

WORKING PRINCIPLE

The vibrating probe level switch operates by using two piezoelectric elements built on vibration kit inside pipe. One receives pulse signal from PCB and causes pipe to vibrate, and the vibration transmits to the other in order to output electric signal and it is sent to PCB. When the vibration of pipe is paused by measuring material surrounding it, PCB can not have the vibration signal from the piezoelectric element and relay actuates on. This is also able to use in fail-safe due to few malfunction and high stable work. This series vibrating probe provides reliable & trouble-free level sensing for bulk solids. Simple mounting and calibration, high confidence in working principle, it is unaffected by material built-up and static electricity, and can withstand high lateral loads.

FEATURE

- No calibration needed, using friendly as well as sturdy and durable design.
- Shed off build-up material. No fear about accumulated material on sensor.
- High / Low fail safe modes offer safety and reliability.
- According to different density, its adjustable sensitivity wheel button can be set even for finest material.

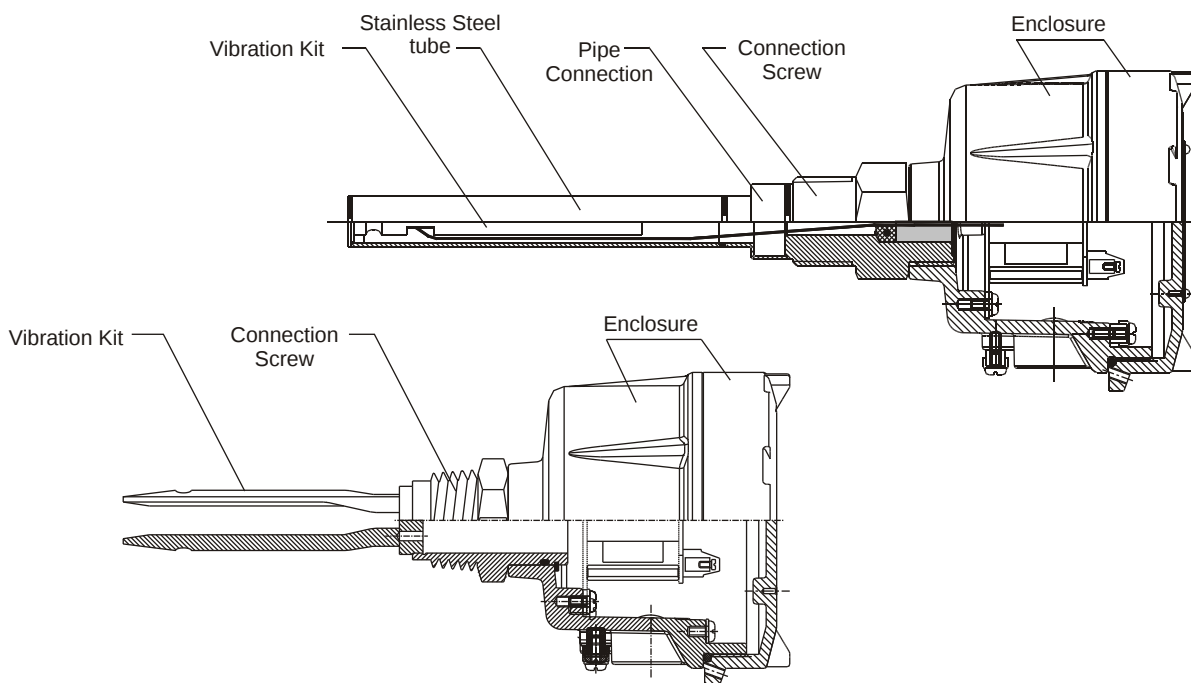
APPLICATION

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

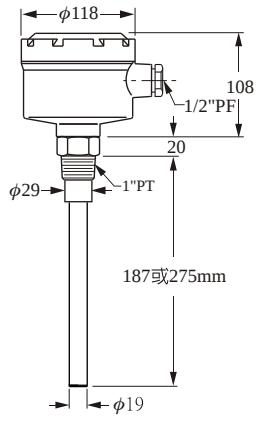
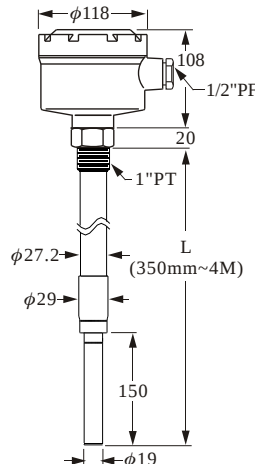
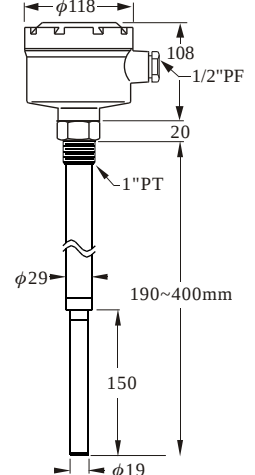
The SC(MV) series detects the min. and max. Level in bins, silos and hoppers, filled with grained or powdered materials. The following list shows some of these materials.

- | | |
|---------------------------|-----------------------|
| • 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 | |

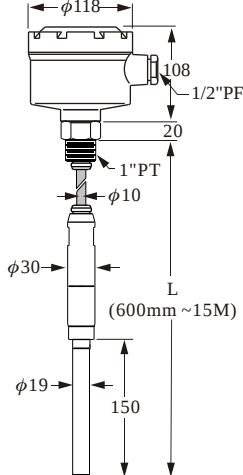
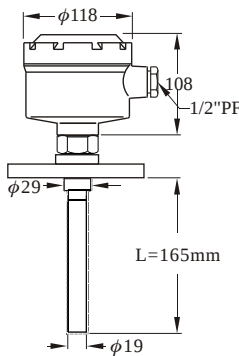
CONSTRUCTURE



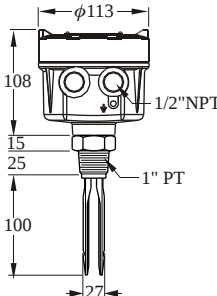
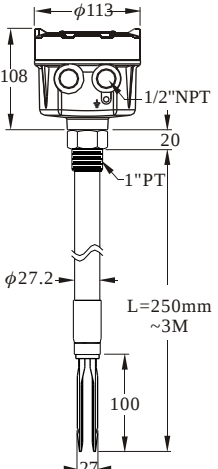
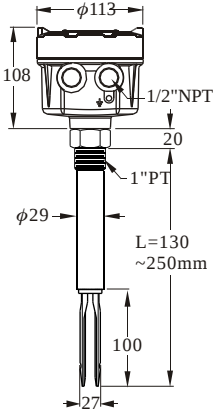
SPECIFICATION

Dimensions (Unit:mm)	 SC1100---L=275mm(standard) SC1110---L=187mm(standard)		
Order No.	SC1100/1110	SC1200	SC1210
Model No.	MV10/11 [Standard Type]	MV20 [Solid extension Type]	MV21 [Solid extension Type]
Level Sensor Housing	SC1100--PP+Fiber / IP65 Sc1110--Aluminum / IP65	Aluminum / IP65	
Probe Construction	SUS 304 / 316		
Conduit	1"PT		
Mounting	1/2"PF × 1		
Max. Vertical load on rod.	177in.Lbs(20Nm)		
Operating Press.	Vacuum~150PSI (10BAR)		
Power Supply	110/220Vac ± 10% 50/60Hz		
Power Consumption	2VA (Max.)		
Operating Temp. In Ambient Air	-10°C~60°C		
Operating Temp. In Bin	-10°C~80°C		
Relay Output	Relay, SPDT , 5A/250Vac Max.		
Material density	Solid: 0.32g/cm ³		
Time Delay	0.6~1 Sec. / Operate;2~5 Secretary / Reset		
Vibrating Freq.	360~370HZ		
Selectable Fail-safe	Hi./ Lo.		
Selectable Sensitivity	Hi./ Mid. / Lo.		

SPECIFICATION

Dimensions (Unit:mm)		
Order No.	SC1300	SC1500
Model No.	MV30 [Cable extension Type]	MV50 [Corrosion-proof]
Level Sensor Housing	Aluminum / IP65	
Probe Construction	SUS 304 / 316	SUS 304/316 Coating TEFLON
Conduit	1"PT	Flange 1"(min.)
Mounting	1/2"PF	1/2"PF
Max. Vertical load on rod.	177in.Lbs(20Nm)	
Operating Press.	Vacuum~150PSI (10BAR)	Vacuum~600PSI (40BAR)
Power Supply	110/220Vac ± 10% 50/60Hz	
Power Consumption	2VA (Max.)	
Operating Temp. In Ambient Air	-10°C~60°C	
Operating Temp. In Bin	-10°C~80°C	-10°C~130°C
Relay Output	Relay, SPDT , 5A/250Vac Max.	
Material density	Solid: 0.32g/cm ³	Solid: 0.32g/cm ³ , Liquid: 0.8g/cm ³
Time Delay	0.6~1 Sec. / Operate; 2~5 Secretary / Reset	
Vibrating Freq.	360~370HZ	
Selectable Fail-safe	Hi./ Lo.	
Selectable Sensitivity	Hi./ Mid. / Lo.	

SPECIFICATION

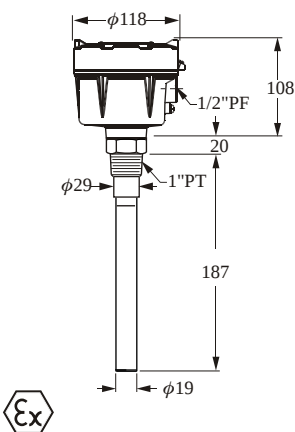
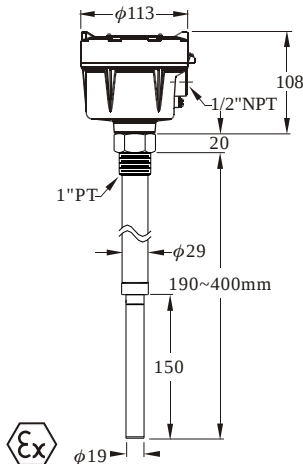
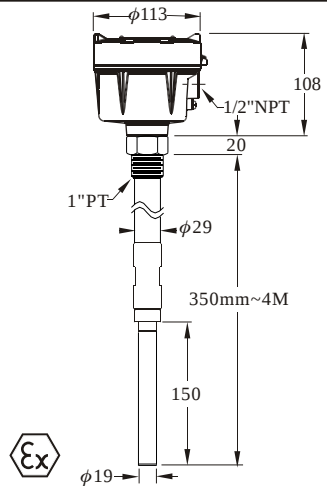
Dimensions (Unit:mm)			
	Order No.	SC1400	SC1410
Model No.	MV40 [Tuning Fork Standard]	MV41 [Tuning Fork extension]	MV42 [Tuning Fork extension]
Level Sensor Housing	Aluminum / IP65		
Probe Construction	SUS 304 / 316		
Conduit	1"PT		
Mounting	1/2"NPT × 2		
Max. Vertical load on rod.	177in.Lbs(20Nm)		
Operating Press.	Vacuum~600PSI (40BAR)		
Power Supply	20~250Vac, 20~60Vdc		
Power Consumption	2.2VA (Max.)		
Operating Temp. In Ambient Air	-10°C~60°C		
Operating Temp. In Bin	-10°C~130°C	-10°C~80°C	
Relay Output	Relay, SPDT, 2A/250Vac Max.		
Material density	Solid: 0.23g/cm³, Liquid: 0.8g/cm³		
Time Delay	0.6 Sec. / Operate;1~3 Secretary / Reset		
Vibrating Freq.	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 / EEX d IIB T3~T6	
Probe Construction	SUS 304/316 Coating TEFLON	SUS 304 / 316
Conduit	Flange 1"(min.)	2" Sanitary
Mounting	1/2"NPT × 2	
Max. Vertical load on rod.	177in.Lbs(20Nm)	
Operating Press.	Vacuum~600PSI (40BAR)	
Power Supply	20~250Vac, 20~60Vdc	
Power Consumption	2.2VA (Max.)	
Operating Temp. In Ambient Air	-10°C~60°C	
Operating Temp. In Bin	-10°C~130°C	
Relay Output	Relay, SPDT, 2A/250Vac Max.	
Material density	Solid: 0.23g/cm ³ , Liquid: 0.8g/cm ³	
Time Delay	0.6 Sec. / Operate;1~3 Secretary / Reset	
Vibrating Freq.	355~365HZ	
Selectable Fail-safe	Hi./ Lo.	
Selectable Sensitivity	Hi./ Lo.	

SPECIFICATION

NEPSI PROOF NO. GYJ03350 Ex d IIB T3~T6
PTB PROOF NO. 05 ATEX 1026 Ex II 2G EEx d IIB T3~T6
Ex II 2D IP65 T3~T6

Dimensions (Unit:mm)			
Order No.	SC1700	SC1701	SC1710
Model No.	MV70 [Standard Type]	MV70 [Extension Type]	MV71 [Shaft extension]
Level Sensor Housing	Aluminum / EEx d IIB T3~T6		
Probe Construction	SUS 304 / 316		
Conduit	Screw: 1"PT or PF, Flange: 1"~6"JIS / DIN / ANSI		
Mounting	1/2"NPT × 2		
Max. Vertical load on rod.	177in.Lbs(20Nm)		
Operating Press.	Vacuum~150PSI (10BAR)		
Power Supply	110/220Vac ± 10% 50/60Hz		
Power Consumption	2W (Max.)		
Operating Temp. In Ambient Air	-10°C~60°C		
Operating Temp. In Bin	-10°C~80°C		
Relay Output	Relay, SPDT , 5A/250Vac Max.		
Material density	Solid: 0.32g/cm ³		
Time Delay	0.6 Sec. / Operate;2~5 Secretary / Reset		
Vibrating Freq.	360~370HZ		
Selectable Fail-safe	Hi./ Lo.		
Selectable Sensitivity	Hi./ Mid. / Lo.		

SPECIFICATION

NEPSI PROOF NO. GYJ06233 Ex d IIB T3~T6

Dimensions (Unit:mm)		
Order No.	SC1740	SC1741
Model No.	MV74 【 Tuning Fork Standard 】	MV74 【 Tuning Fork extension 】
Level Sensor Housing	Aluminum / EEX d IIB T3~T6	
Probe Construction	SUS 304 / 316	
Conduit	Screw: 1"PT or PF, Flange: 1"~6"JIS / DIN / ANSI	
Mounting	1/2"NPT × 2	
Max. Vertical load on rod.	177in.Lbs(20Nm)	
Operating Press.	Vacuum~600PSI (40BAR)	
Power Supply	120~250Vac, 20~60Vdc	
Power Consumption	2.2VA (Max.)	
Operating Temp. In Ambient Air	-10°C~60°C	
Operating Temp. In Bin	-10°C~130°C	
Relay Output	Relay, SPDT, 2A/250Vac Max.	
Material density	Solid: 0.23g/cm ³ , Liquid: 0.8g/cm ³	
Time Delay	0.6 Sec. / Operate;1~3 Secretary / Reset	
Vibrating Freq.	355~365HZ	
Selectable Fail-safe	Hi./ Lo.	
Selectable Sensitivity	Hi./ Lo.	

ORDER INFORMATION

SC

ORDER NO.

SC1100/1110: MV10/11 Standard Type
 SC1200/1210: MV20/21 Solid Extension Type
 SC1300: MV30 Cable Extension Type
 SC1500: 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
 SC1700/1701: MV70 Proof Standard /Extension Type
 SC1710: MV71 Proof Shaft extension Type
 SC1740: MV74 Proof Tuning Fork Standard Type
 SC1741: MV74 Proof Tuning Fork Extension Type

SUPPLY VOLTAGE

A: 110/220Vac B: 20~60Vdc, 20~250Vac

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	9---Sanitary
J---5"(125A)	T---BSP	
K---6"(150A)	U---NPT	
S---others	V--- G	

LENGTH (L) UNIT: mm

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 installed onto the silo wall.

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

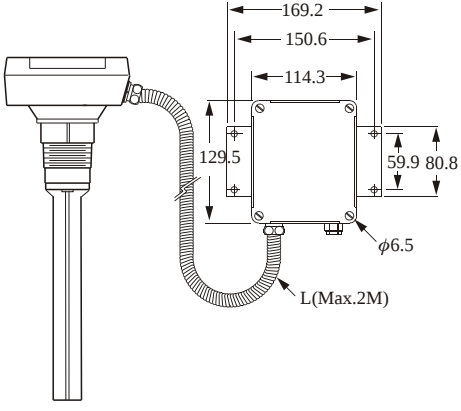
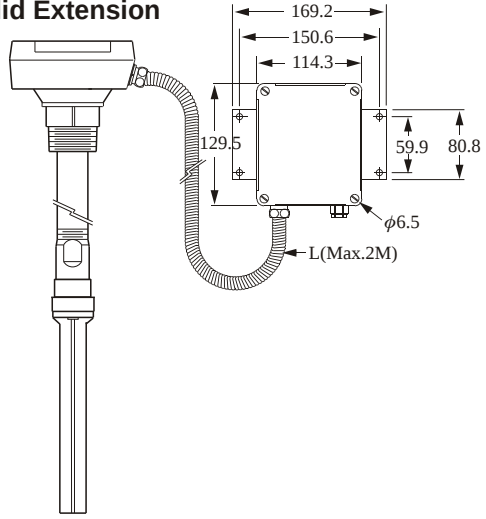
Characteristics, specifications and dimensions are subject to change without notice.

Please contact your nearest distributing office for further informations.

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SPECIFICATION

LIGHT SPECIFIC GRAVITY TYPE

DIMENSIONS (Unit:mm)	Hi-temp/Remote Electronics	Hi-temp/Remote Electronics/ solid Extension
		
Model	ZVL20R	ZVL20S
Level Sensor Housing	NEMA4,12 / IP65 Die Cast Aluminum	
Probe Construction	SUS304	
Mounting	1-1/2"NPT	
Power Entry	1/2"PT, PG13.5	
Power Supply	115 / 230 VAC ± 15% 50 / 60Hz	
Power Consumption	2VA (MAX.)	
Min. Material Density Sensed	1.87Lbs.Cu.Ft. (0.03g/cm³)	
Operating Temp. In Ambient Air	-22°F ~ 140°F -30°C ~ 60°C	
Operating Temp. In Bin	-22°F ~ 248°F -30°C ~ 120°C	
Operating Press.	Vacuum ~150 PSI (10BAR)	
Relay Output	SPDT 5A/250VAC Max.	
Time Delay	1 Sec. / Operate 2~5 Secretary / Reset	
Extension	6Ft.	
Vibrating Freq.	285 Hz	
Selectable Fail-safe	HI./ LO.	
Selectable Sensitivity	HI./ LO.	

ORDER INFORMATION



ZVL

ORDER NO. _____

- ZVL20C: standard
- ZVL20E: Standard W/solid Extension
- ZVL20W: Standard W/cable Extension
- ZVL20R: Hi-temp/Remote Electronics
- ZVL20S : Hi-temp/Remote Electronics/solid Extension

CONNECTION _____

C---3/4"(20A)	M---5kg/cm ²	W---PN 10
D---1"(25A)	N---10kg/cm ²	X---PN 16
E---1-1/2"(40A)	O---150 Lbs	Y---PN 25
F---2"(50A)	P---300 Lbs	Z---PN 40
G---2-1/2"(65A)	Q---PT	
H---3"(80A)	R---PF	
I ---4"(100A)	T ---BSP	
J ---5"(125A)	U---NPT	
K---6"(150A)	V--- GAS	
S---others	S---others	

LENGTH (L) UNIT: mm _____

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 installed 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 informations.