PUMATRONIX

ITSCAM 600

HIGH PROCESSING, CONNECTIVITY AND EMBEDDED SOFTWARE

Installation

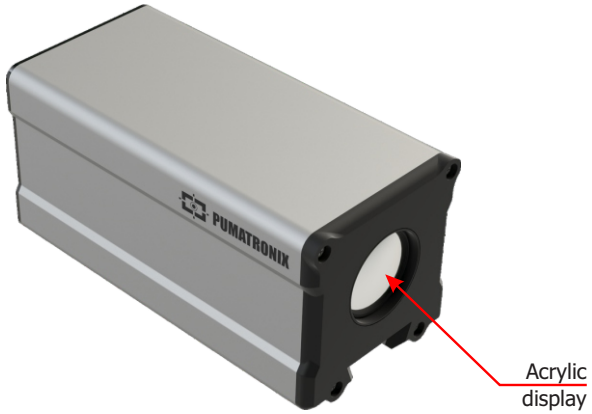
MODELS

ITSCAM CS MOUNT

ITSCAM CS MOUNT FHD

ITSCAM LM

ITSCAM LM FHD

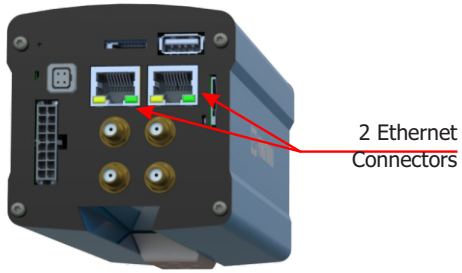


This equipment can have lenses included, which are sensitive to mechanical impacts such as falls and extreme vibrations.

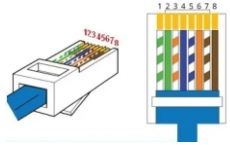
Oxidation Risk: The electrical and signal connections made for ITSCAM 600 bundle and data network cable must be protected in a terminal box or similar structure to avoid oxidation of the connections and unwanted liquids infiltration into the bundle.

NETWORK CONNECTION

1. Use the Ethernet connector to connect ITSCAM 600 to the local network and optionally for power:



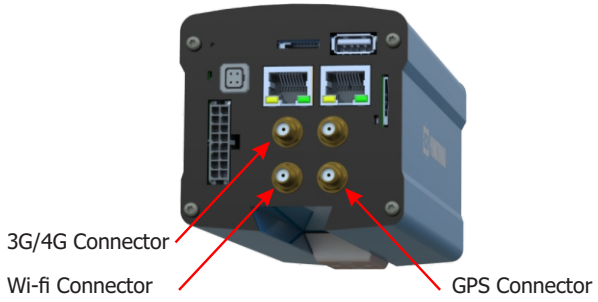
2. Use cable with RJ-45 connector following TIA-568A standard pinout:



3. Check the indication of connection operation through the LEDs of the Ethernet connector used.

4. Check the installation if the LEDs are not indicating that the connection is in operation.

WI-FI, 3G/4G OR GPS CONNECTION



5. Connect the available antennas to the respective SMA connectors named 3G/4G, Wi-Fi and GPS .

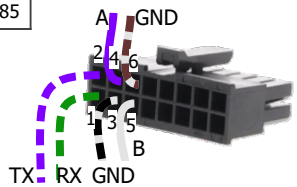
* Only for ITSCAM 600 CS AD IOT (S06L0W1AJP) and ITSCAM 600 LM AD IOT (S06L5W1AJP) models.

CONNECTING SERIAL INTERFACE

6. Make the connections of the RS-232 Serial Port signals at terminals 1 to 3 of the *Microfit Connector*, considering the respective colors and signals detailed in the table:

MICROFIT CONNECTOR	
TERMINAL AND COLOR	**SIGNAL**
1 Green + White	RX RS-232
2 Purple + White	TX RS-232
3 Black + White	GND RS-232
4 Purple	A RS-485
5 White	B RS-485
6 Brown + White	GND RS-485

16-way Microfit Connector



7. Check the signals from terminals 4, 5 and 6 and the respective colors to connect the *RS-485 Serial Port* interface.

CONNECTING INPUT AND OUTPUT SIGNALS

8. Make the input or output signals connections at the terminals 7 to 14 of the *Microfit Connector,* configurable through the interface. The terminals signals and their colors are detailed in the table:

MICROFIT CONNECTOR	
TERMINAL E COR	**SINAL**
7 Gray	I/O 4 +
8 Black	I/O 4 -
9 Red + White	I/O 3 +
10 Blue + White	I/O 3 -
11 Green	I/O 2 +
12 Blue	I/O 2 -
13 Orange	I/O 1 +
14 Yellow	I/O 1 -

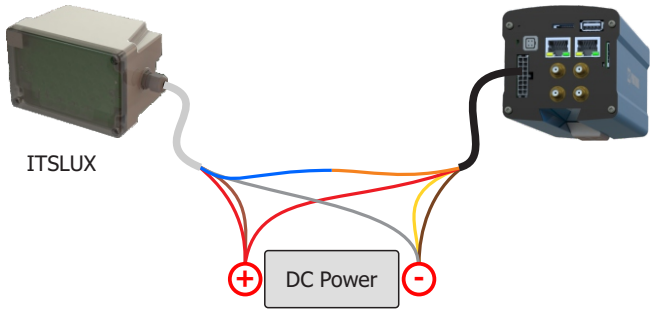
*Set as *Input* the signal received from equipment for physical trigger, such as inductive loop or an optical barrier, for example.

*Set as *Output* the signal sent to an illuminator or to equipment you want to control, such as barriers or gates.

CONNECTING ILLUMINATORS

When using an illuminator in conjunction with ITSCAM 600, check the product specifications for the minimum and maximum distances that must be observed in relation to the position of the object to be illuminated.

9. Connect the ITSLUX illuminator to the same DC Power source used for powering ITSCAM 600 device and considering the colors of the signals to be used in the connection:

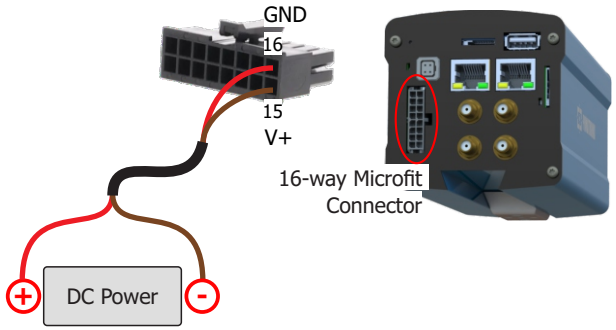


Refer to the technical information of the illuminator device for correct electrical connections.

SUPPLY CONNECTION

10. Use a 12 VDC or 24 VDC power supply

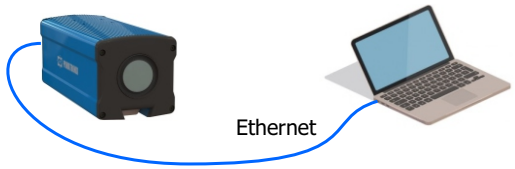
11. Make the power connections with the *Microfit Connector*, at terminals 15 and 16, using the supplied bundle and considering the colors respective to the V+ and GND signals:



This equipment must be supplied with a direct current (DC) source with a voltage of 12 VDC or 24 VDC. Do not connect any of the inputs directly to the mains (AC)!

NETWORK INTERFACE PARAMETRIZATION

12. Connect ITSCAM 600 to an auxiliary device disconnected from the local network where the equipment will be installed, using an Ethernet cable:



13. Access ITSCAM 600 interface in a Google Chrome browser (version 85 or higher) with standard factory data:

IP	**192.168.0.254**
User	**admin**
Password	**1234**

14. Access the *Equipment* > *Network* menú in the *Ethernet* tab.

15. Modify in the corresponding interface (*ETH-1* ou *ETH-2*) the default IP address 192.168.0.254 with netmask 255.255.255.0, considering values diferent from those that cause conflicts in the existing network:

Values that cause conflict	
IP Address	**Netmask**
192.168.254.x	255.255.255.0
192.168.x.x	255.255.0.0
192.x.x.x	255.0.0.0
	0.0.0.0

ITSCAM 600 Maintenance IP (192.168.254.254) is used to recover the connection in extraordinary situations of loss of the primary IP. For this reason, when manually configuring the equipment network interface (Ethernet), values diferent from the maintenance IP must be applied.

16. Click *Apply* to validate the changes and wait for the automatic restart of the equipment

17. Check the connection and network settings after restarting ITSCAM 600 device.

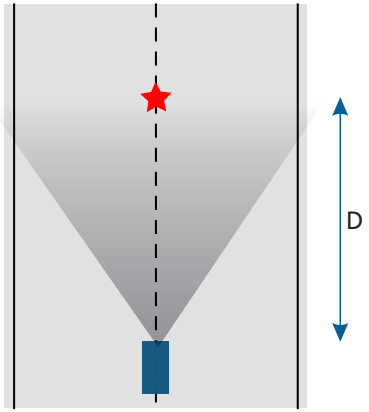
18. Disconnect ITSCAM 600 from the auxiliary device and connect the equipment to the network of the final installation.

19. Repeat steps 12-17 in case of loss of connection or IP address conflict.

20. Access with the maintenance IP address 192.168.254.254, if any network conflict occurs.

POSITIONING OF ITSCAM 600 ON ROAD

21. Select an existing pole or gantry that allows to position ITSCAM 600 to capture two-lane images, according to the ideal equipment position in relation to the monitored road indicated in the installation diagram:

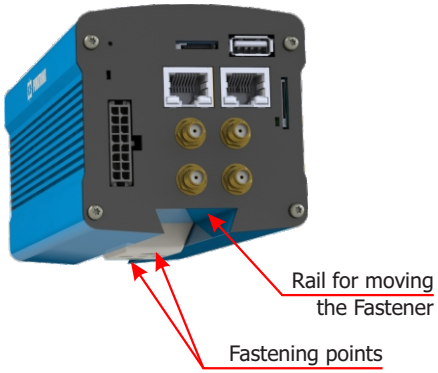


22. Secure ITSCAM 600 considering the minimum height limits specified for the location. The linear distance **D** from the vehicles' crossing point varies according to the estimated range of the lens model. Refer to the Product Manual for more information.

Installation Location: In cases where it is not possible to meet the installation specifications, it is recommended to consult Pumatronix's Technical Support.

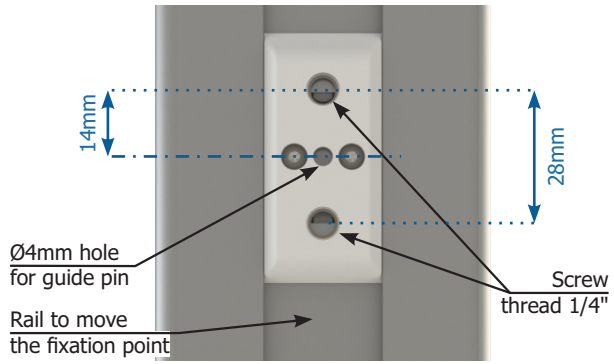
FASTENING ITSCAM 600

ITSCAM 600 must be used with a Protection Box specific for use in outdoor environments, to protect the equipment against bad weather.

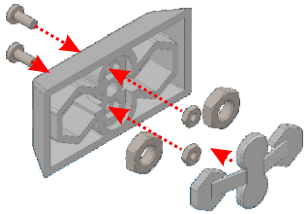


FIXING MECHANISM SPECIFICATIONS

23. Move the *Fixing Mechanism* on the rail, loosen the screws slightly enough for the assembly to slide down the rail:



24. Reassemble the *Fixing Mechanism* following the sequence indicated in the image, if it detaches from the housing of ITSCAM 600:



25. Secure the ITSCAM 600 to the desired surface using two screws with a diameter of ¼" and the guide pin.

FRAMING ADJUSTMENTS

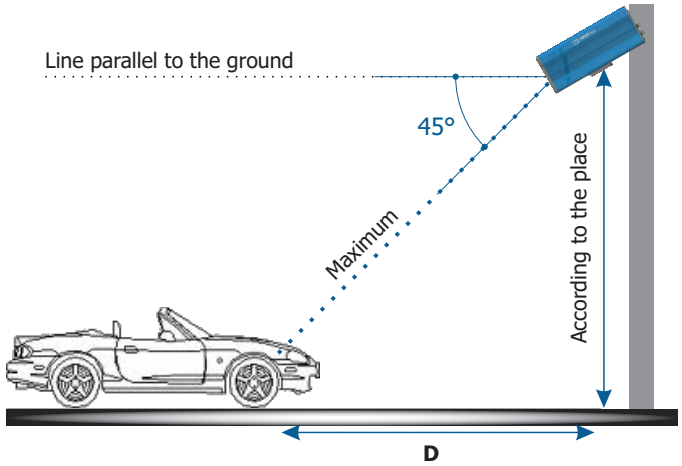
26. Connect the ITSCAM 600 device to a power supply (Steps 10 and 11).

27. Perform the *NETWORK INTERFACE PARAMETERIZATION* (Steps 12 to 20).

28. Disconnect the ITSCAM 600 from the auxiliary device and connect to the network of the final installation.

29. Position ITSCAM 600 with little horizontal inclination, so that the vehicle license plate is aligned with the horizontal in the image and following the steps indicated in *POSITIONING OF ITSCAM 600 ON ROAD*.

30. Tilt the device on the bracket respecting the vertical angle of 45° between the center of the lens and a line parallel to the ground. Under these conditions, the distance **D** varies according to the models indicated:



* **D** for ITSCAM 600 CS Mount models = variable.
* **D** for ITSCAM 600 LM (motorized lens) models = 10 to 50 meters.

When using an illuminator in conjunction with ITSCAM 600, check the product specifications for the minimum and maximum distance that must be observed for effective illumination.

31. Access the web interface of the device with the data registered in the *NETWORK INTERFACE PARAMETERIZATION*.

32. View the frame through the *Live Feed* floating window, which allows *Zoom* and *Focus* control when enabling the option. The suggested framing for two tracks in the image is the display of the ends of the road.

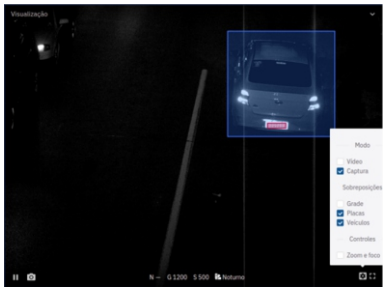
33. Use the *Autofocus* function when the ITSCAM 600 model has motorized lenses or adjust *Zoom* and *Focus* by accessing the *Image* > *Profiles* menu at *Lens* tab, until the characters become clear in the image viewed.

34. Tilt the bracket with the equipment until the best adjustment of the frame, respecting the maximum limit angle of **45°** for vertical inclination, avoiding significant deformations in the images.

35. Disable the *Automatic Iris* for a better result (if the ITSCAM 600 model displays this functionality) in the *Image* > *Profiles* menu on the *Exposure* tab.

36. Consider adjusting the *Perspective* through the image inclination and rotation angles by going to *Equipment* > *Recognition, Jidosha* tab, if the equipment inclination with the bracket has reached the limit of 45º, as indicated.

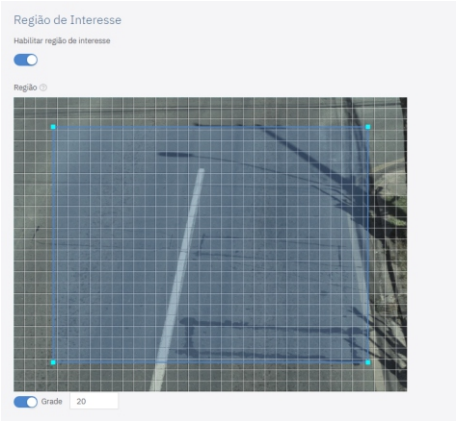
37. Use *Live Feed* during *Perspective* and *Zoom* and *Focus* correction.



38. Adjust the settings for OCR processing by the device by going to the *Equipment* > *Recognition* menu at tab *Jidosha.*

39. Enable the *Region of Interest* and drag polygon vertices to delimit the region of the search for vehicle plates in the image.

40. Enable the *Grid Height* view with value of 25 for *Zoom* and *Focus* fine tuning. Plate's characters are at the optimal reading size when they fall into place at that time.



41. Repeat steps 30 to 40 until the license plate image is obtained with the best framing and sharpness of characters.

CARE AND MAINTENANCE

Perform the safety measures during the upgrade process:

*** Keep the ITSCAM 600 device inactive during the upgrade process, ensuring that it is not requested by any service or other equipment on the network in which it is installed;**

*** Keep the ITSCAM 600 device always turned while performing the update by taking steps to prevent it from restarting or shutting down.**

* Request the firmware file by completing the form provided in the *Technical Support* menu at Pumatronix website.

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

WARRANTY TERM

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, a defect is found under normal conditions of use.

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

This Warranty will only be valid if the product is accompanied by a Maintenance Form duly completed and without erasures and accompanied by an Invoice.

SITUATIONS IN WHICH THE PRODUCT LOSES ITS WARRANTY

1) Use of software/hardware not compatible with the specifications in the Manual;

2) Connecting the product to the power grid outside the standards established in the product manual and installations that present excessive voltage variation;

3) Infiltration of liquids from opening/closing of the product;

4) Damage caused by natural agents (electric discharge, flood, sea fog, excessive exposure to climate variations, among other factors) or excessive exposure to heat (beyond the limits established in the Manual);

5) Use of the product in environments subject to corrosive gases, with excessive humidity and/or dust;

6) Show signs of tampering with safety seals;

7) Show signs of opening and modification made by the customer in places of the product not authorized by Pumatronix;

8) Damage caused by accidents/falls/vandalism;

9) Display adulterated and/or removed serial number;

10) Damage resulting from transportation and packaging of the product by the customer in conditions incompatible with it;

11) Bad use and in disagreement with the Instruction Manual.

PRIVACY POLICY

In compliance with the General Law on Data Protection (LGPD) - Law No. 13,709, of August 14, 2018, this product has programmable functions for capturing and processing images that may infringe the LGPD when used, together 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 finalities, use and treatment of the images captured, and the control of the information and forms of operation of the product are the exclusive decision of the user or purchaser of the product.

INDÚSTRIA BRASILEIRA DE TECNOLOGIA

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

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Movement in Focus.

PUMATRONIX www.pumatronix.com