TRAFFIC MONITORING CAMERAS

Install Guide

Einar 5

EINAR 5

Datasheet and Install Guide

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1. EINAR 5 DATASHEET

	EINAR 5	EINAR 5T	EINAR 5W
Camera			
Sensor size	1/2.5"		
Max. Resolution	5 MP (2560x1920)		
Video Streams	Primary Stream: 25 fps (2560x1920, 2048x1536) Secondary Stream: 25 fps (1920x1440, 1280x960, 960x720, 640x480)		
Light sensitivity	Day/Night/IR: 0,65 lux / 0,01 / 0 lux		Day/Night: 0,65 lux / 0,01 lux
Shutter	1/6,25 s - 1/6400 s		
Day/Night mode	True		
Lens focal length	3-10 mm	9-22 mm	3-10 mm
Lens FOV	Horizontal: 27°-87° Vertical: 21°-71°	Horizontal: 15°-35° Vertical: 12°-26°	Horizontal: 27°-87° Vertical: 21°-71°
IR LED	4 high power IR LEDs, 850nm IR	4 high power IR LEDs, 850nm IR	4 high power LEDs, White
WDR mode	True (120dB)		
Compression			
Video compression	H.264 SVC (Hierarchical P), MJPEG		
Bit rate	500Kbps - 18Mbps		
Video stream	Dual streaming via RTSP(H.264) and HTTP(MJPEG)		
Network			
Protocols	TCP/IP, DHCP, DNS, SNMP, HTTP, HTTPS, RTSP, NTP, UPnP		
Security	Camera side username and password		
Interface			
Ethernet	10BaseT/100BaseTX, RJ-45 socket		
Storage	microSD card		
Reset button	Factory reset (IP address reset)		
General			
Design	IP67 metal housing		
Operating temp. range	-30 - +55 °C		
Power requirement	POE+ (802.3 at)		
Power consumption	Max. 17W, tip. 5 W		
Dimensions	165×124×100 mm (L×W×H) – without bracket		
Weight	1540g (with bracket)		
Certification	CE: EN 55022, EN 55024, RoHS, FCC		

* Please note that the camera will not operate until its internal temperature reaches + 10 ° C, which can be up to 5 minutes at -25 ° C.

2. INSTALLATION INSTRUCTIONS

Tools required

• 4 mm Allen key

• TX10 screwdriver

Contents of the box

• Quick Install Guide

• Mountable, IP67 protected RJ45 connector housing

• Eyelet lugs for grounding

Mounting the camera

The camera can be mounted using 3 mounting holes with a diameter of 6 mm on the console. When mounting, take into consideration the weight of the camera (1540g), always happen with the appropriate fittings for the given wall structure.

| Weight (base camera)	1200g
Weight (wall bracket)	340g

Ground the camera

Grounding should be done at the ground point on the camera with the bearing provided as it is shown on the picture. Make sure that the metallic contact is secured at the ground point (e.g. a metal pole) and that the ground point itself is properly led to the ground. The STP / FTP cable is only allowed on the remote side (patch panel, PoE switch, server) and must be grounded.
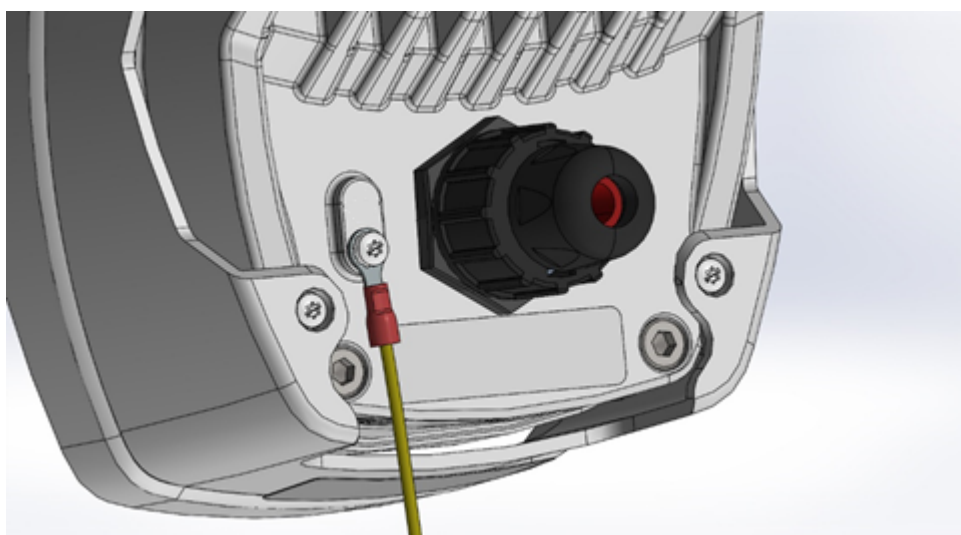
Adjust the view direction of the camera

Loosen the screws marked **2, 3** (tilt) and **4** (turn) by using a 4 mm Allen key, while holding the camera so that it does not "knock down", then set it to the desired position. The horizontal direction can be adjusted by loosening screw **1**. If the device is in the correct direction, tighten all screws on the bracket.
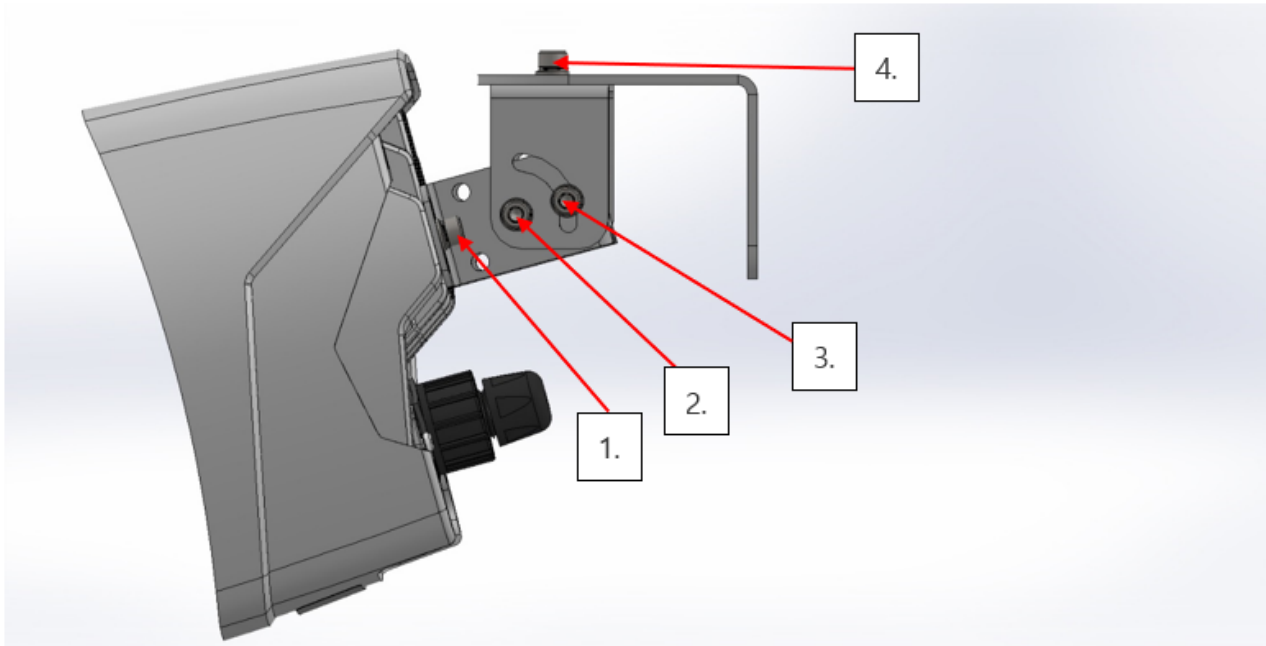
Assemble the waterproof cover of the RJ45 connector

The enclosed IP67 shielded RJ45 connector housing must be assembled as shown. **Before** damaging the RJ45 insert, the components of the connector housing must be pulled onto the cable in the order shown! The crimped RJ45 insert is placed in the housing **A**. The fastener **B** is pulled onto the housing A, and then the sealing insert **C** is pushed all the way between the clamping arms of the housing **A** on the cable. The seal is then clamped to the cable with the clamping part **D**.
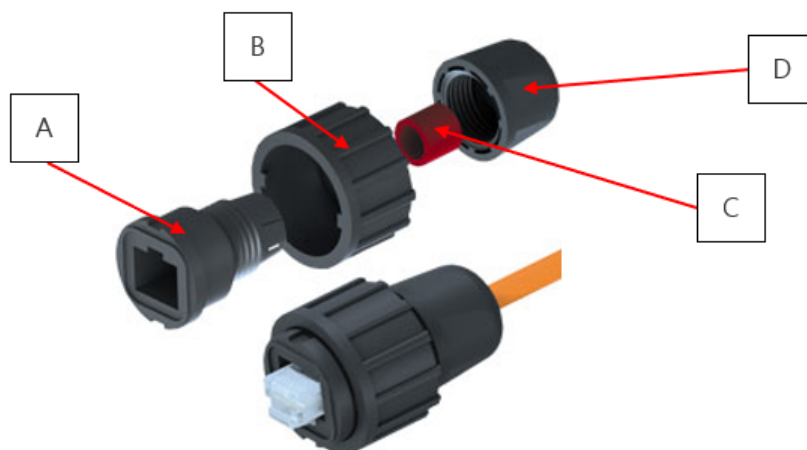
Disconnect the connector

The connector can only be disassembled with the cable connected to the device, otherwise the mounting tab of the RJ45 insert will not be accessible. First loosen **D**, then pull back on the cable, then release **B** so we can pull parts **A** and **C** off the cable. The RJ45 insert then remains in the connector thanks to its own retaining tab and can be removed by pressing it.

Adjust the zoom and focus

The camera lens can be remotely controlled, so zoom and focus can be adjusted from the camera web interface or Intellio Video Management Software (IVS).

Once the angle of view has been adjusted remotely, the autofocus function automatically adjusts the focus after a few seconds, which can be adjusted as needed in both the web interface and the management software.

For a detailed description of the lens remote control, see the description of the camera's web interface and the Intellio Video System's user manual.

Restore factory defaults

If you experience some malfunctions or critical errors in the camera, and the software-based reset does not help, you have an option to physically reset it. In this case, press and hold the **reset button (1)** until the **status LED (2)** lights up continuously (approx. 10 s) and then release the button.

To access the reset button, you must first remove the service port cover with a TX10 screwdriver.

Perform the operation in a clean, low-humidity room!

Further disassembly of the camera is prohibited, as this may void the warranty and damage the watertight insulation!
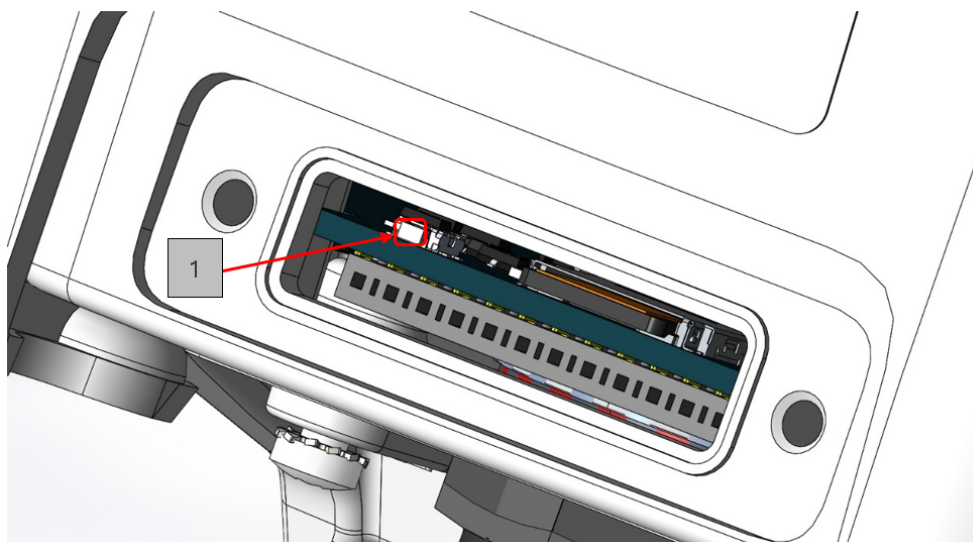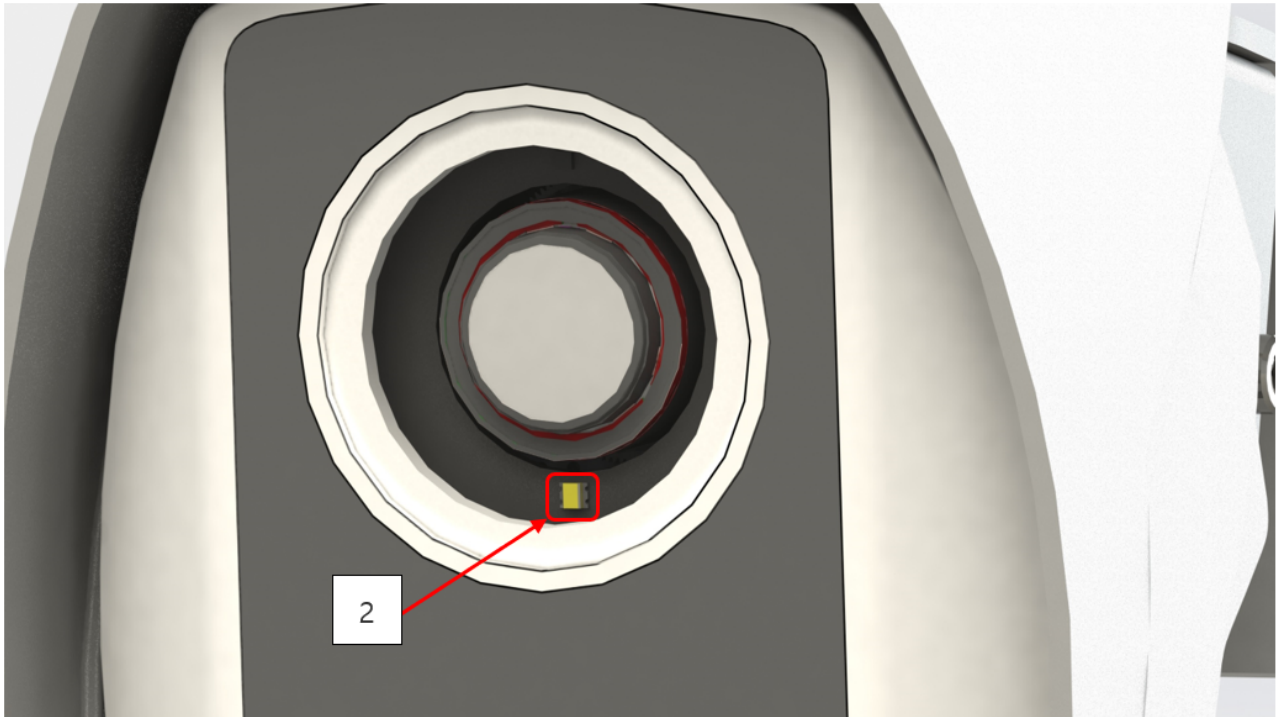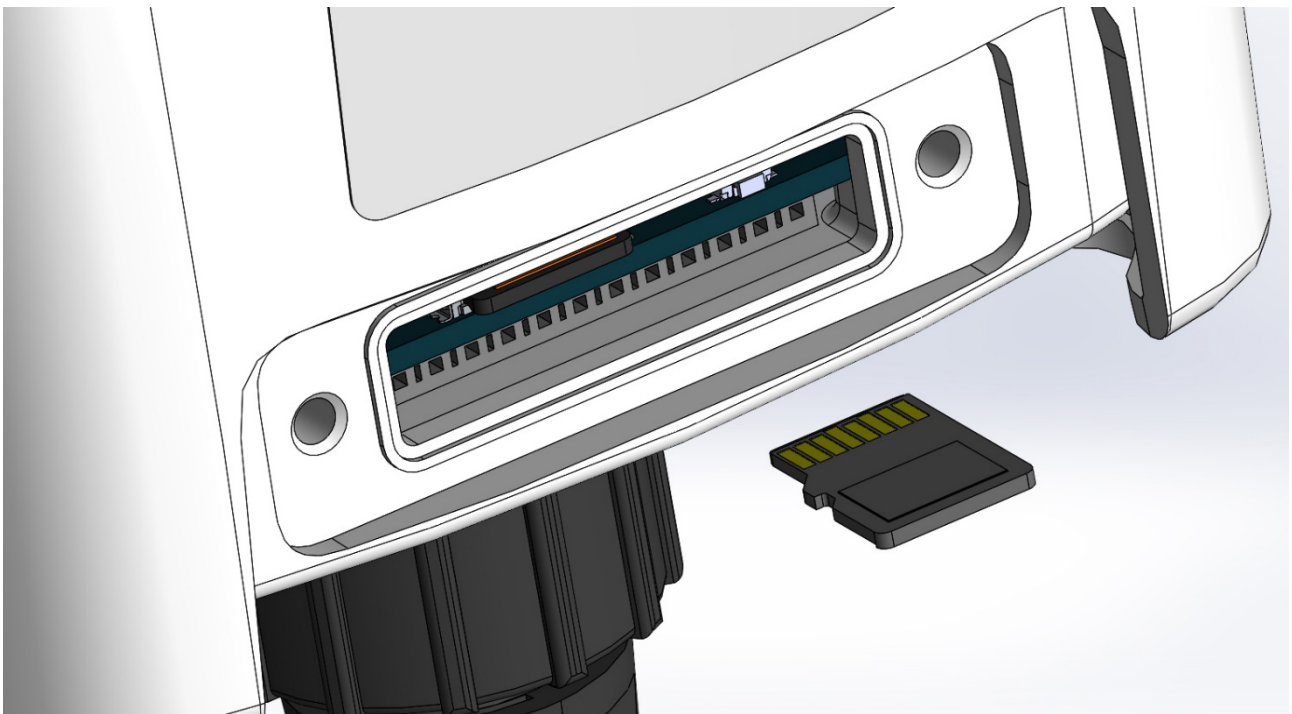
Insert the microSD card

You can insert a microSD card into the device by removing the service port cover as shown in the attached figure. The use of the card is described in the user manual.

**Perform the operation in a clean, low-humidity room!**

3. CABLE LAYOUTS

3.1. ETHERNET CONNECTION

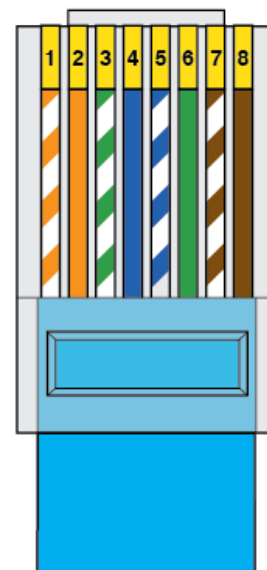| Pin#	Data		POE (802.3at/af)
	10/100BaseTX	1000BaseT	
1	TX+	TP1+	A1
2	TX-	TP1-	A1
3	RX+	TP2+	A2
4	-	TP3+	B1
5	-	TP3-	B1
6	RX-	TP2-	A2
7	-	TP4+	B2
8	-	TP4-	B2

Connector allocation standard: EIA / TIA-568B (straight cable pinout)

Due to the POE power supply, all 4 pairs of wires must be connected even with a 10 / 100BaseTX data connection!
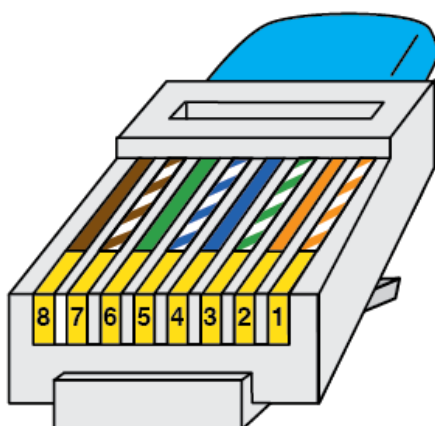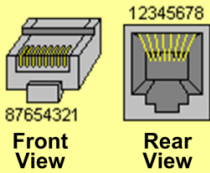
ADAPTIVE RECOGNITION

Networking – Cable Configuration
Network Cabling and Signal Identification for Ethernet LAN Standards

Note: GigaBit Ethernet Requires All 4 Pairs.

RJ45 3D View

12345678

87654321

Front View **Rear View**

RJ45 - Pinout, Wire Pair Color Coding, and Signal Identification

Pin	T568A	T568B	Signal 10/100BaseTx	Signal 1000BaseT
1	Wht/Grn	Wht/Org	Tx+	TP1+
2	Grn	Org	Tx-	TP1-
3	Wht/Org	Wht/Grn	Rx+	TP2+
4	Blu	Blu	Unused	TP3-
5	Wht/Blu	Wht/Blu	Unused	TP3+
6	Org	Grn	Rx-	TP2-
7	Wht/Brn	Wht/Brn	Unused	TP4+
8	Brn	Brn	Unused	TP4-

RJ45 Connector (Bottom) **Straight-Through Cable (T568B)** **RJ45 Connector (Top)**

Hook

UTP Category 5/6 Cable

Hook Underneath **Crossover Cable** **Hook On Top**
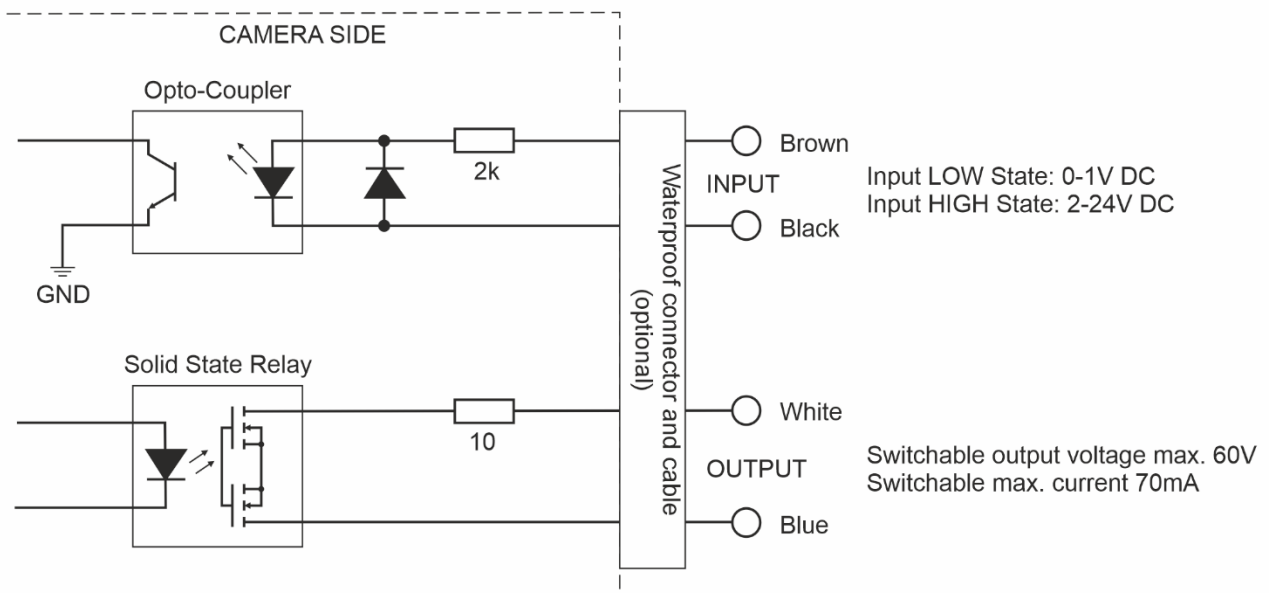
Hook

UTP Category 5/6 Cable
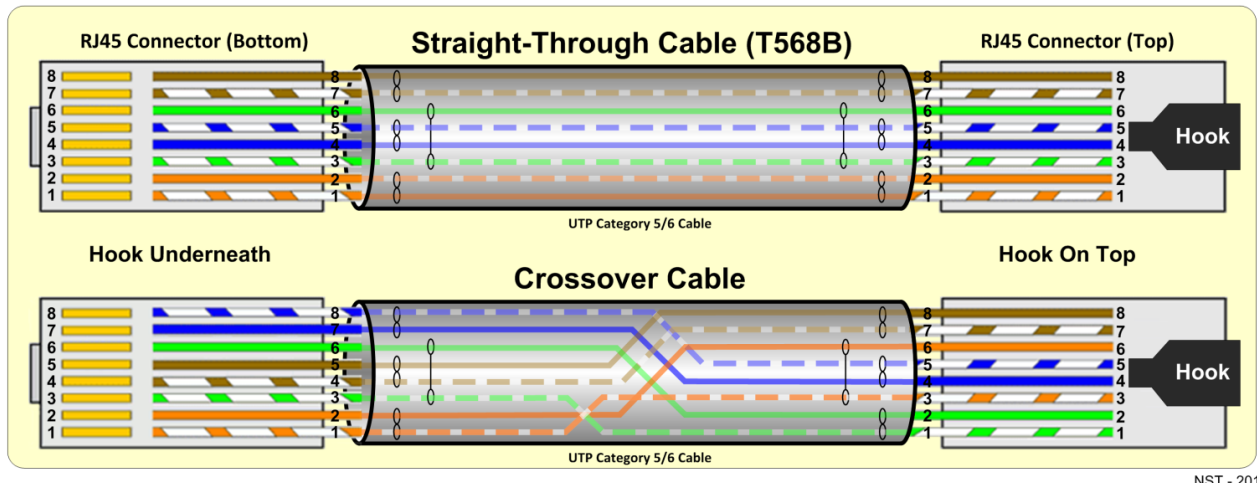
NST - 2011

3.2. IO CONNECTION

EINAR IO waterproof connector and cable pin layout:
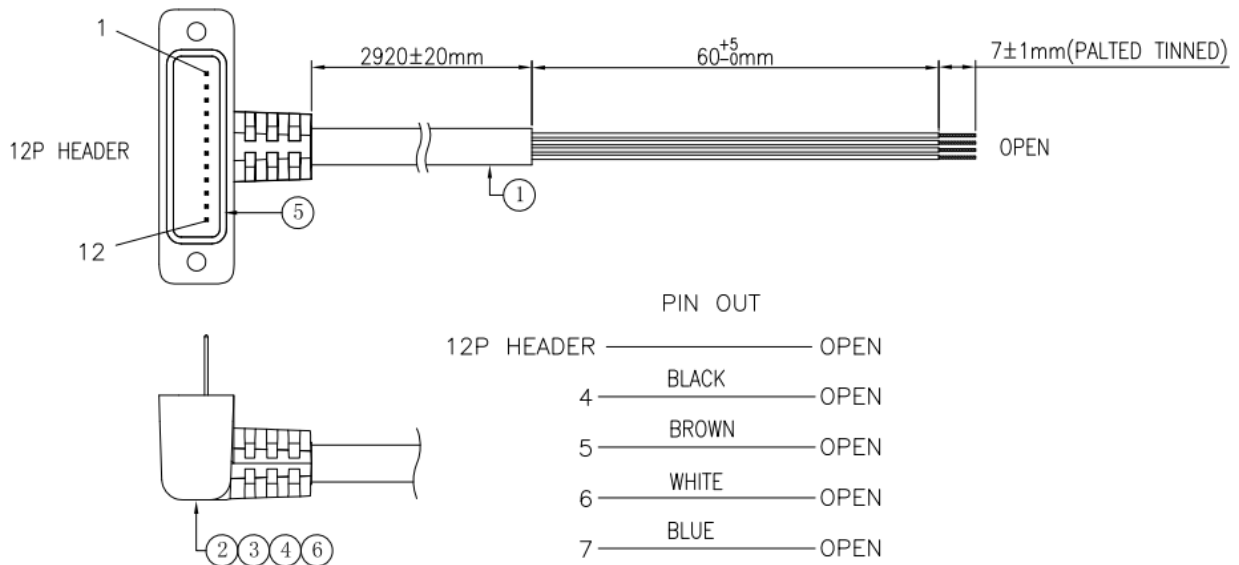
PIN4: IO_I_N (black)
PIN5: IO_I_P (brown)
PIN6: IO_O_A (white)
PIN7: IO_O_B (blue)

4.   RECOMMENDED CAMERA POSITION

A good ANPR engine can read the plates from images taken in various conditions. However, if you want to achieve over 95% recognition rate with short recognition times, you have to calculate the position of the camera accurately. The best position is if the angle between the camera axis and the direction of the vehicle movement is minimal and the camera should be installed 1 – 1,5 meters above the headlights of the vehicles.

The distance between the camera and plate is also important. If the camera is too far from the plate, the characters may not be large enough for recognizing them. In this case, zoom-in until you reach the proper size. If the distance is too short it may happen that a part of the plate is over the camera's field of view (when the vehicle is near to the side of the lane or the plate is not at the middle of the vehicle).
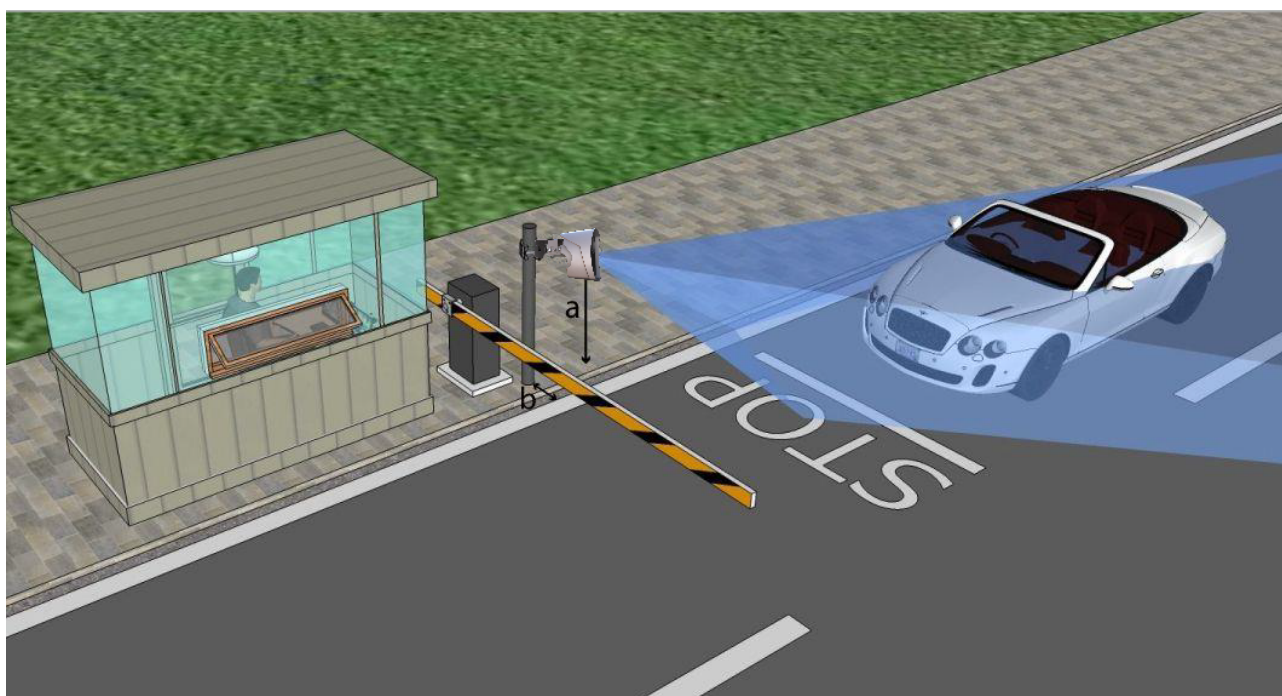
Try to adjust the direction of the camera so that the number plates are horizontal in the picture!

From the point of ANPR/LPR the most important is the size of the characters on the image. For English characters it is recommended to have at least 16 pixel average character height, for Arabic or other special characters it is recommended to have 20 pixel height (due to they are more calligraphic than the English characters). The too large characters are also not suitable for ANPR, therefore try to avoid settings where the character size is greater than 50 pixels in height. A line width of a character on the image should be at least 2 pixels.

Proper character sizes (in pixels)
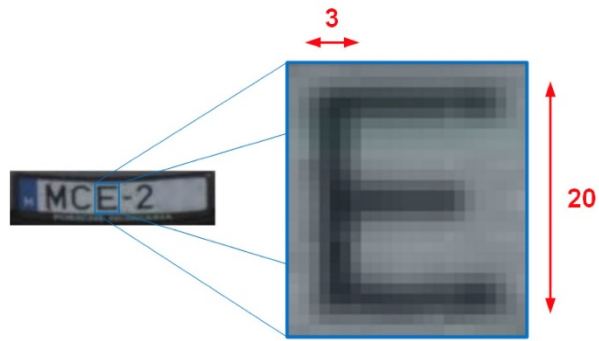
For more information, check How to Install an ANPR camera video on Adaptive Recognition channel.

Adaptive Recognition **America**
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SENDINFO@ADAPTIVERECOGNITION.COM
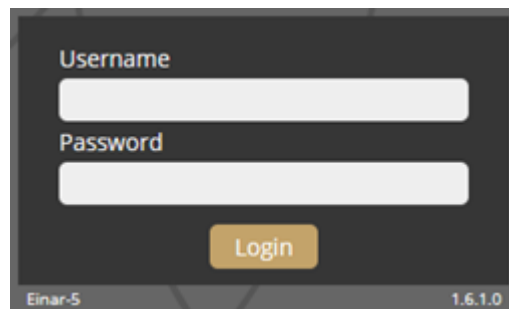WWW.ADAPTIVERECOGNITION.COM

5. ACCESSING THE WEB INTERFACE

1. Start a browser and enter the camera IP address into the address bar of the browser.
2. Type the username and the password on the displayed login interface and click on **[Login]**.

   The default user account is the following:
   Username: admin
   Password: admin

3. After signing in, the web interface of the camera is displayed on which the required settings can be performed.

Default IP Address

According to the factory setting of the Einar cameras, they request IP address from the DHCP server. The DHCP server lists the IP addresses of the DHCP clients, thus the received IP addresses belonging to the cameras connected to the network can be seen on that interface.

Link-Local IP Address

If there is no DHCP in the network the cameras will get a default IP address based on their MAC address (Serial Number). The cameras will also be accessible via their link-local IP address.
For example: if the MAC address of the camera is 00-19-B4-01-42-1A, than its IP is 169.254.aa.bb; 'aa' is the decimal value of the digit one before the last in the MAC address (hexa 42, decimal 66), 'bb' is the decimal value of the last digit in the MAC address (hexa 1A, decimal 26), so the IP is 169.254.66.26.

Finding Cameras

The cameras on the network can be found by using the Einar DeviceTool.
During running, the program continuously looks for detectible cameras on the network and displays them in a list where the current IP address of the camera can be read. If the cameras still do not appear, then make sure that the firewall does not block the multicast protocol on the network and the cameras and the PC logically are in the same network range.

6. CONTACT INFORMATION

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