

Sanitary Gauges

Type 35SS • 45SS



Meets 3-A Sanitary Standard 37-01 and USDA, FDA Regulations

SPECIFICATIONS

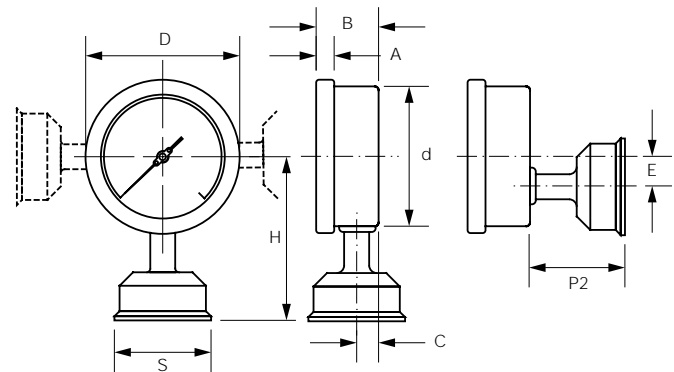
- Case:** AISI 304 Stainless Steel in 3-1/2" (88mm) or 4-1/2" (125 mm). Case can withstand high-pressure cleaning.
- Ring:** AISI 304 Polished Stainless Steel with Bayonet Connections.
- Window:** Polycarbonate
- Socket:** AISI 316 Stainless all welded construction.
- Bourdon Tube:** AISI 316L Stainless Steel.
- Connections:** Gauge is welded to diaphragm seal. Standard is either S15 (1-1/2") or S20 (2") Tri-Clamp®.
- Diaphragm Seal:** Polished 316 Stainless Steel heavy duty one piece welded construction. No exposed threads.
- Diaphragm Backup:** Machine convoluted backup.
- Fill:** Diaphragm Assembly filled with Food Grade Glycerine, also case on wet gauge. Optional Neobee M20 fill available.
- Movement:** All stainless plates and gears.
- Pointer:** Black balanced aluminum, micrometer adjustable.
- Dial:** White aluminum with black markings.
- Range:** See range matrix for availability. 50% over-range protection is standard.
- Accuracy:** 1% of full scale on 3-1/2" gauges (ASME Grade 1A), 1/2% of full scale on 4-1/2" gauges (ASME Grade 2A). 1-1/2% of full scale for both gauge sizes on 0/15 PSI.
- Operating Limitations:** The maximum operating pressure should not exceed approximately 75% of the full scale range.

OPTIONS	Mounting Connection Option	3-1/2"		4-1/2"	
		35SSW	35SSD	45SSW	45SSD
Lower Connected	L	S	S	S	S
Back Connected	B	S	S	S	S
1-1/2" Tri-Clamp®	S	S	S	S	S
2" Tri-Clamp®	M	S	S	S	S
2-1/2" Tri-Clamp®	L	.	.	.	.
2" Perlick Nut	P	.	.	.	.
Food Grade Glycerine	E	S		S	
500% Over range	O	.	.	.	.
Neobee M20 Fill	B	.		.	
Left Side Mount	J		.		.
Right Side Mount	K		.		.

S indicates standard configuration
 . indicates option availability

Additional Options: A1, A2, A3. See page 5 for descriptions.

DIMENSIONS



Gauge Size	D	H	B	A	d	C	P2	E
3-1/2" (88 mm)	3.98 (101.1)	3.85 (97.8)	1.63 (41.4)	0.47 (11.9)	3.63 (92.2)	0.65 (16.5)	2.03 (51.6)	0.77 (19.6)
4-1/2" (125 mm)	4.91 (124.7)	4.72 (119.9)	2.13 (54.1)	0.48 (12.2)	4.55 (115.6)	0.71 (18.0)	2.35 (59.7)	0.96 (24.4)

AVAILABLE RANGES

-30"Hg / 0 / 15 PSI
-30"Hg / 0 / 30 PSI
15*
60
100
160
200
300
400
500
600
1000

*Accuracy of this range is 1.5%, full scale.

Tri-Clamp® Size	S
1-1/2" Tri-Clamp®	1.99
S 15	(50.5)
2" Tri-Clamp®	2.52
S 20	(64.0)
2-1/2" Tri-Clamp®	3.58
S 25	(90.9)

®Tri-Clamp is a registered trademark of the Tri-Clover Co.

Electrical Contact Gauges

Type 40HB • 40HS

SPECIFICATIONS



Case: AISI 304 Stainless Steel in 4" (100mm) Dial size. Available Dry or Filled with Polyisobutylene (Oppanol), or Fluorolube (see page 5). Available in Stem Mount Lower Connected, or Back Connected.

Ring: AISI 304 Polished Stainless Steel, Bayonet Connection.

Window: Acrylic

Socket: 40HS: AISI 316 Stainless Steel.

40HB: OT58 Brass.

Bourdon Tube: Phosphor Bronze for ranges up to 600 PSI. AISI 316L Stainless Steel for ranges above 600 PSI. AISI 316L Stainless Steel for all ranges (40HS). For ranges less than 1000 PSI (60 Bar) a C-tube is used, higher ranges use a spiral tube.

Connection: 1/2" NPT, 1/4" NPT available.

Movement: OT59 Brass, AISI 304 Stainless Steel plates (40HB), Reinforced Stainless Steel (40HS).

Pointer: Balanced black aluminum.

Dial: White aluminum with black markings. Markings and graduations in accordance with ASME B40. 1-1991.

Ambient Temperature Limits: -13°F/150°F (-25°C/65°C).

Process Fluid Limits: 212°F (100°C) maximum.

Accuracy: 1.0% of full scale value (ASME grade 1A).

Temperature Errors: For a normal temperature of 68°F (20°C) approximately +0.3% error for temperature increase of 18°F (10°C) and -0.3% error for temperature decrease of 18°F (10°C).

Options: A1, A2, A3, D, H, L, K, P, R. See page 5 for descriptions.

ELECTRICAL CONTACT SPECIFICATIONS

General Characteristics: Gauges can be supplied with one or two contacts, which are designed to either open or close as the pressure gauge pointer passes the set point. Mechanical contacts are made from a silver alloy and feature a magnetic block to avoid sparking or faulty switching in high vibration environments. See page 21 for configurations.

Inductive Contacts: Have been designed for use in hazardous areas, and are certified to conform to European CENELEC 50014/50020 standards with protection degree EEx ia IIC T6 where intrinsically safe instruments are required.

Design Contact & Operation: The inductive contact is an electric contact which operates without mechanical contact. It mainly consists of a control head containing a transistorized oscillator and two axial coils. The magnetic coupling between the two axial coils is changed by a control flag which is moved by the pointer. This action changes the internal control unit resistance which is used, by means of an amplifier, to trigger a switch amplifier which in turn causes the actual switch.

Electrical Rating: The contacts can be used with either AC or DC with a maximum voltage of 380 volts and are rated at 30 Watts/50VA. For specific recommendation see the accompanying table.

Switching Combinations: Contact your Distributor or Palmer for information.

Available Ranges

PSI	Bar
15	1
30	1.6
60	2.5
100	4
160	6
250	10
400	16
600	25
800	40
1000	60
1500	100
2000	160
2500	250
3000	400
5000	600
6000	1000
10,000	
15,000	

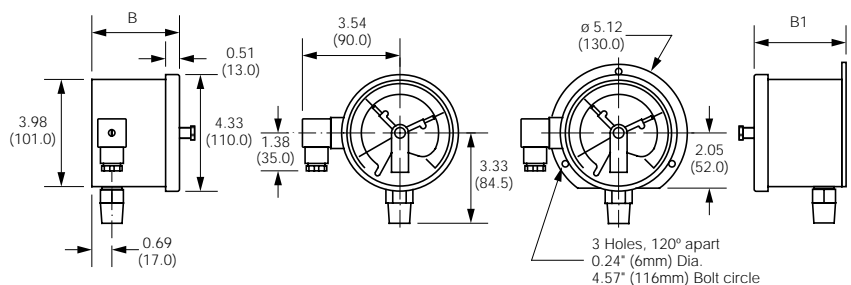
Electrical Ratings

Volts	AC	DC
380	80mA	75mA
220	135mA	130mA
110	270mA	250mA
50	0.5 A	0.4A

Case Thickness

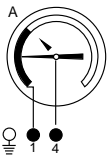
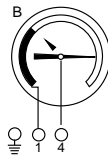

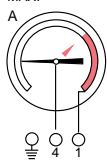
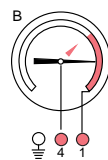



















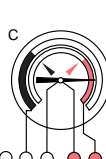


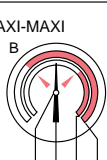
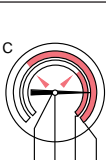

Model	B	B1
Single	2.81	2.97
Contact	(71.4)	(75.4)
Double	3.25	3.41
Contact	(82.6)	(86.6)



DIMENSIONS



Type 40HB • 40HS

ELECTRICAL WIRING FOR MECHANICAL CONTACTS

SCHEME		ACTIVATION	NON ACTIVATED	SWITCH FUNCTION (clockwise movement of the pointer)	CONTACT TYPE	CODE
MINI  		White Area Pos. B	Black Area Pos. A	Pointer passing the set point opens the contact	Magnetic Mechanical	D1
						H1
MAXI  		White Area Pos. A	Red Area Pos. B	Pointer passing the set point closes the contact	Magnetic Mechanical	D2
						H2
MINI-MAXI   		Black & White Areas Pos. A Red & White Areas Pos. C	White Area Pos. B	Pointer passing the set point opens contact 1 and closes contact 2	Magnetic Mechanical	D3
						
MAXI-MAXI   		White Area Pos. A Red & White Areas Pos. B	Red Area Pos. C	Pointer passing the set point closes contact 1 and closes contact 2	Magnetic Mechanical	D4
						
MAXI-MINI   		Black & White Areas Pos. A Red & White Areas Pos. C	Red & Black Pos. B	Pointer passing the set point opens contact 1 and closes contact 2	Magnetic Mechanical	D5
						
MINI-MINI   		Black & White Areas Pos. B White Area Pos. C	Black Area Pos. A	Pointer passing the set point opens contact 1 and contact 2	Magnetic Mechanical	D6
						
INDEPENDENT MINI-MAXI   		Black & White Areas Pos. A Red & White Areas Pos. C	White Area Pos. B	Pointer passing the set point opens contact 1 and closes contact 2	Magnetic Mechanical	D7
						H7
INDEPENDENT MAXI-MAXI   		White Area Pos. A Red & White Areas Pos. B	Red Area Pos. C	Pointer passing the set point closes contact 1 and closes contact 2	Magnetic Mechanical	D8
						H8

 Set point MIN
 Set point MAX
 Adjustable over 270°

When the contact is open the current is interrupted. When the contact is closed the current goes through.
 Wire colors: contact 1 = brown contact 2 = black supply 3 = grey supply 4 = blue ground = yellow-green

Current Loop Transmitter Gauges

Type 40ES

SPECIFICATIONS

- Case:** AISI 304 Stainless Steel in 4" (100mm). Available Silicone filled or dry.
- Ring:** AISI 304 Polished Stainless Steel. Bayonet connection.
- Window:** Laminated safety glass. Acrylic lens optional.
- Socket:** AISI 316 Stainless Steel.
- Pressure Sensors:** Bourdon tube is made from AISI 316L Stainless Steel. Electronic sensor is thick film on ceramic, seal is PTFE (Teflon®). Sensors are completely independent of one another giving the instrument a built-in back up and calibration check capability.
- Connection:** 1/2" NPT, 1/4" optional. Stem Mount, lower connected only.
- Movement:** Reinforced Stainless Steel.
- Pointer:** Balanced black aluminum, micrometer adjustable.
- Dial:** White aluminum with black markings. Markings and graduations in accordance with ASME B40. 1-1991.
- Temperature Limits:** -4°F/150°F for filled gauge (ambient and process fluids).
- Overpressure Limits:** As a percent of full scale value:
 - 30% for ranges up to 870 PSI (60 Bar)
 - 25% for ranges from 870 to 1400 PSI (100 Bar)
 - 15% for ranges above 1400 PSI (100 Bar)
 - Optional 200% over range (changes accuracy to 1% of full scale).
- Accuracy:** 0.5% of full scale value (ASME grade 2A) on dry gauges, 1.0% (ASME grade 1A) on silicone filled.
- Temperature Errors:** For a normal temperature of 68°F (20°C) approximately +0.3% error for a temperature increase of 18°F and -0.3% error for a temperature decrease of 18°F (10°C).
- Options:** A1, A2, A3, G1, O, P, S. See page 5 for descriptions.



The reliability of a mechanical gauge with the interface flexibility of an electronic sensor.

Available Ranges

PSI	Bar
-30" Hg/0 PSI	-1/0 Bar
15	1
30	1.6
60	2.5
100	4
160	6
200	10
300	16
400	25
600	40
1000	60
1500	100
2000	160
3000	250
4000	400
5000	

TRANSMITTER SPECIFICATIONS

- Output Signal:** Industry standard 4 to 20mA current loop.
- Power Supply:** 18 to 32 volts, 25 mA.
- Accuracy:** 0.5% of full scale value including linearity and hysteresis.
- Operating Temperature Range:** -13°F to 160°F (-25°C to 85°C)
- Compensated Temperature Range:** 14°F to 104°F (-10°C to 40°C)
- Temperature Effect On Zero Balance:** Less than 0.02% °F (0.03% °C) in the compensated range.
- Temperature Effect On Output:** Less than 0.006% °F (0.01% °C) in the compensated range.
- Long Term Stability:** Typically less than 0.01%/year.

DIMENSIONS

