

ITSCAM 400

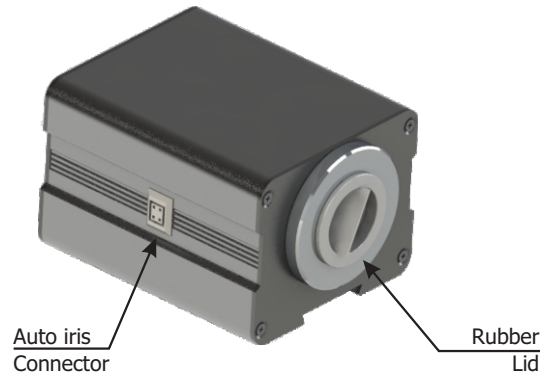
CAPTURE OF VEHICLE IMAGES IN VARIOUS
SPEEDS, DAY AND NIGHT

| Installation

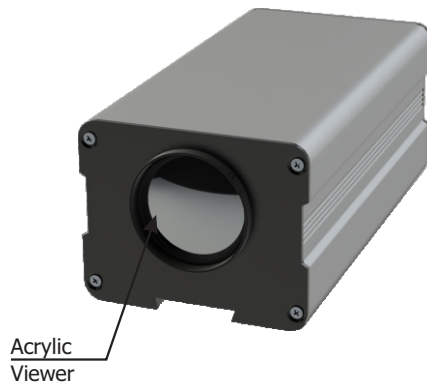


ITSCAM 400 MODELS

ITSCAM CS MOUNT



ITSCAM LM

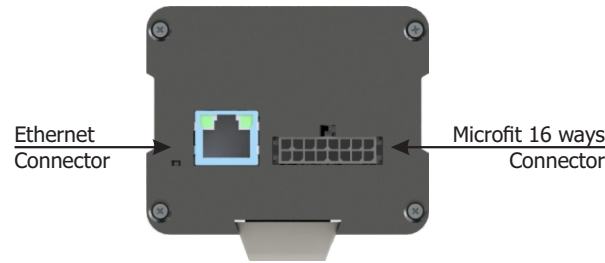


This equipment may be included with lens, which are sensitive to mechanical impacts such as drops and extreme vibrations.



Oxidation Hazard: Electrical and signal connections made to the ITSCAM 400 bundle and data network cable must be protected in a terminal box or similar structure to prevent oxidation of the connections and unwanted infiltration of liquids into the bundle.

CONNECTING ITSCAM 400



* Use the Ethernet connector to connect ITSCAM 400 to the local network.

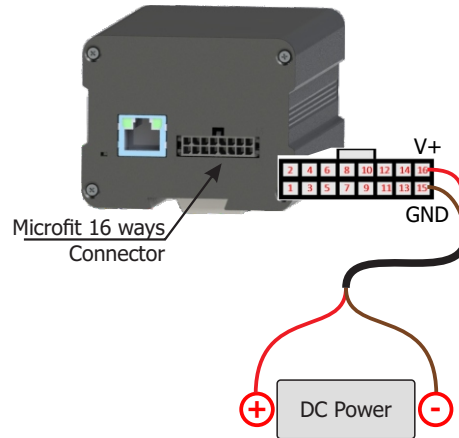
* Use the Microfit connector inputs to connect ITSCAM 400 to power source and to signal input equipment for physical triggering, such as an inductive loop or an optical barrier, for example.

* Utilize as saídas do conector Microfit para conectar a ITSCAM 400 a um iluminador ou a equipamentos que se deseja controlar, como cancelas ou portões.

POWER CONNECTION

1. Use a 12Vdc or 24Vdc power supply.

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



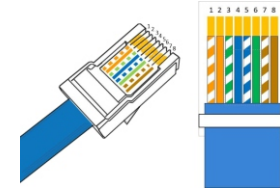
This equipment must be powered from a direct current (DC) source with a voltage between 12 or 24 Vdc. Do not connect any of the inputs directly to the power grid (AC)!

NETWORK CONNECTION

3. Check the connection's working indication via the Ethernet connector's LEDs if the device is powered.

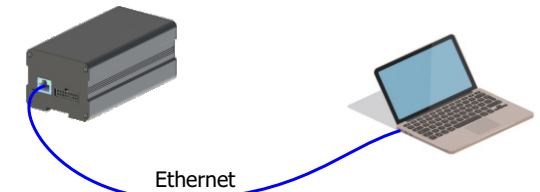
4. Check the installation if the LEDs are not indicating that the connection is working.

5. Use cable with RJ-45 connector with T568B standard pinout:



PARAMETERIZATION OF NETWORK INTERFACE

6. Connect ITSCAM 400 to an auxiliary device disconnected from the local network where the equipment will be installed, using an Ethernet cable:



7. Access the ITSCAM 400 interface in a Google Chrome browser (version 85 or higher) with the factory default data:

IP	192.168.0.254
User	admin
Password	123

8. Go to the menu *Settings > Network*.

9. Modify the default IP address 192.168.0.254 with netmask 255.255.255.0, considering *different* values than 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



The maintenance IP of ITSCAM 400 (192.168.254.254) is used to recover connection in extraordinary situations when the primary IP is lost. For this reason, when manually configuring the network (Ethernet) interface of the equipment, values other than the maintenance IP must be applied.

10. Click *Apply* to validate the changes and wait for the equipment to restart automatically:



11. Check the connection and network configurations after restarting the ITSCAM 400 device.

12. Disconnect the ITSCAM 400 from the auxiliary device and connect the equipment to the definitive facility's network.

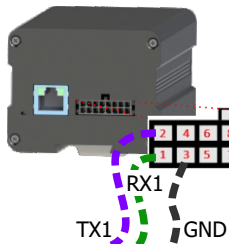
13. Repeat steps 6 to 12 in case of connection loss or IP address conflict.

14. Log on with the maintenance IP address 192.168.254.254, in case of any network conflict.

CONNECTING RS-232 SERIAL INTERFACE

15. Connect the *Serial Port 1* signals to 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	RS232_RX1
2 Purple + White	RS232_TX1
3 Black + White	GND (RS232_1)
4 Purple	RS232_TX2
5 White	RS232_RX2
6 Brown + White	GND (RS232_2)



Terminals of Microfit 16 ways Connector

16. Check the signals of terminals 4, 5, and 6 and their colors to connect the *Serial Port 2* interface.

CONNECTING INPUTS AND OUTPUTS

17. Make signal connections to terminals 7 to 14 of the *Microfit Connector*, which can be used to receive signals from a loop, optical barrier, or illuminators activation. The respective terminal colors and signals are detailed in the table:

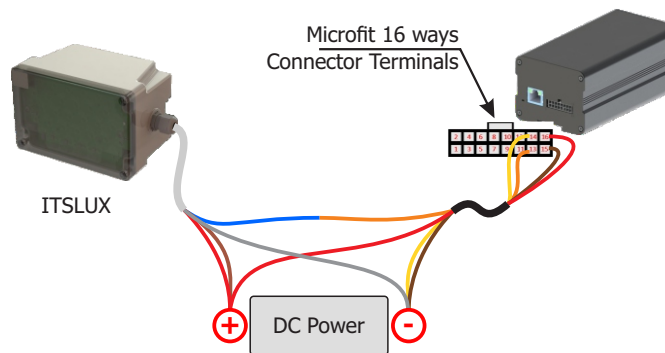
MICROFIT CONNECTOR	
TERMINAL AND COLOR	SINAL
7 Grey	IN2+
8 Black	In2-
9 Red + White	OUT2+
10 Blue + White	OUT2-
11 Green	IN1+
12 Blue	IN1-
13 Orange	OUT1+
14 Yellow	OUT1-

CONNECTING ILLUMINATORS



When using an Illuminator together with ITSCAM 400, check in the product specifications for the minimum and maximum distance that must be observed in relation to the position of the object to be illuminated.

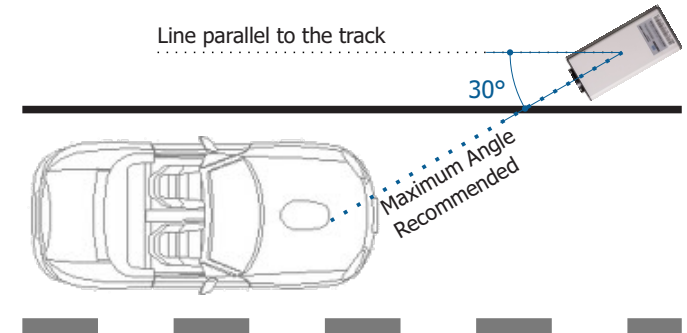
18. Connect the ITS LUX illuminator to the same power supply used to power the ITSCAM 400 device, considering the signal colors used in connection:



Refer to the technical information of the illuminating device to make the electrical connections correctly.

POSITIONING OF ITSCAM 400 ON THE ROAD

19. Select an existing pole or gantry that allows you to position the ITSCAM 400 at road side and parallel to the track, in order to capture images of one lane of the track and with little horizontal inclination, considering the maximum angle of rotation:



20. Avoid covering parts of the image by objects such as trees or vehicles from other tracks.

21. Fix ITSCAM 400 on poles or gantries at a minimum height of 3.5 meters and maximum of 6 meters (in *traffic control* applications), considering the distance **D** from vehicle crossing point.

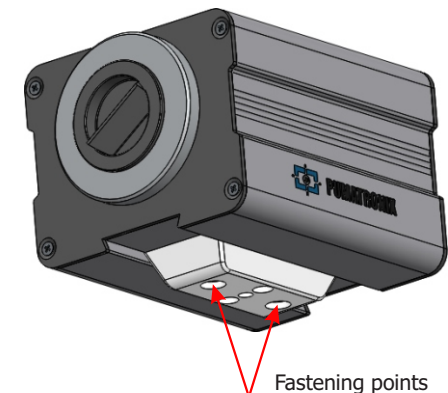


Installation Location: In cases where it is not possible to meet the installation specifications, it is recommended to consult Pumatronix Technical Support.

FASTENING ITSCAM 400

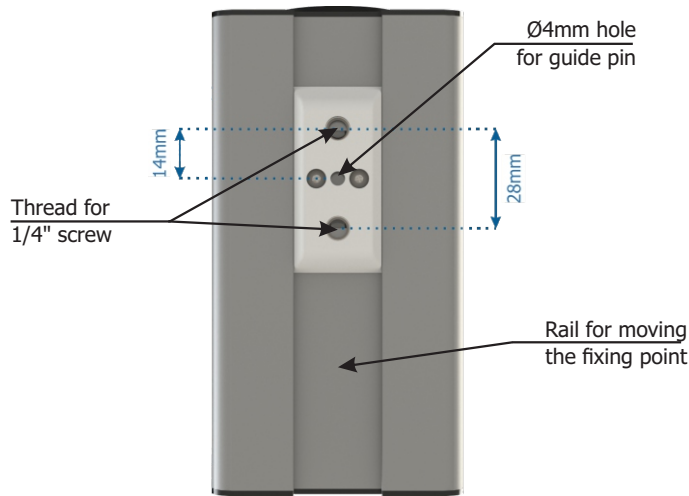


ITSCAM 400 must be used with a Protection Case specifically designed for outdoor use and with the function of protecting equipment from the elements.

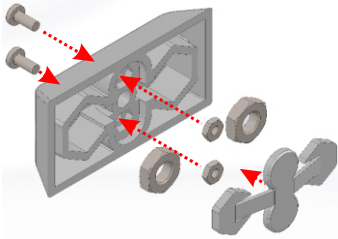


Fastening points

FIXING MECHANISM SPECIFICATIONS



22. Reassemble the Fixing mechanism following the sequence shown in the picture, if it becomes detached from the ITSCAM 400 housing:



FRAMEWORK SETTINGS

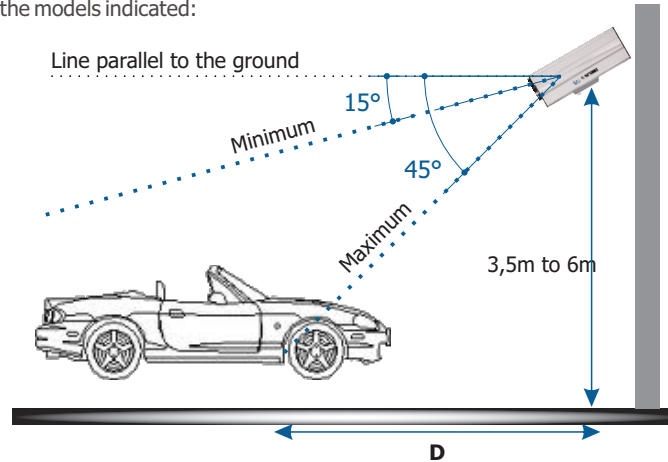
23. Connect the ITSCAM 400 device to a power supply (Steps 1 and 2).

24. Perform the PARAMETERIZATION OF NETWORK INTERFACE as shown in steps 6 to 13.

25. Disconnect ITSCAM 400 from the auxiliary device and connect to the definitive facility's network.

26. Position the ITSCAM 400 with little horizontal inclination so that the vehicle's license plate is aligned with horizontal on the image, following the steps in *POSITIONING OF ITSCAM 400 ON THE ROAD*.

27. Tilt the device on the stand respecting a minimum vertical angle of 15° and a maximum vertical angle of 45° between the lens center and a line parallel to the ground. In these conditions, the distance **D** varies according to the models indicated:



* **D** for ITSCAM 400 CS Mount models = variable.

* **D** for models with motorized lens ITSCAM 411 (S04L3) and ITSCAM 411 (S04L3A) = 4.5 to 45 meters.



When using an Illuminator together with ITSCAM 400, check in the product specifications for the minimum and maximum distance that must be observed in relation to the position of the object to be illuminated.

28. Access the web interface of the device with the data registered in the *PARAMETERIZATION OF THE NETWORK INTERFACE*.

29. Set the OCR processing by device, accessing the *Settings > OCR* menu in the interface, considering the image parameters given in the Integration Manual.

30. Tilt the stand with the device to the best framing fit, considering the maximum angle limit of 45° for vertical tilt, as larger angles of vertical inclination generate significant deformations in images.

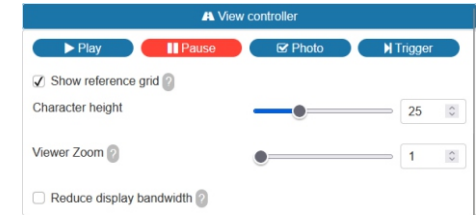
31. Consider using *Perspective Adjustments* in order to correct the plate angles in image, if the inclination of the equipment with the stand has reached the 45° limit, as indicated.



32. Go to the menu *Settings > Zoom and Focus* on the interface, which can be done at any time during the configuration process.

33. Disable *Auto Iris* for a better result (if the ITSCAM 400 model presents this feature), at page's right side.

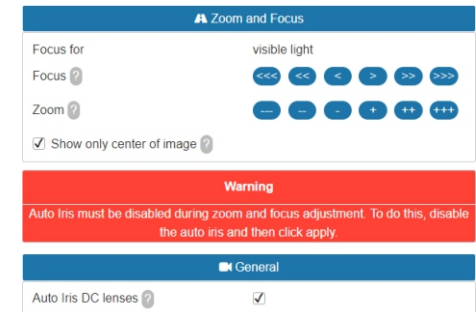
34. Use *View Control* to visualize the live image from the camera via the *Play* button. Select the preview image you want to use as a parameter for zoom configuration and press the *Pause* button.



35. Enable the option *Show Reference Grid* that allows you to use a *Character Height* as a basis for the best zoom setting.

36. Use the *Viewer Zoom* to make it easier the fine adjustment of the plate framing on the reference grid.

37. Use the *Show Image Center Only* function when you need to reduce the response time to interface adjustments when accessing via mobile networks. In this option, the display scale is reduced to 320x240.



38. Click on the adjustment buttons, zooming in and out, also focusing until the characters become clear in the displayed image.

39. Select the desired zoom and focus position, until the license plate is readable and under OCR capture conditions (approximate height 20 pixels), using the character height reference grid.

40. Repeat the steps 26 a 39 until it is possible to obtain an image with the best framing and sharpness of characters.

CAUTION AND MAINTENANCE

Perform security measures during the upgrade process:

- * **Keep the ITSCAM 400 device inactivated during the upgrade process, ensuring that it is not requested by any services or other equipment on the network where it is installed;**
- * **Keep the ITSCAM 400 device powered on at all times while performing the upgrade, taking the necessary steps to prevent it from restarting or being switched off.**

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

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

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.



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

TECHNICAL SUPPORT

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Movement in Focus.

