

ECO Energy Control

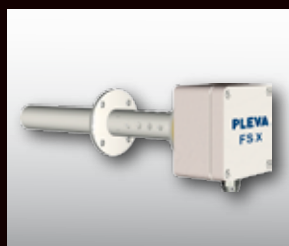
CINTEX
TEXTILE AUTOMATION

NEWS 2022

Energy Saving Carbon Reduction in the textile drying process

ECO Energy Control

EEC



FSX
Air humidity



TC
Air temperature



Application dryer

Drying is a highly energy intensive process. A high percentage of the cost of a dryer is spent on energy. Today, minimization of energy consumption and reduction of energy cost must be given the highest priority in every production plant. At the same time, reducing of carbon emissions is an important aspect of climate pollution.

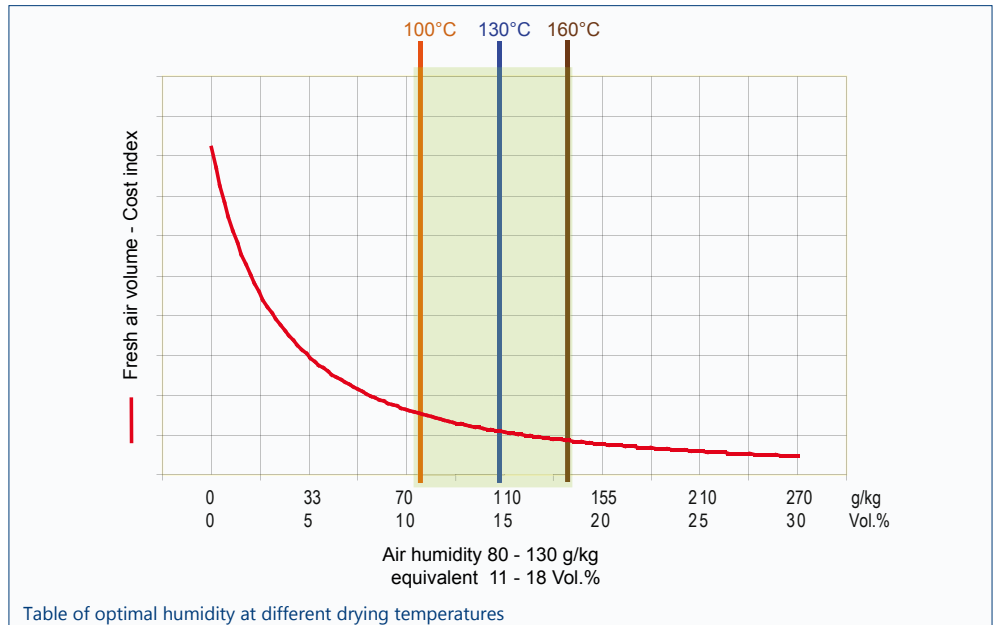
An advantage of the ECO Energy Control system is the integrated calculation of the energy consumption and the carbon load during the drying process in the machine.

FEATURES OF PRODUCT

- Reliable measurement in the dryer at high temperatures
- Wide measuring range
- Requires no maintenance
- Robust and proven sensor with longest life time

Optimum and best drying conditions in the dryer

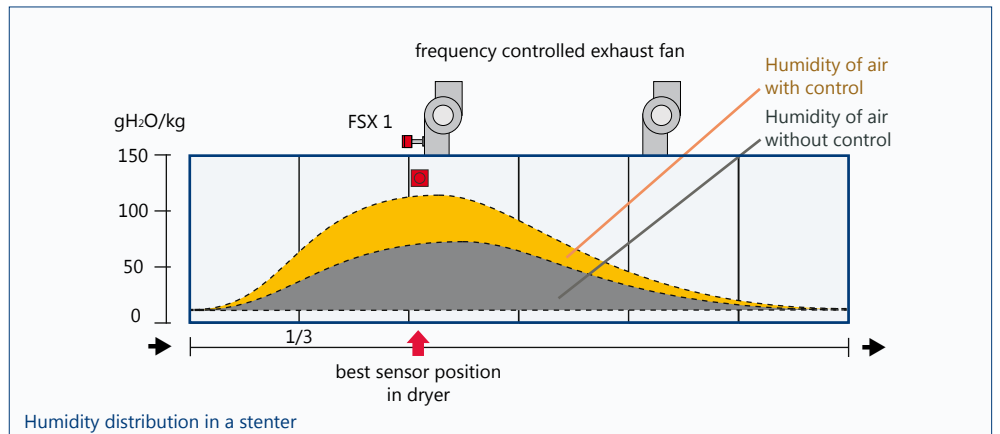
Circulation air loaded with humidity is a perfect energy transfer medium. The most efficient humidity range in the dryer is between 80..130 g/kg water per kg air, corresponding to 11..18 Vol % for drying temperatures between 130 °C and 160 °C.



BENEFIT FOR CUSTOMER

- Great effect in energy saving
- High fabric quality by constant humidity
- Affordable investment with short payback time

Humidity distribution in stenter



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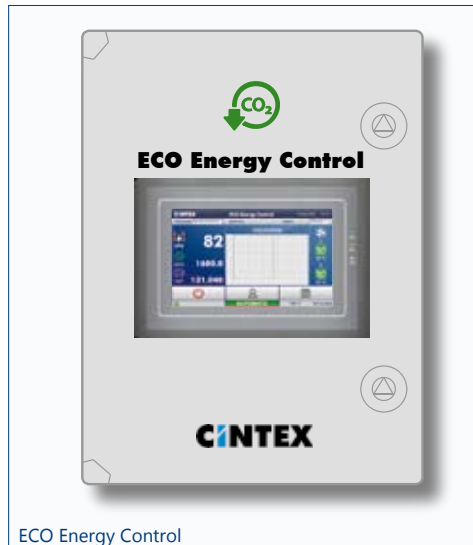
New controller with significant saving of energy in the drying process.

With the ECO Energy Control, the heating energy used is adapted to the actual requirement by monitoring the moisture content of the exhaust air in the dryer and automatically controlling the blower speed.

Additional advantage is the integrated calculation of the energy consumption and the carbon load during the drying process.

By maximizing the humidity in the dryer from 60 to 100 g/kg, 30% savings in energy consumption will be achieved with 6% lower production costs.

(Values for example: fabric weight 150g/m², fabric width 1.6m, incoming fabric moisture 70%, residual moisture 5%, fresh air 25°C, exhaust air 160°C, fabric speed 100m/min)



ECO Energy Control

Air humidity sensor FSX

The air humidity sensor FSX is used to minimise the energy consumption of drying processes in dryers and stenter.

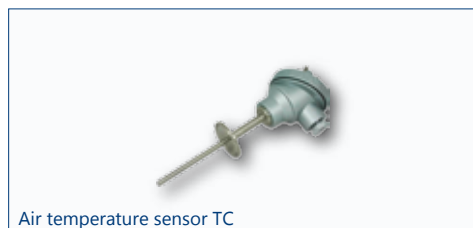
The maintenance free exhaust humidity sensors type FSX measures the humidity of the process air in the dryer to control the exhaust air rate for an economic efficiency on drying process.



Air humidity sensor FSX

Air temperature sensor TC

An additional temperature sensor for the dryer circulating air is used to calculate the energy consumption and the carbon load.



Air temperature sensor TC

Areas of Application

- Stenter frame (textile, carpet)
- Dryer for tubular fabric
- Printing machine
- Sizing machine with energy saving dryer
- Heat-setting for carpet yarns
- Drying hood for paper-making machine
- Flat surface dryer (building slabs, cardboard, wooden boards)
- Dryer for webs of endless fabric (leather fibre, foamed material)
- Backing oven
- Conditioning with high humidity



Continuous Dryer

Solution

Type ECO Energy Control

FEATURES OF PRODUCT

- New features on energy calculation
- Latest state of processor technology and control
- Latest technology with reliable sensors

BENEFIT FOR CUSTOMER

- Significant energy savings
- Considerable carbon reduction
- Measuring and calculation of energy consumption and carbon emission
- Retrofit package for new and existing drying machines
- Easy installation

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Type ECO EC

Air humidity sensor

Type FSX ST

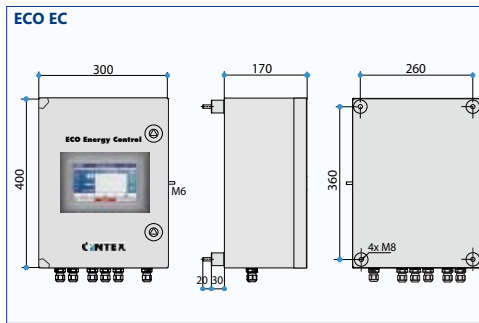
Type FSX HT

Air temperature sensor

Type TC

Accessories

Technical Data

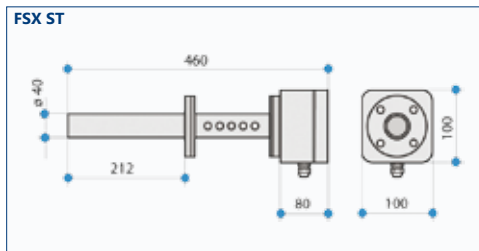


ECO Energy Control

Sensor FSX: 1x FSX air humidity
 Sensor TC: 1x TC air temperature
 Ambient temperature: max. 55 °C
 Power supply multi-range: 100 .. 240 AC
 Power consumption: 60 VA, max. 80 VA
 Current: max. 1.8 Amps

Communication: RS232 / RS485 serial
 Protocols: MODBUS
 Analogue outputs isolated: 2 signals 0/2 .. 10V (for inverters)

Weight approx.: 6.5 kg



Sensor FSX

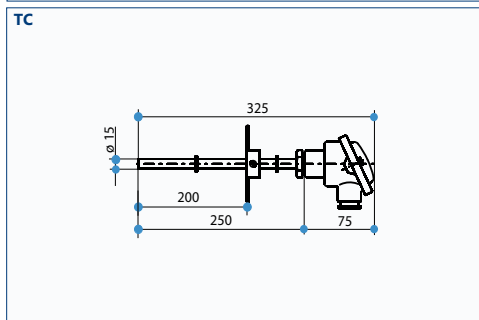
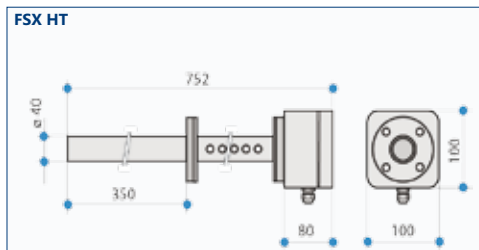
Process air temperature: Type FSX ST: max. 250 °C
 Type FSX HT: max. 600 °C

Temperature of sensor: > 700 °C
 Heating-up time for sensor: approx. 15 min

Measuring range sensor: FSX ST: 0 .. 1000 g/kg
 FSX HT: 0 .. 90 °C DP
 selectable on FS 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
 Weight sensor FSX HT: approx. 3.8 kg



Sensor TC

Sensor: Thermo element
 Type: 1x Fe-CuNi „J”
 Ambient temperature: max. 600 °C

Protective tube: Steel 1.4749
 Weight sensor: approx. 1.2 kg

Accessories optional

- **Special filter** for silicon in air circulation
- **Frequency inverter** for exhaust air blower

Agency:



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