

DAYTECH DT-VLS200 Series Datasheet

Vibrating Rod Level Switch



Features

- Intelligent Vibrating Rod Point Level Switch.
- User programmable tune setting by simple push button.
- Power supply: AC 20-60V or 230V 50Hz or DC 20-60V (<1Watt).
- Relay Output: SPDT 4A / 250VAC, 60VDC.
- PNP / NPN Output: <=400mA.
- Medium Density: Liquids >0.6g/cm³, Solids >0.1g/cm³
- Response Time: < 3 seconds at 25mm submersed
- Standard rod length 210mm, optional rod lengths and custom designs available to suit your application
- Power and Switch status LEDs.
- Robust, reliable and easy to operate. Tough powder coated cast aluminium, UV resistant and built to withstand harsh conditions.
- Intelligent signal processing and automatic compensation for fluid or solid density with switching sensitivity per user tuning.
- Process Temp range from -30°C to 150°C.
- Ambient Temperature -30°C to 70°C
- Process Operating Pressure: 20 Bar max
- Process connection: 1" BSP OR 1.5" BSP (enquire for other options).
- 316SS wetted parts, Rugged IP66, Cast Aluminium Powder Coated Housing. High temperature version available upon request.
- CE Certification.



Applications

- Liquid Level measurement
- Water, oil or corrosive liquids
- Powder Solids
- Granular Bulk solids (i.e. grain, wheat, granulated plastics, pellets, animal feed etc)
- Tank or silo level monitoring
- Pond or dam level monitoring
- Process industries and mining
- Water and Wastewater treatment, irrigation, agriculture
- High reliability and level alarming applications



Description

The DAYTECH DT-VLS200 Series Vibrating Rod Level Switch is designed for reliable, safe, simple and robust performance in point level switching applications. These vibronic sensors are ideal for solids level switching, including powders and granular solids level switching applications. The series is widely used in bin, tank or silo level measurement for water treatment, pumping stations, irrigation, agricultural, food & beverage, mining, oil and gas, process and environmental applications with proven performance. These sensors utilise a 316SS tuning rod, that literally vibrates frequency, when it comes into contact with the liquid or solid medium, the vibration frequency changes and the electronics in the sensor switches.

Standard features include user pushbutton automatic tuning for medium density, simply push the SET button when the vibrating rod is in the medium and the sensor's on board electronic chip will tune the vibronic switching point accordingly. The advanced features of the DT-VLS-200, mean the sensor is remarkably simple to setup and operate. Your level sensing application will be reliably up and running with a push of a button. The vibronic sensor can be user tuned for point level measurement of liquids, powders or bulk solids, presenting a robust solution for tank, dam, pond, silo, hopper or bin level measurement applications.

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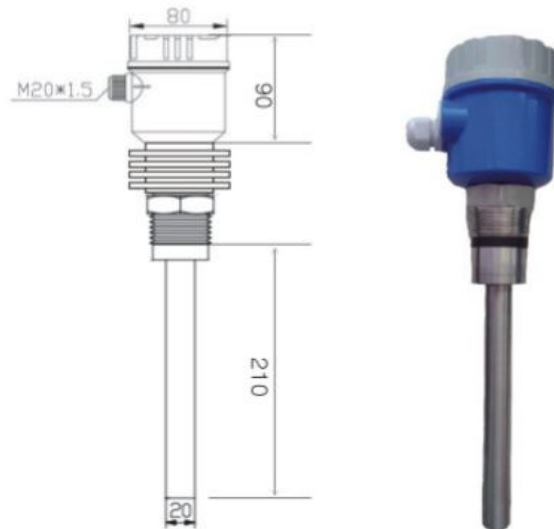
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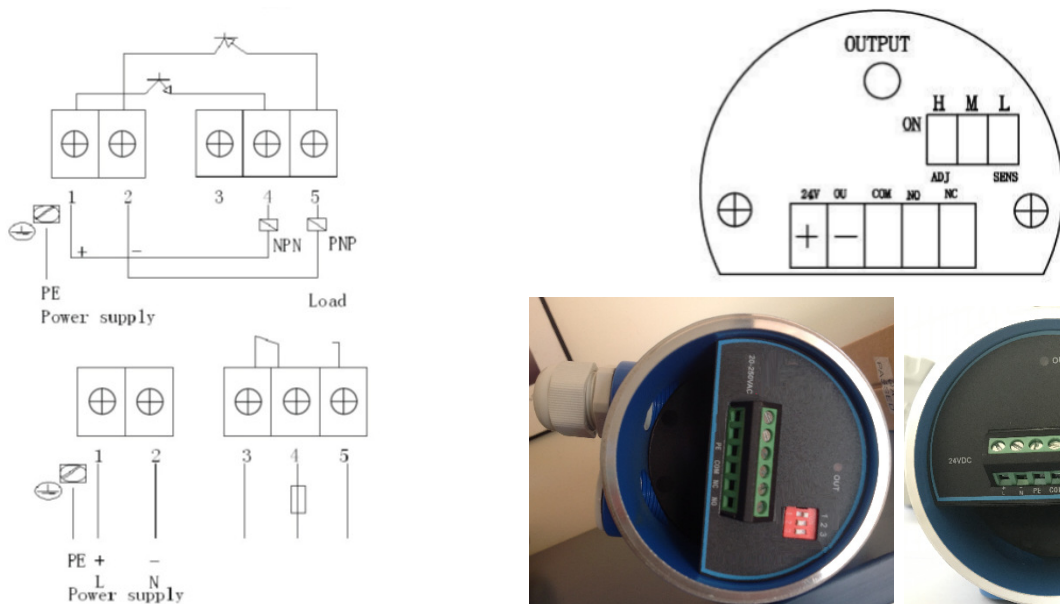


Dimensions



Note: Optional High temp version shown in dimensions figure above, with heat sink. Standard version shown on right.

Wiring and Functionality



Note 1: Optional PNP / NPN or relay output versions available. Note 2: Optional dipswitch or pot adjustment versions available.

Testing / Commissioning:

1. After power-up, the red light turns on. The probe begins vibrate, put your hand on the probe, the relay will work and red light will turn off, then take your hand off the probe, after 1-2 seconds, the red light will go on again.
2. Sensitivity selection: set according to material, typically it's set on HIGH sensitivity. In a high temperature environment, try to set on LOW sensitivity. Insert the probe in a sample of material and ensure the output switches, adjust accordingly. The adjustment potentiometer needs to be turned clockwise to reduce sensitivity and anti-clockwise to increase sensitivity.
3. When the probe touches the material, the probe will stop vibrating, the relay will de-energise and the red light turns off (opposite if "NO"). When material is not in contact with the probe for 1-2 seconds, the red light will turn on again, the relay will work (its opposite if "NO").

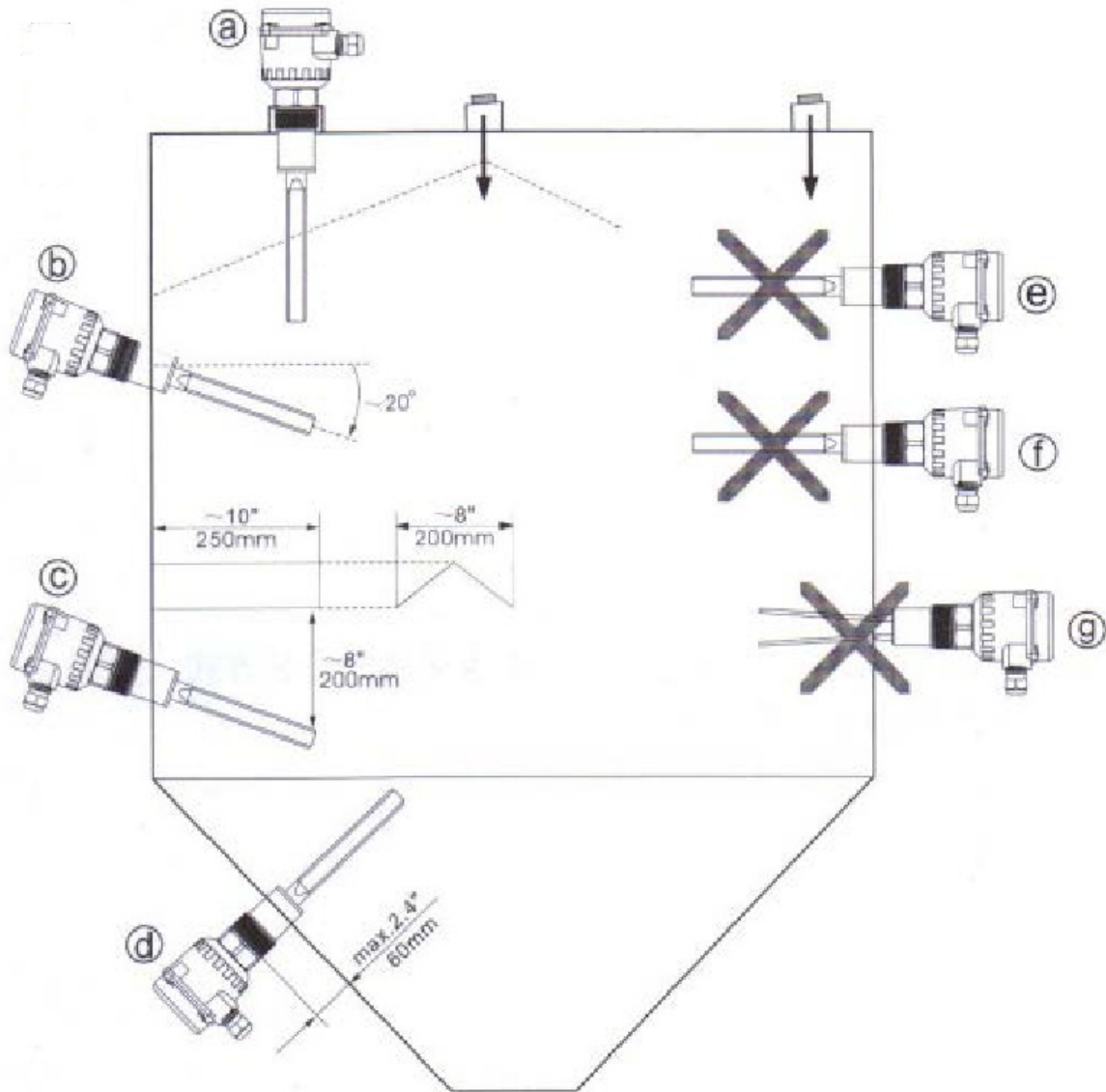
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Installation Examples



Notes:

For solids applications, which fill with an angle of repose, ideal installation is for the vibrating rod/fork is away from the filling stream (curtain) and tilted on an angle, towards perpendicular to the solid media surface. For liquids, the angled installation is not required. The above examples of a solids silo application are explained below.

- a) Installation for high high alarm level or high level control point away from filling curtain and vertical.
- b) Installation for high level control or alarm point away from filling curtain and horizontal with downward sloping angle.
- c) Installation for low level control or alarm point away from filling curtain and horizontal with downward sloping angle.
- d) Installation for low level control or low low alarm point, on angle within the cone.
- e) Do not install within the filling stream.
- f) Do not install within the filling stream.
- g) Applicable to vibrating forks only, this problem is not applicable to vibrating rods.

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Technical Specifications

Parameter	Value	Notes
Measurement Range	Point Level Switching – immersion minimum 45mm	
Operating Pressure	Process: 20 Bar Display Unit / Housing: atmospheric pressure	
Response Time	< 3 seconds at min 25mm immersion	
Ambient Conditions	Temperature: -30°C to 70°C Humidity: ≤90%RH	
Process Temperature	-30°C to 80°C standard -30°C to 200°C high temp version	
Medium Density	Liquids >0.6g/cm ³ Solids >0.1g/cm ³	
Media Compatibility	Medium compatible with 316SS, refer chemical compatibility chart. Optional corrosion resistant probe.	
Optional Rod lengths	210mm or custom designs	
LED Indicators	Power and Switch Status	
Medium Tuning	Via SET pushbutton, automatically tunes for medium density.	
Power supply	AC 20-60V or 230V 50Hz or DC 20-60V	
Load Power	<1 Watt	
SPDT Relay Output:	4A / 250VAC, 4A 60VDC	
PNP / NPN Output	≤400mA.	
Electrical Connection	1 x M20 IP66 gland for cable connection 1 x M20 IP66 blank for optional cable connection	
Process Connection	20Bar, 1" BSP OR 1.5" BSP (enquire for other options)	
Compliance Certification	CE, complies with AUS/NZ standards	
IP Rating	IP66	

Selection Guide

Order DT-VFL200-210 for Rod length of 210mm. Please specify if custom rod lengths are required.

Standard version has a process temperature range of -30°C to 80°C, please specify if the high temperature version is required, with a process temperature range of -30°C to 200°C. Order part number DT-VFL200-210-T for high temperature.

Threaded process connection is standard, flange versions are available for custom orders. For flanged version, order part number DT-VFL200-210-F.

Please contact our sales and engineering team for application assistance.

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