

SmartSensor HD

INSTALLATION QUICK START GUIDE



Note. The mounting location for your SmartSensor HD sensor(s) should have already been determined as part of the design process. If it has not been, please consult the *SmartSensor HD User Guide* for complete design and installation guidelines.

1 Select mounting height & offset

Definition. Offset is the distance between the pole the sensor is mounted on and the edge of the first lane to be detected.

Note. For a more complete version of the table, and information about avoiding occlusion and multipathing, refer to the *SmartSensor HD User Guide*.

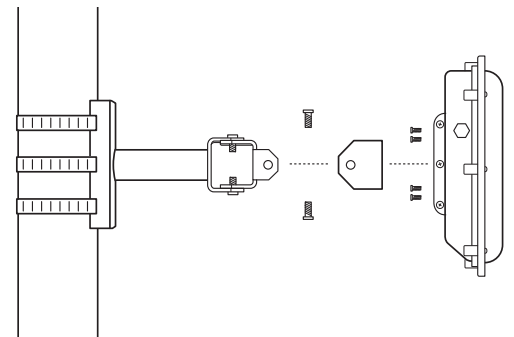
*Reduction in number of reported speeds

Feet	Offset	Height	(acceptable range)	Offset	Height	(acceptable range)
	6*	12	(9-19)		2.0*	3.5
10	12	(9-22)	3.5	3.5	(3.0-6.0)	
15	15	(12-26)	5.0	4.5	(3.5-8.0)	
20	18	(15-30)	6.5	6.0	(4.5-9.5)	
25	26	(17-33)	Recommended	8.0	8.0	(5.0-10.5)
30	29	(19-37)		9.5	8.5	(5.5-11.5)
35	30	(20-40)		11.0	9.0	(6.0-12.5)
40	33	(22-43)		12.5	10.5	(6.5-13.5)
45	36	(23-46)		14.0	11.0	(7.0-14.0)
50+	39	(25- <offset)	15.5+	12.0	(7.5- <offset)	

Meters

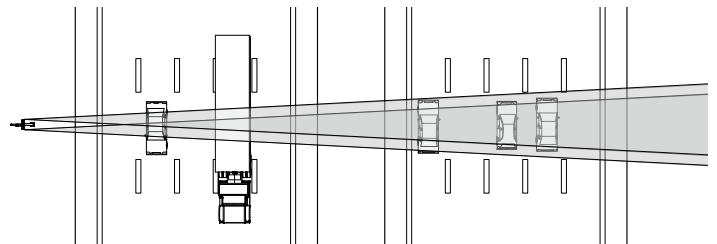
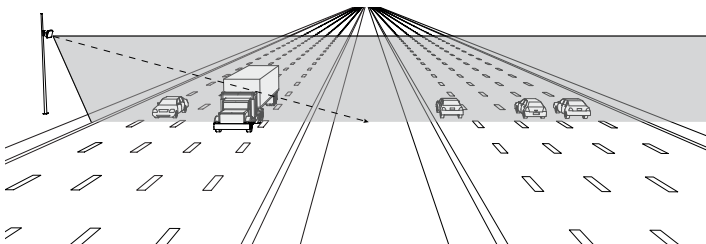
2 Mount the sensor

- 1 Prepare the sensor while still on the ground: remove the large bolts holding the end knuckle to the mount, then use the four small bolts and lock washers to attach the knuckle to the sensor backplate.
- 2 Once you're ready to mount the sensor on the pole, insert the mounting straps through the slots on the mount.
- 3 Position the mount on the pole at the height you chose from the table above.
- 4 Tighten the straps.
- 5 Attach the knuckle you prepared earlier to the mount using the large bolts (the cable connector should be pointed down). Don't tighten completely yet, as you still need to align the sensor to the roadway.

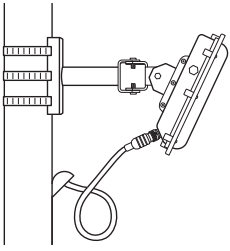


3 Align the sensor to the road

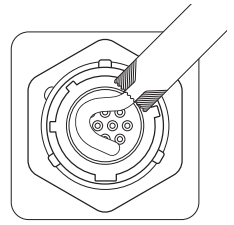
- 1 Tilt the sensor down so the front is aimed at the center of the detection area.
- 2 If the sensor is installed on a road with an uphill/downhill grade, rotate the sensor so that the bottom edge matches the grade of the road (this will require the purchase of a rotating sensor backplate).
- 3 Adjust the side-to-side angle so it's perpendicular to the flow of traffic.



4 Attach the cable



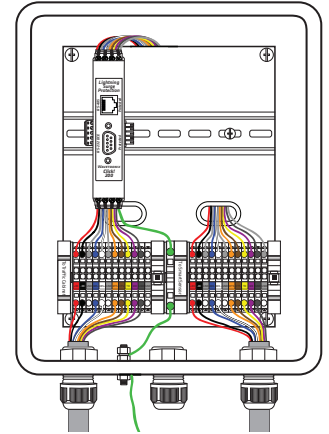
- 1 Tear the tab off the tube of silicon dielectric compound that came with the sensor.
- 2 Squeeze about half of the compound on the connector at the base of the sensor.
- 3 Insert the cable connector into the sensor connector. Be aware it's a keyed connector.
- 4 Twist the cable connector clockwise until you hear it click into place.
- 5 Run the cable through the pole. Leave a small amount of slack at the top; this reduces strain and allows you to create a drip loop.
- 6 If there's excess cable, don't cut it, as you may need it in the future; leave it in the pole.



5 Set up the pole-mount box

Note. Not all installations will include a pole-mount box; if yours doesn't, disregard this section.

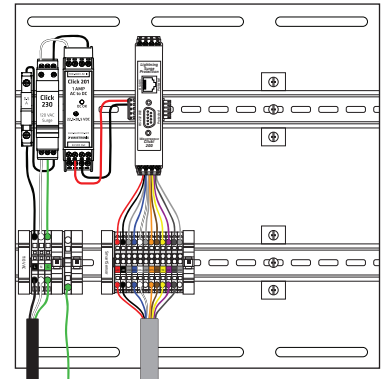
- 1 Use the included mounting brackets, and Band-It or a similar clamping system, to attach the Surge Preassembled Cabinet to the pole.
- 2 Insert the sensor cable (pigtail cable coming from the sensor) through the rightmost cable grip on the bottom of the box; twist the grip to tighten.
- 3 Terminate the conductors in the terminal blocks marked "To SmartSensor," following the color scheme on the labels; do not strip the insulation on the conductors.
- 4 Insert one end of the homerun cable (the cable that runs to the traffic cabinet) through the leftmost grip, and twist the grip to tighten.
- 5 Repeat step 3 with the terminal blocks marked "To Traffic Cabinet."
- 6 Make sure the box is grounded.



6 Set up the traffic cabinet

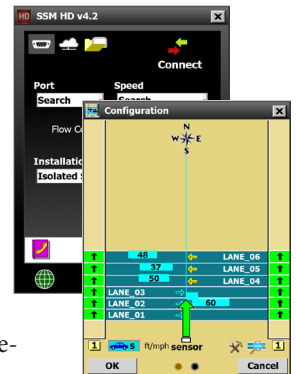
- 1 Use the included screws to mount the Standard Preassembled Backplate in the traffic cabinet.
- 2 Terminate the conductors from the power cable into the terminal blocks marked "110 VAC," following the color scheme on the labels; do not strip the insulation on the conductors.
- 3 Terminate the conductors from the homerun cable into the terminal blocks marked "Smart-Sensor," following the color scheme on the labels; do not strip the insulation on the conductors.
- 4 Make sure the backplate is grounded.

Note. The backplate includes a Click 200, which has RS-232 and RS-485 ports for communications. If you'd like to use a different Click communication device, mount it on the DIN rail.



7 Check alignment in the SmartSensor Manager HD software

- 1 Make a wired or wireless connection between your laptop and one of the Click 200s in the installation.
- 2 Launch SSMHD and click **Connect** on the main menu. Based on the kind of connection you're making, go to the Serial or Internet screen. Change any necessary settings, and click **Connect**.
- 3 On the main SSMHD screen, click the **Lanes** button, then click **Configuration**.
- 4 Click the magnifying glass icon to open the View menu, then click **Show Alignment**. To see an arrow for each lane, click the sidebar button until the number 1 appears.
- 5 Watch the arrows to see where the sensor's alignment is at.
- 6 If necessary, move the sensor manually to fix it. Give the software a few moments after each sensor movement to adjust; a few vehicles need to pass by before it can report on the new alignment.



Note. For configuration instructions, see the *SmartSensor HD User Guide*.