



DEHN protects.

Analysis of lightning events – Berlin TV tower



Customer

DFMG Deutsche Funkturm
GmbH

Project overview

Industry

Radio infrastructure

Application

Analysis of lightning events at
the Berlin TV tower

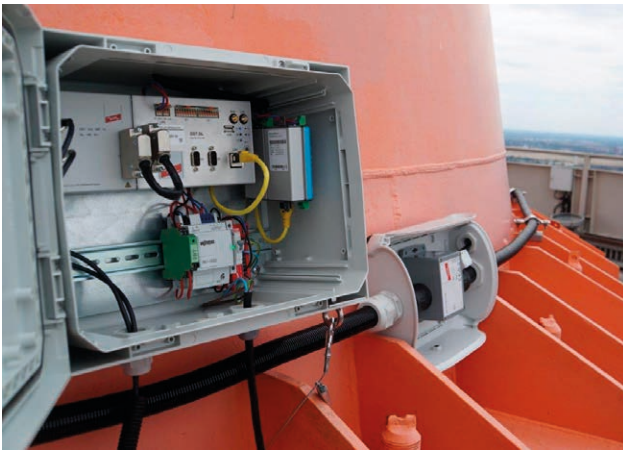
Hardware

DEHNdetect
DEHNrecord SD

DEHN protects.



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Deutsche Funkturm is a key player in developing infrastructure for German mobile network operators, broadcasters, operators of radio relays, and the radio networks of authorities and other institutions. The company was founded in 2002 and is operating around 33,400 radio sites. One of these is the Berlin TV tower which at 368 meters is the highest building in Germany and the fourth tallest TV tower in Europe.

Challenge

When planning the tower back in the 1960s, a good basis was created for lightning protection. The earth-termination system with potential control, the use of metal components of the tower structure as natural down conductors and the air-termination systems at the top of the tower all ensure the safe discharge of lightning currents. The Berlin TV tower is the „highest lightning rod in the capital“.

How often does lightning strike? How high are the lightning currents flowing there and how are they distributed in the earth-termination system? This information is important to the operator.

Solution

With DEHNdetect and DEHNrecord SD, DEHN can provide the site operator with important information when lightning strikes.

To this end, the DEHNdetect lightning current measuring system was installed at a height of 260 meters on the tower where a 22.5-metre-long measuring coil measures all lightning currents entering via the metal spire. Various parameters are then recorded and evaluated during a lightning event. The user-friendly interface of the DEHNcloud, in which the data is documented, enables the customer to draw all necessary conclusions about the type of lightning event and its possible consequences for the building.



Four DEHNrecord SD were also installed in the tower foundation. In addition to various parameters, this smart power quality measuring system can also measure and analyse lightning pulses on conductors. The compact measuring transformers record the partial lightning currents to the four earth rods of the TV tower's earth-termination system.

Benefits of the DEHN solution

With the DEHNdetect and DEHNrecord SD lightning measuring systems, DEHN provides Deutsche Funkturm GmbH with a service, namely detecting, measuring and analysing any lightning current entering the building.

Advantages:

- keep a watchful eye on the parameters of a lightning event with DEHNdetect and DEHNrecord SD
- make faster and easier decisions on repair or maintenance work based on detailed data
- data management in the cloud
- use DEHNrecord SD to keep an eye on other power quality parameters alongside lightning currents
- remain flexible in the future with the option of connecting to different monitoring systems