

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 4"

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 ≤ 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")

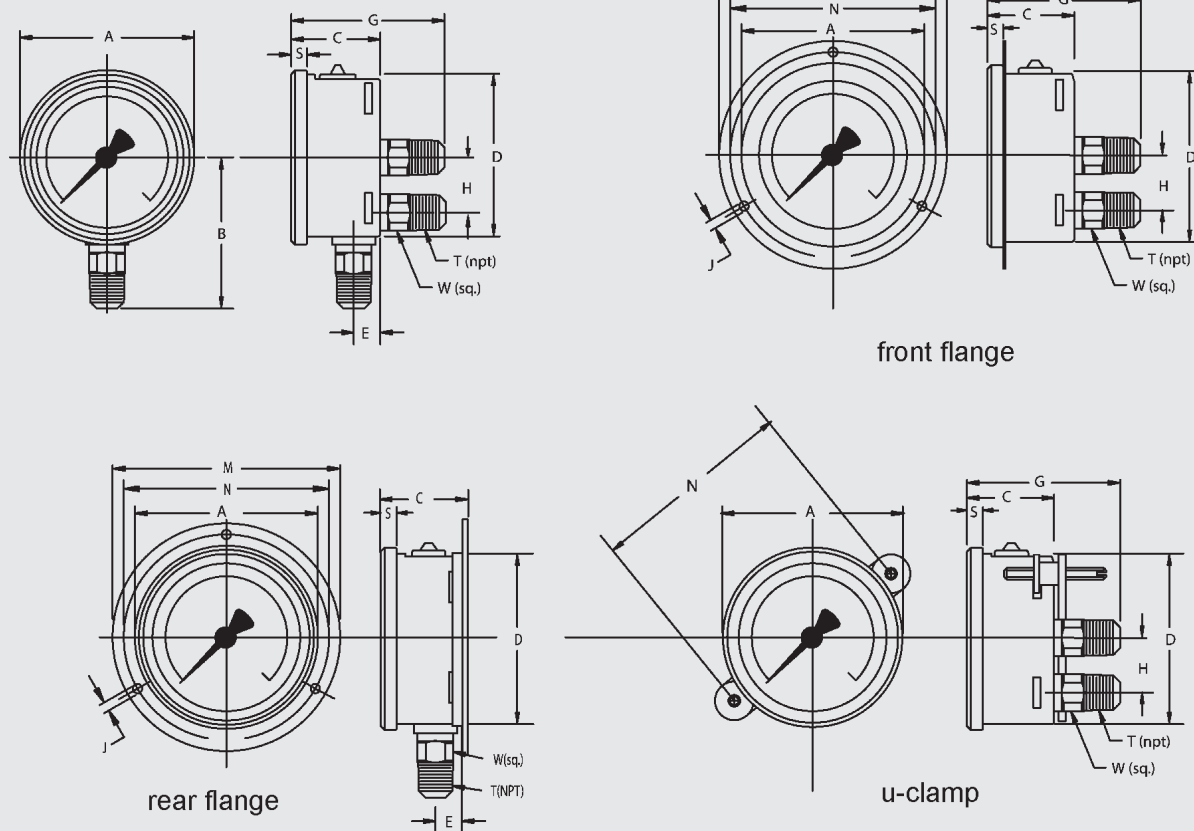
Approvals

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



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"

Measuring System		
1		3 Stainless Steel
Case filling		
		2 without
2		3 with
Case		
3		53 Non-removable crimp ring
Unit of outer Scale		
		P psi / -inHg
		B bar
		L kPa
		E MPa
4		K kg/cm2
Measuring range		
		G gauge pressure range
5		V vacuum- or compound-range
Scale range		
		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		422 -30 inHg/300 psi

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

Stainless Steel
1/4 NPT
+/- 2/1/2% (ASME B40.100 Grade A)
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	psi / -inHg
Scale range	2nd Scale / Special Scale	without	without	2nd scale bar	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"

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

Modelcode: 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	
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"

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