MONITOR

"Setting The Standard For Supplier Excellence"

Vibratory Point Level Sensor Model PZP

- Extremely Versatile
- Exceptional Sensitivity
- Single-Prong Probe Design
- No Calibration
- Universal Power Supply
- Piezoelectric Technology
- Multiple Configurations

- Unique Versatility for Materials From 1.25 to 100 lb/ft^3 (20 - 1600 kg/m^3)
- Unaffected by Environmental and Material Changes
- Unique Single-Prong Probe Design
- Universal Power Supply for 20–250 VAC/DC
- High and Low Level Applications, Dust Collector Back-Up Protection
- Handle Internal Bin Temperatures Up To 302˚F (105˚C)
- Multiple Configurations for a Wide Range of Applications

The PZP vibratory level sensor provides reliable point level detection in a wide variety of process control applications within the powder and bulk solids market.

The PZP offers many advantages over alternative technologies. The vibrating probe principle eliminates problems associated with temperature, humidity and material changes, while providing state-of-the-art electronic reliability and accuracy that requires **no calibration**. The unique single-prong probe design is diamond shaped and eliminates material packing problems and false signaling typically associated with the dual-prong “tuning fork” design.

The PZP’s ability to detect a wide variety of material densities, including very lightweight materials, makes it an attractive solution for many applications.

PRINCIPLE OF OPERATION

The PZP utilizes piezoelectric technology to create a vibration and then constantly monitors the presence or absence of that vibration. Two piezoelectric crystals are located in the base of the probe. A signal is applied to one crystal at the frequency corresponding to the probe’s self-resonance. The electrical excitation causes physical deformation of the crystal resulting in probe vibration. With no material present, the vibration of the probe is felt by the second crystal. This vibration causes physical deformation of the second crystal which generates a voltage to be analyzed by the electronic circuitry. With material present around the probe, the vibration is dampened, thereby minimizing the voltage generated by the second crystal. The output voltage is analyzed by the circuitry and the relay status changes accordingly.

This PZP is being used as a high-level alarm in a plastics application. The PZP was ideal for this application because of its reliability with light weight materials.

APPLICATIONS

The PZP is often applied in ultra lightweight applications due to its exceptional sensitivity to materials as light as 1.25 lb/ft^3 (20 kg/m^3). However, the PZP is also a proven performer for materials up 100 lb/ft^3 (1600 kg/m^3). Current applications range from 1.25 lb/ft^3 (20 kg/m^3) EPP (expanded polypropylene) beads to 100 lb/ft^3 (1600 kg/m^3) clay. The PZP is ideal for applications where vessel content changes are common, since no calibration is required when material changes are made. The PZP can also provide dust collector back-up protection.

TYPICAL APPLICATIONS INCLUDE, BUT ARE NOT LIMITED TO:

Chemicals	Clay	Carbon Black
Grain	Plastics	Sawdust
Polystyrene	Cement	Flour
Cereal	Rice	Fly Ash
Lime	Tobacco	Food

FEATURES

VERSATILITY

The unique design makes the PZP **immune to changes** in many different variables including:

- ▼ Vessel contents
- ▼ Material composition
- ▼ Density of material
- ▼ Dielectric constant
- ▼ Particle size
- ▼ Moisture content
- ▼ Temperature
- ▼ Pressure
- ▼ Humidity

EASE OF USE

The PZP offers maximum ease of use to its users. PZP set-up involves simply selecting the sensitivity and fail-safe settings, and requires **no calibration**.

SUPERIOR PROBE DESIGN

The unique diamond shaped single-prong probe design minimizes material packing problems and false signaling that are typically associated with the dual-prong "tuning fork" design. The diamond shape easily sheds material. Also, the vibration acts as a self-cleaning effect which can further eliminate problems. The reinforced stainless steel probe construction allows use with a wide range of materials.

FAIL-SAFE

A jumper permits selection of either high or low fail-safe. In the event of a power system failure, the relay drops into the mode which denotes an alarm condition. This alarm provides security during a power failure against overfilling or emptying of a vessel.

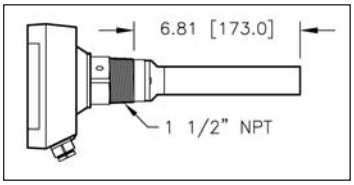
UNIVERSAL POWER SUPPLY

The PZP's electronic module is a universal power supply configuration capable of operating off 20 - 250 VAC 50/60 Hz and 20 - 250 VDC.

AVAILABLE CONFIGURATIONS

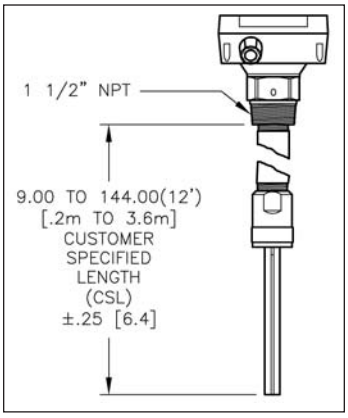
DIMENSIONS ARE SHOWN IN INCHES WITH MILLIMETER EQUIVALENT IN BRACKETS

STANDARD PROBE



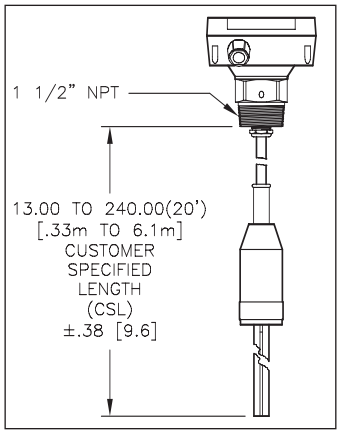
The standard probe is approximately 7" (178mm) in length and is suitable for both top and side mount applications. It mounts to the vessel via a 1-1/2" mounting gland.

PIPE EXTENSION PROBE



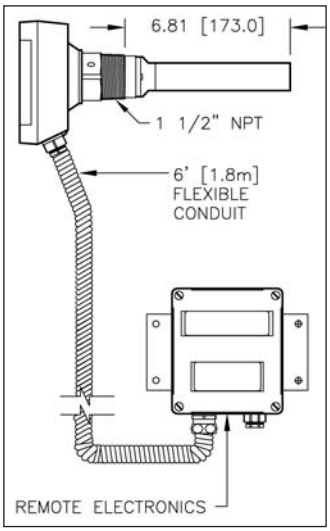
For high and low level applications that extend beyond the length of a standard probe, Monitor offers a pipe extension probe. This configuration is intended for top mount applications only. The extension is constructed of 1" NPT stainless steel pipe which provides structural strength and affords a means to secure the assembly to the vessel. Available in lengths up to 12' (3.6m), this unit is factory sized to the customer's specifications.

FLEXIBLE CABLE EXTENSION PROBE



The cable extension configuration extends the detection length beyond the standard probe length. This self-contained unit is for use in top mount applications and can be used for both high and low level detection. A polyurethane sheathed, steel rope reinforced cable is used for the extension, and is available in lengths up to 20' (6.1m). The unit mounts to the top of the vessel via a 1-1/2" mounting gland.

HIGH TEMP/REMOTE ELECTRONICS



This configuration offers a split-architecture design that moves the electronics to a remote mounting location. The furnished cable allows for a 6' (1.8m) separation between the probe and the remote electronics. This probe is a reliable solution for applications that involve high temperatures (internal bin temperature up to 302˚F (150˚C)) or vibrating vessels. The probe can be top or side mounted for use in high or low level applications. For top mount applications, the probe can be ordered with a pipe extension. Cable extension probes are not available with high temp/remote electronics.

ORDERING INFORMATION

9	-	8	3	X	X	-	X

VOLTAGE/ELECTRONIC MODULE
0=Universal 20 – 250 VAC/DC

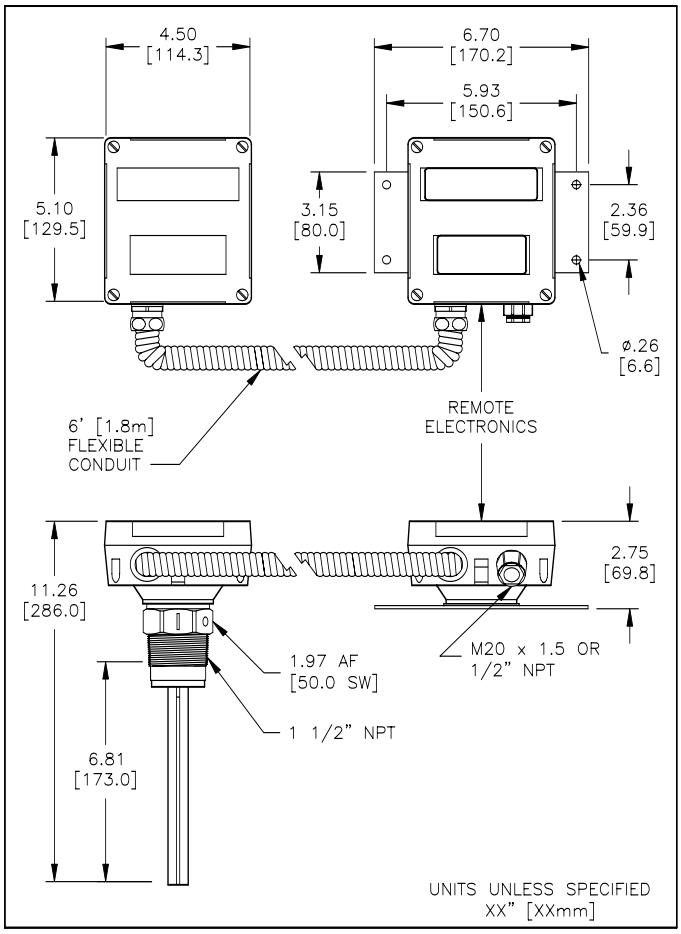
PROBE TYPE
0=Standard Probe
(Approx. 7" (178 mm) in length)
2=Flexible Cable Extension[1]
(13" to 240" (0.3m to 6.1m) overall length)
4=Rigid Pipe Extension[1]
(9" to 144" (0.2m to 6.3m) overall length)
6=High Temp/Remote Electronics w/ Std Probe
8=High Temp/Remote Electronics[1] w/Rigid Pipe Ext

CABLE EXT LENGTH
blank=Std. Probe
Rigid Pipe
High Temp
10 =Length ≤ 10' (3m)
20 =Lengths b/w 10' and 20' (3m and 6.1m)

NOTE:
1 Customer must specify exact required overall length to the nearest inch for p/ns 9-8302, 9-8304 and 9-8308

SENSOR MECHANICALS

DIMENSIONS ARE SHOWN IN INCHES WITH MILLIMETER EQUIVALENT IN BRACKETS



SPECIFICATIONS

Power Requirements:	Universal 20 – 250 VAC 50/60 Hz 20 – 250 VDC
Power Consumption:	3 VA max.
Ambient Operating Temperature:	-22˚ F to 140˚ F (-30˚ C to 60˚ C)
Internal Bin Temperature:	
Integral Probe/Electronics:	To +176˚ F (+ 80˚ C) max.
High Temp/Remote Electronics:	To +302˚ F (+150˚ C) max.
Output Relay:	SPDT dry contact; 5 amps @ 250VAC max
Sensitivity:	1.25 lb/ft^3 (20 kg/m^3) minimum material density
Jumper selectable -	A (High ≥ 1.25 lb/ft^3) (20 kg/m^3) B (Medium ≥ 10 lb/ft^3)(160 kg/m^3) or C (Low, product build-up applications)
Time Delay:	Hold-off, fixed delay of 1 second; Hold-on, fixed delay of 2-5 seconds
Fail-Safe:	Jumper selectable (high - FH, low - FL)
Operating Frequency:	280 Hz
Enclosure:	Die cast alum. beige powder coat; NEMA 4; IP65
Probe/Gland Material:	304 stainless steel
Process Connection:	1-1/2" NPT
Pressure Rating:	150 PSI (10.4 bar)
Wire Entry:	M20 x 1.5 cablegland, remove for 1/2" NPT
Indicator:	Red LED - Status dependent on material sensing and fail-safe selection
Solid Extension:	1" pipe, 304ss, 12' (3.6m) length max. (customer specified length)
Cable Extension:	Polyurethane sheathed,steel rope reinforced; 20' (6.1m) length max. (customer specified length)
Remote Electronics Interconnection Distance:	6' (1.8m factory installed flexible conduit (high temp models)
Weight:	4.5 lb (2 kg) (standard model only)

WARRANTY

Monitor Technologies LLC warrants each PZP vibratory point level sensor it manufactures to be free from defects in material and workmanship under normal use and service within two (2) years from the date of purchase. The purchaser must give notice of any defect to Monitor within the warranty period, return the product intact and prepay transportation charges. The obligation of Monitor Technologies LLC under this warranty is limited to repair or replacement at its factory. This warranty shall not apply to any product which is repaired or altered outside of the Monitor Technologies LLC factory, or which has been subject to misuse, negligence, accident, incorrect wiring by others or improper installation. Monitor Technologies LLC reserves the right to change the design and/or specifications without prior notice.

Huntsman, Inc. ▾ 2362 Warren Ave. ▾ Twin Falls, Idaho 83301 ▾ (877) 733-2214 ▾ (208) 733-2214 ▾ Fax (208) 733-2240
www.huntsmaninc.com ▾ mail@huntsmaninc.com