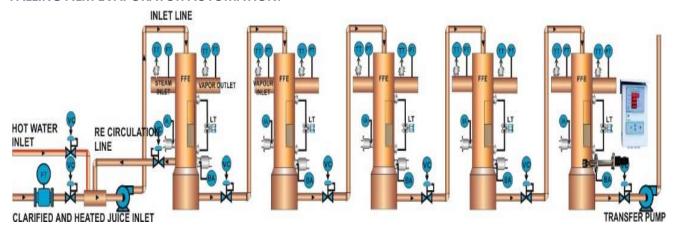
# FFE AUTOMATION WITH BRIX ANALYZER AND DENSITY BRIX SENSOR FALLING FILM EVAPORATOR AND CONDENSER CONTROLS



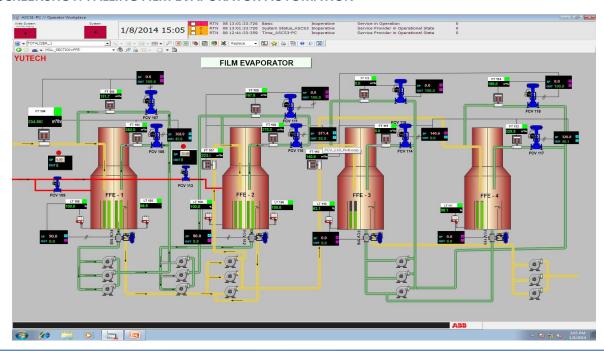
#### **FALLING FILM EVAPORATOR AUTOMATION:**



# **EVAPORATOR / FALLING FILM EVAPORATOR AUTOMATION ADVANTAGES:**

- ➤ MAINTAINED LAST BODY BRIX HENCE EFFICIENT FURTHER PROCESSING AND PAN BOILING PRODUCES BETTER SUGAR YIELD
- MAINTAINED BODY LEVEL AND TEMPERATURE OF EACH BODY HENCE EXCELLENT MASS BALANCE ACHIEVED
- > CONSTANT EVAPORATION RATE IS MAINTAINED, THIS INCREASES OVERALL EFFICIENCY
- > AUTO EXHAUST STEAM CONDENSATE BYPASS PREVENTS ENTRAINMENT
- > SYNCHRONIZATION FOR ALL BODIES INCLUDING JUICE TANKS AND CANE CARRIERS AVOIDS JUICE AND STEAM WASTAGE
- > INTELLIGENT DATA ANALYSIS WITH MAINTENANCE AND CLEANING ALARMING SYSTEM REDUCES INVERSION AND IMPROVES SUGAR RECOVERY
- GENERATES HUGE MONETARY BENEFITS

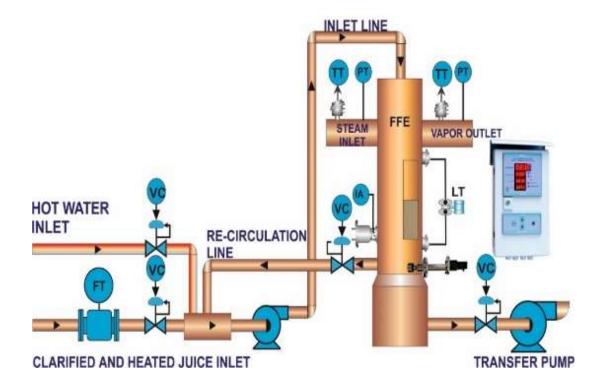
### SCREENSHOT: FALLING FILM EVAPORATOR AUTOMATION



# FFE AUTOMATION WITH BRIX ANALYZER AND DENSITY BRIX SENSOR FALLING FILM EVAPORATOR AND CONDENSER CONTROLS



#### SCHEMATIC DIAGRAM: SINGLE FALLING FILM EVAPORATOR AUTOMATION



# **FALLING FILM EVAPORATOR (FFE) AUTOMATION:**

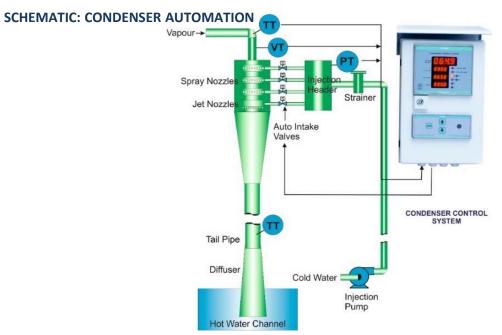
- > EVAPORATOR LEVEL IS MAINTAINED FOR PROPER EVAPORATION AND VAPOUR GENERATION BY CONTROLLING THE TRANSFER VALVE OR TRANSFER PUMP VFD.
- > INLET FLOW TO THE FFE BODY IS CONTROLLED AS PER PRESET VALUE.
- > THE RECIRCULATION VALVE IS CONTROLLED IN EQUAL PROPORTION TO INTAKE OR ALSO CAN BE CONTROLLED AS PER A PRESET PROPORTION IN PERCENT TERMS. THIS IS EASILY ADJUSTABLE FROM THE HMI / SCADA.
- > WATER IS INTRODUCED AUTOMATICALLY ONLY IF REQUIRED.
- > OPTIONAL INLET, RECIRCULATION, AND BYPASS FLOW MEASUREMENT AND CONTROL ARE PROVIDED.
- > TRANSFER, RECIRCULATION, AND INTAKE ARE ALSO CONTROLLED BY THE REQUIRED OUTLET BRIX AS AN OVERRIDING CONTROL.
- > ACCURATELY MAINTAINED BRIX VALUE ENSURES HIGHER EFFICIENCY IN THE FURTHER PROCESS.

## **CONDENSER AUTOMATION**



### CONDENSER AUTOMATION PHILOSOPHY:

- VAPOUR VACUUM AND TEMPERATURE SENSED
- CONDENSATE TEMPERATURE SENSED IN TAIL PIPE
- TEMPERATURE DIFFERENCE CALCULATED
- VACUUM AND TEMPERATURE DIFFERENCE ARE BOTH ANALYZED TO DERIVE REMOTE DYNAMIC SET POINT
- SPRAY WATER IS CONTROLLED AS BELOW:
  - MULTI-ENTRY SYSTEM:
    - SPRAY JETS ARE CONTROLLED BY SEPARATE ON/OFF TYPE CONTROL VALVES AS PER THE REMOTE DYNAMIC SET-POINT
    - 2, 3, OR 4 SETS OF NOZZLES FOR SPRAY AS PER DESIGN
    - 1 OR 2 SETS OF JET NOZZLES AS PER DESIGN ARE CONTROLLED ONLY IF NECESSARY
  - SINGLE-ENTRY SYSTEM:
    - SPRAY JETS ARE CONTROLLED BY A CONTROL VALVE IN PID ACTION AS PER THE REMOTE DYNAMIC SET-POINT
    - > 1 OR 2 SETS OF JET NOZZLES AS PER DESIGN ARE CONTROLLED ONLY IF NECESSARY



# **SCREENSHOT: FFE AND CONDENSER AUTOMATION**





# BRIX AND DENSITY ANALYZER AND FLUID DENSITY BRIX SENSOR ONLINE MEASUREMENT, ANALYSIS, AND TRANSMISSION OF BRIX AND DENSITY









FLUID DENSITY SENSOR FOR ALL PAN MASSECUITES AND SYRUP IN BATCH PANS, HORIZONTAL AND VERTICAL CONTINUOUS PANS, EVAPORATOR, MELTER, MOLASSES CONDITIONER, SLOPE, LIME BAUME,

#### **APPLICATIONS IN SUGAR INDUSTRY:**

- > BRIX OF ALL FALLING AND RISING FILM EVAPORATOR BODIES, SYRUP TO JUICE MIXING VESSELS:
  - > IMPROVE EVAPORATION EFFICIENCY AND STEAM ECONOMY
- > BRIX OF SYRUP, MASSECUITE AND MELT BRIX OF ALL BATCH PANS, VERTICAL AND HORIZONTAL CONTINUOUS PANS, MOLASSES CONDITIONERS, SUGAR MELTERS:
  - > REDUCE STRIKE TIME, AVOID FALSE GRAIN, REDUCE STEAM AND WATER CONSUMPTION
  - > OPTIMIZE CRYSTAL GROWTH AND MAXIMIZE RECOVERY
- > BAUME OF MILK OF LIME

## DISTILLERIES, BREWERIES, WINERIES, AND FOOD AND BEVERAGES INDUSTRIES:

> BRIX OF SLOPE OR SPENT WASH, BRIX OR WORT OF FERMENTATION TANKS, MUST, WINE, FRUIT PULP, SAUCE, SLURRY, PASTE

PLEASE CHECK THE BRIX AND DENSITY ANALYZER BROCHURE

 ${\tt PLEASE\ VISIT\ OUR\ WEBSITE\ \underline{www.yutechautomation.com}}.$ 

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