



The Future of Safety is Here



Earth-Line

Static Discharge and Earthing System





EARTH-LINE

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The Castell Earth-Line product range is an Electrostatic Discharge Safety System designed to prevent the risk of explosions when handling flammable liquids, solids, gases, vapours or powders by eliminating the source of ignition i.e. a spark caused by the build up of a static charge.

The Castell Earth-Line is not restricted for use with tanker loading and unloading systems. Earth-Line can be configured to provide a safety protection and accident prevention system in any application where there is a risk of static discharge in a potentially explosive environment.

These conditions are possible in a wide range of industries, including:

- Chemical
- Pharmaceutical
- Oil
- Gas
- Paint
- Coal
- Metal Powder Processing
- Food
- Animal feeds
- Woodworking

Specific applications include:

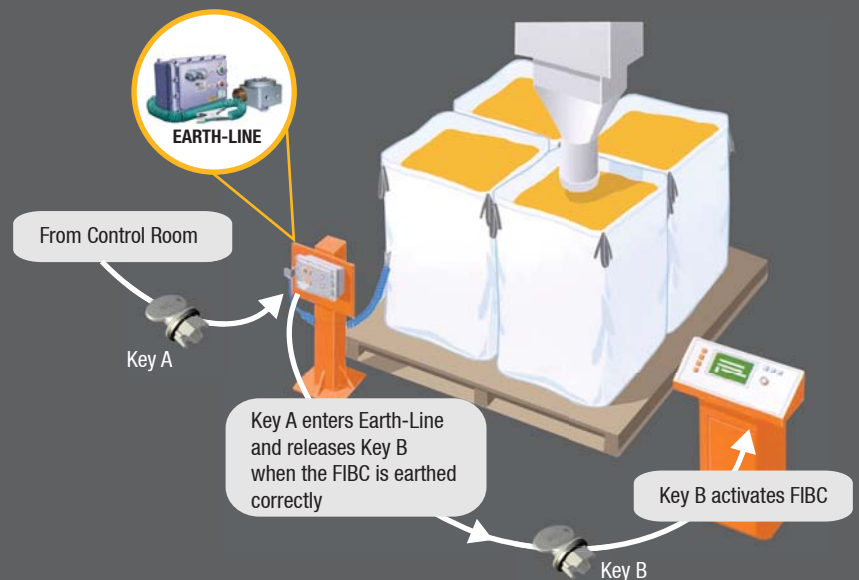
- Road and rail tankers
- Portable tanks
- Drums
- FIBC's (Flexible Intermediate Bulk Containers)

POWDERS HANDLING

The use of Flexible Intermediate Bulk Containers (FIBC's) are increasingly used for the transport and storage of powdered, flaked and granulated products. An electrostatic charge will accumulate during the filling and discharge of FIBC's. Operating personnel can also be at risk of receiving a potentially dangerous physiological electric shock, from the accumulated charge on the FIBC.

Earth-Line will ensure the FIBC or portable storage vessel is earthed correctly.

The system is designed to release a coded key which will enable the product transfer process. This will only happen when the system detects an effective earth connection within a specified range.



TANKER LOADING



From Control Room

SGL locks out trailer brakes.
Once applied, Key A releases.

Key A

Key A activates the Earth-Line,
releasing Key B.

Key C releases loading hose
to be connected to the tanker.

The Earth-Line is designed to ensure operating personnel follow a pre-determined safe sequence of actions to ensure chemical tankers, storage vessels, and vehicles being refuelled are correctly earthed before the handling of potentially explosive materials or substances can proceed. This is at both rail and road tanker loading stations. If the resistance to earth exceeds a pre-set limit, Earth-Line will trigger an alarm sequence and can automatically shut down the loading/unloading operation.

The Earth-Line will only enable the product transfer process when the system detects the presence of a tanker and when the connection to the earth is <10 ohms.

The function of this interlock system is to:

- Prevent connection of loading hose to tanker until Earth-Line is connected and operational.
- Prevent tanker from leaving loading dock while the loading hose is connected to the tanker.
- Ensure the clamp is connected to the tanker, not another metal object.
- Abort loading operation if earth clamp becomes disconnected.

KEY BENEFITS OF EARTH-LINE

- Ensures effective connection to earth to prevent static accumulation.
- The connection to earth is made within the enclosure, enabling an accumulated charge to safely dissipate to earth.
- The operating equipment (pumps/ valves/ alarms) are interlocked to the static discharge control unit to:
 - Prevent the operating process from commencing until the earth clamp is attached.
 - Stop the operating process if the earth clamp is disconnected.
 - Provide visual and audible warning if the earth clamp is disconnected.
- The unit is self-diagnostic and will always fail-safe in the event of short or open circuit.
- Heavy duty, tungsten tipped clamp with chemical and abrasive resistant cable and EEXD IIB T5 enclosure for tough environments.
- Easy to install and simple to operate.
- Suitable for use with 220 - 240V / 110V AC power supplies.
- Manufactured in accordance with EN 50014 and EN 50018 explosion protection.



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21 Kenton Lands Road
Erlanger, KY 41018

p: 1.859.341.3075
f: 1.859.957.1577
toll free: 1.800.800.9422

www.castell.com

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