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Find the *Emerson / Rosemount Analytical 400VP-11* at our website: *Click HERE*

Product Data Sheet
June 2017
LIQ-PDS-400

Rosemount™ 400 and 400VP

Contacting Conductivity Sensors



Reliable conductivity measurements for your process

With Rosemount 400 and 400VP contacting conductivity sensors, you will be able to accurately measure electrolytic conductivity in a broad range of applications from high purity water to clean cooling water. The Rosemount 400 and 400VP contacting conductivity sensors are ideal for use in clean, non-corrosive liquid having conductivity less than 20,000 µS/cm.

ROSEMOUNT™

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Overview



Minimize Start-up and Installation Time

- A factory-measured cell constant ensures out-of-the-box accuracy and no initial calibration requirements.
- Available in cell constants of 0.01, 0.1, and 1.0/cm.



Meet Your Process Mounting Needs

- The sensors are designed for direct screw-in insertion into process piping using a front facing ¾ in. MNPT fitting.
- Can alternatively be used with a pipe tee or flow cell in a sidestream installation.
- Offered with Variopol (VP6) quick disconnect fitting.



A Robust Two-electrode Design

- The sensors have concentric titanium electrodes separated by a PEEK insulator.
- An EPDM O-ring seals the internal parts of the sensor from the process liquid.
- Available with a high temperature option up to 392 °F (200 °C) with integral junction box.

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Ordering Information



The Rosemount 400/400VP Contacting Conductivity sensors are intended to measure electrolytic conductivity in clean water applications. These sensors can be configured with either a 0.01/cm, 0.1/cm, or 1.0/cm to accommodate varying levels of conductivity. The sensors are available with either an integral cable connection or Variopol (VP6) connector. Variopol cables sold separately (see accessories).

Additional Information

Specifications: see "Specifications" on page 5
Dimensional drawings: see "Dimensional Drawings" on page 7
Accessories: see "Accessories" on page 9
Engineering Specifications: see "Engineering Specifications" on page 10

Table 1. Rosemount 400 Contacting Conductivity Sensor ordering information

Model	Sensor type
400	Contacting Conductivity Sensor
Cell constant	
11	0.01/cm
12	0.1/cm
13	1.0/cm
Temperature compensation	
_	Pt-1000 (1)
54	Pt-100
55	10K Ohm TC
Option 1	
_	No selection
36	Extended insertion length (2)
Option 2	
_	No selection
50	Integral 50 ft (15 m) cable
60	Integral junction box
Typical Model Number: 400-11-_-36-50	

1. For use with Rosemount transmitter models 56, 1056, 1057, 1066, 5081, and legacy transmitter models 1055, 54C, 54eC, 4081C, 6081-C, and XMT-C.
2. 5.5 inches from the bottom of threads to tip of sensor.

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Table 2. Rosemount 400VP Contacting Conductivity Sensor with Variopol cable connection ordering information

Model	Sensor type
400VP	Contacting Conductivity Sensor
Cell constant	
11	0.01/cm
12	0.1/cm
13	1.0/cm
Temperature compensation	
_	Pt-1000 (1)
54	Pt-100
55	10K Ohm TC
56	100K Ohm TC
Option 1	
_	No selection
36	Extended insertion length (2)
Typical Model Number: 400VP-11-_-36	

1. For use with Rosemount transmitter models 56, 1056, 1057, 1066, 5081, and legacy transmitter models 1055, 54C, 54eC, 4081C, 6081-C, and XMT-C.
2. 5.5 inches from the bottom of threads to tip of sensor.

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Specifications

Table 3. Rosemount 400/400VP Contacting Conductivity Sensor specifications

Wetted materials	
Electrodes	Titanium
Insulator	Glass Filled PEEK
Body	316 Stainless Steel
O-ring	EPDM
Temperature range	
Standard	32 to 221 °F (0 to 105 °C)
With Optional Integral Junction Box	32 to 392 °F (0 to 200 °C)
Maximum pressure	
250 psig (1825 kPa abs)	
Vacuum	
At 1.6 in. Hg (5.2 kPa) air leakage is less than 0.005 SCFM (0.00014 m^3/min)	
Cell constants	
0.01, 0.1, and 1.0/cm	
Process connection	
¾ in. MNPT	
Cable	
10 ft (3.1 m) standard; 50 ft (15.2m) optional, Interconnecting VP6 cables sold separately (See Accessories).	

Table 4. Rosemount 400/400VP weights and shipping weights*

Rosemount 400 with integral cable	**Weight**	**Shipping weight**
10 ft (3.0m)	1 lb. (0.5 kg)	2 lb. (1.0 kg)
50 ft (15.2m)	4 lb. (2.0 kg)	5 lb. (2.5 kg)
Rosemount 400VP with Variopol cable connection	1 lb. (0.5 kg)	2 lb. (1.0 kg)
Rosemount 400 with integral junction box	3 lb. (1.5 kg)	4 lb. (2.0 kg)

** Rounded up to the nearest 1 lb or 0.5 kg.*

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Flow Cell Specifications (P/N 24091-02)

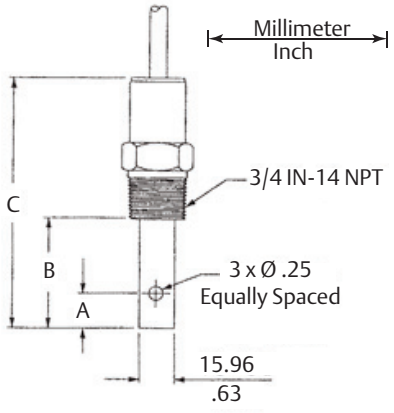
Wetted materials	
Body and Nut	Polycarbonate and Polyester
¼ in. Fittings	316 Stainless Steel
O-ring	Silicone
Process connection	
Compression fitting for ¼ in. OD tubing	
Maximum temperature	
158 °F (70 °C)	
Maximum pressure	
90 psig (722 kPa abs)	



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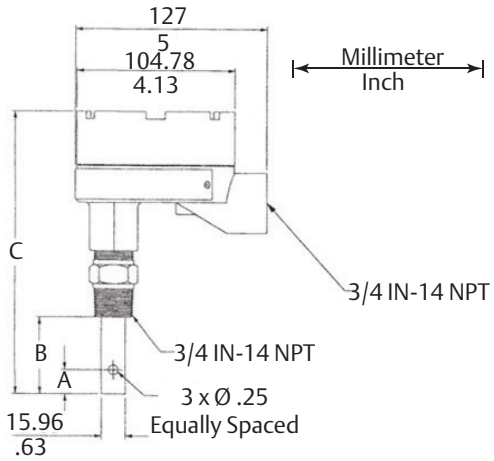
Dimensional Drawings

Figure 1. Rosemount 400 with integral cable connection dimensional drawing



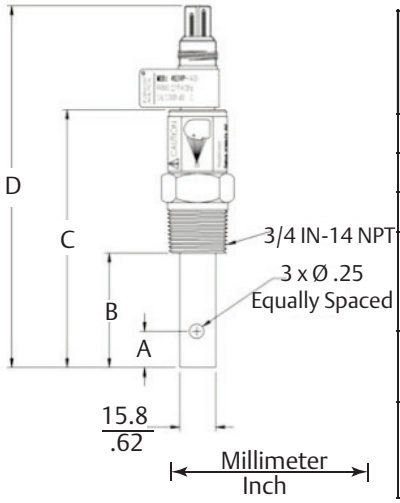
Sensor configuration	A		B		C	
	Inches	mm	Inches	mm	Inches	mm
0.01/cm	1.59	40.39	1.98	50.34	4.52	114.8
0.1/cm	0.687	17.45	1.11	28.15	3.65	92.71
1.0/cm	0.667	16.94	1.13	28.70	3.67	93.22
0.01/cm (with extended insertion length)	1.59	40.39	5.49	139.4	8.00	203.2
0.1/cm (with extended insertion length)	0.687	17.45	5.49	139.4	8.00	203.2
1.0/cm (with extended insertion length)	0.667	16.94	5.49	139.4	8.00	203.2

Figure 2. Rosemount 400 with integral junction box dimensional drawing



Sensor configuration	A		B		C	
	Inches	mm	Inches	mm	Inches	mm
0.01/cm	1.59	40.39	1.98	50.34	7.41	188.2
0.1/cm	0.687	17.45	1.11	28.15	6.49	164.9
1.0/cm	0.667	16.94	1.13	28.70	6.51	165.4
0.01/cm (with extended insertion length)	1.59	40.39	5.49	139.4	10.90	276.9
0.1/cm (with extended insertion length)	0.687	17.45	5.49	139.4	10.90	276.9
1.0/cm (with extended insertion length)	0.667	16.94	5.49	139.4	10.90	276.9

Figure 3. Rosemount 400VP with Variopol cable connection dimensional drawing



Sensor configuration	A		B		C		D	
	Inches	mm	Inches	mm	Inches	mm	Inches	mm
0.01/cm	1.59	40.39	1.98	50.3	4.43	112.5	6.3	160.0
0.1/cm	0.67	17.0	1.10	27.9	3.47	90.4	5.43	137.9
1.0/cm	0.67	17.0	1.10	27.9	3.58	90.9	5.45	138.4
0.01/cm (with extended insertion length)	1.59	40.4	5.48	139.2	7.91	200.9	9.78	248.4
0.1/cm (with extended insertion length)	0.67	17.0	5.48	139.2	7.91	200.9	9.78	248.4
1.0/cm (with extended insertion length)	0.67	17.0	5.48	139.2	7.91	200.9	9.78	248.4

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Figure 4. Flow cell (PN 24091-02)

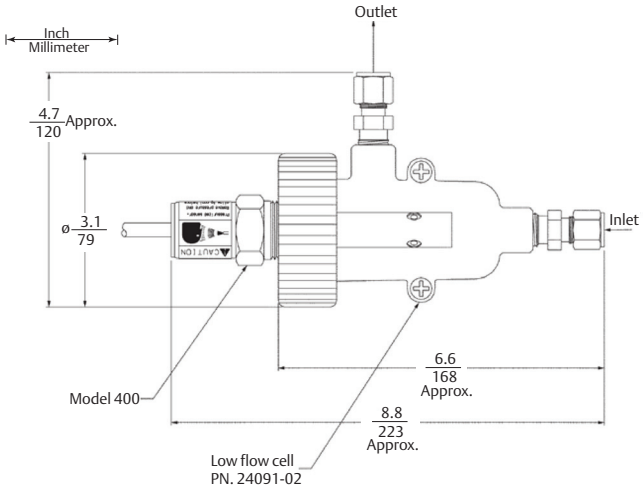


Figure 5. Rosemount 400 with integral cable connection

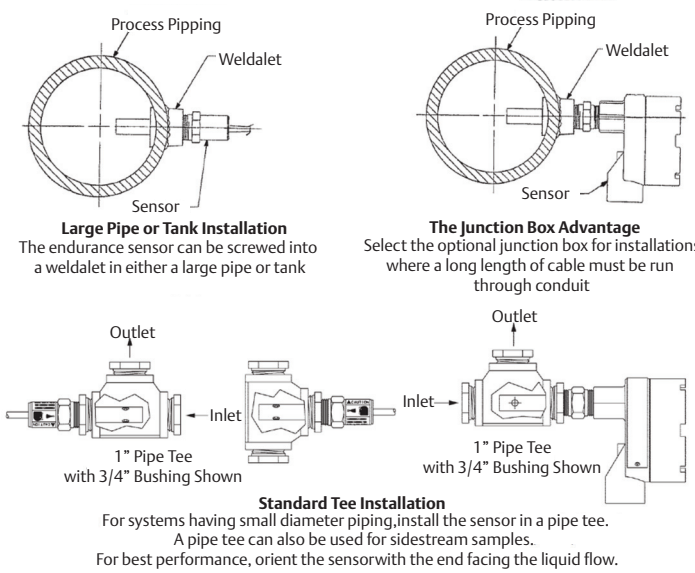
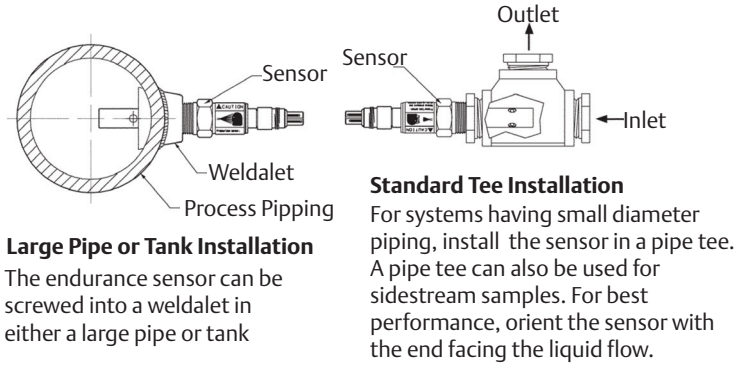


Figure 6. Rosemount 400VP with variopol cable connection



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Accessories

Table 5. Rosemount 400/400VP Contacting Conductivity Sensor accessories information

Part number	Description
23550-00	Remote junction box without preamplifier
23747-00	Interconnect cable, prepped (must specify length)
9200275	Extension cable, unprepped (must specify length)
24091-02	Low Flow Cell for Rosemount 400/400VP Sensors
05010781899	Conductivity standard SS-6, 200 µS/cm, 32 oz (0.95 L)
05010797875	Conductivity standard SS-6A, 200 µS/cm, 1 gal (3.78 L)
05010782468	Conductivity standard SS-5, 100k0 µS/cm, 32 oz (0.95 L)
05010783002	Conductivity standard SS-5A, 1000 µS/cm, 1 gal (3.78 L)
05000705464	Conductivity standard SS-1, 1409 µS/cm, 32 oz (0.95 L)
05000709672	Conductivity standard SS-1A, 1409 µS/cm, 1 gal (3.78 L)
05010782147	Conductivity standard SS-7, 5000 µS/cm, 32 oz (0.95 L)
05010782026	Conductivity standard SS-7A, 5000 µS/cm, 1 gal (3.78 L)
23747-06	2.5 ft (0.8 m) Interconnecting VP6 Cable
23747-04	6.4 ft (1.2 m) Interconnecting VP6 Cable
23747-02	10 ft (3.0 m) Interconnecting VP6 Cable
23747-07	15 ft (4.6 m) Interconnecting VP6 Cable
23747-08	20 ft (6.1 m) Interconnecting VP6 Cable
23747-09	25 ft (7.6 m) Interconnecting VP6 Cable
23747-10	30 ft (9.1 m) Interconnecting VP6 Cable
23747-03	50 ft (15.2 m) Interconnecting VP6 Cable
23747-11	100 ft (30.5 m) Interconnecting VP6 Cable

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Engineering Specifications

Cell constants 0.01, 0.1, and 1.0/cm

- The sensor shall be suitable for the determination of electrolytic conductivity in clean, noncorrosive samples.
- The sensor shall have a ¾- in. MNPT fitting for direct insertion into pipes or tees. A clear plastic flow cell shall also be available for sidestream samples.
- The sensor shall incorporate titanium electrodes and a PEEK insulator.
- The sensor shall have an integral platinum RTD for temperature measurement.
- The sensor shall be available with either integral cable or a Variopol quick disconnect fitting.
- The maximum temperature for the sensor shall be 221 °F (105 °C) at 250 psig (1825 kPa abs). A high temperature option that can be used at 392 °F (200 °C) shall also be available.
- The sensor shall be suitable for vacuum service as low as 1.6 in Hg (5.2 kPa).
- The sensor shall be Rosemount 400 (integral cable) or 400VP (Variopol fitting) or approved equal.

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