optris
infrared thermometers

APPLICATION NOTE

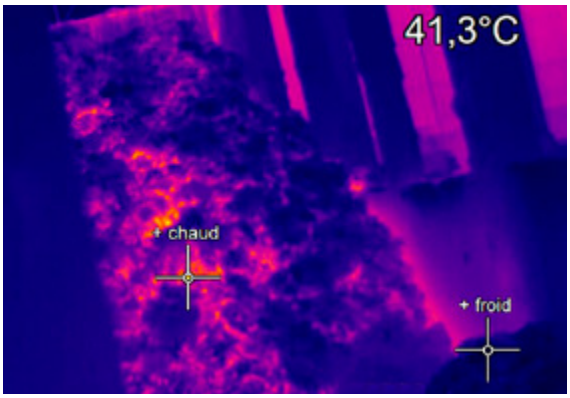
Use of infrared cameras in early fire detection

Preventive monitoring of a refuse bunker with an infrared camera end-to-end system

Almost 1 billion tonnes of waste is generated worldwide each year, which is then disposed of and recycled in many countries via a comprehensive system of waste recycling plants. Heat is often produced in the refuse bunkers, culminating in smouldering nests, which can ultimately cause devastating fires. An early fire detection system using infrared cameras can promtly detect and remove the hazard.

Delivery vehicles transport the waste to the recycling plants and tip the material into a refuse bunker. The bunkers have different storage capacities, for example, the plant in Bonn is 14,000 cubic metres holding roughly 7,000 tonnes of waste. Waste storage produces heat, often leading to the formation of smouldering nests. A gripper is used for the automated transport of the waste to the charging hopper, creating heat displacement and physical effects, which may cause a fire in the refuse bunker. As a result, not only is the plant decommissioned for a few hours, but costly cleanup operations or rehabilitation must be carried out as well.

Infrared cameras are able to measure temperature differences and absolute temperatures very precisely. The waste in the refuse bunker can be easily observed 24/7 by integrating the cameras and accessories. This thereby ensures a prompt response to potential hazards. When combined with other detection systems, e.g. traditional smoke detectors, sprinkler systems can be automatically deployed. The ultimate goal is to monitor the entire bunker surface using infrared cameras. The size of the bunker determines the number of cameras used.



Thermal image of mountains of waste in a French refuse bunker.

„Studies show that waste generation is on the rise worldwide. These days waste disposal has to be efficient and resource-friendly. To ensure that this is put into effect in waste incineration plants, we are on hand as a partner with our non-contact infrared measurement technology.“

Luc Lagorce
Sales Director Europe

Recommended soulutions for less than 8.000 Euros!

optris® PI 640

- Smallest infrared camera in its class
- Real-time infrared images (VGA resolution) at high speed
- Detection of minimal temperature differences
- Licence-free analysis software PI connect
- Detector with 640 x 480 pixels

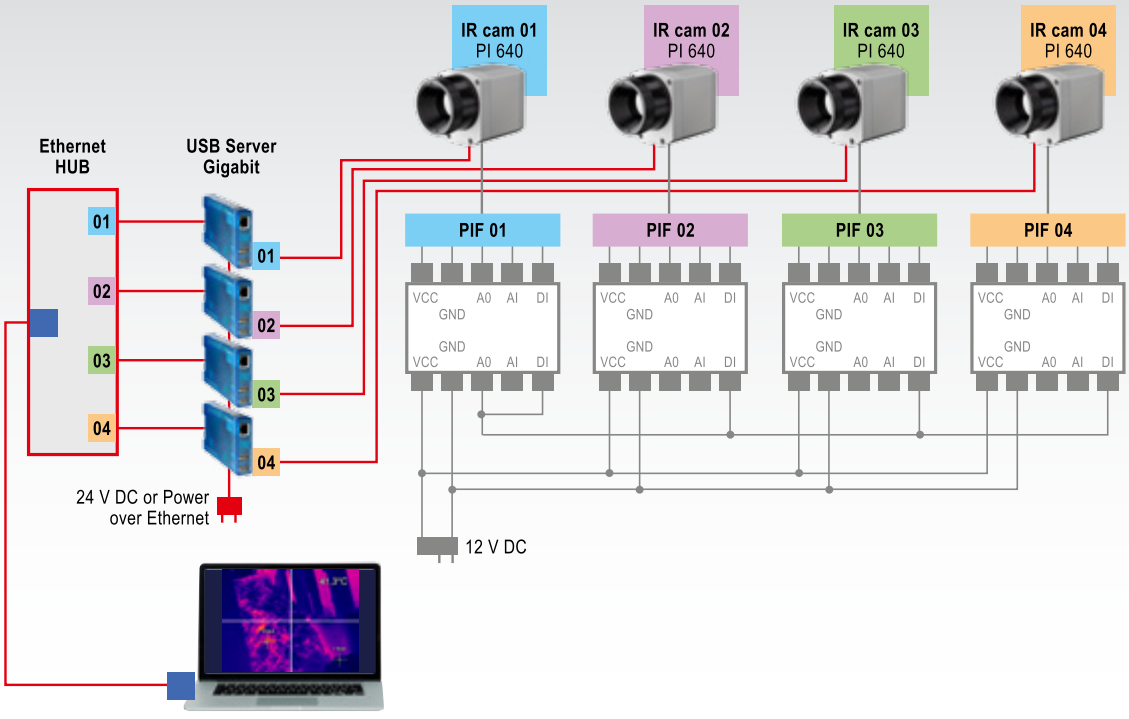
USB server Gigabit

- Adapter for the conversion of USB to Ethernet for Optris infrared cameras
- Bridging up of 100 m via Ethernet and up to 500 m via glass fibre cables between PC and camera

Industrial Process Interface

- Automated process control
- PI hardware with all cable connections and PI Connect software are permanently monitored during operation

Installation diagram for continual monitoring via the process interface



www.optris.com/temperature-monitoring-in-garbage-bunkers

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