FLUKE®

Process Instruments

TECHNICAL DATA

ES Thermal Imaging System

Quality Monitoring for Continuous Web Processes

The ES Thermal Imaging System allows users to automate inspections by detecting, measuring and classifying the thermal features and defects that can occur in continuous web processes.

In the core of each ES Thermal Imaging system is the MP Linescanner – which can measure a line of up to 1024 points by using a rotating mirror, which can scan a 90° field-of-view up to 300 times per second. This high scan rate enables the rapid detection of temperature discrepancies and hot spots. During continuous web processes, items are scanned to create a two-dimensional thermal image, or "thermogram," in real-time.

In addition to the MP Linescanner, each ES Thermal Imaging System features exclusive software that can define any number of sectors corresponding to the specified areas across the web. These sectors can be defined by name, fixed location and the desired process of temperature data within a sector (e.g., average, minimum or maximum). In sheet extrusion processes, for example, these sectors can be configured to provide temperatures that correspond with each die bolt. Additionally, the ES Thermal Imaging System continuously monitors the web process, allowing temperature data to be visualized as a line graph (profile) and thermal image.

By utilizing OLE for Process Control (OPC), the ES Thermal Imaging System can communicate with a variety of common process control systems. As a result, the system is more than a measurement tool and can be used as an integral part of your total process control system.

Supported Applications

Metals: Hot strip mills & continuous casting, painting & coating
Plastics: Sheet & cast film extrusion, laminating & converting
Glass: Tin bath exit & annealing lehrs (float glass), glass wool production
Paper: Coating & laminating, corrugated cardboard drying

Features

- Detailed web temperature profile based on 76,800 pixels per second
- Custom measurement sectors
- Define product-specific configurations (recipes)
- Play back stored files as a "movie"
- PC independent alarms
- Integrated OPC server for remote system control
- Analog or digital output modules
- On-board Ethernet TCP/IP communication
- Built-in laser sighting
- Multiple language support

Benefits

- **Detect thermal problems early**
- **Faster product changes and reduced setup time**
- **Automate quality monitoring for ISO 9000**
- **Improve profitability and product quality**
- **Reduce scrap**

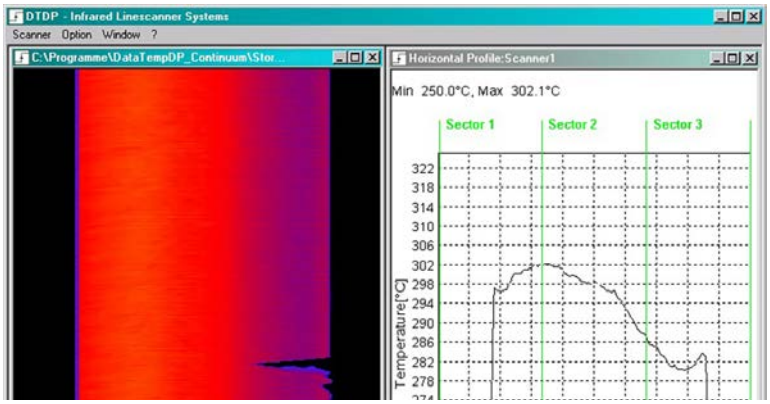
Specifications

MP models are available with a choice of temperature and spectral ranges.

Optical Resolution	up to 200:1 (90% energy)
Ambient Temp.	0 to 50 °C (32 to 122 °F), with internal water cooling 180 °C (356 °F)
Field of View	90°
Points per Line	up to 1024 pixels
Scan Rate	up to 300 Hz

Web Analysis with 76,800 Pixels per Second

The intuitive ES software displays each thermal image with overlaid customizable zones and results. The software features multiple alarm settings, with high alarms appearing red and low alarms appearing blue. Zone results can also be output to your PLC or SCADA system.



The ES system provides scroll views and temperature profiles for monitoring temperature distributions of moving webs

Generic Sectors Follow Your Web

In some applications, the web can move or can be divided into a number of bars (e.g., alternating adhesive-coated strips with non-adhesive strips on a carrier). To follow the web's movements, stationary standard sectors and fixed locations cannot be used. With "generic sectors," however, the ES System is able to utilize the MP Linescanner to generate dynamic temperature data, depending on the evaluated temperatures plates within each scan. By doing this, "generic sectors" are able to follow the web's position as it moves and permanently provide accurate analytics for the specified area.

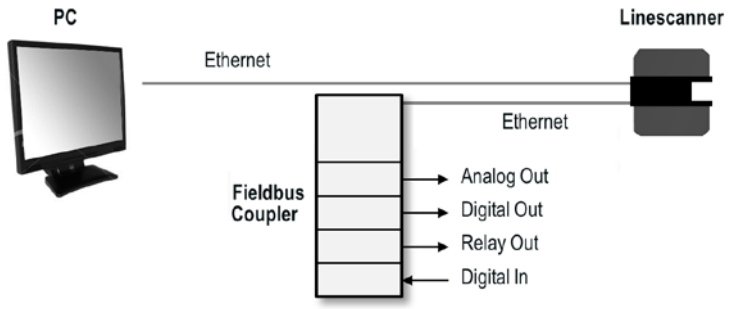
Scope of Delivery

- MP-SYS-ES System including:
  - System software
  - Industrial power supply
  - Optical data carrier (operator's manual, DataTemp DP software)

Accessories

- Adjustable mounting base (A-MP-RMB)
- Ethernet Fieldbus Coupler (A-IO-BASICKIT)
- Relay Output Module (A-IO-2R-NO)
- Analog Output Module (A-IO-2AOC-4)
- Digital Output Module (A-IO-16DO)

Easy Installation



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Worldwide Service
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