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Walfront E18-D80NK

Walfront E18-D80NK Infrared Obstacle Avoidance Sensor Switch User Manual

Model: E18-D80NK

1. INTRODUCTION

This manual provides detailed instructions for the Walfront E18-D80NK Infrared Obstacle Avoidance Sensor Switch. This sensor is designed for reliable detection of objects within a specified range, making it suitable for various applications including robotics, automation, and counting systems. Please read this manual thoroughly before installation and operation to ensure proper use and optimal performance.

2. PRODUCT OVERVIEW

The E18-D80NK is a compact photoelectric sensor that integrates both a transmitter and a receiver. It operates by emitting an infrared beam and detecting its reflection from an object. The detection distance is adjustable, offering flexibility for different application requirements. Its robust design ensures stable performance with minimal interference.

Key Features:

- Integrated transmitter and receiver for compact design.
- Adjustable detection distance from 3cm to 80cm.
- Low power consumption (5VDC, 100mA).
- Easy to assemble and use.
- Suitable for various environments due to its robust construction.

Typical Applications:

- Robot obstacle avoidance systems.
- Automated production line counting equipment.
- Multi-reminder systems.
- Maze robot navigation.



Figure 2.1: The Walfront E18-D80NK Infrared Sensor Switch, showing its cylindrical body, sensor head, and connected wiring with a 3-pin connector.

3. SPECIFICATIONS

Parameter	Value
Model	E18-D80NK
Operating Voltage (U)	5VDC
Current Consumption (I)	100mA
Detection Distance (Sn)	3cm - 80cm (Adjustable)
Diameter	18mm / 0.71in
Sensor Length	45mm / 1.77in
Wire Length	45.5cm / 17.9in
Weight	28g / 1.06 ounces
Material	ABS plastic



Figure 3.1: The sensor shown with its approximate wire length of 51cm (20 inches), indicating the overall reach of the connection cable.

4. SETUP AND INSTALLATION

Proper installation is crucial for the sensor's performance. Follow these steps for setup:

4.1 Wiring Diagram

The E18-D80NK sensor typically comes with a 3-wire connection. The standard color coding is:

- **Brown Wire:** +5VDC (Power Supply Positive)
- **Blue Wire:** GND (Ground / Power Supply Negative)
- **Black Wire:** OUT (Signal Output)

Connect the brown wire to your 5VDC power source, the blue wire to ground, and the black wire to the input pin of your microcontroller or control circuit.



Figure 4.1: A close-up view of the sensor's head and the 3-pin connector, illustrating the wiring for power and signal output.

4.2 Mounting the Sensor

1. Choose a stable mounting location where the sensor's detection area is clear of obstructions, except for the objects you intend to detect.
2. Ensure the sensor is securely fastened to prevent movement or vibration, which could affect detection accuracy.
3. Position the sensor so that its infrared beam is directed towards the target detection zone.

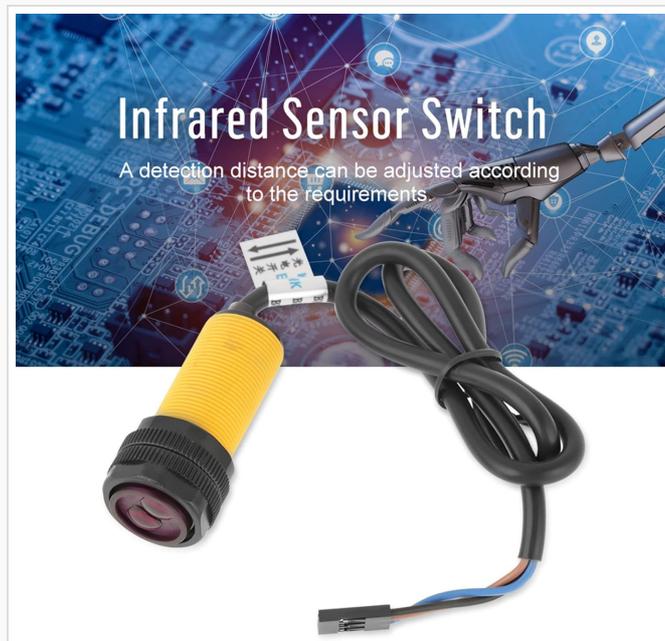


Figure 4.2: The E18-D80NK sensor shown in a context suggesting integration with a circuit board, highlighting its application in electronic projects.

5. OPERATING INSTRUCTIONS

Once the sensor is powered and correctly wired, it will begin to operate. The sensor provides a digital

output signal (HIGH or LOW) indicating the presence or absence of an object.

5.1 Adjusting Detection Distance

The E18-D80NK features an adjustable detection range. To modify the detection distance:

1. Locate the small potentiometer (adjustment screw) on the back or side of the sensor body.
2. Using a small screwdriver, carefully turn the potentiometer clockwise to increase the detection distance or counter-clockwise to decrease it.
3. Test the detection range with a target object at various distances to calibrate it to your specific needs.



Figure 5.1: A detailed view of the sensor, highlighting the adjustment screw (potentiometer) used to set the detection range.

5.2 Output Signal

The black output wire will typically provide a LOW signal when an object is detected within the set range and a HIGH signal when no object is detected, or vice-versa depending on the specific model's configuration. Refer to your specific sensor's datasheet for exact output logic if needed. An indicator LED on the sensor usually illuminates when an object is detected.

6. MAINTENANCE

The Walfront E18-D80NK sensor is designed for low maintenance. However, following these guidelines can help ensure its longevity and consistent performance:

- **Keep Clean:** Periodically clean the sensor's lens and body with a soft, dry cloth to remove dust, dirt, or debris that could interfere with detection. Avoid using abrasive cleaners or solvents.
- **Environmental Conditions:** Operate the sensor within its specified temperature and humidity ranges. Avoid exposure to extreme temperatures, direct sunlight for prolonged periods, or corrosive environments.
- **Cable Integrity:** Regularly inspect the connecting wires for any signs of damage, fraying, or loose connections. Ensure cables are not under excessive strain.

7. TROUBLESHOOTING

If you encounter issues with your E18-D80NK sensor, refer to the following troubleshooting tips:

Problem	Possible Cause	Solution
Sensor not detecting objects	Incorrect wiring; Insufficient power; Detection distance too short; Obstruction on lens; Sensor misaligned.	Verify wiring (5VDC, GND, OUT); Ensure stable 5VDC power supply; Adjust detection distance clockwise; Clean sensor lens; Realign sensor towards target.
Inconsistent detection	Ambient light interference; Vibrations; Unstable power supply; Reflective surfaces.	Shield sensor from strong ambient light; Securely mount sensor; Check power supply stability; Adjust sensor angle or use non-reflective targets.
Sensor always detects (LED always ON/OFF)	Detection distance too long (detecting background); Sensor too close to an object.	Adjust detection distance counter-clockwise; Ensure no unintended objects are within the minimum detection range.

8. WARRANTY AND SUPPORT

Walfront products are manufactured to high-quality standards. For any technical support, warranty claims, or inquiries regarding the E18-D80NK Infrared Obstacle Avoidance Sensor Switch, please contact Walfront customer service through the retailer where the product was purchased or visit the official Walfront website for contact information.

Please retain your proof of purchase for warranty purposes.

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Related Documents - E18-D80NK

	<p>IR Sensor Switch E18-D80NK-N: Technical Manual and Setup Guide</p> <p>This document provides technical specifications, setup instructions, and usage guidelines for the ETT CO., LTD. IR Sensor Switch E18-D80NK-N, an infrared distance detection device.</p>
	<p>Ebyte E18 Series ZigBee 3.0 Wireless Module Product Specification</p> <p>Detailed product specification and user manual for the Ebyte E18 Series 2.4GHz ZigBee 3.0 wireless modules. Covers features, applications, hardware design, software integration, and technical parameters for the CC2530-based modules.</p>



[Baseus Bowie E18 TWS True Wireless Earphones Quick Start Guide](#)

Concise guide to setting up and using Baseus Bowie E18 TWS True Wireless Bluetooth Earphones, covering controls, pairing, specifications, and support.

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[Baseus Earphones Safety and Compliance Information](#)

Comprehensive safety instructions, hearing protection guidelines, and compliance declarations for Baseus earphones, covering various languages and regulatory standards.



E18-MS1-PCB User Manual
CC2530 2.4GHz ZigBee SMD wireless module

[E18-MS1-PCB ZigBee Module User Manual - EBYTE](#)

Comprehensive user manual for the E18-MS1-PCB, a 2.4GHz ZigBee SMD wireless module by EBYTE, featuring CC2530 chip. Includes specifications, features, programming, hardware design, FAQ, and production guidance.



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[eufy Robot Lawn Mower E15/E18 FAQ and User Guide](#)

Find answers to frequently asked questions about the eufy Robot Lawn Mower E15 and E18. This guide covers setup, usage tips, maintenance, and safety information for optimal lawn care.