The Vibrating Rod Level Switch

——CVR312 series

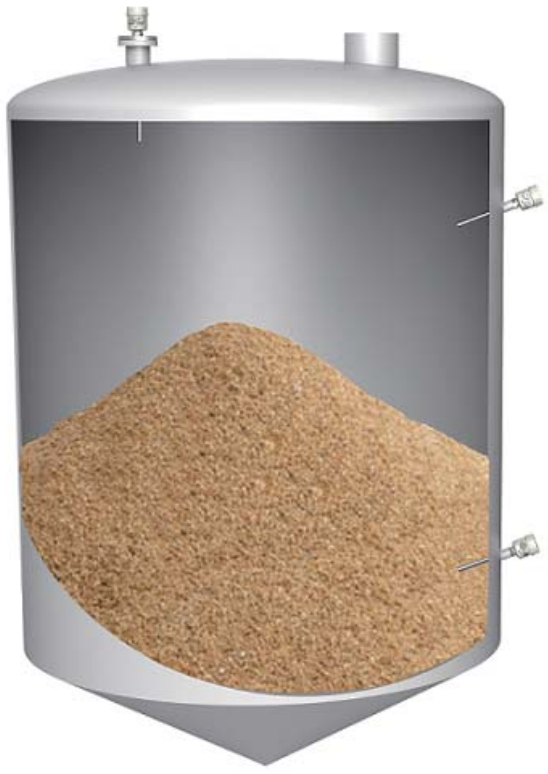
Features

- AC&DC dual power supply design.
- High / Low fail safe modes.
- Adjustable sensitivity to fit versatile density of material.
- No mechanical moving parts, maintenance free.
- Unaffected by flow, foam, solids content, coating and properties variation of targeted media.
- Withstand static electricity.
- Fast response time 0.6S(adjustable).

Measuring Principle

The vibrating rod level switch working principle based upon detecting the change in harmonic vibration frequency of the sensing element as a result of the presence of the target media. The vibrating rod level switch operated by using two piezoelectric elements built in on vibration tube.

The first piezoelectric element triggered by a pulse signal that created from circuit to transport vibration energy out and the other piezoelectric element receives the vibration and transmits it to output electric signal. When the probe comes into contact with the fluid, it will cause the frequency change of output signal and the vibration will hold and send out the relay on at the same time.



Applications

The vibrating rod level switch has a wide range of applications. It can detect high/low level of both liquid and solid, such as coffee powder, tea, flour, sand casting, spices, peanuts, tobacco, animal food, granules, freeze-dried coffee, stearin, wood chips, plastic granules, gravel, coal, clay powder, powdered fiber, glass silicon powder, foaming material, soda, polystyrene powder, etc.

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Specifications

Standard version

Extension version

Power supply	20…250VAC/VDC, 50/60HZ
Power	Max.15VA
Sensitivity	High / Middle / Low
Cable entry	1/2"NPT×2 holes
Process connection	G1" or 1"NPT
Process pressure	Vacuum…20bar
Ambient temperature	-40℃…60℃
Process temperature	-40℃…130℃
Output	Relay, SPDT 5A/250VAC or PNP/NPN
Delay	0.6S…1S action; 2S…5S reset
Vibrational frequency	365HZ…405HZ
Probe material	SUS 304/316
Fail safe modes	High / Low
Housing/Protection	Aluminium/IP65
Max. vertical bearing force of the induction rod	20Nm
Min. induction density of the induction rod	powder: 0.32g/cm^3

Cable extension version

Anti-corrosion version

Power supply	20…250VAC/VDC, 50/60HZ	
Power	Max.15VA	
Sensitivity	High / Middle / Low	
Cable entry	1/2"NPT	
Process connection	G1" or 1"NPT	Flange Min.1"
Process pressure	Vacuum…20bar	
Ambient temperature	-40℃…60℃	
Process temperature	-40℃…80℃	
Output	Relay, SPDT 5A/250VAC or PNP/NPN	
Delay	0.6S…1S action; 2S…5S reset	
Vibrational frequency	365HZ…405HZ	
Probe material	SUS 304/316	SUS 304/316 covered with PTFE or PFA
Fail safe modes	High / Low	
Housing/Protection	Aluminium/IP65	
Max. vertical bearing force of the induction rod	20Nm	
Min. induction density of the induction rod	powder: 0.32g/cm^3	

Ordering Code

CVR312-										
	1	2	3	4	5	6	7	8	9	10

1:Approval	
XX	Standard version
FX	Ex d IIC T6 Gb
FX	Ex tD A21 IP66 T80℃
2:Type of sensor	
S	Standard version (process temperature: -40°C…130°C/process pressure: vacuum...20bar)
E	Extension version (process temperature: -40°C...130°C/process pressure: vacuum...20bar)
F	Cable extension version (process temperature: -40°C...80°C/process pressure: vacuum...20bar)
C	Anti-corrosion version (process temperature: -40°C...80°C/process pressure: vacuum...20bar)
T	Customized
3:Material of sensor	
0	SUS304
6	SUS316
1	SUS304+PTFE
7	SUS316+PTFE
2	SUS304+PFA
9	SUS316+PFA
T	Customized
4:Process connection	
A	Thread G¾"
E	Thread G1"
G	Thread G1½"
F	Thread 1"NPT
L	φ50.5 tri-clamp
W	Movable sleeve
T	Customized

5:Output	
A	Relay 0/P
B	NPN/PNP(Max.50mA)
C	NAMUR
T	Customized
6:Power supply	
9	20-250VAC/VDC，50/60HZ
7:Cable entry	
M	M20*1.5
N	½NPT
8:Installation	
I	Integral
R	Separate
9:Length of the vibrating rod（mm)	
0275	
0500	
1000	
……	Length range of the vibrating rod: 0275…9999
10:Industry code	
XX	Industry code