



# Monitoring Data Centers

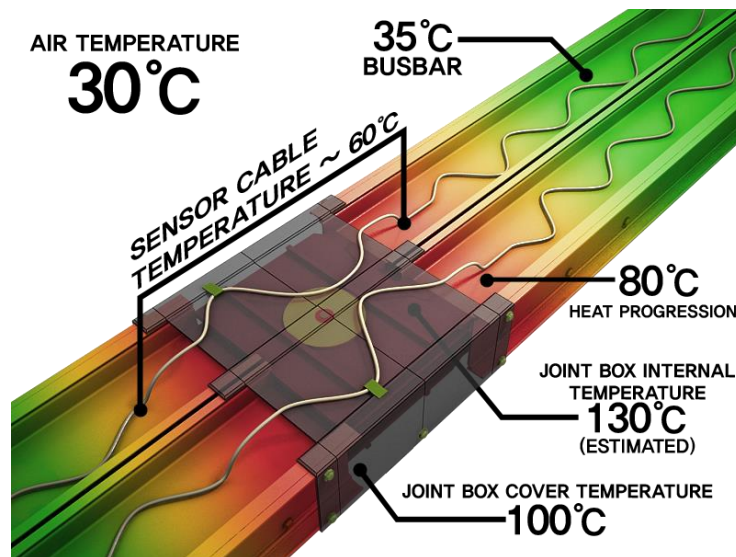
## Power network and server room temperatures

### Introduction

A modern Distributed Temperature Sensing (DTS) solution is ideally suited to monitor data centers. First, data centers have significant power requirements to keep their servers running 24/7. A DTS solution can monitor the entire circuit in real time, from the transformers and generators to the bus ducts. Second, the temperature inside the data center itself needs to be maintained throughout the year, and hot spots need to be identified and addressed as soon as possible. Finally, ever-increasing data volumes and rising energy costs lead to environmentally-friendly solutions (“green” data centers).

### Areas of Application (1)

**Power infrastructure:** If a hot spot develops and goes unnoticed within the power circuit, especially within the bus duct, there is a high risk of asset damage, downtime, and personal injury. Loose plates lead to a potentially dangerous heat buildup over time. Such an event may also send a large surge of current through the line, causing additional damage. AP Sensing’s solution, including the asset visualization software, identifies the pre-defined alarm conditions in real time. Up to 256 zones can be defined over the length of the sensor fiber, each with the appropriate alarm criterion.



*Rugged sensor fiber detects the hot spot*

**Areas of Application (2): Temperature monitoring within the data center** In addition to the power circuit, Distributed Temperature Sensing is the ideal solution to monitor the temperature throughout the data center. Maintaining the correct temperature in all areas – along the server racks, in the aisles, and even below the floor or above the ceiling – is crucial to maintain operations. With the asset visualization software, locating hot spots and cold spots enables the data center to adjust the cooling system for maximum efficiency.

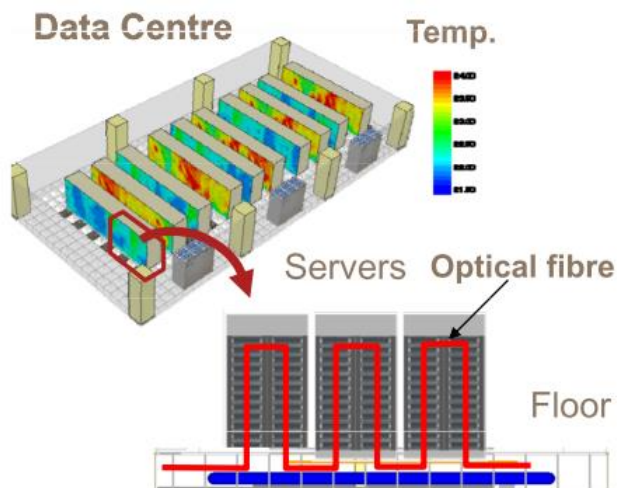


*Passive sensor cable detects hot and cold spots on the racks, in the aisles and below the floor*

### Areas of Application (3): Green server rooms

The amount of data that is transmitted worldwide continues to grow exponentially – this fact, together with rising energy costs, forces IT infrastructures (including data centers) to run their servers and cooling systems as efficiently and as environmentally-friendly as possible.

Yet even the newest servers and cooling systems in a green server room need to be intelligently monitored and adjusted over time, and a DTS solution is ideally suited for this. Together with AP Sensing's asset visualization software you can monitor in real time not only the servers but the cooling systems, any UPS inefficiencies, and the power distribution.



*DTS solution throughout a data center*