

TECHNICAL DATA

EC Thermal Imaging System

Quality Monitoring for Extrusion Processes

The EC Thermal Imaging System allows users to detect, measure and classify thermal defects in real-time for extrusion coating, co-extrusion and laminating processes.

In the core of each EC 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 extrusion processes, items are scanned to create a two-dimensional thermal image, or “thermogram,” in real-time.

In extrusion coating applications, for example, measuring the surface temperature of the melt curtain can provide crucial information about the available temperature distribution at the die exit. The EC Thermal Imaging System is a non-contact temperature measurement solution that scan cover the entire width of the polyethylene film and scan the melt curtain directly. For better alignment, each MP Linescanner is also equipped with a line laser.

By utilizing OLE for Process Control (OPC), the EC 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.

Features

- Detailed web temperature profile based on 76,800 pixels per second
- Define product-specific configurations (recipes)
- Automatically analyze “automatic sector” temperature distributions
- 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 “wavy” or “running” edges, gaps, and torn edges quickly and automatically
- Ensure proper web temperatures for strong film-to-substrate adhesion
- Automate quality monitoring for ISO 9000
- Improve profitability and product quality
- Reduce scrap

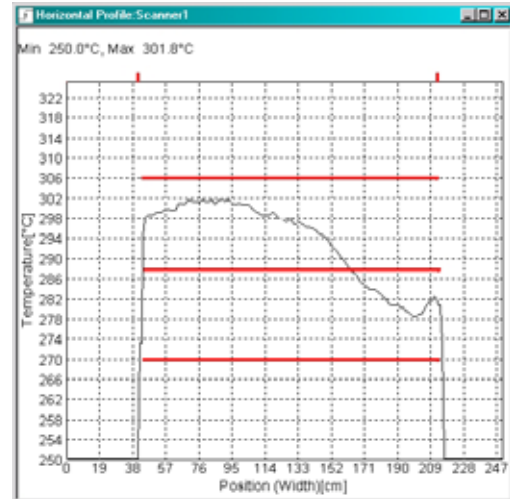
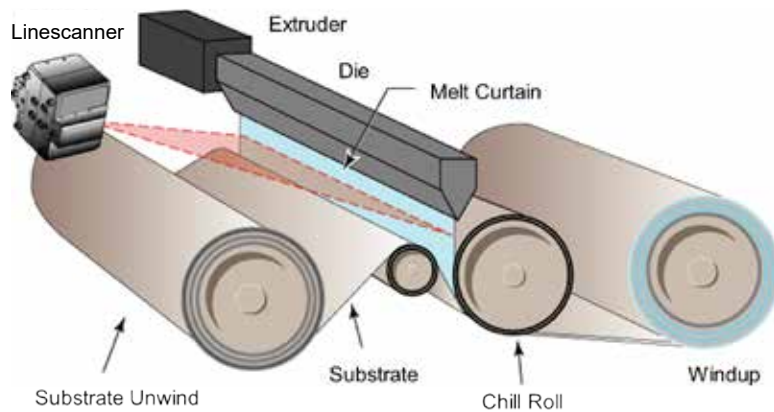
Specifications

Temperature Range	100 to 350 °C (212 to 662 °F)
System Accuracy	±3 °C (6 °F)
Repeatability	±1 °C (2 °F)
Optical Resolution	225:1 (50% 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	256 pixels @ 150 Hz 512 pixels @ 76 Hz 1024 pixels @ 36 Hz

Automatic Edge Detection

Unique to the EC System, the “automatic sector” feature continuously monitors the entirety of the melt curtain and provides automation edge detection. This feature also adapts to measuring plastic films of varying widths automatically. Any temperature gaps or unacceptable “waving” or “edge running” can also be detected automatically from one scanned line to the next.

If a fault or defect is found, an alarm is triggered for corrective action. An alarm module can also be installed to output a digital signal, which can be used to interface to other control systems or to mark defects directly on the coated substrate.



Profile for the melt curtain as analyzed by the “automatic sector”

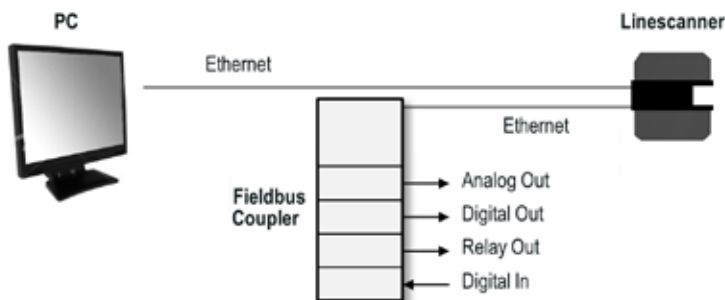
Scope of Delivery

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

Accessories

- 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

Fluke Process Instruments offers services, including repair and calibration. For more information, contact your local office.

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02/2021 EC System_DS_RevA