



PDFlo™ PDFOP

FIBER OPTIC SENSOR



DESCRIPTION

PDFlo™ PDFOP fiber optic sensors are designed to transmit a safe fiber optic signal, allowing the incorporation of flow meters into fully charged electrostatic systems. The fiber optic sensor is compatible with FLO-CORP's PDFlo Positive Displacement Flow Meters. The PDFOP consists of a Reluctance Pickup with a Fiber Optic Transmitter, Fiber Optic Cable and Fiber Optic Receiver.

FEATURES & BENEFITS

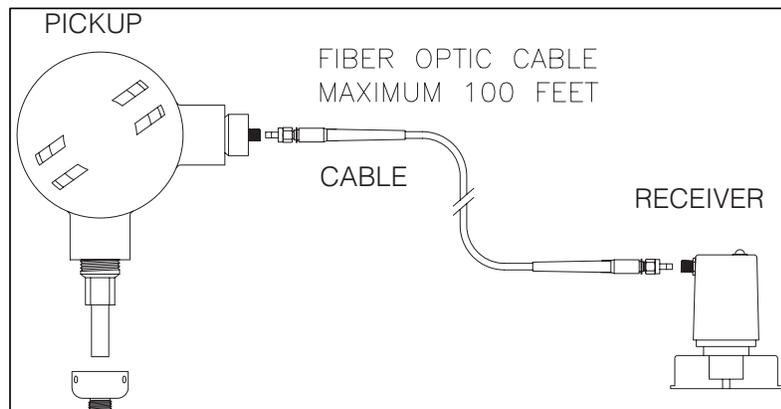
- Transmits a safe fiber optic signal
- Swivel connector to flow meter for easy installation and maintenance.
- Single, sealed, extra long life battery and electronic module.
- Explosion Proof Housing
- CMOS technology for long battery life.
- Economically priced.

COMPATIBLE WITH PDSG1

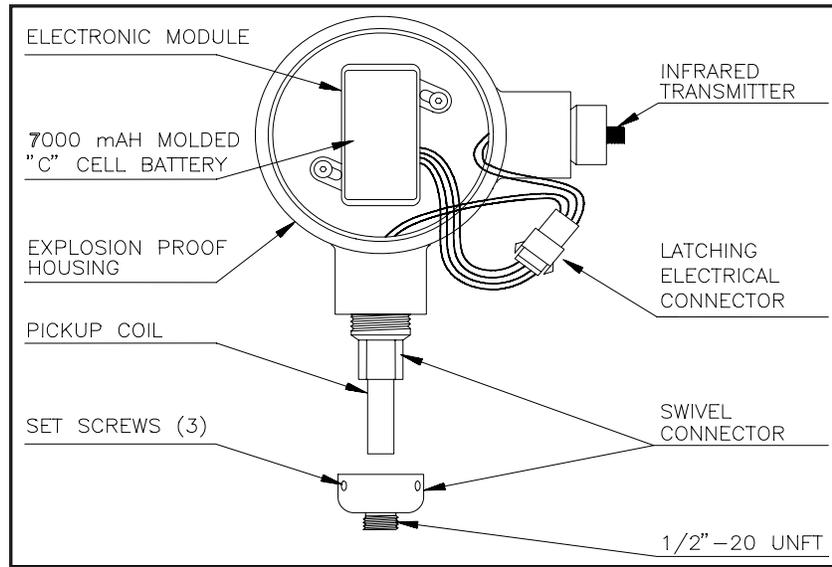


PDSG1 Positive Displacement Flow Meter Shown

The PDFOP consists of a pickup coil, battery/electronic module, and infrared transmitter. The sensor coil is the sensing device. The coil is a low ohm, low inductance device embedded in a stainless steel housing. Embedded in the pickup is a small magnet which will generate pulses to a coil when the magnetic field in front of the pickup changes.



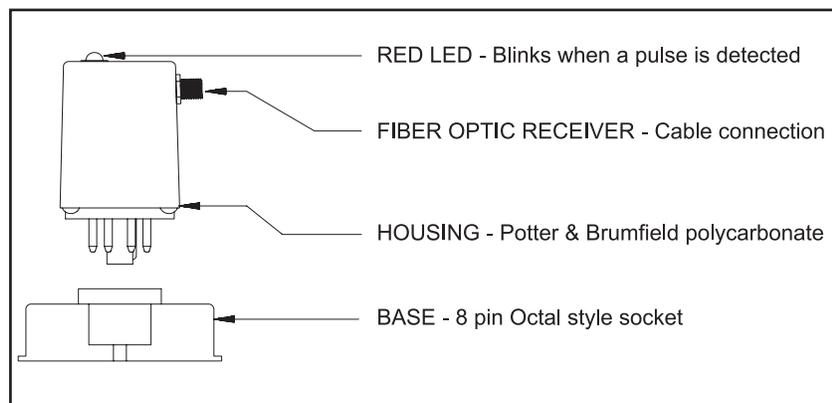
The infrared wave length from the transmitter is approximately 820 nm and the pulse lasts no longer than 30 μ s. By producing this very short pulse, the life of the internal DC power source can be greatly enhanced. The power source is a heavy duty 7000 mAH Lithium "C" cell battery. By utilizing CMOS technology in the PDFOP amplifier/transmitter, the quiescent current is below 10 μ A and increases to approximately 60 μ A when the gears are turning at 100Hz. Due to the very low drainage on the battery, a life expectancy of the battery/electronic module is between 5 and 10 years depending upon the flow rates and time of use. When the battery is installed by FLO-CORP, a label with the installation date is taped to the battery. Do NOT remove this label! As preventive maintenance we recommend keeping a log with the installation dates of all PDFOP's in use. These may be scheduled for replacement at a convenient time after 5 years of operation. This will ensure uninterrupted service during production operations.



RECEIVER

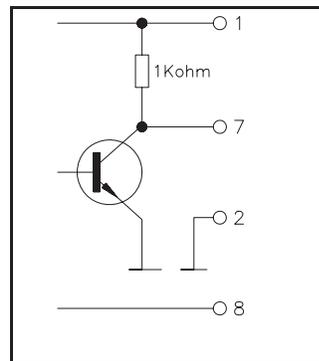
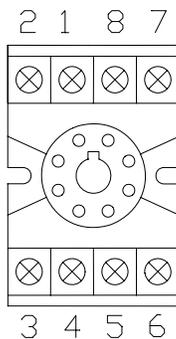
The fiber optic cable coming from the PDFOP terminates in the receiver. This receiver consists of an infrared photodiode, pulse shaper and an amplifier built into a Potter & Brumfield polycarbonate casing which plugs into an 8 pin Octal style socket.

On the top of the module, a red LED is mounted which will blink when a frequency signal is detected at the fiber optic receiver. It is recommended that the unit be mounted to allow operator observation of the LED. The output from the receiver is a square wave frequency which is proportional to the flow through the flow meter on which the PDFOP is mounted. The maximum frequency should not be over 500 Hz. The output from the receiver is a NPN opencollector amplifier with a 1 K Ω pull-up resistor.



Receiver Connections

- 1 - +7 to 20 Volt DC Supply
- 2 - Ground for supply and signal
- 3 - Not used
- 4 - Not used
- 5 - Not used
- 6 - Not used
- 7 - Frequency Signal Output
- 8 - Fiber Optic Receiver Housing ground

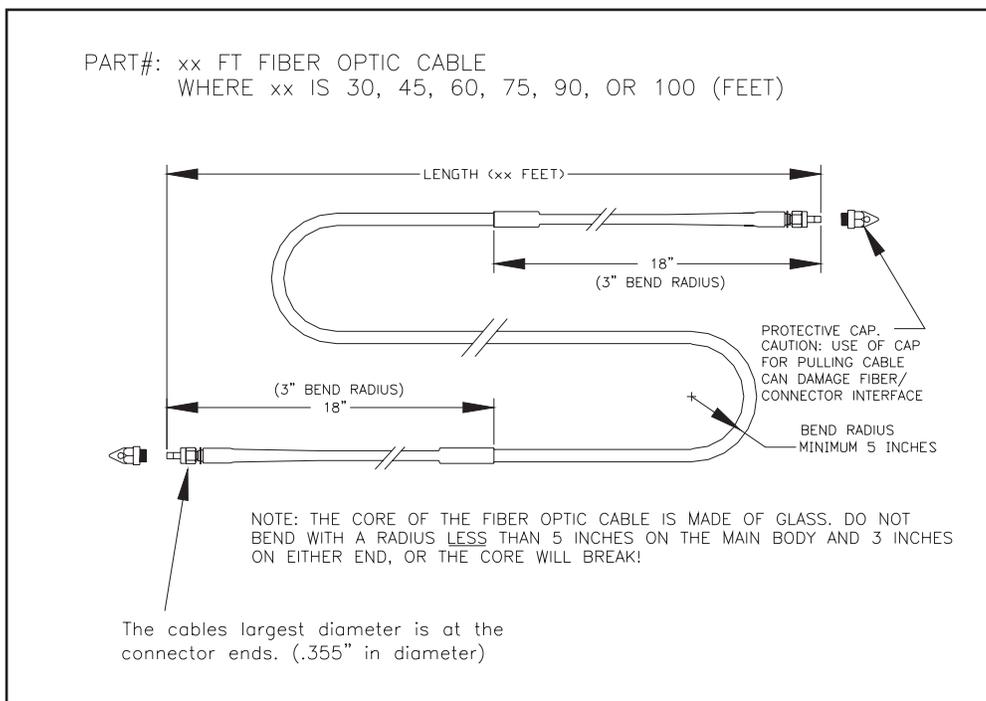


Installation Note: To reduce the chance of noise causing the receiver to emit false signals, it is recommended that terminal 8 be connected to either panel (earth) ground or terminal 2 on the receiver. Panel ground is the preferred choice of connection. The receiver has a fixed pulse length of approximately 1 millisecond. As the frequency increases, the time elapsed between each pulse will decrease resulting in eventual saturation at approximately 1000Hz.

CABLE

The fiber optic cable has a dual reinforced PVC outer jacket covering a layer of Kevlar® yarn for extra strength surrounding a Hytrel® tight buffered optical fiber by Spectran®. The fiber optic cable is pre-assembled with AMP SMA905 industrial use connector by the manufacturer and is available in 30, 45, 60 and 100 foot standard lengths. For special length requirements contact FLO-CORP.

Cables can be joined for extra length or pass through a bulkhead using a Mating-Sleeve-FOC-Connector. The end-connectors are installed with special tools and for this reason NEVER cut the cable. If the fiber optic cable needs to pass through walls or panels, a hole with a diameter of 3/8" is needed so the connector can pass through. The core of the cable is made of glass, so any sharp bends MUST be avoided or the core could break. The MINIMUM bend radius for each cable should never be exceeded (see drawing below). Always be very careful not to damage the ends of the fiber optic cable. During installation the protective cap MUST be kept on at all times.



Ordering Information

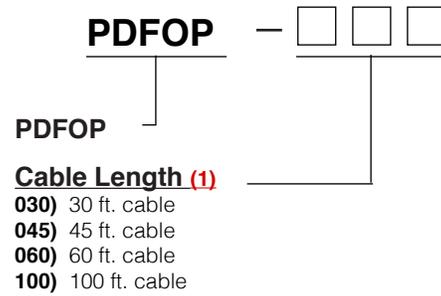
FLO-CORP MODEL NUMBER BUILDER

For Assistance Call **877.356.5463**

Use the diagram below, working from left to right to construct your FLO-CORP Model Number.
Simply match the category to the corresponding box number.

Example: PDFOP-045

PDFlo™ Fiber Optic Pickup for Positive Displacement Flow Meters with 45 ft. cable



Ordering Notes:

(1) Select the best configuration based on your requirements.