

# Rosemount 1495 Orifice Plate, 1496 Orifice Flange Union, 1497 Orifice Meter Section

- *Comprehensive offering*
- *Easy to use, prove, and troubleshoot*
- *The Rosemount 1495 Orifice Plate is compliant to ISO 5167, AGA Report No. 3 / API 14.3.2 and ASME MFC-3M, making the 1495 ideal for custody transfer applications*
- *Suitable for most gas, liquid, and steam applications*



Rosemount 3095 with Connection System into a Rosemount 1497 Meter Section with a Rosemount 1495 Orifice Plate

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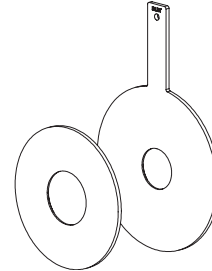
# Rosemount 1495, 1496, and 1497

## The Rosemount 1495, 1496, and 1497

### Rosemount 1495 Orifice Plate

- The most common primary element in the world with established manufacturing and installation standards
- Reliable technology measurement due to known historical flow data
- Easy to use, prove, and troubleshoot
- Compliant to ISO 5167, AGA Report No. 3 / API 14.3.2, and ASME MFC-3M, ensuring a precise flow measurement.
- Ideal for custody transfer applications
- Suitable for most gas, liquid, and steam as well as high temperature and pressure applications
- Meets AGA, ASME, ISO, and API standards, ensuring precision flow measurement
- Available for DIN 19206 Part 1

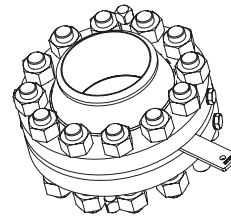
FIGURE 1. 1495 Orifice Plate



### Rosemount 1496 Orifice Flange Union

- Cost effective flow measurement
- No on-site flange tap drilling required
- All hardware for complete assembly provided: studs, nuts, jack screws, gaskets, and pipe plugs
- Meets high pressure and temperatures requirement up to ANSI Class 2500#
- Meets ASME B16.36
- Flange unions available per DIN 19214 Part 1

FIGURE 2. 1496 Orifice Flange Union

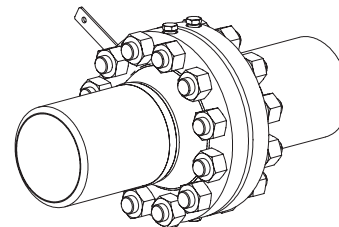


*Shown with 1495 Orifice Plate (ordered separately).*

### Rosemount 1497 Flange Union Meter Section

- All the benefits of a 1496 Orifice Flange Union with upstream and downstream piping provided
- Ease of installation with various piping connections
- Optional temperature tap available

FIGURE 3. 1497 Orifice Meter Section



*Shown with 1495 Orifice Plate (ordered separately).*

## Rosemount DP Flow Solutions

### **Annubar Flowmeter Series: Rosemount 3051SFA, 3095MFA, 485, and 285**

The state-of-the-art, fifth generation Rosemount 485 *Annubar* combined with the 3051S or 3095MV MultiVariable transmitter creates an accurate, repeatable and dependable insertion-type flowmeter. The Rosemount 285 provides a commercial product offering for your general purpose applications.

### **Compact Orifice Flowmeter Series: Rosemount 3051SFC, 3095MFC, and 405**

Compact Orifice Flowmeters can be installed between existing flanges, up to a Class 600 (PN100) rating. In tight fit applications, a conditioning orifice plate version is available, requiring only two diameters of straight run upstream.

## Product Data Sheet

00813-0100-4792, Rev GA  
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# Rosemount 1495, 1496, and 1497

### Integral Orifice Flowmeter Series: Rosemount 3051SFP, 3095MFP, and 1195

These integral orifice flowmeters eliminate the inaccuracies that become more pronounced in small orifice line installations. The completely assembled, ready to install flowmeters reduce cost and simplify installation.

### Orifice Plate Primary Element Systems: Rosemount 1495 and 1595 Orifice Plates, 1496 Flange Unions and 1497 Meter Sections

A comprehensive offering of orifice plates, flange unions and meter sections that is easy to specify and order. The 1595 Conditioning Orifice provides superior performance in tight fit applications.

## Specifications

### PERFORMANCE

#### Rosemount 1497 Meter Section Quality Assurance

Optional

- Code Welding to ASME Section IX
- Post Weld Heat Treatment
- Non-Destructive Examination: Hydrostatic, Radiography, and Dye Penetrant

#### Standard Pipe Schedules

TABLE 1. Default Pipe Schedules for 1496 Orifice Flange Unions and 1497 Orifice Meter Sections

Pipe Size <sup>(1)</sup>	ANSI 300# (WN, TH, SO)	ANSI 600# (WN, RJ)	ANSI 900# (WN, RJ)	ANSI 1500# (WN, RJ)	ANSI 2500# (WN, RJ)
2 (50.8)	40/Standard <sup>(3)</sup>	40/Standard <sup>(3)</sup>	80/XS <sup>(2)</sup>	160	XXS
2½ (63.5)	40/Standard <sup>(3)</sup>	40/Standard <sup>(3)</sup>	80/XS <sup>(2)</sup>	160	XXS
3 (76.2)	40/Standard <sup>(3)</sup>	40/Standard <sup>(3)</sup>	80/XS <sup>(2)</sup>	160/XXS	Wall thickness is beyond the available standard pipe schedules
4 (101.6)	40/Standard <sup>(3)</sup>	40/Standard <sup>(3)</sup>	80/XS <sup>(2)</sup>	160/XXS	
6 (152.4)	40/Standard <sup>(3)</sup>	80 <sup>(2)</sup>	160	XXS	Wall thickness is beyond the available standard pipe schedules
8 (203.2)	40/Standard <sup>(3)</sup>	80 <sup>(2)</sup>	160	Wall thickness is beyond the available standard pipe schedules	
10 (254)	40/Standard <sup>(3)</sup>	80 <sup>(2)</sup>	160		
12 (304.8)	40/Standard <sup>(3)</sup>	80 <sup>(2)</sup>	160		
14 (355.6)	Standard	80 <sup>(2)</sup>	160		
16 (406.4)	XS	80 <sup>(2)</sup>	160		
18 (457.2)	XS	80 <sup>(2)</sup>	160		
20 (508)	XS	80 <sup>(2)</sup>	160		
24 (609.6)	40 <sup>(3)</sup>	80 <sup>(2)</sup>	160		

(1) Measurement is in inches (millimeters).

(2) Flange Unions are supplied with Schedule 80S if 316/316L SST or 304/304L SST materials are selected.

(3) Flange Unions are supplied with Schedule 40S if 316/316L SST or 304/304L SST materials are selected.

# Rosemount 1495, 1496, and 1497

TABLE 2. Dimensions of Pipe Inner Diameter<sup>(1)</sup>

Nominal Pipe Size	Schedule					
	5S	10	10S	20	30	40
2 (51)	2.245 (57.02)	2.157 (54.79)	2.157 (54.79)	–	–	2.067 (52.501)
2½- (64)	2.709 (68.81)	2.635 (66.93)	2.635 (66.93)	–	–	2.469 (62.71)
3 (76)	2.224 (56.49)	3.26 (82.80)	3.26 (82.80)	–	–	3.068 (77.93)
4 (102)	4.334 (110.08)	4.26 (108.20)	4.26 (108.20)	–	–	4.026 (102.26)
6 (152)	6.407 (162.74)	6.357 (161.47)	6.357 (161.47)	–	–	6.065 (154.05)
8 (203)	8.407 (213.54)	8.329 (211.56)	8.329 (211.56)	8.125 (206.38)	8.071 (205)	7.981 (202.72)
10 (254)	10.482 (266.24)	10.42 (264.67)	10.42 (264.67)	10.25 (260.35)	10.136 (257.45)	10.20 (254.51)
12 (305)	12.438 (315.93)	12.39 (314.71)	12.39 (314.71)	12.25 (311.15)	12.09 (307.09)	11.938 (303.23)
14 (356)	–	13.5 (342.90)	13.624 (346.05)	13.376 (339.75)	13.25 (336.55)	13.124 (333.35)
16 (406)	–	15.5 (393.70)	15.624 (396.85)	15.376 (390.55)	15.25 (387.35)	15.0 (381.0)
18 (457)	–	17.5 (444.50)	17.624 (447.65)	17.376 (441.35)	17.126 (435.00)	16.976 (431.19)
20 (508)	–	19.5 (495.30)	19.564 (496.93)	19.25 (488.95)	19.0 (482.60)	18.814 (477.88)
24 (610)	–	23.5 (596.90)	23.5 (596.90)	23.25 (590.55)	22.876 (581.05)	22.626 (574.70)

	Schedule					
	40S	Standard	60	80	80S	XS
2 (51)	2.067 (52.501)	2.067 (52.50)	–	1.939 (49.25)	1.939 (49.25)	1.939 (49.25)
2½- (64)	2.469 (62.71)	2.469 (62.71)	–	2.323 (59.0)	2.323 (59.0)	2.323 (59.0)
3 (76)	3.068 (77.93)	3.068 (77.93)	–	2.90 (73.66)	2.90 (73.66)	2.90 (73.66)
4 (102)	4.026 (102.26)	4.026 (102.26)	–	3.826 (97.18)	3.826 (97.18)	3.826 (97.18)
6 (152)	6.065 (154.05)	6.065 (154.05)	–	5.761 (146.33)	5.761 (146.33)	5.761 (146.33)
8 (203)	7.981 (202.72)	7.981 (202.72)	7.813 (198.45)	7.625 (193.68)	7.625 (193.68)	7.625 (193.68)
10 (254)	10.02 (254.51)	10.20 (259.08)	9.75 (247.65)	9.564 (242.94)	9.75 (247.65)	9.75 (247.65)
12 (305)	12.0 (304.8)	12.00 (304.80)	11.626 (41.30)	11.376 (288.95)	11.75 (298.45)	11.75 (298.45)
14 (356)	–	13.250 (336.55)	12.814 (325.48)	12.50 (317.50)	–	13.0 (330.20)
16 (406)	–	15.250 (387.35)	14.688 (373.08)	14.314 (363.58)	–	15.0 (381.0)
18 (457)	–	17.250 (438.15)	16.5 (419.10)	16.126 (409.60)	–	17.0 (425.0)
20 (508)	–	19.252 (488.95)	18.376 (466.75)	17.938 (455.63)	–	19.0 (482.60)
24 (610)	–	23.250 (590.55)	22.064 (560.43)	21.564 (547.73)	–	23.0 (584.20)

	Schedule				
	100	120	140	160	XXS
2 (51)	–	–	–	1.689 (42.9)	1.503 (38.18)
2½- (64)	–	–	–	2.125 (53.98)	1.771 (44.98)
3 (76)	–	–	–	2.624 (66.65)	2.30 (58.42)
4 (102)	–	3.624 (92.005)	–	3.438 (87.33)	3.152 (78.80)
6 (152)	–	5.501 (139.73)	–	5.189 (131.80)	4.897 (124.28)
8 (203)	7.437 (188.90)	7.189 (157.15)	7.001 (177.83)	6.813 (173.05)	6.875 (174.63)
10 (254)	9.314 (236.58)	9.064 (230.23)	8.75 (222.25)	8.50 (215.90)	–
12 (305)	11.064 (281.03)	10.75 (273.05)	10.5 (266.70)	10.126 (257.20)	–
14 (356)	12.126 (308.00)	11.814 (300.08)	11.5 (37.50)	11.188 (284.18)	–
16 (406)	13.938 (354.03)	13.564 (344.53)	13.124 (333.35)	12.814 (325.48)	–
18 (457)	15.688 (398.27)	15.25 (387.35)	14.876 (377.85)	14.438 (366.73)	–
20 (508)	17.44 (443.98)	17.0 (431.80)	16.5 (410.10)	16.064 (408.03)	–
24 (610)	20.938 (531.83)	20.376 (517.55)	19.876 (504.85)	19.314 (490.58)	–

(1) Measurement is in inches (millimeters).

**NOTE**

For option code J1 - Canadian Registration Number, J2 - ANSI B31.1, J3 - ANSI B31.3, and J4 - ANSI B31.8, contact an Emerson Process Management representative for details.

## Product Data Sheet

00813-0100-4792, Rev GA  
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# Rosemount 1495, 1496, and 1497

## FUNCTIONAL

### Service and Flow Range

Liquid, gas or vapor turbulent flow, for pipe Reynold's Numbers within ISO 5167, AGA Report No. 3/ API 14.3.2, and ASME MFC-3M specifications.

### Pipe Sizes

2-in. to 24-in. (50 mm to 600 mm). Contact Emerson Process Management for pipe sizes less than 2-in. (50 mm) or greater than 24-in. (600 mm).

### Rosemount 1497 Meter Section Pipe Length

("D" is the inside diameter of the pipe)

Upstream

- 10D

Downstream

- 5D (standard)
- 8D (if temperature tap is selected)

Custom

- Contact Emerson Process Management for more information

### Operating Limits

Temperature Range: -320 to 1200 °F (-196 to 649 °C)

- - 320 to 800 °F (-196 to 427 °C) and differential pressure up to 800 inH<sub>2</sub>O
- 800 to 1200 °F (427 to 649 °C) and differential pressure up to 400 inH<sub>2</sub>O

### Maximum Working Pressure

- Flange rating per ANSI B16.5.

## PHYSICAL

### Materials of Construction

#### Orifice Plate

304/304L or 316/316L Stainless Steel ASTM A240; DIN 1.4571 (316Ti SST); Hastelloy® C-276 ASTM B575; or Monel® 400 ASTM B127.

#### Flange Unions

Orifice Flanges (ANSI B16.36): Carbon Steel ASTM A105 / A350; Stainless Steel ASTM A182; Hastelloy ASTM B564/575; or Monel 400 ASTM B564/127; DIN 1.4571 (316Ti SST); DIN 1.0460 (carbon steel)

### Flange Mounting Hardware

- Studs: ASTM A193 Grade B7M
- Nuts: ASTM A194 Gr 2H
- Jackscrews: ASTM A307
- Gaskets: Non-asbestos ring type, Durlon® 8500 Green, Klingersil C4400, or equivalent
- Pipe Plugs: Match flange material

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#### NOTE:

Stainless Steel bolting is available as an option.

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### Meter Sections

- Pipe: Carbon Steel ASTM A106 Grade B; Stainless Steel ASTM A312; Hastelloy ASTM B619 / B622, or Monel ASTM B165
- Flanges (ANSI B16.5): Carbon Steel ASTM A105 / A350; Stainless Steel ASTM A182; Hastelloy ASTM B564/575, or Monel 400 ASTM B564/127
- See "Standard Pipe Schedules" and Table 2 on page 4.

### Orifice Bore Sizes

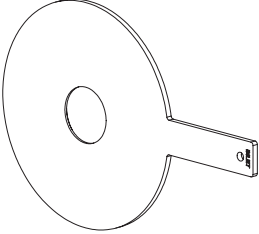
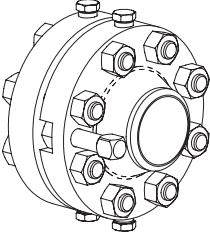
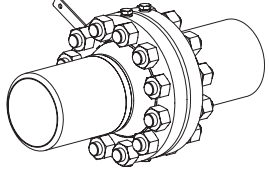
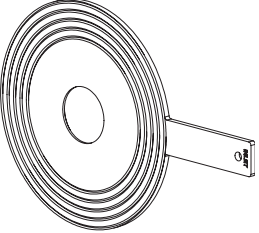
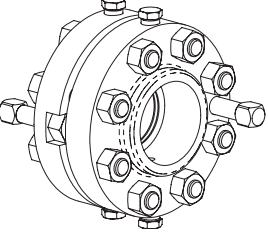
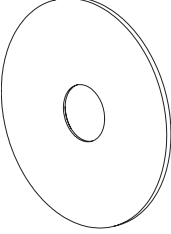
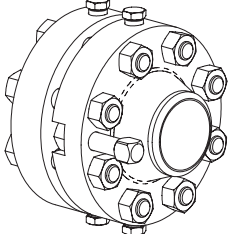
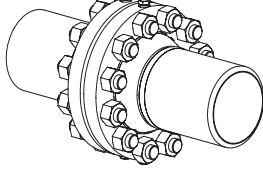
Standard bore sizes are in <sup>1</sup>/<sub>8</sub>-in. (3.2 mm) increments from <sup>1</sup>/<sub>2</sub>-in. (12.7 mm) to 4-in. (101.6 mm) and in <sup>1</sup>/<sub>4</sub>-in. (6.3 mm) increments from 4 <sup>1</sup>/<sub>4</sub> to 6-in. (107.95 mm to 152.4 mm).

If required, Emerson Process Management can determine the orifice bore. Basic flow data is required at the time of order, see "Calculation Data Sheet" .

Bore tolerances are within AGA and ASME specifications. Pressure tap connections are <sup>1</sup>/<sub>2</sub> -in. (12.7 mm) NPT and 180° apart as standard. The tap hole diameter is <sup>1</sup>/<sub>4</sub>-in. (6.35 mm) for 2-in. (51 mm) size, <sup>3</sup>/<sub>8</sub>-in. (9.6 mm) for 2 <sup>1</sup>/<sub>2</sub> -in. (63.5 mm) size and 3-in. (76.2 mm), and <sup>1</sup>/<sub>2</sub>-in. (12.7 mm) for 4-in. (101.6 mm) and larger sizes. Available options allow the user to have the Rosemount 1495 sized for specific operating conditions. The "Orifice Plate Dimensional Drawings" on page 8 specifies the physical parameters of the orifice from a detailed sizing calculation.

## Sizing and How to Order

When making a selection, move from left to right, selecting an option in Column 1 and/or either Column 2 or Column 3.

	Column 1	Column 2	Column 3
	Orifice Paddle Type	Flange Union	Meter Section
Paddle Type	<p><b>1495 PC</b> Paddle, square edged, concentric</p> 	<p><b>1496 WN</b> Raised Face (RF) Weld Neck (for use with paddle type orifice plates)</p> 	<p><b>1497 WN</b> Raised Face (RF) Weld Neck (for use with paddle type orifice plates)</p> 
	<p><b>1495 PG</b> Paddle, square edged, concentric, spiral finish</p> 	<p><b>1496 SO / TH</b> Raised Face (RF) Slip On / Threaded (for use with paddle type orifice plates)</p> 	
Universal Type	Orifice Universal Type	Flange Union	Meter Section
	<p><b>1495 UC</b> Universal, square edged, concentric</p> 	<p><b>1496 RJ</b> Ring Type Joint (RTJ) Weld Neck (for use with universal orifice plates with plate holder)</p> 	<p><b>1497 RJ</b> Ring Type Joint (RTJ) Weld Neck (for use with universal orifice plates with plate holder)</p> 

Continued on next page

Column 1	Column 2	Column 3
Orifice Plate	Flange Union	Meter Section
<p><b>Choose Flange Rating:</b>                      ANSI Class 300#, 600#, 900#, 1500#, or 2500#                      DIN flange ratings: PN10, PN16, PN25, PN40, PN63, PN100</p>	<p>ANSI Class 300#, 600#, 900#, 1500#, or 2500#                      DIN flange ratings: PN10, PN16, PN25, PN40, PN63, PN100</p>	<p>ANSI Class 300#, 600#, 900#, 1500#, or 2500#</p>
<p><b>Material:</b></p> <ul style="list-style-type: none"> <li>SST 316L or 304L                              DIN 1.4571 (316Ti SST)</li> <li>Monel</li> <li>Hastelloy</li> </ul>	<ul style="list-style-type: none"> <li>A105 DIN 1.0460 (CS)</li> <li>SST 316L or 304L                              DIN 1.4571 (316Ti SST)</li> <li>Monel</li> <li>Hastelloy</li> </ul>	<ul style="list-style-type: none"> <li>A105</li> <li>SST 316L or 304L</li> <li>Monel</li> <li>Hastelloy</li> </ul>
<p><b>Choose Line Size:</b></p> <ul style="list-style-type: none"> <li>2 to 24-in. (50 to 600 mm)</li> <li>Contact Emerson Process Management for lines over 24-in. (600 mm)</li> </ul>	<ul style="list-style-type: none"> <li>2 to 24-in. (50 to 600 mm)</li> <li>Contact Emerson Process Management for lines over 24-in. (600 mm)</li> </ul>	<ul style="list-style-type: none"> <li>2 to 24-in. (50 to 600 mm)</li> <li>Contact Emerson Process Management for lines less than 2-in. (51 mm) or greater than 24-in. (600 mm)</li> </ul>
<p><b>Choose Plate Thickness:</b></p> <ul style="list-style-type: none"> <li>Default is 0.125-in. (3.2 mm) for 2 to 6-in (50 to 150 mm) line size</li> <li>Default is 0.250-in. (6.35 mm) for 8 to 14-in (200 to 350 mm) line size</li> <li>Default is 0.375-in. (9.53) for 16 to 20-in. (400 to 500 mm)</li> <li>Default is 0.500-in. (12.7 mm) for 24-in (600 mm) line size</li> <li>Contact Emerson Process Management for lines over 24-in. (600 mm).</li> </ul>		<p><b>Choose Tap Location:</b></p> <ul style="list-style-type: none"> <li>Flange taps are standard. However, the radius of the pipe may also be selected.</li> <li>Flange Taps/Pipe Taps (2 1/2 Dx8D)/Radius taps (D &amp; D/2) are available</li> </ul>
<p><b>Choose Bore Diameter:</b>                      Refer to Instrument Toolkit™ for orifice plate sizing. Or, Rosemount Inc. will calculate the bore diameter by specifying option code BC in the 1495 ordering table. Include all of the flowing conditions and pipe information for the application on the CDS. See the “Calculation Data Sheet” for a detailed sizing calculation.</p>		<p><b>Choose Piping Connection:</b></p> <ul style="list-style-type: none"> <li>Beveled</li> <li>Threaded</li> <li>Flanged</li> </ul>

**CONFIGURATION**

Standard configuration is with a square-edged concentric bore in both paddle and universal type plates. Also available with a spiral finish. Final inspection reports illustrating plate thickness, concentricity, outside dimensions, inside dimensions, roundness, and flatness are available.

- Bore calculations are available if the Configuration Data Sheet (CDS) is completed and Option BC is selected.
- Line sizes larger than 24-in. (609.6 mm) are available. Contact Emerson Process Management.

## Rosemount 1495 Orifice Plate

### ORIFICE PLATE DIMENSIONAL DRAWINGS

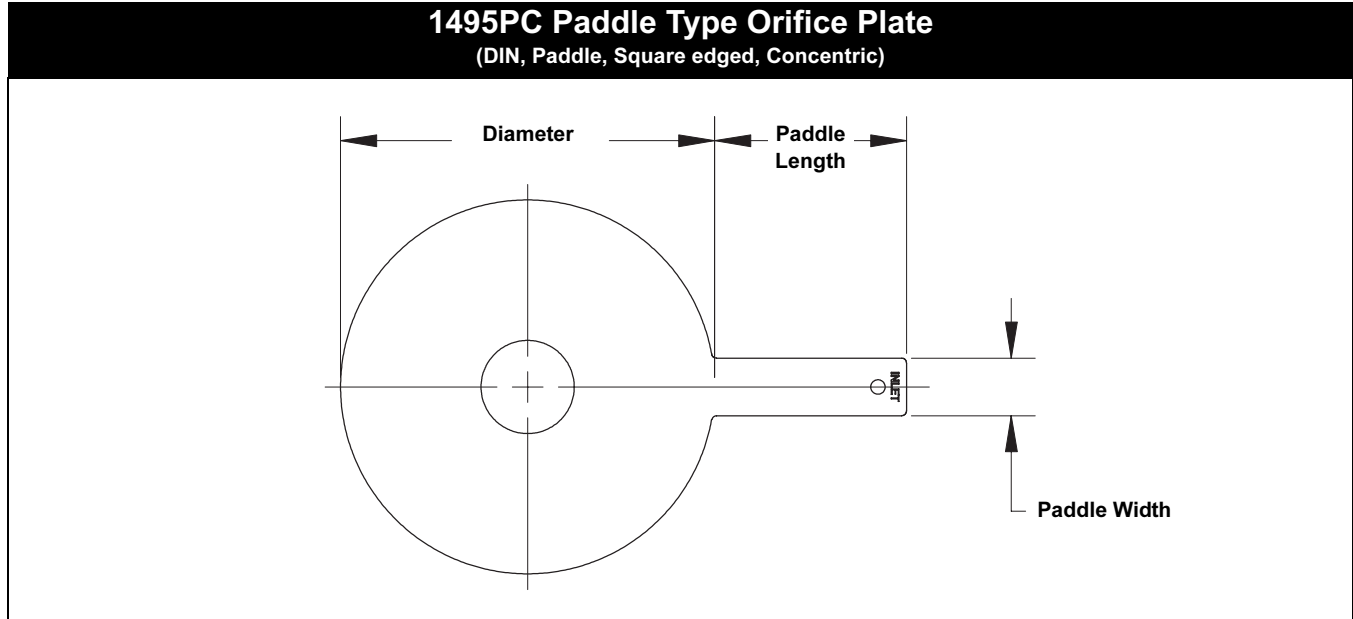
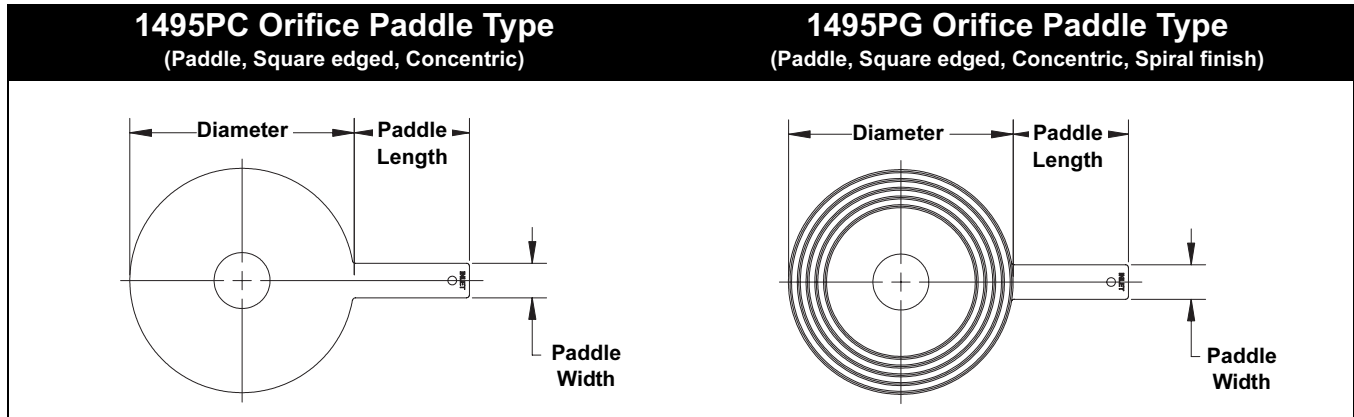


TABLE 3. Orifice Plate Dimensions<sup>(1)</sup>

DN	Diameter (max) – by flange rating						Handle Width	Handle Length
	PN 10	PN 16	PN 25	PN 40	PN 63/64	PN 100		
DN 50	4.21 (107)	4.21 (107)	4.21 (107)	4.21 (107)	4.45 (113)	4.69 (119)	1.5 (40)	6.3 (160)
DN 65	5 (127)	5 (127)	5 (127)	5 (127)	5.43 (138)	5.67 (144)	1.5 (40)	6.3 (160)
DN 80	5.6 (142)	5.6 (142)	5.6 (142)	5.6 (142)	5.82 (148)	6.06 (154)	1.5 (40)	6.3 (160)
DN 100	6.38 (162)	6.38 (162)	6.61 (168)	6.61 (168)	6.85 (174)	7.09 (180)	1.5 (40)	6.3 (160)
DN 125	7.56 (192)	7.56 (192)	7.64 (194)	7.63 (194)	8.27 (210)	8.54 (217)	1.5 (40)	6.3 (160)
DN 150	8.58 (218)	8.58 (218)	8.82 (224)	8.82 (224)	9.72 (247)	10.12 (257)	1.5 (40)	6.3 (160)
DN 200	10.74 (273)	10.74 (273)	11.18 (284)	11.42 (290)	12.17 (309)	12.76 (324)	1.5 (40)	6.3 (160)
DN 250	12.91 (328)	12.95 (329)	13.39 (340)	13.86 (352)	14.33 (364)	15.39 (391)	1.5 (40)	6.3 (160)
DN 300	14.88 (378)	15.11 (384)	15.75 (400)	16.42 (417)	16.69 (424)	18.03 (458)	1.5 (40)	6.3 (160)
DN 350	17.24 (438)	17.48 (444)	17.99 (457)	18.66 (474)	19.13 (486)	20.16 (512)	1.5 (40)	6.3 (160)
DN 400	19.25 (489)	19.49 (495)	20.24 (514)	21.49 (546)	21.38 (543)	22.52 (572)	1.5 (40)	6.3 (160)
DN 450	21.22 (539)	21.85 (555)	22.24 (565)	22.48 (571)	Not Applicable	Not Applicable	1.5 (40)	6.3 (160)
DN 500	23.39 (594)	24.29 (617)	24.57 (624)	24.72 (628)	25.87 (657)	27.72 (704)	1.5 (40)	8.0 (200)
DN 600	27.36 (695)	28.9 (734)	28.78 (731)	29.41 (747)	30.08 (764)	32.01(813)	1.5 (40)	8.0 (200)

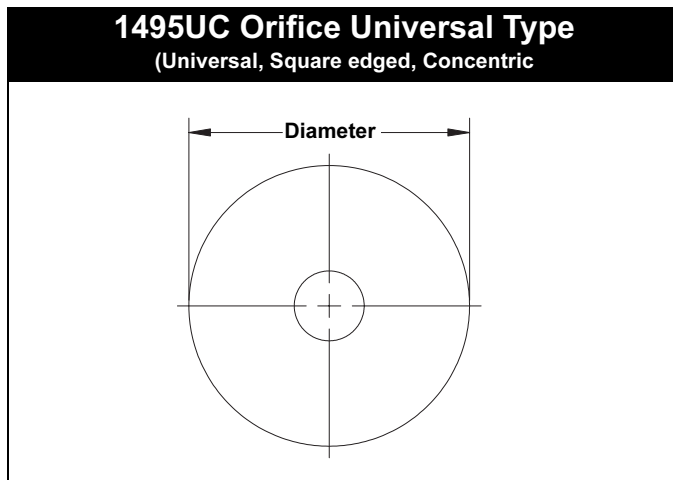
(1) Measurement is in inches (millimeters)





Line Size	Diameter for Paddle Type <sup>(1)</sup>						Paddle Length	Paddle Width
	150#	300#	600#	900#	1500#	2500#		
2-in.	4.125 (104.78)	4.375 (111.13)	4.375 (111.13)	5.625 (142.875)	5.625 (142.875)	5.750 (146.05)	4.0 (101.6)	1.00 (25.4)
2 1/2-in.	4.875 (123.82)	5.125 (130.18)	5.125 (130.18)	6.500 (165.1)	6.500 (165.1)	6.625 (168.275)	4.0 (101.6)	1.00 (25.4)
3-in.	5.375 (136.53)	5.875 (149.23)	5.875 (149.23)	6.625 (168.275)	6.875 (174.625)	7.750 (196.85)	4.0 (101.6)	1.00 (25.4)
4-in.	6.875 (174.63)	7.125 (180.98)	7.625 (266.7)	8.125 (206.375)	8.250 (209.55)	9.250 (234.95)	4.0 (101.6)	1.00 (25.4)
6-in.	8.750 (222.25)	9.875 (250.83)	10.500 (266.7)	11.375 (288.925)	11.125 (282.575)	12.500 (317.5)	4.0 (101.6)	1.00 (25.4)
8-in.	11.000 (279.4)	12.125 (307.98)	12.625 (320.675)	14.125 (358.775)	13.875 (352.425)	15.250 (387.35)	6.0 (127)	1.5 (38.1)
10-in.	13.375 (339.73)	14.250 (361.95)	15.750 (400.05)	17.125 (434.975)	17.125 (434.975)	18.750 (476.25)	6.0 (152.4)	1.5 (38.1)
12-in.	16.125 (409.58)	16.625 (422.26)	18.000 (457.2)	19.625 (498.475)	20.500 (520.7)	21.625 (549.275)	6.0 (152.4)	1.5 (38.1)
14-in.	17.750 (450.85)	19.125 (485.78)	13.375 (339.725)	20.500 (520.7)	22.750 (577.85)	—	6.0 (152.4)	1.5 (38.1)
16-in.	20.250 (514.35)	21.250 (539.75)	22.250 (565.15)	22.625 (574.675)	25.250 (641.35)	—	6.0 (152.4)	1.5 (38.1)
18-in.	21.500 (546.1)	23.375 (593.725)	24.000 (609.6)	25.000 (635.00)	27.625 (701.675)	—	6.0 (152.4)	1.5 (38.1)
20-in.	23.750 (603.25)	25.625 (650.875)	26.750 (679.45)	27.375 (695.325)	29.625 (752.475)	—	6.0 (152.4)	1.5 (38.1)
24-in.	28.125 (714.375)	30.375 (771.525)	31.000 (787.4)	32.875 (835.025)	35.500 (901.7)	—	6.0 (152.4)	1.5 (38.1)

(1) Measurement is in inches (millimeters)



(1) Measurement is in inches (millimeters)

Line Size	Diameter for Universal Type <sup>(1)</sup>
2-in.	2.437 (61.8998)
2 1/2-in.	2.812 (71.4248)
3-in.	3.437 (87.2998)
4-in.	4.406 (111.912)
6-in.	6.437 (163.5)
8-in.	8.437 (214.3)
10-in.	10.687 (271.45)
12-in.	12.593 (319.862)
14-in.	14.000 (355.6)
16-in.	16.000 (406.4)
18-in.	18.000 (457.2)
20-in.	20.000 (508)
24-in.	24.000 (609.6)

# Rosemount 1495, 1496, and 1497

## ORDERING INFORMATION—ROSEMOUNT 1495 ORIFICE PLATE

TABLE 4. Rosemount 1495 Orifice Plate Ordering Table

<b>Model</b>	<b>Product Description</b>
1495	Orifice Plate Primary
<b>Code</b>	<b>Orifice Plate Type</b>
PC	Paddle, Concentric
PG	Paddle, Concentric, Spiral finish (only available up to 12-in. (300 mm) line size)
UC	Universal, Concentric
<b>Code</b>	<b>Line Size</b>
020	2-in. (50 mm)
025	2½-in. (64 mm)
030	3-in. (80 mm)
040	4-in. (100 mm)
060	6-in. (150 mm)
080	8-in. (200 mm)
100	10-in. (250 mm)
120	12-in. (300 mm)
140	14-in. (350 mm)
160	16-in. (400 mm)
180	18-in. (450 mm)
200	20-in. (500 mm)
240	24-in. (600 mm)
<b>Code</b>	<b>Flange Rating</b>
A1	ANSI Class 150 <i>Note: Not compatible with standard ASME B16.36 Orifice Flanges.</i>
A3	ANSI Class 300
A6	ANSI Class 600
A9	ANSI Class 900
AF	ANSI Class 1500
AT	ANSI Class 2500
D1	DIN PN10 (only available with Orifice Plate Type code PC)
D2	DIN PN16 (only available with Orifice Plate Type code PC)
D3	DIN PN25 (only available with Orifice Plate Type code PC)
D4	DIN PN40 (only available with Orifice Plate Type code PC)
D5	DIN PN63 <sup>(1)</sup> (only available with Orifice Plate Type code PC)
D6	DIN PN100 (only available with Orifice Plate Type code PC)
R3	ANSI Class 300 Ring Joint (only available with Orifice Plate Type code UC and requires Plate Holder code PH)
R6	ANSI Class 600 Ring Joint (only available with Orifice Plate Type code UC and requires Plate Holder code PH)
R9	ANSI Class 900 Ring Joint (only available with Orifice Plate Type code UC and requires Plate Holder code PH)
RF	ANSI Class 1500 Ring Joint (only available with Orifice Plate Type code UC and requires Plate Holder code PH)
RT	ANSI Class 2500 Ring Joint (only available with Orifice Plate Type code UC and requires Plate Holder code PH)
<b>Code</b>	<b>Orifice Plate Material Type</b>
S	316/316L Stainless Steel
T	DIN 1.4571 (316Ti Stainless Steel) (only available with Flange Rating codes D1, D2, D3, D4, D5, D6)
L	304/304L Stainless Steel (not available with Flange Rating codes D1, D2, D3, D4, D5, D6)
H	Hastelloy <sup>®</sup> C-276 (Hastelloy C4 is supplied for Flange Rating codes D1, D2, D3, D4, D5, D6)
M	Monel <sup>®</sup>

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# Rosemount 1495, 1496, and 1497

TABLE 4. Rosemount 1495 Orifice Plate Ordering Table

Code	Plate Thickness
A	0.125-in. (3.2 mm) – default for line size 2 to 6-in. (50 to 150 mm)
B	0.250-in. (6.35 mm) – default for line size 8 to 14-in. (200 to 350 mm)
C	0.375-in. (9.53 mm) – default for line size 16 to 20-in. (400 to 500 mm)
D	0.500-in. (12.7 mm) – default for line size .24-in. (600 mm)
E <sup>(2)</sup>	Plate Thickness per DIN 19206
Code	Bore
XXXXX	Bore (XXXXX = XX.XXX)
Code	Options
<b>Bore Calculations</b>	
BC	Bore Calculation
<b>Drain / Vent Hole</b>	
DV <sup>(3)</sup>	Drain / Vent Hole
<b>Plate Holder</b>	
PH <sup>(4)</sup>	Plate Holder for RTJ Flanges
<b>Alternative Plate Holder</b>	
TC <sup>(3)</sup>	Conical Entrance Bore
TE <sup>(3)</sup>	Eccentric Bore
TS <sup>(3)</sup>	Segmental Bore
TQ <sup>(3)</sup>	Quadrant Edged Bore
<b>Special Cleaning</b>	
P2	Cleaning for special processes
<b>Special Inspection</b>	
QC1	Visual and dimensional inspection with certificate
QC7	Inspection and performance certificate
<b>Material Traceability Certification</b>	
Q8	Material certificate per ISO 10474 3.1.B and EN 10204 3.1.B
<b>Code Conformance</b>	
J5 <sup>(5)</sup>	NACE MR-0175 / ISO 15156
<b>Country Certification</b>	
J1	Canadian Registration
<b>Typical Model Number: 1495 PC 040 A3 S A 02125</b>	

(1) Previously PN64.

(2) Standard Plate Thickness:  
DN50 = 2.5 mm  
DN65 = 3 mm  
DN80 – 450 = 4 mm  
DN 500 = 6 mm

(3) This option requires that the Pipe I.D. be specified in the order.

(4) Integral Plate Holder (material matches plate material) for line sizes to 3-in., requires minimum 1/4-in plate thickness. Screw Type Plate Holder in 304SS for line sizes 4-in. and larger.

(5) Materials of Construction comply with metallurgical requirements highlighted within NACE MR0175/ISO 15156 for sour oil field production environments. Environmental limits apply to certain materials. Consult latest standard for details. Selected materials also conform to NACE MR0103 for sour refining environments.

# Rosemount 1495, 1496, and 1497

## Rosemount 1496 Orifice Flange Union

### CONFIGURATION

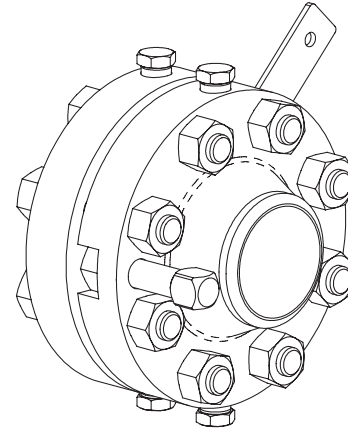
Standard flange styles are raised face (RF) weld neck or RF slip on (ANSI Class 300 only) for paddle type orifice plates, and ring type joint (RTJ) weld neck for universal type plates with plate holders. All flange unions are supplied with studs, nuts, jackscrews, gaskets, and pipe plugs. Table 1 lists standard pipe schedules.

- Meets ASME B16.36
- Meets DIN 19214 part 1
- Threaded tap connection provided 180-degrees apart

The following options are available.

- Socket weld tap connections
- High temperature flange gaskets for temperatures greater than 500 °F (260 °F)
- Stainless Steel flange bolting per ASTM A193 Grade B8M/A194 Grade 8M
- ANSI threaded flanges for connection to threaded process piping (2½-in. (63.5 mm) piping size maximum)

Flange Union



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# Rosemount 1495, 1496, and 1497

## ORDERING INFORMATION—ROSEMOUNT 1496 FLANGE UNION

TABLE 5. Rosemount 1496 Orifice Flange Union Ordering Table

Model	Product Description
1496	Orifice Flange Union
Code	Flange Union Type
WN	Raised Face, Weld Neck
RJ	Ring Joint, Weld Neck
TH	Raised Face, Threaded (only available with Flange Rating code A3 and line sizes to 3-in.)
SO	Raised Face, Slip-On (only available with Flange Rating code A3)
DN	Raised Face, Weld Neck, DIN 19214 Part 1 (only available with Flange Rating codes D1, D2, D3, D4, D5, D6)
Code	Line Size
020	2-in. (50 mm)
025	2½-in. (64 mm)
030	3-in. (80 mm)
040	4-in. (100 mm)
060	6-in. (150 mm)
080	8-in. (200 mm)
100	10-in. (250 mm)
120	12-in. (300 mm)
140	14-in. (350 mm)
160	16-in. (400 mm)
180	18-in. (450 mm)
200	20-in. (500 mm)
240	24-in. (600 mm)
Code	Flange Rating
A3	ANSI Class 300
A6	ANSI Class 600
A9	ANSI Class 900
AF	ANSI Class 1500
AT	ANSI Class 2500
D1	DIN PN10 (only available with Flange Union Type code DN and line sizes 2-in. (DN50) through 20-in. (DN500))
D2	DIN PN16 (only available with Flange Union Type code DN and line sizes 2-in. (DN50) through 20-in. (DN500))
D3	DIN PN25 (only available with Flange Union Type code DN and line sizes 2-in. (DN50) through 20-in. (DN500))
D4	DIN PN40 (only available with Flange Union Type code DN and line sizes 2-in. (DN50) through 20-in. (DN500))
D5	DIN PN63 <sup>(1)</sup> (only available with Flange Union Type code DN and line sizes 2-in. (DN50) through 20-in. (DN500))
D6	DIN PN100 (only available with Flange Union Type code DN and line sizes 2-in. (DN50) through 20-in. (DN500))
R3	Ring-Type Joint (RTJ) Class 300
R6	Ring-Type Joint (RTJ) Class 600
R9	Ring-Type Joint (RTJ) Class 900
RF	Ring-Type Joint (RTJ) Class 1500
RT	Ring-Type Joint (RTJ) Class 2500
Code	Flange Union Material Type
C	Carbon Steel (A105 DIN 1.4060)
S	316/316L Stainless Steel
T	DIN 1.4571 (316Ti Stainless Steel) (only available with Flange Union Type code DN)
L	304/304L Stainless Steel (not available with Flange Union Type code DN)
H	Hastelloy® C-276 (Hastelloy C4 is supplied for Flange Union Type code DN)
M	Monel®

## Rosemount 1495, 1496, and 1497

TABLE 5. Rosemount 1496 Orifice Flange Union Ordering Table

Code	Options
<b>Alternate Pipe Schedule / Wall Thickness<sup>(2)</sup></b>	
FA <sup>(3)</sup>	Schedule 5S
FB <sup>(3)</sup>	Schedule 10
FC <sup>(3)</sup>	Schedule 10S
FD <sup>(3)</sup>	Schedule 20
FE <sup>(3)</sup>	Schedule 30
FF <sup>(3)</sup>	Schedule 40
FG <sup>(3)</sup>	Schedule 40S
FH <sup>(3)</sup>	Schedule Standard (STD)
FI <sup>(3)</sup>	Schedule 60
FJ <sup>(3)</sup>	Schedule 80
FK <sup>(3)</sup>	Schedule 80S
FL <sup>(3)</sup>	Schedule Extra Strong (XS)
FM <sup>(3)</sup>	Schedule 100
FN <sup>(3)</sup>	Schedule 120
FP <sup>(3)</sup>	Schedule 140
FQ <sup>(3)</sup>	Schedule 160
FR <sup>(3)</sup>	Schedule Double Extra Strong (XXS)
<b>High Temperature Gaskets</b>	
G1	High Temperature Gaskets (spiral wound gaskets) (not available with Flange Union Type code DN)
<b>Alternate Bolting Material</b>	
SS	316SS Studs/Nuts
<b>Alternate Pressure Tap Type</b>	
ST	Socketweld Pressure Taps (not available with Flange Union Type code DN)
<b>Special Cleaning</b>	
P2	Cleaning for special processes
<b>Special Inspection</b>	
QC1	Visual and dimensional inspection with certificate
<b>Material Traceability Certification</b>	
Q8	Material certificate per ISO 10474 3.1.B and EN 10204 3.1.B
<b>Code Conformance</b>	
J5 <sup>(4)</sup>	NACE MR-0175 / ISO 15156
<b>Country Certification</b>	
J1	Canadian Registration Number (not available with Flange Union Type code DN)
J6	Conformance to European Pressure Equipment Directive (PED) 97/23/EC
<b>Typical Model Number: 1496 WN 040 A3 S</b>	

(1) Previously PN64.

(2) Default pipe schedules are listed in Table 1 on page 3 for the 1496 Orifice Flange Unions.

(3) These options are not available with flange type DN. These options should only be selected if the required pipe schedule is different from the default pipe schedule, as shown in Table 1 on page 3. Standard wall thickness for DIN weldneck flanges is per ISO EN 1092-1 (2002). Consult the factory if a different wall thickness is required.

(4) Materials of Construction comply with metallurgical requirements highlighted within NACE MR0175/ISO 15156 for sour oil field production environments. Environmental limits apply to certain materials. Consult latest standard for details. Selected materials also conform to NACE MR0103 for sour refining environments.

## Rosemount 1497 Orifice Meter Section

### CONFIGURATION

Meter sections are available in the same material selection as the Rosemount 1495 Orifice Plates and 1496 Flange Unions, with either Raised Face (RF) or Ring Type Joint (RTJ) weld neck flange connections. The standard meter section length is 10 pipe diameters upstream, 5 pipe diameters downstream, with a choice of beveled, threaded, or flanged piping connection. Custom lengths available. Contact Emerson Process Management for more information.

Piping conditions may require additional straight run.

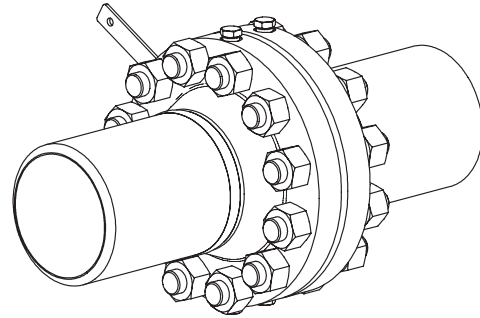
Numerous construction material options are available including 304/316 stainless steel, Hastelloy and Monel. Special materials, such as Inconel<sup>®</sup> 800H, Titanium or Alloy 20, can also be supplied if required.

Additional 1/2-in. (12.7 mm) or 1-in. (25.4 mm) NPT threaded (or socket-weld) fittings for auxiliary temperature are also available.

Meter section with special assemblies can be supplied. Contact Rosemount Engineered Assemblies for more information.

Honed Meter Sections- Contact Emerson Process Management for more information.

**Meter Section**



## METER SECTION DIMENSIONAL DRAWINGS

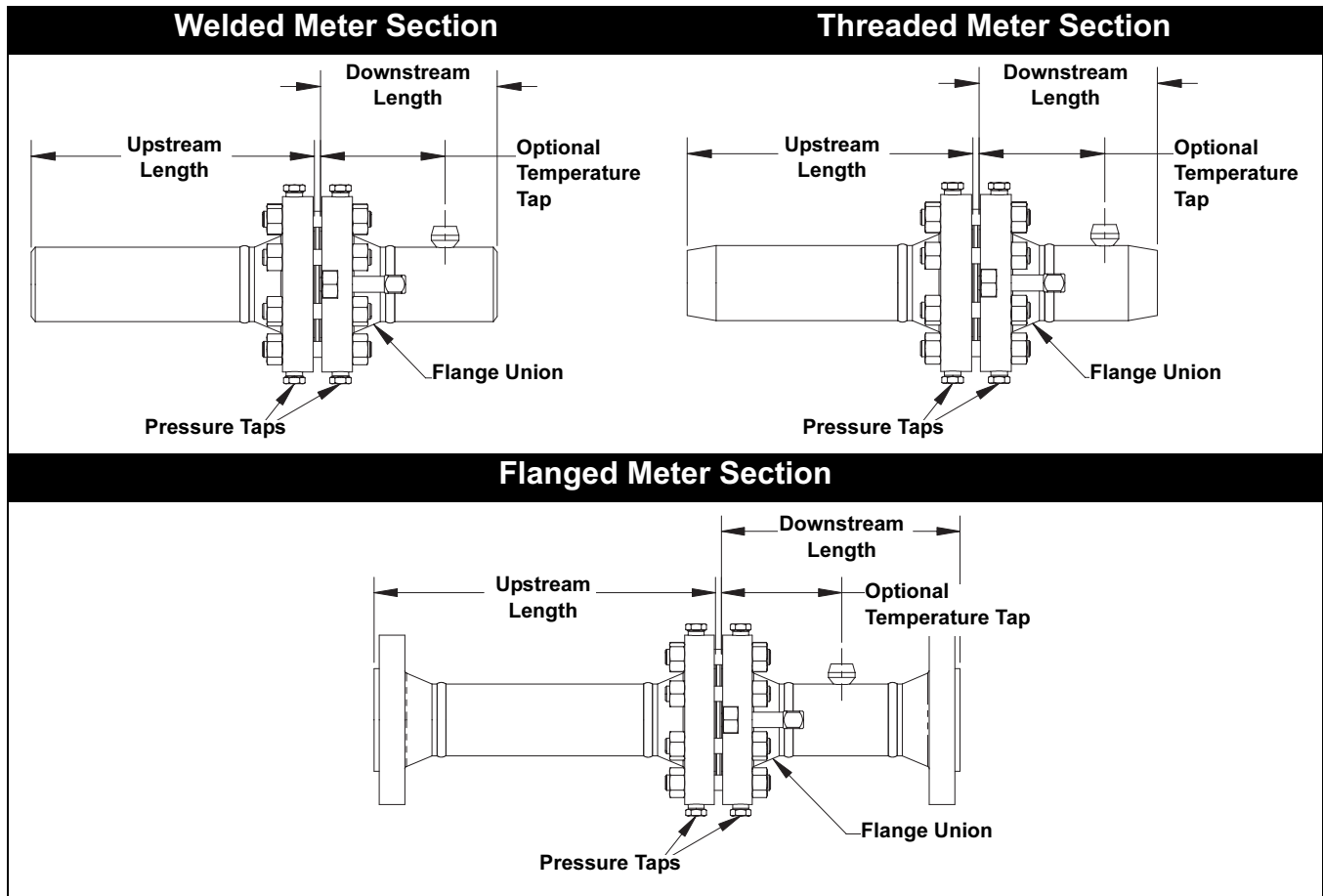


TABLE 6. Meter Section Lengths<sup>(1) (2)</sup>

Nominal Size	Upstream Length	Downstream Length	Downstream Lengths (DSL) with Temperature Tap
2 (51)	21 (533)	11 (279)	17 (432)
2½ (64)	26 (660)	12 (305)	21 (533)
3 (76)	32 (813)	16 (406)	24 (607)
4 (102)	41 (1041)	21 (533)	33 (838)
6 (152)	62 (1575)	30 (762)	48 (1219)
8 (203)	81 (2057)	40 (1016)	64 (1625)
10 (254)	101 (2565)	51 (1295)	82 (2082)
12 (305)	120 (3048)	60 (1524)	96 (2438)
14 (356)	134 (3404)	66 (1676)	106 (2692)
16 (406)	153 (3886)	77 (1959)	123 (3124)
18 (457)	173 (4394)	87 (2209)	138 (3505)
20 (508)	194 (4928)	96 (2438)	154 (3912)
24 (610)	230 (5842)	115 (2921)	171 (4343)

(1) Standard length.

(2) Measurement is in inches (millimeters)

TABLE 7. Meter Tube Pressure Tap Holes

Meter Tube Nominal Inside Diameter	Recommended Nominal Tap Hole Diameter	Maximum Nominal Tap Hole Diameter	Minimum Nominal Tap Hole Diameter
2½ to 3	¾-in. (10 mm)	¾-in. (10 mm)	¼-in. (6 mm)
4 and larger	½-in. (13 mm)	½-in. (13 mm)	¼-in. (6 mm)

Note: The finished tap hole will be  $\pm 1/64$ -in. (0.4 mm) from the selected nominal tap hole diameter along the drilled length of the hole.



**ORDERING INFORMATION—ROSEMOUNT 1497 METER SECTION**

TABLE 8. Rosemount 1497 Orifice Meter Section Ordering Table

<b>Model</b>	<b>Product Description</b>
1497	Orifice Meter Section
<b>Code</b>	<b>Meter Section Type</b>
WN	Raised Face, Weld Neck
RJ	Ring Joint, Weld Neck
SO	Raised Face, Slip-On (only available with Flange Rating code A3)
<b>Code</b>	<b>Line Size</b>
020	2-in. (50 mm)
025	2½-in. (64 mm)
030	3-in. (80 mm)
040	4-in. (100 mm)
060	6-in. (150 mm)
080	8-in. (200 mm)
100	10-in. (250 mm)
120	12-in. (300 mm)
140	14-in. (350 mm)
160	16-in. (400 mm)
180	18-in. (450 mm)
200	20-in. (500 mm)
240	24-in. (600 mm)
<b>Code</b>	<b>Flange Rating</b>
A3	ANSI Class 300
A6	ANSI Class 600
A9	ANSI Class 900
AF	ANSI Class 1500
AT	ANSI Class 2500
R3	Ring-Type Joint (RTJ) Class 300
R6	Ring-Type Joint (RTJ) Class 600
R9	Ring-Type Joint (RTJ) Class 900
RF	Ring-Type Joint (RTJ) Class 1500
RT	Ring-Type Joint (RTJ) Class 2500
<b>Code</b>	<b>Meter Section Material Type</b>
C	Carbon Steel
S	316/316L Stainless Steel
L	304/304L Stainless Steel
H	Hastelloy® C-276
M	Monel®
<b>Code</b>	<b>Pressure Tap Location / Type</b>
F	Flanged / ½-in. FNPT
G	Flanged / ½-in. Sock Tap
<b>Code</b>	<b>Meter Section End Connections</b>
B	Beveled (prepared for welding)
F	Flanged (flange rating matches orifice flange rating)
G	Flanged, ANSI Class 150
T	NPT Male Thread

# Rosemount 1495, 1496, and 1497

TABLE 8. Rosemount 1497 Orifice Meter Section Ordering Table

Code	Options
<b>Alternate Pipe Schedule / Wall Thickness<sup>(1)</sup></b>	
FA <sup>(2)</sup>	Schedule 5S
FB <sup>(2)</sup>	Schedule 10
FC <sup>(2)</sup>	Schedule 10S
FD <sup>(2)</sup>	Schedule 20
FE <sup>(2)</sup>	Schedule 30
FF <sup>(2)</sup>	Schedule 40
FG <sup>(2)</sup>	Schedule 40S
FH <sup>(2)</sup>	Schedule Standard (STD)
FJ <sup>(2)</sup>	Schedule 60
FJ <sup>(2)</sup>	Schedule 80
FK <sup>(2)</sup>	Schedule 80S
FL <sup>(2)</sup>	Schedule Extra Strong (XS)
FM <sup>(2)</sup>	Schedule 100
FN <sup>(2)</sup>	Schedule 120
FP <sup>(2)</sup>	Schedule 140
FQ <sup>(2)</sup>	Schedule 160
FR <sup>(2)</sup>	Schedule Double Extra Strong (XXS)
<b>Temperature Taps</b>	
TO	Temperature Tap, fitting only, 1/2-in. NPT
TP	Temperature Tap, fitting only, 1/2-in. SW
TQ	Temperature Tap, fitting only, 3/4-in. NPT
TR	Temperature Tap, fitting only, 3/4-in. SW
TS	Temperature Tap, fitting only, 1-in. SW
TT	Temperature Tap, fitting only, 1-in. NPT
TV	Temperature Tap, fitting only, 1-in. flanged (rating matches orifice flange rating)
TW	Temperature Tap, fitting only, 1 1/2-in. flanged (rating matches orifice flange rating)
TX	Temperature Tap, fitting only, 2-in. flanged (rating matches orifice flange rating)
<b>Additional Pressure Taps</b>	
PO	Pressure Tap, fitting only, 1/2-in. NPT
PP	Pressure Tap, fitting only, 1/2-in. SW
PQ	Pressure Tap, fitting only, 3/4-in. NPT
PR	Pressure Tap, fitting only, 3/4-in. SW
PS	Pressure Tap, fitting only, 1-in. SW
PT	Pressure Tap, fitting only, 1-in. NPT
<b>High Temperature Gaskets</b>	
G1	High Temperature Gaskets (spiral wound gaskets)
<b>Alternate Bolting Material</b>	
SS	316 Stainless Steel Studs/Nuts
<b>Hydrostatic Test</b>	
P1	Hydrostatic Test (1.5 x design pressure for 10 minutes)
<b>Dye Penetrant Examination</b>	
V1	Dye Penetrant Examination
<b>Radiographic Examination</b>	
V2	Radiographic Examination
<b>Special Inspection</b>	
QC1	Visual and dimensional inspection with certificate

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# Rosemount 1495, 1496, and 1497

TABLE 8. Rosemount 1497 Orifice Meter Section Ordering Table

### Material Traceability Certification

Q8 Material certificate per ISO 10474 3.1.B and EN 10204 3.1.B

### Code Conformance

J2 ANSI B31.1

J3 ANSI B31.3

J4 ANSI B31.8

J5 NACE MR-0175 / ISO 15156

### Country Certification

J1 Canadian Registration Number

J6 Conformance to European Pressure Equipment Directive (PED) 97/23/EC

**Typical Model Number: 1497 WN 040 A3 C FF**

(1) Default pipe schedules are listed on Table 1 on page 3 for the 1497 Orifice Meter Runs.

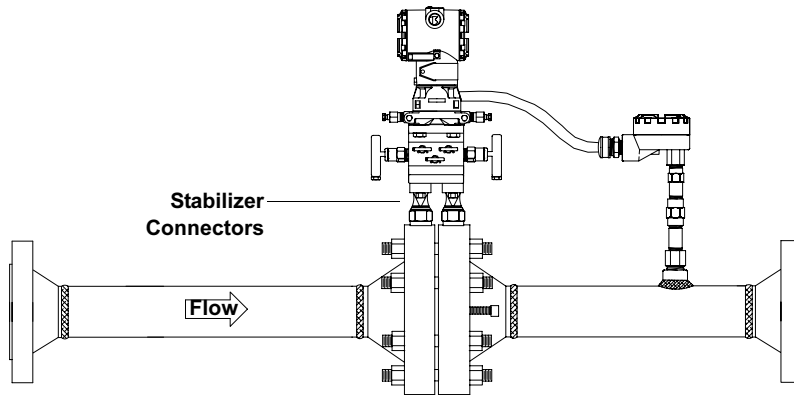
(2) These options should only be selected if the required pipe schedule is different from the default pipe schedule, as shown in Table 1 on page 3. Standard wall thickness for DIN weldneck flanges is per ISO EN 1092-1 (2002). Consult the factory if a different wall thickness is required.

## Accessories

### STABILIZED CONNECTORS

Stabilized Connectors allow the direct connection between the manifold of the transmitter to the orifice flange union as shown in Figure 4.

FIGURE 4. Stabilized Connectors



### Specifications

#### Process Connections

- Short connectors
  - ½-in. NPT threaded
- Long connectors
  - ½-in. NPT threaded

#### Body Material

316 SS

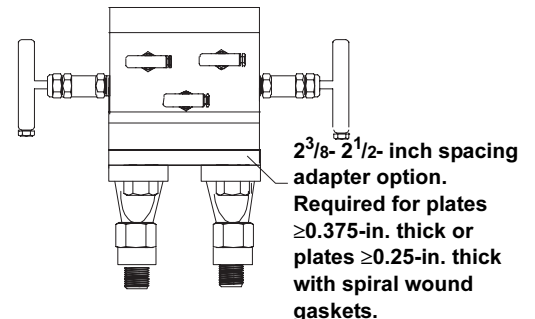
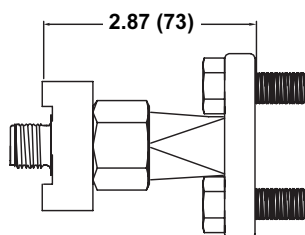
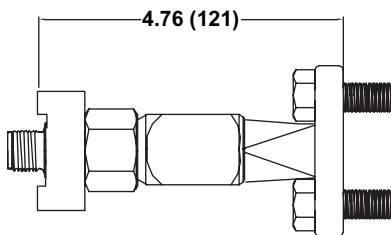
#### Pressure and Temperature limits

- 10,000 psi at 200°F
- 8,000 psi at 450°F

Long Connectors

Short Connectors

Adapter Plate for 3/8-in. and 1/2-in. Thick Plates



Dimensions are in inches (millimeters)

TABLE 9. Stabilized Connectors

Part Numbers	Description
116680830001	Short Connectors, CS Bolts (Standard configuration with best delivery)
116680830002	Short Connectors, SST Bolts
116680820001	Long Connectors, CS Bolts
116680820002	Long Connectors, SST Bolts
116680830004	Short Connectors, CS Bolts (for plates ≥0.375-in. thick or plates ≥0.25-in. thick with spiral wound gaskets)
116680830005	Short Connectors, SST Bolts (for plates ≥0.375-in. thick or plates ≥0.25-in. thick with spiral wound gaskets)
116680820003	Long Connectors, CS Bolts (for plates ≥0.375-in. thick or plates ≥0.25-in. thick with spiral wound gaskets)
116680820004	Long Connectors, SST Bolts (for plates ≥0.375-in. thick or plates ≥0.25-in. thick with spiral wound gaskets)

### NOTE

The length of the Stabilized Connectors (4.76-inches vs. 2.87-inches) determines the distance between the Orifice Flange Union and the manifold.

**Calculation Data Sheet**

This Calculation Data Sheet can be provided. The detailed sizing calculation may be done through the "Configuration Data Sheet (CDS)" on page 22.

<b>ROSEMOUNT INC. 1495 ORIFICE PLATE CALCULATION DATA SHEET</b>					
<b>GENERAL DATA</b>					
Customer:	Customer Name				
Project:	2002 Official Calculations				
S. O. No:	Sales Order Number				
P. O. No:	Customer P.O Number				
Calc. Date:	11/21/2001				
Model No:	1495PC080A3SA04625BC				
Tag No:	Tag Number				
<b>PRODUCT DESCRIPTION</b>					
Plate Type:	Square-edge	Tap Type:	Flange tapping		
Plate Material:	316 SST	Tap Location:	Upstream		
Drain/Vent Diameter:	None	Line Size:	8-inch		
Process Connection		Pipe Schedule:	40		
		Pipe Material:	Carbon Steel		
<b>INPUT DATA</b>					
Fluid Type:	Steam				
Fluid Description:					
Pipe I.D.	7.981	inch			
Pressure	60	psig	Base Pressure	14.6960001	psia
Temperature at Flow:	307.33	F	Base Temperature	59	F
Absolute Viscosity:	0.014093	cP			
Isentropic Exponent	1.317455				
Compressibility at Flow					
Density at Flow:	0.171328	lb/ft <sup>3</sup>	Base Compressibility		
			Base Density		lb/ft <sup>3</sup>
Flow Rates					
	Minimum:	6000	lb/hr		
	Normal:	8000	lb/hr		
	Maximum:	10000	lb/hr		
	Full Scale:	10000	lb/hr		
<b>CALCULATED DATA</b> (Calculation performed at normal conditions. DP in H <sub>2</sub> O at 68 °F)					
Orifice Bore Size:	4.000	inch	Bore Reynolds Number (Normal):	894278.832	
DP at Min. Flow:	16.379	in H <sub>2</sub> O at 68 °F	Pipe Reynolds Number (Normal):	448514.484	
DP at Normal Flow:	29.117	in H <sub>2</sub> O at 68 °F	Gas Expansion Factor:	0.99538888	
DP at Max. Flow:	45.496	in H <sub>2</sub> O at 68 °F	Permanent Pressure Loss:		
URV (DP at Full Scale):	45.496	in H <sub>2</sub> O at 68 °F	at Normal Flow:	21.2294996	in H <sub>2</sub> O at 68 °F
Drain/Vent Corr. Factor:	1		at Max Flow:	33.1710931	in H <sub>2</sub> O at 68 °F
Beta:	0.50119		Velocity at Max. Flow:	46.6687791	ft/sec
Discharge Coefficient	0.60366		Minimum Accurate Flow:	2111.34891	lb/hr
<b>Notes</b>					
Calculation by VLB					
<small>This report is provided according to the terms and conditions of the instrument Toolkit End-Use Customer License agreement.            Version: 3.0 (Build 91) <span style="float: right;">Printed on: 11/27/01 11:07</span> </small>					

# Rosemount 1495, 1496, and 1497

## Configuration Data Sheet (CDS)

### DP FLOW CDS

Complete this form to define a custom flow configuration for DP Flowmeters. Unless specified, the flowmeter will be shipped with the default values identified by the H symbol.

For technical assistance in filling out this CDS, call a Rosemount representative.

#### NOTE

Any missing information will be processed with the indicated default values.

\* = Required Item

★ = Default

#### Customer Information

Customer:	Contact Name:
Customer Phone:	Customer Fax:
Customer Approval Sign-Off:	Customer PO:

#### Calculation Approval

Check this box if you require a calculation for approval prior to manufacturing

#### Application and Configuration Data Sheet (Required with Order)

Tag:

Model No <sup>(1)</sup>

\* Select fluid type       Liquid       Gas       Steam

\* Fluid name

#### Flowmeter Information (optional)

\* Failure Mode Alarm Direction (select one)       Alarm High★       Alarm Low

Software Tag: \_\_\_\_\_ (8 characters)

Descriptor: \_\_\_\_\_ (16 characters)

Message: \_\_\_\_\_  
\_\_\_\_\_ (32 characters)

Date:                      Day \_\_\_ (numeric)                      Month \_\_\_ (numeric)                      Year \_\_\_ (numeric)

(1) A complete model number is required before Rosemount Inc. can process the order.

#### For Rosemount Use Only

S.O.:	LI
CHAMP:	DATE:
	ADMIN:

\* = Required Item  
 ★ = Default

**Primary Element Information**

\* Select Differential Producer (Select One)

**Annubar**

- 485 Annubar/ 3095MFA Mass ProBar, 3051SFA ProBar
- Annubar Diamond II + / Mass Probar
- Long Radius Wall Taps, ASME
- Long Radius Wall Taps, ISO
- ISA 1932, ISO

**Venturi**

- Nozzle, ISO
- Rough Cast/Fabricated Inlet, ASME
- Round Cast Inlet, ISO
- Machined Inlet, ASME
- Machined Inlet, ISO
- Welded Inlet, ISO

**Other (All options require a discharge coefficient value)**

- Calibrated Orifice: Flange, Corner, or D & D/2 Taps.

Discharge coefficient: \_\_\_\_\_

- Calibrated Orifice: 2 1/2 D & 8D Taps

Discharge coefficient: \_\_\_\_\_

- Calibrating Nozzle

Discharge coefficient: \_\_\_\_\_

- Calibrating Venturi

Discharge coefficient: \_\_\_\_\_

- Area Averaging Meter

Discharge coefficient: \_\_\_\_\_

- V-Cone®

Discharge coefficient: \_\_\_\_\_

Diameter (d) \_\_\_\_\_  inch★  millimeters at \_\_\_\_\_  °F  °C

ODF \_\_\_\_\_  ODT \_\_\_\_\_

Special Annubar dimension (required if customer supplies mounting hardware).

**Pipe Information**

\* Orientation / Flow Direction:  Vertical Up  Vertical Down  Horizontal

\* Line Size / Schedule: \_\_\_\_\_ Body I.D. (D): \_\_\_\_\_

**Materials of Construction**

\* Pipe Material  Carbon Steel  304 SST  316 SST  Hastelloy  Other \_\_\_\_\_

\* Primary Element Material  316 SST  Hastelloy  Other \_\_\_\_\_ (Please verify material availability)

**Operating Conditions**

	4 mA value	Minimum	Normal	Maximum	Full Scale: 20 mA flow rate (design to P and T)	Design
Flow Rate	0	*(1)	*	*		
Pressure (P)	—	*(1)	*	*(1)	*(2)	
Temperature (T)	—	*(1)	*	*(1)	*	

**RTD Mode**

Normal Mode ★ (Requires a RTD to be connected. If the RTD is disconnected or fails, the 3095MV output goes to alarm value)

Fixed Temperature Mode: Specify the fixed temperature value \_\_\_\_\_  °F  °C

Backup Mode (Uses the connected RTD for temperature measurement. If the RTD is disconnected or fails, the transmitter uses a fixed temperature value as a backup. This will not cause the mA output to go to alarm value and can potentially cause inaccurate flow measurement.) Fixed temperature value to be used as backup \_\_\_\_\_  °F  °C

# Rosemount 1495, 1496, and 1497

\* = Required Item

★ = Default

**Base Conditions**

Standard Base (P=14.696 psia / 101.325 kPa abs, T= 60 °F (15.56 °C))

Normal Base (P=14.696 psia / 101.325 kPa abs, T= 32 °F (0 °C))

Standard Base for Natural Gas (AGA) (P=14.73 psia, T= 60°F (15.56 °C))

User Defined: P= \_\_\_\_\_ Units: \_\_\_\_\_ T= \_\_\_\_\_ Units = \_\_\_\_\_

Compressibility at Base: \_\_\_\_\_ OR Density at Base: \_\_\_\_\_

(1) Operating ranges for pressure and temperature are needed for transmitter configuration.

(2) Required to verify that the product selection meets design criteria.

TABLE 10. Rosemount Fluids Database<sup>(1)</sup>

Acetic Acid	Divinyl Ether	Methane	n-Hexane	1-Heptanol
Acetone	Ethane	Methanol	n-Octane	1-Heptene
Acetonitrile	Ethanol	Methyl Acrylate	n-Pentane	1-Hexene
Acetylene	Ethylamine	Methyl Ethyl Ketone	Oxygen	1-Hexadecanol
Acrylonitrile	Ethylbenzene	Methyl Vinyl Ether	Pentafluorothane	1-Octanol
Air	Ethylene	m-Chloronitrobenzene	Phenol	1-Octene
Allyl Alcohol	Ethylene	Neon	Propadiene	1-Nonanol
Ammonia	GlycolEthylene	Neopentane	Pyrene	1-Pentadecanol
Argon	Oxide	Nitric Acid	Propylene	1-Pentanol
Benzene	Fluorene	Nitric Oxide	Styrene	1-Pentene
Benzaldehyde	Furan	Nitrobenzene	Sulfur Dioxide	1-Undecanol
Benzyl Alcohol	Helium-4	m-Dichlorobenzene	Propane	1-Nonanal
Biphenyl	Hydrazine	Nitroethane	Toluene	1,2,4- Trichlorobenzene
Carbon Dioxide	Hydrogen	Nitrogen	Trichloroethylene	1,1,2- Trichloroethane
Carbon Monoxide	Hydrogen Chloride	Nitromethane	Vinyl Acetate	1,1,2,2- Tetrafluoroethane
Carbon Tetrachloride	Hydrogen Cyanide	Nitrous Oxide	Vinyl Chloride	1,2-Butadiene
Chlorine	Hydrogen Peroxide	n-Butane	Vinyl Cyclohexane	1,3-Butadiene
Chlorotrifluoroethylene	Hydrogen Sulfide	n-Butanol	Water	1,3,5- Trichlorobenzene
Chloroprene	Isobutane	n-Butyraldehyde	1-Butene	1,4-Dioxane
Cycloheptane	Isobutene	n-Butyronitrile	1-Decene	1,4-Hexadiene
Cyclohexane	Isobutyl benzene	n-Decane	1-Decanal	2-Methyl-1-Pentene
Cyclopentane	Isopentane	n-Dodecane	1-Decanol	2,2-Dimethylbutane
Cyclopentene	Isoprene	n-Heptadecane	1-Dodecene	
Cyclopropane	Isopropanol	n-Heptane	1-Dodecanol	

(1) This list is subject to change without notice. Steam per ASME Steam tables. All other fluids per AIChE.

## Drawing/Notes





# Rosemount 1495, 1496, and 1497

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**Product Data Sheet**  
00813-0100-4792, Rev GA  
Catalog 2006 - 2007

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