

## Automated Monitoring Solution SPTC

Thermography-based Solar Power Tower Monitoring System



### System Description

The Solar Power Tower Check (SPTC) uses infrared technology to monitor the temperature of complete absorbers. The temperature measurements are realised fully automated without the need of any manual interaction.

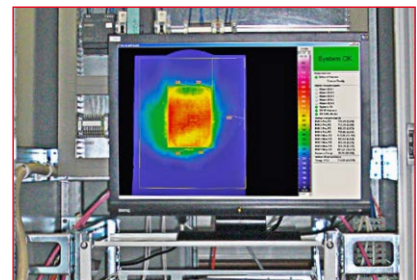
SPTC automatically raises warnings and alarms if an adjustable temperature threshold is exceeded and transfers signals to the main system for controlling the deflection of heliostats. This guarantees an optimised temperature distribution at the absorber and allows reducing maintenance costs and failures caused by overheating.

The temperature development for the complete absorber is tracked. The turnkey solution for monitoring comes with highly reliable components in a flexible structure and thus, it is easily adaptable to the different situations and operational modes in solar power tower plants.



### System Features

- Multi camera system for fully 100 % monitoring of receiver surface
- Reliable alarm release at defined pre alarm and main alarm limits
- Temperature trend recording and analysis
- Customised system alignment and adjustment
- Parameter setting, supervision, operation, display, analysis and playback functions with SPTC-Software
- Recall of all recorded data for comparison and optimisation
- Remote access from Master Control Center



Central control and evaluation unit

### Benefits of the System

- Automatic and complete absorber temperature monitoring on 24/7/365 basis
- HD cameras and optimised tele lenses guarantee long-term precise and reliable temperature measurements via long distance
- Reduction of maintenance costs and failures
- Flexible structure for customised adaption to your operational modes
- Continuous real-time measurement and temperature adjustment
- Specialised temperature measurement algorithm and software with interface to main operator system



Infrared camera in a protective housing

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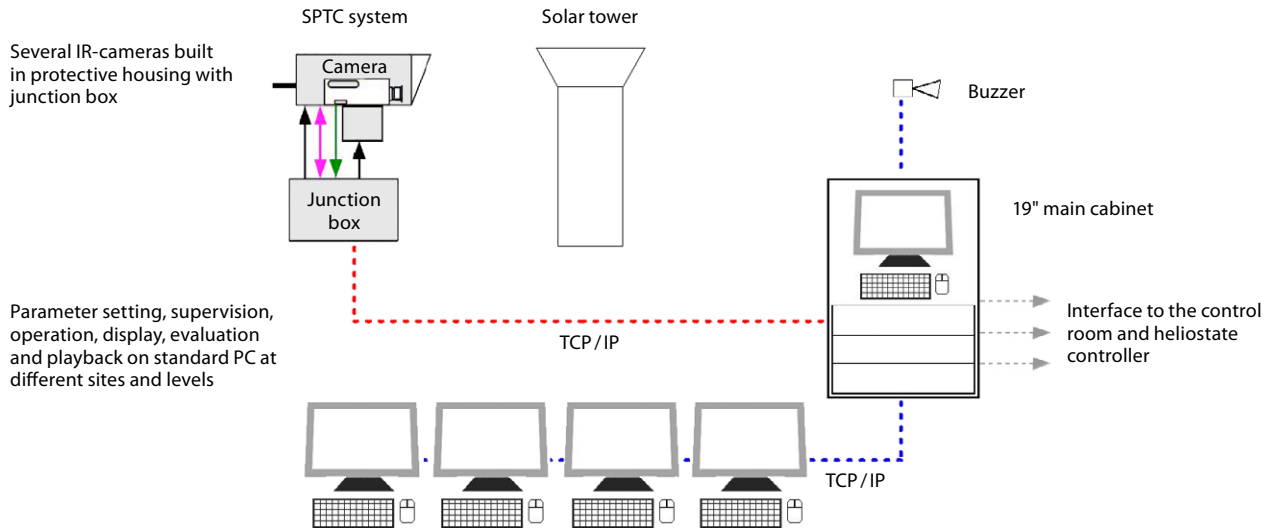
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### Thermography-based Solar Power Tower Monitoring System

#### System Structure

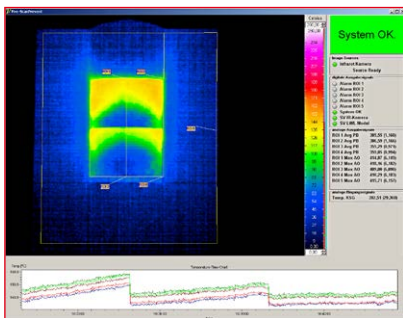


#### Construction / Design

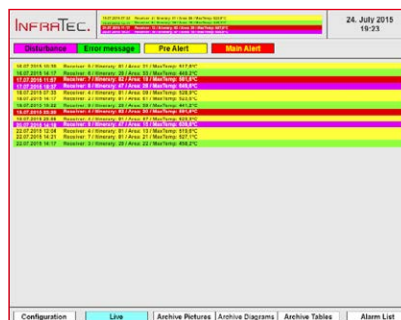
- Rugged 19"-industrial standard main cabinet
- Protective housing designed to withstand harsh environmental conditions
- HD cameras with highest resolution of (2,048 × 1,536) IR pixels
- Nearly maintenance-free, no wearing parts
- Decentralised installable components (IR-cameras, PC, alarm unit), fiber optic cable for interference-free data transmission
- TCP / IP based flexible structure
- Easy to use SPTC software allows flexible customisation



VarioCAM® HD with special telephoto lens 120 mm



Live view with measurement display and temperature-time-diagram



Occurrence display



Temperature-trend-analysis