

Effective for adhesive materials

# *Admittance Level Switch*

Upper and Lower limit detection  
Widely applicable for solid, liquid, slurry, etc.



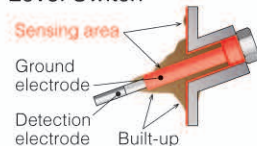
# Convenient and beneficial level sw

## Features

- No misdetection is caused even for highly adhesive materials including slurries, liquid or granular materials. (Special structure 1)
- The common electrical board can be applied for all applications from low sensitivity to high sensitivity. (Special structure 2)
- It is easy to adjust and has high durability due to no drive parts.

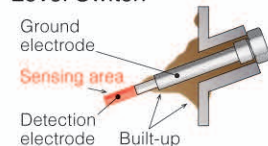
### Special structure 1

#### Normal Capacitance Level Switch



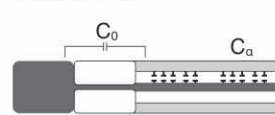
Normal Capacitance Level Switch receives a detection signal at the ground electrode. Because the tank sidewall also works as a sensing part, it is easily influenced by the adhesive materials. On the other hand, since Admittance type Level Switch receives a detection signal at the detection electrode, the adhered materials on the ground electrode or the tank sidewall do not influence the detection of the switch.

#### Admittance type Level Switch

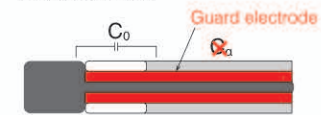


### Special structure 2

#### Electrodes structure of normal Capacitance Level Switch



#### Electrodes structure of Admittance type Level Switch

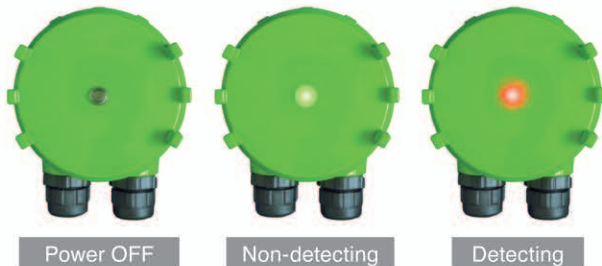


Each Capacitance Level Switch basically contains an inherent capacitance value inside the electrode. The length of electrode is positively correlated with this inherent capacitance value. If the ground electrode is longer, it is necessary to apply a different electrical board to compensate higher inherent capacitance. For Admittance type Level Switch, only one electrical board can be applied to all models due to the guard electrode eliminating any influence from the probe length.

## Extra 6 conveniences

### Extra 1 LED detection indicator by 2 colors

Clear indicator of current condition even though the cover is closed. Regardless of detecting condition, the power supply condition can be easily confirmed because the LED is lit all the time.



### Extra 2 Screw-up type terminal block

The screws are not fallen off or not lost due to screw-up type terminal block. Also, wiring work must be significantly shortened because the wiring can be connected without removing terminal screws.



### Extra 3 Rotation function of the housing

The housing can be rotated in a range of approx. 310 degrees. After installation, the direction of the lead outlet is easily adjustable.



### Extra 4 Detection mode switch

"H" / "L" setting can be selected according to the application.

Level condition	H Mode (Upper detection)		L Mode (Lower detection)	
	LED light	Contact	LED light	Contact
	GREEN		RED	
	RED		GREEN	
Power OFF	CLEAR		CLEAR	

### Extra 5 AC/DC power supply available

AD/DC22-264V It is available to use in many countries and regions in the world.

### Extra 6 Max. temperature 150°C. for standard model

It is available at up to 150 °C. temperature of the detected materials.



# Switch, less influenced by adhesion!!

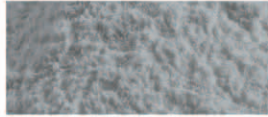
## Applications

### CASE 1

#### Low dielectric constant materials (criteria: 2.0 or more)



Flour, bran



Fly ash



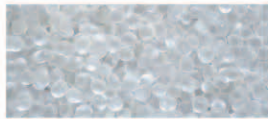
Lime powder



Cement



Talc



Resin pellet

### CASE 2

#### Highly adhesive materials



Granulated sugar



Fine powdered coal, coke



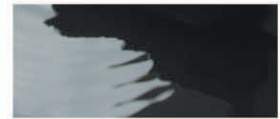
Chocolate



Oils and fats



Dehydrated cake



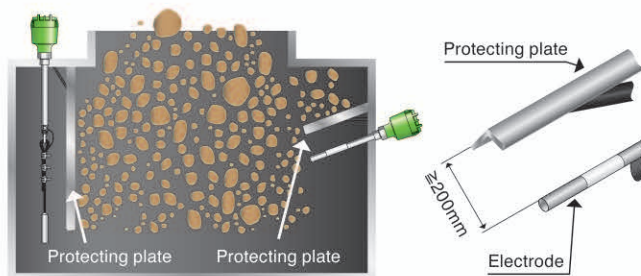
Black liquor

## Precautions for installation

### Protection of electrode

Please apply a protecting plate to avoid the direct material impact to the electrode.

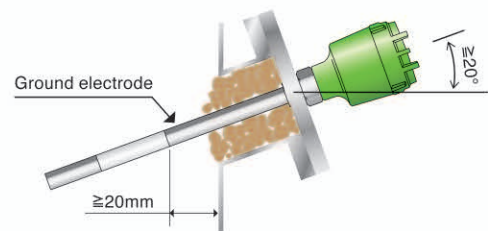
\* Keep a distance of over 200mm between the electrode and the protecting plate.



### L-length and mounting angle

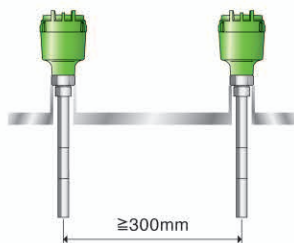
Please mount the electrode so as to be inserted over 20mm from the tank sidewall.

For horizontal mounting, please mount the switch inclining over approx. 20 degrees.



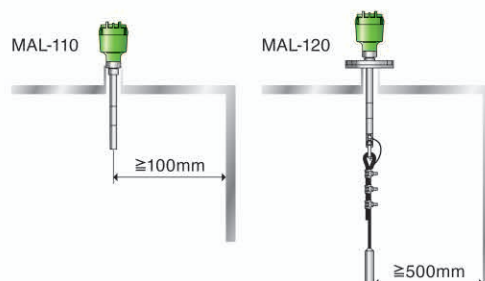
### In case of mounting plural switches

Please keep a distance of over 300mm between each switch if two or more switches are mounted.



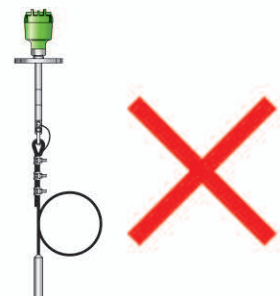
### Mounting distance from the tank wall

MAL-110: over 100mm from the tank wall  
MAL-120: whichever is longer, over 500mm from the tank wall, or quarter of diameter of the silo



### Do not roll wire rope

It may cause material adhesion and misdetection by contacting with the sidewall.

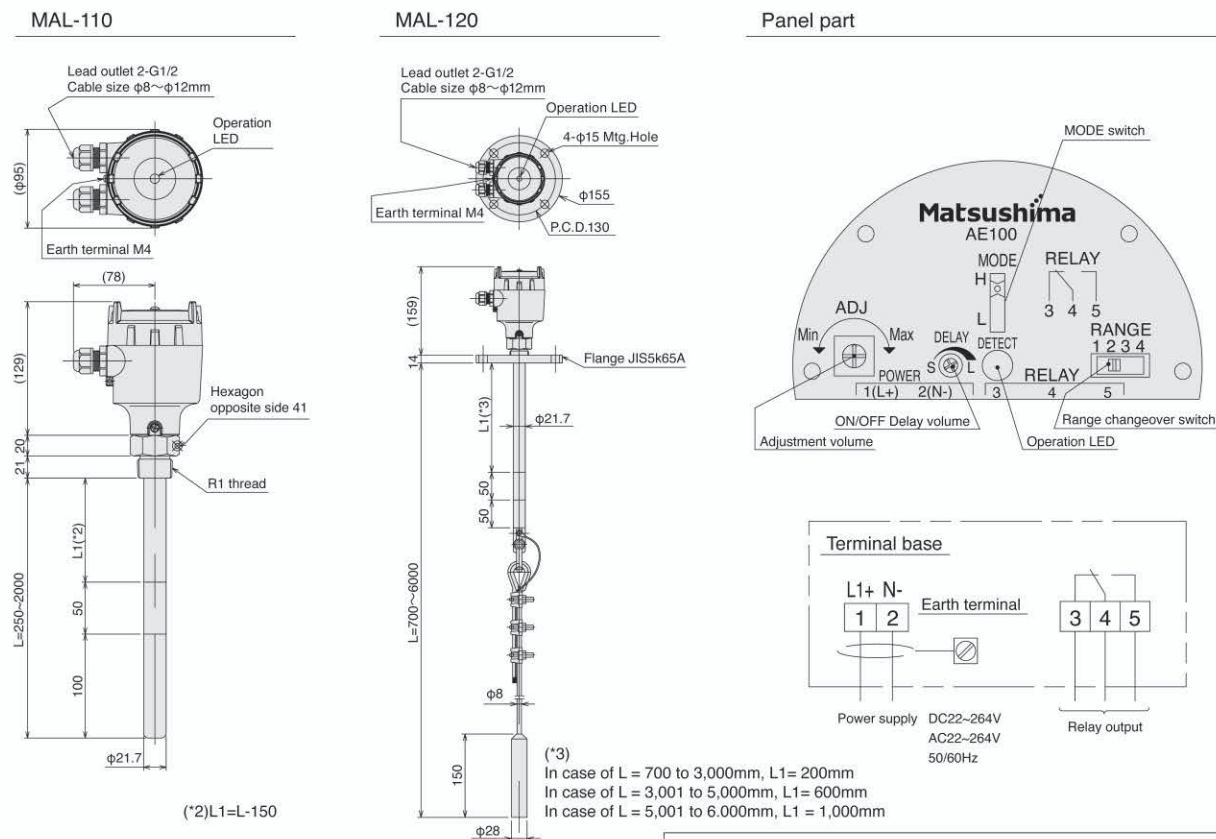


## Standard Specification

Type	MAL-110	MAL-120
Product Type	Rod	Wire
Power supply / Power consumption	AC/DC22~264V 50/60Hz / 4.7W (AC), 1.8W (DC)	
Mounting	R1 thread	JIS5k65A Flange
L-Length	Min.250mm~Max.2000mm *Under R1 thread	Min.700mm~Max.6000mm *Under flange
Detection range (Sensitivity can be switched by slide switch)	Range1 : 0~10pF Range3 : 0~100pF	Range2 : 0~50pF Range4 : Special material (*1)
Signal output	SPDTx1 / Contact capacity:AC250V/DC30V 5A	
Material	Housing : ADC12 Ground electrode : SUS304 Detection electrode : SUS304	Boss : SUS304 Insulator : PTFE Wire rope : SUS304 (MAL-120)
Operation LED	LED (Undetected:Green, Detected:Red)	
Lateral load	Max.500N	—
Teansverse load	—	Max.4500N
Permissible pressure	Max.1.5MPa	Max.0.5MPa
Permissible ambient temperature	-40°C ~ +150°C (No freezing)	
Protection	IP67 (Cover, cable entrance tightened condition)	
Coating color	Munsell 7.5GY6/10	
Quantity	Approx.2.0kg (L=250mm)	Approx.4.6kg (L=700mm)

(\*1) Use RANGE 4 if the measured material has a lot of moisture, high conductivity or cannot adjust by RANGE 1~3.

## Dimension (mm)



Specifications are subject to change without notice.  
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**Caution**

- Read the instructions to ensure correct and suitable application of products.
- Contact our nearest sales office when using our products for any systems used in situations which may be life threatening.

Distributor



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