

Operating Instructions



F01057y

Ground Monitoring System TERRALIGHT



BA-en-4013-2107



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Dear customer,

The controlled grounding principle used in the **TERRALIGHT** Ground Monitoring System ensures that static charges developing in potentially explosive atmospheres, e.g. during loading, discharging or refilling are safely avoided. This means that the risk of ignition caused by uncontrolled static discharges is eliminated at source. Because the ground connection is monitored, there is no need for low-resistance ground connections or large conductor cross-sections-

Static charges are caused by the contact and separation of material surfaces, e.g. when pumping liquid or powdery materials from one container to another. If no leakage device is available to lead these charges to ground, extremely high charge potentials may develop. Deflagrations or even explosions caused by sparking can result in substantial damage or personal injury.

Objects are considered to be adequately grounded if their ground leakage resistance is not greater than $10^5 \dots 10^8 \Omega$. The Eltex **TERRALIGHT** Ground Monitoring System guarantees a safe and reliable ground connection. Used in combination with the Eltex ground clamps and the cable rewinders the system provides the ultimate ground connection.

The **TERRALIGHT** components monitor the connection to the bonding conductor and the contact across the ground clamps.

Please read these instructions carefully before starting the unit. This will help you prevent personal injuries and damage to property.

Simply give us a call if you have any suggestions, proposals or ideas for improvements. We greatly appreciate the feedback from the users of our appliances.

1. Overview of Appliance TERRALIGHT Ground Monitoring System

Ground contactors and cables

Monitoring system

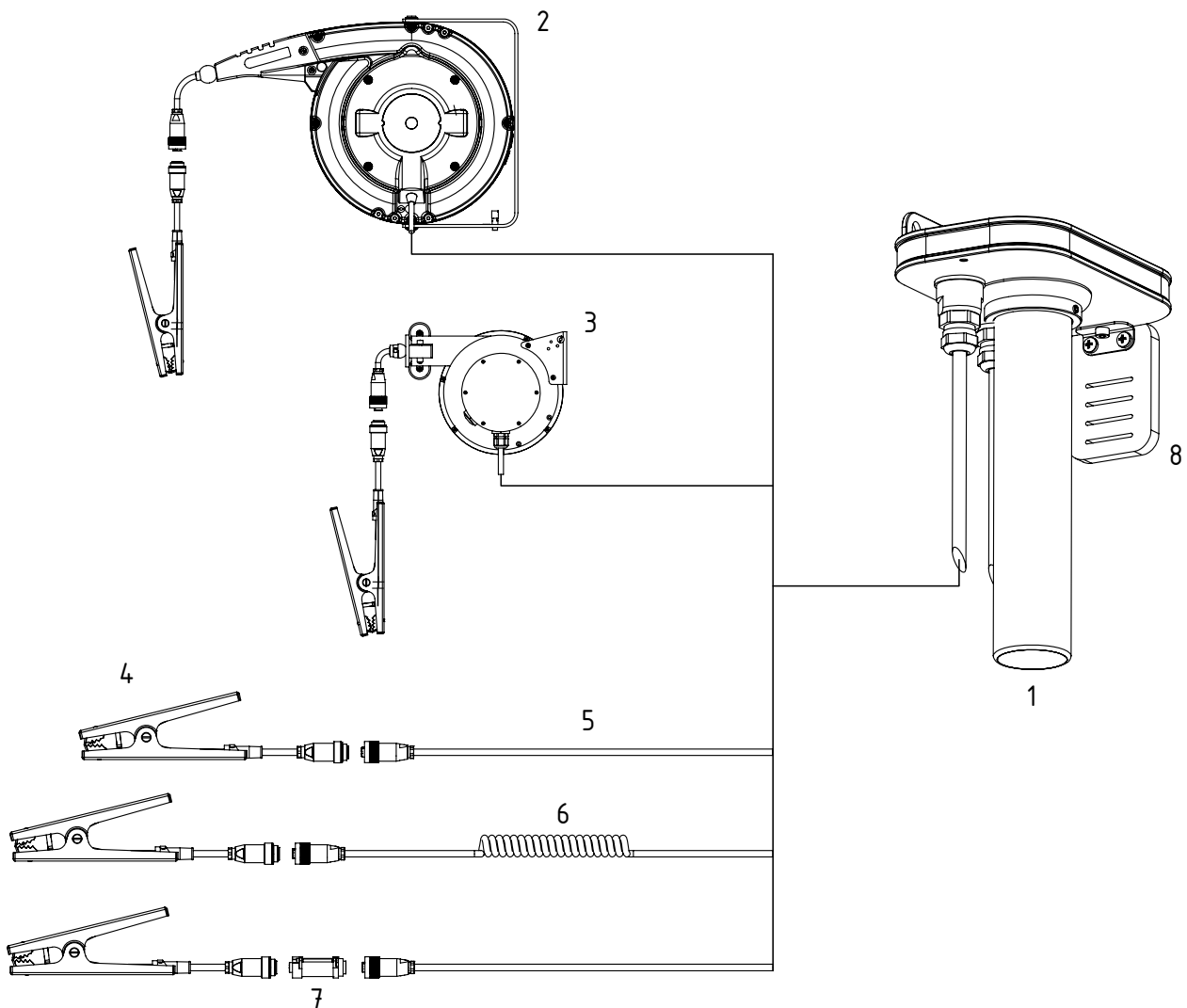


Fig. 1: Overview **TERRALIGHT** Ground Monitoring System

- 1 **TERRALIGHT**
- 2 Cable rewriter, aluminum, 601KR/AW and 601KR/DW with ground clamp
- 3 Cable rewriter, plastic, 601KR/KW with ground clamp
- 4 Ground clamp
- 5 Ground cable KG/BNA
- 6 Helix ground cable KG/BSA
- 7 Light plug
- 8 Clamp holder (optional in 2 versions, available as an accessory)

1.1 Components

TERRALIGHT

for installation in explosion hazard areas
operating voltage 3 x 1.5 V DC (batteries)
for connecting one ground contactor

Light plug

display of the connection to ground
LED adapter cable coupling

601KR/AW, 601KR/DW, 601KR/KW cable rewriter

see separate Operating Instructions BA-en-4007

Series 70 ground clamps

see separate Operating Instructions BA-en-4017

TERRACLAMP ground clamps

see separate Operating Instructions BA-en-4014

1.2 Variants

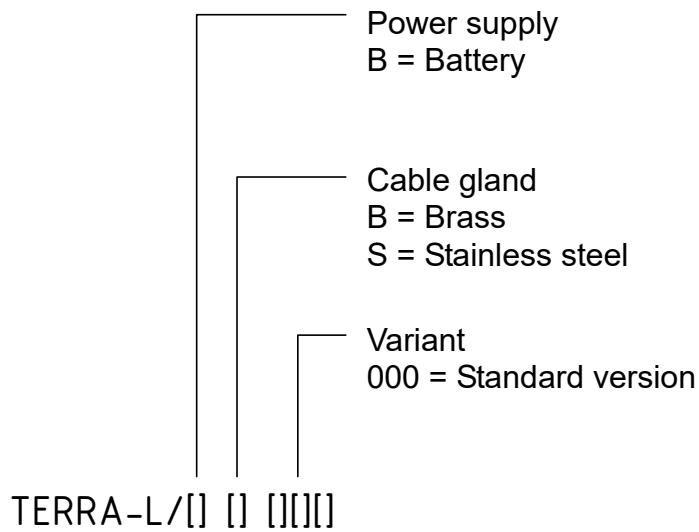


Fig. 2:
TERRALIGHT

10343X3w

2. Safety

The units have been designed, built and tested using state-of-the-art engineering, and have left the factory in a technically and operationally safe condition. If used improperly, the units may nevertheless be hazardous to personnel and may cause injury or damage. Read the operating instructions carefully and observe the safety instructions.

For warranty conditions, please refer to the General Terms and Conditions (GTC), see www.eltex.de.

2.1 Identification of risks and hazards

Possible risks and hazards resulting from the use of the units are referred to in these operating instructions by the following symbols:



Warning!

This symbol appearing in the operating instructions refers to operations which, if carried out improperly, may result in serious personal injuries.



Caution!

This symbol appearing in the operating instructions refers to operations which, if carried out improperly, may result in damage to property.



Ex Warning!

Only for units with Ex approval.

This symbol denotes the special conditions which must be observed when operating the units in explosion hazard areas as specified in the approvals.

2.2 Technical advance

The manufacturer reserves the right to make changes to the technical specifications without prior notice in order to adapt the units to state-of-the-art engineering. Eltex will provide the latest information on any changes or modifications in the operating instructions on request.

2.3 Proper use

The **TERRALIGHT** Ground Monitoring System must be operated only for the purpose of static ground connection.

The **TERRALIGHT** Ground Monitoring Systems are designed for operation with specific Eltex contact clamps of the Series 70 and cable rewinders 601KR/_. These contact clamps provide high degree of safety and the best possible ground connection in terms of static electricity.

The manufacturers will not assume any liability and warranty if the units are used improperly or used outside the intended purpose.

Modifications or changes made to the devices are not permitted.

Use only original Eltex spare parts and equipment.

2.4 Work and operational safety



Warning! electricians

Carefully observe the following notes and the complete [Chapter 2 "Safety", page 7!](#)

- The local standards, rules and regulations relating to the installation and operation of electrical appliances in potentially explosive atmospheres must be observed (e.g. EN 60079-14 and EN 60079-17 in the EU and ElexV in Germany).
- Appliances designed for use in potentially explosive atmospheres must not be modified. The technical specifications for ambient conditions and operation must be maintained and observed (see [Chapter 7 "Technical specifications", page 25](#)).
- Observe the type plate with the connection data (supply voltage) of the devices (see [Chapter 4 "Operation", page 20](#)).



- Electrical systems used in explosion hazard areas must at all times be in a technically faultless condition. Any defects must be repaired or remedied immediately (see [Chapter 4 "Operation", page 20](#)).
- Any work involving the units must be carried out by qualified electricians (see [Chapter 3 "Assembly and installation", page 11](#), [Chapter 5 "Maintenance", page 22](#), [Chapter 6 "Troubleshooting", page 24](#)).
- The unit may only be used by qualified personnel trained for explosion hazard areas.



- A "Connect/Disconnect Approval" by the plant operator must be obtained before carrying out any installation, assembly, service, repair or maintenance work in potentially explosive atmospheres. Make sure that a potentially explosive atmosphere does not exist at this instant of time! (see [Chapter 3.2 "Assembly", page 12](#), [Chapter 5 "Maintenance", page 22](#), [Chapter 6 "Troubleshooting", page 24](#)).
- A permanent ground connection must be established via the ground terminal. The ground cable must have a minimum cross-section of 4 mm² (see [Chapter 3.3 "Grounding", page 13](#)).
- Intrinsically safe circuits must be routed separately from non-intrinsically safe circuits (separate cable conduits/ducts).
- Crossing intrinsically safe and non-intrinsically safe leads is not permitted (see [Chapter 3.4.1 "Cable connection", page 14](#)).
- When connecting the cables, pay attention to the correct length of the stripped section and the position within the connecting adapter (see [Chapter 3.4.1 "Cable connection", page 14](#)).
- Incorrect connector assignment may lead to an inadvertent release, especially in combination with the light plug (see [Chapter 3.5 "Terminal assignments", page 18](#)).



- The maximum cable length in the intrinsically safe circuit must not exceed the maximum permissible capacity and inductance (see [Chapter 7 "Technical specifications", page 25](#)).
- The ground monitoring system must always be connected to the equipotential bonding conductor (see [Chapter 3.4.1 "Cable connection", page 14](#)).
- If the ground cable is subjected to tensile stress in the application (e.g. if KG/BN_ (ground cable) or KG/BS_ (helix ground cable) is used), the cable must be secured additionally with an external strain relief (e.g. a strap clip); see [Chapter 3.4.1 "Cable connection", page 14](#).
- An equipotential bonding connection (PA) must be established along the entire intrinsically safe measuring circuit (see [Chapter 4 "Operation", page 20](#)).
- Electrical systems used in explosion hazard areas must at all times be in a technically faultless condition. Any defects must be repaired or remedied immediately (see [Chapter 4 "Operation", page 20](#)).
- If all connections (supply voltage, ground clamps etc.) have been made correctly and the battery is inserted, the system is operational (see [Chapter 4.1 "Start-up", page 20](#)).
- Once the **TERRALIGHT** ground monitoring system has been assembled and installed, it must be tested for proper functioning (see [Chapter 4.3 "Function control", page 21](#)).
- Check the ground monitoring units at regular intervals for proper function, in doing so check the operating points and the grounding resistance (see [Chapter 5.1 "Ground control units", page 22](#)).
- Cables and clamps must not be damaged. Damaged cables and clamps must be replaced with new parts (see [Chapter 5 "Maintenance", page 22](#)).
- To make sure that the proper ground connection exists with the equipotential bonding and that no malfunctions occur, the ground clamp must be cleaned when dirty (see [Chapter 5.2 "Ground clamps", page 23](#)).
- Perform regular checks to ensure that the cable and the insulation show no tears or abrasion that could impair the cable's insulation or functioning (see [Chapter 5.3 "Cable rewinders", page 23](#)).
- The optionally available balancers (article no. 116738 and 116740) can be used in gas groups IIA, IIB and IIC, zone 0 and zone 20.



2.5 Special conditions according to the declaration of conformity

- Only the following battery types (D cells) may be used to operate the TERRALIGHT system:
 - Duracell Plus Power MN 1300
 - ENERGIZER MAX LR20
 - ENERGIZER LR20 ALKALINE POWER(see [Chapter 3.4.2 "Changing batteries \(Fig. 6\)", page 15](#)).
- The batteries may only be replaced if it can be ensured that a potentially explosive atmosphere does not exist at this instant of time (see [Chapter 3.4.2 "Changing batteries \(Fig. 6\)", page 15](#)).
- Equipotential bonding (PA) shall be established along the entire cable run of the measuring circuit (see [Chapter 4 "Operation", page 20](#)).
- When the light plug no. 116189 is connected to the measuring circuit, its internal reactances shall be considered. The level of protection (marking) of the light plug is determined by the level of protection of the supplying intrinsically safe circuit (depending on the version of the ground monitoring system) (see [Chapter 7 "Technical specifications", page 25](#)).
- In areas where dust can form explosive atmospheres, only correspondingly certified and marked ("D") equipment may be connected to the measuring circuit.
- In areas where gas can form explosive atmospheres, simple electrical apparatus like clamps and cable rewinders may be connected to the measuring circuit. The simple apparatus must comply with the appropriate requirements of EN 60079-11, but must not be certified and marked.

3. Assembly and installation



Attention!

Once the **TERRALIGHT** ground monitoring system has been assembled and installed, it must be tested for proper functioning, see chapter 4.3.

3.1 View of appliance **TERRALIGHT**

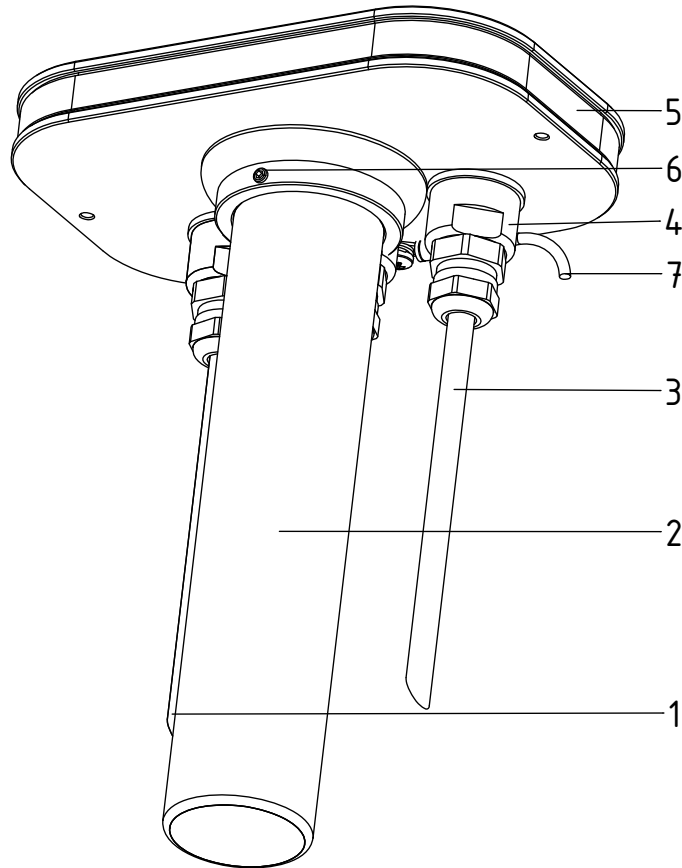


Fig. 3:
View of appliance
TERRALIGHT

- 1 Connection of the ground contactor / cable retractor
- 2 Battery case
- 3 Connection PAL
- 4 Adapter with cable gland
- 5 Signal light (surrounding)
- 6 Locking screw against unintentional opening of the battery compartment
- 7 Ground connection

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3.2 Assembly



When installing the system in explosion hazard areas, every precaution must be taken to ensure that a potentially explosive atmosphere does not exist at this instant of time!

The **TERRALIGHT** ground monitoring device is approved for assembly and installation in potentially explosive atmospheres. The system is designed for wall mounting and is attached with the mounting brackets.

The point of installation must be dry and the indicator lamp must remain in full view. Avoid direct exposure to sunlight.

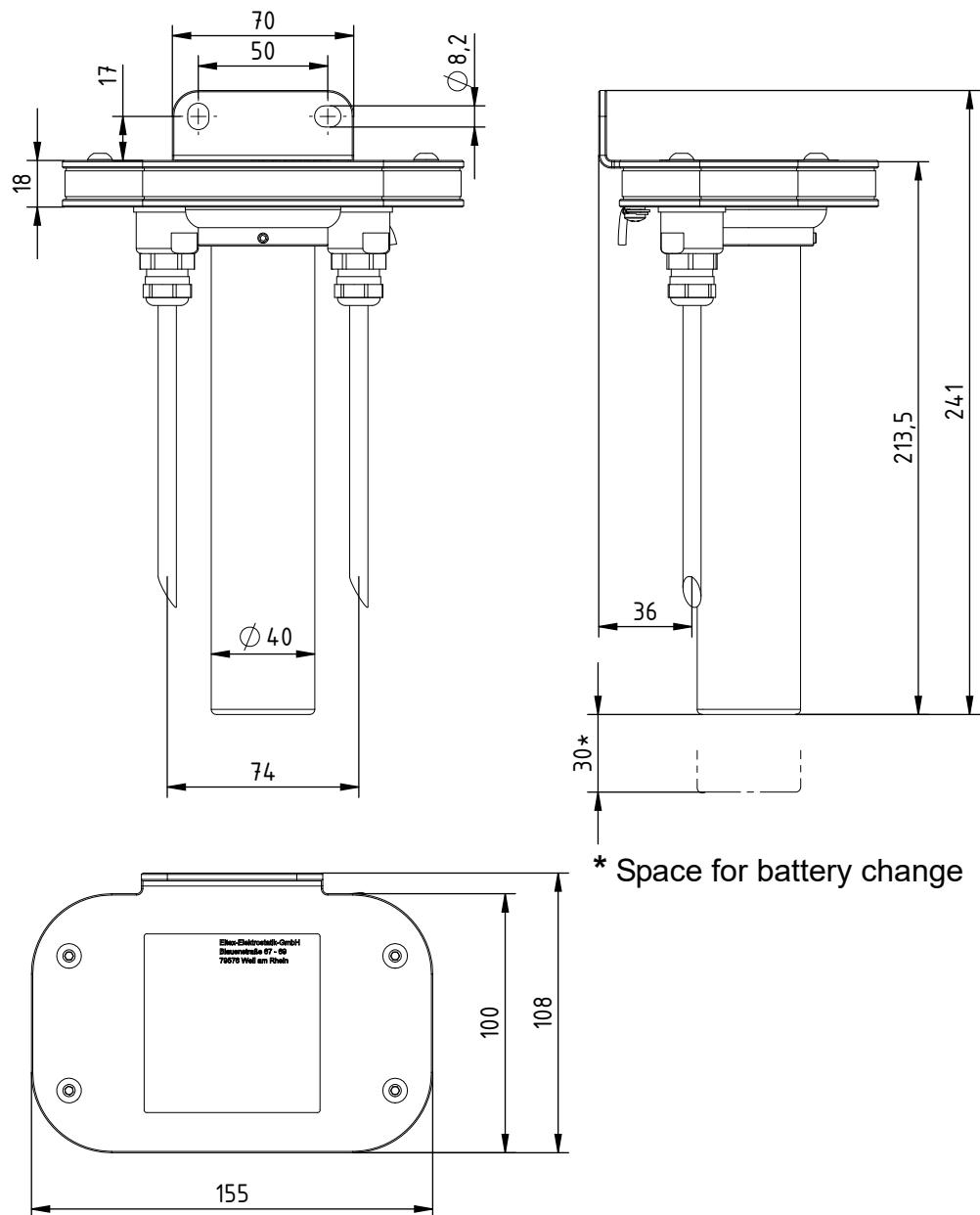


Fig. 4:
Mounting
Dimensions
TERRALIGHT

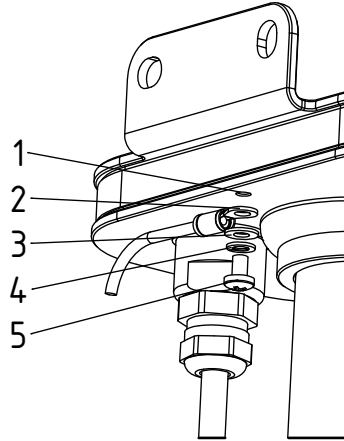


3.3 Grounding



Attention!

A permanent ground connection must be established via the ground terminal (Fig. 5). The ground cable must have a minimum cross-section of 4 mm².



- 1 M4 thread in the housing
- 2 Ground lead with ring terminal
- 3 Washer
- 4 Spring
- 5 M4x6 screw

Fig. 5:
Grounding
connection

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3.4 Electrical connection



When installing the system in explosion hazard areas, every precaution must be taken to ensure that a potentially explosive atmosphere does not exist at this instant of time!

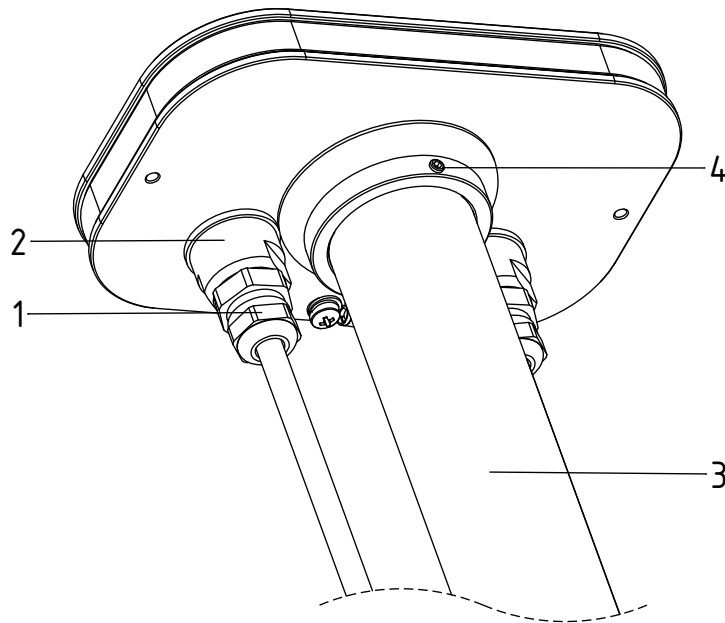


Fig. 6:
Mounting
Dimensions
TERRALIGHT

- 1. Cap nut
- 2. Adapter with cable gland
- 3. Battery compartment with thread and locking mechanism
- 4. Locking screw

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3.4.1 Cable connection



Attention!

When connecting the cables, note the correct length of the stripped section and the position within the connecting adapter.

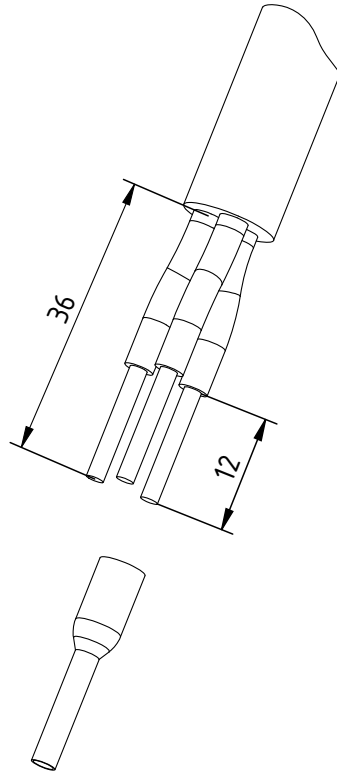


Fig. 7:
Cable termination

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The wires must be crimped with insulated ferrules (10 mm length). Ideally, a square crimping tool should be used.

The connecting terminals are suitable for a conductor cross-section of $0.2 \text{ mm}^2 \dots 1.5 \text{ mm}^2$.

The cable glands are designed for a circular cross-section and an external cable diameter of $7.5 \dots 9.5 \text{ mm}$.

- To connect the cable, first loosen the cap nut (1) at the gland, then unscrew the adapter with the cable gland (2), see Fig. 6).
- Connect the cable as shown in Fig. 8 / Fig. 10.
- Fasten the adapter with the cable gland (2), then tighten the cap nut (1) with a torque of approx. 5 Nm (applies to Eltex grounding cables with an external cable diameter of 8.6 mm). The gasket must not be damaged.
- When using other cables or other cable diameters, the tightening torques must be specified by the user. The cable gland and the cap nut must be tightened firmly.

- Tightening the connection thread or the union nut too loosely or too tightly can impair the type of protection, the tightness and the strain relief



Attention!

If the ground cable is subjected to tensile stress in the application (e.g. if KG/BN_ (ground cable) or KG/BS_ (helix ground cable) is used), the cable must be secured additionally with an external strain relief (e.g. a strap clip).

A two-core cable for connecting the ground circuit with the PAL bonding lead is routed into the connecting terminal space via the cable inlet (5, 6 Fig. 8 / Fig. 10). The double routing ensures that any disruptions to the PAL bonding lead are identified.

Note:

The two PAL leads belong to the intrinsically safe circuit, see cable entry 5, 6 Fig. 8 / Fig. 10.

This is **NO** protective ground link, the leads must **NOT** be coloured green/yellow. The PAL connection can be made with a two-wire sheathed cable, with no wire colours prescribed, i.e., all colours apart from green/yellow are permitted.

The sheathed cable have to be made in light blue or marked accordingly.



The maximum cable length in the intrinsically safe circuit must not exceed the maximum rated capacity and inductance (see Technical Specifications).



The device must always be connected to an equipotential bond.

3.4.2 Changing batteries (Fig. 6)



The batteries may only be replaced if it can be ensured that a potentially explosive atmosphere does not exist at this instant of time!

- Undo the locking screw (4), then unscrew the battery compartment (3) counter clockwise.
- Replace the batteries; note the correct battery type and polarity.
- Close the battery compartment (3) and re-fasten the locking screw (4). The screw is a protection against inadvertent opening of the battery compartment.

Exhausted batteries may be returned to us or must be disposed of properly.



Only the following battery types (D cells) may be used to operate the **TERRALIGHT**:

- Duracell Plus Power MN 1300
- ENERGIZER MAX LR20
- ENERGIZER LR20 ALKALINE POWER

3.4.3 Connection TERRALIGHT

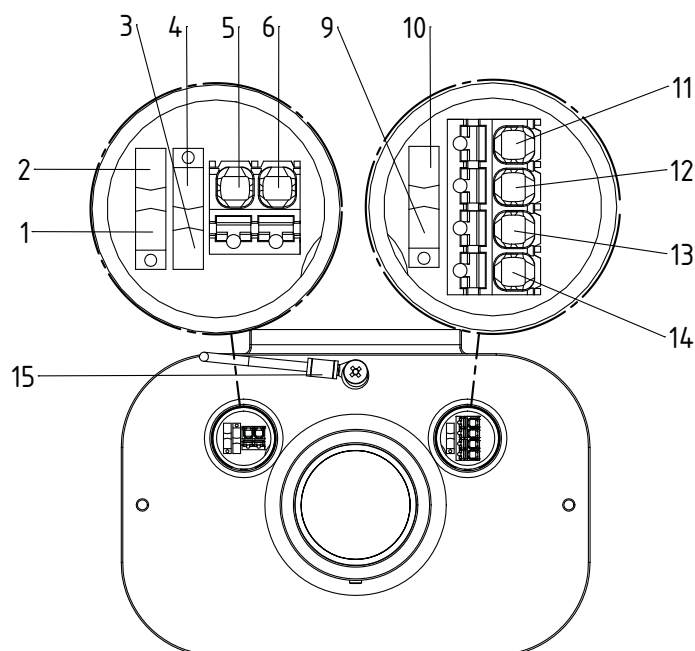


Fig. 8:
Connection
TERRALIGHT

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Position	Function	Labeling elec- tronic parts
Sliding switch 1:		
1	Switch position: steady light	Flash OFF
2	Switch position: flashing	Flash ON
Sliding switch 2:		
3	Switch position: flashing 1 per 3 seconds	3 s
4	Switch position: flashing 1 per 1 second	1 s
5	Connection PAL	PAL
6	Connection PAL	PAL
Sliding switch 3:		
9	Switch position: additional 10 Ohm measurement deactivated	10 Ohm OFF
10	Switch position: additional 10 Ohm measurement activated	10 Ohm ON
11	Connection external LED	LED
12	Connection ground contactor GND	GND
13	Connection ground contactor 2	C2
14	Connection ground contactor 1	C1
15	Ground connection	GND

3.4.4 Configuring the sliding switch

There are two sliding switches that offer 3 different setup options for the LED display and one sliding switch for activating / deactivating the 10-ohm measurement:

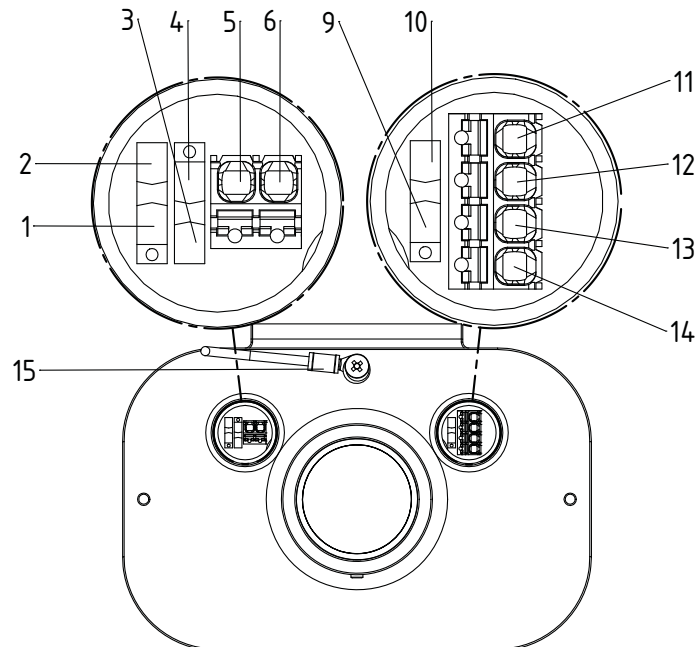


Fig. 9:
Mounting
Dimensions
TERRALIGHT

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Sliding switch 1:

- Position 1: Steady light
Sliding switch 2: Position 3, 4 without function.

- Position 2: Flashing

Sliding switch 2:

Position 3: Flashing at 0.3 Hz frequency: 1 x / 3 seconds

Position 4: Flashing at 1 Hz frequency: 1 x / second

Sliding switch 3:

- Position 9: Additional 10-ohm measurement deactivated
- Position 10: Measurement of leak resistances <10 ohms activated

3.5 Terminal assignments

Terminal assignment TERRALIGHT

Terminal	Connection: PAL
PAL	Equipotential bond
PAL	Equipotential bond
Terminal	Connection: ground contactor
LED	Connection for external LED display
GND	Ground contactor: GND
C2	Ground contactor: Contact 2
C1	Ground contactor: Contact 1
Connection: battery	
	3 x 1.5 V D cells

Connection to the cable rewriter

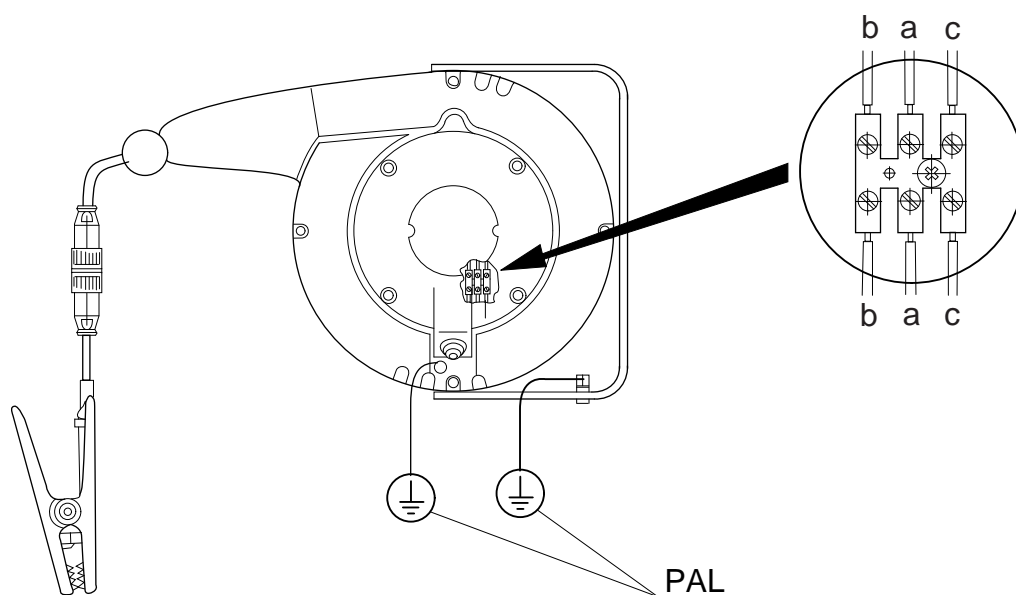
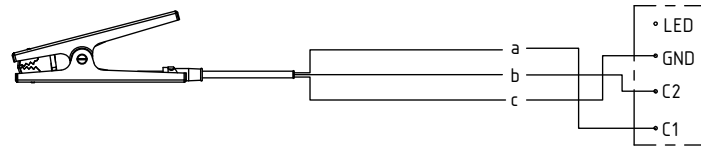


Fig. 10:
Connection of the
cable rewriter
601KR/_

Z00034y

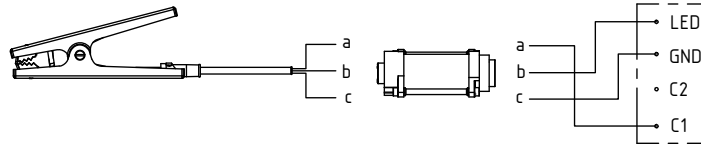
Connection examples of the ground contactors

Fig. 11:
Connection
examples of the
ground contactors
without plug light



Wire color: a: blue b: brown c: green/yellow

Fig. 12:
Connection
examples of the
ground contactors
with plug light



Wire color: a: blue b: brown c: green/yellow

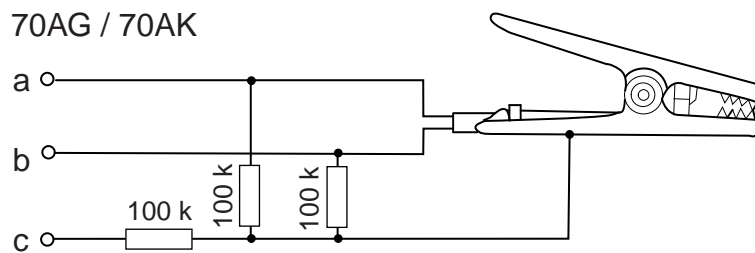


Warning!

Incorrect connector assignment may lead to an inadvertent release, especially in combination with the light plug.

Connecting diagrams of the ground contactors

Fig. 13:
Connecting
diagrams of the
ground contactors
type 70AG and
70AK



Wire color: a: blue b: brown c: green/yellow

4. Operation



Caution!

Please note the type plate indicating the connection data (supply voltage) of the devices.



- An equipotential bonding connection (PA) must be established along the entire intrinsically safe measuring circuit.
- Electrical systems used in explosion hazard areas must at all times be in a technically faultless condition. Any defects must be repaired or remedied immediately.

4.1 Start-up



If all connections (supply voltage, ground clamps etc.) have been made correctly and the battery is inserted, the system is operational.

4.2 Function

If the ground contactor has been connected properly and clamped to the container to be grounded and monitored, the intrinsically safe circuit is closed.

This status is indicated by the green steady light or green flashing of the lamp.

The diagram of the **TERRALIGHT** ground monitoring system is shown in Fig. 14.

Operating points see chapter 7 "Technical specifications".

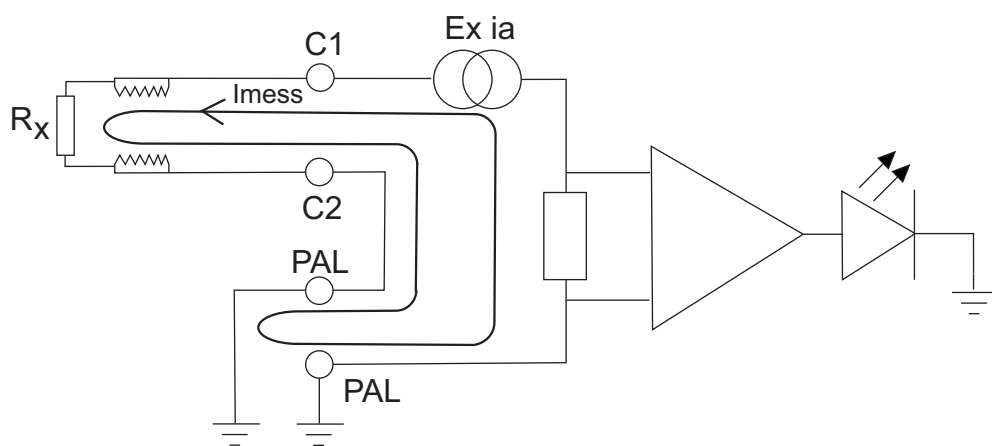


Fig. 14:
Diagram of the
TERRALIGHT
ground monitoring
system

For the operating points, the total resistance is relevant, consisting of R_x , plus the line resistance of the supply lines to the ground contactors and the PAL lines.

I_{mess} = intrinsically safe measuring circuit

4.3 Function control

If the 70AG and 70AK ground clamps are connected to a conductive, non-grounded object, the green operating light signals the enable state and the proper function.

4.4 Undervoltage warning

- If the battery voltage is low, the LEDs are yellow instead of green and the external LED is deactivated.
- The system will still function, but the batteries should be changed at the next opportunity.

4.5 Battery life

The life of the batteries depends primarily on the frequency of use, the configuration and the environmental conditions. The following table of average values shows the influence of the configuration on the expected battery life.

		grounding not detected	grounding detected		
			3 s - interval	1 s - interval	steady light
without external LED	10 Ohm OFF	31900 h / 1329 days	6000 h / 250 days	2960 h / 123 days	400 h / 16 days
	10 Ohm ON		3020 h / 125 days	1130 h / 47 days	330 h / 13 days
with external LED	10 Ohm OFF		4930 h / 205 days	2180 h / 90 days	270 h / 11 days
	10 Ohm ON		2920 h / 121 days	990 h / 41 days	235 h / 9 days

The stated values apply to continuous operation. If the ground monitoring system is only temporarily active, the life of the batteries increases accordingly.

Example:

Configuration without external LED, 10-ohm measurement OFF, 1-second interval, average use of 8 h / day:

$$2960 \text{ h} : 8 \text{ h / day} = 370 \text{ days}$$

For this reason, the “steady light” option is only recommended for applications in which the **TERRALIGHT** system is only used for a short time each day.

5. Maintenance



Before carrying out maintenance or service work in the explosion hazard area, make sure that a potentially explosive atmosphere does not exist at this instant of time.



Warning!

Maintenance and repair work must be carried out only by qualified electricians.

Cables and clamps must not be damaged. Damaged cables and clamps must be replaced with new parts.

5.1 Ground control units



Check the units at regular intervals for proper function, in doing so check the operating points and the grounding resistance. The inspection intervals are specified in the accident prevention regulations, as amended (e.g. in Germany DGUV V3). No other maintenance work is required.

Checking the operating points

Determine the operating points (see chapter 7 "Technical specifications") by using a decimal resistor.

Checking the resistance to earth

To measure the grounding resistance between clamp jaw and ground (PAL) the supply voltage to the ground control unit must be disconnected.

When using the ground clamp 70AG or 70AK, the resistance value is (depending on the measuring voltage of the measuring device, max. 6 V):

between ground and clamp jaw 1: 80 kOhm, $\pm 20\%$

between ground and clamp jaw 2: $< 1\text{ Ohm}$

5.2 Ground clamps



To make sure that the proper ground connection exists with the equipotential bonding and that no malfunctions occur, the ground clamp must be cleaned when dirty.

Store the ground clamp such that it cannot be damaged. Replace damaged cables and clamps with new parts. Whenever possible, the ground clamp should either be hung up freely or be clamped to a non-conductive object.

5.3 Cable rewinders



Perform regular checks to ensure that the cable and the insulation show no tears or abrasion that could impair the cable's insulation or functioning. Clean the cable with a cloth soaked in warm water to remove dirt or incrustations and ensure perfect unwinding.

Defective devices must be sent in for repair.

6. Troubleshooting



Before carrying out maintenance or service work in the explosion hazard area, make sure that a potentially explosive atmosphere does not exist at this instant of time.




Warning!

Maintenance and repair work must be carried out only by qualified electricians.

Error/Symptom	Remedy
LEDs on the TERRA-LIGHT unit lights up yellow.	Low battery voltage; the function is still given, a timely battery replacement is recommended.
Lighting LEDs on the TERRALIGHT unit, although the ground clamp has not been clamped to a conductive object.	Dirt settled on ground clamp: Clean ground clamp with solvent (cleaning gasoline). Do not immerse the plug of the coupling in solvent.
Lighting LEDs on the TERRALIGHT unit after attaching the clamp to a conductive and grounded object, although the connections to terminals C2 and/or PAL are disrupted.	No error! The unit identifies the ground connection of the object and enables.
No LED display, because the cable ripped from the plug or from the clamp.	Shorten cable and reconnect (see Electrical Connections)
Cable break on the cable rewinder.	Shorten cable and reconnect (see Electrical Connections).
No display on the plug light, although the LED on the TERRALIGHT unit lights up green.	Check the wiring on the TERRALIGHT unit.
No display on the plug light, although the LED on the TERRALIGHT unit lights up yellow.	no error, undervoltage deactivates the external LED.

7. Technical specifications

7.1 TERRALIGHT



Supply voltage*	supply via 3 x 1.5 V D cells yellow LEDs indicate a low battery voltage
Operating ambient temperature	-18...+50°C (-0-4...+122°F)
Storage temperature	-40...+80°C (-40...+176°F), without battery
Ambient humidity	max. 80% r.h., non-dewing
Enclosure material	stainless steel with wall bracket
Protection class	IP65 according to EN 60529
Dimensions	240.5 x 155 x 108 mm (H x W x D), see Fig. 15
Weight	1.75 kg
Measurement circuit	intrinsically safe according to EN 60079-11 maximum voltage U_0 : 6.0 V DC maximum current I_0 : 0.25 A maximum output P_0 : 0.36 W maximum permissible connected load (capacity / inductance): C_0 : 1.49 μ F, L_0 : 630 μ H
Operating points	ON <20 kOhm, OFF >50 kOhm / \pm 20 %
Permissible types of battery	Duracell Plus Power MN 1300 ENERGIZER MAX LR20 ENERGIZER LR20 ALKALINE POWER
Approval	PTB 18 ATEX 2005 X
Marking	 II 1G Ex ia IIC T4 Ga, II 1D Ex ia IIIC T135°C Da



*** Note!**

The device will be damaged if the maximum supply voltage is exceeded. The safety of the intrinsically safe measuring circuit is guaranteed up to the specified maximum supply voltage.

7.2 Light Plug

Supply voltage* / Measurement circuit	intrinsically safe according to EN 60079-11 maximum voltage U_1 / U_0 : 15.0 V DC maximum current I_1 / I_0 : 0.25 A maximum output P_1 / P_0 : 0.36 W internal reactances (capacity, inductance) C_1 : 40 nF, L_1 : 57 μ H
Operating ambient temperature	-20...+70°C (-4...+158°F)
Storage temperature	-40...+80°C (-40...+176°F)
Ambient humidity	max. 80% r. h., non-dewing
Protection class	IP65 according to EN 60529
Dimensions	78 x 38 (L x D), see Fig. 16
Weight	0.1 kg
Approval	PTB 18 ATEX 2005 X
Marking	 II 1G Ex ia IIC T4 Ga, II 1D Ex ia IIIC T135°C Da or  II 2G Ex ib IIC T4 Gb, II 2D Ex ib IIIC T135°C Db The level of protection (labeling) of the light plug is determined by the level of protection of the intrinsically safe measuring circuit supplying the plug (depending on the version of the ground monitoring system).



* Note!

The device will be damaged if the maximum supply voltage is exceeded. The safety of the intrinsically safe measuring circuit is guaranteed up to the specified maximum supply voltage.

8. Dimensions

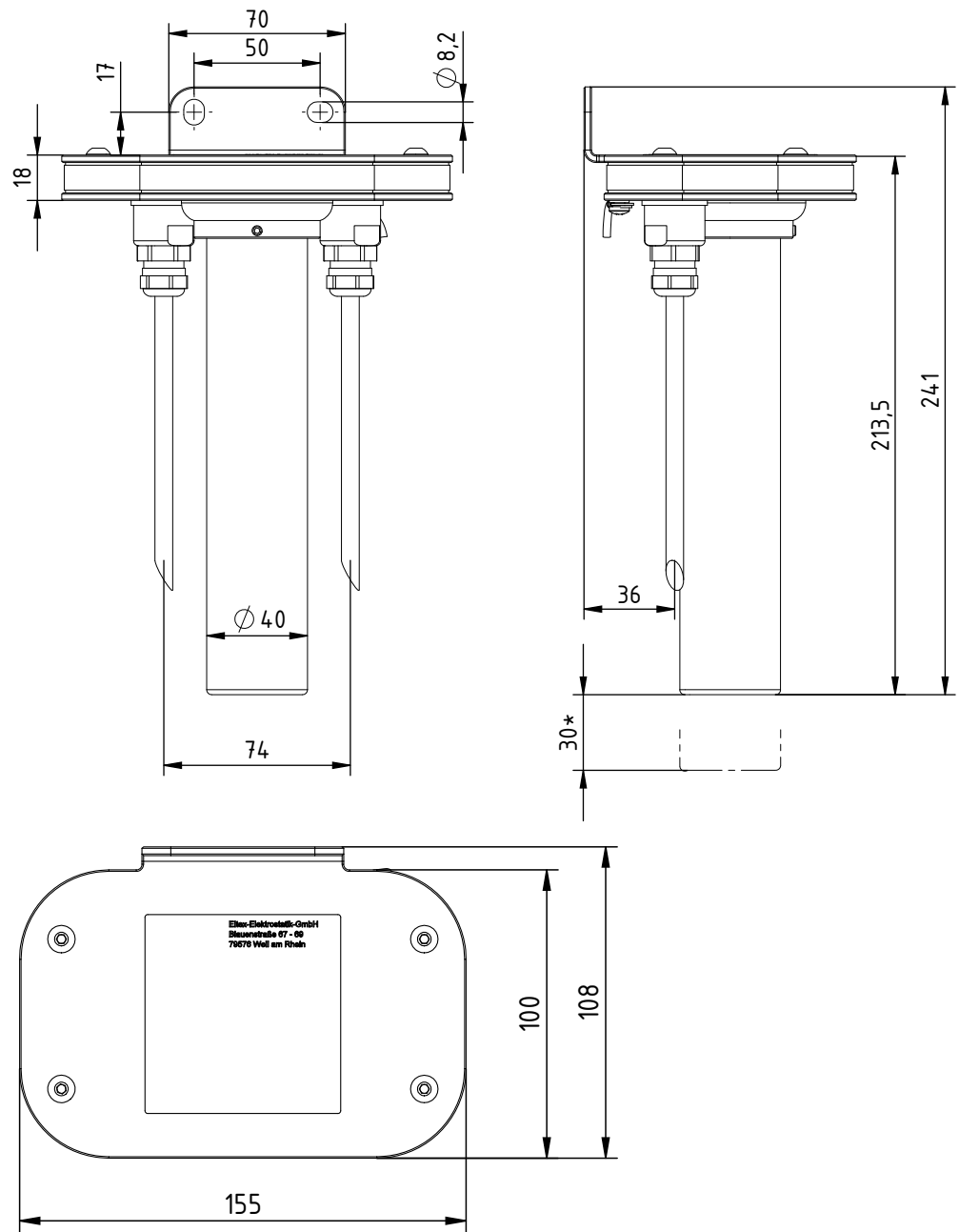


Fig. 15:
 Dimensions
TERRALIGHT

Z-116536by_5+7

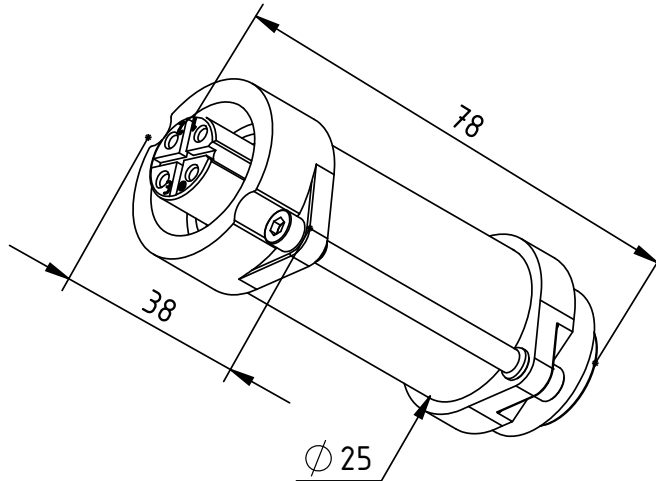
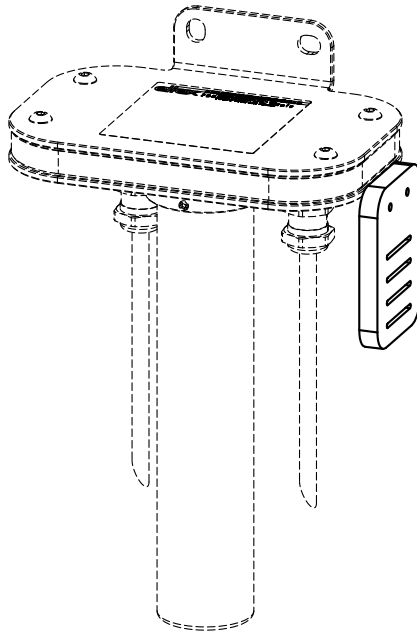


Fig. 16:
Dimensions
light plug

Z-116630ay



Mounting is possible on the
right or the left side of the
TERRALIGHT

Abb. 17:
Clamp holder
mounting on
TERRALIGHT

Z-116742y_1

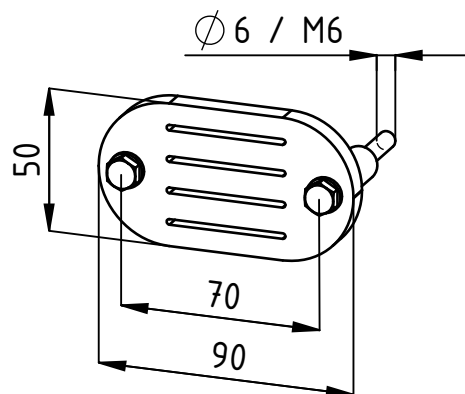


Fig. 18:
Clamp holder
mounting on wall

Z-116742y_2

9. Accessories and spare parts

Article	Article-No.
Light plug	116189
<p>Ground clamp Cable color: light blue with coupling connector or with fixed lead length of 3, 6, 9, 12, 15 or 18 m (specify length) and cable end prefabricated, for connection to TERRALIGHT:</p> <ul style="list-style-type: none"> - stripped, braids are fitted with wire end sleeves - coupling connector - coupling socket or <p>with fixed helix lead length of 5 or 10 m (specify length) and cable end prefabricated:</p> <ul style="list-style-type: none"> - stripped, braids are fitted with wire end sleeves - coupling connector - coupling socket 	TERRA-C/SOL
<p>Ground clamp with integrated LED status display Cable color: light blue with coupling connector or with fixed lead length of 3, 6, 9, 12, 15 or 18 m (specify length) and cable end prefabricated, for connection to TERRALIGHT:</p> <ul style="list-style-type: none"> - stripped, braids are fitted with wire end sleeves - coupling connector - coupling socket or <p>with fixed helix lead length of 5 or 10 m (specify length) and cable end prefabricated:</p> <ul style="list-style-type: none"> - stripped, braids are fitted with wire end sleeves - coupling connector - coupling socket 	TERRA-C/SLL
<p>Ground clamp for BIG-BAG with pressure plate for flexible contact points Cable color: light blue with coupling connector or with fixed lead length of 3, 6, 9, 12, 15 or 18 m (specify length) and cable end prefabricated, for connection to TERRALIGHT:</p> <ul style="list-style-type: none"> - stripped, braids are fitted with wire end sleeves - coupling connector - coupling socket or <p>with fixed helix lead length of 5 or 10 m (specify length) and cable end prefabricated:</p> <ul style="list-style-type: none"> - stripped, braids are fitted with wire end sleeves - coupling connector - coupling socket 	TERRA-C/BOL

Article	Article-No.
<p>Ground clamp for BIG-BAG with integrated LED status display and pressure plate for flexible contact points Cable color: light blue with coupling connector or with fixed lead length of 3, 6, 9, 12, 15 or 18 m (specify length) and cable end prefabricated: - stripped, braids are fitted with wire end sleeves - coupling connector - coupling socket or with fixed helix lead length of 5 or 10 m (specify length) and cable end prefabricated: - stripped, braids are fitted with wire end sleeves - coupling connector - coupling socket</p>	TERRA-C/BLL
<p>Ground clamp, large with coupling plug IP67 and 300 mm ± 50mm lead length or without plug and lead length as specified (3, 6, 9, 12, 15 or 18 m) or without plug and helix lead length as specified (5 or 10 m</p>	70AG
<p>Ground clamp, small with coupling plug IP67 and 300 mm ± 50mm lead length or without plug and lead length as specified (3, 6, 9, 12, 15 or 18 m) or without plug and helix lead length as specified (5 or 10 m)</p>	70AK
<p>Cable rewriter, aluminum, 2.5 meters connecting cable, 20 meters ground cable with coupling socket IP67 for connecting ground clamps with plug</p>	601KR/AW
<p>Cable rewriter, aluminum, 2.5 meters connecting cable, 12 meters ground cable with coupling socket IP67 for connecting ground clamps with plug</p>	601KR/DW
<p>Cable rewriter, plastic, 2.5 meters connecting cable, 9 meters ground cable with coupling socket IP67 for connecting ground clamps with plug</p>	601KR/KW
<p>Helix ground cable, 3-pin with coupling IP67 for connecting ground clamps with coupling socket and wire end sleeve, extensible 1 to 5 m, cable color: light blue</p>	KG/BSLB050
<p>Helix ground cable, 3-pin with coupling IP67 for connecting ground clamps with coupling socket and wire end sleeve, extensible 2 to 10 m, cable color: light blue</p>	KG/BSLB100
<p>Ground cable, 3-pin with coupling IP67 for connecting ground clamps with coupling socket and wire end sleeve, 5 to 95 m in steps of 5 meters (specify cable length), cable color: light blue</p>	KG/BNLB_ _ _

Article	Article-No.
PAL connection cable, 3-pin, one-sided pre-assembled, for connection to TERRALIGHT with wire end sleeves, 5 to 95 m in steps of 5 meters (specify cable length), cable color: light blue	KG/BNLX_ _ _
3-pin ground cable (specify cable length)	LEI00009
Coupling socket, 4-pin, IP67 (side: cable rewinder)	ELM00714
Coupling plug, 4-pin, IP67 (side: clamp)	ELM00713
Cable gland (V2A) with adapter	116902
Cable gland (Ms nickel-plated) with adapter	116903
Battery set (3 pieces, 1.5 V D cells)	116901
Battery compartment with thread	116904
Clamp holder, mounting on TERRALIGHT	116738
Clamp holder, mounting on wall	116740
Operating Instructions (specify language)	BA-xx-4013

Please specify the article number when ordering.

A. Annex

A.1 Grounding with ground monitoring unit

In compliance with EC-Type Examination Certificate PTB18ATEX2005 (**TERRALIGHT**), PTB99ATEX2188X (TCO) and PTB00ATEX2174X (TCB), the clamps and cable rewinders may be used in the potentially explosive zone with the following intrinsically safe ground monitoring units:

- **TERRALIGHT** Type TERRA-L/_ _ _ _ _
- Terracompact II Type TCO030S and TCO030B
- Terrabox Type TCB030/_ _ _
- or other ground monitoring systems with the following max. output values:

voltage:	$U_o \leq 35 \text{ V DC}$
current strength:	$I_o \leq 250 \text{ mA}$
power:	$P_o \leq 650 \text{ mW}$

The following Eltex clamps and cable rewinders have been specially tested for the potentially explosive zone and carry the EC-Type Examination Certificate DMT00ATEXE068X and BVS 20 ATEX E 017 X:

- Clamps Type TERRA-C/_ _
- Clamps Type 70AG, 70AK, 70BG, 70HK
- Cable rewinders Type 601KR/AW, 601KR/DW, 601KR/KW

The maximum connectable total cable length to the grounding system **TERRALIGHT** is 200 m.

Please note the information in the separate operating instructions for the Eltex ground clamps series 70 and **TERRACLAMP** as well as the cable rewinders series 601KR.

A.2 Overview Approvals

Approval No.	Units	File name
PTB18ATEX2005X	TERRALIGHT	TERRALIGHT-ATEX-en.pdf
BVS20ATEXE017X	Clamps Type TERRA-C/SO, TERRA-C/SL, TERRA-C/BO, TERRA-C/BL	TERRA-C-Zangen-ATEX-en.pdf
DMT00ATEXE068X	Clamps Type 70AG, 70AK Cable rewinders Type 601KR/AW, 601KR/DW, 601KR/KW	601KR+Zangen-aktiv-ATEX-en.pdf
IECEX BVS 20.0012X	Clamps Type TERRA-C/SO, TERRA-C/SL, TERRA-C/BO, TERRA-C/BL	IECEX_BVS_200012X_en.pdf
IECEX BVS 16.0016X	Clamps 70** Cable rewinders 601KR/*W	IECEX_BVS_160016X_en.pdf

EU-Declaration of Conformity

CE-4013-en-2104_TERRA-L




Eltex-Elektrostatik-Gesellschaft mbH
Blauenstraße 67 - 69
D-79576 Weil am Rhein



declares in its sole responsibility that the product

TERRALIGHT TERRA-L Ground Monitoring System (according to Eltex reference code)

Identification:  II 1G Ex ia IIC T4 Ga and II 1D Ex ia IIIC T135°C Da
Certification-no. PTB 18 ATEX 2005 X
Notified body : Physikalisch-Technische Bundesanstalt, Bundesallee 100, 38116 Braunschweig, NB No. 0102

complies with the following directives and standards.

Relevant EU-Directive:

2014/34/EU

Directive: Equipment or Protective System intended for use in potentially explosive Atmospheres

Harmonized standards applied:

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

Explosive atmospheres – Equipment – General requirements
Explosive atmospheres – Equipment protection by intrinsic safety "I"

Relevant EU-Directive:

2014/35/EU

Low Voltage Directive

Harmonized standard applied:

EN 60204-1:2018

Safety of machinery – Electrical equipment of machines – General requirements

Relevant EU-Directive:

2014/30/EU

EMC Directive

Harmonized standards applied:

EN 55011:2016 + A1:2017
EN IEC 61000-6-2:2019

Industrial, scientific and medical equipment – Radio-frequency disturbance characteristics – Limits and methods of measurement
Electromagnetic compatibility (EMC) – Generic standards – Immunity for industrial environments

Relevant EU-Directive:

2011/65/EU

RoHS Directive

in the version effective at the time of delivery.

Eltex-Elektrostatik-Gesellschaft mbH keep the following documents for inspection:

- proper operating instructions
- plans
- other technical documentation

Weil am Rhein, 09.04.2021
Place/Date


Lukas Hahne, Managing Director

EU-Declaration of Conformity

CE-4013-en-2104_TERRA-116189




Eltex-Elektrostatik-Gesellschaft mbH
Blauenstraße 67 - 69
D-79576 Weil am Rhein



declares in its sole responsibility that the product

Light Plug No. 116189

Identification:  II 1G Ex ia IIC T4 Ga and II 1D Ex ia IIIC T135°C Da

 II 2G Ex ib IIC T4 Gb und II 2D Ex ib IIIC T135°C Db

Certification-no. PTB 18 ATEX 2005 X

Notified body: Physikalisch-Technische Bundesanstalt, Bundesallee 100, 38116 Braunschweig, NB No. 0102

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Relevant EU-Directive:

2014/30/EU

EMC Directive

Harmonized standards applied:

EN 55011:2016 + A1:2017

Industrial, scientific and medical equipment – Radio-frequency disturbance characteristics – Limits and methods of measurement

EN IEC 61000-3-2:2019

Electromagnetic compatibility (EMC) – Limits – Limits for harmonic current emissions (equipment input current ≤ 16 A per phase)

EN 61000-3-3:2013 + A1:2019

Electromagnetic compatibility (EMC) – Limits – Limitation of voltage changes, voltage fluctuations and flicker in public low-voltage supply systems, for equipment with rated current ≤ 16 A per phase and not subject to conditional connection

EN IEC 61000-6-2:2019

Electromagnetic compatibility (EMC) – Generic standards – Immunity for industrial environments

Relevant EU-Directive:

2011/65/EU

RoHS Directive

in the version effective at the time of delivery.

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Lukas Hahne, Managing Director

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www.eltex.de



Z01007Y



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