

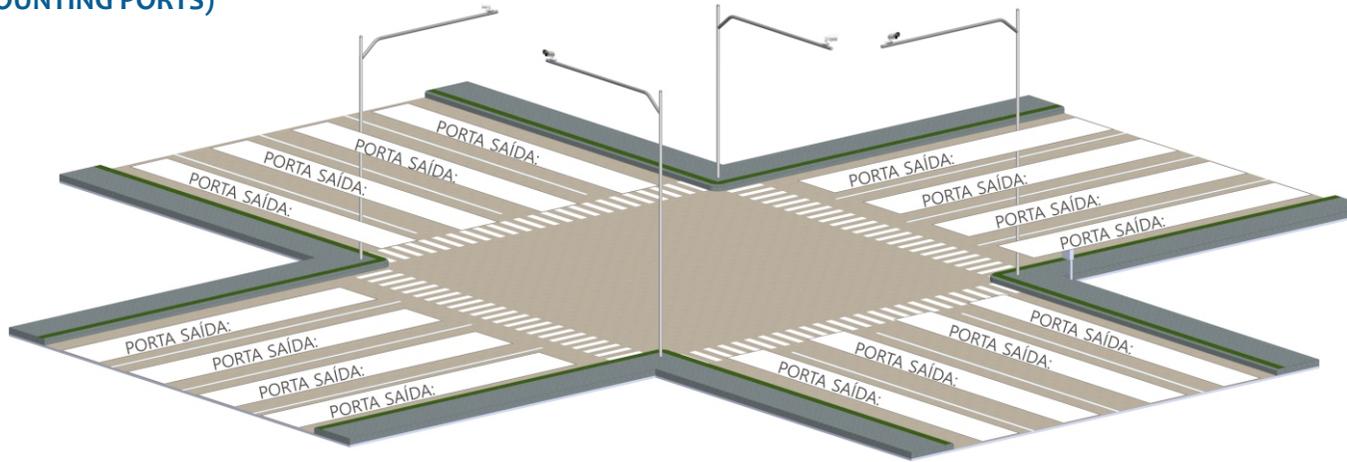
VIGIA-VL

THE MOST COMPLETE SOLUTION FOR OPTIMIZING URBAN MOBILITY

| Installation



MAPPING THE INSTALLATION (COUNTING PORTS)



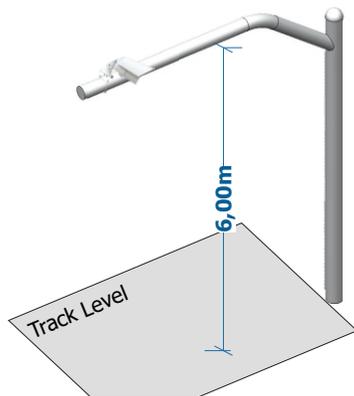
Output Port: connection to OUTPUTS on the VLIO.

MONITORING SET

It is advisable to install the Monitoring Set(s) first.

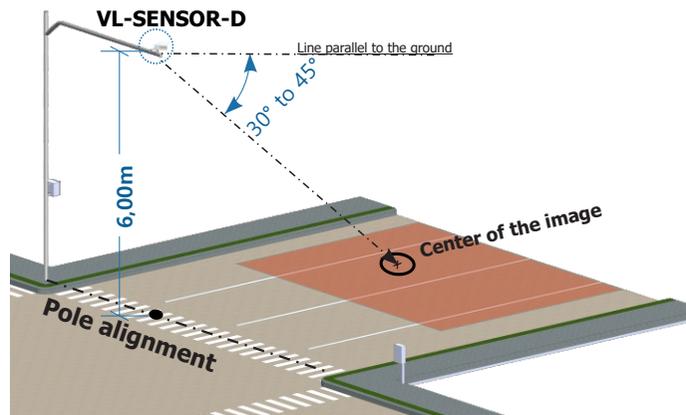
POSITIONING THE POLE WITH PROJECTED ARM

Step 1: Install the pole's projected arm at a height of 6.00 meters in relation to the vehicle roadway, for mounting the pole bracket and the VL-SENSOR-D.



To use the VL-SENSOR-D in a vertical position, additionally install the VIGIA-VL Bracket. However, installation on the road side can cause occlusion of the vehicles traveling in the far lane.

Step 2: Mark the central point of the monitoring area on the road, at a distance of between 3.50 and 6.00 meters from the pole alignment.



Installation Site: In cases where the installation specifications cannot be met, it is recommended that you consult Pumatronix Technical Support.

PREPARING VIGIA-VL CABLE AND COUPLING CONNECTOR



The length of the Ethernet cable connecting the VIGIA-VL with the Controller Module must be less than 100m.



In situations where the maximum length of 100m cannot be guaranteed, it will be necessary to include a PoE extender for Ethernet data.

Step 3: Cut the Ethernet cable to a length sufficient to connect the monitoring device to the Control Switchboard.



Check the model of the coupling connector before starting the preparation. There are models that allow the Ethernet cable to pass through already crimped and models in which it will be necessary to pass the Ethernet cable through without the RJ-45 connector.

Step 4: Assemble the Coupling Connector. The capture device connector (1) already has a sealing ring:



Step 4.1: Place the sealing ring (3) on the connector (2):



Step 4.2: Pass the cable through item 4 and insert the sealing component (4) into the connector (2):



Step 4.3: Place the sealing cover (5) on the connector (2):



Step 5: Crimp an RJ-45 to the EIA/TIA 568A standard:



! There are coupling connector models that allow the Ethernet cable to pass through already crimped and models in which it will be necessary to pass the Ethernet cable through without the RJ-45 connector.

Step 6: Connect the Ethernet cables:



Step 7: Close the Coupling Connector, connecting to the monitoring device:



MOUNTING THE COUPLING CONNECTOR TO THE POLE BRACKET

MONITORING DEVICE

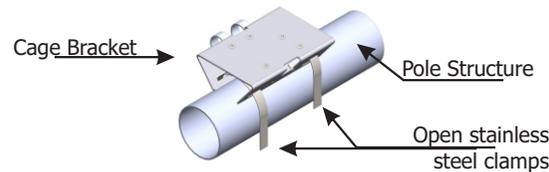


Step 8: Position the Coupling Connector assembled with Ethernet cable on the Pole Bracket.

Step 9: Use a Hellerman tape to attach the coupling connector to the Pole Bracket.

MOUNTING THE BRACKET ON THE POLE ARM

Step 10: Position it on the projecting arm and insert the clamps into the bracket, wrapping around the pole.

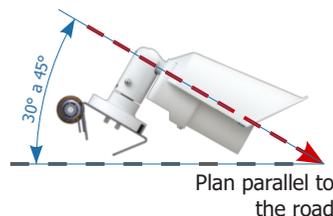


Step 11: Align the surface of the pole support with the road surface.

Step 12: Attach the bracket to the pole by closing the clamps and screwing in the bolts with a 7mm socket wrench.

INSTALLATION OF THE MONITORING DEVICE

Step 13: Slightly loosen the fixation bolt on the arm ball.



Step 14: Secure the position of the VL-SENSOR-D by screwing in the bolts.

Step 15: Pass the PoE Ethernet cable from the VL-SENSOR-D to the Controller Module and crimp an RJ-45 connector in the EIA/TIA 568A standard on the tip.

VL-SENSOR-D SETUP

The steps for setting up a Monitoring Set must be repeated for each Monitoring Set installed.

Access VL-SENSOR-D for the first time by following these steps:

Step 16: Connect the monitoring device to a switch with PoE or to the PoE port of the New Controller Module.

Step 17: Access the VL-SENSOR-D interface in a Google Chrome browser (from version 56) with the factory default data:

IP	192.168.0.250
User	Admin
Password	1234

Step 18: Access the Network Configuration option.

Step 19: Define the IP address of the equipment that is compatible with the installation and unique on the network.

Step 20: Save the changes made.

! There are two models of the VIGIA-VLIO Controller Module available, with different installations, connections and interfaces. The New Controller Module has a faster and simpler installation, as it brings together all the necessary connections in just one device. The other Controller Module is made up of 1 VIGIA-VL ULP (Firefly), 1 VLIO Board and 1 PoE Switch, which are independent. Check the installation for each model:

NEW VIGIA-VLIO CONTROLLER MODULE

MOUNTING THE NEW VIGIA-VLIO CONTROLLER MODULE

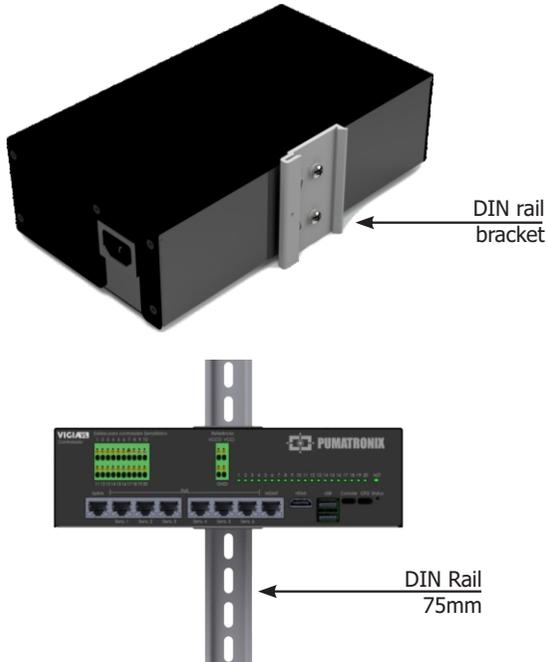
It is advisable to install the Monitoring Assembly first.

! The VIGIA-VLIO Controller Module must be installed in a sheltered location and on a panel.

Step 21 - MOUNTING: Remove the supplied DIN rail from the frame of the New VIGIA-VLIO Controller Module, if there is a rail for attaching the module.

Step 22: Allow enough space to accommodate the cables and connections.

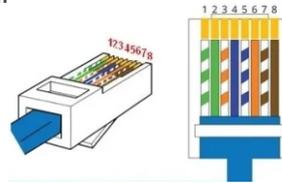
Step 23: Attach the New VIGIA-VLIO Controller Module to the panel rail.



ETHERNET CONNECTION

Step 24: Connect the monitoring device to the Controller Module's LAN port, according to the connection diagram on page 4 of this guide.

Step 25: Use cable with RJ-45 connector following the TIA568A pinout standard.



Step 26: Check that the connection is working by means of the LEDs on the Ethernet connector used.

CONNECTIONS WITH THE TRAFFIC LIGHT CONTROLLER

! Traffic Light Controllers can be connected in different ways and the connection to the Controller Module depends on the internal architecture of each controller. Below are some examples of connections based on some known uses of loop connections.

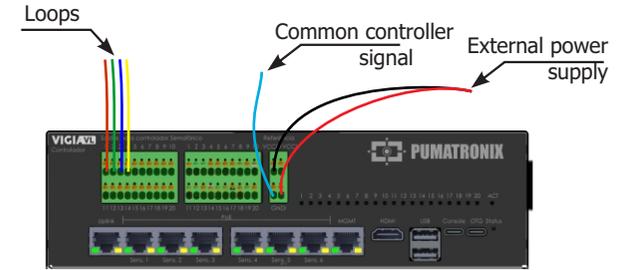
DIGICOM CONTROLLER (Cd200 Model)

! For this model, an external 12V or 24V supply must be used to trigger the input on the controller.

Step 27: Connect the positive (+VCC) to the VCCO terminal, the negative (-VCC) to the GNDI terminal and the controller's common signal to the GNDI terminal, as shown in the example image.

Step 28: Connect the Outputs for the Traffic Light Controller (connector on the left), numbered 1 to 20, to the signal terminal on the Traffic Light Controller.

Example with 4 loops connected to the Cd200 controller:

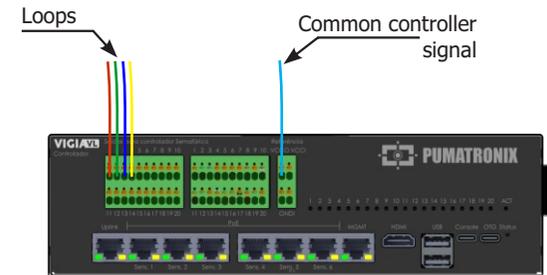


DIGICOM CONTROLLER (Model Cd300)

Step 27: Connect the controller's common signal to the VCCO terminal.

Step 28: Connect the Outputs for the Traffic Light Controller (connector on the left), numbered 1 to 20, to the signal terminal on the Traffic Light Controller.

Example with 4 loops connected to the Cd300 controller:

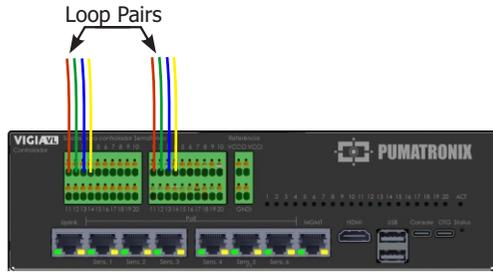


DATAPROM CONTROLLER

! For this model, all the signals from the loops must be connected to the Traffic Light Controller Outputs of the Controller Module.

Step 27: Connect the signal from the loops to the Outputs for the Traffic Light Controller, numbered 1 to 20, pairing the left and right connectors with the signal terminal on the Traffic Light Controller board.

Example with 4 loops connected to the DATAPROM controller:

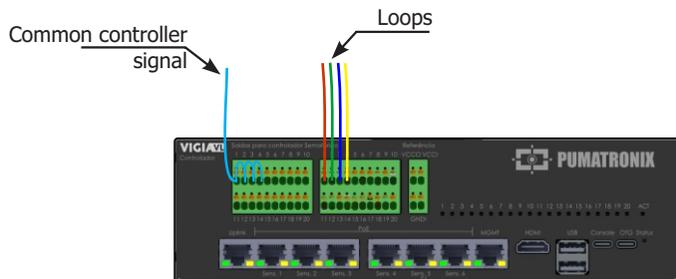


SWARCO, GREEN WAVE AND NEWTEC CONTROLLERS

Step 27: Connect the controller's common signal by Jumping the outputs for the Traffic Light Controller (left connector).

Step 28: Connect the signal from the loops on the Traffic Light Controller Outputs (connector on the right) to the signal terminal on the Traffic Light Controller board.

Example with 4 loops connected to these controllers:



VIGIA-VLIO CONTROLLER MODULE

MOUNTING THE VIGIA-VLIO CONTROLLER MODULE

It is advisable to install the Monitoring Assembly first.

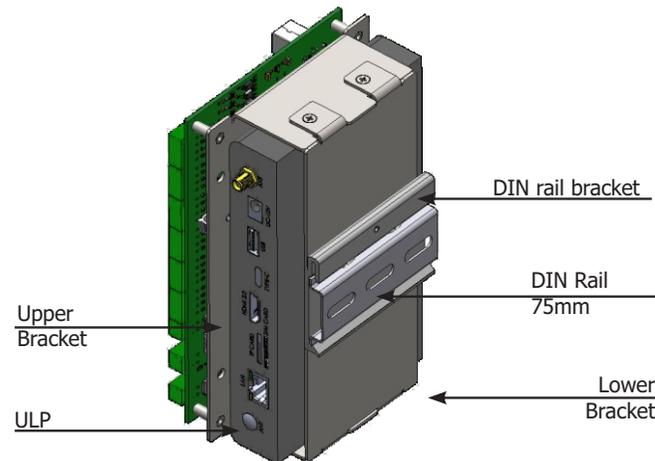


The VIGIA-VLIO Controller Module must be installed in a sheltered location and on a panel.

Step 21 - STANDARD VERTICAL MOUNTING: Remove the supplied DIN rail from the frame of the VIGIA-VLIO Controller Module, if there is a rail for attaching the module.

Step 22: Allow enough space to accommodate the cables and connections.

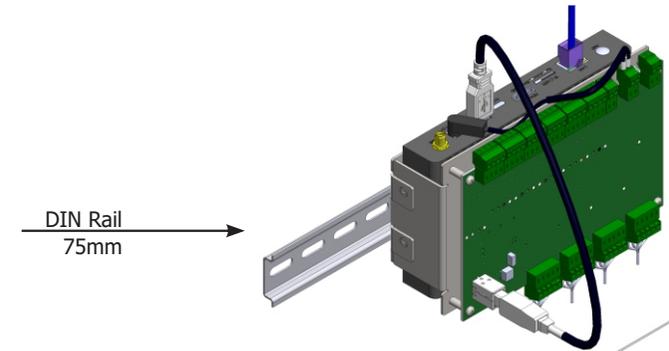
Step 23: Attach the VIGIA-VLIO Controller Module to the panel rail.



Step 21 - HORIZONTAL MOUNTING: Remove the 2 bolts that attach the DIN Rail Bracket to the module.

Step 22: Perpendicular to the original position, attach the DIN Rail Bracket to the Lower Bracket of the module (using the 2 bolts).

Step 23: Attach the module to the panel rail.

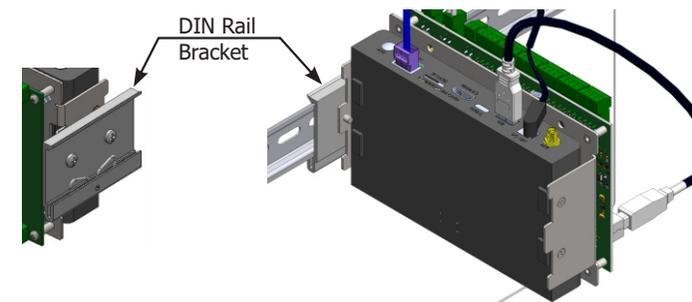


Step 21 - MOUNTING THE PROFILE: Remove the DIN Rail Bracket (loosen 2 bolts) and the Lower Bracket (loosen 4 bolts).



When removing the 4 bolts from the Lower Bracket, the ULP detaches from the frame.

Step 22: Secure the ULP to the Upper Bracket with the 4 bolts and mount the DIN Rail Bracket to the side of the module, on top of the Upper Bracket.



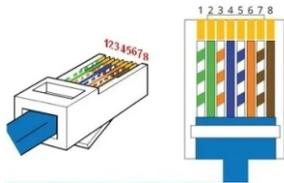
Step 23: Attach the module to the panel rail.

SWITCH CONNECTION

SWITCH SETTINGS: must be in **NORMAL** mode. To do this, use the selector key on the front of the equipment. If the Switch is in **VLAN** mode, there will be no communication between the Controller Module and the VL-SENSOR-D device.

Step 24: Use the Ethernet connector (Uplink port) to connect the PoE Switch to the ULP (LAN port), according to the connection diagram on page 4 of this guide.

Step 25: Use cable with RJ-45 connector following the TIA568A pinout standard.



Step 26: Check that the connection is working by means of the LEDs on the Ethernet connector used.

CONNECTIONS TO THE TRAFFIC LIGHT CONTROLLER

Traffic Light Controllers can be connected in different ways and the connection to the Controller Module depends on the internal architecture of each controller. Below are some examples of connections based on some known uses of loop connections.

The 4 INPUTS inputs on the VLIO Board must remain disconnected.

Step 27: Check with a multimeter that there is a DC voltage level on the Signal and Common input terminals of the Traffic Light Controller's dry contact board.

The maximum voltage supported on each OUTPUTS terminal and on the IOVcc-IN of the VLIO Board is 48Vdc.

The signal output from the OUTPUTS terminals on the VLIO board does not allow connection to inductive loop boards. If you need to connect to the board of this model, please contact Technical Support.

Step 28: Connect the ground to the surface of the VLIO Board with 0.7mm² flexible cable (crimping a fork terminal on the tip).



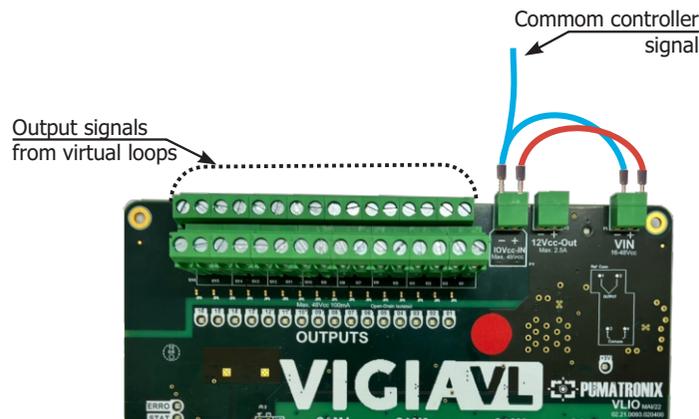
DIGICOM CONTROLLER (Model Cd200)

Step 29: Connect the negative (-) of the IOVcc-IN terminal to the negative (-) of the VIN supply terminal.

Step 30: Connect the positive (+) of the IOVcc-IN terminal to the positive (+) of the VIN supply terminal.

Step 31: Connect the controller's common signal to the negative (-) of the IOVcc-IN terminal.

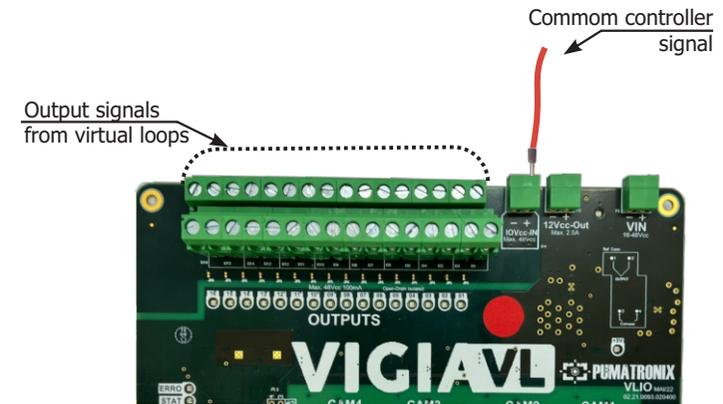
Step 32: Connect the signal from the loops on the OUTPUTS terminals, numbered 1 to 16, to the signal terminal on the Traffic Light Controller board.



DIGICOM CONTROLLER (Model Cd300)

Step 29: Connect the controller's common signal to the positive (+) IOVcc-IN terminal.

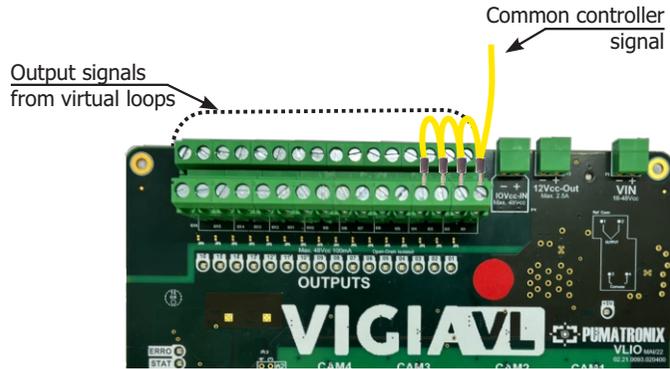
Step 30: Connect the signal from the loops on the OUTPUTS terminals, numbered 1 to 16, to the signal terminal on the Traffic Light Controller board.



SWARCO, GREEN WAVE AND NEWTESC CONTROLLERS

Step 29: Connect the controller's common signal by jumpering all the loops used on the OUTPUTS terminals, numbered 1 to 16.

Step 30: Connect the signal from the loops on the OUTPUTS terminals, numbered 1 to 16, to the signal terminal on the Traffic Light Controller board.

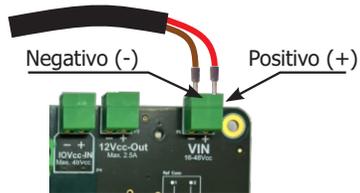


VLIO BOARD POWER SUPPLY

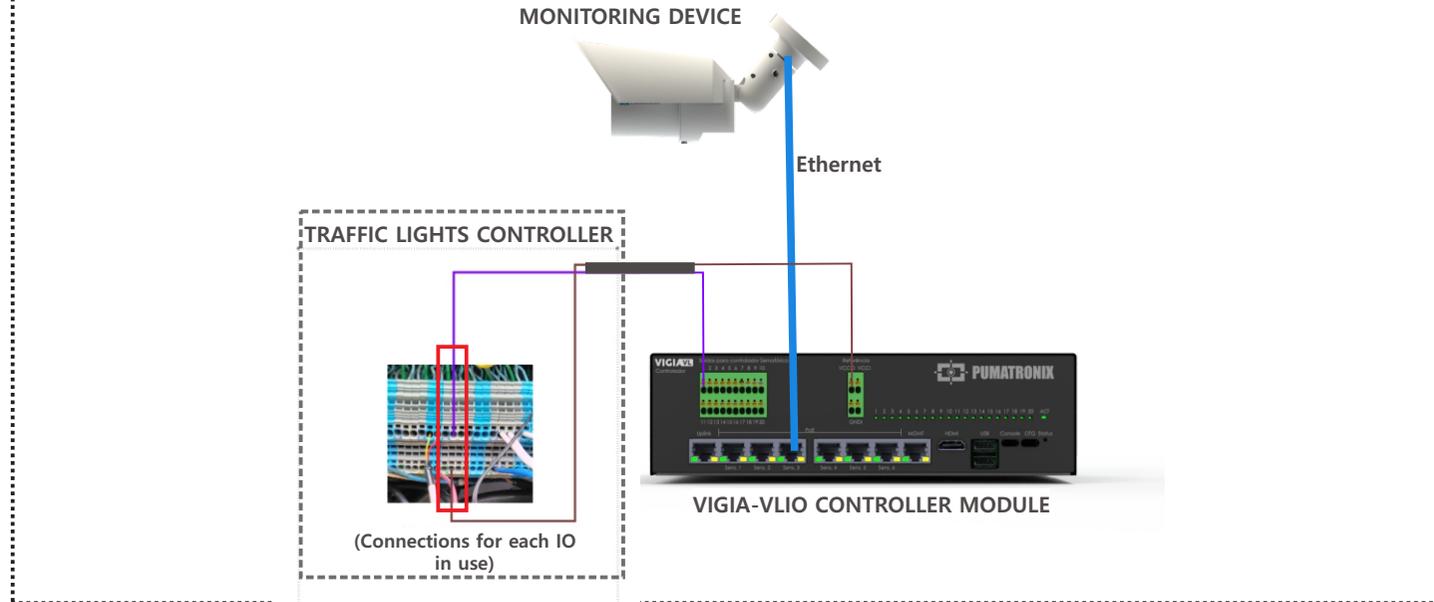
Step 33: Prepare the tips of 1 2-way 26AWG power cable (by crimping a 1mm tubular terminal).

Step 34: Connect the brown wire to the negative (-) of the terminal named VIN on the VLIO Board (screwing the tip of the wires together).

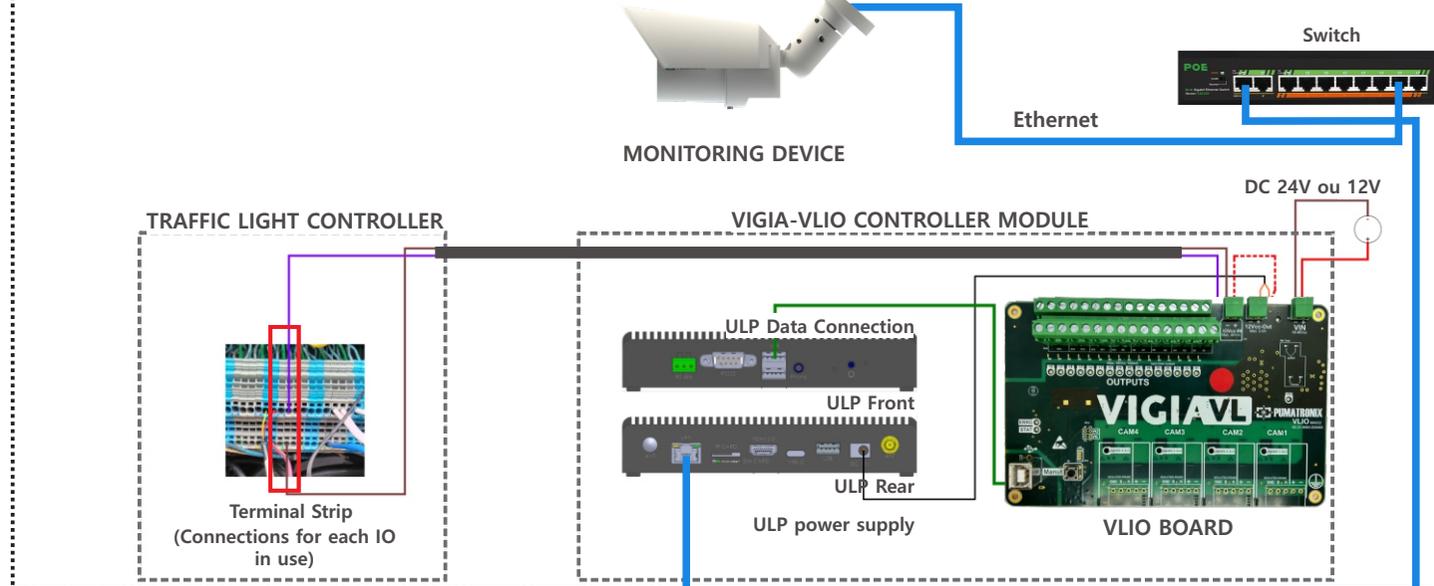
Step 35: Connect the other wire to the positive (+) VIN terminal on the VLIO board (screwing the tips of the wires together).



EXAMPLE OF THE CONNECTION DIAGRAM WITH THE NEW VIGIA-VLIO CONTROLLER MODULE



EXAMPLE OF THE CONNECTION DIAGRAM WITH THE VIGIA-VLIO CONTROLLER MODULE



NETWORK INTERFACE PARAMETERIZATION

The configuration of the VIGIA-VLIO Controller Module or the New VIGIA-VLIO Controller Module in the VIGIA-VL system consists of:

- identify it in the data communication network;
- add the connected VL-SENSOR-D devices;
- set the data communication network.

Step 36: Connect the VIGIA-VLIO Controller Module or the New VIGIA-VLIO Controller Module to a computer with IP address 192.168.0.X and netmask 255.255.255.0.

Step 37: Access the VIGIA-VL interface in a Google Chrome browser (from version 56) with the factory default data:

IP	192.168.0.1
User	admin
Password	admin

Use the data from the Installation Mapping during the setting of the VIGIA-VLIO Controller Module or the New VIGIA-VLIO Controller Module.

Step 38 - REGISTER THE MONITORING DEVICE: Go to the menu **Registration > Cameras** and click on **+New camera**.

Step 39: In General, select Yes to enable the monitoring device, enter a Name and the IP address defined in step 17 in the device configuration.

* Campos obrigatórios

Geral Laço virtual Rede

Habilitada Sim

Nome

Endereço do vídeo*

Rotacionar 180° Não

Step 40 - FRAMING: In Zoom and Focus, analyze whether the image is centered in relation to the marking made in the center of the track (Step 2). If necessary, change the position of the monitoring device to correct (steps 11 to 13).

Step 41 - CREATING VIRTUAL LOOPS: On Virtual Loop, select Yes for Enable virtual loops and click +Add region.

Step 42: Under Type, select the Input option (to indicate the starting location of vehicle detection in the image); a virtual loop ID from 50 to 65 and add a Name.

Step 43: Click on the image displayed to define the vertices of the region and on Apply to save.

Step 44: Click +Add region to create a virtual loop (region of type Counting).

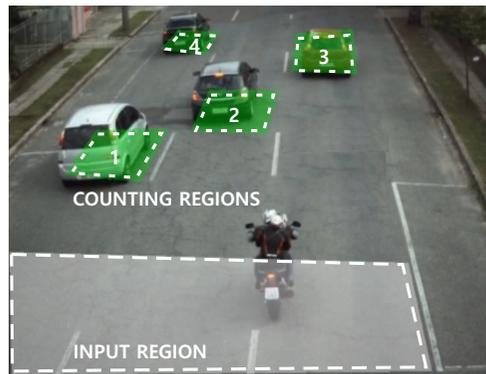
Up to 4 virtual loops can be registered per monitoring device to monitor up to 4 lanes of the road.

Step 45: Under Type, select the **Counting** option (to detect the passage of the vehicle); a Virtual Loop Output Port from 1 to 16 and add a Name.

Step 46: Select a Linked Bit only when the Socket Server is enabled in System > System Settings > External Servers.

Step 47: Set the desired vehicle detection sensitivity by dragging the selection bar.

Step 49: Click on the image displayed to define the vertices of the region with the approximate size of a vehicle and click on Apply to save the settings.



Repeat steps 41 to 49 for each desired virtual loop.

Repeat steps 38 to 50 to set up each monitoring device that makes up the VIGIA-VL solution.

Step 50: Select which Port Operation Mode should be applied in the **Virtual Loop** tab > **Operation Mode** field, which can be:

Counting by Pulses	Pulse when detecting the presence of a vehicle
Virtual loop occupation	Pulse remains active as long as there is a vehicle on the Virtual Loop

INSTALLATION TEST

Step 51: Check that the LEDs on the VLIO Board or the New Controller Module indicate the presence of vehicles in the virtual loops.

Step 52: Check that the LEDs on the Traffic Light Controller indicate the presence of vehicles on the virtual loops.

Step 53: Check that the LEDs are synchronized.

Changing the Polarity of the OUTPUTS ports implies inverting the product's operating logic. Check the IO trigger LEDs to validate the settings.

Change the timing of the pulse sent by the VIGIA-VLIO Controller Module only if the presence of the vehicle is not signaled on the Traffic Light Controller. To do this, consult the Traffic Light Controller manual for the default timing and enter the correct values into the VIGIA-VL system.

CARE AND MAINTENANCE

Take security measures during the update process:

- * **Keep the device inactive during the update process, ensuring that it is not requested by any service or other equipment on the network where it is installed;**
- * **Keep the device switched on at all times while the update is running, taking the necessary steps to prevent it from restarting or switching off.**

* Request the firmware file by filling in the form available in the Technical Support menu on the Pumatronix website.

* Access the Product Manual for step-by-step installation of the firmware updates, which can be done via the web interface or the Pumatronix software.

WARRANTY

Pumatronix guarantees the product against any defect in material or manufacturing process for a period of 1 year from the date of issue of the invoice, provided that, at the discretion of its authorized technicians, it is found to be defective under normal conditions of use.

The replacement of defective parts and the execution of services resulting from this Warranty will only be carried out at Pumatronix Authorized Technical Assistance or a third party expressly indicated by Pumatronix, where the product must be delivered for repair.

This Warranty will only be valid if the product is accompanied by a Maintenance Form that has been duly filled in and has not been erased and is accompanied by an Invoice.

SITUATIONS IN WHICH THE PRODUCTS LOSES ITS WARRANTY

- 1) Using software/hardware not compatible with the specifications in the Manual;
- 2) Connecting the product to power grids outside the standards set out in the product manual and installations with excessive voltage variation;
- 3) Infiltration of liquids from opening/closing the product;
- 4) Damage caused by natural agents (electric shock, flooding, salt spray, excessive exposure to climatic variations, among other factors) or excessive exposure to heat (beyond the limits established in the Manual);
- 5) Using the product in environments subject to corrosive gases, excessive humidity and/or dust;
- 6) Showing signs of tampering with security seals;
- 7) Showing signs of opening or modification by the Customer in places of the product not authorized by Pumatronix;
- 8) Damage caused by accidents/falls/vandalism;
- 9) Displaying a tampered and/or removed serial number;
- 10) Damage resulting from the Customer's transportation and packaging of the product in conditions incompatible with it;
- 11) Misuse and not in accordance with the instruction manual.

PRIVACY POLICY

In compliance with the General Data Protection Law (LGPD) - Law No. 13709, dated August 14, 2018, this product has programmable functions for capturing and processing images that may infringe the LGPD when used in conjunction with other equipment to capture personal data.

The equipment does not collect, use or store personal information, whether sensitive or not, for its operation.

Pumatronix is not responsible for the nature, use and treatment of the images captured, and control of the information and ways of operating the product are the sole decision of the user or purchaser of the product.



* For more information access the product manual at www.pumatronix.com.br.

TECHNICAL SUPPORT

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Movimento em Foco.



www.pumatronix.com

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