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## PRODUCT DATASHEET

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# Rosemount™ 385+

## General Purpose pH/ORP Sensors



### High performance for your process pH/ORP needs

The Rosemount 385+ pH/ORP combination sensors are used for reliable pH or oxidation/reduction potential measurements of aqueous solutions in pipelines, open tanks, or ponds. Rosemount 385+ sensors feature a triple junction reference that extends sensor life in processes containing poisoning ions.

# Overview



## A Robust Sensor Design

- Extended sensor life and protection against poisoning ions using a triple junction reference.
- Enhanced performance and increased life with cracking resistant glass.
- High pH glass option for greater performance and linearity at high process pH levels.
- Operates in pressures up to 100 psig at 100 °C.

## Versatile Installation Options

- The sensor features both a submersion/insertion and a retractable version.
- Safely remove and replace retractable sensors under pressure without the need to shutdown your process.
- Compatible for use with a 1-1/2 in. ball valve assembly.

## SMART Preamplifier

- Automatic recognition of pH sensors by Rosemount transmitters: 1066, 1057, 1056, and 56
- pH calibration data is stored which allows sensors to be calibrated in advance for “Plug and Play” installations in the field.

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## Ordering Information



The Rosemount 385+ pH/ORP sensor features a Tefzel sensor body with a triple junction gel filled reference electrode and automatic temperature compensator housed in a titanium tube. The retractable version of this sensor comes with an integral sensor head junction box, a process connector, and integral preamplifier. Interconnecting cable from sensor junction box to transmitter is sold separately (PN 23646-01 or 9200273; see Accessories).

**Table 1. Rosemount 385+ General Purpose pH/ORP Sensor ordering information**

Model	Sensor type
385+	pH/ORP sensor
<b>Body Configuration</b>	
02	Retractable with Integral Preamplifier <sup>(1)</sup>
03	Insertion/Submersion with Integral Preamplifier and 25 ft. Integral Cable <sup>(1)</sup>
04	Insertion/Submersion without Integral Preamplifier and 15 ft. Integral Cable
<b>Measuring Electrode</b>	
10	pH - General Purpose Low Resistivity (GPLR) pH glass
11	High pH Glass
12	Platinum ORP
<b>Typical Model Number: 385+-02-10</b>	

1. Preamplifier is SMART with -10 and -11 options and a standard preamplifier if with -12 option.

## Specifications

**Table 2. Rosemount 385+ General Purpose pH/ORP Sensor specifications**

<b>Measured Range</b>	
pH range	0 to 14 pH
ORP range	-1500 mV to 1500 mV
<b>Maximum Pressure at Retraction or Insertion (ball valve version)</b>	
542 KPa abs (64 psig)	
<b>Maximum Process Pressure and Temperature</b>	
790 KPa abs (100 psig) at 100 °C (212 °F)	
<b>Temperature Compensation</b>	
(pH only) 0 to 100°C (32 to 212°F)	
<b>Wetted Materials</b>	
Tefzel, titanium, EPDM, 316 SS and Teflon (Code 02), Viton, glass, ceramic and (ORP only) platinum.	

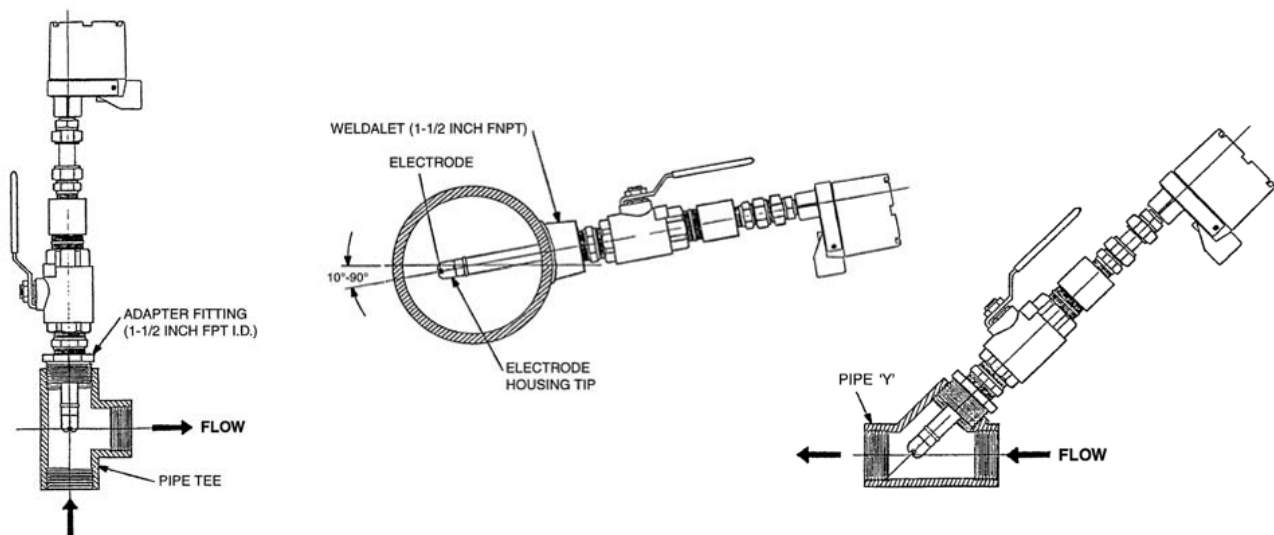
**Table 2. Rosemount 385+ General Purpose pH/ORP Sensor specifications**

<b>Weight/Shipping Weight</b>	
Submersion/insertion	1.6 lb/2.8 lb (0.7 kg/1.25 kg)
Retraction	6 lb/11 lb (2.7 kg/5.0 kg)
Ball Valve	5 lb/10 lb (2.25 kg/4.5 kg)
<b>Process Connections</b>	
With ball valve	1-1/2 in.
Without ball valve	1 in.
<b>Cable Length</b>	
Code 02	Requires interconnecting cable P/N 9200273 (Unprepped) or P/N 23646-01 (Prepped)
Code 03	25 ft. Integral Cable
Code 04	15 ft. Integral Cable

**Table 3. Percent Linearity Over pH Range**

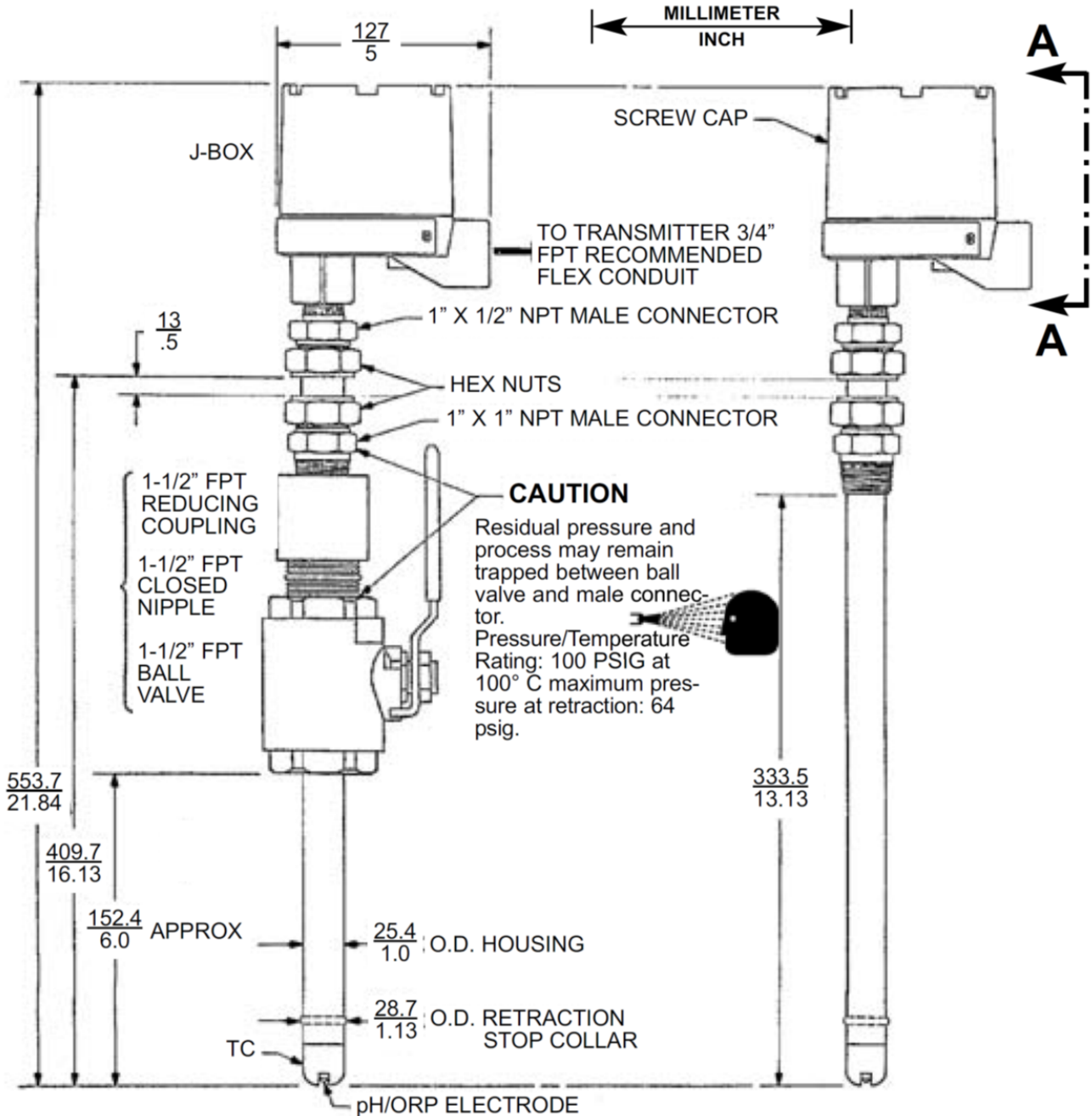
<b>pH Range</b>	<b>Option 10</b>	<b>Option 11</b>
0-2 pH	94%	94%
2-12 pH	99%	97%
12-13 pH	97%	98%
13-14 pH	92%	98%

**Figure 1. Typical mounting configurations for the Rosemount 385+ Sensor**



# Dimensional Drawings

Figure 2. Rosemount 385+-02 sensor dimensions (shown with and without ball valve kit PN 23240-00)



(Ball valve kit includes 1-1/2 in. coupling, 1-1/2 in. nipple, and 1-1/2 in. ball valve)

Figure 3. Rosemount 385+-03/-04 sensor dimensions (shown in handrail mounting assembly PN 11275-01)

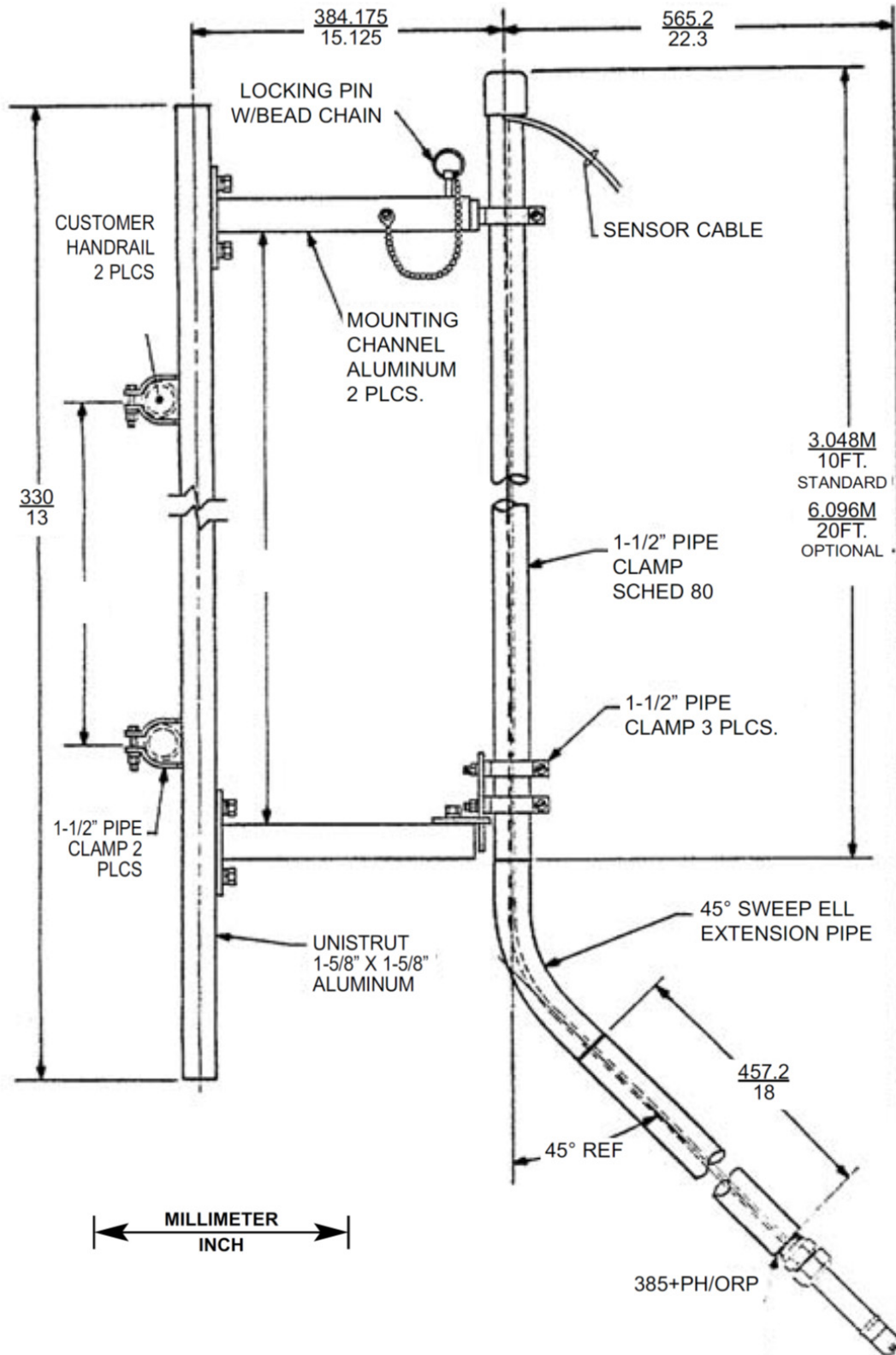
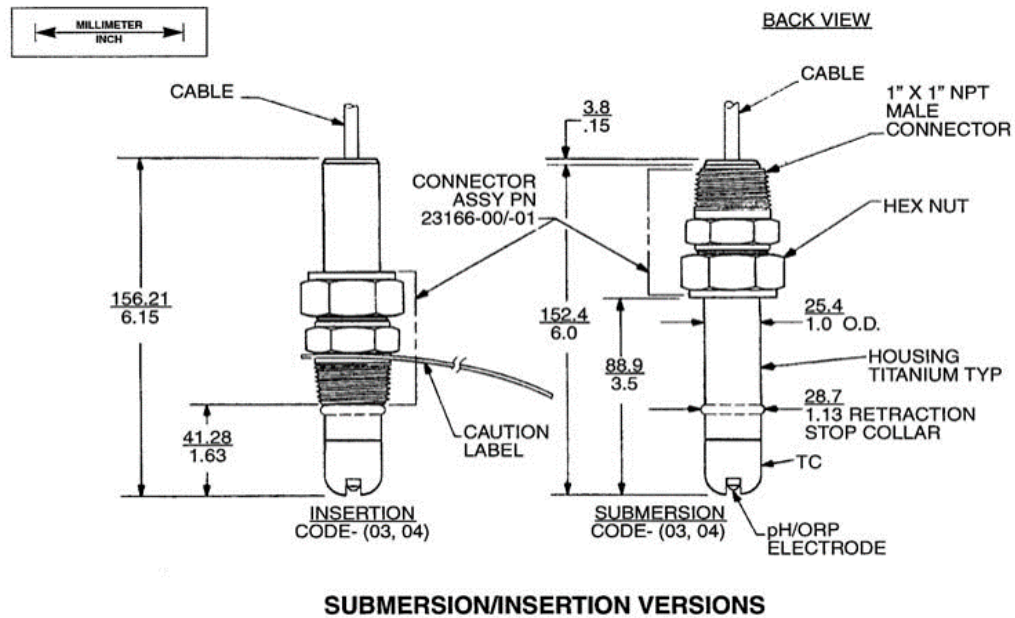


Figure 4. Dimensional drawing for submersion/inversion version (code -03, -04)



## Accessories

Table 4. Rosemount 385+ Sensor accessories information


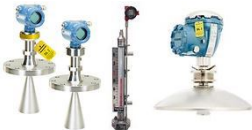










Part number	Description
23166-00	1 in. x 1 in. NPT 316 SS process connector
23166-01	1 in. x 1 in. NPT titanium process connector
23594-01	EPDM O-ring for process connector (23166-01/-01), Qty 4
9510066	1 in. x 1 in. NPT nylon process connector
915240-03	2 in. PVC flow through Tee, 3/4 in. NPT process connection
915240-04	2 in. PVC flow through Tee, 1 in. NPT process connection
915240-05	2 in. PVC flow through Tee, 1-1/2 in. NPT process connection
11275-01	Handrail mounting assembly
23555-00	Remote junction box with preamplifier
23550-00	Remote junction box without preamplifier
23646-01	Extension cable for junction box, 11 conductor, shielded, prepped
9200273	Extension cable for junction box, 11 conductor, shielded, unprepped
23240-00	1-1/2 in. ball valve assembly, 316 SS (Process connector required)
9210012	4.01 pH buffer solution, 16 oz
9210013	6.86 pH buffer solution, 16 oz
9210014	9.18 pH buffer solution, 16 oz



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