

Earthing Pro TK Static Earthing System

● General

Earthing Pro TK is an electrostatic dissipation and monitoring device specifically designed for the loading and unloading of tank trucks.

The device features tank truck detection functionality, completely eliminating the hidden danger of 'false grounding,' thereby providing multi-layered protection during the loading and unloading .



Principle of Operation

Earthing Pro TK ensures electrostatic safety through a three-step verification process.

Step 1: The system continuously monitors whether both grounding cables are properly connected to earth. An alarm is triggered if either cable fails to establish a valid ground connection.

Step 2: When the user removes the clamp and attaches it to the vehicle body, the device detects the capacitance between the vehicle and the earth to confirm correct vehicle attachment. Notably, if the grounding cable is not securely connected to earth, the vehicle identification will fail, providing an additional verification of the grounding status.

Step 3: Upon successful completion of the first two steps, Earthing Pro TK continuously monitors the entire loop resistance (including the connection between the clamp teeth and the vehicle body, as



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well as the vehicle body and the earth). If the loop resistance exceeds 10 Ω , the device triggers an immediate alarm and outputs an interlock signal to prohibit operations.

The Earthing Pro TK static grounding system continuously monitors the loop resistance between the grounded object and the designated grounding point. This function is field-proven and adheres to industry standards, complying with the recommendations for bonding and grounding found in IEC TS 60079-32-1, NFPA 77, and API RP 2003.

● **Performance Features:**

1. **Highly Visible Audio-Visual Alarms**

Under normal operating conditions (grounded), the ring indicator on the controller and the status lights on the junction box remain a steady green, clearly indicating that the object requiring electrostatic protection is safely grounded. If the system is in standby mode or detects a grounding loop resistance exceeding 10 Ω , the lights switch to a steady red, and the buzzer on the junction box activates to sound an alarm.

2. **Real-Time Ground Loop Monitoring**

The system continuously monitors the resistance of the grounding loop, displaying the real-time value directly on the LED screen for full visibility.

3. **Intuitive Human-Machine Interface (HMI)**

The system features a user-friendly interface with graphical step-by-step instructions, guiding operators through the correct usage procedures and ensuring ease of operation, even for first-time users.

4. **Vehicle Detection**

After the grounding clamp is connected to the tanker, the device verifies via software whether the clamp is attached to a genuine vehicle body, thereby completely eliminating the risk of false connections.

5. **Interlock Signal Output**

The controller provides up to three interlock outputs, configurable as either Normally Open (NO) or Normally Closed (NC) to match the input logic of various PLCs/DCS. This flexibility simplifies system integration and retrofit projects.

6. **Flexible Power and Signal Input**

Supporting a wide input voltage range of 85–250 VAC or 24–48 VDC, the system offers flexible power options to accommodate diverse field requirements.

7. **Reliable Grounding Clamps**

The clamp features a serrated jaw design that penetrates paint and rust layers, ensuring reliable contact with the base metal and significantly reducing the risk of false "permit" signals.




8. Clamp Holster Function


The junction box is equipped with a dedicated holster point. After use, the grounding clamp must be returned to this holster; otherwise, the junction box will trigger an audio-visual alarm. This feature provides a secondary layer of safety protection.

- **Technical Specifications:**

Controller

Power Supply	85~250VAC/24~48VDC	
Current	<90mA	
Monitoring Resistance	≤10 Ω (Normal State)	
Operating Temperature	-40℃~60℃	
Output Signal	Passive Digital Switch	
Relay Contact Rating	5A 30VDC/10A 250VDC	
Protection Rating	IP66	
Electrical Connection	7-M20x1.5	
Material	Cast Aluminum (Copper-free)	
Display	LED	
Weight	5.0kg	


Junction Box


Material	Aluminum Alloy	
Electrical Connection	2-M20*1.5	
Weight	1.8kg	



Grounding Clamp

Clamp	High-strength alloy contacts at both poles
Clamp Body	SS 304

Option 1: SC-08	Body: 304 stainless steel	
Weight: 0.38 kg	Paint-piercing pins: 3 × tungsten carbide	
Max. Opening: 26 mm	Dimensions (L × W × H): 205 × 100 × 43 mm	

Option 2: SC-10	Body: 304 stainless steel	
Weight: 0.32 kg	Paint-piercing pins: 3 × tungsten carbide	
Max. Opening: 20 mm	Dimensions (L × W × H): 170 × 82 × 38 mm	

Spiral Cable

Jacket	Blue Polyether TPU	
Conductor	2 x 1.5 mm ² Copper	
Length	5m,7m,10m, 13m ,15m (Custom lengths available upon request)	

Certification

ATEX



II 2(1) G Ex db ia [ia Ga] IIC T6 Gb
II 2(1) D Ex ia tb [ia Ga] IIIC T80°C Db

IECEX



Ex db ia [ia Ga] IIC T6 Gb
Ex ia tb [ia Ga] IIIC T80°C Db

● Installation Kit

This component is required for equipment installation; the user needs to select one of the two types of components when placing an order.



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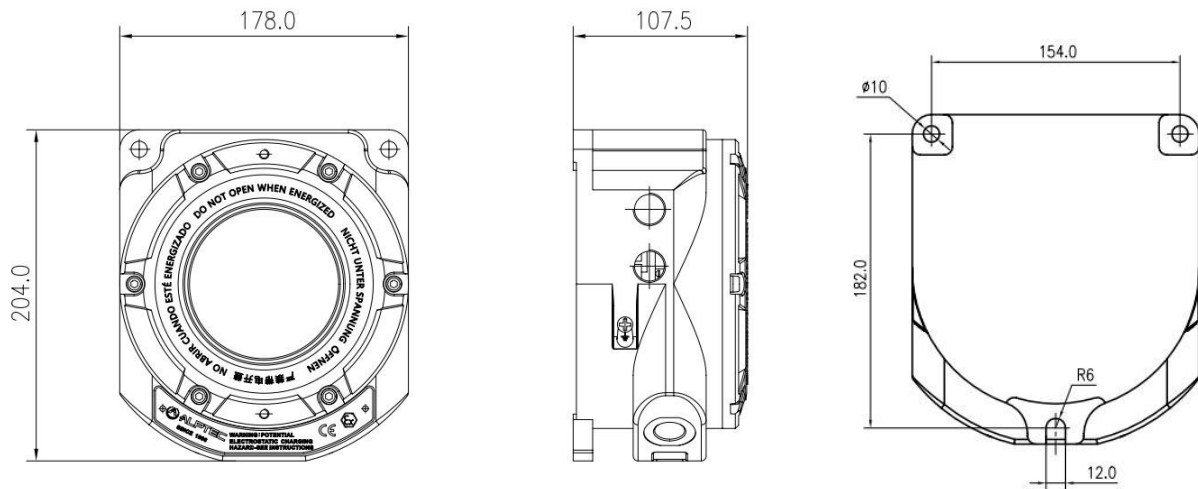
Kit 1

Explosion-Proof Cable Gland	Explosion-proof cable glands for non-armoured cables 7.5 mm - 12 mm Ø (x2)	
	Explosion-proof cable glands for non-armoured cables 8.7 mm - 14 mm Ø (x2).	
Grounding Wire	2x1.5 mm ² Conductor, 3 m Length	
Ex Seal Connector	4-M20*1.5;SS304	

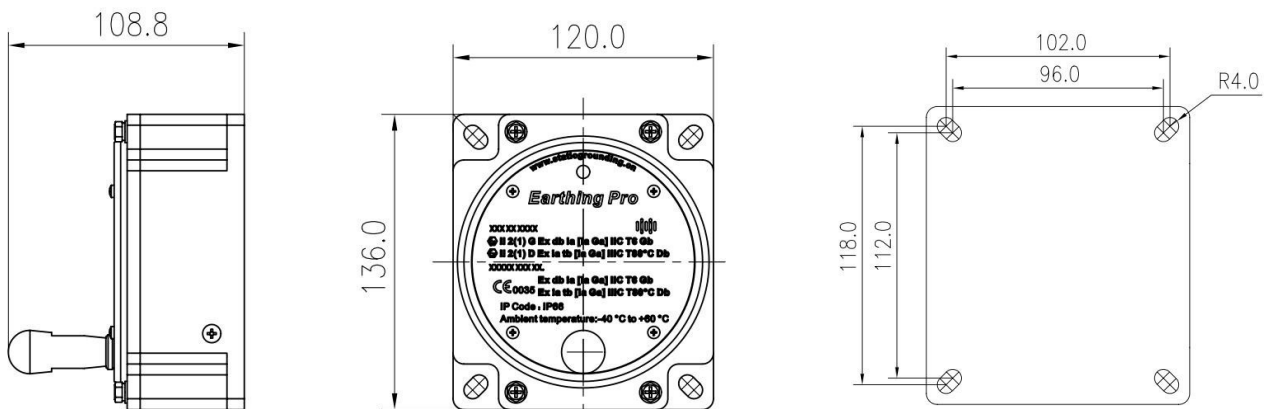
Kit 2

Explosion-Proof Cable Gland	Explosion-proof cable glands for non-armoured cables 7.5 mm - 12 mm Ø (x2)	
	Explosion-proof cable glands for armoured cables 9.5 mm - 16 mm Ø (x2).	
Grounding Wire	2x1.5 mm ² Conductor, 3 m Length	
Ex Seal Connector	4-M20*1.5;SS304	

Controller Dimensions



Junction Box Dimensions



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