

General Information

These versatile impeller flowmeters in 1/4" to 1" nominal pipe size employ jewel bearings for very low minimum flows. The 6-24 VDC pulse output of these meters is compatible with many different types of control, including a full range of SeaMetrics rate displays and controls. The SeaMetrics FT420 provides flow rate and total flow, with 4-20 mA output optional. For metering pump pacing or interfacing with lowspeed counters, the PD10 divider is recommended. The AO45 is a blind 4-20mA transmitter.

S-Series meters are available in 1/4" to 1" nominal sizes. The SPX body material is polypropylene, with transparent acrylic covers for visual flow indication. Polypropylene covers are available as an option.

The SPT is available standard with TFE housing, TFE cover, PVDF rotor, ceramic shaft, choice of o-ring material (EPDM or Viton), and optional silicon carbide shaft.

Specifications

Connections

3/8", 1/2", 3/4", 1"
Female NPT standard,
SAE thread optional

Materials

| | |
|-------|--|
| Body | SPX: Polypropylene, SPT: TFE |
| Cover | SPX: Acrylic, Polypro optional SPT: TFE |
| Rotor | PVDF |
| Shaft | SPX: Nickel tungsten carbide, zirconia ceramic optional SPT: zirconia ceramic, silicon carbide optional |

Bearings

Ruby

Max. Temperature

160° F (71°C)

Max. Pressure

150 PSI (10 bar)

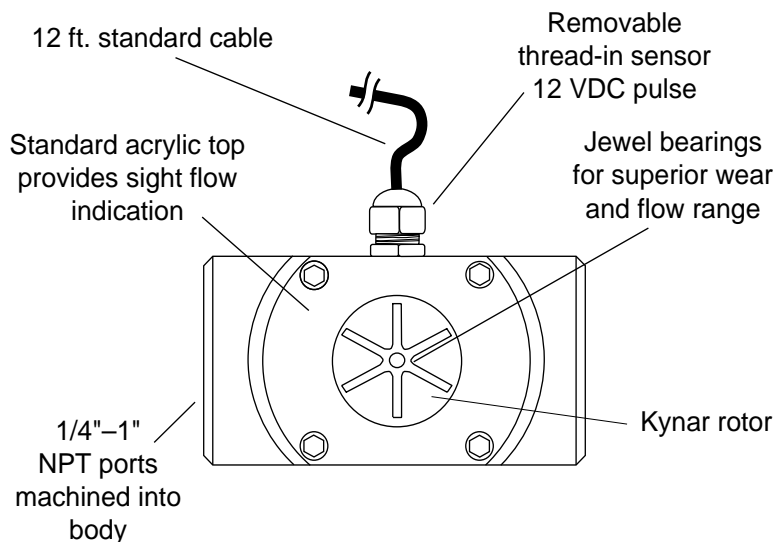
Accuracy

±1% FS

Flow Rates

| Size | GPM | LPM |
|------|----------|-------------|
| 3/8 | 0.07 - 5 | 0.27 - 18.9 |
| 1/2 | 0.1 - 10 | 0.38 - 37.9 |
| 3/4 | 0.2 - 20 | 0.75 - 75 |
| 1 | 0.5 - 40 | 1.90 - 150 |

Features



Field Replacement of Sensor

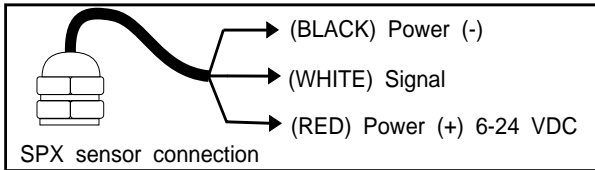


Installation

Piping Requirements. Standard fittings are female NPT. If the piping connected to the meter is metallic, care should be taken not to overtighten. Straight pipe of at least five diameters upstream of the meter is recommended. Vertical, horizontal, or inverted (lens down) installations are all acceptable.

Warning: This meter has low-friction bearings. Do not at any time test operation of the meter with compressed air. Doing so will subject it to rotational speeds many times those for which it was designed, and will certainly damage the rotor, shaft, and/or bearings.

Electrical Connections. There are three conductors to the sensor, two for positive and negative power and one for the signal. See the diagram below for color coding.



*Note: The Hall-Effect sensor used in the S-Series flow meter is of the NPN type. The use of a pull-up resistor (12Kohm nominal at 12 VDC) may be required if the input device is configured for PNP. Consult Technical Bulletin TB0001-0999 for details.

Repair

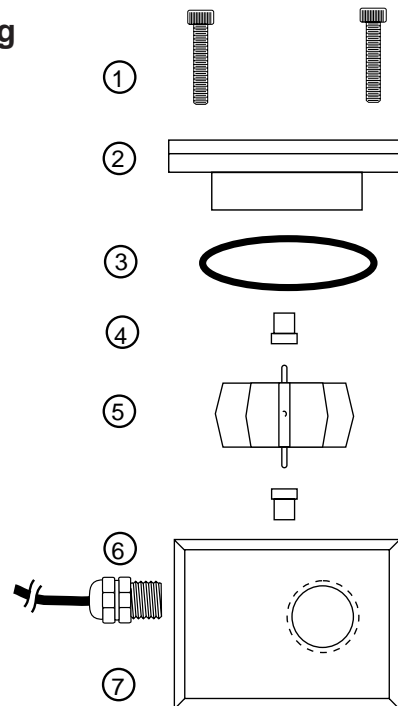
Rotor Replacement. There is only one moving part to this meter. The bearings are made of sapphire, which rarely wears out, and will not need replacement unless they have been physically damaged by severe shock. The shaft is integrally molded into the rotor, and shaft and rotor are replaced as one part. To replace the rotor, remove all pressure from the meter. Then remove the four screws which hold the lens (or cover) in place. Lift the lens, then remove the rotor. When putting in the new rotor, be sure that the end of the shaft is started into the bearing before the lens is put into place. When putting on the lens, be sure that the shaft is also started into the upper bearing before lowering the lens into place. If any resistance is met when the lens is replaced, the shaft is not started into one of the bearings. Check that the lens o-ring is also in place, then replace the four screws and tighten.

Sensor Replacement. The sensor ordinarily does not need replacement unless it is electrically damaged. If replacement is necessary, unthread the sensor by hand. Thread the replacement sensor in and tighten by hand.

SPX, SPT Parts Listing

| | | |
|----|---------------------------------------|--|
| 1 | SPX Screw SPT Screw SPT Hexnuts | 07687 (4 each) 07685 (4 each) 07705 (4 each) |
| 2 | SPX Lens SPT Lens | 16017 (Polysulfone) 16018 (Polypro) 16022 (acrylic) 26174 (TFE) |
| 3* | O-Ring: EPDM VITON | 25081 16455 |
| 4 | Bearing Assembly | 16772 (2 each) |
| 5* | Rotor with Shaft | 11127 (Kynar/ceramic/2 magnet) 11129 (Kynar/carbide/2 magnet) 11130 (Kynar/carbide/6 magnet) 11132 (Kynar/ceramic/6 magnet) 11133 (Kynar/silicon/2 magnet) |
| 6* | Sensor | 11001 (MS 1) |

*recommended spare parts



SeaMetrics