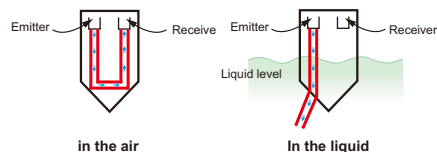


SD21 OPTICAL LEVEL SWITCH OPERATING INSTRUCTIONS

OPERATION PRINCIPLE

Optical liquid level switch uses the principle of total reflection in a prism. Reflection or penetration, is the basis of the level alarm output. When the sensor is surrounded by air, the angle of incidence is greater than the critical angle and thus total reflection occurs. Totally reflected light can be transmitted to the receiver. Conversely, when the sensor is surrounded by Liquid, due to the refractive index of the liquid and the sensor tip material, almost all light will penetrate the front of the sensor. The receiver can detect and determine a light reflected or penetrated state, and determines the circuit output.

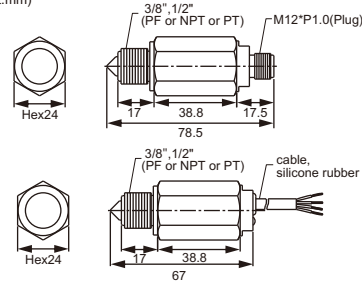


FEATURE

- NPN / PNP output selection can be connected to the relay or PLC.
- This product provides both NO and NC output for selection.
- Products made of glass and SUS 304/316, diesel fuel, waste water, aqueous solution, alcoholic solution.
- Includes power polarity and over current protection.
- LED indicates level status.
- There are general cloudy and Turbidity for option.
- You can measure turbid solution.
- Also output a delayed-type can be selected, the default delay time is 5 seconds.

DIMENSION

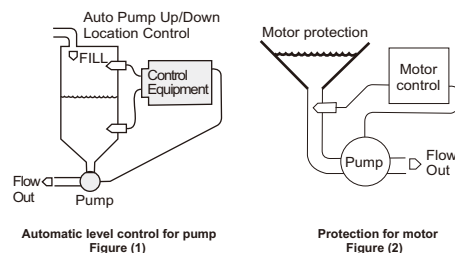
(Unit:mm)



SPECIFICATION

- Power range: 10 ~ 28 Vdc
- Current consumption: <25 mA
- Output mode: NPN / PNP
- Output function: NO + NC
- Load current: <200mA
- Working pressure: <60bar
- Electrical protection: reverse polarity protection, short circuit protection
- Delay time: 5 sec \pm 1 sec (optional)
- Anti ambient light interference: <500 Lux
- Operating temperature: -20~100°C
- Ambient temperature: -20~80°C
- Waterproof, protection class: IP67
- Indicator light: red status indicator (only cable type)
- Cable specifications (with cable): Cable Silicone rubber jacket, 24AWG, length 2m, the 4C (blue, green and black and brown)
- Connection size : 3/8 " / 1/2"
- Thread options: PT / PF / NPT
- Body material: SUS304 / SUS316
- Prism material: glass

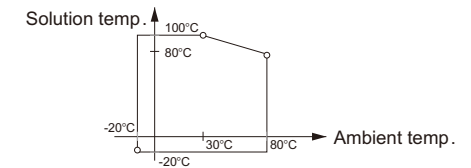
APPLICATION EXAMPLE



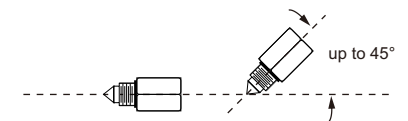
CAUTION

- Please follow the manual to do the correct wiring procedure.
- The maximum torque for installation is: 75Kgf-cm
- This product is not suitable to the solutions containing adhesion and suspended materials in it or viscous liquids.
- This product may not work in part of emulsion and liquids which are in semi-solid state.
- Turbidity type can detect the turbid solution in level of 4000NTU.
- Instruction for time delay type:
 - ◆ High position with time delay type (SD21□□□□4□, SD21□□□□6□) It will switch as continually contacting liquid for 5 seconds, will switch back immediately as leaving the liquid.
 - ◆ Low position with time delay type (SD21□□□□5□, SD21□□□□7□) It will switch as continually leaving liquid for 5 seconds, will switch back immediately as contacting the liquid.

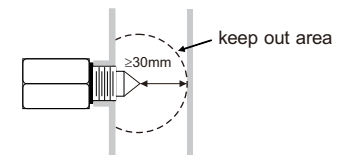
- The correspondence for temperature of detected liquid and ambient temperature is as below:



- This product can not be used in the environments with infrared light source.
- The installation is recommended as shown below, the best installation angle is from horizontal 0° to 45°.



- This product can not be installed in the liquid entry point.
- There should be no objects or surface which might occur reflection or other interference within the radius of 30mm for prism tip.
- As it mounts with the threaded sleeve, the prism tip must be exposed out of sleeve.
- The distance between prism tip and tank wall must be at least 30mm.



WIRING

Type	High Position delay	Low Position delay	Standard
Position			
LED			
Green wire			
Black wire			
Mode of operation	Wire Color	Wiring	
NO	Green		
NC	Black		

REGULAR MAINTENANCE

- In poor conditions, should be cleaned regularly the tip which contact liquid.
- Do not use scouring pads to scrub, to avoid damaging to the sensor.



FineTek Co., Ltd.

No.16, Tzuchiang St., Tucheng Industrial Park, New Taipei City 23678, Taiwan.
Tel: 886-2-22696789 Fax: 886-2-22686682
Email: info@fine-tek.com http://www.fine-tek.com



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