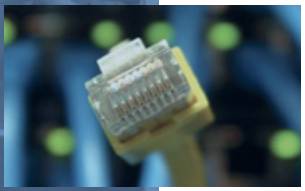
GEUTEBRÜCK
Competence in Video Security



TopLine FD

IP Fix Dome Camera Series

Installation

GEUTEBRÜCK IP Fix Dome Camera Installation Guide

About This Document

This document is intended to help you install your GEUTEBRÜCK IP Fix Dome Cameras on a network. This document applies to IP Fix Dome Cameras that include the designation "TopFD" as part of the model name (see Section 8 on page 56 for list of the models covered by this document).

When installation is complete, **refer** to the **camera user's manual** for **detailed information about operation and features**. You can find the camera user's manual on the USB-Stick delivered with your camera, or you can find the latest version of this manual and versions in other languages in the downloads section of the GEUTEBRÜCK website: www.geutebrueck.com

Precautions

WARNING

Proper Installation Required

The installation should be made by a qualified service person and should comply with all local codes. The connection between the camera and the wall or ceiling must be able to support at least two times the weight of the camera.
All camera models weigh 1.0 kilogram (2.2 lbs.).

CAUTION

Electrical Shock Hazard

Touching the camera's internal components may result in an electrical shock.
Do not attempt to access the electrical components in the camera base. The camera base contains no user serviceable parts.

NOTICE

Do not mount the dome camera in direct sunlight.

1. Direct sunlight can cause excessive heat buildup inside of the housing and may damage the camera.
2. You will get the best image quality when the camera is not mounted in direct sunlight.

WEEE Directive

The European Union has enacted Directive 2002/96/EC on Waste Electrical and Electronic Equipment (the WEEE Directive). This directive is only applicable in European Union member states.

1 Hardware Overview

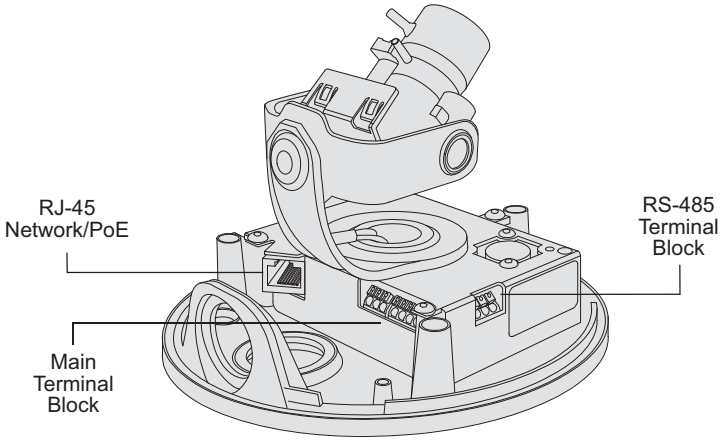


Fig. 1: Camera Hardware

- **RJ-45 Network / PoE** - Provides a 10/100 Ethernet connection and can be used to connect Power over Ethernet (IEEE 802.3af) to the camera.
- **Main Terminal Block** - Provides connections for an alternate camera power input (on outdoor dome camera models only), for the camera's I/O ports, and for a DC output voltage. (See Section 6 on page 48 for more detailed information.)
- **RS-485 Terminal Block** - Provides a connection for a standard RS-485 port that can be used to communicate with an external device. (See Section 7 on page 55 for more detailed information.)

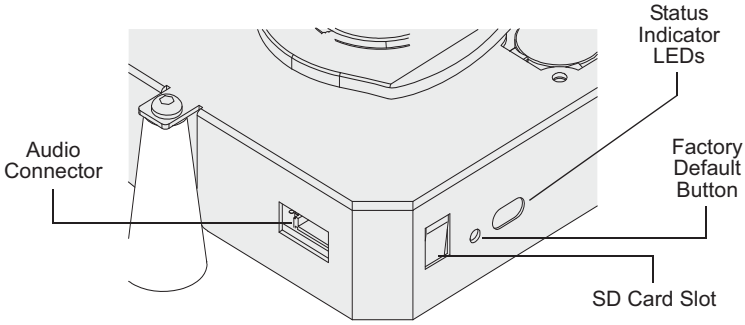


Fig. 2: Camera Hardware

- **Status Indicator LEDs** - The green LED indicates the network connection speed. Off means the network speed is 10 MBits/s (or the network is not connected). On means the network speed is 100 MBits/s.

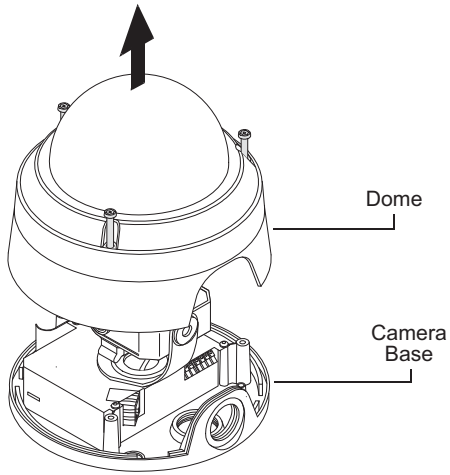
  The yellow LED indicates the level of network activity.
- **Factory Default Button** - Used to return the camera to factory default settings. See the dome camera user's manual for details.
- **SD Card Slot** - Can hold a micro SD or a micro SDHC card. The card can be used to store alarm images or the contents of the alarm buffers. See the dome camera user's manual for details. (An SD card is not included with the camera.)
- **Audio Connector** - Supplies connections for an audio line-in and an audio line-out.

2 Installation Procedure

2.1 Mounting the Camera Base

Note: The camera base mounting procedure describes how to mount the camera directly to a solid surface such as a wall or a hard ceiling. Optional kits are available that allow the camera to be mounted in other fashions (such as in a suspended ceiling). If you are using one of these kits, refer to the instructions included with the kit to determine how to mount the camera.

1. Remove the dome from the camera base.
   (For shipping, the dome will be held to the camera base with tape. Remove the tape to separate the dome from the camera base.)

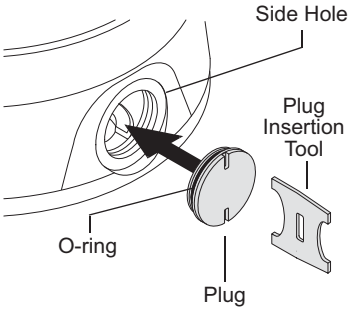


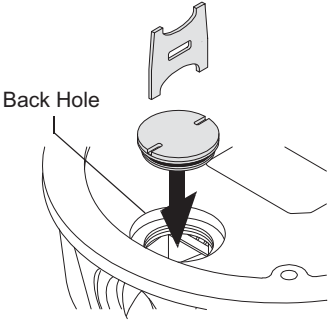
2. If you are installing an indoor dome camera, skip this step and go on to step 3 now.

   If you are installing an outdoor dome camera:

   Decide whether you will insert the network cable and the secondary cable through the cable pass-through hole in the side of the camera base or in the back of the camera base. (The secondary cable is the cable that can be used to carry alternate camera power, digital I/O, RS-485, and audio signals to the camera.)

   Use the round plug and the plug insertion tool included in the dome camera kit to plug the hole that you will not be using as shown below. Note that the plug should have an O-ring on it as shown in the drawing.





3. Tape the drilling template included with the camera to the wall or the ceiling in the location where the camera will be mounted, and mark the location of the mounting holes and the location of the cable pass-through hole.

Notes: The anchors you use to mount the camera must be able to support at least two times the weight of the camera. Indoor dome camera models weigh 600 grams (1.3 pounds). Outdoor dome camera models weigh 1.0 kilogram (2.2 pounds).

For easier access to the mounting holes, some installers prefer to unscrew the three screws that hold the camera assembly to the camera base and to remove the camera assembly from the base. If you do this, when you reattach the camera assembly to the base, do not overtighten the three screws. When reinstalling the screws, they should be tightened to a maximum of 25 cNm (35.4 in-oz).

Overtightening the screws can result in non-repairable damage to the housing.

4. Drill holes in the wall or ceiling at the three points you marked for the mounting holes. The holes should be appropriately sized for the type of anchor you will be using.

   If you are installing an indoor dome camera or if you are installing an outdoor dome camera and you will be routing cables through the pass-through hole in the back of the camera base, also drill a 23 mm (7/8") hole for the cable pass-through.
5. Insert appropriate anchors into the three mounting holes.

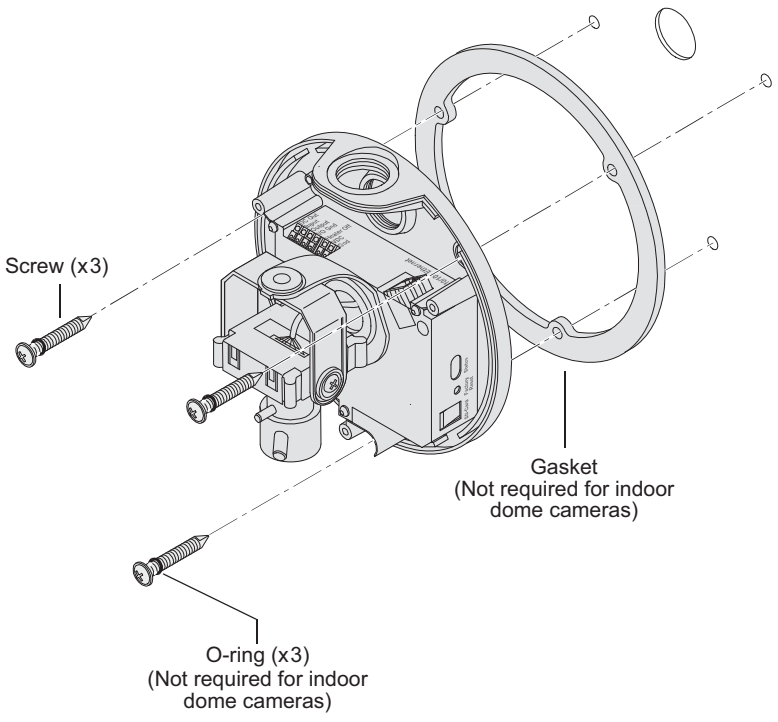
6. Mount the camera base on the wall or ceiling by placing three screws through the mounting holes in the camera base and into the anchors as shown in the drawing on the next page.

   If you are installing an outdoor dome camera, be sure that each screw has an O-ring as shown in the drawing and be sure to place the weather-proof gasket between the camera base and the wall or ceiling as shown in the drawing. The O-rings and the gasket are included in the outdoor dome installation kit. (The O-rings and the gasket are not required for indoor dome cameras.)

   If you are routing the camera cables through the hole in the back of the camera base, pull approximately 15 cm (6 inches) of cable through the hole and into the camera base before you mount it.

When you are finished mounting the camera base,

a. Go on to Section 2.2 if you are working with an outdoor dome camera and you want to route cables through the hole in the side of the camera base.
b. Go on to Section 2.3 if you routed the camera cables through the back of the camera base.

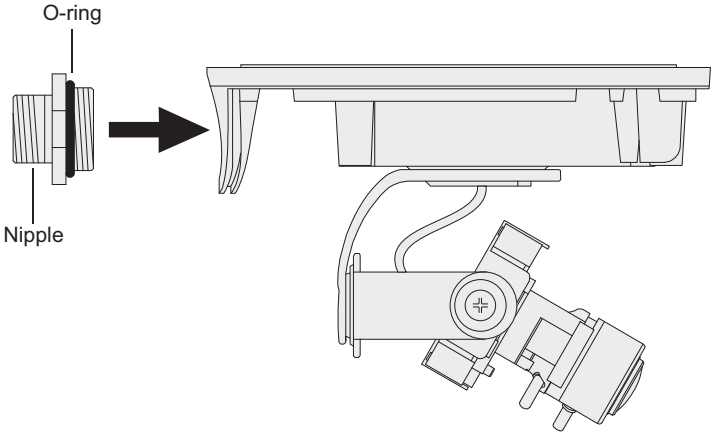

Screw (x3)
Gasket
(Not required for indoor
dome cameras)
O-ring (x3)
(Not required for indoor
dome cameras)

2.2 Installing Camera Cables Through the Side Pass-Through Hole

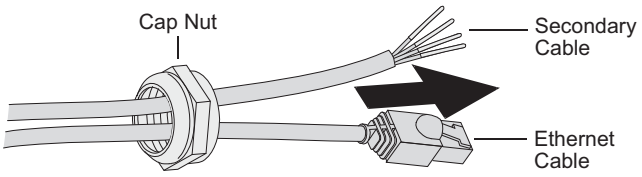
Notes: This procedure describes how to install the cables using the weather-proof connection included with the outdoor dome camera kit.

The procedure describes an installation that uses two cables, an Ethernet cable and a secondary cable. If you are only using a single PoE cable, installation is similar, but uses a grommet with only one groove.

1. Screw the nipple into the side of the camera base. Be sure to tighten the nipple enough so that the O-ring is squeezed between the nipple and the camera base. This is required to make a weather-proof seal.

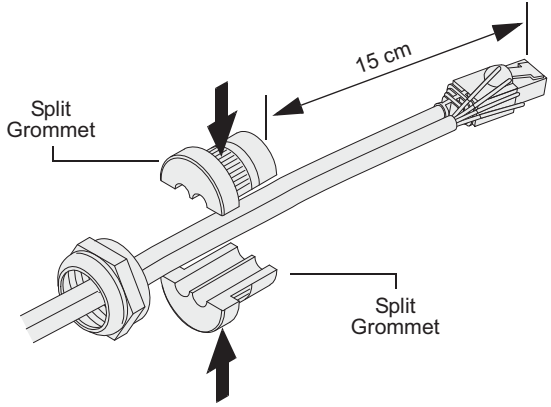


2. Insert the cable(s) through the cap nut as shown below.

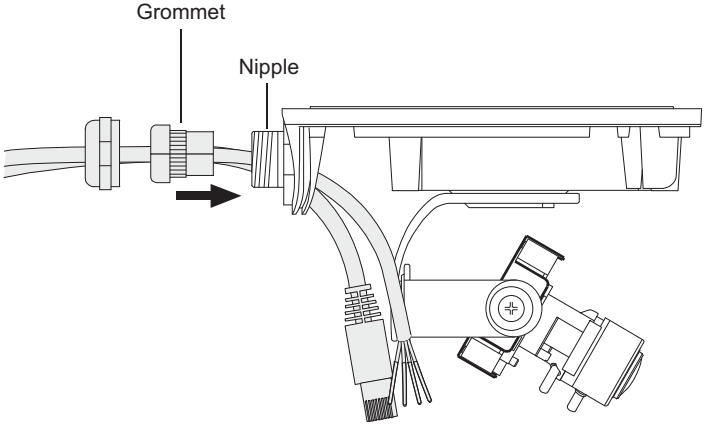


3. Place the two cables in the grooves of the split grommet as shown below. Make sure that the ends of the cables extend 15 cm (6 inches) past the grommet as shown below.

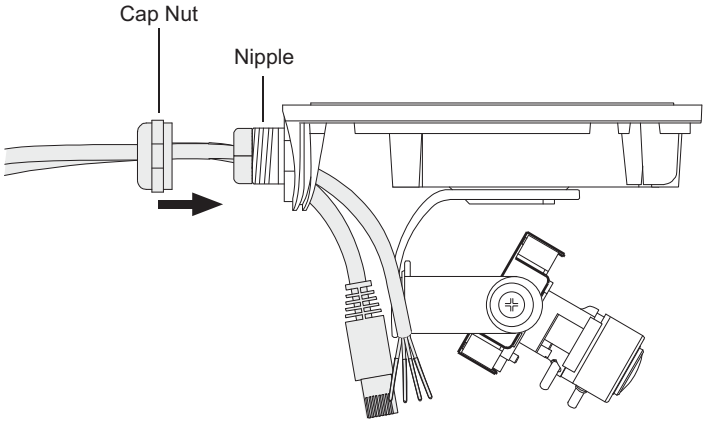
   Note: If you are using only one cable, use the split grommet with only one groove.



4. For the connection to be weather proof, the cables must fit snugly in the grommet's grooves. Check now and make sure that the cables fit snugly in the grooves. If the cables are a loose fit:
   a. Remove the grommet.
   b. Increase the diameter of the cables where they will pass through the grooves in the grommet by wrapping several layers of high quality plastic tape around each cable.
   c. Reapply the grommet to the cable and check the cables for a snug fit in the grooves.
5. Route the cable ends through the hole in the center of the nipple as shown below.
6. Continue pulling the cables through the hole until the grommet contacts the nipple and then press the grommet into the hole in the center of the nipple.



7. Slide the cap nut up to the threaded end of the nipple and screw the cap nut onto the nipple as shown below.
8. Go on to Section 2.3.



2.3 Routing the Cables in the Housing and Making Connections

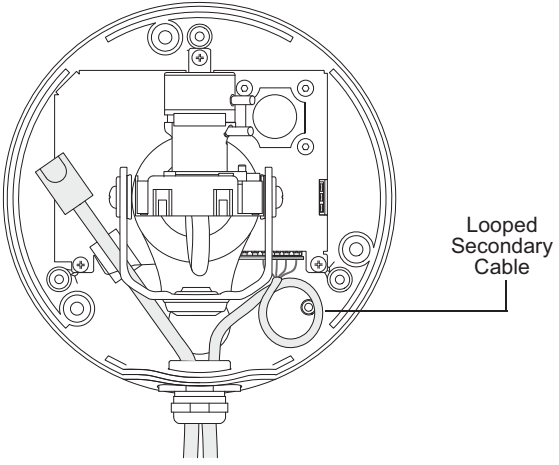
Start with step 1 if you are using a network and a secondary cable.

If you are only using a network cable, go to step 4.

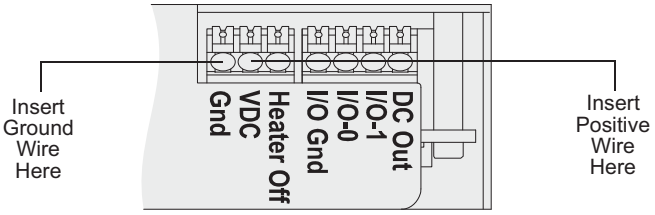
1. Prepare the secondary cable:

   If you will only be making connections to the main terminal block, strip about 5 cm (2 inches) off of the cable's outer sheath and loop the cable as shown below.

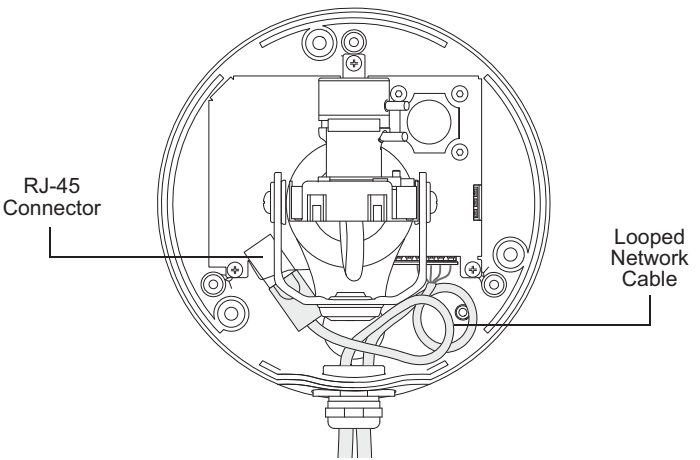
   If you will be making connections to both the main terminal block and to the RS-485 terminal block, strip about 13 cm off of the cable's outer sheath and route the wires directly to the terminal blocks.



2. If you are installing an outdoor dome camera and camera power will be supplied via the main terminal block:
   a. Make sure that your power supply meets the requirements for alternate camera power stated in Table 1 on page 50.
   b. Locate the two wires that will be used to supply power to the camera.
   c. Make sure that you can identify which wire is positive and which is ground. If you are not sure, use a voltmeter to identify the wires now.
   d. Switch off the power supply for the camera.
   e. Strip 8 mm (5/16") of insulation from the end of each wire.
   f. Insert the positive wire into the wiring fixing hole in the terminal block marked "VDC" as shown below.
   g. Insert the ground wire into the wire fixing hole marked "Gnd".



3. Complete the wiring at the terminal blocks.
   a. If you will be using the camera's I/O ports or the DC Out capabilities, refer to Table 1 on page 50 and to Figure 4 on page 54, and make the appropriate wiring connections at the main terminal block now.
   b. If you are installing an outdoor dome camera and you want to disable the camera's heater (this will lower the camera power consumption), refer to Table 1 on page 50 and apply a jumper between the "Heater Off" and the "Gnd" wire fixing holes in the main terminal block now.
   c. If you will be making an RS-485 connection to the camera, refer to page 54 and make the appropriate wiring connections to the RS-485 terminal block now.
4. Connect the network cable to the RJ-45 connector now. It is easiest to connect the cable if you loop it as shown below.

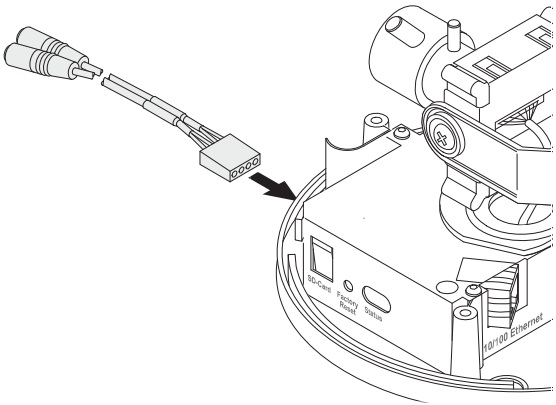


If you will not be using the camera's audio connections, go on to Section 2.4 on page 19 now.

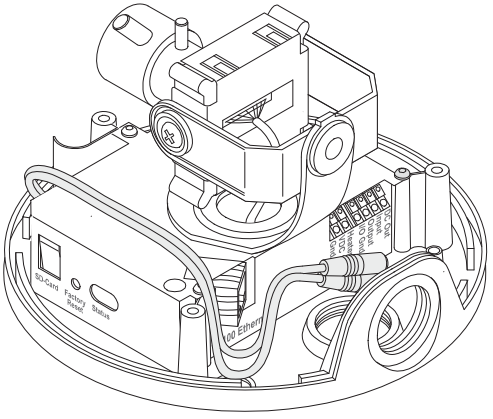
If you will be using the camera's audio connections, read the note below and then continue on with step 5.

Note: The following steps describe using the Y-cable assembly that is included with the camera to make audio connections. If you want to run wiring directly to the audio connector without using the Y-cable, see the camera user's manual for details about the audio connector type and pin assignments.

5. Get the Y-cable assembly that is included with the camera.
6. Plug the four-pin connector on the end of the cable into the audio connector on the camera base as shown below.



7. Route the Y-cable across the camera base as shown in the drawing below.



8. Plug a monaural microphone (or similar audio input device) with a 3.5 mm plug into the jack on the end of the cable labeled "Input".
9. The 3.5 mm monaural jack on the end of the cable labeled "Output" can be connected to an active speaker or, for example, to the line-in connector on a PC. Note that the output from this jack is not amplified and cannot drive headphones or a passive speaker.

Note: Software switchable 2.2 V power is available on the input line; this is normally used with a microphone that requires power. Software switchable 20 dB gain is also available on the input line. See the camera user's manual for more details.

2.4 Locating the Camera on Your Network and Making Initial Camera Access

- The location procedure assumes that your **camera is on the same network subnet as your PC** and that you have a Windows® operating system on your PC.
- The procedure uses a web browser to access your GEUTEBRÜCK IP Fix Dome Camera. The recommended web browsers are Microsoft Internet Explorer 8.0 or higher and Mozilla Firefox 3.6 or higher.
- If your network includes a proxy server and your web browser is set to use the proxy server, the browser will not be able to access the camera. To avoid this problem, change your web browser's connection settings so that the proxy server will not be used with local addresses.
- Make sure that Javascript is enabled on your browser.
- It's recommended to use GeViScope software **release 6.0.880.27X or higher**.

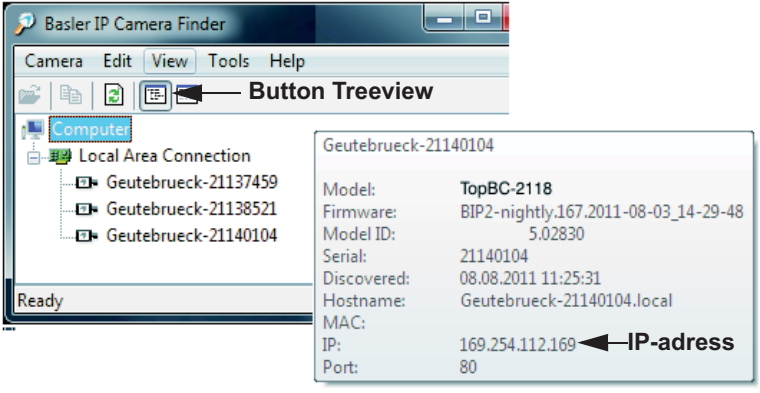
To locate your GEUTEBRÜCK IP Camera on your network and make initial access, the camera must be in the same subnet as your computer. If not, please proceed as following:

1. Obtain the USB-Stick that is delivered with your camera and place it in your computer's USB interface drive.
2. Copy the **BIPFinder.exe** program from the USB-Stick to a location on your computer's hard drive. The BIP Finder is a standalone program and does not need to be installed.

   (You can also obtain the BIP Finder software from the Downloads section of our website: www.geutebrueck.com.)
3. Create a shortcut on the desktop to the BIPFinder program.

4. Double click on the BIP Finder shortcut. The BIP Finder software opens. Click on the Button "Treeview" to activate the network camera search. The BIP Finder will locate the GEUTEBRÜCK IP Camera(s) on your network, and will display them in a tree format.

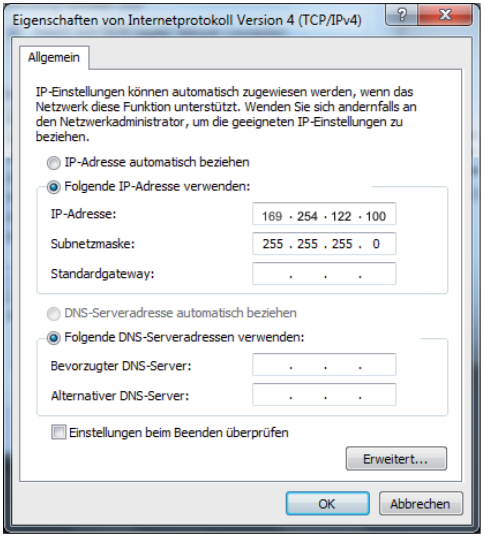
   The GEUTEBRÜCK IP Cameras connected to your network will be listed in the BIP Finder window by serial number. If you hover your cursor over a serial number or click on it, you will see a list of information for the camera, including the IP address, as shown below.



   Note: The BIP Finder software includes a wide range of functionality including the ability to display extensive information about each connected camera and to perform firmware updates on the cameras. We strongly suggest that you review the help file included with the BIP Finder software to familiarize yourself with its capabilities.

5. Please note the IP-adress of this camera (e.g. 169.254.112.169).

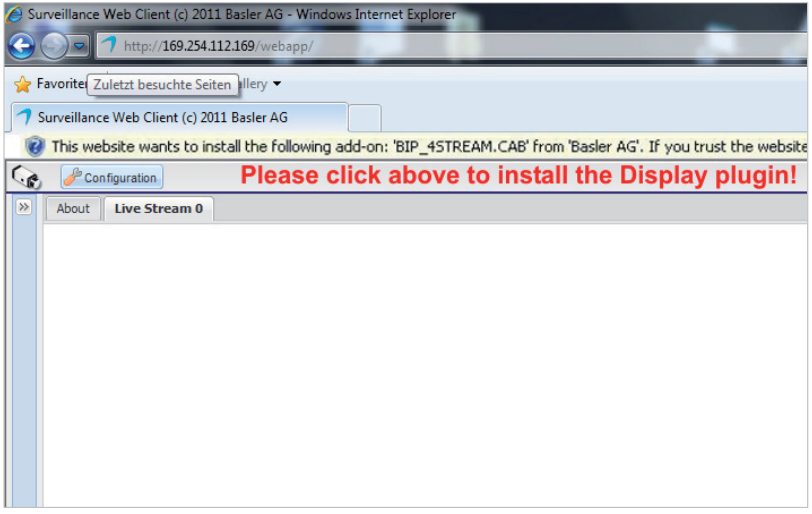
6. Open the Network Configuration window (see following figure) and change the IP-adress of your computer to an IP-adress in the subnet of the camera (169.254.112.XXX). Also note your primary network configuration.



Confirm with click on Button OK. Camera and computer are now in the same network.

Reopen the BIP Finder Software with a double click.

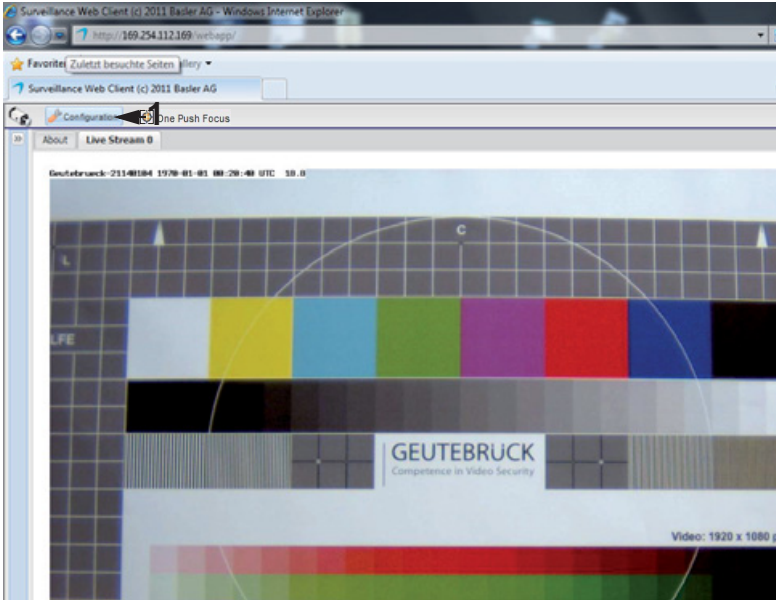
Double click on a GEUTEBRÜCK IP Camera serial number in the BIP Finder window, your web browser will open and the browser will access the Surveillance Web Client in the selected camera as shown below.



Assuming that this is the first time you are accessing the camera via the web browser, you may see a message asking you to click on the Information Bar to allow installation of an ActiveX control. The ActiveX control that the system wants to install is supplied by Basler and is used to display image streams within the browser. We strongly recommend that you install the control by performing the following steps:

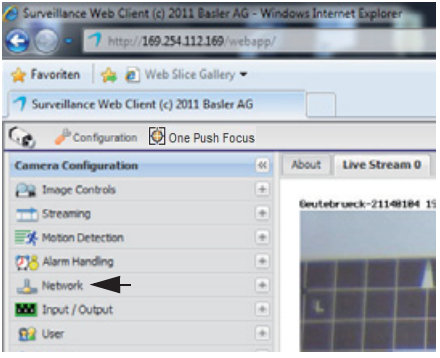
a. Click on the yellow Information Bar and select **Install ActiveX Control** from the menu that appears.
b. When the **Do you want to install this software?** window opens, click the **Install** button.

The Surveillance Web Client will display a live stream from the camera as shown below.



With click on the Button "**Configuration**" (**1**) you can change the TopLine camera settings.

The following configuration menu opens:
Please click on the menu item "**Network**"



The following context menu opens:

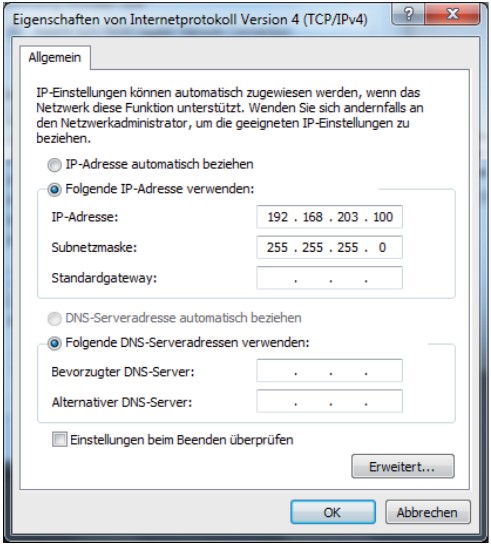
7. Disable the check box "**DHCP**". (**1**)

   Change the camera's IP-adress to the designated IP-adress in the range of your network (e.g. 192.168.0.234). (**2**)

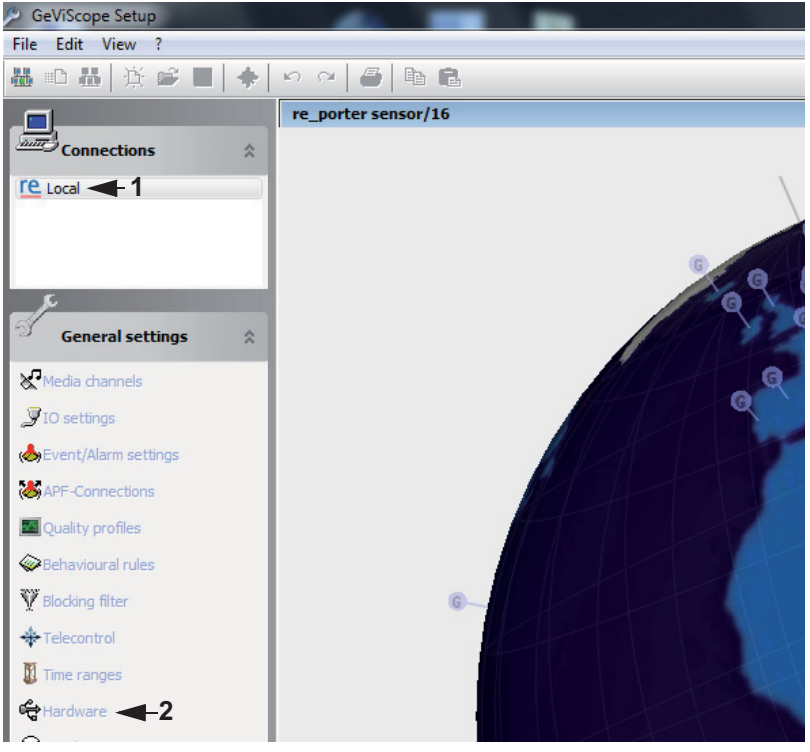
   Confirm with click on the Button "**Commit**". (**3**)

   Close the software BIP Finder.

   Open the Network Configuration window of your computer and return to your primary network configuration. Confirm with OK.

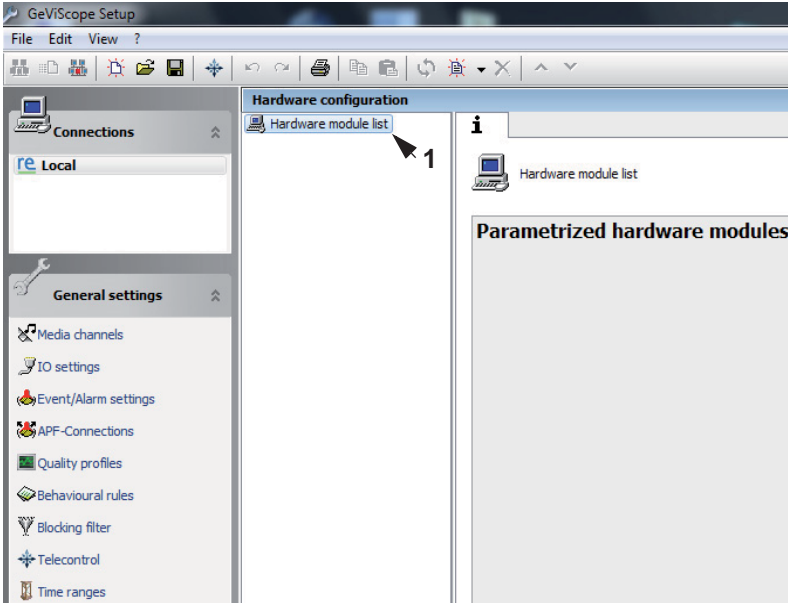


Start the software "**GSCSetup**" by double clicking on the desktop icon.



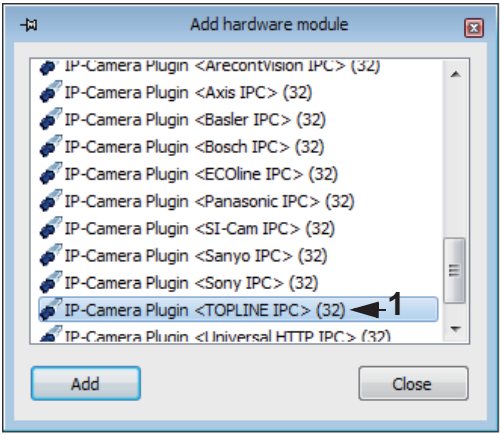
Double click on "**local** connections". (**1**)
Click on "Hardware". (**2**)

The hardware module list will open.



With a right click on "**Hardware module list**" (**1**) you will open a pop up window.
Click on button "**Add**".
A second pop up window appears.
Click here also on Button "**Add**".

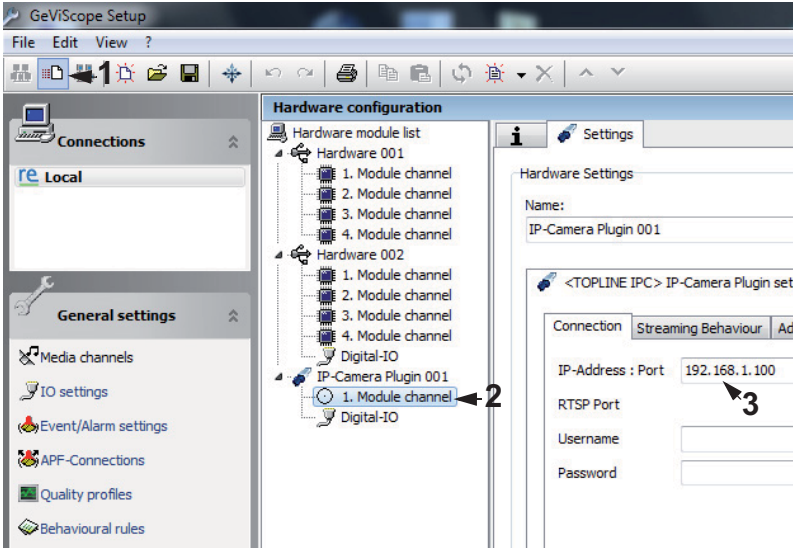
A list with the available hardware modules opens (see following figure).



Please scroll to the camera Plugin <**TOPLINE IPC> (32)** and doubleclick on it.

The chosen module (**1**) appears as "**IP-Camera Plugin 001**" in the "Hardware module list" (see next figure).

The name can be changed (e.g. TopLine Camera 1).



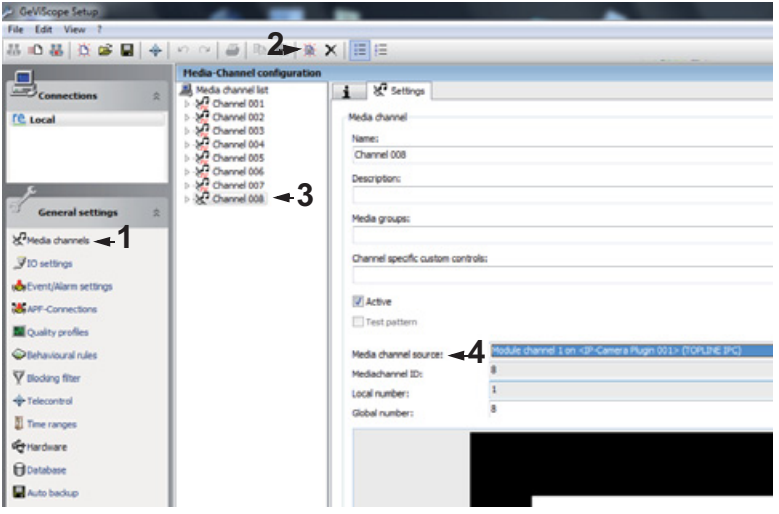
Click the icon  on the toolbar to send your choice to the server (**1**).

Click on the camera's module channel (**2**) and insert the new IP-adress of your TopLine camera in the connection menu (**3**).

Click the icon  on the toolbar again to send your modifications to the server (**1**).

Now you must assign a **media channel** to transmit the camera's pictures.

Please click in "General settings" on the menu item "Media channels" (**1**).
A list of the available media channels appears.
Click the icon "Add" (**2**) on the toolbar to add a new media channel.

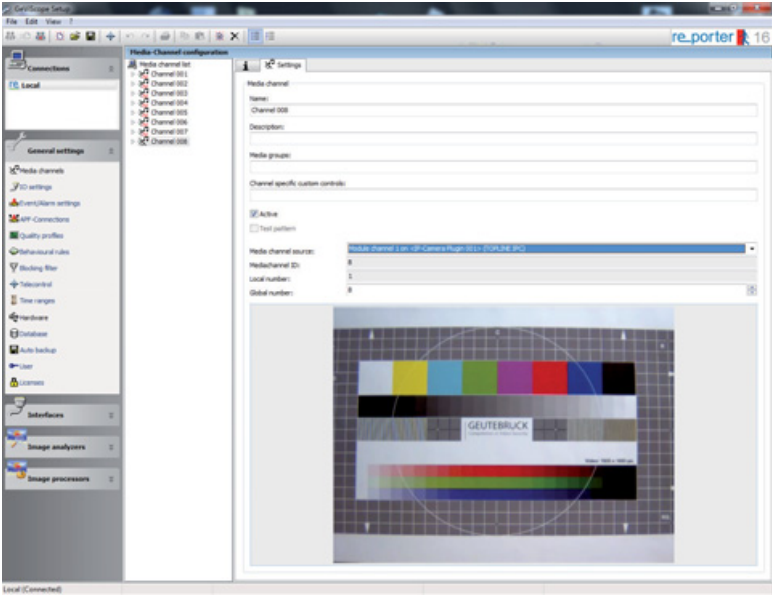


Mark the new media channel with click. (**3**).

Choose "**IP camera plugin (TOPLINE IPC)**" in the menu "Media channel source" (**4**).

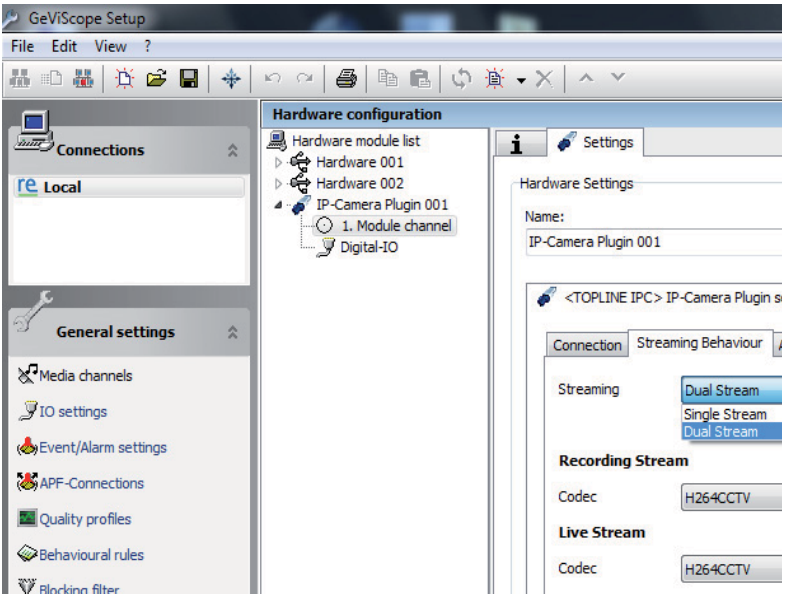
Click the icon  on the toolbar to send your choice to the server.

Now the camera's picture stream appears in the viewer (see next figure).

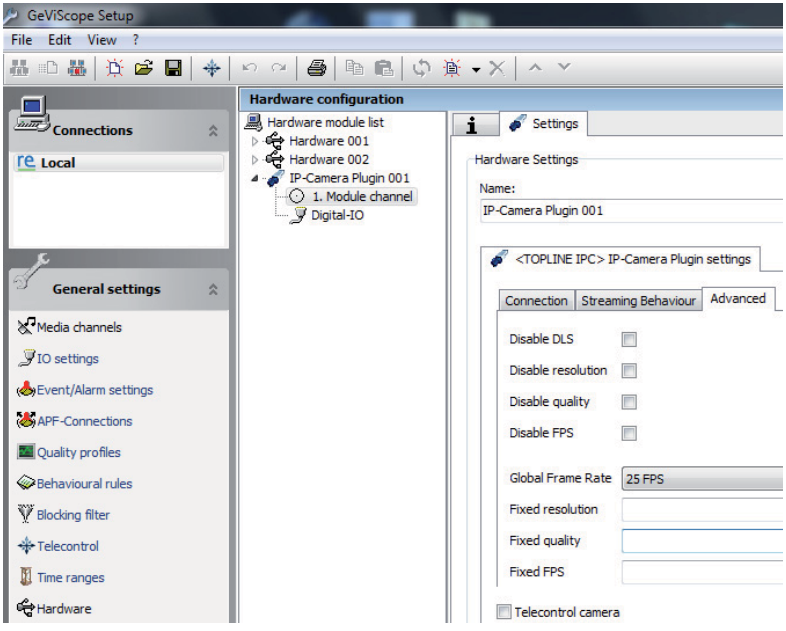


Advanced configuration.

In the hardware configuration you can make advanced settings like the streaming behaviour (see following screenshots).



Please note, that the configurations made here will **overwrite** the webbrowser configurations!

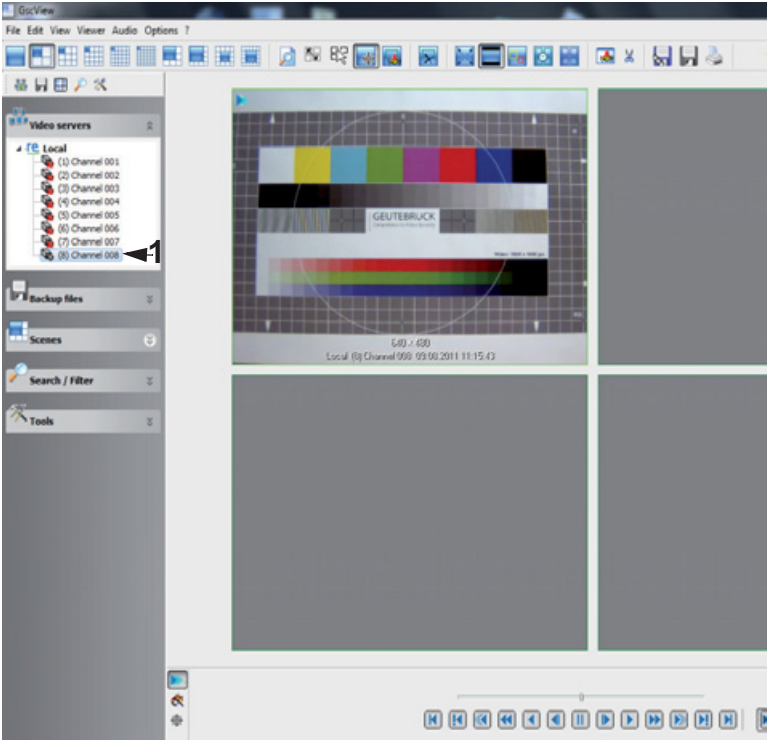


Please note, that the configurations made here will **overwrite** the webbrowser configurations!

Please don't forget to click the icon  on the toolbar to send your modifications to the server.

Close the GSCSetup software.

Start the GSCView software with a double click on the desktop icon **GSCView**.



By click on the camera's media channel (**1**) the camera's video stream will be shown on the selected viewer.

3 Firmware Updates

To ensure that your camera's functionality is up to date, you should periodically check the Downloads section of the GEUTEBRÜCK website to see if a firmware update file is available. The website address is: www.geutebrueck.com

You can use the Surveillance Web Client to view the current firmware version on a camera and to perform a firmware update. For more information about using the client to view the current firmware version or to update firmware, see the camera user's manual. The user's manual can be found on the USB-Stick delivered with your camera or you can download the latest version of the manual from the GEUTEBRÜCK website.

You can also use the IP Camera Finder software (version 1.7 or higher) to view the current firmware version in your camera and to apply firmware update files to the camera (see Section 2.4). Some advantages of the BIP Finder software are that it can be used to view the firmware versions on multiple cameras at once and it can be used to update the firmware version on several cameras simultaneously. For more information about using the BIP Finder to check firmware versions and update firmware, see the BIP Finder help file (the help file is a separate file that is included along with the BIP Finder software).

4 Adjust the Aim, Zoom, and Focus

NOTICE

Using incorrect procedures when aiming the camera head can severely damage the camera.

1. **DO NOT** attempt to aim the camera head by pulling or pushing directly on the lens.
2. **DO NOT** over-pan or over-rotate the camera head. Panning or rotating the camera head too far can damage the cable between the camera base and the camera head.

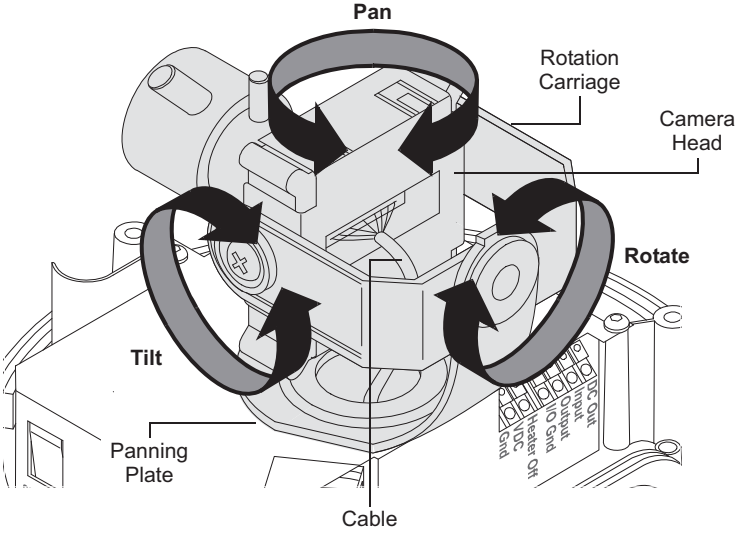
While viewing the live image stream in the Surveillance Web Client:

1. Position the camera head so that the lens is aimed at your desired viewing area. You can tilt, pan, or rotate the camera head as shown in the drawing on the next page. It is not necessary to loosen any screws to tilt, pan, or rotate the camera head.

   To tilt the camera head, grasp the camera head itself (not the lens!) and tilt the head up or down. The amount that you can tilt the head is mechanically limited.

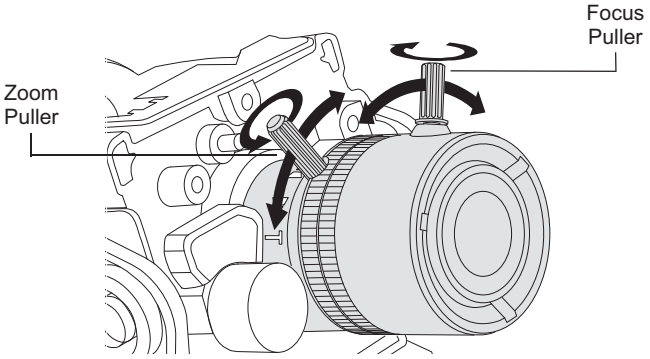
   To pan or rotate the camera head, grasp the sides of the rotation carriage. While grasping the sides of the rotation carriage, you can turn either the panning plate or the rotation carriage. The amount that you can pan or rotate the head is limited by the stress on the cable between the camera base and the camera head.

When you are panning or rotating the camera head, observe the cable and stop the panning or rotation when the cable begins to look like it will become over-stressed.



Note: When adjusting the zoom and focus in the following two steps, keep in mind that the field of view will become slightly smaller when you put the dome in place.

2. Loosen the zoom puller by turning it counter-clockwise as shown in the drawing below. Adjust the zoom factor by moving the puller left and right. When complete, tighten the zoom puller.
3. Loosen the focus puller by turning it counter-clockwise. Adjust the focus by moving the puller left and right. When complete, tighten the focus puller.



For autofocus domes, it is possible to have the focus adjusted automatically by the camera.

Description of the autofocus function (one-touch function) via Web browser

A requirement is the installation of the camera firmware Top_FW 3.9.0.bin. These can be installed directly via the Web browser (tab “System”, tab “Management”, button “Start Firmware Update”) or alternatively installed with the BIP-Finder software **version 1.7** or higher. You can find both on the enclosed USB data drive.

With this function it is possible, after installing the camera and orienting it, to adjust the focus of the lens optimally without having to work on the camera itself. This process is performed automatically once the "One Push Focus" button is pressed and can take a few seconds. This function can be accessed via a Web browser (see Figure 1).

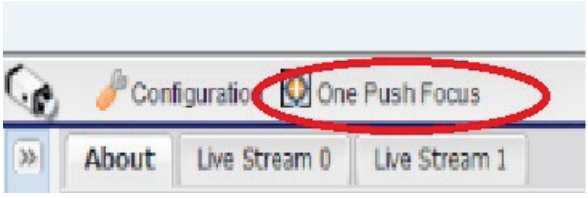


Figure 1) Browser interface with the AF button

This button only needs to be pressed one time (One Touch). The entire field of vision is used as the (focus) reference. The automatic focus correction after changing to night mode or back to day mode should always provide a sharp image, independent of all lighting conditions and environmental factors. Permanent focusing is unnecessary and is not supported.
In some circumstances it may be necessary to focus manually. To access this function, click "Image Controls" and select the tab "Focus" (see Figure 2). With the bar "Focus Position" the current mechanical position of the focus ring is indicated.

Using the 6 "Move Focus" buttons, you can select the step size of the **manual** focus: (from inside to outside) < small >, << medium >>, <<< large >>>.

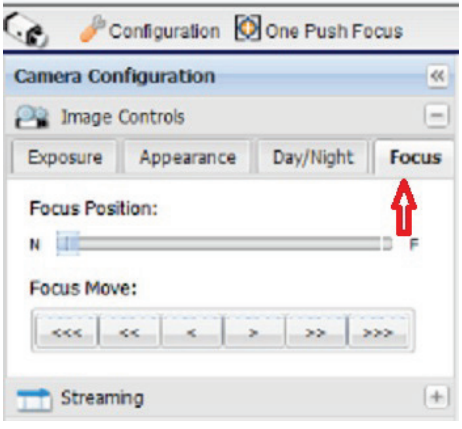


Figure 2) "Image Controls" with the tab "Focus"

Using the function from GSCView and GSCSetup:

There is currently no button in the plugin with which the OPF can be initiated. It is possible, however, to send the action "AutoFocusOn" per event to the camera to trigger the OPF. In addition, with the “TopLineCameraCustomControls” it is possible to use OPF and other settings directly from GSCView.

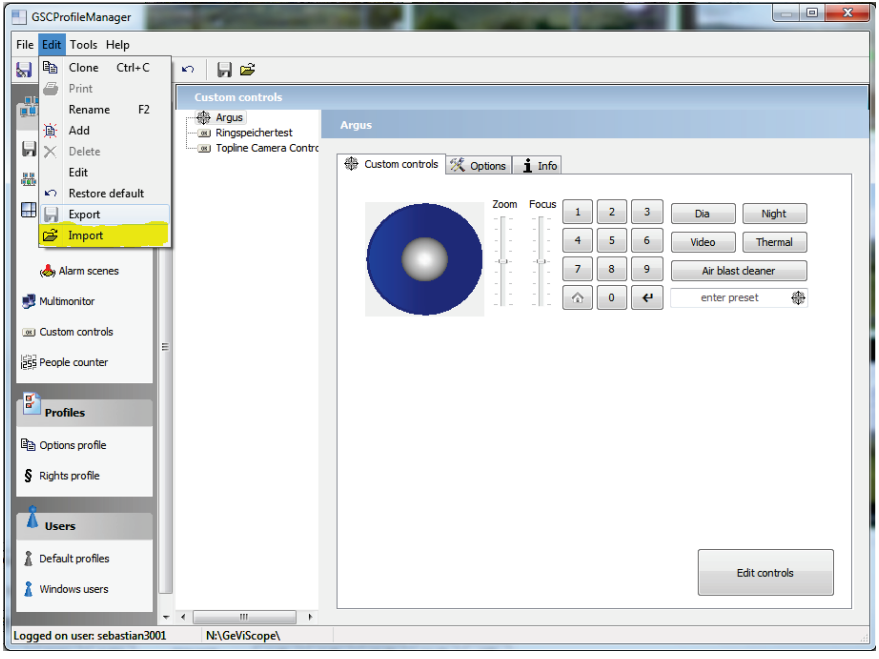
Installation of the TopLine operating elements in the "Custom Controls" area in GSCView

Installation of the Topline camera of custom controls:

Save the file "Topline Camera Control.gvsfe" on your GeViScope/re_porter/GeViStore/GeViHost device in any directory. This file is located on the USB data drive.

Import the file "Topline Camera Control.gvsfe" using the Profile Manager (menu Options/Profilemanager) from GSCView:

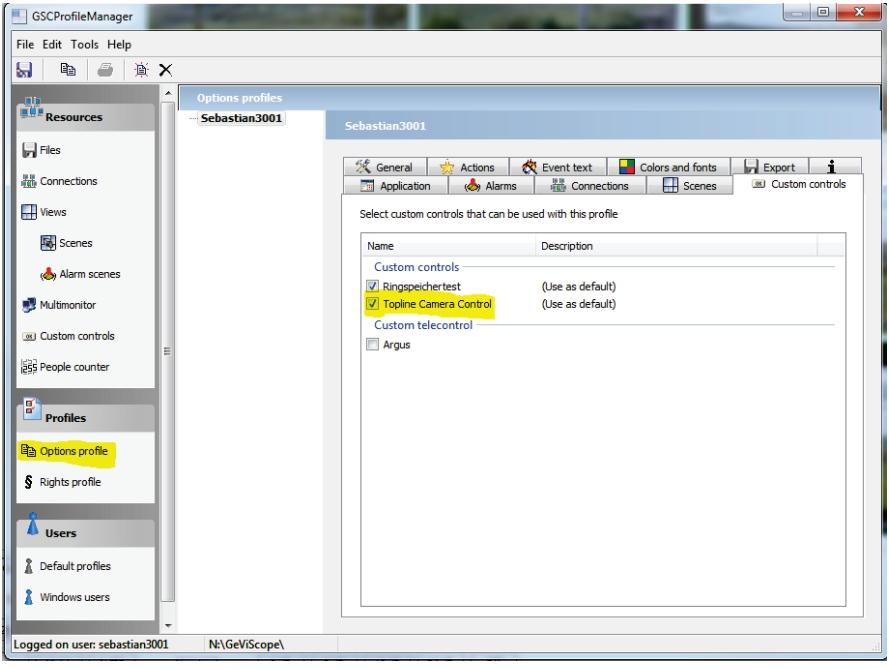
To do so, under "Resources" click "Custom Button" - then click on "Import" in the "Edit" menu. Select the file "Topline Camera Control.gvsfe" that was stored previously on the device.


GSCProfileManager
File Edit Tools Help
Clone Ctrl+C
Print
Rename F2
Add
Delete
Edit
Restore default
Export
Import
Alarm scenes
Multimonitor
Custom controls
People counter
Profiles
Options profile
Rights profile
Users
Default profiles
Windows users
Custom controls
Argus
Ringspeichertest
Topline Camera Contro
Argus
Custom controls
Options
Info
Zoom
Focus
1 2 3
4 5 6
7 8 9
0
Dia
Night
Video
Thermal
Air blast cleaner
enter preset
Edit controls
Logged on user: sebastian3001
N:\GeViScope\

How to enable the custom control sets for each user:

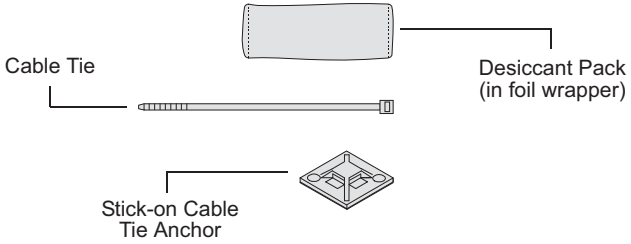
For the buttons to be visible for the corresponding user, they must be activated in the user's option profile.

To accomplish this, select "Custom Buttons" tab in the menu "Profile" under "Option Profile". Activate the checkbox before "Topline Camera Controls" in the profile of the respective user. Please save your changes using "Save Settings" then exit the Profile Manager. The new buttons are now available.

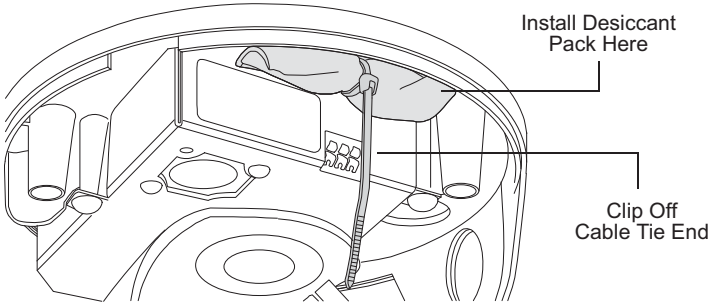

GSCProfileManager
File Edit Tools Help
Resources
Files
Connections
Views
Scenes
Alarm scenes
Multimonitor
Custom controls
People counter
Profiles
Options profile
Rights profile
Users
Default profiles
Windows users
Options profiles
Sebastian3001
Sebastian3001
General
Actions
Event text
Colors and fonts
Export
Application
Alarms
Connections
Scenes
Custom controls
Select custom controls that can be used with this profile
Name
Description
Custom controls
Ringspeichertest
(Use as default)
Topline Camera Control
(Use as default)
Custom telecontrol
Argus
Logged on user: sebastian3001
N:\GeViScope\

5 Complete the Installation

1. Install the desiccant pack (outdoor dome cameras only):
   a. Get the desiccant pack, cable tie, and stick-on cable tie anchor from the installation kit (the desiccant pack will be in a foil wrapper).

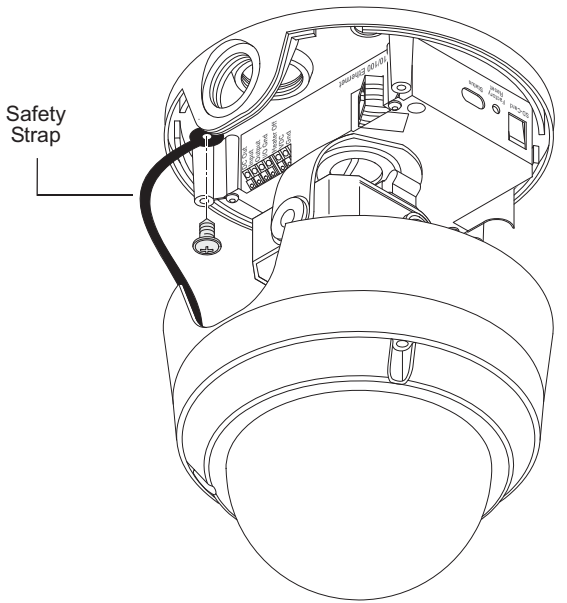


   b. Place the stick-on anchor on the camera base as shown below. Remove the desiccant pack from its foil wrapper, cable tie the desiccant to the anchor, and clip off the end of the cable tie.



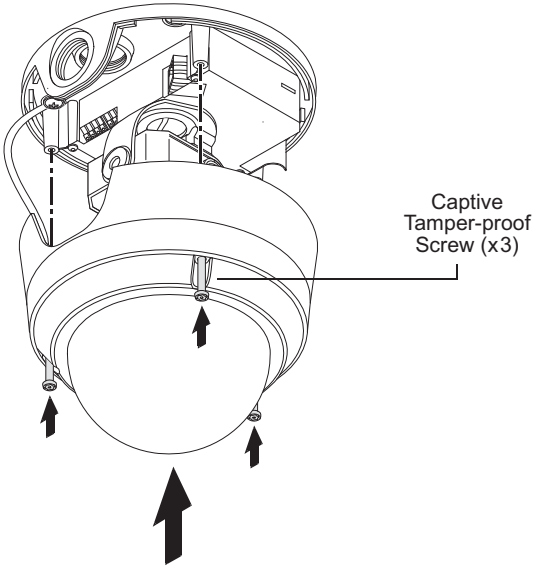
2. If you will be using an SD card, insert the card (either a micro SD or micro SDHC card) into the SD card slot now.
3. Clean the dome with a soft cloth to remove any dust or fingerprints.
4. Use the screw included with the installation kit to attach the safety strap from the dome to the camera base as shown below.

   Note: On dome cameras with a plastic housing, the screw should be tightened to a maximum of 25 cNm (35.4 in-oz). **Overtightening the screw can result in non-repairable damage to the housing.**



5. Use the three captive tamper-proof screws in the dome and the special torx wrench included with the installation kit to mount the dome to the camera base as shown below.

   Before the three screws are completely tightened, rotate the plastic dome so that the clear area in the black coating on the dome is properly aligned with the lens. Once the screws are completely tightened, the plastic dome will be locked in place.



6. With the dome in place, double-check that the camera aim and focus is still correct. Remove the dome and make adjustments, if necessary.

6 The Main Terminal Block

The terminal block on the front of the camera base can be used to:

- provide alternate power to the camera when PoE is not used (this functionality is available on outdoor dome cameras only)
- access the camera's I/O ports
- power a small DC device such as a relay
- limit the camera's power consumption by disabling the camera's heater

NOTICE

Do not apply AC voltages or voltages out of specification to the main terminal block.

1. Apply only DC voltages. Applying AC voltages can severely damage the camera.
2. Make sure that the voltages are within the limits specified in Table 1 on page 50. Applying voltages outside of the specifications can severely damage the camera.

NOTICE

Always switch off camera power before making or breaking connections at the main terminal block.

The assignments for the wire fixing holes in the main terminal block are as shown below and explained in Table 1 on page 50.

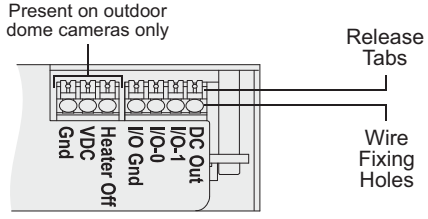


Fig. 3: Main Terminal Block

The main terminal block is a push-in type of connector. Either solid or stranded wires can be inserted into the wire fixing holes in the terminal block. A wire can be removed from a fixing hole by pressing the release tab above the hole and pulling on the wire.

Wires inserted into the fixing holes must have a minimum cross section of 0.2 mm2 (AWG 24) and a maximum cross section of 1.5 mm2 (AWG 16).

8 mm (5/16") of insulation should be stripped from the end of a wire before it is inserted into a fixing hole.

We recommend that connections to the I/O ports be made with shielded cable and that the cable shields be connected to ground. If you are unable to connect the cable shields to ground or if you use unshielded cable, we recommend that you install a ferrite bead on each cable near to the camera to minimize electromagnetic interference.

The functionality of each wire fixing hole in the main terminal block is as described in Table 1.

Hole Name: Gnd (outdoor dome cameras only)
Function: Ground for alternate camera power. **Note:** The ground for alternate camera power, the I/O ground, and the RS-485 ground are all isolated from each other.
Hole Name: VDC (outdoor dome cameras only)
Function: Use this fixing hole to supply alternate power to the camera (i.e., use this connection to supply power to the camera if you are not using PoE). Nominal operating range: +7 to +24 VDC Max power consumption: 10 W @ 12 VDC when the heater is enabled 7 W @12 VDC when heater is disabled
Hole Name: Heater Off (outdoor dome cameras only)
Function: Place a jumper between the Heater Off fixing hole and the Gnd fixing hole to disable the camera's heater. If you are using alternate power, the camera's power consumption will be 10 W when the heater is enabled and 7 W (@ 12 VDC) when the heater is disabled. If you are using PoE, the camera will be Class 2 when the heater is enabled and will be Class 0 when the heater is disabled. This can be useful when you are using the camera with a PoE switch that is only capable of supplying low amounts of power.
Hole Name: I/O Gnd
Function: Ground for the camera's I/O ports **Note:** The ground for alternate camera power, the I/O ground, and the RS-485 ground are all isolated from each other.

Table 1: Main Terminal Block Wire Fixing Hole Assignments

Hole Name: I/O-0, I/O-1

Function: I/O port 0 and I/O port 1 respectively. Each I/O port can be set to operate either as an input or as an output. The choice of whether a particular I/O port will operate as an input or an output and how it will function is made by setting camera parameters (see the camera user's manual for details about setting camera parameters).

For an I/O port set as an input:

In the schematic drawing on page 54, I/O-0 has been set to operate as an input. Normally, you will connect an input port to I/O ground via a switch as illustrated in the schematic.

As indicated in the table below, an input port will be detected by the camera as active or inactive depending on whether the switch is open or closed and whether the port is or is not set to invert.

See the camera user's manual for more information about setting a port to invert.

Switch Condition	Port Set To Invert	Input Detected As
Open	No	Inactive
Closed	No	Active
Open	Yes	Active
Closed	Yes	Inactive

(I/O-0, I/O-1 description continued on the next page.)

Table 1: Main Terminal Block Wire Fixing Hole Assignments

(I/O-0, I/O-1 description continued from the previous page.)

For an I/O port set as an output:

In the schematic drawing on page 54, I/O-1 has been set to operate as output. An output port employs an open collector transistor connected to ground as shown in the schematic.
As indicated in the table below, an output port will or will not be connected to ground via the transistor depending on the state of the port and whether the port is or is not set to invert.

See the camera user's manual for more information about setting a port to invert.

Note: If an output port has been set to invert and you restart the camera or you power it off and back on, the port will not invert during the camera bootup process and will return to inverted once the bootup process is complete.

Output State	Port Set To Invert	Output Pin Connected to Ground
Inactive	No	No
Active	No	Yes
Inactive	Yes	Yes
Active	Yes	No

The maximum load is 100 mA and the maximum voltage is +24 VDC.
If an inductive load such as a relay is connected to an output port, a diode must be connected in parallel with the load as shown in the schematic drawing on page 48.

Table 1: Main Terminal Block Wire Fixing Hole Assignments

Hole Name: DC Out
Function: DC Out supplies unregulated +5.6 VDC and can be used to power a small device such as a relay. For example, the relay shown in the schematic drawing on page 48 could be connected to DC Out rather than to an external source of power. The maximum allowed load on DC Out is 50 mA. If an inductive load such as a relay is used with DC Out, a diode must be connected in parallel with the load as shown in the schematic page 54.

Table 1: Main Terminal Block Wire Fixing Hole Assignments

By default, I/O port 0 is set as an output with its function set to user settable and I/O port 1 is set as an input with its function set to monitor. The explanations in Table 1 and the schematic on page 54 assume that you have changed the port settings.

We recommend that I/O connections be made with shielded cable and that the cable shields be connected to ground. If you are unable to connect the cable shields to ground or if you use unshielded cable, we recommend that you install a ferrite bead near to the camera on each cable to minimize electromagnetic interference.

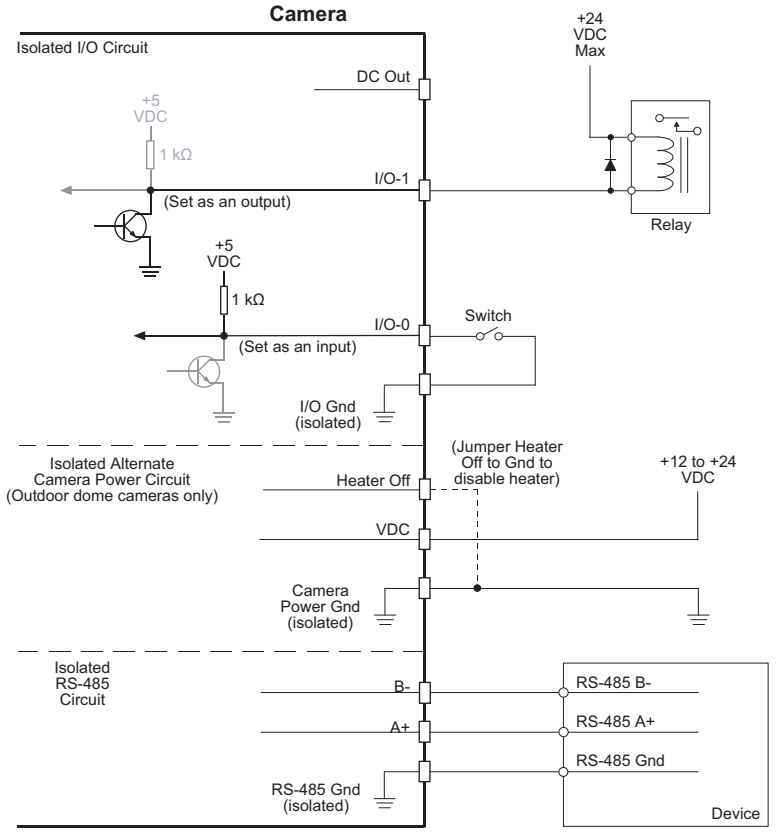


Fig. 4: I/O, Alternate Power and RS-485 Schematic

7 The RS-485 Terminal Block

The 3-hole terminal block on the right side of the camera base can be used to make an RS-485 connection to the camera.

The assignments for the wire fixing holes in the terminal block are as shown below. The A+, B-, and Gnd connections are standard for an RS-485 connection. The RS-485 ground is isolated from the camera's power ground and I/O ground.

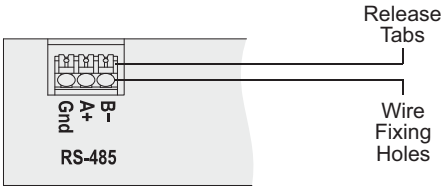


Fig. 5: RS-485 Terminal Block

The terminal block is a push-in type of connector. Either solid or stranded wires can be inserted into the wire fixing holes in the terminal block. A wire can be removed from a fixing hole by pressing the release tab above the hole and pulling on the wire.

Wires inserted into the fixing holes must have a minimum cross section of 0.2 mm^2 (AWG 24) and a maximum cross section of 1.5 mm^2 (AWG 16).

8 mm (5/16") of insulation should be stripped from the end of a wire before it is inserted into a fixing hole.

8 Specifications

Technical specifications	TopFD-2284
Image sensor (Chip)	1/3" Sony CCD
Picture format	4:3 / 16:9 / multiple areas of interest (AOI)
Scanning system	Progressive scan
Mega pixel	1.3 MP
Pixel (H x V)	1280 (H) x 960 (V) effective
Pixel size	3.75 µm x 3.75 µm
Minimum sensitivity:	
Color	0.42 Lux / F1.3 (IR Cut Filter)
B/W	0,10 Lux / F1,3 (IR Pass Filter)
Day/Night function	Removable IR-Cut Filter
White balance	Automatic
Exposure	Automatic / Manual
Shutter	Automatic electronic (AES),
Back Light Compensation	Automatic
Flickerless	Automatic
Automatic gain control (AGC)	Yes
Electronic PTZ function	Yes
Text overlay	Yes
Interface	Browser interface
Mirror-Function	V, H, both
Image rotation	180° Image rotation
Compression	H264CCTV (GEUTEBRÜCK), MJPEG (Multiple compression levels), H.264 (with 3rd party systems)
Picture rate (full resolution)	H264CCTV: 30 fps; H.264: 30 fps; MJPEG: 30 fps
Resolutions	From 64 x 64 up to 1280 x 960 pixel (free scaling)

Video Streaming	Multi-encoding and Multi-streaming for H264CCTV, MJPEG and MPEG4; VBR and CBR for H264CCTV, MJPEG und MPEG4
Protocols	TCP/IP, HTTP, FTP, UDP, ICMP, ARP, DHCP, NTP, RTP, RTSP, RTCP, SMTP, IGMP, ZEROCONF, QoS Layer 3, ONVIF
Processor / Memory	Multimedia Video Processor, FPGA; 256 MB RAM, 32 MB Flash
Motion detection	Yes
Alarm management	Ring buffer for pre- and post alarm; Events triggered via Motion Detection or external input; Image upload over FTP, email or HTTP
Privacy masking	Yes
Lens	2.8 mm to 10 mm (variable)
Angle of view	f = 2.8 mm / 81° (H) x 66° (V) f = 10 mm / 27° (H) x 20° (V)
Camera angle adjustment range	Horizontal: +/- 180° Vertical: 130° Rotation: 360°
Operating temperature	-40 °C to + 50 °C
Voltage supply	PoE (IEEE 802.3af class 0) or 12 - 24 V DC
Power consumption	Max. 7 W / 12 V DC (w/o heater) and max. 10 W (incl. heater and fan)
Dimensions in mm (Dia x H)	148 x 122
Connectors	RJ-45 for 10/100 BASE-T Ethernet, full or half duplex; 8-pin terminal for power supply, digital I/O, RS-485
Weight	Approx. 1000 g
IP class	IP 66
Certifications	DIN EN 50130-4, FCC, CE, RoHS
Licensing	Licence/GSC/IP-Cam (8.31150) built-in
Accessories	Built-in heater and fan, Data USB-Stick
Brand	GEUTEBRUECK
Order No.	**5.02831**

Note: For more specifications, see also *www.geutebrueck.com*.

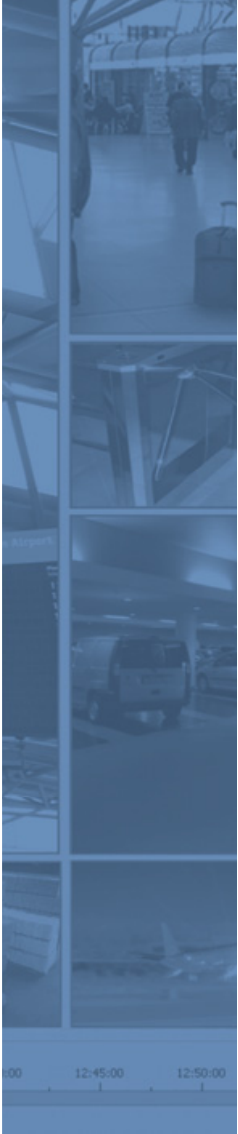
Technical specifications	**TopFD-2126 / TopFD-2132-AF**
Image sensor (Chip)	1/3" CMOS
Picture format	4:3 / 16:9 / multiple areas of interest (AOI)
Scanning system	Progressive scan
Mega pixel	2 MP
Pixel (H x V)	1920 (H) x 1440 (V) effective
Pixel size	2,2 µm x 2,2 µm
Minimum sensitivity:	
Color	0,88 Lux / F1.3 (IR Cut Filter)
B/W	0,15 Lux / F1,3 (IR Pass Filter)
Day/Night function	Removable IR-Cut Filter
White balance	Automatic
Exposure	Automatic / Manual
Shutter	Automatic electronic (AES),
Back Light Compensation	Automatic
Flickerless	Automatic
Automatic gain control (AGC)	Yes
Electronic PTZ function	Yes
Text overlay	Yes
Interface	Browser interface
Mirror-Function	V, H, both
Image rotation	180° Image rotation
Compression	H264CCTV (GEUTEBRÜCK), MJPEG (Multiple compression levels), H.264 (with 3rd party systems)
Picture rate (full resolution)	H264CCTV: 20/30 fps; H.264: 20/30 fps; MJPEG: 20/30 fps
Resolutions	From 160 x 120 up to 1920 x 1440 pixel (free scaling)
Video Streaming	Dual-streaming for H264CCTV, MJPEG; VBR and CBR for H264CCTV, MJPEG

Protocols	TCP/IP, HTTP, FTP, UDP, ICMP, ARP, DHCP, NTP, RTP, RTSP, RTCP, SMTP, IGMP, ZEROCONF, QoS Layer 3, ONVIF
Processor / Memory	Multimedia Video Processor, FPGA; 256 MB RAM, 32 MB Flash
Motion detection	Yes
Alarm management	Ring buffer for pre- and post alarm; Events triggered via Motion Detection or external input; Image upload over FTP, email or HTTP
Privacy masking	Yes
Lens Focus	2.8 mm to 10 mm (variable) manual / auto
Angle of view	f = 2.8 mm / 81° (H) x 66° (V) f = 10 mm / 27° (H) x 20° (V)
Camera angle adjustment range	Horizontal: +/- 180° Vertical: 130° Rotation: 360°
Operating temperature	-10°C to + 50°C
Voltage supply	only PoE (IEEE 802.3af class 2)
Power consumption	Max. 5,5 W
Dimensions in mm (Dia x H)	148 x 122
Connectors	RJ-45 for 10/100 BASE-T Ethernet, full or half duplex; 8-pin terminal for power supply, 3 digital I/O, RS-485
Weight	Approx. 600 g
Certifications	DIN EN 50130-4, FCC, CE, RoHS
Licensing	Licence/GSC/IP-Cam (8.31150) built-in
Accessories	Data USB-Stick
Brand	GEUTEBRUECK
Order No.	**5.02822 / 5.02823**

Technical specifications	TopFD-2229 / TopFD-2234-AF
Image sensor (Chip)	1/3" CMOS
Picture format	4:3 / 16:9 / multiple areas of interest (AOI)
Scanning system	Progressive scan
Mega pixel	2,7 MP
Pixel (H x V)	1920 (H) x 1440 (V) effective
Pixel size	2,2 µm x 2,2 µm
Minimum sensitivity:	
Color	0,88 Lux / F1.3 (IR Cut Filter)
B/W	0,15 Lux / F1,3 (IR Pass Filter)
Day/Night function	Removable IR-Cut Filter
White balance	Automatic
Exposure	Automatic / Manual
Shutter	Automatic electronic (AES),
Back Light Compensation	Automatic
Flickerless	Automatic
Automatic gain control (AGC)	Yes
Electronic PTZ function	Yes
Text overlay	Yes
Interface	Browser interface
Mirror-Function	V, H, both
Image rotation	180° Image rotation
Compression	H264CCTV (GEUTEBRÜCK), MJPEG (Multiple compression levels), H.264 (with 3rd party systems)
Picture rate (full resolution)	H264CCTV: 20/30 fps; H.264: 20/30 fps; MJPEG: 20/30 fps
Resolutions	From 160 x 120 up to 1920 x 1440 pixel (free scaling)
Video Streaming	Dual-streaming for H264CCTV, MJPEG; VBR and CBR for H264CCTV, MJPEG

Audio	Bi-directional (half duplex / G.711)
Protocols	TCP/IP, HTTP, FTP, UDP, ICMP, ARP, DHCP, NTP, RTP, RTSP, RTCP, SMTP, IGMP, ZEROCONF, QoS Layer 3, ONVIF
Processor / Memory	Multimedia Video Processor, FPGA; 256 MB RAM, 32 MB Flash
Motion detection	Yes
Alarm management	Ring buffer for pre- and post alarm; Events triggered via Motion Detection or external input; Image upload over FTP, email or HTTP
Privacy masking	Yes
Lens Focus	2.8 mm to 10 mm (variable) manual / auto
Angle of view	f = 2.8 mm / 81° (H) x 66° (V) f = 10 mm / 27° (H) x 20° (V)
Camera angle adjustment range	Horizontal: +/- 180° Vertical: 130° Rotation: 360°
Operating temperature	-40°C to + 50°C
Voltage supply	PoE (IEEE 802.3af class 0) or 12 - 24 V DC
Power consumption	Max. 7 W / 12 V DC (excl. heater)
Dimensions in mm (Dia x H)	148 x 122
Connectors	RJ-45 for 10/100 BASE-T Ethernet, full or half duplex; 8-pin terminal for power supply, 3 digital I/O, RS-485
Weight	Approx. 1000 g
IP class	IP 66
Certifications	DIN EN 50130-4, FCC, CE, RoHS
Licensing	Licence/GSC/IP-Cam (8.31150) built-in
Accessories	Built-in heater and fan, Data USB-Stick
Brand	GEUTEBRUECK
Order No.	**5.02827 / 5.02828**

Note



Technical alterations reserved.

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