

# MARINE GROUNDING SYSTEM SEK-3

## BEST PRACTICE BY MONITORING OF COMPENSATION CURRENT

Loading and unloading of **oil and chemical tankers** with petroleum products and inflammable liquids can create a hazardous environment. Due to the **potential difference** between tanker and pier (among others, by galvanic processes), sparking can occur at the connecting points of loading hoses, loading arms or other conductive equipment. To reduce this risk of energy stored in inductances, an **effective equipotential bonding** should be considered as **additional safety measure**.

## FUNCTIONAL PRINCIPLE

SEK-3 establishes a monitored equipotential bonding of **very low resistance between ship and pier** which **counteracts** the physical effect of **electrical potential difference**. This explosion protection measure prevents uncontrolled sparking when handling conductive elements at the terminal. In addition, the SEK-3 **signals unsafe situations** (such as over-voltage or over-current caused by active sources) by flashing LEDs and switching off the corresponding control outputs.

## APPLICATION AREAS

SEK-3 is **installed at piers** for sea tankers and inland vessels. The clamp with up to 30 m cable length has to be attached at a flat metallic attachment point on the ship with good electrical connection to the ship hull. The whole system is approved for **hazardous areas of zone 1** and gas group IIB according to the European Explosion Prevention Directive 2014/34/EU (**ATEX**) and the international standard **IECEx** as well as designed in accordance to **best practice recommendations**.

## PRODUCT BENEFITS

- **Very low-ohmic** measure line, specifically for maritime application
- 2 **clearly visible LEDs** on the device front
- **Easy check of a proper grounding connection** due to additional status LEDs at the grounding clamp
- Easy-to-understand **error diagnosis system** inside the housing
- **Opening the housing** under voltage is permissible - thanks to intelligent explosion protection (IEPC)



**HIGHEST LEVEL OF SAFETY**  
in hazardous areas

**LEADING TECHNOLOGY**  
in monitoring, diagnostics, and  
configuration

**EASY TO OPERATE**  
by ability to open housing in hazardous areas





## TECHNICAL SPECIFICATIONS

### Type of protection:

according to ATEX 2014/34/EU:

⊕ II 2 G - Ex eb ib q [ib] IIB T4 Gb (SEK-3)

⊕ II 2 G - Ex eb ib IIB T4 Gb (Clamp SKS-4A)

### Power supply:

110, 120, 220, 230 V ± 10 %, 50-60 Hz, approx. 15 VA

### Control outputs:

2 relay contacts

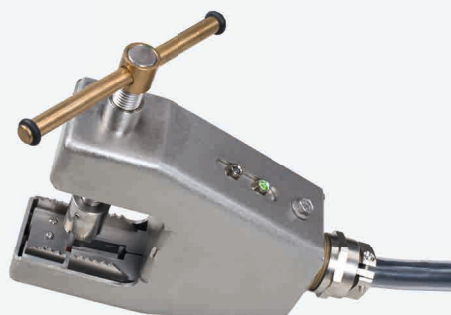
2 change-over contacts | 2 NAMUR-outputs

**Operating temperature:** - 40 °C up to + 60 °C

**Approvals:** ATEX, IECEx

## ACCESSORIES\*

### MARINE GROUNDING CLAMP WITH CABLE | up to 30 m



### OTHER ACCESSORIES



Cable holder



Clamp holder

\*For further information and additional accessories, visit us at [www.timm-technology.de](http://www.timm-technology.de) or contact us in person.



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