System Installation for Single Point Sensor

The 454PFTB sensor is designed to use high pressure Air or other inert gas for doing a pneumatic cleaning of the velocity sensor. A solenoid valve with bleed air bypass is connected between the ½" port and a blow-down tank. The blow-down tank ensures a high pressure (90 psi +/- 30) air source when the solenoid is opened, If the cleaning gas can sustain 60 psi at the gas port while flowing 120 SCFM for one second, then the blow-down tank is not needed.

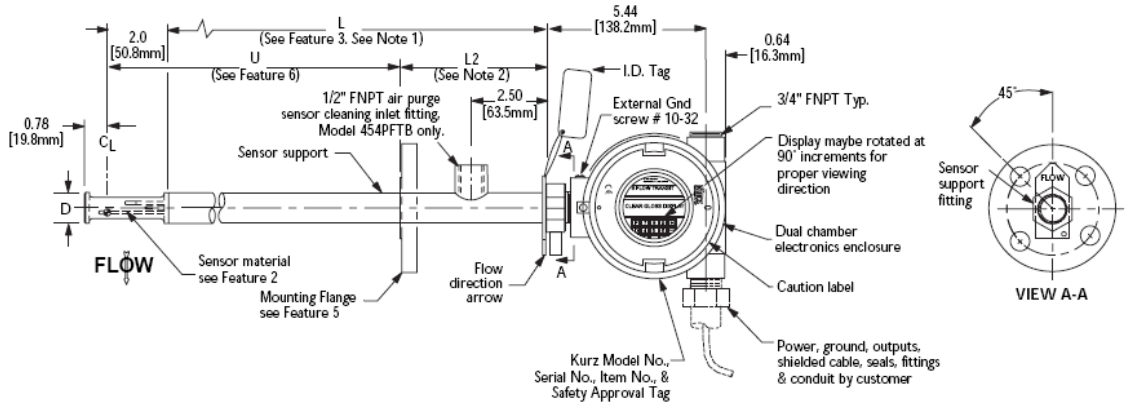

Figure AE-1. 454PFT Flow Meter. Note the ½" compressed gas port between the flange and electronics head for purge cleaning gas.

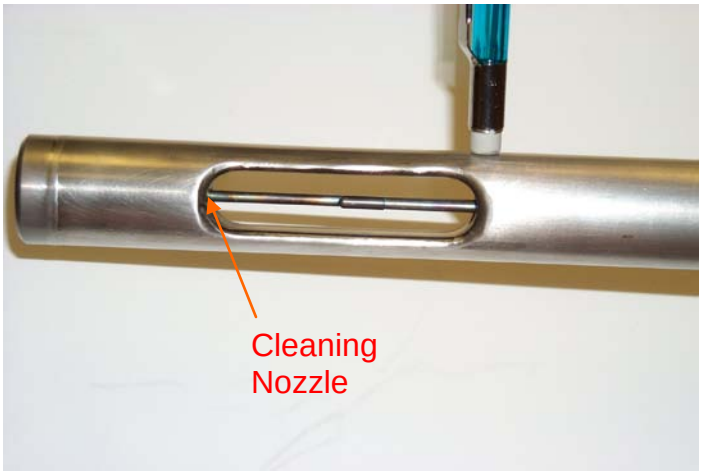

Figure AE-2. Typical purge sensor and window.

The solenoid control valve for purge air is powered from the MFT B-Series electronics using the DO2 terminal block (TB6, pin 1 switched +24 VDC, pin 2 ground). This output is rated for continuous 24 VDC, 0.5 A, (can use a 1 A valve for a few seconds). See field wiring diagram 342038, sheet 3 and 759038 for recommended solenoid wiring.

Cleaning Gas Requirements

Gas	Clean Air or inert gas for Ex applications
Pressure	105 PSIA +/- 30 psi
Purge Consumption	2 SCF/purge @ 1 second valve open time ~120 SCFM flow rate when valve is open.
Bleed Flow Rate (only needed for very corrosive gas)	0.1 SCFM

System Installation

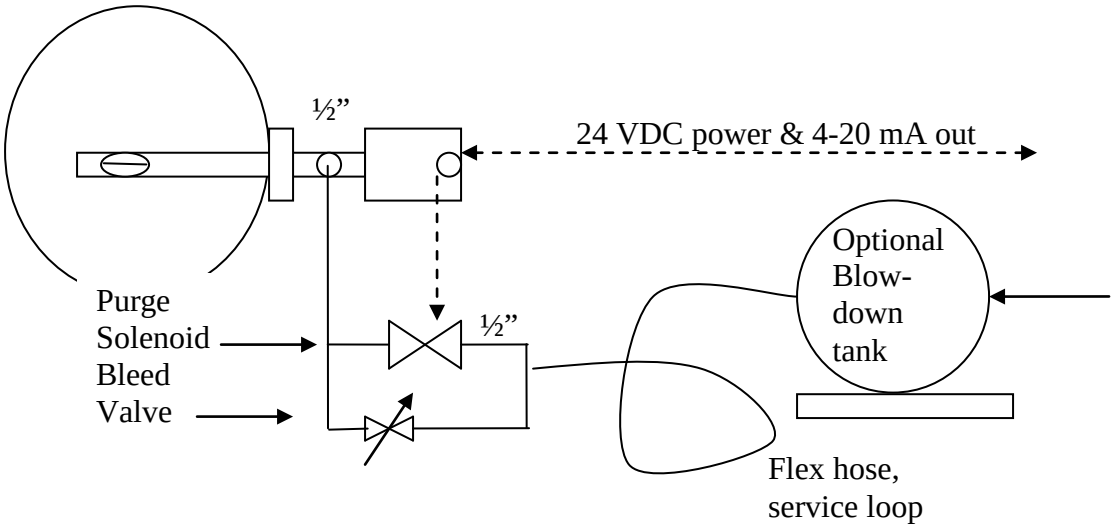

Figure AE-3. Typical system setup for 454PFT flow meter. All components available from Kurz.

If space permits, mounting the purge valve and bleed adjacent to the Flow sensor mounted from its ½” port will simplify the mounting requirements for this system and its wiring. A flex hose connections to the pressure source and control valve will simplify routine maintenance where the sensor is pulled out of the process for inspection of its dirt build up.

Bleed Flow Setting

Bleed flow on the purge is only needed for very corrosive process gas. Bleed flow rate is set to keep process gas out of the inside of the sensor and thus corrode the flow meter. To little bleed flow does nothing, too much interferes with normal flow measurements. A bleed flow rate of say ~ 0.12 SCFM/sensor reduces process fluids from entering the backside of the sensor by providing a constant clean Air flush. The bleed flow will indicate ~ 500 SFPM (2.5 SMPS) at zero flow on the sensor and also will show a 2 % drop in all readings above 1500 SFPM (7.5 SMPS).

Integrated solenoid valve controller

Programming setup for the purge valve open time, cleaning interval, meter hold time during and following a cleaning are found in another section.