PLEVA
Sensors and Controls

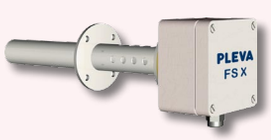
Heat Treatment Process

DRYING- AND HEATSETTING
LIQUOR APPLICATION

ECO-OPTIDRY®
CIMATIC

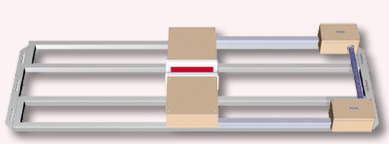
Fabric temperature sensors TDS

ECO-OPTIDRY Control Panel

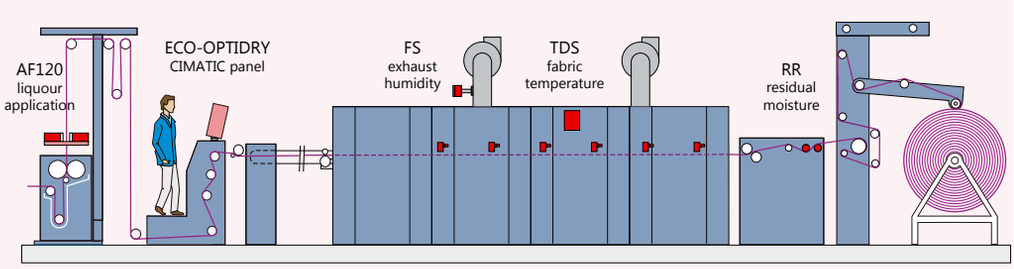


Air humidity sensor FSX

Residual moisture RR



Application moisture AF120



Fabric temperature

Air humidity

Residual moisture

Application moisture

PLEVA

ECO-OPTIDRY®
CIMATIC

ECO-OPTIDRY® PLUS

Control of heat treatment process at stenter and dryer

Type ECO-OPTIDRY CIMATIC

FEATURES OF PRODUCT

- Control of drying process
- Control of heatsetting / fixation time
- Exhaust air humidity control
- Energy consumption meter
- Integrated „Auto-Setting“ function
- Suitable for new and existing dryers

BENEFIT FOR CUSTOMER

- Optimised drying process
- Higher product quality
- High benefit by extremely energy saving
- Easy to use by „Auto-Setting“ function
- Increase of productivity
- Short payback time

Drying- and heat setting with liquor application control

The ECO-OPTIDRY PLUS control system is optimizing the process requirements on dryers in terms of drying- and fixation process as well to control liquor application at padder in front of the stenter.

The water based liquor application is measured at the padding unit by microwave measurement AF120 and accurately controls the pressure on the application padder.

The result is an uniform liquor distribution over the fabric length in combination with an optimized process on drying and fixation with highest possible saving on energy and costs.

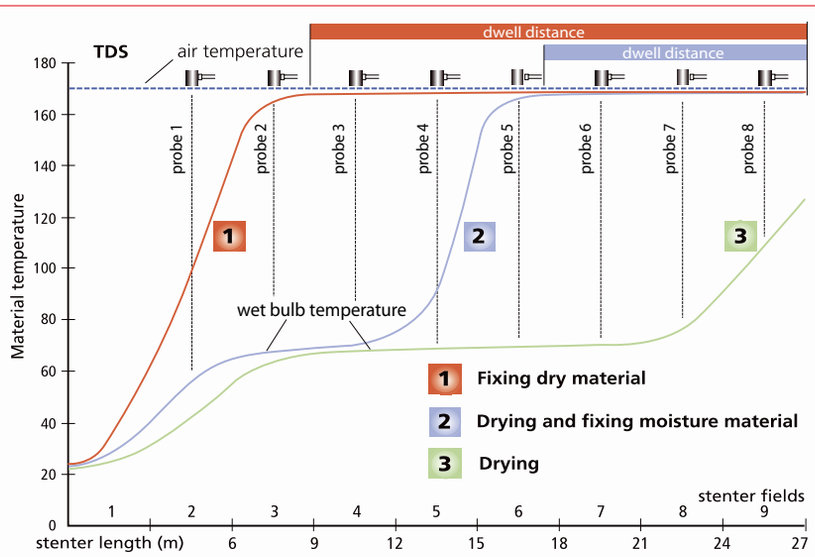
Modular ECO-OPTIDRY® PLUS CIMATIC for stenter and dryer

Modern colour graphic operating panel with modular PLC system and advanced control software guarantees optimised process control at stenter and dryer.

The advanced system use touch screens panel with trend graphic display, data gatering, recipe memory and interfaces to connect to a network by Ethernet.

ECO-OPTIDRY CIMATIC touch panel

Fabric temperature patterns inside of dryer



Temperature patterns of the fabric heated at different technological process, e.g. in a tendering frame having 9 zones.

ECO-OPTIDRY control system with panel PP100 and protective cabinet

Advanced module functions

ECO-OPTIDRY® PLUS

Dwell time control - Heatsetting

The fabric temperature is measured by several TDS temperature sensors placed over the length of the dryer to detect the temperature patterns of the fabric to provide an accurate control of dwell time.

A great feature of the ECO OPTIDRY software is the "Auto-Setting" function of set values from the running process.

BASIC module

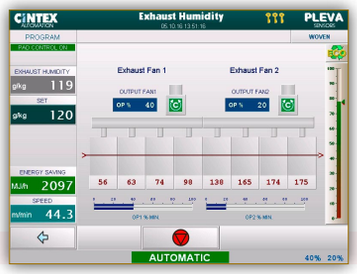
Fabric / Air temperature sensors TDS

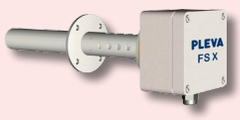
Exhaust humidity control

The air humidity sensor FSX measures the water content of the process air to control the exhaust air rate for an economic efficiency on drying process.

Loading the exhaust air most efficiently with humidity will greatly reduce the hot air volume and save energy dramatically. The revolutions of 1 or 2 exhaust fan are individually controlled by one sensor.

BASIC module





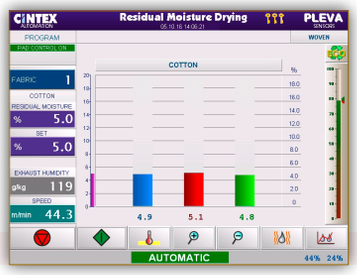
Air humidity sensor FSX

Residual moisture control

The measurement of residual moisture content on natural fabrics and synthetics is done by tandem roller sensors for woven fabrics or two existing guide rollers on open width knitted goods.

Control of moisture retention in percentage of a target fibre is optimising the drying process for quality finishing and efficient drying.

PLUS module



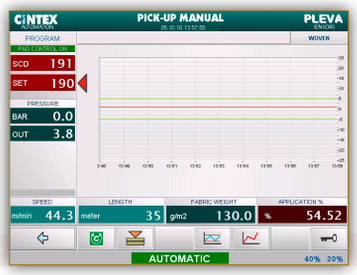
Residual moisture sensor RR

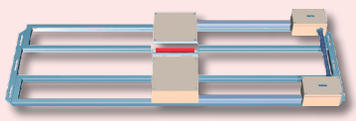
Application liquor control

The water based liquor application is measured at the padder unit by microwave measurement AF120 and controls the pressure on the application padder.

The result is an uniform liquor distribution over the fabric length in combination with an optimized process on drying and fixation with highest possible saving on energy and costs.

PLUS module





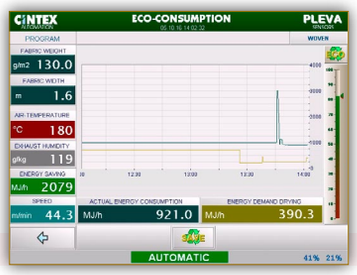
Application moisture sensor AF120

Energy consumption measurement

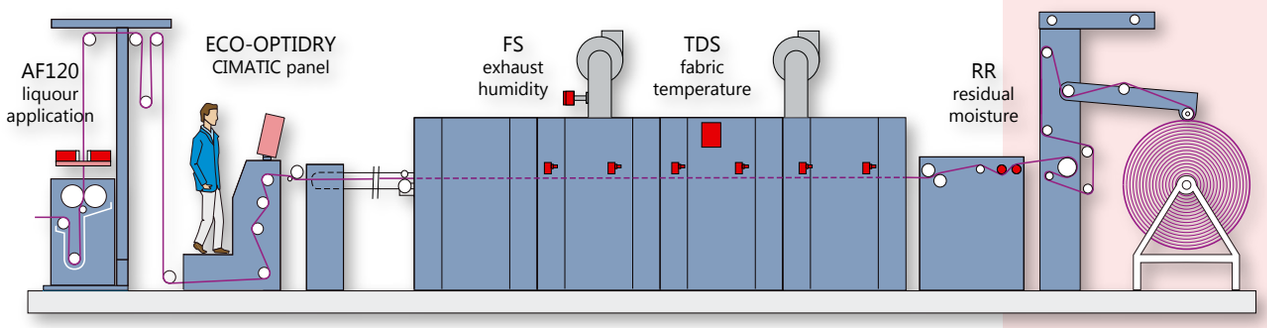
First time ever, this advanced function is available for actual energy consumption measurement and the calculation of energy saving out of the production at your drying and stenter machine.

A reliable online calculation is achieved by measured values and data from our sensors in conjunction with machine data and your energy costs.

BASIC module



ECO Energy consumption meter



Stenter frame with ECO-OPTIDRY control system and available sensors for heat treatment process

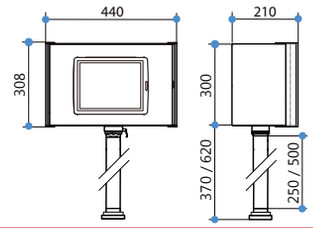
ECO-OPTIDRY®
CIMATIC

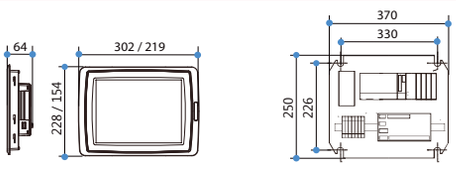
Technical Data

ECO-OPTIDRY system

Type CIMATIC

Protective cabinet PP70 / PP100-G with socket





ECO-OPTIDRY Control system

Ambient temperature:	max. 50 °C
Power supply:	230 V AC (+/- 10 %), 50/60Hz
Power consumption:	approx. 130 VA
Panel type PP 70:	6.5" Touch Screen coloured
Panel type PP 100:	10.4" Touch Screen coloured
Weight protective cabinet:	15 kg (wall mounting)
Weight stand socket:	2.8 kg (length 250mm)

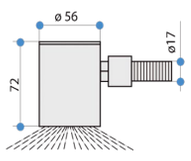
Panel PP70-R / PP100-R with mounting plate and PLC only

Weight PP70 panel:	1.6 kg
Weight PP100 panel:	2.8 kg
Weight mounting plate:	4.0 kg

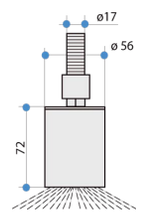
Fabric / Air temperature sensor

Type TDS

TDS -R
Connection radial



TDS -A
Connection axial



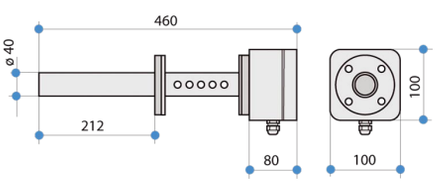
Sensor TDS

Ambient temperature:	
Measuring range 0..250°C:	Type TDS ST-A • TDS ST-R
Measuring range 0..400°C:	Type TDS HT-A • TDS HT-R
Accuracy measuring range:	+/- 1 %
Distance to material:	20..120 mm (optimal 60mm)
Measuring area:	140 mm at 20 mm distance 300 mm at 60 mm distance 550 mm at 120 mm distance
Cable length (standard):	5 m / 7 m / 10 m
Cable length (optional):	13 m / 16 m (other on request)
Weight TDS sensor:	0.5 kg without flexible tube
Weight flexible tube:	0.3 kg per m flexible tube

Air humidity sensor

Type FSX

FSX ST



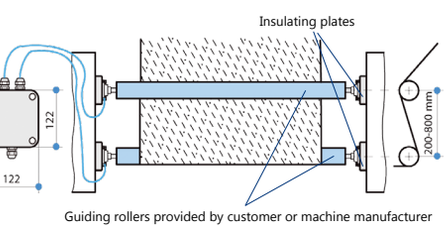
Sensor FSX

Process air temperature:	Type FSX ST: max. 250 °C Type FSX HT: max. 600 °C
Temperature of sensor:	> 700 °C
Heating-up time for sensor:	approx. 20 min
Measuring range sensor:	standard 0 .. 1000 g/kg
selectable on Process Box:	free scaling
Ambient temperature for instrument preamplifier:	max. 70 °C
Power supply:	24 V DC (+/- 10 %)
Power consumption:	max. 24 VA, max. 1.0 Amps.
Weight sensor FSX ST:	approx. 2.6 kg

Residual moisture sensor

Type RR W • RR Tandem roller

RR W

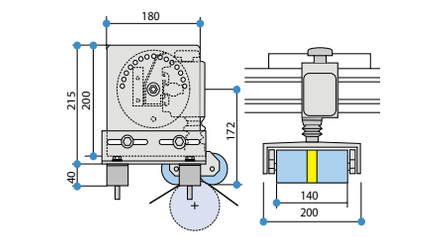


Sensor RR W

Ambient temperature:	
Measuring frame/roller:	max. 100 °C
Electronic preamplifier box:	max. 50 °C
Measuring range sensor:	3.5 .. 16 % at Cotton
Power supply:	24 V DC (+/- 10 %)
Power consumption:	approx. 2.5 VA, 0.1 Amps.
Weight sensor RR W kit:	approx. 1.2 kg

Notice:
The measurement of synthetics or mixed fibres with synthetics is not possible with type RR W because of the high electro-statics that are produced with this type of fabric.

RR Tandem roller



Sensor RR Tandem roller

Ambient temperature:	
Measuring frame/roller:	max. 100 °C
Electronic preamplifier box:	max. 50 °C
Measuring range sensor RR:	0.9 .. 15 % at Cotton 0.1 .. 5 % at Synthetics 0.2 .. 9 % at Polyamide 1.7 .. 30 % at Viscose
Power supply:	24 V DC (+/- 10 %)
Power consumption:	approx. 15 VA, 0.7 Amps.
Weight sensor RR1	
with swing out unit:	approx. 14 kg
Electronic Box RR1:	approx. 9 kg

Available machines, measuring and control systems for different applications

- **StraightLiner** for high-tech automatic straightening
- **StructureDetector** for distortion analysis, pick/course density and width measurement
- **Add'nDry** for coating, drying and heat-treatment processes with multiple sensors
- **Dens'nDry** for drying and fixation processes and pick/course density
- **DrumDryControl** for cylinder dryers
- **SizeControl** for controlled size pick-up
- **PadderControl** for continuous dyeing and cold pad batch dyeing
- **Sensors** for fabric temperature, exhaust humidity, oxygen, application and residual moisture

PLEVA

PLEVA GmbH
Rudolf-Diesel-Str. 2
D-72186 Empfingen-Germany
Tel: +49 (0) 7485 1004
Fax: +49 (0) 7485 1009
info@pleva.org www.pleva.org