VSC206

EN

OPERATING MANUAL
VIDEOSCOPE

TROTEC

TRT-BA-VSC206-TC220630TTRT04-006-EN

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Notes regarding the operating manual

Symbols

Warning of electrical voltage
This symbol indicates dangers to the life and health of persons due to electrical voltage.

Warning
This signal word indicates a hazard with an average risk level which, if not avoided, can result in serious injury or death.

Caution
This signal word indicates a hazard with a low risk level which, if not avoided, can result in minor or moderate injury.

Note
This signal word indicates important information (e.g. material damage), but does not indicate hazards.

Info
Information marked with this symbol helps you to carry out your tasks quickly and safely.

Follow the manual
Information marked with this symbol indicates that the operating manual must be observed.

You can download the current version of the operating manual and the EU declaration of conformity via the following link:

VSC206

https://hub.trotec.com/?id=41280

Safety

Read this manual carefully before starting or using the device. Always store the manual in the immediate vicinity of the device or its site of use.

Warning
Read all safety warnings and all instructions. Failure to follow the warnings and instructions may result in electric shock, fire and/or serious injury. **Save all warnings and instructions for future reference.**

- Do not use the device in potentially explosive rooms or areas and do not install it there.
- Do not use the device in aggressive atmosphere.
- Do not use the device in atmospheres containing oil, sulphur, chlorine or salt.
- Protect the device from permanent direct sunlight.
- Do not remove any safety signs, stickers or labels from the device. Keep all safety signs, stickers and labels in legible condition.
- Do not open the device.
- Observe the storage and operating conditions (see Technical data).
- Never insert non-rechargeable batteries into the charger. A charger that is suitable for one type of battery pack may create a risk of fire and explosion, when used with another battery pack or non-rechargeable batteries.
- Do not expose the charger to rain or wet conditions. Water entering an electrical appliance increases the risk of electric shock.
- Keep the charger clean. Contamination entails a risk of electric shock.
- Check the charger, cable and plug before each use. Do not use the charger if you detect any damages to the device. Do not open the charger and have it repaired only by qualified personnel and only with original spare parts. Damaged chargers, cables and plugs increase the risk of electric shock.

- Do not operate the charger on highly combustible ground (e.g. textiles, paper etc.) or in an inflammable environment. The heat generated by the charger during charging entails a risk of fire.
- Do not cover the venting slots of the charger. The charger may otherwise overheat and no longer function correctly.
- In case of damage and improper use of batteries, vapours may be emitted. Provide for fresh air and seek medical help in case of complaints. The vapours can irritate the respiratory system.
- Under abusive conditions, liquid may be ejected from a battery. Avoid contact with liquid ejected from the battery as it may cause skin irritation or burns. If contact accidentally occurs, flush with water. Seek medical help if this liquid contacts eyes.

Intended use

Only use the device for the visualization of objects.

To use the device for its intended use, only use accessories and spare parts which have been approved by Trotec.

Foreseeable misuse

Do not use the device in potentially explosive areas. Never use the device on persons or animals. Trotec accepts no liability for damages resulting from improper use. In such a case, any warranty claims will be voided. Any unauthorised modifications, alterations or structural changes to the device are forbidden.

Personnel qualifications

People who use this device must:

- have read and understood the operating manual, especially the Safety chapter.

Residual risks

Warning of electrical voltage

Electric shock due to contact with live parts! Do not touch any live parts. Secure neighbouring live parts by covering them or by switching them off.

Warning of electrical voltage

There is a risk of a short-circuit due to liquids penetrating the housing!
Do not immerse the device and the accessories in water. Make sure that no water or other liquids can enter the housing.

Warning of electrical voltage

Work on the electrical components must only be carried out by an authorised specialist company!

Warning of electrical voltage

Before any work on the device, remove the mains plug from the mains socket and the battery from the device! Hold onto the mains plug while pulling the power cable out of the mains socket.

Warning of explosive substances

Do not expose the batteries to temperatures above 60 °C! Do not let the batteries come into contact with water or fire! Avoid direct sunlight and moisture. There is a risk of explosion!

Warning

Risk of suffocation!
Do not leave the packaging lying around. Children may use it as a dangerous toy.

Warning

The device is not a toy and does not belong in the hands of children.

Warning

Dangers can occur at the device when it is used by untrained people in an unprofessional or improper way! Observe the personnel qualifications!

Caution

Keep a sufficient distance from heat sources.

Note

To prevent damages to the device, do not expose it to extreme temperatures, extreme humidity or moisture.

Note

To prevent water damages to the device, please observe the different types of protection of the housing and the gooseneck probe.
The housing is splash-proof (IP54), the gooseneck probe can be immersed in water (IP67, 1 m / 30 min).

Note

Using the device continuously over several hours causes an increased heat generation in the LEDs in the probe tip. To increase the lifetime of both the LEDs and the imaging sensor we recommend allowing the device to cool down at ambient temperatures for at least 10 to 15 minutes with the power switched off after a long period of use.

Note

Do not use abrasive cleaners or solvents to clean the device.

Information about the device

Device description

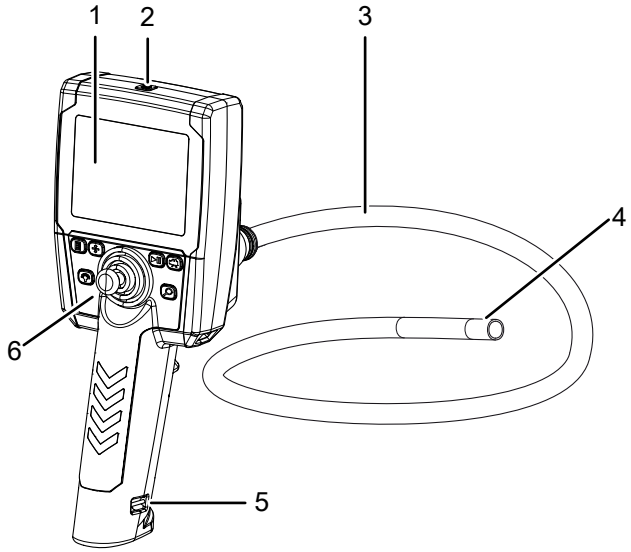
The device VSC206 serves for inspecting concealed machine components and poorly accessible or inaccessible hollows.

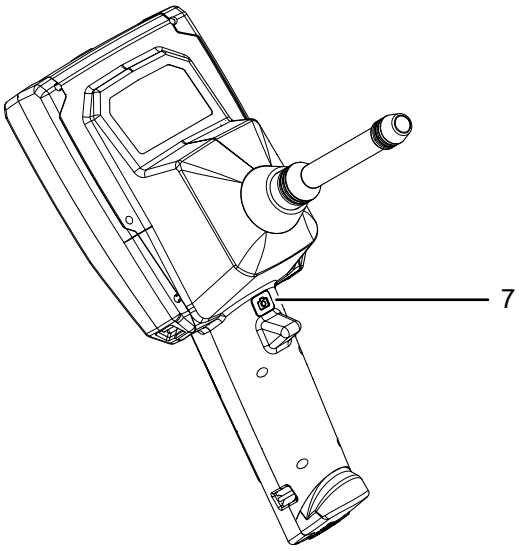
A high-resolution camera and a moveable camera head with an adjustable, bright LED illumination are available for the display and capturing/recording of images and videos.

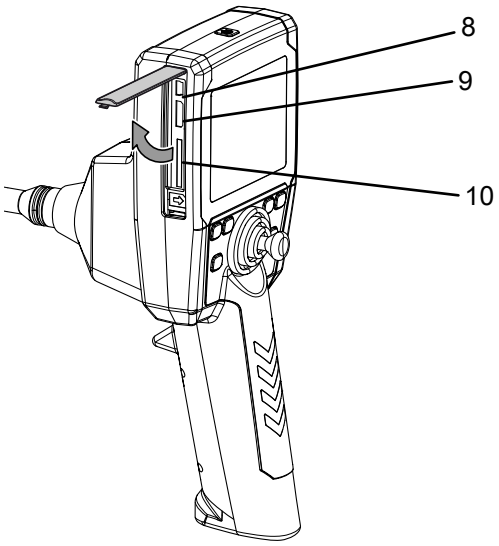
The device's functions can be controlled via an integrated operator software.

The recordings and measurements can be stored on an SD card and transmitted via a USB interface.

Device depiction

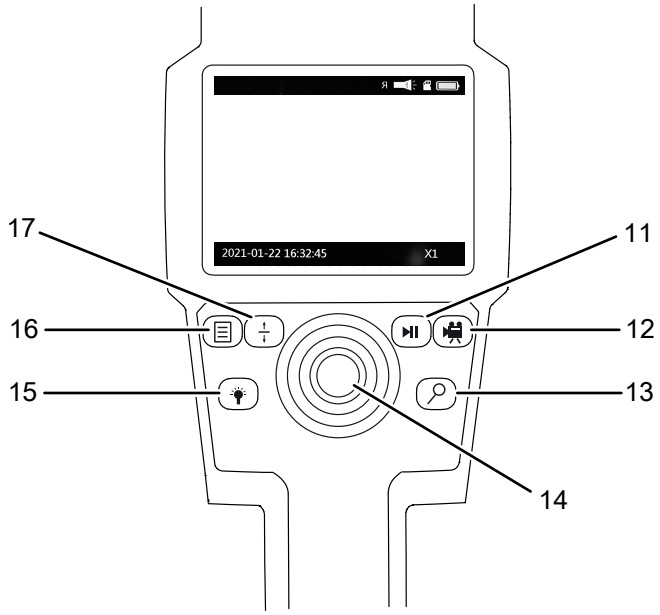






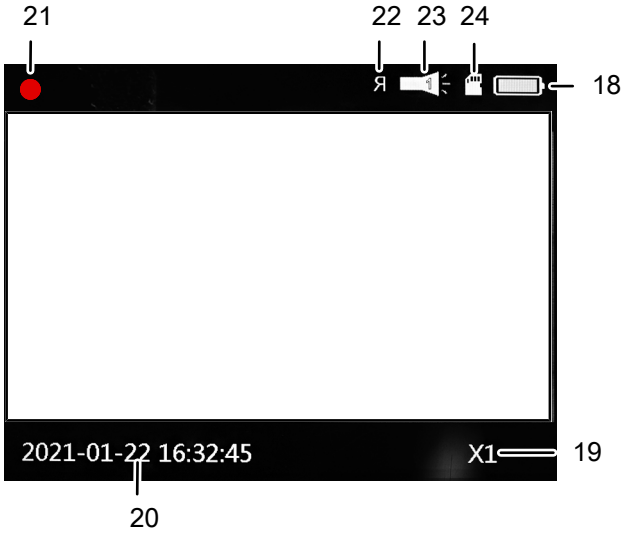
No.	Designation
1	Display
2	Power button
3	Probe cable
4	Camera head with 4-way articulation
5	Battery compartment with battery holder
6	Operating elements with joystick
7	Photo/OK button
8	USB interface
9	HDMI interface
10	SD card slot

Control panel



No.	Designation
11	Play button
12	Video button
13	Zoom button
14	Joystick
15	Brightness button
16	Menu button
17	Up/Down button

Display



No.	Display element	
18	Battery	battery state of charge
19	Zoom	current zoom factor
20	Time/date stamp	indicates the current date/time
21	Recording	Current recording with time display (video)
22	Rotation	Is used to mirror the camera display and to turn it upside down
23	Lamp	illumination
24	SD card	indicates whether an SD card is inserted

Technical data

Parameter	Value	
Model	**VSC206**	
System	Type of lighting	6 white LEDs (colour temperature 5,000 to 6,000 K)
	Luminous intensity	40,000 lux
	White balance	Default setting ex works
	Brightness control	manually adjustable
	LCD display	3.5 inch TFT LCD (640 x 480 px)
	Memory	slot for removable SD card (max. 32 GB)
	File formats	JPEG image format, AVI video format
	Power supply	4 x rechargeable batteries AA, 1.2 V, or batteries AA, 1.5 V
	Operating time	≤ 2 h
	Video connection	HDMI
	USB port	mini USB type B
Probe	Dimensions	Length 2 m, ø 6 mm
	Design	Exterior: stainless steel wire mesh for high torsional stability, inner layer: polyurethane on steel spiral
	Bending	up / down / left / right ≈ 120°
Camera	Image sensor	CMOS
	Resolution	350,000 pixels
	Field of vision	Bending angle > 90°
	Joint movement	360°
	Camera head	stainless steel with titanium coating
	Zoom	5x digital
Control software	Operator guidance	simple interactive menu control, menu navigation via joystick
	Available menu languages	English, Chinese, German, French, Spanish, Italian, Russian and Japanese
	Software functions	system settings, video settings, memory functions
Ambient conditions	Temperature	-10 °C to +50 °C
	Humidity	< 90 % RH
	Type of protection (housing)	IP54 , splash-proof
	Protection type (probe)	IP67 (The probe can be used in oil, light oil and water with a salt content of 5 %)
Physical characteristics	Construction	ABS housing with integrated bumpers
	Dimensions	280 x 90 x 152 mm
	Weight	590 g (incl. batteries)

Scope of delivery

- 1 x Videoscope VSC206
- 4 x NI-MH batteries, 1.2 V
- 1 x Transport case
- 1 x Battery charger with mains plug
- 1 x Quick guide
- 1 x SD card
- 1 x LCD cleaning cloth

Transport and storage

Note

If you store or transport the device improperly, the device may be damaged.
Note the information regarding transport and storage of the device.

Transport

For transporting the device, use the transport case included in the scope of delivery in order to protect the device from external influences.

Storage

When the device is not being used, observe the following storage conditions:

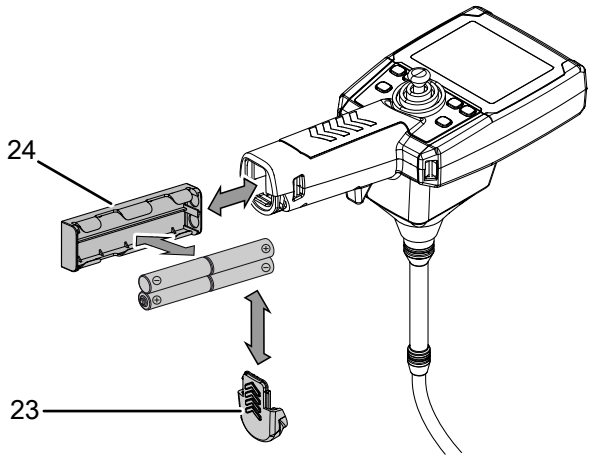
- dry and protected from frost and heat
- protected from dust and direct sunlight
- For storing the device, use the transport case included in the scope of delivery in order to protect the device from external influences.
- the storage temperature complies with the values specified in the Technical data
- When storing the device for an extended period of time, remove the battery/batteries.

Operation

Inserting the batteries

Note

Make sure that the surface of the device is dry and the device is switched off.



1. Remove the cover (23) from the battery compartment by sliding it in the direction of the arrow.
2. Take out the battery holder (24).
3. Insert the batteries in the battery holder with correct polarity.

Inserting the SD card

1. Open the rubber tab on the left side of the device.
2. Insert the SD card in the SD card slot (10).
3. Slightly press down the SD card until it engages.
4. Close the rubber tab.

Switching on and off

1. Briefly press the Power button (2).
   ⇨ The display is switched on.
   ⇨ The device is ready for operation.
   ⇨ The device always starts in camera mode. This mode allows you to take pictures and record videos.
2. Press the Power button (2) for approx. 3 seconds.
   ⇨ The device switches off.

Aligning / moving the camera

Info

Please note that the surface of the netting at the probe exterior may fray over time depending on the mechanical stress (e.g. when in contact with sharp-edged objects). This does not constitute a defect of the device but normal wear and tear, which cannot be avoided.

1. Use the joystick (14) to move the camera (4) in the desired direction.

Taking a picture

✓ The device is in camera mode.

1. Press the Photo/OK button (7).
   ⇨ The picture is taken.

Recording a video

Info
It is possible to take pictures at the same time while you are recording a video. Video recording is not interrupted.

1. Press the video button (12) to record a video.
   ⇨ The recording is started.
   ⇨ During recording, the recording symbol (21) is displayed in the top left of the display.
2. Press the video button (12) again.
   ⇨ The recording is stopped.

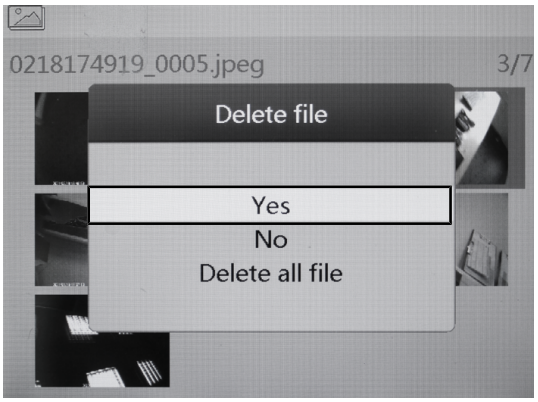
Viewing recordings

1. Press the Play button (11).
   ⇨ The videoscope switches to picture view and video view.
2. Press the Up/Down button (17).
   ⇨ The different recordings will be displayed on the screen.
   ⇨ Press the Photo/OK button (7) to play a video or, if necessary, to pause, or to view the pictures.
3. Press the Zoom button (13) to enlarge the picture.
   ⇨ 2-, 3- or 4- fold zoom is possible by pressing the Zoom button (13) several times.
4. Press the video button (12).
   ⇨ The picture view is stopped.
   ⇨ The videoscope switches back to recoding mode.

Info
You can also view the recordings on an external monitor (e.g. a TV). To do so, connect an HDMI cable to the HDMI interface (9) and connect the HDMI cable to a monitor/TV.

Deleting pictures or videos

1. Press the Play button (11).
   ⇨ The videoscope switches to picture view.
2. Press the Up/Down button (17) or the brightness button (15) until the desired recording is displayed.
3. Press the Menu button (16).
   ⇨ The submenu for deleting (*Delete file*) will be displayed.



4. Select the desired setting:
   ⇨ Select *Yes* to delete the file.
   ⇨ Select *Delete all file* to delete all files.
   ⇨ Select *No* to cancel the process.
5. Confirm the selection by pressing the Photo/OK button (7).
   ⇨ The selected action is executed.

Saving picutres and videos on a computer

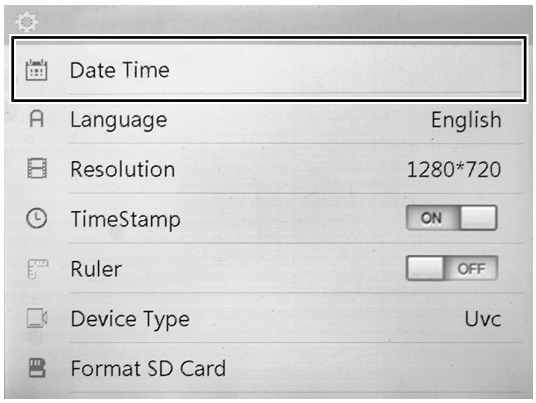
You have the option to transmit any stored pictures and videos to a computer. This can be done in two ways:

- Remove the SD card and insert it into the SD card slot of the computer (if the computer has an SD card slot).
- Use a USB cable (mini-USB, type B, not included in the scope of delivery) to connect the device to a computer.

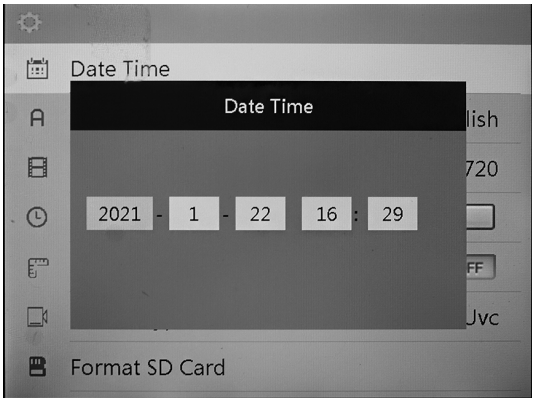
Software

Set date and time

1. Press the Menu button (16).
   ⇨ The selection menu will be displayed.



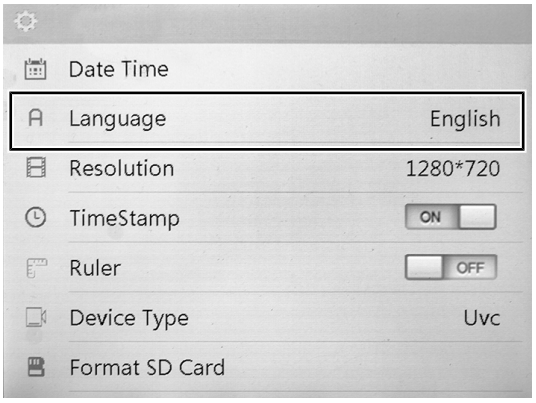
2. Select the menu item *Date Time* by use of the Up/Down button (17).
3. Confirm the selection by pressing the Photo/OK button (7).
   ⇨ The *Date and time* submenu will be displayed.
   ⇨ The date is indicated in year/month/day format.
   ⇨ The time is indicated in the hours/minutes format.



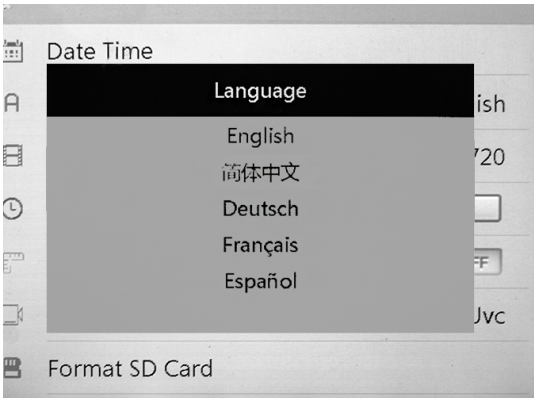
4. Use the Up/Down button (17) to select the desired year.
5. Press the Zoom button (13).
   ⇨ The field for the month is now enabled.
   ⇨ The settings are made as described for the year.
   ⇨ Repeat the procedure for the day format or for the hours/minutes format.
6. Press the Photo/OK button (7).
   ⇨ The settings are saved and the selection menu is displayed.

Setting the language

1. Press the Menu button (16).
   ⇨ The selection menu will be displayed.



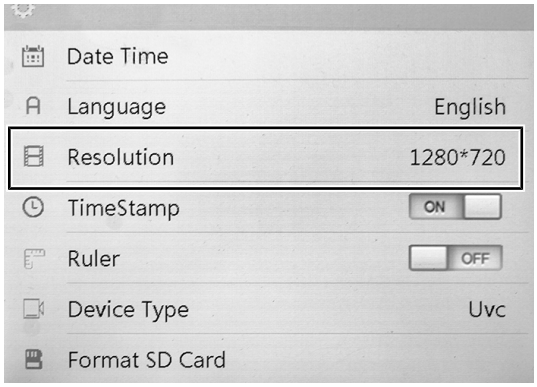
2. Select the menu item *Language* by use of the Up/Down button (17).
3. Confirm the selection by pressing the Photo/OK button (7).
   ⇨ The *Language* submenu will be displayed.



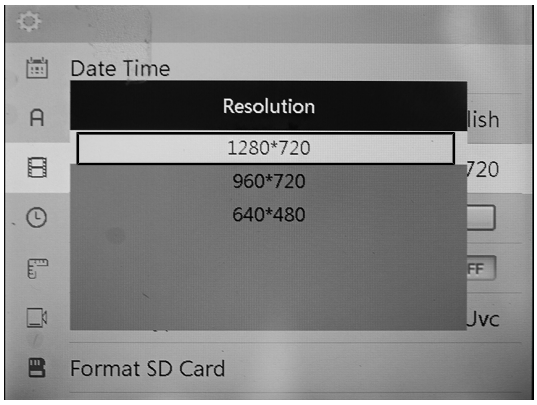
4. Use the Up/Down button (17) to select the desired language.
5. Confirm the selection by pressing the Photo/OK button (7).
   ⇨ The desired language will be set and the selection menu will be displayed.

Setting the resolution

1. Press the Menu button (16).
   ⇨ The selection menu will be displayed.



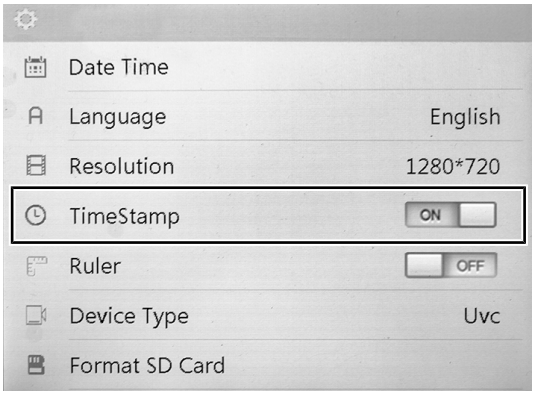
2. Select the menu item *Resolution* by use of the Up/Down button (17).
3. Confirm the selection by pressing the Photo/OK button (7).
   ⇨ The *Resolution* submenu will be displayed.



4. Use the Up/Down button (17) to select the desired resolution:
   ⇨ Press *1280*720* to set a high resolution.
   ⇨ Press *960*720* to set a normal resolution.
   ⇨ Press *640*720* to set a low resolution.
5. Confirm the selection by pressing the Photo/OK button (7).

Setting the time stamp

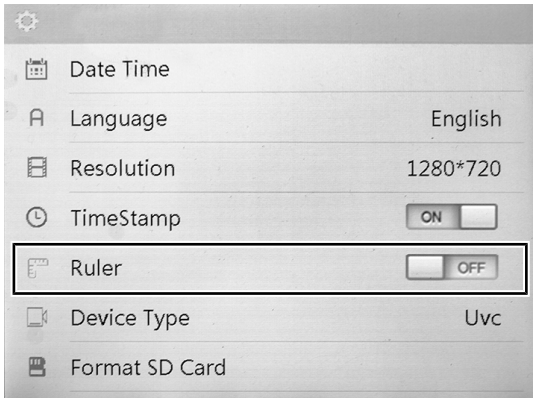
1. Press the Menu button (16).
   ⇨ The selection menu will be displayed.



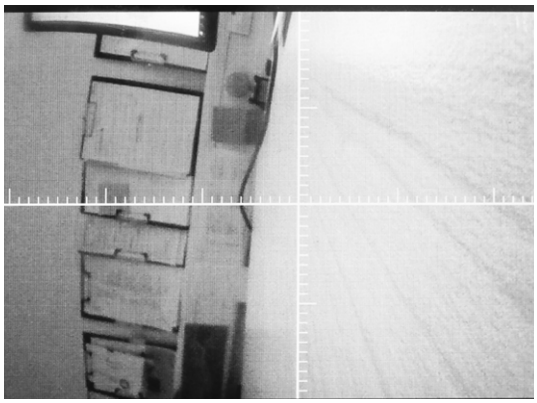
2. Select the menu item *TimeStamü* by use of the Up/Down button (17).
   ⇨ Press *On* to enable the time stamp.
   ⇨ Press *Off* to disable the time stamp.
3. Confirm the selection by pressing the Photo/OK button (7).
   ⇨ The time stamp will be set and the selection menu will be displayed.

Setting the ruler

1. Press the Menu button (16).
   ⇨ The selection menu will be displayed.

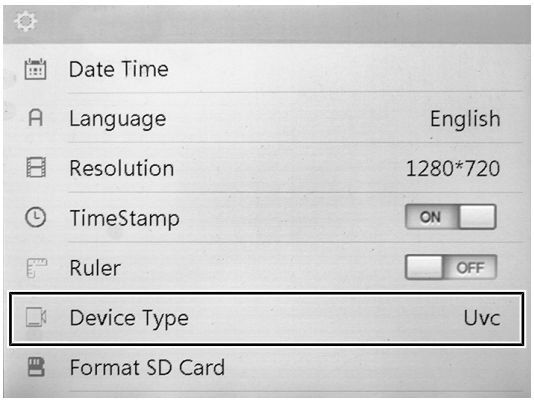


2. Select the menu item *Ruler* by use of the Up/Down button (17).
   ⇨ Press *On* to apply the ruler.
   ⇨ Press *Off* to hide the ruler.
3. Confirm the selection by pressing the Photo/OK button (7).
   ⇨ The process will be executed and the selection menu will be displayed.



Device type

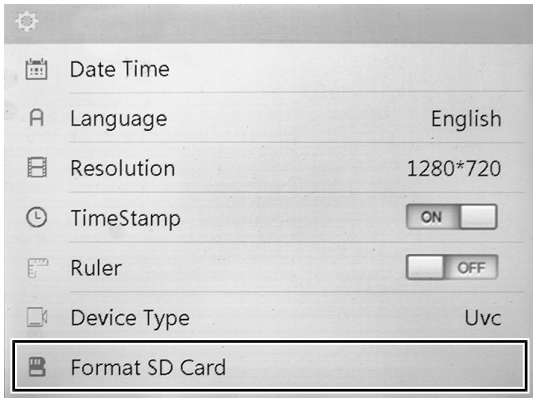
1. Press the Menu button (16).
   ⇨ The selection menu will be displayed.



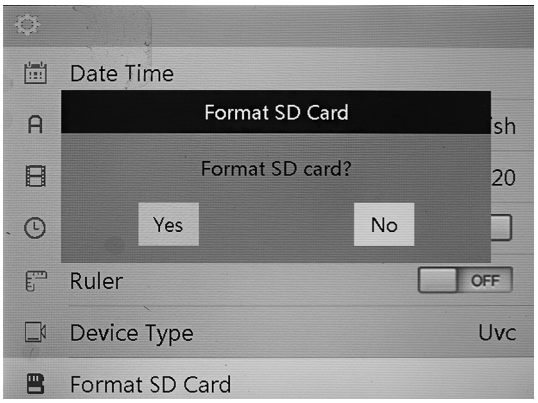
⇨ The current signal type of the device is displayed. This parameter cannot be changed.

Formatting the SD card

1. Press the Menu button (16).
   ⇨ The selection menu will be displayed.



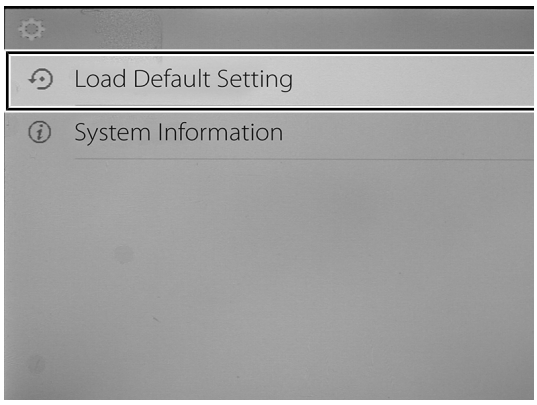
2. Select the menu item *Format SD Card* by use of the Up/Down button (17).
3. Confirm the selection by pressing the Photo/OK button (7).
   ⇨ The *Format SD Card* submenu will be displayed.



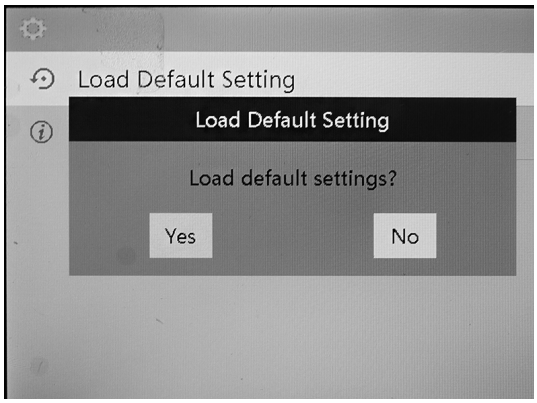
4. Use the Up/Down button (17) to select the desired setting.
   ⇨ If you press *Yes*, the SD card will be formatted.
   ⇨ If you press *No*, the SD card will not be formatted.
5. Confirm the selection by pressing the Photo/OK button (7).
   ⇨ The process will be executed and the selection menu will be displayed.

Reset to factory settings

1. Press the Menu button (16).
   ⇨ The selection menu will be displayed.



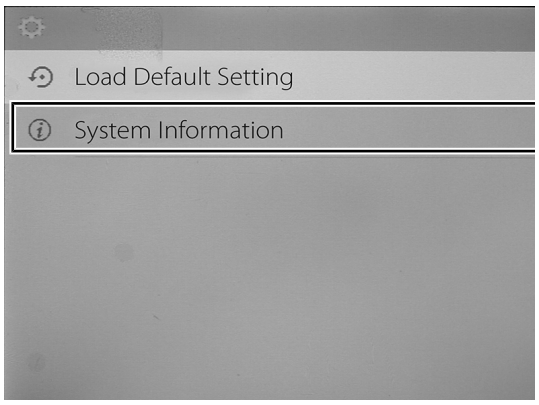
2. Use the up/down button (17) to select the menu item *Load Default Setting* to reset the device to the factory settings.
   ⇨ The *Load Default Setting* submenu will be displayed.



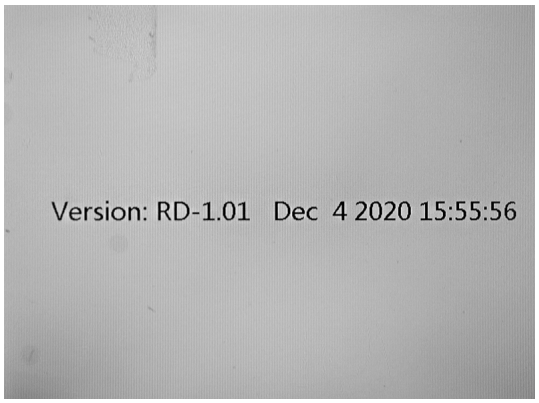
3. Use the Up/Down button (17) to select the desired setting.
   ⇨ The device can be reset to factory settings by pressing *Yes*.
   ⇨ Pressing *No* cancels the operation and the device will not be reset to factory settings.
4. Confirm the selection by pressing the Photo/OK button (7).
   ⇨ The process will be executed and the selection menu will be displayed.

System information

1. Press the Menu button (16).
   ⇨ The selection menu will be displayed.



2. Select the menu item *System Information* by use of the Up/Down button (17).
3. Confirm the selection by pressing the Photo/OK button (7).



⇨ The device displays the current software version, date and time.

Errors and faults

The device has been checked for proper functioning several times during production. If malfunctions occur nonetheless, check the device according to the following list.

The displayed image is blurred:

- Check the camera lens for damage or liquid ingress.
- Contact the manufacturer for inspection.

The display remains dark or no picture is shown:

- By switching on the LEDs, check whether the camera head is supplied with power. If this is the case but the screen still remains dark, the CCD chip may be damaged.
- Contact the manufacturer for inspection.

Probe tip cannot be bent:

- Carefully unwind the probe completely lengthways to relax the tension of the probe cable. Try bending the probe cable in all directions again using the joystick. If this still does not work or if the probe cable can only be bent in one direction, one or both Bowden cables may be defective.
- Contact the manufacturer for inspection.

Maintenance and repair

Charging the battery

Charge the batteries when the battery indication (18) indicates a low battery state of charge. Only use the supplied power adapter or a power adapter with identical specifications for charging the batteries!

You can also use spare batteries (see Technical Data for battery type) or non-rechargeable batteries of type 1.5 V AA.

Cleaning

Clean the device with a soft, damp and lint-free cloth. Make sure that no moisture enters the housing. Do not use any sprays, solvents, alcohol-based cleaning agents or abrasive cleaners, but only clean water to moisten the cloth.

Repair

Do not modify the device or install any spare parts. For repairs or device testing, contact the manufacturer.

Disposal

Always dispose of packing materials in an environmentally friendly manner and in accordance with the applicable local disposal regulations.

The icon with the crossed-out waste bin on waste electrical or electronic equipment is taken from Directive 2012/19/EU. It states that this device must not be disposed of with the household waste at the end of its life. You will find collection points for free return of waste electrical and electronic equipment in your vicinity. The addresses can be obtained from your municipality or local administration. You can also find out about other return options that apply for many EU countries on the website https://hub.trotec.com/?id=45090. Otherwise, please contact an official recycling centre for electronic and electrical equipment authorised for your country.

The separate collection of waste electrical and electronic equipment aims to enable the re-use, recycling and other forms of recovery of waste equipment as well as to prevent negative effects for the environment and human health caused by the disposal of hazardous substances potentially contained in the equipment.

In the European Union, batteries and accumulators must not be treated as domestic waste, but must be disposed of professionally in accordance with Directive 2006/66/EC of the European Parliament and of the Council of 6 September 2006 on batteries and accumulators. Please dispose of batteries and accumulators according to the relevant legal requirements.

Only for United Kingdom

According to Waste Electrical and Electronic Equipment Regulations 2013 (SI 2013/3113) (as amended) and the Waste Batteries and Accumulators Regulations 2009 (SI 2009/890) (as amended), devices that are no longer usable must be collected separately and disposed of in an environmentally friendly manner.

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