

General

The **Smith Meter® Model PPS (Photo-Electric Pulse Security) Transmitter** is a photo-electric, dual channel, high resolution, pulse generator that is directly connected to the output shaft of a positive displacement meter.

The PPS Transmitter is installed at the lowest level in the meter accessory stack. It is designed to be mounted directly on the meter dome adaptor and replaces the manual calibrator. If other mechanical stack accessories are required, a calibrator adaptor kit is used for mounting the manual calibrator above the PPS Transmitter.

Offshore Trim

This sealed version of the PPS Transmitter should be used on such applications as offshore drilling platforms where optimum protection against corrosive atmosphere is required.

Reference Publications

- Parts List P0904.50¹

Receipt of Equipment

When the equipment is received, the outside packing case should be checked immediately for any shipping damage. If the packing case has been damaged, the local carrier should be notified at once regarding his liability. Carefully remove the unit from its packing case and inspect for damaged or missing parts.

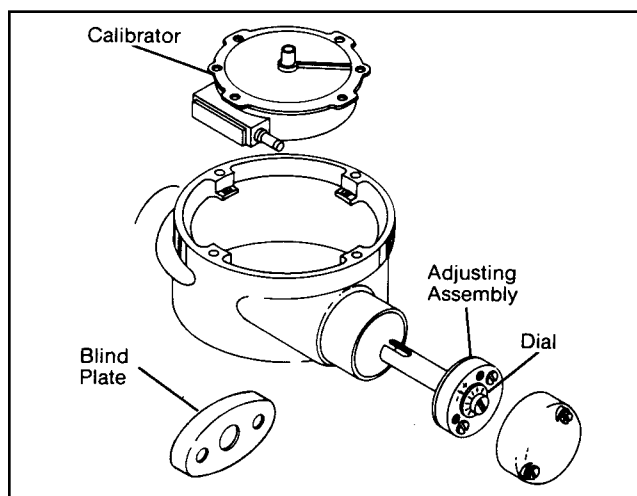
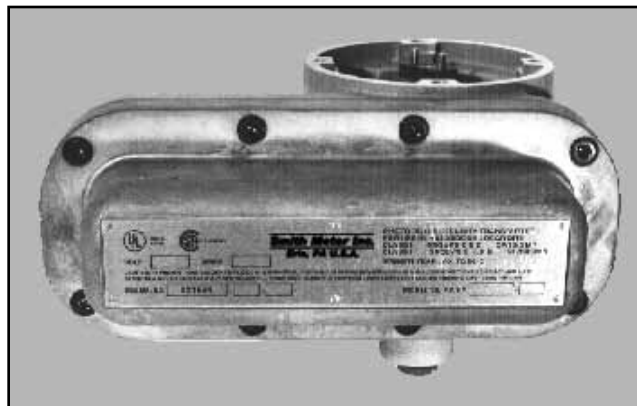
If damage has occurred during shipment or parts are missing, a written report should be submitted to the Customer Service Department, FMC Technologies Measurement Solutions, Inc., Erie, Pennsylvania.

Prior to installation, the unit should be stored in its original packing case and protected from adverse weather conditions and abuse.

Mechanical Installation

When ordered with a Smith Meter Positive Displacement (PD) meter, the Model PPS Transmitter will normally be factory installed directly on the meter. The following steps are required for field mounting the PPS Transmitter to a Smith Meter PD meter:

1. Remove all accessories (counters, mechanical temperature compensators, transmitters, etc.) from the meter.



2. Remove the existing calibrator, located inside the meter dome adaptor.
 - a. Remove the cap protecting the external calibrator adjusting stem by removing the two mounting screws.
 - b. Indicate the calibrator setting with a line that intersects the calibrator dial and its adjacent part.
 - c. Remove the calibrator adjusting assembly by removing the two mounting screws and carefully withdrawing the stem assembly from the housing without changing the adjusting screw.
 - d. Remove the calibrator from the meter dome adaptor by removing the two small hold-down screws and carefully rotating the calibrator body clockwise.
 - e. Attach the blank-off plate (provided in the adaptation kit) over the calibrator stem assembly hole.

¹ The latest addition is indicated by a change in the last digit (e.g., .50, .51, etc.)

3. Mount the PPS Transmitter onto the meter dome adaptor. A weatherproof gasket and three 3/8" - 16 x 1-1/4" mounting bolts are provided. Care must be taken to properly engage the transmitter coupling or gear to the meter drive coupling or gear.

For adaptation to old style (single case) PD meter (old style PD meters include Models AB, AS, B, or S-12, 13, 24, 28, 30, 35, 42, 45, 50, 60, 65, 75, and 100), also mount the 5/8" spacer between the PPS Transmitter and meter dome adaptor. An additional weatherproof gasket and longer mounting bolts are provided.

4. If additional stack accessories are not required, install a blind cover plate (10078-1) on the top of the PPS Transmitter. The manual calibrator and other parts removed in previous steps can be discarded (see note below).
5. If additional stack accessories are required, reinstall the previously removed calibrator and stem assembly into the new calibrator adaptor housing located on top of the transmitter by reversing the removal procedure described in Step 2 above (see note below).
6. Install oiler in calibrator housing (parts provided in the adaptation kit):
 - a. Attach tube to oiler.
 - b. Insert tube through calibrator housing.
 - c. Drive oiler (force fit) into housing.
 - d. Attach oiler tube to top of calibrator, just below drive coupling.
7. Reassemble the accessories (counter, mechanical temperature compensator, etc.) onto the calibrator housing.
8. Check the calibrator setting and adjust (if necessary) to the setting recorded in Step 2b. Recalibration of the meter may be required due to breaking of seals on original calibrator adjustment and is recommended to maintain optimum meter accuracy.

For adaptation to old style PD meters, the meter must be recalibrated because the new factory-installed calibrator is not adjusted.

9. If desired, a seal wire can be installed (like a belt) around the middle of the PPS Transmitter cover and housing to prevent unauthorized tampering with internals.

Note: With the calibrator removed from the meter, the oiler fitting on the PD meter is no longer needed and should be sealed off.

Electrical Installation

CAUTION: To prevent ignition of hazardous atmospheres, disconnect from supply circuit before opening. Keep tightly closed when circuits are in operation.

- A) A female NPT conduit thread entry is provided on the housing. The entry will have a thread protector that must be removed. A minimum of 12 inches of flexible conduit and a conduit union fitting should be used to join the housing to rigid conduit. This will

facilitate later removal and replacement of the PPS Transmitter.

Important: *Cut shield back to insulation and tape. Terminate shield at receiving instrument.*

- B) Double check all field wire connections before operation. Incorrect wiring may damage or destroy the circuitry in the PPS Transmitter.

European EU Installations

- A) Cable entry must be in accordance to EN 50018. For systems utilizing cable glands, the gland and/or the thread adaptor must be EEx certified. The cable end must be securely installed and, depending on the cable type, be properly protected from mechanical damage.
- B) Conduit entry must be in accordance to EN 50018. For systems utilizing conduit, an EEx certified sealing device must be used immediately at the entrance of the enclosure.
- C) Any unused entry must be suitably blocked with an EEx certified plug.

Maintenance












The PPS Transmitter has all self-lubricating bearings and a sealed transmitter assembly so preventative maintenance is not required.

Servicing

If the PPS Transmitter is not generating a signal and all external connections have been inspected:

1. Remove all power from the unit.
2. Remove the front cover.
3. Check that the interconnect ribbon cable between the transmitter and interface circuit board is securely connected at both ends.
4. Remove the interface circuit board and visually inspect for damage. Replace if necessary.
5. Remove the transmitter for inspection by removing the two bracket mounting screws and aligning/removing the hooked-shaped end of the cotter pin located under the coupling on the bottom of the transmitter. This will allow the coupling to slip down the shaft and allow the transmitter to be removed. Replace the transmitter by reversing the removal procedure.

Wiring Diagram

Function	Standard Version Pin Connections	"Gulf-Proof" Version Terminal Block Connections
Electronics Ground	[1] ∅	 [1]
Input Power (10-28 Vdc)	[2] ∅	 [2]
Channel "B" Output	[3] ∅	 [3]
Channel "B̄" Output	[4] ∅	 [4]
Channel "A" Output	[5] ∅	 [5]
Channel "Ā" Output	[6] ∅	 [6]
(Not Used)	[7] ∅	 [7]
Verification Pulse Output	[8] ∅	 [7] Earth Ground ²
Verification Pulse Contacts Form C.	[9] ∅	 [8] (Not Used)
Normally-open relay contacts that close in synchronous with the marker pulse (one contact per revolution).	[10] ∅	 [9]
		 [10]

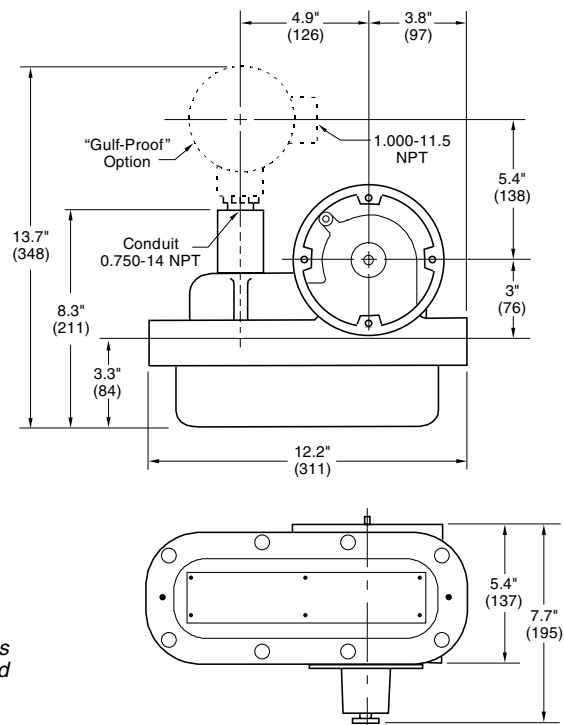
Dimensions

Inches (mm)

Weight

Standard Version: 15.5 lb.

"Gulf-Proof" Version: 23.0 lb.



Note: Dimensions – Inches to the nearest tenth (millimetres to the nearest whole mm), each independently dimensioned from respective engineering drawings.

² To inside of PPS Transmitter.

Revisions included in MN01036 Issue/Rev. 0.1 (3/11):
Modified Electrical Installation section on Page 2. Wiring diagram and illustration with dimensions added page 3.

The specifications contained herein are subject to change without notice and any user of said specifications should verify from the manufacturer that the specifications are currently in effect. Otherwise, the manufacturer assumes no responsibility for the use of specifications which may have been changed and are no longer in effect.

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