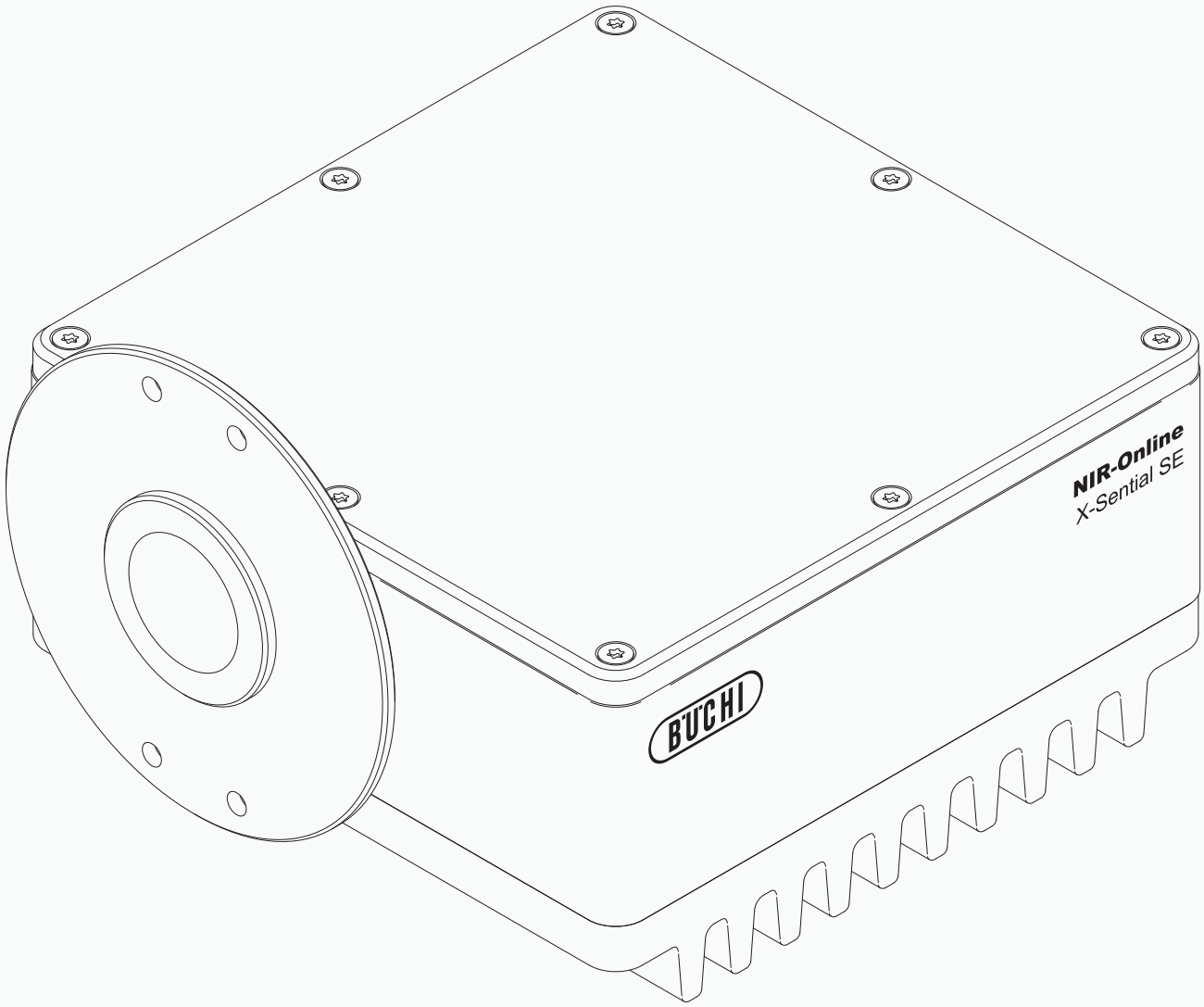

Operation Manual

X-Sential™ SE

BÜCHI

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1 About this document

This operation manual is applicable for all variants of the instrument.
Read this operation manual before operating the instrument and follow the instructions to ensure safe and trouble-free operation.
Keep this operation manual for later use and pass it on to any subsequent user or owner.
NIR-Online GmbH accepts no liability for damage, faults and malfunctions resulting from not following this operation manual.
If you have any questions after reading this operation manual:

▶ Contact NIR-Online GmbH Customer Service.

service.nir-online@buchi.com

1.1 Mark-ups and symbols

NOTE

This symbol draws attention to useful and important information.

☑ This character draws attention to a requirement that must be met before the instructions below are carried out.

▶ This character indicates an instruction that must be carried out by the user.

⇨ This character indicates the result of a correctly carried out instruction.

Mark-up	Explanation
Window	Software Windows are marked-up like this.
Tab	Tabs are marked-up like this.
Dialog	Dialogs are marked-up like this.
[Button]	Buttons are marked-up like this.
[Field names]	Field names are marked-up like this.
[Menu / Menu item]	Menus or menu items are marked-up like this.
Status	Status is marked-up like this.
Signal	Signals are marked-up like this.

2 Safety

2.1 Proper use

The sensor is used to analyze substances and samples in production and in the laboratory. The sensor is intended exclusively for that purpose.
The sensor can be used in laboratories and production facilities for the following operations:

- Quality control
- Process optimization

2.2 Use other than that intended

The use of the instrument other than described in proper use and specified in technical data is use other than that intended.
The operator is responsible for damages or hazards that are caused by use other than that intended.
Especially the following uses are not permitted:
Use of any other kind than that described in the section Chapter 2.1 “Proper use”, page 6 and any application that does not comply with the technical specifications (see Chapter 3.6 “Technical data”, page 15) constitutes use other than that intended.
In particular, the following applications are not permissible:

- Using the sensor in areas for which the sensors are not certified. For certification details see Chapter 3.5 “ATEX rating”, page 15.
- Use of the sensor in potentially explosive atmospheres without an overall assessment by the responsibility holder.
- Use of a sensor of which the screw sealing cap is damaged.

Damage or hazards attributable to use of the product other than as intended are entirely at the risk of the operator alone.

2.3 Warning notices in this document

Warning notices warn you of dangers that can occur when handling the instrument. There are four danger levels, each identifiable by the signal word used.

Signal word	Meaning
DANGER	Indicates a danger with a high level of risk which could result in death or serious injury if not prevented.
WARNING	Indicates a danger with a medium level of risk which could result in death or serious injury if not prevented.
CAUTION	Indicates a danger with a low level of risk which could result in minor or medium-severity injury if not prevented.
NOTICE	Indicates a danger that could result in damage to property.

2.4 Warning and directive symbols

The following warning and directive symbols are displayed in this operation manual or on the instrument.

Symbol	Meaning
	General warning
	Dangerous electrical voltage
	Material damage
	Explosive substances
	Read manual

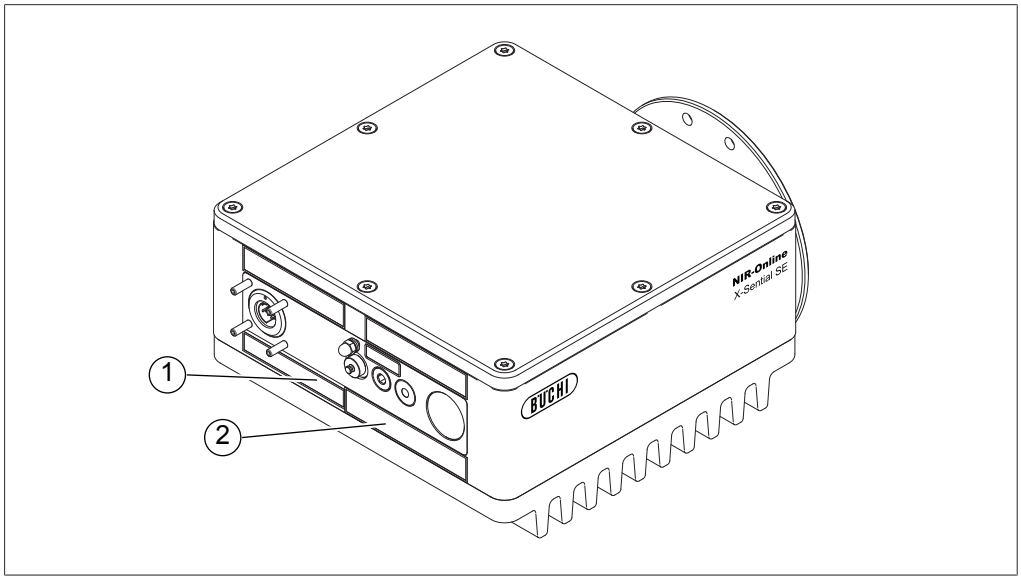


Fig. 1: Location of safety notices and warning signs on the instrument

1 

General warning

Clean Unit when dust exceeds 5 mm thickness

2 

General warning

Do not separate when energized

Do not open in hazardous area.

2.5 Residual risks

The instrument has been developed and manufactured using the latest technological advances. Nevertheless, risks to persons, property or the environment can arise if the instrument is used incorrectly.
Appropriate warnings in this manual serve to alert the user to these residual dangers.

2.5.1 Risk of explosion from opening up the sensor

Opening up the sensor in potentially explosive atmospheres can cause an explosion.

▶ Do not open up the sensor housing.

2.5.2 Risk of explosion in potentially explosive atmospheres from unplugging the device power plug

Risk of explosion in potentially explosive atmospheres from unplugging the device power plug when the power is switched on.

▶ Do not unplug the sensor when the power is switched on.

2.6 Staff qualification

Unqualified persons are unable to identify risks and are therefore exposed to greater dangers.
The device may only be operated by suitably qualified persons.
These operating instructions are aimed at the following target groups:

Users

Users are persons that meet the following criteria:

- They have been instructed in the use of the device.
- They are familiar with the contents of these operating instructions and the applicable safety regulations and apply them.
- They are able on the basis of their training or professional experience to assess the risks associated with the use of the device.

Operator

The operator is responsible for the following aspects:

- The instrument must be correctly installed, commissioned, operated and serviced.
- Only suitably qualified staff may be assigned the task of performing the operations described in these operating instructions.
- The staff must comply with the locally applicable requirements and regulations for safe and hazard-conscious working practices.
- Safety-related incidents that occur while operating the instrument are to be reported to the manufacturer.
  service.nir-online@buchi.com

NIR-Online service technicians

Service technicians authorized by NIR-Online have attended special training courses and are authorized by NIR-Online GmbH to carry out special servicing and repair measures.

2.7 Personal protective equipment (production)

Follow the rules regarding personal protective equipment that are applicable at the installation site.
The operation of the sensor does not require additional protective equipment.

2.8 Personal protective equipment (laboratory)

Depending on the application, hazards due to heat and/or corrosive chemicals may arise.

▶ Always wear appropriate personal protective equipment such as safety goggles, protective clothing and gloves.

▶ Make sure that the personal protective equipment meets the requirements of the safety data sheets for all chemicals used.

2.9 Modifications

Unauthorized modifications may impair safety and lead to accidents.

- ▶ Use only genuine NIR-Online accessories, spare parts and consumables.
- ▶ Technical modifications to the instrument or accessories should only be carried out with the prior written approval of NIR-Online GmbH and only by authorized NIR-Online service technicians.

NIR-Online GmbH accepts no liability whatsoever for damage arising as a result of unauthorized modifications.

3 Product description

3.1 Description of function

Overview

X-Sential™ SE is an optical instrument for non-destructive analysis of substances and their concentrations in a sample. Each sample absorbs and reflects light across the visible (VIS) and near-infrared (NIR) regions of the spectrum.
The light behavior varies based on the sample's color, physical properties, and chemical composition. This results in a unique optical signature, or spectrum, which can be analyzed to identify and quantify specific compounds.
To create this optical signature, the sensor utilizes a lamp that emits both VIS and NIR radiation.

Light interaction

In the VIS region, radiation is primarily absorbed by pigments, chromophores, or color-bearing compounds. In the NIR region, the light interacts with molecular bonds, causing specific molecular vibrations. The differing responses in the VIS and NIR regions provide valuable, complementary data about the sample's chemical and physical properties.
The reflected light is collected by two sets of fiber optics and directed toward two spectrophotometers: one optimized for the VIS range and the other for the NIR range.

VIS light collection

In the visible spectrophotometer, a diffraction grating spatially disperses the incoming light by wavelength. The light then reaches a silicon photodiode array, consisting of multiple sensor elements that measure the light intensity at specific wavelength intervals. This enables high-resolution analysis of visible spectrum characteristics related to color and chromophores.

NIR light collection

The NIR spectrophotometer similarly uses a diffraction grating to disperse the light by wavelength, but it employs an indium-gallium-arsenide (InGaAs) photodiode array with multiple sensor elements.
NIR wavelengths are particularly sensitive to molecular vibrations associated with bonds like C-H, N-H, and O-H, making it highly effective for analyzing organic compounds and water content within the sample

Analysis

Once the measurements are taken, the data is converted into digital sequences, which are transmitted to a computer. Specialized software then compares the data sequence curve against a pre-established calibration model, often created through techniques such as Partial Least Squares (PLS) regression. By comparing these sequences, the program can accurately determine the chemical composition and concentration of various substances in the sample. This technique provides rapid, precise, and non-destructive analysis.

3.2 Configuration

3.2.1 Front view

X-Sential™ SE with standard flange or X-Beam version

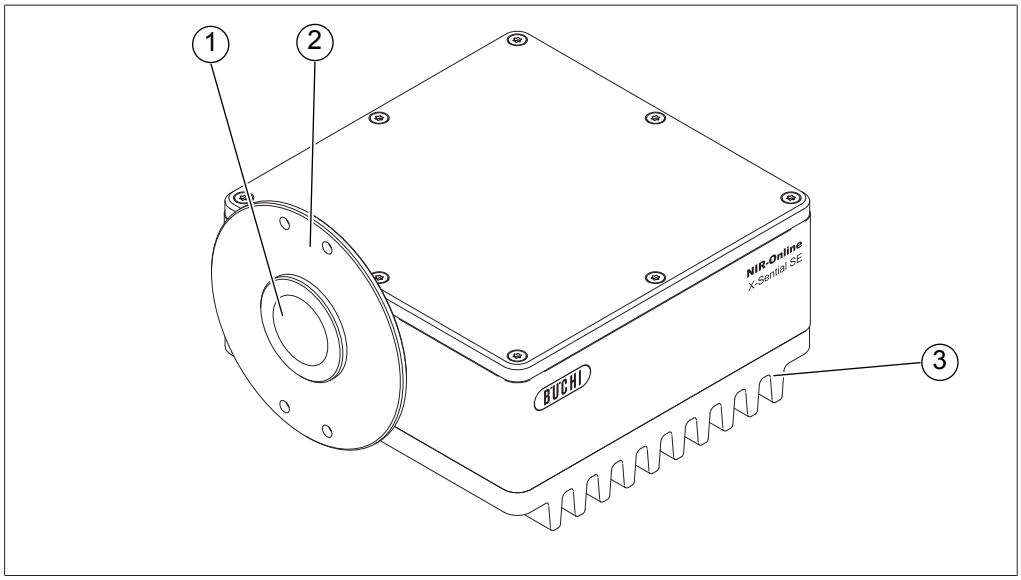


Fig. 2: Front view with standard flange or X-Beam version

1 Measurement window
2 Flange
3 Heat sink

X-Sential™ SE with hygienic inline flange

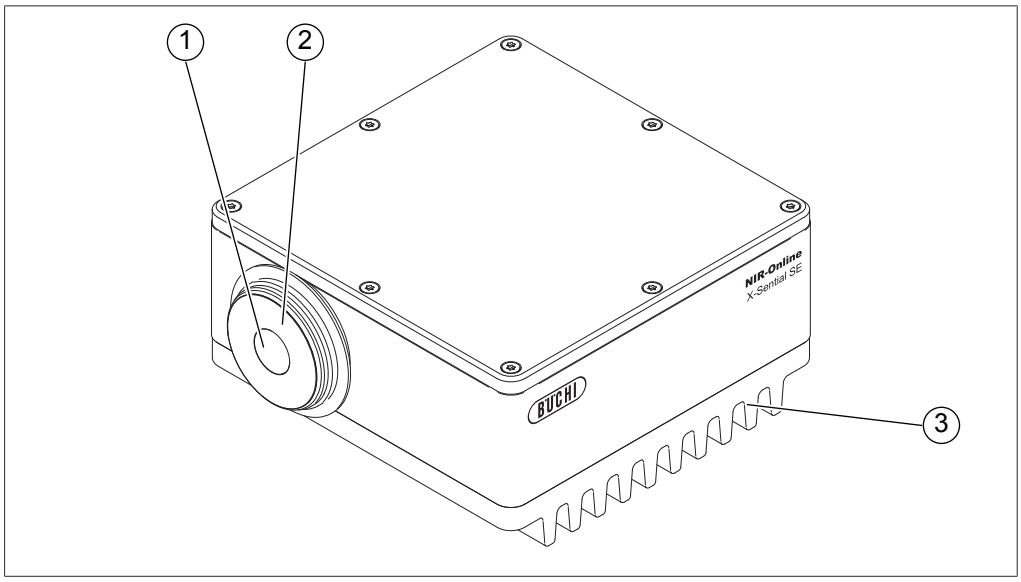


Fig. 3: Front view with hygienic inline flange

1 Measurement window (23 mm)
2 (3A) hygienic inline flange
3 Heat sink

X-Sential™ SE with inline flange

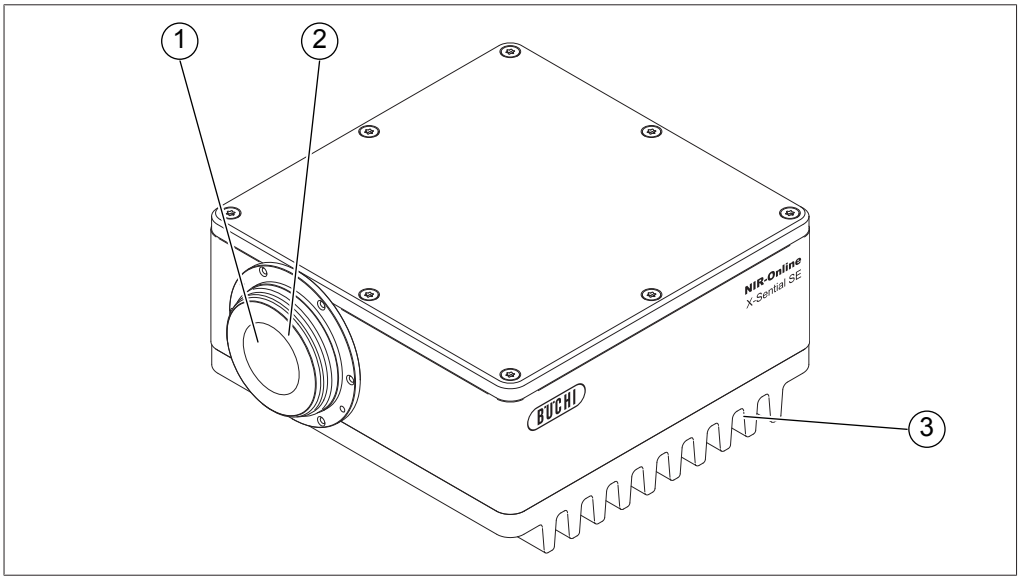


Fig. 4: Front view with inline flange

1 Measurement window (40 mm) 2 Inline flange
3 Heat sink

3.2.2 Rear view

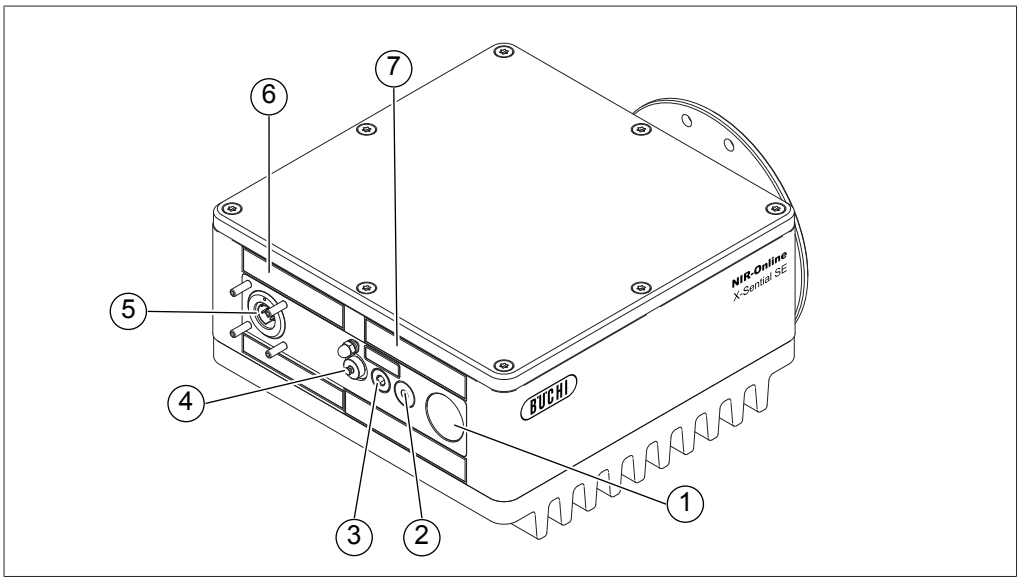


Fig. 5: Rear view

1 Journal Button 2 Power and scanning indicator light
3 ACC connection (optional) 4 Ground connection (Equipotential bonding)
5 Power and signal connector 6 Type plate (part)
7 Type plate (part)

3.2.3 Active water-cooling housing

For product temperatures between 40 °C and 130 °C, an active water-cooling housing is optionally available.
At 130 °C, a minimum water flow rate of 5L/h at 20 °C is required. The cooling water connector is suitable for tubes with an inner diameter of 6 mm and an outer diameter of 8 mm.
The active water-cooling housing is compatible with all instrument variants. See Chapter 3.2.1 “Front view”, page 11.

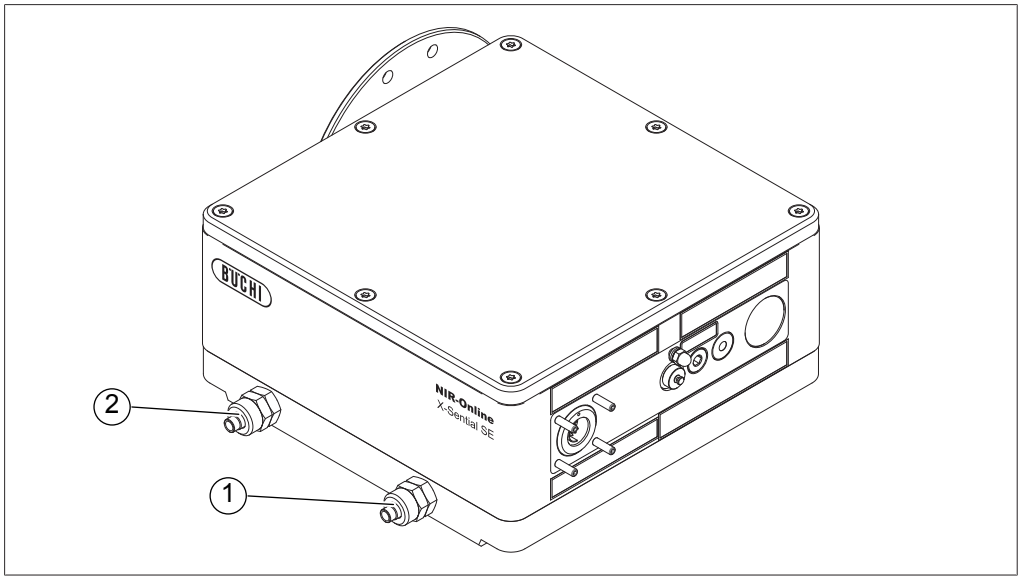


Fig. 6: Active water-cooling housing

1 Water outlet
2 Water inlet

3.3 Scope of delivery

NOTE

The scope of delivery depends on the configuration of the purchase order.

Components and accessories are supplied according to the requirements specified in the purchase order, confirmed through the order confirmation, and listed on the delivery note.

Any optional accessories or additional items requested are included as specified, ensuring alignment with the agreed-upon term.

3.4 Type plate

NOTE

Labeling

Instruments without Ex mark.

- Instruments without ATEX mark are not suitable for ATEX operation. See Chapter 3.5 “ATEX rating”, page 15

The type plate identifies the instrument. See Chapter 3.2.2 “Rear view”, page 12

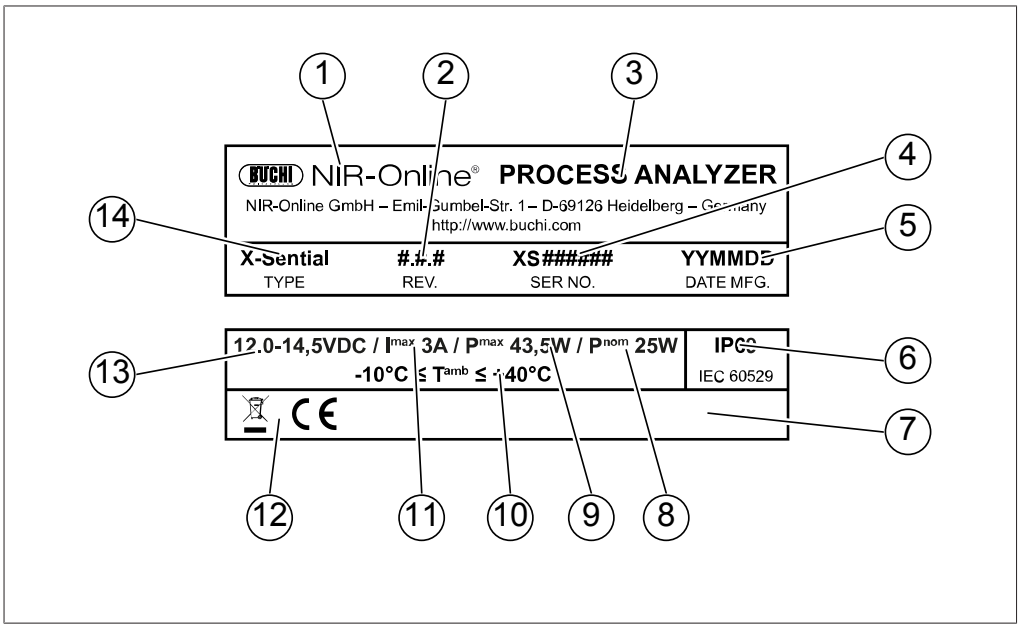


Fig. 7: Type plate

1	Company name and address	2	Revision number
3	Product name	4	Serial number
5	Production date	6	IP class
7	ATEX information, if applicable (depends on configuration, see label on instrument)	8	Power consumption (nominal)
9	Power consumption (maximum)	10	Ambient temperature
11	Current draw (maximum)	12	Certificates
13	Operating voltage	14	Product type

3.5 ATEX rating

This operation manual applies to ATEX and non-ATEX instruments. Please check the label on the instrument to confirm its configuration.
The sensor is certified according to the following European Union ATEX Directive ratings:

II 3D Ex tc IIIC T85°C Da/Dc X

Meaning of the rating marks:

Rating	Meaning according to Directive 2014/34/EU
II	Device group approved for all Ex zones except mining
3D	Device category approved for dust zone 22
Ex	Explosion-safe
tc	Protection class protected by enclosure
IIIC	Dust group conductive dusts
T85 °C	Temperature classification max. surface temperature = 85° C
Da/Dc	Device safety level. Da -zone 20, adequate safety in event of rare faults; Dc - zone 22, adequate safety in regular operation
X	Specific conditions

3.6 Technical data

3.6.1 Sensor

Specifications	X-Sential™ SE	X-Sential™ SE with (hygienic) inline flange
Dimensions (W x D x H)	229 x 220 x 115 mm	241 x 220 x 115 mm
Weight	8 kg	8 kg
Max. operating pressure	30 bar	30 bar
Product temperature (at flange) with water cooling	-10 °C to +130 °C	-10 °C to +130 °C
Product temperature (at flange) without water cooling	-10 °C to + 70 °C	-10 °C to + 70 °C
Vibrations	0.2 G at 0.1 - 150 Hz	0.2 G at 0.1 - 150 Hz
Wavelength spectrum NIR range	900–1,700 nm	900–1,700 nm
Wavelength spectrum VIS range	350–850 nm	350–850 nm
Measurement window size	40 mm standard flange	23 mm hygienic inline flange 40 mm standard inline flange
Number of pixels NIR	256	256
Number of pixels VIS	256	256
Detector technology NIR/ VIS	Diode array	Diode array
Average measurement time	20 spectra/s	20 spectra/s
IP Code	IP69	IP69

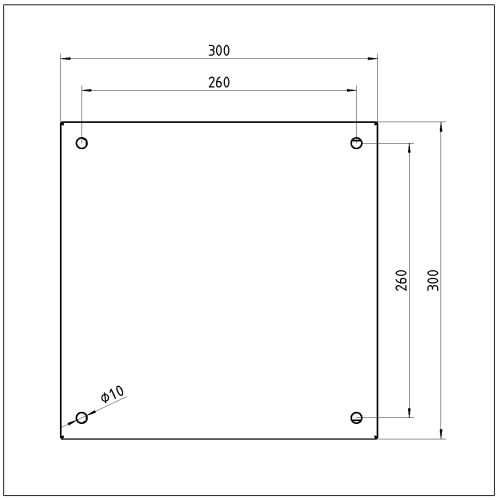
Specifications	X-Sential™ SE	X-Sential™ SE with (hygienic) inline flange
Light source	Tungsten-halogen dual lamp[1]	Tungsten-halogen dual lamp[1]
Lamp lifetime	18,000 h (2 x 9,000 h)	18,000 h (2 x 9,000 h)
Minimum clearance on all sides	100 mm	100 mm
Connection voltage	85–264 VAC	85–264 VAC
Frequency	50/60 Hz	50/60 Hz
Power consumption	30 W	30 W
Temperature stabilization	ASDC (Advanced Spectral Drift Control): active temperature control to ±1°C from set system operating temperature. Deviations will lead to automatic white reference measurement to account for spectral drifts.	ASDC (Advanced Spectral Drift Control): active temperature control to ±1°C from set system operating temperature. Deviations will lead to automatic white reference measurement to account for spectral drifts.
ATEX	Dust: II 3D Ex tc IIIC T85 °C Da/Dc X	Dust: II 3D Ex tc IIIC T85 °C Da/Dc X

[1] Single lamp module for overbelt variant.

3.6.2 Installation box

Specifications	Installation box
Dimensions (W x D x H)	300 x 300 x 167 mm
Weight (excluding cables)	6 kg
Weight (inc. cables, 2 x 10 m)	7.4 kg
Voltage	100–240 VAC
Frequency	50/60 Hz
Power consumption	50 W
Overvoltage category	II
IP code	IP66
Pollution degree	2
Appliance classes	I
ATEX	II 3D Ex tc IIIC T60°C Dc
EMC environment	Basic environment
EMC emission class	Class B
EMC standard	IEC 31326-2-3

Refer to the illustration for the measurements and hole pattern of the installation box.



3.6.3 Ambient conditions

Specifications	X-Sential™ SE	X-Sential™ SE with (hygienic) inline flange
Ambient temperature with active water cooling	-10 to +65 °C	-10 to +65 °C
Ambient temperature without active water cooling	-10 to +40 °C	-10 to +40 °C
Max. relative air humidity	< 90% non-condensing	< 90% non-condensing
Max. altitude above sea level	2,000 m	2,000 m
Storage temperature	max. 45 °C	max. 45 °C

3.6.4 Materials

Component	Materials of construction
Casing	1.4404
Passive cooler	Aluminum with coating, EPOFLON 526/4562
Seals (housing and flange)	EPDM or FKM (depends on configuration), all interface sealings are FKM, all sealing materials are FDA approved
Hygienic inline flange	Gold-soldered

3.6.5 Software

The sensor is controlled via the SX-Suite software package. It consists of the following components:

Name	Description	Typical usage	User	Occurence
SX-Server	Instrument driver / usage of special functions	Read out instrument status	Operator	As required
		Setup of instrument hardware	NIR admin	For installation and maintenance

Name	Special function	Description	User	Occurence
SX-Server	Conveyor belt	Optimized for measurement of moving objects on a conveyor belt	NIR admin	As required
	Mix	Control end-point of mixing processes	NIR admin	As required
	Sample movement detection	Verify sample flow	NIR admin	As required

Name	Description	Typical usage	User	Occurence
SX-Center	User interface (online/lab mode)	Recipe/product and calibration mangement	Operator	Daily workflow (if not fully automated)
		View results (table, trend, charts, reports)		
		Reference data management		
SX-Backup	Data backup scheduler	Automated backup of measurement data, results and calibrations	NIR admin	During installation

Name	Special function	Description	User	Occurence
SX-Run	Software restart	Automatic software restart in case of a crash	-	As required

3.6.6 Computer system requirements

The system requirements for the computer are as follows:

Operating system	Windows 11, Windows 10 until EOL
Central processing unit	For single sensor: Intel Core i5 (12th Gen or newer), equivalent AMD For multiple sensors: Intel Core i7 (12th Gen or newer), equivalent AMD
RAM	At least 16 GB
Hard disk space	At least 512 GB SSD and 1 TB HDD of free disk space Use a hard disk suitable for continuous operation (average 20 GB per sensor per year)
Data backup Network or external hard disk	At least 1 TB of free disk space 50 GB per sensor per year
Screen resolution	At least 1920x1080 Recommended 2560x1440
LAN	At least 1 x 100 Mbit/s LAN
USB 2.0/3.0	At least 1 USB connection per sensor and 1x USB per DataLab I/O box
PCI/PCIe	1 slot for Profibus card (for Profibus connection)
Software	Microsoft Word and Microsoft Excel 2010 or later PDF reader for operation manual

3.6.7 Installation site (laboratory)

- The installation site has a firm, level surface.
- The installation site meets the safety requirements. See Chapter 2 “Safety”, page 6
- The installation site has enough space that cables can be routed safely.
- The installation site has no obstacles (e.g. water taps, drains, etc.).
- The installation site has an own mains outlet socket for the instrument.
- The installation site is not exposed to external thermal loads, such as direct solar radiation.
- The installation site allows that the power supply can be disconnected at any time in an emergency.
- The installation site meets the specifications according to the technical data (e.g. weight, dimension, etc.). See Chapter 3.6 “Technical data”, page 15

3.6.8 Installation site (production)

- The installation site has a firm, level surface.
- The installation site meets the safety requirements. See Chapter 2 “Safety”, page 6
- The installation site has enough space that cables can be routed safely.
- The installation site is not exposed to external thermal loads, such as direct solar radiation.
- The installation site meets the specifications according to the technical data (e.g. weight, dimension, etc.). See Chapter 3.6 “Technical data”, page 15
- The installation site meets the specifications according to the installation point. See Chapter 5.1 “Establishing the installation point”, page 23
- The installation site has a own mains outlet socket for the instrument.
- The installation site has a sample removal point at a distance of < 1 m.
- The installation site allows a direct product measurement.
- The installation site has constant product flow.
- The layer thickness of the product to be measured is at least 30 mm.

4 Transport and storage

4.1 Transport

NOTICE

Risk of breakage due to incorrect transportation

- ▶ Make sure that all parts of the instrument are safely packed in such a way as to prevent breakage, ideally in the original box.
- ▶ Avoid sharp movements during transit.

- ▶ After transportation, check the instrument for damage.
- ▶ Damage that has occurred in transit should be reported to the carrier.
- ▶ Keep packing for future transportation.

4.2 Storage

- ▶ Make sure that the ambient conditions are complied with (see Chapter 3.6 “Technical data”, page 15).
- ▶ Wherever possible, store the device in its original packaging.
- ▶ After storage, check the device for damage and replace if necessary.

5 Installation

5.1 Establishing the installation point

5.1.1 Standard flange

The fixing points or bolts must conform to M6 with A2-70 torque of 7.3 Nm (5.4 lbft). Determine the installation point according to the specified data of the flange.

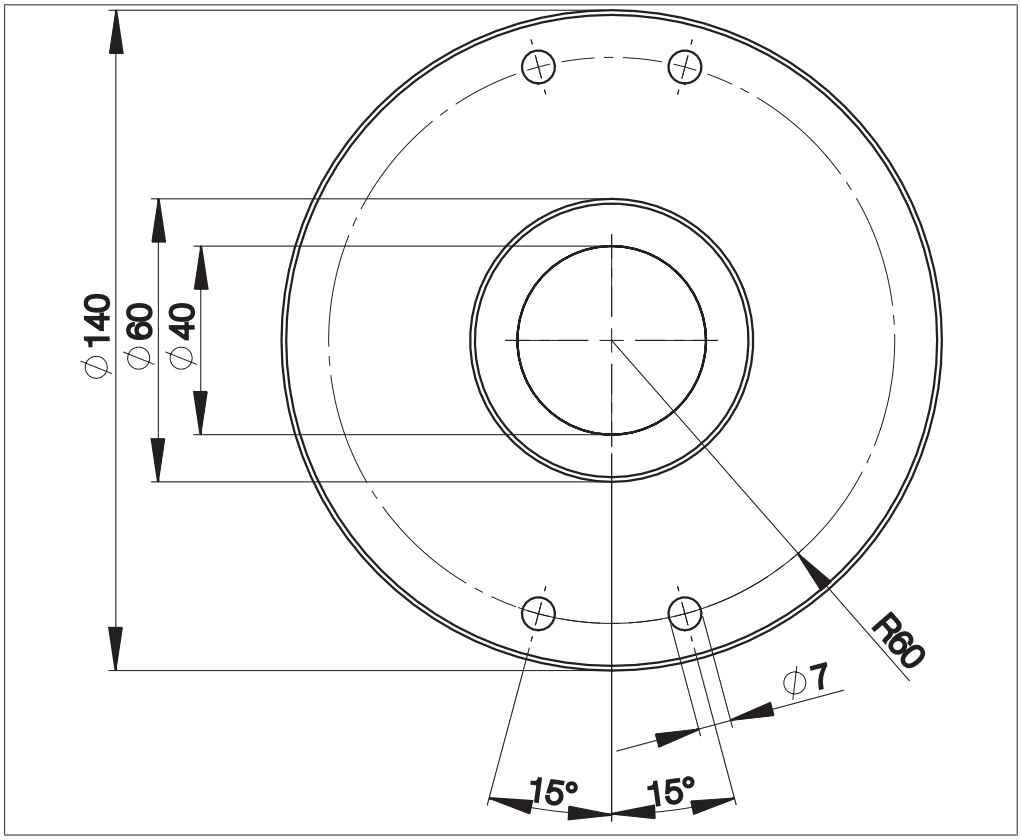


Fig. 8: Dimensions of flange

5.1.2 (Hygienic) inline flange

The fixing nuts on the clamp rings must conform to the following specifications:

- Suitable for Varinline housings Type N
- M6 with A2-70 torque of 9 Nm (6.6 lbft)
- M8 with A2-70 torque of 22 Nm (16.2 lbft)

Adhering to these values ensures the secure installation of the clamp rings. Additionally, determine the installation point according to the specified data of the flange and housing.

5.2 Installation point in piping system (example)

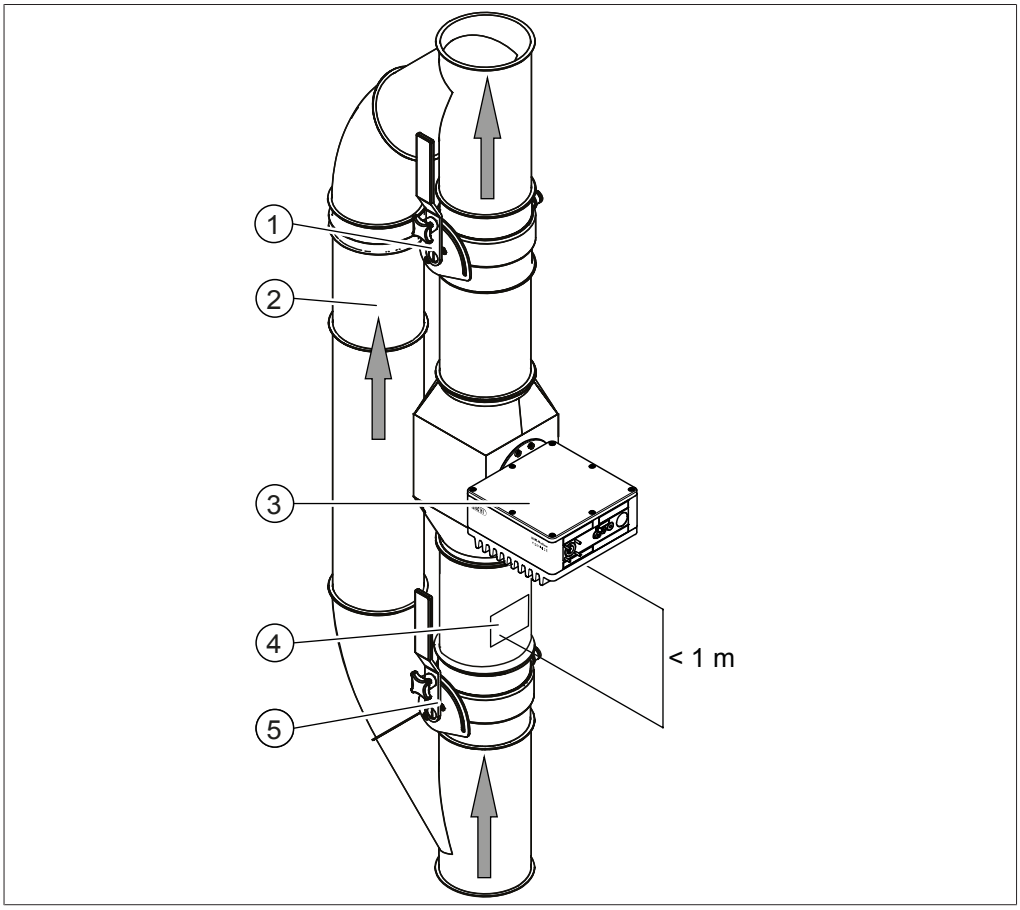
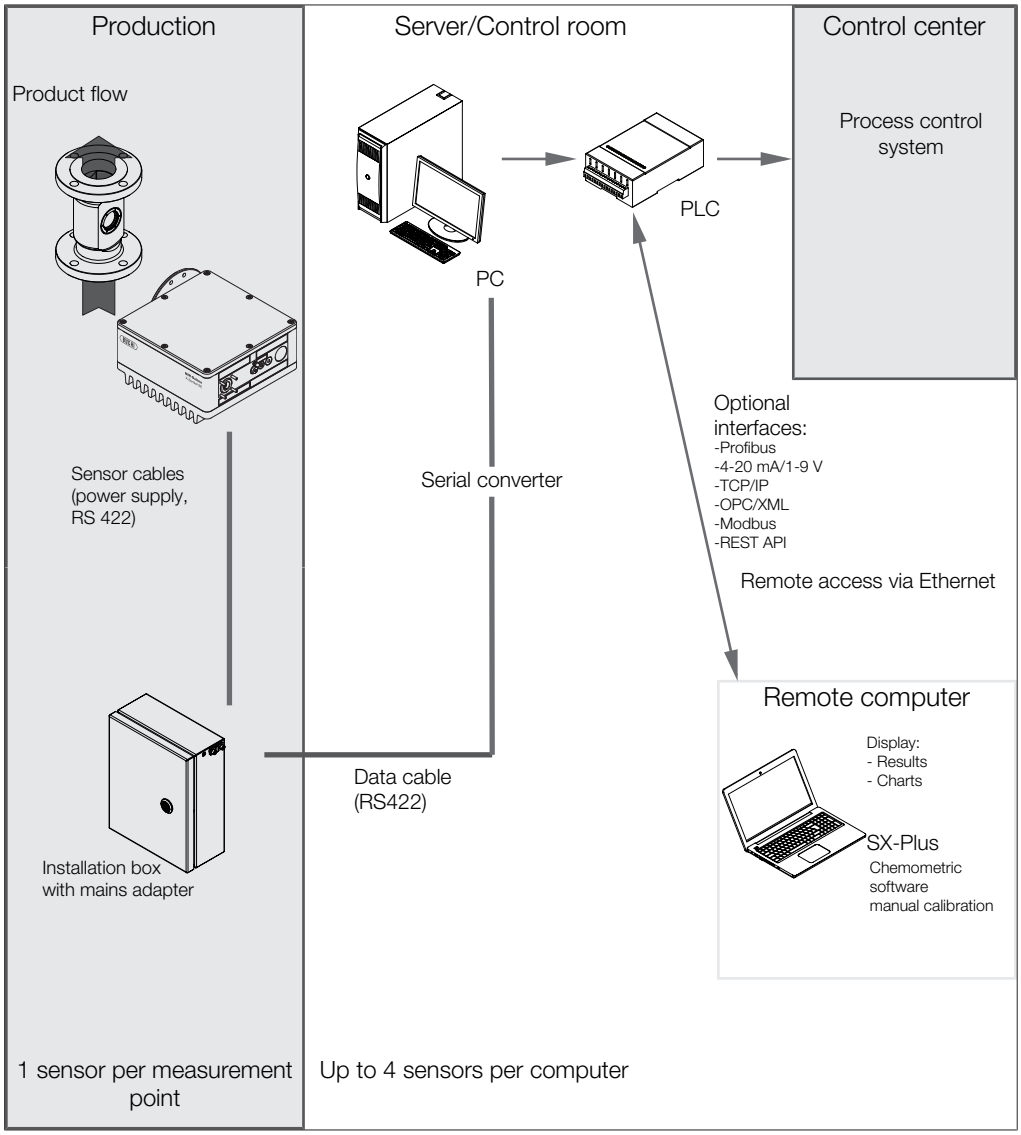


Fig. 9: Configuration

1	Flow restrictor	2	Bypass
3	Analyser	4	Sample removal point
5	Flow restrictor		

5.3 Installation (example)



5.4 Sensor installation

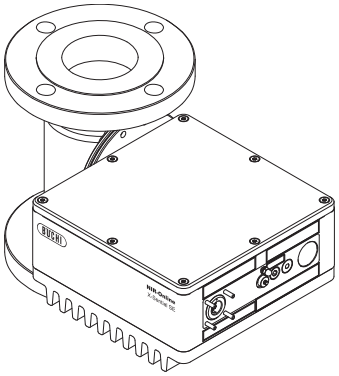
⚠ DANGER

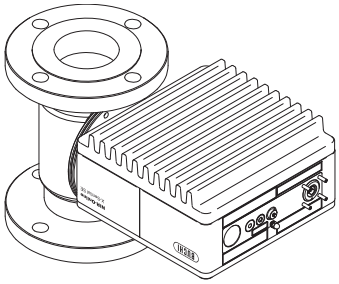
Use of an unsuitable flange in potentially explosive atmospheres.

The use of an unsuitable flange may cause an explosion.

▶ In potentially explosive atmospheres use a double flange.

The following installation positions are possible:





X-Sential™ SE with standard flange

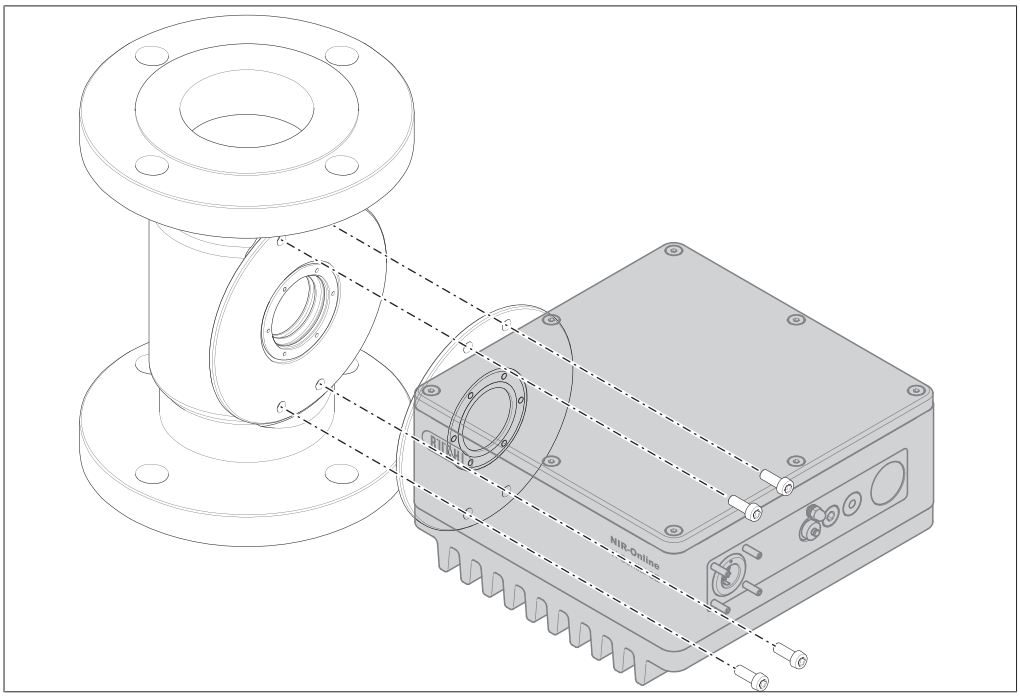


Fig. 10: Fixing sensor with screws (standard flange)

Tools required:

- Torque wrench, size Torx T30

Tightening torque: 8.4 Nm ±1

Precondition:

☑ Installation point has been established. See Chapter 5.1 “Establishing the installation point”, page 23.

☑ The fixing points or bolts conform to M6 A2-70 15 mm

▶ Fix the sensor to the installation point using the bolts.

X-Sential™ SE with (hygienic) inline flange

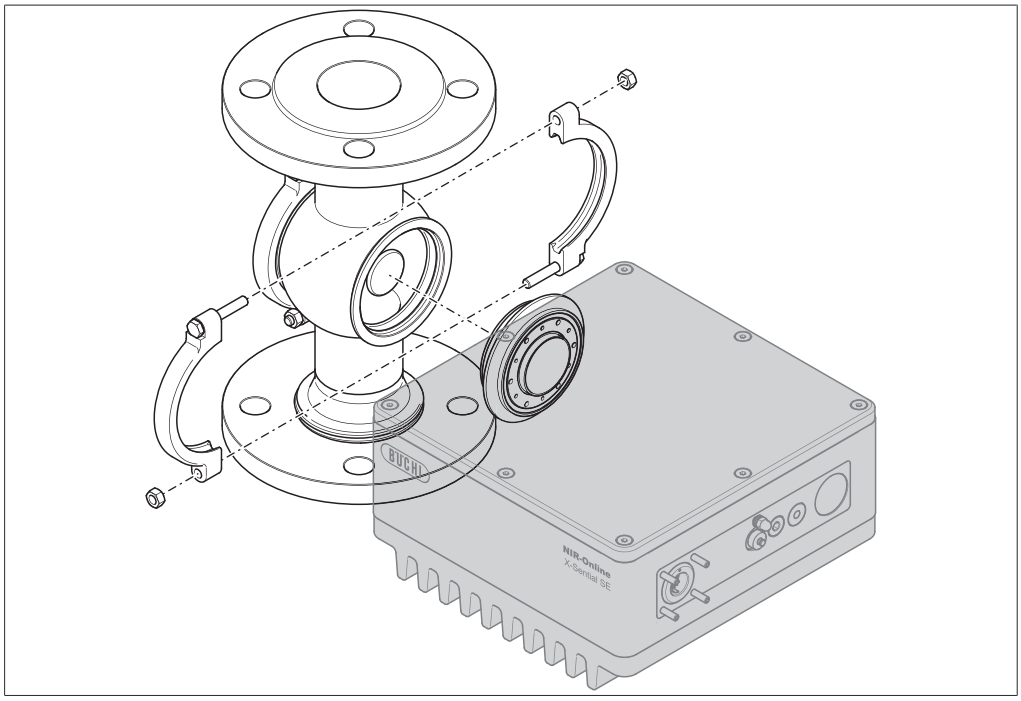


Fig. 11: Fixing sensor with screws (hygienic inline flange)

Tools required:

- Torque wrench, size Torx T30

Tightening torque:

- M6: 9 Nm (6.6 lbft)
- M8: 22 Nm (16.2 lbft)

Precondition:

☑ Installation point has been established. See Chapter 5.1 “Establishing the installation point”, page 23.

▶ Ensure the sensor and O-rings are clean and undamaged.
▶ Insert the sensor with the O-rings into the housing, checking the alignment.
▶ Position the sensor correctly to avoid sealing issues.
▶ Place the clamp ring evenly over the flange.
▶ Tighten the M6 and M8 nuts.
▶ Conduct a final inspection to ensure proper assembly and alignment

5.5 Connecting the sensor

Tools required:

- Torque wrench, size 7 mm AF
- Torque wrench, size Torx T20

NOTE

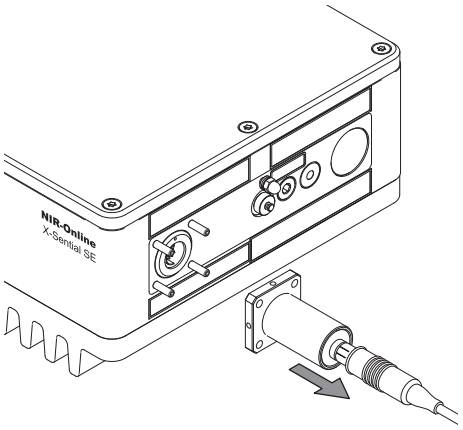
Make sure that the power is not switched on when connecting the sensor.

NOTE

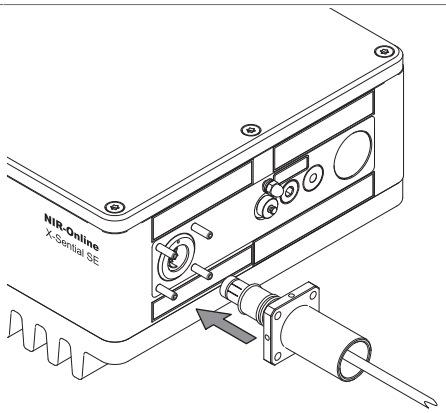
Loss of performance due to use of unsuitable device cables

Max. cable length between installation box and sensor 10 m.

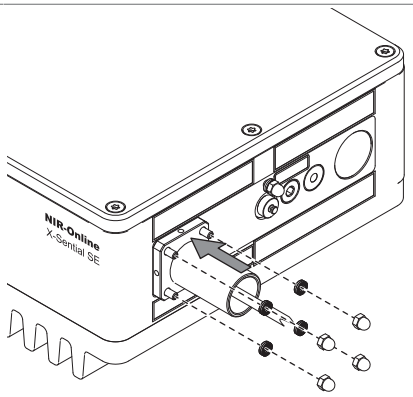
▶ Put the cable guard over the sensor cable.



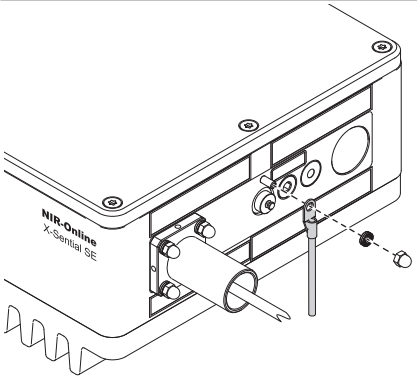
▶ Connect the sensor cable to the sensor.
▶ Secure the connector.



Tightening torque: 2.5 Nm ± 0.5
▶ Attach the cable guard to the sensor.



Tightening torque: 2 Nm ± 0.5
▶ Attach the ground cable to the sensor.



5.6 Establishing electrical connections

NOTICE

Risk of instrument damage because of not suitable power supply cables.

Not suitable power supply cables can cause bad performance or an instrument damage

- ▶ Use only BUCHI power supply cables.

Precondition:

- ☑ The electrical installation is as specified on the type plate.
- ☑ The electrical installation is equipped with a proper grounding system.
- ☑ The electrical installation is equipped with suitable fuses and electrical safety features.
- ☑ The installation site is as specified in the technical date. See Chapter 3.6 “Technical data”, page 15
- ▶ Connect the power supply cable to the connection on the instrument. See Chapter 3.2 “Configuration”, page 11
- ▶ Connect the mains plug to an own mains outlet socket.

6 Operation

The instrument is controlled via the SX-Suite software, installed on a connected computer. Detailed operational instructions are provided in both the *SX-Suite User Manual* and *SX-Plus User Manual* which offer in-depth guidance on the instrument's software interface, functionality, and troubleshooting.

6.1 Journal button

The ***Journal*** button on the instrument is critical for tracking and recording calibration events. Pressing this button automatically generates a new entry in the software's journal system, which records details such as the date, time, and action taken.
This feature is essential for maintaining a detailed history of calibration checks, ensuring quality control over time, and supporting audit requirements. The timestamped entries are valuable for later analysis and verification.

6.2 Creating journal entries and entering reference data

For calibration and continuous accuracy verification, reference data must be systematically entered into the journal.
This process aids in calibration improvements and is essential for monitoring consistency and precision according to the specific requirements of the production process.
The frequency and specifics of these checks are typically determined by quality assurance protocols or regulatory standards relevant to the industry in which the instrument is being used.

NOTE

Each journal entry is automatically timestamped with the exact date and time of the action.

- ▶ Press and hold the ***Journal*** button for one second.
  - ⇨ The connected software creates a journal entry (with current date, time, and preset identifiers associated with the operator/instrument).
- ▶ Remove the sample at the sample removal point, following the appropriate procedure to avoid contamination or errors.
- ▶ Mark the sample with critical identifiers (date, time and sensor number) to ensure traceability.
- ▶ Carry out a laboratory analysis to obtain reference values.
- ▶ Insert the reference data into the journal to create/update the calibration model.

For additional instructions, consult the *SX-Suite User Manual* and *SX-Plus User Manual*, which provide comprehensive guidelines for journal management, calibration practices, and specific instructions for data entry.

7 Cleaning and servicing

NOTE

Users may only carry out the servicing and cleaning operations described in this section.

Any servicing and repair work which involves opening up the casing may only be carried out by NIR-Online service technicians.

- ▶ Use only genuine NIR-Online consumables and spare parts in order to ensure correct operation of the device and preserve the warranty.

7.1 Notes on servicing

NOTICE

Risk of property damage due to failure to remove dust from heat sink

If dust is not cleaned off the heat sink it may cause the sensor to fail.

- ▶ Make sure that the layer of dust is no thicker than 5 mm.

7.2 Regular maintenance work

Component	Action	Interval
Casing	▶ Wipe down the casing with a damp cloth.	Weekly
Warning symbols	▶ Check that the warning symbols on the sensor are legible. ▶ If they are dirty, clean them.	Weekly
Optics	**NOTICE! Have operation carried out by NIR-Online service technician** ▶ Replace lamps.	Annually
Casing	**NOTICE! Have operation carried out by NIR-Online service technician** ▶ Check and replace seals	Annually

8 Taking out of service and disposal

8.1 Disposal

The operator is responsible for proper disposal of the instrument.

- ▶ When disposing the equipment observe the local regulations and statutory requirements regarding waste disposal.
- ▶ When disposing, observe the disposal regulations of the materials used. For the used materials see Chapter 3.6 “Technical data”, page 15.

8.2 Returning the instrument

Before returning the instrument, contact the NIR-Online GmbH Service Department. service.nir-online@buchi.com and ask for an RMA number.

9 Appendix

9.1 Certificates

9.1.1 ATEX certificate

NOTE

Labeling

Instruments without  mark.

- ▶ Instruments without ATEX mark are not suitable for ATEX operation. See Chapter 3.5 “ATEX rating”, page 15

9.2 Spare parts and accessories

NOTE

Any modifications of spare parts or assemblies are only allowed with the prior written permission of NIR-Online GmbH.

9.2.1 Spare parts specifications

Power supply

NOTICE

Risk of property damage due to incorrectly connected mains adapter

An incorrectly connected mains adapter may cause the sensor to fail.

- ▶ Make sure that the current limiter is set to more than 4.5 A.
- ▶ Make sure that the voltage is 12.7 VDC.

Specification
Power supply input voltage: 85–264 ± 10% VAC
Rated voltage: 12.7 VDC
Rated current: ≥ 4.5A
Typical peak-to-peak residual ripple: 50 mV
Max. peak-to-peak residual ripple: 200 mV

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