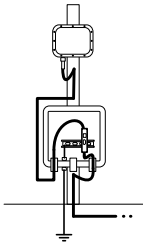
SmartSensor HD

INSTALLER QUICK-REFERENCE GUIDE

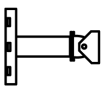
Introduction

Complete steps 1–10 to install the Wavetronix SmartSensor HD. If you need technical support or have questions, please contact Wavetronix Technical Services at 801.734.7200. For more information, see the *SmartSensor HD User Guide*.



1 Ensure that all necessary components are available

The components below, all of which can be ordered from Wavetronix, may be needed to install your HD; for more information on any of these components, see the Wavetronix product catalog.



Mount bracket

Sensor

Sensor cables

Pole-mount cabinet

Home-run cable

2 Select a mounting height

Use the table to select the mounting height for the sensor based on the offset from the nearest detection lane.

The range of ideal offsets is highlighted in gray.

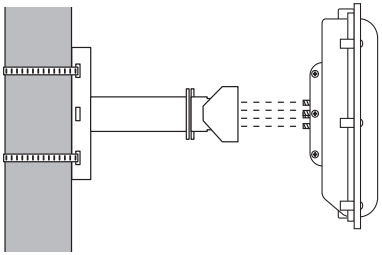
If possible, use the mounting height contained in the second column, which is marked Recommended Mounting Height.

Offset from first Detection Lane (ft/m)	Recommended Mounting Height (ft/m)	Minimum Mounting Height (ft/m)	Maximum Mounting Height (ft/m)
6 / 1.8	**12** / 3.7	**9** / 2.7	**19*** / 5.8*
10 / 3	**12** / 3.7	**9** / 2.7	**22** / 6.7
15 / 4.6	**15** / 4.6	**12** / 3.7	**26** / 7.9
20 / 6	**18** / 5.5	**15** / 4.6	**30** / 9.1
25 / 7.6	**26** / 7.9	**17** / 5.2	**33** / 10
30 / 9.1	**29** / 8.8	**19** / 5.8	**37** / 11.2
35 / 10.7	**30** / 9.1	**20** / 6	**40** / 12.2
40 / 12.2	**33** / 10	**22** / 6.7	**43** / 13.1
45 / 13.7	**36** / 11	**23** / 7	**40** / 14
50 / 15.2	**39** / 11.9	**25** / 7.6	**50** / 15.2

***Reduction in number of reported speeds**

3 Attach the sensor and mount bracket to the pole

Attach the mount bracket to the pole:



1. Insert the stainless steel straps through the slots in the mount bracket.
2. Position the mount on the pole so that the head of the mount is pointing towards the middle of the lanes of interest.
3. Tighten the strap screws partway. The sensor alignment will need to be fine-tuned later, so keep the straps loose enough to be adjustable but tight enough to be secure.

Attach the sensor to the mount bracket:

1. Align the bolts on the sensor's backplate with the holes in the mount bracket. The large 26-pin connector at the bottom of the unit should be pointing towards the ground.
2. Place the lock washers onto the bolts after the bolts are in the mount bracket holes.
3. Thread on the nuts and tighten.

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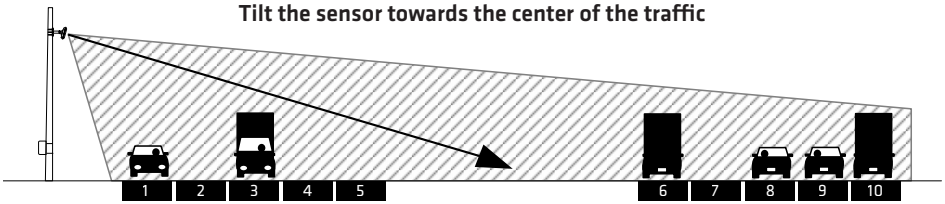
4 Align the sensor to the roadway

1. Tilt the sensor down so that the front is aimed at the center of the detection area.



2. Adjust the side-to-side angle as close to perpendicular to the flow of traffic as possible. The side-to-side alignment will be fine-tuned in step 10 using SmartSensor software.

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5 Attach the SmartSensor cable

1. Tear the tab off the silicon dielectric compound and squeeze about 25% of it into the connector at the base of the sensor. Wipe off any excess compound.
2. Insert the cable into the connector and twist clockwise until you hear it click into place.
3. To avoid undue movement from wind, strap the cable to the pole or run it through a conduit, but leave a small amount of slack at the top of the cable to reduce strain.

6 Attach the pole-mount cabinet

1. Attach the mounting brackets to the back of the pole-mount cabinet, also called the pole-mount box; thread in the mounting straps.
2. Position the pole-mount box onto the pole and attach the box to the pole using the mounting straps.
3. Run the sensor/homerun cables through the cable grips on the bottom of the pole-mount box.

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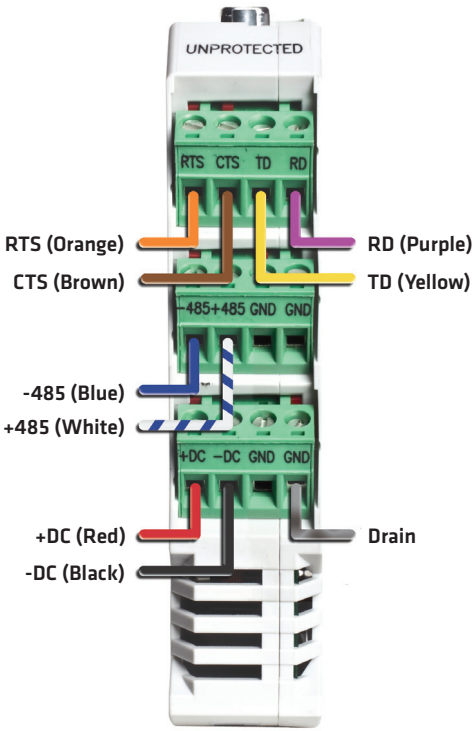
7 Connect surge protection and power

SmartSensor HD normally ships with one of two cable types. Newer installations will use the 8-conductor cable, but some installations may still use the 9-conductor cable. The wiring of these cables differs very slightly. The image below shows the wiring of the 8-conductor cable; below that, the differences in wiring the 9-conductor cable are laid out.



This covers the basics of how to wire the Click 200:

1. Disconnect the Click 200 from the DIN rail.
2. Disconnect the green screw terminals on the appropriate side of the Click 200 and wire the sensor cable as shown in the diagram.
3. Connect the Click 200 to the DIN rail.
4. Connect the ground terminal to the DIN rail and the earth ground wire to the lug bolt on the bottom of the pole-mount box.
5. Connect the exterior lug bolt to earth ground.
6. Connect 10–30 VDC to the +DC and –DC terminals on the appropriate side of the Click 200.

Note. The Click 200 has one side marked PROTECTED and one marked UNPROTECTED; which you use depends on your installation. If you're unsure which side to use, consult the installation designs, Chapter 2 of the *SmartSensor HD User Guide*, or Wavetronix Technical Services.

Note. If you have a 9-conductor cable, it will have the following wiring differences:

- There is a gray ground wire that can be plugged into any GND terminal.
- Instead of one drain, there are three; they can also be plugged into any GND terminals.
- The white +485 wire does not have a blue stripe.

8 Install the SmartSensor Manager HD (SSMHD) software

To confirm correct sensor installation and fine-tune sensor alignment, install the SmartSensor HD Manager (SSMHD) software using the steps below:

1. Download the setup program from the Wavetronix website, www.wavetronix.com. Go to the **Support** tab, click the **SmartSensor** product line icon, then use the drop-down menu to select **SmartSensor HD**. Click the **SmartSensor Manager HD** link to download the setup file.
2. Double-click on the file and follow the steps included in the install wizard.

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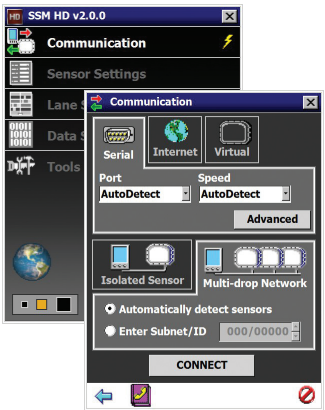
9 Make a connection



1. Make a serial connection to the SmartSensor. If you are using a traffic cabinet, this will involve making a wired or wireless connection to a Click device that has a communication connection with the sensor—for instance, to a device that is on the same T-bus as the Click 200 surge protector.
2. Launch SSMHD and select **Communication** from the main menu.
3. Select the **Serial Connection** tab.
4. Change any necessary settings, such as connection port or speed.
5. Click **Connect**.

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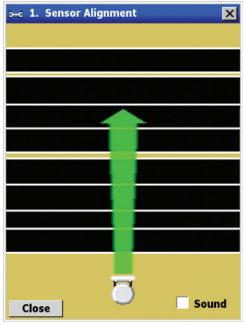
10 Complete sensor alignment



1. Select **Lane Setup** from the main menu, then **1. Sensor Alignment**.
2. Adjust the sensor according to the arrow. A green arrow means the sensor is positioned for optimal performance; a yellow or red arrow means the sensor is NOT correctly aligned with the roadway. For audio verification, check the **Sound On** box.
3. Once sensor is properly aligned, tighten strap screws the rest of the way.

For the sensor alignment tool to function properly, traffic must be flowing freely. After each adjustment of the sensor, several vehicles must pass before the alignment tool's output is valid. Also, if the sensor is not already aligned close to perpendicular to traffic, this tool will display a message indicating that the sensor is too far out of alignment for the tool to function properly.