Installation and User Guide

EN

idSET-OTM

Oil separator alarm

DOC002209-EN-3

6/5/2025

Labkotec

Contents

1 General information about the manual

This manual is an integral part of the product.

- Please read the manual before using the product.
- Keep the manual available for the entire duration of the product's life span.
- Provide the manual to the next owner or user of the product.
- Please report any errors or discrepancies related to this manual before commissioning the device.

1.1 Markings and symbols

Safety-related markings and symbols

This marking warns of a possible hazard. Failing to observe the safety instructions in question may result in injury or death.

This marking warns of a fault or hazardous situation. Failing to observe the safety instructions in question may result in injury or device breakage.

This marking warns of a possible fault. Failing to observe the safety instructions in question may result in device or system breakage or erroneous operation.

This marking emphasises an issue that requires special attention during installation and when using the device in an explosive atmosphere.

Informative markings and symbols

This marking highlights essential information.

► This marking refers to a user measure.

1.2 Conformity of the product

The EU declaration of conformity and the product's technical specifications are integral parts of this document.

All of our products have been designed and manufactured with due consideration to the essential European standards, statutes and regulations.

Labkotec Oy has a certified ISO 9001 quality management system and ISO 14001 environmental management system.

1.3 Limitation of liability

Due to continuous product development, we reserve the right to change these operating instructions.

The manufacturer cannot be held liable for direct or indirect damage caused by neglecting the instructions provided in this manual or directives, standards, laws and regulations regarding the installation location.

2 Safety and the environment

2.1 General safety instructions

The plant owner is responsible for the planning, installation, commissioning, operation, maintenance and disassembly at the location.

Installation and commissioning of the device may be performed by a trained professional only.

Protection of operating personnel and the system is not ensured if the product is not used in accordance with its intended purpose.

Laws and regulations applicable to the usage or intended purpose of the device must be observed. The device has been approved for the intended purpose of use only. Neglecting these instructions will void any warranty and absolve the manufacturer from any liability.

The device must be de-energised when any installation work is carried out.

Appropriate tools and protective equipment must be used during installation. Other risks at the installation site must be taken into account as appropriate.

2.2 Intended use

The sensor can be situated in zone 0 explosive atmospheres, but the connected control unit must be placed in a safe area.

A more specific description of the product’s operation, installation and use is provided later in this guide.

The device must be used in accordance with the instructions provided in this document. Other use is counter to the product’s purpose of use. Labkotec cannot be held liable for any damage caused by using the device in violation of its purpose of use.

2.3 Transport and storage

Check the packaging and its content for any possible damage.

Ensure that you have received all the ordered products and that they are as intended.

Keep the original package. Always store and transport the device in the original packaging.

Store the device in a clean and dry space. Observe the permitted storage temperatures. If the storage temperatures have not been presented separately, the products must be stored in conditions that are within the operating temperature range.

2.4 Installation and commissioning

The device does not have a main switch and therefore the supply voltage wires near the device should be fitted with an isolating switch (250 VAC/12 VA), which disconnects the wires (L1, N), in order to facilitate service and repair procedures. The switch must be labelled as the unit's isolating switch. The external switch must adhere to the standard IEC/EN 60947-1 or IEC/EN 60947-3.

Supply cable 3 x 1.5–2.5 mm^2 (AWG16-AWG13). Maximum supply voltage fuse size 16 A.

If the temperature in the installation environment is expected to exceed +40°C, the temperature tolerance of the supply voltage and relay connection cable must be at least +80°C. Otherwise, any cable that meets the applicable electrical regulations can be used as the supply voltage and relay connection cable.

Due to the overvoltage protection, the protective earth wire (PE) must be connected to the supply voltage connector (see Section *Connections*).

The internal temperature of the device can be 10°C higher than the ambient temperature. This must be taken into account in the cabling of the device.

The voltage connected to the relay contacts must be of the same voltage class (ELV/LV), with due consideration given to the maximum values listed in the technical specifications.

The idSET-OTM control unit must not be installed in potentially explosive areas, but a sensor connected to it may be installed in potentially explosive atmospheres of zones 0, 1 and 2.
In potentially explosive area installations, the national regulations and appropriate standards IEC/EN 60079-25 Intrinsically safe electrical systems “i” and/or IEC/EN 60079-14 Explosive atmospheres - Electrical installations design, selection and erection must all be followed.

If it is possible that static electricity can cause hazards in the measurement environment, equipotential bonding must be attended according to the regulations concerning potentially explosive atmospheres. Equipotential bonding is done by connecting all conductive parts to the same potential e.g. in a junction box. Equipotential bonding system must be grounded.

The instructions concerning the inspection and maintenance of Ex equipment contained in the standards IEC/EN 60079-17 and IEC/EN 60079-19 should be observed when executing service, inspection or repair procedures in potentially explosive atmospheres.

See *Technical specifications; Connection values* and *Appendix; System diagram.*

2.5 Repair

The device may not be repaired or modified without the manufacturer’s permission. If the device exhibits a fault, it must be delivered to the manufacturer and replaced with a new device or one repaired by the manufacturer.

2.6 Decommissioning and disposal

The device must be decommissioned and disposed of in compliance with local laws and regulations.

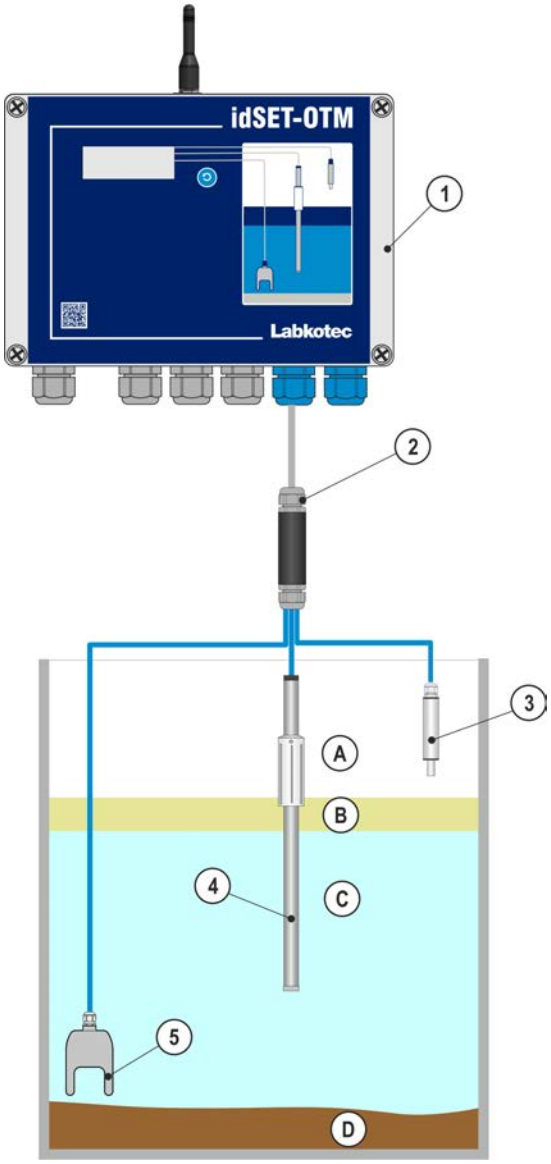
3 Product description

3.1 Operation of the device

idSET-OTM is a measurement system intended for monitoring liquid levels in oil and sand separators. The system consists of an idSET-OTM control unit and idSET and idOil sensors installed in a separator. The sensor cables can be extended with a cable extension or connection box.

One to three different types of digital idSET and idOil sensors can be connected to the control unit. The sensors can be used to monitor the following:

- High liquid level (upper limit sensor)
- Oil layer active level measurement (idSET-OTM sensor)
- Sludge layer detection (sludge sensor)



1 Control unit idSET-OTM
2 Cable extension LCJ1-3
3 High level sensor idOil-LIQ
4 Oil level sensor idSET-OTM sensor
5 Sludge sensor idOil-SLU

A Air
B Oil
C Water
D Sludge

Figure 1. System description example: idSET-OTM control unit, sensors and cable extension

The system state, alarms and failures are shown on the control unit display. They can also be read from the LabkoNet remote monitoring system if the device has been activated in the system. In addition, the level information can also be read from the 4-20mA output.

In alarm and fault situations, the buzzer sounds an alarm and the relays are switched to the alarm position. Labkotec recommends connecting the alarm and fault relays of the device in such a way that the user receives the information outside of the equipment room.

The system settings can be changed with the device's browser-based operating system via a WLAN connection.

The idSET-OTM system includes a data transfer module which is able to send alarms and scheduled measurements to the LabkoNet® service, from where the data can be shared with other users. The unit settings can be changed from the browser interface. The LabkoNet connection can be switched off from the unit settings. Labkotec recommends using the LabkoNet remote monitoring system, which provides the user with up-to-date operating information on the device.

The operation of the product is described in more detail in the section *Operation*.

3.2 Products

Control unit:

Type name	Description
idSET-OTM	Control unit, 230 V AC +/-10%, 50/60 Hz

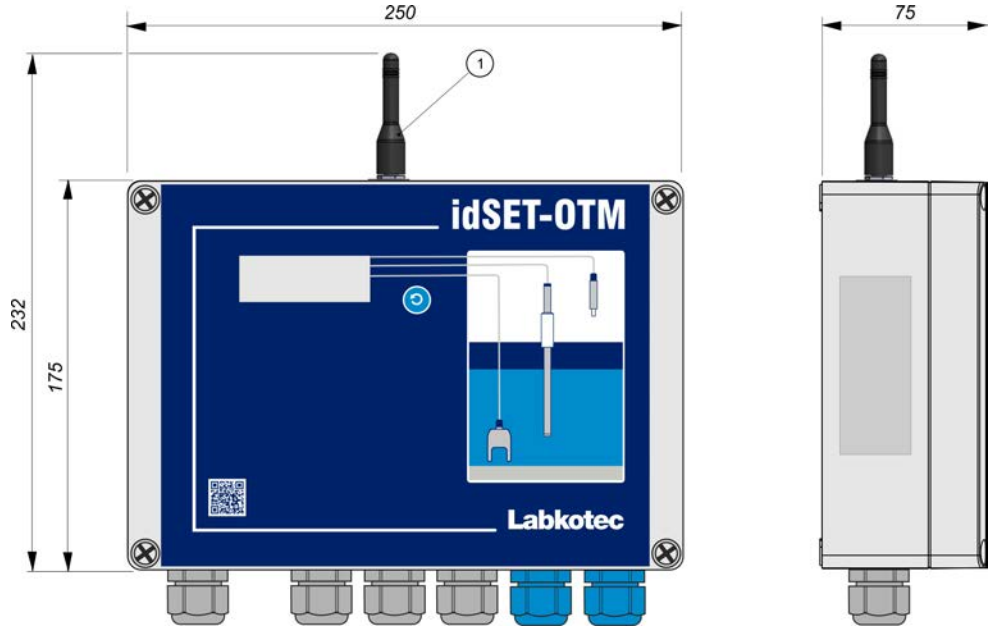
Example of compatible sensors:

Type name	Description
idOil-LIQ / idSET-LIQ	High level sensor to sense excessively high liquid level
idSET-OTM sensor	Oil layer thickness sensor to measure the amount of accumulated oil
idOil-SLU / idSET-SLU	Sludge sensor to detect the thickness of the sludge layer

Accessories:

Type name	Description
LCJ1-1	Cable extension for one sensor
LCJ1-2	Cable extension for two sensors
LCJ1-3	Cable extension for three sensors
LMS-SAS2	Installation supplies accompanying the control unit
LMS-SAS5	Installation supplies accompanying the idOil-LIQ and idOil-SLU sensors
LMS-SAS6	Installation supplies provided with the idSET-OTM sensor

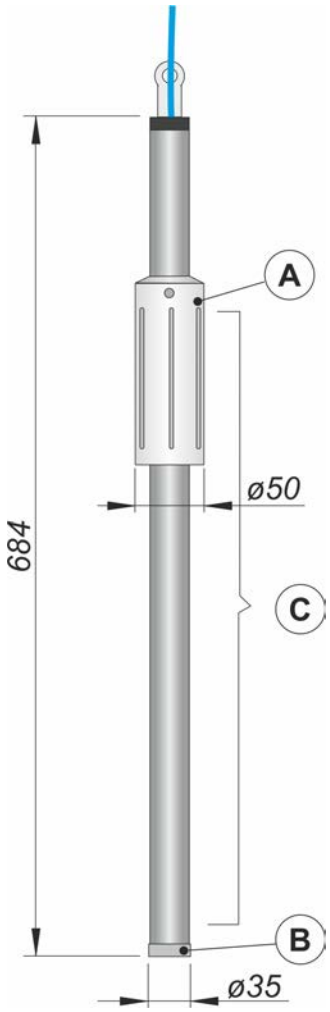
3.3 Dimensions of the idSET-OTM control unit



1 Antenna

Figure 2 . Dimensions of the idSET-OTM control unit (mm)

3.4 Dimensions idSET-OTM oil sensor



A Counter electrode
B Grounding electrode
C Active measurement range

Figure 3. idSET-OTM sensor dimensions

4 Installation

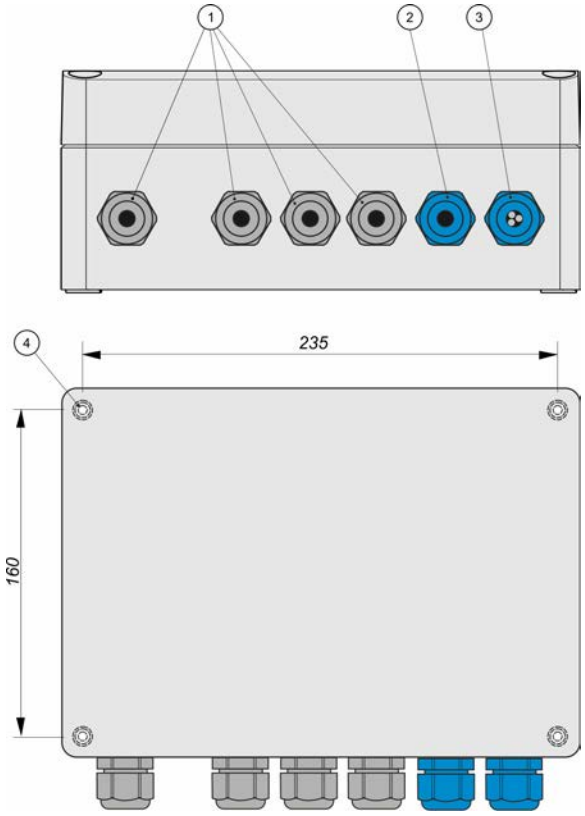
4.1 Installing the control unit

The idSET-OTM control unit is of the wall-mounted type. The installation holes are located at the bottom of the enclosure, under the mounting holes for the cover.

The cover of the box must be tightened so that the edge touches the bottom part. This ensures that the reset and test button functions well and the enclosure is tight.

The control unit must be installed in a safe (non-Ex) space.

Read the section *General safety instructions* before installation.



1 Lead-throughs M20 grey, 4 pcs
2 Lead-throughs M20 blue, 1 pc
3 Lead-throughs M20 blue, 1 pc (incl. 3-hole rubber)
4 Fastening holes Ø4.5 mm, 4 pcs

Installation dimensions 235 x 160 mm

Figure 4 . idSET-OTM control unit installation

4.2 General installation instructions for sensors

idOil and idSET sensors can be installed in zone 0 explosive atmospheres. Do not remove the sensor markings from the cables or sensor frames.

Read the section *General safety instructions* before installation.

Check the correct installation depth of the sensor in the instructions of the separator in question.

For example, sensors can be installed suspended from their cable (see next figures). Leave a sufficient length of the sensor or extension cable coiled inside the service well, for example, so that you can easily lift the sensor out for inspection and cleaning.

5 Connections

Read the section *General safety instructions* before installation.

The legends for the connection diagrams can be found in the section following the diagrams.

5.1 Connection diagrams

5.1.1 Connection with a single-sensor cable extension

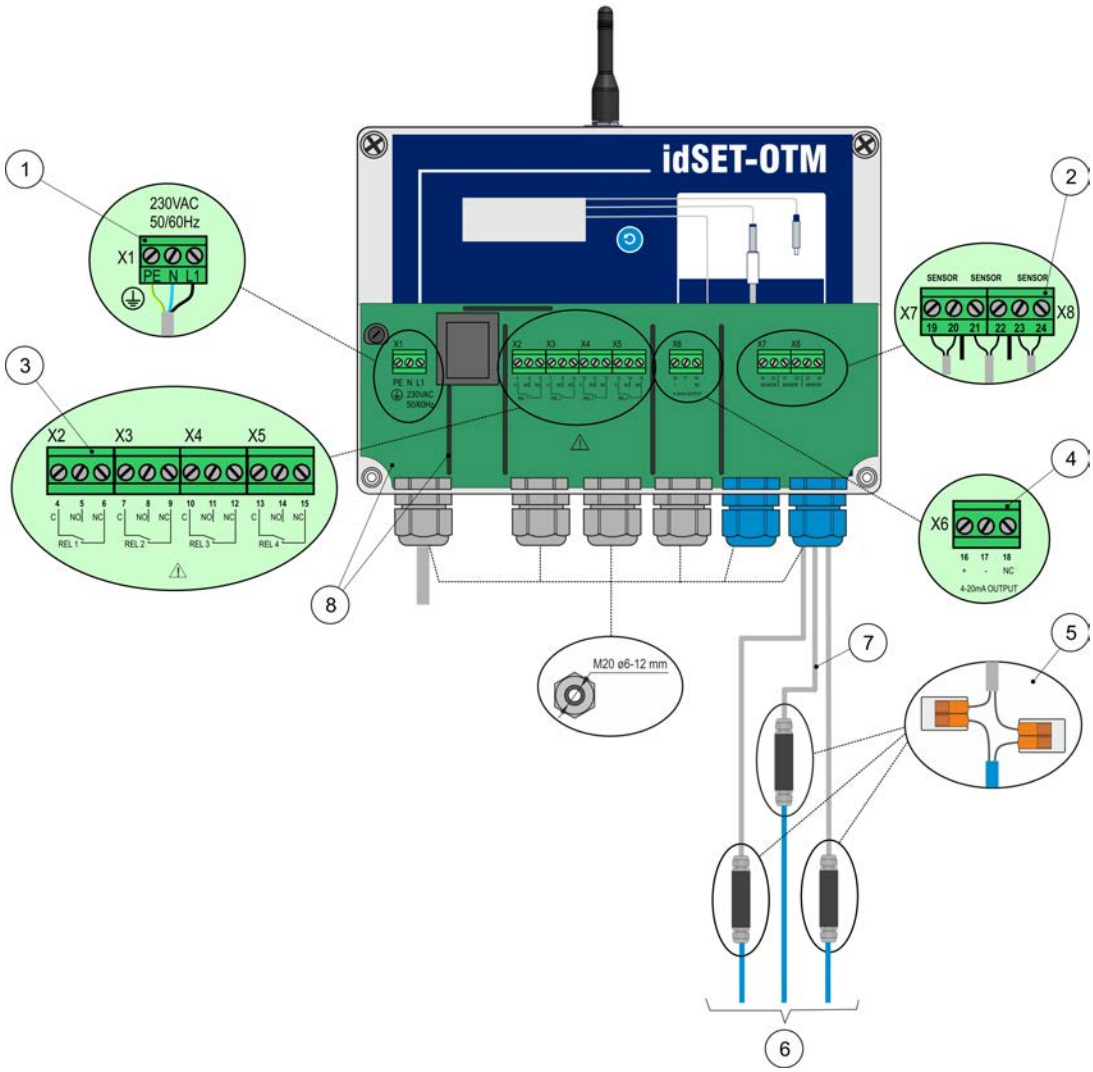


Figure 5 . Connection with a single-sensor cable extension

5.1.2 Connection with a two-sensor cable extension

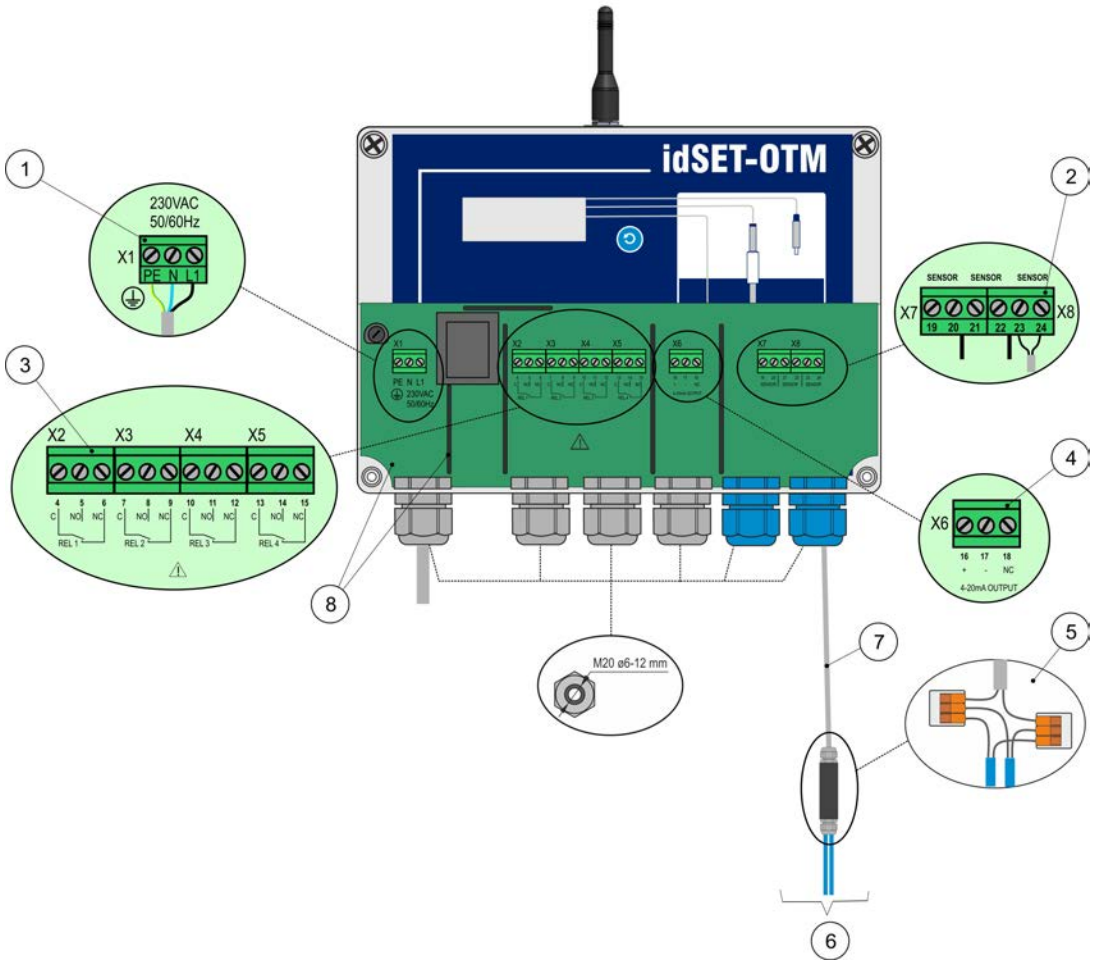


Figure 6 . Connection with a two-sensor cable extension

5.1.3 Connection with a three-sensor cable extension

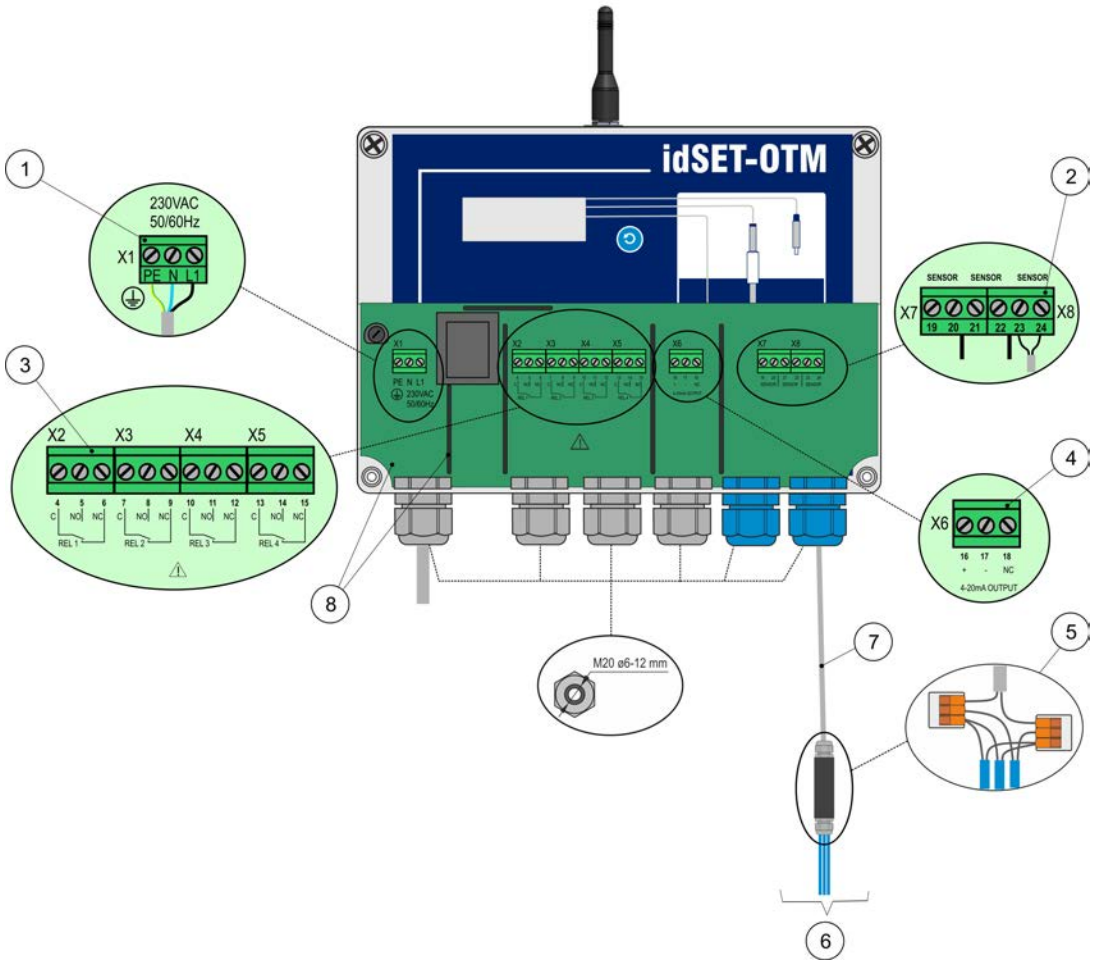


Figure 7 . Connection with a three-sensor cable extension

5.2 Explanations of connection diagrams

1 **Supply voltage** 230 V AC **(X1)**
(N.B. The device does not include a disconnecting coupler, see Section *Safety and the environment*)

PE = mains connection protector
N = mains connection neutral connector
L = mains connection phase connector

Supply cable 3 x 1.5–2.5 mm^2 (AWG16-AWG13). Maximum supply voltage fuse size 16 A.

2 Sensor connector (X7,X8)

19 = sensor 1, connection 1

20 = sensor 1, connection 2

21 = sensor 2, connection 1

22 sensor 2, connection 2

23 sensor 3, connection 1

24 sensor 3, connection 2

The sensor connection is polarity-free, which means that it does not matter which sensor terminal the wires are connected to.

3 Relay outputs

RELAY 1 for oil sensor alarms **(X2)**

4 = Relay shared contact

5 = Contact that opens in an alarm situation

6 = Contact that closes in an alarm situation

RELAY 2 for high level sensor alarms **(X3)**

7 = Relay shared contact

8 = Contact that opens in an alarm situation

9 = Contact that closes in an alarm situation

RELAY 3 for sludge sensor alarms **(X4)**

10 = Relay shared contact

11 = Contact that opens in an alarm situation

12 = Contact that closes in an alarm situation

RELAY 4 for fault alarms **(X5)**

13 = Relay shared contact

14 = Contact that opens in an alarm situation

15 = Contact that closes in an alarm situation

The maximum values presented in the technical specifications must be taken into account.

4 Analog output 4–20 mA

5 Cable extension:

LCJ1-1 for a single sensor

LCJ1-1 for two sensors

LCJ1-3 for three sensors

6 Sensors

7 Extension cable, e.g. protected, twisted-pair 2 x 0.5 mm^2, maximum loop resistance 68 Ohm.

The cable can be extended up to 800 metres using a suitable cable with a loop resistance not exceeding 68 Ohm. For more information, see Appendix A.

When the cable and its route are chosen, the EMC disturbances caused by the environment must be taken into account.

Extra wire and shield must be cut and isolated carefully.

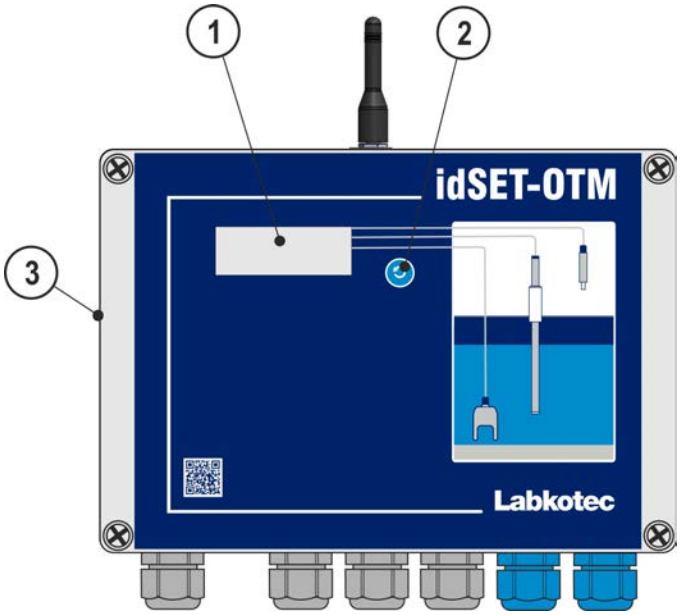
8 Guard plate

The connectors for the external connections are separated with a guard plate and separator walls. The partitions must not be removed. The guard plate covering the connectors must be replaced after connecting the cables.

6 Commissioning

The device can be commissioned in the two ways described in the following sections:

- Simple commissioning
- Commissioning through the browser-based operating system



1 Display
2 Reset and test button
3 Type plate with the serial number

Figure 8 . Operating system description

6.1 Simple commissioning

Ensure that the sensors have been installed and connected in the control unit in accordance with the instructions in the previous paragraphs.

▶ Connect power to the control unit.

The new device always starts in English.
The control unit display shows the message NO SENSORS.

Figure 9. Initial start-up

▶ Open the cover of the control unit.

DANGER OF ELECTRICAL SHOCK! Do not remove the connector guard plate and avoid touching energised parts.

▶ Press the red sensor identification button briefly.

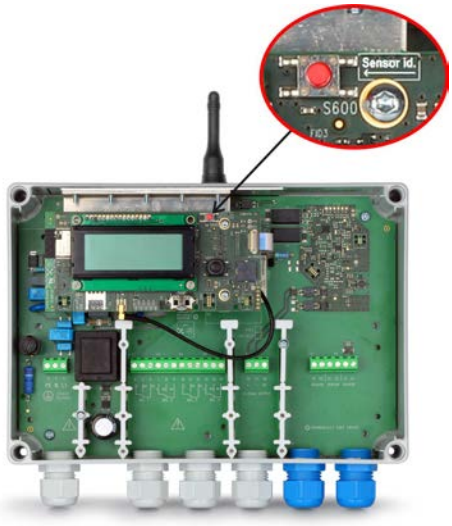


Figure 10. Sensor identification button.

The control unit display shows the message:
idSET-OTM
SEARCHING
Once the search is complete, the display shows the sensor names and statuses, and in the case of the idSET-OTM sensor, the measured oil layer thickness.

▶ Close the cover of the enclosure.

The idSET-OTM separator alarm system is now operational at factory settings.

If the control unit does not identify all connected sensors.

▶ Check the sensor connections.

▶ After the check, press the sensor identification button again.

The control unit will look for the sensors for approx. 2 minutes, unless it has already found three sensors.

The sensor identification can be stopped by pressing the sensor identification button for 5 seconds.

SIM card

The device has a SIM card pre-installed, and the device is connected to the LabkoNet system.
Commissioning of LabkoNet in section *LabkoNet CONNECTED.*

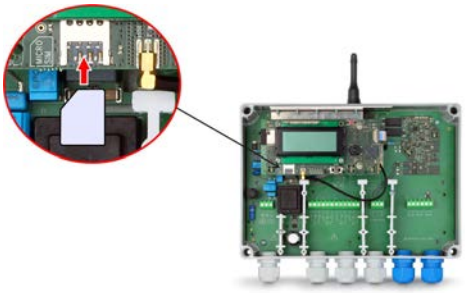


Figure 11. SIM card location

Once the device has established a connection to the LabkoNet service, a signal strength bar and the LN symbol will appear on the display.
The first LabkoNet connection may take over 10 minutes depending on the mobile network.

Figure 12 . The device connected to LabkoNet service

6.2 Factory settings of the idSET-OTM control unit

System settings	Language		English
	Date and time		not set
Alarm settings	Alarm buzzer		on
	Alarm repeat (24h)		on
	Alarm delay for all sensors		10 s
	Alarm reset button		on
Inspection settings	Inspection interval counter and inspection warning		not set
Relay settings	Relay 1	idSET-OTM sensor	oil sensor
		function	functions upon oil sensor alarm, alarm limit 350 mm
		relay is restored when alarm is reset	no
	Relay 2	idOil-LIQ	high level sensor
		function	functions upon high level sensor alarm
		relay is restored when alarm is reset	no

Relay settings	Relay 3	idOil-SLU	sludge sensor
		function	functions upon sludge sensor alarm
		relay is restored when alarm is reset	no
	RELAY 4	Fault	All sensors connected to the control unit
		function	function upon sensor fault
		relay is restored when alarm is reset	no
M2M settings	SMS reporting		off
	LabkoNet		on

Restoring factory settings is described in Section *Settings.*

6.3 Commissioning through the browser-based interface

The commissioning process can also be performed through the control unit's built-in browser-based user interface. For this, you must establish a local WLAN connection between the idSET control unit and a terminal device, such as a smartphone, PC or tablet.

More details on using the browser-based interface is provided in the section *Using the browser-based interface*.

6.3.1 Establishing a WLAN connection

▶ Connect power to the idSET control unit.

The display presents the message shown in the figure: *NO SENSORS*.

Figure 13. WLAN network on

▶ Press the reset button briefly.

A symbol indicating a WLAN network connection is shown in the upper left corner of the display.

If the device power is already on, press the reset button twice; the first push activates the backlight and the second press activates the WLAN connection.

▶ Establish a WLAN connection between the idSET control unit and terminal device as follows:

1. Use the network settings of the terminal device to find the WLAN network provided by the idSET device.
2. Enter the WLAN network password. The password is five zeroes followed by the eight final characters of the device's serial number. The serial number can be found in the idSET device's type plate.
   If the serial number is 8540564_1112118J, for example, the WLAN password is 000001112118J.
3. Open the web browser of your terminal device and enter the IP address: 192.168.0.1.

A connection has now been established between the terminal device and the idSET control unit.

The WLAN network will remain active for 10 minutes after terminal devices are no longer connected to it.

6.4 Commssioning of LabkoNet CONNECTED

Read the QR code. The code can be found from the device:
1. Cover
2. Finger guard
3. Sticker glued on the inside
Select LabkoNet Connected and follow the instructions shown on the website.

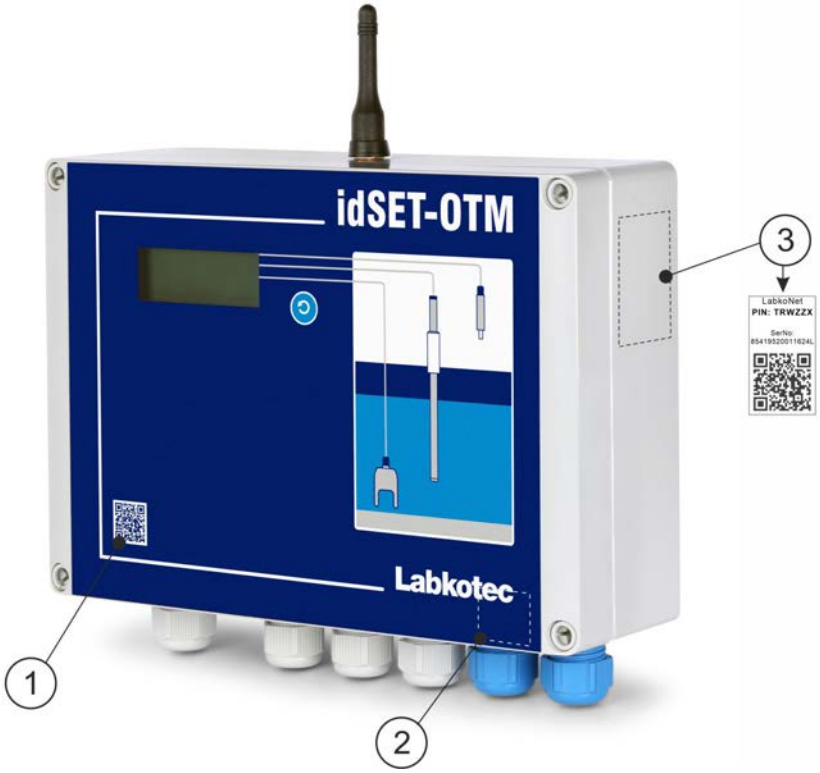


Figure 14 . QR code location in the idSET-OTM control unit.

Figure 15. Commissioning process of LabkoNet CONNECTED.

7 Operation

After installation and commissioning, the idSET separator alarm system functions entirely independently and does not require constant monitoring.

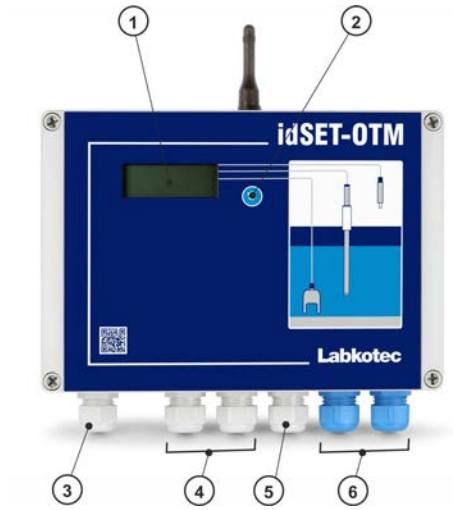
The system state, alarms and failures can be viewed on the control unit display and through the browser-based operating system.

The backlight of the local display is normally off. The backlight can be activated by pressing the reset/test button briefly.

The alarm information can be connected to automation systems through relays and mobile connections.

All of the system's connections and functions are described in the figure below and in more detail in the following sections.

The operation of the device depends on the settings made through the browser-based operating system. Unless otherwise indicated, this section describes device operation in accordance with factory settings. See Section *Commissioning*.



1 Local display
2 Reset and test button
3 Network feed lead-through
4 Relay output lead-throughs 2 pcs
5 Analog output lead-through 1 pc
6 Sensor connections 2 pcs (blue)

Local WLAN connection for using the browser interface.

Modem and connection to LabkoNet service as standard. The LabkoNet service can be disabled in the user interface settings.

Figure 16. Features of the idSET-OTM control unit

7.1 Local display and alarms

Local display

The four-row local display in the front panel shows the amount of accumulated oil, system status, possible alarms and faults. In the event of an alarm, the type of the sensor that activated the alarm is shown (high level sensor, oil layer thickness sensor or sludge sensor). In addition, the display can be used to show the customer information specified in connection with commissioning.

If the maintenance alarm is in use (not a factory setting), the display can show the next maintenance month. The maintenance date is presented in the browser-based operating system.

If the details to be displayed do not fit the screen at the same time, they will be distributed to multiple pages. In this case, the display indicates the current page number and the total page count, e.g. 1/2. The page is changed automatically every 5 seconds.

Alarms

In alarm and fault situations:

- The alarm information is shown on the local display.

After the alarm delay (10 s):

- The buzzer lets out an alarm sound and the backlight of the display begins to flash.
- The relays corresponding to the alarm are switched to the alarm position. The relays are de-energised in alarm and fault situations (factory setting). The relays are of the failsafe type, which means that they also enter the alarm state when operating power is lost.
- The device sends alerts to the LabkoNet service when the service is in use.

The alarms can be divided into three groups: level, fault and maintenance alarms.

- **In a level alarm** the sensor in the well or tank has detected that the liquid level being monitored has reached the alarm limit (high level sensor, oil sensor or sludge sensor).
- **In a fault alarm** the control unit has detected a fault in the sensor circuit. The monitoring covers the communication between the control unit and sensor as well as short circuits and breaks.
- **In a maintenance alarm** the month counter has reached the limit value (1, 3, 6 or 12 months). This function is used as a factory setting.

7.2 Resetting an alarm

An alarm can be reset by pressing the rest button in the cover.

Resetting an alarm deactivates the buzzer. However, the buzzer is always reactivated every 24 hours (factory setting) until the cause for the alarm is eliminated.

The relays do not change their state when an alarm is reset with the reset button.

The operation of the buzzer and relays can be changed through the browser-based operating system. See Section *Using the browser-based operating system*.

7.3 Using the browser-based interface

The following sections describe the use of the idSET browser-based user interface.

The process of establishing a connection to the browser-based interface is described in the section *Commissioning through the browser-based interface*.

7.3.1 Home screen

The browser-based interface always starts in the home screen shown in the figure below. You can also access the home screen by pressing the icon in the upper left corner.

The items listed in the following table are shown in the home screen. The menus are described in more detail in the sections below.

idSET-OTM	Type name of the control unit
2017-01-04 16:45	Date and time of the device's internal clock
	Home screen button; by clicking this icon, you can return to the home screen
Menu	Selection of menu options
Settings	Settings menu. Requires logging in with the maintenance user password.
	The idSET device features two user levels: Basic user: • The upper right corner of the home screen top bar does not show this symbol. • No rights to configure the device, except time and language settings. Maintenance user: • The lock system is shown in the upper right corner of the home screen top bar. The user has logged in with the maintenance user password. • The right to configure control unit settings in the Settings menu.
Status view	The status of the sensors connected to the device is shown under the Status view heading: • Green means no alarm. • Red means an alarm or fault status in the sensor. The cause of the alarm or fault and the time of the alarm is shown below the sensor.
Inspection	Below the Inspection menu, the device shows either the time of the next scheduled inspection or the latest inspection alarm if the scheduled inspection date is in the past and the alarm has not been reset. See *Settings*.
Customer data	This section shows the customer and contact information set in the device.

7.3.2 Menu list

The Menu list features the functions.

 Basic users can access the Menu options.

7.3.2.1 Alarm log

The alarm log records the times of the alarm and fault situations, the reset times, and the times at which the alarms and faults are eliminated. The following events are recorded in the alarm log:

- Sensor alarm situation.
  Note! Alarms caused during maintenance are recorded in the inspection log.
- Sensor fault
- Sensor bus short-circuit
- Test alarm (reset button has been pressed for 3 s)
  Note! Alarms caused during maintenance are recorded in the inspection log.
- Power off/on (start and stop time of a power outage)

The buttons at the bottom of the alarm log perform the following functions:

- *Load more items:* Shows previous alarms if all alarms and faults do not fit in the browser window at the same time.
- *Update:* The alarm log view returns to the initial view which shows the latest alarms.
- *Save report:* Saves the alarm log in the .csv format.

7.3.2.2 Maintenance

This function adds an inspection measure in the device's inspection log. Recording inspection measures resets the inspection counter.

▶ Press the *Start inspection*button to activate the inspection form.

▶ In the *Inspection notes* field, enter the inspection measures conducted and, in the *Inspector name* field, enter your name.

▶ End the inspection measure with the *Inspection completed* button. The device will switch to the Inspection log view.

> *Maintenance can also be carried out as an instantaneous function without using the browser interface. Once the maintenance alarm has been activated, maintenance can be carried out using the test function (see Test function). Press and hold the acknowledgement/test button on the front panel continuously for 3 seconds and then release the button. The maintenance interval counter is reset, and the maintenance alarm is acknowledged.*

7.3.2.3 Inspection log

The Inspection log view shows the latest inspection note first. Alarms during inspection are shown in the inspection log. These alarms are not shown in the alarm log.

The latest inspection note can be edited but this will not change the time stamp. Old inspection notes can no longer be edited.

▶ Press the *Save*button after any possible changes.

The buttons at the bottom of the inspection log perform the following functions:

- *Load more items:* Shows prior inspection measures if it is not possible to fit all of them in the browser window at the same time.
- *Update:* The Inspection log view returns to the initial view which shows the latest inspection measures.
- *Save report:* Saves the inspection log in the .csv format.

7.3.2.4 Language

You can select one of the supported languages in the Language menu.

▶ Select the desired language and press the *Select*button.

This will change the language of the browser interface and local display to the selected language.

7.3.2.5 Date and time

The control unit's date, time, time zone setting can be set and updated in this view.

▶ Make the necessary changes and press the *Save*button.

The date and time must be set (required information) when the first WLAN connection to the control unit is established.

7.3.3 Settings menu

The functions in the Settings menu can be used to change the control unit settings. The settings can be accessed with the maintenance user's password.

▶ Press the Settings menu in the home screen, at which point the device requests a password.

ⓘ The maintenance user password is *1234.*

▶ Enter the password and press the *Log in*button.

The Settings menu features the functions shown in the figure below. The functions are described in more detail in the following paragraphs.

7.3.3.1 Customer data

In the Customer data menu, you can enter the following information in the device:

- *Company*: The name of the device owner, supplier or maintenance company, for example. The name is shown in the home screen and the control unit display. The display shows the first 16 characters.
- *Contact name*: The name of the contact person for the above company, for example. The name is shown in the home screen but not the control unit display.
- *Phone number*: The contact person's phone number. The number is shown in the home screen and the control unit display.
- *Site name*: A unique name can be entered for the device. The name is shown in the home screen *Status view*bar and the loaded reports, but not the control unit display.

7.3.3.2 Inspection settings

In the Inspection settings menu, you can set the inspection period counter. You can select between:

- never (factory setting, inspection period not used)
- 1 month
- 3 months
- 6 months
- 12 months

▶ Select the desired inspection period and press the *Save*button.

The selection (with the exception of “never”) activates the inspection period counter, which will activate the inspection alarm after the selected interval. The time of the maintenance is shown in the home screen (year-month-day) and the control unit display (year-month).

The inspection counter can only be reset once the inspection alarm has been activated. In other words, an inspection cannot be performed before the activation of the alarm (this does not reset the counter).

7.3.3.3 Alarm settings

In the Alarm settings menu, you can change the following alarm settings:

- *Alarm buzzer: Off/On*. If *Off* is selected, the buzzer will not sound upon an alarm.
- *Alarm repeat (24 h): Off/On*. If *On* is selected, the alarm will be repeated 24 hours after a reset, if the cause of the alarm has not been eliminated.
- *Alarm delay for sensors*. Delay between sensor detection and the activation of the alarm buzzer and relay. You can use seconds, minutes or hours for the setting.
- *Alarm reset button: Disabled/Enabled*. If *Disabled* is selected, the alarm cannot be reset by pressing the reset button in the front panel of the control unit (i.e. the buzzer will keep sounding the alarm).

7.3.3.4 Restoring factory settings

In the Factory settings menu you can restore the control unit’s original factory settings.

The factory settings of the idSET-OTM device are described in the section *Commissioning*

Restoring the factory settings clears the alarm and maintenance log. The sensors connected to the control unit must also be identified again.

You can restore the factory settings as follows:

▶ Check the *Restore factory settings* box and press the *Restore settings* button.

▶ Confirm the restoration of the factory settings by pressing the *Continue*button.

After this, the system shows the following message: *“Restoring factory settings. Please reload the web page in a few moments. If the WLAN connection is lost, reconnect the device.”*

▶ If necessary, establish the WLAN connection in accordance with section *Establishing a WLAN connection* .

▶ Configure the system settings and perform sensor identification.

7.3.3.5 WLAN settings

If the WLAN connection is poor, several devices may be using the same WLAN channel.

▶ You can change the WLAN channel by using the *WLAN settings* menu to select another channel and pressing the *Save*button.

▶ Establish the WLAN connection again according to the instructions in the *Establishing a WLAN connection* section.

7.3.3.6 Settings of the sensors

In the Sensor Settings menu, it is possible to perform sensor identification and assign names to the sensors.
For the identified sensors, the type, identification details, and measured value are displayed.
In the settings for the idSET-OTM sensor, you can define the alarm threshold for oil layer thickness as well as a volume conversion from layer thickness to volume.
The conversion is done by entering the layer thickness (mm) and the corresponding volume in liters.
Finally, press Save.

8 Maintenance

The operation of the separator system and alarm device must be checked at least every 6 months by experienced personnel.

The following is recommended in conjunction with the inspection:

- Functional check of the idSET-OTM alarm device with the test function and sensor (see Section *Functional test*)
- sensor cleaning (see Section *Maintenance measures*)

The device has a backup battery for the internal clock to keep it in time if power outages occur. In normal operation, there is no need to replace the battery. If replaced, the battery is of type CR1225 (3V), and it is installed with the plus side up.

The device has a replaceable fuse (see Section *Maintenance measures*).

In addition to these, the idSET-OTM control unit and sensors have no other wearing or replaceable parts.

8.1 Functional test

The functional test must be performed as follows:

► On your terminal, open the browser interface of the control unit.

► Navigate to *Menu -> Inspection* and click the button *Start inspection*.

► Perform the functional test by pressing the test button and with sensors (see following paragraphs).

► Record the desired information in the text fields of the *Maintenance*page.

► End the inspection by clicking the *Inspection complete* button.

8.1.1 Test function

The test function creates a test alarm, which is used to ensure the appropriate functioning of the idSET-OTM device and any other possible devices or systems controlled by its relays in an alarm situation.

The function can only be executed if no alarms are active. At this point, the screen reads *SYSTEM OK*.

Activating the test function:

► Press the reset/test button continuously for 3 seconds.

The display shows the message *TEST ALARM*, the backlight flashes and the relays are switched to the alarm state for 3 seconds.

If the device has SMS alarm set to active, the device sends a test alarm text message to the recipient’s phone number.

If the device has maintenance alarm set to active, this function performs maintenance as an instantaneous function. In this case, the test function acknowledges the maintenance alarm and the service interval counter is reset (see also Maintenance).

8.1.2 Functional test with sensors

The operation of the idSET-OTM device and sensors can be checked comprehensively by simply simulating an actual alarm situation.

Depending on the sensor type, the functional test can be conducted as follows:

1. idOil-LIQ (high level sensor)
   ► Immerse the sensor in oil or water.
2. idSET-OTM Sensor (oil layer thickness sensor):
   ► Lift the sensor in the air. The level indication on the idSET-OTM control unit display is not shown. A sensor dry alarm notification is added to the maintenance log.
3. idOil-SLU (sludge sensor)
   ► Immerse the sensor in sand or sludge. If this is not possible, lift the sensor into the air.

The alarm will be activated after the delay (factory setting: 10 s).

Remember to set the device in maintenance mode so that the alarms during the maintenance measures are recorded in the inspection log instead of the alarm log.

8.2 Maintenance measures

The sensors must be cleaned in conjunction with maintenance inspections. You can clean the sensors with washing up liquid and a washing up brush, for example.

Do not use corrosive substances to clean the sensors.

In order to make it easier to clean the idSET-OTM sensor, the counter electrode can be detached by loosening the three screws at the top.

The mains fuse (marked 200 mAT) can be replaced with another 5 x 20 mm/200 mAT ceramic fuse according to IEC/EN 60127-2/3 with a breaking capacity of at least 1500 A. During the fuse replacement, the device must be de-energised. Other repair for the device may only be performed by a person with Exi device training and Labkotec Oy’s authorisation. If problems occur, contact Labkotec Oy's service.

8.3 Troubleshooting

DANGER OF ELECTRICAL SHOCK!
Adhere to the electrical safety regulations!

PROBLEM: **The display is dark.**

Explanation: The voltage received by the device is too low, or the fuse has blown.

Action:

1. First check that the voltage has not been cut by the isolating switch.
2. Measure the voltage from connectors N and L. It should be 230 V AC ± 10 %.
3. The device can be restarted by pressing and holding both the sensor search and WLAN buttons, then releasing the sensor search button first, followed by the WLAN button.
4. If the fault persists, contact Labkotec Oy's service.

EXPLOSION HAZARD!
Observe the installation and maintenance instructions for explosive atmospheres!
The measuring device must be Exi classified if the sensor is in an explosive area.

PROBLEM: **Fault alarm on (the backlight of the display is flashing)**

Explanation: The sensor cable is short-circuited, cut or disconnected from the connector. The sensor could also be damaged.

Action:

1. Measure voltage separately from that sensor's sensor connectors. The voltage should be 9–11.5 V.
2. If the voltage is correct, measure the current drawn by the sensor. Check the correct current value in the sensor installation and user manual.
3. Reconnect the disconnected wire after the measurement.

ⓘ The sensor cable wires are not numbered because the voltage polarity (+ or -) makes no difference.

PROBLEM: **The browser interface fails to open in the mobile terminal's internet browser at: 192.168.0.1.**

Explanation: The mobile terminal's internet browser is attempting to use the mobile data feature.

Action: 1. Turn off the mobile data feature in the settings of your mobile terminal or
2. Turn the mobile terminal into the flight mode. Make sure that the Wi-Fi remains on.

If problems occur, contact Labkotec Oy's service department.

9 Technical specifications for the idSET-OTM control unit

TECHNICAL SPECIFICATIONS idSET-OTM	
Dimensions	250 mm x 175 mm x 75 mm (w x h x d)
Enclosure	IP 65, material: polycarbonate
Lead-throughs	5 pcs M20, cable diameter 6–12 mm 1 pc M20, cable diameter 3×5.3 mm
Weight	1.4 kg
Operating environment	Temperature: -30ºC…+60ºC Max. elevation above sea level 3,000 m Relative humidity RH 100% Suitable for indoor and outdoor use (must be protected from rain)
Supply voltage	230 V AC ± 10%, 50/60 Hz The device does not have a main switch. Supply cable 3 x 1.5–2.5 mm^2 (AWG16-AWG13). Maximum supply voltage fuse size 16 A.
Power consumption	Max. 12 VA
Sensors	Digital Labkotec idOil or idSET sensors
Relay outputs	5 A, 250 V AC / 30 V DC, 100 VA Potential-free changeover contacts.
Analog output	4–20 mA
Display	Character-based 20x4 LCD screen for displaying alarm and fault states.
Operating system	Browser-based operating system for displaying alarm and fault states and configuring the device over a Wi-Fi connection (2.4GHz; 802.11 b/g/n) IP address: 192.168.0.1
Data transfer	LTE-M, NB-Iot (4G)
Electrical safety	Class II ⧈, CAT II, POLLUTION DEGREE 2 IEC/EN 61010-1 UL 61010-1 CAN/CSA-C22.2 NO. 61010-1-12
EMC	EN IEC 61000-6-2 EN IEC 61000-6-3
RED	EN 301 908-1 v15.2.1 EN 300 328 v2.2.2

Ex classification Special terms (X) Exi connection values See system diagram Appendix A	Ⓔx II (1) G [Ex ia Ga] IIB Ta = -30 °C…+60 °C Uo = 14.5 V, Io = 78 mA, Po = 363 mW, R = 243 Ω, Co = 4.0 µF, Lo = 15.0 mH Output voltage's characteristic curve is trapezoidal
Manufacturing year: Please see the serial number on the type plate.	xxxxxxx x xxx xx YY x where YY = manufacturing year (e.g. 24 = 2024)

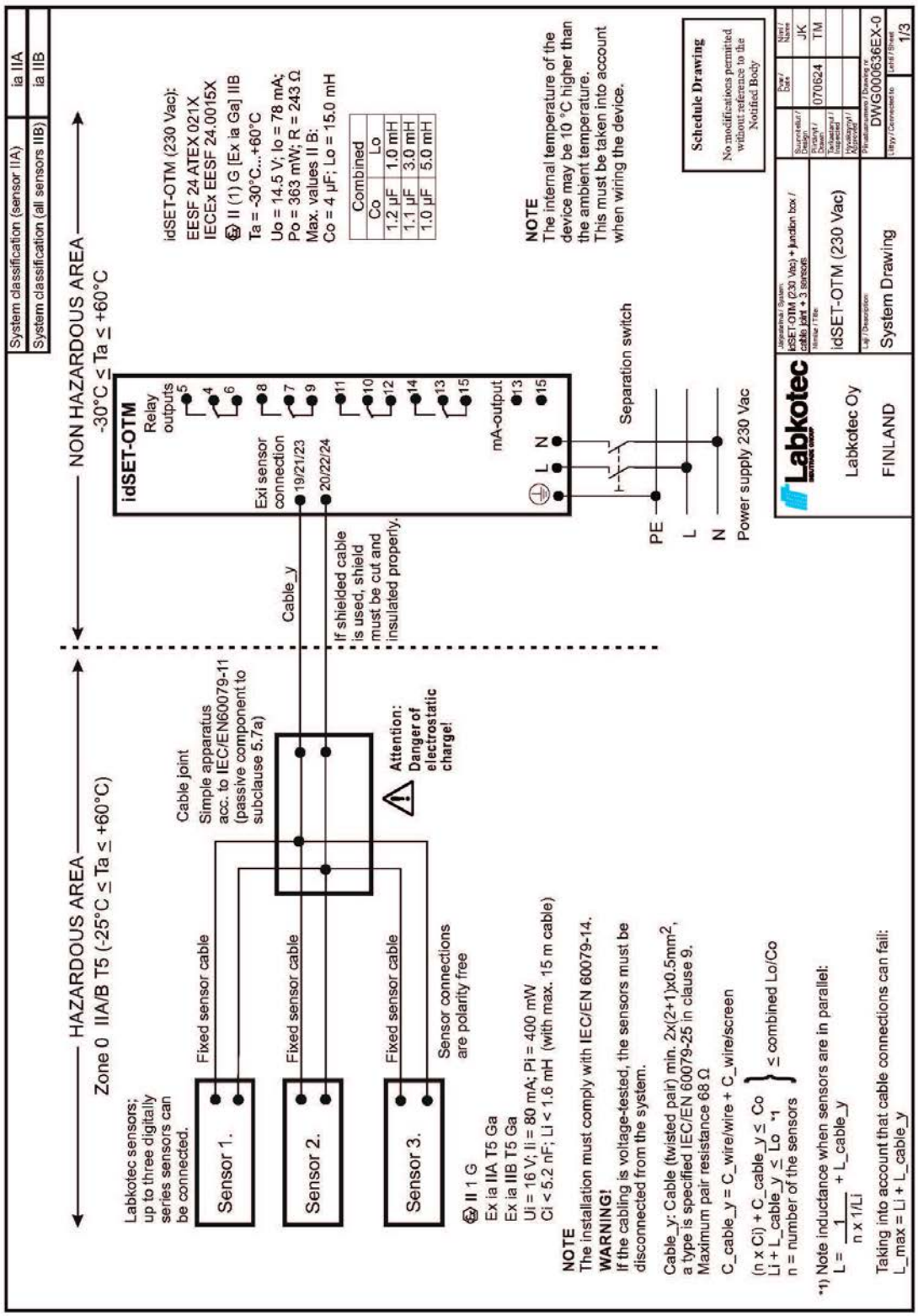
10 EX certificates

EX certificates	
ATEX	EESF 24 ATEX021X
IECEx	IECEx EESF 24.0015X
UKEX	CML 24UKEX2321X

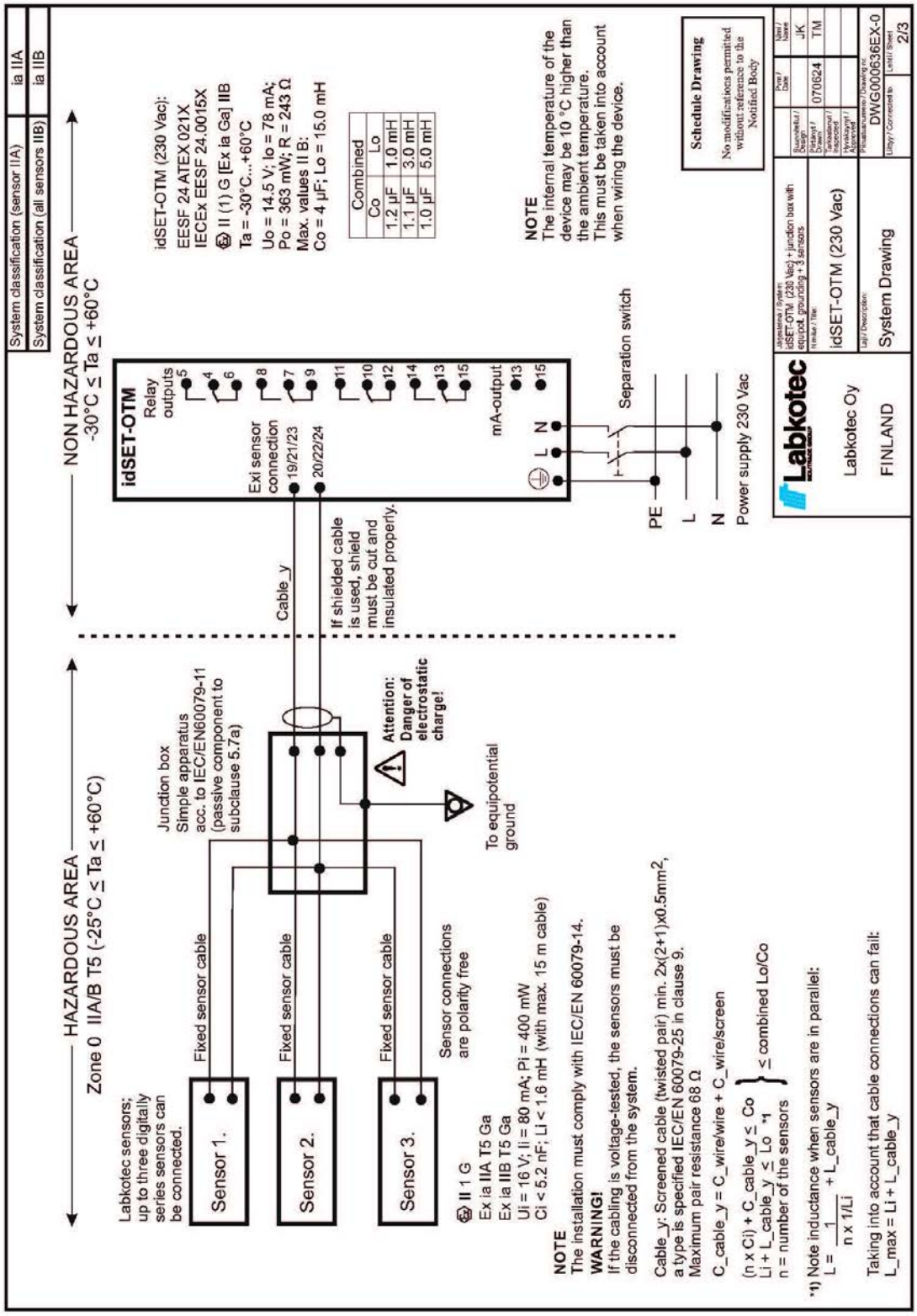
11 Appendices

11.1 APPENDIX A System drawing

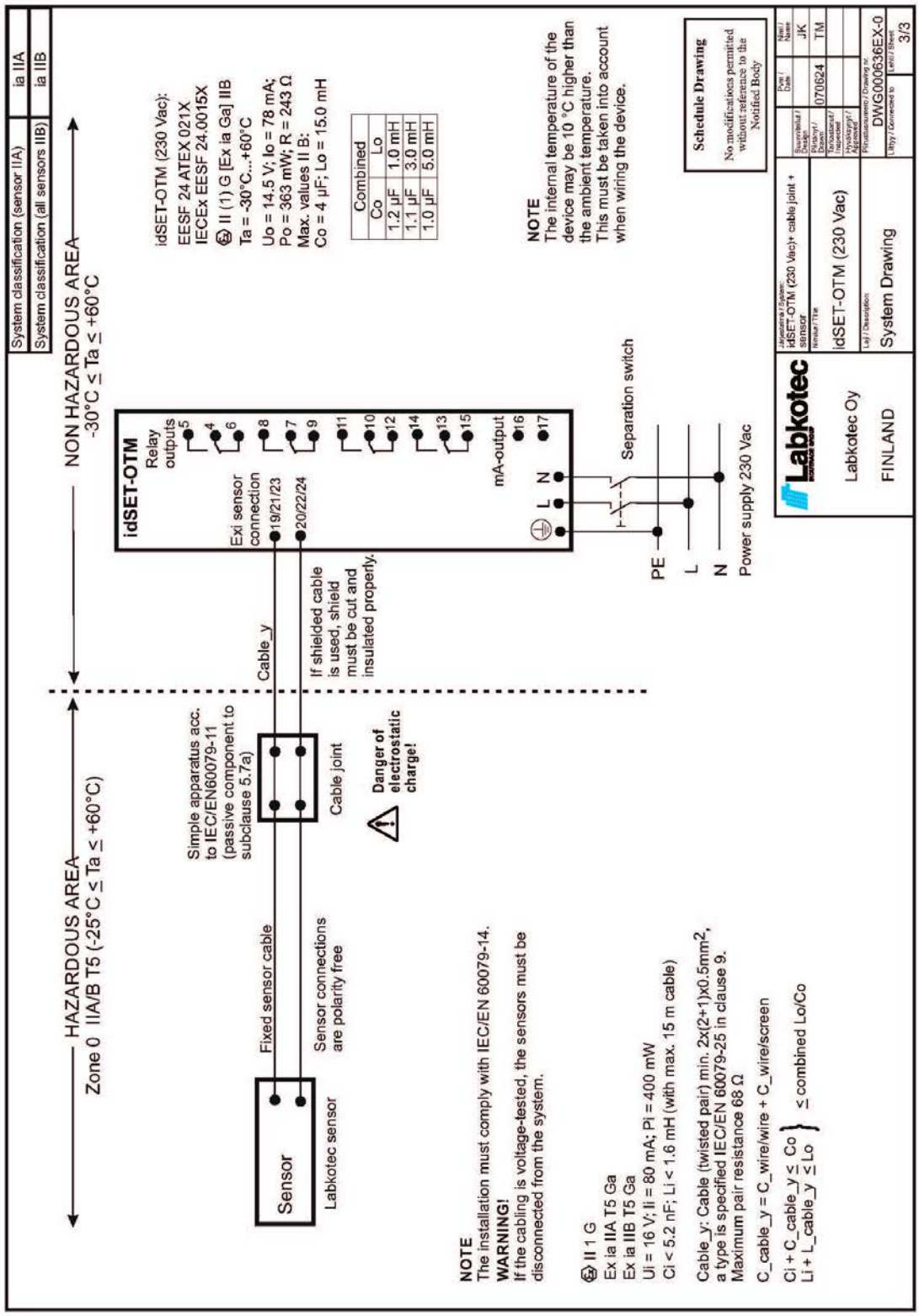
11.1.1 idSET-OTM (230 VAC) + junction box / cable joint + 3 sensors



11.1.2 idSET-OTM (230 VAC) + junction box with eauipotential grounding + 3 sensors



11.1.3 idSET-OTM (230 VAC) + cable joint + sensor



11.2 APPENDIX B EU declaration of conformity

Labkotec

EU DECLARATION OF CONFORMITY

We hereby declare that the product named below has been designed to comply with the relevant requirements of the referenced directives and standards.

Product idSET-OTM Control unit

Manufacturer
Labkotec Oy
Myllyhaantie 6
FI-33960 Pirkkala
Finland

Directives The product is in accordance with the following EU Directives:

2014/30/EU	Electromagnetic Compatibility Directive (EMC)
2014/34/EU	Equipment for Potentially Explosive Atmospheres Directive (ATEX)
2014/53/EU	Radio Equipment Directive (RED)
2014/35/EU	Low Voltage Directive (LVD)
2011/65/EU	Restriction of Hazardous Substances Directive (RoHS)

Standards The following standards were applied:

EMC:	EN 301 489-1 V2.2.3 (2019-11) EN 301 489-17 V3.2.4 (2020-09) EN 301 489-52 V1.2.1 (2021-11) EN IEC 61000-6-2:2019 EN IEC 61000-3-2:2019 EN 61000-3-3:2013/A1:2019
ATEX:	EN IEC 60079-0:2018+A11:2024 IEC 60079-11:2023 IEC 60079-25:2020 EU-type examination certificate: EESF 24 ATEX 021X. Notified Body: Eurofins Expert Services Ltd, Notified Body number 0537.
RED:	EN 301 908-1 v15.2.1 EN 300 328 v2.2.2
LVD:	EN 61010-1:2010/A1:2019/AC:2019-04
RoHS:	EN IEC 63000:2018

The product is CE-marked since 2024.

Signature This declaration of conformity is issued under the sole responsibility of the manufacturer. Signed for and on behalf of Labkotec Oy.

Pirkkala 14.8.2024

Janne Uusinoka, CEO
Labkotec Oy

Labkotec Oy | Myllyhaantie 6, FI-33960 Pirkkala, Finland | Tel. +358 29 006 260 | info@labkotec.fi DOC002264-0

Labkotec

EU DECLARATION OF CONFORMITY

We hereby declare that the product named below has been designed to comply with the relevant requirements of the referenced directives and standards.

Product Oil thickness measurement sensor
idSET-OTM

Manufacturer Labkotec Oy
Myllyhaantie 6
FI-33960 Pirkkala
Finland

Directives The product is in accordance with the following EU Directives:

2014/30/EU Electromagnetic Compatibility Directive (EMC)
2014/34/EU Equipment for Potentially Explosive Atmospheres Directive (ATEX)
2011/65/EU Restriction of Hazardous Substances Directive (RoHS)

Standards The following standards were applied:

EMC: EN 61000-6-2:2019
EN 61000-6-3:2021

ATEX: EN IEC 60079-0:2018
EN 60079-11:2012

EU-type examination certificate: EESF 21 ATEX 002X.
Notified Body: Eurofins Expert Services Oy, Notified Body number 0537.

RoHS: EN IEC 63000:2018

The product is CE-marked since 2021.

Signature This declaration of conformity is issued under the sole responsibility of the manufacturer. Signed for and on behalf of Labkotec Oy.

Pirkkala 2.12.2024

Janne Uusinoka, CEO
Labkotec Oy

Labkotec Oy | Myllyhaantie 6, FI-33960 Pirkkala, Finland | Tel. +358 29 006 260 | info@labkotec.fi DOC001874-EN-1

11.3 APPENDIX C UK declaration of conformity

Labkotec

UK DECLARATION OF CONFORMITY

We hereby declare that the product named below has been designed to comply with the relevant requirements of the referenced regulations and standards.

Product Control Unit:
idSET-OTM

Manufacturer Labkotec Oy
Myllyhaantie 6
FI-33960 Pirkkala
Finland

Regulations The product is in accordance with the following UK Regulations:

S.I. 2016/1091 Electromagnetic Compatibility Regulations
S.I. 2016/1107 Potentially Explosive Atmospheres Regulations
S.I. 2017/1206 Radio Equipment Regulations
S.I. 2016/1101 Electrical Equipment (Safety) Regulations
S.I. 2012/3032 Electrical and Electronic Equipment Regulations

Standards The following designated standards were applied:

EMC: EN 301 489-1 V2.2.3 (2019-11)
EN 301 489-17 V3.2.4 (2020-09)
EN 301 489-52 V1.2.1 (2021-11)
EN IEC 61000-6-2:2019
EN IEC 61000-3-2:2019
EN 61000-3-3:2013/A1:2019

ATEX: EN IEC 60079-0:2018+A11:2024
IEC 60079-11:2023
IEC 60079-25:2020

UK-type examination certificate: CML 24UKEX2321X.
Approved Body: Eurofins CML, Approved Body number 2503.

RED: EN 301 908-1 v15.2.1
EN 300 328 v2.2.2

LVD: EN 61010-1:2010/A1:2019/AC:2019-04

RoHS: EN IEC 63000:2018

The product is UKCA-marked since 2024.

Signature This declaration of conformity is issued under the sole responsibility of the manufacturer. Signed for and on behalf of Labkotec Oy.

Pirkkala 2.12.2024

Janne Uusinoka, CEO
Labkotec Oy

Labkotec Oy | Myllyhaantie 6, FI-33960 Pirkkala, Finland | Tel. +358 29 006 260 | info@labkotec.fi DOC002301-EN-0

Labkotec

UK DECLARATION OF CONFORMITY

We hereby declare that the product named below has been designed to comply with the relevant requirements of the referenced regulations and standards.

Product Oil thickness measurement sensor
idSET-OTM Sensor

Manufacturer Labkotec Oy
Myllyhaantie 6
FI-33960 Pirkkala
Finland

Regulations The product is in accordance with the following UK Regulations:

S.I. 2016/1091	Electromagnetic Compatibility Regulations
S.I. 2016/1107	Potentially Explosive Atmospheres Regulations
S.I. 2012/3032	Electrical and Electronic Equipment Regulations

Standards The following standards were applied:

EMC:	EN 61000-6-2:2019
	EN 61000-6-3:2021
ATEX:	EN IEC 60079-0:2018
	EN 60079-11:2012
	UK-type examination certificate: CML 21UKEX21348X.
	Approved Body: Eurofins CML, Approved Body number 2503.
RoHS:	EN IEC 63000:2018

The product is UKCA-marked since 2021.

Signature This declaration of conformity is issued under the sole responsibility of the manufacturer. Signed for and on behalf of Labkotec Oy.

Pirkkala 2.12.2024

Janne Uusinoka, CEO
Labkotec Oy

Labkotec Oy | Myllyhaantie 6, FI-33960 Pirkkala, Finland | Tel. +358 29 006 260 | info@labkotec.fi DOC001977-EN-1