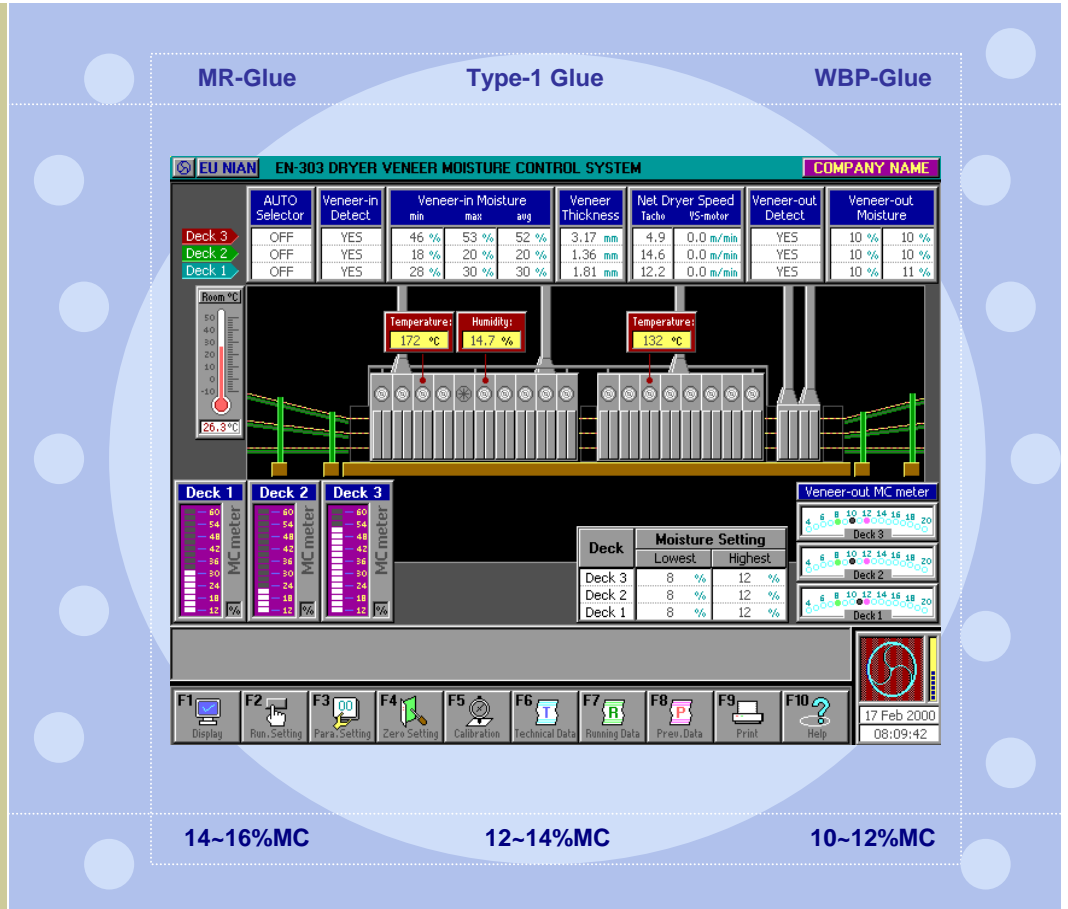


# EN-303

# SMART IN-LINE

## Dryer Veneer Moisture Content Control System

- ★ INPUT %MC
- ★ AMBIENT TEMP
- ★ THICKNESS
- ★ DRYER TEMP
- ★ HUMIDITY
- ★ DRYER LENGTH
- ★ NET SPEED
- ★ OUTPUT %MC
- ★ DESIRED %MC
- ★ DAILY REPORT



What do you need **THE MOST** for your Continuous Dryer?

**YES!** An automatic system that can fulfill & conform **EXACTLY** to your preset Output Veneer Moisture Content as specified by its different glue type!

**EN-303** is your **ANSWER!!!**

### Our Contact Info

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# Are you constantly facing the following problems?



Veneer Overdrying



Veneer Underdrying

# Are you aware of the consequences of these problems?



Wavy Veneer

**Wavy Veneer**



End Split Veneer

**End Split Veneer**



Part Pieces (Random)

**Part Pieces Veneer**



Jointed Veneer

**Jointed Veneer**



# Are you aware of the consequences of these problems?



**Redry Veneer**



**Blistering**



**Overlapping**



**Glue Consumption Costs**

# Doesn't it this is the one that you are always looking for?



**EN-303**  
is  
Your  
**ANSWER**

# All About EN-303

## Product

- ☑ Product Name : SMART IN-LINE DRYER VENEER MOISTURE CONTENT CONTROL SYSTEM
- ☑ Model : EN-303
- ☑ OEM : EU NIAN, Malaysia

## Application

- ☑ Specifically design for Continuous Dryer in Plymill.

## Function

- ☑ Continuously & automatically control the speed of Net Dryer that brings an **accurate** desired veneer Moisture Content at Output Dryer, & conform **exactly** to the pre-set MC range for different glue type (i.e. MR Glue: 14~16%, Type-1 Glue: 12~14%, WBP Glue: 10~12%)!

## Contributions

### Major Contributions

1. Obtain desired (pre-set) veneer Moisture Content at Output Dryer, which prevents veneer from under-drying or over-drying. **[Under-dry or over-dry phenomenon is the major problem in manually controlled system]**
2. Significant increase in productivity by:
  - ☑ Optimising the Dryer efficiency. **[Manually controlled system always shows inconsistent speed control]**
  - ☑ Reducing the rate of veneer re-drying. **[Re-drying process will seriously affect productivity & veneer quality, as well as veneer recovery]**
  - ☑ Minimising the lost time due to the changing of veneer with large thickness difference. **[In manually controlled system, Dryer will be totally stopped, in some cases, when changing veneer with large thickness difference]**
3. Gain higher veneer quality/grade by:
  - ☑ Obtaining a perfect drying results with under controlled under-drying or over-drying. **[Under-drying requires veneer to re-dry again & this will definitely degrades the veneer quality. Whereas over-drying results in veneer splitting, waving & overlapping problem]**
4. Increase in veneer recovery by:
  - ☑ Maintaining desired output Moisture Content, & thus minimising veneer contraction. A smaller amount of veneer contraction results in higher output volume, & thus higher recovery.
  - ☑ Preventing veneer from re-drying. Re-dried veneer normally needs to be composed, which faces first-cut & end-cut lost. Besides, its wavy problem causes precise cutting lost at Auto-Clipper. This will definitely decreases veneer recovery.
5. Saves in glue application by:
  - ☑ Ensuring veneer output Moisture Content falls within the desired range. In fact, only over-drying veneer will absorb larger amount of glue!

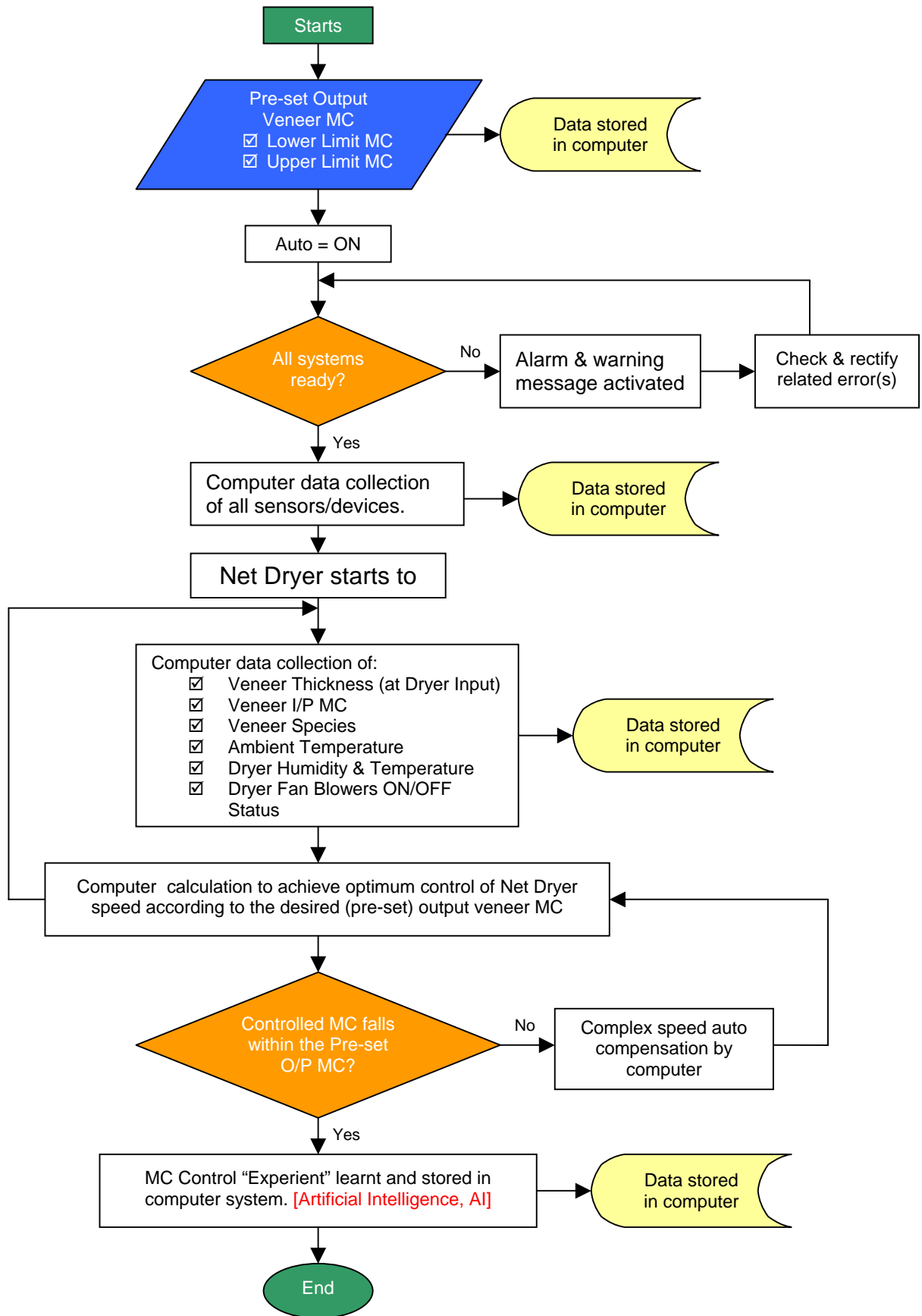
### Other Contributions

- ☑ Saves in electricity consumption by optimising dryer productivity & efficiency.
- ☑ Saves in workforce by automating all the drying process.
- ☑ Makes the management control of dryer & production more efficient by providing daily computer report on machine efficiency & productivity,
- ☑ Makes the dryer operation easy & user-friendly by the use of touch-screen monitor for data viewing & setting.

## System Layout

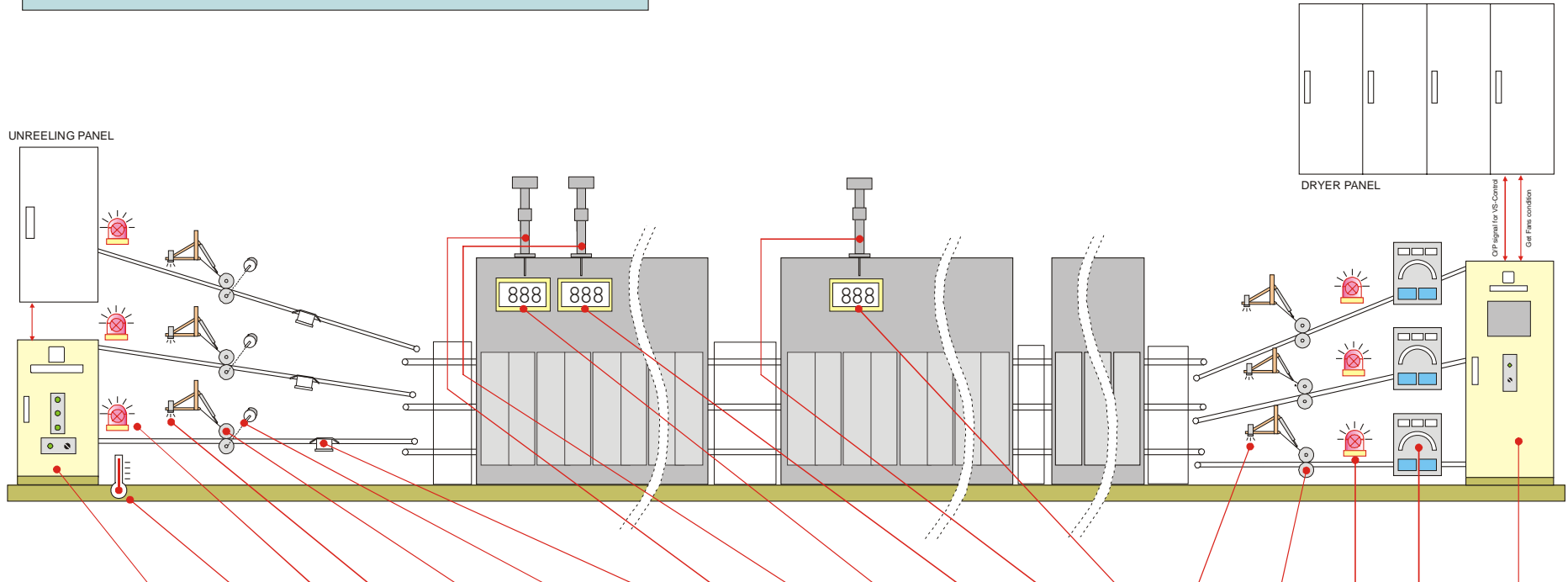
**[Please refer to the attached EN-303 System Layout for details] – page 7**

# EN-303 Operation



EN-303 will, in all time, automatically studies (by himself) the characteristics of your Dryer without having you to assist in any of the EN-303 operation. In no time, you will find out EN-303 is an "experienced" and smart Dryer MC-controller!

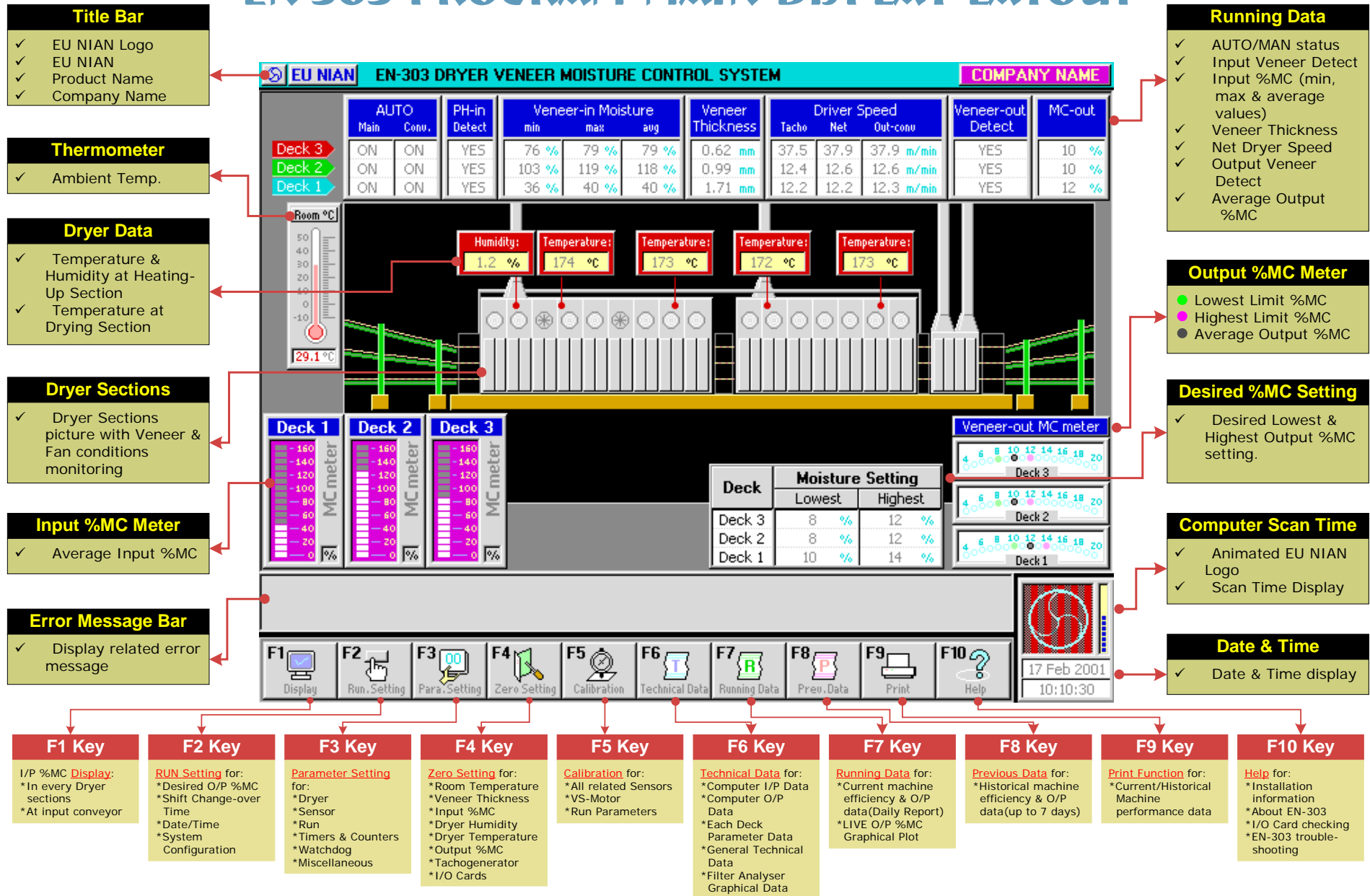
# EN-303 System Layout



DEVICE	Remote Panel	Temperature Sensor	Emergency Lamp	Photoelectric Sensor	Thickness Sensor	Rotary Encoder	Moisture Sensor	Humidity Sensor	High Temp. Sensor	Humidity Display	Temperature Display	High Temp. Sensor	Temperature Display	Photoelectric Sensor	Moisture Sensor	Emergency Lamp	MC Display	Main Panel
MODEL	RP303	RT50CD-E1	IALARM	PHS-30E1	THC-50M	E1-20P	MCI-60C	EN303RH	EN-200VC	RH303-DSP	TC200-DSP	TC-200VC	TC200-DSP	PHS-30E1	MCO-30C	OALARM	MC-DSP	MP303
SPECIFICATION	220/380/415V Power Supply	High precision -20 to 80°C	220VAC	Distance adjustable 5 to 30 cm	High precision 0 to 5.0 mm thickness. Res: 0.01mm	20 p/r Open collector Output	High precision 4 to 300 %MC non-contact type	Heavy-duty 0 to 100%RH	Heavy-duty 0 to 300°C	0 to 100%RH 7-segments Display	0 to 300°C 7-segments Display	Heavy-duty 0 to 300°C	0 to 300°C 7-segments Display	Distance adjustable 5 to 30 cm	High precision 0 to 99 %MC non-contact type	220 VAC	UNO indicator 5 to 24 %MC L/H set-displ.	220/380/415V Power-supply
QUANTITY	1 pcs/unit	1 pcs/unit	1 pcs/deck	1 pcs/deck	1 pcs/deck	1 pcs/deck	6 pcs/deck	1 pcs/unit	1 pcs/unit	1 pcs/unit	1 pcs/unit	1 pcs/unit	1 pcs/unit	1 pcs/deck	2 pcs/deck	1 pcs/deck	1 pcs/deck	1 pcs/unit
FUNCTION	Input/Output Controller for Unreeling Zone & remote communication	Detects ambient temperature	Indicates warning & useful signs	Detects veneer at Unreeling Conveyor	Measures veneer thickness	Detects Unreeling Conveyor status	Measures veneer %MC at Input Dryer	Measures humidity inside Dryer	Measures temperature inside Dryer	Displays value of humidity inside Dryer	Displays value of temperature inside Dryer	Measures temperature inside Dryer	Displays value of temperature inside Dryer	Detects veneer at Dryer-out Conveyor	Measures veneer %MC at Dryer-out	Indicates warning & useful signs	Displays veneer %MC at Dryer-out	Centralised Processing Unit



# EN-303 PROGRAM MAIN DISPLAY LAYOUT



## EN-303 System Installation Overview



Input Operation (Overall) - for 3-Decks System

**Thickness Arm Mechanism – A Closer Look**



**Top View**



**Bottom View**



**Input MC Sensor – A Closer Look**



**Top View**



**Bottom View**

**EN-303 Remote Panel – Input Data Collection Center**



**Panel Outside View**



**Humidity & Temperature Display – A Closer Look**

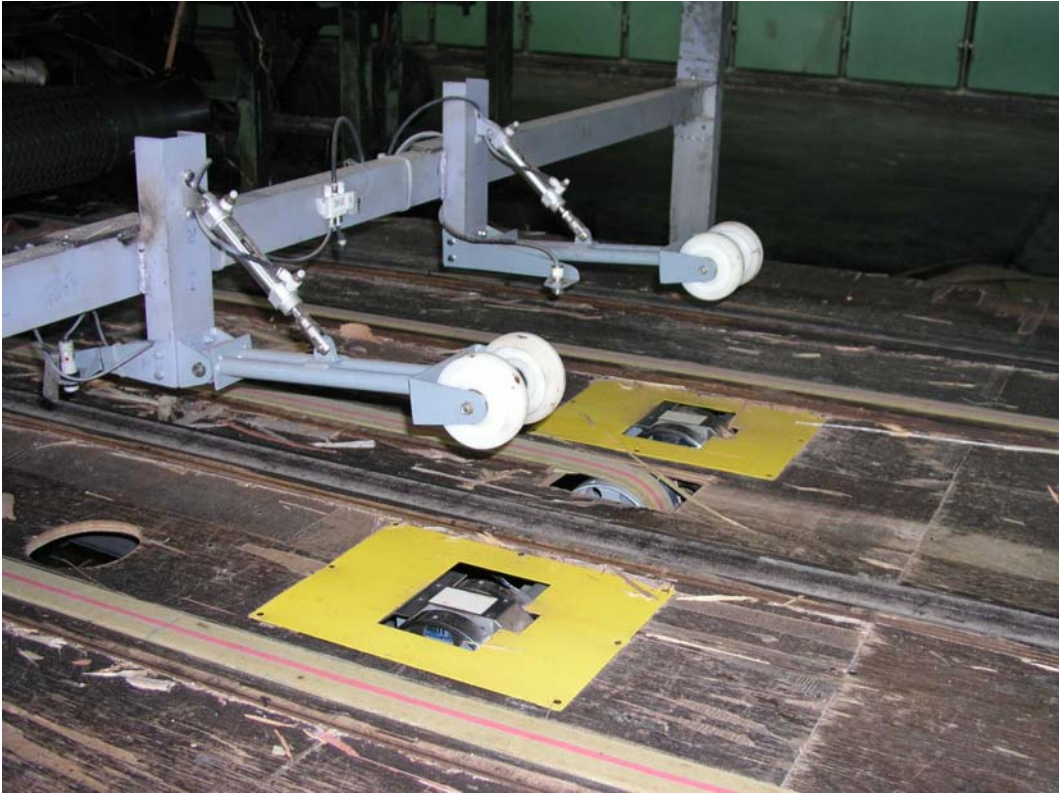


**Humidity Display**



**Temperature Display**

**Output MC Sensor & Display – A Closer Look**



**Without Arm Pressing (No Veneer)**



**With Arm Pressing**



**Output MC Display**



**Output Operation (Overall) – for 3-Decks System**



**Output Panel – Smart Control Processing Center**





## Operator Panel – A Closer Look



**Input Operator Panel**



**Output Operator Panel**