

# Bourdon Tube Pressure Gauges Industrial Stainless Steel Gauge Type 232.54 - Dry Case Type 233.54 - Liquid-filled Case

WIKA Datasheet 23X.54

## Applications

- Intended for adverse service conditions where pulsating or vibration exists
- Process industry: chemical/petrochemical, power stations, mining, on and offshore, environmental technology, mechanical engineering and plant construction
- Suitable for gaseous or liquid media that will not obstruct the pressure system

## Product features

- Vibration and shock resistant (with liquid filling)
- All stainless steel construction
- Pressure ranges up to 15,000 psi
- FlexWindow™ option with integrated pressure compensation and 100% case fill (\*)

## Specifications

### Design

ASME B40.100 & EN 837-1

### Sizes

2½" & 4" (63 & 100 mm)

### Accuracy class

2½": ± 2/1/2% of span (ASME B40.100 Grade A)

4": ± 1% of span (ASME B40.100 Grade 1A)

### Ranges

Vacuum / Compound to 200 psi (16 bar)

Pressure from 15 psi (1 bar) to 15,000 psi (1000 bar)

or other equivalent units of pressure or vacuum

### Working pressure

2½":     Steady:     3/4 scale value  
          Fluctuating: 2/3 full scale value  
          Short time: full scale value

4":       Steady:     full scale value  
          Fluctuating: 0.9 x full scale value  
          Short time: 1.3 x full scale value

### Operating temperature

Ambient: -40°F to +140°F (-40°C to +60°C) - dry

-4°F to +140°F (-20°C to +60°C) - glycerine filled

-40°F to +140°F (-40°C to +60°C) - silicone filled

Medium: +212°F (+100°C) maximum



Bourdon Tube Pressure Gauge Model 232.54

### Temperature error

Additional error when temperature changes from reference temperature of 68°F (20°C) ±0.4% of span for every 18°F (10°K) rising or falling.

### Ingress protection

IP 65 per EN 60529 / IEC 60259

IP 66 (NEMA 4) with FlexWindow option (2½" only)

### Pressure connection

Material: 316 stainless steel

Lower mount (LM) or center back mount (CBM) - 2½"

Lower mount (LM) or lower back mount (LBM) - 4"

1/4" NPT or 1/2" NPT limited to wrench flat area

### Bourdon tube

Material: 316L stainless steel

< 1,500 psi (100 bar): C-shape,

≥ 1,500 psi (100 bar): Helical type

### Movement

300-series stainless steel

### Dial

White aluminum with black lettering; 2½" size with stop pin

**Pointer**

Black aluminum, friction adjustable

**Case**

304 stainless steel with vent plug for ranges  $\leq 300$  psi (FlexWindow option without vent plug) and polished stainless steel bayonet ring. Suitable for liquid filling. Welded case/socket connection.

**Window**

Laminated safety glass with Buna-N gasket  
FlexWindow (clear liquid silicone rubber)

**Case fill**

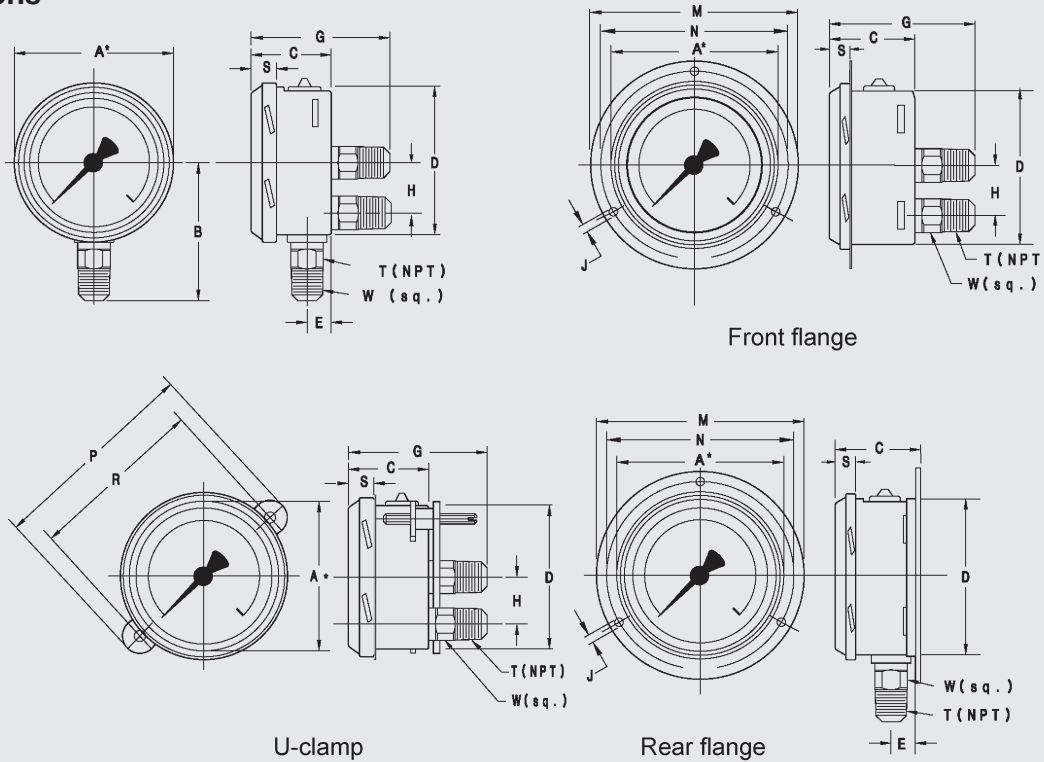
Glycerine 99.7% - Type 233.54  
100% Case fill with integrated pressure compensation with FlexWindow option (only available in 2½")

**Optional extras**

- 316SS restrictor
- Accuracy  $\pm 1.0\%$  of full scale (2½" size)
- Stainless steel front or rear flange
- Zinc-plated steel or SS u-clamp bracket (field installable)
- Red drag pointer or mark pointer (\*)
- Silicone or Halocarbon oil case filling (\*)
- Special connections limited to wrench flat area
- Cleaned for O2 service (\*)
- Custom dial layout
- Other pressure scales available  
bar, kPa, MPa, kg/cm<sup>2</sup> and dual scales

(\*) Not available with FlexWindow

**Dimensions**



Size		A	B	C	D	E	G	H	J	M	N	P	R	S	T	W	Weight
2.5"	mm	70	54	33.5	62	13	55.5	-	3.6	85	75	87	72	12		14	0.36 lb. dry
	in	2.75	2.13	1.32	2.44	0.51	2.19	-	0.14	3.35	2.95	3.43	2.83	0.47	1/4"	0.55	0.44 lb. filled
4"	mm	110	87	49.5	100	15.5	81	30	4.8	132	116	125	110	15		22	1.10 lb. dry
	in	4.30	3.43	1.95	3.94	0.61	3.19	1.18	0.19	5.20	4.57	4.92	4.33	0.59	1/2"	0.87	1.76 lb. filled

Recommended panel cutout is dimension D + 3 mm

# Quick Order Guide/Standard Items - 23X.54 2½"

Specifications according to data sheet  
Nominal size





23X.53 and 23X.54  
2.5"




## Standard features

Measuring System  
Process Connection  
Case material

Stainless Steel  
1/4 NPT  
Stainless steel 1.4301 (standard)

## Ordering information

Case		Removable bayonet ring							
Case filling		without				with			
Connector location									
Unit of outer Scale		psi / -inHg		psi / -inHg		psi / -inHg		psi / -inHg	
Scale range	2nd Scale / Special Scale	without	2nd scale bar	without	2nd scale bar	without	without	without	without
0/15 psi		9744894	9735114	9745130	9735254	9831856		9832101	
0/30 psi		9744908	9735122	9745149	9735262	9831865		9832119	
0/60 psi		9744916	9735130	9745157	9735270	9831873		9832127	
0/100 psi		9744924	9735148	9745165	9735288	9831881		9832135	
0/160 psi		9744932	9735156	9745173	9735296	9831899		9832144	
0/200 psi		9744940	9837642	9745181	4310489	9831903		9832152	
0/300 psi		9744959	9735165	9745190	9735300	9831911		9832160	
0/400 psi		9744967	9744967-0006	9745203	50092481	9831929		9832178	
0/600 psi		9744975	9735173	9745211	9735318	9831937		9832186	
0/800 psi		9744983	52912480	9745220	52912486	9831945		9832195	
0/1000 psi		9744991	9735181	9745238	9735326	9831954		9832208	
0/1500 psi		9745009	9735199	9745246	9735335	9831962		9832216	
0/2000 psi		9745017	9745017-0012	9745254	50507176	9831970		9832225	
0/3000 psi		9745025	9735203	9745262	9735343	9831988		9832233	
0/5000 psi		9745033	9735211	9745270	9735351	9831996		9832241	
0/10000 psi		9745041	9735229	9745289	9735369	9832004		9832259	
0/15000 psi		9745050	9735237	9745297	9735377	9832012		9832267	
-30 inHg/0 psi		9744827	9735245	9745068	9735385	9831784		9832020	
-30 inHg/15 psi		9744835	52857154	9745076	50092430	9831792		9832046	
-30 inHg/30 psi		9744843	50092391	9745084	52698301	9831805		9832055	
-30 inHg/60 psi		9744851	50422481	9745092	50946609	9831814		9832063	
-30 inHg/100 psi		9744860	52912481	9745106	55813481	9831822		9832071	
-30 inHg/160 psi		9744878	52802429	9745114	52912485	9831830		9832089	
-30 inHg/200 psi		9744886	52912482	9745122	52912484	9831848		9832097	

	available on stock
	available after production
	not available

# Standard Order Code - 23X.54 2½"

		<b>Measuring System</b>	
1	<input type="text"/>	3	Stainless Steel
		<b>Case filling</b>	
		2	without
2	<input type="text"/>	3	with
		<b>Case</b>	
3	<input type="text"/>	54	Removable bayonet ring
		<b>Unit of outer Scale</b>	
		B	bar
		P	psi / -inHg
		L	kPa
		E	MPa
4	<input type="text"/>	K	kg/cm2
		<b>Measuring range</b>	
		G	gauge pressure range
5	<input type="text"/>	V	vacuum- or compound-range
		<b>Scale range</b>	
		310	0/15 psi (-30"Hg/0)
		321	0/30 psi (-30"Hg/15 psi)
		341	0/60 psi
		369	0/100 psi
		411	0/160 psi
		414	0/200 psi
		421	0/300 psi
		428	0/400 psi
		441	0/600 psi
		455	0/800 psi
		469	0/1000 psi
		510	0/1500 psi
		514	0/2000 psi
		521	0/3000 psi
		528	0/4000 psi
		534	0/5000 psi
		541	0/6000 psi
		552	0/7500 psi
		569	0/10000 psi
		610	0/15000 psi
		331	-30 inHg/30 psi
		352	-30 inHg/60 psi
		379	-30 inHg/100 psi
		412	-30 inHg/160 psi
		415	-30 inHg/200 psi
6	<input type="text"/>	422	-30 inHg/300 psi

		<b>2nd Scale / Special Scale</b>	
		Z	without
		B	2nd scale bar
		P	2nd scale psi
		L	2nd scale kPa
		E	2nd scale MPa
7	<input type="text"/>	K	2nd scale kg/cm2
		<b>Process Connection</b>	
		NB	1/4 NPT
		GB	G 1/4 B
8	<input type="text"/>	NH	1/8 NPT
		<b>Connector location</b>	
		U	lower mount
		B	center back mount
		E	3 o'clock
		G	9 o'clock
9	<input type="text"/>	D	12 o'clock
		<b>Mounting Flange/Bracket</b>	
		Z	Without (Standard)
		F	front flange, polished SS
		C	Rear Flange, Stainless Steel
10	<input type="text"/>	K	Panel mount with Stainless steel U-clamp
		<b>Restrictor</b>	
		Z	Without (Standard)
		Q	stainless steel, D 0.6
11	<input type="text"/>	R	Stainless Steel, Orifice 0.3mm(0.012 inches)
		<b>Special design features</b>	
		Z	without (Standard)
		G	for Oxygen, Cleanliness ASME B40.1 Level IV
		D	Cleanliness ASME B40.1 Level IV
12	<input type="text"/>	N	NACE Sour Gas Service
		<b>Certificates</b>	
		Z	without (Standard)
13	<input type="text"/>	1	quality certificates
		<b>Approvals</b>	
14	<input type="text"/>	Z	without (Standard)
		<b>Additional ordering information</b>	
		Z	Without (Standard)
15	<input type="text"/>	T	Additional text

Modelcode: 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15  
 2 3 . 54 .063 - - - Z

Additional Text:

Additional scale ranges and options are available. Please contact the factory or access the product configurator for model 23X.54 on the WIKA US website.

# Quick Order Guide/Standard Items - 23X.54 4"

Specifications according to data sheet  
Nominal size





23X.53 and 23X.54  
100 mm



## Standard features

Measuring System  
2nd Scale / Special Scale  
Accuracy Class  
Material pressure element

Stainless Steel  
without  
+/- 1% (ASME B40.100 Grade 1A)  
Measuring System 316L

## Ordering information

Case		Removable bayonet ring					
Case filling		without			with		
Connector location							
Unit of outer Scale		psi / -inHg		psi / -inHg	psi / -inHg		psi / -inHg
Scale range	Process Connection	1/2 NPT	1/4 NPT	1/2 NPT	1/2 NPT	1/4 NPT	1/2 NPT
0/15 psi		9745610	9745378	9745858	9832585	9832348	9832828
0/30 psi		9745629	9745386	9745866	9832594	9832356	9832836
0/60 psi		9745637	9745394	9745874	9832607	9832365	9832845
0/100 psi		9745645	9745408	9745882	9832615	9832373	9832853
0/160 psi		9745653	9745416	9745890	9832624	9832381	9832861
0/200 psi		9745661	9745424	9745904	9832632	9832399	9832879
0/300 psi		9745670	9745432	9745912	9832640	9832403	9832887
0/400 psi		9745688	9745440	9745920	9832658	9832411	9832895
0/600 psi		9745696	9745459	9745939	9832666	9832429	9832909
0/1000 psi		9745718	9745475	9745955	9832683	9832445	9832925
0/1500 psi		9745726	9745483	9745963	9832691	9832454	9832934
0/2000 psi		9745734	9745491	9745971	9832705	9832462	9832942
0/3000 psi		9745742	9745505	9745980	9832713	9832470	9832950
0/5000 psi		9745750	9745513	9745998	9832721	9832488	9832968
0/10000 psi		9745769	9745521	9746005	9832739	9832496	9832976
0/15000 psi		9745777	9745530	9746013	9832747	9832500	9832985
-30 inHg/0 psi		9745548	9745300	9745785	9832518	9832275	9832755
-30 inHg/15 psi		9745556	9745319	9745793	9832526	9832284	9832764
-30 inHg/30 psi		9745564	9745327	9745807	9832535	9832292	9832772
-30 inHg/60 psi		9745572	9745335	52874492	9832543	9832305	52874627
-30 inHg/100 psi		9745580	9745343	9745823	9832551	9832314	9832798
-30 inHg/160 psi		9745599	9745351	9745831	9832569	9832322	9832802
-30 inHg/200 psi		9745602	9745360	52823635	9832577	9832330	52912554

	available on stock
	available after production
-	not available

# Standard Order Code - 23X.54 2½”

		<b>Measuring System</b>	
1	<input type="text"/>	3	Stainless Steel
		<b>Case filling</b>	
		2	without
2	<input type="text"/>	3	with
		<b>Case</b>	
3	<input type="text"/>	54	Removable bayonet ring
		<b>Unit of outer Scale</b>	
		B	bar
		P	psi / -inHg
		L	kPa
		E	MPa
4	<input type="text"/>	K	kg/cm2
		<b>Measuring range</b>	
		G	gauge pressure range
5	<input type="text"/>	V	vacuum- or compound-range
		<b>Scale range</b>	
		310	0/15 psi (-30*Hg/0)
		321	0/30 psi (-30*Hg/15 psi)
		341	0/60 psi
		369	0/100 psi
		411	0/160 psi
		414	0/200 psi
		421	0/300 psi
		428	0/400 psi
		441	0/600 psi
		455	0/800 psi
		469	0/1000 psi
		510	0/1500 psi
		514	0/2000 psi
		521	0/3000 psi
		528	0/4000 psi
		534	0/5000 psi
		541	0/6000 psi
		552	0/7500 psi
		569	0/10000 psi
		610	0/15000 psi
		331	-30 inHg/30 psi
		352	-30 inHg/60 psi
		379	-30 inHg/100 psi
		412	-30 inHg/160 psi
		415	-30 inHg/200 psi
6	<input type="text"/>	422	-30 inHg/300 psi

		<b>2nd Scale / Special Scale</b>	
		Z	without
		B	2nd scale bar
		P	2nd scale psi
		L	2nd scale kPa
		E	2nd scale MPa
7	<input type="text"/>	K	2nd scale kg/cm2
		<b>Process Connection</b>	
		ND	1/2 NPT
		NB	1/4 NPT
		GD	G 1/2 B
8	<input type="text"/>	GB	G 1/4 B
		<b>Connector location</b>	
		U	lower mount
		3	lower back mount
		E	3 o'clock
		G	9 o'clock
9	<input type="text"/>	D	12 o'clock
		<b>Mounting Flange/Bracket</b>	
		Z	Without (Standard)
		F	front flange, polished SS
		C	Rear Flange, Stainless Steel
10	<input type="text"/>	K	Panel mount with Stainless steel U-clamp
		<b>Restrictor</b>	
		Z	Without (Standard)
		Q	stainless steel, D 0.6
11	<input type="text"/>	R	Stainless Steel, Orifice 0.3mm(0.012 inches)
		<b>Special design features</b>	
		Z	without (Standard)
		G	for Oxygen, Cleanliness ASME B40.1 Level IV
		D	Cleanliness ASME B40.1 Level IV
12	<input type="text"/>	N	NACE Sour Gas Service
		<b>Certificates</b>	
		Z	without (Standard)
13	<input type="text"/>	1	quality certificates
		<b>Approvals</b>	
14	<input type="text"/>	Z	without (Standard)
		<b>Additional ordering information</b>	
		Z	Without (Standard)
15	<input type="text"/>	T	Additional text

Modelcode:    1   2   3            4   5   6   7   8   9   10   11   12    13   14   15  
 2 3 . 54 .100 -    -    -    -    Z

Additional Text:

Additional scale ranges and options are available. Please contact the factory or access the product configurator for model 23X.54 on the WIKA US website.