

**MAGNE-SONIC
VL SERIES
VIBRATING LEVEL SENSOR**

Manual No. MS110IM

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PART ONE - INTRODUCTION

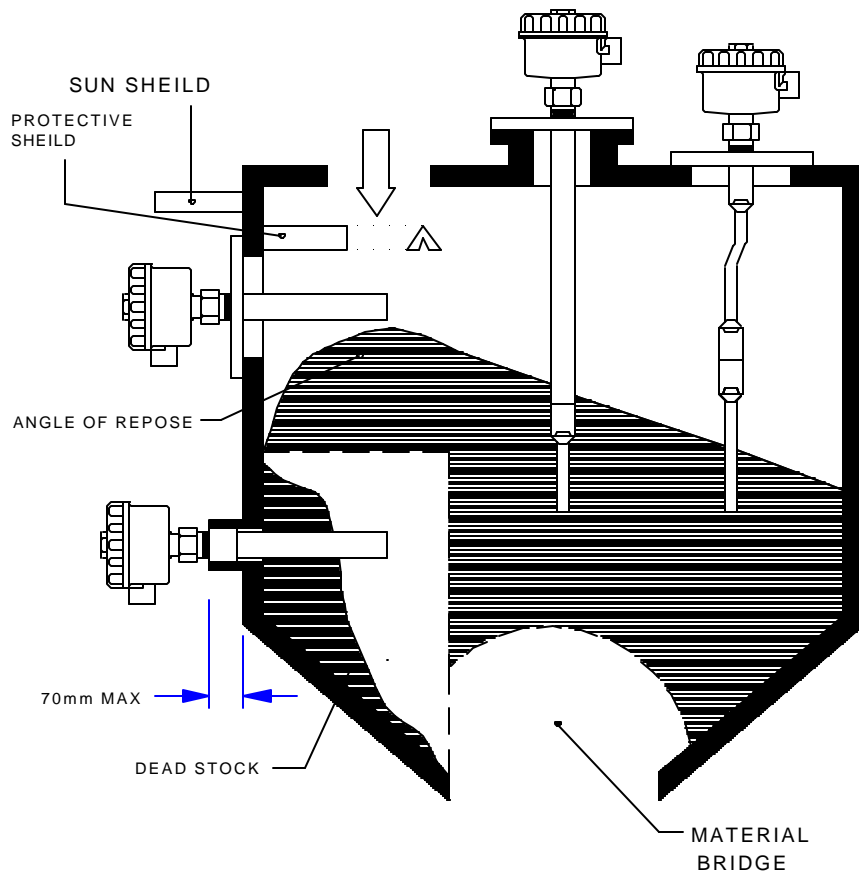
SECTION ONE - GENERAL INFORMATION

1.1 Description

The VL is made specifically for solid level detection in containers. It is designed for bulk solids as low as 0.2g/cm^3 .

1.2 Location

Locate the VL at the position where the material level will actually make contact with it. In case of high level control, pay attention to the angle of repose. In case of low level control, prevent from being surrounded by dead stock. The maximum length for the threaded boss/standoff pipe is 70mm. The vibration rod shall not contact with tank wall or standoff pipe because the vibration rod will not vibrate. The VL may be mounted in any position or orientation. However, we recommend the cable entry to point down to the ground to prevent rain or splashing water from intruding. In case of negative or positive pressure within the container, use suitable pipe compound, gasket or thread tape.



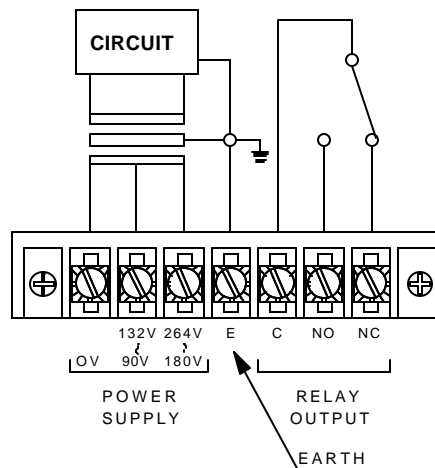
PART TWO - WIRING

SECTION ONE - WIRING

1.1 Wiring Details

Wiring shall be in accordance with all local codes. Control cable 0.75mm² minimum is recommended. Terminal screw is m3.5. Cable gland is JIS F 20a (Maximum cable O.D. is ϕ 12).

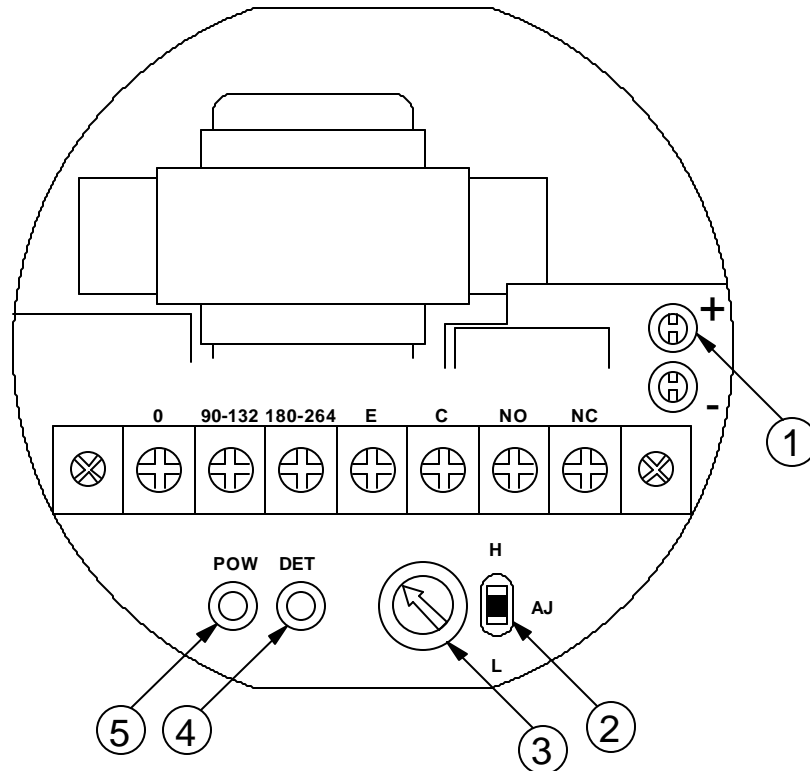
AC VOLTAGE SUPPLY



CONTACT CAPACITY
240V 3A AC (RESISTIVE)
30V 3A DC (RESISTIVE)
POWER SUPPLY
90-132V AC 50/60Hz
180-264V AC 50/60Hz
POWER CONSUMPTION
5VA

PART THREE - START-UP

SECTION ONE - NOMENCLATURE



- ① TEST POINTS
For fine adjustment of the sensitivity.
- ② SENSITIVITY SWITCH
To set or adjust the sensitivity mode.
- ③ SENSITIVITY VOLUME
To adjust the sensitivity.
- ④ DETECTION STATUS LED
- ⑤ POWER STATUS LED

1.1 Sensitivity

The sensitivity can be adjusted by the sensitivity switch and the adjusting voltage.

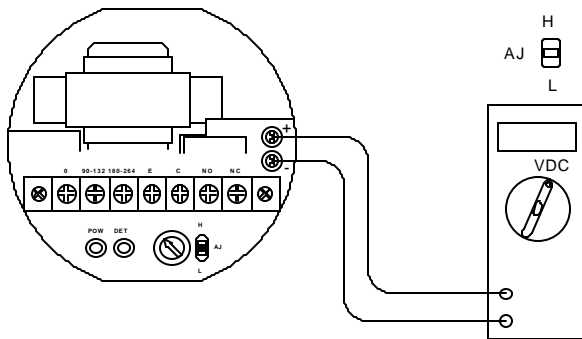
H with 4.5 - 5.5V DC: for highly fluidized materials

L with 2.0 - 3.0V DC: for light materials

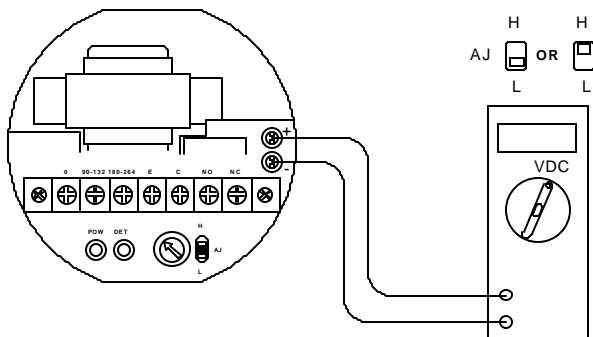
L with 4.5 - 5.5V DC: Standard adjustment

(Bulk density 0.2g/cm³ or more)

L with 6.0 - 7.0V DC: for sticky materials



Set the sensitivity switch to AJ.
Turn sensitivity volume until the
above-mentioned voltage can be read.

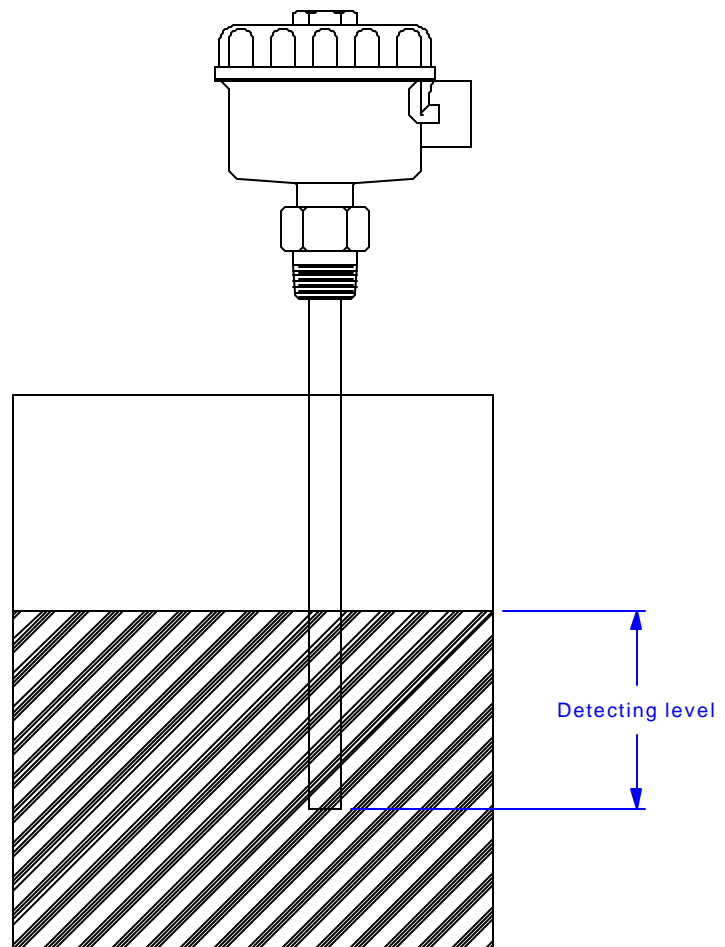


After adjustment, set the switch to H or
L and make sure 8 - 10V DC can be read.

1.2 Reference Sensitivity The sensing point (detecting level) of the VL depends on both bulk density and sensitivity. To adjust the proper level, refer to the following table.

- Sensing point from the tip of the probe at vertical mounting.

Material	g/cm ³	STD. SENS.	H SENS.
Salt	1.4	Less than 20mm	Less than 20mm
PC pellet	0.7	Less than 40mm	Less than 10mm
Coffee powder	0.26	Undetectable	Less than 80mm



1.3 Installation

The VL should be installed in an area which meets the following conditions:

1.) The ambient temperature range are as follows:

VL11/21/31: -4°C to $+212^{\circ}\text{F}$

NOTE: Install a sun sheild over the housing if exposed to direct sunlight. Do not install in the place where ambient temperature rapidly drop (for example, 104°F to 0°F). It may cause dew and damage the sensor.

2.) Locate away from splashing water. The housing protection is NEMA 4X.

3.) No Corrosive gases (such as NH_3 , Cl_2 , etc.).

4.) Humidity and vibration are low.

5.) Non-hazardous area.

6.) Ample space is provided for maintenance/inspection.