

TIMM BITE SMART LED

OPERATING INSTRUCTIONS | ENGLISH



TIMM BITE Smart LED

Operating Instructions

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1. Safety Instructions, Explosion Protection, and Intended Use

This chapter contains important basic safety instructions, information on explosion protection and on intended normal use. These must be strictly observed when selecting, installing, commissioning, operating, maintaining, and servicing the device.

Please read this instruction manual carefully and completely. Not following the instructions, safety, and warning notices may result in property damage, serious injuries, or death.

The TIMM BITE Smart LED is an explosion-protected device that complies with the ATEX Directive 2014/34/EU and meets the requirements of the Standards EN IEC 60079-0:2018, IEC 60079-11:2023+COR:2023, and IEC 60079-31:2022. The protection methods used are intrinsic safety (Ex i) and protection by enclosure (Ex t).

As an electrical device of Equipment Category **II 2G**, the TIMM BITE Smart LED is suitable for use in hazardous areas classified as **Zone 1 and Zone 2**. As an Equipment Category **II 2D** device, it can be used in areas classified as **Zone 21 and Zone 22**. Its suitability for these zones is subject to compliance with the explosion group, temperature class, equipment protection level, and other requirements, especially those resulting from the operator's risk assessment. The TIMM BITE Smart LED must not be used in Zones 0 or 20.

The marking as an explosion-protected equipment is:

Ex ib IIC T4 Gb and Ex ib tb IIIC T85 °C Db

Installation and commissioning of the TIMM BITE Smart LED may only be carried out by authorized and qualified professionals in accordance with occupational safety regulations and in compliance with applicable guidelines and regulations for the installation of explosion-protected equipment, such as EN 60079-14:2014 / VDE 165 Part 1 and DGUV Rule 113-001 (EX-RL).

During all work on the TIMM BITE Smart LED, the safety instructions and technical data in this manual must be observed, along with national safety and accident prevention regulations.

The TIMM BITE Smart LED and its supplied accessories may only be installed, provided, and used as intended and in an undamaged, flawless condition.

The sole intended normal use is for the dissipation of electrostatic charges.

Warnings about hazards are mentioned in this instruction manual in the context in which the hazard occurs. They are marked with the adjacent safety symbol. Hazards may present an **immediate risk of explosion** or become effective at a later time.



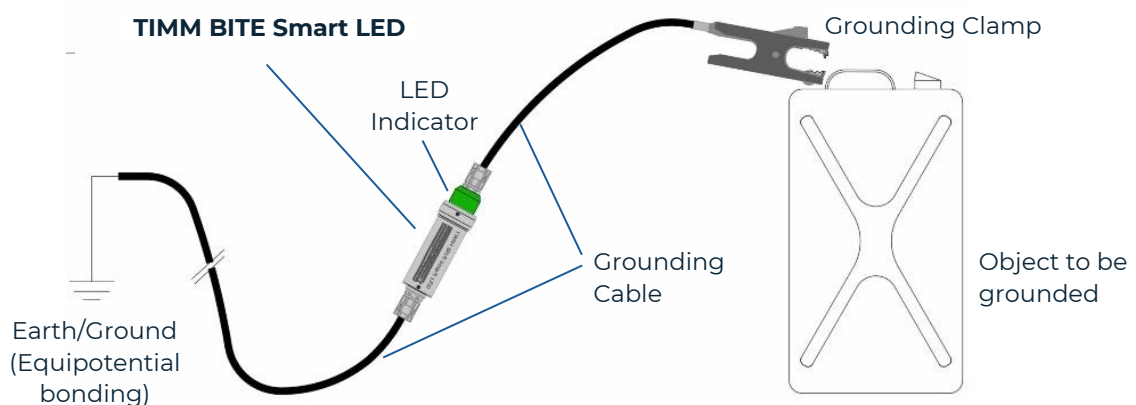
2. Functional Principle

The TIMM BITE Smart LED is an easy-to-use grounding device designed to prevent dangerous electrostatic charges in work areas with explosive atmospheres (Ex zones).

Electrostatic charges can arise, for example, during the conveying, filling, extracting, or transferring of flammable liquids or bulk materials into or out of containers. The separated charge carriers can accumulate on the liquid or bulk material, on ungrounded system components, or on ungrounded containers. If the charge buildup reaches a sufficiently high level, there is a risk of a sudden and uncontrolled electrostatic discharge, such as a spark. Such electrostatic discharges release enough energy to ignite an explosive atmosphere.

Electrostatic grounding is used as a preventive explosion protection measure to safely dissipate electrostatic charges to ground potential. This controlled dissipation prevents uncontrolled static electricity discharges and the ignition of an explosive atmosphere.

The TIMM BITE Smart LED enables monitored electrostatic grounding of conductive containers or system components to a defined grounding point. It is integrated into a grounding cable either permanently or via connectors. This setup provides contact points on both sides of the TIMM BITE Smart LED: on one side, to the object to be grounded (e.g., drum, canister, IBC), and on the other side, to a defined grounding point (e.g., grounding rail). The connection can be established either via a grounding clamp or a fixed installation.



The TIMM BITE Smart LED continuously measures the electrical resistance in the grounding cable, including its contact points with the object to be grounded and the defined grounding point. If the resistance in this circuit is below 10 ohms, a safe dissipation of electrostatic charges is ensured. The TIMM BITE Smart LED indicates this with a green light. If the resistance is in the unsafe range, i.e., above 10 ohms, it signals this with a red light.

The TIMM BITE Smart LED is powered by a replaceable battery. The measurement circuit is designed to be highly energy-efficient, and the display function is controlled by an integrated motion sensor. This ensures an exceptionally long battery life. A low battery level or device errors detected by the measurement circuit are indicated via the LED display.

The TIMM BITE Smart LED enhances safety with minimal investment costs. For applications requiring a higher level of safety, such as integrating an automated permissive signal into the filling process control system (interlock) or ensuring a reliable grounding connection with an object detection function, we recommend using our grounding control devices.

3. Device Structure

The enclosure of the TIMM BITE Smart LED features a transparent indicator cap, behind which three LEDs are positioned. These LEDs are arranged in such a way that they are visible from all sides around (360°).

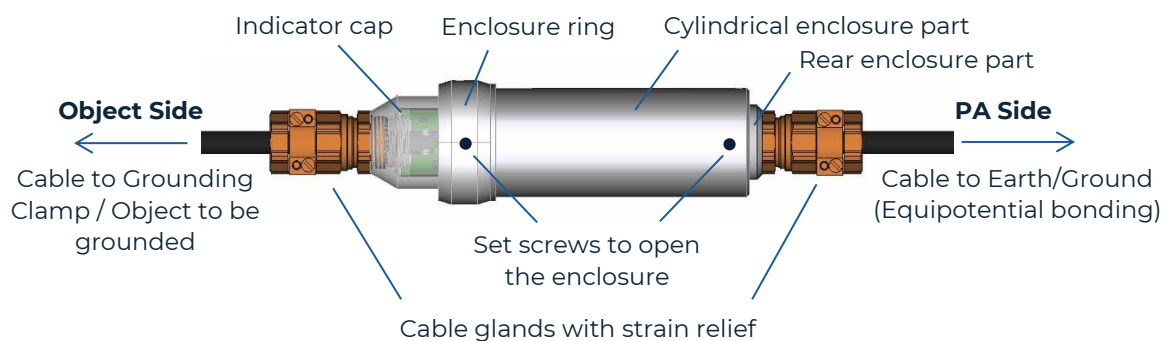
Inside the enclosure, the battery for power supply, the measurement electronics, and the connection terminals for the grounding cables are located. At both ends of the enclosure, there are cable glands with strain relief to secure the grounding cables.

The TIMM BITE Smart LED is available in versions with or without QC quick connectors integrated into the grounding cables.

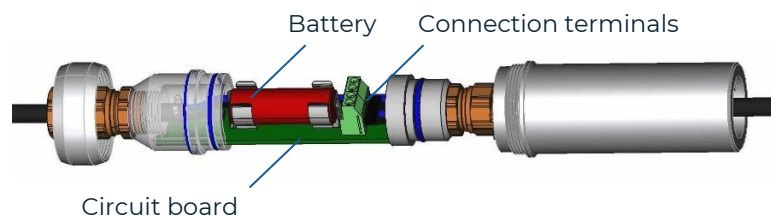
Depending on the installation position within the grounding cable, the connection sides are distinguished as follows:

- **Object side:** Used for connecting to the object that needs to be grounded. This is typically at the transparent indicator cap.
- **PA side:** Used for connecting to the defined grounding point (e.g., grounding rail). PA stands for Equipotential bonding.

External view in typical installation position:



Internal view with open enclosure:



Grounding clamps are connected to the ends of the grounding cables. Fixed installation using a ring terminal with appropriate strain relief or connection to a junction box is also possible.

4. Commissioning and Installation

The steps for opening and closing the enclosure, replacing the battery, and connecting the grounding cables are described in Chapter 6. The terminal connection diagram can be found in Section 10.2.

4.1. Removing the Battery Transport Lock

To commission the TIMM BITE Smart LED for the first time, the battery transport lock must be removed. This is a pull-out plastic strip located between the positive terminal of the battery and its opposing contact. To remove it, the enclosure must be opened and then reclosed. A 2 mm hex key (Allen wrench) is required for this process.

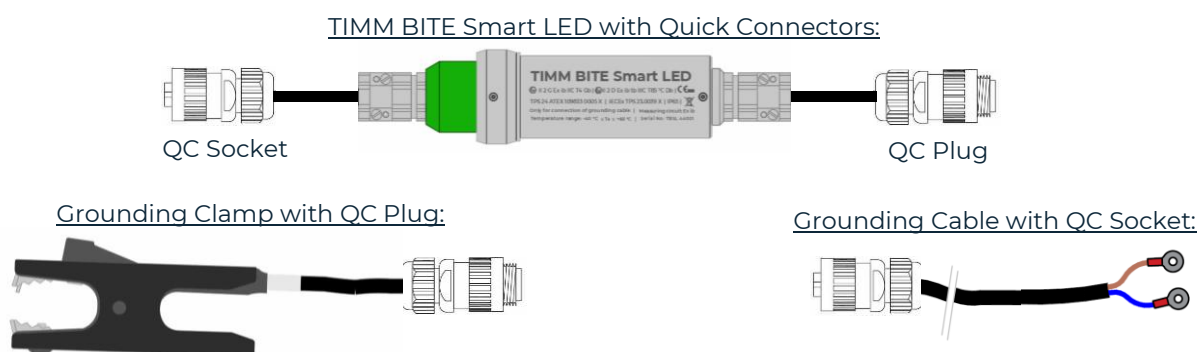


Hazard Due to Improper Grounding Cables and Clamps!

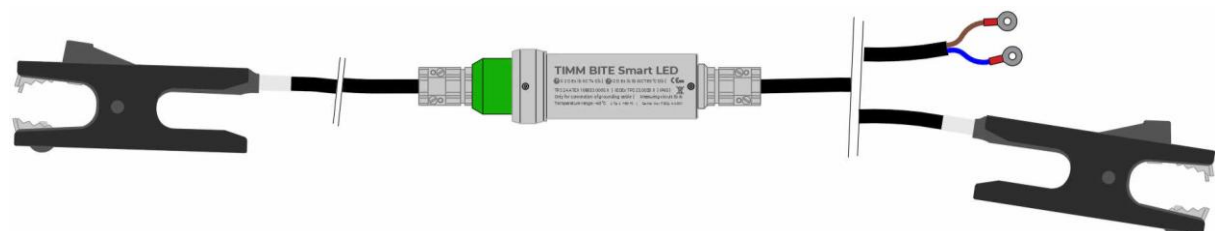
The grounding cables and clamps used must be suitable for the temperature range specified on the TIMM BITE Smart LED. The grounding cables must match the sealing range of the cable glands.

The TIMM BITE Smart LED requires two-core grounding cables and two-pole grounding clamps. Suitable grounding cables and clamps should be sourced from the manufacturer. Depending on the configuration of the TIMM BITE Smart LED, the grounding cables and clamps can be connected either via QC quick connectors or directly through the cable glands.

Connection with QC quick connectors:



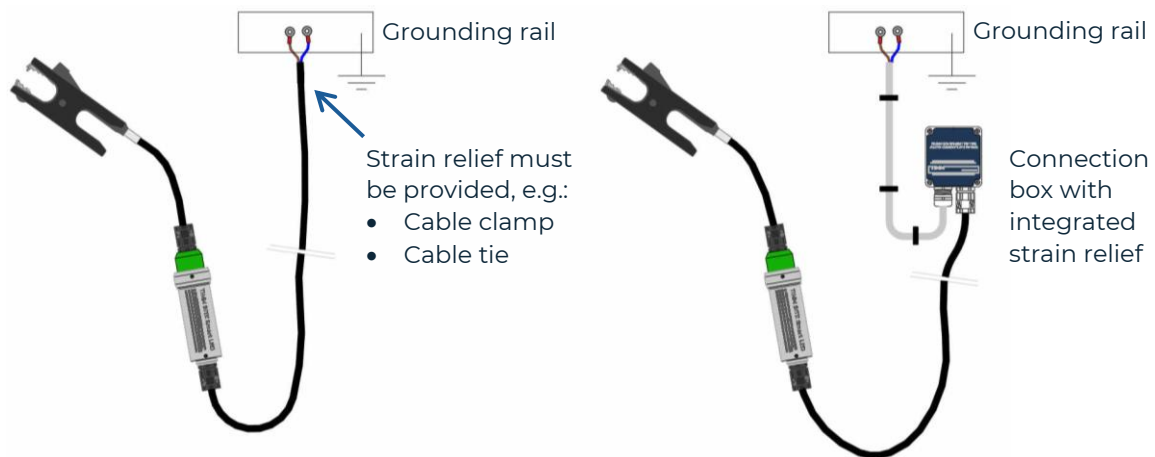
Direct connection to the TIMM BITE Smart LED:



4.3. Installation at a Fixed Grounding Point

The TIMM BITE Smart LED can be permanently connected to a fixed grounding point on its PA side using a two-core cable. It is recommended to attach the two cores of the grounding cable to different points of the grounding location.

Installation examples of the TIMM BITE Smart LED at a fixed grounding point:



We recommend using the Smart LED Parking Set, available as an accessory:



Smart LED Parking Set

customizable with:

- Holder or Holding Clip for storing the TIMM BITE Smart LED
- One or two clamp hangers
- Connection box
- Grounding plate

4.4. Commissioning Inspection

Before completing the commissioning process, a visual inspection and a functional test must be carried out. The checkpoints are detailed in Section 7.1 of this manual.

5. Operation

5.1. Safety Instructions for Proper Handling

**Explosion hazard due to damage!**

The TIMM BITE Smart LED, grounding cables, and clamps must be in proper and undamaged condition. The operator must visually inspect them before each use.

**Explosion hazard due to mechanical sparks!**

The TIMM BITE Smart LED and grounding clamps must only be used manually. They must not be struck, dropped, or accelerated by connected spiral cables.

**Explosion hazard due to charged objects or potential differences!**

When connecting to the grounding object and to the PA/grounding point, proper potential equalization must be ensured. The object to be grounded must not be electrostatically charged, and no potential difference should exist between the object and the PA/grounding point.

**Explosion hazard due to dust deposits in connectors!**

In dust explosion-hazardous areas of Zones 21 and 22, the QC quick connectors must not be disconnected if an explosive atmosphere is present. In gas explosion-hazardous areas of Zones 1 and 2, the QC quick connectors can be opened and closed in the presence of an explosive atmosphere.

**Explosion hazard due to external heat sources!**

The TIMM BITE Smart LED must be kept away from external heat sources!

**Hazard due to insufficient instruction!**

Improper handling of the TIMM BITE Smart LED can lead to hazards. Operating personnel must be instructed and trained in safe handling before first use and at regular intervals.

5.2. Status Indicator (LEDs)

The TIMM BITE Smart LED features a continuous status indicator consisting of three LEDs behind a transparent plastic cover. It is activated via a motion sensor and internal measuring electronics. A printed table on the device enclosure explains the indications.

In standard installation, the indicator is oriented toward the object side (grounding clamp to the object to be grounded). The table on the enclosure contains arrows pointing to the object and PA sides. This helps the operator identify, in case of denied permissive (red flashing), whether the measured resistance is too high on the object side or the PA side:



Table on the TIMM BITE Smart LED enclosure:

DISPLAY		STATUS
	Green Grün 1x per 4 s	Release Freigabe
	Red Rot 1x per 4 s	← Resistance too high left links Widerstand zu groß
	Red Rot 3x per 4 s	Resistance too high Widerstand zu groß → right rechts
	Red Rot 4x per 4 s	Failure Gerätefehler
	Yellow Gelb	Battery low Batterie schwach

The following operating states are indicated at the TIMM BITE Smart LED:

LEDs	Device Status	Description
All LEDs off	Power-saving mode (Wake up by slight movement)	The indicator is activated by the motion sensor or a status change in the measuring circuit. Measurements continue even when the indicator is off. If activation is not possible, replace the battery.
Green flashing (1 pulse per 4 s) 	Permissive	Electrical resistance within the entire grounding circuit (from object to PA) is within the permissible range (< 10 ohms).
Red flashing (1 pulse per 4 s) 	Non-Permissive (Object Side)	Electrical resistance in the grounding cable between the TIMM BITE Smart LED and the object is too high, e.g., due to non-conductive contact.
Red flashing (3 pulses per 4 s) 	Non-Permissive (PA Side)	Electrical resistance in the grounding cable between the TIMM BITE Smart LED and the PA/grounding rail is too high, e.g., due to an installation error.
Fast red flashing (4 pulses per 4 s) 	Malfunction	The internal monitoring function indicates a fault. The device must be taken out of operation and the manufacturer contacted.
Yellow flashing 	Low battery	The green or red flashing pattern is supplemented by a yellow flash. The battery must be replaced within 14 days.

5.3. Operating Sequence

Explosion hazard due to incorrect operating sequence!



When using the TIMM BITE Smart LED, the PA side must first be connected to a defined grounding point. Only afterwards may the object to be grounded be connected.

After use, the connection to the grounded object must be removed first. Only then may the connection to the defined grounding point be disconnected.

Explosion hazard due to contacting charged objects!



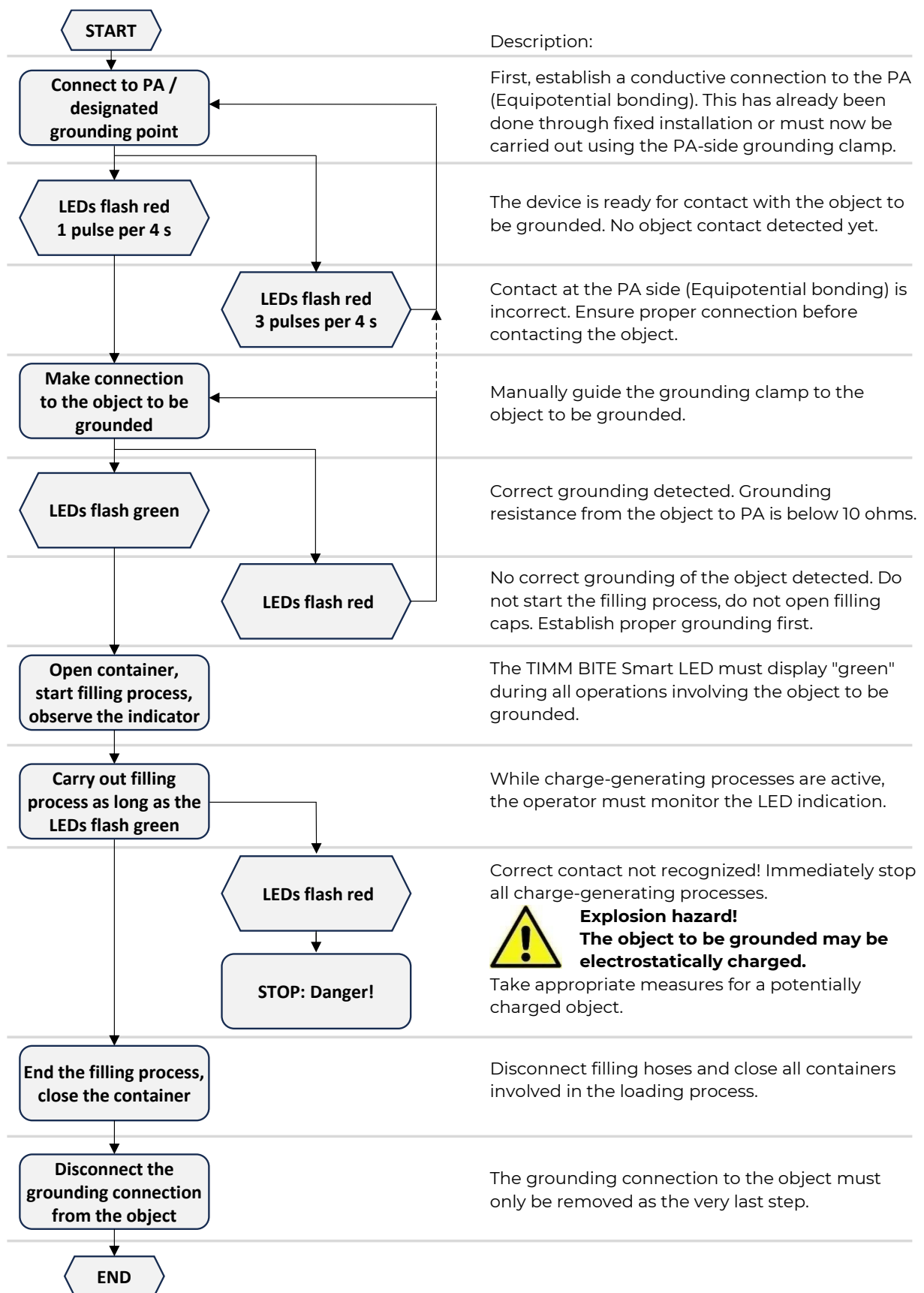
The connection to the object to be grounded must be established before any charge-generating processes begin, before opening filling nozzles, and before connecting filling hoses. Already charged objects must not be contacted!

Explosion hazard due to premature removal or reconnection!



As long as charge-generating processes are taking place that could charge the object to be grounded or elements of the TIMM BITE Smart LED, the connections to the object and the defined grounding point must not be removed.

The TIMM BITE Smart LED can only be used with connected grounding cables and clamps. The following operating steps must be followed:



6. Operations on the Device: Opening, Closing, Battery Replacement, Cable Connection, LED Adjustment

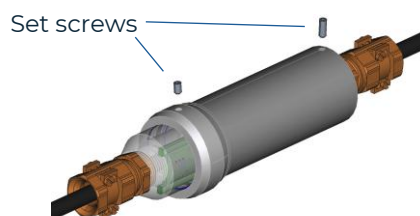
6.1. Opening the Enclosure



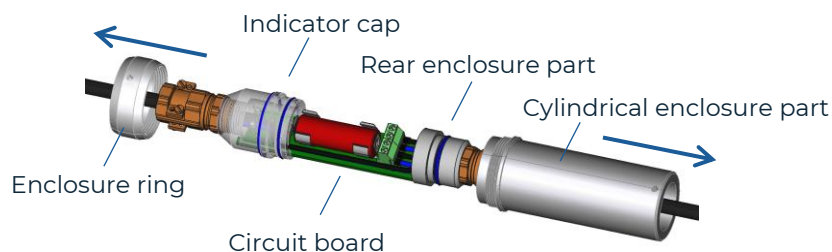
Explosion Hazard When Opening the Enclosure!

The enclosure of the TIMM BITE Smart LED must not be opened in gas or dust explosion-hazardous areas if an explosive atmosphere is present.

To open the enclosure of the TIMM BITE Smart LED, first loosen the two set screws (M4x6 and M4x10, with a 2 mm hex socket) on the outer housing ring and the rear housing part.

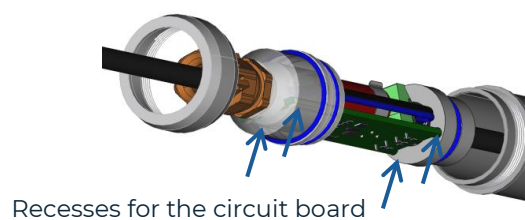


Then, unscrew the enclosure ring and slide it over the transparent indicator cap. The cylindrical enclosure part can now be removed with a slight twist towards the rear enclosure part to expose the circuit board with the battery and terminal connections.

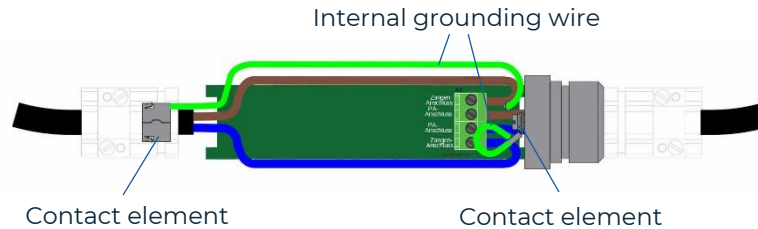


6.2. Closing the Enclosure

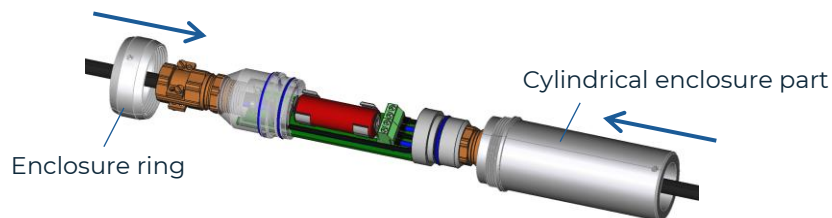
Before closing, ensure that the circuit board is properly seated in the recesses of both the indicator cap and the rear enclosure part.



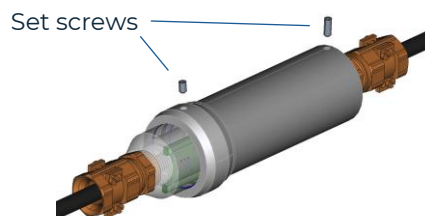
The enclosure components of the TIMM BITE Smart LED are conductively connected to the PA circuit. Ensure proper connection and secure positioning of the related contact elements.



To close, slide the cylindrical enclosure part with a slight twist over the circuit board until it reaches the stop at the indicator cap. Screw the enclosure ring onto the cylindrical enclosure part.



Secure the enclosure ring with the M4x6 set screw. Then, secure the cylindrical enclosure part to the rear enclosure part with the M4x10 set screw.



Hazard Due to Improper Closure!

The set screws must be tightened. The cable glands must be properly tightened and sealed by the inserted cables. Otherwise, the IP65 protection rating is not ensured, the type of explosion protection "protection by enclosure" may become ineffective and its use in hazardous areas poses an explosion danger.

6.3. Battery Replacement

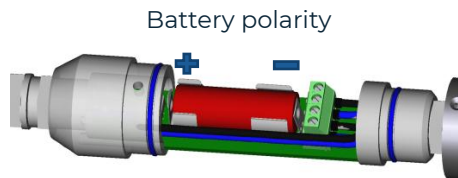


Hazard Due to Incorrect Batteries!

Only Saft LS17500 batteries are permitted for use.

To ensure the correct battery type is used, we recommend purchasing it from TIMM.

With the enclosure open, remove the old battery and insert a new one. Ensure correct polarity when inserting the battery!



6.4. Connection of Grounding Cables



Hazard Due to Improper Grounding Cables and Clamps!

The grounding cables and clamps used must be suitable for the temperature range specified on the TIMM BITE Smart LED. The grounding cables must match the sealing range of the cable glands.



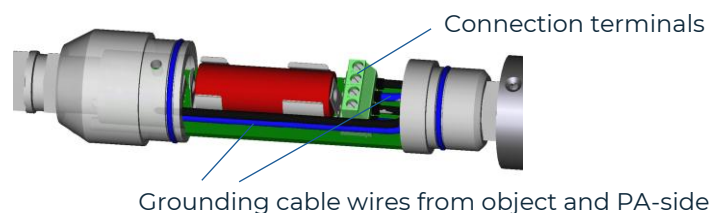
Hazard Due to Removal or Replacement of Cable Glands!

Do not remove or replace cable entries. Only the cable glands specified by the manufacturer and installed in the original condition are permitted.

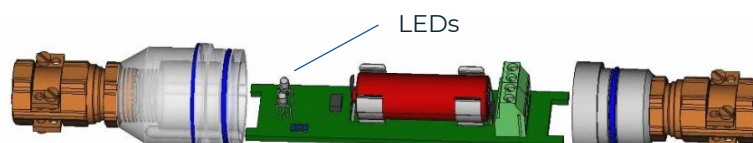
These are: Pflitsch, UNI Ex* Dicht Silicone Cable Gland, metric, brass, M20 x 1.5, 15 mm length, Approvals: PTB 15 ATEX 1001X - IECEx PTB_15.0001X.

The permissible cable diameter for the cable glands is 7.0 – 10.5 mm. The terminal clamp range is 0.25 – 2.5 mm² (recommended is 0.5 to 1.5 mm²). Cables should be pre-assembled according to section 10.2 (wiring diagram, connector configuration, stripping length).

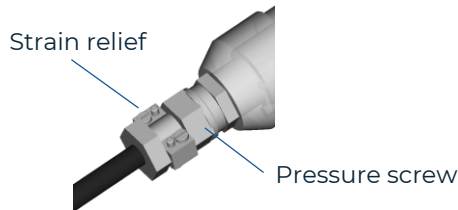
To connect the cables to the TIMM BITE Smart LED, the enclosure must be opened (see section 6.1), so that the connection terminals are fully accessible.



Unscrew the wires from the terminals on the circuit board and remove the circuit board from the indicator cap and the rear enclosure part. Take care not to damage the LEDs on the circuit board.

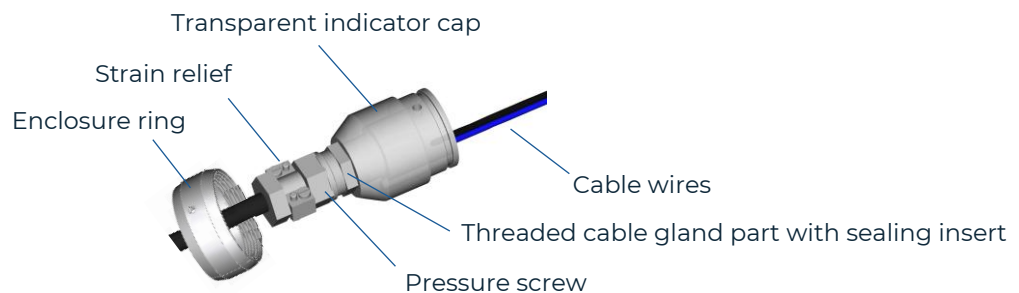


To remove the cables from the cable glands, first loosen the strain relief, then unscrew the pressure screw to fully release the cable. Do this on both cable glands if necessary.



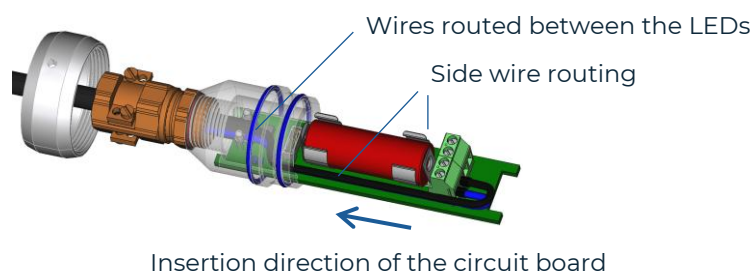
Replacing the Cable on the Object Side (at Indicator Cap):

Insert the pre-assembled cable through the enclosure ring and into the cable gland of the indicator cap until the cable sheath is visible inside. Ensure that the wire length is sufficient to reach the connection terminals.



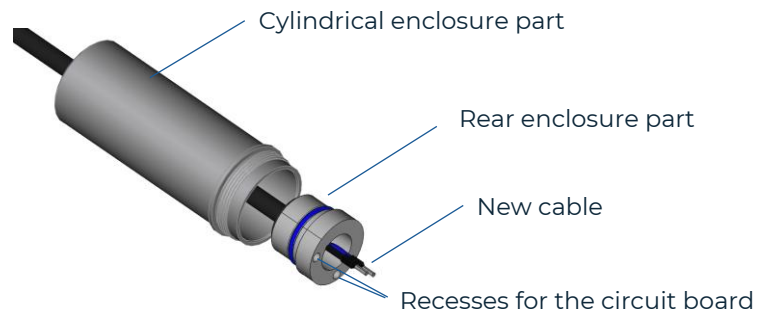
First, tighten the threaded part of the cable gland into the indicator cap to 10 Nm. Then, secure the pressure screw on the sealing insert to 5 Nm. Finally, fully tighten the screws on the strain relief.

Insert the circuit board into the recesses of the indicator cap. Position the wires between the two upper LEDs and route them along the side of the circuit board to the connection terminals, where they should be securely fastened.



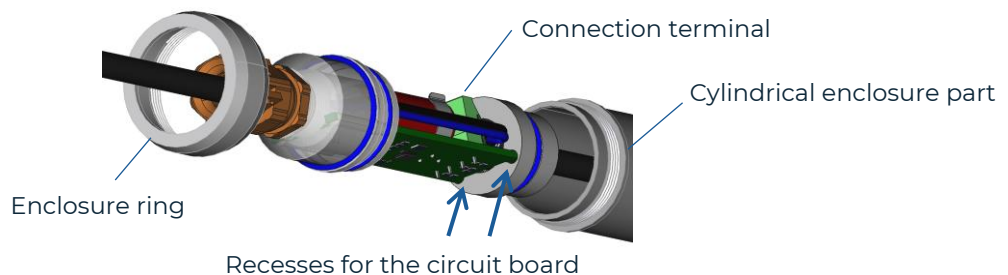
Replacing the Cable on the PA Side (at Rear Enclosure Part):

After removing the old cable, first feed the new pre-assembled cable for the PA-side through the cylindrical enclosure part. Then, guide it through the cable gland and secure it.



First, tighten the threaded part of the cable gland into the rear enclosure part to 10 Nm. Then, secure the pressure screw on the sealing insert to 5 Nm. Finally, fully tighten the screws on the strain relief.

Now, insert the circuit board into the recesses of the rear enclosure part. Then, connect the wires of the cable to the connection terminals.



Finally, slide the cylindric enclosure part over the circuit board and onto the indicator cap. Screw the enclosure ring onto the cylindric part and tighten the two set screws.

For closing the enclosure, see section 6.2.

6.5. Setting the LED Flash Patterns

The flash patterns for "Permissive" and "Non-Permissive due to High Resistance at Object to be Grounded" can be adjusted. To do this, the device housing must be opened.

To switch between flash patterns, press the button on the circuit board for at least one second. The LED light duration is adjustable and repeats every approximately 4 seconds. The following flash patterns are available:

- 1) All LEDs flash once for 100 milliseconds in a 4-second cycle (energy-efficient factory setting)
- 2) All LEDs flash once for 500 milliseconds in a 4-second cycle
- 3) All LEDs flash once for 2 seconds in a 4-second cycle

Modes 2 and 3 result in higher energy consumption.

7. Maintenance



Risk due to unauthorized repairs!

Repairs on the TIMM BITE Smart LED may only be carried out by the manufacturer. Otherwise, the explosion protection will be compromised, posing a serious safety risk.

7.1. Visual Inspection and Functional Test

A visual inspection and a functional test must be carried out during commissioning, after battery replacement, or after connecting the grounding cables. The type and scope of this inspection/test must comply with the relevant national regulations (including Directive 1999/92/EC, IEC/EN 60079-14, -17, -19). Intervals must be scheduled to ensure that any defects are detected in time.

Visual Inspection:

The visual inspection must include at least the following checkpoints:

- Proper installation of the device using original TIMM accessories
- No damage to the enclosure
- No damage to cable glands
- Secure fit of the cable glands (required for IP65 protection)
- Secure fit of the two set screws at the enclosure
- Proper condition of cables, wires, and grounding clamps
- Check QC quick connectors for secure fit and correct connection
- Properly established PA (Equipotential bonding) connection in fixed installations

If any damage is found, the device must be taken out of operation immediately.

Functional Test / Recurring Function Test:

The recurring function test serves to verify the safety function of the device. Functionality must be checked at appropriate intervals, which must not exceed two years. The operator is responsible for selecting the appropriate method of inspection.

The functional test must include at least the following checkpoints:

- Visual inspection
- Correct indication of the permissive status
- Correct indication of too high resistance at the object contact side
- Correct indication of too high resistance on the PA (Equipotential bonding) side
- Electrically continuous conductivity between all housing parts, including cable glands, up to the PA connection point

If the functional test fails, the device must be taken out of operation.

The functional test can be supported using the optional test equipment:



Test Equipment for the TIMM BITE Smart LED
(picture not identical)

7.2. Cleaning



Risk of enclosure damage due to aggressive cleaning agents!

Do not use aggressive substances, cleaning benzene, or other fuel-like substances to clean the TIMM BITE Smart LED, as they may affect the enclosure seal.

We recommend using:

- Water with a surfactant (dish liquid)
- Anodized aluminium cleaner
- A soft sponge or nylon brush

7.3. Troubleshooting

Ensure that the device and cable connections are in perfect condition and only original TIMM accessories are used. If available, use the TIMM test equipment for verification. Also, refer to the inspection and functional test points in Section 7.1.

Possible Fault Conditions:

a) LEDs show a device error (fast red flashing)

Actions:

1. Take the device out of operation.
2. Check the proper connection of grounding cables and clamps. The TIMM BITE Smart LED must not be connected to external current circuits.
3. Contact the manufacturer for further support to ensure compliance with explosion protection measures. Keep the device out of operation.

b) LEDs do not light up / remain off

Actions:

1. Move the device to activate it via the internal motion sensor.
2. Establish a conductive connection on both the object and PA side to close the grounding and measuring circuit and thus to activate the device.
3. Check the battery placement / replace the battery if necessary.

c) LEDs do not turn green despite established object contact

Actions:

1. Verify contact with the grounded object: The contact point at the object must be conductive. Paint, coatings, and deposits can impair conductivity. Plastic surfaces, even those that are dissipative, cannot be monitored with the TIMM BITE Smart LED.
2. Check contact on a bare metal surface of another object.
3. Test the PA connection for conductivity (Equipotential bonding / local grounding bar).
4. Check the grounding cable for continuity. If necessary, open the TIMM BITE Smart LED housing to access the cable ends.

If the issue persists, please contact us and have the following information ready:

- Error description
- Device serial number
- Pictures/videos of the device, its LED indication, the surrounding operating site, the connected grounding clamps and cables, as well as the established PA connection

7.4. Accessories and Spare Parts

Various accessories and spare parts are available for the TIMM BITE Smart LED (selection):



**Smart LED
with Quick
Connectors**



**Smart LED
without Quick
Connectors**



**Smart LED
with Grounding
Clamp**



Spare Battery



**Test
Equipment**



**Grounding
Clamp
EZ-1 2-pole**



**Grounding
Clamp TIMM
Medium Bite
QC**



**Grounding
Clamp TIMM
Large Bite QC**



**Coiled
Grounding
Cable**



**Straight
Grounding
Cable**



**Smart LED
Parking Set
(different
configurations)**



**Smart LED
Connection
Box**



Clamp Hanger



**Smart LED
Holding Clip**



**Smart LED
Holder**



**Smart LED
Grounding
Plate**



**Parking Set
Mounting
Plate**

Please contact us or our distribution partners to discuss your accessory or spare part needs individually. Also, visit our website and online shop for more information.

8. Registration with the Manufacturer

Thank you for choosing this product. To provide you with the best possible support and service, we kindly ask you to register your device with us. This enables us to assist you quickly and efficiently with troubleshooting and technical inquiries, as well as to deliver important product-related messages directly.

For full registration, please provide the following information:

- Device serial number
- Application area of the device
- Your name
- Your position
- Your phone number
- Your company name
- Your company address

You can easily register your product using the email template stored in the QR code. Simply scan the QR code with your phone's camera or a QR code scanner, fill in the required details, and send the email.



Alternatively, you are welcome to send us an email or call us directly at any time.

Our contact details:

Timm Technology GmbH
Senefelder-Ring 45
21465 Reinbek
GERMANY
Tel.: +49 40 248 35 63 - 0
info@timm-technology.de



9. Return and Disposal

For customers within the European Community only:

This electronic device contains batteries and falls under the scope of the Waste Electrical and Electronic Equipment Directive 2002/96/EC (WEEE) and corresponding national acts governing the 'Sale, Return and Environmentally Sound Disposal of Electrical and Electronic Equipment', e.g. German Electrical and Electronic Equipment Act (ElektroG) and German Battery Act (BattG).



Electrical devices, accumulators, and batteries marked with a crossed-out wheeled bin symbol must not be disposed of with household waste. This measure helps protect the environment by promoting the recycling of components and raw materials, thereby reducing waste and preventing environmental pollution.

According to the "Act on the Marketing, Return, and Environmentally Sound Disposal of Electrical and Electronic Equipment (ElektroG)", used electrical equipment must be collected separately and disposed of in an environmentally friendly manner.

For these B2B devices, identified by a nameplate with the TIMM brand name and a serial number, Timm Technology GmbH takes responsibility for the proper disposal of old devices that were placed on the market by us after August 12, 2005. TIMM devices **must not** be disposed of at public collection points, but **must** be returned directly to us for disposal.

According to the "Act on the Marketing, Return, and Environmentally Sound Disposal of Batteries and Accumulators (Battery Act - BattG)", used batteries and accumulators must be collected separately and disposed of in an environmentally responsible manner. End users are legally required to return used batteries. Batteries identified by a TIMM nameplate can be returned free of charge to Timm Technology GmbH.

Please send your used electrical devices or batteries from TIMM with the label "**Old Device for Disposal**" or "**Battery for Disposal**" to the following address:

Timm Technology GmbH
Senefelder-Ring 45
21465 Reinbek
GERMANY

Please note that we cannot accept shipments with unpaid postage. When shipping, ensure that batteries are properly declared as hazardous goods. The battery must be undamaged and securely packaged within the parcel.

10. Technical Annex

10.1. Technical Data

In accordance with EN 60079-0 and IEC 60079-0, the designations are as follows:

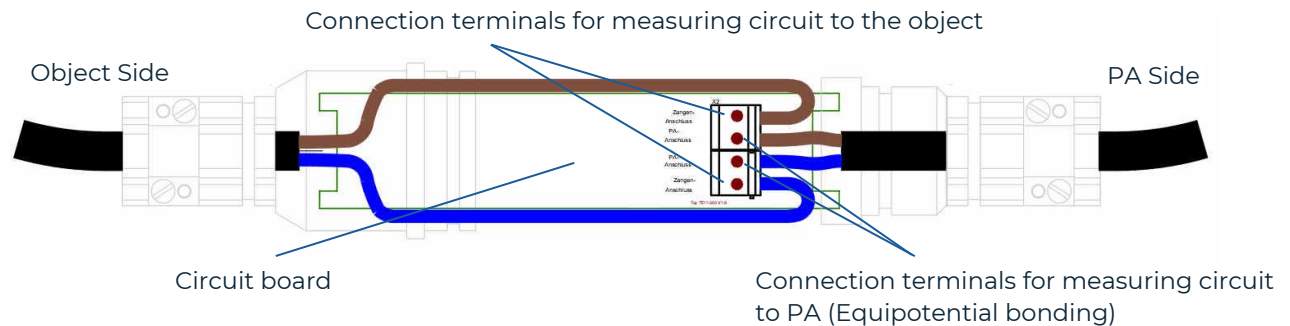
Device Category – Protection Type:	 II 2G – Ex ib IIC T4 Gb  II 2D – Ex ib tb IIIC T85°C Db
EU Type Examination Certificate:	TPS 24 ATEX 109833 0005 X
IECEx Certificate of Conformity:	IECEx TPS 23.0039X
Power Supply:	Replaceable primary cell, Manufacturer: SAFT, Type: LS17500. Battery life: When using 6 hours per day (LEDs flashing), battery life is up to 3 years.
Measuring and Grounding Circuit	
Explosion protection type:	Ex ib IIC and Ex ib IIIC
Maximum cable length:	20 m
Switching Threshold for Permissive:	Resistance < 10 Ω in the measuring and grounding circuit
Motion Sensor:	Deactivates LED indicator approx. 30 seconds after position change
Operating Temperature Range ¹⁾	
TIMM Bite Smart LED:	Ta = -25 °C to +60 °C
Ingress Protection Code:	IP 65
Dimensions:	Length: 220 mm, Diameter: $\varnothing$ 42 mm (cylindrical part), $\varnothing$ 48 mm (enclosure ring)
Weight:	0.5 kg (including battery)

1) The TIMM BITE Smart LED is approved in two variants with different operating temperature ranges, determined by the allowable temperature limits of the grounding cables used.

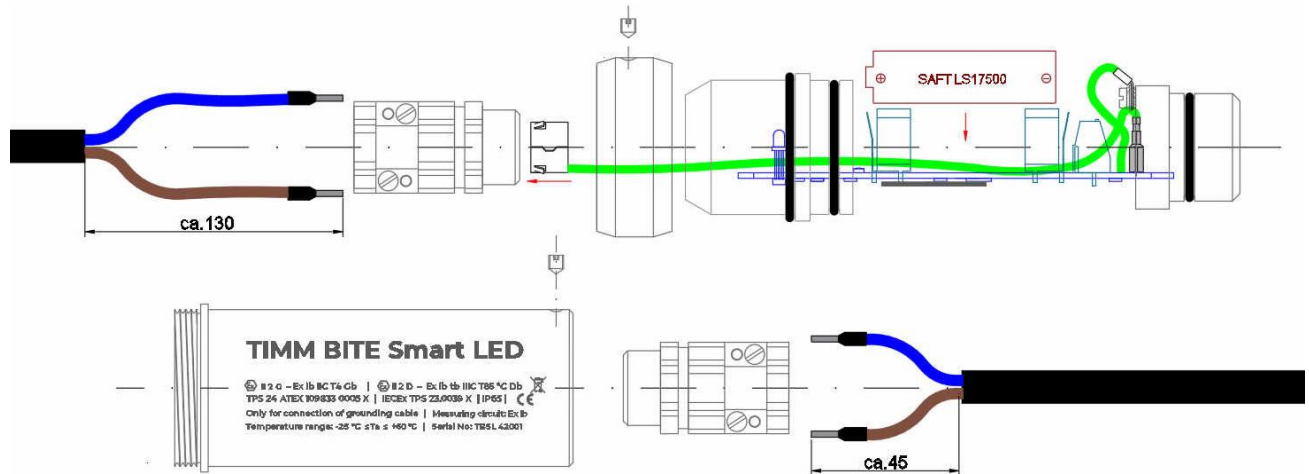
This manual applies only to the standard variant (Ta = -25 °C to +60 °C), which uses standard cables rated for -25 °C. The TIMM BITE Smart LED LT, with an extended range down to -40 °C, is included in the certification but available only on request from the manufacturer.

10.2. Wiring Diagrams

Terminal Assignment of TIMM BITE Smart LED:



Assembly of the Connection Cable to TIMM BITE Smart LED:



Connection Terminals on the Circuit Board:

- Terminal cross-section for flexible wires: 0.5 – 1.5 mm²
- Terminal cross-section for flexible wires with ferrules (with/without collar): 0.5 – 1.5 mm²
- Tightening torque: 0.5 – 0.6 Nm

Cable Glands:

- Sealing range: 7 – 10.5 mm
- Tightening torque of cable gland: 10 Nm – do not remove the cable glands!
- Tightening torque of strain-relief pressure screw: 5 Nm
- Only use the following type: Pflitsch, UNI Ex* Dicht Silicone Cable Gland, metric, brass, M20 x 1.5, 15 mm length, Approvals: PTB 15 ATEX 1001X - IECEx PTB_15.0001X.

Cables:

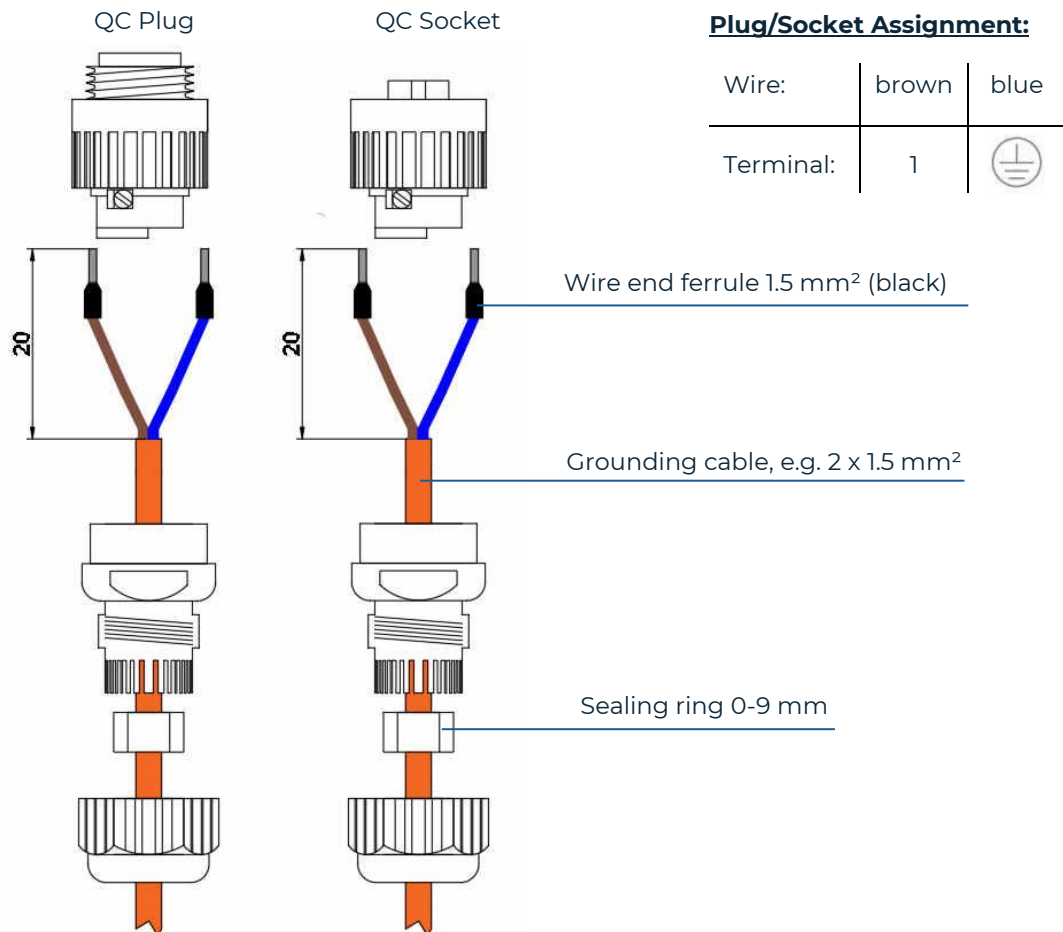
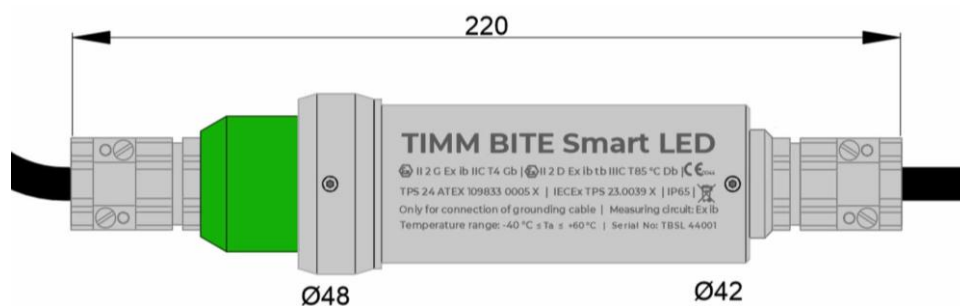
- Flexible cable, 2-core, conductor cross-section 1.5 mm²
- Ferrules must be used

Cable Stripping Lengths:

- Object connection side: 140 mm
- PA side: 45 mm
- Sheath diameter (sealing range of cable gland): 7 – 10.5 mm

Ferrules:

- Diameter according to conductor cross-section
- Length: 8 mm
- With or without plastic collar

Assembly of the QC Quick Connectors:**10.3. Dimensional Drawing**

All dimensions in mm

10.4. EU Type Examination Certificate

ZERTIFIKAT ♦ CERTIFICATE ♦ 認證證書 ♦ CERTIFICADO ♦ CERTIFICAT

(1) **EU-Baumusterprüfbescheinigung**

(2) Geräte und Schutzsysteme zur bestimmungsmäßigen Verwendung in explosionsgefährdeten Bereichen – **Richtlinie 2014/34/EU**

(3) Nummer der EU-Baumusterprüfbescheinigung:

TPS 24 ATEX 109833 0005 X

(4) Gerät: Überwachungsgerät der elektrostatischen Ableitung
Typen: TIMM BITE Smart LED, TIMM BITE Smart LED LT

(5) Hersteller: Timm Technology GmbH

(6) Anschrift: Senefelder-Ring 45
21465 Reinbek
Deutschland

(7) Die Bauart dieses Produktes sowie die verschiedenen zulässigen Ausführungen sind in der Anlage und den darin aufgeführten Unterlagen zu dieser EU-Baumusterprüfbescheinigung festgelegt.

(8) Die TÜV SÜD Product Service GmbH bescheinigt als notifizierte Stelle Nr. 0123 nach Artikel 17 der Richtlinie 2014/34/EU des Europäischen Parlaments und des Rates der Europäischen Union vom 26. Februar 2014 die Erfüllung der grundlegenden Sicherheits- und Gesundheitsanforderungen für die Konzeption und den Bau von Geräten und Schutzsystemen zur bestimmungsgemäßen Verwendung in explosionsgefährdeten Bereichen gemäß Anhang II der Richtlinie. Die Ergebnisse der Prüfung sind in dem vertraulichen Prüfbericht 713224050 festgelegt.

(9) Die grundlegenden Sicherheits- und Gesundheitsanforderungen werden erfüllt durch Übereinstimmung mit:

EN IEC 60079-0:2018 IEC 60079-11:2023+COR:2023 IEC 60079-31:2022

(10) Falls das Zeichen „X“ hinter der Bescheinigungsnummer steht, wird auf besondere Bedingungen für die sichere Anwendung des Gerätes in der Anlage zu dieser Bescheinigung hingewiesen.

(11) Diese EU-Baumusterprüfung bezieht sich nur auf Konzeption und Bau des festgelegten Gerätes gemäß Richtlinie 2014/34/EU. Weitere Anforderungen dieser Richtlinie gelten für die Herstellung und das Inverkehrbringen dieses Gerätes.

(12) Die Kennzeichnung des Gerätes muss die folgenden Angaben enthalten:



II 2G Ex ib IIC T4 Gb

II 2D Ex ib tb IIIC T85 °C Db

Zertifizierstelle Explosionsschutz
Ridlerstraße 65, 80339 München

München, 02.10.2024


Product Service

Ausgabe 00


.....
Stefan Vierbücher

Seite 1 / 3

EU-Baumusterprüfbescheinigungen ohne Unterschrift haben keine Gültigkeit.
Diese EU-Baumusterprüfbescheinigungen darf nur unverändert weiterverbreitet werden.
Auszüge oder Änderungen bedürfen der Genehmigung von TÜV SÜD Product Service GmbH
Das Dokument wird intern unter der folgenden Nummer verwaltet: EX5A 109833 0005 Rev. 00

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(13) **Anlage**(14) **EU-Baumusterprüfbescheinigung TPS 24 ATEX 109833 0005 X** Ausgabe 00(15) Beschreibung des Gerätes

Die Überwachungsgeräte der elektrostatischen Ableitung vom Typ TIMM BITE Smart LED und TIMM BITE Smart LED LT dienen zur Überwachung der elektrostatischen Erdung von leitfähigen Behältern oder Anlagenteilen. Sie sind für den festen Einbau in ein Erdungskabel oder über Steckverbinder vorgesehen. Auf der einen Seite wird das zu erdende Objekt angeschlossen, auf der anderen Seite ein definierter Erdungspunkt (z.B. Erdungsschiene). Die Kontaktierung kann über Erdungszangen oder eine feste Installation erfolgen. Die TIMM BITE Smart LED und TIMM BITE Smart LED LT messen kontinuierlich den elektrischen Widerstand im äußeren Erdungs- und Messkreis. Liegt der Widerstand unter 10 Ohm, zeigen die Geräte dies durch eine blinkende grüne LED an. Ist der Widerstand größer als 10 Ohm, zeigen sie dies durch eine blinkende rote LED an.

Die TIMM BITE Smart LED und TIMM BITE Smart LED LT sind für die Installation in explosionsgefährdeten Bereichen der Zonen 1 und 21, EPLs Gb und Db vorgesehen. Sie werden von einer austauschbaren Primärzelle gespeist.

Gerätevarianten:

Die beiden Typen TIMM BITE Smart LED und TIMM BITE Smart LED LT unterscheiden sich bzgl. ihres Umgebungstemperaturbereichs:

TIMM BITE Smart LED : $-25\text{ °C} \leq T_{amb} \leq +60\text{ °C}$

TIMM BITE Smart LED LT : $-40\text{ °C} \leq T_{amb} \leq +60\text{ °C}$

Der Umgebungstemperaturbereich ist jeweils auf dem Typenschild gekennzeichnet.

Technische Daten :

$U_o = U_m = 3.9\text{ V}$

$I_o = 26.3\text{ mA}$

$R_o = 148\text{ }\Omega$

$P_o = 25.6\text{ mW}$ (lineare Kennlinie)

$C_o = 100\text{ }\mu\text{F}$ $C_i = 4.43\text{ }\mu\text{F}$

$L_o = 90\text{ mH}$ $L_i = 0\text{ mH}$

(16) Prüfbericht 713224050

(17) Besondere Bedingungen für die Verwendung:

- Es dürfen nur Primärzellen des Herstellers SAFT, Typ LS17500, verwendet werden.
- Das Gerät darf bei Vorhandensein einer explosionsfähigen Atmosphäre nicht geöffnet werden.
- Mit dem Gerät dürfen nur Kabelverschraubungen verwendet werden, die in der Gebrauchsanweisung des Herstellers angegeben sind und die den Anforderungen der IEC 60079-0 entsprechen.

Seite 2 / 3

EU-Baumusterprüfbescheinigungen ohne Unterschrift haben keine Gültigkeit.
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Auszüge oder Änderungen bedürfen der Genehmigung von TÜV SÜD Product Service GmbH
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- (18) Grundlegende Sicherheits- und Gesundheitsanforderungen:
Durch die unter (9) aufgeführten Normen abgedeckt.

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TÜV[®]

10.5. EU Declaration of Conformity



EU-Konformitätserklärung | *EU Declaration of Conformity*

Timm Technology GmbH, Senefelder-Ring 45, 21465 Reinbek, Germany

erklärt als Hersteller in alleiniger Verantwortung, dass das Produkt |
declares in its sole responsibility as manufacturer that the product

Erdungsgerät TIMM BITE Smart LED und TIMM BITE Smart LED LT |
Grounding device TIMM BITE Smart LED and TIMM BITE Smart LED LT

mit den Anforderungen der folgenden EU-Richtlinien und harmonisierten Normen
übereinstimmt | *is in conformity with the requirements of the following EU directives*
and harmonised standards:

EU Richtlinien <i>EU Directives</i>	Normen <i>Standards</i>
EMV-Richtlinie 2014/30/EU <i>EMC Directive 2014/30/EU</i>	EN IEC 61000-6-4:2019, EN IEC 61000-6-2:2019, EN 61000-4-2:2009, EN 61000-4-3:2006 + A1:2008 + A2:2010, EN 61000-4-4:2012, EN 61000-4-6:2014, EN 61000-4-8:2010
ATEX-Richtlinie 2014/34/EU <i>ATEX Directive 2014/34/EU</i>	EN IEC 60079-0:2018, IEC 60079-11:2023+COR:2023, IEC 60079-31:2022
RoHS-Richtlinie 2011/65/EU <i>RoHS Directive 2011/65/EU</i>	EN IEC 63000:2018

ATEX-Kennzeichnung | *ATEX-Marking:*

 II 2 G Ex ib IIC T4 Gb
II 2 D Ex ib tb IIIC T85 °C Db

EG-Baumusterprüfbescheinigung |
EC Type Examination Certificate:

TPS 24 ATEX 109833 0005 X Ausgabe 00

Zertifizierungsstelle | *Notified Body:*

TÜV SÜD Product Service GmbH,
Ridlerstraße 65, 80339 München

Reinbek 18.11.2024

Ort und Datum |
Place and date

Dr. Thomas Overbeck
Geschäftsführer | *General Manager*



info@timm-technology.de
www.timm-technology.de

18.11.2024 | V1.0 | TBSL Konformitätserklärung 241118 _AZ
1 | 1



10.6. IECEx Certificate of Conformity



IECEx Certificate of Conformity

INTERNATIONAL ELECTROTECHNICAL COMMISSION

IEC Certification System for Explosive Atmospheres

for rules and details of the IECEx Scheme visit www.iecex.com

Certificate No.: IECEx TPS 23.0039X

Page 1 of 3

[Certificate history:](#)

Status: Current

Issue No: 0

Date of Issue: 2024-10-02

Applicant: Timm Technology GmbH

Senefelder-Ring 45

Reinbek 21465

Germany

Equipment: Electrostatic discharge monitoring device, types TIMM BITE Smart LED and TIMM BITE Smart LED LT

Optional accessory:

Type of Protection: Intrinsic safety "i", protection by enclosure "t"

Marking: Ex ib IIC T4 Gb

Ex ib tb IIIC T85 °C Db

Approved for issue on behalf of the IECEx Certification Body:

Stefan Vierbücher

Position:

Technical Certifier

Signature:
(for printed version)

Date:
(for printed version)

1. This certificate and schedule may only be reproduced in full.

2. This certificate is not transferable and remains the property of the issuing body.

3. The Status and authenticity of this certificate may be verified by visiting www.iecex.com or use of this QR Code.

Certificate issued by:

TÜV SÜD Product Service GmbH

Ridlerstr. 65

D-80339 Munich

Germany



Product Service





IECEx Certificate of Conformity

Certificate No.: **IECEx TPS 23.0039X**

Page 2 of 3

Date of issue: 2024-10-02

Issue No: 0

Manufacturer: **Timm Technology GmbH**
Senefelder-Ring 45
Reinbek 21465
Germany

Manufacturing
locations:

This certificate is issued as verification that a sample(s), representative of production, was assessed and tested and found to comply with the IEC Standard list below and that the manufacturer's quality system, relating to the Ex products covered by this certificate, was assessed and found to comply with the IECEx Quality system requirements. This certificate is granted subject to the conditions as set out in IECEx Scheme Rules, IECEx 02 and Operational Documents as amended

STANDARDS :

The equipment and any acceptable variations to it specified in the schedule of this certificate and the identified documents, was found to comply with the following standards

[IEC 60079-0:2017](#) Explosive atmospheres - Part 0: Equipment - General requirements
Edition:7.0

[IEC 60079-11:2023](#) Explosive atmospheres - Part 11: Equipment protection by intrinsic safety "i"
Edition:7.0

[IEC 60079-31:2022](#) Explosive atmospheres – Part 31: Equipment dust ignition protection by enclosure "t"
Edition:3.0

This Certificate **does not** indicate compliance with safety and performance requirements other than those expressly included in the Standards listed above.

TEST & ASSESSMENT REPORTS:

A sample(s) of the equipment listed has successfully met the examination and test requirements as recorded in:

Test Report:

[DE/TPS/ExTR23.0052/00](#)

Quality Assessment Report:

[DE/TUN/QAR15.0008/08](#)





IECEx Certificate of Conformity

Certificate No.: **IECEx TPS 23.0039X**

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Date of issue: 2024-10-02

Issue No: 0

EQUIPMENT:

Equipment and systems covered by this Certificate are as follows:

The electrostatic discharge monitoring devices of type TIMM BITE Smart LED and TIMM BITE Smart LED LT are used to monitor the electrostatic earthing of conductive containers or system parts. They are intended to be permanently installed in an earthing cable or via plug connectors. On one side the object to be earthed is connected, on the other side a defined earthing point (e.g. earthing rail). Contact can be made via earthing clamps or fixed installation. The TIMM BITE Smart LED and TIMM BITE Smart LED LT continuously measure the electrical resistance in the external earthing and measuring circuit. If the resistance is below 10 Ω the electrostatic discharge monitoring devices indicate this by a flashing green LED. If the resistance is greater than 10 Ω , they indicate this by a flashing red LED.

The TIMM BITE Smart LED and TIMM BITE Smart LED LT are intended to be installed in potentially explosive atmospheres of Zones 1 and 21, EPLs Gb and Db. They are powered by a replaceable primary cell.

The two types TIMM BITE Smart LED and TIMM BITE Smart LED LT differ in terms of their ambient temperature range:

TIMM BITE Smart LED : $-25\text{ }^{\circ}\text{C} \leq T_{\text{amb}} \leq +60\text{ }^{\circ}\text{C}$

TIMM BITE Smart LED LT : $-40\text{ }^{\circ}\text{C} \leq T_{\text{amb}} \leq +60\text{ }^{\circ}\text{C}$

The ambient temperature range is marked on the type plate.

Electrical rating:

$U_0 = U_m = 3.9\text{ V}$

$I_0 = 26.3\text{ mA}$

$R_0 = 148\text{ }\Omega$

$P_0 = 25.6\text{ mW}$ (linear source)

$C_0 = 100\text{ }\mu\text{F}$ $C_1 = 4.43\text{ }\mu\text{F}$

$L_0 = 90\text{ mH}$ $L_1 = 0\text{ mH}$

SPECIFIC CONDITIONS OF USE: YES as shown below:

Only primary cells of manufacturer SAFT, type LS17500 may be used.

The apparatus may not be opened when an explosive atmosphere is present.

Only cable glands that are specified in the manufacturer's user instructions and that are conforming to the requirements of IEC 60079-0 may be used with the apparatus.



11. Revision History of This Operating Instructions

The following table shows the revision history of this document:

Version	Date	Status / Changes
1.0 EN	14.02.2025	-