

Electric arcing.
Protection against damage.



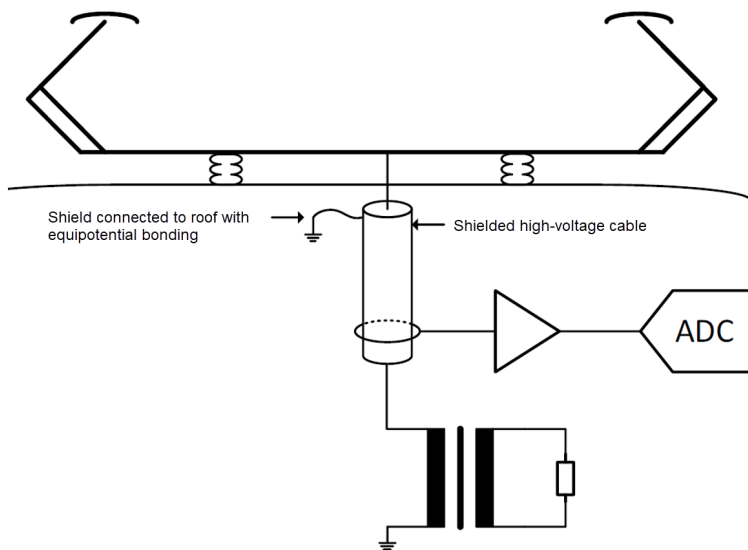
ArcoGard

Prelim info

ArcoGard is a system designed to protect against damage caused by arcing between the overhead contact line and the pantograph. The arc is detected without contact by a current sensor and the information is forwarded to the train control system.

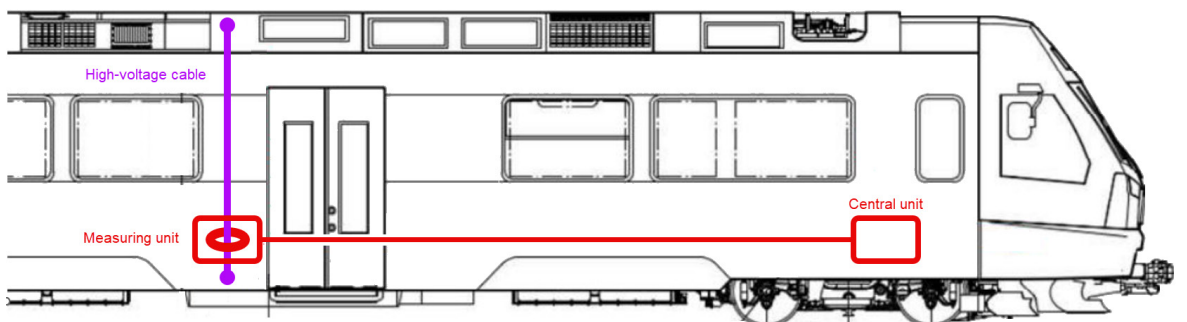
Measuring principle: high-frequency component in the operating current

In electrical systems, inherent inductances maintain the current flow. When a contact opens, the current can continue to flow in a hot gas, the electric arc. The high temperature of the gas generates a characteristic noise that ArcoGard detects..



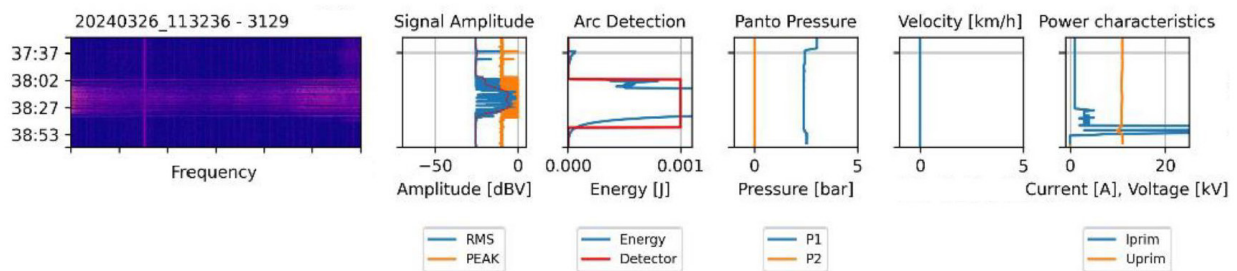
Installation in vehicles

The ArcoGard system obtains the raw signals using a contactless current sensor, which is installed near the high-voltage cable. There is no direct contact with the cable, which ensures that no dangerous voltages can enter the vehicle interior. The sensor signal is sent to a central unit, which evaluates the signal and forwards the event to the train control system via potential-free contacts.



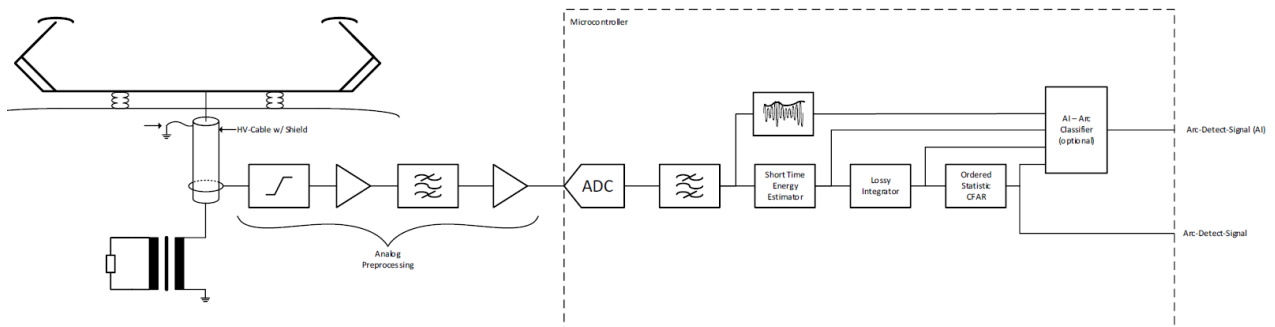
Analyzing

The measurement signal supplied by the sensor consists of signals originating from normal operation and superimposed interference signals from the power grid, the electronic control units and, finally, possible interference patterns caused by poor contacts or arcing. The evaluation algorithm separates the arc fault signal patterns and classifies them according to their energy content and hazard potential. Above a certain threshold value, an alarm is triggered, which is forwarded to the train control system via a potential-free contact.

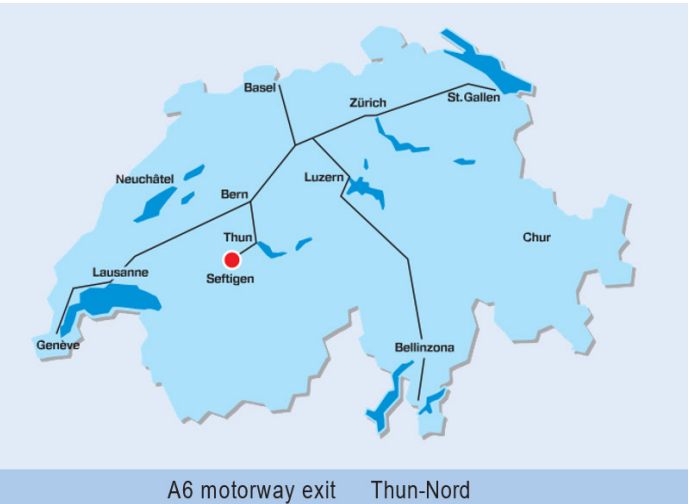


Signal processing concept

The signal flow begins at the contactless current sensor, where it is limited, filtered and amplified in a measuring unit. The signal is transmitted via a cable connection to a central unit, where it is digitally pre-processed and classified using various algorithms. A detected arc with hazard potential is reported via a potential-free contact.



Competence centre for industrial electronics.



History

- 1975 TELMA AG founded in Bern
- 1981 Relocation to Ittigen / Bern
- 1991 Moved into our own company building in Seftigen
- 2020 Moved to new company premises in Seftigen

Business

- Own products
- Customised electronics
- Contract manufacturing (EMS)

Core

A strong focus on customer needs is one of TELMA AG's greatest strengths. Thanks to short communication channels and a common language, our customers gain valuable time and can therefore get to market faster. With our own development and manufacturing facilities, we are a full-service provider for electronic control systems. By working with specialised partners, we can also solve complex tasks. With a high degree of automation and highly qualified employees, we are able to keep overall costs pleasingly low.

