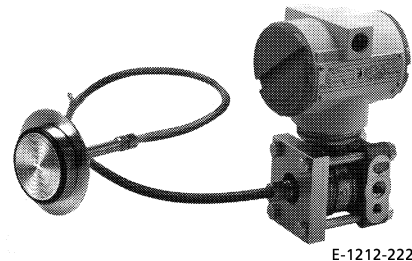


578T, 579T Electronic Liquid Level Pressure Transmitter with Sanitary/Aseptic Remote Seal Elements

- Operates at Full Vacuum
- ±0.2% of span accuracy
- Spans from 25 to 800 inches H₂O
- Outstanding temperature stability
- All-welded remote seal design
- For open or closed tank service
- 7-year warranty



The 578T, 579T Remote Sanitary or Aseptic Seal Element Electronic Liquid Level Transmitter is a two-wire, 24V dc transmitter with a 4 to 20 mA dc output signal linear to the input pressure. The transmitter employs a ceramic capacitance sensor and a unique, hermetically sealed, thick-film hybrid circuit.

Each hybrid circuit is dynamically laser-trimmed to match the performance characteristics of the sensor to create a high-performance, high-reliability transmitter. Combined accuracy, temperature, and pressure stability are unmatched by other electronic pressure transmitters.

SPANS AND RANGES

Transmitter	Span Limits Minimum & Maximum	Range Limits		Maximum Working Pressure (MWP)
		Lower	Upper	
578T	25 in. H ₂ O to 150 in. H ₂ O (6 kPa) to 38 kPa)	-150 in. H ₂ O (-38 kPa)	150 in. H ₂ O (38 kPa)	275 psig (1900 kPa)
579T	150 in. H ₂ O to (800 in. H ₂ O (38 kPa) to (200 kPa)	-800 in. H ₂ O (-200 kPa)	800 in. H ₂ O (200 kPa)	275 psig (1900 kPa)

*MWP of transmitter may be limited to rating of commercial clamp selected by customer for seal element process connection.

Zero Elevation/Suppression: Zero is continuously adjustable provided that the calibrated range is within the span and range limits above.

Warranty: ABB Instrumentation Inc., Rochester, NY, warrants the 500T Series Transmitter for 7 years from date of shipment. Contact ABB Instrumentation Inc., for complete information

PERFORMANCE SPECIFICATIONS

Electrical Classification

Agency approvals and certifications as listed in Ordering Information.

Ambient Temperature Limit

Process -40 to 400°F (-40 to 204°C)
Ambient

Without Digital Output Meter -40 to 185°F (-40 to 85°C)
With Digital Output Meter -40 to 149°F (-40 to 65°C)

Storage

Without Digital Output Meter -65 to 200°F (-54 to 93°C)
With Digital Output Meter -65 to 149°F (-54 to 65°C)

Operating Voltage (Transmitter)

	Minimum	Maximum
Without Options	12V dc	45V dc
With Surge Protection	13.4V dc	45V dc
With Digital Output Meter	16.0V dc	45V dc
With All Options	21.9V dc	45V dc

PERFORMANCE SPECIFICATIONS

Load Limitations*

Drive Impedance = $\frac{\text{Supply } V_{dc} - \text{Minimum } V_{dc}}{0.020}$

Maximum Drive Impedance

Without Options 1650 ohms
With Surge Protection 1580 ohms
With Digital Output
Meter 1450 ohms
With All Options 1150 ohms

*For higher load capability, contact Rochester.

Relative Humidity

0 to 100% RH

Low-Pressure Limit

Full vacuum, provided seal element is at or above level of capsule (See Note 2)

Accuracy

(Includes effects of linearity, hysteresis, and repeatability)

±0.2% of calibrated span

Hysteresis and Dead Band Combined

Better than 0.05%

Repeatability

Better than 0.05%

Overpressure Effect

Less than ±0.25% of upper range limit (URL) on zero to flange limit

Ambient Temperature Effect

Temperature effect on performance of remote seal transmitters is dependent on many factors such as:

- Process temperature
- Ambient temperature
- Sunshine vs shade on capillary
- Length of Capillary
- Type of seal element
- Capillary fill fluid
- Calibrated span of unit
- Amount of suppression or elevation

Under controlled conditions, temperature effect is less than 1.5% per 100°F (56°C).

Optional Surge Protection

Up to 2500V pulse (5K amp discharge current) of 8 μs rise time and 20 μs decay to half value

Output Signal

4 to 20 mA dc

Long-Term Stability

Better than ±0.25% of URL after 6 months

Supply Voltage Effect

Less than 0.005% per V dc

Load Effect

None

Vibration Effect

±0.1% URL/2g at 15 to 150 Hz
±0.1% URL/g at 151 to 2000 Hz

RFI Effect

Meets SAMA Standard PMC 33.1-1978. Tested over a full frequency range of 20 to 1000 MHz.

PHYSICAL SPECIFICATIONS

Process Diaphragm

Type 316L SST

Fill-Fluid

Primary, Seal and Capillary

Silicone¹ 200 -40 to 400°F (40 to 204°C)

Capillary

304 SST capillary with spiral armor protection and polyethylene jacket.

¹Trademark of Dow Corning Corp.

Transmitter Housing

Low copper cast aluminum with baked epoxy ester, urea formaldehyde melamine finish; NEMA 4X, CSA Enc 4, IP66.

Weight

15.7 lb (7.1 kg)

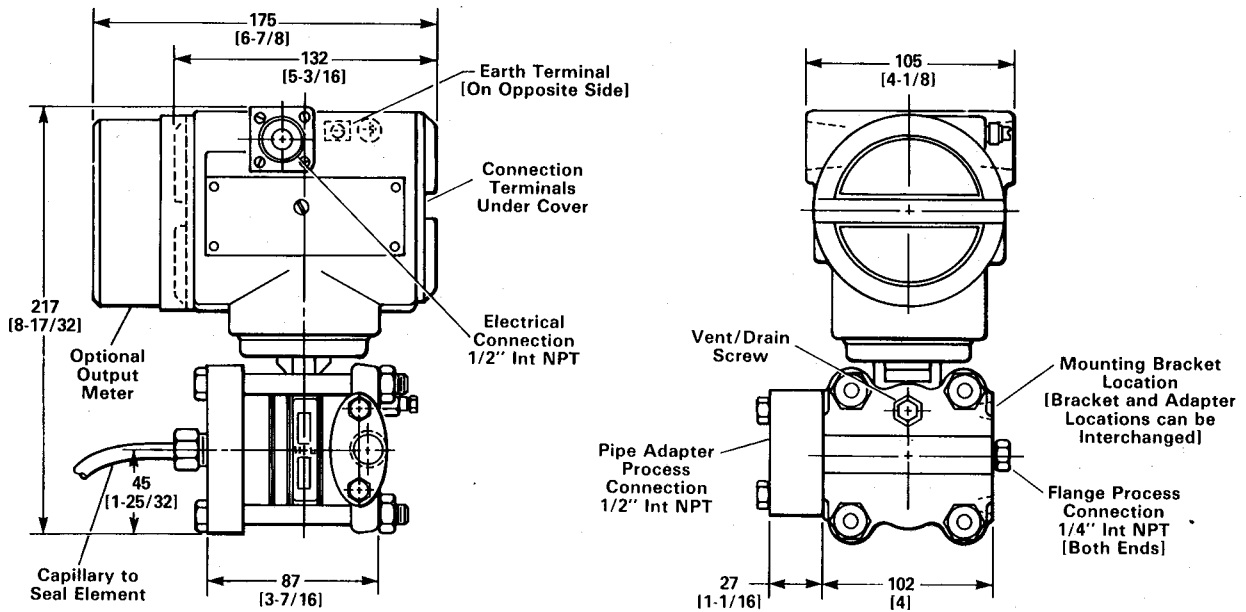
Electrical Connection

1/2 in. Int. NPT

For Electrical Codes 08 and 38 only, 2 each, 1/2 in. NPT male x M20 female adapters are provided.

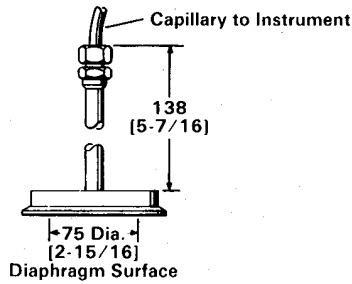
For Electrical Code 82 only, 2 each environment-resistant circular connectors with angle plug, per MIL-C-5015, are provided.

DIMENSIONS

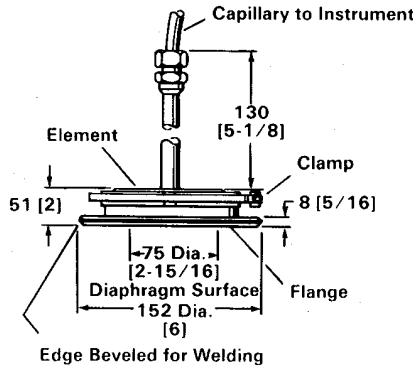


SANITARY SEAL ELEMENTS

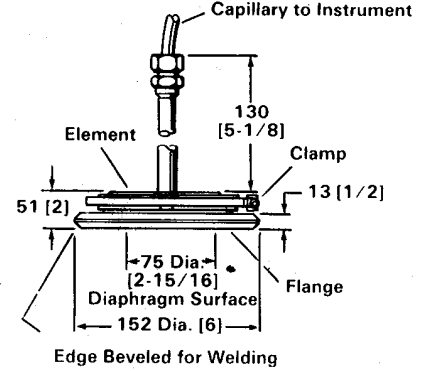
FOR USE WITH 4-INCH TRI-CLAMP CONNECTION



WITH 4-INCH THIN-WALL FLANGE

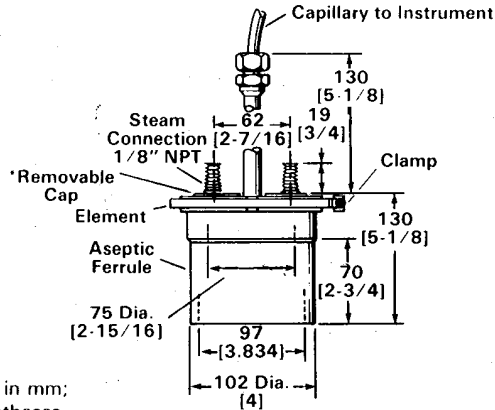


WITH 4-INCH THICK-WALL FLANGE

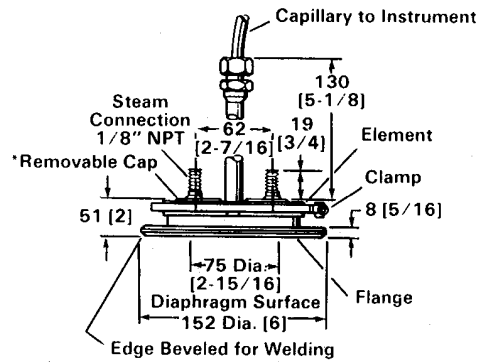


ASEPTIC SEAL ELEMENTS

WITH 4-INCH FERRULE



WITH 4-INCH THIN-WALL FLANGE



All dimensions in mm;
inches in parentheses

Note: Dimensions are nominal

E-1212-320

ORDERING INFORMATION
578T; 579T ELECTRONIC LIQUID LEVEL PRESSURE TRANSMITTER
WITH SANITARY/ASEPTIC REMOTE SEAL ELEMENTS

1. Select one character or set of characters from each category and specify complete catalog number per sample below.
2. Specify tagging if required. Tagging information is provided on the exterior stainless steel data plate to a limit of 40 characters.
3. Specify units for calibration and Data Tag in inches H₂O or kPa.

Code No.	Description
	BASE NUMBER - 1st thru 4th characters
578T	Electronic Liquid Level Pressure Transmitter with Sanitary or Aseptic Remote Seal Element, Span Adjustable from 25 to 150 in. H ₂ O (6 to 38 kPa)
579T	Electronic Liquid Level Pressure Transmitter with Sanitary or Aseptic Remote Seal Element, Span Adjustable from 150 to 800 in. H ₂ O (38 to 200 kPa)
	PRIMARY FILL-FLUID - 5th character
B	Silicone 200 ¹
	ELECTRICAL CODE - 6th and 7th characters (also see Specification Sheet 12-16)
01	FM Approved: Non-Incendive (Division 2), Explosionproof (Division 1), Intrinsic Safety (Division 1)
02	BASEEFA Certified: Type N (Zone 2), Intrinsic Safety (Zone 0) to CENELEC Standard EN50020
04	CSA Certified: Non-Incendive (Division 2), Explosionproof (Division 1), Intrinsic Safety (Division 1)
08	SAA Certified: Type N (Zone 2), Flameproof (Zone 1), Intrinsic Safety (Zone 0) (Pending)
10	General Purpose, ABB Instrumentation Standard
31	FM Approved: Non-Incendive (Division 2), Explosionproof (Division 1) (Note 1)
32	BASEEFA Certified: Type N (Zone 2) (Note 1)
34	CSA Certified: Non-Incendive (Division 2), Explosionproof (Division 1) (Note 1)
38	SAA Certified: Type N (Zone 2), Flameproof (Zone 1) (Note 1)
45	BASEEFA Certified: Flameproof (Zone 1)
82	BASEEFA Certified: Intrinsic Safety (Zone 0) (Electrical Connection includes Environment Resistant Circular Connector with Angle Plug per MIL-C-5015)
	CAPILLARY FILL-FLUID AND PROCESS TEMPERATURE RANGE - 8th character
1	Silicone 200: -40 to 400°F (-40 to 204°C) (Note 2)
	SEAL ELEMENT TYPE - 9th character
3	Sanitary Element for 4" Tri-Clamp ² Connection (only available with Process Connection Fitting 0)
4	Sanitary Element for 4" ABB Instrumentation Flange Connection (not available with Process Connection Fitting 3 or 4)
5	Aseptic Element for 4" ABB Instrumentation Flange or Ferrule Connection (not available with Process Connection Fitting 1 or 2)
6	Aseptic Element for 4" ABB Instrumentation Flange or Ferrule Connection with End Cap (not available with Process Connection Fitting 1 or 2)
	SEAL DIAPHRAGM WETTING MATERIAL - 10th character
2	Type 316L SST
	MODEL - 11th character
A	Design level
	PROCESS CONNECTION FITTING - 12th character
0	None
1	4" Sanitary Flange for welding to tank wall thickness up to 3/16 in. (5 mm)
2	4" Sanitary Flange for welding to tank wall thickness up to 3/16 in. to 3/8 in. (5 mm to 10 mm)
3	4" Aseptic Flange for welding to tank wall thickness up to 3/16 in. (5 mm)
4	4" Aseptic Ferrule

ORDERING INFORMATION

Code No.	Description
	MOUNTING BRACKET - 13th Character
0	None
1	Bracket for 1-1/4 in. to 2 in. (32 mm to 50 mm) pipe or surface mounting, carbon steel
2	Bracket for 1-1/4 in. to 2 in. (32 mm to 50 mm) pipe or surface mounting, SST (Note 3)
	OUTPUT METER - 14th character
0	None
1	0 to 100 Linear Scale
3	Digital (see Note 1)
	OPTIONS - 15th character
0	None
2	Surge Protector
-	HYPHEN - 16th character
	PROCESS AND STEAM SEAL O-RINGS - 17th character
0	None (not available with Seal Element Type 4, 5, or 6)
1	Buna-N: -40 to 250°F (-40 to 121°C) (not available with Seal Element Type 3)
2	Viton: 35 to 350°F (2 to 177°C) (not available with Seal Element Type 3)
	PROCESS CONNECTION CLAMP - 18th character
0	None
1	V-band Clamp for 4" Tri-Clamp, 150 psi (1050 kPa) MWP at 70°F (21°C)
	CAPILLARY LENGTH - 19th and 20th characters
05	5 ft (1.5m) minimum
10	10 ft (3m)
15	15 ft (4.5m), maximum for 578T
25	25 ft (7.5m), maximum for 579T
	579TB01132A0000-0005 SAMPLE CATALOG NUMBER

NOTES:

1. Electrical Codes 10, 31, 32, 34, 38, and 45 are the only valid codes when a digital output meter (14th character 3) is required.
2. Maximum temperature for full vacuum is 300°F (149°C) for Silicone 200
3. Not available with BASEEFA or SAA electrical code.

¹ Trademark of Dow Corning Corporation

² Trademark of Tri-Clover



The Company's policy is one of continuous product improvement and the right is reserved to modify specifications contained herein without notice.

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SS-12-15C 98.9

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