

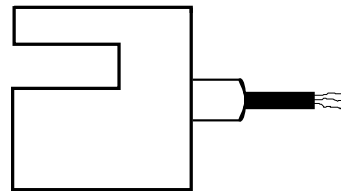
# User's Manual

# **EXTECH**

## INSTRUMENTS

### Model 461957

## Photoelectric Sensor



### Introduction

Congratulations on your purchase of the Extech 461957 Photoelectric Sensor for use with your Panel Tachometer. This NPN sensor has a 0.4" (10mm) target distance and a range up to 15,000 rpm (250Hz). This sensor is shipped fully tested and calibrated and with proper use will provide years of reliable service.

### Operation

Extech *Photoelectric Sensor* Model 461957 connects directly to the tachometer's input terminals and measures up to 6,000 RPM. When the sensor is properly powered, the green power LED (on the sensor) will switch on.

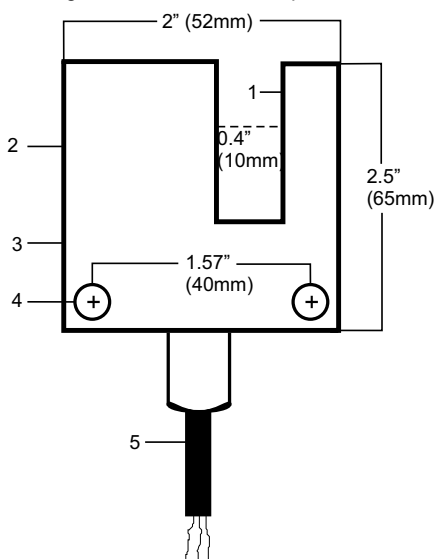
Photoelectric sensors generate a light beam that is interrupted by an object as it passes through the beam. Each time the beam of light is interrupted a pulse is transmitted to the meter and the red status LED on the sensor blinks. The meter then calculates and displays the RPM based on the number of pulses received in a specific period of time.

The sensitivity adjustment screw on the sensor may have to be adjusted so that one pulse is generated for each interruption of the light beam. If the red LED turns on less/more than once for each interruption of the beam, adjust the sensitivity screw.

### Mounting Instructions

Use the mounting holes to secure the photoelectric sensor to the desired surface. The photo beam is generated and detected in the groove (as depicted by the dotted line in the diagram below). The object under test must pass in the groove so that the light beam can be interrupted.

1. Sensor
2. Power/Detection LEDs
3. Sensitivity Adjustment
4. Mounting Holes
5. Cable



### Wiring Instructions

1. Brown wire connects to +DCV sensor power from the panel tachometer
2. Blue wire connects to GND (ground) sensor input of the panel tachometer
3. Black wire (sensor output during high to low transition) or Green wire (sensor output during low to high transition) connects to positive sensor input terminal of the panel tachometer. Connect one wire only to the positive terminal (black or green) depending upon which better suits the application.

### Specifications

Range	Up to 15,000 RPM
Switching Frequency	100Hz (6000 rpm)
Power	10 - 30VDC $\pm$ 10%; 40mA max.
Response time	< 5ms
Output	NPN transistor; Max load 100mA
Photo beam color	Red
Photo beam wavelength	660 Angstroms
Protection	IP60
Cable length	6 ft (1.8 meters)
Dimensions	2.5 x 2 x 0.8" (65 x 52 x 20.5mm)

### Warranty

**EXTECH INSTRUMENTS CORPORATION** warrants this instrument to be free of defects in parts and workmanship for **one year** from date of shipment (a six month limited warranty applies to sensors and cables). If it should become necessary to return the instrument for service during or beyond the warranty period, contact the Customer Service Department at (781) 890-7440 ext. 210 for authorization or visit our website [www.extech.com](http://www.extech.com) for contact information. A Return Authorization (RA) number must be issued before any product is returned to Extech. The sender is responsible for shipping charges, freight, insurance and proper packaging to prevent damage in transit. This warranty does not apply to defects resulting from action of the user such as misuse, improper wiring, operation outside of specification, improper maintenance or repair, or unauthorized modification. Extech specifically disclaims any implied warranties or merchantability or fitness for a specific purpose and will not be liable for any direct, indirect, incidental or consequential damages. Extech's total liability is limited to repair or replacement of the product. The warranty set forth above is inclusive and no other warranty, whether written or oral, is expressed or implied.



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Repair & Returns: Extension 210; E-mail: [repair@extech.com](mailto:repair@extech.com)

#### Product specifications subject to change without notice

For the latest version of this User's Guide, Software updates, and other up-to-the-minute product information, visit our website: [www.extech.com](http://www.extech.com)  
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