

Vibrating Fork Point Switch "VFSS" for Solids



SINCE 1984

It is a point level switch based on piezo driven vibrating fork technology. Model VFSS is designed to detect all kinds of free flowing powders, grains and granular solids in Bins, Silos or Hoppers.

Features:

- No moving parts. Minimum maintenance.
- Fail safe design.
- Unaffected by environmental changes e.g. temperature, pressure & humidity.
- Unaffected by dust clouds and agitation.
- Ex - proof version Gr IIA & IIB for hazardous applications.
- The vibration has a self cleaning effect.

Construction & Operation :

The system is available in two versions - Integral (Standalone) & Two Part. In the integral system, the controller is integral with the sensing probe. In two part system, the controller is separate from the probe and can be mounted remotely. The sensing probe is of rugged construction & available in two designs-standard & high temperature. The sensing probe is fitted with an enclosure at its top end, which holds the control electronics and its lower end holds a SS tuning fork, which vibrates at its mechanical resonance frequency of 120 Hz, created through a piezo crystal, when in air. However, when the tuning fork is covered with solid, its vibrations get damped. This is sensed by the control electronics, which changes the status of output relay contacts.

Specifications:

Sensing probe

Enclosure	: Cast Al, WP -IP 66
	: Cast Al, Ex-Proof-Gr. IIA & IIB
Conduit Connection	: Polyamide PG 16 x W-proof Const.
	: Brass 3/4" ET x Ex-proof
Mounting	: SS304 x 1 1/2" BSP (M) screwed
Fork MOC	: SS316
Extension Pipe MOC	: SS304 or SS316
Std Insertion Length (L)	: 250mm
Max Insertion Length (L)	: 2500mm
Resonance Frequency	: 120 Hz
Max Optg Temperature	: 150°C/200°C (With temp standoff)
Max Pressure	: 10Kg/cm ²
Particle Size	: Max 10mm

Controller (Integral)

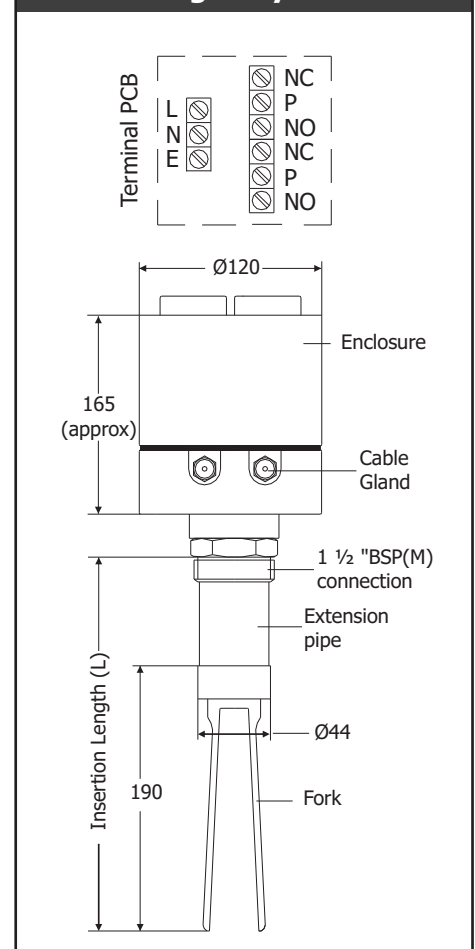
Enclosure Dimensions	: Ø120 x 165 height
Conduit Connection	: Polyamide PG 16 x 2 Nos
Supply	: 110 or 230 VAC 50-60 Hz or 24VDC
Relay Contacts	: DPDT x 5A, 230 VAC resistive load
Signal Delay	: Fork covered to free about 2 -3 secs. Fork free to covered 2 secs.
Switching Delay	: Continuously adjustable from 2 to 20 secs for fork free or covered
Safety Operation	: Field selectable fail safe high & low
LED Status Display	: Power ON - Yellow;
	Normal - Green ; Alarm -RED
Power Consumption	: 2VA
Amb Temperature	: 60°C
Amb Humidity	: 95% Rh non condensing

Controller (Two part)

All specs as in Integral except	
Enclosure Dimensions	: Ø122 x 150 height
Interconnecting Cable	: 3 core x 1.5mm ² PVC Insulated (Buyer's Scope)



Integral system



Model Identification No. VFSS : [] [] [] [] [] x L (mm)

System

Integral (standalone) ————— **I**
 Two part ————— **T**

Probe Encl. x Control Unit Encl.

Cast Al WP IP-66 (Syst-I) ————— **J**
 Cast Al,WP IP-66 x Cast Al ,WP IP-66 (Syst-T) ————— **K**
 Cast Al,Ex-proof Gr IIA & IIB x Cast Al,WP IP-66(Syst-T) ————— **E**
 Others ————— **O**

Sensing Probe

Standard (150°C) ————— **S**
 High temp (200°C) ————— **H**

Process Conn

SS304 screwed 1½" BSP (M) ————— **S**
 SS304 flanged 2"NB ASA 150# ————— **F**
 Others ————— **O**

Supply

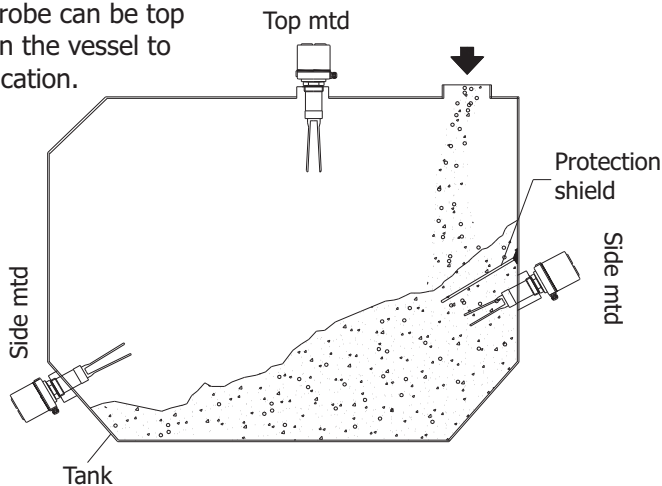
110 VAC ————— **1**
 230 VAC ————— **2**
 24 VDC ————— **3**

Ordering information :

Specify Model No x L (mm) x Optg Temp & Press, particle size & bulk density

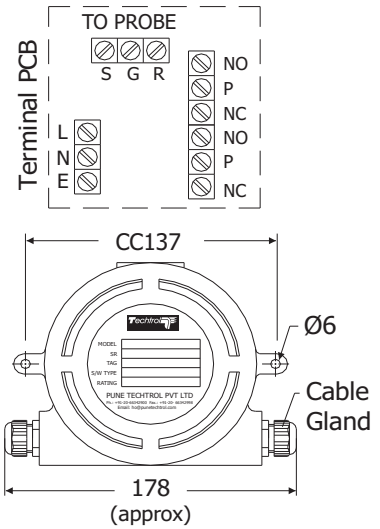
Installation :

The sensing probe can be top or side mtd. on the vessel to suit your application.

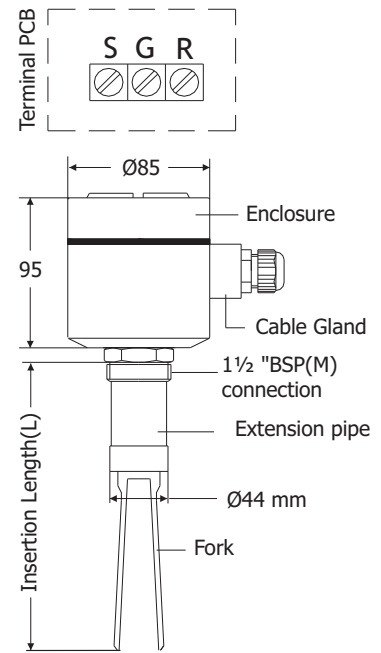


Two part system

Controller



Sensing Probe



Services :

Solids(VFSS) : Food Grains, Coffee - Beans, Soya / Zinc Sulphate / Pesticide Powder, Powder dyes, Bentonite /Plastic Granuals, Cement, Sand & Lime. (Particle size max 10 mm.)

All dimensions in mm, except specified.

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