

# MODEL VP11 VIBRATION PROXIMITY LEVEL SENSOR

## General Description

The VP 11N is a single point level sensor designed for low-cost, solids state indication and control of powder levels in a small hopper or bin. The VP works best in granular and powdered materials of medium to high bulk density. It is especially useful in applications for detection of high and low level. The VP is an excellent replacement of mechanical rotary paddle level controls that are prone to failure. An example is the high level control in a plastic resin feed hopper used in injection molding. The sensor must not be exposed to high temperatures or excessive abrasion.

## Operational Description

The sensor utilizes a piezoelectric vibration element to create a specific vibration frequency. If the vibration diaphragm is vibrated for pulse vibration frequency, the reverberant vibration is occurred. When the material covers the sensor, more reverberant vibration is dampened for a given length of time. The damping of reverberant vibration is detected by a piezoelectric element, and processed through a comparator circuit. The sensitivity is set by the volume of damping for a given length of time.

AC voltage with relay output is optionally available by using our power reply unit, Model PR2100 or PR2200.

## Features

- Low-cost piezoelectric vibratory level sensor
- Easy to use 26mm proximity style housing
- Not affected by moisture, humidity, or temperature variations
- Standard transistor output
- Relay output optional with PR2100/2200

## Specifications

Model	VP11N	VP11F
Drawing		
Mounting	G3/4	ISO 1-1/2S
Supply Power	24V DC	
Current Consumption	Approx. 20mA DC Max.	
Relay Output	NPN open collector 100mA DC Max. Residual voltage 1V Max.	
Detection Time Delay	Approx. 3 seconds	
Operating Temperature	-10°C to 60°C	
Maximum Pressure	500kPa / 5bar	
Maximum Humidity	95% RH	
Sensitivity	Bulk density of 0.2g/cm <sup>3</sup> Min.	
Material	Body	304SS
	Diaphragm	316SS
	Fastener	Brass
Cable	φ3 × 2000mm (3 × 0.2mm <sup>2</sup> ), PVC	
Protection	IP55 (Equivalent)	
Indication	Green LED for Power status Red LED for Relay status Orange LED for Detected recovery	

