

Documentation

Leak indicating unit LAE and LAE P

- for VLX .. A-Ex
- for DL .. ELC FCM
- for one or more leak detectors or leak detection probes
- for residual pressure monitoring of gas cylinders



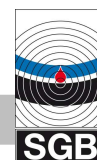


Table of Contents

1. General	3
1.1 Information	3
1.2 Explanation of Symbols	3
1.3 Limitation of Liability	3
1.4 Copyright	3
1.5 Warranty Conditions	4
1.6 Customer Service	4
2. Safety	5
2.1 Intended Use	5
2.2 Obligation of the Operating Company	5
2.3 Qualification	5
2.4 Personal protective equipment (PPE)	6
2.5 Fundamental Hazards	6
3. Technical Data of the Leak Indicating Unit	7
3.1 General Data	7
3.2 Electrical Data	7
3.3 Field of Application	7
4. Design and Function	10
4.1 Design	10
4.2 Displays and Controls	12
5. Mounting the System	13
5.1 Basic Instructions	13
5.2 Mounting the Leak indicating unit	13
5.3 Electrical Cables	13
5.4 Electrical Wiring Diagram	13
5.5 Installation examples	21
6. Commissioning, Functional Check, and Maintenance	25
6.1 Commissioning of the leak indicating unit	25
6.2 Functional Check and Maintenance	25
6.3 Test routine/Alarm Test	25
7. Dimensions and Drilling Pattern	26
7.1 LAE	26
7.2 LAE P	27
8. EU Declaration of Conformity	28
9. Manufacturer's declaration of compliance	28
10. TÜV-Nord certification	29

1. General

1.1 Information

These instructions provide important information on how to use the LAE and LAE P leak indicating unit. The pre-requisite for workplace safety is the adherence to all safety and handling instructions specified in this manual.

Furthermore, any local regulations for the prevention of accidents that are applicable at the site of use of the leak indicating unit and general safety instructions must be complied with.

1.2 Explanation of Symbols



In these instructions, warnings are marked with the adjacent symbol. The signal word expresses the level of hazard.

DANGER:

Imminently hazardous situation which, if not avoided, will result in death or serious injury.

WARNING:

Potentially hazardous situation which, if not avoided, could result in death or serious injury.

CAUTION:

Potentially hazardous situations which, if not avoided, could result in minor or moderate injury.



Information:

Highlights useful tips, recommendations, and information.

1.3 Limitation of Liability

All information and instructions in this documentation have been compiled considering the applicable standards and regulations, the state of the art, and our longstanding experience.

SGB does not assume any liability in the case of:

- Noncompliance with these instructions
- Improper use
- Use by unqualified personnel
- Unauthorized modifications
- Connection to systems not approved by SGB

1.4 Copyright



The contents, texts, drawings, images, and other representations are copyrighted and subject to industrial property rights. Any misuse is punishable.



1.5 Warranty Conditions

We provide warranty for the LAE leak indicating unit for a period of 24 months from the day of installation on site in accordance with our General Terms & Conditions.

The maximum warranty period is 27 months from the date of sale.

The obligation of warranty shall cease to exist in the case of

- inadequate or improper installation,
- improper use,
- modifications/repairs without consent of the manufacturer.

Our warranty does not include parts which may be perished premature due to their consistence or category of usage (e.g., pumps, valves, gaskets, etc.). Furthermore, we are not liable for defects or corrosion damage caused by humid or inappropriate installation environments.

1.6 Customer Service

Our customer service is available for any inquiries.

For information on contacts, please refer to our website sgb.de or the label of the leak indicating unit.

2. Safety

2.1 Intended Use



WARNING!
Danger from
misuse

- Install leak indicating unit outside of the Ex-area
- Install inside a closed and dry room in buildings (LAE version)
- Outdoors without additional protective box (LAE P version)
- Do not install near strong heat sources
- At least 1 m lateral distance from the tool (with VLX .. A-Ex)
- Do not mount above or below the leak detector
- Conditions from Chap. 3.3 “Field of Application” must be adhered to.
- The power supply cannot be disconnected

Any claims arising from misuse are excluded.

Caution: The protective function of the device may be impaired if it is not used as specified by the manufacturer.

2.2 Obligation of the Operating Company

The leak indicating unit is used in the commercial sector. The operating company is therefore subject to statutory occupational safety obligations.

In addition to the safety instructions in this documentation, all applicable safety, accident prevention, and environmental regulations must be adhered to. In particular:



WARNING!
Danger in case
of incomplete
documentation

- Compiling a risk assessment and implementing its results in a directive
- Performing regular checks as to whether the directive is in compliance with the current standards
- The directive includes, among others, how to react to an alarm that might arise
- Arranging for an annual functional check

2.3 Qualification



WARNING!
Danger to hu-
mans and the
environment in
the case of in-
adequate quali-
fication

The personnel must be capable of independently recognizing and avoiding potential risks based on their qualifications.

Companies that put leak detectors or leak indicating units into operation must be trained by SGB or an authorized representative.

National guidelines must be adhered to.

For Germany: Technical service qualification for assembly, commissioning, and maintenance of leak detection systems.

2.4 Personal protective equipment (PPE)

Personal protective equipment must be worn during work.

- Wear necessary protective equipment for the relevant work
- Note and comply with existing PPE signs



Entry in the "Safety Book"



Wear HV vest



Wear safety footwear



Wear hard hat



Wear gloves – where necessary



Wear safety goggles – where necessary

2.5 Fundamental Hazards



DANGER:

from electric current

When working on an open leak indicating unit, it must be disconnected from the power supply.

Comply with relevant regulations regarding electric installation and regulations for the prevention of accidents.



DANGER:

from explosive vapor-air mixtures

Comply with explosion regulations, e.g., BetrSichV (and/or directive 1999/92/EC and the laws of the respective member states resulting therefrom) and/or others.

3. Technical Data of the Leak Indicating Unit

3.1 General Data

Dimension and drilling pattern:	see Chap. 7
Weight (LAE/LAE P):	0.5 kg/3,8 kg
Storage temperature range:	-30°C to +70°C
Operating temperature range:	
LAE:	0°C to +40°C
LAE P:	-40°C to +60°C
Max. height for safe operation:	≤ 2000 m above sea level
Max. relative humidity for safe operation:	95 %
Buzzer volume:	> 70 dB(A) in 1 m
Housing protection class:	
LAE:	IP 40
LAE P:	IP 66

3.2 Electrical Data



Power supply:	100...240 V AC, 50-60 Hz optionally: 24 V DC
Power input:	5.5 W
Terminals 5/6, external signal:	max. 24 V DC; max. 200 mA
Terminals 60(27)/61(28)/62, 63(23)/64(24)/65, 66(25)/67(26)/68	1,0 A (internal) (Appliances must be fused on site.)

3.3 Field of Application

3.3.1 General use



The leak indicating unit has three input channels. Each channel has two terminals. When connected, a signal circuit is closed between the terminals.

If the signal circuit of the respective channel is closed, the leak indicating unit is in good state. If the signal circuit is interrupted, the alarm is triggered at the LAE.

Note: Unused channels in the leak indicating unit must be bridged.

The connection devices with their potential-free relay contacts are connected to the terminals of a channel. It is also possible to connect several devices in series to one and the same channel.

If a connected device leaves its (good) operating state, its potential-free contact opens, and the signal circuit is interrupted. In this way, both alarms and cable breaks are detected.

In the event of an alarm, the internal buzzer sounds on the leak indicating unit and indicator lights on the keypad light up.

The following applies to the alarm display on the keypad:

Alarm on channel 1: Red LED (high priority)

Alarm on channel 2: Yellow LED (medium priority)

Alarm on channel 3 red + yellow LED (low priority)



Note:

Due to the lower alarm priority for channel 3, it is recommended that service equipment such as the dry filter monitoring be connected here.

In addition, potential-free relay contacts are available on the leak indicating unit itself for forwarding all three channels.

3.3.2 Use as a leak indicating unit for VLX .. A-Ex tools

VLX .. A-Ex type tools can be mounted within the Ex-area and are electrically connected to the leak indicating unit mounted outside the Ex-area.

A tool is connected to one leak indicating unit at a time. The leak indicating unit is connected to the potential-free contacts of the tool via the signal circuit, and the leak indicating unit additionally provides the 230 V AC power supply for the tool.



Note:

In general, it should be noted that VLX .. A-Ex tools are only connected to channel 1.

The other channels, 2 and 3, of the leak indicating unit remain unused.

For a connection diagram, the circuit diagram, and an installation example, see Chap. 5.4 and 5.5.1.

3.3.3 Use as leak indicating unit for DL .. ELC FCM

At the leak detector DL .. ELC FCM, the alarm of the tank, the pipeline, and the service message are displayed when the dry filter is used, which can also be transmitted potential-free by the leak detector.

The connection constellation to the leak indicating unit is:
Alarm of the tank potential-free on channel 1, alarm of the pipeline potential-free on channel 2, and service message potential-free on channel 3.

For a connection diagram, the circuit diagram, and an installation example, see Chap. 5.4 and 5.5.2.

3.3.4 Use as central leak indicating unit for one or more leak detectors or leak detection probes

The leak indicating unit is used centrally for the connection of any number of leak detectors and/or leak detection probes. For this purpose, the potential-free contacts of the connected devices are connected in series.

The connection is usually made on channel 1.

For a connection diagram, the circuit diagram, and an installation example, see Chap. 5.4 and 5.5.3.



3.3.5 Use as a leak indicating unit for residual pressure monitoring of pressurized gas cylinders

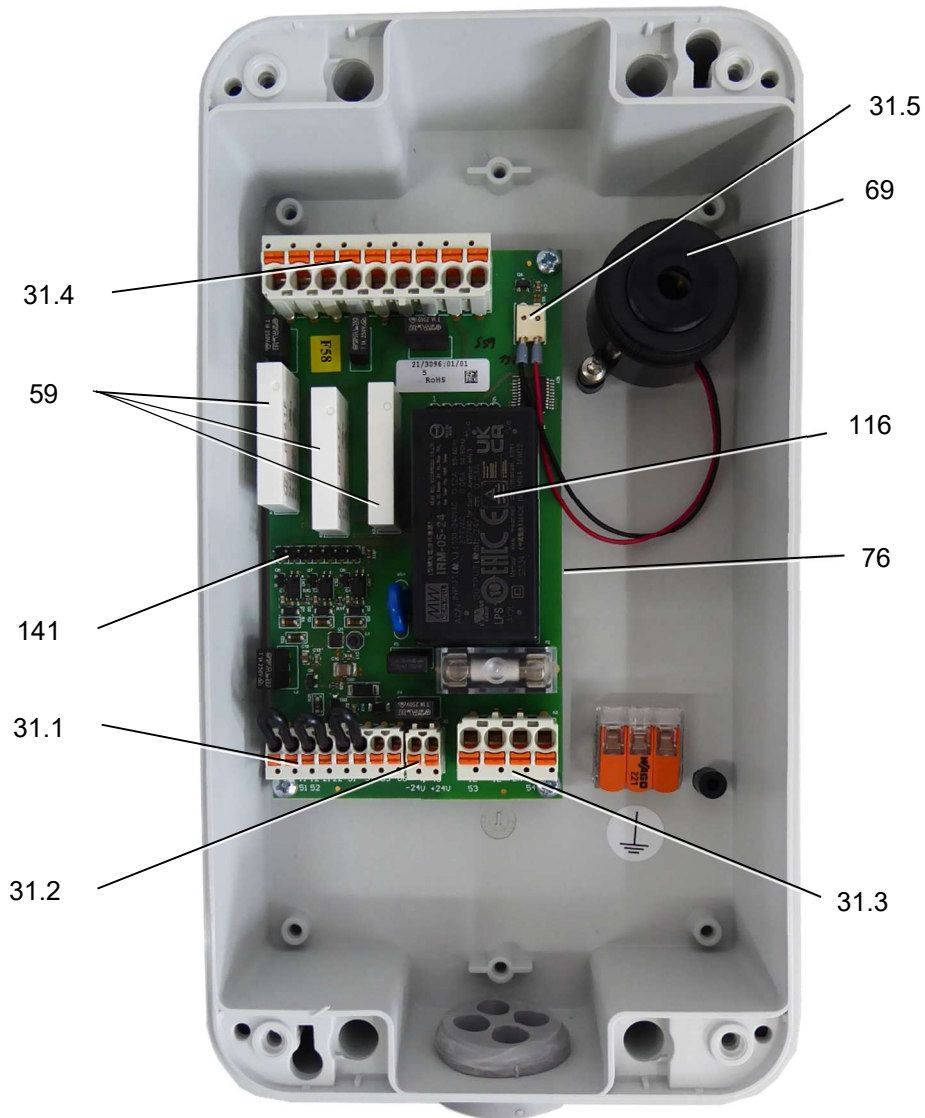
In the case of leak detectors that work with compressed gas such as nitrogen, a residual pressure message can be useful in order to be able to prepare a replacement of the cylinder in good time. For this purpose, a contact manometer attached to the pressure reducer with a set limit value triggers the alarm or the message on the leak indicating unit as soon as the residual pressure falls below the set limit value.

The connection is usually made on channel 1.

For a connection diagram, the circuit diagram, and an installation example, see Chap. 5.4 and 5.5.4.

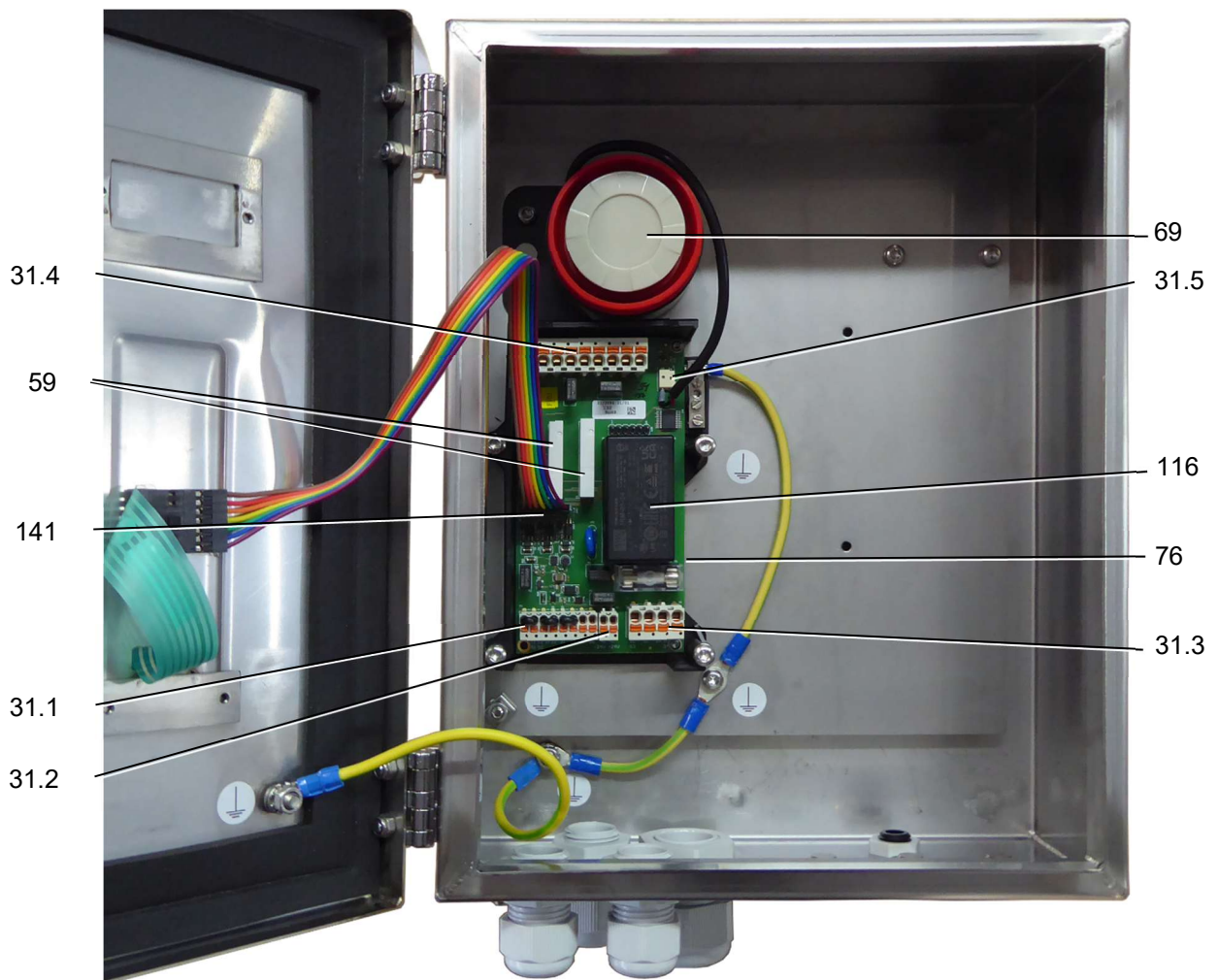
4. Design and Function

4.1 Design



Interior view LAE with:

- 31.1 Terminal strip signal circuit 1 to 3 and external signal
- 31.2 Terminal strip mains, power supply 24 V DC
- 31.3 Terminal strip mains, power supply 230 V AC
- 31.4 Terminal strip potential-free contacts for signal circuits 1 to 3
- 31.5 Terminal strip connection of internal buzzer
- 59 Relay
- 69 Buzzer
- 76 Main board
- 116 24 V DC power supply unit
- 141 Terminal strip keypad



Interior view LAE P with:

- 31.1 Terminal strip signal circuit 1 to 3 and external signal
- 31.2 Terminal strip mains, power supply 24 V DC
- 31.3 Terminal strip mains, power supply 230 V AC
- 31.4 Terminal strip potential-free contacts for signal circuits 1 to 3
- 31.5 Terminal strip connection of internal buzzer
- 59 Relay
- 69 Buzzer
- 76 Main board
- 116 24 V DC power supply unit
- 141 Terminal strip keypad

4.2 Displays and Controls

4.2.1 Display



Indicator lights	Operating condition	Alarm channel 1	Alarm channel 2	Alarm channel 3	Audible alarm acknowledged
OPERATION: green	ON	ON	ON	ON	ON
ALARM: red	OFF	ON	OFF	ON (flashing)	ON (flashing)
ALARM 2: yellow	OFF	OFF	ON	ON (flashing)	ON (flashing)

Note:

The light signals are displayed on the keypad as follows:

- Individual alarm on channel 1: red LED lights up; if the audible alarm is acknowledged, the red LED flashes.
- Individual alarm on channel 2: yellow LED lights up; if the audible alarm acknowledged, the yellow LED flashes.
- Alarm on channel 1+2: red and yellow LEDs light up; if the audible alarm is acknowledged, the red and yellow LEDs flash simultaneously.
- Alarm on channel 3: red + yellow LEDs light up alternately, no distinction between pending alarm and acknowledgment.

4.2.2 Function "Turn off audible alarm signal"



Press the "mute" button once, the audible signal switches off, the respective LED (red for channel 1, yellow for channel 2, and flashing red and yellow for channel 3) lights up.

This function is not available during normal operating conditions.

4.2.3 Alarm

In the event of an alarm, acknowledge the audible signal and check which connected device triggered the alarm. In the event of alarms from connected leak detection systems, inform the responsible service company immediately. In the case of service notifications, have the necessary measures carried out within the required time frame.

5. Mounting the System

5.1 Basic Instructions



- Prior to commencing work, the documentation must be read and understood. In case of ambiguities, please refer to the manufacturer.
- The safety instructions in this documentation must be adhered to.
- Only qualified service companies may be used for assembly and commissioning¹.
- Leadthroughs for connection lines through which the explosion atmosphere can carry over must be sealed gas tight.
- Comply with relevant regulations regarding electric installation, explosion protection (e.g., EN 60 079-14, -17), and accident prevention.

5.2 Mounting the Leak indicating unit



- Wall mounting usually with dowels and screws in a dry room
- **NOT in potentially explosive areas.**
- For housing dimensions and hole pattern, see Chap. 7.

5.3 Electrical Cables



Mains connection LAE and LAE P and terminals 60 to 68:

- Max. 2.5 mm² without ferrule
- 1.5 mm² with ferrule and plastic collar

Power supply 24 VDC via 40/41, external signal and signal circuits (11/12, 21/22 and 31/32):

- 1.5 mm² without ferrule
- 0.75 mm² with ferrule and plastic collar

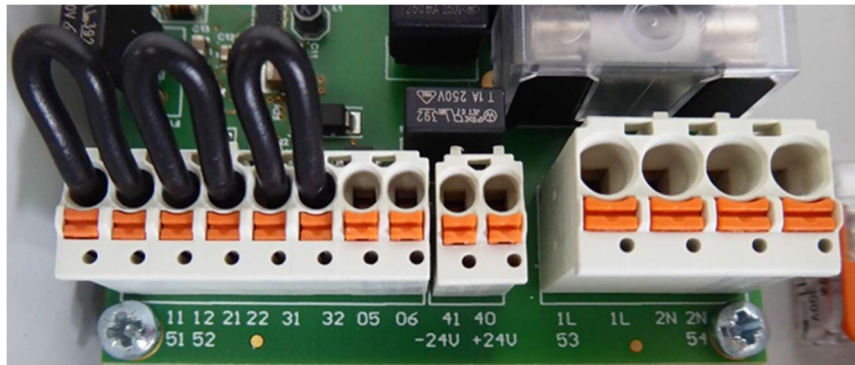
Must be resistant to stored/pumped liquids.

5.4 Electrical Wiring Diagram

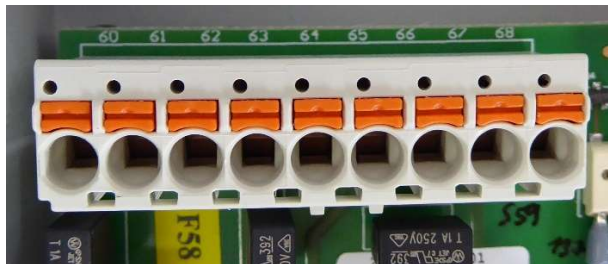


- (1) Install the electrical connection securely, without plug or switching connections.
- (2) Devices with plastic housing may only be connected with a fixed cable.
- (3) Observe the requirements for electric installations, if necessary, also those of the electric companies.
- (4) Terminal layout: (see also block diagrams in Chap. 5.4.2 to 5.4.4)

¹ For Germany: Specialist service companies per Water Law that have documented qualifications to install leak detection systems.



- 1/2 Power connection (100...240 V AC)
- 54/53 Power supply (230 V AC) for VLX .. A-Ex tool
- 40/41 24 V DC supply connection (+: 40, -: 41)
- 5/6 External signal 24 V DC (+: 5, -: 6)
- 11/12 Signal circuit for channel 1
- 51/52 Signal circuit for VLX .. A-Ex tool
- 21/22 Signal circuit for channel 2
- 31/32 Signal circuit for channel 3

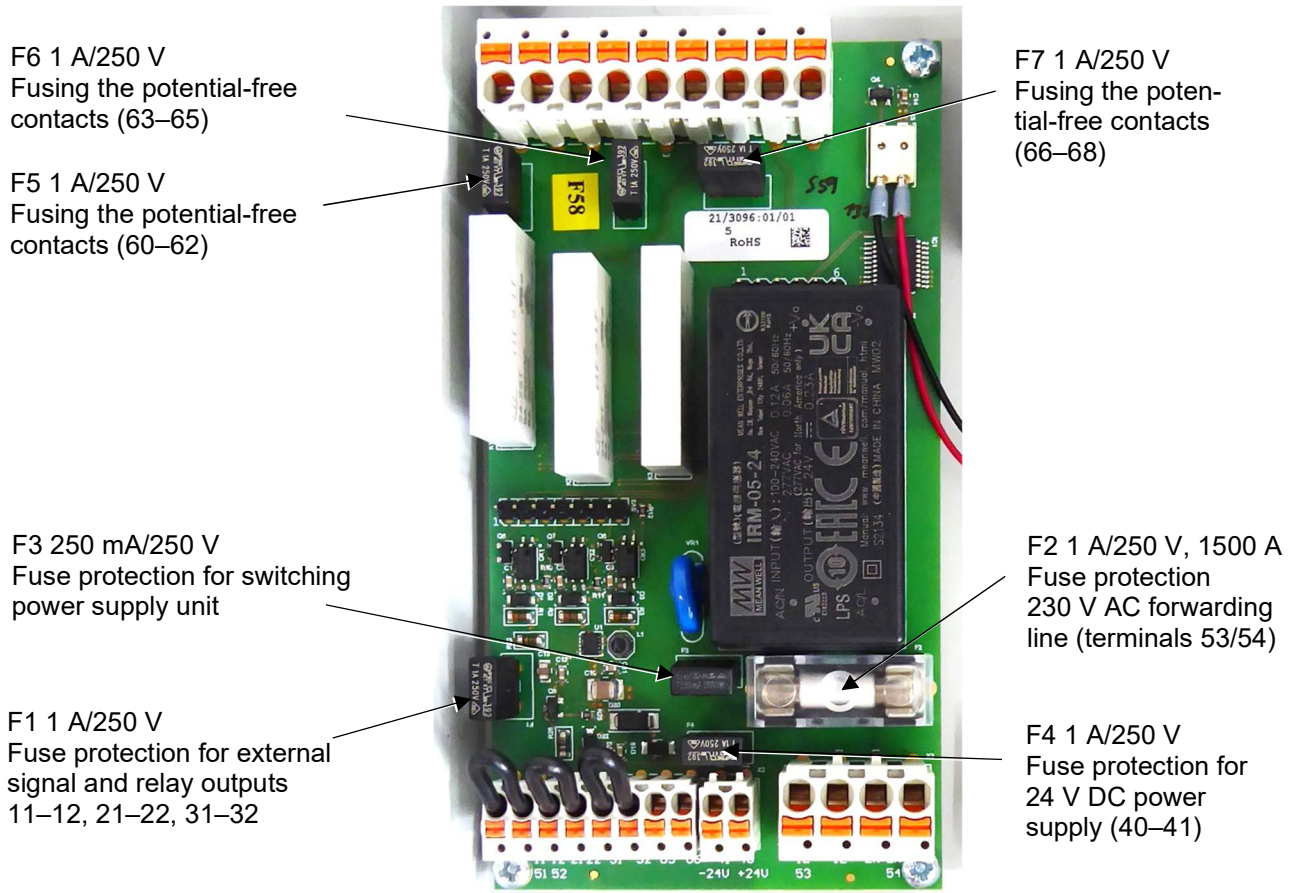


Potential-free relay contacts:

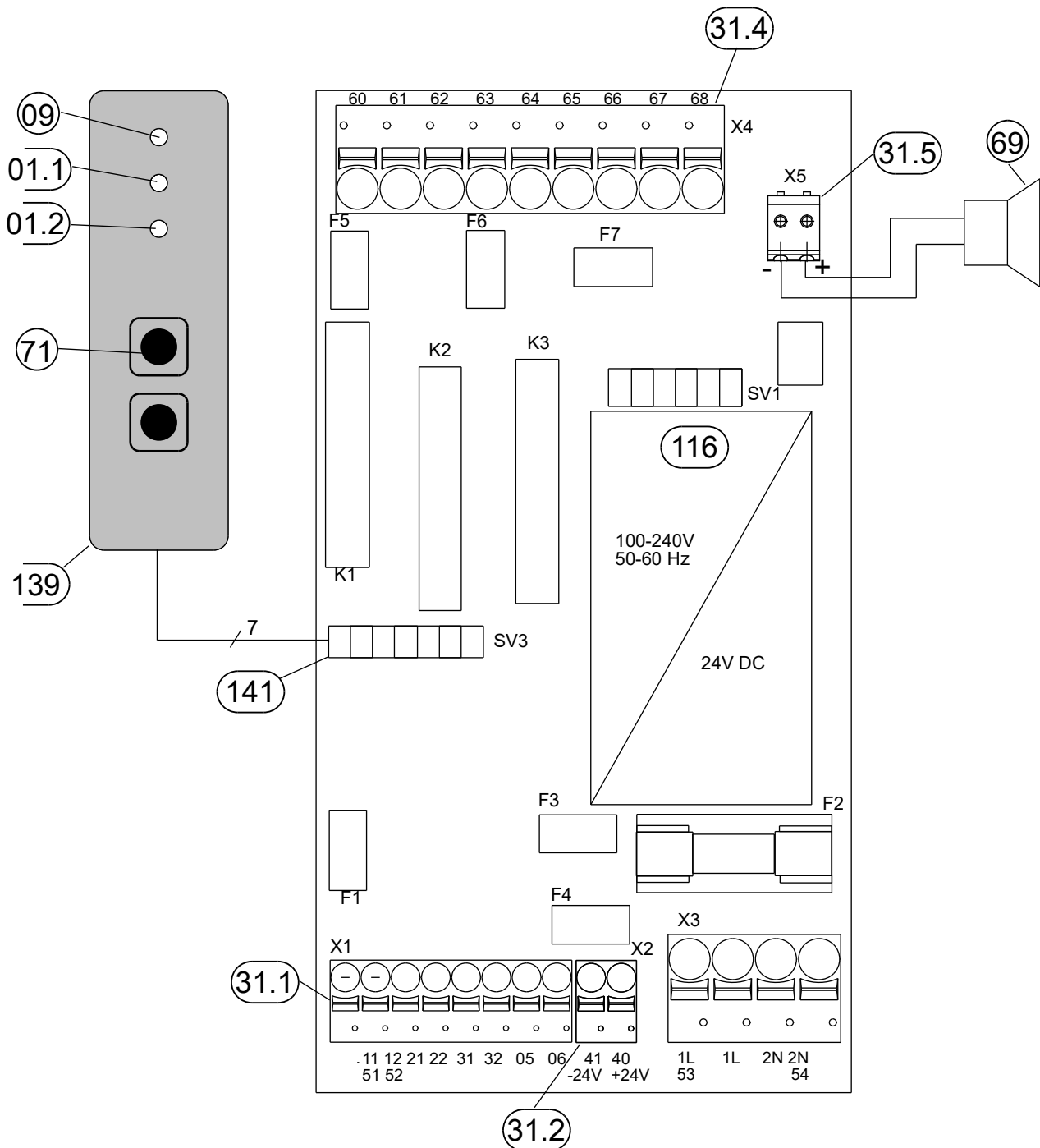
- 60(27)/61(28) Channel 1 open in the case of alarm and power failure
 - 61/62 As above, but contacts closed
 - 63(23)/64(24) Channel 2 open in the case of alarm and power failure
 - 64/65 As above, but contacts closed
 - 66(27)/67(28) Channel 3 open in the case of alarm and power failure
 - 67/68 As above, but contacts closed
- (5) Close unused cable glands properly and professionally.
 - (6) Do not apply voltage until all electrical cables have been connected and the housing cover has been closed.



5.4.1 Position of the fuses and their values

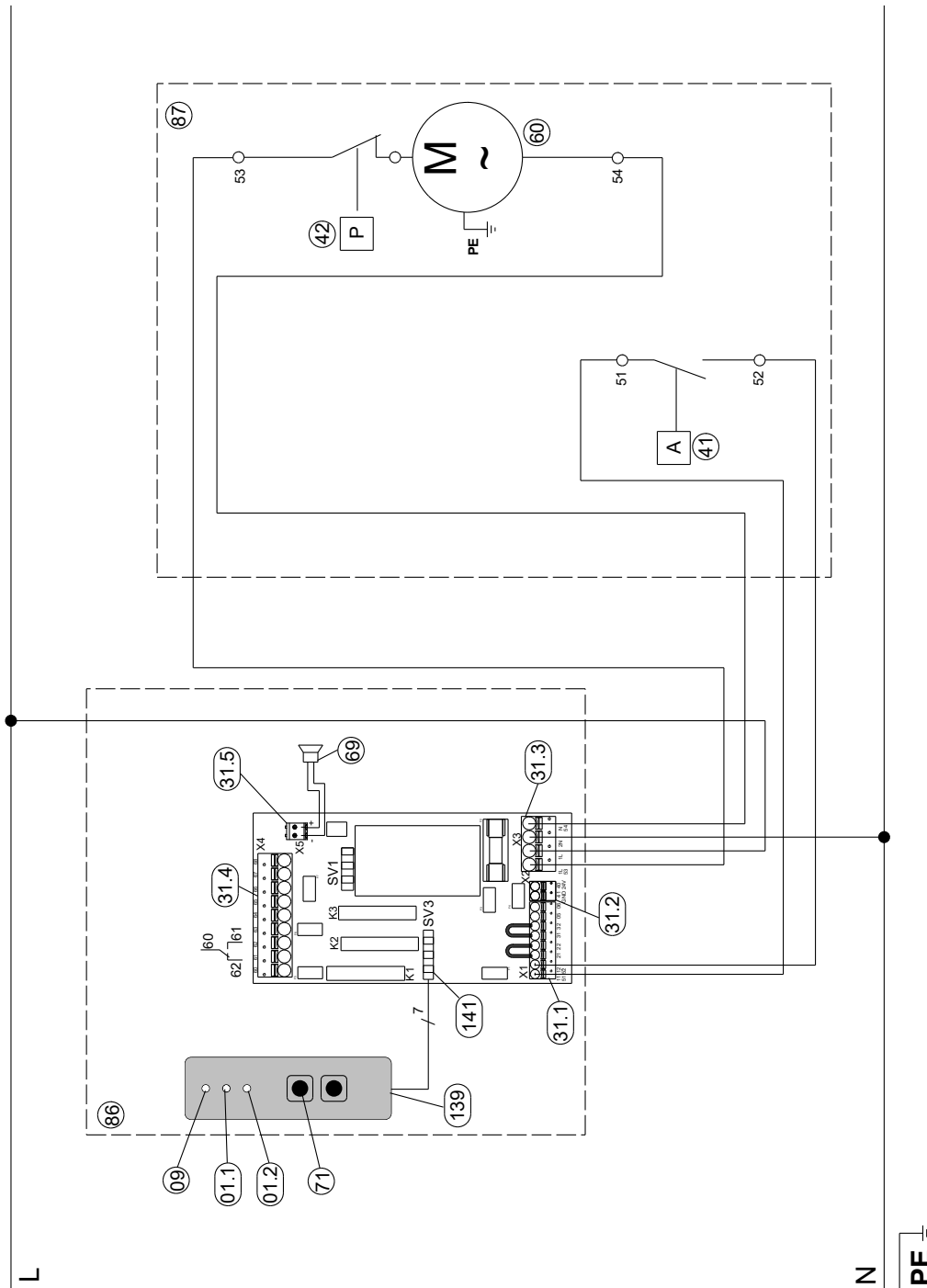


5.4.2 LAE block diagram



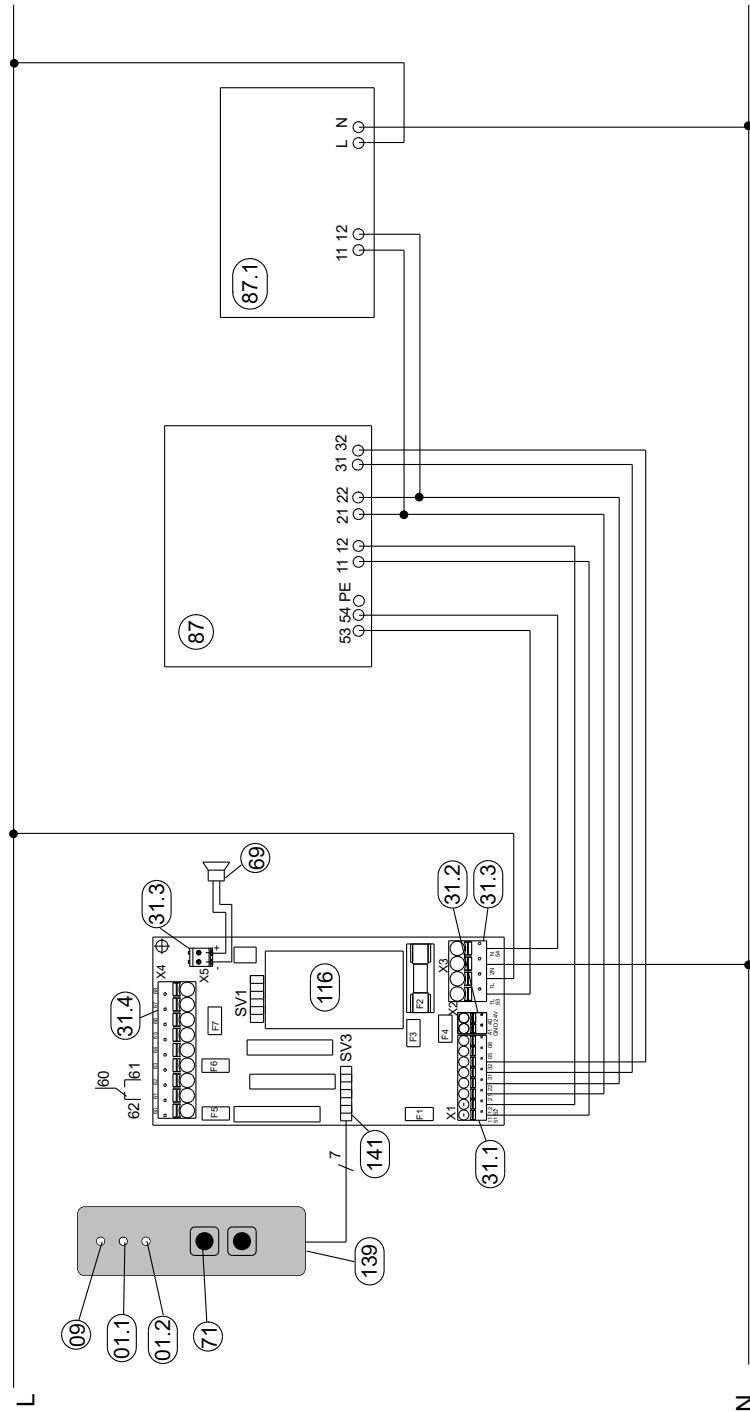
- | | | | |
|------|-----------------------------------------------------------|------|-------------------------------------------------------------------|
| 01.1 | Signal lamp Alarm I, red | 31.4 | Terminal strip potential-free contacts for signal circuits 1 to 3 |
| 01.2 | Signal lamp Alarm II, yellow | 31.5 | Terminal strip connection of internal buzzer |
| 09 | Signal lamp "Operation", green | 69 | Buzzer |
| 31.1 | Terminal strip signal circuits 1 to 3 and external signal | 71 | "Mute" button |
| 31.2 | Terminal strip mains, power supply 24 V DC | 116 | 24 V DC power supply unit |
| 31.3 | Terminal strip signal circuits 1 to 3 and external signal | 139 | Keypad |
| | | 141 | Terminal strip keypad |

5.4.3 Block diagram/connection diagram – Connection as LAE for VLX .. A-Ex tools



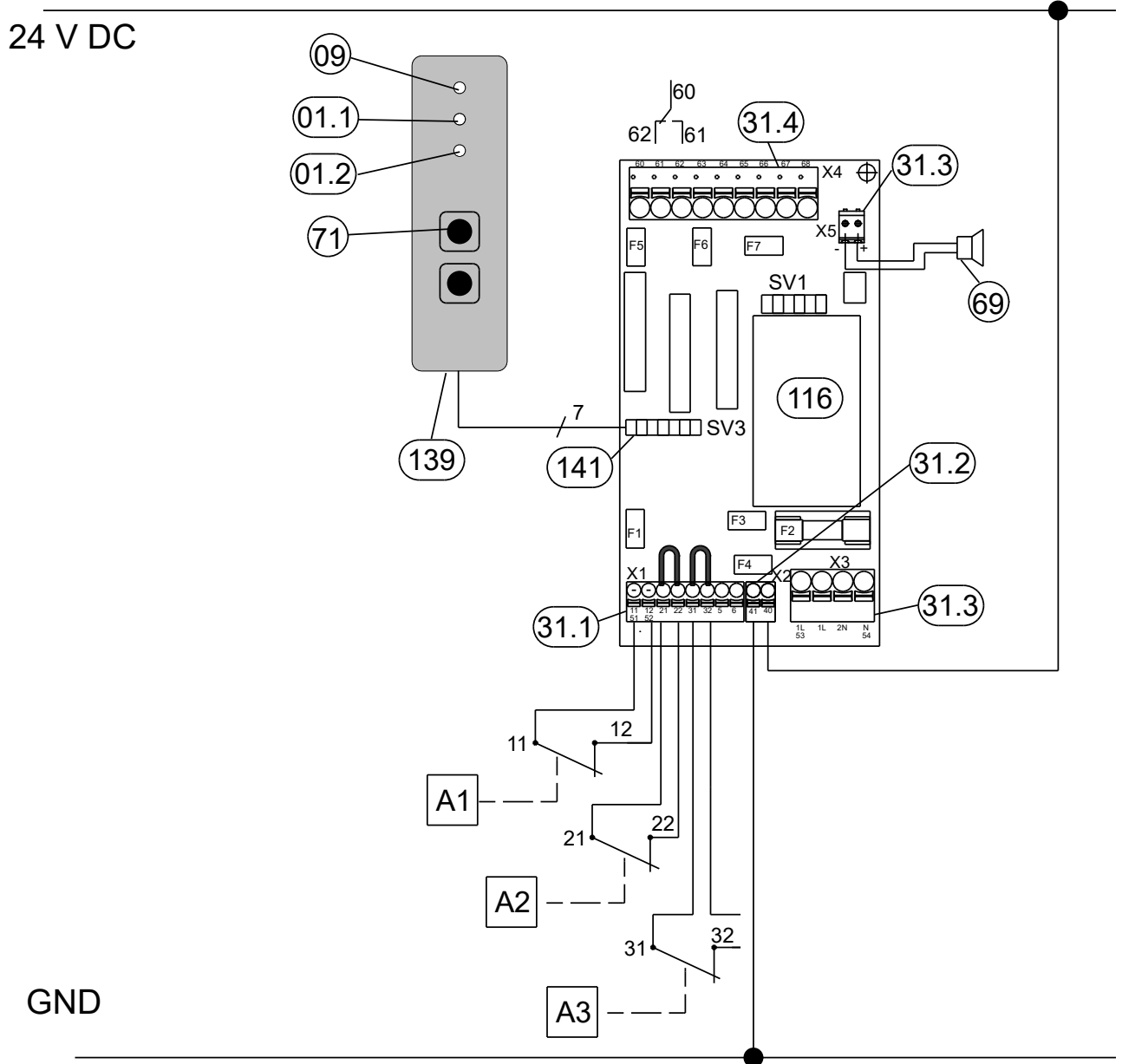
- | | | | |
|------|------------------------------------------------------------------|-----|---------------------------|
| 01.1 | Signal lamp Alarm I, red | 41 | Alarm switch |
| 01.2 | Signal lamp Alarm II, yellow | 42 | Pump switch |
| 09 | Signal lamp "Operation", green | 60 | Vacuum pump |
| 31.1 | Terminal strip signal circuit 1 to 3 and external signal | 69 | Buzzer |
| 31.2 | Terminal strip mains, power supply 24 V DC | 71 | "Mute" button |
| 31.3 | Terminal strip mains, power supply 230 V AC | 86 | Leak indicating unit |
| 31.4 | Terminal strip potential-free contacts for signal circuit 1 to 3 | 87 | Leak detector |
| 31.5 | Terminal strip connection of internal buzzer | 116 | 24 V DC power supply unit |
| | | 139 | Keypad connection |
| | | 141 | Terminal strip keypad |

5.4.4 Block diagram/connection diagram – Connection as LAE for DL .. ELC FCM



- | | | | |
|------|------------------------------------------------------------------|------|----------------------------------------------|
| 01.1 | Signal lamp Alarm I, red | 31.5 | Terminal strip connection of internal buzzer |
| 01.2 | Signal lamp Alarm II, yellow | 69 | Buzzer |
| 09 | Signal lamp "Operation", green | 71 | "Mute" button |
| 31.1 | Terminal strip signal circuit 1 to 3 and external signal | 87 | Leak detector DL .. ELC FCM |
| 31.2 | Terminal strip mains, power supply 24 V DC | 87.1 | Pipeline leak detector |
| 31.3 | Terminal strip mains, power supply 230 V AC | 116 | 24 V DC power supply |
| 31.4 | Terminal strip potential-free contacts for signal circuit 1 to 3 | 139 | Keypad |
| | | 141 | Terminal strip keypad |

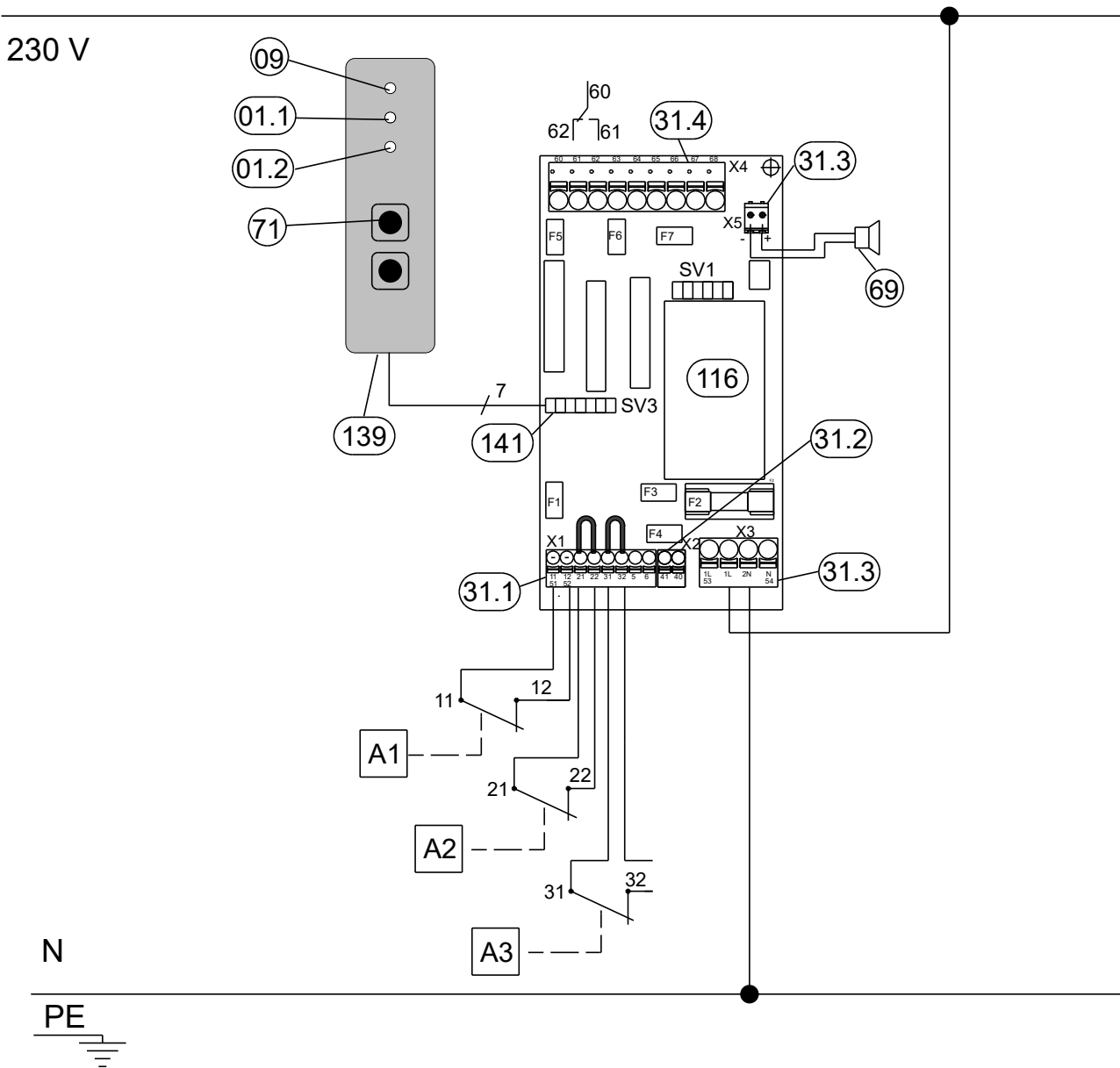
5.4.5 Block diagram/terminal diagram – Connection of any potential-free contacts (channels 1 to 3), power supply of the LAE with 24 V DC



- | | | | |
|------|----------------------------------------------------------|------|------------------------------------------------------------------|
| 01.1 | Signal lamp Alarm I, red | 31.4 | Terminal strip potential-free contacts for signal circuit 1 to 3 |
| 01.2 | Signal lamp Alarm II, yellow | 31.5 | Terminal strip connection of internal buzzer |
| 09 | Signal lamp "Operation", green | 69 | Buzzer |
| 31.1 | Terminal strip signal circuit 1 to 3 and external signal | 71 | "Mute" button |
| 31.2 | Terminal strip mains, power supply 24 V DC | 116 | 24 V DC power supply unit |
| 31.3 | Terminal strip mains, power supply 230 V AC | 139 | Keypad |
| | | 141 | Terminal strip keypad |

Mounting

5.4.6 Block diagram/terminal diagram - Connection of any potential-free contacts (channels 1 to 3), voltage supply of the LAE with 230 V AC

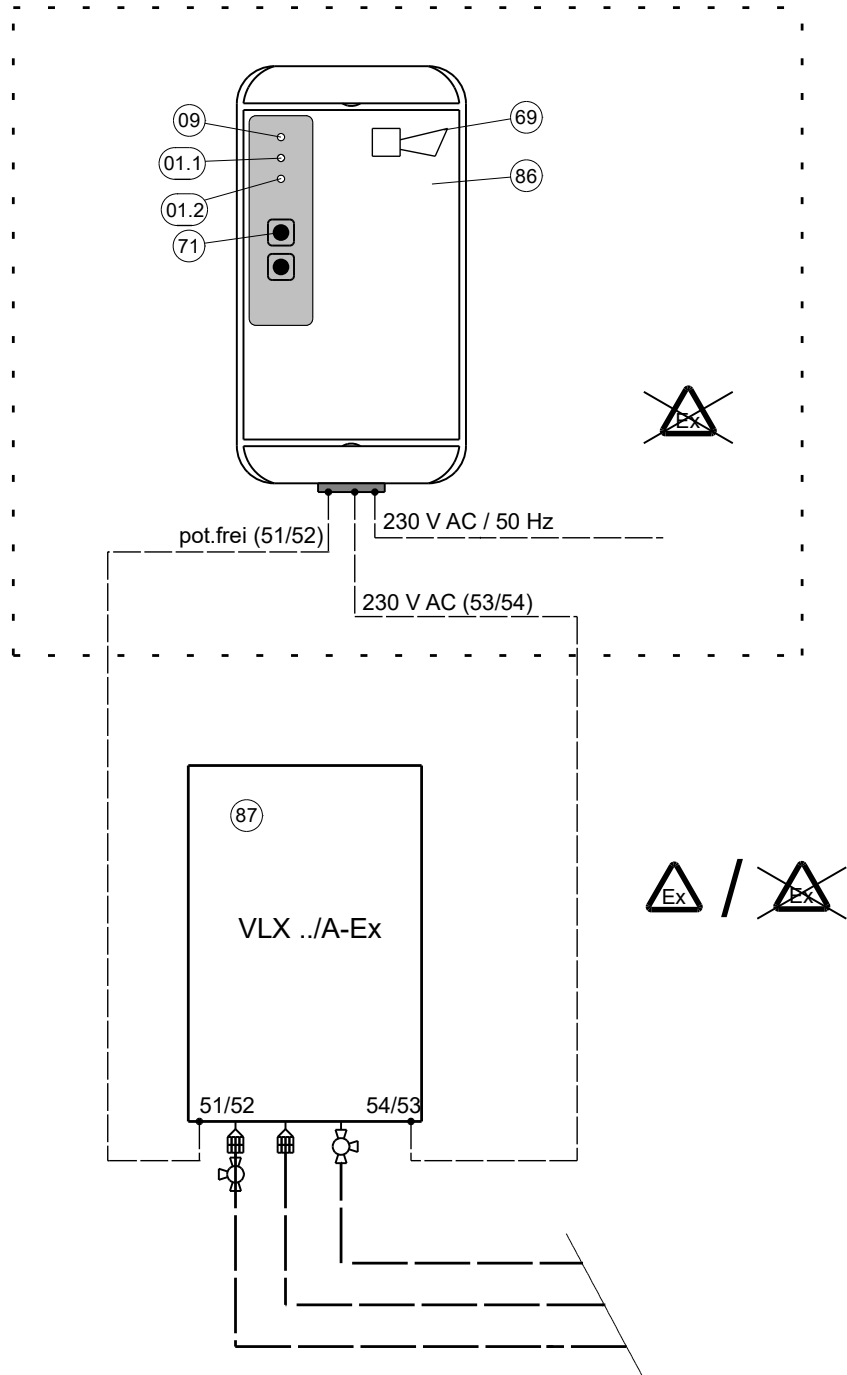


- 01.1 Signal lamp Alarm I, red
- 01.2 Signal lamp Alarm II, yellow
- 09 Signal lamp "Operation", green
- 31.1 Terminal strip signal circuit 1 to 3 and external signal
- 31.2 Terminal strip mains, power supply 24 V DC
- 31.3 Terminal strip mains, power supply 230 V AC

- 31.4 Terminal strip potential-free contacts for signal circuit 1 to 3
- 31.5 Terminal strip connection of internal buzzer
- 69 Buzzer
- 71 "Mute" button
- 116 24 V DC power supply unit
- 139 Keypad
- 141 Terminal strip keypad

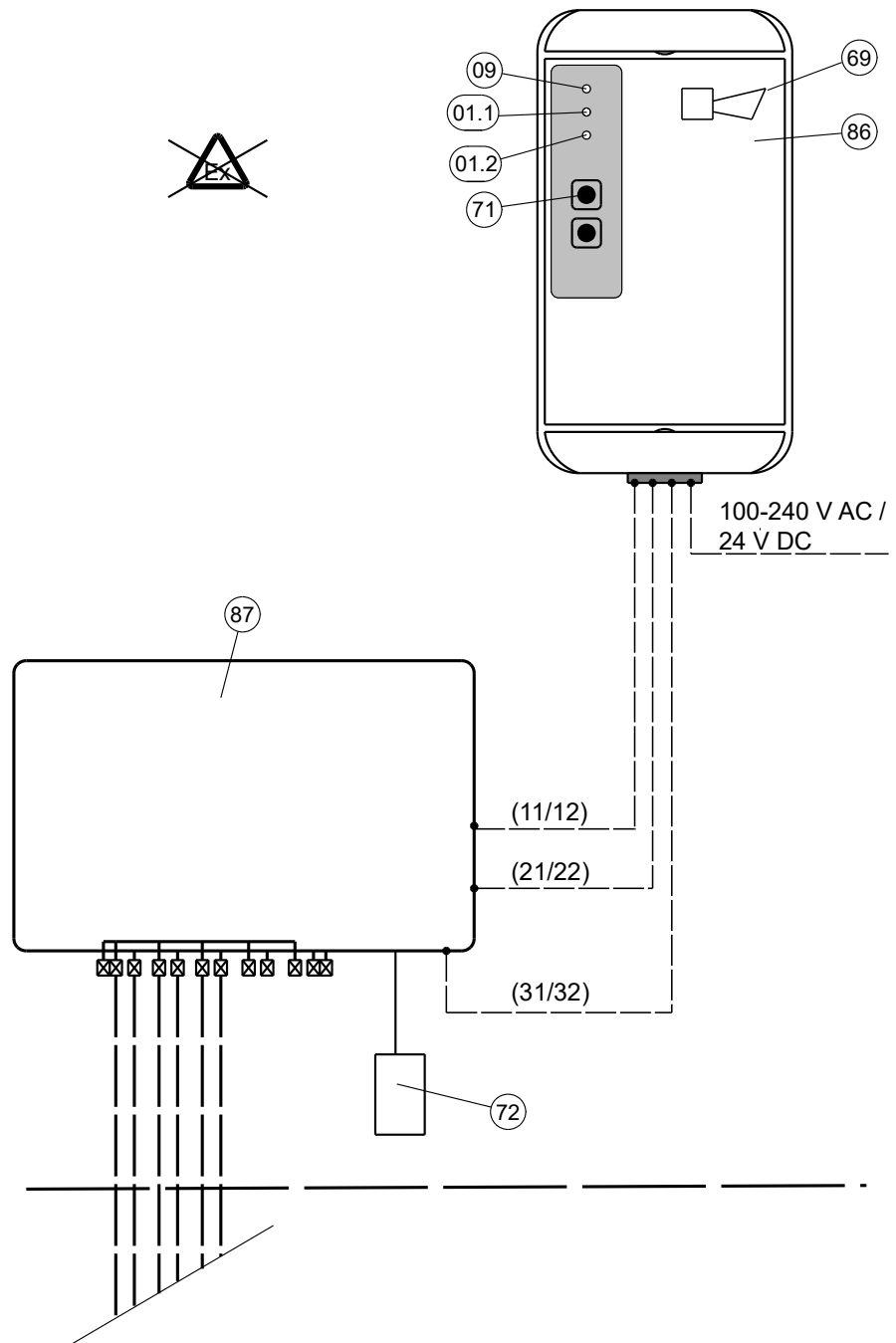
5.5 Installation examples

5.5.1 As a leak indicating unit for VLX .. A-Ex tools



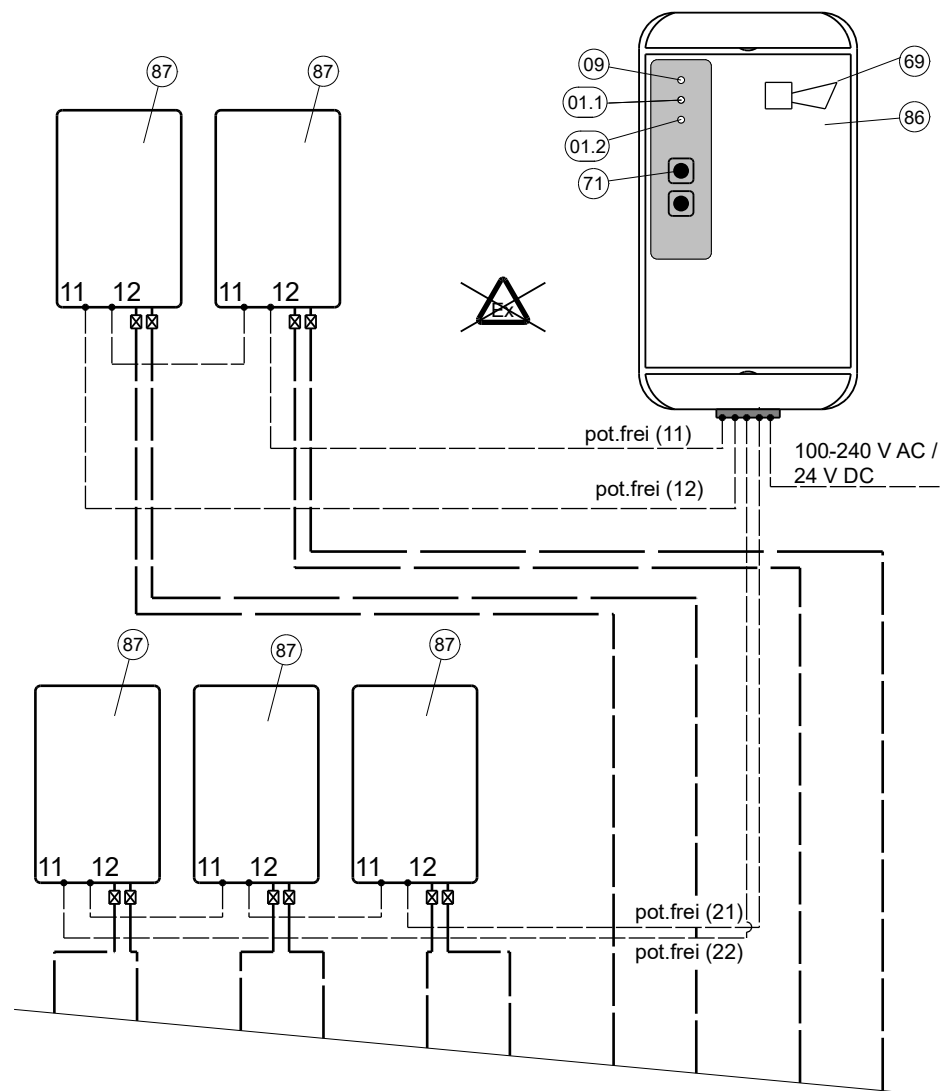
- 01.1 Signal lamp Alarm I, red
- 01.2 Signal lamp Alarm II, yellow
- 09 Signal lamp "Operation", green
- 69 Buzzer
- 71 "Mute" button
- 86 Leak indicating unit
- 87 Tool (here "Ex" version)

5.5.2 As leak indicating unit for DL .. ELC FCM



- 01.1 Signal lamp Alarm I, red
- 01.2 Signal lamp Alarm II, yellow
- 09 Signal lamp "Operation", green
- 69 Buzzer
- 71 "Mute" button
- 72 Dry filter
- 86 Leak indicating unit
- 87 Leak detector (here with dry filter monitoring "FC")

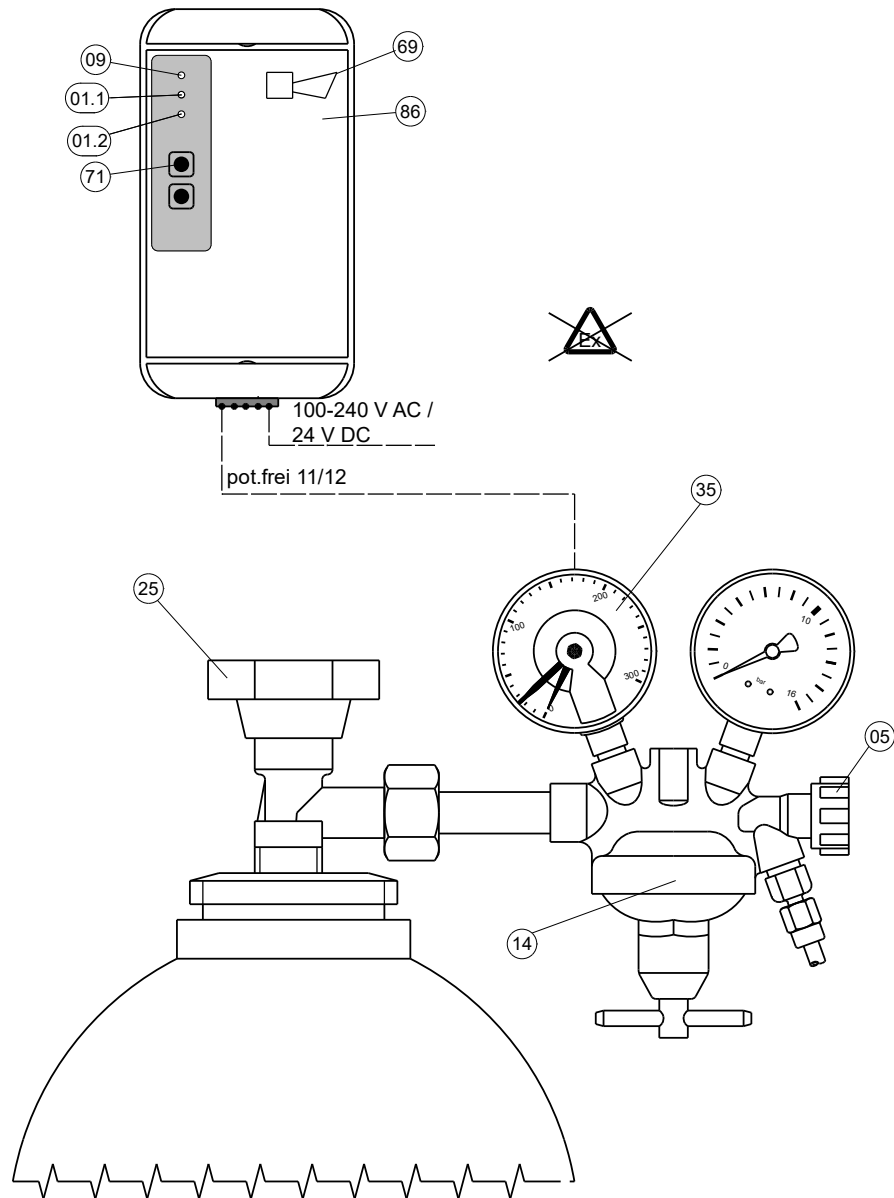
5.5.3 As central leak indicating unit for one or more leak detectors or leak detection probes



- 01.1 Signal lamp Alarm I, red
- 01.2 Signal lamp Alarm II, yellow
- 09 Signal lamp "Operation", green
- 69 Buzzer
- 71 "Mute" button
- 86 Leak indicating unit
- 87 Leak detector

Mounting

5.5.4 Use as leak indicating unit for residual pressure monitoring of pressurized gas cylinders



- 01.1 Signal lamp Alarm I, red
- 01.2 Signal lamp Alarm II, yellow
- 05 Shut-off valve
- 09 Signal lamp "Operation", green
- 14 Pressure reducer
- 25 Cylinder shut-off valve
- 35 Contact manometer
- 69 Buzzer
- 71 "Mute" button
- 86 Leak indicating unit

6. Commissioning, Functional Check, and Maintenance



Only perform commissioning once the steps in section 5 "Mounting" have been fulfilled.

6.1 Commissioning of the leak indicating unit



- (1) Remove bridges from the leak indicating unit channels to be used.
- (2) Establish connection lines between the potential-free relay contacts of the devices to be connected and the respective channels of the LAE.

- (3) Connect the power supply to the leak indicating unit.

Note: The power supply complies with the requirements described in chapters 3.3, 5.4, and 5.5 as well as in the relevant documentation of the connected device.

- (4) Check that the "Operation" signal lamp on the leak indicating unit lights up.

- (5) When the signal circuits are correctly closed (via leak detector or probe/service contacts or bridges), only the "Operation" indicator lights up.

- (6) Determination of the audible alarm for the individual connected channels. For this purpose, establish the alarm status at the respective connected devices, probes, or service application and determine the audible and visual alarm signal at the leak indicating unit.

Acknowledge audible alarm(s) if necessary.

Note: To set the alarm condition, read the relevant documentation for the connected device.

- (7) If an alarm has been detected in (5), restore the operating status of the connected devices and check that the respective signal lamps have gone out on the leak indicating unit (operating status as in (4)).

Note: To set up the operating status, read the relevant documentation for the connected device.

- (8) Repeat points (5) and (6) for further occupied channels.

6.2 Functional Check and Maintenance

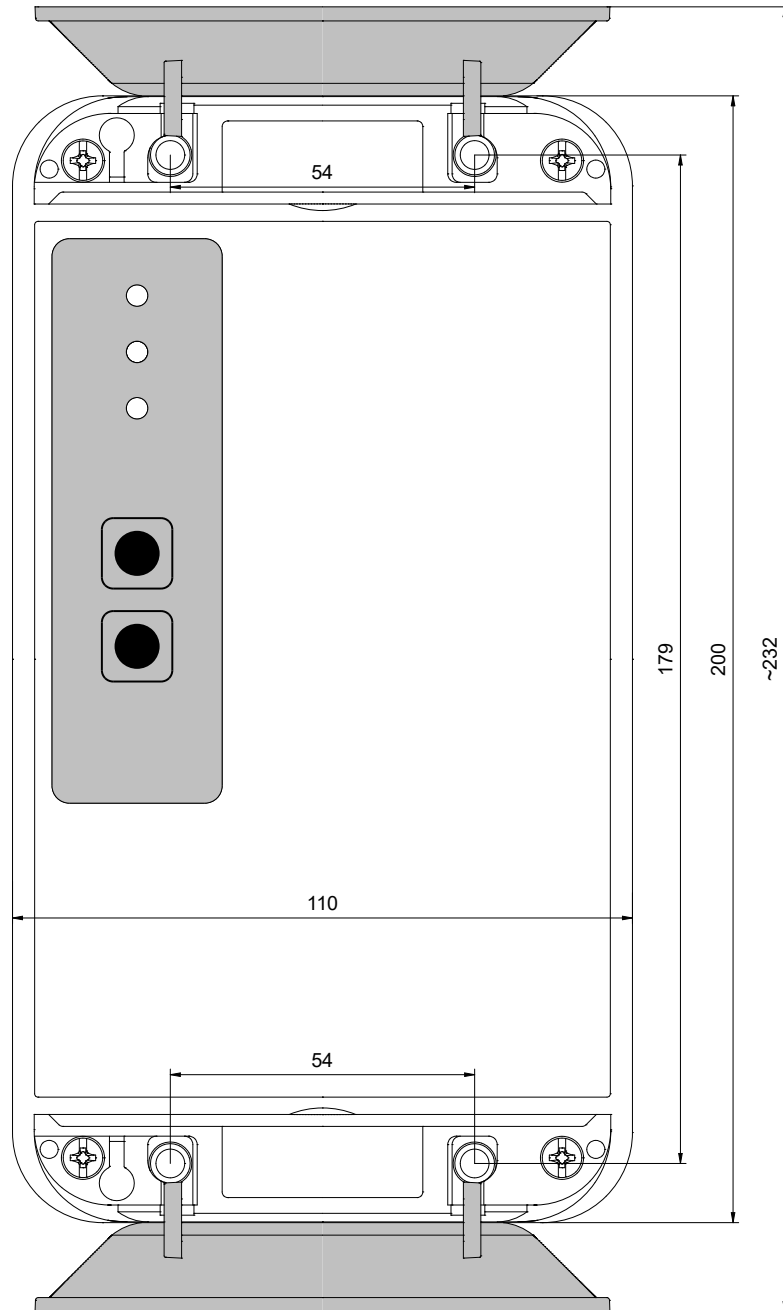
- (1) Once a year as part of the leak detector test.
- (2) Observe regulations and information on the test scope according to the documentation of the connected devices.

6.3 Test routine/Alarm Test

Press and hold the "Mute" button – the test routine begins. An alarm of all three channels is simulated in succession for three seconds each. The internal buzzer with the external signal and the individual LED on the membrane keyboard are activated, including the potential-free contacts. In order to be able to carry out this test, there must be no alarm!

7. Dimensions and Drilling Pattern

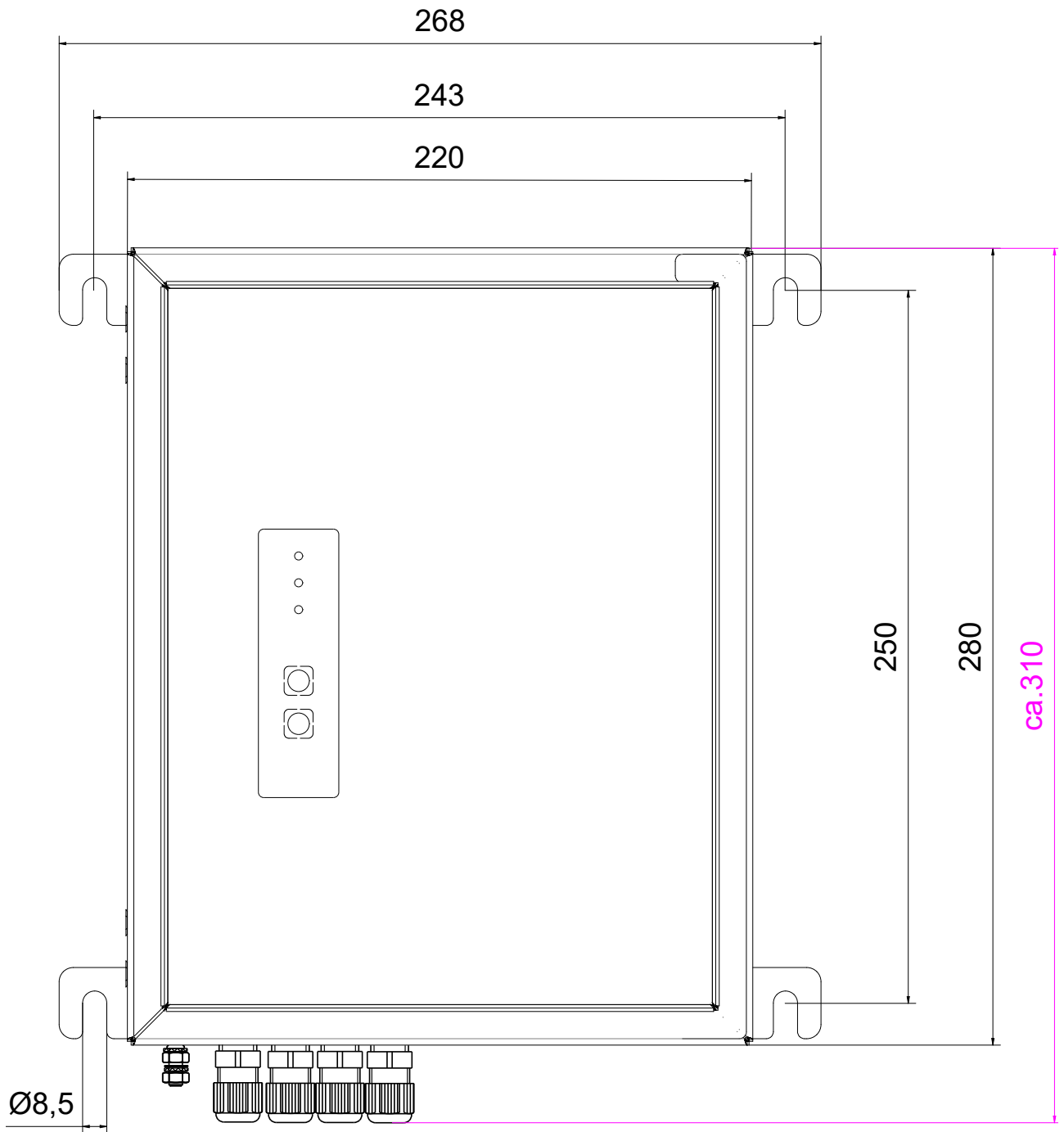
7.1 LAE



Depth = 60 mm



7.2 LAE P



T=120 mm
Depth = 120 mm



8. EU Declaration of Conformity

We,
 SGB GmbH
 Hofstr. 10
 57076 Siegen
 Germany,
 hereby declare in sole responsibility that the

Leak indicating unit LAE

is in conformity with the essential requirements of the EU directives / regulations / UK statutory requirements listed below.

In case the device is modified or used in a way that has not been agreed with us, this declaration shall lose its validity.

Number/short title	Satisfied regulations
2014/30/EU EMC Directive SI 2016 No. 1091	EN 61000-6-3:2007 + A1:2011 EN 61000-6-2:2006 EN 61000-3-2:2014 EN 61000-3-3:2013
2014/35/EU Low-voltage directive SI 1989 No. 728	EN 60335-1:2012 / A11:2014 / A13:2017 / A1:2019 / A2:2019 / A14:2019 / A15:2020 EN 61010-1:2010 / A1:2019 EN 60730-1:2017

Conformity is declared by:

As of: 02/2023

ppa. Martin Hücking
 (Technical Director)

9. Manufacturer's declaration of compliance



Compliance with the "Muster-Verwaltungsvorschrift Technische Baubestimmungen" (sample administrative regulation technical building regulations) is hereby declared.

Conformity is declared by:

As of: 02/2023

ppa. Martin Hücking
 (Technical Director)



10. TÜV-Nord certification

TÜV NORD Systems GmbH & Co. KG
Accredited test lab
Accreditation no.: D-PL-11074-04

Note:
By TÜV not certified translation
of the German original version

Prüfbericht Test Report

Auftrags/Prüfberichts-Nr.: 8117149846 Rev. 1
Order-No./Test-report No.:

Auftraggeber: SGB GmbH
Customer: Hofstr. 10
57076 Siegen

Auftrag vom: 6/19/2019
Date of order:

Gegenstand der Prüfung: Indicating unit LAE for leak detectors and leak detection probes in
Test items: accordance with EN 13160:2016 Part 1 and Part 4 with additional
buzzer type PK-20A35EWQ acc. to documentation 605 600, last
updated 06/2019

Art der Prüfungen: Test in accordance with EN 13160-4:2016 section 4.1.1 or EN
Kind of tests: 13160-3:2016 section 4.1.3.5 as well as in accordance with EN
13160-4:2016 section 4.2.1

Zeitraum der Prüfungen: 08/2019-10/2019
timeframe of the tests:

Ergebnis der Prüfungen: The LAE indicating unit with additional buzzer type PK-20A35EWQ
Test result: meets the requirements for temperature resistance and alarm
equipment. As the indicating unit without additional buzzer does not meet
the requirements for alarm equipment, the use of the additional buzzer is
mandatory. General requirements in accordance with EN 13160:2016
Part 1 as well as requirements in accordance with EN 13160:2016 Part 4
with regard to operating temperature range type 2 are met.

Die Prüfungen beziehen sich ausschließlich auf das Prüfobjekt.
The tests refer exclusively to the test object.

Der Prüfbericht darf nur ungekürzt veröffentlicht werden. Die gekürzte oder auszugsweise Veröffentlichung
bedarf der vorherigen schriftlichen Genehmigung des Prüflaboratoriums.
*The test report is allowed to be published only in an unabridged form. Any abridged publication or publication in extracts is subject to
previous written authorization by the laboratory.*

Dieser Prüfbericht umfasst
This test report comprises:

1 Blatt und 1 Anlage
1 page and 1 annex

Gesamtblattzahl: 3
total No. of pages: 3

Leiter Prüflabor
Head of Test Laboratory

Hamburg, 12.11.2019

J. Straube



Legal notice

SGB GmbH
Hofstr. 10
57076 Siegen
Germany

+49 271 48964-0
sgb@sgb.de
sgb.de | shop.sgb.de

Photos and sketches are not binding for the scope of delivery. Subject to change without notice. © SGB GmbH, 01/2025