



# Lightning Card System

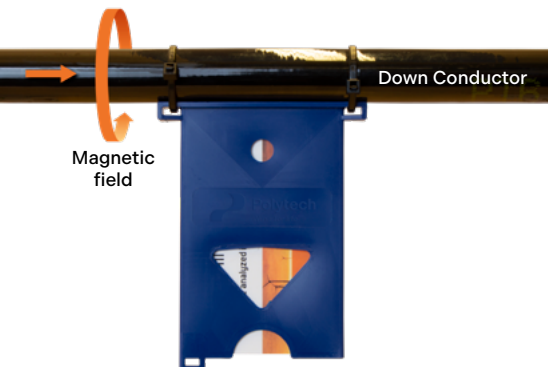
VITAL DATA FOR PREVENTATIVE MAINTENANCE



It is not an *if* - it is a *when*. Lightning will strike your turbines and structures. Our Lightning Card System provides vital data that you can use actively in your preventive maintenance work and as such, improve the uptime of your turbines.

## A safe, simple, and reliable system

Our Lightning Card System is the simplest lightning registration available on the market. We have put a lot of emphasis on safety, simplicity, and reliability. When lightning strikes and is conducted to earth, a magnetic field is created around the down conductor. The strength of the magnetic field is proportional to the peak of the lightning current and decreases with the distance to the conductor.



The Lightning Card is installed onto the down conductor and it will register the magnetic field generated by the lightning strike. From this registered magnetic field, we can conclude the peak amplitude of the lightning current.

## SUMMARY OF LIGHTNING CARD ADVANTAGES

- Avoid unnecessary and expensive inspections and downtime
- Event-based decision making on continued operation or need for immediate service
- Timely planning of maintenance
- Increased production
- Incident documentation based on facts



The compact Lightning Card Reader with easy-to-use USB interface.

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## The system consists of three components

**1 Lightning Card** The card measures lightning current in the down conductor by registering and measuring the magnetic field. The card then stores this measurement, which can only be overwritten by a higher lightning current. You can take the card out for reading and replace it either during a routine exchange or when you expect a lightning strike had occurred. If the card registered a lightning strike, you should not re-install the same card, but install a new one instead.

The Lightning Card can register lightning strikes in the range of 6 – 300kA with an accuracy better than 20kA. The card is operational in a temperature range of -30°C – 80°C, regardless of the humidity. It can also withstand submersion in water over longer periods without effecting the card measurement performance.

Each card has a unique serial number.

**2 Card Holder** The Card Holder needs to be installed onto a lightning down conductor with cable ties. The holder keeps the Lightning Card in a pre-defined position to the down conductor. The holder is not affected by lightning, so will only need replacement if it has been mechanically damaged.

**3 Lightning Card Reader** The Lightning Card Reader is converting the Lightning Card measurement to a lightning current value in Ampere [kA]. The software in the Lightning Card Reader stores the reading data in a database and automatically generates a PDF report that you can use to document the reading.

You can also manually type in user-defined data in the software, such as turbine/blade ID, location, or initials, which will also be included in the PDF report. You can download the software directly from our website.

The Card Reader is powered by 230V/110V/12Vdc, so you can easily use it through a service car or a normal socket in an office or in a wind turbine.

### Lightning Card Readout Service

Polytech offers to read out and analyze the measurements stored on your Lightning Cards. Please contact our Sales at [polytech.com/contact](https://polytech.com/contact) for further information.