

# Bourdon Tube Pressure Gauges Ultra High Purity (UHP) Series Type 230.15

WIKA Datasheet 230.15

## Applications

- Semiconductor and electronic industry, medical industry, gene technology, biotechnology and pharmaceutical industries.
- Suitable for corrosive environments and gaseous or liquid media that will not obstruct the pressure system
- Where measurement of high purity gases is needed without contamination of the process media.

## Special Features

- 316L SS wetted parts
- Electro-polished stainless steel case & face-seal connection
- Positive and compound pressure ranges to 5000 psi

## Standard Features

### Design

ASME B40.100

### Sizes

2" (50 mm)  
1 1/2" (40 mm)

### Accuracy Class

2":  $\pm 2/1/2\%$  of span (ASME B40.100 Grade A)  
1 1/2":  $\pm 3/2/3\%$  of span (ASME B40.100 Grade B)

### Ranges

Vacuum / compound to 30" Hg/0/300 psi  
Pressure from 15 psi up to 5000 psi  
or other equivalent units of pressure or vacuum

### Working Pressure

Steady:  $\frac{3}{4}$  full-scale value  
Fluctuating:  $\frac{2}{3}$  full-scale value  
Short time: full-scale value

### Operating Temperature

Ambient: -40°F to +140°F (-40°C to +60°C)  
Medium: +212°F (+100°C) maximum

### Temperature Error

Additional error when temperature changes from reference



Bourdon Tube Pressure Gauge Model 230.15

temperature of 68°F (20°C)  $\pm 0.4\%$  for every 18°F (10°C) rising or falling. Percentage of span.

### Weather Protection

Weather resistant (NEMA 3 / IP 54)

### Pressure Connection

Material: Face-seal nut 316 SS,  
Face-seal gland, 316L SS  
Position: Lower mount (LM)  
Center back mount (CBM)  
Type of Connection: Face-seal fixed male  
Swivel male or female  
Wetted Surface Finish:  $R_a < 0.25\mu\text{m}$  ( $R_a < 10\mu\text{inch}$ )-internal

### Bourdon Tube

Material: 316L SS  
30" Hg (vac) to 1,000 psi, C-type  
1,500 to 5000 psi, helical type  
Helium leak tested  $1 \times 10^{-9}$  scc/sec (inboard)

### Socket

Material: 316L SS  
 $R_a < 0.5\mu\text{m}$  ( $R_a < 20\mu\text{inch}$ ) - internal

(Standard Features continued on Page 2 of 6)

### Movement

Stainless steel

### Dial

White aluminum with stop pin and black lettering

### Pointer

Black aluminum

### Case

304 SS, electropolished

### Window

Polycarbonate: twist-lock (2"); snap cap (1½")

### Cleanliness

UHP 'clean' for semiconductor gas applications

- in accordance with SEMI/SEMATECH

Cleaned and packed in class 100/10 cleanroom

Packaged in two bags

Purged with Nitrogen

Protective cap over threaded connection

### Order Options (minimum order may apply)

Inductive Pressure Switch (830.1E)

Custom dial layout

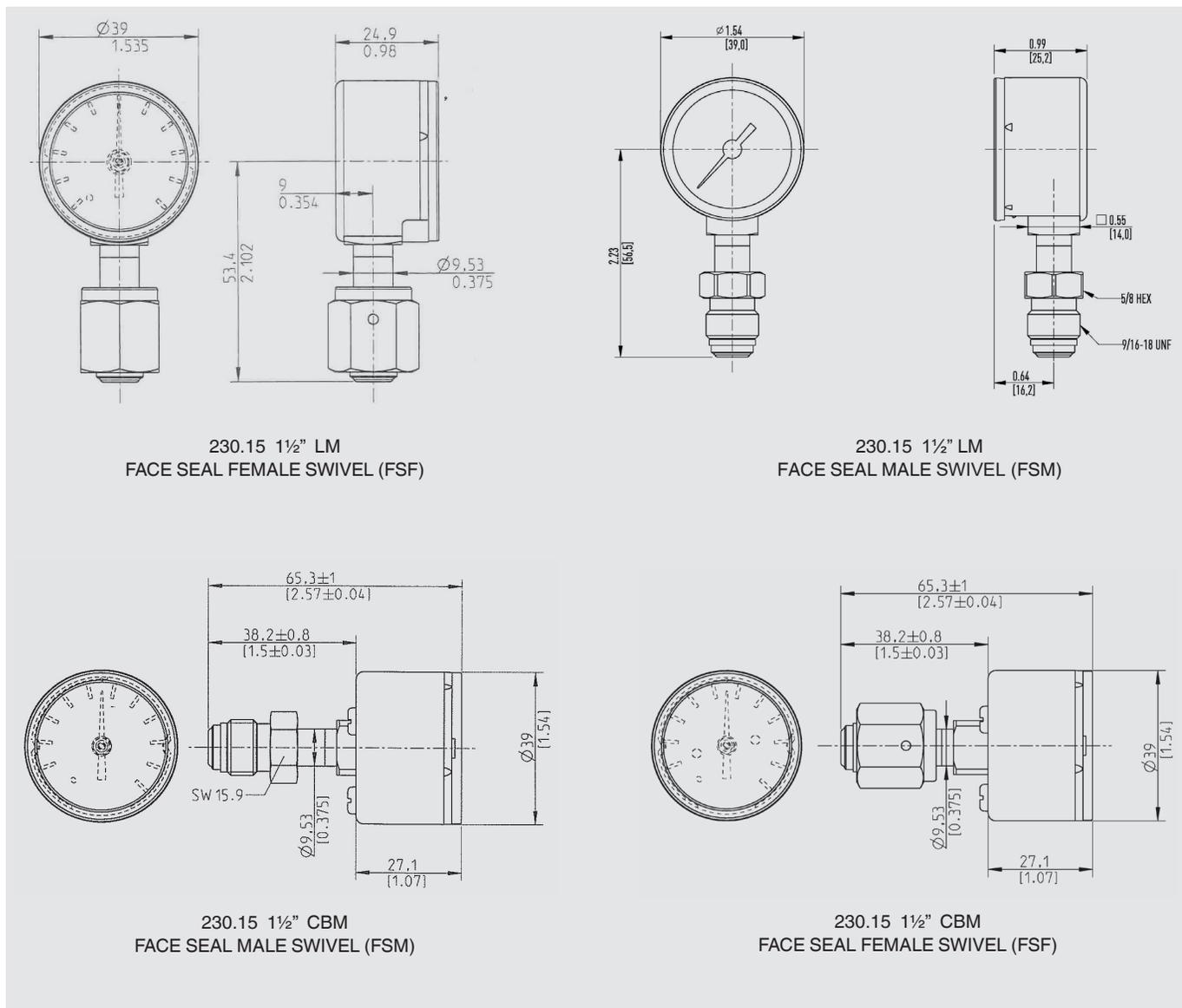
Dual pressure scales

Optional materials for Male / Female face-seal Nuts - 304 SS

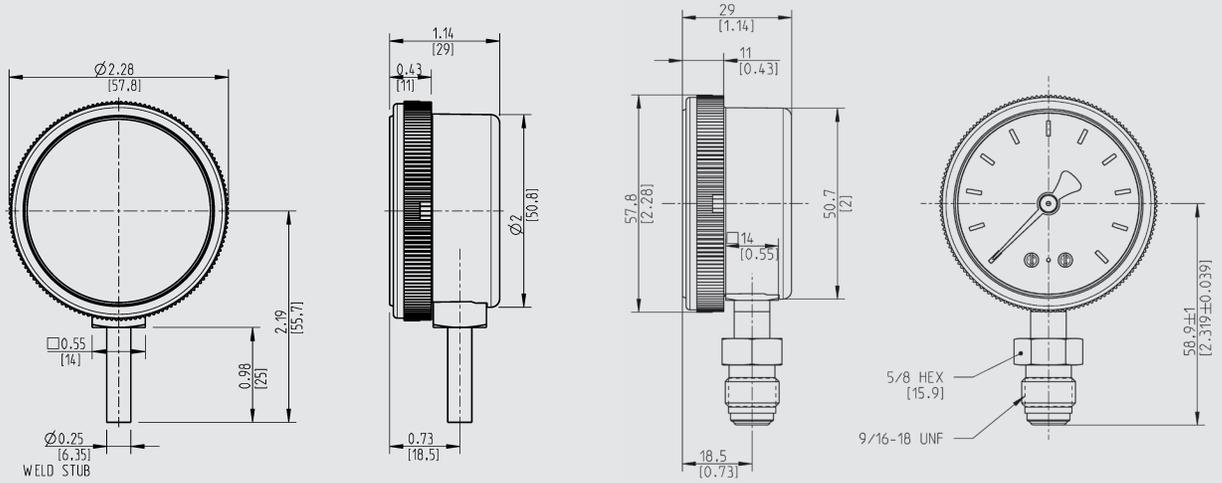
316 SS, Gall Resistant (Nitronic 60)

### Dimensions

For pressure ranges greater than 250 bar (3,625 psi), the dimension of the face seal gland diameter changes from 9.53 mm (0.375") to 8.86 mm (0.349").

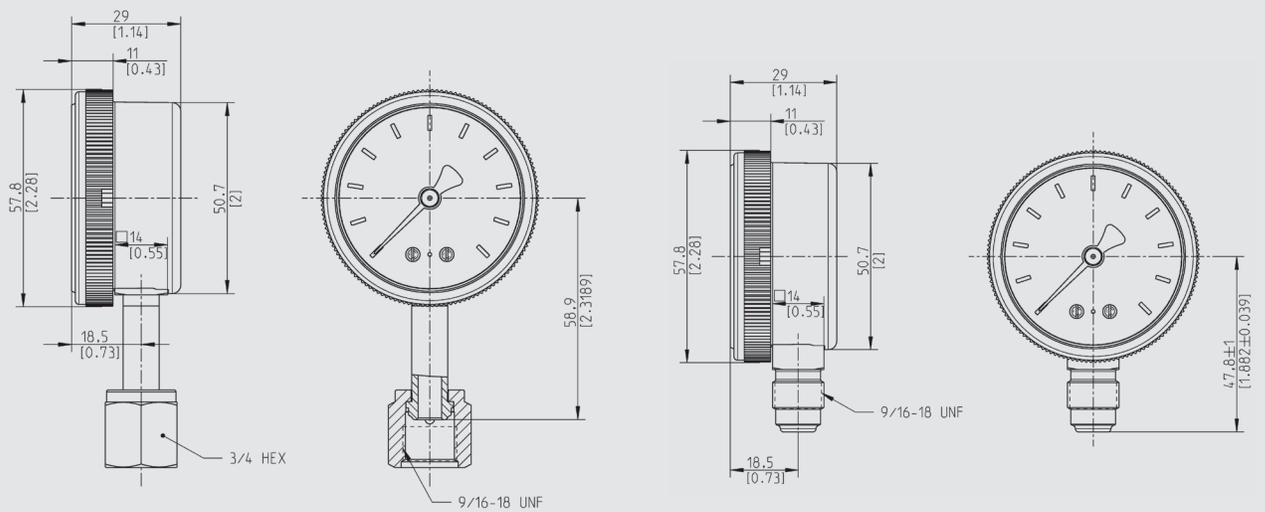


## Dimensions



230.15 2" LM  
1/4" WELD STUB

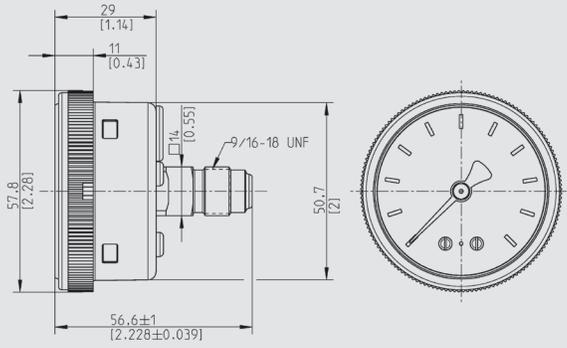
230.15 2" LM  
FACE SEAL MALE SWIVEL (FSM)



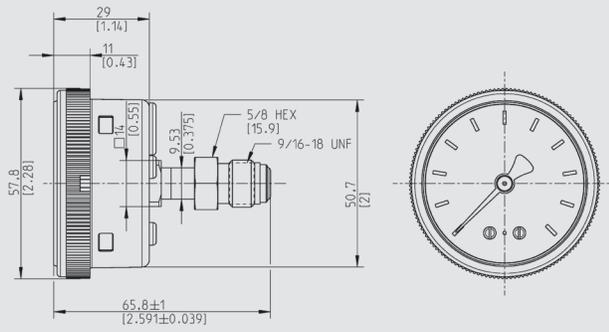
230.15 2" LM  
FACE SEAL FEMALE SWIVEL (FSF)

230.15 2" LM  
FACE SEAL FIXED MALE (FSFM)

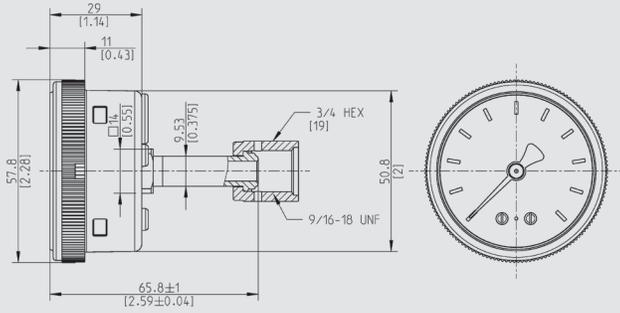
# Dimensions



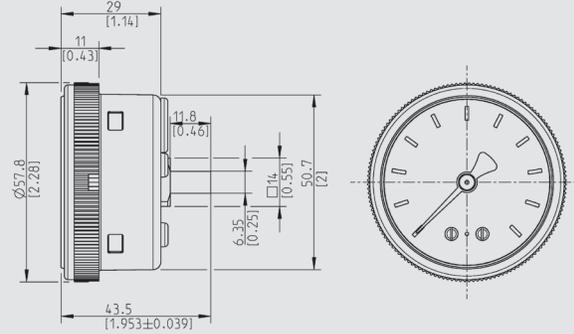
230.15 2" CBM  
FACE SEAL FIXED MALE (FSFM)



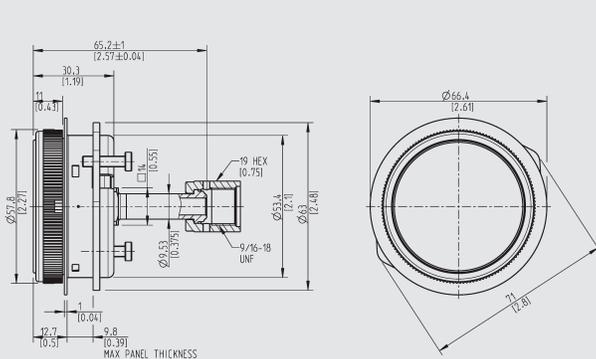
230.15 2" CBM  
FACE SEAL MALE SWIVEL (FSM)



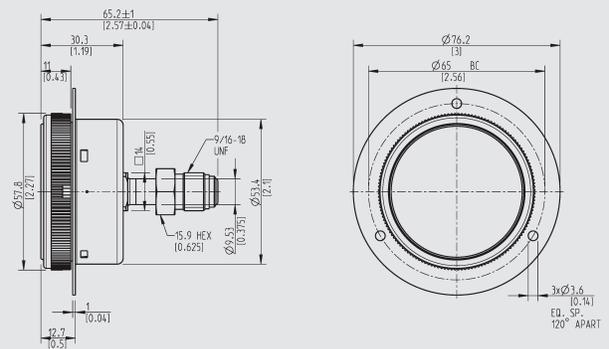
230.15 2" CBM  
FACE SEAL FEMALE SWIVEL (FSF)



230.15 2" CBM  
1/4" WELD STUB



230.15 2" CBM  
U-CLAMP OPTION



230.12 2" CBM  
FRONT FLANGE OPTION

**Recommended panel cutout = 55 mm (2.17 in)**

<b>Case</b>	304 SS, electropolished
<b>Wetted Material</b>	316L SS, electropolished
<b>Window</b>	Polycarbonate
<b>Dial</b>	Aluminum, white with stop pin
<b>Pointer</b>	Aluminum black
<b>Accuracy</b>	2": +/- 2/1/2% of span (ASME B40.1 Grade A) 1 1/2": +/- 3/2/3% of span (ASME B40.1 Grade B)
<b>Cleanliness</b>	UHP 'clean' for semiconductor gas applications - in accordance with SEMI/SEMATECH
<b>Packaging</b>	Double plastic bagged, nitrogen purged

Field No.	Code	Feature
1	<b>Nominal Case Size</b>	
	6	1.5" (40 mm)
	7	2.0" (50 mm)
2	<b>Primary (Outer) Scale</b>	
	P	psi
	B	bar
	L	kPa
	E	MPa
	K	Kg/cm <sup>2</sup>
	S	Special pressure range
	<b>Pressure Range</b>	
	V310	-30 inHg ... 0 psi
V321	-30 inHg ... 15 psi	
V331	-30 inHg ... 30 psi	
V352	-30 inHg ... 60 psi	
V379	-30 inHg ... 100 psi	
V412	-30 inHg ... 160 psi	
V415	-30 inHg ... 200 psi	
V422	-30 inHg ... 300 psi	
3	G310	0 ... 15 psi
	G321	0 ... 30 psi
	G341	0 ... 60 psi
	G369	0 ... 100 psi
	G410	0 ... 150 psi
	G411	0 ... 160 psi
	G414	0 ... 200 psi
	G417	0 ... 250 psi
	G421	0 ... 300 psi
	G428	0 ... 400 psi
	G434	0 ... 500 psi
	G441	0 ... 600 psi
	G455	0 ... 800 psi
	G469	0 ... 1000 psi
	G510	0 ... 1500 psi
	G514	0 ... 2000 psi
G521	0 ... 3000 psi	
G528	0 ... 4000 psi	
G534	0 ... 5000 psi	
4	<b>Secondary (Inner) Scale</b>	
	Z	without
	P	psi
	B	bar
	L	kPa
	E	MPa
	K	Kg/cm <sup>2</sup>
?	Special scale	

**Field No. Code Feature**

Field No.	Code	Feature
<b>Process Connection</b>		
5	WH	1/4" Swivel Male Face Seal (FSM)
	WI	1/4" Swivel Female Face Seal (FSF)
	WG	1/4" Fixed Male Face Seal (FSFM)
	VN	1/4" Weld Stub
	9F	1/4" Swivel Female Face Seal, 9/16-18 UNF, Gall Resistant (FSF-GR)
	9M	1/4" Swivel Male Face Seal, 9/16-16 UNF, Gall Resistant (FSM-GR)
	??	other - please specify
<b>Connector Position</b>		
6	B	Center back mount
	U	Lower mount
<b>Mounting Flange/Bracket</b>		
7	Z	Without
	K	Panel mount with stainless steel mounting bracket (2" CBM only)
	F	Front flange, polished stainless steel (2" CBM only)
	?	other - please specify
<b>Switch Type</b>		
8	Z	without
	N	Inductive NPN (2" Case only) 830.1E
	P	Inductive PNP (2" Case only) 830.1E
<b>Electrical Connection</b>		
9	ZZ	without
<b>Approvals</b>		
10	Z	without
<b>Certificates</b>		
11	Z	without
	2	certificate 2.2 EN 10204
	3	certificate 3.1 EN 10204
	A	2.2 and 3.1 certificates acc. EN 10204
<b>Additional Order Details</b>		
12*	Z	without
	T	Additional text*

Order Code:    1    2    3    4    5    6 7    8    9 10    11 12\*

**230.15** -  -  -  -  -  -  -

\*Additional order details \_\_\_\_\_

