



DOC273.52.00161

Power connection box for sc analyzers

Mounting instruction

09/2021, Edition 5

Installation

General information

In no event will the manufacturer be liable for direct, indirect, special, incidental or consequential damages resulting from any defect or omission in this manual. The manufacturer reserves the right to make changes in this manual and the products it describes at any time, without notice or obligation. Revised editions are found on the manufacturer's website.

Safety information

The manufacturer is not responsible for any damages due to misapplication or misuse of this product including, without limitation, direct, incidental and consequential damages, and disclaims such damages to the full extent permitted under applicable law. The user is solely responsible to identify critical application risks and install appropriate mechanisms to protect processes during a possible equipment malfunction.

Please read this entire manual before unpacking, setting up or operating this equipment. Pay attention to all danger and caution statements. Failure to do so could result in serious injury to the operator or damage to the equipment.

Make sure that the protection provided by this equipment is not impaired. Do not use or install this equipment in any manner other than that specified in this manual.

Use of hazard information

DANGER

Indicates a potentially or imminently hazardous situation that, if not avoided, will result in death or serious injury.

WARNING

Indicates a potentially or imminently dangerous situation that, if it is not avoided, could result in death or to serious injuries.

CAUTION

Indicates a potentially hazardous situation that may result in minor or moderate injury.

NOTICE

Indicates a situation which, if it is not avoided, may cause damage to the instrument. Information that requires special emphasis.

Precautionary labels

Read all labels and tags attached to the instrument. Personal injury or damage to the instrument could occur if not observed. A symbol on the instrument is referenced in the manual with a precautionary statement.

	This symbol, if noted on the instrument, references the instruction manual for operation and/or safety information.
	This symbol indicates that a risk of electrical shock and/or electrocution exists.
	Electrical equipment marked with this symbol may not be disposed of in European domestic or public disposal systems. Return old or end-of-life equipment to the manufacturer for disposal at no charge to the user.

Introduction

In this instruction sheet, the assembly and installation of the power connection box (catalog number LQV155.99.0000x) is described.

The power connection box serves to connect sc analyzers to a power supply. It offers a power connection, fuses and power sockets for two sc analyzers.

⚠ DANGER

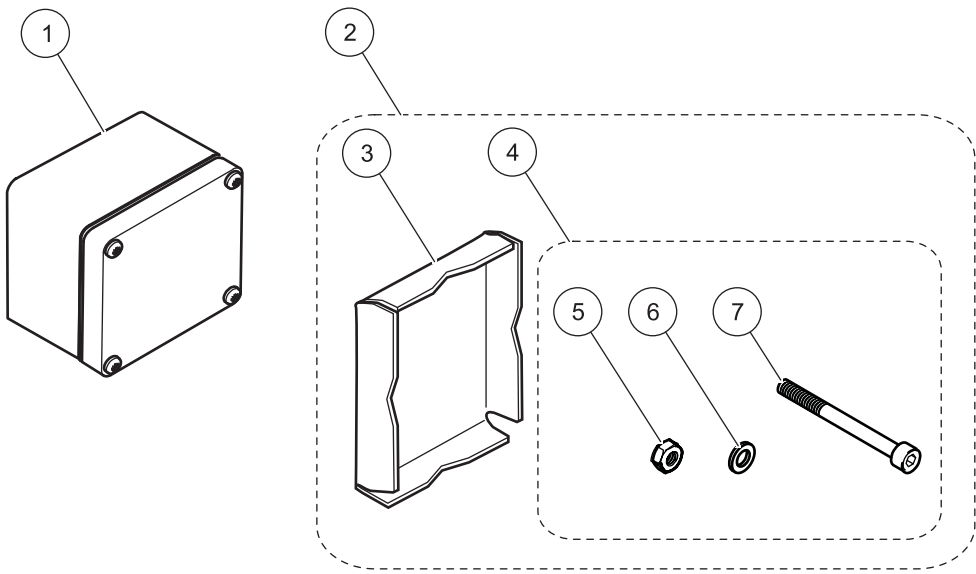
Risk of electric shock. The procedures described in this instruction sheet may only be performed by qualified personnel.

The parts included in the scope of delivery for the power connection box are listed in [Figure 1](#). Under some circumstances, not all supplied parts are required. Therefore the only parts listed are those mentioned in this instruction sheet.

The dimensions of the installation are shown in [Figure 2, page 5](#).

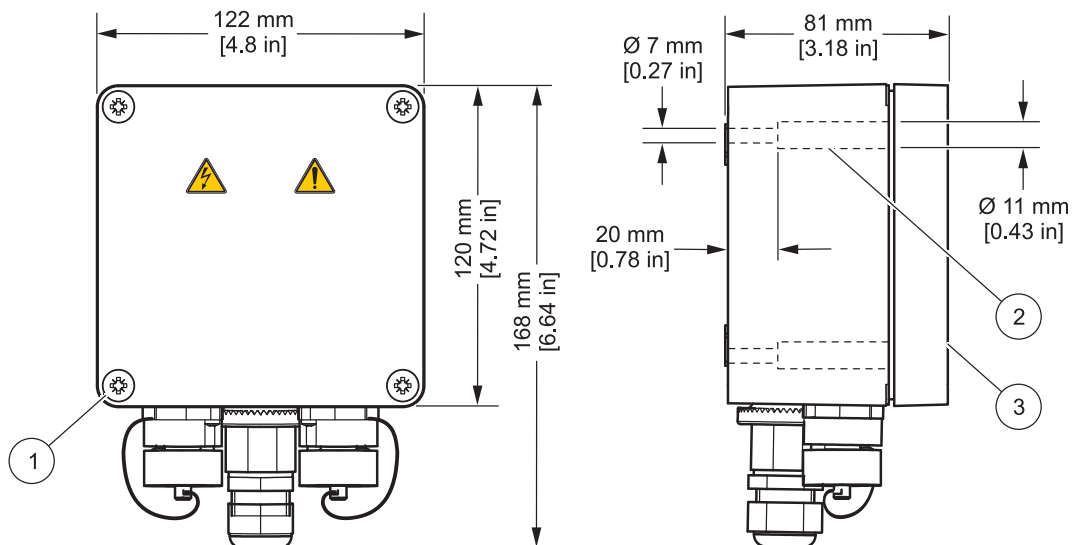
Note: Important note: Leave underneath the power connection box (i.e. 50–100 mm) for cables and connectors.

Figure 1 **Parts included in the scope of delivery for the power connection box (LQV155.99.0000x)**



1	Power connection box	5	Nut, M6 (4x) (LZQ058)
2	Assembly kit for the rail or pole assembly (LZQ059)	6	Washer for M6 (4x) (LZQ058)
3	Clamping plate for LZQ060 (LZQ059)	7	Hexagons socket screw, M6 x 100 mm (4x) (LZQ058)
4	Screw set for LZQ058 (LZQ059)		

Figure 2 **Dimensions**



1	Lid screw (4x)	3	Lid
2	Screw hole (4x)		

Assembly

⚠ DANGER

Risk of electric shock.

This device may only be connected to a single-phase power supply at 100–240 V~, which is protected with a 15 A fuse or a current breaker.

⚠ DANGER

Risk of electric shock.

The wire connection of the power supply must always contain a 2-pin disconnect switch available on site. The disconnect switch must meet the applicable regulations. This disconnect switch must be installed in the immediate vicinity of the device and be easily accessible; it must also be labeled as a disconnect switch. Before opening the power supply cover, disconnect the system electrically via the disconnect switch.

Installation location

The power connection box can be installed on a wall, a vertical pole or on horizontal rails.

NOTICE

During the installation of the power connection box, read the user manuals for the sensor and for the controller. Pay particular attention to all safety instructions and danger notes.

NOTICE

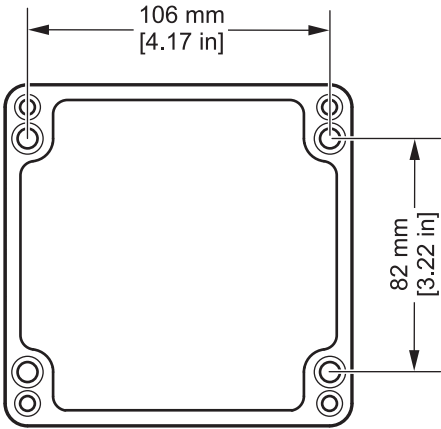
Leave sufficient space underneath the power connection box (i.e. 50–100 mm) for cables and connectors.

Note: Always make sure that all parts of the system can be accessed without hindrances when the installation location is selected.

Wall assembly

1. Loosen the four lid screws and remove the lid (refer to [Figure 2, page 5](#)).
2. Secure the housing with the four screws provided to the wall (refer to [Figure 1, page 4](#) and [Figure 2, page 5](#)). The dimensions required for assembly can be found in [Figure 3](#).

Figure 3 Dimensions

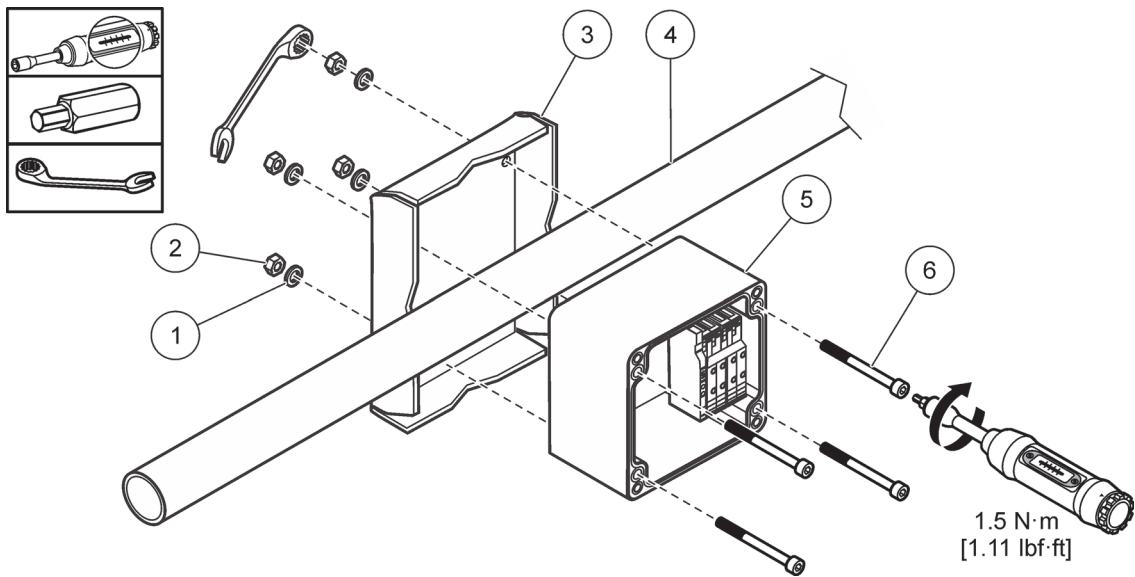


Rail or pole assembly

Note: Make sure that the diameter of the rail or of the pole is between 35 and 55 mm.

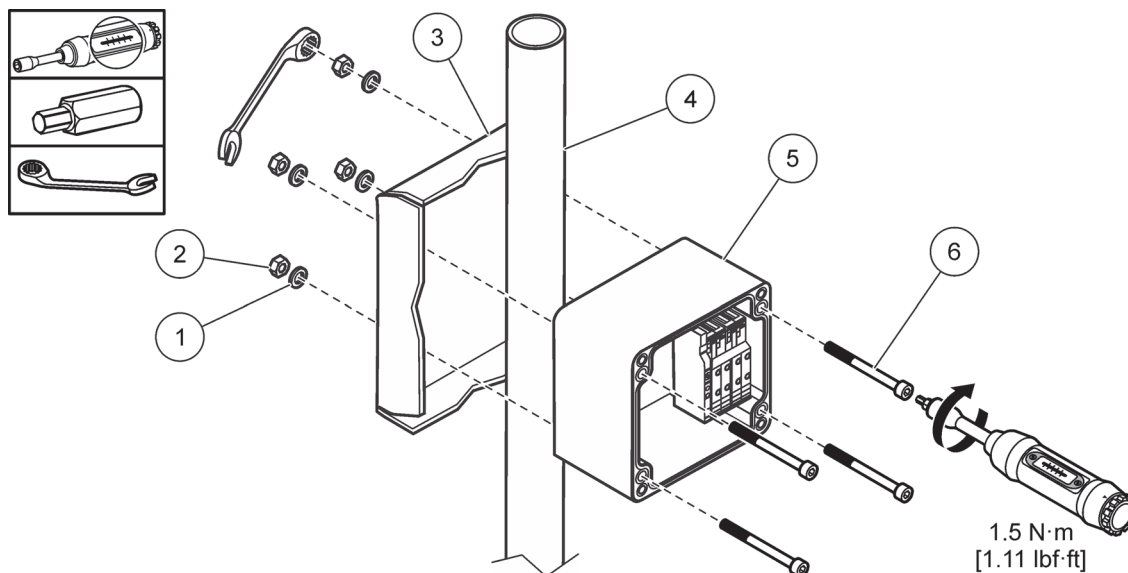
Note: Instructions on how to secure the housing with the clamping plate can be found in [Figure 4](#) or [Figure 5, page 7](#).

Figure 4 Assembly on a horizontal rail



1	Washer for M6	4	Rail
2	Nut	5	Power connection box
3	Clamping plate	6	Hexagon socket screw, M6 x 100 mm

Figure 5 Pole assembly



1 Washer for M6	4 Rail
2 Nut	5 Power connection box
3 Clamping plate	6 Hexagon socket screw, M6 x 100 mm

Electrical connections

⚠ DANGER

Risk of electric shock. For installation in wet areas or areas in which wetness can occur, a residual-current circuit breaker must always be installed with this socket. For assembly in outdoor areas, overvoltage protection is required. For fixed wire connections (cable conduit), a clearly labeled 2-pin disconnect switch must be installed on site next to the socket, in accordance with the applicable regulations. For the wire connection to the on-site disconnect switch, disconnect the power supply to the socket.

⚠ DANGER

With fixed wiring, a disconnecting device (local interruption) must be integrated into the supply line. The disconnecting device must meet the applicable standards and regulations. It must be installed near the device, be able to be reached easily by the operator and labeled as a disconnecting device.

If the connection is established using a mains connection cable that is permanently connected to the power supply, the plug of the mains connection cable can serve as local interruption.

⚠ WARNING

Electrical dangers and fire hazards. Use only the supplied power cable.

Only qualified experts may perform the tasks described in this section of the manual, while adhering to all locally valid safety regulations.

NOTICE

Use only earthed sockets for the connection of this device to the power supply.

If you are not sure if the sockets are earthed, have this checked by a qualified electrician.

The power plug serves in addition to the power supply to isolate the device quickly from the mains where necessary.

This is recommended for long-term storage and can prevent potential dangers in the event of a fault.

Therefore make sure that the sockets to which the device is connected are easy to reach by each user at all times.

⚠ DANGER

The products of the manufacturer for use outdoors have a comprehensive protection against the penetration of moisture and dust. If these products are connected to a mains socket of the main power line via a cable with plug instead of fixed-installation wire connections, the plug and socket are considerably more susceptible to the penetration of moisture and dust.

It lies in the responsibility of the operator to protect plug and socket in a way that the connection has an adequate protection against the penetration of moisture and dust and fulfils the local safety conditions.

When the device is used outdoors, it should be connected only via a suitable socket that has at least protection rating IP44 (protection against spray water from all directions).

The power connection box is available with and without a pre-assembled power cable. If no pre-assembled power cable is provided, the power connection box can be connected to the mains power via a fixed wire connection or a power cable with suitable strain relief. The wire connection is established via the same connection terminals for a fixed wire connection and a cable wire connection.

For the wire connection, proceed as follows (refer to [Figure 6, page 9](#)):

1. Make sure that the housing is well secured.
2. Remove the four screws and the socket lid (component 8).
3. Unscrew the nut of the strain relief (component 5).
4. Remove the cap of the strain relief (component 4).
5. Strip off the insulation of all three conductors of the power cable (phase, neutral conductor and earth conductor) over a length of 8 mm. The connection terminals are designed for solid or stranded conductors (18 – 16 AWG).
6. Feed the cables through the strain relief or cable guide. If strain relief is used, feed the power cable through the strain relief nut (component 5), the cap (component 4) and the cable gland (component 3).
7. If strain relief is used, insert the cap (component 4) into the cable gland (component 3) and screw the nut (component 5) onto the cable gland. Do not tighten the nut.

NOTICE

Leave the bridges between the terminals 1 and 2 as well as 3 and 4. Both the conductors of the power cable and the bridges must be connected to the corresponding terminals.

8. Open the fuse holder of terminal 1 — to do this, push the fuse holder down (refer to [Figure 7, page 10](#)).
9. Connect the phase to terminal 1 (refer to [Figure 8, page 10](#)) and tighten the screw.
10. Insert the fuse holder again.
11. Open the fuse holder of terminal 4.
12. Connect the neutral conductor to terminal 4 and tighten the screw.

13. Insert the fuse holder again.

⚠ DANGER

Risk of electric shock.

A good ground connection to this product is required to make sure that this and all other connected devices fulfill the safety standards and safety provisions.

NOTICE

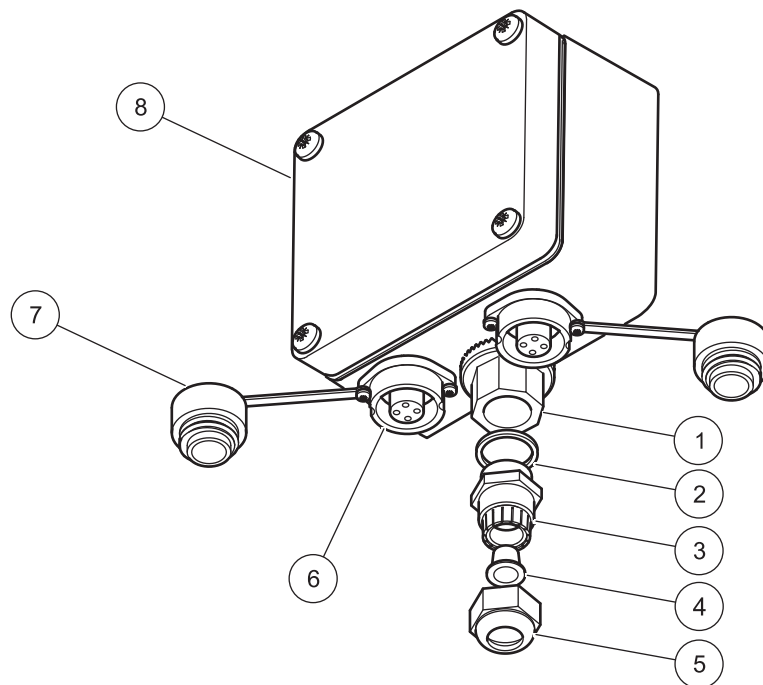
The terminal block for the ground connection has several terminals. The outer screws (top and bottom screw) are intended for the front terminals.

14. Connect the front ground cable to terminal 5 and tighten the top screw.

15. For wire connections with a power cable, tighten the nut of the cable gland (component 3 in [Figure 6, page 9](#)), so that the cable sits firmly in the strain relief. Do not tighten the inner conductors of the power cable too tightly under tension (instead leave a small loop for service work).

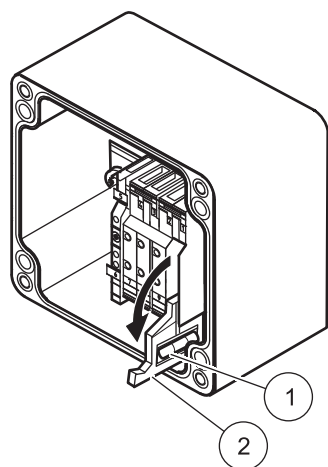
16. Position the socket lid again and tighten the four screws.

Figure 6 Cable connections



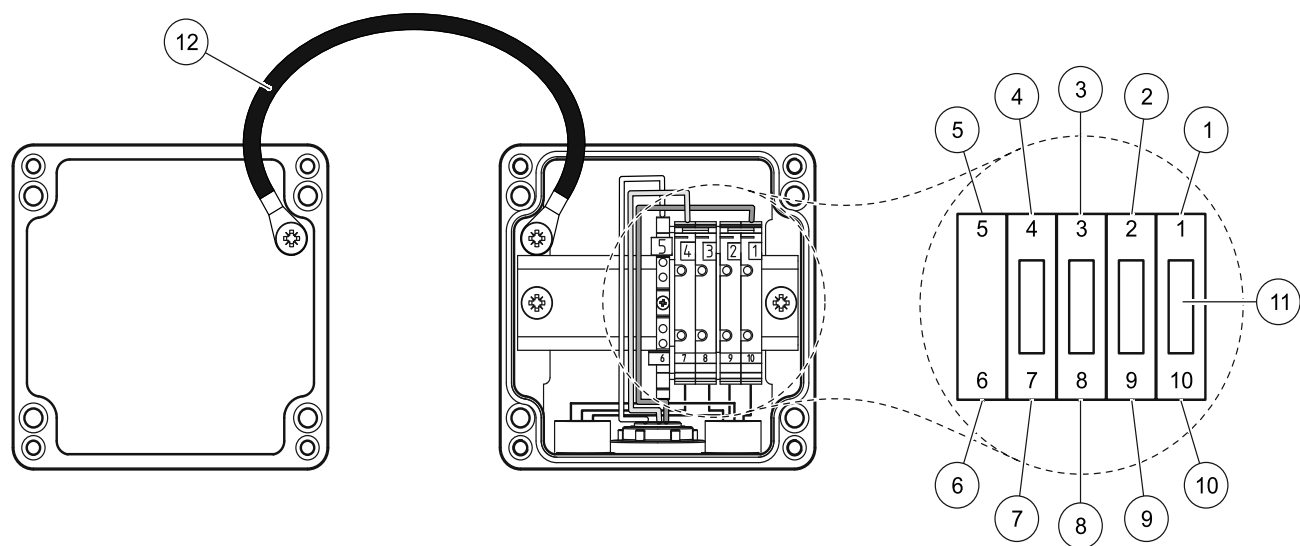
1 Cable guide	6 Power socket
2 Sealing ring	Note Observe the output voltage at the power sockets. The output voltage supplied by the power connection box to the power sockets corresponds to the country-specific mains voltage to which the power connection box is connected. Never connect consumers with a lower input voltage to the power connection box, if the power connection box is operated at a higher mains voltage.
3 Cable gland	
4 Cap	7 Lid
5 Nut	8 Power connection box

Figure 7 Fuse holder



1 Fuse	2 Fuse holder
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Figure 8 Circuit diagram (see inside of the lid)



1 Phase, line (live)	7 Black for left power socket
2 Connection to terminal 1 via bridge	8 Black for right power socket
3 Connection to terminal 4 via bridge	9 White for left power socket
4 Neutral conductor	10 White for right power socket
5 Protective ground (two terminals)	11 Fuse, T 5 A H, 250 V (4x)
6 Protective ground for left and right power socket	12 Lid protective ground

Clean the power connection socket

DANGER

Risk of electric shock.

Disconnect the power connection socket from the power supply before it is cleaned in order to avoid electric shocks.

Wipe the outside of the housing with a damp cloth. Make sure that the connector is well sealed with the sealing cap. Use a mild cleaning agent if required. Solvents must not be used.

Replace the fuse

DANGER

Risk of electric shock.

The procedures described in this section of the instruction sheet may only be performed by qualified personnel.

DANGER

Risk of electric shock.

An incorrect fuse can lead to injuries and damage. The fuse must always be replaced with a fuse of the same type and with the same nominal values.

1. Make sure that the power connection box is disconnected from the power supply.
2. Loosen the screws and remove the lid.
3. Open the fuse holder (there are two fuses for each analyzer connection: one for the phase and another for the neutral conductor — refer to [Figure 7, page 10](#)) and replace damaged fuses with fuses of the same type and with the same nominal values (T 5 A, time-lag, H, 250 V). Close the fuse holder (component 11, [Figure 8, page 10](#)).
4. Position the lid again and tighten the screws.

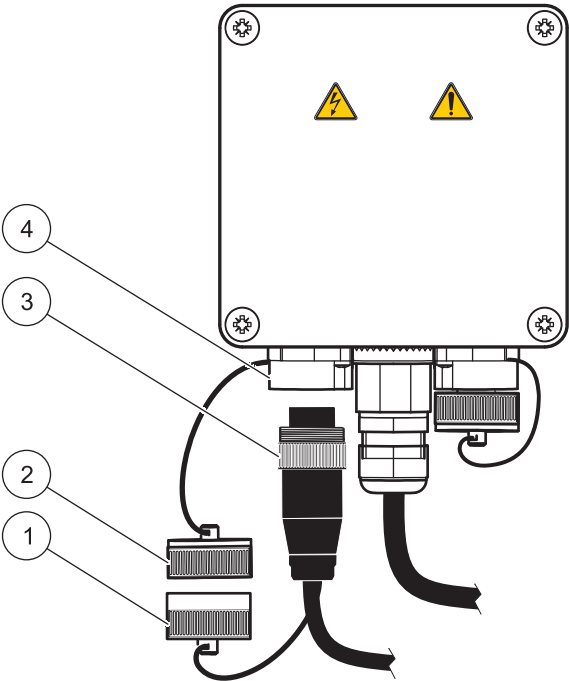
Connect the sc analyzer

 **DANGER**

Risk of electric shock.
If a power socket (component 4 in [Figure 9](#)) is not to be used, make sure that the power socket is well sealed with the cap (component 2 in [Figure 9](#)).

1. Remove the sealing cap from the connector.
2. Connect the analyzer to the power socket.
3. Secure the connector of the analyzer to the power socket.
4. Connect the sealing caps of the connector (component 1) and of the power socket (component 2) securely together.

Figure 9 **Connections of the analyzer**



1	Sealing cap for the analyzer connector	3	Analyzer connector
2	Sealing cap for the power socket	4	Power socket of the analyzer

Technical data

Subject to change.

General information	
Power supply	100–240 V~, + 10 %–15 %; 50/60 Hz; maximum 1000 VA
Overvoltage category	II
Pollution degree	2
Fuses	T 5 A (time-lag) H, 250 V (4x)
Dimensions	(H x W x T) housing: 168 mm x 122 mm x 80 mm Assembled: (free space for the cables) x width x (free space for the hardware)
Weight	1250 g
Housing protection rating	IP56 (with protective caps or connectors assembled)
Certifications	CE, cTUVus
Assembly	Wall, pole or rail (with supplied assembly kit LZQ059): Ø 35 mm–55 mm
Cable gland	Strain relief: water resistant, 8–13 mm Cable guide: 1,3 cm (0,5 inches) Conductors: maximum 1,5 mm ² (AWG 16)
Environmental conditions	
Environmental conditions	Indoor and outdoor use
Ambient temperature	–20 °C to +45 °C, 95 % relative humidity, non-condensing
Altitude	2000 m (6562 ft) maximum
Materials	
Enclosure	Aluminum with powder coating

Replacement parts and accessories

Description	Quantity	Catalog number
Clamping plate	1	LZQ060
Cable guide	1	LZX981
Fuse set (4x, T 5 H/250 V)	1	LZY460
Assembly kit for rail or pole assembly	1	LZQ059
Screws set	1	LZY058

HACH COMPANY World Headquarters

P.O. Box 389, Loveland, CO 80539-0389 U.S.A.
Tel. (970) 669-3050
(800) 227-4224 (U.S.A. only)
Fax (970) 669-2932
orders@hach.com
www.hach.com

HACH LANGE GMBH

Willstätterstraße 11
D-40549 Düsseldorf, Germany
Tel. +49 (0) 2 11 52 88-320
Fax +49 (0) 2 11 52 88-210
info-de@hach.com
www.de.hach.com

HACH LANGE Sàrl

6, route de Compois
1222 Vérenaz
SWITZERLAND
Tel. +41 22 594 6400
Fax +41 22 594 6499

