

Application note

Fire surveillance system PYROVIEW/PYROSOFT WBFDS

The storage of waste materials in waste combustion plants or waste dumps as well as the storage of combustibles holds a high risk of a fire emergence. Due to chemical processes within the material or the insertion of glow material may spark a fire with high danger for people and environment. Proper facilities for early fire detection and fire fighting are needed.

The PYROVIEW/PYROSOFT WBFDS offers a suitable monitoring solution to detect thermal developments at the surface of the collected waste in such a way that fires can be prevented upfront and not only after their emergence. The uncontrolled production and emission of toxic air pollutions by burning waste can be forestalled efficiently. Hazards to people and environment are minimized.

Components of the system

- Uncooled IR-2D-camera PYROVIEW 380L or PYROVIEW 320L
 - Wavelength $8\ \mu\text{m}$ to $14\ \mu\text{m}$
 - 384×288 or 320×240 elements
 - Max. frame rate 50 Hz
 - IP 65 housing with air purge
 - Digital data transmission via fiber optics
- Pan-tilt head
 - Pan 350° , tilt $> 180^\circ$
 - IP 66 housing
 - Accuracy 0.2°

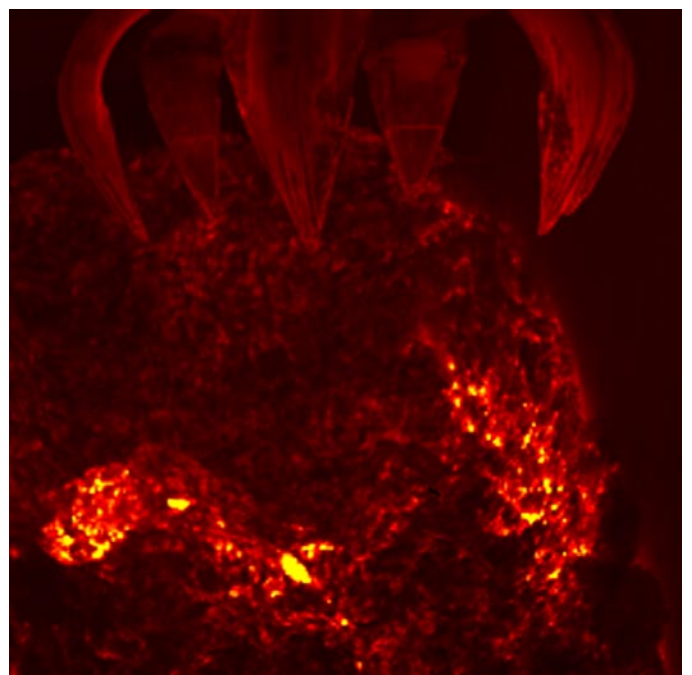
- 19"- Rack
 - 19"-industrial-PC with Windows® XP
 - I/O-system with digital inputs and outputs
 - KVM extender (optional)
 - UPS system for continuous power supply
- Monitor and control panel
- Software PYROSOFT WBFDS
- Reference source for online examination of the camera

Operating principle

The infrared cameras PYROVIEW 380L and 320L, based on an uncooled microbolometer detector FPA and manufactured in Germany, are used to detect thermographic images of bunker segments with a maximum frame rate of 50 Hz.

The complete waste bunker can be monitored with full geometrical resolution by one single camera using a remote-controlled pan-tilt head with 0.2° positioning accuracy. A complete scan of a typical waste bunker will need less than 2 minutes.

An intelligent IO-system WAGO-I/O750 is used for digital input and output and the control of the pan-tilt head which is connected via Ethernet with the industrial PC with the PYROSOFT WBFDS software. Uninterruptible power supply or a redundant switch may ensure continuous operation even in case of a power failure for up to 4 hours.



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A large area reference source will assure cyclic self test of the system as well as calculation of transmissivity losses due to dust or lens contamination.

Software PYROSOFT WBFDS

This special software implements image acquisition, control of all components, alarm detection and data storage. The graphical user interface displays all relevant data to the operator:

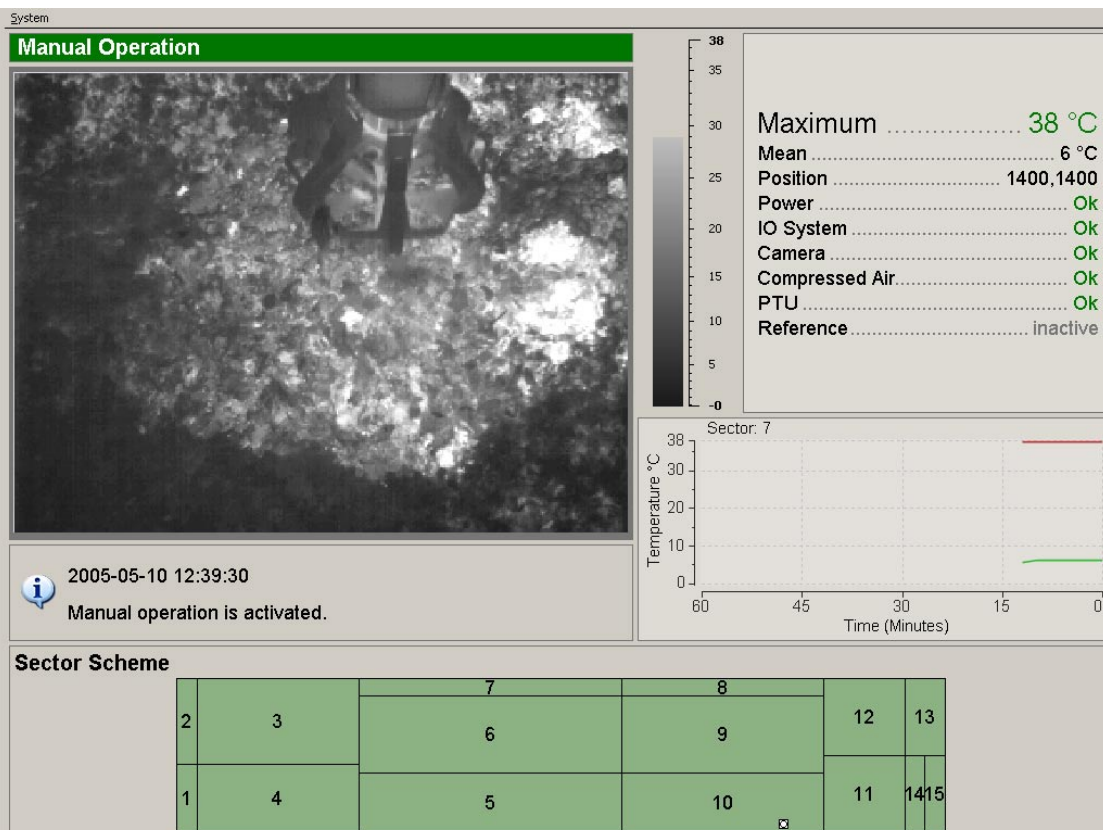
- Actual thermal image
- Maximum and mean temperature of the actual measured sector
- Trend display for mean and maximum temperature of each sector

- State information for camera and all components

In case of fire detection the system will alarm the operator on the monitor and with acoustic sound on the control panel. A circular image storage in combination with a permanent alarm image storage for up to one year will ensure the retrace of all critical events.

VdS approval

The complete system as well as the infrared cameras PYROVIEW 380L and 320L, respectively, are accepted for fire prevention systems by the German VdS (VdS-No. G 204106). DIAS Infrared GmbH is approved manufacturer of this cameras.



Technical details are subject to change without notice. January 2006.

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