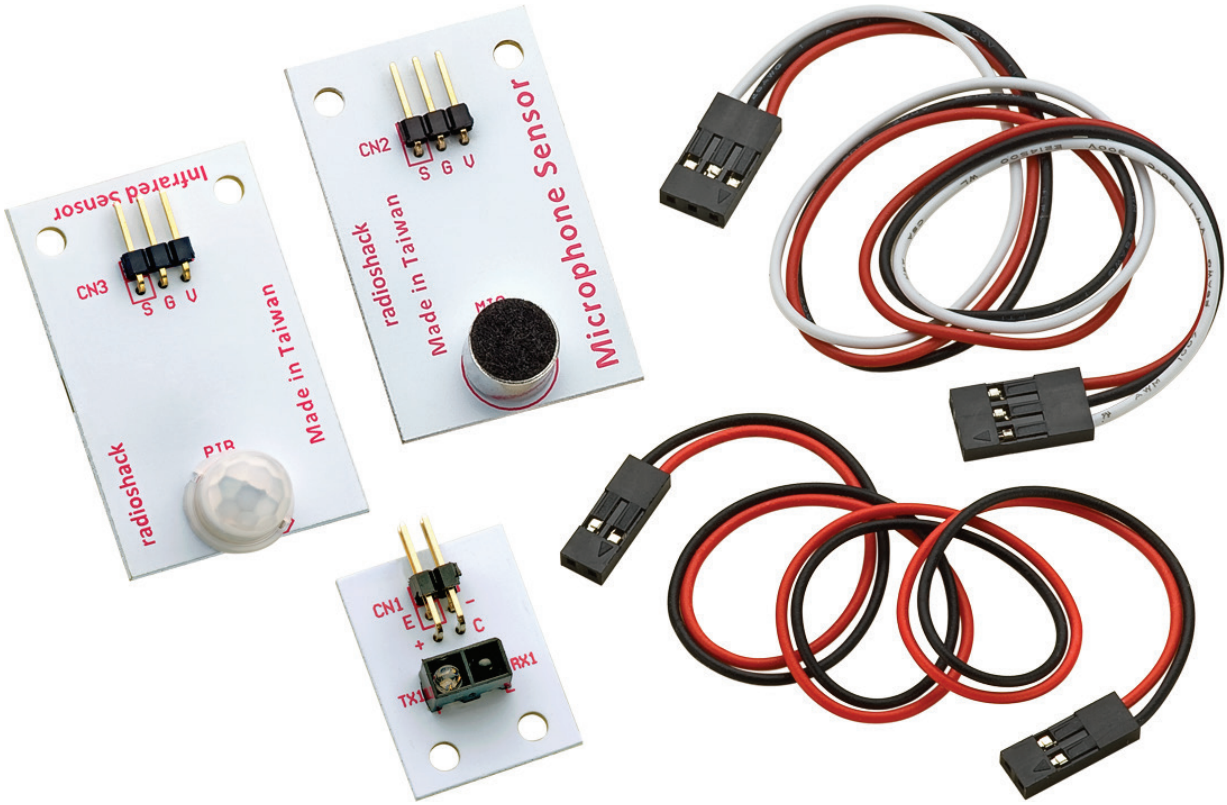
RadioShack®

Starting with STEM

Robotics Sensors Kit



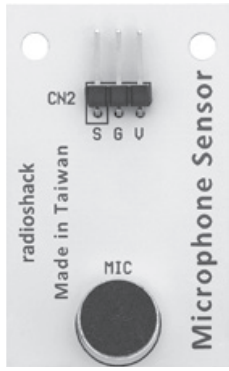
2770408

User's Guide

We hope you enjoy your Robotics Sensors Kit from RadioShack. Please read this user's guide before using your new sensors kit.

Package Contents

Optical Sensor



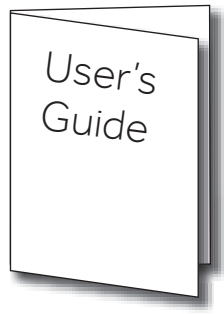
Microphone

Infrared Sensor

Cables

2-Pin (2)

3-Pin (2)



Features

- Ideal for voice-operated or light-operated robotics as well as projects requiring motion detection
- Sensors require 5V supply voltage
- Works with core PCB in the Robotics Starter Kit

Specifications are subject to change and improvement without notice. Actual product may vary from the images found in this document.

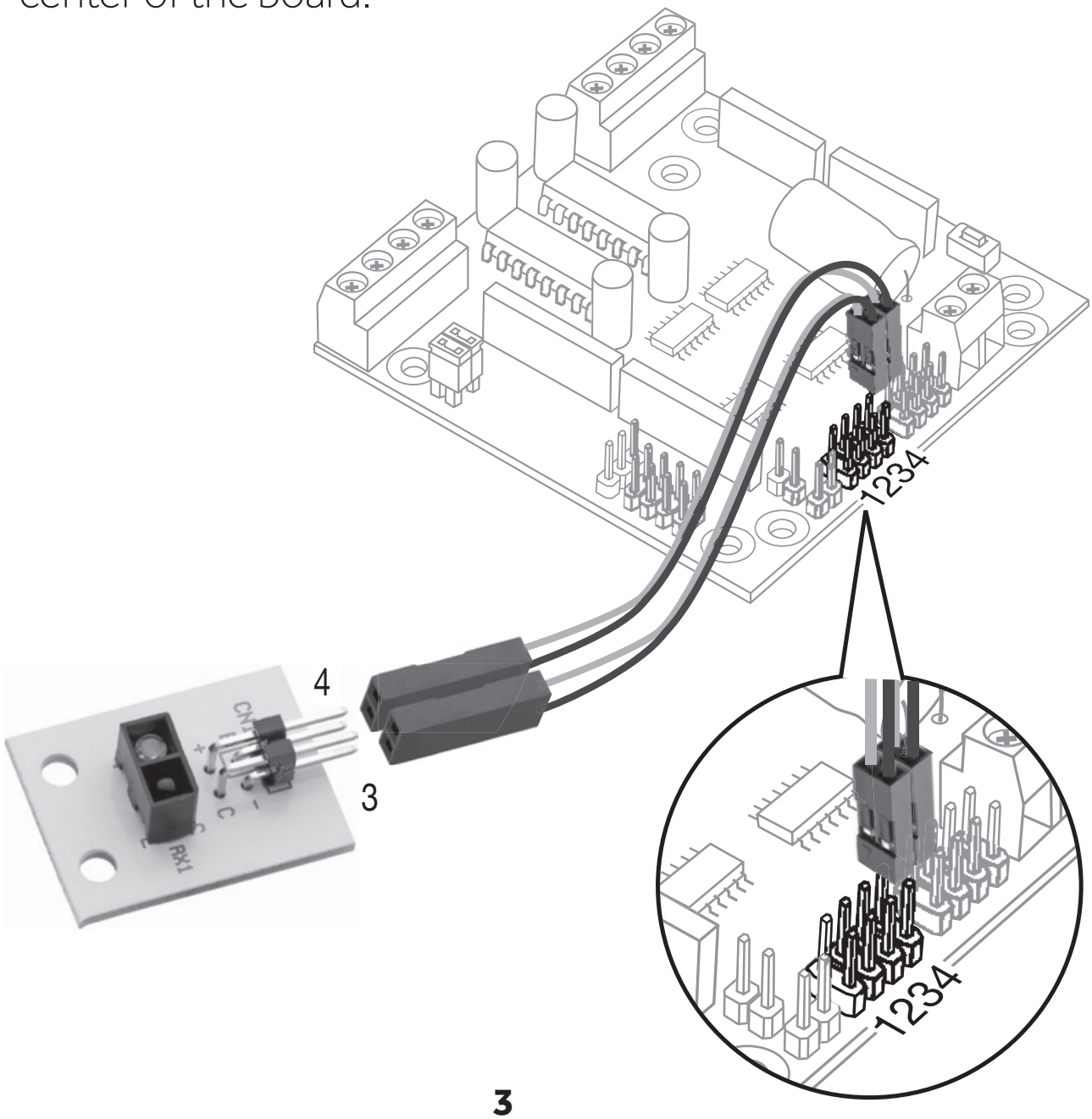
Optical Sensor

Detection Range .....0.08 – 0.8 in (2 – 20mm)

Connect the optical sensor to the J9 pins on the PCB using two 2-pin cables.

Note: On the sensors, match the red wire to the positive pin and the black wire to the negative pin.

On the PCB, the red wires should face toward the center of the board.



Microphone

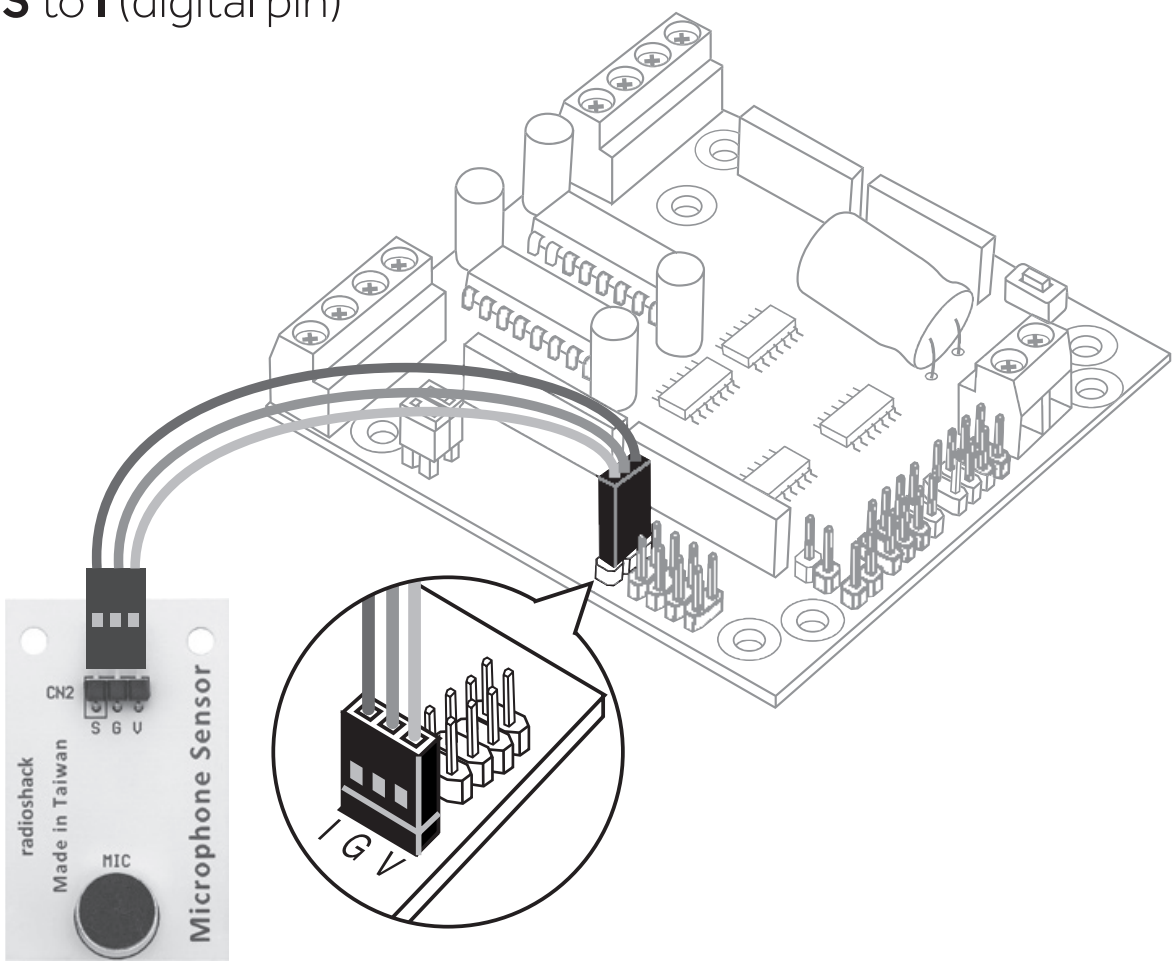
Microphone Sensitivity ..... 105 dB (at 7.87 in./20 cm)

Connect the microphone sensor to the J11 pins on your PCB using a 3-pin cable.

V to **V** (power source)

G to **G** (ground)

S to **I** (digital pin)



The signal is HIGH when no sound is detected and LOW when sound over 105 dB (for example, hand clapping) is detected.

Infrared Sensor

Use the passive infrared (PIR) sensor to let your project detect motion.

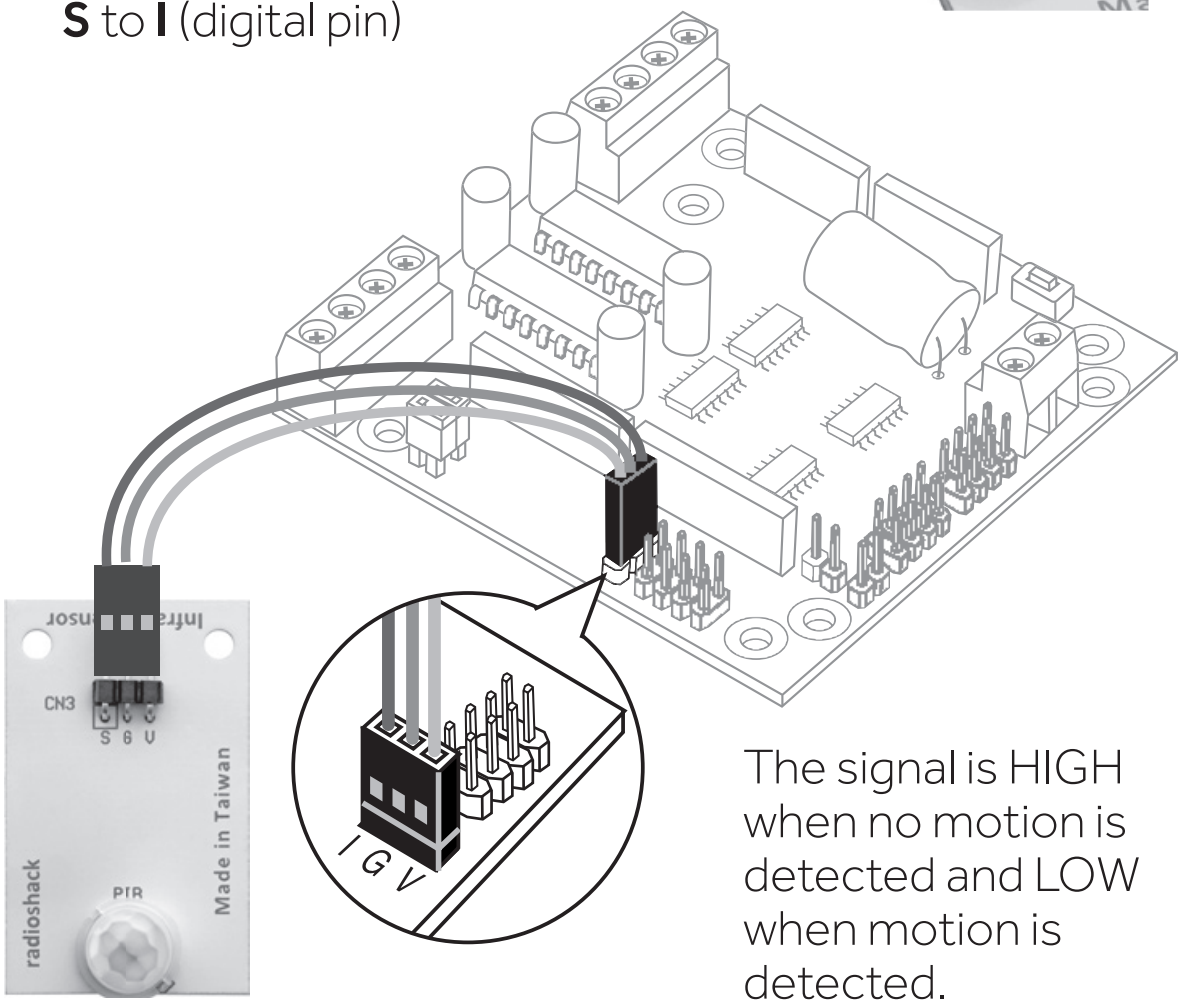
Detection Range .....4.9 ft (1.5m)

1. Attach the lens to the sensor.
2. Connect the infrared sensor to the J11 pins on your PCB using a 3-pin cable.

   V to **V** (power source)

   G to **G** (ground)

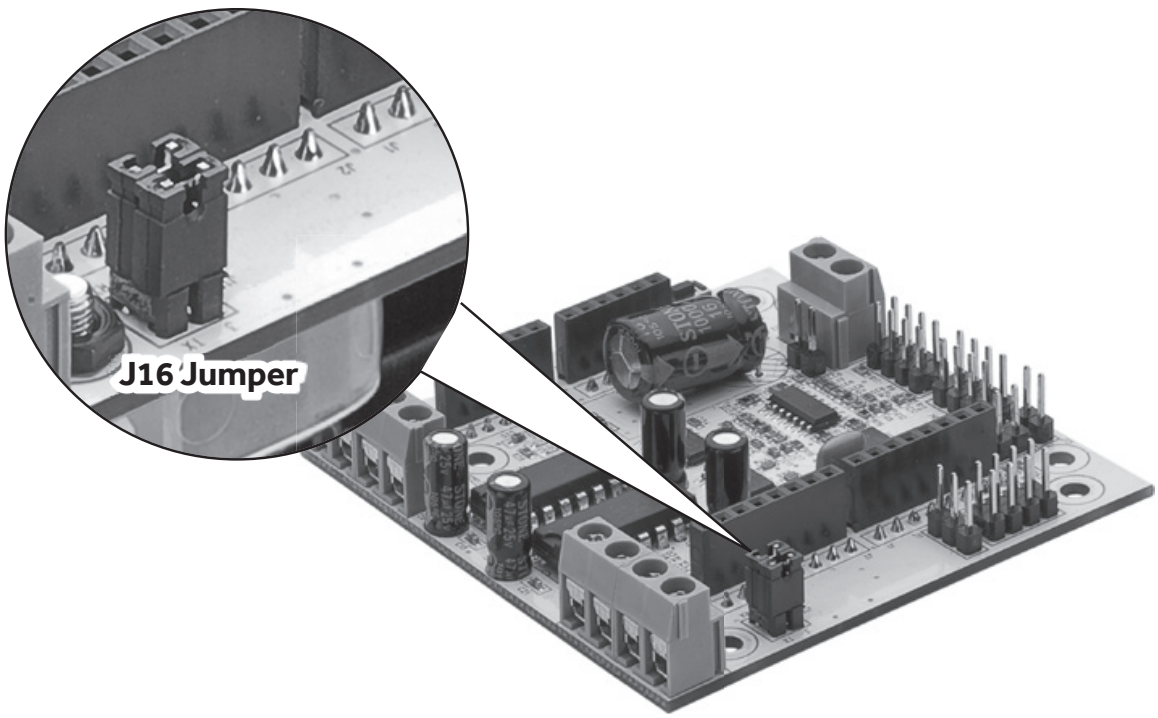
   S to **I** (digital pin)



The signal is HIGH when no motion is detected and LOW when motion is detected.

Download the Support Files

1. For schematics and programs, go to https://github.com/RadioShackCorp/2770408-Robotics-Sensors-Kit.
2. In the **Example sketches** folder, select **infrared**, **microphone** or **optical** folder then save the corresponding .ino files to your computer.
3. If you have not created a directory in your Arduino folder for the Robotics programs, in the **Library files** folder, open READ_ME.txt and follow the directions.
4. Connect your Arduino Uno R3 to your computer with a USB cable.
5. Remove the jumpers from J16 on the PCB to allow your Arduino board's USB port to communicate with your computer.



6. Open the corresponding .ino file in the Arduino programming environment.
   - Open **optical.ino** to program the optical sensor.
   - Open **microphone.ino** to program the microphone.
   - Open **infrared.ino** to program the PIR sensor.
7. Verify and upload the program to your Arduino board.
8. Remove the USB cable from your Arduino board.
9. Put the jumpers back onto J16. When the PCB is connected to your Arduino board and the jumpers on J16 are in place, your Arduino board's serial port will be unavailable.

90-Day Limited Warranty

Go to www.radioshack.com/help for details.

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