

Type L990.10 - Standard Welded Diaphragm Seal

WIKA Datasheet L990.10

Applications

Process industry diaphragm seal to combine with pressure reading instruments. Intended for corrosive, contaminated, hot or viscous pressure media with suitable instruments.*

Design

- Diaphragm welded to upper housing. Upper and lower housings are bolted together. Housings may be removed from each other without loss of hydraulic system fill fluid on calibrated assemblies.
- Multiple bolting configurations, housing gaskets, and component materials are available based on application conditions (pressure, temperature, compatibility, etc.)
- See Diaphragm Seal Application - Design for more information at www.wika.com



Standard Welded Diaphragm Seal Model L990.10

Pressure Rating

Plastic Lower Housing
200 psi for 8 bolt configuration

Metal Lower Housing
1500 psi for 4 bolt configuration
3625 psi for 8 bolt configuration

Suitable Pressure Instrument Ranges

Typically for Bourdon tube gauges 15 psi span to maximum pressure rating

Operating Temperature

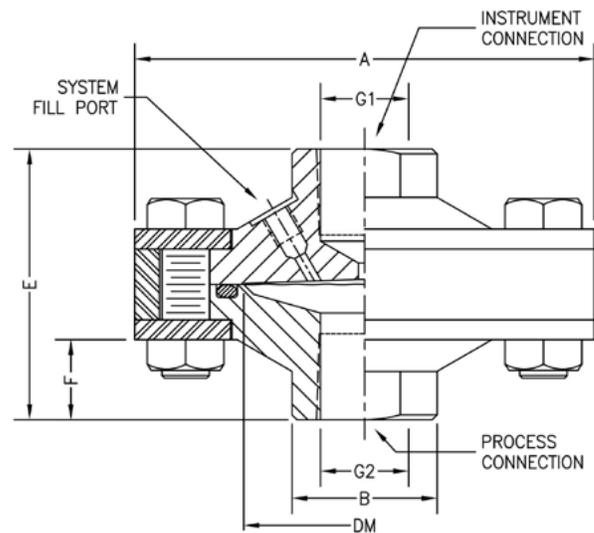
-130°F to 752°F (-90°C to 400°C)**

Volumetric Data

Displacement typically for 2.1" SS diaphragm

$\Delta V = 1.37 \text{ cm}^3$

Total cavity volume $V_o = 2.4 \text{ cm}^3$



Available Options

Connections, Materials, Flushing Ports, etc. See Selection Guide. Consult factory for special designs.

G1	G2	A	B	DM	E	F	WEIGHT
		inches (in)	in	in	in	in	lbs
1/4" NPT OR 1/2" NPT	1/4" NPT or 1/2" NPT	3.74	1.18	2.10	2.20	0.63	3.0
	3/4" NPT		1.41	2.1	2.36	0.79	3.4
	1" NPT		1.77	2.1	3.46	1.89	3.6

DM: Effective Diaphragm Diameter
G1: Instrument Connection
G2: Process Connection
All dimensions in inches unless otherwise noted

To determine the effects of temperature and response time in a specific application, contact the factory for an **Application Questionnaire**. The information provided will allow WIKA Technical Support to accurately model your application parameters using state-of-the-art computer simulation techniques.

** The diaphragm seal must be able to support the volumetric requirements of the pressure instrument. Please contact factory if unsure.

** Dependent on overall seal and pressure instrument configuration. Consult Diaphragm Seal Application-Design and factory if unsure



L990.10 Selection Guide

Field no.	Code	Description	Field no.	Code	Description
1	Instrument Connection		6	Housing Clamp Material (including nuts & bolts)	
	N4F	1/2" NPT female		CS	Retainer flange and bolts in galvanizes steel max. 500°F
	N2F	1/4" NPT female		SS	Retainer flange and bolts in stainless steel max. 500°F
CPL	Capillary (Axial weld-in) connection - (see note 1)	HS		Retainer flange stainless steel and high tensile bolts - max. 752°F (see note 5)	
Process Connection		Diaphragm Material			
N2F	1/4" NPT female	SS		Stainless steel 316L (1.4435)	
N4F	1/2" NPT female	HB		Hastelloy® B3 (2.4600)	
N6F	3/4" NPT female	HC		Hastelloy® C276 (2.4819)	
N8F	1" NPT female	MO		Monel® 400 (2.4360)	
N2	1/4" NPT male	IN		Inconel® 600 (2.4816)	
N4	1/2" NPT male	IC	Incoloy® 825 (2.4858)		
N6	3/4" NPT male	TA	Tantalum		
N8	1" NPT male	NI	Nickel 200 (2.4066)		
XX	Other - consult factory	TI	Titanium Grade 2 (3.7035) - (see note 2)		
2	Upper Housing Material (Instrument side)		CA	Carpenter 20 (2.4660)	
	CS	Carbon steel 1018, Nickel plated	TF	Stainless steel (316L) with black PTFE-foil	
	SS	Stainless steel 316L (1.4435)	SW	Stainless steel (316L) with virgin PTFE-foil (Tmax 300°F)	
	TI	Titanium Grade 2 (3.7035) - (see note 2)	PF	Stainless steel (316L) with Teflon®-spray-coating - (see note 6)	
	MO	Monel® 400 (2.4360)	AU	Stainless steel (316L) with Gold Lining 10 µin	
	HC	Hastelloy® C276 (2.4819)	DP	Duplex 2205 (1.4462)	
	DP	Duplex 2205 (1.4462)	S4	Stainless steel 304L (1.4304)	
	XX	Other - consult factory	XX	Other - consult factory	
3	Lower Housing Material (Process side)		Housing Gasket Material (see note 7)		
	CS	Carbon steel 1018, Nickel plated	BN	BUNA-N (NBR) max. 212°F	
	SS	Stainless steel 316L (1.4435)	VI	Viton® (FPM) max. 400°F	
	HB	Hastelloy® B2 (2.4617)	TF	Teflon® (PTFE) max. 500°F	
	HC	Hastelloy® C276 (2.4819)	AS	Metal Seal Form C, Inconel / Silver plated - max 752°F	
	MO	Monel® 400 (2.4360)	NA	None - for PTFE lower (see Note 8)	
	IN	Inconel® 600 (2.4816)	XX	Other - consult factory	
	IC	Incoloy® 825 (2.4858)	Pressure Rating @ 250°F		
	TI	Titanium Grade 2 (3.7035)	200	200 PSI MWP for plastic lower (8 bolt design)	
	TF	Solid Virgin PTFE - (see note 3)	1500	1500 PSI MWP (standard 4 bolts) (not for high temp bolts and ring)	
	CA	Carpenter 20 (2.4660)	3625	3625 psi (8 bolt design)	
	PVC	PVC - (see note 3)	Options (see note 9)		
	DP	Duplex 2205 (1.4462)	XMT	Material Certificate 3.1 EN10204 (metal only)	
	PVDF	PVDF (Kynar) - (see note 3)	XNC	Wetted Parts NACE (MR0175/MR0103 Year 2009) compliant	
	NI	Nickel 200 (2.4066)	CE4	4" Cooling element - (see note 1, 10)	
	S4	Stainless steel 304L (1.4304)	CE8	8" Cooling element - (see note 1, 10)	
	XX	Other - consult factory	PLG	Provide flushing port plugs	
	4	Lower Housing Flushing Connection (see note 4)		Options (see note 9)	
-0		Without	XMT	Material Certificate 3.1 EN10204 (metal only)	
-1		1 X 1/8 NPT	XNC	Wetted Parts NACE (MR0175/MR0103 Year 2009) compliant	
-2		1 X 1/4 NPT	CE4	4" Cooling element - (see note 1, 10)	
-3		2 x 1/8 NPT	CE8	8" Cooling element - (see note 1, 10)	
-4		2 x 1/4 NPT	PLG	Provide flushing port plugs	
-5		1 X 1/2 NPT			
5	-6	2 X 1/2 NPT			

Notes:

- 1) Axial weld-in connections and cooling elements are only available on 316L stainless steel upper housings.
- 2) Titanium upper housings and diaphragms are only offered together for this seal model.
- 3) Maximum working pressure is 200 psi at 200°F (8 bolts standard).
Only 1/4" and 1/2" NPT female connections are available.
- 4) Plugs are not supplied with flushing ports as standard.
- 5) For use with silver plated metal gasket (AS) and 8 bolt configuration (3625) for process media temperatures up to 752°F.
- 6) Teflon® coating (PF) is not intended for full corrosion protection. It is applied as a non-stick coating only.
- 7) Viton® (VI) gaskets are standard for 316L (SS) and carbon steel (CS) wetted parts.
Teflon® (TF) gaskets are standard for all other wetted parts configurations.
- 8) Only the design of the PTFE lower housing (TF) does not require a housing gasket. See note 7 for all other lower housings.
- 9) List options in alphabetical order at the end of the configuration code.
- 10) Cooling elements are welded to the diaphragm seal as standard.

Order Sample	MODEL	INSTRUMENT CONNECTION	PROCESS CONNECTION	UPPER HOUSING MATERIAL	LOWER HOUSING MATERIAL	FLUSHING MATERIAL	CLAMP & SUPPORT MATERIAL	DIAPHRAGM MATERIAL	GASKET MATERIAL	PRESSURE RATING	OPTIONS
L990.10	N4F	X	N4F	SS	SS	-0	SS	SS	VI	1500	XXX
Field no.	1	2	3	4	5	6	7	8	9	10	

*Additional order details _____

