Overheight Vehicle Detection System

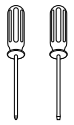
Wiring Diagram

Voltage

Operates within an input range of 100VAC to 240VAC.

What You Need:

Phillips Head Screw Driver
3mm/1/8" Flat-head Screw Driver
Sign *(ordered separately)*



⚠ Always turn off the power prior to installation.

⚠ Be sure any metal debris cleared out of the cabinet.

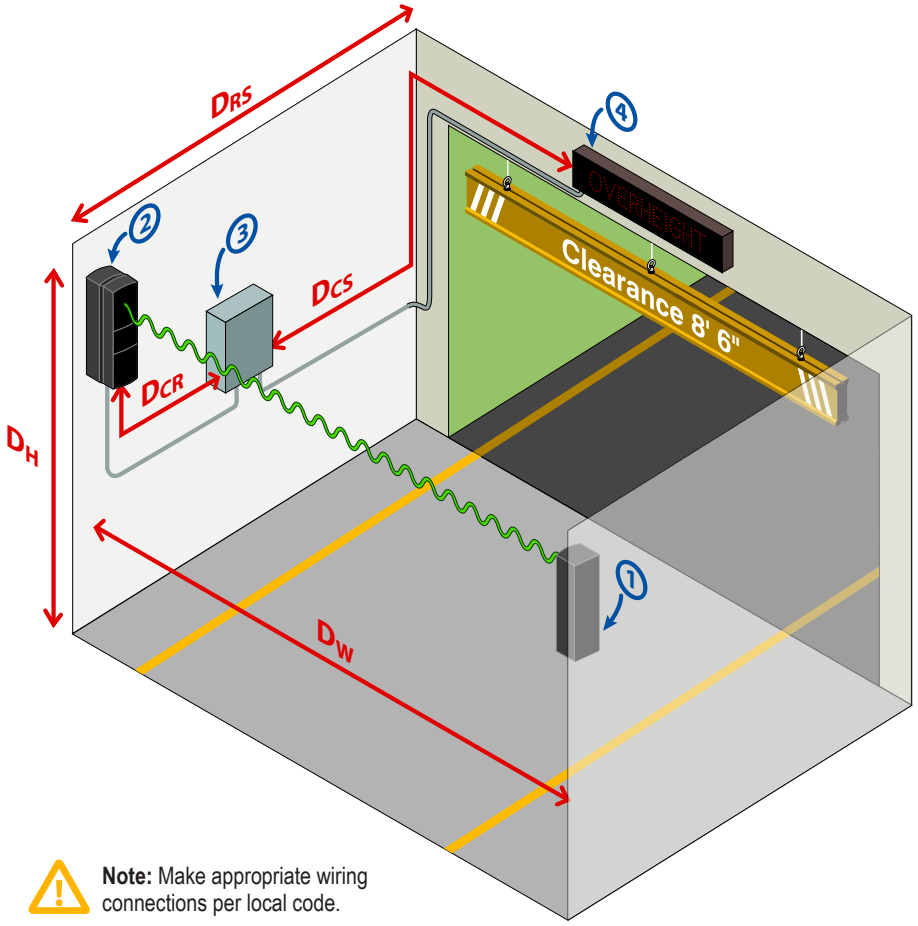
Application Notes

- This system should be used for **LOW-SPEED (10MPH) applications *ONLY***
- This system is intended to be used **in conjunction** with a **physical barrier** for over-height vehicles, such as a clearance bar
- Failure to follow installation and maintenance guidlines **will** result in system failure and potential damage and/or injury

Application Overview

Label	Component	Notes
1	Through-beam sensor (*Transmitter*)	• Battery powered (no wire entry required)
2	Through-beam sensor (Receiver)	• Wired to Controller for power (**24VDC**) + Signal
3	Controller	• **120VAC** Input • **24VDC** to Receiver • Switched **120VAC** Output to Sign
4	LED Sign	• **120VAC** Input

Label	Measurement	Value	Notes
D_W	**Max** Lane Width	**50ft** (~15m)	• Sensor's maximum detection range
D_H	Sensor line height: **ground** to **top** of each sensor	**Equal to clearance height**	• Measured from the ground to the top of each sensor • D_H should be the same for both mounting locations (sensor line must be parallel to ground)
D_{RS}	**Min** distance between detection area (Receiver) and LED Sign	**(Varies)**	• Varies per application • Account for time/ distance for drivers to stop
D_{CR}	**Max** distance between Controller and Receiver	**350ft** (~106m)	• Using 18-22AWG, 4-conductor cable
D_{CS}	**Max** distance between Controller and LED Sign	**(Varies)**	• For **120VAC**: Consult local Electrical Code • For **24VDC**: Account for sign load and wire gauge



⚠ **Note:** Make appropriate wiring connections per local code.

Sensor Installation	*Specific to the **Optex OVS-50TNR** sensor*
Wiring	Ⓐ ***Wiring the Sensor*** See "Typical Wiring" on the back page
Mounting and Configuration	**Quick Start Guide:** https://optex-america.sfo2.digitaloceanspaces.com/sensor-downloads/OVS-50TNR%E2%80%93QSG.pdf **Full User Manual:** https://optex-america.sfo2.digitaloceanspaces.com/sensor-downloads/OVS-50TNR_MANUAL.pdf

Sign Installation	
Wiring	Ⓒ ***Wiring the LED Sign*** See "Typical Wiring" on the back page
Mounting and Configuration	Follow the instructions included with your sign

Typical Wiring

Wiring will involve three separate areas: Wiring to the Sensor; Wiring to the LED Sign and Wiring to the Control Module

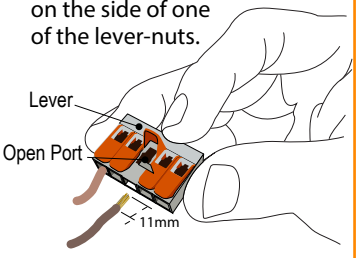
IMPORTANT NOTE: All conduit entry points must be on the bottom of the Control Module's enclosure.
Failure to do so will result in water damage not covered under warranty

A Wiring the Sensor:

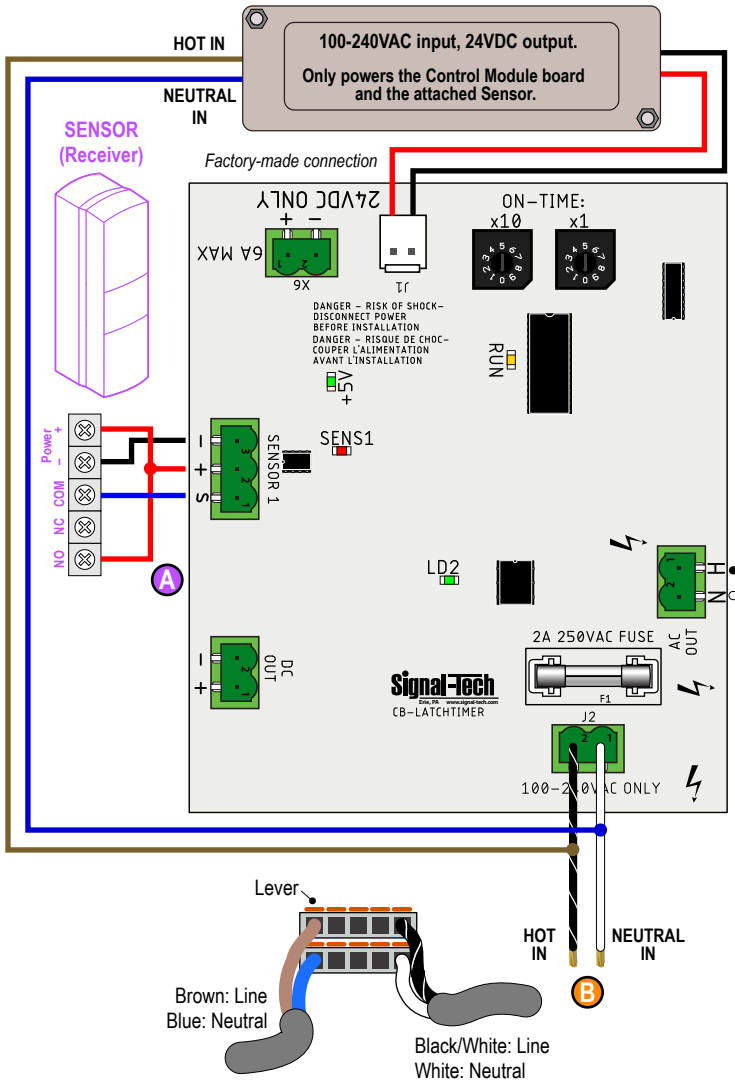
1. Refer to the Quick Start Guide included in the sensor's packaging to access its power/ signal terminals
2. On the Control Module board, locate the green screw terminal block labeled SENSOR 1
3. Following the wiring diagram below, make the appropriate connections using 18-22 AWG, 4-conductor wire up to 350' (referenced on D_{CR} notes)

B Wiring the Control Module:

1. Locate the Lever-nut connectors.
   Connector with the Brown and Black/White wires is HOT/LINE IN.
   The connector with the Blue and White wires is NEUTRAL IN.
2. Strip the ends of your input wires to 11mm using the guide on the side of one of the lever-nuts.



3. To make a connection pull up on the lever of an open port insert wire conductor and push lever back down to lock wire in place.



C Wiring the LED Sign:

1. Refer to the sign's included wiring diagram and note the color code for its HOT and NEUTRAL input leads (typically Black/White and White, respectively).
2. On the Control Module board, locate the green screw terminal block labeled with "H" and "N".
3. Using the screw terminals, make the appropriate wiring connections between the control module and the sign.

110-240VAC SIGN
(sold separately)

Note: Neutral-IN and Neutral-OUT are connected on PCB.

Note: Make appropriate wiring connections per local code.

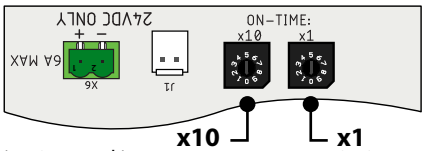
Control Module Information and Installation

Signal-Tech's adjustable Control Module uses an input signal from the sensor to activate a set of relays, turning on the LED sign for an adjustable amount of time *(see "Typical Wiring Diagram" for board layout and wiring)*.
The device comes in a NEMA 4X rated, lockable enclosure. It includes the Control Module board with 100-240VAC input/output.

Installation notes: · The enclosure should be mounted between the sensor and the LED sign to minimize the distance of any low-voltage wiring

Adjusting the Sign On-Time

Use the two switches to adjust the amount of time the sign stays illuminated.



To Adjust:
Turn the x10 to select 0 to 90 seconds in 10 second increments.
Turn the x1 to select 0 to 9 seconds in 1 second increments

x10 0 - 90 seconds in 10 second increments

x1 0 - 9 seconds in 1 second increments

· **ALWAYS** bring in conduit through the bottom of the enclosure to prevent water intrusion into the enclosure

Specification	Value	Notes
Input Voltage	100-240VAC	Power supply step down from 100 - 240VAC to 24VDC included
Adjustable Timer Range	1-99 seconds	• If rotary switches are set to 0, 0 time will default to 1 second • Timer begins when input signal returns to its open state (NO) • Timer is retriggered by additional activations on the sensor input
Relay Output Types	Mechanical; 100-240VAC (labeled N/H)	
Relay Output Rating	AC Output: 1A	