

# SDX5 OPTICAL SWITCH OPERATION MANUAL

## FEATURE

1. NPN, PNP open collector output to energize relay or PLC.
2. Housing material of PC, PES for acidity and alkaline; applicable in water, oil, liquid solution, liquor, alcohol...etc.
3. Over-current and reverse polarity protected
4. LED Status indication.

## SPECIFICATION

Housing Material: PC, PES, SUS304, SUS316  
 Sensible Tip Material: PC, PES, Glass  
 Protection Rating : IP67  
 Operation Temperature: -10~125°C  
 Ambient Temperature: -10~80°C  
 Operation Pressure:  
 Max. 10kg/cm<sup>2</sup>(PC、PES)  
 Max. 40kg/cm<sup>2</sup>(SUS304、316)  
 Power Supply: 10~28 Vdc with reverse charge protection  
 Current consumption: < 15mA  
 Load Current: 100mA Max.  
 Overload Current Protection: 100mA  
 Connection Thread: M12X1.0 (PC and PES only)  
 M12X1.5 (SUS304 and 316 only)  
 3/8" PF、3/8" PT、3/8" NPT  
 Lead Wire: 2m CABLE(φ4), 3-core XLPE, 24 AWG custom made if over 2m

## APPLICATION EXAMPLE

Liquid Level Control:

In Fig.3, two optical switches are installed individually in upper and lower level of the tank. When liquid rises to cover the upper optical switch, it will stop fill in liquid. When liquid drops down and lower optical switch is not covered by liquid, it will start filling up. Liquid has to be maintained in between upper and lower optical switches.

Motor Protection:

In Fig.4, optical switch is installed in lower level of the tank to prevent pump burning caused by the lack of water/liquid.

\*Avoid to install it near the corner region.

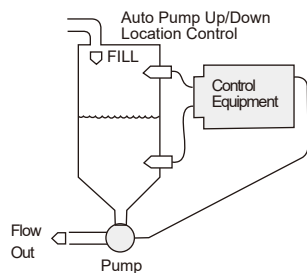


Fig.3

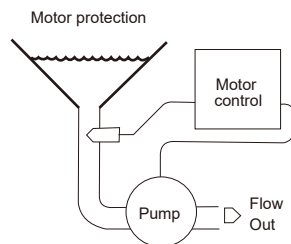
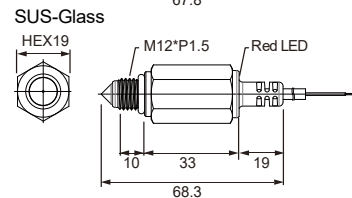
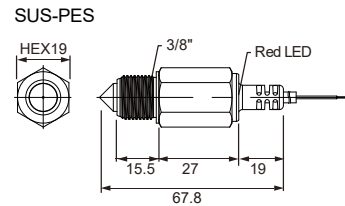
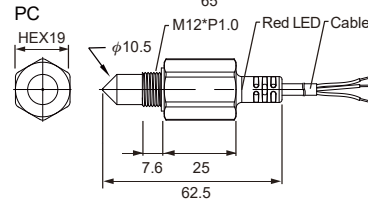
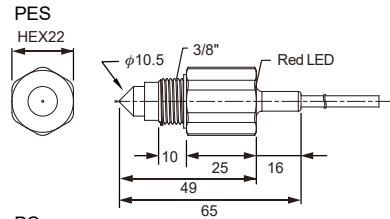


Fig.4

## DIMENSION



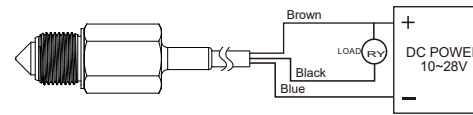
**Warning**

Low-pressure injection molded. Minor bubbles or irregularities are normal and do not affect performance.

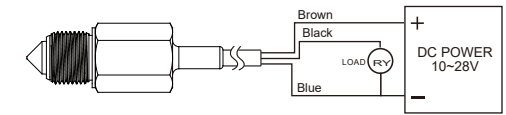
## WIRING

※ Do not operate without load. Use the correct power supply according to the load.

### NPN output



### PNP output



## CAUTION

- The recommended tightening torque for the standard sealing ring (O-ring) is 8-12 kgf-cm. This torque may vary depending on the internal pressure of the pipe/barrel or if the material is changed.
- Maximum Allowable Torque for the Casing:  
 M12: 25kgf-cm (PC、PES); 3/8": 50kgf-cm (PC、PES), 100kgf-cm (SUS304、SUS316)
- Power supply is 10~28Vdc. Color code: Brown for positive and blue for negative terminal.
- Optical switch is not recommended for operating in emulsion and phase-change liquids.
- Do not install sensor close to infrared sources.
- Tip of the optical sensor must be free at least 30mm from any reflective surfaces or other interferences. Like the tank wall (Fig.5.)
- Do not install the sensor in a stagnation point of the liquid.
- The sensor installed a thread casing when the sensor tip must be exposed.
- This product is not recommended for organic solution especially for viscous liquid which easy to stick on the optical surface (Fig.6.)
- We recommend the following installation below. The horizontal plane parallel to the 0° ~ 45° for optimal installation angle.(Fig.7.)

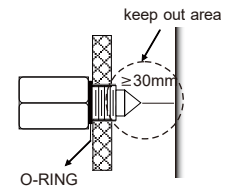


Fig.5

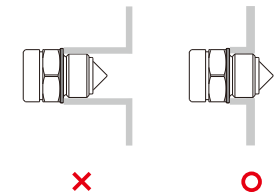


Fig.6

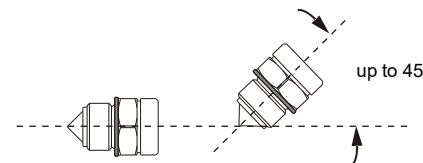



Fig.7


## REGULAR MAINTENANCE

- Please clean the top part of optical switch with clean water regularly.
- Please do not use organic solution or scrub while washing to avoid scratches on the surface.

## READ LABELS

Thank you for purchasing a product from FineTek. This operating manual explains the product's features, working principles, operation, maintenance methods, and usage precautions. It is designed to help users fully understand the correct usage of the product, preventing equipment damage and potential hazards to the operator.

 Caution Warning → Indicates that incorrect operation may result in a certain degree of injury and equipment damage.


 High temperature → indicates high temperature, touching may cause burns.




1. When installing the equipment system, the installation and safety of the equipment system are the responsibility of the installer.
2. Please use the product specification 10~28VDC power supply
3. The wire diameter of the M12 connector should be 24AWG~28AWG
4. Please wipe the label regularly, and only use dry cloth for wiping.



1. Lors de l'installation du système d'équipement, l'installation et la sécurité du système d'équipement sont de la responsabilité de l'installateur.
2. Veuillez utiliser l'alimentation 10~28VDC spécifiée par le produit
3. Le diamètre du fil du connecteur M12 doit être compris entre 24 AWG et 28 AWG
4. Veuillez essuyer l'étiquette régulièrement et utilisez uniquement un chiffon sec pour l'essuyer.

 When using the product normally, if you need to touch the shell, please wear protective equipment first.

 Lorsque vous utilisez le produit normalement, si vous devez toucher la coque, veuillez d'abord porter un équipement de protection.



**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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