SFERA PLUS
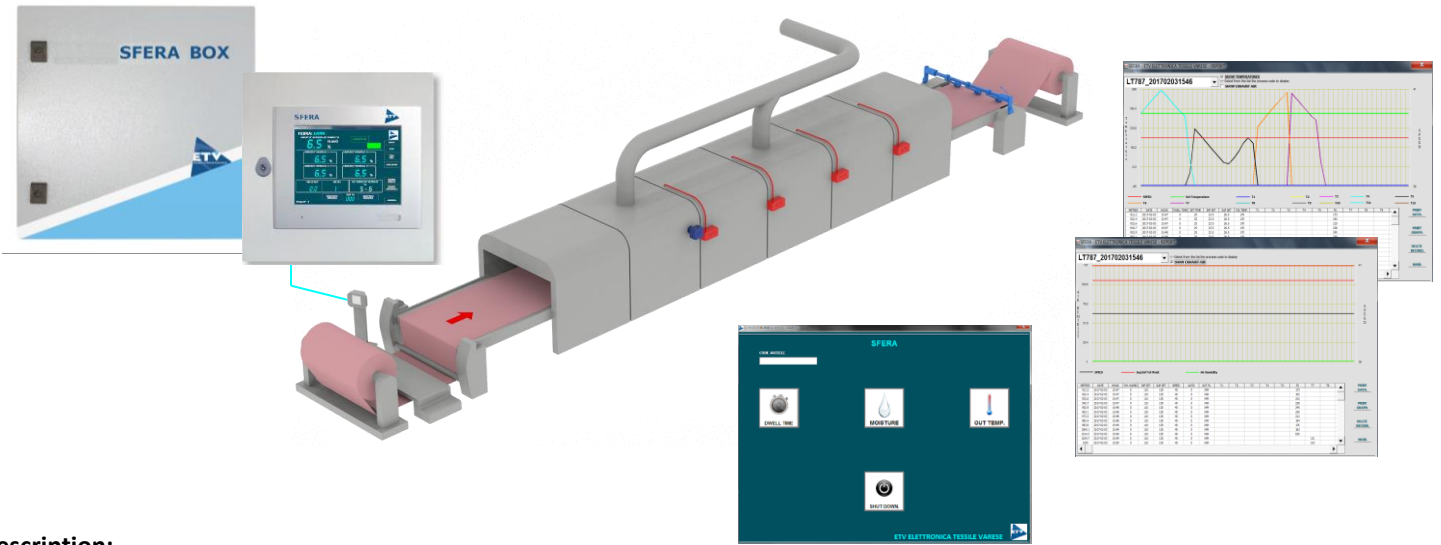
All-in-one stenter control unit

Description:

An all-round modular system to run drying and finishing processes involving natural or man-made fabrics, envisaging automated machine control and adjustment (conveyor and exhaust fan speed) through the measurement of all major processing parameters.

🌡 THERMOCONTROL   Contactless fabric temperature measurement plus dwell time assessment.

💧 HYGROBOX-E   Fabric residual moisture meter.

✳ HYGROAIR   Provides monitoring of absolute humidity air levels and the consequent discharge exhaust fumes.

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Applications:

Stenters, dryers, hot flues.

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Features:

🌡 **'HEAT TREATMENT' MODE**

- The device will measure and display fabric temperature for each field, actual dwell time and machine speed
- Dwell time and heatsetting temperature set-up
- Heatsetting fabric dwell time can be displayed and adjusted
- Automatic machine speed adjustment control:
    > 2 dry contacts (relay +/-) or (optionally) > 1 analogue output (0 - 10V)

💧 **'DRYING CYCLE' MODE**

- Measurement of the residual moisture content in the material
- Fibre selection (15 pure fibres + 42 mixed fibres)
- Wide residual moisture measuring range
- Automatic machine speed adjustment control:
    > 2 dry contacts (relay +/-) or (optionally) > 1 analogue output (0 - 10V)
  Optional:
- Drying roller temperature automatic adjustment control (*):
    > 1 analogue output (0 - 4/20mA) (* modulating valve not included)

✳ **'AIR HUMIDITY' MODE**

- Measurement of the amount of water in the air (g/kg).
- Absolute air humidity measurement
- 1 analogue output for the automatic adjustment of the exhaust fan speed (*)
    > 1 analogue output (0 – 10V) (* inverter not included)

Additional features:

- All set parameters and the relevant values are recorded and can be charted
- Data can be downloaded via the USB port on the front panel or through an Ethernet connection
- Remote support (LAN access via a VPN)

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Benefits:

- Production quality is constantly monitored ((no reprocessing required))
- Production optimization
- All gathered data are recorded and can be downloaded via an USB port or through an Ethernet connection
- Easy to use (all machine operators shall work in the same way)
- Easy to assemble
- Energy saving
- An automated processing management becomes possible
- Only requires minimal routine maintenance
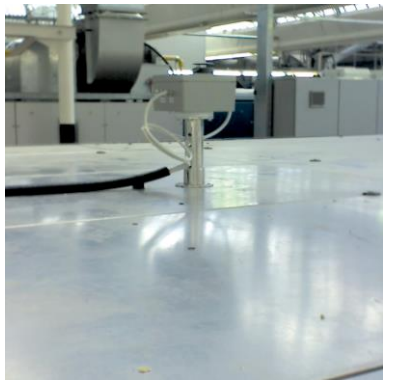
THERMOCONTROL   HYGROBOX-e   HYGROAIR

To be installed internally (Max temperature 250°C)	To be installed externally (dryer outlet)	To be installed internally (Max temperature 300°C)

SFERA PLUS summary table *tabella riassuntiva*	residual moisture *umidità residua*	temperature *temperatura*	exhausted air humidity *aria esausta*	residual moisture + exhausted air humidity *umidità residua + aria esausta*	residual moisture + temperature *umidità residua + temperatura*	residual moisture + temperature + exhausted air humidity *umidità residua + temperatura + aria esausta*
Hygrobox-e	O			O	O	O
Thermocontrol		O			O	O
Hygroair			O	O		O

Sfera Plus allows to calculate the actual dwell-times of the fabric in the machine.

Sfera Plus permette di calcolare i reali tempi di permanenza del tessuto in macchina.

Overview:

Embedded industry-standard PC, diskless, fanless, with an embedded operating system and SSD, a 10.4" LCD touch-screen colour display (12" or 15" available as optionals) and a frontal USB port.

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Dimensions:

- PC metal case size with a 10.4" touch screen (L 400 x H 400 x P 150 mm), weighing 12 kg ca.*
- Remote unit metal case size: L 600 x H 600 x P 250 mm, weighing 30 kg ca.*
  (maximum distance between the units: 10 m)
  *size and weight may vary depending on the chosen configuration

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Peripherals:

- **Inputs**
  - 8 for Thermocontrol fabric temperature sensors
  - 1 for the HygroBox residual moisture sensor
  - 1 for the HygroAir air humidity sensor (operates the exhaust)
  - a module with 8 additional input connectors (to add Thermocontrol, HygroBox or HygroAir sensors) (optional)
  - 1 for the length and speed sensor (encoder)
- **Outputs**
  - 2 relay connectors for speed adjustment
  - 1 analogue output, 0 - 10V (for speed adjustment) (optional)
  - 1 analogue output, 0 - 10V (exhaust fan adjustment)
  - 1 to allow an expansion of the input module
  - 1 for an additional module with three warning lights (amber/red/green) showing the amount of residual moisture (optional)
  - 2 Ethernet ports
  - 3 USB ports (one on the front panel)

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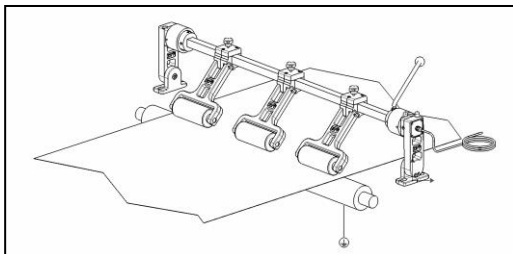
Power supply:

Power supply for the remote unit: 230V - 50/60 Hz (120V - 60 Hz available on demand)
  - Power supply for computer and Thermocontrol and HygroBox sensors: 24V DC (power supply housed in the remote unit)
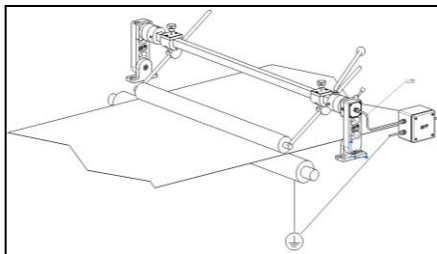 - HygroAir sensor power supply: 24V AC (power supply housed in the remote unit)
Current: 500 mA - 230 V

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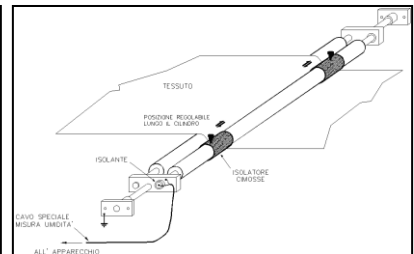
NOTE HYGROBOX-e :

Choice of the residual moisture sensor of the fabric:

(Code: 3R1) Roller sensor unit for spun or woven fabrics, complete with lifting and mounting accessories.

(Code: SR) Single-Roller sensor unit, single-point fabric height, for heavy fabrics and terry, complete with lifting and mounting accessories.

(Code: DR) Double-Roller sensor unit, single-point fabric height, for knitted fabrics or specific for the outlet of belt (tensionless) dryers or stenters, complete with mounting accessories.