

NOYITO E3F-DS30P1

NOYITO E3F-DS30P1 Diffuse Reflection Infrared Obstacle Avoidance Sensor User Manual

Brand: NOYITO | Model: E3F-DS30P1

1. PRODUCT OVERVIEW

The NOYITO E3F-DS30P1 is a diffuse reflection infrared obstacle avoidance sensor designed for industrial and scientific applications. This sensor detects objects by emitting infrared light and measuring the reflection. It is suitable for detecting both transparent and opaque objects within its adjustable range.

Key Features:

- **Induction Type:** Diffuse reflection
- **Induction Distance:** 30cm, adjustable
- **Working Voltage:** 6-36V DC, 300mA
- **Output Type:** PNP NO (Normally Open)
- **Protection Level:** IP61-IP67
- **Response Time:** Below 2.5ms
- **Detection Capability:** Detects transparent and opaque objects
- **Differential Distance:** Detection distance is below 20%
- **Insulation Resistance:** 20M ohms or more

2. SPECIFICATIONS

Parameter	Value
Product Dimensions	3.14 x 0.71 x 0.71 inches
Item Weight	2.08 ounces

Parameter	Value
Manufacturer	NOYITO
Item Model Number	E3FDS30P1
Induction Type	Diffuse Reflection
Induction Distance	30cm (adjustable)
Working Voltage	6-36V DC
Output Current	300mA
Protection Level	IP61-IP67
Corresponding Time	Below 2.5ms
Detecting Objects	Transparent, Opaque
Differential Distance	Below 20% of detection distance
Insulation Resistance	20M ohms or more

3. SETUP & INSTALLATION

Careful installation and wiring are crucial for the proper functioning of the sensor. Ensure all connections are secure and match the specified voltage requirements.

Wiring Instructions:

- **Brown Wire:** Connect to the positive (+) power supply.
- **Blue Wire:** Connect to the negative (-) power supply.
- **Black Wire:** Data output.

Important: Before connecting the switch to the power supply, verify that the wiring is correct and that the voltage parameter is within the rated range (6-36V DC). The switching load must not be short-circuited, and the power supply to the load should not exceed the maximum output current of 300mA.

Wiring Diagram:



Figure 3.1: Wiring diagram for the E3F-DS30P1 PNP NO sensor. The brown wire connects to DC 6-36V positive, the blue wire to negative, and the black wire is the PNP NO output.

4. OPERATION

The E3F-DS30P1 sensor operates on the principle of diffuse reflection. It emits infrared light, and when an object enters its detection field, the light reflects off the object and is received by the sensor. This triggers the PNP NO output.

Adjusting Detection Distance:

The detection distance of up to 30cm is adjustable. Refer to the sensor body for any adjustment screws or indicators, typically a potentiometer, to fine-tune the sensitivity and detection range according to your application's requirements.

Output Behavior (PNP NO):

As a PNP Normally Open (NO) sensor, its output (black wire) will be open (no voltage) when no object is detected. When an object is detected within the set range, the output will close, providing a positive voltage signal (equal to the supply voltage minus a small drop) to the connected load.

5. MAINTENANCE

To ensure optimal performance and longevity of your NOYITO E3F-DS30P1 sensor, follow these simple maintenance guidelines:

- **Cleaning:** Regularly clean the sensor lens to prevent dust, dirt, or debris from obstructing the infrared beam, which can affect detection accuracy. Use a soft, dry cloth.
- **Environmental Conditions:** While the sensor has an IP61-IP67 protection level, avoid exposing it to extreme

temperatures, corrosive substances, or excessive vibrations beyond its specified operating conditions (-40 to +70 degrees Celsius).

- **Cable Integrity:** Periodically inspect the connecting cable for any signs of damage, fraying, or wear. Damaged cables can lead to intermittent operation or complete failure.

6. TROUBLESHOOTING

If you encounter issues with your sensor, consider the following troubleshooting steps:

- **No Detection / Intermittent Detection:**
 - Check all wiring connections (Brown to +, Blue to -, Black as output) for correctness and security.
 - Ensure the power supply voltage is within the 6-36V DC range.
 - Clean the sensor lens to remove any obstructions.
 - Adjust the detection distance potentiometer on the sensor body.
 - Verify that the object being detected is within the sensor's adjustable range.
- **Sensor Always On / Always Off:**
 - Confirm the sensor type is indeed PNP NO.
 - Check for any persistent objects or reflective surfaces within the detection range that might be continuously triggering the sensor.
 - Ensure the sensor is not aimed at a highly reflective background that could cause false triggers.
- **Power Indicator Not Lighting Up:**
 - Verify the power supply is active and connected correctly.
 - Check for any short circuits in the wiring.

If the problem persists after performing these checks, contact customer support for further assistance.

7. SAFETY INFORMATION

Please observe the following safety precautions during installation and operation:

- Always disconnect power before performing any wiring or maintenance.
- Ensure proper grounding where applicable.
- Do not exceed the specified voltage and current ratings.
- Avoid direct exposure of the sensor to strong electromagnetic interference.
- Do not modify the sensor or its components, as this may void the warranty and pose safety risks.

8. WARRANTY AND SUPPORT

This NOYITO E3F-DS30P1 sensor comes with a standard manufacturer's warranty against defects in materials and workmanship. For specific warranty terms and conditions, please refer to the product packaging or contact NOYITO customer support.

For technical support, troubleshooting assistance, or inquiries regarding replacement parts, please visit the official NOYITO website or contact their customer service department. Please have your product model number (E3F-DS30P1) and purchase information ready when contacting support.

