NOTRAFFIC

# Installation Guide

A guide for traffic engineers, signal technicians, and contractors to install NoTraffic sensors and cabinet equipment.

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| NoTraffic Definitions | |
|---|---|
| **Connected Vehicle Sensor Unit (CV SU)** | A video/radar sensor with embedded Connected Vehicle Roadside Unit (CV RSU) |
| **Control Unit (CU)** | The processor in the cabinet receives data from each sensor, makes detection decisions, and interfaces with the controller. |
| **Power DIN Rail** | An additional DIN Rail that is required when sensors are powered from the cabinet. It houses the power supply, circuit breakers and sensor web relay. |
| **Sensor Unit (SU)** | The NoTraffic video/radar combined sensor. |
| **Standard DIN Rail** | The standard NoTraffic DIN rail in the cabinet that houses the communications and power supply equipment |
| **Virtual Management Center (VMC)** | The cloud-based system monitors the sensors, alerts, and data tables. |

# INTRODUCTION

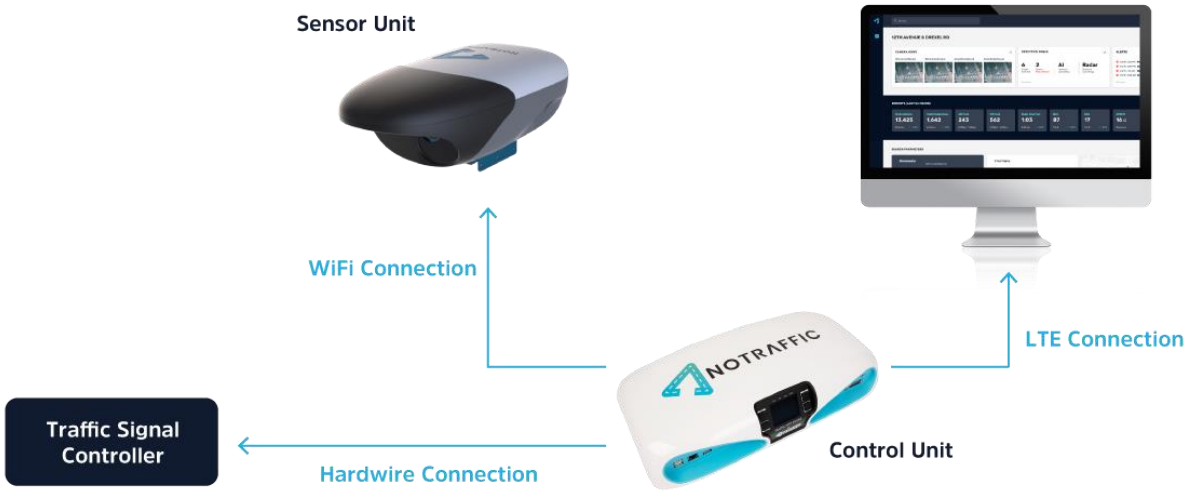
## SYSTEM OVERVIEW

NoTraffic has developed a hardware and software solution to manage traffic in real-time using a network of cloud-linked sensors deployed at intersections, corridors, or grid networks. Intersections may run in a detection mode, passive data collection mode, or optimization mode.

Our sensors are vendor agnostic and will work with any existing infrastructure. The sensors communicate to the cabinet equipment wirelessly, so only power is required. The sensors fuse video & radar for object detection & classification and have a built-in Road-Side Unit (RSU) for Connected Vehicle applications. The Control Unit in the cabinet interfaces with the traffic signal controller.

All sensors are connected to the cloud using wireless communications and accessed anywhere using our Virtual Management Center (VMC) dashboard. The VMC monitors the proper functioning of the traffic controller and will provide real-time alerts if it detects any problems with the traffic controller (E.g., signal in flash, stuck pedestrian calls, communications failure). It will also provide alerts from events picked up by the sensors, such as accidents or stuck vehicles.

**Figure 1:** NoTraffic System Overview



## MODES OF OPERATION

NoTraffic system can be run in three different modes of operations:

**Detection Mode:** In Detection mode, the NoTraffic sensors detect and classify all road users, and provide inputs to the traffic controller for signal operations. Data is sent to the Virtual Management Center for performance measures. The intersection still operates using the timing and detector plans programmed in the traffic controller.

**Optimization Mode:** In Optimization Mode, NoTraffic uses AI to autonomously optimizes traffic signal operations in real-time based on actual demand, and by predicting 2 minutes into the future. Rather than adhering to a fixed cycle or historical estimates, a predictive system changes, or adapts, based on actual traffic demand in real time. The software uses advanced AI algorithms to track and count vehicles, analyze incoming data, and respond appropriately regardless of intersection geometries or traffic demand changes.

**Passive Mode:** In Passive mode, the sensor collects data, but does not actuate the traffic signal. This is a typical application for a roundabout or pedestrian signal. The data from the sensors is still sent to the dashboard for accessing data and generating performance measures. Additionally, the sensors pass traffic demand information to downstream intersections if the corridor/grid is in Optimization mode.

## SENSOR POWER AND MOUNTING

The NoTraffic Sensor Units (SUs) communicate wirelessly to the cabinet equipment, and therefore can be installed at locations with a variety of power sources and mounting locations.

**Sensor Power Variations:** Sensor Units require 3-conductor power cable (14-18 gauge) from a 120 VAC source. Power can be supplied from the cabinet by using the NoTraffic Power DIN Rail in the cabinet, or from a luminaire using the NoTraffic NEMA power adapter.

- **Cabinet Power** – Sensor Units can be powered from the cabinet by installing the NoTraffic Power DIN Rail and running 3-conductor stranded copper cable to the mounting location.
- **Luminaire Power** – Sensor Units can be powered from a luminaire (streetlight) that has continuous power by installing the NoTraffic NEMA Power Tap on the photocell and running it to the mounting location.

**Sensor Unit Mounting:** Sensors can be mounted to mast arms or luminaires using one of the following standard camera brackets:

- Pelco Astro-Brac Assembly AS-0170 with Bracket SH-0514 and a 6-foot riser, or similar (e.g., Sky Bracket) is the preferred mounting hardware
- Iteris “Universal Camera Mount” MA/SOP-16 (preferred for luminaires)

Most standard detection camera mounting brackets are compatible but should be reviewed on a case-by-case basis.

## TWO TYPICAL INSTALLATION VARIATIONS

A typical installation with power to the SUs from the cabinet is shown in Figure 2. A typical installation with power to the SUs from luminaires is shown in Figure 3.

**Figure 2:** Typical installation and cabinet-powered SUs

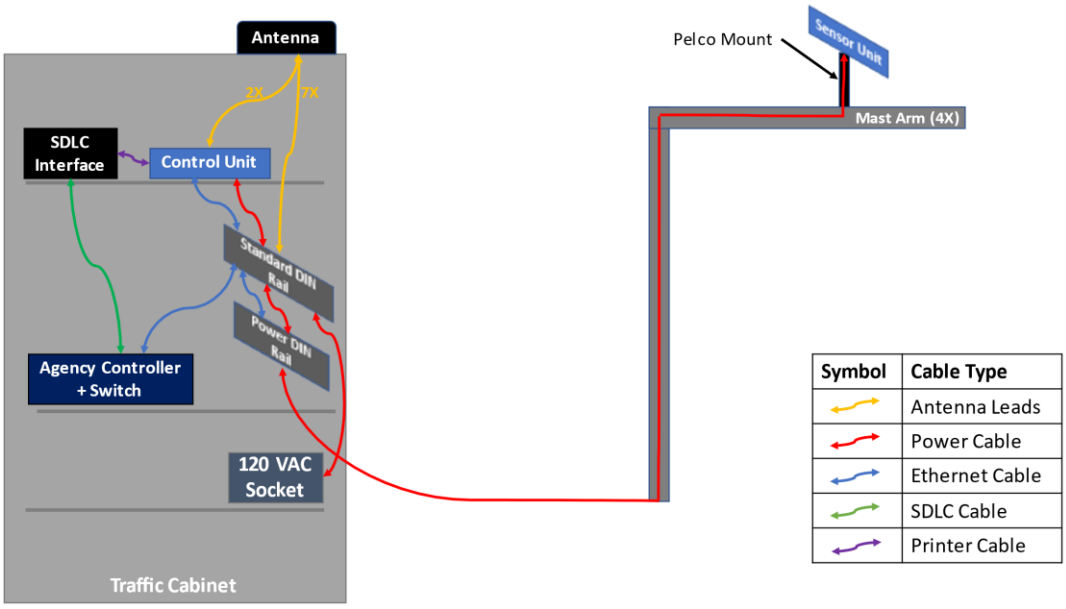
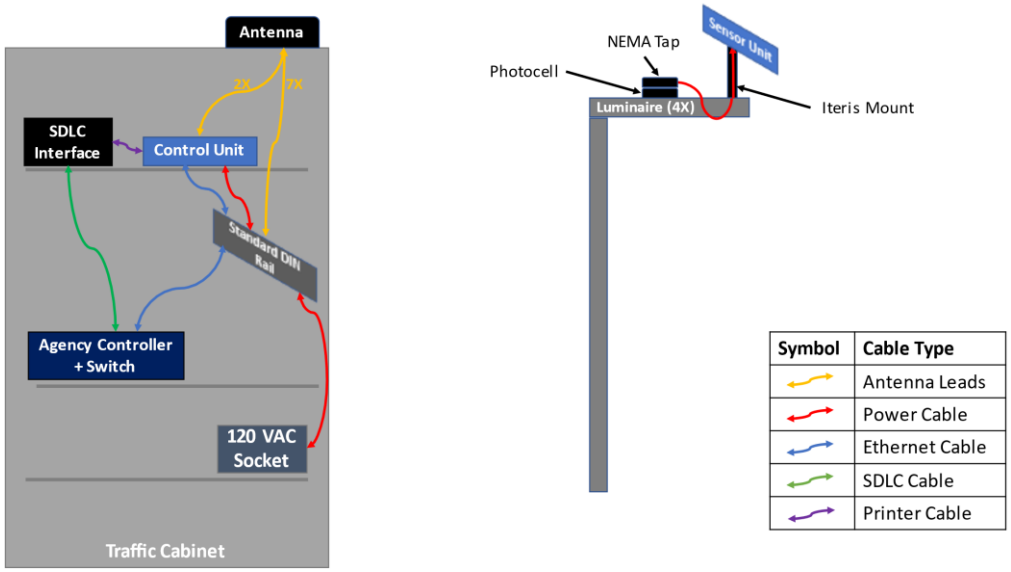



**Figure 3:** Typical installation with luminaire-powered SUs



## CABINET AND CONTROLLER COMPATIBILITY

NoTraffic is compatible with the following traffic cabinet equipment:

**Cabinet Equipment:**

- **Traffic Cabinets:** NEMA TS2 Type 1, NEMA TS2 Type 2, ATC, and 332-style cabinets
- **Power:** NoTraffic requires one 120 VAC socket to power all cabinet equipment
- **Traffic Controller Detector I/O Interface:** SDLC and C1/C11 is supported for sending detection calls and reading Traffic Light Status
- **Traffic Light Status:** Traffic light status can be read from the controller using either SDLC, C1/C11 or NTCIP. NTCIP is preferred.
- **Optimization-only:** For optimization, NTCIP on a read/write port is required to place simulated calls

## SUPPORT

Technical support for troubleshooting is available 24/7/365 by phone or email. Certain restrictions and exclusions may apply. Please contact the support number 3-days in advance if you will be aiming sensors, or re-aiming existing sensors.

**Phone:** +1 202-800-1890

**Email:** support@notraffic.tech

## NOTRAFFIC SYSTEM COMPONENTS

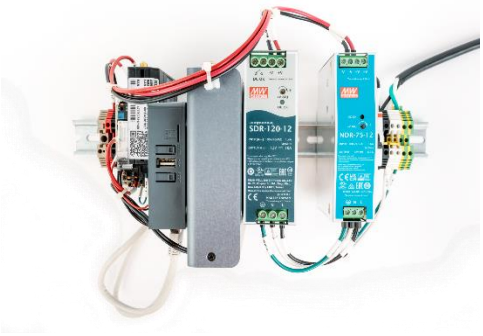
The following components are included with a NoTraffic Installation.

**Control Unit (CU)**

**Sensor Unit (SU)**

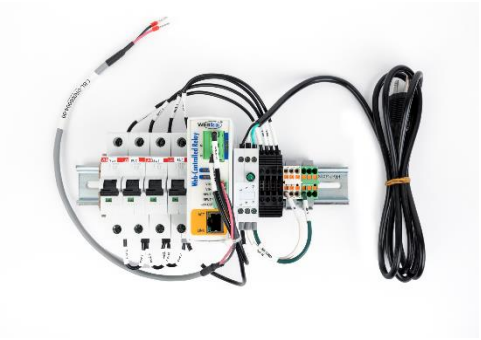
**Sensor Unit with Roadside Unit (SU-RSU)**

**Standard DIN Rail**



**Power DIN Rail (for cabinet-powered SUs only)**

**Antenna**



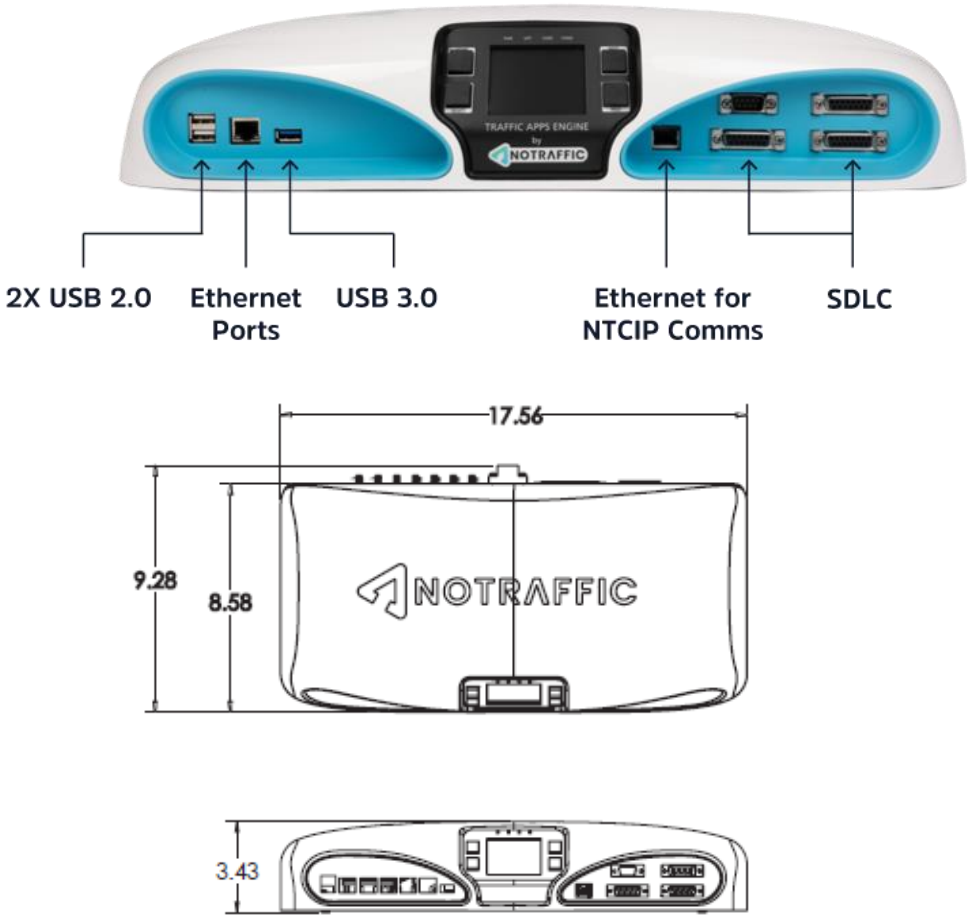
**SDLC Interface**

**NEMA Power Tap (luminaire-powered SUs only)**

## CONTROL UNIT

The Control Unit is installed in the cabinet at each intersection. It receives traffic demand data from the local sensor units, and places detection calls to the existing traffic controller.

**Figure 4:** Control Unit

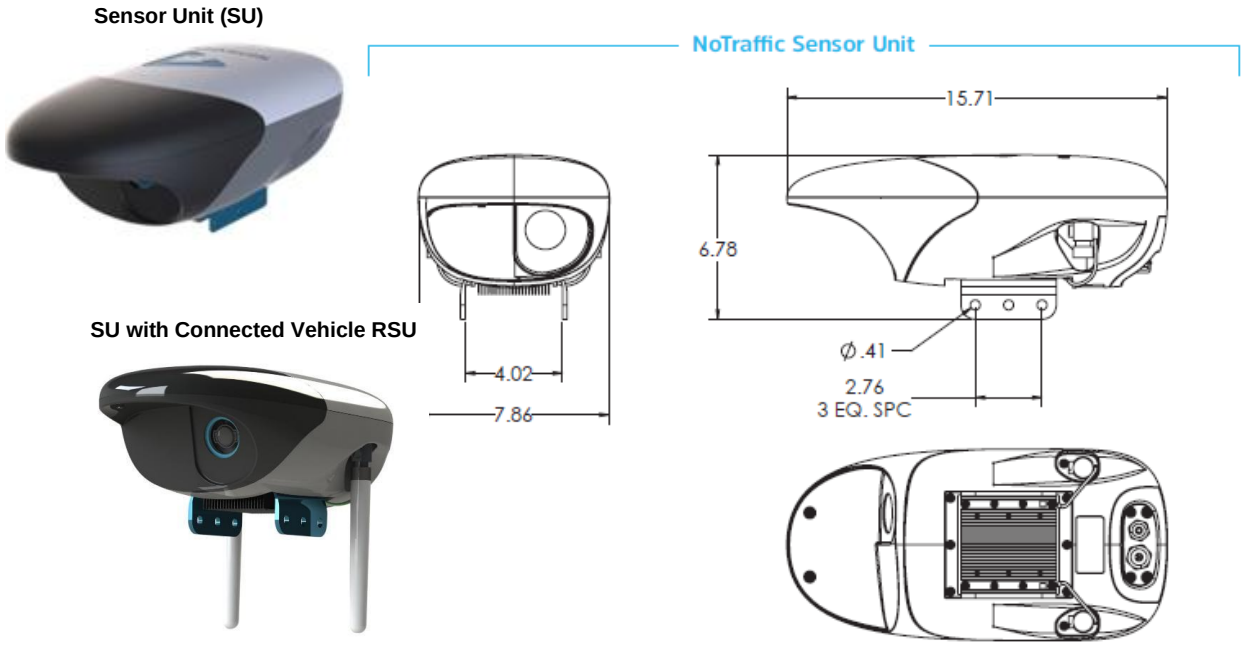



| Specifications and Features | |
|---|---|
| Temp & Humidity | -30F to +165F, up to 95% RH per NEMA TS2 |
| Ingress Protection | IP20 |
| Dimensions | L 17.56” x W 9.28” x H 3.43” |
| Weight | Five lb. 8 oz. |
| Detector I/O | SDLC with SDLC Interface |
| Power | 90V-264 VAC 50/60Hz (power provided from Standard DIN Rail) |
| Mounting | Shelf mounted |
| Additional Ports | 5X ethernet, 2X USB 2.0 and 1X USB 3.0 |

## SENSOR UNIT (STANDARD AND RSU)

The Sensor Unit (SU) is a video/radar combined sensor for roadway user detection and classification. One sensor unit at each intersection contains an embedded Connected Vehicle Roadside Unit (CV RSU).

**Figure 5:** Sensor Unit diagram




| Specifications and Features | |
|---|---|
| Temp & Humidity | -30F to +165F, up to 95% RH |
| Ingress Protection | IP67 |
| Dimensions | L 15.71” x W 7.86” x H 6.78” |
| Weight | Six lb. 13 oz. for SU, 7 lb. 15 oz. for SU with CV RSU |
| Video | 1080p @ 30FPS MPJEG stream |
| Radar | 60GHz Operating Frequency (V Band) |
| Wi-Fi | IEEE 802.11a/n/ac 5GHz |
| CV RSU | DSRC – SAE J2735, USDOT RSU v. 4.1 + C-V2X |
| Power | 90V-264 VAC 50/60Hz |
| Power Cable | 14-18 AWG stranded copper 3-conductor cable |
| Max Consumption | 40W |
| Mounting | Pelco Assembly AS-0170 with Bracket SH-0514 OR Iteris “Universal Camera Mount” (MA/SOP-16) |
| Additional Ports | Ethernet port if Cat-5 connection is preferred over Wi-Fi |

## ANTENNA

The Antenna ensures reliable communications between the SUs, cabinet equipment, and the cloud-based dashboard. The Antenna is installed on top of the cabinet by drilling a 1” hole at the top of the cabinet and pulling the harness through.

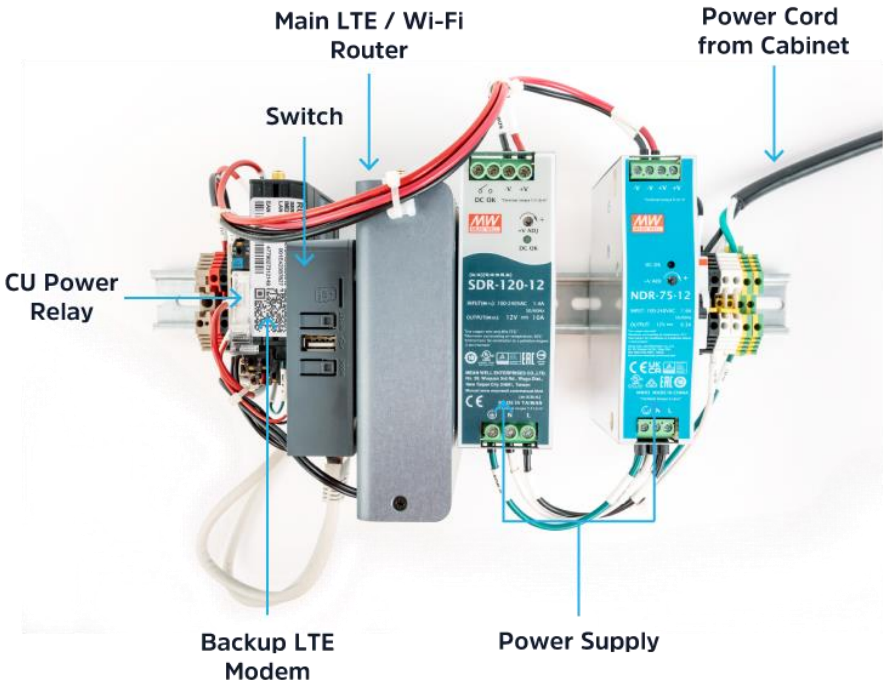
**Figure 6:** Antenna

| Specifications and Features | |
|---|---|
| Temp & Humidity | -40F to +185F, up to 95% RH |
| Ingress Protection | IP67 |
| Dimensions | D 6.33” x H 2.2” |
| Leads | 4X 4G/5G<br>1X GPS<br>4X 2.4/5.8GHz Wi-Fi |
| Lead Length | 6’ |

## STANDARD DIN RAIL

The Standard DIN rail houses the power distribution, main modem/router, switch, backup LTE modem, CU power relay, and power terminal for the CU.

**Figure 7:** Standard DIN Rail

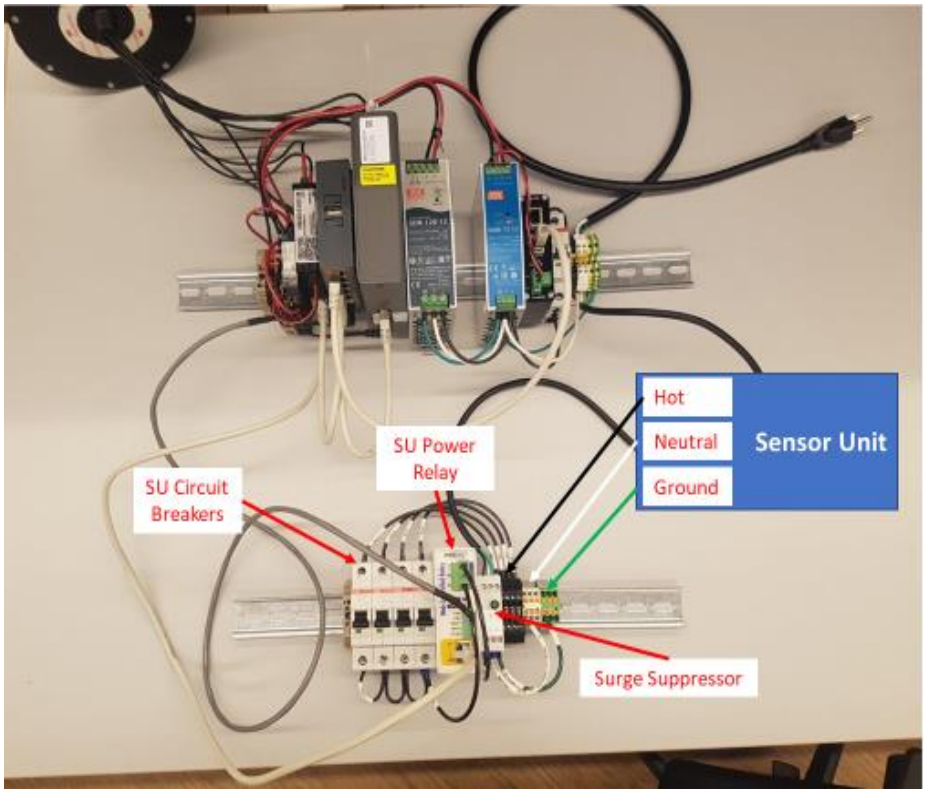



| Specifications and Features | |
|---|---|
| Dimensions | 14” L |
| DIN Rail | TS 35X7.5 slotted DIN Rail |
| Temp & Humidity | -30F to +165F, up to 95% RH |
| Wi-Fi | Wi-Fi - IEEE 802.11a/n/ac 5GHz |
| Cloud Communications | 4G/5G |
| Power | 90V-264 VAC from Cabinet |
| Power Connections | Power input from cabinet using provided 3-conductor power cord |
| Max Consumption | 40W |
| Mounting | 8” spacing for mounting to NEMA cabinets<br>Adapters provided to extend the DIN Rail to 19” for 332 or ATC cabinets<br>Provide appropriate T-Nuts and screws for mounting |
| Other Features | Power Relay for remote power cycling of CU |

## POWER DIN RAIL (CABINET-POWERED SUS ONLY)

For intersections where power to the SUs will be provided by the cabinet, we will also provide a Power DIN Rail. The Power DIN Rail houses the power-related equipment to the SUs, including circuit breakers, power relay, surge suppressor and power terminals. This is the preferred way to power the SUs, as it allows the SUs to be power cycled remotely if needed.

**Figure 8:** Power DIN Rail (bottom)




| Specifications and Features | |
|---|---|
| Dimensions | Power DIN is 10” |
| Temp & Humidity | -30F to +165F, up to 95% RH |
| DIN Rail | TS 35X7.5 slotted DIN Rail |
| Power | 90V-264 VAC 50/60Hz |
| Mounting | 8” spacing for mounting to NEMA cabinets<br>Adapters provided to extend the DIN Rail to 19” for 332 or ATC cabinets<br>Provide appropriate T-Nuts and screws for mounting |
| Other Features | Power Relay for remote power cycling of SUs |

## SDLC INTERFACE

The NoTraffic SDLC Interface allows the CU to place detection calls to the traffic controller using Synchronous Data Link (SDLC) protocol. The SDLC interface sits between the CU and traffic controller. **IMPORTANT Note:** The SDLC box has been integrated into the Control Unit for hardware manufactured after July 2022, and do not require the SDLC Interface.

**Figure 9:** SDLC Interface


| Specifications and Features | |
|---|---|
| Dimensions | W 5 5/8”” x D 6” H 2” |
| Temp & Humidity | -30F to +165F, up to 95% RH |
| Power | Power from CU using USB-A to USB-B cable |
| Connections | USB-A to USB-B cable from CU to SDLC Interface<br>SDLC cable from SDLC Interface to Controller |
| Mounting | Shelf mounted |

## NEMA POWER TAP (LUMINAIRE-POWERED SUS ONLY)

For SUs that will be mounted to and powered by a luminaire, a NEMA Power Tap is used to provide power. Two versions are available – 3-Pin for a standard luminaire, or 7-pin for a “smart” luminaire.

**Figure 10:** 3-Pin NEMA Power Tap for standard luminaire

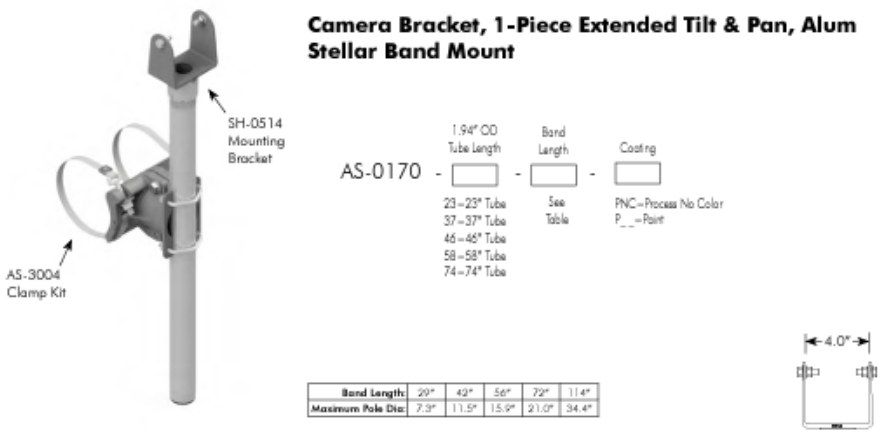
| Specifications and Features | |
|---|---|
| Input Voltage (AC) | 120 VAC |
| Input Voltage Range | 90 - 480 V |
| Input Current | 15 A |
| Output Voltage (AC) | 120 VAC |
| Output Current | 7 A |
| Weight | 1 lb. |
| Output Cable Length | 10’ |
| Mounting | Twist-lock |

# NEEDED FOR INSTALLATION

## MOUNTING BRACKETS

Procure mounting hardware for the sensor units. You will need a camera mounting assembly with a clamp kit, 6-foot riser pole, and a mounting bracket. The Astro-Brac assembly shown below with SH-0514 is recommended. Camera mounting assemblies from other manufacturers (e.g., Sky Bracket, Iteris) can be used, provided the mounting bracket has the same dimensions.

**Figure 11:** Pelco Astro-Brac for mounting the Sensor Units




## POWER CABLE

Power cable between the Power DIN in the cabinet and the Sensor Units should be 14 gauge, 3 conductor copper cable; IMSA 19-1 stranded is typical. 16 and 18 gauge cable is also acceptable.

**Figure 12:** 14 AWG, 3-conductor cable for the Sensor Units

Cable as small as 18 AWG can be used if necessary. 2-conductor cable can be used between the cabinet Power DIN and Sensor Unit, provided there is a grounding wire that can be terminated in the Sensor Unit.

## TOOLS FOR INSTALLATION

You will need the following generic tools for installation:

- Small Phillips and flat head screwdriver
- Cordless drill
- Silicon waterproof sealant to waterproof around the Antenna
- Wire cutters and wire strippers
- Multimeter
- Banding Tool

The table below identifies the recommended equipment to bring for proper installation of the SUs and DIN rails.

| Name | Details | Installation Step | Photo |
|---|---|---|---|
| Adjustable Torque wrench | 12-68 [N-m]<br>10-50 [lb –ft]<br>100-600 [lb – in] | Mount SU to Iteris or Astro Brac mounting bracket |  |
| Pre-calibrated torque wrench<br>+ Square drive 3/8 | 10-65 [N-m]<br>7-48 [lb-ft]<br>84 – 576 [lb – in] | Alternative option to Mount SU to Astro-Brac Mounting Bracket |  |
| Combination Wrench | 6-Point Openings, 9/16" Size, 8-5/8" Long, Dull Chrome Plated | Mount SU to Astro-Brac Mounting Bracket |  |
| 3/8 Inch Drive x 1/4 Inch Hex Bit Holder | | Mount the internal setscrews of Pelco |  |
| Step Drill Bit | 7/8 in. - 1-1/8 in. #9 Black Oxide Step Drill Bit (2-Steps) | Antenna above the cabinet top (For Toglas) |  |
| Flat Head Terminal Block | 1/8-Inch Cabinet Tip, 4-Inch Round Shank | Terminal block in DIN rails<br>Connect the SU wiring |  |

Note that you may need additional mounting hardware and associated tools depending on the specific hardware purchased and traffic cabinet.

## INSTALLATION MATERIALS CHECKLIST

Use the table below to ensure you have the proper quantities of NoTraffic provided hardware and procure auxiliary hardware.

| Equipment | Provided By | Guidance | Qty |
|---|---|---|---|
| Control Unit | NoTraffic | 1 per intersection | |
| Standard Sensor Unit | NoTraffic | 1 per intersection approach, minus the CV-RSU SU (i.e., 3 Standard SUs for a 4-leg intersection) | |
| Sensor Unit with CV RSU | NoTraffic | 1 per intersection | |
| Standard DIN Rail | NoTraffic | 1 per intersection | |
| Power DIN Rail | NoTraffic | 1 per Intersection **where at least 1 SUs will be powered by the cabinet** | |
| SDLC Interface + cables | NoTraffic | 1 per intersection | |
| Antenna | NoTraffic | 1 per intersection | |
| NEMA Power Tap | NoTraffic | 1 per SU that will be **powered by a luminaire.** Note if you need a 3-pin or 7-pin variation | |
| 19” DIN Rail Adapter Kit | NoTraffic | 1 per Standard DIN Rail + 1 per Power DIN Rail for 332 or ATC cabinets | |
| Power Cable | Agency / Contractor | # Feet to reach the **cabinet-powered SUs** from the cabinet through existing conduit**.** 14/3, stranded, outdoor rated. IMSA 19-1 is typical. | |
| Camera Mounting Assembly | Agency / Contractor | 1 per SU that will be **mounted to the mast arm.** Pelco Assembly AS-0170 with Bracket SH-0514. Typical riser height is 2 Meters. | |
| Spring nuts | Agency / Contractor | 2X per Standard DIN Rail and 2X per Power DIN Rail for NEMA cabinets | |
| **Below – Items needed only for very large intersections requiring Wi-Fi repeater** | | | |
| Ethernet repeater | NoTraffic | 1 per 300 feet of ethernet cable | |
| Wi-Fi Repeater | NoTraffic | 1 for any SUs further than 230 feet from cabinet | |
| Cat-5 outdoor-rated Ethernet cable + RJ45 Plugs | Agency / Contractor | # Feet of to reach the Wi-Fi repeater through conduit from the cabinet if a Wi-Fi repeater is used, or SU’s will not use wireless comms **(uncommon)** | |

# INSTALLATION STEPS

## STEP 1: INSTALL CABINET EQUIPMENT

### Identify Mounting Locations

Select mounting locations of the DIN rail(s), CU, SDLC Interface and Antenna in the cabinet using the following guidance:

- **DIN Rail(s)** should be mounted horizontally to the vertical rails. Ensure the leads from the Antenna will be able to reach the Standard DIN Rail. Ensure the power cable from the standard DIN rail can reach the CU. Ensure the power and ethernet cables between the Standard DIN Rail and Power DIN Rail (if a power DIN is needed) will reach.
- **Control Unit** should be mounted on a shelf and not on top of any equipment that generates excessive heat. Ensure that the power cable from the Standard DIN and 2 of the 9 leads from the antenna can reach the CU.
- **SDLC interface** should be placed between the controller and CU.
- **The Antenna** is installed on top of the cabinet by drilling a hole, has 9 leads. 7 go to the Standard DIN Rail and 2 go to the CU.

The cabinet equipment required for cabinet-powered SUs vs luminaire-powered SUs are shown below.

**Figure 13:** Cabinet equipment.

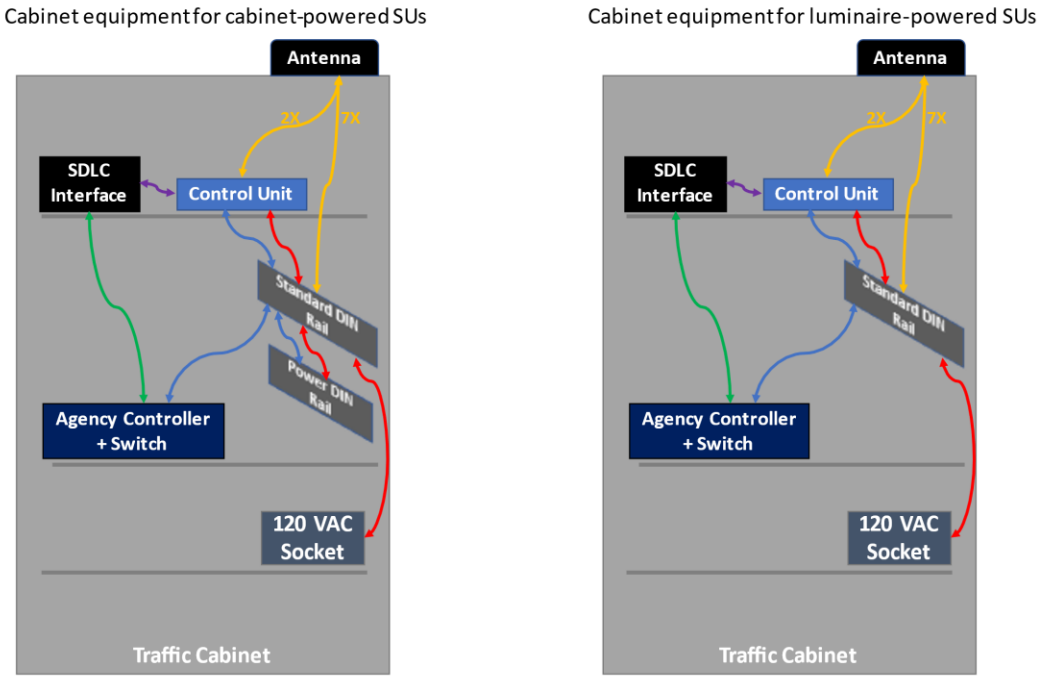


**Figure 14:** Standard DIN and Power DIN in a NEMA cabinet

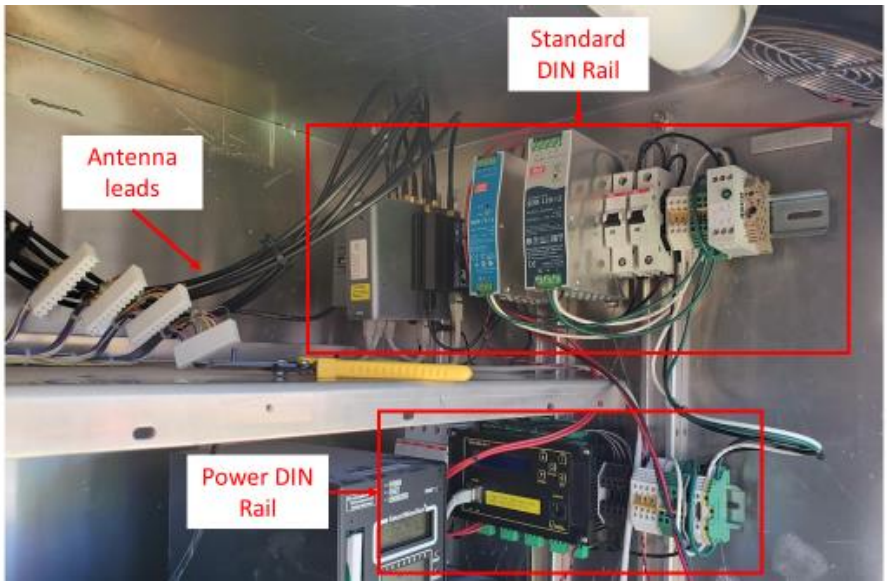



**Figure 15:** Antenna leads connected to the standard DIN Rail

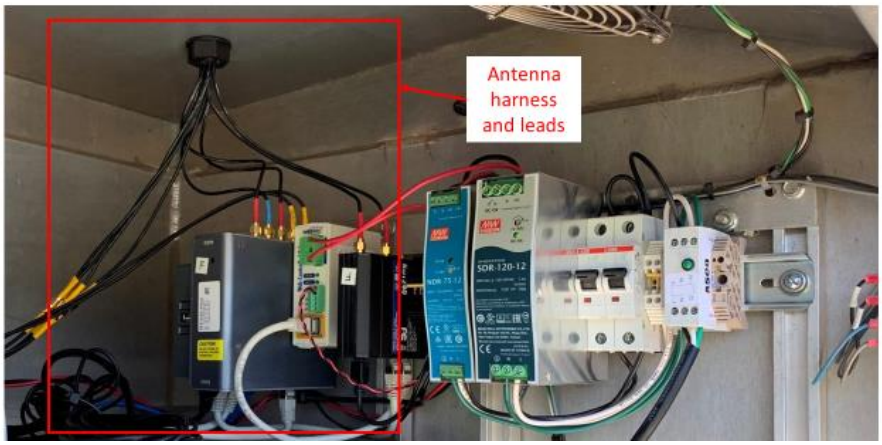
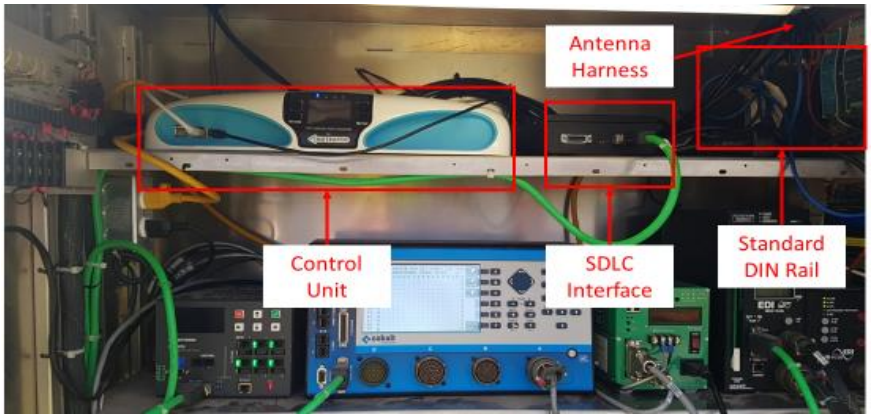


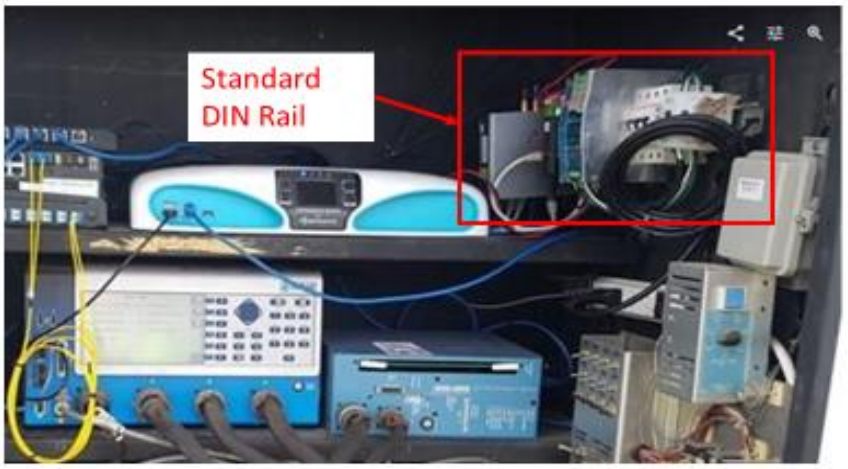

**Figure 16:** Control Unit, SDLC Interface and Standard DIN



## Mount DIN Rails and Control Unit

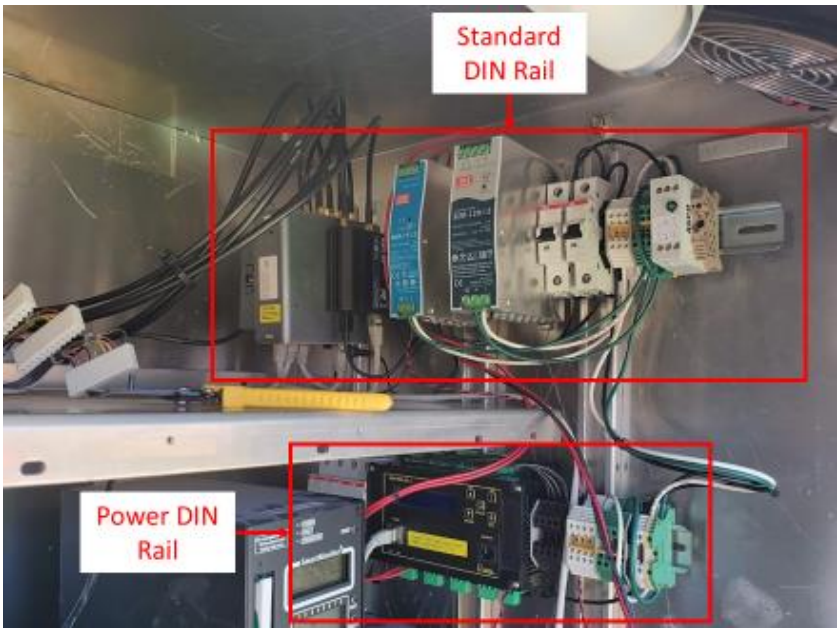
Place the Control Unit on a shelf, close to the traffic controller, and mount the DIN Rail to the cabinet wall.

**Figure 17:** Installing the CU and Standard DIN Rail




If using a Power DIN, mount the Power DIN rail to the wall, and make the ethernet and power connections between the Standard DIN Rail and Power DIN Rail.

**Figure 18:** Addition of a Power DIN Rail



## Install the Antenna

Drill a 25 mm (1 inch) hole in the top of the cabinet, remove debris from the mounting surface, clean the surface with a fresh alcohol wipe. Place the antenna firmly on the cabinet top using 3M adhesive and pass the antenna cable assembly wiring harness through the hole from the top side.

**Figure 19:** Antenna mounted to top of cabinet

Route the antenna cable to the area where the Standard DIN Rail and CU will be installed. Seal around the antenna using silicon waterproof sealant.

**Figure 20:** View of the antenna from inside the cabinet

## Connect Antenna Leads

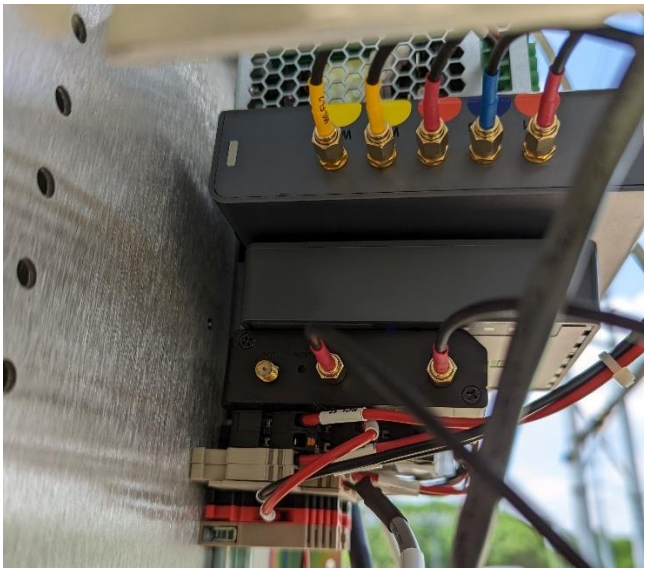
Make the following antenna lead connections to the main router on the Standard DIN Rail:

- 4G/5G-1 to LTE1 (red)
- GNSS to GPS (blue)
- 4G/5G-2 to LTE2 (red)
- Wi-Fi-1 to WiFi1 (yellow)
- Wi-Fi-2 to WiFi2 (yellow)

Then, make the two LTE connections to the backup LTE:

- 4G/5G-3 to mobile on LTE Modem
- 4G/5G-4 to mobile on LTE Modem

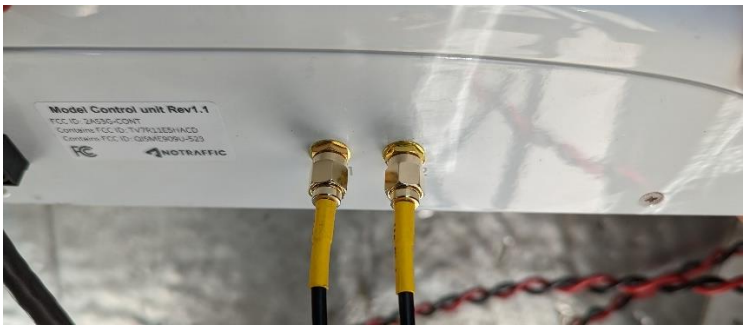
**Figure 21:** Antenna connections to Standard DIN main router (top), and backup LTE (bottom)



Lastly, connect the remaining 2 Wi-Fi leads to the back of the CU:

- Wi-Fi-3 to Wi-Fi 1
- Wi-Fi-3 to Wi-Fi 2

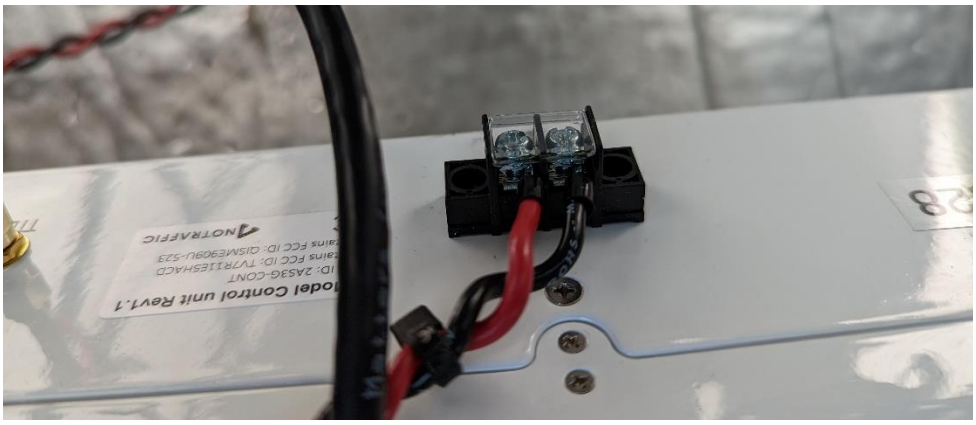
**Figure 22:** CU Wi-Fi antenna leads




## Connect power to CU

Use red and black terminals on the Standard DIN for connecting the 12V DC power to the CU. Note +/- markings on power connector, at the back of the CU. Red is + / Black is –.

**Figure 23:** Power termination on back of CU

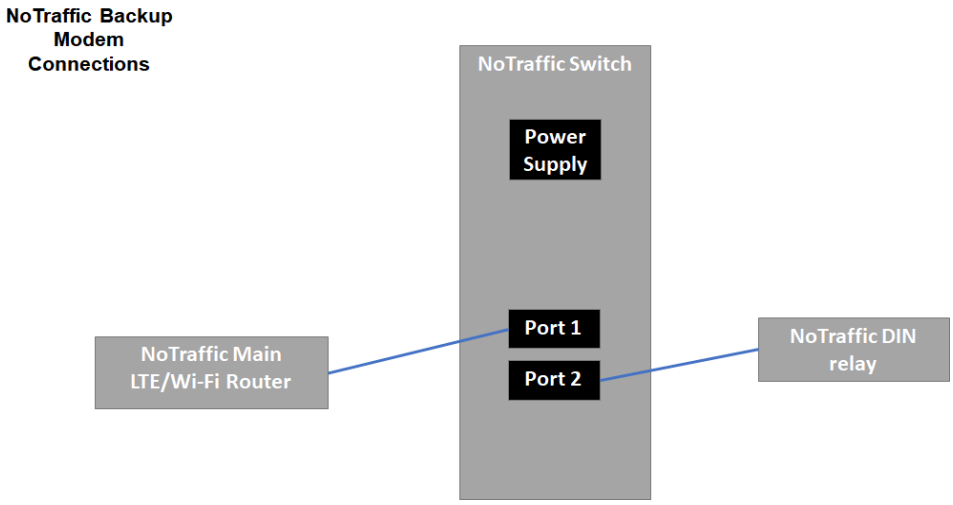


## Make DIN Rail connections (if using Power DIN)

First, connect the 14-guage 3-conductor AC Power bridging cable to connect the black/white/green terminals on the Standard DIN Rail to the surge protector on the Power DIN Rail. Black is for live, white is for neutral, and green is for ground.

Next, connect the ethernet cable from the backup LTE on the Standard DIN to the Web Relay on the power DIN.

**Figure 24:** Ethernet connections on backup LTE




Lastly, connect the 12V DC power cable from the web relay, to the tan power terminations on the Standard DIN Rail. Note which side is used for red and black.

**Figure 25:** Power and ethernet on the Power DIN Rail

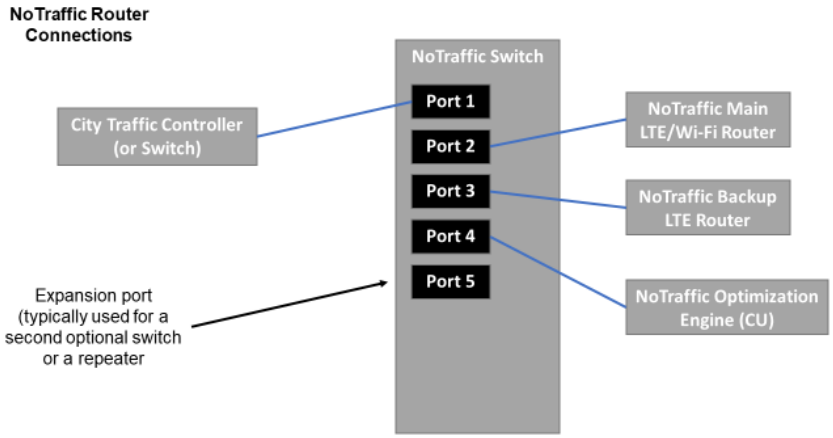

## Make Ethernet Connections

Using two additional ethernet cables, make the following connections from the router:

a. Port 1 – connect to City switch or controller
b. Port 4 – connect to Control Unit ethernet port on front-face

c. Port 5 - Optional. This may serve as an expansion port (e.g., Daisy-chaining to a second switch, directly connect Wi-Fi repeater)

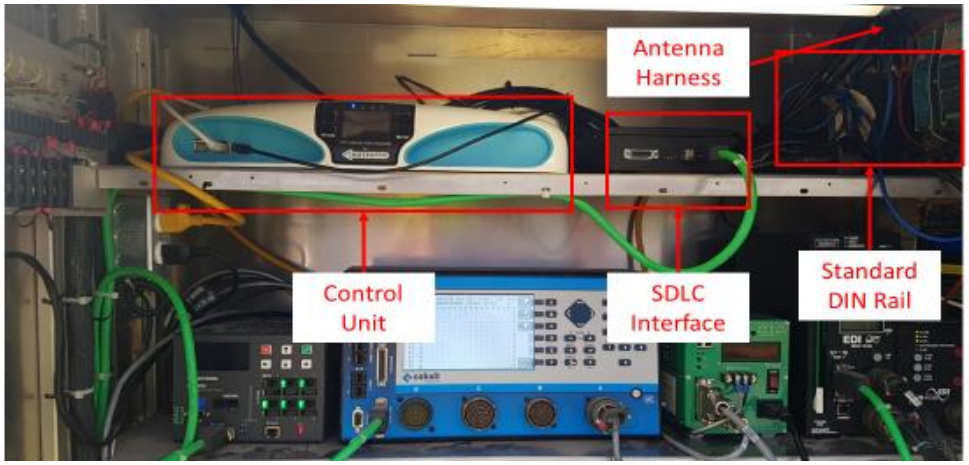
**Figure 26:** Ethernet connections on Main LTE



## Connect SDLC Interface

Connect the SDLC interface to the Control Unit by using the USB-A to USB-B cable. Then connect the SDLC cable to the SDLC box and appropriate cabinet location (either serial bus, or directly to the controller).

**Figure 27:** SDLC interface connection




## Check Connections and Power on Equipment

1. Antenna cables - make sure all are tightened
2. Power cables - tug on all to make sure they are not loose
3. Turn MAIN circuit breaker from green to red.
    a. Listen for Main Router “beep” then “beep-beep” to ensure it is on
    b. Watch power supplies LEDs light up
    c. Watch CU screen turn on

## Call NoTraffic to verify communications

If NoTraffic is not on site, call NoTraffic support (**Phone:** +1 202-800-1890) to verify communications. Test the connectivity between the traffic controller and SU

## STEP 2: SELECT SENSOR MOUNTING LOCATION

### Select Sensor Mounting Location

Each sensor covers a single intersection approach, which includes right, through and left turn traffic. Ideally, they will be mounted in the center of the approach, at the greatest height achievable

The V2X SU (1 per intersection) should be mounted facing the main street with minimum obstruction to field of view to provide the best possible range for V2I communications.

**Figure 28:** Typical SU mounting - center of the approach at maximum height


If the installation location for the SU is not clear, consult the NoTraffic team at +1 202-800-1890 to troubleshoot the best possible location.

## STEP 3. RUN POWER CABLE TO SENSORS

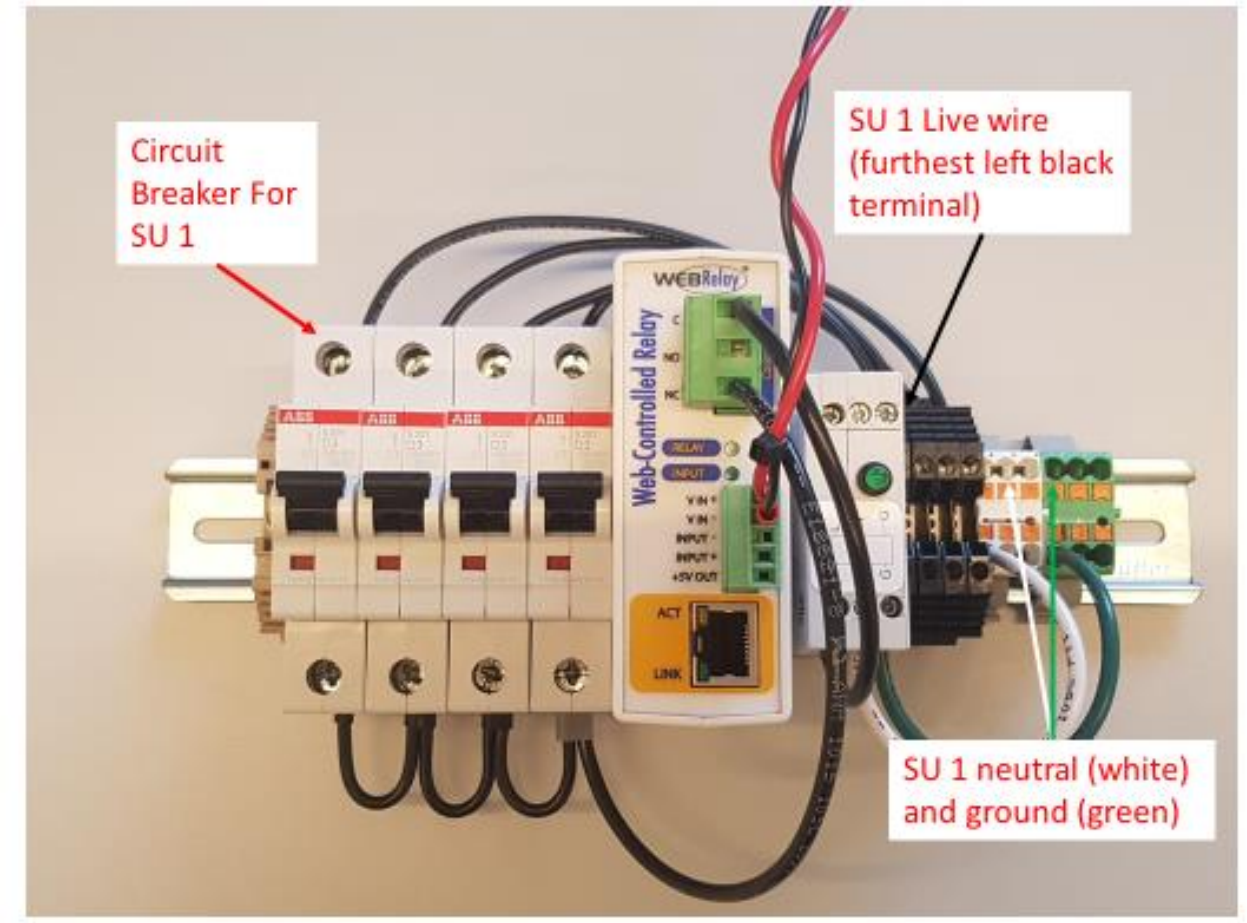
**For Sensor Units powered using Power DIN from Cabinet:**

Run 14-gauge 3-conductor cable to the mast arm location where the SUs will be mounted.

In the cabinet, strip down the 3-conductor cable and terminate the live (black), neutral (white) and ground (green) to the power terminals on the right side of the picture below.

The live (black terminals), are 1-4 going from left to right. This corresponds to the circuit breakers SU1 – SU4, going from left to right. See example below.

**Figure 29:** Power cable terminations on Power DIN Rail for Sensor Unit




**For Sensor Units powered using a NEMA Tap:**

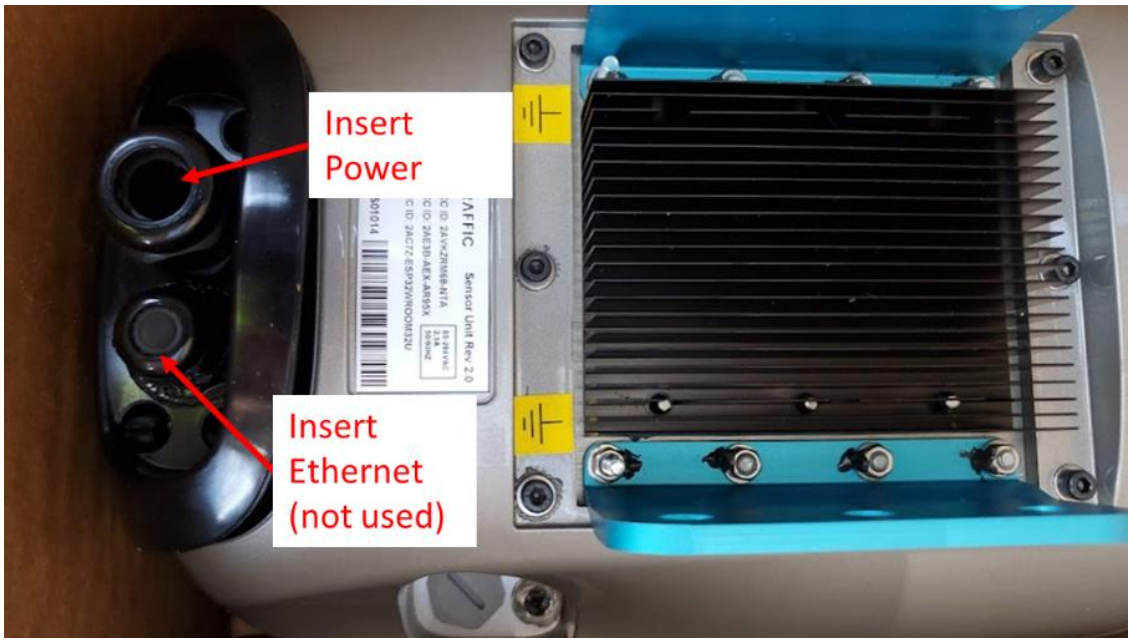
1. Attach the NEMA tap to the top of the photocell on the luminaire
2. Cut the power cable to appropriate length to reach the mounting location of the SU
3. Strip power connections

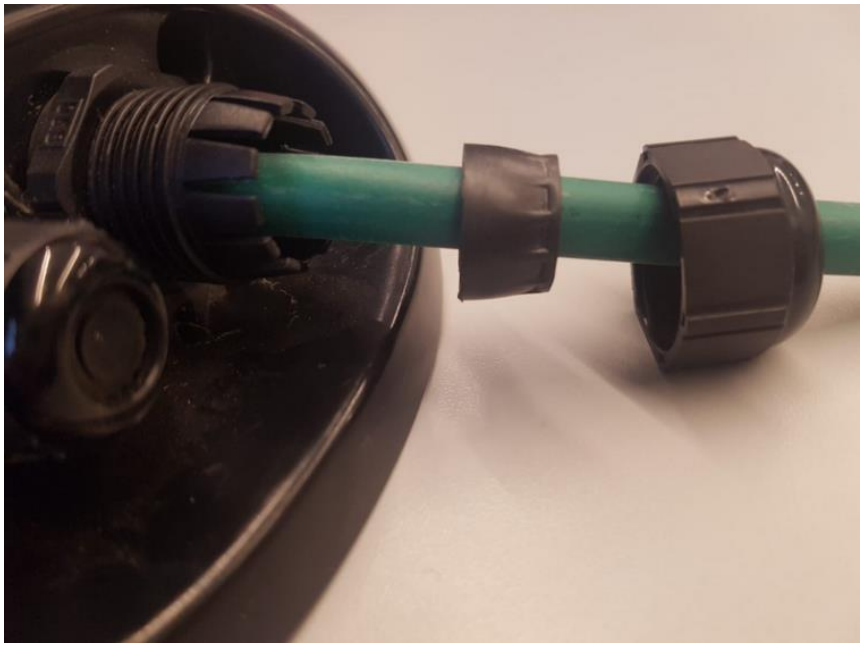
## STEP 4: MOUNT AND AIM SENSORS

### Connect Power to Sensor Unit

Remove back compartment from sensor, which is connected via 4 Phillips-head screws. Place power cable through “power” hole in back compartment, along with rubber grommet and plastic nut (see image below). Note you will not need to use the ethernet port.

**Figure 30:** Back compartment and rubber grommet for power cable (and Cat 5 if used)

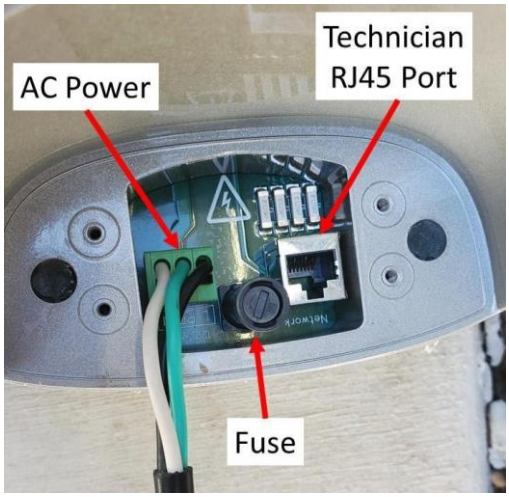


Strip the power cables. Terminate AC power as shown below at terminal block on the sensor. Use a flathead screwdriver or the disposable metal “toothpicks” (provided in the box) to “release” the metal tabs, put AC power cable in, and remove screwdriver or “toothpicks.” Tug on cable to make sure it is in correctly.

L = Hot; N = Neutral; PE = protective earth (ground)

**Figure 31:** Power terminations inside the SU once back compartment is removed





Place back compartment, grommet, and nut (shown below). Ensure that back compartment is securely fastened and that seal between the power cable and the nut is tight.

**Figure 32:** Back compartment grommet and nut.

Aim the sensor towards the horizon, with a few taps down, similar to the example below.

**Figure 33:** Sensor Unit initial aiming guidance


## Power on Sensor Unit

Power system on by flipping the appropriate circuit breaker on the Power DIN Rail (if using Power DIN). It takes ~1 minute for the system to connect to Wi-Fi once powered.

## Call NoTraffic to Aim Sensor

Once the breaker has been turned on, call the NoTraffic support line (202) 800-1890 to aim.

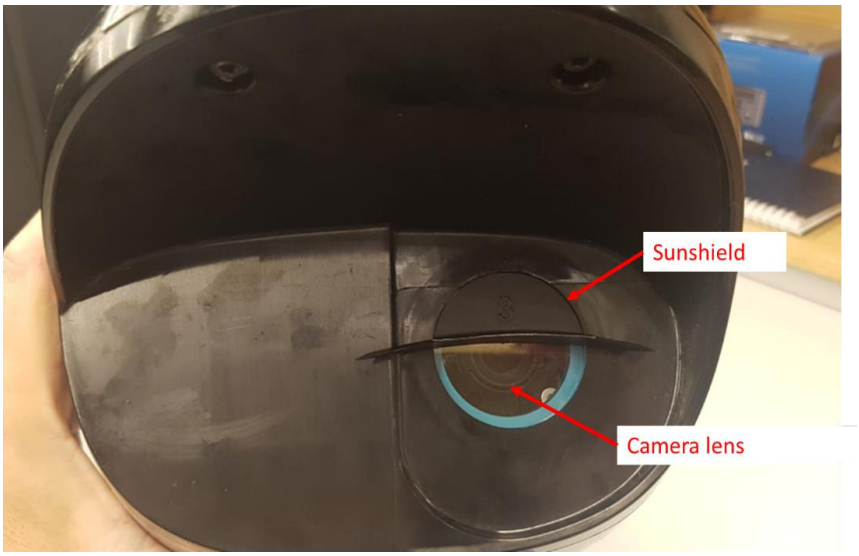
Keep the horizontal and vertical movements of the mounting bracket slightly loose. NoTraffic will give instructions for any adjustments to the sensor aiming.

## Attach Sunshield:

Once the sensor is aimed (note it may still need to be adjusted), NoTraffic will instruct you on how to affix the sunshield on the lens of the camera.

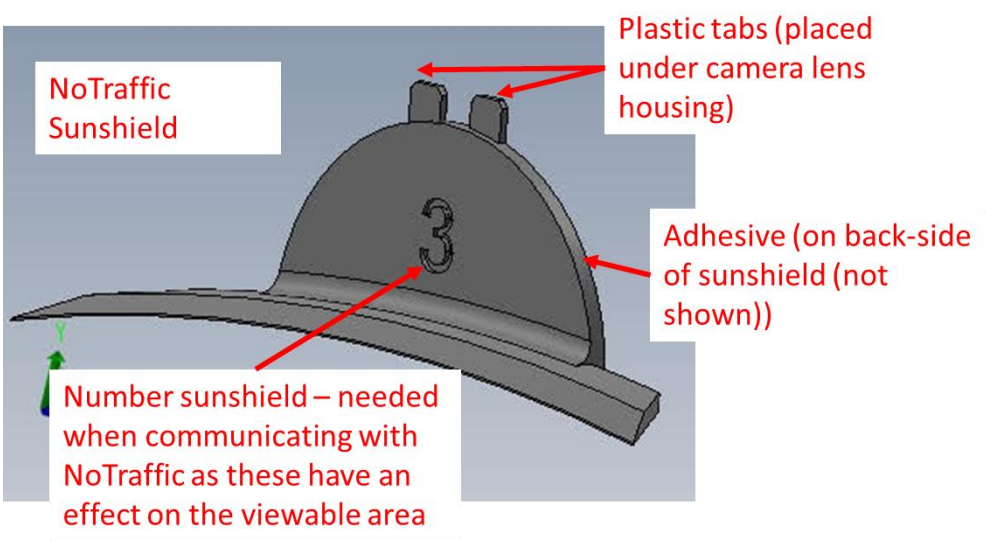
The sun shields are provided in the small accessories box that comes with each SU. Note that there will be three sunshields numbered “1”, “2”, and “3”.

**Figure 34:** Sunshield on front of Sensor Unit




The sunshield is provided in the NoTraffic Accessories Box. Take both sunshields in the bucket truck. Use Sunshield #2 to start. Affix tabs underneath the lens, prior to removing the adhesive.

**Figure 35:** Guidance for attaching sunshielf




Confirm with NoTraffic via phone that sunshield is on correctly. It can be difficult to determine if it is straight, so confirmation with NoTraffic is important.

Once confirmed by NoTraffic remove the sun shield carefully. Use the NoTraffic wipes to clean the camera lens. Use Number 1 – WET to remove debris and oil and then dry with Number 2 – DRY.

Remove the adhesive on the back of the sunshield and place back on the camera lens. Confirm with NoTraffic via phone that sunshield is straight. Once confirmed, press, and hold sunshield for 5-10 seconds

**Figure 36:** Sensor Unit with sunshield attached


## Lock Down

Please see the below required torques to lock down the sensor mounting location:

8-10 [ft-lb] / 96-120 [lb-in] - Allen wrench, section 5

12-15 [ft-lb] / 144-180 [lb-in], section 9

20-22 [ft-lb] / 240-264 [lb-in] , section 10 and 11

Confirm with NoTraffic that sensor hadn't moved. Once confirmed, task is complete.

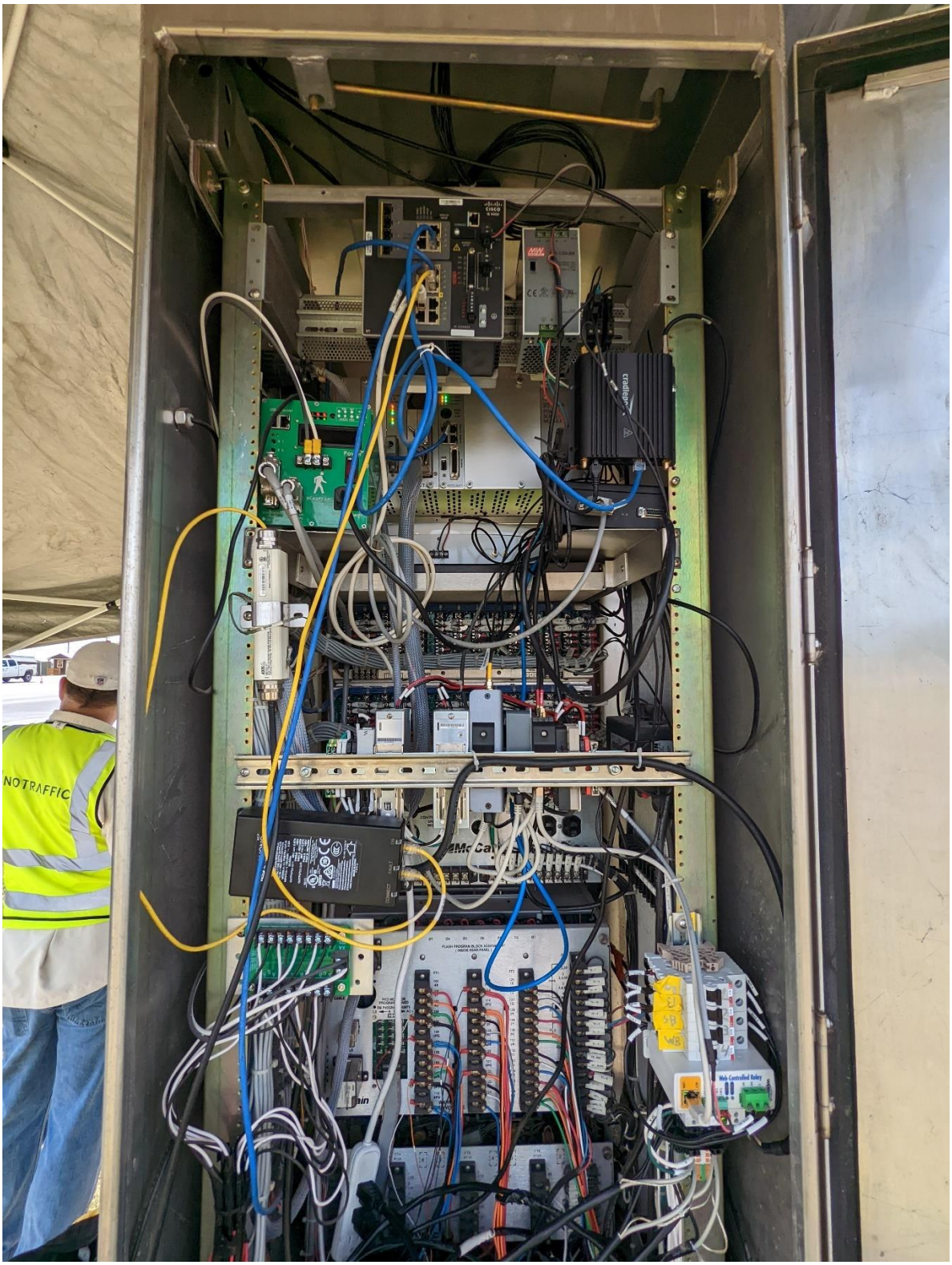
# INSTALLATION EXAMPLES

## CABINET EQUIPMENT

### ATC/332 CABINET WITH STANDARD DIN

**Figure 37:** Front view of 332 cabinet after installation.

**Figure 38:** Rear view of 332 cabinet after installation.



## NEMA CABINET WITH STANDARD DIN AND POWER DIN

**Figure 39:** Cabinet equipment installed in a NEMA cabinet.

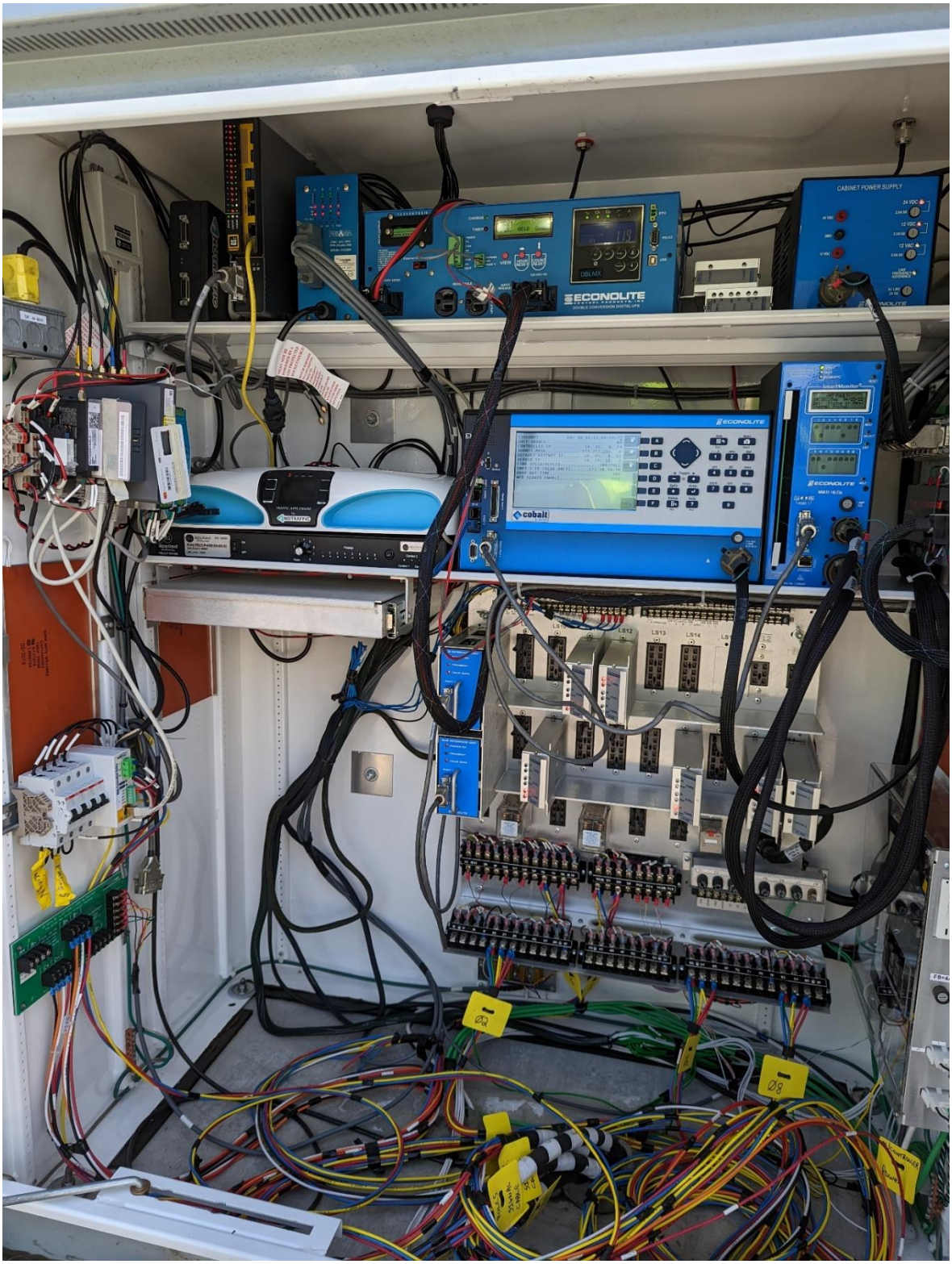
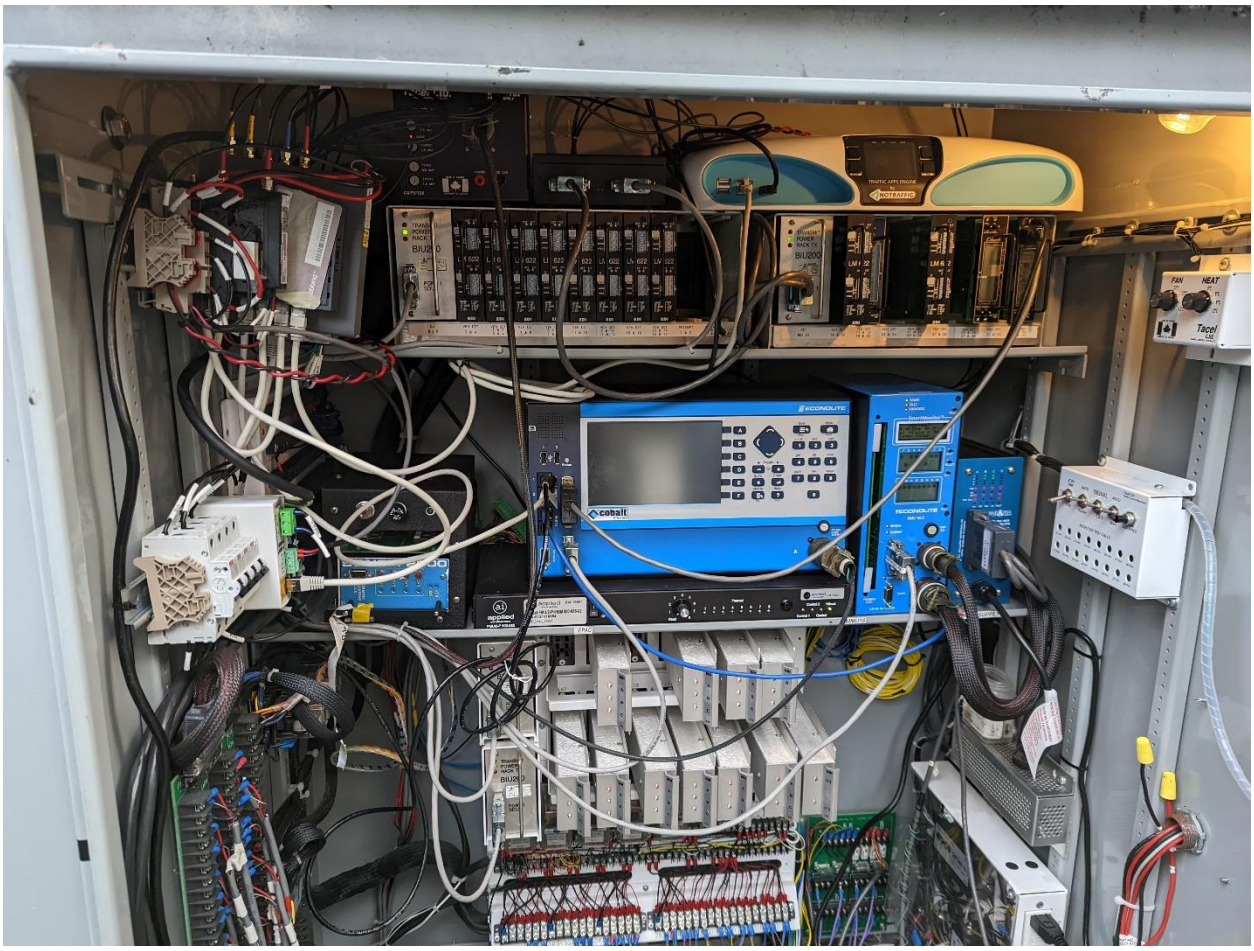


**Figure 40:** Cabinet equipment installed in a NEMA cabinet (2)



## SENSOR UNIT

**Figure 41:** Sensor unit installed at one approach

**Figure 42:** Connected Vehicle SU (left), and regular sensor unit