

APPLICATION :

- Detection of levels of solids, liquids granules food grains and powders,
- Detection of top and bottom levels of coal bunkers
- Detection of chute blockage in feeding hoppers
- Level detection in cement silos
- Level detection of Fly ash
- Level detection for Stock Pile

PRINCIPLE OF OPERATION :

The RF Level switch operates on the basis of RF absorption. The electronic unit generates a sinusoidal wave, applied to the electrode creating a field around it. RF environment absorption changes (Electrical Loss) around the electrode are reflected on the changes of generator supply current. Such changes caused by increase in level is amplified and used to actuate the relay. Special Coat-guard amplifier is incorporated in the circuit, which will ignore the effect of deposition.

The RF Admittance type, point level switch, designed with special sensing probe, using special shield coat-guard circuit and three element probe. The level switch immune to the material built-up on the probe and material bridging between the probe and hopper wall.

FEATURES :

- Three Element coat-guards Technique: Ignores material built-up on probe.
- Fast end easy installation: Simple to calibrate.
- Suitable for highly dusty environment.
- Field selectable operation logic : Configurable high or low point switching.
- Economical.

TECHNICAL SPECIFICATIONS :

- The electronic circuit can be integral with probe housing, cast Al., IP 65. or can be remote mounting
- Ambient Temperature: 0 60 Deg. Cent. (For Fly Ash, we have special sensors with PT-FE) & ceramic coating. Please specify application area and working temperature.)
- Control Supply: 230V AC, 50 Hz (+_15%) (Standard), other voltages like 110V AC, 24V DC are also available on request.
- Output: 2C/o Relay contact, rated for 5 Amps. Resistive @ 230V AC.
- Switching Delay: 2 20 secs.
- Safety Operation: Field selected for minimum or maximum switching points.
- Switch status LED: Green: Normal, Red: Alarm Yellow: Power ON.
- Particle size : max 30 mm



Ordering Proforma :

RFLS R 300 1 I 1

Probe Type :	
DISC	D
ROD	R
ROPE	C

Length in mm 9 for probe type R&C only : Pl specify

Supply Voltage	
230V AC , 50Hz	1
110V AC , 50Hz	2
24 V DC	3

Control Unit	
Integral (Temp Up to 60 Degree cent)	I
Remote (Sensor temp up to 200 degree cent)	R

Mounting :	
Screwed 1/2 " BSP	1
Flanged	2



**APPLICATION :**

- Various liquids including water storage tank,
- Moderate range solids such as loading, bagging hoppers.
- Mineral Oil.
- Cost effective Level Measurement for Multiple silo applications.
- Versatile : Short or long range liquid or Dusty solids application.

FEATURES:

- Fully temperature compensation facility.
- Easy to install.
- Automatic variable gain.
- Plug in terminal.
- Differential Level measurement.
- Sensonic Transducer Technology.
- Advanced, process adaptive signal processing, secondary lightning protection.

PRINCIPLE OF OPERATION :

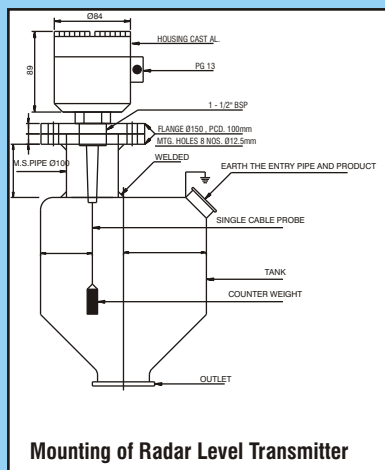
Integrated compact Ultrasonic Level Transmitter with process current and HART communication as standard for liquid applications only. Not recommended for foam liquid surface. They are based on the principle of ultrasonic rays. It is capable for liquid applications upto 10 Mtrs. range. The transducer is fitted to the top & faced down towards the material being measured. The transmitter then fires electronics pulses, which the transducer convert into acoustics pulses (Ultrasonic rays). These pulses travels to material & is reflected back from the same to the sensor. Transducer then converts these pulses again into signal, and accordingly giving 4-20 mA DC analog, isolated output. With reference to the time taken by the pulses to travel from transmitter and to reflect back from the material to the receiver in the sensor, we can determine the distance.

SPECIFICATION :

Supply	: 230V AC or 24VDC
Output	: 4-20mA, Plus 1 Relay output.
Enclosure	: Polycarbonate, IP65
Range	: 30mtr (For solids) & upto 10 Mtrs. for liquid application.
Temperature range	: -30 to 65 degree.

Inform Following Details so as to offer proper model

- Area of application • Specifications / dimensions of tank / hopper • Measuring range • Measuring accuracy expected
- Material to be sensed , • Particle size with moisture, dust contents • In case of liquid whether foam, waves & vapor are present • Temperature / pressure • Material of transducer (for corrosive liquids) • Output required • Power supply Two wire or four wire type • Mounting Flange / thread mounting • Local indication required • Digital communication like HART or RS 485 (with MODBUS) is required

RADAR LEVEL TRANSMITTER :**APPLICATION:**

- For level monitoring of liquids and free flowing solids.
- Suitable for highly dusty environments such as cement industry.
- Less affected by environment effects like wind, rain etc.

OPERATING PRINCIPLE:

Radar Level Transmitters operates on the principle of Frequency modulated continuous wave. However, MicroTREK Level Transmitters operates on Time domain Reflectometry principle. A wave is emitted by the antenna. As soon as the pulses reaches the surface of the medium, it is reflected back to the electronic module. Level distance is directly proportional to the flight time of the pulse. The measured Level data is converted into 4-20 mA DC analog, isolated output. With reference to the time taken by the pulses to travel from transmitter and to reflect back from the material to the receiver in the sensor, we can determine the distance.

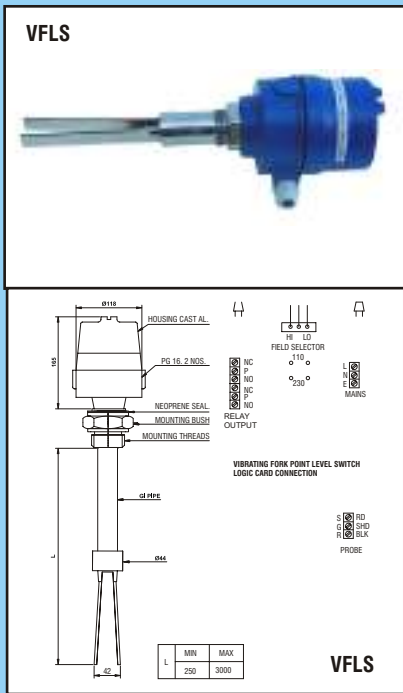
FEATURES :

- Minimizes signal loss.
- Eliminates false echoes.
- No moving parts.
- High accuracy.
- Solid, Flexible & co-axial probes.
- Non-contact type Level Transmitters.

SPECIFICATIONS:

2 wire TDR Level Transmitter & FMCW for liquids and free flowing solids.

Range	: Up to 24 Mtrs & 100 Mtrs.
Housing	: Paint coated aluminum housing.
Enclosure of Electronics	: IP 65 / NEMA 4.
Output	: 4 - 20 mA with HART Communication
Power Supply	: 18 to 35V DC.
Electrical Connection	: DIN Connector (PG 11).
Sealing	: Viton.
Probe type	: Mono cable, Dia : 8 mm, SS-1.4571 max.
Probe Length	: 24 Mtrs.
Process Connection	: 1.5" BSP with slip on 4" MS Flange, 15 mm thick.



APPLICATION:

Find application in food , packaging , Cement, steel & power generation industries for monitoring level of ore, fertilizer, food grains, coal, sand, chips, granules etc. Ideal for products that do not have heavy build-up on forks and can handle dense materials such as cement to extremely light products like styrene. Not recommended for slurries or in water with high turbidity.

FEATURES:

- No calibration required, simple to install.
- Performance independent of material characteristics i.e. change in conductivity, moisture, di-electric constant.
- No moving parts, hence no wears and tears.
- Weatherproof enclosure, SS 316 for food industry.
- Field selectable operation logic : configurable high or low point switching.

SPECIFICATIONS :

- Material Size : Up to 10 mm.
- Material bulk density : 0.05 Kg/dm³ minimum.
- Operating Pressure : 10 Kg/cm² max.
- Fork Length : Max upto 2000 mm,
- Control supply : 230 V AC (standard) Other supply voltages on request)
- Output : 2 C/O relay contact, rated for 5 Amp. resistive at 230 V AC.
- Ambient Temp : 60 degree cent max.
- Temp in vessel : 150 degree cent max.
- Enclosure : Cast Al, IP 65, integral with probe



PRINCIPLE OF OPERATION :

Vibrating Fork Level switch contain Piezo-electric crystal in the probe, which causes the fork to vibrate at a frequency of 125 Hz. It detects the presence or absence of material and actuate a relay. It gives point output, indicating high & low level alarm. It is a compact and robust design, suitable for side & top mounting. The constant vibration of the fork provides self-cleaning characteristics. The change in vibration is detected by circuit which causes the relay to change state after few seconds delay. When fork is free from material relay reverts to its normal condition.

Ordering Proforma

VIBRATING FORK TYPE LEVEL SWITCH **VFLS** **300** **1** **2**

Length of Probe in mm

Supply Voltage	
230V AC , 50Hz	: 1
110V AC , 50Hz	: 2
24 V DC	

Mounting :	
Screwed 1/2 " BSP	:1
Flanged	:2
Other	:3

PROTOCONTROL INSTRUMENTS (INDIA) PVT. LTD.

EL 31/1, ELECTRONIC ZONE, 'J' BLOCK, M.I.D.C., BHOSARI, PUNE 411 026 INDIA
 PHONE : 020- 27125198, 27125197 FAX : 020-27123918
 email : protocontrol@eth.net Web site : www.protocontrol.com

