



Color Identification Sensor with Anti-Jitter User Manual



一、 Usage Commitments & General Safety

1. Usage Commitments

- **Human Safety:** To ensure safety, please do not use this product directly or indirectly for human body detection. If such use is required, please select safety sensors published in a comprehensive sensor catalog.
- **Selection & Redundancy Design:** When using the product for the following purposes, please consult with technical personnel. After confirming according to specifications, etc., please adopt a method with a certain margin relative to the rated performance, or design a safety circuit that minimizes danger even in the event of a malfunction.

- (1) Outdoor use, potential chemical pollution or electrical hazard environments, or conditions/environments not recorded in the instruction manual.
- (2) Used in nuclear power control equipment, incineration equipment, railway/aviation/vehicle equipment, medical equipment, entertainment equipment, safety devices, and equipment specified by administrative agencies or individual industries.
- (3) Used in systems/machinery that may endanger life or property.
- (4) Used for other similar high-safety requirements.
- (5) Used for high-reliability equipment such as gas, water, and power supply systems or 24-hour continuous operation systems.

2. Safety Precautions

- (1) **Environmental Restrictions:** Do not use in environments with flammable or explosive gases. Do not use in places with water, oil, chemical residues, or environments containing steam.
- (2) **No Disassembly:** Do not disassemble, repair, or modify this product without authorization.
- (3) **Electrical Parameters:** Do not apply voltage or current exceeding the rated values to the product (the maximum allowable voltage for the sensor is 33VDC).
- (4) **Temperature Range:** Do not use in environments outside the rated range.
- (5) **Wiring Polarity:** Pay attention to power supply polarity to avoid wiring errors; correctly implement load wiring; do not short-circuit both ends of the load.
- (6) **Appearance Damage:** Do not use if the outer casing is damaged.
- (7) **Disposal:** Please dispose of it as industrial waste when discarding.

二、 Attention Points in Use

1. **High Temperature, Light Sources & Corrosive Environments:** Do not use in the following places: High temperature (e.g., exceeding 75°C), direct sunlight (exceeding 50°C for photoelectric and laser switches), or in environments with corrosive gases and liquids.
2. **Ambient Temperature:** Photoelectric and laser products should not be used in environments below 0°C.

3. Mutual Interference:

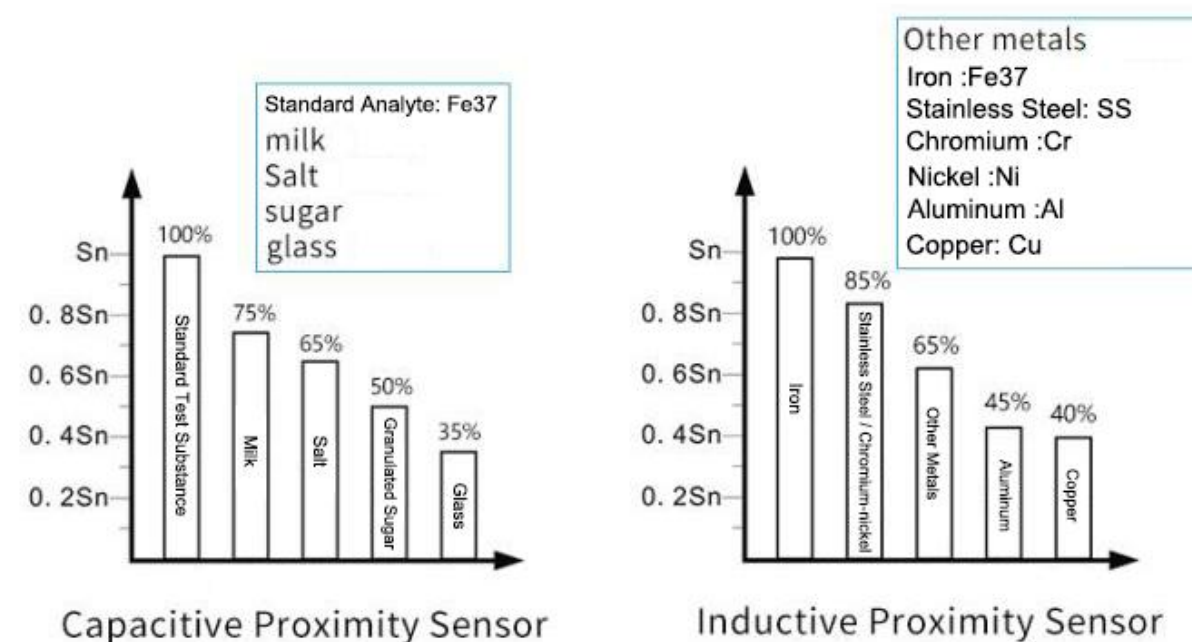
- **Inductive/Capacitive:** A certain interval must be maintained during side-by-side installation to prevent mutual interference.
- **Power Lines/Motor Lines:** Use separate wiring conduits or shielded wires with photoelectric switches to prevent induction causing malfunction or product damage.
- 4. **Wiring Length:** Use wires of 0.3mm² or more for extension, and keep it under 100m (confirmation is required when using wires of 5m or more).
- 5. **Power Supply Sequence:** After turning on the power, detection can only be performed after 200ms or more.
- 6. **Power Cut-off:** When cutting off the power, output pulses may occur, so the power to the load or the load line must be cut off first.
- 7. **Installation & Removal:** Always turn off the power before installing or removing.
- 8. **Cleaning & Maintenance:** Do not use banana oil, gasoline, acetone, or kerosene for cleaning.
- 9. **Metal Enclosure:** If the switch has a metal enclosure, it must be effectively grounded.

三、Proximity Switch Installation Instructions

1. Installation Methods (Flush & Non-flush)

- **Flush Installation:** The switch does not need to be exposed or only a small amount needs to be exposed. If the mounting bracket is metal, sufficient space must be left to prevent malfunction.

- **Non-flush Installation:** When installed, a certain length of the switch tube must be exposed.
- **Spacing Requirements:** When installed side by side, a certain interval must be maintained between switches (please refer to the installation diagram for specific standards). If the mounting bracket is non-metal, there is no installation limit on the distance to surrounding objects.



2. Factors Affecting Detection Distance

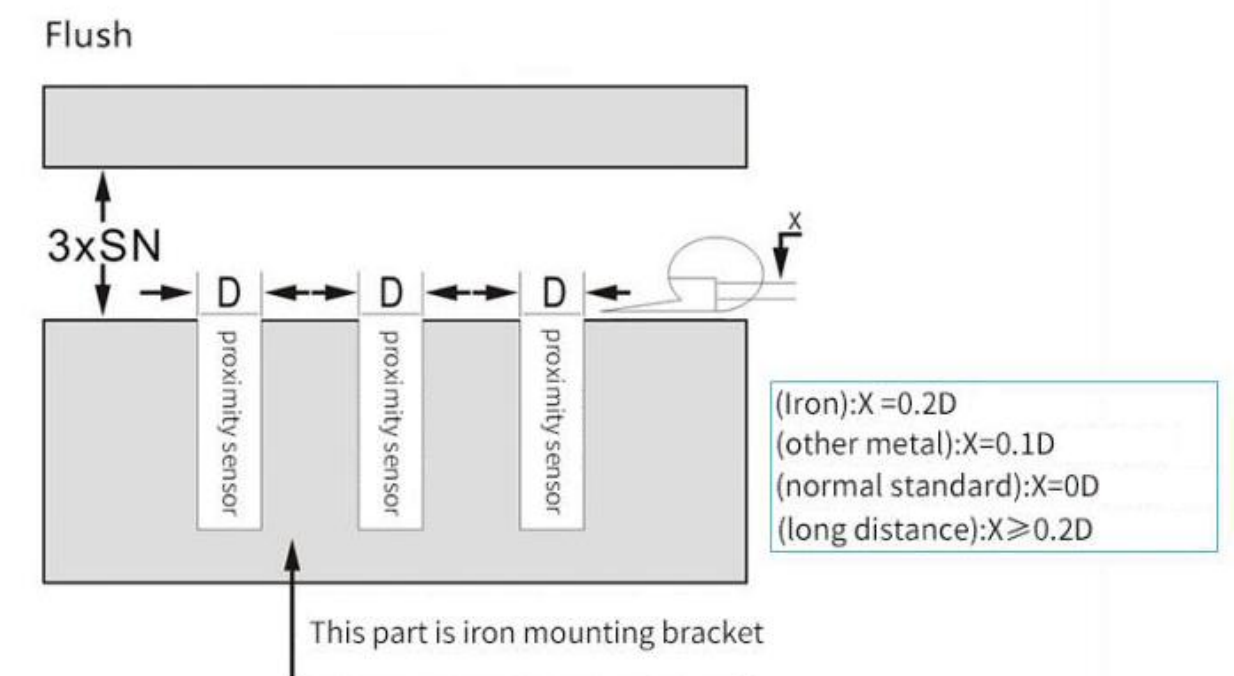
- **Inductive Proximity Switch:** The factory detection standard is a 1mm thick square Fe37 iron sheet. The actual detection distance will vary depending on the material of the detected object.
 - ✧ Based on Fe37 as 100%: Stainless steel approx. 85% > Chrome approx. 65% > Nickel approx. 45% > Aluminum approx. 40% > Copper approx. 35%.
- **Capacitive Proximity Switch:** Can detect almost all objects with static electricity. The detection distance is affected by the thickness, size, conductivity, and surface flatness of the detected object. The thicker the object, the larger the size, the

stronger the conductivity, and the smoother the surface, the longer the detection distance.

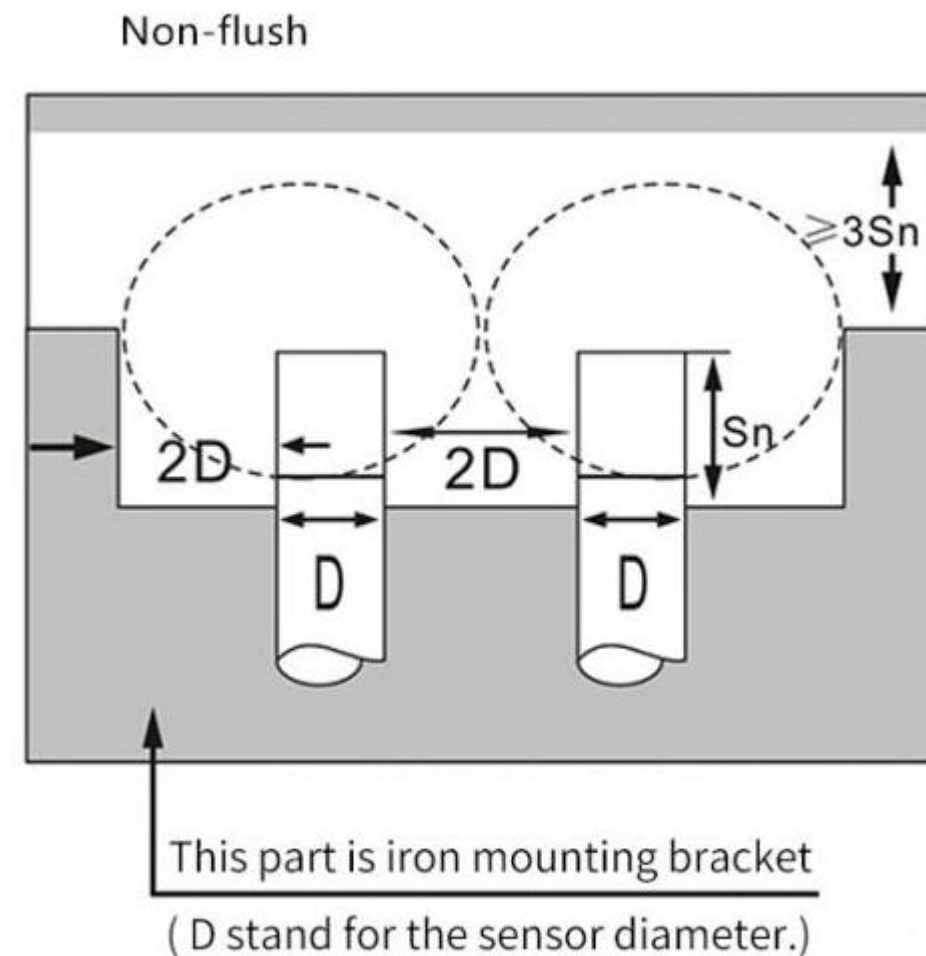
✧ Based on Fe37 as 100%: Milk approx. 72% > Salt approx. 62% > Sugar approx. 50% > Glass approx. 35%.

3. Installation Spacing Diagram Notes

- **Flush Installation:** When using an iron mounting bracket, the spacing requirement is 3xSN (SN is the sensor diameter), and the side spacing is D. For copper/iron materials, X=0.2D; for other metals, X=0.1D.



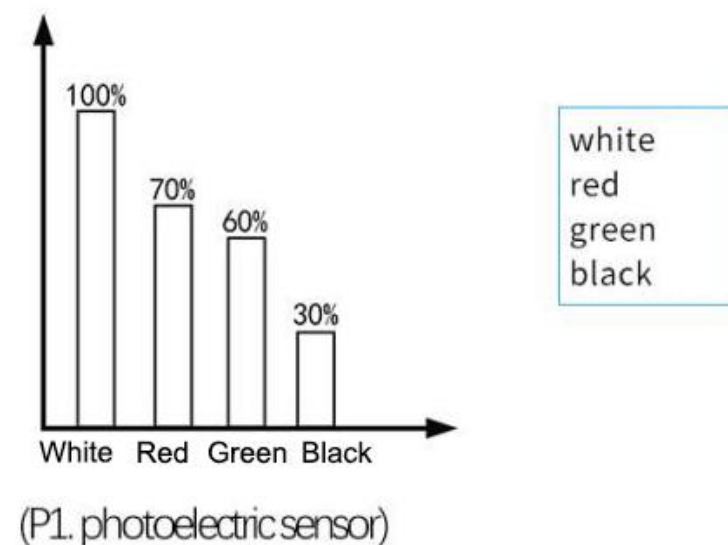
- **Non-flush Installation:** When using an iron mounting bracket, the spacing requirement is 2D, the side spacing is D, and the bottom spacing is 3SN.



- Note: The shaded part in the diagram is the iron mounting bracket.

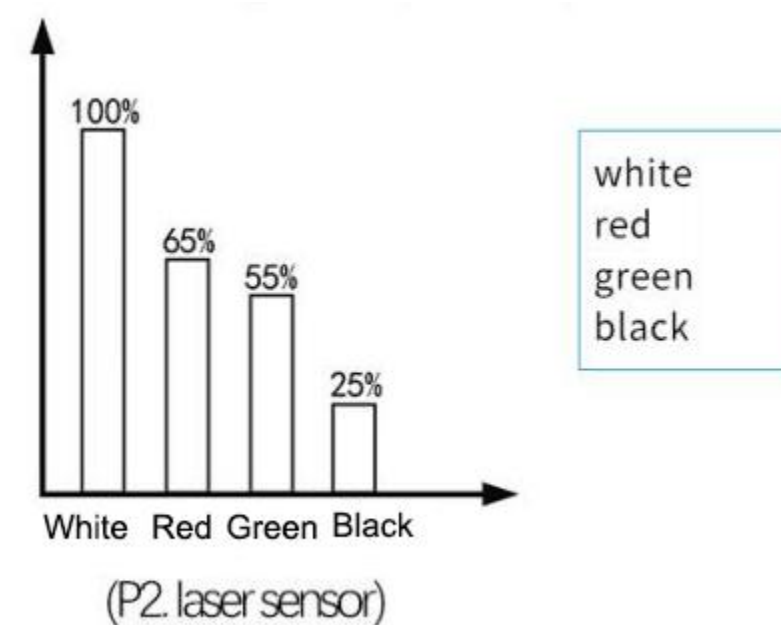
四、Photoelectric & Laser Switch Installation Instructions

- Installation Requirements:** During installation, ensure the switch is as perpendicular to the detected object as possible. Do not install too densely when side-by-side; a certain interval must be left to prevent mutual interference.

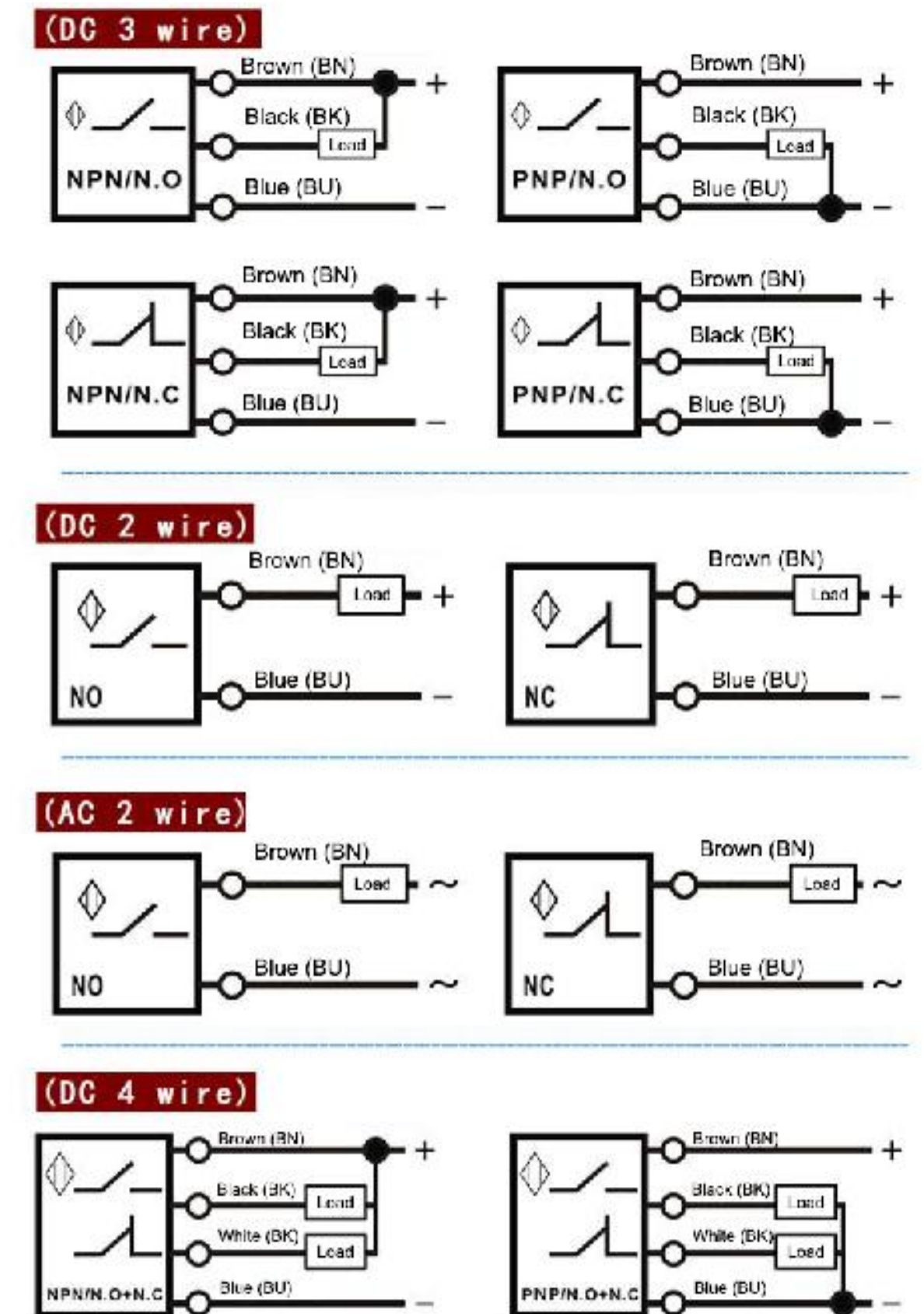


- Factors Affecting Detection Distance:** The factory detection standard is 90% reflectivity pure white paper. The actual detection distance will vary depending on the color reflectivity of the detected object.

- **Photoelectric Switch** (Based on White as 100%): Red approx. 70% > Green approx. 50% > Black approx. 30%.
- **Laser Switch** (Based on White as 100%): Red approx. 65% > Green approx. 55% > Black approx. 29%.



五、Product Wiring Method (Cable Outlet Type)



Note: The above content is extracted and translated from the provided image materials. For actual installation and use, please refer to the latest official paper manual and technical specifications.