

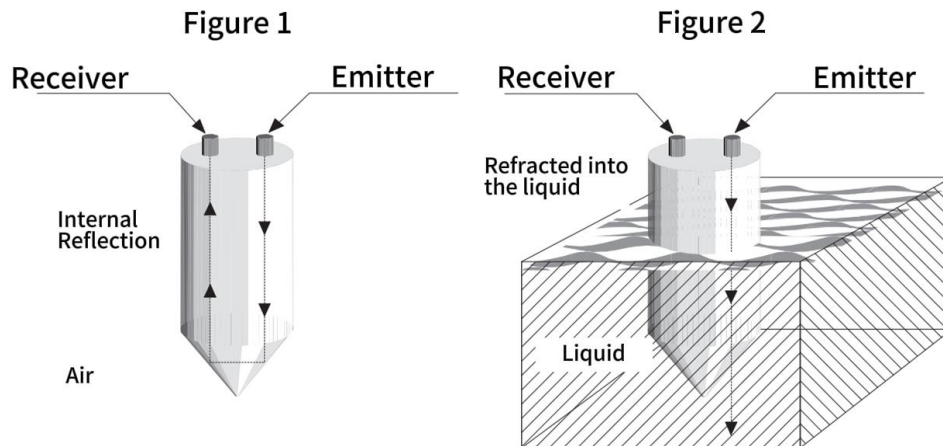
Optical Level Switch

User Manual



Basic Parameters

The **Optical Level Switch** operates based on the principles of light refraction and reflection. When light encounters the interface between two different media, it will be either reflected or refracted.



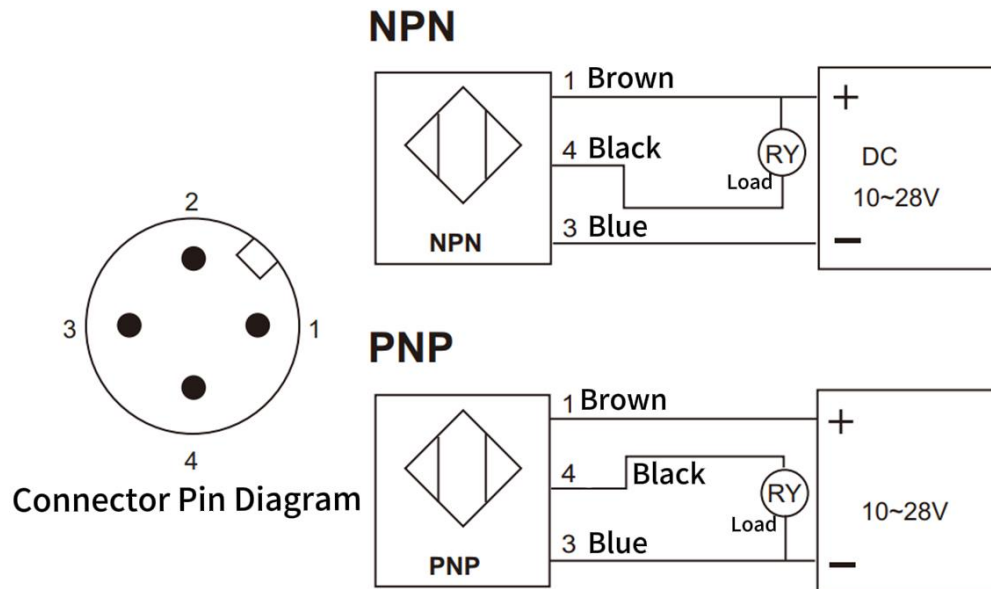
Working Principle of the Optical Level Switch

As shown in the figure above, when the measured liquid immerses the optical level switch, a liquid-to-switch interface is formed. When the liquid recedes, an air-to-switch interface is formed instead. These two different interfaces cause the intensity of the reflected light received by the internal phototransistor to differ, corresponding to two distinct switch states.

Applications

The optical level switch features a prism fused to a metal housing and can withstand pressures above 60 bar. Its split-type design is particularly suitable for pressure vessels in HVAC and hydraulic equipment. It is used for critical level detection, upper/lower limit points, or multi-point level measurement with accurate and reliable monitoring, display, alarm, and point-level control.

It is widely applied in industries such as water treatment, paper production, printing, power generation and distribution, petrochemicals, food and beverage, pharmaceuticals, dye production, railway equipment, and heavy machinery. It is suitable for clean, low-viscosity liquids that are non-crystallizing and non-freezing.



Performance Parameters / Technical Specifications

Operating Conditions

- **Operating Temperature:** -40°C to 120°C; not suitable for frozen or crystallizing liquids.
- **Operating Pressure:** ≤6 MPa
- **Repeatability:** ±1.0 mm

Material

- **Probe Material:** Glass (food-grade)
- **Housing Material:** 316 Stainless Steel (probe section)

Installation Thread

- 1/2 NPT, G1/2, M20×1.5

Electrical Parameters

- **Power Supply Voltage:** 24VDC
- **Current Consumption:** 12VDC, 30 mA
- **Electromagnetic Compatibility (EMC):** Compliant with GB/T18268 industrial equipment requirements (equivalent to IEC61326-1)

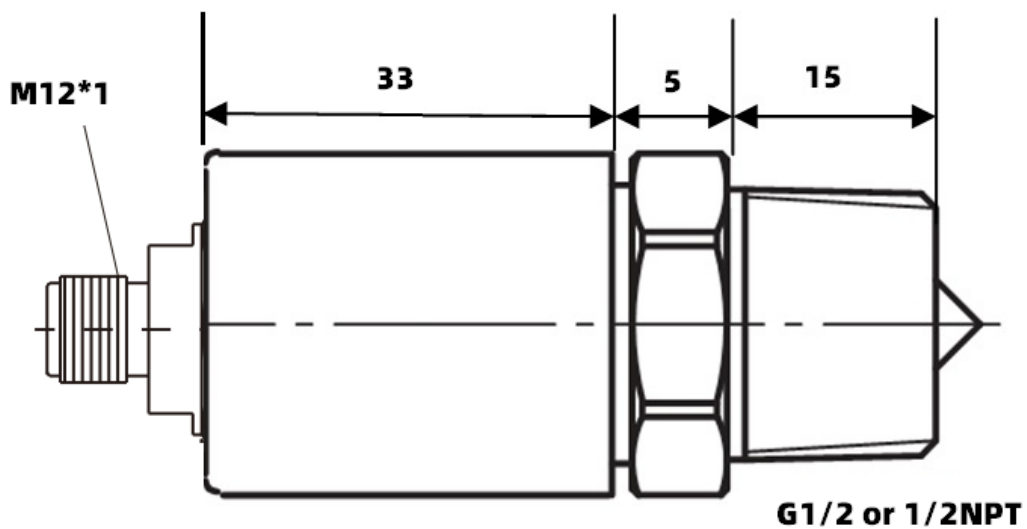
Output

- **Type:** Open-collector output (NPN-C)
- **Output Current:** ≤100 mA
- **Output Delay:** None

Cable

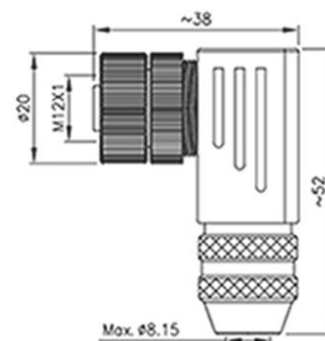
- Cable Length: 1 m; 3-core cable
 - Power: Blue (GND), Brown (V+)
 - Output: Black (CONTROL)

Dimensions



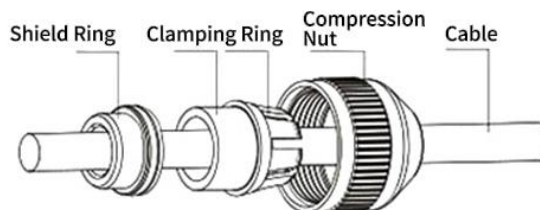
Optional Connectors

1. Angled metal plug with screw-type terminals
2. Leave pins unconnected

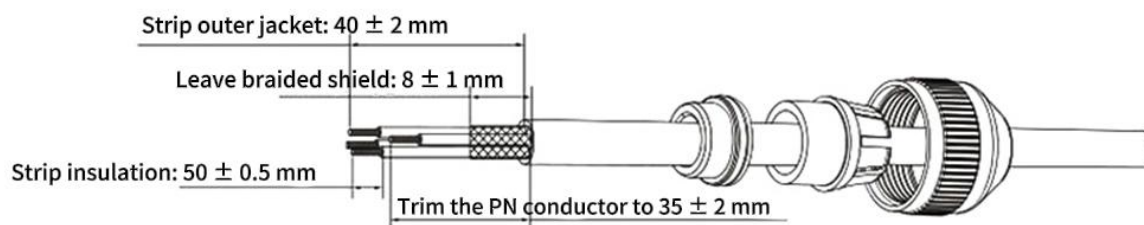


Cable Assembly Instructions

Step 1:
Insert Components onto
the Cable in the



Step 2:
Prepare the Cable
According to the
Following



Step 3:
Fold the Braided Shield
Back Over the Shield Ring

