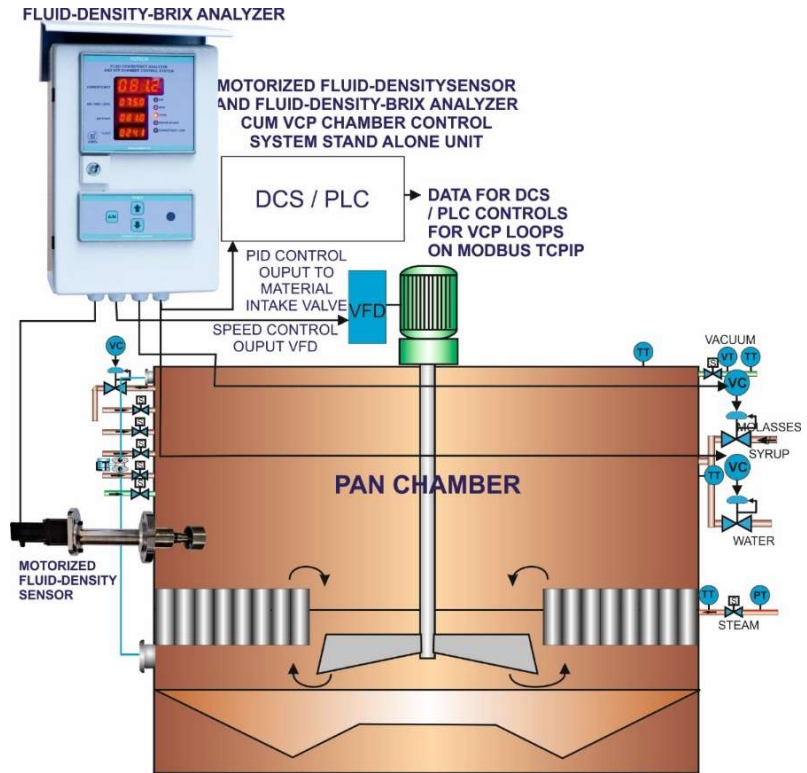
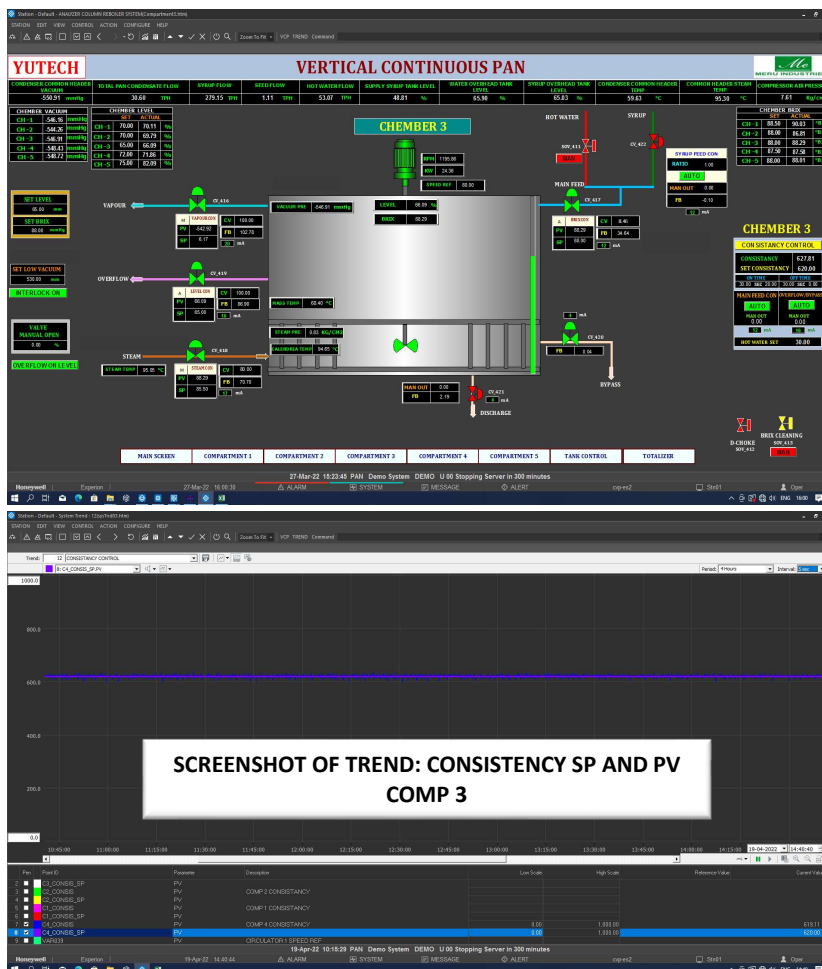


VERTICAL CONTINUOUS PAN OR VKT AUTOMATION WITH BRIX ANALYZER AND DENSITY BRIX SENSOR



VERTICAL CONTINUOUS PAN AUTOMATION ADVANTAGES:

- MAINTAINED SEED-TO-SYRUP RATIO AT ALL TIMES, ENSURES CONSTANT GOOD QUALITY PRODUCT
- ACCURATE FLUID-DENSITY-BRIX SENSING IN EACH COMPARTMENT ENSURES MAINTAINED BRIX THROUGHOUT THE CHAMBER AT ALL TIMES
- MAINTAINED BRIX ENSURES VERY LITTLE OR NO ADDITION OF WATER THUS INCREASING EFFICIENCY
- STEPWISE INCREASE IN BRIX OF THE MATERIAL IN EACH CHAMBER IS ACHIEVED EFFICIENTLY TILL THE FINAL DISCHARGE
- VACUUM CONTROL AND MAINTAINED VALUE WITH TEMPERATURES MAINTAIN EQUILIBRIUM IN THE ENTIRE PROCESS
- VFD SPEED CONTROL AS PER PAN CHAMBER LEVEL ENSURES PROPER MIXING OF MATERIAL THROUGHOUT THE CHAMBER
- SYNCHRONIZATION BETWEEN THE PRECEDING AND NEXT CHAMBER IS MAINTAINED
- SEMI-AUTOMATIC / AUTOMATIC DROP CONTROL IN ABNORMAL CONDITIONS IS CONTROLLED AND THERE IS NO LOSS OF MATERIAL OR TIME
- ENSURED LOWER LOSSES AND VERY HIGH PROFITABILITY

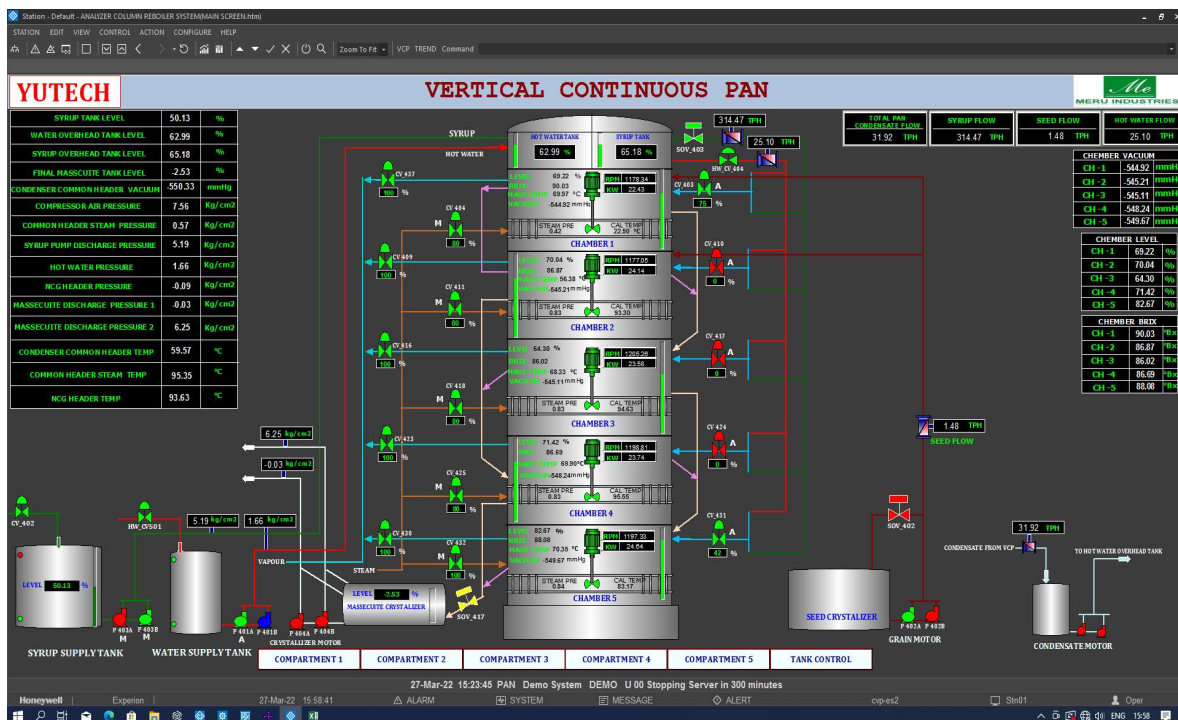
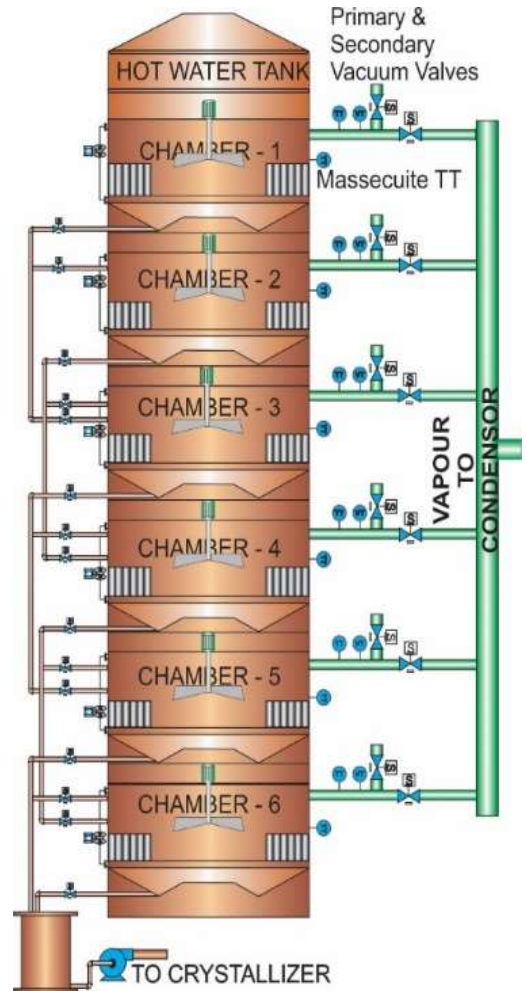


VERTICAL CONTINUOUS PAN OR VKT AUTOMATION WITH BRX ANALYZER AND DENSITY BRX SENSOR



VERTICAL CONTINUOUS PAN AUTOMATION:

- SEED / MAGMA AND SYRUP / MOLASSES FLOW SENSING
- SEED OR MAGMA FLOW CONTROL WITH RESPECT TO MOLASSES OR LIQUOR FLOW ENSURES MAINTAINED MOLASSES-TO-SEED RATIO
- FLUID-DENSITY-BRIX SENSING AND SYRUP / MOLASSES INTAKE CONTROL
- AUTO WATER INTAKE IN THE CHAMBER IF PROCESS CONDITIONS DEMAND IT WITH RESPECT TO FLUID-DENSITY-BRIX
- HEATING STEAM / VAPOUR CONTROL WITH RESPECT TO FLUID-DENSITY-BRIX
- VFD SPEED CONTROL AS PER PAN CHAMBER LEVEL
- TEMPERATURE SENSING THROUGHOUT THE PAN CHAMBER TO ENSURE UNIFORM TEMPERATURE INSIDE THE CHAMBER
- SEMI-AUTOMATIC / AUTOMATIC DROP CONTROL IN ABNORMAL CONDITIONS
- STANDALONE SYSTEM FOR PAN CHAMBER FLUID-DENSITY-BRIX CONTROL AND COMMUNICATION WITH MAIN VCP PLC / DCS SYSTEM



VERTICAL CONTINUOUS PAN OR VKT AUTOMATION WITH BRUX ANALYZER AND DENSITY BRUX SENSOR



YUTECH approaches Vertical Continuous Pan Automation from the Process Point of View, not a typical Automation Perspective.

We aim to achieve maximum throughput in the same Batch Time by properly controlling process parameters to improve process dynamics, resulting in consistent maximum capacity production, with the best possible grain size and sugar quality. The following Procedures are performed in a Controlled Manner:

- Seed / Magma Flow Control with respect to Syrup / Molasses Flow as a Ratio Control.
- Auto Feeding of Syrup to each Compartment based on Fluid Consistency-Brix Sensing to maintain / build Preset Brix.
- Auto Selection of Syrup (or Molasses) or Water depending on Consistency-Brix
- Steam Control with respect to Density-Brix
- Calandria Vapour / Heating Steam Pressure Control.
- Overall, Pan Vacuum Control by Condenser Automation.
 - Please check our Condenser Automation Presentation
- Masecuite Overflow Control with respect to Density-Brix in the Compartment.
- Masecuite Bottom Drain Control with respect to Density-Brix into next Compartment or Abnormal Conditions
- Bypass next Compartment and send material to another compartment with respect to Level / other abnormal condition of next Compartment
- Wash Water and Wash Steam Intake after Material Discharge
- Intake of Fresh Material from Previous or Earlier Compartment and repeat procedure
- Seed or Magma Flow Control with respect to Molasses or Liquor Flow:
 - Molasses and Seed Flowmeters sense Flow.
 - Ratio Controller delivers exact Flow of Seed with respect to Molasses Quantity by Controlling Seed / Magma Pump VFD.
- Individual Compartment Brix Control by Auto Feeding Molasses or Water into each Compartment:
 - Fluid-Density-Brix Sensing of each Compartment by YUTECH Fluid-Density-Brix Analyzer
 - Control of Molasses Intake Valve with respect to Density-Brix Set Point, and Process Value in a PID Mode
 - Addition of Water when required as per Process Dynamics.

BRIX ANALYZER AND FLUID DENSITY BRIX SENSOR

SUGAR PROCESS AND REFINERY APPLICATIONS: SENSES BRIX AND DENSITY IN KG/M³
ACCURATELY SENSES BRIX AND DENSITY IN KG/M³ WITH VACUUM, LEVEL AND TEMPERATURE COMPENSATION



FLUID DENSITY BRIX ANALYZER TECHNICAL SPECIFICATIONS:

PRODUCT CODE: A15FDACFM1230 / A24FDACFMEM1230

- POWER SUPPLY: 85 - 265 VAC, 50 – 60HZ
- INPUTS:
 - FLUID-DENSITY SENSOR
 - RTD PT100 TEMPERATURE SENSOR
 - 8-POINT LEVEL SENSORS (CONDUCTIVITY-BASED DIGITAL SWITCH TYPE)
 - 4-20MA: INPUT FROM VACUUM TRANSMITTER (OPTIONAL, NOT A PART OF STANDARD SUPPLY)
 - 4-20MA: INPUT FROM DIFFERENTIAL PRESSURE TRANSMITTER WITH EXTENDED DIAPHRAGM WITH CAPILLARY TUBES (OPTIONAL, NOT A PART OF STANDARD SUPPLY)
- OUTPUTS:
 - 4-20MA: BRIX OUTPUT
 - 4-20MA: PID OUTPUT FOR BRIX CONTROL (BRIX AS PV FOR PID CONTROL)
 - 2 POTENTIAL-FREE RELAY OUTPUTS
- DISPLAY:
 - FOR PRODUCT CODE - A15FDACFM1230: 7-SEGMENT LED DISPLAY
 - FOR PRODUCT CODE - A24FDACFMEM1230: 7-SEGMENT LED DISPLAY AND LCD DISPLAY
- ENCLOSURE: FIELD MOUNTED MS POWDER COATED, INGRESS PROTECTION CLASS IP67
- COMMUNICATION:
 - ETHERNET: MODBUS TCP/IP (PRODUCT CODE: A24FDACFMEM1230)

FLUID DENSITY SENSOR TECHNICAL SPECIFICATIONS:

PRODUCT CODE: A24FDSRS1, A24FDSRS2, A24FDSRS3

- TYPE: MOTORIZED FLUID DENSITY SENSOR
- POWER SUPPLY: 24VDC FROM THE ANALYZER (NOT TO BE CONNECTED TO ANY EXTERNAL SOURCE).
- BUILT-IN THERMOWELL WITH RTD PT100
 - MATERIAL OF CONSTRUCTION: SS304 / SS316L
- PTFE SHEATHED CONDUCTIVITY PROBE 8 NOS.: SS304 / SS316L WITH PTFE SHEATH
 - MATERIAL OF CONSTRUCTION:
- MATERIAL OF CONSTRUCTION:
 - WETTED ROTARY PARTS: SS304 / SS316L
 - WETTED STATIONARY PARTS: MS CHROME PLATED / SS304 / SS316L
- FOR FOOD-GRADE, SS-304 FULL SENSOR BODY: ADD FGSS TO THE PC. EX: A24FDSRS3FGSS
- FOR ACIDIC CHEMICALS, SS-316L FULL SENSOR BODY: ADD SSL TO THE PC. EX: A24FDSRS3SSL

FLUID DENSITY SENSOR MODEL GUIDANCE FOR VARIOUS APPLICATIONS:

A24FDSRS1: BATCH PAN, HORIZONTAL CONTINUOUS PAN, VERTICAL CONTINUOUS PAN
A24FDSRS2: EVAPORATOR, FALLING FILM EVAPORATOR, JUICE AND SYRUP MIXING VESSEL
A24FDSRS3: SUGAR MELT, MOLASSES CONDITIONER, LIME BAUME
A24FDSRS3FGSS: BREWERIES, FOOD & BEVERAGES, DAIRY
A24FDSRS3FGSSL: CHEMICALS, DISTILLERY SLOPE / SPENTWASH

FOR MORE DETAILS ON THE FLUID-DENSITY-BRIX ANALYZER AND CONTROL SYSTEM WITH FLUID-DENSITY SENSOR DOWNLOAD THE BROCHURE FROM OUR WEBSITE.

PLEASE VISIT OUR WEBSITE www.yutechautomation.com.

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