

# Bourdon Tube Pressure Gauges Stainless Steel Series Type 232.53 - Dry Case Type 233.53 - Liquid-filled Case

WIKA Datasheet 23X.53

## Applications

- With liquid filled case for applications with high dynamic pressure pulsations or vibration
- Suitable for corrosive environments and gaseous or liquid media that will not obstruct the pressure system
- Process industry: chemical/petrochemical, power stations, mining, on and offshore, environmental technology, mechanical engineering and plant construction

## Product features

- Excellent load-cycle stability and shock resistance
- All stainless steel construction
- Positive pressure ranges to 15,000 psi (1,000 bar)
- FlexWindow™ option with integrated pressure compensation and 100% case fill (\*)

## Specifications

### Design

ASME B40.100 & EN 837-1

### Sizes

2", 2½" & 4" (50, 63 and 100 mm)

### Accuracy class

2" & 2½": ± 2/1/2% of span (ASME B40.100 Grade A)  
4": ± 1.0% 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 (1,000 bar) or other equivalent units of pressure or vacuum

### Working pressure

2" & 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 232.53 – 2-1/2" » with FlexWindow™ option

### 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 (2-1/2" only)

### Pressure connection

Material: 316 stainless steel  
Lower mount (LM) or center back mount (CBM)  
Lower back mount (LBM) for 4" size  
1/8" NPT, 1/4" NPT or 1/2" NPT limited to wrench flat area

### Bourdon tube

Material: 316 stainless steel  
≤ 1,500 psi (100 bar): C-shape,  
> 1,500 psi (100 bar): Helical type

### Movement

Stainless steel

### Dial

White aluminum with black lettering, 2" and 2½" with stop pin

### Pointer

Black aluminum

**Case**

304 stainless steel with vent plug for ranges  $\leq 300$  psi  
(FlexWindow™ option without vent plug) and stainless steel  
crimp ring.

**Window**

Polycarbonate (standard)  
Laminated Safety Glass  
FlexWindow™ (Clear liquid silicone rubber)

**Case fill**

Model 233.53 – Glycerin, Glycerin/Water  
100% Case fill with integrated pressure compensation with  
FlexWindow™ option (only available in 2-1/2")

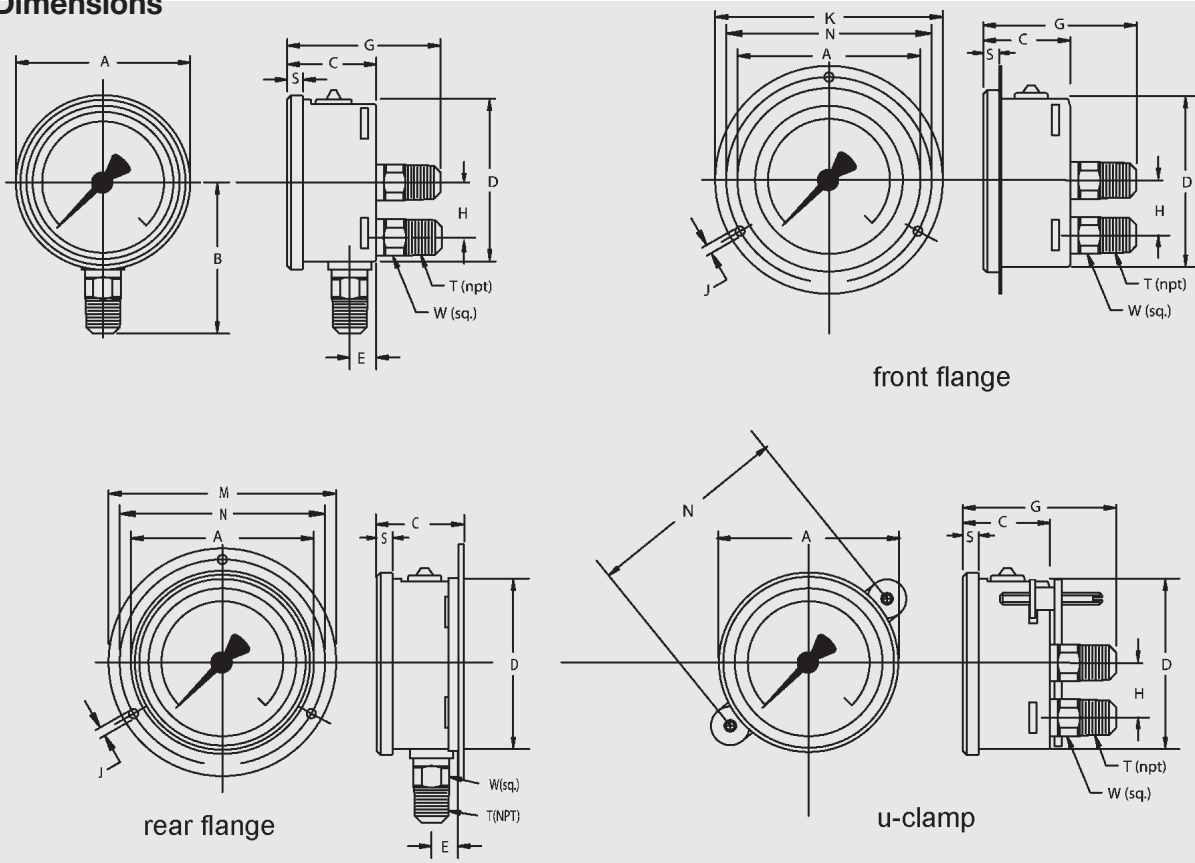
**Approvals**

NGV 3.1 Approval (not available with FlexWindow™)

**Optional extras**

- SS restrictor
- SS front flange
- SS rear flange (2½" and 4" only)
- Zinc-plated steel or SS u-clamp bracket  
(field installable - see note)
- Cleaned for oxygen service  
(not available with FlexWindow™)
- Red drag pointer or mark pointer (2½" and 4" only)  
(not available with FlexWindow™)
- External zero adjustment (4" size only)
- Other pressure connections
- Silicone or Halocarbon Oil case filling  
(not available with FlexWindow™)
- Other pressure scales available:

## Dimensions



front flange

rear flange

u-clamp

Size		A	B	C	D	E	G	H	J	K	M	N	S	T	W	Weight
2"	mm	55	48	30	50	12	53	-	3.6	71	71	60	5.5		14	0.27 lb. dry
	in	2.17	1.89	1.18	1.97	0.47	2.09	-	0.14	2.80	2.80	2.36	0.22	1/4"	0.55	0.33 lb. filled
2.5"	mm	69	54	32	62	13	54	-	3.6	85	88.1	75	6.5		14	0.36 lb. dry
	in	2.69	2.13	1.26	2.45	0.51	2.13	-	0.14	3.35	3.47	2.95	0.26	1/4"	0.55	0.44 lb. filled
4"	mm	107	87	48	100	15.5	79.5	30	4.8	132	132	116	8		22	1.10 lb. dry
	in	4.21	3.43	1.89	3.91	0.61	3.13	1.18	0.19	5.20	5.20	4.57	0.31	1/2"	0.87	1.76 lb. filled

Recommended panel cutout is dimension **D + 3 mm**

# Standard Order Code - 23X.53 2"

		<b>Measuring System</b>	
1	<input type="text"/>	<b>3</b>	Stainless Steel
		<b>Case filling</b>	
		<b>2</b>	without
2	<input type="text"/>	<b>3</b>	with
		<b>Case</b>	
3	<input type="text"/>	<b>53</b>	Non-removable crimp ring
		<b>Unit of outer Scale</b>	
		<b>P</b>	psi / -inHg
		<b>B</b>	bar
		<b>L</b>	kPa
		<b>E</b>	MPa
4	<input type="text"/>	<b>K</b>	kg/cm2
		<b>Measuring range</b>	
		<b>G</b>	gauge pressure range
5	<input type="text"/>	<b>V</b>	vacuum- or compound-range
		<b>Scale range</b>	
		<b>310</b>	0/15 psi (-30"Hg/0)
		<b>321</b>	0/30 psi (-30"Hg/15 psi)
		<b>341</b>	0/60 psi
		<b>369</b>	0/100 psi
		<b>411</b>	0/160 psi
		<b>414</b>	0/200 psi
		<b>421</b>	0/300 psi
		<b>428</b>	0/400 psi
		<b>441</b>	0/600 psi
		<b>455</b>	0/800 psi
		<b>469</b>	0/1000 psi
		<b>510</b>	0/1500 psi
		<b>514</b>	0/2000 psi
		<b>521</b>	0/3000 psi
		<b>528</b>	0/4000 psi
		<b>534</b>	0/5000 psi
		<b>541</b>	0/6000 psi
		<b>552</b>	0/7500 psi
		<b>569</b>	0/10000 psi
		<b>610</b>	0/15000 psi
		<b>331</b>	-30 inHg/30 psi
		<b>352</b>	-30 inHg/60 psi
		<b>379</b>	-30 inHg/100 psi
		<b>412</b>	-30 inHg/160 psi
		<b>415</b>	-30 inHg/200 psi
6	<input type="text"/>	<b>422</b>	-30 inHg/300 psi

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

Modelcode: 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15  
**2 3 .53 .050 - - - - - Z**

Additional Text:

Additional scale ranges and options are available. Please contact the factory or access the product configurator for model 23X.53 on the WIKA US website.

# Quick Order Guide/Standard Items - 23X.53 2½”





Specifications according to data sheet  
Nominal size

23X.53 and 23X.54  
2.5"

## Standard features

Measuring System                    Stainless Steel  
Process Connection                 1/4 NPT  
Accuracy Class                       +/- 2/1/2% (ASME B40.100 Grade A)  
Case material                         Stainless steel 1.4301 (standard)

## Ordering information

Case		Non-removable crimp ring					
Case filling		without				with	
Connector location							
Unit of outer Scale		psi / -inHg		psi / -inHg		psi / -inHg	
Scale range	2nd Scale / Special Scale	without		2nd scale bar		without	
		without	without	2nd scale kPa	without	without	
0/15 psi		9768734	9768351	50603515	7310315	9833604	9833272
0/30 psi		9768726	9768343	4335911	7310366	9833590	9833264
0/60 psi		9768718	9768335	8992848	8993089	9833582	9833255
0/100 psi		9768700	9768327	8992856	8993097	9833574	9833247
0/160 psi		9768696	9768319	8992865	8993101	9833565	9833239
0/200 psi		9768688	9768300	8992873	8993119	9833557	9833221
0/300 psi		9768670	9768297	8992881	8993127	9833549	9833213
0/400 psi		9768661	9768289	50982274	7310439	9833531	9833205
0/600 psi		9768653	9768270	9779685	9779693	9833523	9833191
0/1000 psi		9768645	9768262	8992899	8993135	9833515	9833183
0/1500 psi		9768637	9768254	8992903	7310499	9833506	9833175
0/2000 psi		9768629	9768246	8992911	8993152	9833493	9833166
0/3000 psi		9768610	9768238	8992929	52906341	9833485	9833158
0/5000 psi		9768602	9768220	8992937	8993178	9833476	9833140
0/10000 psi		9768599	9768211	8992954	8993195	9833468	9833132
0/15000 psi		50401581	9779715	9776715	9779723	50987764	9779715-0003
-30 inHg/0 psi		9768777	9768394	52875470	7309661	9833646	9833310
-30 inHg/15 psi		4386189	4259029	52875471	52812065	4210194	4257905
-30 inHg/30 psi		9768769	9768386	52875472	52428486	9833638	9833302
-30 inHg/60 psi		9768750	9768378	52875473	7310269	9833620	9833298
-30 inHg/100 psi		4382621	50771990	52620174	7310277	4382621-0001	50164619
-30 inHg/160 psi		9768742	9768360	52875474	52875476	9833612	9833280
-30 inHg/200 psi		50590324	52875469	52875475	52875477	50091905	52912385

	available on stock
	available after production
-	not available

# Standard Order Code - 23X.53 2½”

		<b>Measuring System</b>				<b>2nd Scale / Special Scale</b>	
1	<input type="checkbox"/>	3	Stainless Steel			Z	without
		<b>Case filling</b>				B	2nd scale bar
		2	without			P	2nd scale psi
2	<input type="checkbox"/>	3	with			L	2nd scale kPa
		<b>Case</b>				E	2nd scale MPa
3	<input type="checkbox"/>	53	Non-removable crimp ring	7	<input type="checkbox"/>	K	2nd scale kg/cm2
		<b>Unit of outer Scale</b>				<b>Process Connection</b>	
		P	psi / -inHg			NB	1/4 NPT
		B	bar			GA	G 1/8 B
		L	kPa			GB	G 1/4 B
		E	MPa	8	<input type="checkbox"/>	NH	1/8 NPT
4	<input type="checkbox"/>	K	kg/cm2			<b>Connector location</b>	
		<b>Measuring range</b>				U	lower mount
		G	gauge pressure range			B	center back mount
5	<input type="checkbox"/>	V	vacuum- or compound-range			E	3 o'clock
		<b>Scale range</b>				G	9 o'clock
		310	0/15 psi (-30"Hg/0)	9	<input type="checkbox"/>	D	12 o'clock
		321	0/30 psi (-30"Hg/15 psi)			<b>Mounting Flange/Bracket</b>	
		341	0/60 psi			Z	Without (Standard)
		369	0/100 psi			F	front flange, polished SS
		411	0/160 psi	10	<input type="checkbox"/>	C	Rear Flange, Stainless Steel
		414	0/200 psi			K	Panel mount with Stainless steel U-clamp
		421	0/300 psi			<b>Restrictor</b>	
		428	0/400 psi			Z	Without (Standard)
		441	0/600 psi			Q	stainless steel, D 0.6
		455	0/800 psi	11	<input type="checkbox"/>	R	Stainless Steel, Orifice 0.3mm(0.012 inches)
		469	0/1000 psi			<b>Special design features</b>	
		510	0/1500 psi			Z	without (Standard)
		514	0/2000 psi			G	for Oxygen, Cleanliness ASME B40.1 Level IV
		521	0/3000 psi			D	Cleanliness ASME B40.1 Level IV
		528	0/4000 psi	12	<input type="checkbox"/>	N	NACE Sour Gas Service
		534	0/5000 psi			<b>Certificates</b>	
		541	0/6000 psi			Z	without (Standard)
		552	0/7500 psi	13	<input type="checkbox"/>	1	quality certificates
		569	0/10000 psi			<b>Approvals</b>	
		610	0/15000 psi	14	<input type="checkbox"/>	Z	without (Standard)
		331	-30 inHg/30 psi			<b>Additional ordering information</b>	
		352	-30 inHg/60 psi			Z	Without (Standard)
		379	-30 inHg/100 psi	15	<input type="checkbox"/>	T	Additional text
		412	-30 inHg/160 psi				
		415	-30 inHg/200 psi				
6	<input type="checkbox"/>	422	-30 inHg/300 psi				

Modelcode: 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15  
**2 3 . 53 .063 - - - - - Z**

**Additional Text:** \_\_\_\_\_  
 Additional scale ranges and options are available. Please contact the factory or access the product configurator for model 23X.53 on the WIKA US website.

# Quick Order Guide/Standard Items - 23X.53 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		Non-removable crimp 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		9768513	9767428	9737120	9833387	9833026	9831571
0/30 psi		9768521	9767436	9737138	9833395	9833035	9831589
0/60 psi		9768530	9767444	9737146	9833409	9833043	9831597
0/100 psi		9768548	9767452	9737154	9833417	9833051	9831601
0/160 psi		9768556	9767460	9737162	9833425	9833069	9831619
0/200 psi		9768564	9767479	9737170	9833434	9833077	9831627
0/300 psi		9768572	9767487	9737189	9833442	9833085	9831635
0/400 psi		9768580	9767495	9737197	9833450	9833094	9831644
0/600 psi		9768963	9767509	9737200	9833727	9833107	9831652
0/1000 psi		9768858	9767517	9737227	9833697	9833115	9831678
0/1500 psi		9768866	4382613	9737235	9833701	50417754	9831686
0/2000 psi		9768807	50025708	9737243	9833655	50570838	9831695
0/3000 psi		9768874	50576151	9737251	9833719	50563181	9831708
0/5000 psi		9768823	4232724	9737260	9833663	4267927	9831716
0/10000 psi		9768831	52806638	9737278	9833671	4267935	9831725
0/15000 psi		9768840	52873915	9737286	9833689	52142809	9831733
-30 inHg/0 psi		9768459	9767576	9737057	9833328	9833124	9831504
-30 inHg/15 psi		9768467	9737910	9737065	9833336	9831775	9831512
-30 inHg/30 psi		9768475	9767398	9737073	9833345	9832993	9831520
-30 inHg/60 psi		9768483	9767401	52912433	9833353	9833000	9831538
-30 inHg/100 psi		9737880	9737898	9737090	9831741	9831759	9831546
-30 inHg/160 psi		9768491	9767410	9737103	9833361	9833018	9831555
-30 inHg/200 psi		9768505	9737901	9737111	9833379	9831767	9831563

	available on stock
	available after production
	not available

# Standard Order Code - 23X.53 4"

		<b>Measuring System</b>				<b>2nd Scale / Special Scale</b>	
1	<input type="checkbox"/>	3	Stainless Steel			B	2nd scale bar
		<b>Case filling</b>				P	2nd scale psi
		2	without			L	2nd scale kPa
2	<input type="checkbox"/>	3	with			E	2nd scale MPa
		<b>Case</b>		7	<input type="checkbox"/>	K	2nd scale kg/cm2
3	<input type="checkbox"/>	53	Non-removable crimp ring			<b>Process Connection</b>	
		<b>Unit of outer Scale</b>				ND	1/2 NPT
		P	psi/ -inHg			NB	1/4 NPT
		B	bar			GD	G 1/2 B
		L	kPa	8	<input type="checkbox"/>	GB	G 1/4 B
		E	MPa			<b>Connector location</b>	
4	<input type="checkbox"/>	K	kg/cm2			U	lower mount
		<b>Measuring range</b>				3	lower back mount
		G	gauge pressure range			E	3 o'clock
5	<input type="checkbox"/>	V	vacuum- or compound-range			G	9 o'clock
		<b>Scale range</b>		9	<input type="checkbox"/>	D	12 o'clock
		310	0/15 psi (-30"Hg/0)			<b>Mounting Flange/Bracket</b>	
		321	0/30 psi (-30"Hg/15 psi)			Z	Without (Standard)
		341	0/60 psi			F	front flange, polished SS
		369	0/100 psi			C	Rear Flange, Stainless Steel
		411	0/160 psi	10	<input type="checkbox"/>	K	Panel mount with Stainless steel U-clamp
		414	0/200 psi			<b>Restrictor</b>	
		421	0/300 psi			Z	Without (Standard)
		428	0/400 psi			Q	stainless steel, D 0.6
		441	0/600 psi	11	<input type="checkbox"/>	R	Stainless Steel, Orifice 0.3mm(0.012 inches)
		455	0/800 psi			<b>Special design features</b>	
		469	0/1000 psi			Z	without (Standard)
		510	0/1500 psi			G	for Oxygen, Cleanliness ASME B40.1 Level IV
		514	0/2000 psi			D	Cleanliness ASME B40.1 Level IV
		521	0/3000 psi	12	<input type="checkbox"/>	N	NACE Sour Gas Service
		528	0/4000 psi			<b>Certificates</b>	
		534	0/5000 psi			Z	without (Standard)
		541	0/6000 psi	13	<input type="checkbox"/>	1	quality certificates
		552	0/7500 psi			<b>Approvals</b>	
		569	0/10000 psi			Z	without (Standard)
		610	0/15000 psi	14	<input type="checkbox"/>	<b>Additional ordering information</b>	
		331	-30 inHg/30 psi			Z	Without (Standard)
		352	-30 inHg/60 psi			<b>Additional text</b>	
		379	-30 inHg/100 psi	15	<input type="checkbox"/>	T	Additional text
		412	-30 inHg/160 psi				
		415	-30 inHg/200 psi				
6	<input type="checkbox"/>	422	-30 inHg/300 psi				

Modelcode:    2 3    . 53 . 100 -    -    -    Z

Additional Text: \_\_\_\_\_

Additional scale ranges and options are available. Please contact the factory or access the product configurator for model 23X.53 on the WIKA US website.