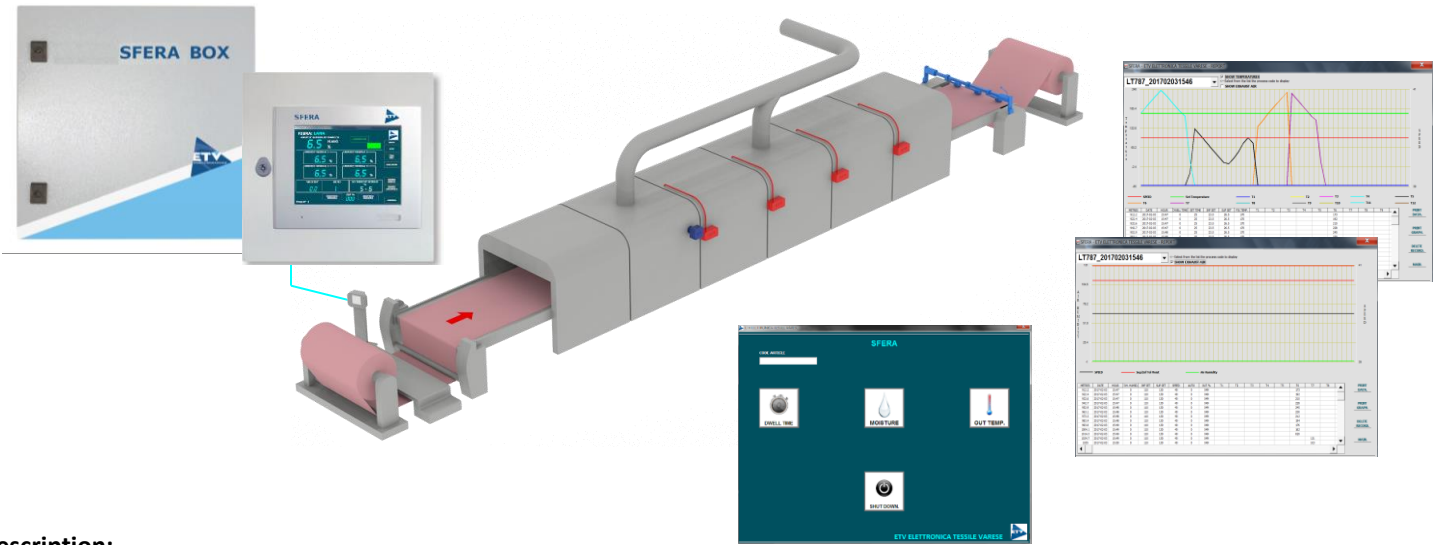







# SFERA PLUS

## 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.

### Applications:

Stenters, dryers, hot flues.

### 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)

**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**



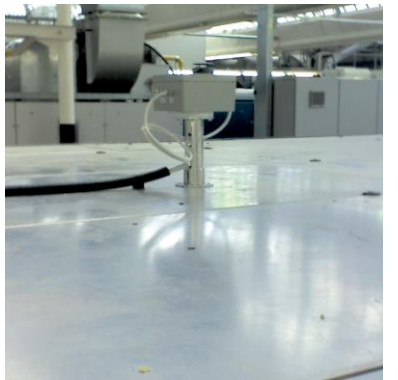
To be installed internally  
(Max temperature 250°C)



To be installed externally  
(dryer outlet)



To be installed internally  
(Max temperature 300°C)



**SFERA PLUS**  
summary table  
tabella riassuntiva

- Hygrobox-e
- Thermocontrol
- Hygroair

	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	○			○	○	○
Thermocontrol		○			○	○
Hygroair			○	○		○

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.





# Technical Specifications

## 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.

## 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

## 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)

## Power supply:

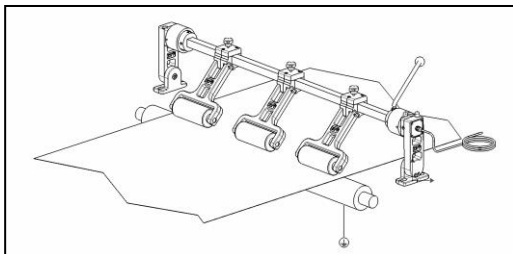
Power supply for the remote unit: 230V - 50/60 Hz (120V - 60 Hz available on demand)

- 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)

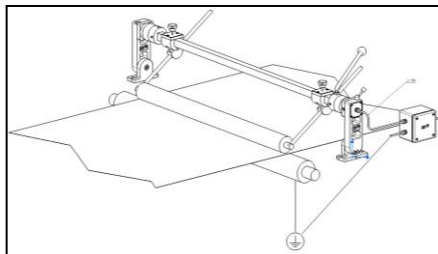
Current: 500 mA - 230 V

## NOTE HYGROBOX-e :

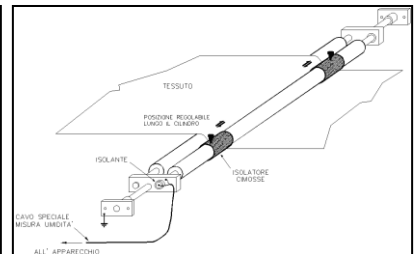
Choice of the residual moisture sensor of the fabric:



(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.

