Analog Technologies

Liquid Level Control Switch

ALLCS500MA45-21

Figure 1. Liquid Level Control Switch

ALLCS500MA45-21

MAIN FEATURES

The switch can be configured either normally closed or normally open

Long life time: 10^7 times @ resistive load

High contact withstand voltage: 240VAC/200VDC

High maximum switching current: 0.5A

Wide operating temperature range: −10°C ~ 120°C

All stainless steel construction

Corrosion resistant parts: stainless SUS304/SUS316

Vertical installation

High insulation resistance: >10MΩ

Low contact resistance: <100mΩ

APPLICATIONS

Liquid level control switch, ALLCS500MA45-21, is designed for sensing the liquid levels found in water containers, ponds, fish tanks, etc. It is widely used in household appliances (such as: water machine, water dispenser, humidifier, dehumidifier, water heater, air conditioning, direct drinking water system, etc.), industrial equipment (such as: air hydraulic machine, cooler, drainage, lubricating oil system), gardening equipment, medical equipment, beauty salon equipment, aquatic farming and industrial water purification, sewage treatment systems, automatic door control system and other industries.

DESCRIPTION

The liquid level control switch, also called the water level control switch or liquid level sensor, is to control the liquid level. ALLCS500MA45-21 is a small stainless float type liquid level control switch. This liquid level control switch features small size, high sensitivity, high temperature resistance, oxidation resistance, moisture proof, etc.

WORKING PRINCIPLE

A shallow stainless float moves up and down with the liquid. Upon reaching a pre-set level, the liquid carries the float up to a position which makes an internal reed relay contact to change from closed to open or from open to closed state. The switching transaction direction is reversible by reversing the float mounting orientation, i.e., it can be from normally closed to open or from normally open to closed according to the customers' requirements. The liquid level triggering point can be customized to a pre-set level according to customers' needs.

INSTALLATION INSTRUCTIONS

The liquid level control switch is an easy-to-use liquid level control device. Drill a 10mm diameter hole on the top or bottom of the container, and then tighten the switch with its nut. Refer to Figure 2 or Figure 3 for the wiring based on the control method required. The followings should be noted during installation:

1. Do not place the sensor switch near the liquid inlet to avoid the input liquid flow affecting the float position, thus causing faulty or fluctuating level readings.

2. The specific gravity of the liquid to be monitored must be greater than that of the float, i.e. 0.75.

3. The action point of the float has been pre-set by the factory and it cannot be adjusted.

Table 1. Installation

Parameter	Value	Unit/ Note
Pressure Range	0.1	Mpa
Mounting Hole Size	10	mm
Installation Orientation	Vertical	< 3° declination
Installation Dimensions	M10	
Operating Temperature Range	−10 ~ 120	°C

MAINTENANCE

Regularly clean dirt from the sliding guide rod and floats. The cleaning time interval is dependent on cleanliness of the liquid in which the level switch is immersed.

Figure 4 shows the dimensions of this liquid level control switch ALLCS500MA45-21.

APPLICATION INFORMATION

The state of the switch can be determined by the position of the circular hole on the float. It is normally closed when the hole is on the top.

Figure 5 shows how to switch the float between normally open and normally closed.

Follow these steps:

1. Remove the circlip with pliers;

2. Reverse the float mounting orientation as shown in Figure 5;

3. Put it back.

Figure 2 and 3 show typical applications for input water control and output water control respectively.
Note: The switch is normally closed by default (disconnected when floating up and closed when falling down). If you need normally open type (closed when floating up and disconnected when falling down), you can adjust it by yourself.

SPECIFICATIONS

Table 2. Characteristics

Parameter	Value	Unit/ Note
Maximum Continuous Rating	10	W
Maximum Switching Current	0.5	A
Maximum Continuous Current	1	A
Maximum Float Travel Length	10	mm
Hysteresis	1	mm
Accuracy	1	mm
Insulation Resistance	>10	MΩ
Contact Resistance	<100	mΩ

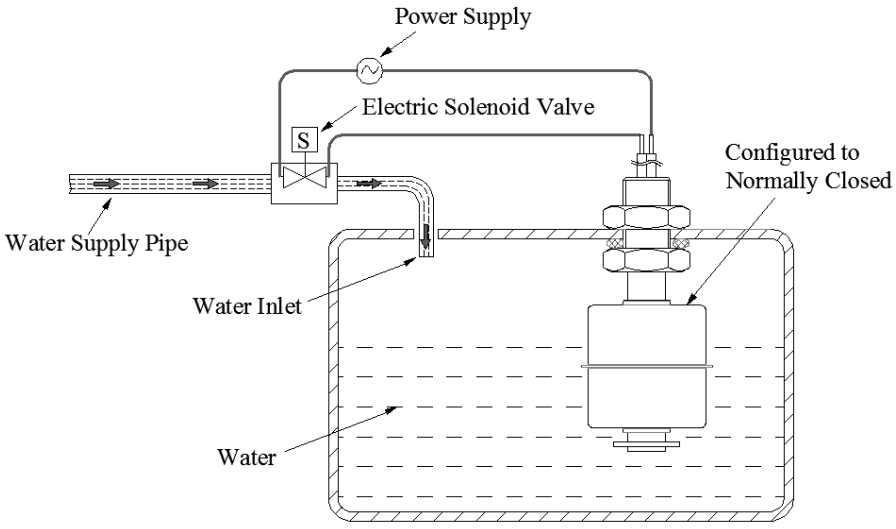

Figure 2. Wiring for Inlet Water

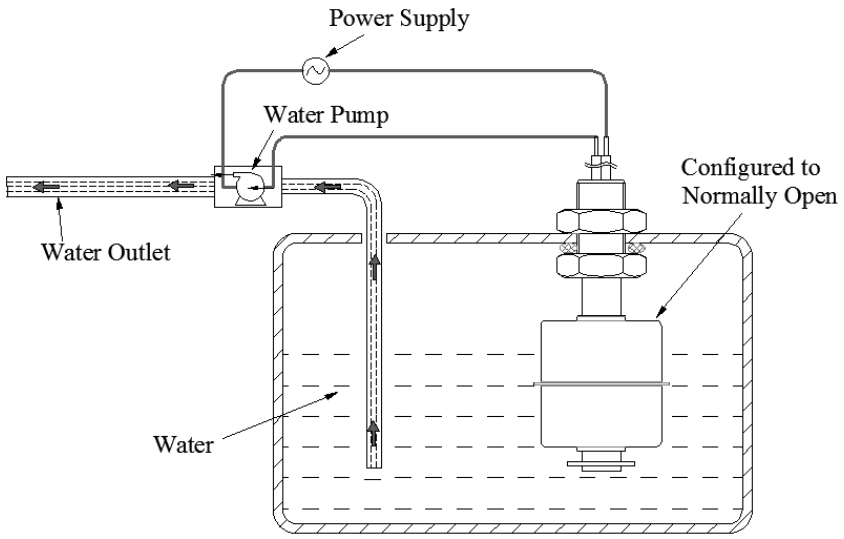

Figure 3. Wiring for Outlet Water

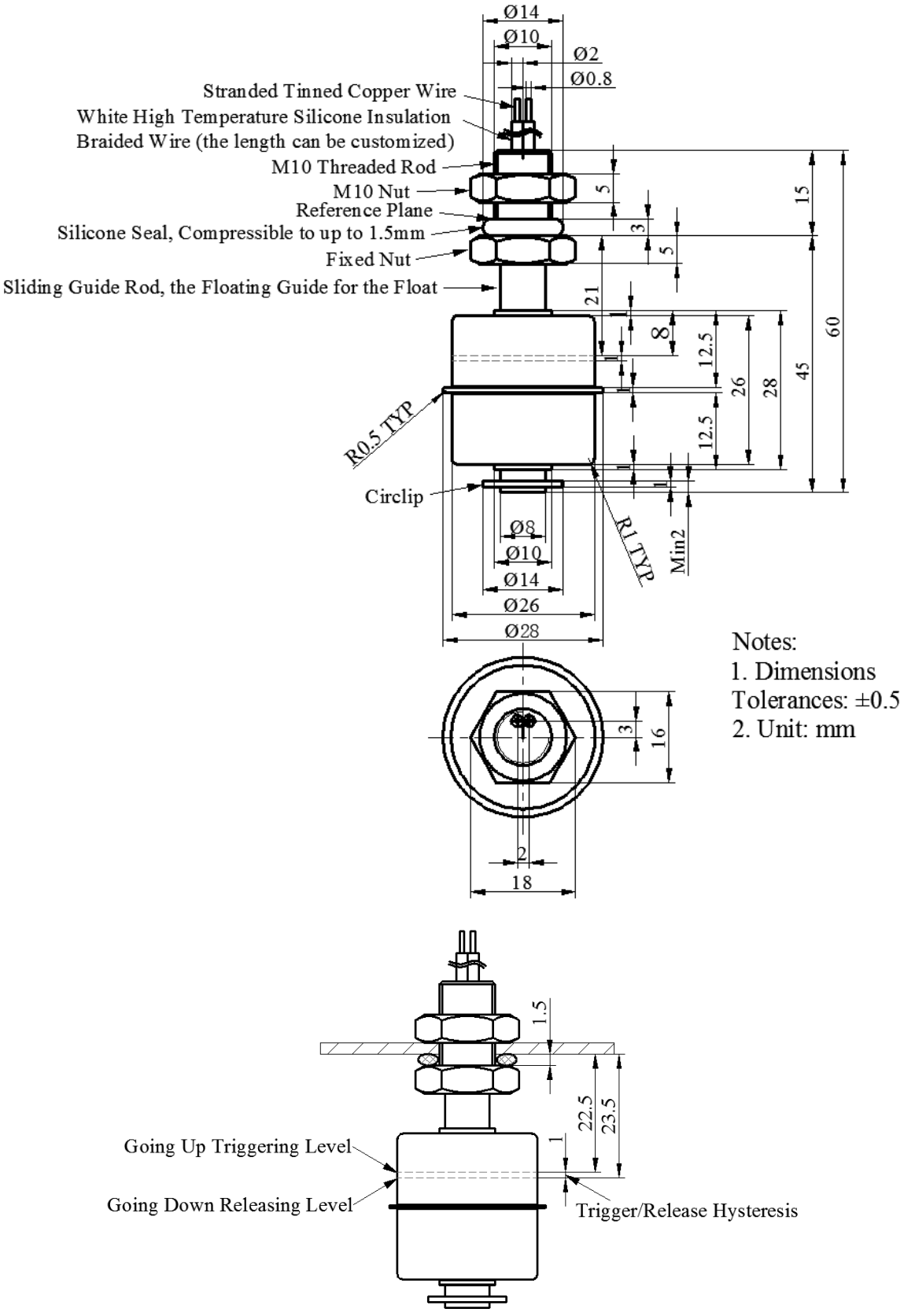

Figure 4. Dimensions of ALLCS500MA45-21

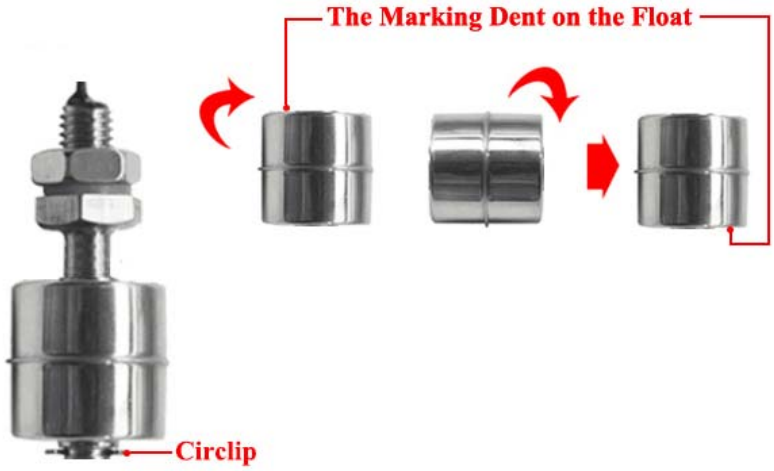

Figure 5. Swapping Float Orientation for Normally Open or Normally Closed

Table 2. Unit Price

Quantity (pcs)	1 – 9	10 – 49	50 – 199	200 – 499	500 – 999	≥1000
Unit Price	$12.4	$11.3	$10.1	$8.6	$6.8	$4.8

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