



## P56-USB Digital Differential Pressure Transmitter for USB



- **USB Interface for Digital Operation with PC**
- **+/-5 Vdc Analog Output**
- **Excellent Stability Over Wide Thermal Range**
- **0.25% FS Accuracy, 0.7% Max Temperature Error**
- **For Liquid or Gas Service**
- **FS Ranges from 2.22 In H2O**
- **NEMA 4 Housing**
- **USB Drivers and Software Included**

The Validyne model P56-USB is a digital differential pressure transmitter designed for industrial pressure measurement applications. The on-board microprocessor provides high accuracy and improved stability in changing thermal environments. Communication and power via USB interface provides remote zero and span adjustment as well as digital pressure readings in engineering units. Drivers and software for the USB interface are included.

The P56-USB is designed for a wide variety of low pressure measurements where fast dynamic response, high resistance to vibration and superior signal stability through temperature change is required. The P56-USB will accept both liquids and gases directly at the sensing diaphragm.

The sensing element of the P56-USB can be changed by the user to allow calibration to a new full scale pressure. Replaceable sensing diaphragms are available with full scales from 3.5 In H2O through 3200 psi. Calibration settings are supplied to the sensor via PC software and the USB connection.

The zero and full-scale outputs are set by switch or USB digital command. No potentiometer adjustments are required to calibrate.

Pressure readings via USB port are available in engineering units. The temperature reading at the sensor is also available via USB.

The P56-USB has 1/8 inch female NPT pressure connections and measures just 1.5 x 1.5 x 5 inches overall.

The P56-USB is powered by the +5 Vdc USB port or any regulated +5 Vdc source capable of supplying 30 mA.

Wiring for the P56-USB is a six-pin PT02A connector with USB cable, supplied.

### The P56-USB is Ideal for:

- **Laboratory Pressure measurement**
- **Level Measurements**
- **Hydraulic Pressures**
- **Flow Measurement**

## P56-USB Specifications

### General Specifications –

#### Ranges:

**P56D:** +/-0.08 psid to +/-3200 psid  
**P56A:** 0 - 0.08 psia to 0 - 3200 psia

#### Accuracy:

**P56D:** +/-0.25% FS, includes non-linearity, hysteresis and non-repeatability  
**P56A:** +/-0.5% FS, as above

#### Overpressure:

**P56D:** 200% FS up to 4000 psi maximum with less than 0.5% FS output shift  
**P56A:** 20 psia or 200% FS, whichever is greater, up to 4000 psia maximum, for less than 0.5% zero shift

#### Line Pressure:

**P56D:** 3200 psig maximum, with zero shift less than 1%/Kpsi

#### Pressure Ports:

**P56D:** 1/8" female NPT with 8-32 Bleed Screw & Gasket, STD  
**P56A:** 5/16-24 UNF-2B with 1/8" male NPT adapter included

### Environmental Specifications -

**Operating Temp:** 0 to +160 F

**Compensated Temp:** 0 to +160 F

**Temperature Error:** +/-0.7% FS  
Over Operating Temperature  
Range of 0 F to +160 F

### Sensor Physical Specifications -

**Pressure Media:** Liquids & gases compatible with 410 SST and Inconel

**O-Rings:** Buna-N Standard, other compounds available

**Pressure Cavity Volume:** 4 e-3 cu in, each port

**Volumetric Displacement:** 3 e-4 cu in at FS

**Weight:** 16 Oz.

### Power Requirements -

**Power Supply:** +5 Vdc, Regulated

**Current Draw:** +/-5 Vdc Versions: 30 mA, typ

### Signal Output -

**DC Voltage Output:** +/-5 Vdc @ 0.5 mA  
**Digital:** USB Port

**Zero Balance:** Auto-zero via Switch or USB  
**Span:** Set by Switch or USB command

**Frequency Response:** Low Pass Filter at 250 Hz, -3 db

**Line Regulation:** 0.02%

**Output Noise:** 2 mVrms

**Insulation Resistance:** 100 MOhms, any terminal to case

### USB Interface –

USB cable and drivers supplied. Device appears as a COM port to Windows applications. Commands and readings via serial strings.