

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



Type M93X.D1 AWS

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

Operating Temperature

0 to 300°F (-18°C to 149°C)

Ambient Temperature

-40°F to 140°F (-40°C to 60°C)

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

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 4

System Fill Fluid

Silicone oil, DC200-10cSt.

Identification: Engraved in upper seal housing

Available Options

- Cooling element 4" (up to 500F) and 8" (up to 750F) long
- Severe pressure pulsation protection
- Other system fill fluids
- Additional process connections
- Window materials (safety glass, instrument glass)
- Certifications material 3.1 and NIST
- Flushing ports w/o plug
- Case liquid filled
- Other material wetted parts
- Dampened movement
- Ethanol Configuration

Description Code – M93X.D1

M932.D1	160PSI	1/2NPTM	SS,	SS	-0,	SS,	OPTIONS
							<p>Options</p> <p>KN68 = DC200 - 10 KN2 = DC200-50 KN21 = Halocarbon 6.3 KN3.2 = High temperature oil CE = 4" cooling element CE8 = 8" Cooling element SG = Safety glass window MC = Material certificate 3.1 NACE = NACE applications R0.6 = Standard restrictor R0.3 = Super restrictor GF = Glycerin case fill SF = Silicone case fill O2 = Clean for oxygen use SI-free = Silicon free ETH = Ethanol configuration TAG = Stainless steel tag plate INST = Instrument glass</p> <p>Diaphragm Material</p> <p>SS = 316L stainless steel MO = Monel® 400 HC = Hastelloy® C-276</p> <p>Flushing Connection</p> <p>0 = None 1 = 1/8" NPT female 2 = 1/4" NPT female</p> <p>Lower Housing Material</p> <p>SS = 316 stainless steel MO = Monel® 400 HC = Hastelloy® C-276</p> <p>Upper Housing Material</p> <p>SS = 316 stainless steel</p> <p>Process Connection</p> <p>1/4NPTF = 1/4" NPT female 1/2NPTF = 1/2" NPT female 3/4NPTF = 3/4" NPT female 1.0NPTF = 1" NPT female 1/4NPTM = 1/4" NPT male 1/2NPTM = 1/2" NPT male 3/4NPTM = 3/4" NPT male 1.0NPTM = 1.0" NPT male</p> <p>Pressure Range</p> <p>160 psi</p>

Diaphragm Seal Design

M93X.D1 = All-Welded Diaphragm Seal

M93X.D1 Smart Code Configuration	
Field No.	Code
	Case filling for vibration protection
	2 Without
	3 Glycerine (standard)
	P Silicone, 1000 cSt
1	? Other - please specify
	Nominal gauge size
2	U 4½"
	Unit
	P psi
3	S Special pressure range
	Range
	V310 -30 inHg...0
	V321 -30 inHg...15 psi
	V331 -30 inHg...30 psi
	V352 -30 inHg...60 psi
	V379 -30 inHg...100 psi
	V412 -30 inHg...160 psi
	V415 -30 inHg...200 psi
	G310 0 psi...15 psi
	G321 0 psi...30 psi
	G341 0 psi...60 psi
	G369 0 psi...100 psi
	G411 0 psi...160 psi
	G414 0 psi...200 psi
	G421 0 psi...300 psi
	G428 0 psi...400 psi
	G441 0 psi...600 psi
	G469 0 psi...1000 psi
	G510 0 psi...1500 psi
	G514 0 psi...2000 psi
	G521 0 psi...3000 psi
	G534 0 psi...5000 psi
4	???? Other - please specify
	2nd scale / special scale
	K 2nd scale kg/cm ²
	B 2nd scale bar
	L 2nd scale kPa
5	Z Without
	Connection position Dry Filled
	U Lower mount
	3 Lower back mount
6	?? Other - please specify
	Window
	A Acrylic
	G Flat instrument glass
7	H Laminated safety glass

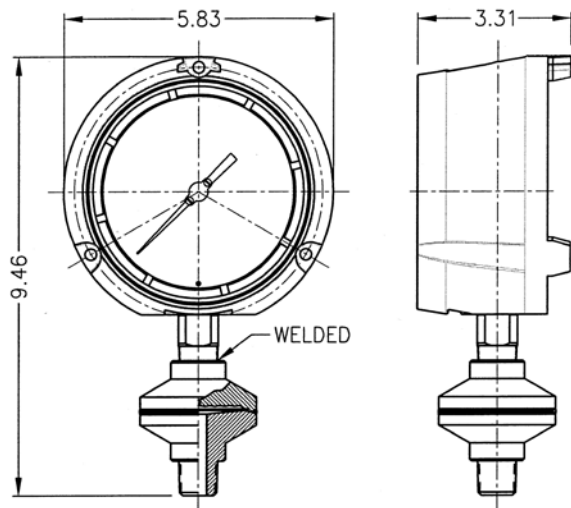
M93X.D1 Smart Code Configuration	
Field No.	Code
	Process connection
	GNB 1/4" NPT-male
	GND 1/2" NPT-male
	GN2 1/4" NPT-female
	GN4 1/2" NPT-female
8	??? Other - please specify
	Diaphragm material
	A2 Stainless steel 316L (1.4435)
	A7 Hastelloy® C276 (2.4819)
	A8 Monel® 400 (2.4360)
	D1 Duplex 2205 (1.4462)
9	?? Other - please specify
	Lower housing material
	A2 Stainless steel 316L (1.4435)
	A7 Hastelloy® C276 (2.4819)
	A8 Monel® 400 (2.4360)
	D1 Duplex 2205 (1.4462)
10	?? Other - please specify
	Fill fluid
	B2 KN 68 - DC 200 (10 cSt)
	A1 KN 2 - silicon oil
	A2 KN 32 - DC 704
	E1 KN 21 - halocarbon
11	?? Other - please specify
	Flushing connection
	1 Without
	3 1 x 1/4" NPT
	5 2 x 1/4" NPT
12	?? Other - please specify
	Special design features
	Z Without
	A Clean for O2 service
13	? Other - please specify
	Quality certificates
	Z Without
	2 Certificate 2.2 EN 10204
14	3 Certificate 3.1 EN 10204
	Additional order details
	Z Without
15	T Additional order details

Order Code:

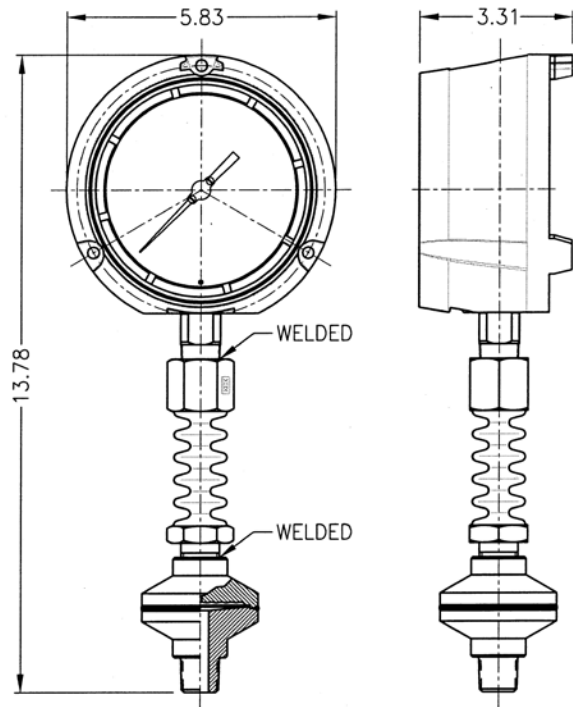
M93 .D1 - - - - -

*Additional order details _____

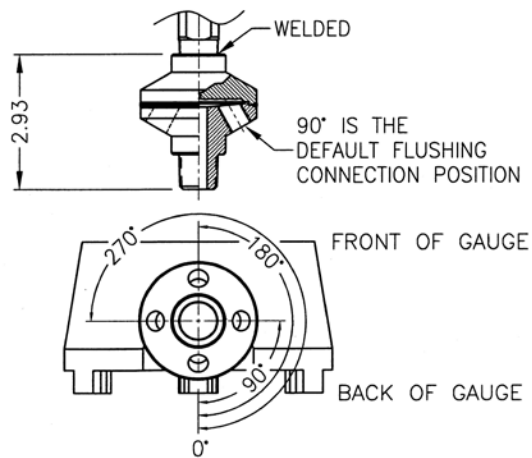
Standard Configuration



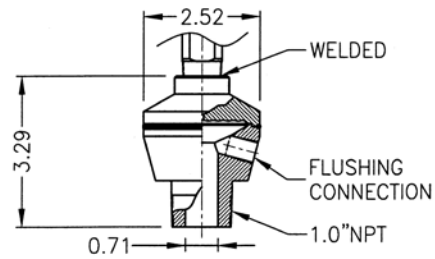
4" Cooling Element installed



Flushing Port Location



Ethanol Configuration



Technical Data

Overall weight: No case fill: 3.50 lbs.

Case filled: 4.60 lbs.

Temperature effect²⁾

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

¹⁾ Values including 4" cooling element

²⁾ Units filled at 70F (base temperature)

