

Rosemount™ 3200HP

pH Sensors



Essential Instructions

Read this page before proceeding!

Emerson designs, manufactures and tests its products to meet many national and international standards. Because these sensors are sophisticated technical products, you **MUST** properly install, use, and maintain them to ensure they continue to operate within their normal specifications. The following instructions **MUST** be adhered to and integrated into your safety program when installing, using, and maintaining Rosemount products. Failure to follow the proper instructions may cause any one of the following situations to occur: loss of life; personal injury; property damage; damage to this sensor; and warranty invalidation.

- Read all instructions prior to installing, operating, and servicing the product.
- If you do not understand any of the instructions, contact your Emerson representative for clarification.
- Follow all warnings, cautions, and instructions marked on and supplied with the product.
- Inform and educate your personnel in the proper installation, operation, and maintenance of the product.
- Install your equipment as specified in the Installation Instructions of the appropriate Instruction Manual and per applicable local and national codes. Connect all products to the proper electrical and pressure sources.
- To ensure proper performance, use qualified personnel to install, operate, update, program, and maintain the product.
- When replacement parts are required, ensure that qualified people use replacement parts specified by Emerson. Unauthorized parts and procedures can affect the product's performance, place the safe operation of your process at risk, and **VOID YOUR WARRANTY**. Third-party substitutions may result in fire, electrical hazards, or improper operation.
- Ensure that all equipment doors are closed and protective covers are in place, except when maintenance is being performed by qualified persons, to prevent electrical shock and personal injury.

The information contained in this document is subject to change without notice.

CAUTION

Sensor/Process Application Compatibility

The wetted sensor materials may not be compatible with process composition and operating conditions. Application compatibility is entirely the responsibility of the user.

CAUTION

Special Conditions for Safe Use

1. All pH sensors have a plastic enclosure which must only be cleaned with a damp cloth to avoid the danger due to a build up of an electrostatic charge.
2. All pH sensor models are intended to be in contact with the process fluid and may not meet the 500V r.m.s. a.c. test to earth.

This must be taken into consideration at installation.

About This Document

This manual contains instructions for installation and operation of the Rosemount 3200HP pH Sensors.

The following list provides concerning all revisions of this document.

Rev. Level	Date	Notes
G	04/17	Reformatted to reflect the latest Emerson documentation style Wiring Diagrams, and EC Declaration of conformity.

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Section 1: Specifications

1.1 Specifications

Table 1-1: Rosemount 3200HP sensor specifications

Conductivity Range	> 0.4 $\mu\text{S}/\text{cm}$
Sample Temperature	0 °C to 70 °C (32 °F to 160 °F)
Sample Inlet Pressure	5 to 10 psig (134-170 kPa abs); no back pressure allowed; sample must drain to open atmosphere
Accuracy	± 0.05 pH
Noise	< 0.02 pH
Drift	< 0.05 pH per week
Sample Flow Rate	1 to 3 GPH, (60 to 180 mL/min)
Process Connections	1/4 in. FPT
Weight/Shipping Weight	5.4 lbs/7.6 lbs (2.5 kg/3.5 kg)
Wetted Materials	Silicone, polycarbonate/polyester, glass, stainless steel, PVDF, Viton

1.2 Product Certifications

Please see online certificates for further details.

IECEX

Ex ia IIC T4 Ga (-20 °C ≤ Ta ≤ +60 °C)

Per standards IEC60079-0 : 2011, IEC 60079-11 : 2011

ATEX

⊕ II 1 G Ex ia IIC T4 Ga (-20 °C ≤ Ta ≤ +60 °C)

Per standards EN 60079-0: 2012+A11:2013, EN 60079-11:2012

FM

Intrinsically Safe for use in Class I, II, and III, Division 1, Groups A, B, C, D, E, F, and G; Temperature Class T6 Ta = -20 °C to +60 °C

Intrinsically Safe for use in Class I, Zone 0, AEx ia IIC T6 Ta = -20 °C to +60 °C

Nonincendive for use in Class I, Division 2, Groups A, B, C, and D; Temperature Class T6 Ta = -20 °C to +60 °C

Suitable for use in Class II and III, Division 2, Groups E, F, and G; Temperature Class T6 Ta = -20 °C to +60 °C Hazardous (Classified) Locations

IS/I,II,III/1/ABCDEFG/T6 Ta = 60 °C - 1400332; Entity; I/0/AEx ia IIC/T6 Ta = 60 °C - 1400332; Entity; NI/I/2/ABCD/T6 Ta = 60 °C; S/II,III/2/EFG/T6 Ta = 60 °C; Entity Parameters

Per standards 3600:1998, 3610:2010, 3611:2004, 3810:2005

CSA

Intrinsically Safe and Non-Incendive:

Class I, Division 1, Groups ABCD; Class II, Division 1, Groups EFG; Class III; Class I, Division 2, Groups ABCD; Ex ia IIC; T6; Ambient temperature rating -20°C to +60°C: (Simple Apparatus)

Per standards C22.2 No. 142 – M1987, C22.2 No 157 – M1992, CAN/CSA E60079-0:07, CAN/CSA E60079-11:02, UL 50:11th Ed., UL 508:17th Ed., UL 913: 7th Ed., UL 60079-0: 2005, UL 60079-11: 2002

Section 2: Installation

2.1 Unpacking and Inspection

Inspect the outside of the carton for any damage. If damage is detected, contact the carrier immediately. Inspect the instrument and hardware. Make sure all items in the packing list are present and in good condition. Notify the factory if any part is missing.

2.2 Mechanical Installation

1. Refer to [Figure 2-1](#) for dimensions of the mounting plate and the positions and diameter of the mounting holes.
2. Remove the bag containing the diffuser plate from the flow cell. Place the diffuser plate flat in the bottom of the flow cell. See [Figure 2-2](#). Do not install the sensor yet.
3. Connect the sample and drain lines to the flow cell. Process connections are ¼ inch FNPT.

Note: The flow cell must drain immediately to open atmosphere. Do not use a long or convoluted drain line.

Figure 2-1: Dimensional Drawing for Rosemount 3200HP

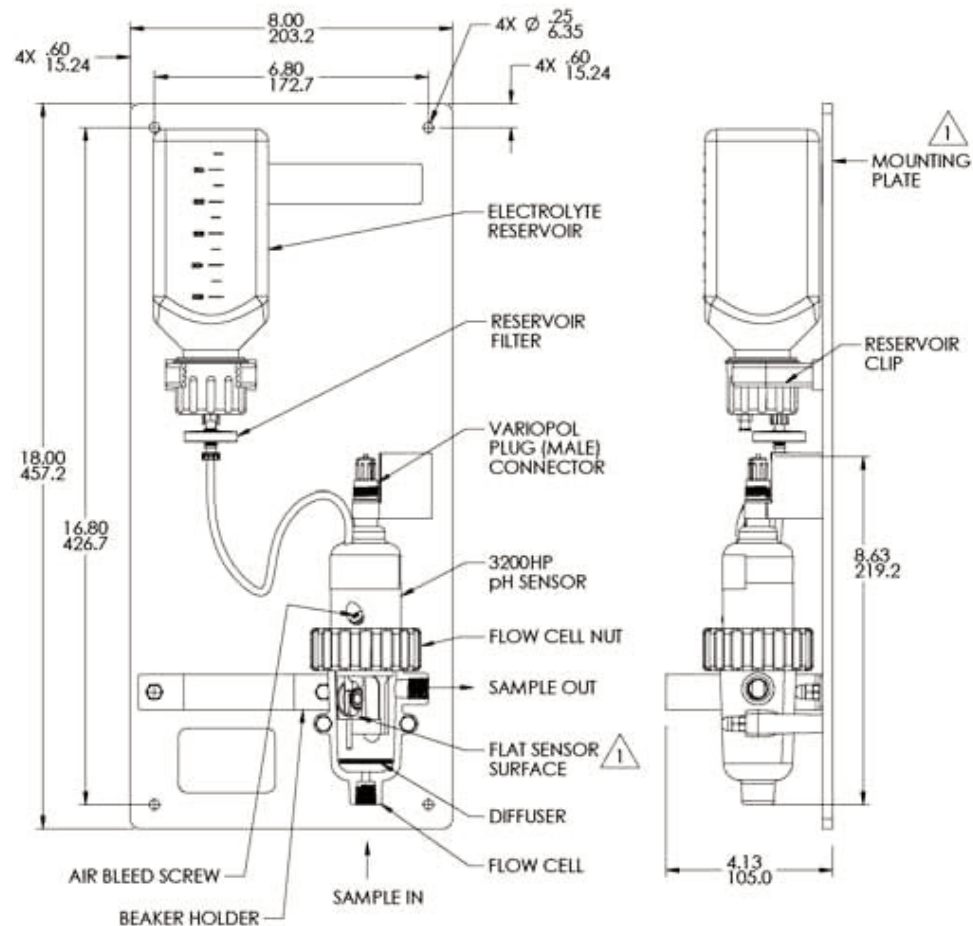
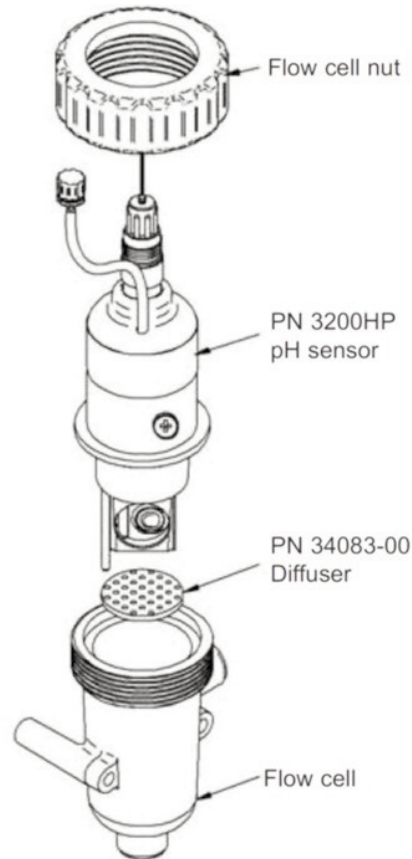


Figure 2-2: Rosemount 3200HP



2.3 Putting the Rosemount 3200HP Sensor in Service

1. Wire the cable to the transmitter. See the wiring diagrams in the wiring section.
2. Start the sample flow to fill the flow cell with water.
3. Unscrew the plastic nut on the flow cell and slip the nut over the sensor. See Figure 2-1.
4. Remove the vinyl cap from the end of the sensor and place the sensor in the water in the flow cell.

CAUTION

The solution in the protective cap may cause skin or eye irritation.

Note: Keep the capillary disc wet. See Figure 2-7. If the disc dries out, it cannot be rehydrated, and it must be replaced.

Note: Do not remove the shipping plug from the tube connected to the sensor.

5. Lift the reservoir bottle out of the clip holding it to the backplate.
6. Unscrew the cap and lay it on its side in a clean place. Do not remove the protective cap attached to the filter.

7. Pour 500 mL of reference solution (PN 9210391) into the reservoir. Replace the reservoir cap.
8. Remove the shipping plugs from the reservoir filter and the electrolyte tube.
9. Connect the electrolyte tube to the filter by pressing the luer fitting on the tube onto the luer fitting on the filter.
10. Invert the reservoir and slide it back into the clip. A few drops of solution may drip out of the air vent.
11. Bleed air bubbles from the electrolyte tube and sensor.
 - a. Loosen the bleed screw until it is engaged by only about one thread. Watch for bubbles flowing down the electrolyte tube and out the bleed port. See [Figure 2-3](#)
 - b. Once the last bubble has appeared at the bleed port allow an additional 2 mL of solution to escape. Use a paper towel to soak up the electrolyte. Tighten the bleed screw. See [Figure 2-4](#).
 - c. Bubbles may still remain trapped in the sensor. To remove them, take the sensor out of the flow cell and hold it with the end of the sensor slightly tilted above horizontal. Keep the capillary disc facing up. Loosen the bleed screw and let about 2 mL of solution escape. See [Figure 2-5](#).
 - d. Rotate the sensor slightly in the direction shown by the arrow in [Figure 2-6](#) until the capillary disc is about 60° from vertical. Watch for bubbles leaving the port. Bleed an additional 2 mL of solution after the last bubble has escaped. Tighten the bleed screw.

Figure 2-3: Rosemount 3200HP



Figure 2-4: Rosemount 3200HP



Figure 2-5: Rosemount 3200HP

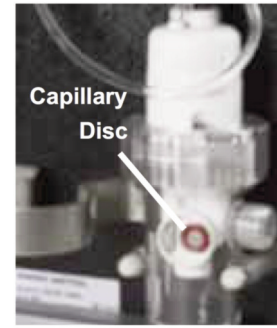


Figure 2-6: Rosemount 3200HP



12. Connect the VP cable to the sensor. The sensor connector is keyed to ensure proper mating with the cable receptacle. Once the key has slid into the mating slot, hand tighten the connection by turning the knurled ring clockwise.
13. Place the sensor in the flow cell. Be sure the capillary disc faces forward. Tighten the flow cell nut.
14. Adjust the sample flow until it is between 1 and 3 gph (60 to 180 mL/min). For best results flow should be constant.

Figure 2-7: Rosemount 3200HP



Section 3: Wiring

3.1 Wiring for Rosemount 3200HP

The Rosemount 3200HP sensor is available with Variopol (VP) quick disconnect cable only.

For other wiring diagrams not shown below, please refer to the [Liquid Transmitter Wiring Diagrams](#).

Table 3-1: VP6 and VP8 Cable

Cable Length	VP6	VP8
10 ft. (3.0 m)	23645-10	24281-06
20 ft. (6.1 m)	23645-11	24281-07
30 ft. (9.1 m)	23645-12	24281-08

If the part number is missing or not visible, identify the cable by disconnecting it from the sensor and counting the number of gold contacts on the cable receptacle (not on the sensor). VP6 cable has six contacts; VP8 has eight contacts.

Figure 3-1: Rosemount 3200HP Sensor Wiring to Rosemount 1056/56 Transmitters

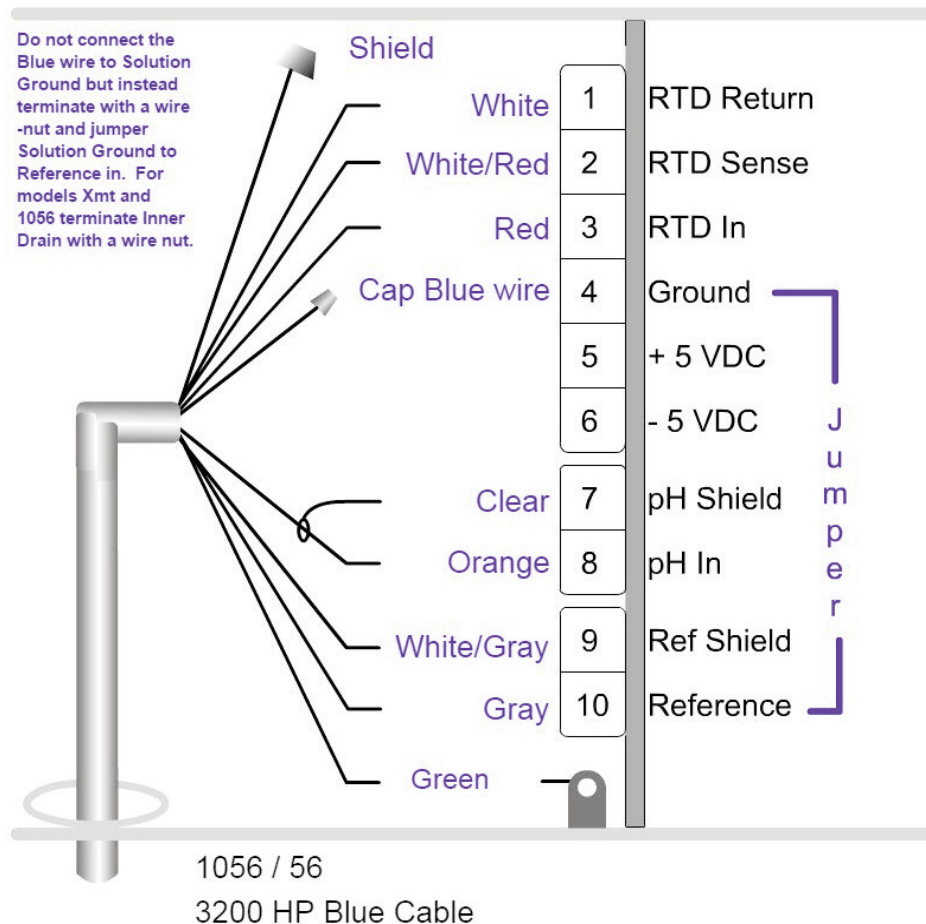


Figure 3-2: Rosemount 3200HP Sensor Wiring to Rosemount 1057 Transmitter

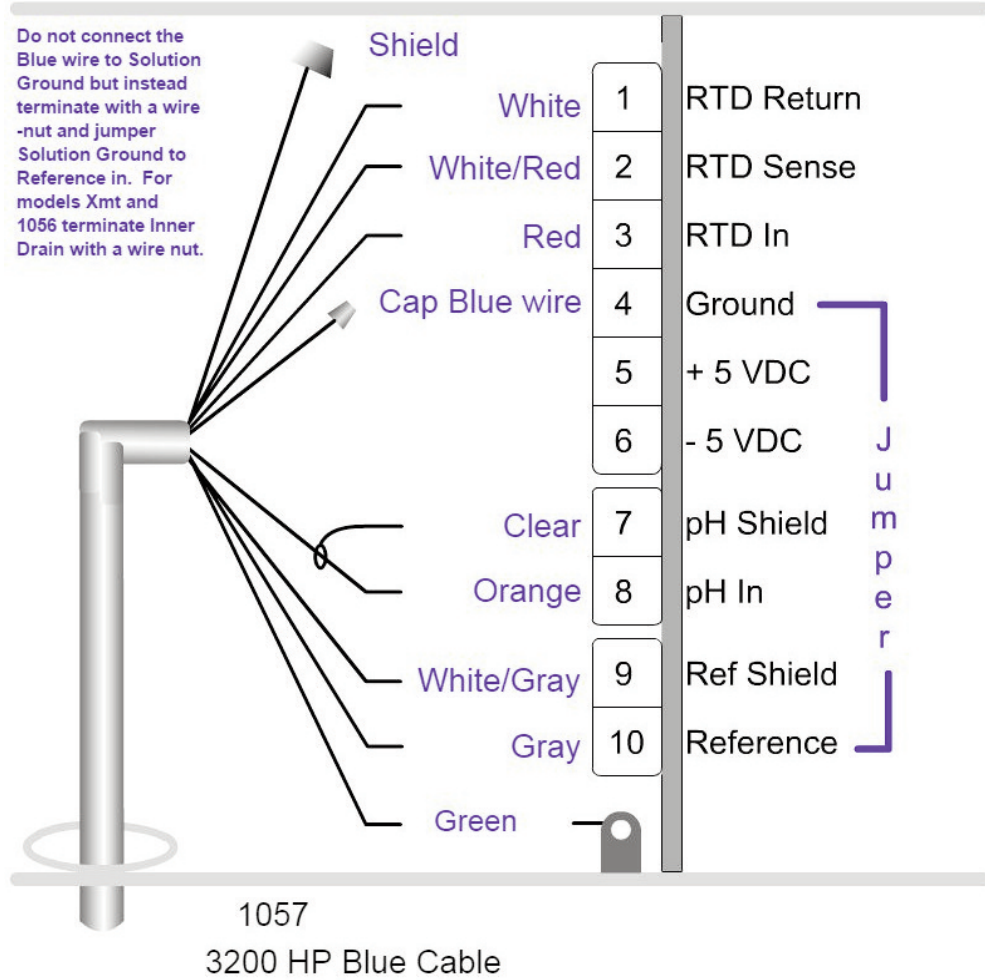


Figure 3-3: Rosemount 3200HP Sensor Wiring to Rosemount 1066 Transmitter

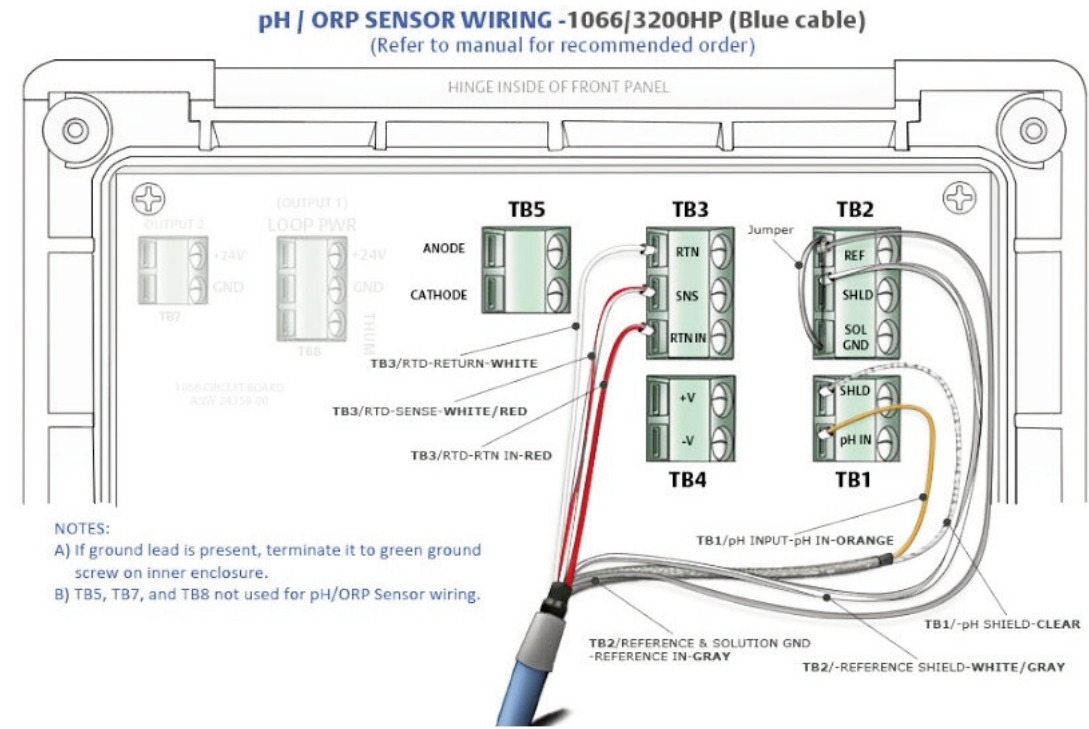
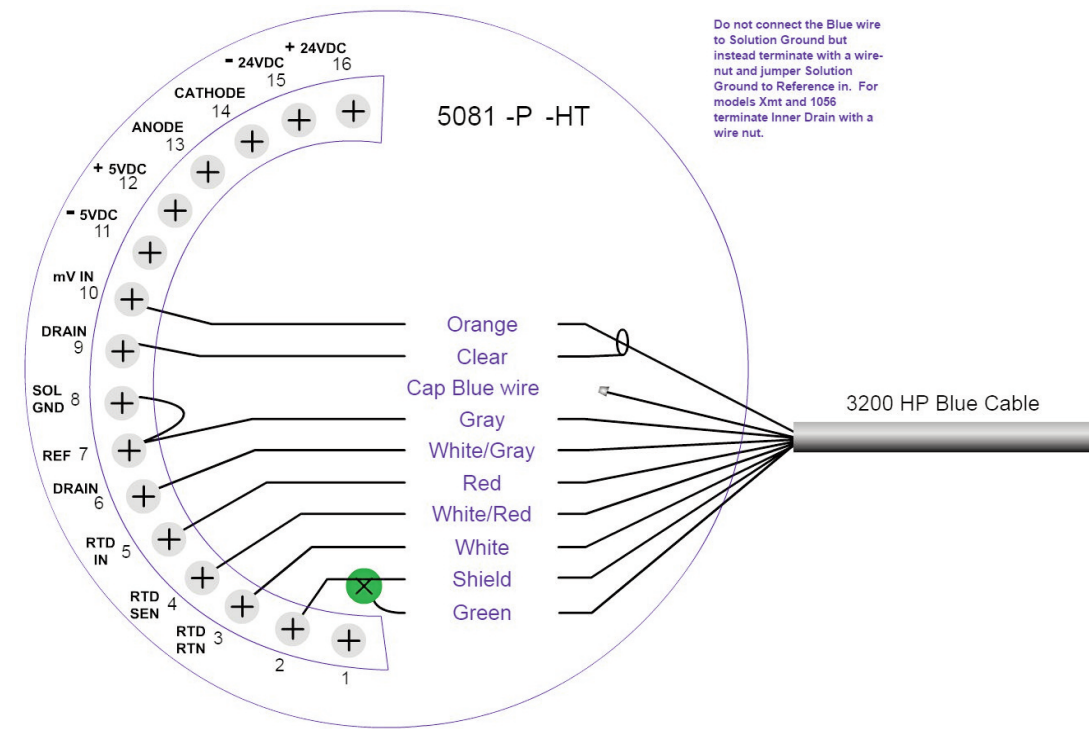


Figure 3-4: Rosemount 3200HP Sensor Wiring to Rosemount 5081 Transmitter



Section 4: Calibration

4.1 Calibration

1. Select two stable buffer solutions. Ideally, the calibration buffers should bracket the expected pH of the sample and be at least two pH units apart. Use the ring at the bottom of the back plate to hold the beaker containing the buffer.
2. Most pH meters offer automatic buffer recognition. Automatic buffer recognition means the instrument automatically calibrates using the correct pH for the buffer temperature. (The pH of a buffer, particularly one with alkaline pH, changes as the temperature changes.) If the meter does not have automatic buffer recognition, refer to the label on the buffer bottle for a table of pH versus temperature.
3. Remove the sensor from the flow cell and rinse it with deionized water. Immerse it in the first buffer. Be sure the capillary disc is completely submerged. Gently swirl the sensor in the buffer for a few seconds. Allow the sensor and buffer to reach the same temperature. Once pH readings are stable, start the calibration. Follow the procedure in the transmitter instruction manual.
4. After the sensor has been calibrated in the first buffer, remove and rinse it with deionized water. Place the sensor in the second buffer and complete the calibration.
5. After the calibration is complete, check the slope and intercept of the sensor. The slope should be between 56 and 60 mV/pH and the offset should be between -20 and 20 mV.

Section 5: Maintenance

5.1 Replacing the Electrolyte Solution (PN 9210391)

The reference electrolyte solution should last two to three months.

To replace the electrolyte solution:

1. Remove the reservoir bottle from the clip on the back plate. Turn the bottle upright.
2. Unscrew the cap without disconnecting the filter or electrolyte tube. To avoid twisting the electrolyte tube, turn the bottle, not the cap. To keep the cap and air inlet tube clean, hang the cap from the reservoir clip using the electrolyte tube.
3. Discard any remaining fill solution.
4. Pour 500 mL of new reference fill solution (PN 9210391) into the reservoir.
5. Replace the cap. Remember to turn the bottle, not the cap.
6. Invert the bottle and reattach it to the clip.
7. Bleed air bubbles from the tube and sensor. Refer to step 11 in the [Putting the Rosemount 3200HP Sensor in Service \(Section 2.3\)](#)

5.2 Replacing the Capillary Disc (PN 34142-00)

The reference capillary is protected by two filters, one on the inside of the disc and the other on the sample side. During normal operation, suspended solids in the sample coat the filter and hinder flow through the capillary. Occasionally, bacterial or fungal growth in the electrolyte solution will coat the inside filter. Eventually, as the coating builds up, the electrolyte flow becomes too low and the capillary disc must be replaced. The typical symptom of a blocked capillary disc is abnormally low use of electrolyte (500 mL of electrolyte should last no more than two months) or pH readings significantly lower (0.5 pH) than expected.

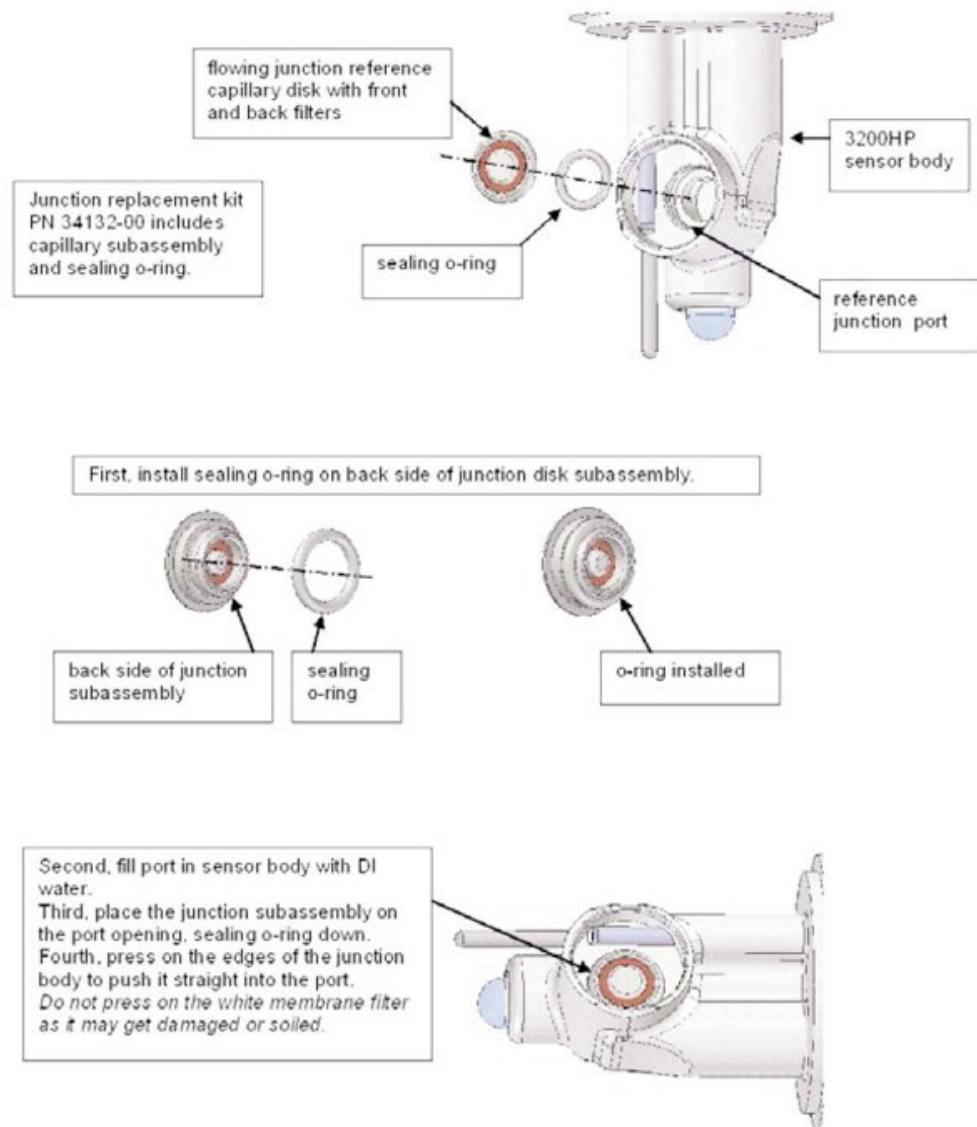
The capillary disc will also become blocked if the filters are allowed to dry out. Dried out filters cannot be rehydrated. They must be replaced.

To replace a capillary disc:

1. Lift the electrolyte reservoir out of the clip on the back plate. Turn the bottle upright and disconnect the electrolyte tube from the filter. Place the shipping plug on the filter.
2. Disconnect the VP cable from the sensor and remove the sensor from the flow cell.
3. Hold the sensor in a horizontal position with the capillary disc pointing up. Use a small screwdriver to gently pry the disc and O-ring out of the gland. Take care not to scratch the gland. See [Figure 5-1](#).
4. Remove the replacement capillary disc and O-ring from the container. Be careful not to touch the white filter membrane portion of the disc with your fingers. Wear latex gloves if necessary.
5. Place the sealing O-ring on the back side of the replacement capillary disc. See [Figure 5-1](#). Put the disc aside in a clean place. Keep the capillary disc wet. If the disc dries out it cannot be rehydrated and must be replaced.

6. Fill the reference junction port with electrolyte solution or deionized water until the level slightly overflows the port.
7. Place the new capillary disc with the sealing O-ring facing down in the port. Use your finger tips – do not let your bare fingers touch the white filter membrane – to push the capillary disc straight into the port. See [Figure 5-1](#). If inserting the disc is difficult, place the open end of a clean ¼ inch compression fitting nut on the transparent portion of the disc and push the disc into place by gently press straight down on the nut.
8. Reconnect the VP cable to the sensor. Place the sensor back in the flow cell and reattach the electrolyte tube to the reservoir filter.
9. Slide the reservoir back into the clip.
10. Bleed air bubbles from the tube and sensor. Refer to step 11 in the [Putting the Rosemount 3200HP Sensor in Service \(Section 2.3\)](#)

Figure 5-1: Replacing the capillary disc



Section 6: Troubleshooting

6.1 Troubleshooting

Table 6-1: Troubleshooting

Trouble	Probable Cause	Remedy
pH reading is in error	Electrolyte flow is too low bubbles are blocking flow or the inside membrane on the capillary disc is fouled with biological growth.	1. Remove air bubbles. Refer to step 11 in the Putting the Rosemount 3200HP Sensor in Service (Section 2.3) . 2. Discard the fill solution in the reservoir and sensor. Rinse the reservoir and sensor with fresh fill solution. Replace with fresh solution. Replace reservoir filter.
	Capillary is plugged.	Replace capillary.
	Sensor was not properly calibrated.	Check buffers for freshness and replace if necessary. Pay particular attention to alkaline buffers, which can become contaminated with atmospheric carbon dioxide. Review calibration procedure and repeat calibration.
Noisy reading	Sample flow is too high.	Adjust sample flow to between 1 and 3 gph (60 to 180 mL/min).
	Sensor is not properly oriented in flow cell.	Orient sensor so that capillary disc faces the front.
	Electrolyte flow is too low – bubbles are blocking flow or the inside membrane on the capillary disc is fouled with biological growth.	1. Remove air bubbles. Refer to step 11 in the Putting the Rosemount 3200HP Sensor in Service (Section 2.3) . 2. Discard the fill solution in the reservoir and sensor. Rinse the reservoir and sensor with fresh fill solution. Replace with fresh solution. Replace reservoir filter.
pH readings drift	Sensor is dirty.	Clean the outside capillary filter by rinsing with deionized water. Clean the pH glass bulb by rinsing with dilute hydrochloric acid. Recalibrate the sensor after cleaning.
	Unstable sample.	Fluctuations in sample flow can cause slight changes in pH reading. Keep sample flow constant. Be sure the sample drains immediately to open atmosphere.

Note: For any repair or warranty inquiries please contact our Customer Care group.

Section 7: Accessories


7.1 Accessories

Table 7-1: Accessories for Rosemount 3200HP sensor


Part Number	Description
24281-00	15 ft. cable with mating VP8 connector
24281-01	25 ft. cable with mating VP8 connector
24281-02	2.5 ft. cable with mating VP8 connector
24281-03	50 ft. cable with mating VP8 connector
24281-04	100 ft. cable with mating VP8 connector
24281-05	4 ft. cable with mating VP8 connector
24281-06	10 ft. cable with mating VP8 connector
24281-07	20 ft. cable with mating VP8 connector
24281-08	30 ft. cable with mating VP8 connector
2001492	Stainless Steel Tag
3200HP-00	3200HP Replacement pH Sensor
3200HP-OEM	3200HP pH System without Panel and without VP Cable
3200HP-OEM-01	3200HP pH System without Panel and without VP Cable, with 10 ft. VP Cable
3200HP-OEM-02	3200HP pH System without Panel and without VP Cable, with 20 ft. VP Cable
3200HP-OEM-03	3200HP pH System without Panel and without VP Cable, with 30 ft. VP Cable
24185-00	HP pH Reservoir Kit
24193-00	Calibration Cup, 100 mL
24212-00	Electrolyte Tubing
33810-00	Calibration Cup Holder
34083-00	Diffuser
34132-00	Flowing Junction Capillary Kit (Capillary Disc and O-ring)
9160590	Cartridge Filter
9210391	3200HP Electrolyte Refill, 500 mL
9601025	Air Bleed Screw
9913804	Washer for Air Bleed Screw

EC Declaration of Conformity

Note: Please see [website](#) for most recent Declaration.



EU Declaration of Conformity



(No. 1700911)

pH/ORP Sensors

This declaration is issued under the sole responsibility of the manufacturer:
Rosemount Inc., 8200 Market Blvd., Chanhassen, MN 55317 USA

The sensor models:

328A, 385, 385+ -04, 385+ -02/03, 385+ -03-12, 389-01, 389-01-10/11-50, 389-01-10/11-54, 389-01-12-50, 389-01-12-54, 389-01-12-55, 389-02, 389VP, 389VP-70, 396, 396P-01-10/13-50, 396P-01-10/13-54, 396P-01-12-50, 396P-01-12-54, 396P-01-12-55, 396P-01-55, 396VP, 396VP-70, 396R, 396RVP, 396RVP-70, 396P-02, 396PVP, 396PVP-70, 397, 398, 398VP, 398R, 398RVP, 398RVP-70, 3200HP, 3300HT, 3300HT VP, 3300HTVP-70, 3400HT, 3400HT VP, 3400HTVP-70, 3500P-01, 3500P-01-12, 3500P-02, 3500VP-01, 3500VP-01-12, 3500VP-02, 3800, 3800VP, 3900-01, 3900-02, 3900VP-01, 3900VP-02

to which this declaration relates, are in conformity with relevant Union harmonization legislation:
(2014/34/EU) ATEX Directive

Intrinsically Safe, Examination Certificate: Baseefa10ATEX0156X

Provisions of the directive fulfilled by the equipment:
Equipment Group II, Category I G Ex ia IIC T4 Ga (-20°C ≤ Ta ≤ +60°C) exceptions noted below

Model 328A Steam sterilizable pH sensor with integral cable
Model 385 Retractable pH/ORP sensor with integral cable
Model 385+ -04 pH/ORP sensor with integral cable
Model 385+ -02/03 pH/ORP sensor with integral cable & Smart preamplifier
Model 385+ -03-12 ORP sensor with integral cable & preamplifier: T4 (-20°C ≤ Ta ≤ +80°C), T5 (-20°C ≤ Ta ≤ +40°C)
Model 389-01 pH sensor with integral cable & Smart preamplifier
Model 389-01-10/11-50 pH sensor with integral cable & preamplifier: T4 (-20°C ≤ Ta ≤ +80°C) or T5 (-20°C ≤ Ta ≤ +40°C)
Model 389-01-10/11-54 pH sensor with integral cable & preamplifier: T4 (-20°C ≤ Ta ≤ +80°C) or T5 (-20°C ≤ Ta ≤ +40°C)
Model 389-01-12-50 ORP sensor with integral cable & preamplifier: T4 (-20°C ≤ Ta ≤ +80°C)
Model 389-01-12-54 ORP sensor with integral cable & preamplifier: T4 (-20°C ≤ Ta ≤ +80°C)
Model 389-01-12-55 ORP sensor with integral cable & preamplifier: T4 (-20°C ≤ Ta ≤ +80°C)
Model 389-02 pH/ORP sensor with integral cable
Model 389VP-70 pH sensor with Variopole connector & Smart preamplifier
Model 389VP pH/ORP sensor with Variopole connector
Model 396 TU pH sensor with integral cable
Model 396P-01-10/13-50 polypropylene pH sensor with integral cable & preamp: T4 (-20°C ≤ Ta ≤ 80°C) or T5 (-20°C ≤ Ta ≤ 40°C)
Model 396P-01-10/13-54 polypropylene pH sensor with integral cable & preamp: T4 (-20°C ≤ Ta ≤ 80°C) or T5 (-20°C ≤ Ta ≤ 40°C)
Model 396P-01-12-50 ORP sensor with integral cable & preamp: T4 (-20°C ≤ Ta ≤ +80°C)
Model 396P-01-12-54 ORP sensor with integral cable & preamp: T4 (-20°C ≤ Ta ≤ +80°C)
Model 396P-01-12-55 ORP sensor with integral cable & preamp: T4 (-20°C ≤ Ta ≤ +80°C)
Model 396P-01-55 pH sensor with integral cable & Smart preamp
Model 396VP TU pH sensor with Variopole connector
Model 396VP-70 TU pH sensor with Variopole connector & Smart preamplifier
Model 396R TU pH Retractable pH/ORP sensor with integral cable
Model 396RVP TU pH Retractable pH/ORP sensor with Variopole connector
Model 396RVP-70 TU pH Retractable pH sensor with Variopole connector & Smart preamplifier
Model 396P-02 TU pH Polypropylene pH/ORP sensor with integral cable
Model 396PVP TU pH Polypropylene pH/ORP sensor with Variopole connector
Model 396PVP-70 TU pH Polypropylene pH sensor with Variopole connector & Smart preamplifier
Model 397 TU pH sensor with integral cable
Model 398 TU pH pH/ORP sensor with integral cable
Model 398VP TU pH pH/ORP sensor with Variopole connector
Model 398R TU pH Retractable pH/ORP sensor with integral cable
Model 398RVP TU pH Retractable pH/ORP sensor with Variopole connector
Model 398RVP-70 TU pH Retractable pH sensor with Variopole connector & Smart preamplifier
Model 3200HP Flowing junction pH sensor with Variopole connector
Model 3300HT Insertion/submersion pH sensor with integral cable
Model 3300HTVP Insertion/submersion pH sensor with Variopole connector
Model 3300HTVP-70 Insertion/submersion pH sensor with Variopole connector & Smart preamplifier
Model 3400HT Retractable pH sensor with integral cable
Model 3400HTVP Retractable pH sensor with Variopole connector
Model 3400HTVP-70 Retractable pH sensor with Variopole connector & Smart preamplifier
Model 3500P-01 High performance pH sensor with integral cable & Smart preamplifier
Model 3500P-01-12 PerpH-X ORP sensor with integral cable & preamplifier: T4 (-20°C ≤ Ta ≤ +80°C)
Model 3500P-02 High performance pH sensor with integral cable
Model 3500VP-01 High performance pH sensor with Variopole connector & Smart preamplifier
Model 3500VP-01-12 PerpH-X ORP sensor with Variopole connector & preamplifier: T4 (-20°C ≤ Ta ≤ +80°C)
Model 3500VP-02 High performance pH sensor with Variopole connector
Model 3800 Steam sterilizable pH sensor with single pole Eurocap connector

Model 3800VP Steam sterilizable pH sensor with Variopole connector
 Model 3900-01 pH/ORP sensor with integral cable & Smart preamplifier
 Model 3900-02 pH/ORP sensor with integral cable
 Model 3900VP-01 pH sensor with Variopole connector & Smart preamplifier
 Model 3900VP-02 pH/ORP sensor with Variopole connector

Special conditions for safe use:

- 1) All pH/ORP sensor models with a plastic enclosure or exposed plastic parts may provide an electrostatic ignition hazard and must only be cleaned with a damp cloth to avoid the danger of ignition due to a build up of electrostatic charge.
- 2) All pH/ORP sensor models with a metallic enclosure may provide a risk of ignition by impact or friction. Care should be taken during installation to protect the sensor from this risk.
- 3) External connections to the sensor must be suitably terminated and provide a degree of protection of at least IP20.

All pH/ORP sensor models are intended to be in contact with the process fluid and may not meet the 500V r.m.s test to earth. This must be taken into consideration at installation.

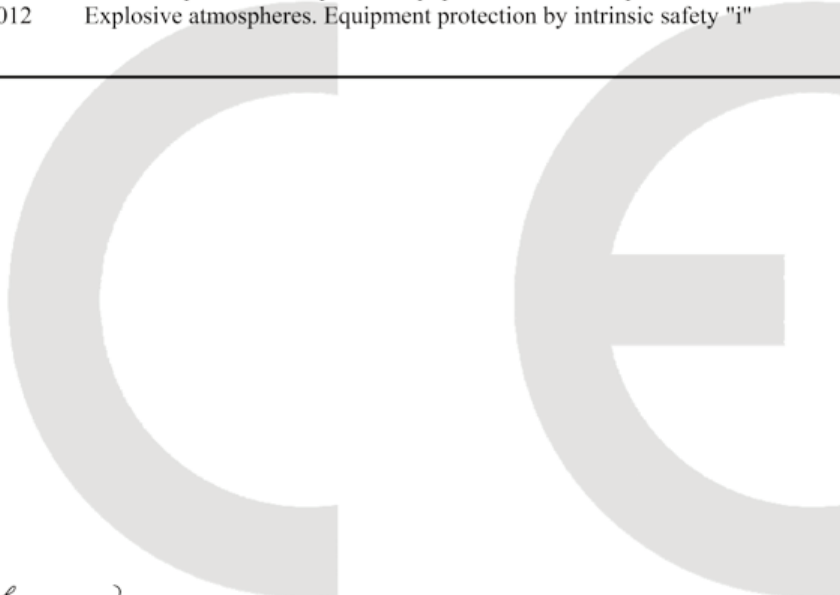
ATEX Notified Body for EC Type Examination Certificate & Quality Assurance:

SGS Baseefa[Notified Body Number:1180], Rockhead Business Park, Staden Lane, Buxton SK17 9RZ UNITED KINGDOM

Assumption of conformity is based on the application of the harmonized standards:

EN 60079-0:2012+A11:2013 Explosive atmospheres. Equipment. General requirements

EN 60079-11:2012 Explosive atmospheres. Equipment protection by intrinsic safety "i"



Kim Freeman

(Signature)

Kim Freeman
(Name printed)

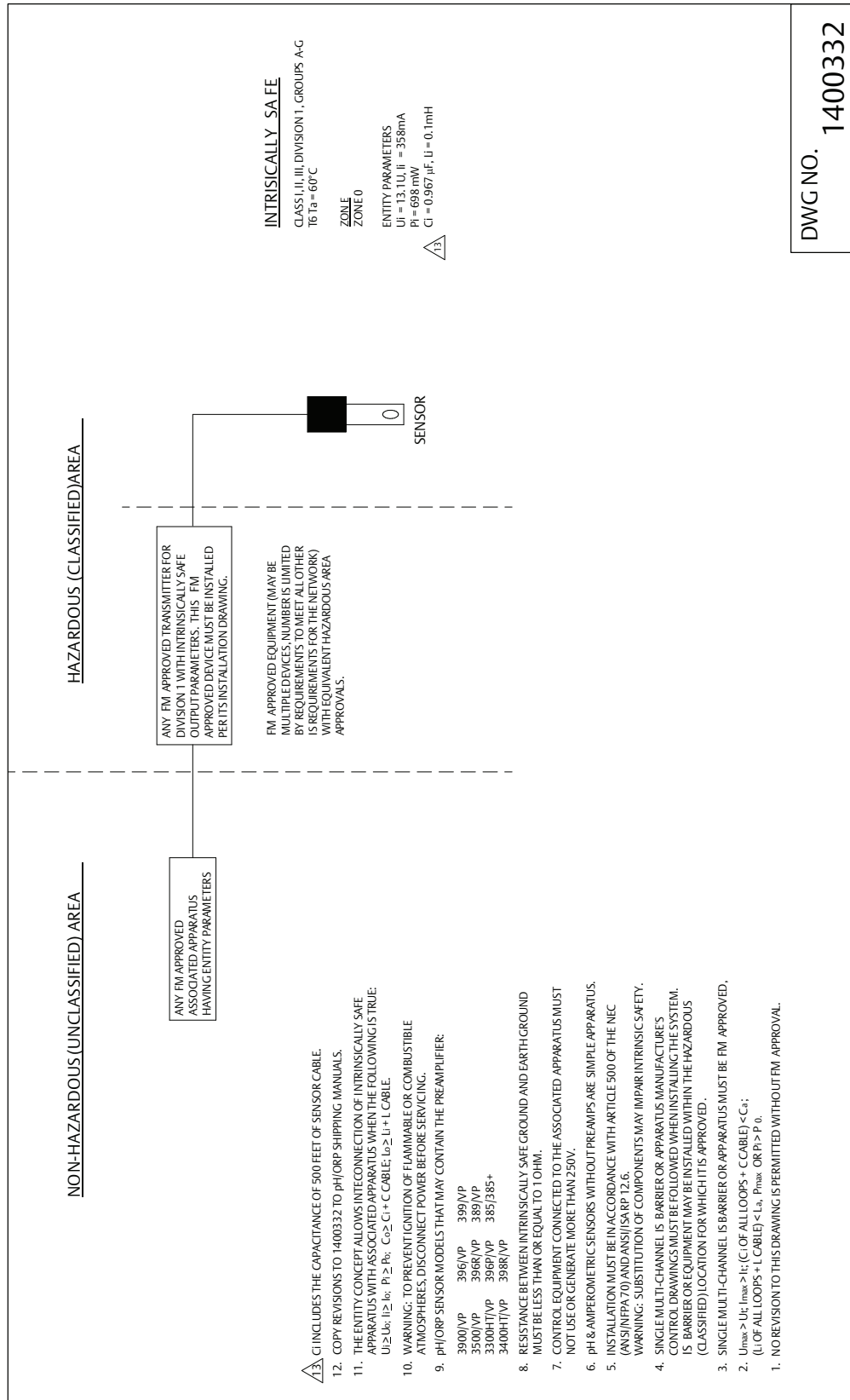
Director of Global Quality

(Function name)

March 23, 2017
(Date of issue)

CE marking was first affixed to this product in 2011

Intrinsically Safe Sensor Installation Drawing - FM



DWG NO. 1400332

www.Emerson.com/RosemountLiquidAnalysis



[Youtube.com/user/Rosemount](https://www.youtube.com/user/Rosemount)



Analyticexpert.com



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