

Type M93X.D1 All-Welded System (AWS)

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

1,500 psi and 5,000 psi

Ranges

Vacuum, compound and positive pressure up to 5000 psi
(See selection table for detail)

Operating Temperature

0 to 300°F (-18°C to 149°C)

Ambient Temperature

-40°F to 140°F (-40°C to 60°C)



Type M93X.D1 AWS

Gauge Features

Dial Size

4½" process gauge

Process Connection

¼" NPT & ½" NPT male or female

Process Wetted Materials

316L stainless steel

Case Material

Fiberglass reinforced thermoplastic (Pocan®)

Case Fill

Glycerin (optional)

Window

Acrylic

Dial

White aluminum with black lettering

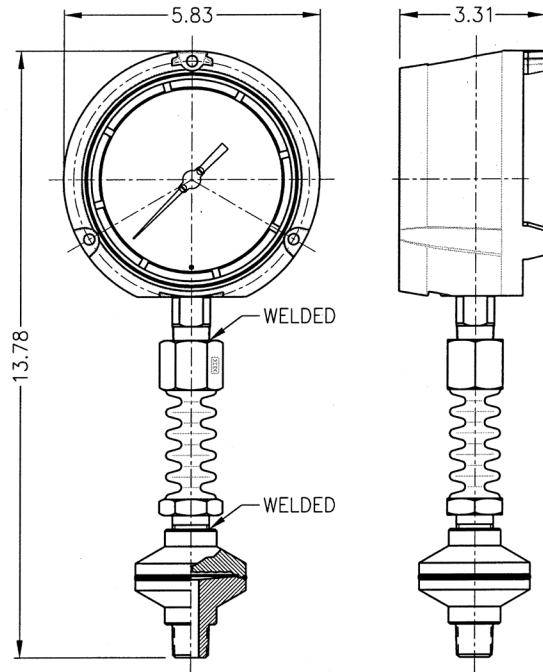
Pointer
Black aluminum

Accuracy
±0.5% of span

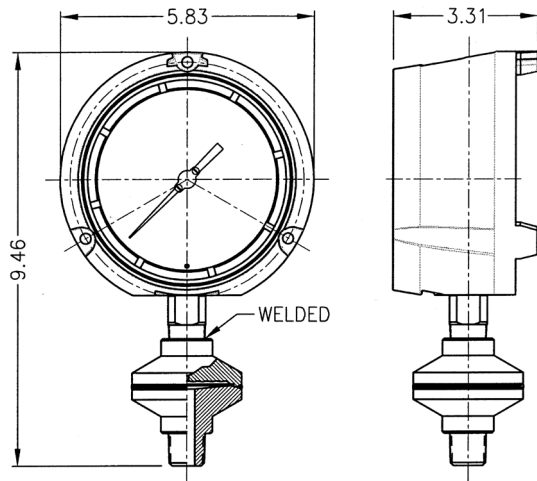
Temperature effect
Process and ambient change, see Technical Data, page 1

System Fill Fluid
Silicone oil, KN68 - DC200-10cSt.
Identification: Engraved on upper seal housing

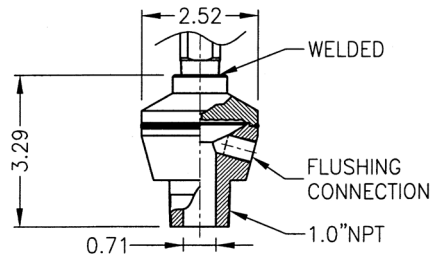
4" Cooling Element installed



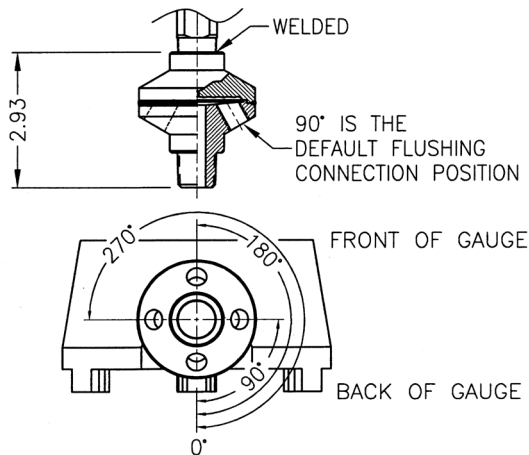
Standard Configuration



Ethanol Configuration



Flushing Port Location



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)

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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	8		Diaphragm Material	
	PX	PSI - Single scale		SS	Stainless steel 316L (1.4435)	
	PC	PSI outside/KG/CM ² inside in red		HB	Hastelloy® B3 (2.4600)	
	PK	PSI outside/KPA inside in red		HC	Hastelloy® C276 (2.4819)	
	PB	PSI outside/BAR inside in red		MO	Monel® 400 (2.4360)	
	SP	Special scale - consult factory		IN	Inconel® 600 (2.4816)	
	3			Connector Location	IC	Incoloy 825 (2.4858)
LM		Lower mount		NI	Nickel 200 (2.4066)	
BK		Lower back mount		CA	Carpenter 20 (2.4660)	
4		Process Connection		DP	Duplex 2205 (1.4462)	
	N2F	1/4" NPT female		S4	Stainless steel 304L (1.4304)	
	N4F	1/2" NPT female		XX	Other - consult factory	
	N6F	3/4 NPT female		9		System Fill
	N8F	1" NPT female			68	KN68 - Silicone DC200-10cSt
	N4	1/2" NPT male			02	KN2 - Silicone DC200-50cSt
	N6	3/4" NPT male	32		KN32 - Silicone DC704	
	N8	1" NPT male	21		KN21 - Halocarbon 6.3	
	XX	Other - consult factory	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

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

