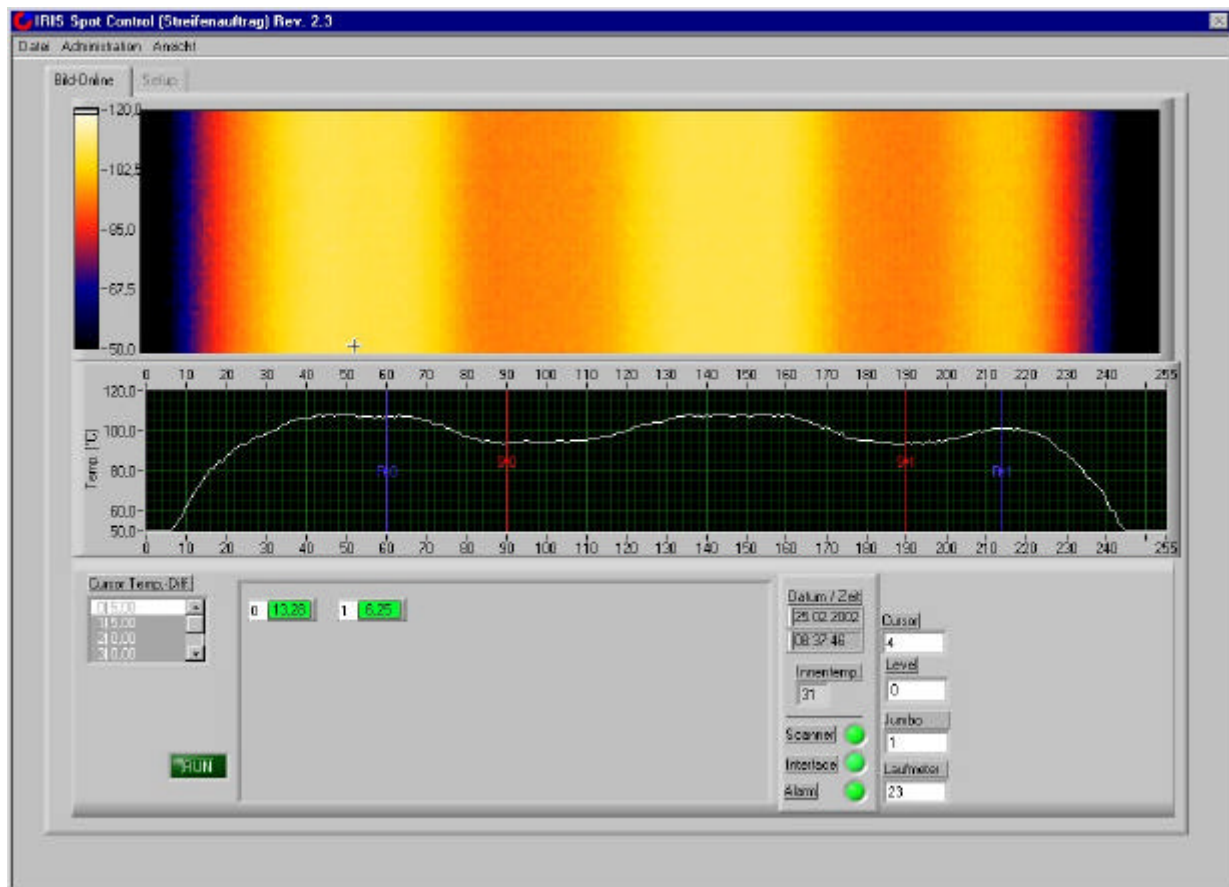


Basic System Description



IRIS Spot Control is designed to monitor and control all kinds of application procedures during fleece production. Where spray heads are used to coat or wet the fleece material in whole or in parts, **IRIS Spot Control** provides report and control data about the application result and the performance of the spray heads. It serves for the easy detection of faulty lots or malfunction of devices involved.

As a result, faulty output can easily be separated and damages of the machine's components can immediately be communicated to the production personnel with the aid of an alarm.

A Raytek MP50LT infrared scanner scans the temperature profile of the fleece at high speed just after it passed the application process and the dryer. Using intelligent filters for data reduction, the scanner device then communicates the data to a computer where it is checked based on an individual pattern, set up in the **IRIS Spot Control** software before.

The **IRIS Spot Control** software is a real time software. As the temperature level may change during production, the IRIS Spot Control uses dynamic references instead of absolute temperature values. This approach eliminates faults caused by changes of the dryers performance.

Velocity and meter measurement, the cutting of lots ("Jumbos"), alarms and watchdog signals are controlled by a separate interface unit. It serves for the synchronisation of the scanner with the process.

In the automatic mode the **IRIS Spot Control** display shows both the current temperature profile in form of a chart and the profile history in form of a scrolling image using an adjustable colour palette. It is also possible to maximise either of the windows if only one view is required.

The software set up is as user friendly. It requires the input of values for minimum temperature tolerances and cursor positions for both the monitored position and the associated reference. Right after entering the data the system can be started with all features immediately available.

The current system performance is displayed in an embedded window including signal lights for several system components and the spray heads.

The set up access is protected by passwords to guarantee that only skilled personnel alters the system settings.

Basic System Description

Stripe Pattern Application:

The system monitors up to **30 cursor positions**. Each monitored position [red cursor] is linked to a control reading at a reference position [blue cursor] and an individual temperature tolerance value. The difference between the cursor positions is widely independent from the overall temperature level (dynamic reference). An alarm is produced when the temperature difference measured is smaller than the set tolerance.

Example:

Monitored position: Pixel 90

Reference Reading: Pixel 60

Minimum Tolerance $T_{[Pix\ 90 - Pix\ 60]}$: 5° C

When $T_{[Pix\ 90]} - T_{[Pix\ 60]}$ is smaller than 5° ⇒ ALARM

Surface Coating:

The system monitors up to **30 cursor positions**. Each reading is compared to historical readings at the same position (moving average over an adjustable time interval). An alarm is produced when the temperature measured exceeds the moving average by any value bigger than the tolerance.

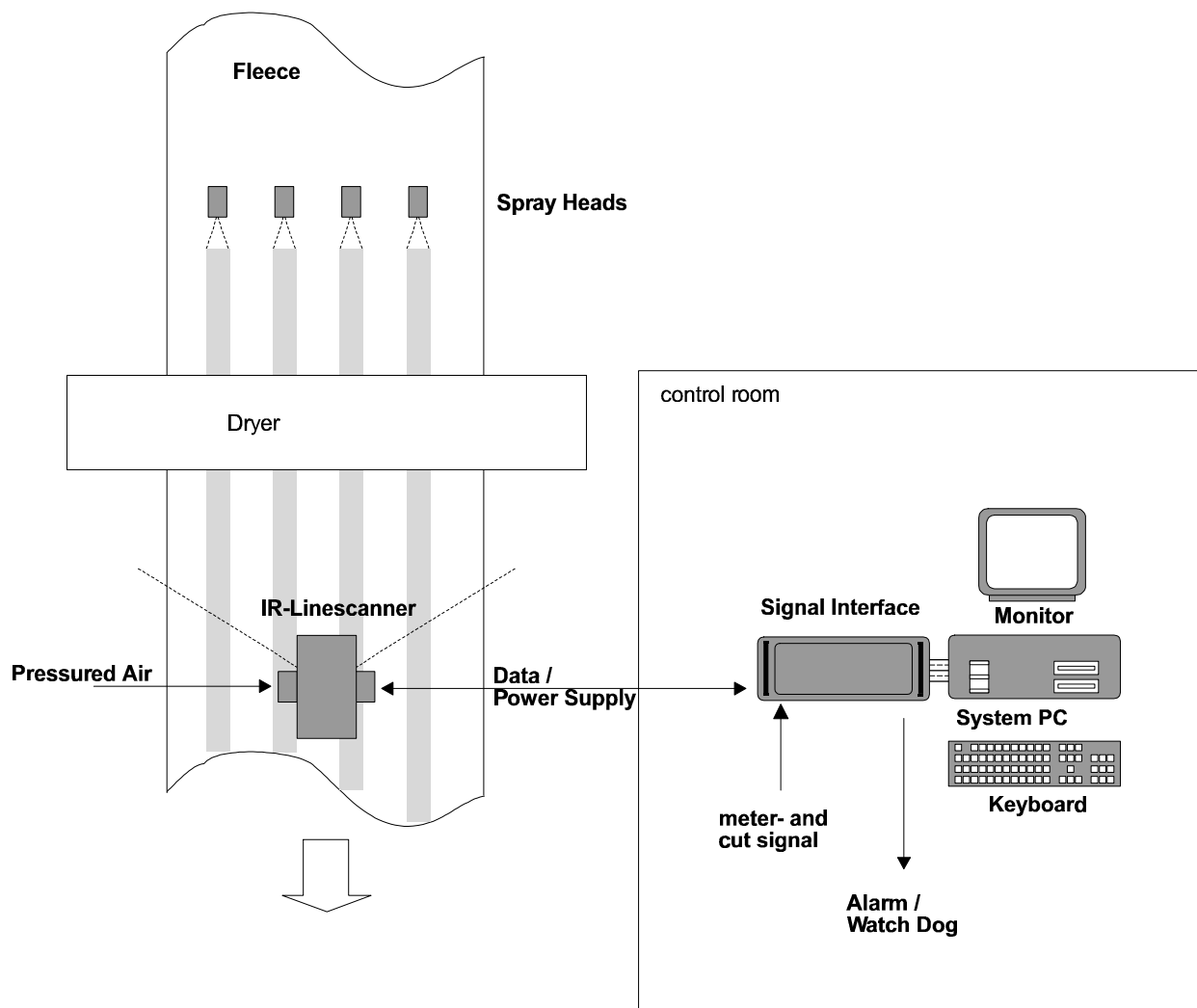
Example:

Monitored position: Pixel 90

Moving Average $_{[last\ 20\ sec.]}$: 60° C

Tolerance: 2° C

When $T_{[Pix\ 90]}$ is higher than 62°C (is smaller than 58°C) ⇒ ALARM



Basic System Description

IRIS Spot Control Components:	
Sensorhead:	RAYTEK MP50LT (Line Scanner)
Industrial PC:	Pentium IV, 1.4GHz, 256MB-RAM, 30GB HDD
Interface Unit:	IRIScan Digital I/O
Meter Measurement:	PNP-Initiator

Specifications:	
Max. Number of Cursor Positions	30
Modes	Stripe Pattern Application dynamic references (reference cursors)
	Whole Surface Coating/ Wetting dynamic references (spot history)
Inputs	Meter measurement Cut signal
Outputs	Process alarm (sprayheads) System alarm (components) System watchdog
Set Up	Password-protected (2 levels)
Reporting	Automated report filing for each lot ("Jumbo") textfile format
Temperature Range	20...350°C
Measurement Interval	About 1Hz
Optical Resolution	200:1
Repeatability	±1%
Measurements per line (edge-to-edge)	256