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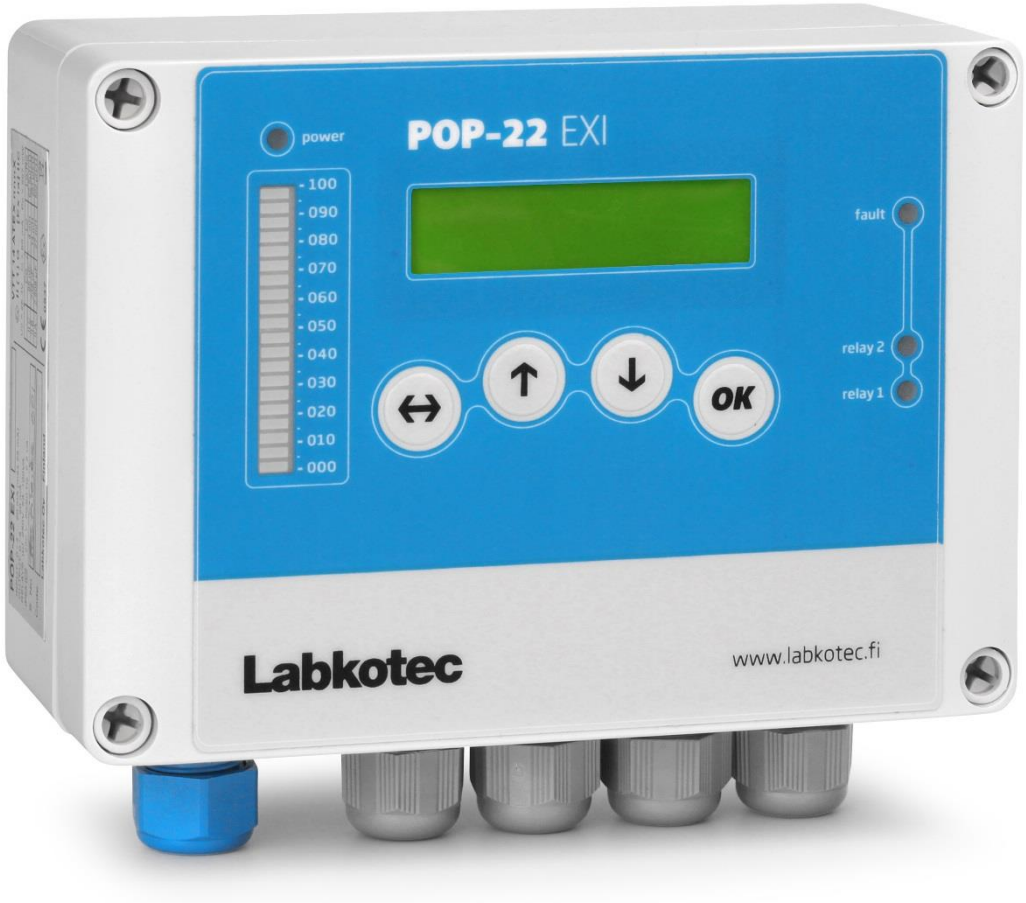
POP-22 EXI

LEVEL MEASUREMENT AND CONTROL UNIT

Installation and Operating Instructions



T A B L E O F C O N T E N T S

1. TECHNICAL SPECIFICATIONS

Supply voltage	230 VAC, 50/60 Hz, 6.5 VA. Fuse IEC/EN 127 5 x 20 mm/160 mAT. The unit does not have a disconnecting switch (isolator; see installation and operating instructions 4.2.1).
Electical safety	EN IEC 61010-1, Class II, POLLUTION DEGREE 2
Operating environment	Temperature: 0 °C....+50 °C. Max. elevation above sea level 2,000 m. Relative humidity RH 100%. Suitable for indoor and outdoor use (protected from direct rain).
Input signal Current signal [dc] Measuring accuracy ± 0.3%	4...20 mA Ri =50 Ω [Active / passive, auxiliary voltage ~ 18-26 VDC] or Labkotec 3W sensors (0.2...7 mA) Ri =150 Ω Maximum input current 25 mA.
Output signals Relay Analogue	Two relay outputs. Potential-free switching contacts. Max. (resistive load): 250 VAC / 5 A / 100 VA or 24 VDC / 4 A / 100 VA. 0/4...20 mA [configurable], for a load of 0 to 500 ohm. 10 bit, accuracy ± 0.5 %
User interface	Bar display 0…100 % [5% steps] and 2-row LCD display. LED signal lights: supply voltage, relay control, error Keyboard: for settings [↔], [↑], [↓] ja [OK]. Software includes volume calculation for horizontal cylindrical tank.
Enclosure	Polycarbonate, 175 x 125 x 75 [mm] (w x h x d) IP 65
Cable bushings	5 pcs M16 for cable diameter 5-10 mm
Weight	1.1 kg
Ex classification **Special conditions**	II (1) G [Ex ia Ga] II C EESF 22 ATEX 006X Ta = -25 °C....+50 °C
Electrical parameters	Uo = 26.3 V Io = 86 mA Po = 567 mW Co = 95 nF Lo = 4 mH
EMC **Immunity** **Emissions**	EN IEC 61000-6-2 EN IEC 61000-6-3
Manufacturing year Please see the serial number on the type plate	xxx x xxxxx xx **YY** x where YY= manufacturing year (esim. 19 = 2019)
The device must be installed in a safe area. **The sensors can be installed in zones 0/1/2 of potentially explosive atmospheres. The appropriate standards must be taken into consideration during installation: EN IEC 60079-25 Intrinsically safe electrical systems 'I', EN IEC 60079-14 Electrical installations in hazardous areas.**	

Exi connection parameters	**U_o** = 26.3 V	**I_o** = 86 mA	**P_o** = 567 mW
Group	**Capacitance C_o**	**Inductance L_o**	**Lo/Ro**
II C	95 nF	4 mH	62.5 µH/Ω
II B	738 nF	14 mH	251 µH/Ω
II A	2.508 µF	27 mH	502 µH/Ω

NB! The current signal received from the unit **must not be taken into a potentially explosive atmosphere** without an appropriate barrier. Direct connection inside a safe area is permitted.

2. GENERAL INTRODUCTION

POP-22 EXI is a versatile level measurement and control unit. Its applications include monitoring tank levels, controlling pumping stations and valves and relay alarms. Labkotec's capacitive 3W sensors or other two-wire transmitters such as pressure transmitters can be connected to the unit. POP-22 EXI's features include converting the level of a horizontal cylindrical tank into a volume.

The POP-22 EXI level measurement and control unit has been approved for use with sensors installed in potentially explosive atmospheres, such as oil tanks, in accordance with ATEX directive, device category 1. POP-22 EXI must be installed within a safe area.

The unit has two relay outputs for alarms or the control of pumps and valves, and one 0/4…20 mA current signal output. The current signal can be transmitted to an external automation system without a separate Ex barrier. When the current signal is transmitted back into a potentially explosive atmosphere, a separate Ex barrier must be used.

In addition to a two-row LCD display, the unit features an illustrative bar display (0 to 100 %).

Settings can be made on the front panel, using the display unit and keys.

3. OPERATION

The unit's measurement results and basic settings can be read from the two-row display.

In normal use, only the measurement and setting values in the main menu and the initial Settings screen can be browsed using the [↔] key. See Chapter 5, Settings.

There are three different functions associated for [↔] key:

- Pressing the key will take you to the next menu screen.
- Holding the key pressed down for a longer period of time, will take you back to the previous menu screen.
- Holding the key pressed down for even a longer period of time, will take you back to the basic display.

The [OK] key can be used to open the menu settings and accept the settings.

The [↑] and [↓] keys can be used to change the setting displayed on the screen.

A single press changes the value by one step. A long press scrolls faster through the values.

Appendix 2 illustrates all menus and settings of the unit.

You can check the unit's software version by pressing the [↑] or [↓] key in the SETTINGS Enter screen.

3.1 Setting up

Basic settings, see items 1 to 5.

At least the following settings must be made in the unit when it is taken into use. For a more detailed description, see Chapter 5, Settings. The Settings menu is password-protected.

1 Check the sensor type selection.

2. Define the display settings. (Display texts, units and precision.)

3. Calibrate the sensor input. (Set the measured value of the sensor to match the actual value.)

4. Define the tank (or other conversion) settings. (E.g. surface level is converted into a volume, either linearly or for a horizontal cylindrical tank.)

In applications requiring controls, see also item 6.

5. Define the value shown with the bar display.

Other settings include:

6. Define the settings for the relays and the current output.

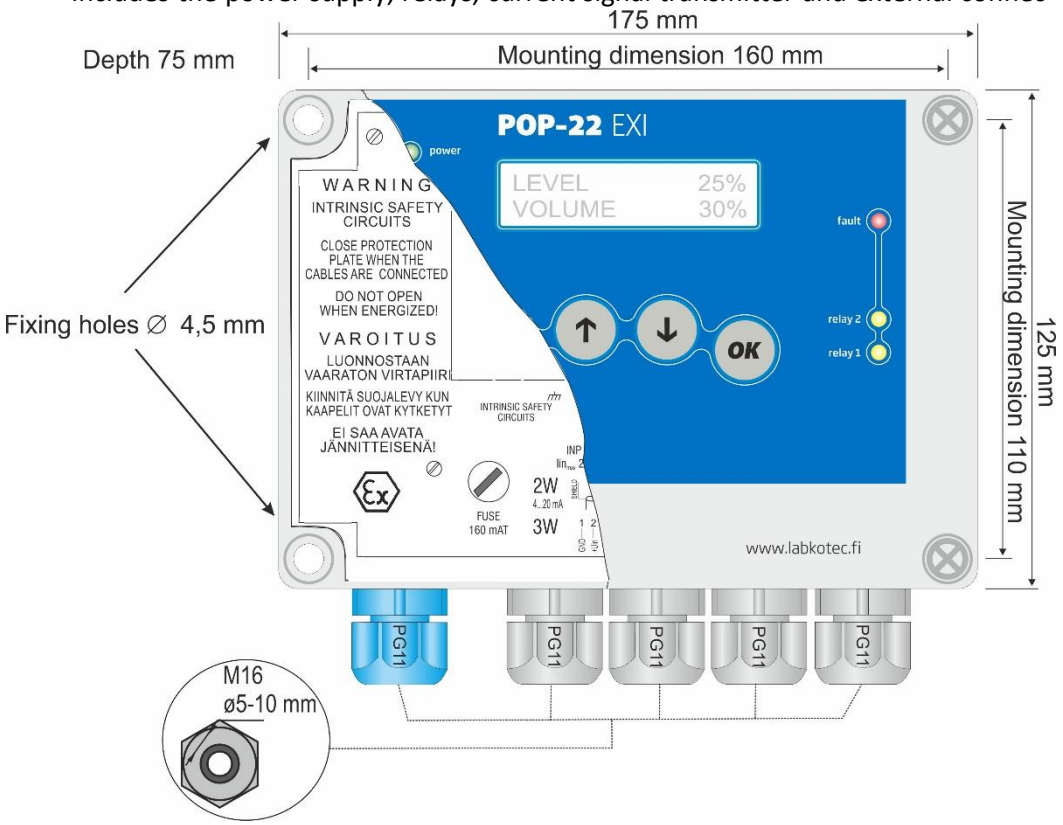
7. In problematic measurement applications, you may have to modify the input filtering factors.

4. INSTALLATION AND ELECTRICAL CONNECTIONS

4.1 Construction

The POP-22 EXI level measurement and control unit is wall-mounted. The unit is enclosed in a polycarbonate enclosure with an IP65 protection class, which means that separate casing is not needed in installation. Its mounting holes are located on the bottoms of the lid fixing holes in the frame of the unit.

The unit's electronics comprise two separate circuit boards. While the lower board includes the power supply, relays, current signal transmitter and external connections, the upper board includes the LED signal lights, operating keys and the LCD display.



In addition, the upper board is fixed to the lid of the enclosure and the lower board to the frame. The boards are connected to each other with a 34-way ribbon cable.

When opening the unit, be careful not to damage the ribbon cable.

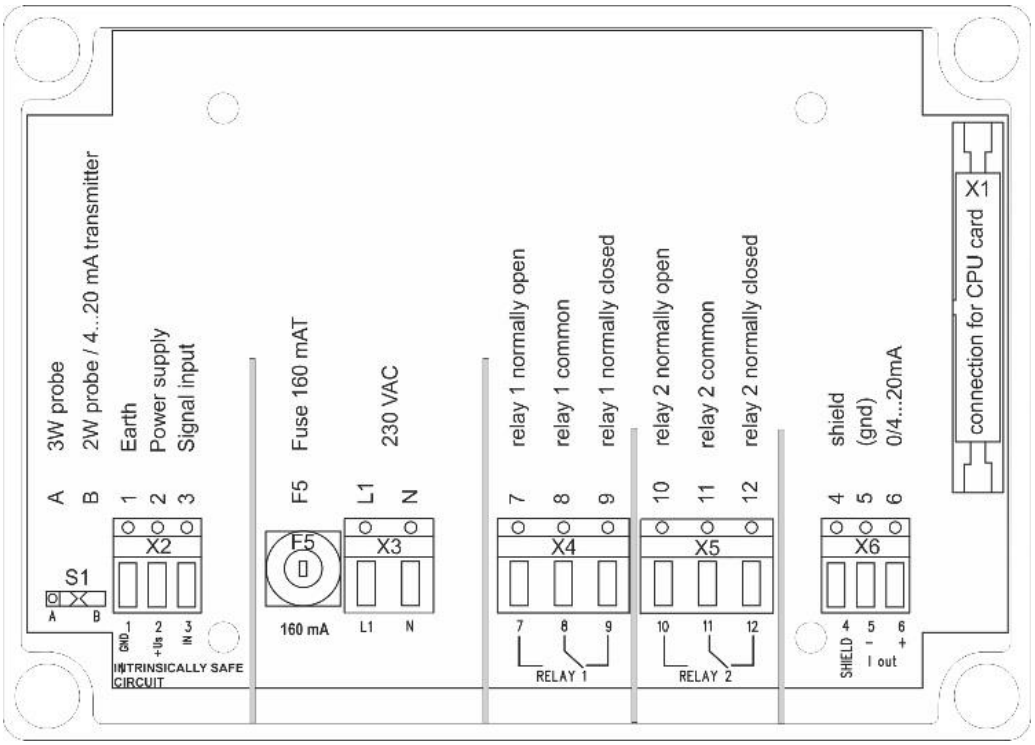
The through holes for the input cables (PG11) are in the frame. The terminals for external connections are separated by partitions.

If the partition between the relay terminals is removed, both relays must be connected to a similar voltage system (e.g. 230 VAC or 24 VAC/DC).

Partitions other than the relay partition may not be removed.

The unit's components and terminal blocks connected to the intrinsically safe circuit are covered with a protective plate. This plate must be installed into place after the cables have been connected.

4.2 Connections and selections



Connector	Description
X1	connector for the ribbon cable between the boards
S1	sensor selection switch (A / B)

Move the sensor selection switch S1 to position A, when a Labkotec 3W sensor is connected to the unit. Move the switch to position B, when a 2W sensor or other 4…20 mA transmitter is connected to the unit.

X2	sensor/input connection
F5	distribution fuse (160 mAT)
X3	supply voltage 230 VAC 50/60 Hz6.5 VA
X4	relay 1
X5	relay 2
X6	analogue output 0/4...20 mA

NB! Check the position of selection switch S1 when connecting a sensor cable. You must select the same setting from the *Sensor type* (see Chapter 5) menu.

NB! Labkotec 3W serie transmitters can be connected to the POP-22 EXI unit. Old Labkotec MET series transmitters CANNOT BE CONNECTED to the unit.

4.2.1 Power input

The 230 VAC 50/60 supply voltage is connected to terminal block X3, marked L1 and N while the supply voltage is taken from the distribution board in its own branch. Some 6.5 VA is the required power.

A disconnecting switch (250 VAC / 1 A) must be installed on the supply voltage line near the unit, allowing both conductors (L1, N) to be disconnected to ease maintenance and operation. The switch must be marked as the disconnecting switch of the device..

4.2.2 Output relays

The relay contacts are connected to terminal blocks X4 and X5. The maximum connected power is 250 VAC / 5 A / 100 VA or 24 VDC / 4 A / 100 VA (resistive load).

RELAY 1; break 8-9, make 8-7. (The numbers are the numbers of the connector screws.)

RELAY 2; break 11-12, make 11-10.

4.2.3 Analogue output

Terminal block X6 outputs a 0/4…20 mA current signal: 6 (+), 5 (-) and 4 (protective sheath). The unit can output a signal up to a 500 ohm load.

We recommend using pair-shielded instrumentation cable.

If you wish to relay the signal back into a potentially explosive atmosphere, it must pass through an Ex safety barrier, where the outermost sheaths are connected to equipotential bonding.

4.2.4 Input circuit

Select the type of sensor connected to the sensor input with switch S1.

NB! You must not check or change the switch position while the unit's terminals are live.

There is a >2500 V galvanic isolation between the input and output circuits.

The connections of different sensors to the POP-22 EXI level measurement and control unit are described in *Appendix 1, Connection examples*.

4.3 Cabling

In order to avoid EMC interference etc., we recommend using pair-shielded instrumentation cable for the sensor cables, e.g.:

Cable 2 x (2 + 1) x 0.5 or cable 3 x 0.8 + 0.8.

The maximum sensor cable length with these cable types is around 500 m with materials in group IIC and around 700 m with materials in groups IIB/IIA.

The unit should be installed as far as possible from devices containing relay controls, and other cabling. You should avoid routing sensor cabling closer than 30 cm to other cabling. Input and control cabling must be kept separate from measurement and communications cabling.

Use single-point earthing.

The appropriate standards must be taken into consideration when cabling areas with potentially explosive atmospheres (see Technical specifications).

5. SETTINGS

You can modify the settings of the POP-22 EXI level measurement and control unit by pressing the **[OK]** key in the *SETTINGS Enter* screen of the main menu. When the unit prompts for a password, enter [2] as the password using the [↑] and [↓] keys, and accept it by pressing the **[OK]** key.

All of the POP-22 EXI level measurement and control unit's menus are described in Appendix 2. Each menu includes an *Exit* selection which you can use to close the menu in question.

The following table briefly describes the purpose of each menu. This document uses level and volume values as examples only.

NB! Do not enter the Settings menu unless absolutely necessary.

Menu	**Settings and their descriptions**
Sensor type	Sensor type selection**. 3W sensor, switch S1 = A** or **4-20 mA sensor, switch S1 = B** NB! This selection affects only the unit software. The actual position of switch S1 must match the setting made in this menu. ***See also Chapter 4.2.***
Input filter	Filtering the signal from the sensor can eliminate unwanted fluctuations, i.e. noise, in the input signal. The adjustable settings are: **Time** constant (0…20 s, 1 second steps), recommended value 1 s. **Band** (0…20 mA; 0.01 mA steps), recommended value 2 W: 0.16 mA, 3W: 0.07 mA. Please contact Labkotec service if you need further details concerning these settings.
Display settings	The display texts, i.e. measurement names, units, scale and number of decimals. **NAME 1**, i.e. the name of the first row. (Select from the following: LEVEL, HEIGHT, VOLUME, MASS, FLOW, PRESSURE, TEMPERATURE, pH, VOLTAGE, CURRENT, POWER, CONSUMPTION, DIESEL or <nothing>.) **UNIT 1**, i.e. the unit of the first row. (Select from the following: %, mm, cm, m, l, m3, kg, t, l/s, l/min, m3/s, m3/h, bar, mbar, Pa, kPa, MPa, mmH2O, C, pH, V, mA, A, kW, kWh, lpm or <nothing>) **SCALE**, i.e. the number of integers to be displayed. (30,00....30000000,00.) **DECIMALS** [300], [300,0], [300,00], [300,000] Same settings for the second row of the display.
Input calibration	Set the measurement to match a known level or other known measurement result. ***See 5.1.***
Tank settings	Tank type selection (**linear** or **horizontal cylinder**) and the volume matching the level. ***See Chapter 5.2.*** Correspondingly, any linear conversion can be made.
Bar display	The value controlling the bar display, e.g. level (mm) or volume (l).

Relay settings	The following settings affect relay control and status: **Control signal** (e.g. level or volume) **Turn-on limit** (e.g. LEVEL 10 %), recommendation 1 s. **Turn-off limit** (e.g. LEVEL 11 %), recommendation 1 s. **On delay** (delay 0 to 255 s), recommendation 1 s. **Off delay** (delay 0 to 255 s), recommendation 1 s.
Current output setting	Current output setting in relation to the measurement. Selectable 0…20 mA or 4…20 mA on the selected measurement range, and current output in failure situations.
Other settings *See Chapter 5.3.*	Simulation - Testing the unit's functionality by simulating sensor current values on the keyboard. Direct control - Direct control of the relays and the current output on the keyboard. Function mode - Always select extended mode! Parameters - **DO NOT MODIFY THESE SETTINGS!** We recommend not changing the Function mode and Parameters settings. For more information, please contact Labkotec service.

The unit will return to normal mode in around 10 minutes unless setting commands are made. The Simulation mode is an exception. The following sections describe the meaning of the main settings in more detail.

5.1 Input calibration

With this setting, you can adjust the sensor readout to match the actual measured value. There are two methods of calibrating the input circuit:

- Using two known surface levels (CALIBRATION METHOD = 2 levels) or

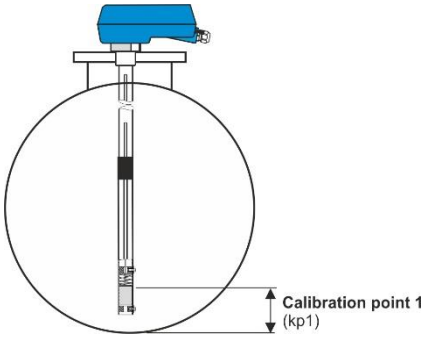
- By entering the input current and level values at two points on the keyboard (CALIBRATION METHOD = 2 x (mA, level).

The calibration points must be separated by at least 20 % of the measurement range.

5.1.1 Calibration method "2 levels"

Use this calibration method only if it is possible to change the measurement during calibration, e.g. while the tank is being filled. POP-22 EXI requires that both level settings are entered successively on the device.

CALIBRATION POINT 1 (Tank empty)



1. First, open the SETTINGS / INPUT CALIBRATION / *CALIBRATION METHOD 2 levels* menu.

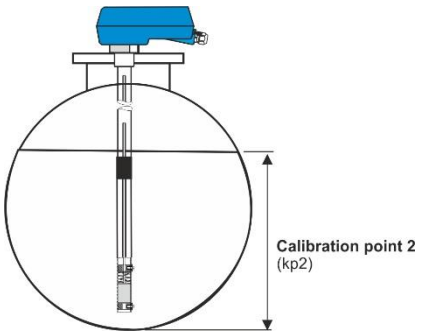
2. Determine the lowest possible level measured by the sensor. E.g. when using the Labkotec PA/3W sensor, the lowest level is 55 mm (the sensor's 'dead zone') + the distance between the sensor and the tank bottom (e.g. 75 mm). If the tank is not empty, measure the actual fluid level in the tank with, for example, a foot rule.

3. Install the sensor in the tank, enter the just determined level on the POP-22 EXI at calibration point 1 using the [↑] and [↓] keys, and press [OK].

CALIBRATION PT 1 LEVEL 130 mm

The unit will then prompt you to change the fluid level.

CALIBRATION POINT 2 (Fluid in the tank)



4. Raise the fluid level by at least 20 % and measure the actual level. (Remove the sensor from the tank, if its through hole is the only spot where the level can be measured.)

5. Install the sensor in the tank, enter the just determined level at calibration point 2 using the [↑] and [↓] keys, and press [OK].

CALIBRATION PT 2 LEVEL 1200 mm

6. Set a measurement value, values below this being displayed as zero. See 5.1.3.

The measurement has now been calibrated at the points you defined, and the unit will display all measurement values from the measurement range linearly on the top row of the two-row display.

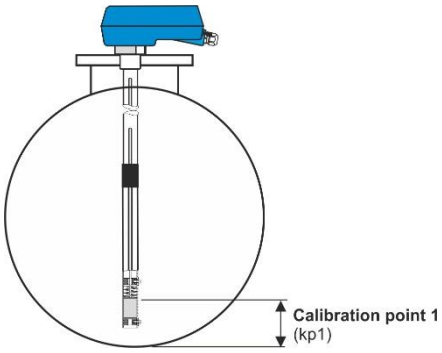
5.1.2 Calibration method "2 x (mA, level)"

This is the recommended calibration method, when the fluid level cannot be changed at once during the calibration. Two current signal / measurement value points are set for the unit, based on which the entire measurement range will be scaled. The points can be entered independently.

NB! The 4-20 mA current signal range of, for example, pressure transmitters has been factory-set so that 4 mA corresponds to a level of 0 mm and 20 mA is the full sensor reading, for example 5000 mm. The POP-22 EXI settings can then be made without connecting the sensor to the unit.

The following example describes the input calibration for a Labkotec PA/3W sensor.

CALIBRATION POINT 1 (Tank empty)



1. Install the sensor in an empty tank, or outside the tank, vertically suspended in the air.

2. Determine the lowest possible level measured by the sensor. E.g. when using the Labkotec PA/3W sensor, the lowest level is 55 mm (the sensor's 'dead zone') + the distance between the sensor and the tank bottom (e.g. 75 mm). If the tank is not empty, measure the actual fluid level in the tank with, for example, a foot rule.

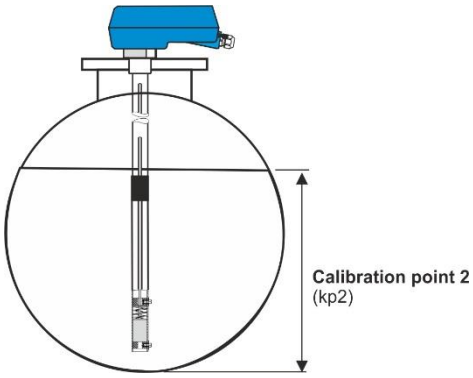
Level = _____ mm

3. Read the sensor current from the POP-22 EXI unit's main display at calibration point 1 by pressing the [↑] key in the LEVEL/VOLUME display.

Sensor current I_{IN} = _____ mA

4. Mark down the calibration point 1 values or move to step 8.

CALIBRATION POINT 2 (Fluid in the tank)



5. Raise the fluid level by at least 20 % and measure the actual level.

Level = _____ mm

6. Read the sensor current corresponding to the level from the POP-22 EXI unit's main display at calibration point 2 by pressing the [↑] key in the LEVEL/VOLUME display.

Sensor current I_{IN} = _____ mA

7. Mark down the calibration point 2 values or move to step 8.

ENTERING THE SETTINGS ON THE POP-22 EXI UNIT

8. Open the SETTINGS / INPUT CALIBRATION / CALIBRATION METHOD 2 x (mA, level) menu and use the [↑] and [↓] keys to set the input current value (e.g. 2.569 mA) at the corresponding calibration point.

CALIBRATION PT 1. Iin 2.569 mA

9. Use the [↑] and [↓] keys to set the corresponding level value (e.g. 130 mm) and press [OK].

CALIBRATION PT 1 LEVEL 130 mm

Make the corresponding settings for calibration point 2.

The measurement has now been calibrated at the points you defined, and the unit will display all measurement values from the measurement range linearly on the top row of the two-row display.

5.1.3 Enforced zero indication

You can use the enforced zero indication to make the unit display zero, when the surface level is below the set limit.

WARNING! May cause incorrect control signals.

If you do not wish to use the zero indication, set this setting at a value that is as low as possible, for example -300 mm.

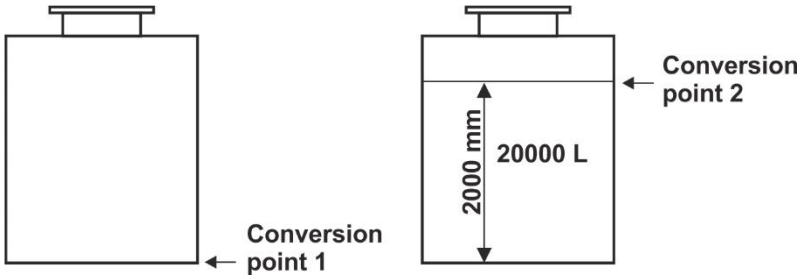
5.2 Tank settings

In the tank settings, the value measured with the sensor is converted into another value (for example level to volume), using either linear conversion or utilising the formula for a horizontal cylindrical tank.

5.2.1 Linear tank

Set a conversion pair, e.g. level and volume, on the unit for both points, for example

CONVERSION POINT 1	CONVERSION POINT 2
Level = 0 mm	Level = 2000 mm
Volume = 0 litres	Volume = 20000 litres



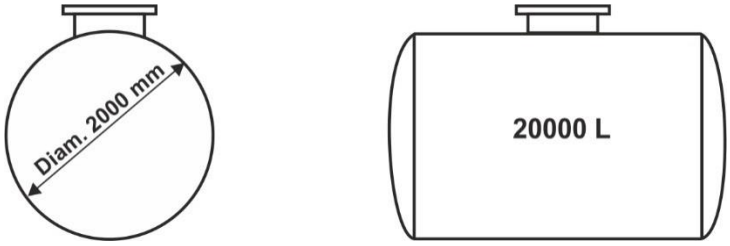
5.2.2 Horizontal cylindrical tank

The POP-22 EXI unit will calculate the correlation between level and volume, utilising the formula for a horizontal cylindrical tank.

The user must know the tank's diameter (height) and volume, e.g.

Tank diameter (height) = 2000 mm

Total tank volume = 20000 litres.



5.3 Other settings

The following menus are available under the OTHER SETTINGS menu: SIMULATION, DIRECT CONTROL, FUNCTION MODE and PARAMETERS.

WARNING! We do not recommend changing the Function mode and Parameters settings. For more information, please contact Labkotec service.

The Simulation and Direct control menus are described below.

5.3.1 Simulation

WARNING! DO YOU REALLY WANT TO ENTER SIMULATION?

In this mode, the unit can be controlled on the keyboard, emulating the input signals regardless of the actual input signal values.

The unit's current mode is used as the initial status.

Once you exit simulation, the unit returns to the original function mode.

WARNING! In simulation mode, the outputs are controlled by the simulated signals. If the system is connected to a process, information about functions caused by the simulation will also be relayed to the process.

The display will initially show the following (depending on the display settings):

LEVEL	nn mm
Sim Iin	mm mA

You can use the [↑] and [↓] keys to change the simulated input signal value.

The level corresponding to the simulated input signal is displayed on the top row and the simulated input signal value on the bottom row. Otherwise, the unit functions as in normal use.

Pressing the **[↔]** key changes the top row value between LEVEL, VOLUME, Iout or SIMULATION Exit.

5.3.2 Direct control

WARNING! DO YOU REALLY WANT TO ENTER DIRECT CONTROL?

In this mode you can use the keys to control the unit's relays on or off, and adjust the output current signal up or down.

The unit's current status is used as the initial values.

When you exit direct control, the unit returns to the original status.

Initially, the display will show (depending on the status of relay 1)

RELAY 1 IS ON

You can use the [↑] and [↓] keys to turn the relay in question on or off and adjust the output signal up or down.

Use the **[↔]** key to select RELAY1, RELAY2, OUTPUT CURRENT, Iout 4-8-12-16-20 or DIRECT CONTROL Exit.

6 ERROR MANAGEMENT

6.1 Error situations

If the sensor/input circuit signal current is too low (outage) or too high (short), an error is detected.

Any error situations appearing in the unit's internal operations cause error detection, providing that the unit is not badly damaged.

The POP-22 EXI will show an error message on the display and the red FAULT light will turn on.

Once the POP-22 EXI has detected an error, the red FAULT light turns on, the relays are turned off, the analogue output is set to the nominal value defined for it *(see Chapter 5, Current output setting)*, and the following message is shown on the display:

```
INPUT FAULT:
Iin > MAX     Acknowledge
```

If the input current is greater than the set limit value, the message reads Iin > MAX; if the current is less than the limit value, the message reads Iin < MIN.

You can acknowledge the message by pressing the [OK] key, after which the Acknowledge text disappears from the display.

The FAULT light will not turn off and the error message will not disappear until the error has been corrected.

If the error situation was only momentary and cleared without special measures, the unit will automatically continue normal operation, but the following message will be shown on the display:

```
NONACTIVE FAULT
Iin >    MAX  Acknowledge
```

Press the [OK] key to clear the message.

You can exit the error display by pressing the [↔] key, after which the following text is shown on the display:

```
SERVICE DISPLAY
                    Exit
```

Press the [OK] key to jump to the main menu level, level/volume.

If the unit has an error situation or unacknowledged error messages, you can press the **[↔]** key to open the following menu:

```
SERVICE DISPLAY
                    Enter
```

Press the [OK] button to display the active error message.

6.2 Internal error

If the error is caused by the unit's internal system, the display will read

```
INTERNAL FAULT:
memory fault
Acknowledge
```

Press [OK].

You can try the following methods to clear the error situation.

WARNING! If the unit begins to operate normally with these methods, you should note that the required system settings may not be in effect any longer, and you will need to set up the unit again!

The display reads

```
INTERNAL FAULT:
memory fault
```

Press [OK].

The display reads

```
MEMORY SERVICE
                Enter
```

Press [OK].

The display reads

```
ENTER PASSWORD
        0
```

Use the [↑] and [↓] keys to enter password [2].

Press [OK].

The display reads

```
MEMORY CHECKSUM
                Enter
```

You can calculate a new memory checksum for the possibly incorrect settings in the unit's memory if you do not want to reset the unit to its factory settings. Following this, all of the unit's settings must be checked to ensure their correctness. If you do not wish to calculate a new checksum, you can skip to the next step by pressing the **[↔]** key. If you wish to calculate the checksum, press [OK].

The display reads

OK: new checksum other: no changes

When you press [OK], the unit will calculate a new checksum.

When you press any other key

The display reads

MEMORY CHECKSUM Exit

Press [OK].

The display reads

FACTORY SETTINGS Enter

NB! You can use this function to reset all of the unit's settings to the factory defaults.

Note that you then need to make all application-specific settings again. If you do not wish to reset the unit to the factory settings, press the [↔] key. If you wish to reset the unit to the factory settings, press [OK].

The display reads

OK: factory settings other: no changes

When you press the [OK] key, the unit will reset to the factory settings.

If you press any other key, the factory settings will not be taken into use.

The display reads

FACTORY SETTINGS Exit

Press [OK].

The display reads

MEMORY SERVICE Exit

Press [OK].

The display reads

SERVICE DISPLAY Exit

Press [OK].

The unit returns to the basic display.

6.3 Input circuit monitoring

If the unit detects an error situation in the input circuit, such as too low an input current (e.g. cable breakage) or too high an input current (e.g. cable short), the relay is set to off.

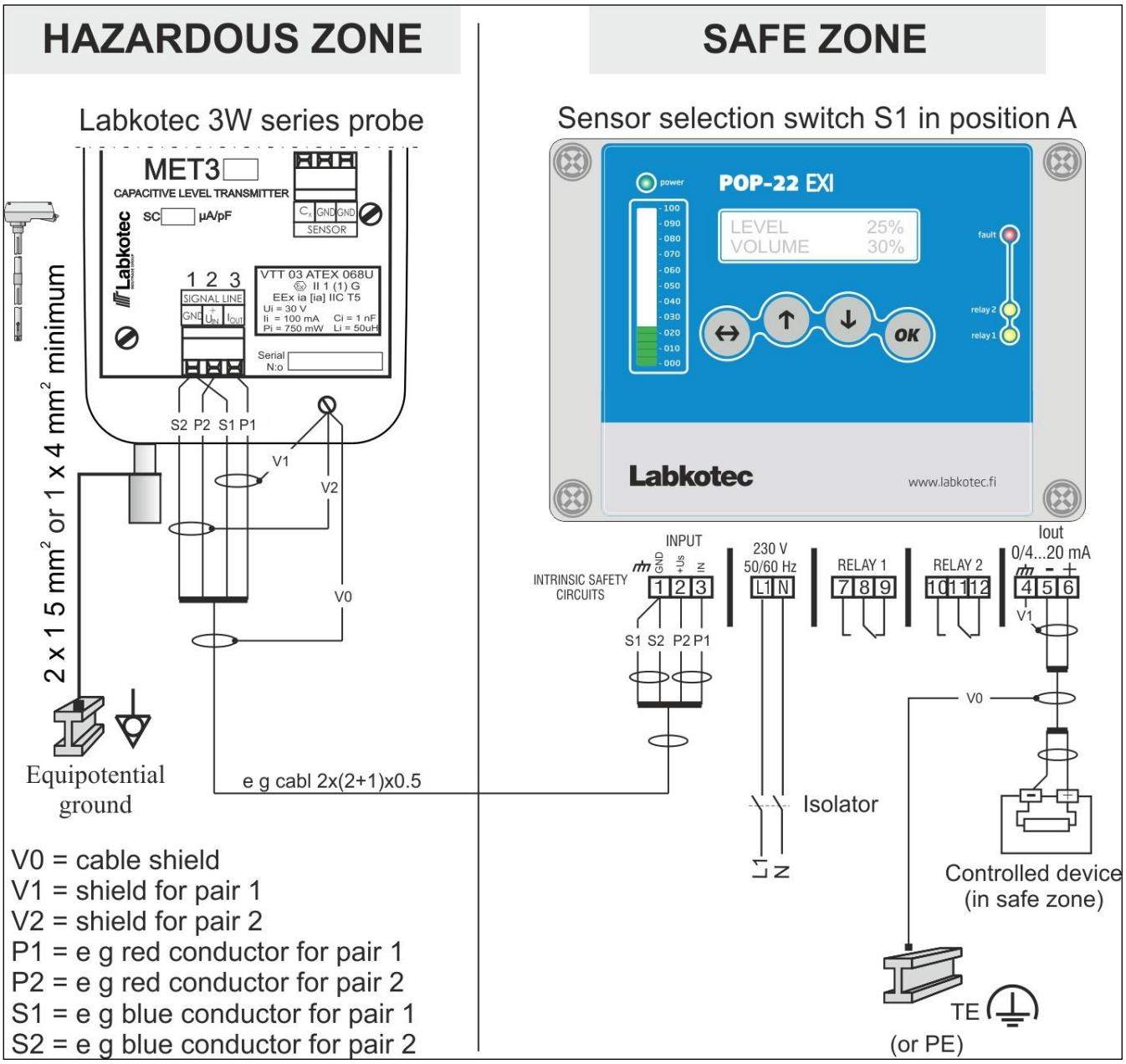
7. SERVICE AND REPAIRS

The unit's distribution fuse (marked FUSE 160 mAT) can be replaced with another 5 x 20 mm / 160 mAT glass tube fuse conforming to IEC127, if you take the safety measures described in Chapter 4 into consideration. Other service and maintenance may be performed on the unit only by a person qualified in Exi equipment and authorised by Labkotec Ltd.

The instructions in standards EN IEC 60079-17 and EN IEC 60079-19 concerning the inspection and maintenance of Ex equipment should be followed during all maintenance, inspection and repair work.

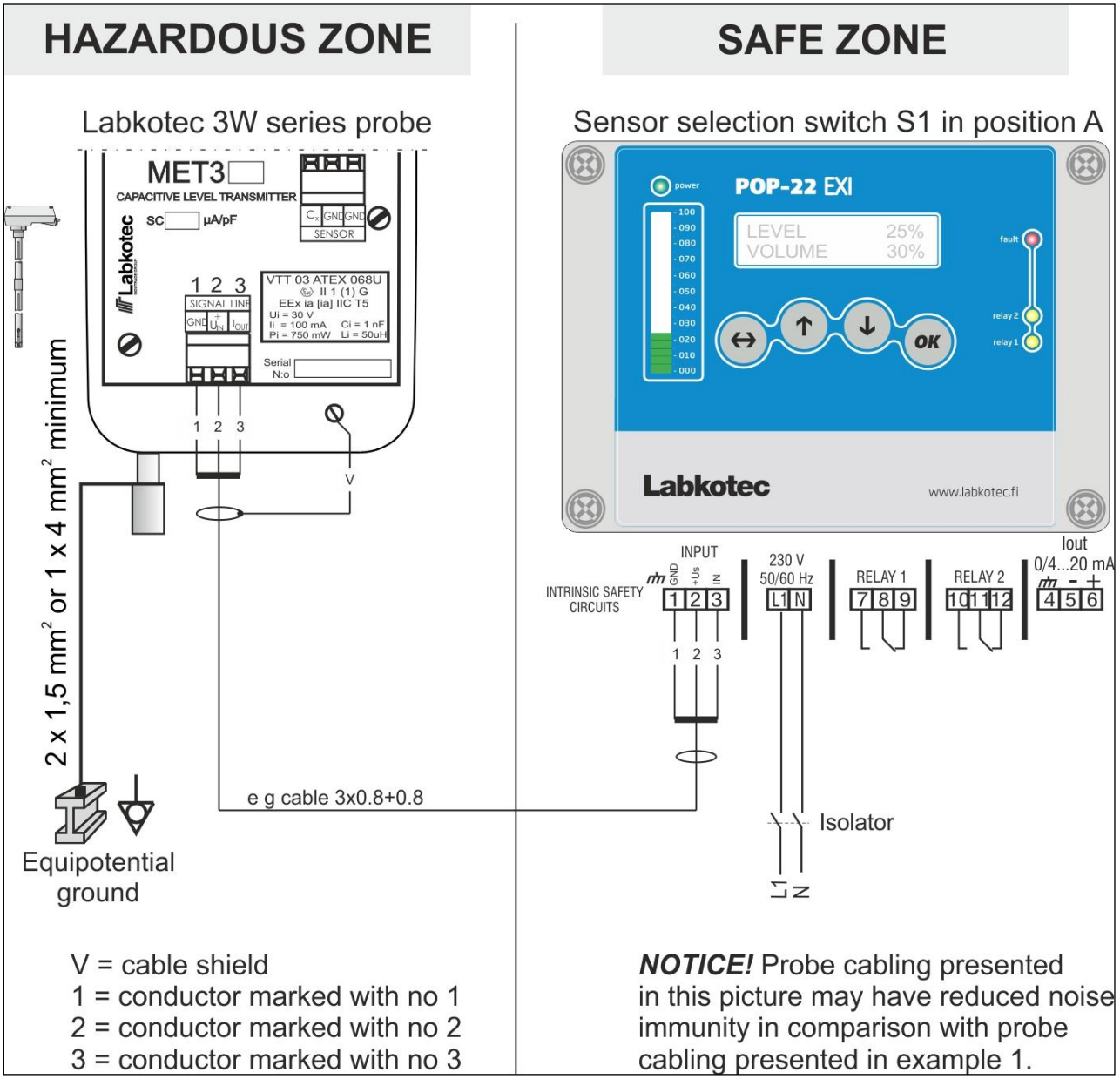
APPENDIX 1. CONNECTION EXAMPLES

CONNECTION EXAMPLE 1. Labkotec 3W sensor with two-pair cable



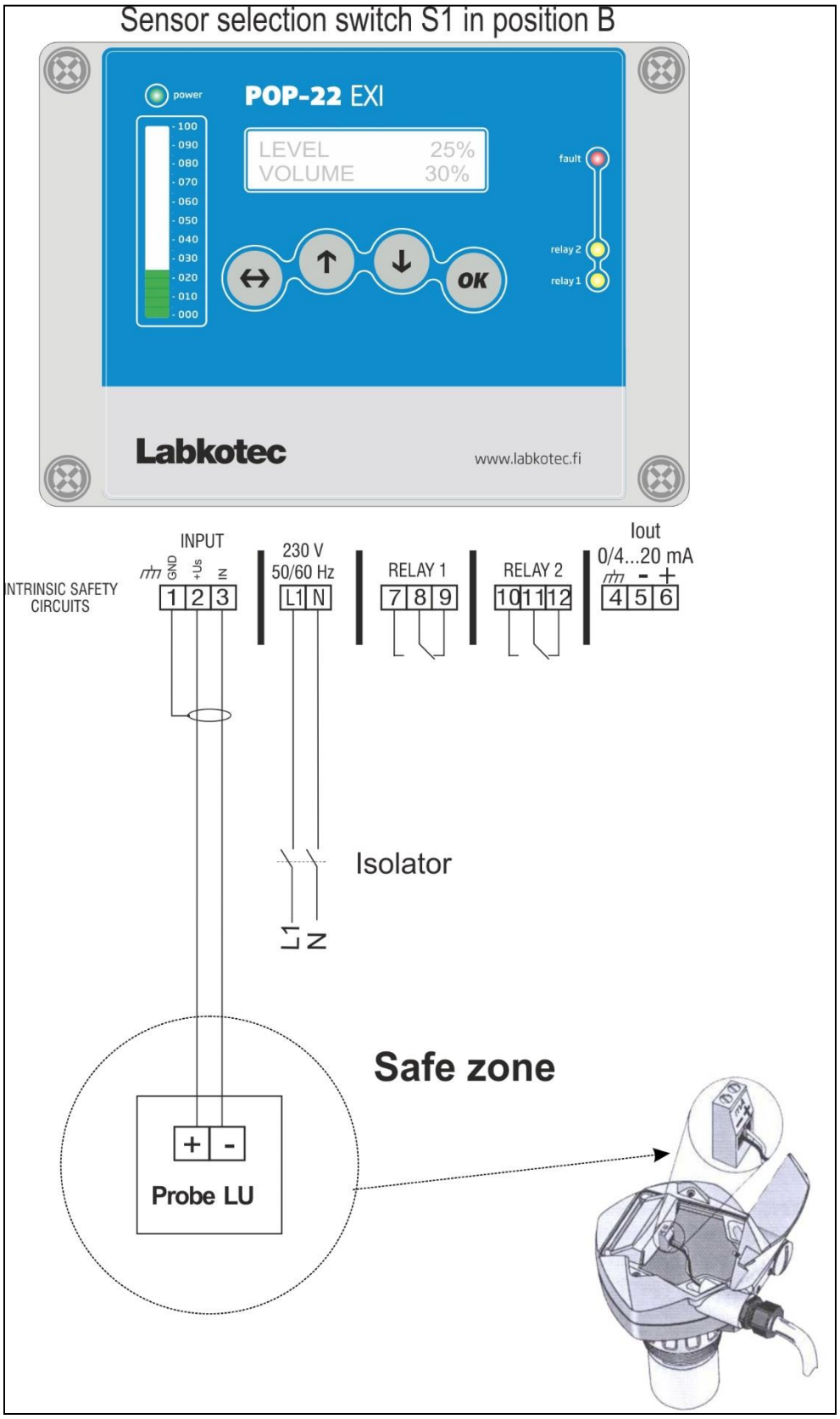
Example 1.
Connections with Labkotec 3W sensor when using two-pair shielded instrumentation cable, e.g. cable 2 x (2 + 1) x 0.5mm^2 sensor cable (recommended), with a control connection to a device not inside an Ex area.

CONNECTION EXAMPLE 2. Labkotec 3W sensors with three-wire cable.



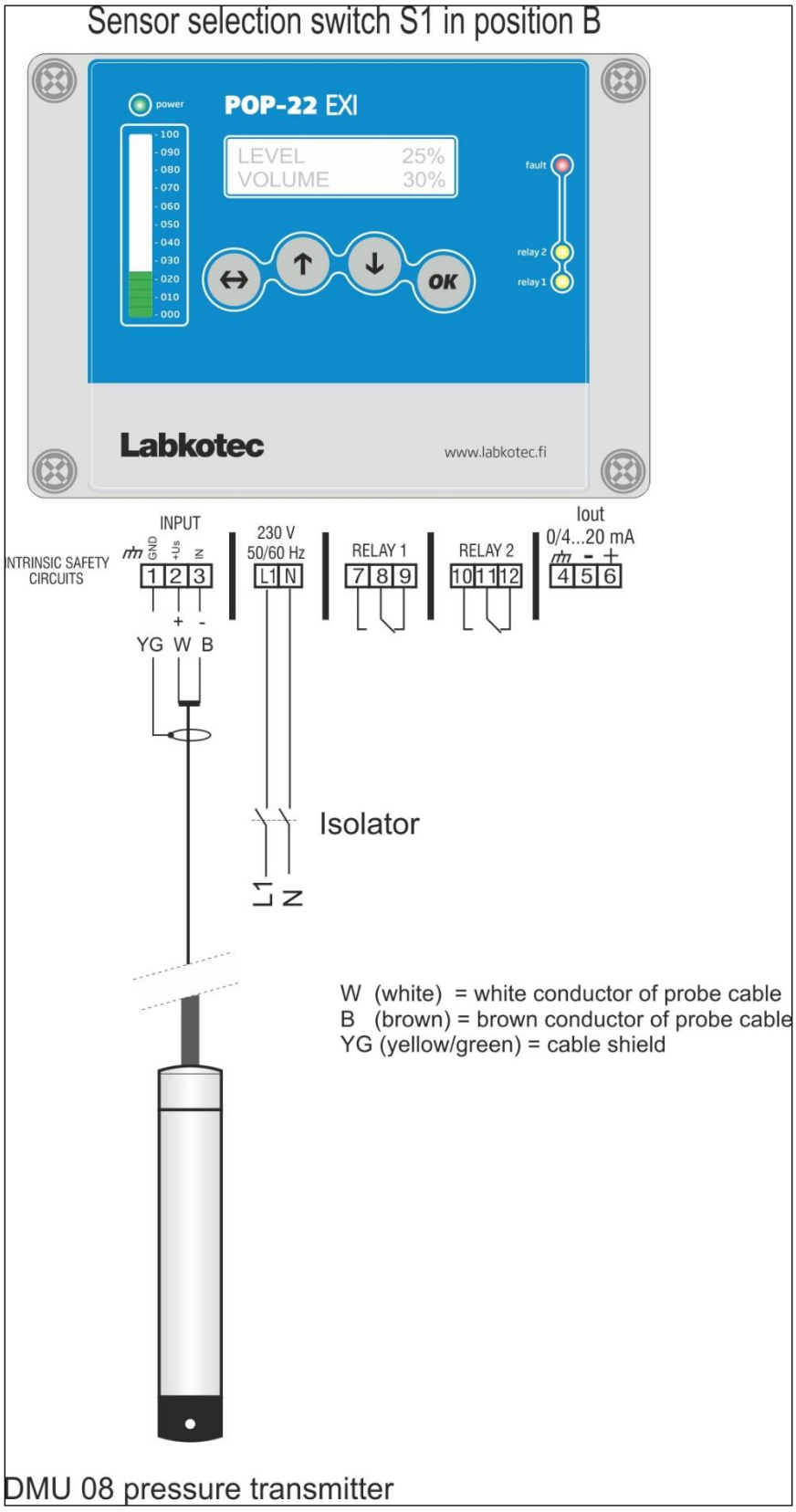
Example 2.
Connection with Labkotec 3W sensor when using three-wire shielded sensor cable.

CONNECTION EXAMPLE 3. Sitrans Probe LU ultrasonic probe



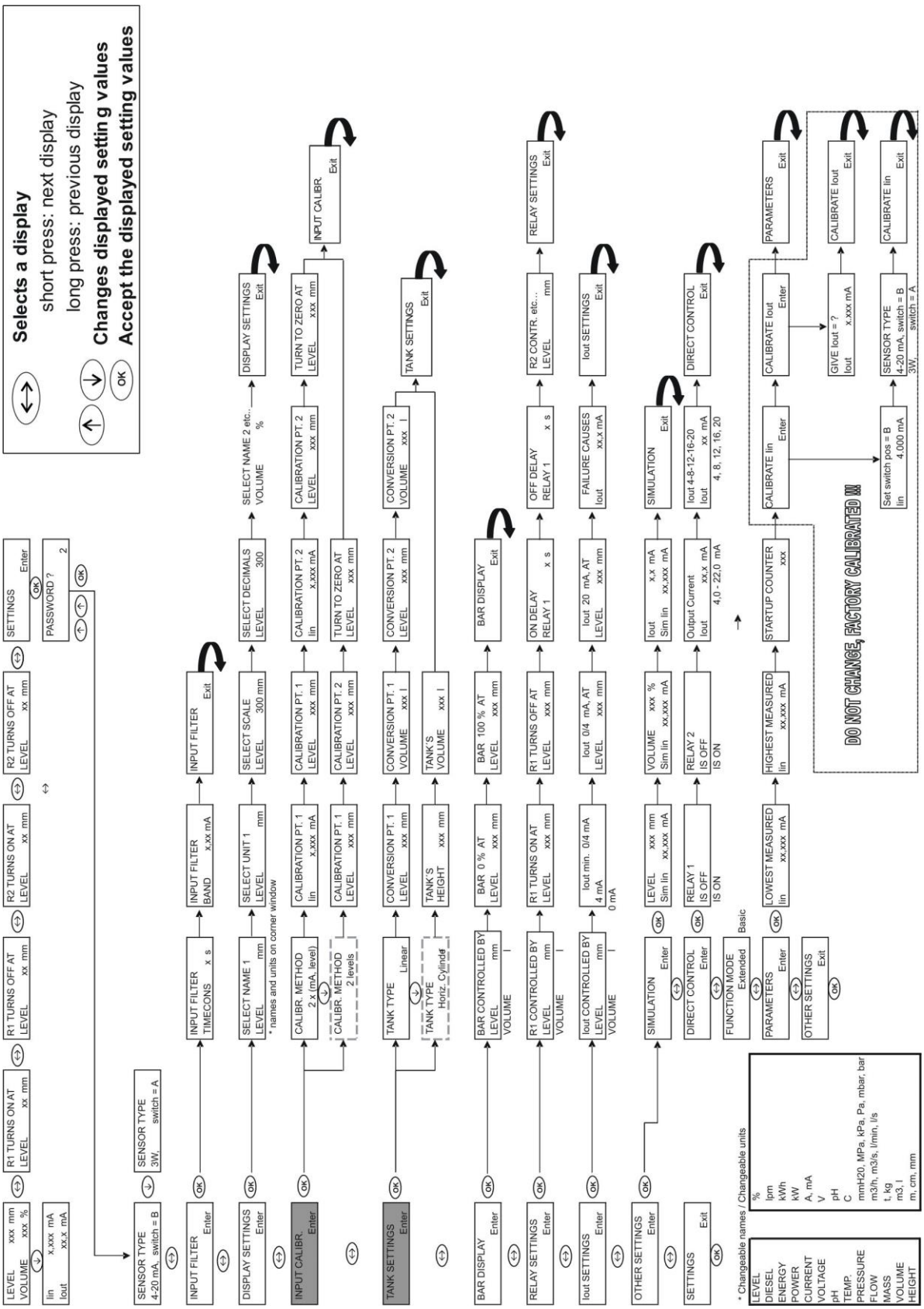
Example 3.
Connection to a Sitrans Probe LU ultrasonic level transmitter not inside an Ex area.

CONNECTION EXAMPLE 4. DMU 08 pressure transmitter



Example 4. Connection to DMU 08 pressure transmitter

APPENDIX 2. POP-22 EXI MENUS AND SETTINGS



Labkotec
INDUTRADE GROUP

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 Level measuring unit
POP-22 EXI

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)
2014/35/EU	Low Voltage Directive (LVD)
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 IEC 61000-6-2:2019
EN IEC 61000-6-3:2021
EN IEC 61000-3-2:2019
EN 61000-3-3:2013/A1:2019

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

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

EC-type examination certificate: EESF 22 ATEX 006X.
Notified Body: Eurofins Expert Services Oy, Notified Body number 0537.

The revised harmonised standards have been compared to the previous standard versions used in the original type certification and no changes in the "state of the art" apply to the equipment.

RoHS: EN IEC 63000:2018

The product is CE-marked since 2014.

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

Pirkkala 21.1.2022

Janne Uusinoka, CEO
Labkotec Oy