SulfiLogger™ sensor & PowerCom Box

Installation Manual

Revision 114 (Valid from August 2023)

S/N from 1005000

SulfiLogger

Installation Manual

This manual covers the installation of the SulfiLogger™ sensor and the PowerCom Box - an accessory that powers the SulfiLogger™ sensor and transmits data to the cloud. The SulfiLogger™ sensor can be used both with and without the PowerCom Box.

Disclaimer
Please read this manual carefully before unpacking, installing, or operating the equipment. Failure to do so may result in serious injury to operators or other persons, or damage to equipment.

Only qualified technicians who are familiar with the technical terms, warnings, and instructions in this manual and who are able to follow these should connect the equipment.

Do not use the equipment in any other way than specified.

Special conditions apply for Ex equipment (page 6-11).

Pay attention to all warning statements (⚠).

The Equipment is not intended to be the sole control mechanism in any setup and the intended use of the equipment is recommended to be in combination with other supplementary control mechanisms and systems.

Warranty
The equipment is covered by a limited warranty as specified in "General Terms and Conditions of Sale and Delivery".

Chemical and gas handling safety

⚠ *Operators should familiarize themselves with relevant safety procedures, the use of personal protective equipment (PPE), the correct handling of gases and/or chemicals, and carefully read all relevant safety sheets.*

Equipment use and handling considerations

⚠ *Do not use the equipment outside the specified electrical, mechanical, and thermal parameters, or outside the measurement range as specified in the data sheet.*

⚠ *Do not orient the SulfiLogger™ sensor with the front of the sensor facing upwards at any time (Fig. 2).*

⚠ *Do not expose the equipment to: direct sunlight, objects that radiate intense heat, corrosive chemicals or gases (except for H_2S), mechanical impacts, vibrations or shocks, dust, and radioactive emissions.*

Installation
Follow the step-by-step instructions (page 4-5).

Maintenance
Calibrate the SulfiLogger™ sensor regularly to maintain its accuracy. Before calibrating the sensor, remove any rags and gently wipe the sensor with tissue paper if necessary.

⚠ *Do not use chemicals and do not scrub or apply force while cleaning the front of the SulfiLogger™ sensor.*

Replace PowerCom Box batteries when needed.

See battery status online.

Use only PowerCom Box batteries (part number: S00098) and replace the batteries one at a time.

Disassembly, modifications, and repair
Disassembly, modifications, and repair of the equipment may only be performed by the manufacturer.

Disposal

Electrical equipment marked with this symbol may not be disposed of as general household waste in European domestic or public disposal systems. Return old or end-of-life equipment to the applicable collection points for the recycling of electrical equipment and batteries or return the equipment to the manufacturer for disposal at no charge to the user.

Installation in hazardous areas (Ex)
Special conditions apply for installations in hazardous areas.

Please see the relevant installation drawings (page 6-11).

Fig. 1 SulfiLogger™ sensor pin specifications

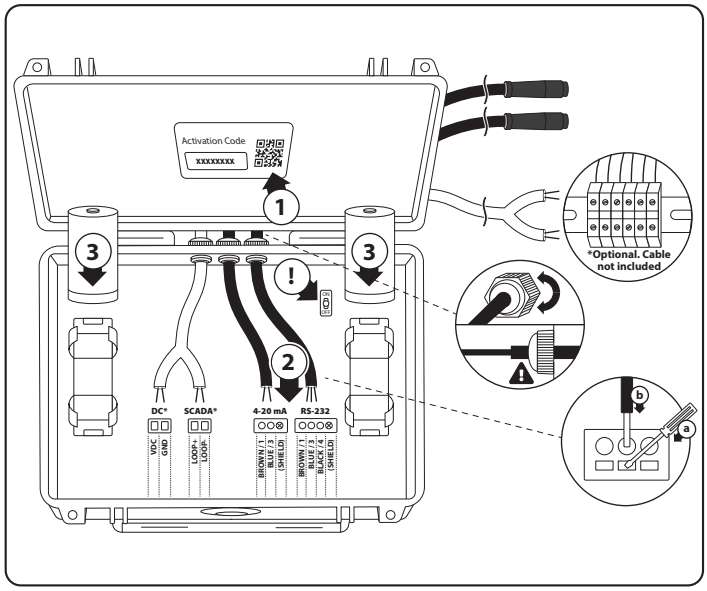
Communications (RS-232)			Power / 4-20 mA		
Pin	Color	Connection	Pin	Color	Connection
1	Brown	Sensor RXD	1	Brown	Positive (+12 to 28V)
2	White	Not connected	2	White	Not connected
3	Blue	Sensor TXD	3	Blue	Negative (-)
4	Black	GND	4	Black	Not connected
5	Gray	Not connected	5	Gray	Not conencted

Fig. 2 Sensor orientation

Installation

1. Configure power/data

a) PowerCom Box



⚠ *Wipe the surface of the PowerCom Box with a damp cloth before installation.*

① Configure a site in SulfiLogger™ WebData.
Scan the QR activation code with a smartphone or go to webdata.sulfilogger.com, login, and add a site.

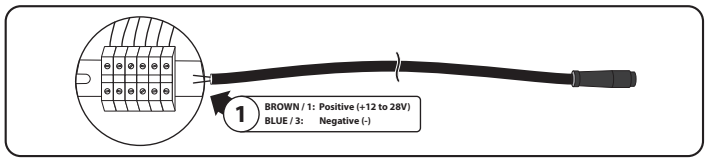
② Insert and connect the two sensor cables. For SCADA/PLC integration, connect 4-20 mA loop power (24V, source).

⚠ *Tighten the cable glands at the cable sections fitted with shrink tubing. Be careful not to over- or undertighten the cable glands.*

③ Insert two batteries and/or connect DC power.
DC voltage 6-12 V, min. 2 A or 9-28 V, min. 1 A (from S/N 1000302291).

! Wait and turn on the PowerCom Box after you have connected the two sensor cables to the sensor in step 2.

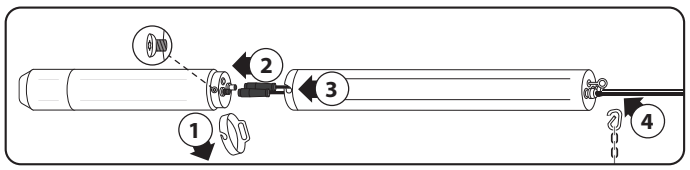
b) Direct 4-20 mA only



① Install the power / 4-20 mA sensor cable (pin specifications in Fig. 1) and scale the 4-20 mA signal according to the min and max values of the sensor's measurement range.

2. Prepare sensor

a) Wastewater (in the liquid)



① Loosen the 3 screws and remove the outer ring.

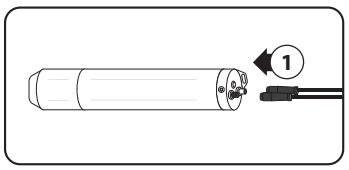
② Connect the sensor cable(s).

③ Connect the cable guard and fasten the 3 screws.

④ Attach the chain to the eye bolt.

! Turn on the PowerCom Box (if applicable).

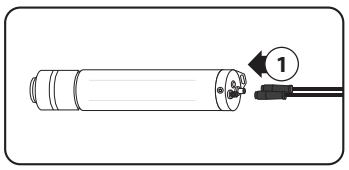
b) Wastewater (in the air)



① Connect the sensor cable(s).

! Turn on the PowerCom Box (if applicable).

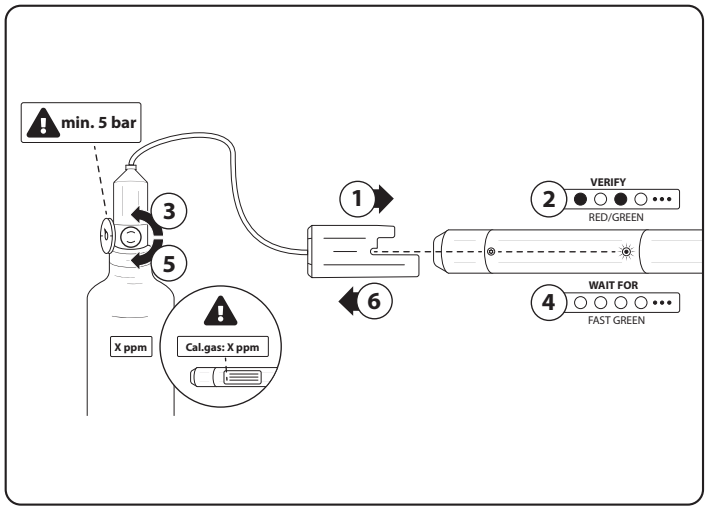
c) Inline



① Connect the sensor cable(s).

! Turn on the PowerCom Box (if applicable).

3. Calibrate sensor



⚠ *Verify pressure and gas concentration.*

⚠ *Calibrate the sensor outdoors or in a well-ventilated area.*

① Fully attach the calibration cap and rotate it until the notch aligns with the indicator light and the screw is visible in the notch.

② Verify alternating red/green flashes (ready to calibrate).

③ Fully open the regulator valve.

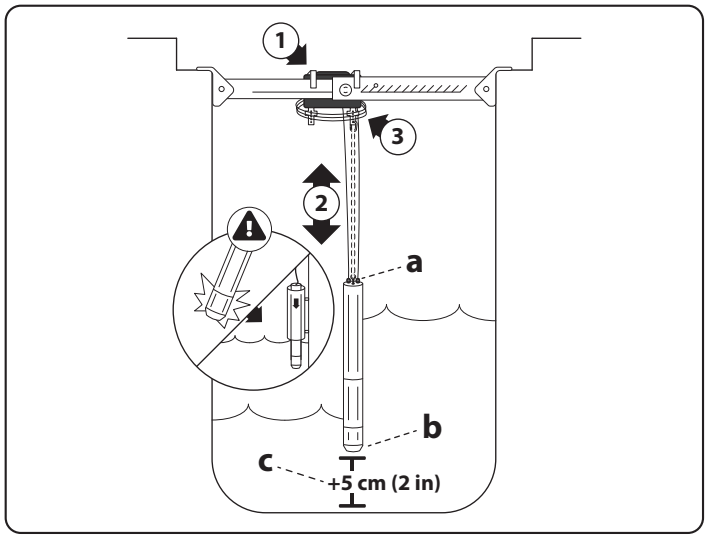
④ Wait for fast green flashes (calibration completed) after 5 - 6 mins.

⑤ Fully close the regulator valve.

⑥ Remove the calibration cap.

4. Install sensor

a) Wastewater (in the liquid)



⚠ *Install the sensor inside a fixated PVC pipe (min. Ø70mm) if there is a risk of the sensor hitting well walls or other objects.*

① Locate/establish an anchor point and mount the PowerCom Box (if applicable).

② Install the sensor and adjust the height while paying attention to keep:

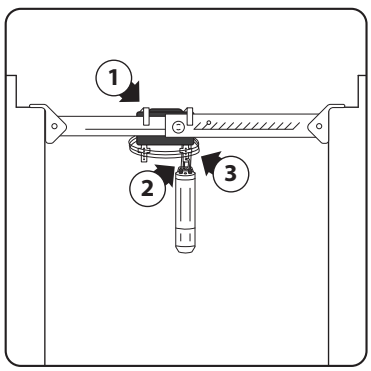
a) the cables clear of water

b) the front of the sensor submerged when water is flowing

c) the front of the sensor at least 5 cm from the bottom.

③ Manage the cables.

b) Wastewater (in the air)

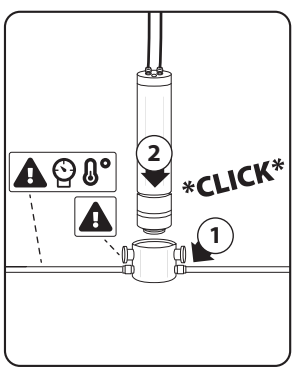


① Locate/establish an anchor point and mount the PowerCom Box (if applicable).

② Install the sensor.

③ Manage the cables.

c) Inline



⚠ *Verify pressure & temperature.*

① Install the flow cell using appropriate fittings and mount the PowerCom Box (if applicable).

② Insert the sensor.

⚠ *The index plungers must be fully inserted and locked.*

F00001QAX01

ATEX/UKEX Installation Drawing

Manufacturer:
SulfiLogger A/S
Stokagervej 8G
DK-8240 Risskov
Denmark

Model:
SulfiLogger™ X1

Standards	EN IEC 60079-0 EN 60079-11
Safety markings	Ⓔx II 1G Ex ia IIC T4 Ga -20 °C ≤ Ta ≤ +60 °C
ATEX certificate	ETL21ATEX0085X
UKEX certificate	ITS21UKEX0474X
Intrinsically safe parameters	Power / 4-20 mA: Ui: 30 V, Ii: 100 mA, Ci: 22 nF, Li: 100 µH, Pi: 0.70 W RS-232: Ui: 20 V, Ii: 100 mA, Ci: 0 nF, Li: 0 µH, Pi: 0.30 W

Special Conditions of Use:

- The sensor has been considered an isolated metal part and has a max capacitance of 97.2 pF on the screws of the enclosure body. The end user shall ensure that this part is incapable of being charged, either through grounding or installation conditions. Please refer to the installation manual for details on the mitigation of electrostatic charging.
- The sensor must not be disassembled.
- It is the end user's responsibility to select proper barriers for the sensor.

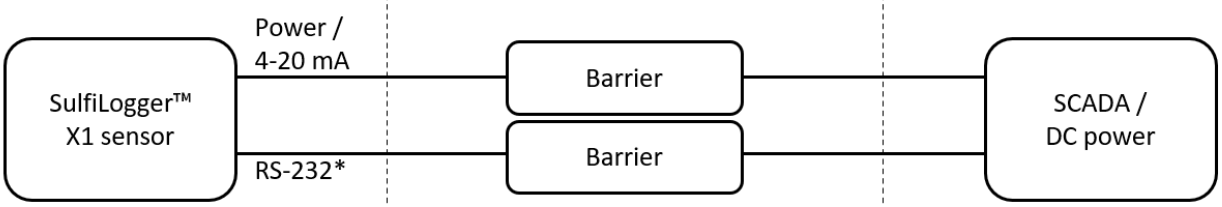
F00001QAX01

Hazardous area
Zone 0, 1, or 2

Ⓔx II 1G Ex ia IIC T4 Ga
-20 °C ≤ Ta ≤ +60 °C

Non-hazardous area
or
Hazardous area

Non-hazardous area



Entity parameters:
Ui ≥ Uo
Ii ≥ Io
Pi ≥ Po
C_{cable} + Ci ≤ Co
L_{cable} + Li ≤ Lo

**Optional*

F00001QEL01

ETL Installation Drawing

Manufacturer:

SulfiLogger A/S
Stokagervej 8G
DK-8240 Risskov
Denmark

Model:

SulfiLogger™ X1

Standards	UL 60079-0 UL 60079-11 UL 61010-1 CSA C22.2#60079-0 CSA C22.2#60079-11 CSA C22.2#61010-1-12
Safety markings	Class I Zone 0 AEx ia IIC T4 Ga Class I Division 1 Groups A-D T4 Ex ia IIC T4 Ga -20 °C to +60 °C
Certificate	ETL21CA104799609X
Intrinsically safe parameters	Power / 4-20 mA: Ui: 30 V, Ii: 100 mA, Ci: 22 nF, Li: 100 µH, Pi: 0.70 W RS-232: Ui: 20 V, Ii: 100 mA, Ci: 0 nF, Li: 0 µH, Pi: 0.30 W

Warning:

- Disassembly of this device is not allowed.

Avertissement:

- Le démontage de cet appareil n'est pas autorisé.

Special Conditions of Use:

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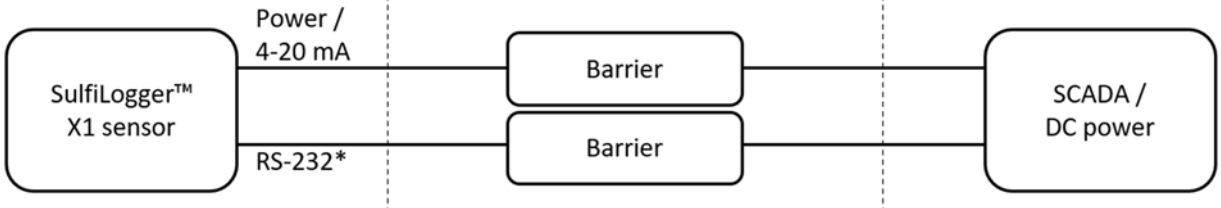
F00001QEL01

Hazardous Classified Location
Class I, Division 1 or 2
Hazardous area
Class I, Zone 0, 1, or 2

Class I, Division 1, Groups A-D T4
Class I, Zone 0, Group IIC T4
Ex ia IIC T4 Ga
Tamb: -20 °C to +60 °C

Unclassified Location/Non-hazardous area
or
Hazardous (Classified) Location/area

Unclassified Location/Non-hazardous area



Entity parameters:
Ui ≥ Uo
Ii ≥ Io
Pi ≥ Po
C_{cable} + Ci ≤ Co
L_{cable} + Li ≤ Lo

**Optional*

F00001QIX01

IECEx installation drawing

Manufacturer:

SulfiLogger A/S
Stokagervej 8G
DK-8240 Risskov
Denmark

Model:

SulfiLogger™ X1

Standards	IEC 60079-0 IEC 60079-11 IEC 61010-1
Safety markings	Ex ia IIC T4 Ga -20 °C to +60 °C
IECEx certificate	IECEx ETL 21.0072X
Intrinsically safe parameters	Power / 4-20 mA: Ui: 30 V, Ii: 100 mA, Ci: 22 nF, Li: 100 µH, Pi: 0.70 W RS-232: Ui: 20 V, Ii: 100 mA, Ci: 0 nF, Li: 0 µH, Pi: 0.30 W

Specific Conditions of Use:

- The sensor has been considered an isolated metal part and has a max capacitance of 97.2 pF on the screws of the enclosure body. The end user shall ensure that this part is incapable of being charged, either through grounding or installation conditions. Please refer to the installation manual for details on the mitigation of electrostatic charging.
- The sensor must not be disassembled.
- It is the end user's responsibility to select proper barriers for the sensor.

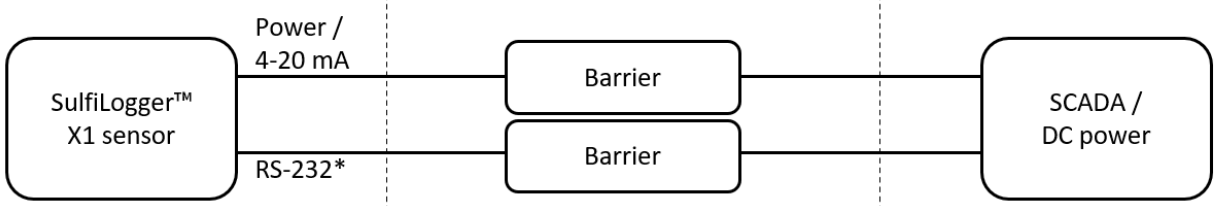
F00001QIX01

Hazardous area
Zone 0, 1, or 2

Ex ia IIC T4 Ga
Tamb: -20 °C to +60 °C

Non-hazardous area
or
Hazardous area

Non-hazardous area



Entity parameters:
Ui ≥ Uo
Ii ≥ Io
Pi ≥ Po
C_{cable} + Ci ≤ Co
L_{cable} + Li ≤ Lo

**Optional*

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