

WORKING PRINCIPLE

The vibrating probe level switch operates by using two piezoelectric elements built on vibration kit inside the tube. One piezoelectric element receives pulse signal from PCB and causes the tube to vibrate, and the vibration transmits to the other in order to output electric signal, which will be sent to PCB. When the vibration of the tube is paused by the risen material, PCB can not have the vibration signal from the piezoelectric element. Therefore relay actuates on.

Fail-safe is equipped to prevent malfunction caused by power shortage.

Vibrating probe level switch provides reliable & trouble-free level sensing for bulk solids. With simple mounting and calibration, and high stability of working principle, it can withstand high lateral loads, and it will not be affected by material built-up and static electricity.

FEATURE

- Sturdy and durable design. No calibration needed.
- No fear for accumulated material on sensor.
- High / Low fail safe modes offer safety and reliability.
- Adjustable sensitivity can be set according to different density of material.

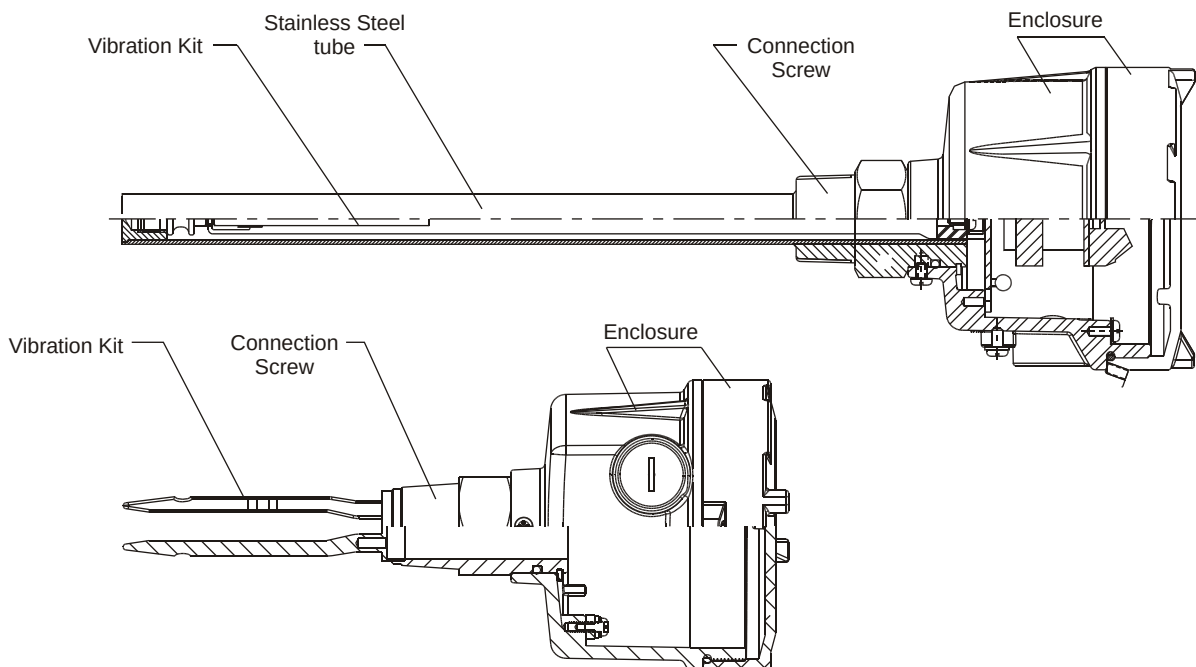
APPLICATION

- Powder materials, Powdered coffee, Dry milk, Chocolate, Powdered coal, Dry Bulk, Sugar, Salt, Wheat, Grains, Glass material, Plastic pellet, Cement
- Sludge level detection in waste water

The SC(MV) series detects the min. and max of level in bins, silos and hoppers, filled with powdered materials. The following list shows some of these materials.

- | | |
|---------------------------|-----------------------|
| • Powdered milk | • Peanuts |
| • Frozen potato chips | • Tobacco |
| • Beans | • Wood shavings |
| • Sugar | • Chalk |
| • Sweets | • Stearin chips |
| • Coffee beans | • Powdered cellulose |
| • Coffee ground | • Glass finely ground |
| • Coffee Powder | • Granular plastics |
| • Tea (leaf) | • Gravel |
| • Salt | • Powdered clay |
| • Flour (in a flour mill) | • Polystyrene powder |
| • Foundry sand | • Styrofoam |
| • Spices | • Soda |
| • Animal food | • Soot dry |
| • Pellets | |

CONSTRUCTURE



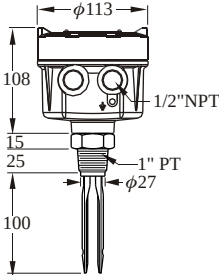
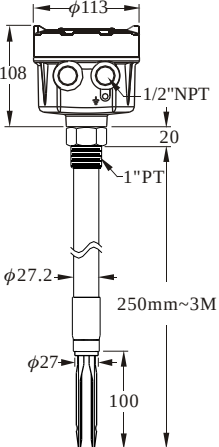
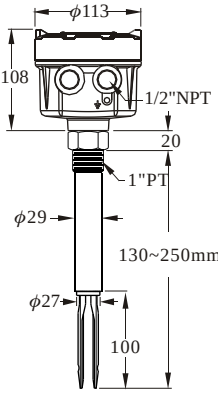
SPECIFICATION

Dimensions (Unit:mm)			
Order No.	SC2100	SC2110	SC2120
Model No.	MV10/11 [Standard Type]	MV20 [Solid Extension Type]	MV21 [Solid Extension Type]
Level Sensor Housing	Aluminum / IP65		
Probe Construction	SUS 304 / 316		
Mounting	1"PT		
Conduit	1/2"NPT × 2		
Max. Vertical load on rod.	177in.Lbs(20Nm)		
Operating Pressure.	Vacuum~150PSI (10BAR)		
Power Supply	20~250, 50/60Hz Vac/ Vdc		
Power Consumption	15VA (Max.)		
Operating Temp. In Ambient Air	-40°C~60°C		
Operating Temp. In Bin	-40°C~80°C		
Signal Output	Relay, SPDT, 5A/250Vac /PNP/NPN(MOSFET)400mA/60 Vac/ Vdc		
Medium density	Solid: 0.32g/cm ³		
Time Delay	0.6~1 Second / Operate; 2~5 Seconds / Reset		
Remote-test	Yes		
Vibrating Frequency.	395~405HZ		
Selectable Fail-safe	Hi./ Lo.		
Selectable Sensitivity	Hi./ Mid. / Lo.		

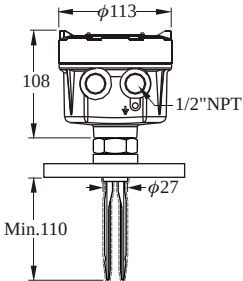
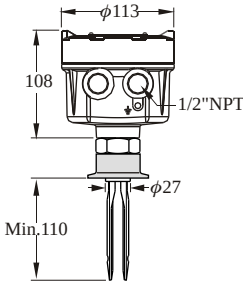
SPECIFICATION

Dimensions (Unit:mm)		
Order No.	SC2300	SC2500
Model No.	MV30 [Cable Extension Type]	MV50 [Corrosion-Proof]
Level Sensor Housing	Aluminum / IP65	
Probe Construction	SUS 304 / 316	SUS 304/316 Coating TEFLON
Mounting	1"PT	Flange 1"(min.)
Conduit	1/2"NPT × 2	
Max. Vertical load on rod.	177in.Lbs(20Nm)	
Operating Pressure.	Vacuum~150PSI (10BAR)	Vacuum~150PSI (10BAR)
Power Supply	20~250, 50/60Hz Vac/ Vdc	
Power Consumption	15VA (Max.)	
Operating Temp. In Ambient Air	-10°C~60°C	
Operating Temp. In Bin	-40°C~80°C	-40°C~80°C
Signal Output	Relay, SPDT, 5A/250Vac /PNP/NPN(MOSFET)400mA/60 Vac/ Vdc	
Medium density	Solid: 0.32g/cm ³	
Time Delay	0.6~1 Second / Operate; 2~5 Seconds / Reset	
Remote-test	Yes	
Vibrating Frequency.	395~405HZ	
Selectable Fail-safe	Hi./ Lo.	
Selectable Sensitivity	Hi./ Mid. / Lo.	

SPECIFICATION

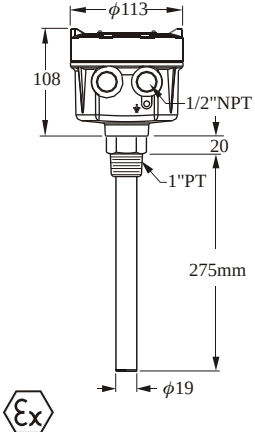
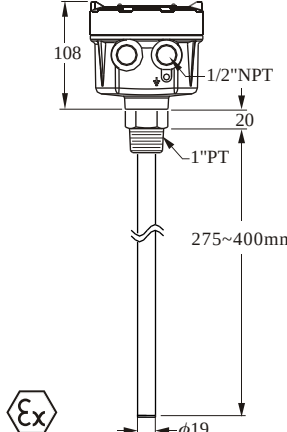
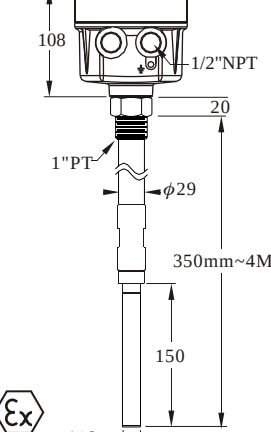
Dimensions (Unit:mm)			
Order No.	SC1400	SC1410	SC1420
Model No.	MV40 [Tuning Fork Standard]	MV41 [Tuning Fork Extension]	MV42 [Tuning Fork Extension]
Level Sensor Housing	Aluminum / IP65		
Probe Construction	SUS 304 / 316		
Mounting	1"PT		
Conduit	1/2"NPT × 2		
Max. Vertical load on rod.	177in.Lbs(20Nm)		
Operating Pressure.	Vacuum~600PSI (40BAR)		
Power Supply	20~250Vac/dc		
Power Consumption	10VA		
Operating Temp. In Ambient Air	-40°C~70°C		
Operating Temp. In Bin	-40°C~130°C		
Signal Output	Relay, SPDT, 2A/250Vac Max.		
Medium density	Solid: 0.23g/cm ³ , Liquid: 0.8g/cm ³		
Time Delay	0.6 Second / Operate; 1~3 Seconds / Reset		
Vibrating Frequency.	355~365HZ		
Selectable Fail-safe	Hi./ Lo.		
Selectable Sensitivity	Hi./ Lo.		

SPECIFICATION

Dimensions (Unit:mm)		
Order No.	SC1540	SC1600
Model No.	MV54 [Corrosion-Proof Type]	MV60 [Sanitary Type]
Level Sensor Housing	Aluminum / IP65	
Probe Construction	SUS 304/316 Coating TEFLON	SUS 304 / 316
Mounting	Flange 1"(min.)	2" Sanitary
Conduit	1/2"NPT × 2	
Max. Vertical load on rod.	177in.Lbs(20Nm)	
Operating Pressure.	Vacuum~600PSI (40BAR)	
Power Supply	20~250Vac/dc	
Power Consumption	10VA	
Operating Temp. In Ambient Air	-40°C~70°C	
Operating Temp. In Bin	-40°C~130°C	
Signal Output	Relay, SPDT, 2A/250Vac Max.	
Medium density	Solid: 0.23g/cm ³ , Liquid: 0.8g/cm ³	
Time Delay	0.6 Second / Operate; 1~3 Seconds / Reset	
Vibrating Frequency.	355~365HZ	
Selectable Fail-safe	Hi./ Lo.	
Selectable Sensitivity	Hi./ Lo.	

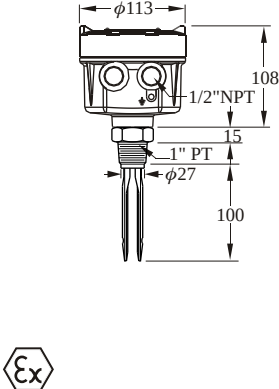
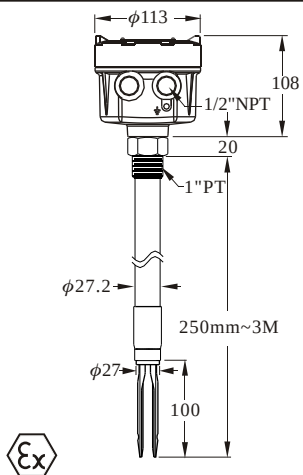
SPECIFICATION

NEPSI PROOF NO. GYJ06233 Ex d IIC T3~T6
PTB PROOF NO. 05 ATEX 1026 Ex II 2G EEx d IIB T6
Ex II 2D IP65 T6

Dimensions (Unit:mm)			
Order No.	SC1700	SC1701	SC1710
Model No.	MV70 [Standard Type]	MV70 [Shaft Extension Type]	MV71 [Shaft Extension Type]
Level Sensor Housing	Aluminum / Ex d IIC T3~T6		
Probe Construction	SUS 304 / 316		
Mounting	Screw: 1"PT or PF, Flange: 1"~6"JIS / DIN / ANSI		
Conduit	1/2"NPT × 2		
Max. Vertical load on rod.	177in.Lbs(20Nm)		
Operating Pressure.	Vacuum~150PSI (10BAR)		
Power Supply	20~250Vac/dc		
Power Consumption	15W		
Operating Temp. In Ambient Air	-40°C~60°C		
Operating Temp. In Bin	-40°C~80°C		
Signal Output	Relay, SPDT , 3A/250Vac Max.		
Medium density	Solid: 0.32g/cm ³		
Time Delay	0.6 Second / Operate; 2~5 Seconds / Reset		
Vibrating Frequency.	360~370HZ		
Selectable Fail-safe	Hi./ Lo.		
Selectable Sensitivity	Hi./ Mid. / Lo.		

SPECIFICATION

NEPSI PROOF NO. GYJ06233 Ex d IIC T3~T6

Dimensions (Unit:mm)		
Order No.	SC1740	SC1741
Model No.	MV74 【 Tuning Fork Standard 】	MV74 【 Tuning Fork Extension 】
Level Sensor Housing	Aluminum / Ex d IIC T3~T6	
Probe Construction	SUS 304 / 316	
Mounting	Screw: 1"PT or PF, Flange: 1"~6"JIS / DIN / ANSI	
Conduit	1/2"NPT × 2	
Max. Vertical load on rod.	177in.Lbs(20Nm)	
Operating Pressure.	Vacuum~600PSI (40BAR)	
Power Supply	20~250Vac/dc	
Power Consumption	10VA	
Operating Temp. In Ambient Air	-40°C~70°C	
Operating Temp. In Bin	-40°C~130°C	
Signal Output	Relay, SPDT, 3A/250Vac Max.	
Medium density	Solid: 0.23g/cm ³ , Liquid: 0.8g/cm ³	
Time Delay	0.6 Second / Operate; 1~3 Seconds / Reset	
Vibrating Frequency.	355~365HZ	
Selectable Fail-safe	Hi./ Lo.	
Selectable Sensitivity	Hi./ Lo.	

ORDER INFORMATION

SC () ()

ORDER NO.

SC2100: MV10/11 Standard Type
SC2110/2120: MV20/21 Solid Extension Type
SC2300: MV30 Cable Extension Type
SC2500: MV50 Corrosion-proof Type
SC1400: MV40 Tuning Fork Standard Type
SC1410/1420: MV41/42 Tuning Fork Extension Type
SC1540: MV54 Tuning Fork Corrosion-proof Type
SC1600: MV60 Sanitary Type
SC1700: MV70 Explosion-Proof Standard Type
SC1701: MV70 Explosion-Proof Shaft extension Type
SC1710: MV71 Explosion-Proof Shaft extension Type
SC1740: MV74 Explosion-Proof Tuning Fork Standard Type
SC1741: MV74 Explosion-Proof Tuning Fork Extension Type

POWER & OUTPUT MODULE

20~250Vac/ Vdc, 50/60Hz
A: Relay O/P(Barrier terminal Block)
B: Transistor PNP/NPN (Barrier terminal Block)
R: Relay O/P(Green terminal)-EuroType
N: Transistor PNP/NPN-EuroType

MATERIAL

0: SUS304 6: SUS316 P: PTFE

CONNECTION

D---1"(25A)	M---5kg/cm ²	W---PN 10
E---1-1/2"(40A)	N---10kg/cm ²	X---PN 16
F---2"(50A)	O---150 Lbs	Y---PN 25
G---2-1/2"(65A)	P---300 Lbs	Z---PN 40
H---3"(80A)	Q---PT	S---others
I---4"(100A)	R---PF(G)	9---Sanitary
J---5"(125A)	T---BSP	
K---6"(150A)	U---NPT	
S---others		

LENGTH (L) (UNIT: cm)

0500: 50cm(01~50)
1000: 100cm(51~100)
1500: 150cm(101~150) ※ 50cm per Unit

BEFORE YOU ORDER

1. Please affirm the voltage.
2. Please affirm the mounting positions.
3. Please affirm the material specific gravity (S.G.) value.
4. Please affirm whether any bridge block or vibrating motor are attached onto the silo wall.

Tolerance of the total product length is $\pm 5\text{mm}$

Characteristics, specifications and dimensions are subject to change without notice.

Please contact your nearest distributing office for further information.