







MANUFACTURED IN SOUTH AFRICA

Because Quality Matters 🦠



At Mozambique Industrial Supply Company, we have strategically partnered with suppliers in South Africa. This collaboration ensures that we bring products of exceptional quality and reliability to the Mozambican market.

Our product range encompasses a variety of industrial solutions, each carefully selected to meet the diverse demands of our customers. From machinery components to advanced equipment, we cater to a wide spectrum of industries.

Today, we'd like to shine a spotlight on one of our specialized product categories: pressure gauges. These crucial instruments are used to measure and monitor pressure in various industrial processes. We take pride in being a registered reseller of high-quality pressure gauges sourced from South Africa.

The Importance of Pressure Gauges

Pressure gauges play a vital role in ensuring the safety, efficiency, and accuracy of industrial operations. Our pressure gauges are manufactured in South Africa with precision and adhere to the highest international standards.

Slide 8: Our Partnership with Presseru Gauges

We are delighted to highlight our partnership with pressure guage manufactures for:

Exceptional durability and reliability
Accurate pressure readings for diverse applications
Rigorous testing and quality assurance processes
Comprehensive range to meet various industrial needs

When you choose Mozambique Industrial Supply Company, you choose a partner dedicated to your success. Our commitment to delivering high-quality products, backed by excellent customer service, ensures that your industrial operations run smoothly and efficiently.

### Contact Information:

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To ensure a safe working environment, care must be taken when selecting a pressure gauge or thermometer. The following information can assist with the selection.

Casing size To suit the availability of space or reading from a distance. Choose from 50, 63, 80, 100, 120, 150 & 250 mm dia.

Casing type Choose from bottom or back entry to suit the application. Case material: Stainless steel 304.

**Mounting flange**To suit the case size and type for mounting in a panel or against a surface. Choose from front or rear flange. For panel mounting (front flange, rear entry) choose from 3 hole flange or slim line front ring with u- bracket.

Wetted parts

These parts must be compatible with the process media. Choose from Cu-alloy ( brass ) or stainless steel 316. for media that will corrode the wetted parts or obstruct the pressure port, a diaphragm type chemical seal should

be selected.

Fitting size and positions

To facilitate correct positioning. Choose from 1/8", 1/4", 3/8", or 1/2" BSP or NPT at the bottom or rear of the

case

Working pressure Although pressure gauges will tolerate full scale pressure for short periods, in general the working pressure

should not exceed 70% of the full scale value of the pressure gauge. For thermometers, media pressure should

not exceed 2500 kPa without the use of a suitable thermowell.

**Media temperatures** For pressure gauges, media temperature should not exceed 70°C. If so, choose from a syphon tube, cooling element, capillary assembly or diaphragm seal to isolate the gauge from media. For thermometers, select the

temperature range double that of the media operating temperature.

**Working conditions** Adverse working conditions such as vibration, pulsation and shock loads, require the use of a dampening device. Choose from glycerine/ silicone filling, a snubbing device or capillary assembly to remove the instrument from the

cause.

Fitting types 1) BSP ( parallel ) thread seals by means of the seat at the end of the thread. It is advisable to use copper or

another suitable sealing washer to ensure a good seal. ( see diagram 1 )

2) BSPT / NPT ( taper ) thread seals by means of the mating of the thread. PTFE ( teflon ) tape or any other

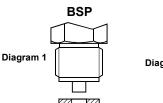
suitable jointing material will ensure a good seal. ( see diagram 2 )

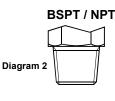
**Instalation** Always secure the instrument by means of a suitable wrench on the hexagon/square of the threaded connection.

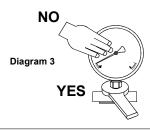
Twisting the instrument by hand on the case can cause damage to the internals of the instrument.

( see diagram 3 )

For gauges with flanges to facilitate panel or surface mounting, please support gauge fitting with a suitable size wrench to counter the force of tightening the process fitting, this will prevent damaging the gauge internals.







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#### Service Intended

Suitable for media such as air, water, oil & gases that do not attack copper alloy or stainless steel parts or will obstruct the pressure system. Typical applications will be in the pneumatic, heating / airconditioning and medical industry. Not glycerine fillable.

### **Case Details**

Nominal Dia: 40, 50, 63, 100mm Material: Stainless steel 304

#### Bezel

Flush mount, snap-in window.

### **Pressure Connections**

Material: Type 3: Brass.

Sizes: 50, 63 mm dia: 1/8" & 1/4" in BSP or NPT Sizes: 100 mm dia: 3/8" in BSP or NPT (Position: See "Mounting Configurations".)

### **Mounting Flange**

Material: Polished stainless steel 304

#### **Pressure Element**

Material: Type 3: Cu-alloy

### **Geared Movement**

Material: Brass.

#### **Pointer**

Collet: Aluminium or brass Blade: Black aluminium

#### Dial

Material: Aluminium, white with black lettering.

#### Window

Polycarbonate.

### **Working Pressure**

Steady: 75% of full scale value Fluctuating: 50% of full scale value Short Period: Full scale value

For pulsating pressure, the use of an inlet restrictor is

recommended.

### **Accuracy Class**

2.5% FS

### **Operating Temperature**

Ambient: -20 °C to + 60 °C

Medium: +70 °C (soldered tube) For live steam use, a

syphon tube is recommended.

#### **Optional Extras**

Calibration Certificate

Customized scale plates ( customer logo, red line, etc ) Special Dials, other than standard ( dual scale, bar, psi )

Colour Coding of dial

Drag pointer ( maximum set pointer )

Degreased for Oxygen

### PRESSURE MEASUREMENT

### **Utility - Contractors Gauge**

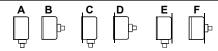
Type U3: Stainless steel case with brass internals

Data Sheet P U3



Type U Snap-in Window

### **MOUNTING CONFIGURATIONS**



A: Bottom connection, no flange

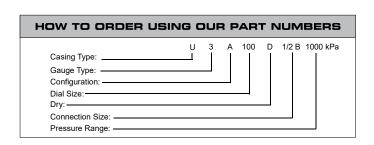
B: Rear connection, no flange

C: Bottom connection, front flange

 $\boldsymbol{\mathsf{D}}\boldsymbol{:}$  Rear connection, front flange

**E:** Bottom connection, rear flange **F:** Rear connection, rear flange

ST	STANDARD PRESSURE RANGES										
Ranges	Ranges Figure Interval		Ranges	Figure Interval	Minor Graduations						
Pressure			Vacuum								
0/60 kPa	10	1	-100/0 kPa	20	2						
0/100 kPa	20	2	Compound								
0/160 kPa	20	2	-100/0/150 kPa	50	5						
0/250 kPa	50	5	-100/0/300 kPa	100	10						
0/400 kPa	100	10	-100/0/500 kPa	100	10						
0/600 kPa	100	10	-100/0/700 kPa	100	10						
0/800 kPa	100	10	-100/0/900 kPa	200	20						
0/1000 kPa	200	20	-100/0/1500 kPa	500	50						
0/1600 kPa	200	20	-100/0/2400 kPa	500	50						
0/2500 kPa	500	50									
0/4000 kPa	1000	100									
Customized	and other so	ales such as ba	r / psi / inHG etc. a	re available (	on request						





#### Service Intended

Suitable for media such as air, water, oil & gases that do not attack copper alloy or stainless steel parts or will obstruct the pressure system. Typical applications will be in the hydraulic, pneumatic, refrigeration, steam, chemical and food and beverage industry.

### **Case Details**

Nominal Dia: 40, 50, 63, 80, 100, 160mm

Material: Stainless steel 304

Bezel

S/Steel rolled ring type - tamper proof.

Material: Stainless steel 304

**Pressure Connections** 

Material: Type 3: Brass. Type 4: Stainless steel 316 Sizes: 50, 63, 80, mm dia: 1/8" & 1/4" in BSP or NPT Sizes: 100, 160mm dia: 1/4", 3/8" & 1/2" in BSP or NPT

(Position: See "Mounting Configurations".)

**Mounting Flange** 

Material: Polished stainless steel 304

**Pressure Element** 

Material: Type 3: Cu-alloy Type 4: Stainless steel 316

**Geared Movement** 

Material: Clockwork brass or stainless steel.

Pointer

Collet: Aluminium or brass Blade: Black aluminium

Dial

Material: Aluminium, white with black lettering.

Instrument glass or plexiglass (plexiglass recommended for food applications )

**Weather Protection** 

IP 65 Dust & weather proof.

**Working Pressure** 

Steady: Full scale value

Fluctuating: 90% of full scale value Short Period: 130% of full scale value

For pulsating pressure, the use of an inlet restrictor and/or liquid

filling is recommended.

**Accuracy Class** 40mm dia: 2.5

50mm, 63mm & 80mm dia: Class 1.6

100mm,160mm dia: Class 1

**Operating Temperature** 

Ambient: -20 °C to + 60 °C

Medium: +70 °C ( soldered tube ): + 100 °C ( brazed / tig

welded tube ) For live steam use, a syphon tube is

recommended.

**Optional Extras** 

Calibration Certificate

Customized scale plates ( customer logo, red line, etc ) Special Dials, other than standard (dual scale, bar, psi)

Damped movement (Vibragauge)

Colour Coding of dial

Drag pointer (maximum set pointer)

Micro adjustable pointer

Blow out disc

Diaphragm seals fitted

Degreased for Oxygen

### PRESSURE MEASUREMENT

### Industrial Use - General Purpose

Type R3: Stainless steel case with brass internals

Type R4: Stainless steel case with stainless steel internals

Data Sheet P RR3-4 600 Type R Roll Ring Bezel

For dimensional drawing see technical section

### **MOUNTING CONFIGURATIONS**



A: Bottom connection, no flange

B: Rear connection, no flange

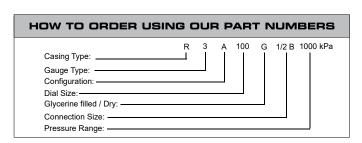
C: Bottom connection, front flange D: Rear connection, front flange

E: Bottom connection, rear flange

F: Rear connection, rear flange

Y: Rear con. narrow front ring (clamp mtg)

STANDARD PRESSURE RANGES										
Ranges	Figure Interval	Minor Graduations	Ranges	Figure Interval	Minor Graduations					
Pressure			Pressure							
0/2.5 kPa	0.5	0.05	0/6 MPa	1	0.1					
0/4 kPa	1	0.1	0/10 MPa	2	0.2					
0/6 kPa	1	0.1	0/16 MPa	2	0.2					
0/10 kPa	2	0.2	0/25 MPa	5	0.5					
0/16 kPa	2	0.2	0/40 MPa	10	1					
0/25 kPa	5	0.5	0/60 MPa	10	1					
0/40 kPa	10	1	0/100 MPa	20	2					
0/60 kPa	10	1								
0/100 kPa	20	2	Vacuum							
0/160 kPa	20	2	-100/0 kPa	20	2					
0/250 kPa	50	5	Compound							
0/400 kPa	100	10	-100/0/150 kPa	50	5					
0/600 kPa	100	10	-100/0/300 kPa	100	10					
0/800 kPa	100	10	-100/0/500 kPa	100	10					
0/1000 kPa	200	20	-100/0/700 kPa	100	10					
0/1600 kPa	200	20	-100/0/900 kPa	200	20					
0/2500 kPa	500	50	-100/0/1500 kPa	500	50					
0/4000 kPa	1000	100	-100/0/2400 kPa	500	50					





### Service Intended

Suitable for media such as air, water, oil & gases that do not attack copper alloy or stainless steel parts or will obstruct the pressure system. Typical applications will be in the hydraulic, pneumatic, refrigeration, steam, chemical and food and beverage industry.

### **Case Details**

Nominal Dia: 63, 100, 160, 250mm Material: Stainless steel 304

Bayonet lock, twist type - removable.

Material: Stainless steel 304

### **Pressure Connections**

Material: Type T3: Brass. Type T4: Stainless steel 316 Sizes: 63 mm dia: 1/8" & 1/4" in BSP or NPT Sizes: 100, 160 mm dia: 1/4", 3/8" & 1/2" in BSP or NPT

Position: See "Mounting Configurations".

### **Mounting Flange**

Material: Polished stainless steel 304 Position: See "Mounting Configurations".

### **Pressure Element**

Material: Type T3: Cu-alloy Type T4: Stainless steel 316

### **Geared Movement**

Material: Clockwork brass or stainless steel.

#### **Pointer**

Collet: Aluminium or brass Blade: Black aluminium

Material: Aluminium, white with black lettering.

### Window

Instrument glass, plexiglass or safety glass. ( Plexiglass recommended for food applications )

#### **Weather Protection**

IP 65 Dust & weather proof.

### **Working Pressure**

Steady: Full scale value

Fluctuating: 90% of full scale value Short Period: 130% of full scale value

For pulsating pressure, the use of an inlet restrictor and/or liquid

filling is recommended.

#### **Accuracy Class**

63mm dia: Class 1.6

100mm, 160mm & 250mm dia: Class 1

### **Operating Temperature**

Brass wetted parts:

Ambient: -20 °C to + 60 °C

Medium: +70  $^{\circ}\text{C}$  ( <code>soldered tube</code> ) with glycerine filling

S/Steel wetted parts: Ambient: -20 °C to + 60 °C

Medium: + 100 °C (tig welded tube) with glycerine filling

+ 200 °C (tig welded tube) without liquid filling

For live steam use, a syphon tube or cooling tower is

recommended.

#### **Optional Extras**

Calibration Certificate

Customized scale plates (customer logo, red line, etc)

Special Dials, other than standard (dual scale, bar, psi)

Damped movement (Vibragauge) Single or double electrical contacts

Colour Coding of dial

Drag pointer (maximum set pointer)

Micro adjustable pointer Diaphragm seals fitted Degreased for Oxygen

### PRESSURE MEASUREMENT

### Process Industry Use

Type T3: Stainless steel case with brass internals

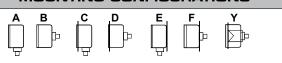
Type T4: Stainless steel case with stainless steel internals

Data Sheet P T3-4



For dimensional drawing see technical section

### **MOUNTING CONFIGURATIONS**



- A: Bottom connection, no flange
- B: Rear connection, no flange
- C: Bottom connection, front flange
- E: Bottom connection, rear flange
- F: Rear connection, rear flange
- D: Rear connection, front flange
- Y: Rear con. narrow front ring (clamp mtg)

Ranges	Figure Interval	Minor Graduations	Ranges	Figure Interval	Minor Graduati
Pressure			Pressure		
0/2.5 kPa	0.5	0.05	0/6 MPa	1	0.1
0/4 kPa	1	0.1	0/10 MPa	2	0.2
0/6 kPa	1	0.1	0/16 MPa	2	0.2
0/10 kPa	2	0.2	0/25 MPa	5	0.5
0/16 kPa	2	0.2	0/40 MPa	10	1
0/25 kPa	5	0.5	0/60 MPa	10	1
0/40 kPa	10	1	0/100 MPa	20	2
0/60 kPa	10	1	0/160 MPa	20	2
0/100 kPa	20	2	0/250 Mpa	50	5
0/160 kPa	20	2	Vacuum		
0/250 kPa	50	5	-100/0 kPa	20	2
0/400 kPa	100	10	Compound		
0/600 kPa	100	10	-100/0/150 kPa	50	5
0/800 kPa	100	10	-100/0/300 kPa	100	10
0/1000 kPa	200	20	-100/0/500 kPa	100	10
0/1600 kPa	200	20	-100/0/700 kPa	100	10
0/2500 kPa	500	50	-100/0/900 kPa	200	20
0/4000 kPa	1000	100	-100/0/1500 kPa	500	50
			-100/0/2400 kPa	500	50

HOW TO ORDER US	SING C	DUF	3 P	AR	TN	MUI	BERS	i
Casing Type:  Gauge Type:  Configuration:  Dial Size:  Glycerine filled / Dry:  Connection Size:  Pressure Range:						1/2 B	1000 kPa	



#### Service Intended

Suitable for measuring low pressure / vacuum in gaseous, non-aggressive dry media that does not attack copper alloy or stainless steel parts or will obstruct the pressure system. Typical applications will be in the medical, laboratory, vacuum and filter monitoring industry.

### **Case Details**

Nominal Dia: 63, 80, 100, 160mm Material: Stainless steel 304

#### Bezel

Sizes 63, 80 & 100mm Roll ring type - tamper proof. Size 160mm Bayonet locking, twist type - removable. Material: Stainless steel 304

#### **Pressure Connections**

Type 4: Stainless steel 316 Material: Type 3: Brass. Sizes: 63, 80mm nom. dia: 1/8" & 1/4" in BSP or NPT Sizes: 100, 160mm nom. dia: 1/4", 3/8" & 1/2" in BSP or NPT (Position: See "Mounting Configurations".)

### **Mounting Flange**

Material: Polished stainless steel 304 (Position: See "Mounting Configurations".)

### **Pressure Element - Capsule**

Material: Type 3: Cu-alloy.

Type 4: Stainless steel 316.

### **Pressure Ranges**

0 to 2.5...40 kPa pressure or vacuum (see standard pressure ranges)

### **Geared Movement**

Material: Clockwork brass or stainless steel. Special feature: External zero adjustable from the front.

Collet: Aluminium or brass Blade: Black aluminium

Material: Aluminium, white with black lettering.

#### Window

Plexiglass / polycarbonate.

#### **Weather Protection**

IP 54

#### **Working Pressure**

Steady: Full scale value

Fluctuating: 90% of full scale value

For pulsating pressure, the use of an inlet restrictor is recommended.

### **Accuracy Class**

63mm & 80mm dia: Class 2.5 100mm & 160mm dia: Class 1.6

### **Operating Temperature**

Ambient: -20 °C to + 60 °C Medium: +70 °C

#### **Optional Extras**

Calibration Certificate Customized scale plates (customer logo, red line, etc) Special Dials, other than standard (dual scale, bar, psi) Colour Coding of dial Blow out disc

Degreased for Oxygen

### PRESSURE MEASUREMENT

### Capsule Gauge - Low Pressure

Type R3: Stainless steel case with brass capsule

Type R4: Stainless steel case with stainless steel capsule

Data Sheet P CAP3-4



For dimensional drawing see technical section

# MOUNTING CONFIGURATIONS

- A: Bottom connection, no flange
- B: Rear connection, no flange
- C: Bottom connection, front flange D: Rear connection, front flange
- E: Bottom connection, rear flange
- F: Rear connection, rear flange
- Y: Rear con. narrow front ring (clamp mtg)

S'	STANDARD PRESSURE RANGES										
Ranges	Figure Interval	Minor Graduations	Ranges	Figure Interval	Minor Graduations						
Pressure			Pressure								
0/2.5 kPa	0.5	0.05	0/25 mbar	5	0.5						
0/4 kPa	1	0.1	0/40 mbar	10	1						
0/6 kPa	1	0.1	0/60 mbar	10	1						
0/10 kPa	2	0.2	0/100 mbar	20	2						
0/16 kPa	2	0.2	0/160 mbar	20	2						
0/25 kPa	5	0.5	0/250 mbar	50	5						
0/40 kPa	10	1	0/400 mbar	100	10						
Vacuum			Vacuum								
2.5/0 kPa	0.5	0.05	25/0 mbar	5	0.5						
4/0 kPa	1	0.1	40/0 mbar	10	1						
6/0 kPa	1	0.1	60/0 mbar	10	1						
10/0 kPa	2	0.2	100/0 mbar	20	2						
16/0 kPa	2	0.2	160/0 mbar	20	2						
25/0 kPa	5	0.5	250/0 mbar	50	5						
40/0 kPa	10	1	400/0 mbar	100	10						

HOW TO ORDER US	NG OUR PART NUMBER	s
Casing Type:		a
Connection Size: ————————————————————————————————————		



### PRESSURE MEASUREMENT

### Refrigeration Gauge

Type 3: ( Freon scale ) Stainless steel case with brass internals

Type 4: ( Ammonia scale ) Stainless steel case with stainless steel internals

Data Sheet P REF3-4

#### Service Intended

Suitable for refrigeration media such as freon and ammonia. Typical applications will be in the refrigeration and airconditioning industry.

#### **Case Details**

Nominal Dia: 63, 80, 100 & 160mm diameter. Material: Stainless steel 304

#### Bezel

Standard - Type R: S/Steel rolled ring type - tamper proof. Optional - Type T: S/Steel bayonet lock, twist type - removable. Material: Stainless steel 304

#### **Pressure Connections**

Material: Type 3: Brass. Type 4: Stainless steel 316 Sizes: 63 & 80mm dia: 1/8" & 1/4" in BSP or NPT or 1/4" flare.

Sizes: 100 & 160mm dia: 1/4", 3/8" & 1/2" in BSP or NPT or 1/4" flare.

Position: See "Mounting Configurations".

### **Mounting Flange**

Material: Polished stainless steel 304 Position: See "Mounting Configurations".

#### **Pressure Element**

Material: Type 3: Cu-alloy. Type 4: Stainless steel 316.

### **Geared Movement**

Material: Clockwork brass or stainless steel.

Collet: Aluminium or brass Blade: Black aluminium

Material: Aluminium, white with black lettering.

### Window

Instrument glass or plexiglass.

### **Weather Protection**

IP 65 Dust & weather proof.

#### **Working Pressure**

Steady: Full scale value

Fluctuating: 90% of full scale value Short Period: 130% of full scale value

For pulsating pressure, the use of an inlet restrictor and/or liquid filling is recommended.

### **Accuracy Class**

63mm & 80mm dia: Class 1.6 (1.6 % of full scale value) 100mm & 160mm dia: Class 1 (1% of full scale value)

### **Operating Temperature**

Ambient: -20 °C to + 60 °C

Medium: +70 °C ( soldered tube ): + 100 °C ( brazed tube )

### **Optional Extras**

Calibration Certificate

Rubber cover (for robust handling)

Customized scale plates ( customer logo, red line, etc )

Special Dials, other than standard (dual scale, bar, psi)

Damped movement (Vibragauge)

Single or double electrical contacts (100 & 150mm only)

Colour Coding of dial

Drag pointer (maximum set pointer)

Micro adjustable pointer

Blow out disc

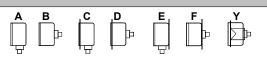


Freon gauge

Ammonia gauge

For dimensional drawing see technical section

### **MOUNTING CONFIGURATIONS**



- A: Bottom connection, no flange
- B: Rear connection, no flange

temperature scale as required.

Dual scales, such as kPa / psi, or bar / psi.

such as psi and inHG etc.

- C: Bottom connection, front flange D: Rear connection, front flange
- E: Bottom connection, rear flange
- F: Rear connection, rear flange
- Y: Rear con. narrow front ring (clamp mtg)

STANDARD PRESSURE RANGES										
Ranges	Figure Interval	Minor Graduations	Ranges	Figure Interval	Minor Graduations					
Freon			Ammonia R717 (NH3)							
-100 / 0 / 1250 kPa	200	50	-100 / 0 / 1250 kPa	200	50					
-100 / 0 / 2500 kPa	200	100	-100 / 0 / 2500 kPa	500	50					
-100 / 0 / 12.5 bar	2	0.5	-100 / 0 / 12.5 bar	2	0.5					
-100 / 0 / 25 bar	5	1	-100 / 0 / 25 bar	5	0.5					
Above pressure scal	es with co	orresponding	Above scales standa	ard with R	717 (NH <sub>3</sub> )					

**Optional Scales Optional Scales** Other equivalent units of pressure or vacuum

temperature scale.

Other equivalent units of pressure or vacuum such as psi and inHG etc Dual scales, such as kPa / psi, or bar / psi.

Customized and other scales such as bar / psi / inHG etc. are available on request

### HOW TO ORDER USING OUR PART NUMBERS 1/2 B 1000 kPa Casing Type: Gauge Type: Configuration: Dial Size: Glycerine filled / Dry: Connectino Size: Pressure Range:



#### Service Intended

Suitable for aggressive gaseous and liquid media under extreme conditions. Diaphragm gauges are suitable for viscous, crystallising or polluting media. The design ensures resistance to vibration and protection against over pressures.

#### **Case Details**

Nominal Dia: 100 & 160mm Material: Stainless steel 304.

#### Reze

Type T: S/Steel bayonet lock, twist type - removable.

Material: Stainless steel 304

#### **Pressure Connections**

Material: Stainless steel 316.

Sizes: 1/2" BSP or NPT male or female threaded.

: Open flange on request.

Position: Radial bottom connection only.

### **Diaphragm Flange Material & Dimensions**

Upper flange (gauge) : Stainless steel 316 Lower flange (process): Stainless steel 316 (Exotic material optional) Ranges 4 kPa to 25 kPa : Flange Ø 160 mm

Ranges 40 kPa to 2500 kPa: Flange Ø 95mm

Gaskets: PTFE or Klingerit IT1000

#### **Measuring System**

Diaphragm with push rod principle. Material: Stainless steel 316.

(Exotic Material or PTFE protection optional)

### **Geared Movement**

Material: Clockwork brass or stainless steel.

### Pointer

Collet: Aluminium or brass Blade: Black aluminium

#### Dia

Material: Aluminium, white with black lettering.

#### Window

Instrument glass or plexiglass. ( Plexiglass recommended for food applications )

### **Weather Protection**

IP 65 Dust & weather proof.

### **Working Pressure**

Steady : Full scale value
Fluctuating : 90% of full scale value
Short Period: 130% of full scale value
Over Pressure Safety: 5 x full scale value not
exceeding 40 bar.

### **Accuracy Class**

Class 1.6

### **Operating Temperature**

Ambient: -20°C to + 60°C Medium: + 100 °C

Error: 0,5% of fsd / 10°C above or below 20°C

### **Optional Extras**

Glycerine filling of case Calibration Certificate

Customized scale plates (customer logo, red line, etc) Special Dials, other than standard (dual scale, bar, psi)

Colour Coding of dial

Drag pointer ( maximum set pointer )

Micro adjustable pointer

### PRESSURE MEASUREMENT

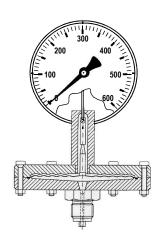
Pressure Gauge - Diaphragm Operated

Series SCH - All stainless steel construction

Data Sheet P SCH4







For dimensional drawing see technical section

ST	STANDARD PRESSURE RANGES											
Ranges	Figure Interval	Minor Graduations	Ranges	Figure Interval	Minor Graduations							
Pressure			Pressure									
0/4 kPa	1	0.1	0/800 kPa	100	10							
0/6 kPa	1	0.1	0/1000 kPa	200	20							
0/10 kPa	2	0.2	0/1600 kPa	200	20							
0/16 kPa	2	0.2	0/2500 kPa	500	50							
0/25 kPa	5	0.5										
0/40 kPa	10	1	Compound									
0/60 kPa	10	1	-100/0/300 kPa	100	10							
0/100 kPa	20	2	-100/0/500 kPa	100	10							
0/160 kPa	20	2	-100/0/700 kPa	100	10							
0/250 kPa	50	10	-100/0/900 kPa	200	20							
0/400 kPa	100	10	-100/0/1500 kPa	500	50							
0/600 kPa	100	10	-100/0/2400 kPa	500	50							
	,											



### PRESSURE MEASUREMENT

### Test Gauge - Mirror Dial

Type 3: Stainless steel case with brass internals

Data Sheet P TEST3-4

#### Service Intended

For pressure gauge testing and calibration laboratories. Suitable for media such as air, water, oil & gases that do not attack copper alloy parts.

### **Case Details**

Nominal Dia: 160 mm Material: Stainless steel 304

#### Bezel

Bayonet lock, twist type - removable. Material: Stainless steel 304

### **Pressure Connections**

Material: Brass or Stainless steel 316 Sizes: 1/4", 3/8" & 1/2" in BSP or NPT. Position: See "Mounting Configurations".

### **Mounting Flange**

Material: Polished stainless steel 304 Position: See "Mounting Configurations".

#### **Pressure Element**

Material: CuBe 2

#### **Geared Movement**

Material: Clockwork brass, wearing part argentan and

bearings.

### Pointer

Collet: Aluminium micro adjustable

Blade: Black aluminium

Material: Polished Stainless steel, white with black

lettering, mirror scale.

### Window

Instrument glass or plexiglass.

### **Weather Protection**

IP 65 Dust & weather proof.

### **Working Pressure**

Steady: Full scale value

Fluctuating: 90% of full scale value Short Period: 130% of full scale value

For pulsating pressure, the use of an inlet restrictor and/or liquid

filling is recommended.

### **Accuracy Class**

0.3% of full scale value.

### **Temperature Error**

Additional error when temperature deviates from ambient (+20 °C)

Rising temperature: + 0.3% of FSD per 10 °C Falling temperature: + 0.3% of FSD per 10 °C

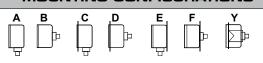
#### **Optional Extras**

Calibration Certificate Customized scale plates ( customer logo, red line, etc ) Special Dials, other than standard (dual scale, bar, psi) Colour Coding of dial Drag pointer ( maximum set pointer ) Degreased for Oxygen



For dimensional drawing see technical section

### **MOUNTING CONFIGURATIONS**



A: Bottom connection, no flange

B: Rear connection, no flange

C: Bottom connection, front flange D: Rear connection, front flange

E: Bottom connection, rear flange

F: Rear connection, rear flange

Y: Rear con. narrow front ring (clamp mtg)

STANDARD PRESSURE RANGES										
Ranges	Figure Interval	Minor Graduations	Ranges	Minor Graduations						
Pressure			Pressure							
0/60 kPa	10	1	0/6 MPa	1	0.1					
0/100 kPa	20	2	0/10 MPa	2	0.2					
0/160 kPa	20	2	0/16 MPa	2	0.2					
0/250 kPa	50	10	0/25 MPa	5	0.5					
0/400 kPa	100	10	0/40 MPa	10	1					
0/600 kPa	100	10	0/60 MPa	10	1					
0/800 kPa	100	20	0/100 MPa	20	2					
0/1000 kPa	200	20	Vacuum							
0/1600 kPa	200	20	-100/0 kPa	20	2					
0/2500 kPa	500	50	Compound							
0/4000 kPa	1000	100	-100/0/150 kPa	50	5					
			-100/0/300 kPa	100	10					
			-100/0/500 kPa	100	10					
			-100/0/700 kPa	100	10					
			-100/0/900 kPa	200	20					
			-100/0/1500 kPa	500	50					
			-100/0/2400 kPa	500	50					

HOW TO ORDER USIN	GC	OUF	3 P	AR	ΓŅ	NUMBERS
Casing Type:  Gauge Type:  Configuration:  Dial Size:  Glycerine filled / Dry:  Connection Size:  Pressure Range:					G	1/2 B 1000 kPa



### PRESSURE MEASUREMENT

### Tyre Pressure Gauge

Type R3: Stainless steel case with brass internals

Data Sheet P TYRE3

#### Service Intended

Suitable for inspection of tyre air pressure in the automotive and industrial environment.

#### **Case Details**

Nominal Dia: 63 mm standard. 50, 80 & 100 mm dia on request. Material: Stainless steel 304

#### Bezel

Type R: S/Steel rolled ring type - tamper proof.

#### **Pressure Connections**

Material: Type 3: Brass self sealing valve fitting. Position: See "Mounting Configurations".

### **Pressure Element**

Material: Type 3: Cu-alloy.

### **Geared Movement**

Material: Clockwork brass.

#### **Pointer**

Collet: Aluminium or brass Blade: Black aluminium

#### Dial

Material: Aluminium, white with black lettering.

### Window

Instrument glass or plexiglass.

### **Weather Protection**

IP 65 Dust & weather proof.

### **Working Pressure**

Steady: Full scale value Fluctuating: 90% of full scale value Short Period: 130% of full scale value

### **Accuracy Class**

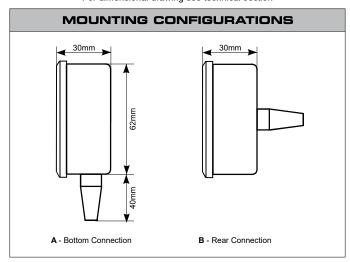
Class 1.6 (1.6 % of full scale value)

### **Optional Extras**

Calibration Certificate
Rubber cover (for robust handling)
Customized scale plates (customer logo, red line, etc)
Special Dials, other than standard (psi, inHG, etc)
Colour Coding of dial
Drag pointer (maximum set pointer)
Damped movement (Vibragauge)



For dimensional drawing see technical section



STANDARD PRESSURE RANGES							
Ranges	Figure Interval	Minor Graduations					
Standard pressure range							
Dual scale 0 / 400 kPa ( primary ), 0 / 4 bar ( secondary ) scale	100	10					
Dual scale 0 / 1000 kPa ( primary ), 0 / 10 bar ( secondary ) scale	200	20					
Optional pressure ranges							
Dual scale 0 / 60 kPa ( primary ), 0 / 0,6 bar ( secondary ) scale	10	1					
Dual scale 0 / 100 kPa ( primary ), 0 / 1 bar ( secondary ) scale	20	2					
Dual scale 0 / 160 kPa ( primary ), 0 / 1,6 bar ( secondary ) scale	20	5					
Dual scale 0 / 250 kPa ( primary ), 0 / 2,5 bar ( secondary ) scale	50	5					
Dual scale 0 / 600 kPa ( primary ), 0 / 6 bar ( secondary ) scale	100	10					
Dual scale 0 / 800 kPa ( primary ), 0 / 8 bar ( secondary ) scale	100	10					
Customized and other scales such as bar / psi / inHG etc. are	available o	on request					



#### Service Intended

Suitable for media such as air, water, oil & gases that do not attack copper alloy or stainless steel parts or will obstruct the pressure system. Typical applications will be for the control and regulation of industrial processes where switching of electrical circuits are required. Externally adjustable, single or double contacts, can be fitted to a SA Gauge pressure gauge to make the gauge suitable to activate or deactivate electrical devices. Contact can make or break in an upward or downward pressure cycle.

#### **Case Details**

Nominal Dia: 100, 160 mm diameter. S/Steel 304

Bayonet locking, twist type - removable. S/Steel 304

#### **Pressure Connection**

Material: Type T3: Brass. Type T4: S/Steel 316 Sizes: 1/4", 3/8" & 1/2" in BSP or NPT Position: See "Mounting Configurations".

#### **Mounting Flange**

Material: S/Steel 304 See "Mounting Configurations".

#### **Pressure Ranges**

0...60kPa to 250MPa (also bar, psi, etc.)

#### **Pressure Element**

Material: Type T3: Cu-alloy. Type T4: S/Steel 316

#### **Pointer**

Gauge Pointer: Black Single Contact Pointer: Red

Double Contact Pointer: 1st Cont - Green, 2nd Cont - Red

Dial - Aluminium, white with black lettering.

Window - Plexiglass / polycarbonate.

Weather Protection - IP 54.

Accuracy Class - Class 1

### **Working Pressure**

Steady: Full scale value

Fluctuating: 90% of full scale value Short Period: 130% of full scale value

For pulsating pressure, the use of an inlet restrictor and/or damped

movement.

Operating Temperature - Ambient: -20 °C to + 60 °C Medium: +70 °C (soldered tube): + 100 °C (brazed / tig wellded tube) For live steam use, a syphon tube is recommended.

### Optional Extras - Calibration Certificate

Customized scale plates (customer logo, red line, etc) Special Dials, other than standard ( dual scale, bar, psi ) Damped movement (Vibragauge), Colour Coding of dial Blow out disc, Diaphragm seals fitted, Degreased for Oxygen

### MOUNTING CONFIGURATIONS



- A: Bottom connection, no flange B: Rear connection, no flange
- C: Bottom connection, front flange D: Rear connection, front flange
- E: Bottom connection, rear flange F: Rear connection, rear flange Y: Rear con. narrow front ring (clamp mtg)

### PRESSURE MEASUREMENT

### Electrical Contact - Magnetic Type

Type T3: Stainless steel case with brass internals

Type T4: Stainless steel case with stainless steel internals

Data Sheet P EC MAG3-4



#### **ELECTRICAL CONTACT SPECIFICATIONS**

### **Magnetic Snap-Action Contacts**

The adjustable magnet of the set pointer causes a mechanical snap-action when making contact, ensuring an arc free contact, avoiding sparking or faulty switching and increasing the life span of the contact point materials. No control unit or extra power supply is required as the unit switches 12V to 230V directly. Allow 2-5% of measuring range to accommodate the resistance force required to break the magnetic contact.

### **Inductive Contacts**

Non-contact switching ensures extended service life. Additional control unit required. Designed for use in hazardous areas, this is an electric contact operating without making mechanical contact. Essentially it consists of a control head attached to the set pointer and a flag moved through the control head by the gauge pointer. The flag makes or breaks the circuit depending on the configuration, having virtually no effect on the gauge accuracy.

### **Electrical Rating**

Maximum Voltage: 250V

Maximum Current: Closed contacts: 1A

Maximum Output: Closed contacts: AC-30VA, DC-30W

Frequency: 10 - 55Hz

The operating life of the switch will be reduced if any one of these limits are exceeded, if excessively, even to the point of immediate failure.

### **SWITCH FUNCTIONS**

### Single Contact: With gauge pointer in clockwise motion

NO - Normally Open: Contact makes when pointer reaches set point. NC - Normally Closed: Contact breaks when pointer reaches set point. The opposite will apply with pointer in anti-clockwise motion.

#### Double Contact: With gauge pointer in clockwise motion

NC / NO: 1st contact breaks and 2nd contact makes when pointer reaches set point.

NO / NC: 1st contact makes and 2nd contact breaks when pointer reaches set point.

NC / NC: 1st and 2nd contact breaks when pointer reaches set point. NO / NO: 1st and 2nd contact makes when pointer reaches set point The opposite will apply with pointer in anti-clockwise motion



### Service Intended

Suitable for media such as air, water, oil & gases that do not attack copper alloy or stainless steel parts or will obstruct the pressure system. Typical applications will be for the control and regulation of industrial processes where switching of electrical circuits are required. Externally adjustable, single or double contacts, attached to the movement of a SA Gauge pressure gauge make the gauge suitable to activate or deactivate electrical devices. Contact can make or break in an upward or downward pressure cycle.

#### **Case Details**

Nominal Dia: 100, 160mm S/Steel 304

#### Bezel

S/Steel rolled ring type - tamper proof. S/Steel 304

#### **Pressure Connection**

Material: Type R3: Brass. Type R4: S/Steel 316 Sizes: 1/4", 3/8" & 1/2" in BSP or NPT Position: See "Mounting Configurations".

#### **Mounting Flange**

Material" S/Steel 304 See "Mounting Configurations".

### **Pressure Ranges**

600kPa.... 250MPa (also bar, psi, etc.) Not suitable for ranges below 600kPa

### **Pressure Element**

Material: Type R3: Cu-alloy. Type R4: S/Steel 316

#### **Pointer**

Gauge Pointer: Black Single Contact Pointer: Red

Double Contact Pointer: Green and red

Dial - Aluminium, white with black lettering.

Window - Plexiglass / polycarbonate.

Weather Protection - IP 54.

Accuracy Class - Class 1

### Working Pressure

Steady: Full scale value Fluctuating: 90% of full scale value Short Period: 130% of full scale value

For pulsating pressure, the use of an inlet restrictor is

recommended.

**Operating Temperature** - Ambient: -20 °C to + 60 °C Medium: +70 °C ( soldered tube ): + 100 °C ( brazed / tig wellded tube ) For live steam use, a syphon tube is recommended.

### Optional Extras - Calibration Certificate

Customized scale plates (customer logo, red line, etc) Special Dials, other than standard (dual scale, bar, psi), Colour Coding of dial, Blow out disc, Diaphragm seals fitted, Degreased for Oxygen

#### MOUNTING CONFIGURATIONS



- A: Bottom connection, no flange
- B: Rear connection, no flange
  C: Bottom connection, front flange
  D: Rear connection, front flange
- E: Bottom connection, rear flange
  F: Rear connection, rear flange
  Y: Rear con. narrow front ring

### (clamp mtg)

### PRESSURE MEASUREMENT

### **Electrical Contact - Micro Switch Type**

Type R3: Stainless steel case with brass internals

Type R4: Stainless steel case with stainless steel internals

Data Sheet P EC MICRO3-4



### **ELECTRICAL CONTACT SPECIFICATIONS**

### **Movements with Built-on Micro Switches**

Pressure gauge movements with built-on micro switches are a combination of movement and miniature, lever operated micro switch/es. These micro switches are characterised by a relatively high switching performance, high precision at the switching point and a long service life. The micro switches are one pole chargers, closing or opening electric circuits at the set limit values depending on the direction of movement.

Contact can be made or broken in upwards or downwards pressure cycles.

#### **Application**

Pointer movements with a micro switch should be use where high switching performances are required. The actuating force required to change the contact makes this type of electrical contact gauge unsuitable for pressure ranges below 600kPa. Allow 2-5 % of measuring range to accommodate the resistance force required to break the micro switch contact.

#### Setting

The set value is normally set with the help of a square socket adjusting key. The value is set through a hole in the window by inserting the key and turning of the adjusting axle to the desired set value. The hole should be closed after setting, with a rubber plug.

### **Electrical Rating**

Maximum Voltage: 250V

Maximum Current: 5A (resistive load) max 5A (inductive load, cos. φ>0.75) max

### **SWITCH FUNCTIONS**

### Single Contact

Contact makes or breaks when pointer reaches the set point in clockwise or anti-clockwise direction, depending on wiring configuration.

#### **Double Contact**

1st contact breaks and 2nd contact makes when pointer reaches set point or alternatively 1st contact makes and 2nd contact breaks when the pointer reaches the set point in clockwise or anti-clockwise direction, depending on wiring configuration.

Both contacts can also be set to make or break when the pointer reaches the set point in clockwise or anti-clockwise direction, depending on wiring configuration



#### Service Intended

Specifically designed duplex gauge for diesel / steam railway and industrial locomotive use. Illumination slots behind the bezel or flange facilitates easy reading in dim environments. Removable front flange available with or without illumination slots.

### **Case Details**

Nominal Dia: 100mm diameter. Material: Stainless steel 304

#### Beze

Material: Stainless steel 304 or mild steel powder

coated.

### **Mounting Configuration**

Duplex bottom or rear connection with removable front flange with or without illumination slots, in stainless steel or mild steel powder coated.

### **Pressure Connections**

Material: Brass - duplex bottom or rear

Sizes: 3/8" BSP standard, other sizes on request

### Pressure Element

Material: Cu-alloy.

#### **Pressure Ranges**

-100...6000kPa (also bar, psi, etc.)

#### **Geared Movement**

Material: Clockwork brass

#### Pointer

Collet: Aluminium or brass

Blade: Black or white aluminium depending on dial

colour.

### Dial

Material: Aluminium, black with white lettering or white with black lettering.

#### Window

Instrument glass or plexiglass.

### **Weather Protection**

IP 54 Dust resistant.

### Working Pressure

Steady: Full scale value

Fluctuating: 90% of full scale value

Short Period: 130% of full scale value

For pulsating pressure, the use of an inlet restrictor and/or

damped movement is recommended.

### **Accuracy Class**

Class 1

### **Operating Temperature**

Ambient: -20 °C to + 60 °C

Medium: +70 °C

### **Optional Extras**

Calibration Certificate (Manufacturers)

Calibration Certificate (SANAS)

Customized scale plates ( customer logo, red line, etc )

Special Dials, other than standard (dual scale, bar, psi)

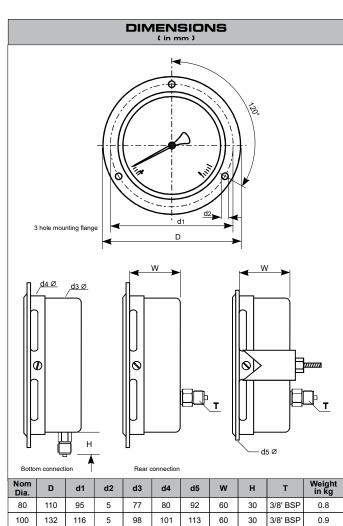
Colour Coding of dial

Blow out disc

## PRESSURE MEASUREMENT Locomotive Gauge RW4

Data Sheet P Loco RW4







## PRESSURE MEASUREMENT Locomotive Gauge RW6

Data Sheet P LOCO RW6

#### Service Intended

Specifically designed duplex gauge for diesel / steam railway and industrial locomotive use. Illumination slots behind the bezel facilitates easy reading in dim environments. Available with special square, removable front flange, with or without illumination slots.

### **Case Details**

Nominal Dia: 160mm diameter. Material: Stainless steel 304

#### Bezel

Material: Stainless steel 304 or mild steel powder coated.

### **Mounting Configuration**

Duplex bottom entry with square, removable front flange, with or without illumination slots, in stainless steel or mild steel powder coated.

### **Pressure Connections**

Material: Brass - duplex

Sizes: 3/8" BSP standard, other sizes on request

### **Pressure Element**

Material: Cu-alloy.

### **Pressure Ranges**

-100...6000kPa (also bar, psi, etc.)

#### **Geared Movement**

Material: Clockwork brass

#### Pointer

Collet: Aluminium or brass

Blade: Black or white aluminium depending on dial

colour.

### Dial

Material: Aluminium, black with white lettering or white with black lettering.

#### Window

Instrument glass or plexiglass.

### **Weather Protection**

IP 54 Dust resistant.

### **Working Pressure**

Steady: Full scale value Fluctuating: 90% of full scale value Short Period: 130% of full scale value For pulsating pressure, the use of an inlet restrictor and/or damped movement is recommended.

### **Accuracy Class**

Class 1

### **Operating Temperature**

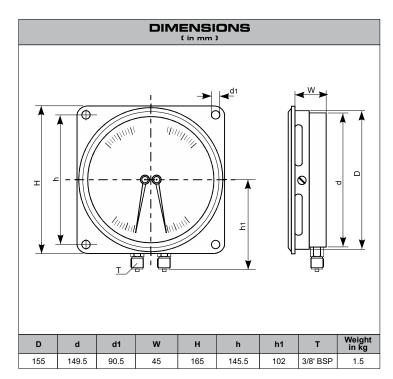
Ambient: -20 °C to + 60 °C Medium: +70 °C

### **Optional Extras**

Calibration Certificate (Manufacturers)
Calibration Certificate (SANAS)
Customized scale plates (customer logo, red line, etc)
Special Dials, other than standard (dual scale, bar, psi)
Colour Coding of dial

Blow out disc







#### Service Intended

For mining equipment and plants where hydraulic support is required.

### **Case Details**

Nominal Dia: 50, 63mm diameter. Material: Stainless steel 304

#### Beze

S/Steel rolled ring type - tamper proof.

Material: Stainless steel 304.

### **Pressure Connections**

Configuration: Bottom connection.

Material: Brass, staple lock design. (S/steel on request)

#### Pressure Element

Material: Type 3: Cu-alloy.

#### **Pressure Range**

0....60MPa (also bar, psi, etc.)

### **Geared Movement**

Material: Clockwork brass.

#### Pointer

Collet: Aluminium or brass Blade: Black aluminium

#### Dial

Material: Aluminium, white with black lettering.

### Window

Plexiglass

### **Weather Protection**

IP 65 Dust & weather proof.

### **Working Pressure**

Steady: Full scale value

Fluctuating: 90% of full scale value Short Period: 130% of full scale value

### **Accuracy Class**

Class 1.6

### **Operating Temperature**

Ambient: -20 °C to + 60 °C

Medium: +70 °C (soldered tube): +100 °C (brazed / tig

welded tube)

### **Optional Extras**

Calibration Certificate

Customized scale plates (customer logo, red line, etc) Special Dials, other than standard (dual scale, bar, psi)

Damped movement (Vibragauge)

Colour Coding of dial

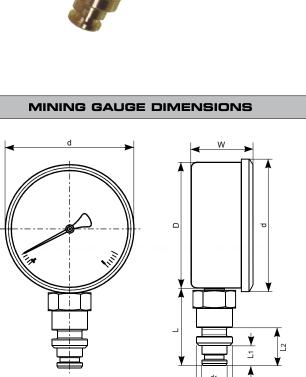
### PRESSURE MEASUREMENT

### Mining Gauge - Staple Lock SL

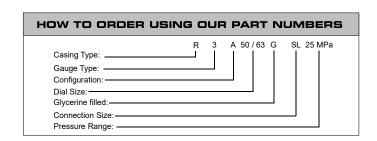
Type R3: Stainless steel case with brass internals

Data Sheet P MIN SL3





Nom Dia	D	d	d1	d2	w	L	L1	L2	Weight in kg
50	51	57.5	14	20	29	42	11	21	0.2
63	62	68.0	20	20	30	42	11	21	0.25





#### Service Intended

Safety pressure gauge, with solid front baffle wall, designed with operational safety requirements in mind. Suitable for media such as air, water, oil & gases that do not attack copper alloy or stainless steel parts or will obstruct the pressure system. Typical applications will be in the chemical, petrochemical, mining, on and offshore process industry.

#### **Case Details**

Nominal Dia: 100mm

Material: Stainless steel 304 with solid front baffle wall

and blow-out back.

#### Bezel

Bayonet locking, twist type - removable.

Material: Stainless steel 304

#### **Pressure Connections**

Material: Type T3: Brass. Type T4: Stainless steel 316

Sizes: 1/4", 3/8" & 1/2" in BSP or NPT Position: See "Mounting Configurations".

### Mounting Flange

Material: Polished stainless steel 304 Position: See "Mounting Configurations".

### **Pressure Element**

Material: Type T3: Cu-alloy. Type T4: Stainless steel 316

### **Geared Movement**

Material: Clockwork brass or stainless steel.

### Pointer

Collet: Aluminium or brass Blade: Black aluminium

#### Dial

Material: Aluminium, white with black lettering.

### Window

Plexiglass or safety glass.

( Plexiglass recommended for food applications )

### **Weather Protection**

IP 65 Dust & weather proof.

#### **Working Pressure**

Steady: Full scale value

Fluctuating: 90% of full scale value Short Period: 130% of full scale value

For pulsating pressure, the use of an inlet restrictor and/or liquid

filling is recommended.

### **Accuracy Class**

Class 1

### **Operating Temperature**

Ambient: -20 °C to + 60 °C

Medium: +70 °C ( soldered tube ): +100 °C ( brazed / tig wellded tube ) For live steam use, a syphon tube is recommended.

### **Optional Extras**

Calibration Certificate

Customized scale plates ( customer logo, red line, etc ) Special Dials, other than standard ( dual scale, bar, psi )

Damped movement (Vibragauge)

Colour Coding of dial

Drag pointer ( maximum set pointer )

Micro adjustable pointer Diaphragm seals fitted Degreased for Oxygen

### PRESSURE MEASUREMENT

### Safety Gauge - Solid Front SF

Type T3: Stainless steel case with brass internals

Type T4: Stainless steel case with stainless steel internals

Data Sheet P SF3-4



For dimensional drawing see technical section

### MOUNTING CONFIGURATIONS



- A: Bottom connection, no flange
  B: Rear connection, no flange
- B: Rear connection, no flange
- C: Bottom connection, front flangeD: Rear connection, front flange
- E: Bottom connection, rear flange
- F: Rear connection, rear flange
- Y: Rear con. narrow front ring (clamp mtg)

ST	STANDARD PRESSURE RANGES					
Ranges	Figure Interval	Minor Graduations	Ranges	Figure Interval	Minor Graduations	
Pressure			Pressure			
0/2.5 kPa	0.5	0.05	0/6 MPa	1	0.1	
0/4 kPa	0.1	0.01	0/10 MPa	2	0.2	
0/6 kPa	1	0.1	0/16 MPa	2	0.2	
0/10 kPa	2	0.2	0/25 MPa	5	0.5	
0/16 kPa	2	0.2	0/40 MPa	10	1	
0/25 kPa	5	0.5	0/60 MPa	10	1	
0/40 kPa	10	1	0/100 MPa	20	2	
0/60 kPa	10	1	0/160 MPa	20	2	
0/100 kPa	20	2	0/250 MPa	50	5	
0/160 kPa	20	5	Vacuum			
0/250 kPa	50	5	-100/0 kPa	20	2	
0/400 kPa	100	10	Compound			
0/600 kPa	100	10	-100/0/150 kPa	50	5	
0/800 kPa	100	10	-100/0/300 kPa	100	10	
0/1000 kPa	200	20	-100/0/500 kPa	100	10	
0/1600 kPa	500	50	-100/0/700 kPa	100	10	
0/2500 kPa	500	50	-100/0/900 kPa	200	20	
0/4000 kPa	1000	100	-100/0/1500 kPa	500	50	
			-100/0/2400 kPa	500	50	

HOW TO ORDER USIN	G C	UF	? P	ARI	г <b>г</b>	IUMBERS
Casing Type:	i				G	1/2 B 1000 kPa



#### Service Intended

Suitable for the measurement and indication of two simultaneous or individually applied pressures. Intended for media such as air, water, oil & gases that do not attack copper alloy or stainless steel parts or will obstruct the pressure system.

#### **Case Details**

Nominal Dia: 100, 160mm Material: Stainless steel 304

#### Bezel

S/Steel 304 rolled ring type - tamper proof.

### **Pressure Connections**

Material: Type 3: Brass. Type 4: Stainless steel 316

Sizes: 1/4", 3/8" & 1/2" in BSP or NPT (Position: See "Mounting Configurations".)

### **Mounting Flange**

Material: Polished stainless steel 304

### **Pressure Element**

Material: Type 3: Cu-alloy. Type 4: Stainless steel 316

### **Geared Movement**

Material: Clockwork brass or stainless steel.

Collet: Aluminium or brass Blade: Black aluminium

Material: Aluminium, white with black lettering.

### Window

Instrument glass or plexiglass

#### **Weather Protection**

IP 65 Dust & weather proof.

### **Working Pressure**

Steady: Full scale value

Fluctuating: 90% of full scale value Short Period: 130% of full scale value

For pulsating pressure, the use of an inlet restrictor and/or liquid

filling is recommended.

### **Accuracy Class**

Class 1

### **Operating Temperature**

Ambient: -20 °C to + 60 °C Medium: +70 °C (soldered tube): + 100 °C (brazed / tig

welded tube)

#### **Optional Extras**

Calibration Certificate

Customized scale plates (customer logo, red line, etc.) Special Dials, other than standard (dual scale, bar, psi)

Colour Coding of dial

Blow out disc

Degreased for Oxygen

### PRESSURE MEASUREMENT

### **Duplex Pressure Gauge**

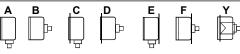
Type R3: Stainless steel case with brass internals

Type R4: Stainless steel case with stainless steel internals

Data Sheet P DUP3-4



### **MOUNTING CONFIGURATIONS**



- A: Bottom connection, no flange
- B: Rear connection, no flange
- C: Bottom connection, front flange
- D: Rear connection, front flange
- E: Bottom connection, rear flange
- F: Rear connection, rear flange
- Y: Rear con. narrow front ring (clamp mtg)

ST	STANDARD PRESSURE RANGES						
Ranges	Figure Interval	Minor Graduations	Ranges	Figure Interval	Minor Graduations		
Pressure			Vacuum				
0/60 kPa	10	1	-100/0 kPa	20	2		
0/100 kPa	20	2	Compound				
0/160 kPa	20	2	-100/0/150 kPa	50	5		
0/250 kPa	50	5	-100/0/300 kPa	100	10		
0/400 kPa	100	10	-100/0/500 kPa	100	10		
0/600 kPa	100	10	-100/0/700 kPa	100	10		
0/800 kPa	100	10	-100/0/900 kPa	200	20		
0/1000 kPa	200	20	-100/0/1500 kPa	500	50		
0/1600 kPa	500	50	-100/0/2400 kPa	500	50		
0/2500 kPa	500	50					
0/4000 kPa	1000	100					

HOW TO ORDER US	ING C	UF	? P	ARI	Γ <b>N</b>	IUMBERS
Casing Type:  Gauge Type: Configuration: Dial Size: Glycerine filled / Dry: Connection Size: Pressure Range:					G	1/2 B 1000 kPa



#### Service Intended

High accuracy, precision digital gauge, suitable for field & laboratory applications. Ideal for calibration of other pressure measuring equipment. Compatible with media such as air, water, oil & gases that do not attack stainless steel parts or will obstruct the pressure system.

#### **Features**

Low power consumption, continuous working time, up to 10 000 working hours, depending on measurement speed setting.

1 reading/second = 1 year,

1 reading/2 seconds = 2 years

Pressure bar graph providing quick visual indication of pressure output.

Auto peak recording.
Communication: RS232
Overload alarm function

CE and EX approved on request.

### Case & Bezel Details

Nominal Dia: 95mm x 41mm deep Material: Rugged aluminium

### **Pressure Connections**

Material: Stainless steel 316

Sizes: 1/2" BSP Standard (other on request)

### **Technical Specifications**

Accuracy: < 100 MPa - 0.05% FS Standard ≥ 100 MPa - 0.1% FS Standard

Optional on request (0.025%, 0.1% & 0.2%

of Full Scale)

0.05% accuracy guaranteed over ambient

temperature range (0°C - 50°C)

0.025% accuracy guaranteed over ambient

temperature range (20°C - 25°C)

Pressure Range: As per standard ranges in chart Display units: Pa, kPa, MPa, mbar, bar, psi, inH,O,

mmH<sub>2</sub>O, inHg and mmHg

Display: 6 digit LCD with backlight function, 14mm

character height

Temperature Compensation: 0+50 °C
Temperature Stability: 0.02% FS/°C
Operational Spec: Ambient Temp 0+50 °C

Medium Temp 0+70 °C Relative Humidity: 0-85% non-condensing

Burst Pressure: 2 x FS

Over Pressure: 1.7x FS@<35MPa, 1.5x FS@>35MPa

Wetted Parts: Stainless Steel 316

Power: Built-in 3.6V lithium battery or 3 AA alkaline

batteries Weight: 0.5kg

### **Optional Extras**

Calibration Certificate Diaphragm Seals fitted

### PRESSURE MEASUREMENT

### **Digital Gauge**

Type DPG610: Precision Digital Pressure Gauge



	ACCURACY		SSURE F	Accuracy	
Range	(% FS)	Resolution	Range	(% FS)	Resolution
Pressure			Vacuum		
0/16 kPa	0.05	0.001	-100/0 kPa	0.05	0.0001
0/25 kPa	0.05	0.001			
0/40 kPa	0.05	0.001	Compound		
0/60 kPa	0.05	0.001	-0.06 + 0.06 kPa	0.05	0.0001
0/100 kPa	0.05	0.01	-0.25+0.25 kPa	0.05	0.0001
0/160 kPa	0.05	0.01	-1+1 kPa	0.05	0.0001
0/250 kPa	0.05	0.01	-2+2 kPa	0.05	0.0001
0/400 kPa	0.05	0.01	-5+5 kPa	0.05	0.0001
0/600 kPa	0.05	0.01	-10+10 kPa	0.05	0.001
0/1000 kPa	0.05	0.1	-16+16 kPa	0.05	0.001
0/1600 kPa	0.05	0.1	-25+25 kPa	0.05	0.001
0/2500 kPa	0.05	0.1	-40+40 kPa	0.05	0.001
0/4000 kPa	0.05	0.1	-60+60 kPa	0.05	0.001
0/6 MPa	0.05	0.001	-100+100 kPa	0.05	0.01
0/10 MPa	0.05	0.001	-100+160 kPa	0.05	0.01
0/16 MPa	0.05	0.001	-100+250 kPa	0.05	0.01
0/25 MPa	0.05	0.001			
0/40 MPa	0.05	0.001	Differential		
0/60 MPa	0.05	0.001	2 kPa	0.05	0.0001
0/100 MPa	0.1	0.01	5 kPa	0.05	0.0001
0/160 MPa	0.1	0.01	10 kPa	0.05	0.001
0/250 MPa	0.1	0.01			



#### Service Intended

General purpose digital gauge, suitable for media such as air, water, oil & gases that do not attack stainless steel parts or will obstruct the pressure system. Typical applications will be in the general industrial and hydraulic industry.

### Description

The DPG 502 is a digital pressure gauge with an accuracy of 0.2% of full scale. it features a max/peak pressure memory function.

#### **Features**

Low power consumption, 1200 hours battery life. High accuracy and stability. Maximum (Peak) value function. Zero and full scale calibration function.

### **Case Dimension**

Nominal Dia: 67mm x 35mm deep

### **Pressure Connections**

Material: Stainless steel 316

Sizes: 1/4" BSP Standard (other on request)

### **Technical Specifications**

Accuracy : +/- 0.25% Full Scale

Pressuré Range
Pressure units
Display
Digit Dimensions
Bar Graph

: As per standard ranges in chart
: kPa, MPa, bar, psi and kg/cm²
: 4 digit LCD with back light,
: 12mm digit height
: Percentage of full scale

Battery Status : Condition display - 5 segments

Sampling Rate : 4 times per second
Memory : Max pressure vaule
Auto Power : Selectable 1-15 min
Zero Function : zero reset and adjustment
Reset: : Delete max/peak value

Temp Compensation: -10+70 °C
Temp Stability : 0.05% FS/°C

Operational Spec : Ambient Temp -10+60 °C

Medium Temp -10+80 °C

Relative Humidity : 0-90% non-condensing

Burst Pressure : 3 x FS Over Pressure : 1.5 x FS

Wetted Parts : Stainless Steel 316 Power : 9V battery (6LR61)

Weight : 0.25kg

### **Optional Extras**

Calibration Certificate Diaphragm Seals fitted

Rubber Cover

### PRESSURE MEASUREMENT

### **Digital Gauge**

Type DPG502: Digital Pressure Gauge



Range	Accuracy (% FS)	Resolution	Range	Accuracy (% FS)	Resolutio
Pressure			Pressure		
0/35kPa	0.25	0.01	0/6 MPa	0.25	1.0
0/70 kPa	0.25	0.1	0/10 MPa	0.25	1.0
0/100 kPa	0.25	0.1	0/25 MPa	0.25	10.0
0/250 kPa	0.25	0.1	0/40 MPa	0.25	10.0
0/400 kPa	0.25	0.1	0/60 MPa	0.25	10.0
0/600 kPa	0.25	0.1	0/70 MPa	0.25	10.0
0/1000 kPa	0.25	1.0	0/80 MPa	0.25	10.0
0/1600 kPa	0.25	1.0			
0/2500 kPa	0.25	1.0			
0/4000 kPa	0.25	1.0	Vacuum		
			-100/0 kPa	0.5	0.1



### PRESSURE MEASUREMENT

### **Pressure Transmitter**

Type PT1: Standard industrial use

Type PT2: Flush diaphragm type

Data Sheet P PT4

#### Service Intended

Suitable for the majority of general industrial control applications such as hydraulics, pneumatics, pharmaceutical and food & beverage.

### Construction

Material: Stainless steel 316 Wetted Parts; Stainless steel 316

Flush diaphragm for type PT2: Stainless steel 316

### **Pressure Connections**

Material: Stainless steel 316

Size: 1/2" BSP

### **Ingress Protection**

IP 65

#### **Working Pressure**

Steady: Full scale value Over Range Limit: 150% of FS Burst Pressure: 3 x FS

#### Signal Output

4 - 20 mA 2-wire

### **Power Supply**

10 - 30 V DC

### **Accuracy Class**

0.5% (0.25% optional)

### **Compensated Temperature Range**

0 to 85 °C

Temperature Error: Zero and span < 0.02% FS / K

#### Installation

Careful consideration, regarding process conditions, should be taken when installing transmitters. Damage to the transmitter may be caused by excessive vibration, pulsation, temperature or over pressure. A capillary assembly fitted to the transmitter to remove the transmitter from the above conditions may increase instrument life.

Fluid hammer, surges or pressure spikes must be avoided by fitting a suitable snubbing device.

Typical symptoms of damage:

- The transmitter will indicate an output at zero pressure
- The transmitter output remains constant while pressure is applied or no output is indicated at all.

### Zero and Span Adjustment

Zero and span adjustment is not normally required but may be done on site to trim offsets in the process system.

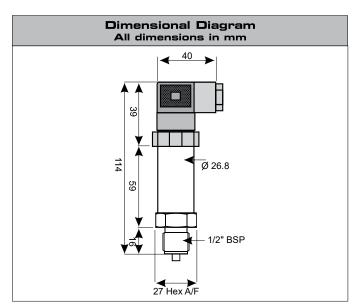
Although field calibratable we recommend that the instrument be returned to the factory for the necessary adjustments as proper re-calibration requires a calibration standard at least 3 x more accurate than the accuracy of the transmitter.

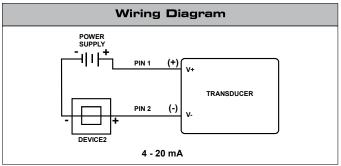
Individual span or zero adjustment may also have an effect on each other.

#### **Optional Extras**

Calibration certificate
Diaphragms seals fitted







Wiring Connections				
1 red	1 blue	Ť		
+Us	-Vs	GND		



### PRESSURE MEASUREMENT

### **Pressure Transmitter**

Type PT1 or PT2: With Display POD

Data Sheet P PT-POD

### Display

4 digital red LED display, 7mm digit height

### **Display Output Range**

-999 to 9999

### **Input Signal**

4 - 20mA, 2 wire current loop

### **Display Calibration**

Factory set to display 4.00 to 20.00 for 4 - 20mA input

#### **Accuracy**

0.2% of full scale input +/ - 1 digit

### **Power Supply Voltage**

Requires 5 V or less from loop supply

#### **Allowed Loop Current**

Maximum 60mA. Above this, automatic circuit protection is activated

### **Display Sampling Rate**

300mS to 25.5 S, adjustable filter setting from menu

### **Open Drain Switch Output**

Model number POD-B only: P type MOSFET switch. Maximum current source: 90mA, with automatic circuit protection

#### **Programming**

Via two press buttons, menu assisted. Access to the programming buttons is made by removing front cover

### Menu Selection

Zero adjustment: -999 to 9999 Span adjustment: 0 to 9999 Decimal point: 3 positions or off Filter: 0.3 to 25.5 second Over-range: On/Off Setpoint: -999 to 9999 Setpoint direction: Up/Down Setting stored om Non-volatile EEPROM

### **Error Message**

When over-range option is selected:
"HI" is displayed when input is above 20mA "LO" is displayed when input is less than 4mA
When over-range option is off:
"ErC6" is displayed when range -999 to 9999 is exceeded

### Temperature Range

Operating: - 10 'C to + 60 'C Storage: -30 'C to + 80 'C

#### **Case Material**

Moulded ABS plastic, red acrylic display window, nitrile seal

### **Ingress Protection Type**

Splash-proof, enclosure sealed to IP65

#### **Electrical Connection**

Plugs directly onto transmitters with 4-20mA output and right-angled DIN 43650 (3-pin+earth) connector plug



The POD series is a universal 4 digit LED plug-on display for transmitters with 4-20mA, 2 wire output and fitted with DIN43650 connector. The plug-on display simply fits between the transmitter plug and connecting cable socket and is powered from the 4-20mA current loop signal of the transmitter. No additional power is required.

Display settings are stored in non-volatile EEPROM, and can be easily modified through the menu using two programming buttons. Calibration parameters (zero, span, decimal point position, filter and setpoint level) can all be reprogrammed and stored and retained when power is removed. The display assembly inside the enclosure can be rotated through 90° steps, which will suit any mounting angle and simplfy installation.

The standard model is the POD-A but the POD-B can be programed to open or close at a single set-point level. The output can then by used to trigger an alarm or provided external controller.

Typical applications for the plug-on display include use on pressure, temperature, level, RH, or flow transmitters for local readout, alarm activation or control.



PRESSURE MEASUREMENT					
Pressure Testing Kits					
TKS Series	TKM Series				
TKL Series	TKQ Series				



S A Gauge manufactures easy to handle, robust testing kits designed for troubleshooting on hydraulic, air and vacuum systems. Sizes and configurations other than indicated below are also available on request.

	TKS	TKM	TKL	TKQ
Steel carry case ( with storage space for hoses & fittings underneath hinged mounting plate )	Lightweight steel carry case, powder coated. Size 265mm long x 210mm wide x 105mm high.	Lightweight steel carry case, powder coated. Size 410mm long x 290mm wide x 105mm high.	Lightweight steel carry case, powder coated. Size 360mm long x 360mm wide x 170mm high.	Heavy duty stainless steel 304 case with rubber cover. Case dia: 160mm
Pressure gauge quantity and size per kit ( glycerine filled )	2, 3, 4, 5, or 6 x 63mm dia 2, 3, or 4 x 80mm dia 1 or 2 x 100mm dia 1 x 160mm dia (other combinations and configurations on request)	2, 3, 4, 5, 6 or 8 x 63mm dia 2, 3, 4 or 6 x 80mm dia 1, 2, 3 or 4 x 100mm dia 1 x 160mm dia (other combinations and configurations on request)	8 or 10 or 13 x 63mm dia 9 x 80mm dia 6 x 100mm dia 1 x 160mm dia ( other combinations and configurations on request )	3 x 50mm dia. Glycerine filled
Pressure ranges	vacuum : 060 / 100 kPa compound : -1000+150 / 3 pressure : 060 / 100 / 160 06 / 10 / 16 / 25 Optional scales Other units of pressure or vac Dual scales, such as MPa / pa	1 x - 30 inHG0+150 psi 1 x 0600 psi 1 x 06000 psi other units of measure available on request		
Test hose	Hose not included with kit ( av Available in: In 1m, 2m, 3m, 4	1m test hose included		
Test connectors	Kits standard with: M16 x 2 m	M16 x 2 female swivel		
Optional extras	Test hose to your requirement. Test connectors to customer re	Test connectors to customer requirements.		



#### Service Intended

Suitable for media such as air, water, oil, gas, and chemicals that will not attack stainless steel 316. Typical applications will be in a general industrial heating, air- conditioning, food, petroleum, and chemical industry.

#### **Case Details**

Nominal Dia: 50, 63, 80, 100, 125 and 160mm Material: Stainless steel 304 Adjustable set screw at the back of case for 80, 100, 125 and 160mm dia.

#### Bezel

Type R: S/Steel rolled ring type - tamper proof - for 50 and 63mm dia.

Type T: S/Steel bayonet lock, twist type - removable - for 80, 100, 125 and 160mm dia.

Material: Stainless steel 304

### **Stem Location**

Bottom or rear mount, fixed or adjustable angle. With or without mounting flange. See "Mounting Configuration". (50mm rear mount only)

### **Stem Connection**

To suit application. See "Standard stem and fitting sizes" table

Max stem pressure w/o thermowell 2500 kPa. Material: Stainless steel 316, exotic material on request.

### Thermowell

Fabricated thermowell maximum pressure 16 MPa Optional: Solid machined thermowell maximum pressure 60 MPa.

Material: Stainless steel 316, exotic material on request.

### Window

Glass or plexiglass.

#### Dial

White aluminium. Black lettering. Adjustable with set screw at back of case for 80, 100 125 & 160mm dia.

#### Pointer

Black aluminium.

### Sensing Element

Bimetal coil, direct drive.

#### **Working Range**

Maximum scale value.

#### Accuracy

Class 2 (2% of full scale value)

### **Weather Protection**

IP 65 water and weather proof.

### **Liquid Filling**

Glycerine or silicone filling of stem and case. Glycerine maximum 120°C Silicon maximum 250°C

### **Optional Extras**

Calibration Certificate Special Dials, other than standard Customer Logos Colour Coding Thermowell to suit stem

### TEMPERATURE MEASUREMENT

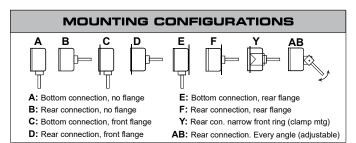
### Thermometer - Process Industry Series

Type B4: All stainless steel construction

Data Sheet TBM-4



For dimensional drawing see technical section



STANDARD	STANDARD TEMPERATURE RANGES					
Scale range °C	Figure interval	Minor graduations				
-300+50	20	2				
-300+70	20	2				
-200+100	20	2				
060	10	1				
0100	20	1				
0120	20	1				
0160	20	2				
0200	50	5				
0300	50	5				
0400	100	10				
0500	100	10				
0600	100	10				

STANDAR	RD STEM AND FITTING SIZES
Stem length including thread	65, 100, 150, 200, 250, 300mm standard. 400, 500mm and non- standard sizes available on request.
Stem diameter	6mm dia standard. 8, 10 & 12mm on request.
Standard connection	1/2" BSP or NPT male
Optional thread sizes	1/4", 3/8", 1/2", and 3/4" in BSP or NPT
Optional conn types	Plain stem (no thread) Sliding compression fittings (to adjust length of insertion) Male or female swivel nut with weld-on collar Hyglenic flange mounting for the food and beverage industry



### **TEMPERATURE MEASUREMENT**

### Thermometer - Gas Actuated Series

Type G4: All stainless steel construction

Data Sheet T GF-4

#### Service Intended

Suitable for media such as air, water, oil, gas, and chemicals that will not attack stainless steel parts. Typical applications will be in a general industrial heating, air- conditioning, food, petroleum, and chemical industry. Vibration resistant.

#### **Case Details**

100, 160 and 250mm (63 & 80mm on request)

#### **Case Material**

Stainless Steel 304

#### Bezel

Type T: S/Steel bayonet lock, twist type - removable Type R: S/Steel rolled ring type - tamper proof

### Material: Stainless steel 304

#### Stem Location

Bottom or rear mount, fixed or adjustable angle. With or without mounting flange. See "Mounting Configuration".

#### **Stem Connection**

To suit application. See "Standard stem and fitting sizes" table. Max stem pressure w/o thermowell 2500 kPa. Material: Stainless steel 316, exotic material on request.

#### Capillary

Material: Stainless steel 316. Maximum length 50m. Sprague protection sleeve optional.

#### Thermowell

Fabricated thermowell maximum pressure 16 MPa Optional: Solid mach. thermowell max pressure 60 MPa. Material: Stainless steel 316, exotic material on request.

### Window

Glass or plexiglass. (Plexiglass recommended for food applications)

### Dial

White aluminium. Black lettering. (Other options on request)

#### Pointer

Black aluminium.

#### **Sensing Element**

Bourdon tube, inert gas expansion system. Non Toxic.

### **Working Range**

Steady: Full scale value.

Short period: 130% of full scale value.

### Accuracy

Class 1 (1% of full scale value)

#### **Weather Protection**

IP 65 water and weather proof.

### **Liquid Filling**

Glycerine or silicone filling, depending on temperature range.

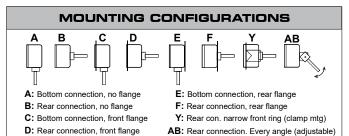
### **Optional Extras**

Micro adjustable pointer

Calibration Certificate
Customized scale plates (customer logo, red line, etc)
Special Dials, other than standard (dual scale, bar, psi)
Single or double electrical contacts
Colour Coding of dial
Drag pointer (maximum set pointer)



For dimensional drawing see technical section



Optional: All configurations available with flexible capillary for remote reading

STANDARD TEMPERATURE RANGES						
Scale range °C	Figure interval	Minor graduations				
-300+50	20	2				
-300+70	20	2				
-200+100	20	2				
060	10	1				
0100	20	1				
0120	20	1				
0160	20	2				
0200	50	5				
0300	50	5				
0400	100	10				
0500	100	10				
0600	100	10				
50650	100	10				
	Other ranges on request					

STANDAR	RD STEM AND FITTING SIZES					
Stem dia and length including thread (standard sizes, other sizes on request)	12mm dia x 100, 150, 200, 250, 300mm long (Sensitive L= 45mm) 10mm dia x 120, 150, 200, 250, 300mm long (Sensitive L= 65mm) 8mm dia x 160, 200, 250, 300mm long (Sensitive L= 65mm) 6mm dia x 300mm long (Sensitive L= 75mm)					
Standard connection	1/2" BSP or NPT male					
Optional thread sizes	1/4", 3/8", 1/2", and 3/4" in BSP or NPT					
Optional conn types	Plain stem (no thread) Sliding compression fittings (to adjust length of insertion) Male or female swivel nut with weld-on collar Hygienic flange mounting for the food and beverage industry					



### **TEMPERATURE MEASUREMENT**

### Thermometer - Vapour Expansion Series

Type V3: Stainless steel and brass construction

Data Sheet T VAP - 3

#### Service Intended

Suitable for media such as air, water, oil, gas, and chemicals that will not attack brass parts. Typical applications will be in demanding automotive, portable air compressors / generators and earth moving equipment where distance reading is required. Vibration resistant.

#### **Nominal Case Sizes**

50, 63, 80, 100mm

#### Bezel

S/Steel rolled ring type - tamper proof. Material: Stainless steel 304

### **Case Material**

Stainless Steel 304

### **Mounting Method**

Rear entry with front mounting flange. See "Mounting Configuration D, F and Y"

#### **Probe**

Flexible copper capillary PVC protected, with brass probe.

See "Standard Probe and Fitting Size".

### Window

Glass or plexiglass.

#### Dia

White aluminium. Black lettering. Other options on request.

### Pointer

Black aluminium.

### **Sensing Element**

Bourdon tube, vapour expansion system.

### **Working Range**

Steady: 90% of full scale value. Fluctuating 75% of full scale value. Short period: 110% of full scale value.

### **Accuracy**

Class 2 (2% of FSD)

#### **Weather Protection**

IP 65 water and weather proof.

### **Liquid Filling**

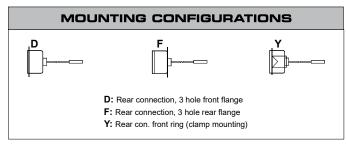
Glycerine or silicone filling.

### **Optional Extras**

Calibration Certificate
Customized scale plates (customer logo, red line, etc)
Special Dials, other than standard
Colour Coding of dial



For dimensional drawing see technical section



STANDARE	STANDARD TEMPERATURE RANGES											
Scale range °C	Figure interval	Minor graduations										
40120 °C	10	2										
40160 °C	20	2										

STANDARD I	STANDARD PROBE AND POCKET SIZES										
Probe	7mm dia x 35mm long (Sensitive L= 35mm) ( standard sizes, other sizes on request )										
Pocket thread size	1/4", 3/8", 1/2" BSP or NPT male										
Pocket length	30mm including thread										



### TEMPERATURE MEASUREMENT

### **Bimetal Thermometer**

Airconditioning / Heating Series

Data Sheet T BM-3

#### Service Intended

Suitable for general heating and cooling industry. Typical applications will be in a general industrial heating and air-conditioning industry. Also suitable for solar power systems and hot water boiler installations.

### **Case Details**

Nom. dia: 100mm

### Bezel

S/Steel 304 push on type.

### **Case Material**

Mild steel, zinc plated or stainless steel 304.

#### **Stem Location**

Centre back.

#### Stem

Stem with adjustable set screw at the end, 8mm dia with slip on, removable thermowell 11mm dia.

#### Thermowell

Material: Brass, 11mm dia. Stem Length: 63 or 100mm Pressure Rating: 6 bar max.

### Window

Glass or plexiglass.

#### Dia

White aluminium. Black lettering. Other options on request.

### **Pointer**

Black aluminium.

### **Sensing Element**

Bimetal coil, direct drive.

### **Working Range**

Maximum scale value.

### **Accuracy**

Class 2 (2% of full scale value)

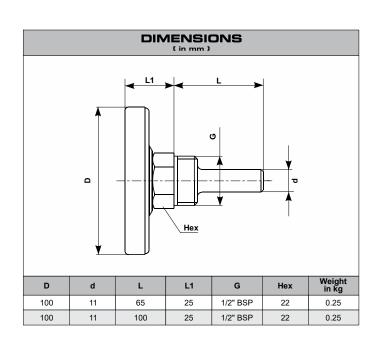
### **Weather Protection**

IP 54

### **Optional Extras**

Calibration Certificate





STANDARD TEMPERATURE RANGES										
Scale range °C	Figure interval	Minor graduations								
0 - 60	10	1								
0 - 120	20	2								
	Other ranges available on request									



### TEMPERATURE MEASUREMENT Machine Thermometer - V Line

Data Sheet T VL - 3

### Service Intended

Suitable for general heating and cooling applications. Typical applications will be in shipping, diesel engines, refrigeration and heating plants, power station turbines and the petrochemical industry.

### Design

Consists of an aluminium body, brass colour, with brass or stainless steel stem. Indication by means of liquid column in a glass capillary tube.

### **Body**

Aluminium, brass colour.

V shaped, with temperature scale printed on one side.

### **Body Length**

200mm

### Configuration

Straight & 90° angle type.

#### **Stem Connection**

Material: Brass or Stainless steel 316

Sizes: 1/2" BSP

Stem Dia: 10mm

Stem Length: 63 or 100mm long including thread

### **Pressure Rating of Stem**

6 bar max.

### **Thermometer Glass Insert**

Prismatic glass capillary tube with increments on tube.

### **Accuracy Class**

Class 1

### **Temperature Ranges**

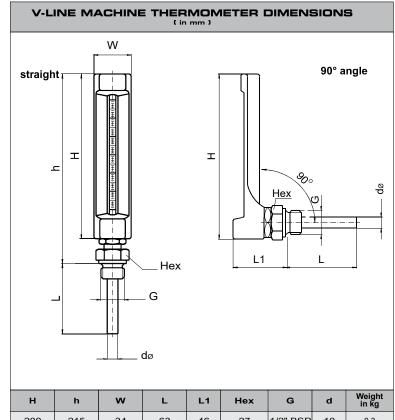
-30+50 'C

0...60/120/160/200 °C

### **Optional Extras**

Calibration Certificate Thermowell Customer logo's







### **DIAPHRAGM SEALS**

### General Industrial Use

CS70 Series

Data Sheet D CS70











For dimensional drawing see technical section

SA Gauge diaphragm seals, with application driven filling fluids, are designed to protect the pressure gauge when dealing with hot, aggressive, solidifying or hygienic media, insuring accurate and trouble free pressure indication. Typical applications will be the chemical and slurry industries or any other application where the pressure media will obstruct or corrode the pressure system.

	MODEL SSS	MODEL SPP	MODEL NNP	MODEL SCT		
Upper Body With 1/2" BSP female gauge port standard. ( other sizes on request )	Stainless Steel 316	Stainless Steel 316	Polypropylene	Stainless Steel 316		
Lower Body With 1/2" or 1" process connection standard. ( other sizes and male connections on request)	Stainless Steel 316	PTFE	Polypropylene	Carbon Steel cadmium plated.		
Diaphragm	Stainless Steel 316 welded to upper body (PTFE protection optional)	Standard: S/Steel 316, Optional: Hastelloy or Tantalum welded to upper body Optional: With 0.5mm PTFE protection	Standard: S/Steel 316 with 0.5mm PTFE protection Optional: Hastelloy or Tantalum	Tantalum welded to upper body. ( PTFE protection optional )		
Bolting	8 x M6 Stainless Steel 316 Cap screws	8 x M6 Stainless Steel 316 Cap screws	8 x M8 Stainless Steel 316 Cap s6rews	8 x M8 Stainless Steel 316 Cap screws		
Sealing Gasket	PTFE	PTFE	PTFE	PTFE		
Pressure Rating	Vacuum to 60 MPa	Vacuum to 1600 kPa	Vacuum to 1600 kPa	Vacuum to 60 MPa		
Filling Fluid	DC 20 Silicon Oil	DC 20 Silicon Oil	DC 20 Silicon Oil	On request (To suit application)		
Operating Temperature	-20 °C + 200 °C	-20 °C + 120 °C	-20 °C + 120 °C	-20 °C + 200 °C		
Optional Extras	Cooling tower Capillary extension Special filling liquids Repairs, diaphragm renewed	Cooling tower Capillary extension Special filling liquids Repairs, diaphragm renewed	Cooling tower Capillary extension Special filling liquids Repairs, diaphragm renewed	Cooling tower Capillary extension Special filling liquids Repairs, diaphragm renewed		
Weight	0.9	0.65	0.2	0.9		



DIA	DIAPHRAGM SEALS									
Food	l / Hygiene Se	eries								
NW - Series	MINI - Series	HOM - Series								

Data Sheet D HOM







SA Gauge diaphragm seals are designed to protect the pressure gauge when dealing with hot, aggressive, solidifying or hygienic media, insuring accurate and trouble free pressure indication. Typical applications will be the food and beverage, chemical and slurry industries or any other application where the pressure media will obstruct or corrode the pressure system.

	MODEL NW	MODEL MINI	MODEL HOM				
Service intended	Dairy seal for food and hygienic applications. (Easy to strip and clean)	Compact size to suit space restricted applications. ( Not suitable for pressures below 600 kPa )	Homogeniser seal for hot & high pressure applications. (Not suitable for pressure ranges below 6 MPa)				
Construction	Stainless steel 316 DIN nut. Stainless steel 316 body with stainless steel 316 welded diaphragm. Gauge connection: 1/2" BSP female Process connection: DIN 25 / 40 / 50	Stainless steel 316 body with stainless steel 316 welded diaphragm. Gauge connection: 1/4" BSP female Process connection: 3/4" BSP male	Stainless steel 316 body with stainless steel 316 welded diaphragm Gauge connection: 1/4" BSP female. Process connection: Homogeniser flange or Male running nut.				
Pressure rating	Vacuum to 0 4000 kPa	0 600 kPa to 0 60 MPa	0 6 MPa to 0 60 MPa				
Filling fluid	Glycerine / water mixture or vegetable oi.l.	DC 20 Silicon oil.	DC 20 Silicon oil.				
Operating temp.	-20 °C + 120 °C	-20 °C + 200 °C	-20 °C + 300 °C				
Optional extras	Male thread instead of union nut. Cooling tower. Capillary extension. Repairs, diaphragm renewed.	Extended body length. S / steel 316 adaptor 3/4" BSP female ( To convert seal male thread to 1/4", 3/8", 1/2" BSP or NPT male / female) S / steel cross flow adaptor with bleed port. Cooling tower. Capillary extension. Repairs, diaphragm renewed.	Extended body length. Capillary extension. Repairs, diaphragm renewed.				



### Service Intended

Suitable for hot, aggressive gaseous and liquid media under extreme conditions. Diaphragm gauges are suitable for viscous, crystallising or polluting media. Typical applications will be in the petrochemical and chemical process industry.

#### **Case Details**

Nominal Dia: 100 & 160mm Material: Stainless steel 304.

#### Bezel

Type T: S/Steel bayonet lock, twist type - removable

Type R: S/Steel rolled ring - tamper proof

Material: Stainless steel 304

### **Pressure Connections**

Flanged: To required flange specifications. Material: Stainless steel 316, other special materials to

required specifications.

: DN 25 to DN 125 in Class 10 to 250 to Sizes

required specifications.

Position: Radial bottom connection only.

Range: 60 kPa to 25 MPa Gaskets: PTFE when bolted.

### **Measuring System**

Diaphragm / bourdon tube filled system.

#### Diaphragm

Material: Stainless steel 316 welded to upper housing. other special / exotic materials on request.

#### **Geared Movement**

Material: Clockwork brass or stainless steel.

### Pointer

Collet: Aluminium or brass Blade: Black aluminium

Material: Aluminium, white with black lettering.

### Window

Instrument glass or plexiglass. ( Plexiglass recommended for food applications)

### **Weather Protection**

IP 65 Dust & weather proof.

### **Working Pressure**

Steady: Full scale value

Fluctuating: 90% of full scale value Short Period: 130% of full scale value

### **Accuracy Class**

Class 1

### **Operating Temperature**

Ambient: -20°C to + 60°C Medium: + 100 °C

Error: 0,5% of fsd / 10°C above or below 20°C

### **Optional Extras**

Glycerine filling of case Calibration Certificate

Customized scale plates ( customer logo, red line, etc ) Special Dials, other than standard (dual scale, bar, psi)

Colour Coding of dial

Drag pointer (maximum set pointer)

Micro adjustable pointer

Single or double electrical contacts

Cooling tower

Capillary Extensions

### DIAPHRAGM SEALS

### Flanged Diaphragm Seals

Data Sheet D FL



**BOLTED DIAPHRAGM** 



**WELDED DIAPHRAGM** 



## ACCESSORIES - PRESSURE Gauge Saver - GS601

### Service Intended

Adjustable over pressure protectors are intended to protect pressure gauges against the effect of pressures exceeding their maximum pressure rating. Stainless steel version for corrosive pressure media. Intended for the process industry, mechanical engineering and plant construction, chemical/petro-chemical, power stations, mining on and offshore environmental technology.

### Specification: Diaphragm Overload Type

For viscous and solidifying process media with

diaphragm seal.

Setting range: 0.016-1MPa
Over Pressure Limit: 0-5MPA
Working Temperature: -25 + 120 °C
Diaphragm Material: 316L
Set Point accuracy: ± 4%

Set Point accuracy: ± 4% Wetted Material: 316+BUNA Connection: Thread 1/2" BSP

### **Specification: Piston Overload Type**

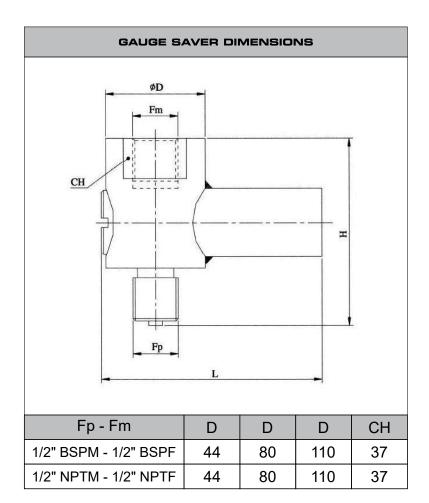
For non-solidifying process media Setting range: 1.6-40MPa Working Temperature: -25 + 120 °C

Diaphragm Material: 316L Set Point accuracy: ± 4% Wetted Material: 316+BUNA Connection: Thread 1/2" BSP

### **Special Versions**

Body Material: 321, 304, 316L Connection: Other on request.







## ACCESSORIES - PRESSURE Cooling Tower

### Service Intended

To protect pressure instruments when process temperatures would exceed the permissible temperature limit.

Recommended for process temperatures between 80 °C and 200 °C (for temperatures greater than 200 °C, capillary cooling coils are recommended)

### Design

Air circulation through the finned radiator design allows ambient temperature to sufficiently reduce the temperature of the process media through the 3mm bore of the element.

The cooling element can also be used for warming, cold or freezing media when ambient temperature is higher than the process media.

### Configuration

Female instrument connection with male process connection (other configurations on request)

### **Body Material**

Stainless steel 316

### **Stem Connection**

Instrument connection: 1/2" BSP std (other on request) Process connection: 1/2" BSP male (other on request)

### **Total Length**

118mm

### **Pressure Rating**

60 MPa max.

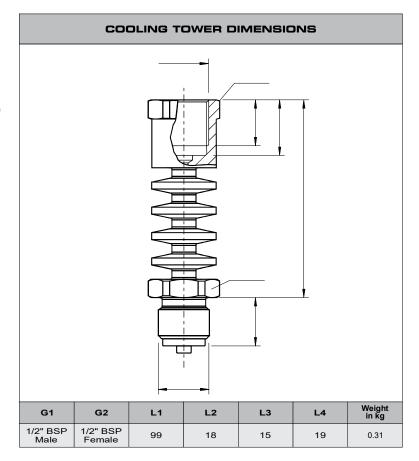
### **Temperature Ranges**

Recommended for temperature between 80 °C and 200 °C

### **Optional Extras**

Pressure Test Certificate





Data Sheet ACC 001

### **ACCESSORIES - PRESSURE**



Mozambique Industrial Supply Company

### PRESSURE GAUGE COCKS

### Service intended

To isolate the pressure gauge from the pressure medium to enable pressure gauge replacement or to enable sampling and inspection

#### Construction

Brass

#### Sizes

1/4", 3/8" & 1/2" female ends standard.

Optional: Female swivel nut or male fixed fitting.

#### Pressure rating

Maximum pressure 2500 kPa



### PRESSURE GAUGE ADAPTORS

#### Service intended

To increase or reduce the thread size of the pressure gauge to suit the process connection.

#### Sizes

1/4" BSPT or NPT fm to 3/8" or 1/2" BSP & NPT male 3/8" BSPT or NPT fm to 1/4" or 1/2" BSP & NPT male 1/2" BSPT or NPT fm to 1/4" or 3/8" BSP & NPT male

#### Pressure rating

Maximum pressure brass 100 MPa Maximum presure s/steel 160 MPa

#### Material

Brass or stainless steel 316.





### PRESSURE GAUGE SYPHON TUBES

#### Service intended

To isolate the pressure gauge from steam or other hot media that could damage the gauge internal parts.

U shape for horizontal mounting Pigtail ( trumpet ) shape for vertical mounting.

### Pressure rating

Maximum pressure 16 MPa

#### Material

1/4" shed 40 tubing. Carbon steel tubing with brass gauge adaptors or s/steel tubing with s/steel gauge adaptors.

### **Process connection**

1/4", 3/8" & 1/2" BSP or NPT male or female gauge adaptors in brass or stainless steel.



### **CAPILLARY ASSEMBLIES**

### Service intended

To protect and remove pressure gauge from vibration or excessively high process media temperatures. To enable distant reading.

#### Material

Capillary: Copper or stainless steel 3.2mm dia Connectors: Brass or stainless steel

### **Process connection**

1/4", 3/8" & 1/2" BSP or NPT male or female gauge adaptors in brass or stainless steel.

#### Pressure rating

Copper: maximum pressure 4000 kPa S/steel: maximum pressure 100 MPa



### **COOLING TOWERS**

### Service intended

To protect pressure gauge from excessively high process media temperatures.

### Material

Stainless steel 316.

### **Process connection**

1/4", 3/8" & 1/2" BSP or NPT gauge connection with 1/2" BSP process connection standard.

#### Pressure rating

Maximum pressure 60 MPa.



### PRESSURE GAUGE RUBBER COVERS

### Service intended

To protect portable field service pressure gauges against shock and rough handling.

#### Material

Natural rubber.

### Configuration

Will suit bottom or rear mounting pressure gauges without flanges.

#### Size

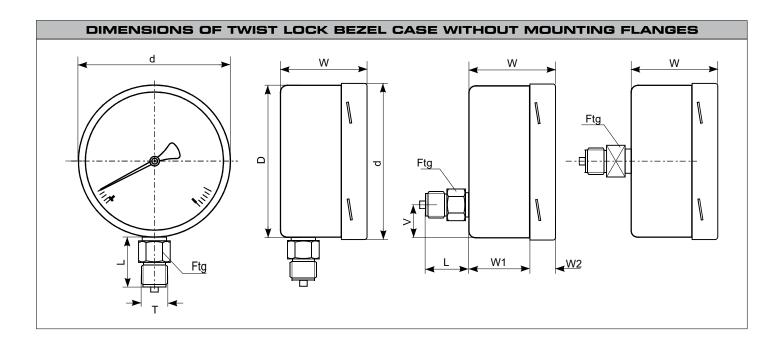
63 & 100 mm standard. Other sizes available on request.



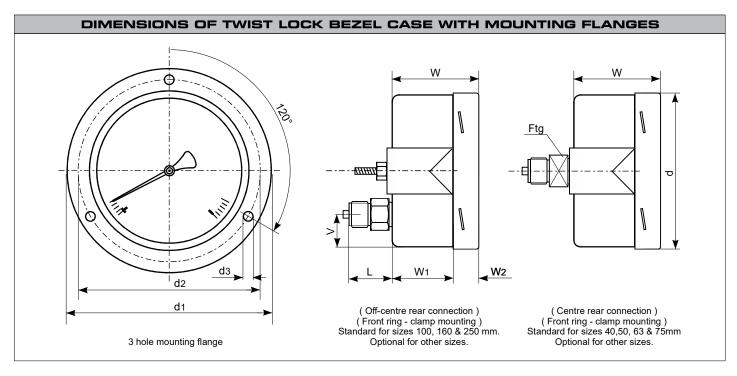


**Bayonet Twist Lock Case Dimensions** 

Data Sheet DIM PT3-4



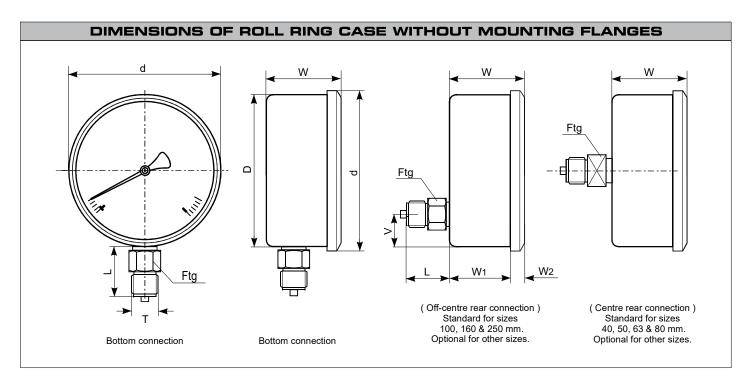
	TWIST LOCK BEZEL CASE AND FLANGE DIMENSIONS											DIMENSIONS	Panel cut out to suit back entry gauges		Weight in kg	
Nom Dia.	D	d	d1	d2	<b>d</b> 3	W	W <sub>1</sub>	W2	٧	L	Ftg	Т	3 Hole Mtg	Clamp Mtg	Dry	Glyc filled
63	62	64	85	75	3.6	32	20	12	11	24	14 A/F	1/8", 1/4" BSP / BSPT / NPT standard	64	64	0.2	0.25
100	99	101	132	116	4.8	49	32	17	22	39	22 A/F		101	101	0.5	0.90
160	158	161	196	178	5.8	51	33	18	51	39	22 A/F	1/4", 3/8", 1/2" BSP / BSPT / NPT standard (Other thread sizes on request.)	160	160	1.0	1.80
250	248	262	285	270	5.8	54	37	18	72	39	22 A/F	, ,	250	250	2.0	N/A



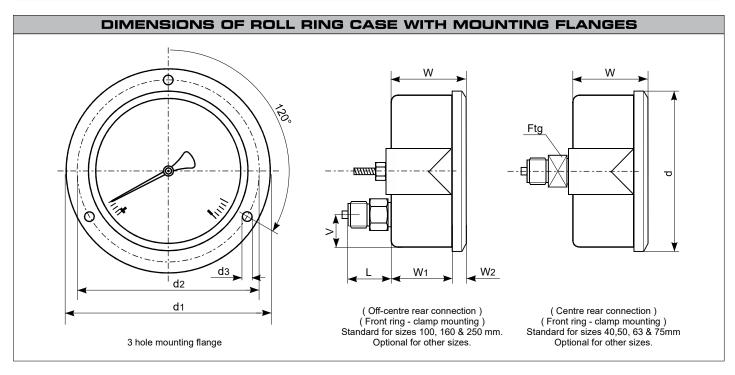


Rolled Ring Case Dimensions

Data Sheet DIM PRR3-4



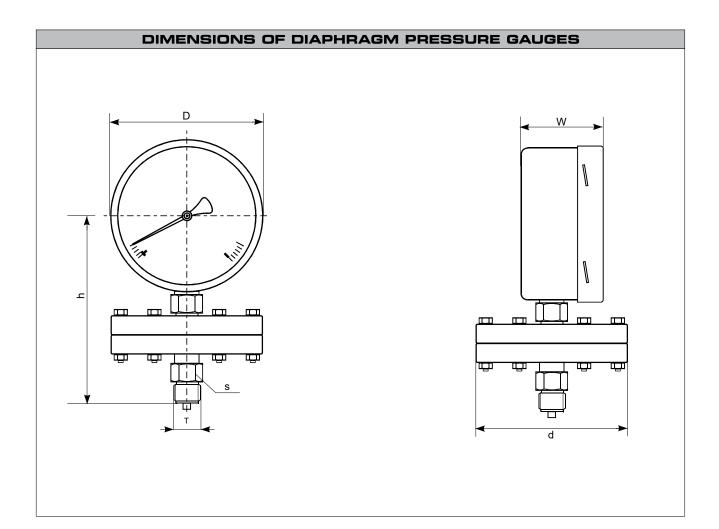
	ROLL RING CASE AND FLANGE DIMENSIONS												to sui	cut out t back gauges	Weight in kg	
Nom Dia.	D	d	d1	d <sub>2</sub>	dз	W	W1	W2	V	L	Ftg	Т	3 Hole Mtg	Clamp Mtg	Dry	Glyc
40	41	47	61	51	3.6	26	21	5	N/a	20	11 A/F	1/8' NPT standard	42	43	0.10	0.12
50	51	57	71	60	3.6	30	24	6	N/a	24	14 A/F	1/8", 1/4" BSP / BSPT / NPT standard	55	53	0.15	0.25
63	62	68	85	75	3.6	32	26	6	11	24	14 A/F	( 3/8", 1/2" BSP / BSPT / NPT and other	68	65	0.20	0.30
80	75	82	110	95	4.8	33	26	7	18	24	14 A/F	threads on request.)		77	0.30	0.60
100	100	109	132	116	4.8	51	43	8	22	39	22 A/F	1/4", 3/8", 1/2" BSP / BSPT / NPT standard	106	102	0.50	0.90
160	154	161	196	178	5.8	53	42	11	49	39	22 A/F	( Other thread sizes on request. )	157	156	1.00	1.80





Diaphragm Operated Pressure Gauge Dimensions

Data Sheet DIM P SCH4

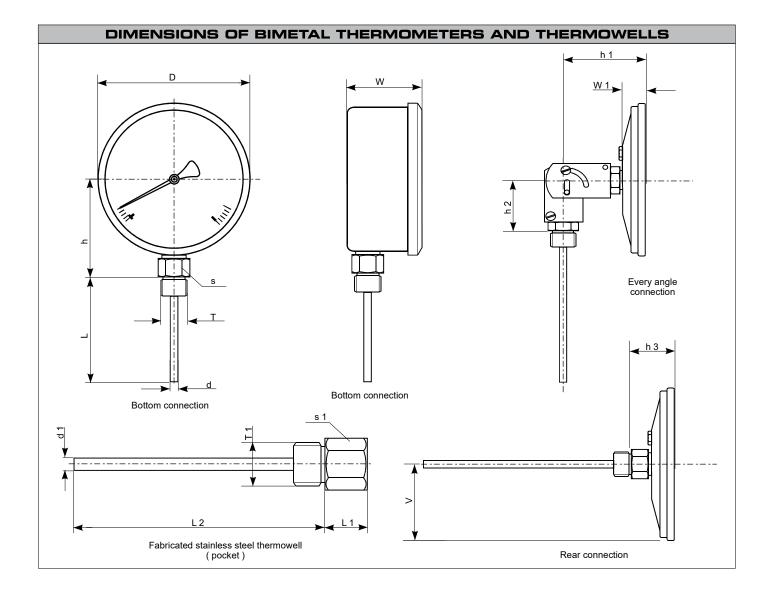


PRESSURE GAUGE CASE & FLANGE DIMENSIONS ( in mm )												
Nom Case Ø	Range	D	d	h	s	W	Т	Dry	Glyc			
100	0-2.5, 0-4, 0-6, 0-10, 0-16, 0-25, 0-40 kPa	99	160	135	22	49	½"BSP male standard,	3.5	3.8			
160	Compound & vacuum ranges available on request.	158	100	160	Hex	51	other threads on request.	3.8	4.5			
100	0-60, 0-100, 0-160, 0-250, 0-400, 0-600, 0-1000,	99	95	135	22	49	½"BSP male standard,	1.7	2.0			
160	0-1600, 0-2500 kPa Compound & vacuum ranges available on request.	158	95	160	Hex	51	other threads on request.	2.0	2.7			



**Bimetal Process Thermometer Dimensions** 

Data Sheet DIM T PROC4



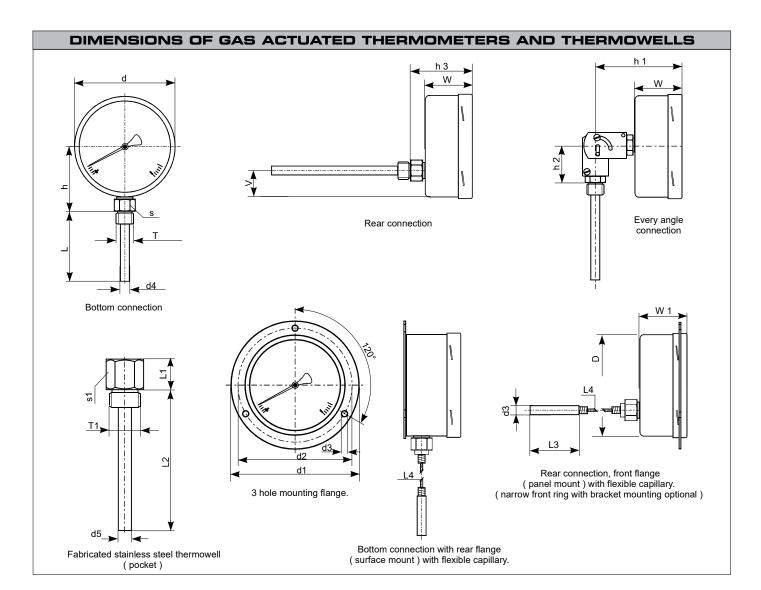
	BIMETAL THERMOMETER DIMENSIONS ( in mm )											We in	ight kg
Nom Case Ø	D	d	h	h1	h2	h3	L	s	Т	W	W1		Glyc filled
50	58	6	N/A	N/A	NA	25	Standard lengths	22 Hex	1/2" BSP / NPT Standard.	N/A	13	0.15	0.25
63	68	6	64	60	47	28	65, 100, 150, 200, 250& 300mm.	22 Hex	Other sizes on request.	38	16	0.2	0.3
80	81	6	70	61	47	29	Non standard & other	22 Hex	·	48	17	0.4	0.5
100	107	6	84	691	47	29	lengths up to 500mm	22 Hex		50	17	0.5	0.9
125	130	6	95	66	47	34	available on request.	22 Hex		N/A	22	N/A	N/A
160	161	6	110	69	47	37	avaliable of request.	22 Hex		50	25	1.0	1.8

	FABRICATED THERMOWELL DIMENSIONS ( SOLID MACHINED ON REQUEST ) ( in mm )											
d1	L1	L2	s1	T1								
10	25	Standard lengths: 45, 80, 130, 180, 230, 280mm  Non standard lengths & other specifications on request.	27 Hex	1/2" BSP / NPT male thread standard. Other specifications on request.								



**Gas Actuated Thermometer Dimensions** 

Data Sheet DIM T GF4



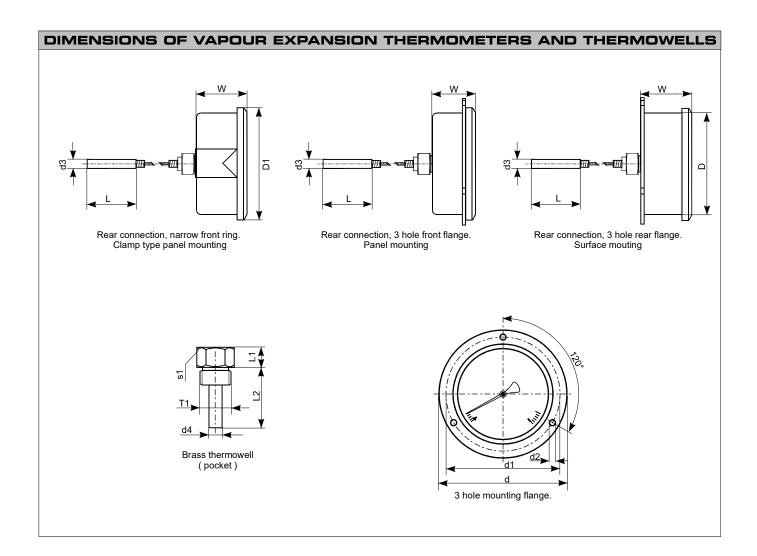
	GAS ACTUATED THERMOMETER DIMENSIONS ( in mm )															Panel cut out to suit back entry gauges		Weight in kg				
Nom Case Ø	D	d	d1	d2	d3	d4	d5	h	h1	h2	h3	L	L3	L4	s	Т	٧	W	3 Hole MTG	Clamp MTG	Dry	Glyc filled
63	62	64	85	75	3.6	12mm	14mm	50	72	47	57	Standard lengths	ō		0	Standard	11	32	64	64	0.3	0.35
100	99	101	132	116	4.8	dia std	dia std	70	89	47	74	100, 150, 200,	standard.	30m	22 Hex	1/2"	22	49	101	101	0.7	1.0
160	158	161	196	178	5.8	1		95	91	47	76	250 & 300mm.	o da	t g	22 Hex	BSP / NPT.	51	51	160	160	1.0	2.2
250	248	262	285	270	5.8	6, 8,9.5 & 10mm		145	94	47	79	Non standard &	stan	length up to 30	22 Hex	Other sizes	72	54	250	250	2.0	NA
						dia on	dia on							l >		1						
						request.	request.					other lengths	톤은	illa		on						
						1						up to 2m	150mm Other leng	Capillar		request.						
						1						available on request.	) <u> </u>	ال ۾		1						

F	FABRICATED THERMOWELL DIMENSIONS ( SOLID MACHINED ON REQUEST ) ( in mm )										
d4	L1	L2	s1	T1							
16	25	Standard lengths: 80, 130, 180, 230, 280mm  Non standard lengths & other specifications on request.	27 Hex	1/2" BSP / NPT male thread standard. Other specifications on request.							



Vapour Expansion Series Dimensions

Data Sheet DIM T VAP3



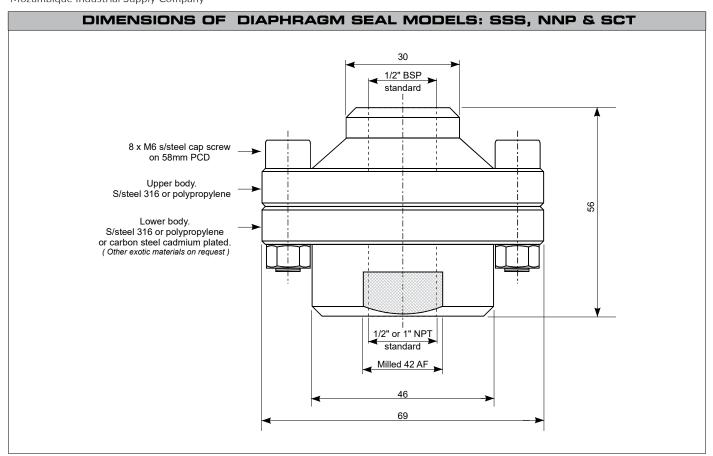
	GAS	ACTU	to sui	cut out t back gauges	Weight in kg								
Case Ø	D	D1	d	d1	d2	d3	L	s	W	3 Hole MTG	Clamp MTG	Dry	Glyc filled
50	51	57	71	60	3.6	7	35	14 Sq	30	55	53	0.2	0.3
63	62	68	85	75	3.6	7	35	14 Sq	32	68	64	0.4	0.5
80	75	82	110	95	4.8	7	35	86	78	0.5	0.9		
100	100	109	132	51	106	102	0.7	1.1					

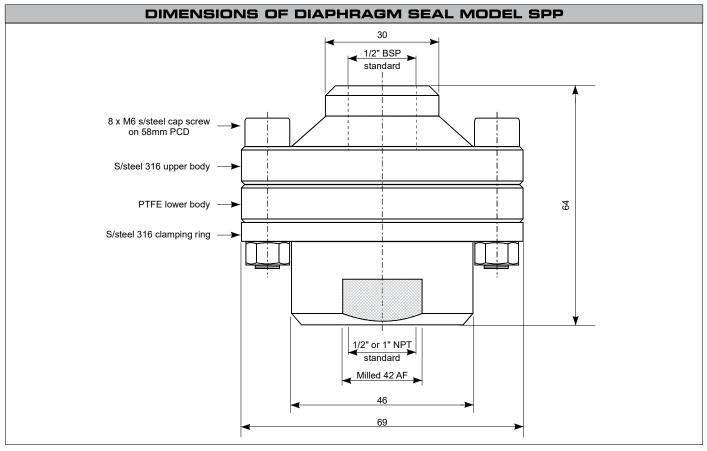
	SOLID MACHINED BRASS THERMOWELL DIMENSIONS ( in mm )												
d4	L1	L2	s1	Т1									
10	14	30	27 Hex	1/4", 3/8", 1/2" BSP / NPT male thread standard. Other specifications on request.									



Diaphragm Seals CS70 Dimensions

Data Sheet DIM P CS70

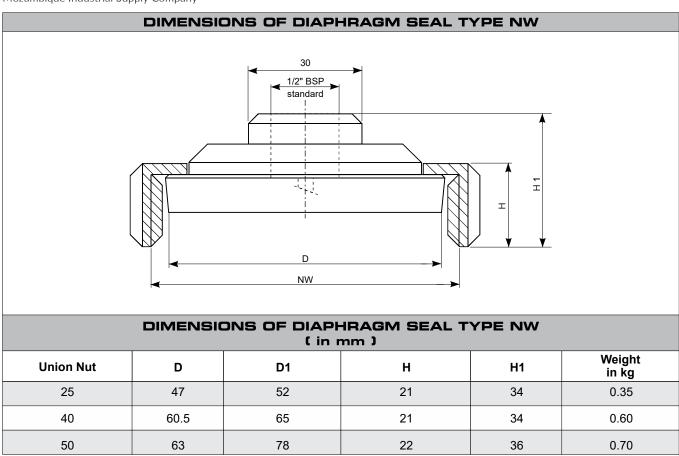


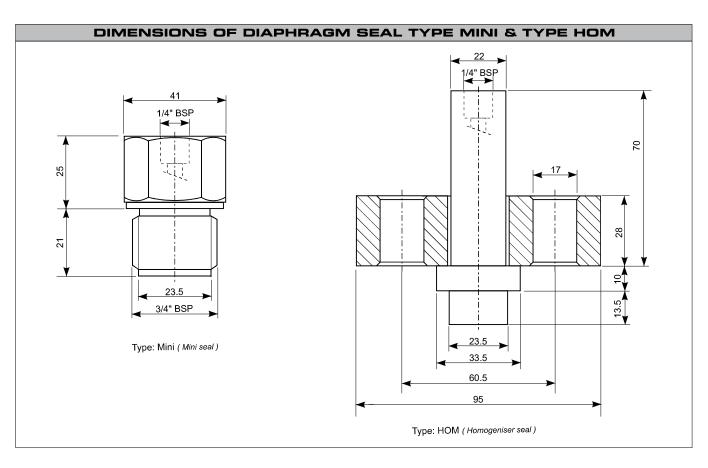




Diaphragm Seal Dimension - Hygiene Series

Data Sheet DIM HYG







### STANDARD GAUGE SCALE RANGES

### Standard marking and increments for accuracy class 1 and 1,6

Round scales expand over 270  $^{\circ}$  Dual & customised scales are available on request.

Scale Range		Duc	Scale	Markings		on reque	.ot.		Increments				
01	0	0.2	0.4	•	0.6	0.8	_	1	0.02				
010 0100	0	2 20	4		6	8		10 100	0.2 2				
0100	0	200	40 400		60 600	80 80	20						
								1000					
-10 -100	-1 -10	-0.8 -8	-0.6 -6		-0.4 -4	-0.: -2		0 0	0.02 0.2				
-1000	-100	-80	-60		-40	-20		0	2				
02.5	0	0.5	1.0		1.5	2.0	)	2.5	0.05				
025	0	5	10		15	20	)	25	0.5				
0250 02500	0	50 500	100 1000		150 1500	200 200		250 2500	5 50				
0500	0	100	200		300	40	0	500	10				
-1000900	-100	0 100	300		500	70		900	20				
-1000150	-100	50	0		50	10	0	150	5				
			1111111	111411	111111	111111	111111	1111					
-10002400	-100 <b>0</b>	400	900	_	1400	1900	) -	2400	50				
	1111111												
00.8	0	0.1 0.2	0.3	<b>■</b> 0.4	0.5	0.6	0.7	0.8	0.01				
08	0	1 2	3	4	5	6	7	8	0.1				
080	0	10 20	30	40	50	60	70	80	1				
0800	0	100 200		400	500	600	700	800	10				
08000	0	1000 2000	3000	4000	5000	6000	7000	8000	100				
01.6	0	0.2 0.4	0.6	8.0	1.0	1.2	1.4	1.6	0.02				
016 0160	0	2 4 20 40	6 60	8 80	10 100	12 120	14 140	16 160	0.2				
01600	Ö	200 400		800	1000	1200	1400	1600	20				
-1000700	-100	0 100	200	300	400	500	600	700	10				
-10001500	-100 0	100 300	500	700	900	1100	1300	1500	20				
		111111		11111	11111		11111	1					
04	0	1		2		3		4	0.1				
040 0400	0	10 100		20 200		30		40	1				
0400	0	100		2000		300 3000		400 4000	10 100				
0200	0	50		100		150		200	5				
-100300	-100	0		100		200		300	10				
	<u>, 1</u> 1111,	[1111]	111111111111111111111111111111111111111	ШДШ	111111111	Ш	1111111	11111					
00.6	0	0.1	0.2	0.3	0.4	-	0.5	0.6	0.01				
06	0	1	2	3	4		5	6	0.1				
060	0	10	20	30	40		50	60	1				
0600	0	100	200	300	400		500	600	10				
06000	0	1000	2000	3000	4000		0000	6000	100				
0120 0300	0	20 50	40 100	60 150	80 200		100 250	120 300	2 5				
-100500	-100	0	100	200	300		400	500	10				
-100300	-100	U	100	200	300	•	100	500	10				



### **TEST GAUGE SCALE RANGES**

Standard marking and increments for accuracy class 0.3 and 0.5

Round scales expand over 270° Available with or without mirror scale. Dual & customised scales are available on request.

Scale Range									ales a Marki									Increments
							-											
01	0 0.1 0.2 0.3													0.005				
01			3	4		5		6 7				0.9 9		10	0.003			
0100			30	4		50		60	, 70		8	90		100	0.03			
01000			300	40	00	500	6	00	700		800	90	0	1000	5			
-1000			-70	-6	00	-50	-	40	-30		-20	-1	0	0	0.5			
01.6	0	0.1	0.2	0.3	0.4	0.5	0.6	0.7	8.0	0.9	1.0	1.1	1.2	1.3	1.4	1.5	1.6	0.01
016	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	0.1
0160	0	10	20	30	40	50	60	70	80	90	100	110	120	130	140	150	160	1
01600	0	100	200	300	400	500	600	700	800	900	1000	1100	1200	1300	1400	1500	1600	10
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02.5	0			0.5			1.	.0		1	1.5			2.0			2.5	0.02
025	0 5				10			15 20			20 25			25	0.2			
0250	0 50			100			1	150			200			250	2			
02500	0 500			1000			15	500		2	2000			2500	20			
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04 040						1.5 2									35		0.02	
	0		5		10	15 20			25								0.2	
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04000	0		500		1000		150	0	2000		2500	0	3000		3500	)	4000	20
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06	Ö	0.5		1	1.5	2		2.5	3	3.		4	4.5	5		5.5	6	0.05
060	0	5		10	15	20		25	30	35	5 .	40	45	50		55	60	0.5
0600	0	50	1	00	150	200	) 2	250	300	35	0 4	100	450	500	) 5	550	600	5
06000	0	500	10	000	1500	200	0 2	2500	3000	350	00 4	000	4500	500	0 5	500	6000	50



## Notes: