

Diaphragm - Type Diaphragm Seal

Type L990.10 - Standard Welded Diaphragm Seal

WIKA Datasheet L990.10

Applications

Process industry diaphragm seal to combine bourdon tube pressure gauges. Intended for corrosive, contaminated, hot or viscous pressure media.

Features

- Multi-purpose diaphragm seal
- Threaded process connection
- Diaphragm welded to upper housing

Design

The diaphragm is welded to the upper housing which allows the replacement of the lower housing without jeopardizing the integrity of the system fill fluid and installed instrument. The upper and lower housing are bolted together and sealed by use of an O-ring. Process wetted components can be manufactured with solid metallic and nonmetallic materials.



Standard Welded Diaphragm Seal Model L990.10

Pressure Rating, Maximum¹:

3,675 psi

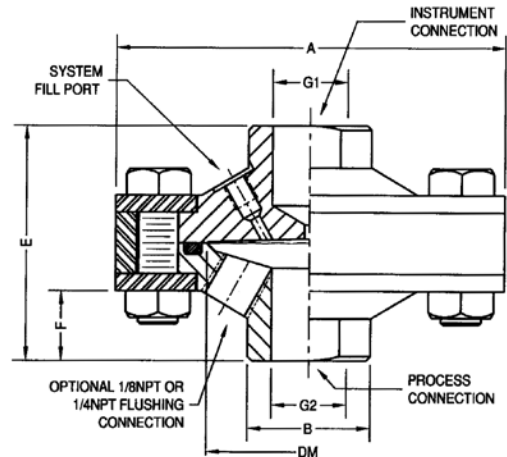
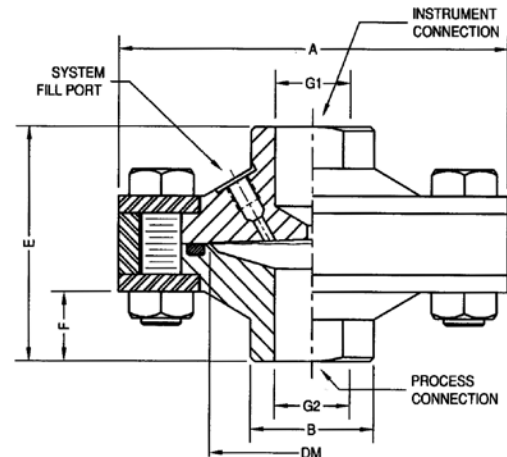
Suitable Pressure Span, Minimum²:

Gauge (Range³): 2½", ≥ 15 psi
4" or 4½", ≥ 15 psi

Pressure Transmitters (TRONIC)⁴:

≥ 15 psi

Operating Temperature⁵: -130°F to 752°F (-90°C to 400°C)



DM: EFFECTIVE DIAPHRAGM DIAMETER
G1: INSTRUMENT CONNECTION
G2: PROCESS CONNECTION
ALL DIMENSIONS IN INCHES UNLESS OTHERWISE NOTED

G1	G2	A	B	DM	E	F	WEIGHT
							lbs
1/4"NPT OR 1/2"NPT	1/4"NPT OR 1/2"NPT	3.74	1.18	2.1	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

DWG.#2211769-5

L990.10 Smart Codes for Custom Order Configurations

Field No.	Code	Feature
1	Process Connection	
	GN2	1/4 NPT Female
	GN4	1/2 NPT Female
	GN5	3/4 NPT Female
	GN6	1 NPT Female
	GNB	1/4 NPT Male
	GND	1/2 NPT Male
	GNE	3/4 NPT Male
	GNF	1.0 NPT Male
???	Other - Please Specify	
2	Nominal Pressure Rating	
	XA	200 psi MWP (Maximum 300 °F)
	XB	1500 psi MWP (Standard 4 bolts)
	XT	3675 psi
??	Other - Please Specify	
3	Upper Housing Material	
	AP	Carbon Steel 1018 Nickel Plated
	A2	Stainless Steel 316L (1.4435)
	A1	Stainless Steel 316TI (1.4571)
	AE	Titanium Grade 2 (3.7035)
??	Other - Please Specify	
4	Diaphragm Material	
	A2	Stainless Steel 316L (1.4435)
	A5	Hastelloy B2 (2.4617)
	A7	Hastelloy C276 (2.4819)
	A8	Monel 400 (2.4360)
	A9	Inconel 600 (2.4816)
	AA	Incoloy 825 (2.4858)
	AB	Tantalum
	AC	Nickel 200 (2.4066)
	AE	Titanium Grade 2 (3.7035) Upper Titanium required
	C2	Carpenter 20
	AG	Stainless Steel 316TI (1.4571) with PTFE-foil
	BB	Stainless Steel 316L with PFA-coating
	BD	Stainless Steel 316TI (1.4571) with Gold Lining 25 µm
??	Other - Please Specify	
5	Lower Housing Material	
	AP	Carbon Steel 1018 Nickel Plating
	A1	Stainless Steel 316TI (1.4571)
	A2	Stainless Steel 316L (1.4435)
	A5	Hastelloy B2 (2.4617)
	A7	Hastelloy C276 (2.4819)
	A8	Monel 400 (2.4360)
	A9	Inconel 600 (2.4816)
AA	Incoloy 825 (2.4858)	
AE	Titanium Grade 2 (3.7035)	

L990.10 Smart Codes for Custom Order Configurations cont'd

Field No.	Code	Feature
Lower Housing Material (continued)		
5	AN	Solid Teflon (PTFE) ¹⁾ MWP 200 psi
	C2	Carpenter 20
	??	Other - Please Specify
Fastening Parts		
6	A	Retainer Flange and Bolts in Galvanized Steel
	B	Retainer Flange and Bolts in Stainless Steel
	C	Retainer Flange Stainless Steel and High Tensile Bolts
Gasket (Process Seal)		
7	Z	Without
	G	BUNA-N (NBR) Max. 212°F
	J	Viton (FPM) Max. 400°F
	E	Teflon (PTFE) Max. 500°F
	C	Metal Seal Form C, Stainless Steel / Silver
	D	Metal Seal Form C, Inconel / Silver
	?	Other - Please Specify
Connection to the Pressure Instrument		
8	3	1/2 NPT Female
	4	1/4 NPT Female
	5	Axial Weld-in Connection
	?	Other - Please Specify
Flushing Connection		
9	1	Without
	2	1 x 1/8 NPT
	3	1 x 1/4 NPT
	4	2 x 1/8 NPT
	5	2 x 1/4 NPT
	?	Other - Please Specify
System Fillport		
10	A	Without
	C	Filler Hole M6 Set Screw
	?	Other - Please Specify
Quality Certificates		
11	Z	Without
	1	Quality Certificates
Additional Order Details		
12	Z	Without
	T	Additional Order Details

Note: ¹⁾ NO Flushing ports available.

²⁾ Lot charges for annealing apply

Order Code:

1
2
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10
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12*

L990.10 - -

*Additional order details _____

Description Ordering Code - L990.10

L990.10,1/4X1/4F,CS,CS-0,CS,SS,VI

Gasket Material (See note 10)

VI = Viton®

BN = Buna "N"

TF = Teflon®, virgin

AS = Stainless steel, silver-plated

NA = None (See note 9)

Diaphragm Material

SS = 316L stainless steel

MO = Monel® 400

HB = Hastelloy® B-2

HC = Hastelloy® C-276

PF = 316 stainless steel, Teflon® coated

TF = 316 stainless steel, virgin Teflon® lined

TA = Tantalum

TI = Titanium, grade 2 (See note 8)

NI = Nickel 200

IN = Inconel® 600

IC = Incoloy® 825

CA = Carpenter® 20

SA = 316 stainless steel, gold-plated

VI = Viton® (See note 7)

Clamp & Support Material (Including nuts and bolts)

CS = Carbon Steel, zinc-plated

SS = Stainless steel

HS = High temperature stainless steel (See note 6)

NA = None (See note 5)

Flushing Connection (See note 4)

0 = None

1 = 1/8" NPT female

2 = 1/4" NPT female

Lower Housing Material

CS = Carbon steel, nickel-plated

SS = 316 stainless steel

MO = Monel® 400

HB = Hastelloy® B-2

HC = Hastelloy® C-276

TF = Teflon®, virgin (See note 3)

TI = Titanium, grade 2

NI = Nickel 200

IC = Inconel® 800

IC = Incoloy® 825

CA = Carpenter® 20

Upper Housing Material

CS = Carbon steel, nickel-plated

SS = 316 stainless steel

TI = Titanium, grade 2

Process Connection

1/4F = 1/4" NPT female

1/2F = 1/2" NPT female

3/4F = 3/4" NPT female

1.0F = 1" NPT female

1/4M = 1/4" NPT male

1/2M = 1/2" NPT male

3/4M = 3/4" NPT male

Instrument Connection

1/4 = 1/4" NPT female

1/2 = 1/2" NPT female

CPL = Capillary connection (To weld capillary directly to seal, see note 2)

Notes

1. Includes previous type 990.10.502.
2. Capillary connection requires a stainless steel upper housing.
3. Teflon® lower housing available in welded diaphragm (type 990.10.501) design only. (MWP 200 psi@ 200°F) Available with 1/4" or 1/2" NPT female process connections only.
4. Customer to supply flushing plug.
5. For all welded design (990.10.520) only.
6. Nuts and bolts only. Clamp rings, support ring and washers are 316 stainless steel. Requires silver-plated stainless steel gasket.
7. Viton® diaphragm is available for clamped design only.
8. For titanium diaphragm welded to upper housing, a titanium upper housing is required.
9. For Teflon® lower housing and all welded design (990.10.520) only. All other lower housings require gaskets.
10. Standard material for stainless steel and carbon steel wetted parts is Viton® (400°F max.). Teflon® is standard for all other wetted parts (500°F max.). Silver-plated stainless steel gasket is used for high temperature applications (752°F max.).

Diaphragm Seal Design

L990.10 = Welded Diaphragm (Pressure rating up to 3675PSI, see note 1)

Ordering information

Pressure gauge model / Nominal size / Scale range / Size of connection / Optional extras required
Specifications and dimensions given in this leaflet represent the state of engineering at the time of printing.
Modifications may take place and materials specified may be replaced by others without prior notice.



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