: <±1% selected range @ 20°C: <±0.6% for 3/4" unit
- Optional <±0.25% accuracy available for 1 1/2" and 2" units
- Zero point displacement: <±1% selected range @ 20°C
- Long term stability: <±0.1% over 12 months

Electrical connection

- IP65 rated PG11 thermoplastic plug, IP65 or IP68 insulated cable of specifiable length.



DN63 Thermometers



Key features

- Separate thermowell for easy gauge removal
- Specifiable insertion length
- High accuracy
- Temperature compensated
- Material & calibration certification available

When specifying state:

- ✓ Connection orientation
- ✓ Probe length
- ✓ Temperature range
- ✓ Certification requirements

DN63 thermometers are charged with an inert gas which ensures long-term stability, fast reaction and high accuracy. Units are supplied with a separate thermowell which allows the measuring instrument to be removed for calibration without compromising system integrity. Gauges are available with either bottom or back entry connection in a range of insertion lengths and temperature ranges. An in-built compensation system ensures that readings are unaffected by changes in ambient temperature.

Dial size

- DN63 – 68mm

System connection

- DN63 thermometers are available with either bottom or back entry sensing probe. Thermowell pockets have a 1-1/2" Tri-Clamp® compatible connection. Weld neck pockets are also available upon request.

Materials of construction

- Case – 316 stainless steel
- Lens – Polycarbonate or toughened glass
- Case fill – Silicone oil
- Thermowell – 316 stainless steel

Surface finish

- Case – satin
- Thermowell – 0.5 microns Ra and electropolished

Temperature ranges (°C)

- Bottom entry connection: 0-60, 0-120, 0-160
- Back entry connection: 0-120, 0-160

Limiting design criteria

- Maximum allowable over-temperature: 30% above selected range
- Ambient temperature range: -40°C to 80°C

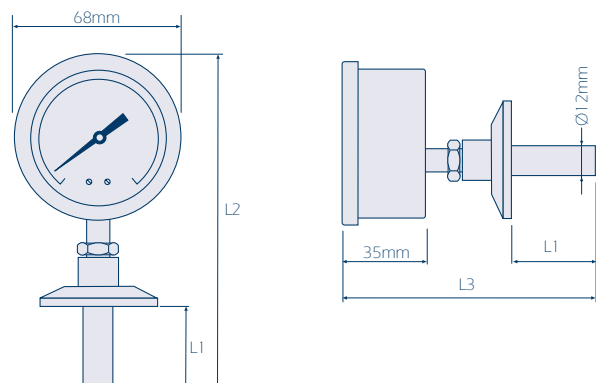
Accuracy

- 0-60°C range: ±1% @ 10°C to 50°C
- 0-120°C range: ±2% @ 10°C to 110°C
- 0-160°C range: ±2% @ 20°C to 140°C

Dimensions (mm)

Insertion length L1	L2	L3
4.5*	100	105
50*	130	135
75	190	165
100	190	165

*Not available for 0-60°C range



All specifications subject to change without notice

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