Quick Start Guide

Tek-Bar 3800XH

Multivariable Transmitter

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Quick Start Guide

1. Before you begin

This guide provides basic guidelines to assist you in quickly getting started.

Installation of the transmitter in an explosive environment must be in accordance with the appropriate local, national, and international standards, codes, and practices. Review the approvals section of the 3800XH Multivariable Transmitter reference manual for any restrictions associated with a safe installation.

Do not remove the transmitter covers in explosive environments when the circuit is live.

Make sure the transmitter is installed by qualified personnel and in accordance with applicable codes of practice.

2. Unpack

Tek-Bar 3800XH Multivariable Transmitter

3. Dimensional Drawings

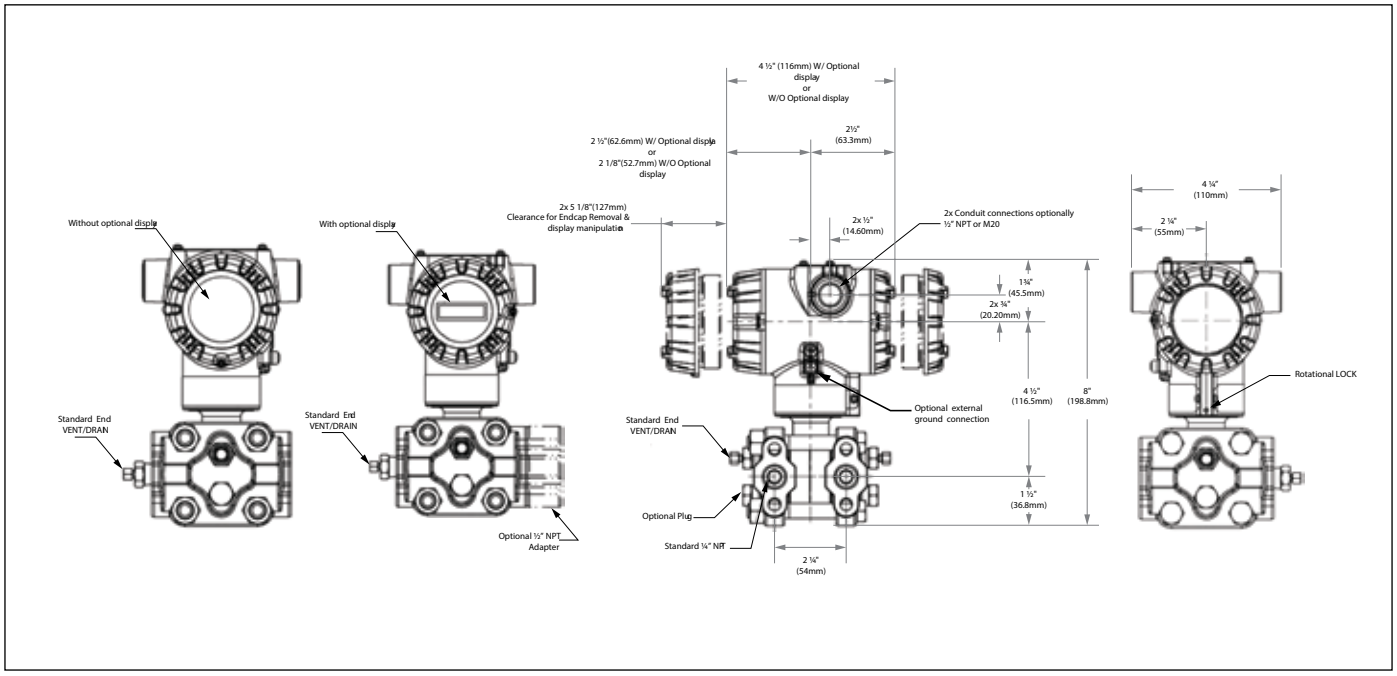

Fig 1: Mounting Dimensions

4. Display

The Tek-Bar 3800XH Multivariable Transmitter has an Advanced display.

Table 1: Advance Display Settings

Advanced Display	Screen Format
	Large process variable (PV)
	PV with bar graph
	PV with trend (1-24 hours, configurable)
	PV Selection
	Display Units
	Decimals
	PV Scaling
	Scaling Low
	Scaling High
	Display Low Limit
	Display High Limit
	Scaling Unit
	Screen Custom Tag
	Trend Duration (h)

Optional 3-Button Assembly

The optional 3-button assembly provides the following features:

Opportunity for immediate reaction with minimal disruptions.

- Improved maintenance time.
- Potential savings on hand-held units.
- Suitable for all environments hermetically sealed for long life in harsh environments.
- Suitable for use in all electrical classifications (flameproof, dustproof, and intrinsically safe).

The 3-button assembly is externally accessible and provides the following capabilities:

- Menu-driven configuration with optional display: Using increment, decrement & enter keys.
- A comprehensive on-screen menu guides the way Configure the transmitter Configure the display Set zero and span.
- Zero and span settings without optional display.

5. Power Supply

Before doing wiring work, turn OFF the power supply to prevent electric shocks. Connect a power source with the correct rating to prevent an accident.

Ensure installation of the transmitter meets applicable state and national electrical code requirements.
Do not remove the transmitter covers in explosive environments when the circuit is live.
Both transmitter covers must be fully engaged to meet explosion-proof requirements.

Note: For more information on Power Supply, refer to the detailed manual.

Conduit Entry Connectors, Plugs and Adapters

Table 1: Plug Tightening Tools

Description	Tool	Torque	
M20 Conduit Entry	10mm Hex Wrench	32NM	24Lb-ft
½" Conduit Entry	10mm Hex Wrench	32NM	24Lb-ft

Table 2: Adapter Tightening Tools

Description	Tool	Torque	
½" to ¾" NPT Adapter	1 ¼" Wrench	32NM	24Lb-ft

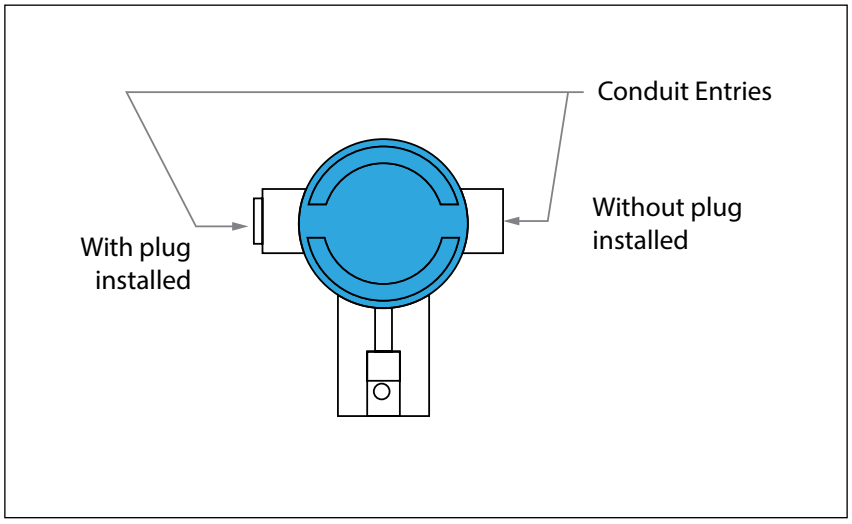

Fig 2: Electronic Housing Conduit Entry

Power Supply Voltage Within The HART/DE Operating Range

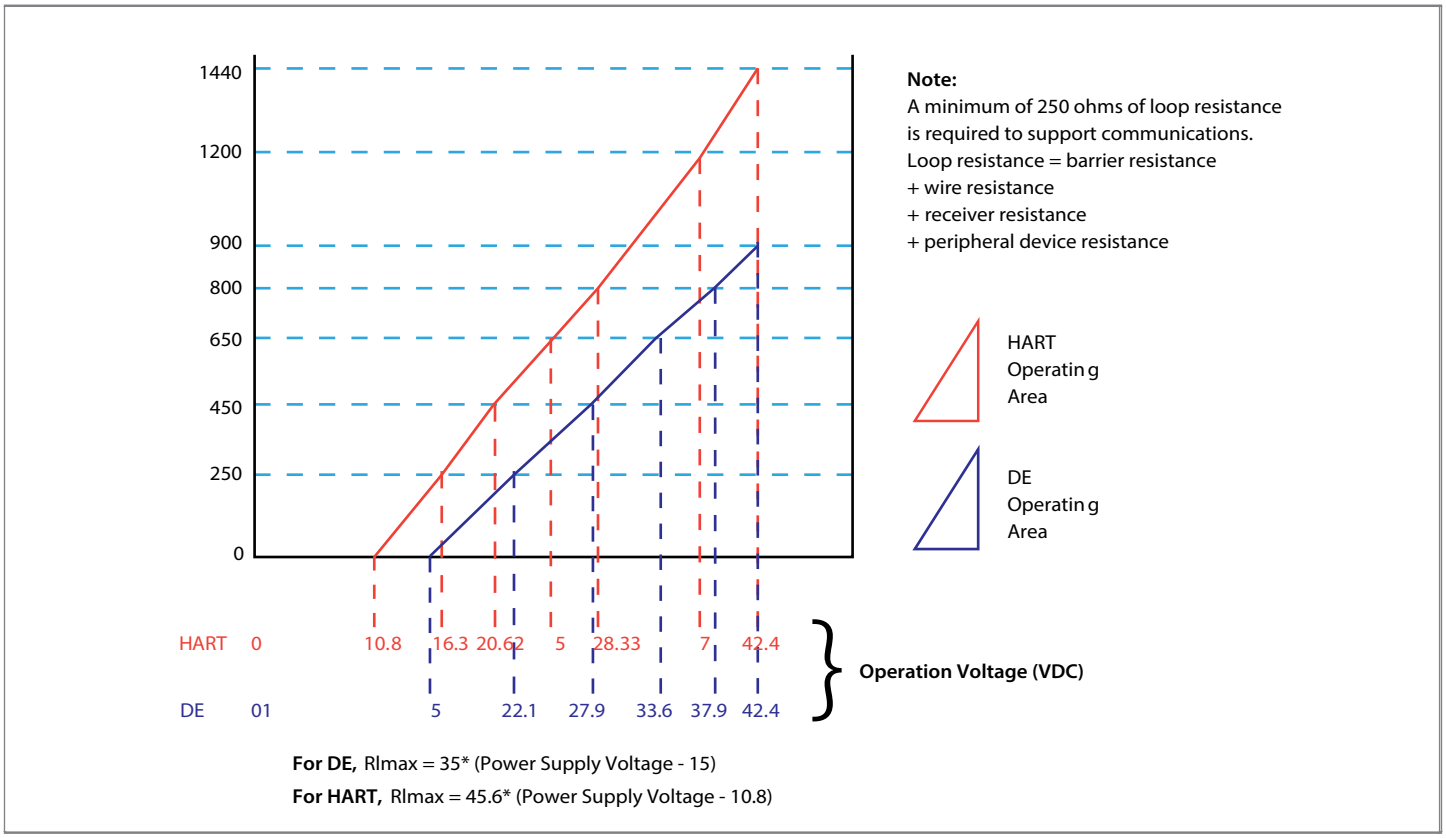

Fig 3: Two-wire power or current loop

Supply Voltage for Modbus (RS-485)

Table 3: Modbus Supply Voltage Requirements

Power Supply	9.5V to 30VDC at terminals.
Power Consumption	Average power consumption is 70mW at 9.5V Supply
Baud Rate	9600 baud rate at a rate of once per second without termination at room temperature.

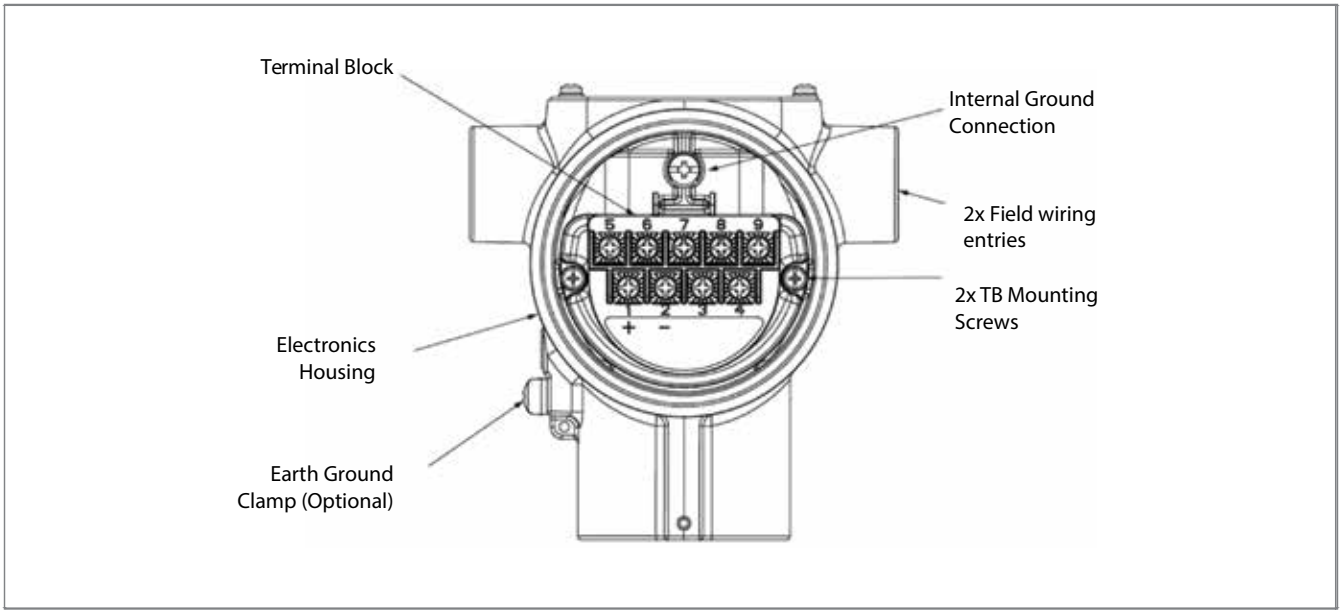

Fig 4: Terminal Block and Grounding Screw location

Input Sensor Wiring

Figure 5 shows the input sensor wiring

RTD Connection

The wire terminal 3 or 4 is used to RTD (Resistance Temperature Detector) measurements. The transmitter determines by itself if a 3 or 4 wire RTD is connected when powered up.

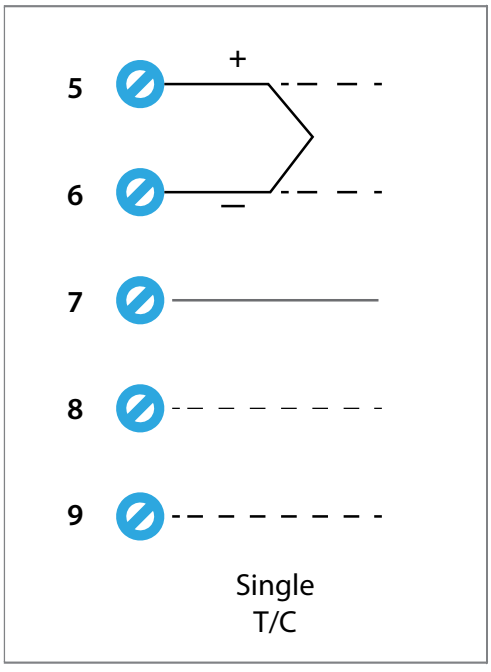

Fig 5: Thermocouple Connections

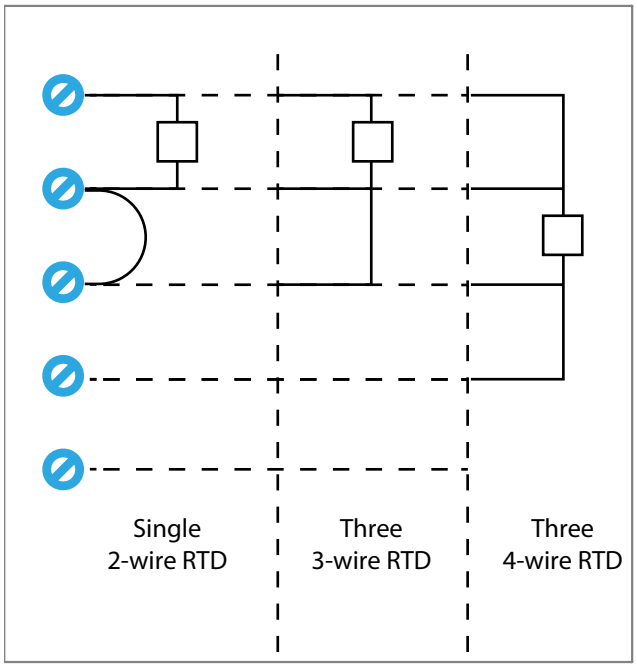

Fig 6: RTD Connection

Loop Wiring (HART/DE)

- Please consider, or screw location is shown in figure 4.
- Please, remove the end cap cover from the terminal block end of the electronics housing.
- Feed loop power on both sides of the electronics housing leads through one end of the conduit entrances. The transmitter accepts up to 16 AWG wire.
- Shield of the cable to be grounded on the supply or host side.
- Connect the positive loop power lead to the positive (+) terminal and the negative loop power lead to the negative (-) terminal. Note that the transmitter is not polarity sensitive.
- Feed input sensor wires through the 2nd conduit entrance and connect the wire.
- Replace the end cap and secure it in place.

Modbus Power Supply Wiring

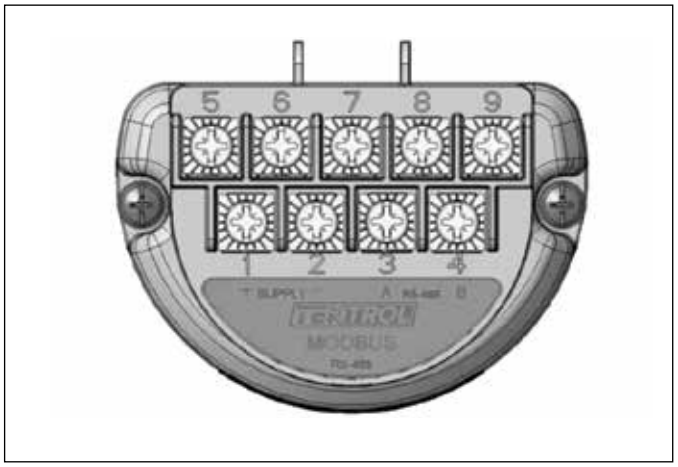

Fig 5 : Wiring Connection of Modbus Terminal Block

Table 4: Wiring Details of Modbus Terminal Block

Terminal Number	Description
1	Power Supply input +ve
2	Power Supply input -ve (Return)
3	Modbus (RS-485) A
4	Modbus (RS-485) B
5	Temperature Sensor Input
6	Temperature Sensor Input
7	Temperature Sensor Input
8	Modbus (RS-485) Common

6. Installation

This section covers instructions on installation and commissioning. Installation of the device must be carried out by trained; qualified specialists authorized to perform such works.

Mounting

1. Transmitter Mounting

Transmitter can be attached to a 2" (50mm) vertical or horizontal pipe with optional angle or flat mounting bracket.

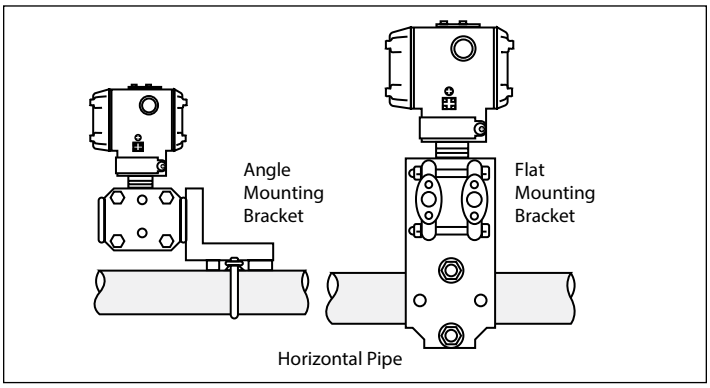

Fig 6: Transmitter Mounting

2. Bracket Mounting

Position bracket on 2" (50mm) and install "U" bolt around he pipe and through holes in the bracket. Secure with nuts and lock washers provided.

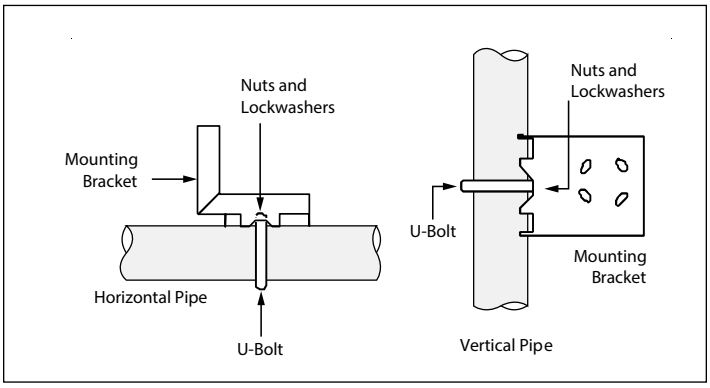

Fig 7: Angle Mounting Bracket

3. Transmitter Housing Rotation

Use a 2mm hex wrench to loosen the set screw on outside neck of transmitter one full turn. Rotate the transmitter housing to a maximum of 180° increment in left or right direction from center to position you require and tighten set screw (1.46 to 1.68 Nm/13 to 15 lb-in).

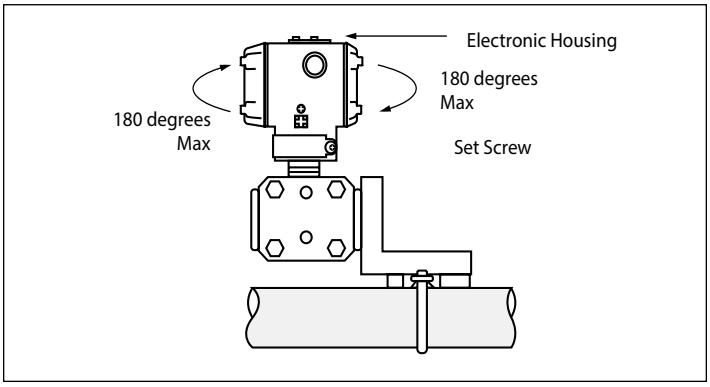

Fig 8: Rotating Transmitter Housing

4. Leveling Transmitters with Small Absolute or Differential Pressure Spans

- The mounting position of the transmitter is critical due to the smaller transmitter span.
- Take the appropriate mounting precautions to minimize these positional effects on calibration (zero shift).
- How to level the transmitter using a spirit balance is shown in figure 6. To perform a Zero Trim after leveling, refer to Trim the Transmitter.

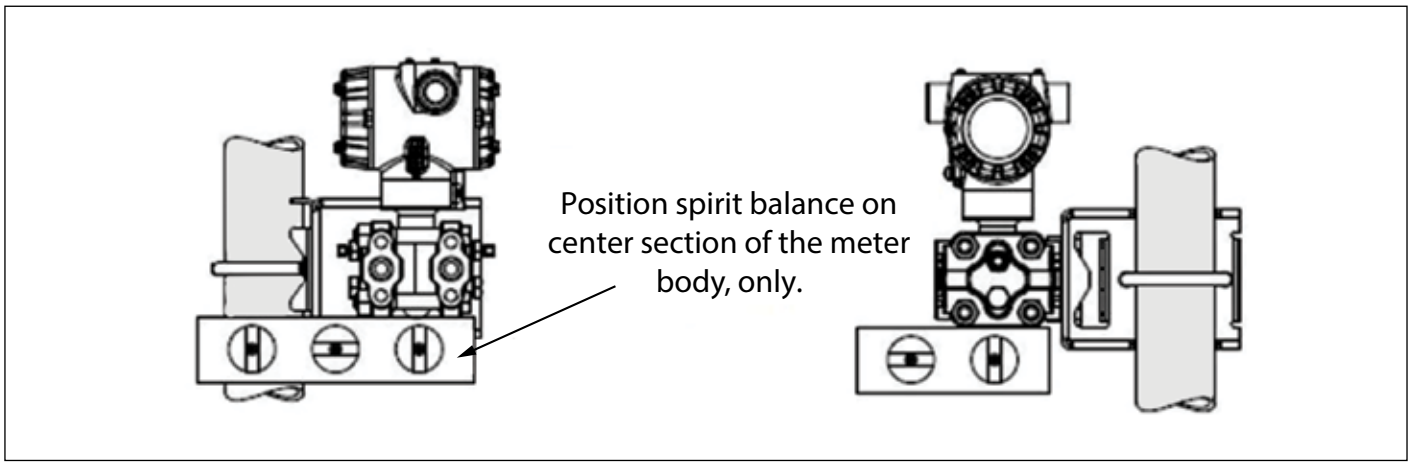

Fig 9: Using Level to Mount Transmitter

- Please ensure that the transmitter is vertical when mounting it.
- You can do leveling the transmitter side-to-side and front-to-back.
- Mount transmitter vertically to assure the best accuracy.
- Position a spirit balance on the pressure connection surface of the AP body

7. Troubleshooting

Using the 3800XH Multivariable Transmitter in the on-line mode you can check the transmitter status by navigating into Monitoring tab, identify diagnostic messages and access troubleshooting information so you can clear fault conditions.

The 3800XH Multivariable diagnostic messages fall into any one of the following general categories:

- Critical
- Details of Critical Fault
- Device Variables Status
- Warning
- Information

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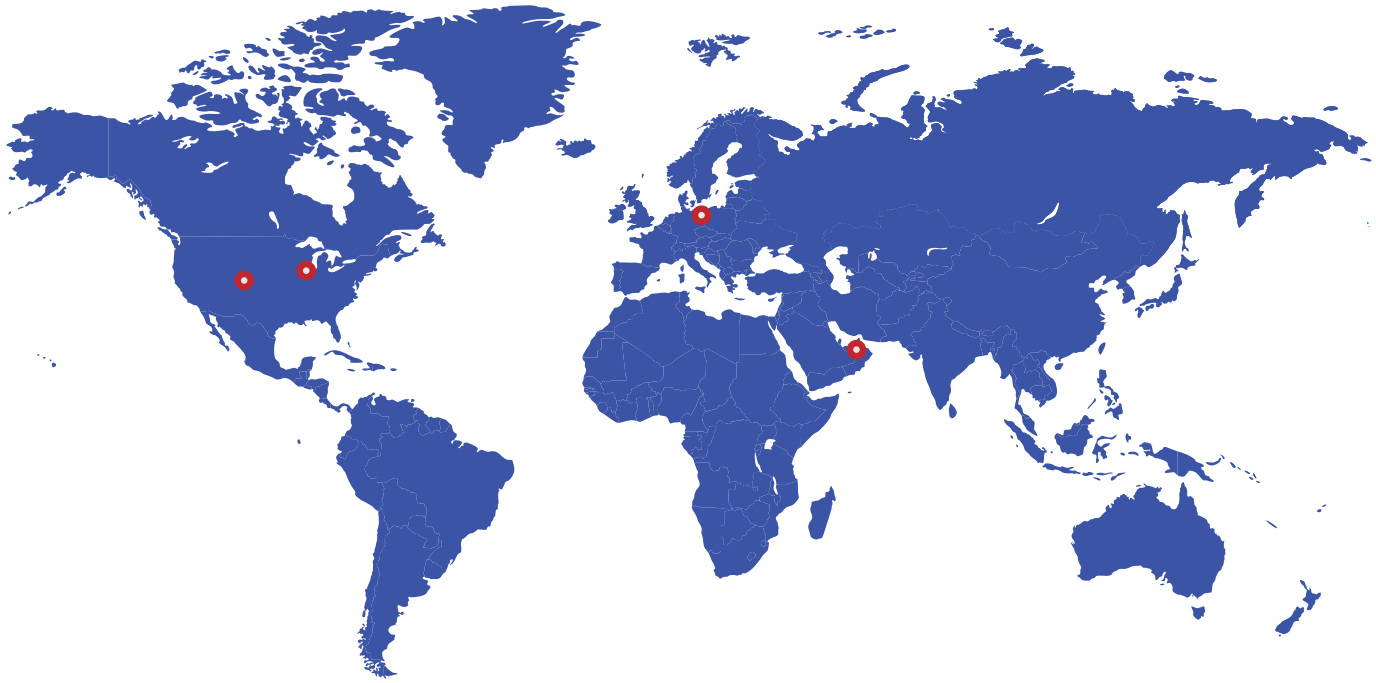

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