

## Wet Differential Pressure Sensor with Manifold Assembly

### Product Description

The Siemens Wet Differential Pressure Sensors utilize a unique, well-proven ceramic technology making them ideal for applications across a broad spectrum of industries. These sensors are unidirectional with a three-valve manifold.

### Product Numbers

Product Number	Burst Pressure on High Side (psi)	Differential Pressure Rating (psi)	Differential pmax.* (psi)
QBE3190UD25	543	0 to 25	72
QBE3190UD50		0 to 50	116
QBE3190UD100		0 to 100	290

### Pressure Rating



#### CAUTION:

- The maximum manifold pressure rating is 250 psi.
- \* Reference the sensors' pmax. rating. Exceeding the recommended pressure will damage the sensor.

### Warning/Caution Notations

<b>WARNING:</b>		Personal injury/loss of life may occur if you do not follow the procedures as specified.
<b>CAUTION:</b>		Equipment damage/loss of data may occur if you do not follow the procedures as specified.

### Contents

- Sensor/manifold assembly
- Rubber gasket
- Non-conduit assembly kit
- Conduit cap

### Required Tools

- Thread sealant (Loctite 565 or equivalent)
- (2) crescent wrenches: 1/2", and 9/16"
- Small, Phillips screwdriver
- Small, flat-blade screwdriver
- (2) 6-32 sheet metal screws or nylon tie wraps

### Installation Time

30 minutes

### Prerequisites

- Use two male connector compression fittings with 1/4"-18 NPT threads rated for system pressure for the HIGH and LOW pressure ports of the manifold.
- Prepare the fittings with Loctite 565 Thread Sealant or equivalent anaerobic liquid to prevent leakage.



#### CAUTION:

Do not use putty, gasket-type material, or tape.

### Installation

#### Pressurizing the System

- Before the system is pressurized ensure that:
  - Valves V1 and V2 are closed.
  - Valve V3 is open.

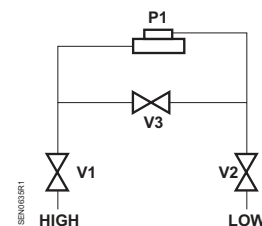
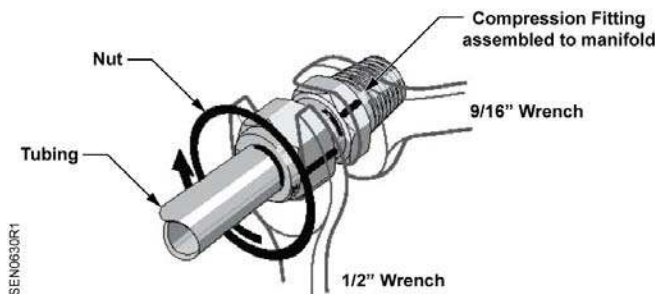


Figure 1. Sensor Flow Loop.

## Installing the Sensor/Manifold Assembly

1. Assemble compression fittings to the manifold finger-tight, and then tighten a minimum 2 to 3 turns with 5/8" wrench or to a maximum 25 ft-lbs (34 Nm). See Figure 2.
2. Insert the HIGH and LOW pressure lines into the appropriate pressure port compression fittings at the bottom of the manifold. Be sure to fully insert the pressure lines against the inside shoulder and finger-tighten the nut.
3. While holding the fitting body with the 9/16" wrench, tighten the nut 1-1/4 turn with the 1/2" wrench.

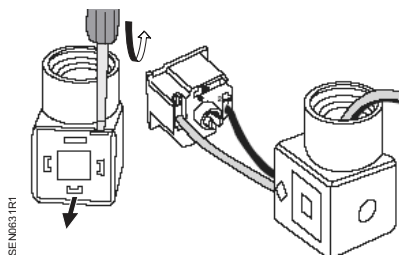


**Figure 2. Attaching Compression Lines to the Compression Fittings.**

4. Pressurize the system, and then:
  - a. Slowly open valves V1 and V2.
  - b. Close valve V3.

## Wiring

1. Use a Phillips or flat-blade screwdriver to completely remove the mounting screw from conduit cap.
2. Use a flat-blade screwdriver to pry up the termination board where indicated. (LIFT is embossed on the cover.) See Figure 3.

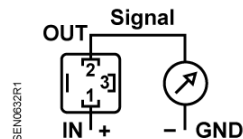


**Figure 3. Accessing and Connecting to the Wiring Terminals.**

3. Feed wiring through the conduit cap and terminate wires as shown.

**NOTE:** For non-conduit installations, insert the plastic connection with washer from the Non-conduit Assembly Kit before terminating wires.

### Current Output



### Terminal

- |                |                                 |
|----------------|---------------------------------|
| <b>1 (IN)</b>  | Operating voltage 7.5 to 33 Vdc |
| <b>2 (OUT)</b> | Output signal 4 to 20 mA        |
| <b>3</b>       | Not used                        |

**Figure 4. Wiring Terminals, Sensor Top View.**

4. Snap the termination board back into the conduit cap.

**NOTE:** The termination board can be oriented in any direction.

5. Remove white, protective cap from sensor.
6. Insert rubber gasket onto sensor's metal leads. Observe the different slot sizes on the gasket.



### CAUTION:

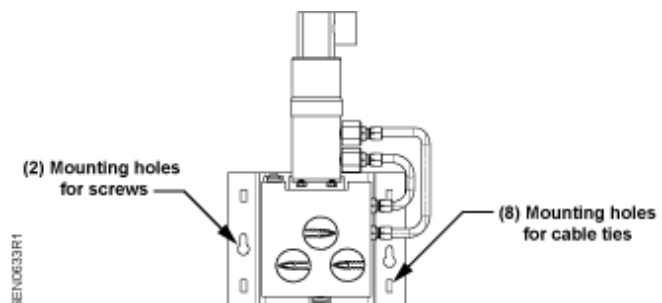
Lead slots in the conduit cap must be oriented to the sensor's metal leads.

**NOTE:** The ground lead may appear slightly bent, but do not attempt to straighten it. Insert the ground lead into the conduit cap first to correct any alignment issues.

7. Snap conduit cap onto sensor.
8. Replace and secure with the mounting screw.

## Mounting the Sensor/Manifold Assembly

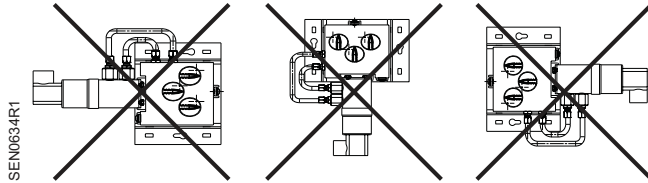
1. Use two screws or required number of nylon tie wraps to mount the sensor/manifold assembly.



**Figure 5. Mounting Options and Approved Position.**

## Mounting the Sensor/Manifold Assembly (Continued)

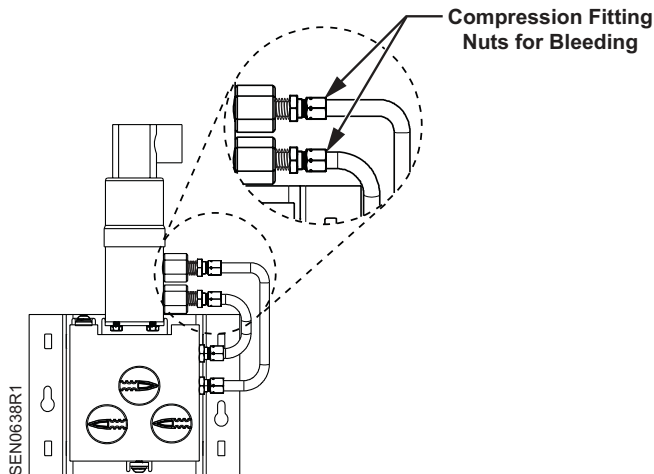
2. Ensure that the sensor is mounted vertically. The conduit cap may be positioned to face left, right, front or back.



**Figure 6. Unapproved Mounting Positions.**

3. If air bleeding is desired:
  - a. Carefully loosen the two nuts of the compression fittings assembled to the sensor. See Figure 7.

**NOTE:** While holding the fitting body with the 9/16" wrench, loosen the nuts with the 1/2" wrench.



**Figure 7. Compression Fitting Nuts Location.**

- b. Carefully tighten the nuts after bubble-free media flows out.

The installation is now complete.

Information in this publication is based on current specifications. The company reserves the right to make changes in specifications and models as design improvements are introduced. Product or company names mentioned herein may be the trademarks of their respective owners. © 2012 Siemens Industry, Inc.