

All-Welded System(AWS) Type M93X.D1

WIKA Datasheet M93X.D1

Type M93X.D1 all-welded gauge/diaphragm seal systems are a drop-in retrofit for existing gauges. This assembly eliminates all potential leak paths and has a tamper-resistant construction. The all-welded system is ideal for installations where tightly controlled fugitive emissions and safety are a concern. The M93X.D1 is well-suited for applications in the chemical, petrochemical and process industries

Design

This all-welded gauge assembly is constructed using WIKA gauge model number 23X.34 and diaphragm seal model number L990.34. The diaphragm is recessed within the all-welded seal body. The pressure gauge is back-welded to the seal upper housing to eliminate another potential leak path. The threaded seal fill port has been removed to ensure a tamper resistant design. Additional process wetted materials, process connections, system fill fluids and accessories are available to meet the rigorous demands of most applications.

Standard Features

Construction

All-welded design

Pressure Rating, Maximum

Vacuum to 5000PSI

Pressure Range*

-30inHG up to 5000 psi,

Operating Temperature (standard design)

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

Process: +0°F to +300°F (-18°C to +149°C)

Dial

White aluminum with black lettering

Accuracy (Ref. @ 73°F)

4.5": ±1.0% of span

Additional Temperature Effects

See table page 2

System Fill*

DC200-10 KN68 (Standard)

Material *

316L Stainless Steel

For more see selection guide page 4-5

Dial Size

4 1/2" Process gauge

Process Connection*

1/2 NPT male (Standard)

Case Material

Fiberglass reinforced thermoplastic (Pocan)

Window *

Acrylic (PMMA)

Pointer

Black aluminum, micro-adjustable, designed for zero adjustment in field

Bourdon Tube & Movement

316L stainless steel bourdon tube and stainless steel movement

Weather Protection

Weather tight to NEMA 4X / IP65



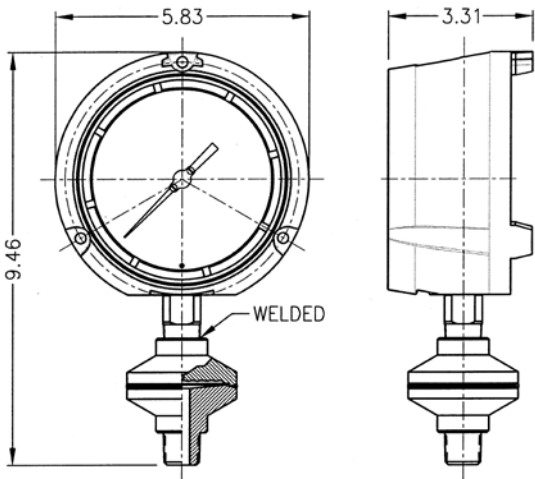
Type M93X.D1 AWS

Order information Engraved on upper housing

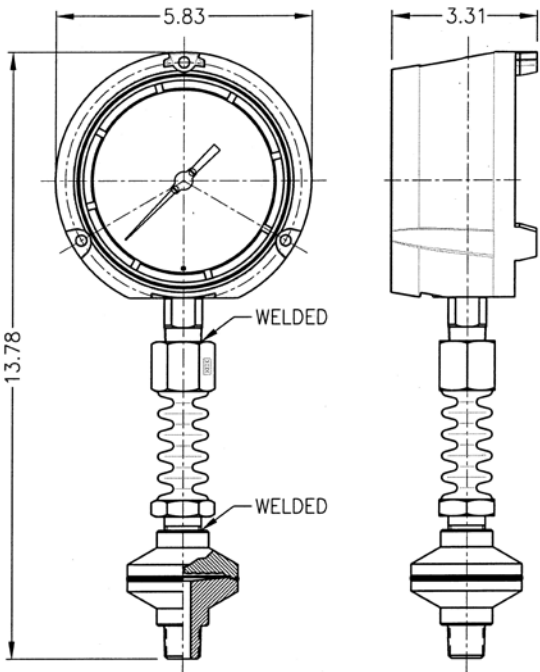
Material Identification and Heat Numbers
Engraved in seal body

Available Options
More *

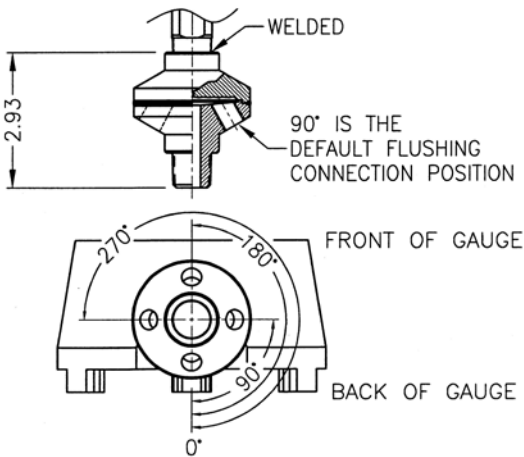
Standard Configuration



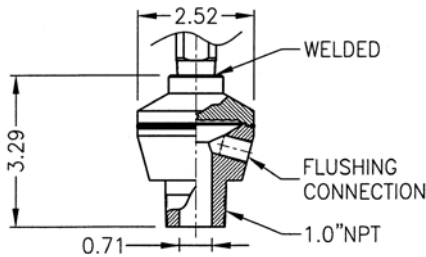
4" Cooling Element installed



Flushing Port Location



Ethanol Configuration



Technical Data

Overall weight: No case fill: 3.50 lbs. Case filled: 4.60 lbs.

Temperature effect ²	Fill fluid	KN68	KN7	KN2	KN59	KN21	KN3.2 ¹	
	Ambient	0.21	0.10	0.21	0.20	0.18	0.16	PSI per 10°F change
	Process	0.04	0.02	0.04	0.03	0.03	0.04	

¹⁾ Values including 4" cooling element

²⁾ Units filled at 70°F (base temperature)

Model #		M932.D1		M933.D1	
Gauge Design:		4.5" Size, Pocan case, Acrylic window, dry case	Diaphragm: 316L Stainless Steel wetted parts, Silicon Oil - KN68 DC200-10cSt	4.5" Size, Pocan case, Acrylic window, Glycerin filled case	Diaphragm: 316L Stainless Steel wetted parts, Silicon Oil - KN68 DC200-10cSt
Process Connection:		½ NPT - male		½ NPT - male	
Code:	Ranges:				
V000	-30inHG-0 PSI*	4237758		4237758-0001	
C015	-30inHG-15 PSI*	4255349		4255349-0001	
C030	-30inHG-30 PSI*	4256906		4256906-0002	
C060	-30inHG-60 PSI	50591347		50377370	
P015	15 PSI*	4227158		4227158-0002	
P030	30 PSI*	4217901		4217901-0001	
P060	60 PSI	4221915		4221915-0002	
P100	100 PSI	4217919		4217919-0001	
P160	160 PSI	4232330		4232330-0003	
P200	200 PSI	4222415		4222415-0003	
P300	300 PSI	4217927		4217927-0003	
P400	400 PSI	4221923		4221923-0001	
P600	600 PSI	4217935		4217935-0002	
P10C	1000 PSI	4217943		4217943-0001	
P15C	1500 PSI	4249011		50197894	
P20C	2000 PSI	4249003		4249003-0001	
P30C	3000 PSI	4255811		4255811-0001	
P50C	5000 PSI	4217951		50245571	

* case fill will be Glycerine/Water 86/14 (Code FGW)

Typical Order code: M932.D1.PXXXXPX.LM.N4.SS.SS-0.SS.68
M933.D1.PXXXXPX.LM.N4.SS.SS-0.SS.68.FGL

See next page for more details

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Field no.	Code	Description	Field no.	Code	Description
1		Nominal Pressure Range	5		Upper Housing Material
	V000	-30inHg ... 0 Vacuum		SS	Stainless steel 316L (1.4435)
	C015	-30inHg ... 15 psi Compound range		MO	Monel® 400 (2.4360)
	C030	-30inHg ... 30 psi Compound range		HC	Hastelloy® C276 (2.4819)
	C060	-30inHg ... 60 psi Compound range		DP	Duplex 2205 (1.4462)
	C100	-30inHg ... 100 psi Compound range		XX	Other - consult factory
	C160	-30inHg ... 160 psi Compound range	6		Lower Housing Material
	P015	0 psi ... 15 psi Gauge pressure range		SS	Stainless steel 316L (1.4435)
	P030	0 psi ... 30 psi Gauge pressure range		HC	Hastelloy® C276 (2.4819)
	P060	0 psi ... 60 psi Gauge pressure range		MO	Monel® 400 (2.4360)
	P100	0 psi ... 100 psi Gauge pressure range		IN	Inconel® 600 (2.4816)
	P160	0 psi ... 160 psi Gauge pressure range		IC	Incoloy 825 (2.4858)
	P200	0 psi ... 200 psi Gauge pressure range		CA	Carpenter 20 (2.4660)
	P300	0 psi ... 300 psi Gauge pressure range		DP	Duplex 2205 (1.4462)
	P400	0 psi ... 400 psi Gauge pressure range		NI	Nickel 200 (2.4066)
	P600	0 psi ... 600 psi Gauge pressure range		S4	Stainless steel 304L (1.4304)
	P800	0 psi ... 800 psi Gauge pressure range		XX	Other - consult factory
	P10C	0 psi ... 1000 psi Gauge pressure range	7		Lower Housing Flushing Connection (see note 1)
	P15C	0 psi ... 1500 psi Gauge pressure range		-0	Without
	P20C	0 psi ... 2000 psi Gauge pressure range		-1	1 X 1/8 NPT
	P30C	0 psi ... 3000 psi Gauge pressure range		-2	1 X 1/4 NPT
	P50C	0 psi ... 5000 psi Gauge pressure range		-3	2 x 1/8 NPT
2		Pressure Units		-4	2 x 1/4 NPT
	PX	PSI - Single scale	8		Diaphragm Material
	PC	PSI outside/KG/CM² inside in red		SS	Stainless steel 316L (1.4435)
	PK	PSI outside/KPA inside in red		HB	Hastelloy® B3 (2.4600)
	PB	PSI outside/BAR inside in red		HC	Hastelloy® C276 (2.4819)
	SP	Special scale - consult factory		MO	Monel® 400 (2.4360)
3		Connector Location		IN	Inconel® 600 (2.4816)
	LM	Lower mount		IC	Incoloy 825 (2.4858)
	BK	Lower back mount		NI	Nickel 200 (2.4066)
4		Process Connection		CA	Carpenter 20 (2.4660)
	N2F	1/4" NPT female		DP	Duplex 2205 (1.4462)
	N4F	1/2" NPT female		S4	Stainless steel 304L (1.4304)
	N6F	3/4 NPT female		XX	Other - consult factory
	N8F	1" NPT female	9		System Fill
	N4	1/2" NPT male		68	KN68 - Silicone DC200-10cSt
	N6	3/4" NPT male		02	KN2 - Silicone DC200-50cSt
	N8	1" NPT male		32	KN32 - Silicone DC704
	XX	Other - consult factory		21	KN21 - Halocarbon 6.3
				07	KN7 - Glycerin 99.7% USP (1000cSt) (see note 3)
				92	KN92 - Medicinal white mineral oil (23cSt)
				XX	Other - consult factory

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Field no.	Code	Description
10		Options - (see note 4)
	FGL	Glycerin, 99.7% case fill - change model # to M933.D1
	FS1	Silicone 1000cSt case fill - change model # to M933.D1
	LSG	Laminated safety glass window
	XMT	Material Certificate 3.1 EN10204 (metal only)
	XNC	Wetted Parts NACE (MR0175/MR0103 Year 2009) compliant
	WSS	Instrument tag, stainless steel
	RS3	Restrictor, SS, 0.3 mm orifice
	PDP	Drag pointer, red (standard)
	CE4	4" Cooling element - (see note 5)
	CE8	8" Cooling element - (see note 5)
	PLG	Provide flushing port plugs

Notes:

- 1) Plugs are not supplied with flushing ports as standard.
- 2) Diaphragm material should match the lower housing material. Please contact the factory for exceptions.
- 3) Glycerin (07) is not available for vacuum & compound pressure measurement ranges. Consult factory for exceptions.
- 4) List options in alphabetical order at the end of the configuration code.
- 5) Cooling element are only offered with 316L stainless steel upper housings.

Order Sample

MODEL	PRESSURE RANGE	PRESSURE UNIT	CONNECTOR LOCATION	PROCESS CONNECTION	UPPER HOUSING MATERIAL	LOWER HOUSING MATERIAL	FLUSHING CONNECTION	DIAPHRAGM MATERIAL	SYSTEM FILL	OPTIONS
M933.D1	P200	PX	LM	N4	SS	SS	-0	SS	68	FGL
Field no.	1	2	3	4	5	6	7	8	9	10

