eppendorf

VisioNize

VisioNize sense

Operating Manual

ESS1900059-00/2026-03

Table of contents

1 About this manual

1.1 Notes on this manual

The current version of this manual can be found on the website www.eppendorf.com/manuals. To obtain a different version of the manual, contact Eppendorf SE.

1. Read this manual completely before using the product.
2. Ensure that you have the manual available while using the product.

The dates in this manual correspond to the international date format as specified in the ISO 8601 standard. All dates are shown in the format YYYY-MM-DD or YYYY-MM.

This manual uses units of measurement and unit symbols in accordance with the International System of Units (SI) (see ISO 80000) and its derived and legally permissible units. For example, times are specified in hours [h], minutes [min], and seconds [s].

1.2 Warning notice structure

HAZARD LEVEL! Type of danger

Source of danger
Consequences of disregarding the danger

– Measures to avoid the danger

Symbol	Hazard level	Type of danger	Meaning
	**DANGER**	Personal injury	Will lead to severe injuries or death.
	**WARNING**	Personal injury	May lead to severe injuries or death.
	**CAUTION**	Personal injury	May lead to minor or moderate injuries.
	**NOTICE**	Material damage	May lead to material damage.

1.3 Graphics

Depiction	Meaning
1. 2.	Work steps
•	Bullet point
Text	Display text

Depiction	Meaning
Key	Name for port, button, status lamp, or key
	Important information
	Tip

1.4 Other applicable documents

1. The following documents supplement this manual:
   - Operating manuals for the devices whose data is collected via VisioNize sense.
   - Operating manual for the VisioNize box 2, which is used as a gateway for VisioNize sense products (formerly VisioNize sense gateway router).

   The manuals are available at www.eppendorf.com/manuals or from your Eppendorf partner.

2 Safety

2.1 Intended use

VisioNize sense products are sensors for monitoring devices from Eppendorf SE or third-party devices. The VisioNize sense environmental monitor is connected to the VisioNize box 2 (formerly VisioNize sense gateway router) and transmits the collected measurement data from the VisioNize sense temperature sensor. The sensors are placed near a device or inside a device.

VisioNize sense products are intended for indoor use only. Country-specific safety requirements for the operation of electrical devices in laboratories must be observed.

VisioNize sense products may only be operated by appropriately qualified and trained personnel.

2.2 Residual risks when used as intended

2.2.1 Personal injury

2.2.1.1 Explosion hazard

The use of explosive substances or substances with violent reactions may cause explosions. Do not operate the device under the following conditions:

- In an explosive atmosphere
- In areas where work with explosive substances is carried out
- With explosive substances or substances with violent reactions
- With substances that may, combined with a reactant or without such reactant, form an explosive atmosphere

2.2.1.2 Electrical hazards

Touching parts that carry high voltage can cause an electric shock. A life-threatening electric shock can cause cardiac arrhythmia, burns and respiratory paralysis.

- Only use earth/grounded sockets with a protective earth (PE) conductor.
- Ensure that a residual current circuit breaker is present and accessible.
- Ensure that the housing and mains/power cord are not damaged.
- In case of danger, disconnect the device from the mains/power line.
- Do not open or remove the housing.
- Compare the technical data of the mains/power cord and the mains/power plug with the technical data on the name plate, taking into account national laws and regulations. This also includes legally required test seals. Use only approved mains/power cords with plugs.
- Make sure that the mains/power plug and earth/grounded socket match and that the electrical PE conductors of the device and the building installation are securely connected to each other.
- Only clean and maintain the device when it is disconnected from the mains/power line.
- Have the device regularly checked for electrical safety in accordance with national requirements.

2.2.2 Material damage

2.2.2.1 General hazards

NOTICE! Damage to device

The use of accessories and spare parts other than those recommended by Eppendorf SE may impair the safety, functioning, and precision of the device. Eppendorf SE cannot be held liable or accept any liability for damage resulting from the use of accessories and spare parts other than those recommended.

– Use only the accessories and spare parts recommended by Eppendorf SE.

3 Product description

3.1 Product components

3.1.1 VisioNize sense environmental monitor

The VisioNize sense environmental monitor is a wireless, Bluetooth-enabled multi-sensor unit.

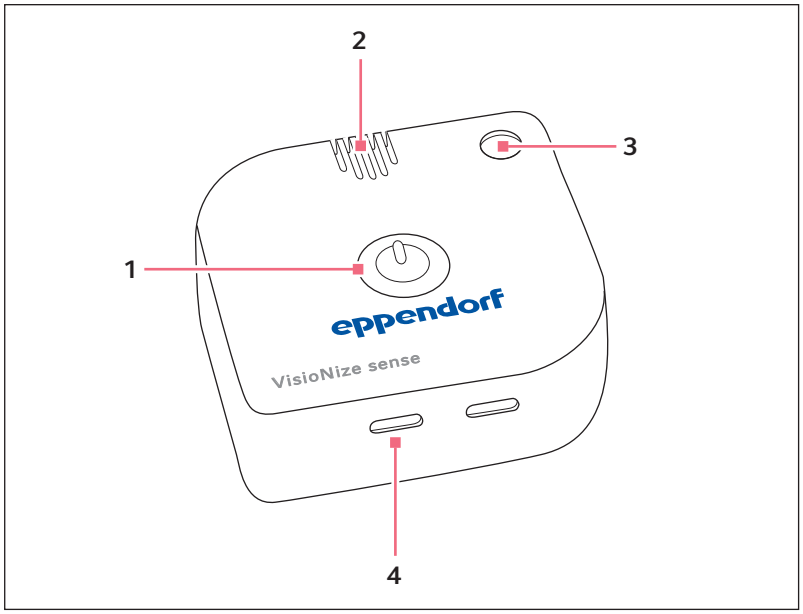
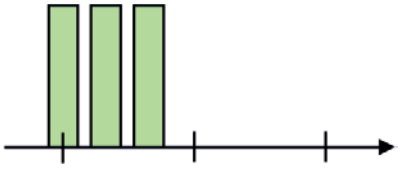
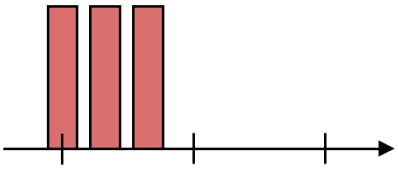
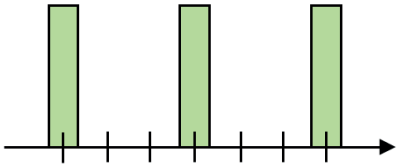
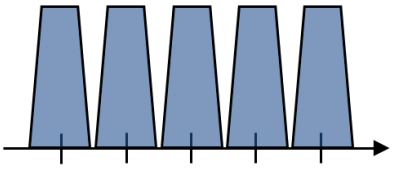
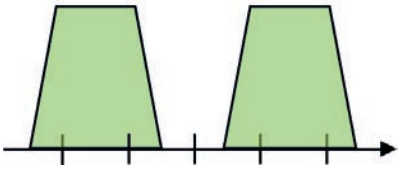
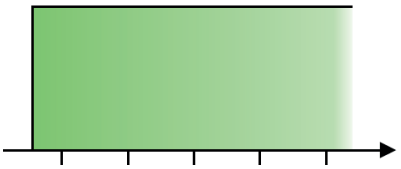


Fig. 3-1: Displays and ports on the VisioNize sense environmental monitor

1 On/off button
2 Ventilation gaps for recording values
3 Status lamp
4 Charging and extension interface

Colors and flashing codes indicated by the status lamp on the VisioNize sense environmental monitor

Color and flashing codes indicated by the status lamp	Status
Green	The device is operating.
Blue	The memory is being read out.
Red	A critical error has occurred.
	The status lamp flashes green 3 times quickly. This flashing code indicates that the device has been switched on. This flashing code appears when a sensor extension is plugged in via the USB interface.
	The status lamp flashes red 3 times quickly. This flashing code indicates that the device has been switched off. This flashing code also appears when a sensor extension is unplugged or not recognized via the USB interface.
	The status lamp flashes every 3 seconds. In battery mode, the status lamp indicates the current device health by its color.
	The status lamp pulses blue. The status lamp pulses blue while actively connected to a readout unit. Data is being transferred.
	The status lamp pulses. The status lamp pulses during charging. The LED status lamp indicates the current charging status.
	The status lamp lights up solid green. The status lamp indicates that charging is complete and the rechargeable battery is fully charged by lighting up solid green.

3.1.2 VisioNize sense temperature sensor

To display the measured values, the VisioNize sense temperature sensor and the VisioNize sense environmental monitor must be connected to each other. Further information on using the VisioNize sense temperature sensor with the device to be monitored can be found in its operating manual.

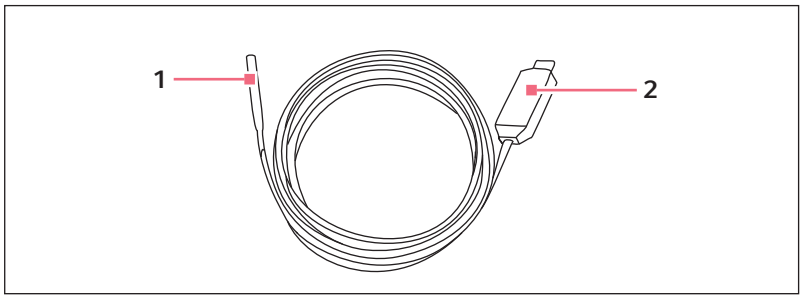


Fig. 3-2: Sensor and connection to the VisioNize sense environmental monitor

1 Sensor with accuracy class A, PT100

2 USB-C connector for connection to the VisioNize sense environmental monitor

3.1.3 VisioNize box 2

The VisioNize box 2 is used as a gateway for VisioNize sense products and sends the collected measurement data to the VisioNize Lab Suite. Further information on the VisioNize box 2 can be found in the corresponding operating manual.

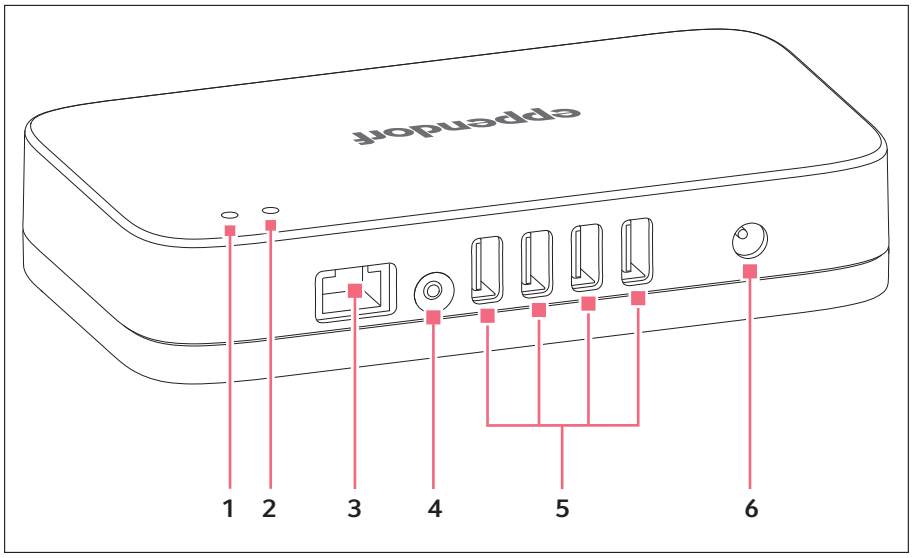


Fig. 3-3: Displays and ports on the VisioNize box 2

1	Status LED	4	Button
2	Power LED	5	USB interfaces
3	Ethernet interface	6	Power supply

4 Installation

4.1 Preparing installation

4.1.1 Checking connection requirements

All prerequisites must be met before the device can be installed and put into operation.

Checking the electrical connection

1. Check that the electrical connection meets the following conditions:
   - The power connection corresponds to the specifications on the name plate.
   - A power socket with a PE conductor is present.
   - The power socket is always freely accessible.
   - A residual current circuit breaker is present and accessible.

4.1.2 Checking the location

If you move VisioNize sense from a cold environment to a warm environment, condensation inside the devices can cause damage. After placing VisioNize sense on the devices, wait about one hour before connecting VisioNize sense to the power line.

1. Check that the location meets the following conditions:
   - The ambient conditions correspond to the specifications in the technical data.
   - The footprint is designed to support the weight of the device.
   - A free power connection is available near the device and the specifications on the power supply device correspond to this connection.
   - Good ventilation, no obstructions within 30 cm of the ventilation gaps
   - The power switch and disconnecting device of the power system circuit are accessible
2. Check that the location is protected from the following influences:
   - Heat sources
   - Sparks
   - Open flames
   - Direct sunlight
   - UV radiation
   - Strong electromagnetic radiation
   - Humidity

4.1.3 Checking the delivery and packing

1. Check whether the packages indicated on the delivery note match the packages actually delivered.
2. Check the packing for transport damage.
3. Report any visible damage to your Eppendorf partner.

4.1.4 Checking the delivery condition

1. Check the device and accessories for visible damage.
2. Report any damage to your Eppendorf partner.

4.1.5 Checking the delivery package

1. Check that the supplied components match the specifications of the delivery package.
2. If any parts are missing, contact your Eppendorf partner.

Scope of delivery

Table 1: VisioNize sense environmental monitor

Quantity	Description
1	VisioNize sense environmental monitor
1	Power supply unit for VisioNize sense
3	Adhesive wall mount
2	Adhesive device mount
1	Installation guide

Table 2: VisioNize sense temperature sensor

Quantity	Description
1	VisioNize sense temperature sensor
1	Installation guide

4.1.6 Setting up an account for VisioNize

Further information on setting up a user account can be found online at https://www.eppendorf.com/visionize.

To transfer measured values to VisioNize, set up an account with *myEppendorf*.

1. Visit www.eppendorf.com/visionize-subscription/.
2. Purchase the subscription that suits you best.

   The administrator specified during the purchase process will receive access to the administrator account for your organizational unit. You can then create all other user and administrator accounts through this account.

4.1.7 Charging the VisioNize sense environmental monitor rechargeable battery

To ensure reliable measurement data, fully charge the VisioNize sense environmental monitor rechargeable battery before use.

NOTICE!

To avoid material damage, only use the power supply included in the scope of delivery to charge the VisioNize sense environmental monitor.

The rechargeable battery takes up to 8 hours to charge. You can check the charging status in the VisioNize Lab Suite.

Under normal operating conditions, the rechargeable battery run time is up to 6 months. The run time may be reduced depending on the number of extensions used.

Prerequisites:

- The USB cable is ready.
- The adapter for the power supply is ready.
- The power supply is ready.

1. Plug the USB cable into the USB port on the VisioNize sense environmental monitor.
2. Plug the other end of the USB cable into the power supply adapter.
3. Connect the power supply to a power socket.

   The status LED light indicates the charging process.

   When the status LED is constantly lit, the charging process is complete.
4. Place the VisioNize sense environmental monitor near the device whose internal temperature you want to measure.

For more information on the colors and meaning of the LED light duration, visit .

4.2 Performing the installation

4.2.1 Installing the VisioNize sense environmental monitor

Mount the VisioNize sense environmental monitor outside the device. To ensure good transmission of the measured values, choose a distance to the VisioNize box 2 of no more than 10 m. Walls and other barriers between the two devices reduce the signal strength.

Mount the VisioNize sense environmental monitor in close proximity to the device, e.g., on the wall or directly on the device in the case of an ULT freezer. This allows the data from the VisioNize sense temperature sensor to be transferred to the VisioNize box 2 and into the VisioNize Lab Suite.

Prerequisites:

- The VisioNize sense environmental monitor rechargeable battery is charged.
- The surface on which the VisioNize sense environmental monitor is to be mounted is smooth, dust-free, and grease-free.

1. Use one wall mount
2. Apply the mount firmly to the surface on the wall or device.
3. Attach the counterpart to the wall mount to the VisioNize sense environmental monitor.
4. Wait at least 2 minutes before attaching the VisioNize sense environmental monitor to the wall mount.

The mount will be fully load-bearing after a 10-minute waiting period.

You can use the VisioNize sense environmental monitor in rechargeable battery mode or connected to the power line.

4.2.2 Connecting VisioNize sense and the device

You can connect multiple devices to VisioNize sense and monitor measurement data in the VisioNize Lab Suite.

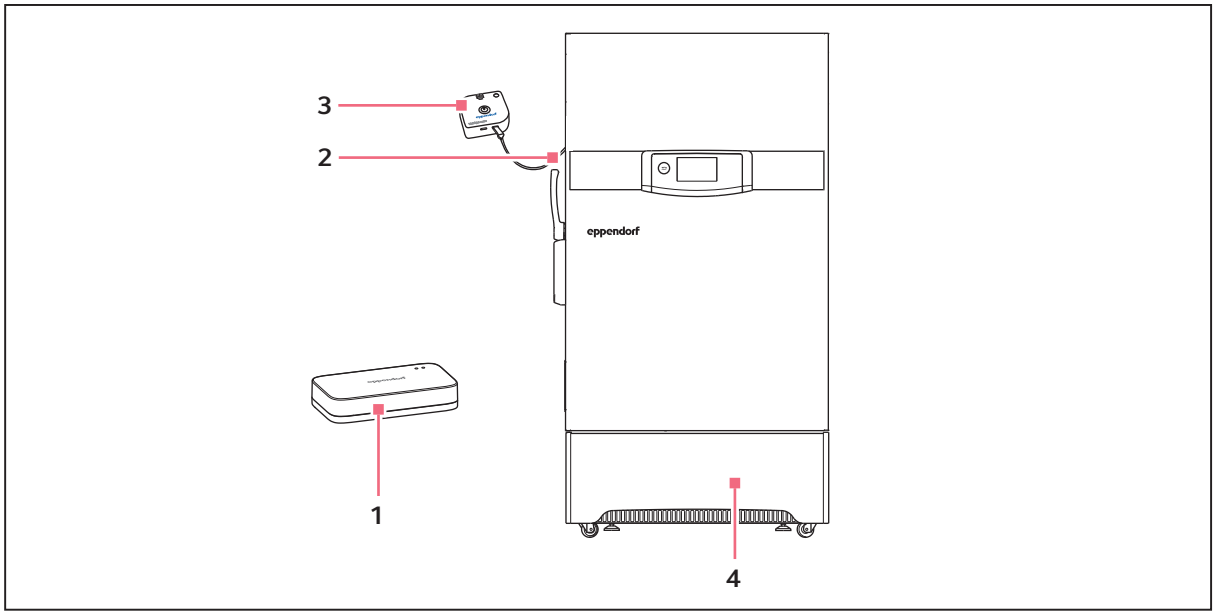


Fig. 4-1: Overview of connected devices

1 VisioNize box 2
2 VisioNize sense temperature sensor
3 VisioNize sense environmental monitor
4 ULT freezer

Prerequisites:

- The VisioNize box 2 is registered in VisioNize.
- The VisioNize sense environmental monitor is registered in VisioNize.
- The VisioNize box 2 is connected to the power line and is connected to the network via a standard Ethernet cable or via WLAN.

1. Place the VisioNize sense environmental monitor near the VisioNize box 2.
2. Briefly press the on/off button on the VisioNize sense environmental monitor.

   The status LED flashes green.

   The monitor will be displayed in the VisioNize Lab Suite as *online* after a few seconds.
3. Plug the USB-C connector from the VisioNize sense temperature sensor into the USB interface on the VisioNize sense environmental monitor.
4. Position the sensor either at the access port on the ULT freezer or connect the sensor via the door seal on the hinge side of the ULT freezer.

5 Operation

5.1 Operating the VisioNize sense environmental monitor

Switching on

1. Briefly press the on/off button on the VisioNize sense environmental monitor.

   When you switch on the device for the first time, the VisioNize sense environmental monitor connects to the VisioNize box 2.

   If the monitor is correctly connected, the monitor's LED will flash green.

Switching off

1. Press the on/off button on the VisioNize sense environmental monitor for 6 to 7 seconds.

   The monitor's LED will flash red, then remain red for a while, and then stay black.

Resetting

Prerequisites:

- To reset the VisioNize sense environmental monitor, make sure it is switched off.
- Make sure that no LED light is lit.

1. Press and hold the on/off button on the VisioNize sense environmental monitor until the LED lights up continuously red.
2. When the LED lights up continuously red, release the on/off button.

   The device begins to reset itself, which is indicated by the LED flashing red at a high frequency. When the process is complete, the device switches back on.

6 Maintenance

6.1 Maintenance

6.1.1 Cleaning

Cleaning the VisioNize sense environmental monitor

NOTICE! Damage to the device and accessories

The use of unsuitable cleaning agents or sharp objects may damage the device and its accessories.

- Do not use any aggressive cleaning agents, strong solvents or abrasive polishes.
- Check the compatibility with the materials used.
- Do not clean the device with acetone or organic solvents with a similar effect.
- Do not use any sharp or pointed objects to clean the device.

1. Briefly press the on/off button.

   The VisioNize sense environmental monitor switches off.

2. Moisten all sides of the VisioNize sense environmental monitor with isopropanol, avoiding the USB interfaces.
3. Wipe the sides dry with a microfiber cloth.
4. Wait 5 minutes until the isopropanol has completely evaporated.
5. Repeat this process, if necessary, until all contaminants have been removed.

   The VisioNize sense environmental monitor is ready for use.

Cleaning the VisioNize sense temperature sensor

NOTICE! Damage to the device and accessories

The use of unsuitable cleaning agents or sharp objects may damage the device and its accessories.

- Do not use any aggressive cleaning agents, strong solvents or abrasive polishes.
- Check the compatibility with the materials used.
- Do not clean the device with acetone or organic solvents with a similar effect.
- Do not use any sharp or pointed objects to clean the device.

1. Disconnect the USB cable from the VisioNize sense temperature sensor from the USB port on the VisioNize sense environmental monitor.
2. Moisten the VisioNize sense temperature sensor on all sides with isopropanol.
3. Wait one minute for the isopropanol to take effect.
4. Wipe the VisioNize sense temperature sensor dry with a microfiber cloth.
5. Wait 5 minutes until the remaining isopropanol has evaporated.

   The VisioNize sense temperature sensor is ready for use.

6.1.2 Decontamination/disinfection

Observe the instructions in the decontamination certificate. This is available as a PDF file on our website (https://www.eppendorf.link/decontamination/).

1. Decontaminate all parts you intend to ship.
2. Enclose the fully completed decontamination certificate for returned goods with the shipment.

Disinfection

NOTICE! Component damage

If disinfectant gets inside the device, it can cause electronic components to corrode. This will impair the function of the device.

– Only spray disinfectant onto a cloth.

1. Select the disinfection method in accordance with the legal regulations and guidelines for your area of application.
2. Disinfect all parts you intend to ship.

7 Transport

7.1 Sending the device

Use the original packing to transport the device. If the original packing is no longer available, please ensure that the device is sufficiently protected by replacement packing during storage and further transport. Eppendorf SE is not liable for damage caused by improper replacement packing.

WARNING! Contamination

Shipping or storing a contaminated device or contaminated accessories may lead to contamination of persons or cause damage to health.

– Decontaminate the device and accessories before shipping or putting them into storage.

Material:

- Packing

Prerequisites:

- The device is out of operation.
- The device is decontaminated.

1. Download the decontamination certificate for goods returns from https://www.eppendorf.link/decontamination/.
2. Complete the decontamination certificate.
3. Pack the device.
4. Securely attach the decontamination certificate to the outside of the packing.
5. Ship the device.

8 Disposal

8.2 Preparing for disposal

Preparing disposal according to legal regulations

For information on the legal regulations that apply in your country, contact your local authority and your Eppendorf partner.

Dispose of non-decontaminable devices as hazardous waste.

1. Check which legal regulations apply to disposal in your country.
2. Choose a certified waste disposal company or contact your Eppendorf partner.

Creating a decontamination certificate

Prerequisites:

- The device has been decontaminated.

1. Download the decontamination certificate from the website https://www.eppendorf.link/decontamination/.
2. Complete the decontamination certificate.

8.3 Handing over the device to the disposal company

1. Inform the disposal company of any hazards posed by the device, e.g., locking devices, flammable substances.
2. Hand over the device and the decontamination certificate to the certified disposal company.

9 Technical data

9.1 Dimensions

VisioNize sense environmental monitor

Width	66 mm
Height	23 mm
Length	66 mm

VisioNize sense temperature sensor

Width	14 mm
Height	8 mm
Length	35.5 mm
Cable length	3 m
Sensor sleeve with PT 100 ceramic	50 mm

9.2 Weight

VisioNize sense environmental monitor

80 g

VisioNize sense temperature sensor

40 g

9.3 Power supply

VisioNize sense environmental monitor

Battery	Li-polymer rechargeable battery 1900 mAh rechargeable, permanently installed
Charging voltage	5 VDC (max. 500 mA)

9.4 Ambient conditions

Operating conditions

Table 3: VisioNize sense environmental monitor

Environment	Indoor use only, do not use or store in potentially explosive atmospheres
Ambient temperature	-10 °C – 58 °C
Relative humidity	max. 95 %, non-condensing

Table 4: VisioNize sense temperature sensor (with connector)

Environment	Indoor use only, do not use or store in potentially explosive atmospheres
Ambient temperature	-10 °C – + 35 °C ± 0.3 °C
Relative humidity	max. 80 %, relative humidity, non-condensing

Storage and charging conditions

Table 5: VisioNize sense environmental monitor

Temperature	0 °C – 40 °C
Relative humidity	10 % – 50 %
Storage location	Protected from: • Frost and heat • Dust and sunlight • Hazardous substances

Table 6: VisioNize sense temperature sensor

Temperature	0 °C – 40 °C
Relative humidity	10 % – 50 %
Storage location	Protected from: • Frost and heat • Dust and sunlight • Hazardous substances

Sensor specification and measuring range

Table 7: VisioNize sense environmental monitor

Temperature	-10 °C – +58 °C (typ. ± 0.3 °C)
Humidity	0 % – 100 % (typ. ± 2 %)
Barometric pressure	300 hPa – 1100 hPa (typ. ± 1 hPa)
Brightness	0 % – 100 % (dark/light)
Motion detection	Standstill, movement

Table 8: VisioNize sense temperature sensor

Temperature	-90 °C – 60 °C (typ. accuracy class A)

9.5 Interfaces

Interfaces of the VisioNize sense environmental monitor

Radio interface	2.4 GHz
2 USB interfaces	Type C for connecting sensor extensions

9.6 Electromagnetic compatibility and radio

VisioNize sense environmental monitor

ICES-Gen, Category II, Class B ICES-003 ANSI 63.4	This device has been tested and found to comply with the limits for a Class B, Category II ITE device, pursuant to Canadian ICES-003. Class B includes devices that cannot be classified as Class A. Category II devices are exempt from certification pursuant to subsection 21(5) of the Radiocommunication Regulations.
RSS-Gen RSS-247	Contains IC: 11306A-ISP1507

FCC Part 15, Class B ANSI 63.4	This device complies with Part 15 of the FCC Rules. Operation is subject to the following conditions: • (1) This device may not cause harmful interference, and • (2) this device must accept any interference received, including interference that may cause undesired operation. This device has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This device generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this device does cause harmful interference to radio or television reception, which can be determined by turning the device off and on, the user is encouraged to try to correct the interference by one or more of the following measures: • Reorient or relocate the receiving antenna. • Increase the separation between the device and receiver. • Connect the device to an outlet on a circuit different from that to which the receiver is connected. • Consult the dealer or an experienced radio/TV technician for help. Contains FCC ID: 2AAQS-ISP1507
IEC 61326-1 CISPR 11, Group 2, Class B	Group 2 includes ISM devices with intentional RF transmitters for use in the home environment. Class B devices are devices that are suitable for use in residential areas and such areas, and they are connected to the public mains.
EN IEC 61326-1 EN 55011, Group 2, Class B EN 61000-6-2 ETSI EN 300 328 ETSI EN 301 489-1 ETSI EN 301 489-17	Hereby, Eppendorf SE declares that the radio equipment type VisioNize sense is in compliance with Directive 2014/53/EU. The full text of the EU declaration of conformity is available at the following Internet address: www.eppendorf.com/manuals

9.7 Further conformities

VisioNize sense environmental monitor

Degree of protection (DIN EN 60529:2014-09)	IP20

10 Ordering information

10.1 Accessories

Item number	Description	Order no.
1	**VisioNize® box 2** Hardware hub that serves as connection point for VisioNize sense equipment and additionally connects up to four qualified Eppendorf devices. Features WLAN connectivity.	1008 000 006
2	**VisioNize® sense environmental monitor** a wireless, rechargeable multi-sensor unit (ambient temperature, humidity, pressure & light)	ESS1000002
3	**VisioNize® sense temperature sensor** PT-100 extension that can measure temperature of any device (including ULT Freezers) within the range of +60 to -90 °C.	ESS1000003

Evaluate Your Manual

Give us your feedback.
www.eppendorf.com/manualfeedback

Your local distributor: www.eppendorf.com/contact
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eppendorf@eppendorf.com · www.eppendorf.com