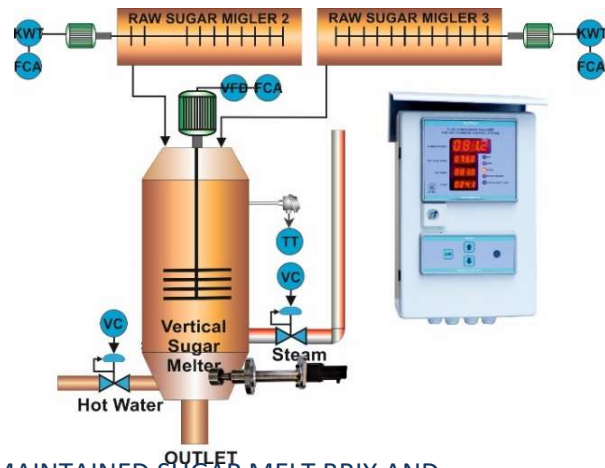


**FLUID-DENSITY-BRIX ANALYZER AND CONTROL SYSTEM WITH FLUID-DENSITY SENSOR**



**SUGAR MELTER AUTOMATION MOLASSES CONDITIONER AUTOMATION**



**SUGAR MELTER AUTOMATION ADVANTAGES:**

- STREAMLINED PROCESS DUE TO CONSTANT AND MAINTAINED SUGAR MELT BRUX AND TEMPERATURE.
- ENSURE CONSTANT QUALITY OF MELT FEED TO PANS.
- REDUCE HEAT WASTE, DUE TO OVERHEATING, UNDER DILUTION, OR OVER STEAMING.
- REDUCE PROCESS TIME BY AVOIDING EXTRA DILUTION.
- THUS SAVE TIME, STEAM, AND WATER AND ENSURE MORE THROUGHPUT IN LESS TIME.
- INCREASE PROFITABILITY.

**CONTROL LOOPS:**

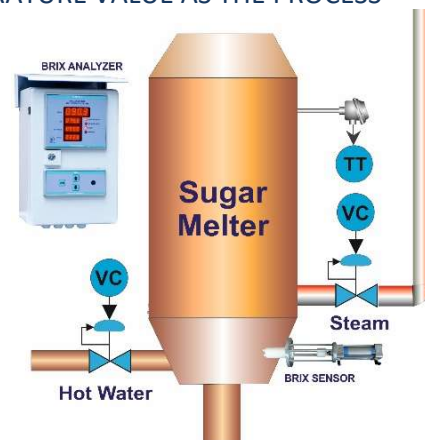
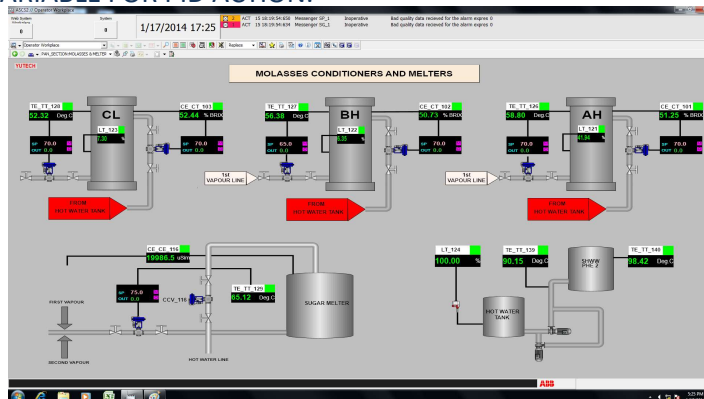
CONTROLLED INTAKE OF HEATING MEDIA (STEAM), AND DILUTING MEDIA (WATER) AS PER PROCESS DYNAMICS LIKE BRUX AND TEMPERATURE OF THE RAW OR RECYCLED SUGAR INTAKE.

**BRUX CONTROL USING BRUX OR FLUID-DENSITY-BRIX ANALYZER:**

- BRUX OF SUGAR MELT ARE MAINTAINED BY THE CONTROLLED ADDITION OF HOT WATER TO MOLASSES USING A HOT WATER CONTROL VALVE IN A PID LOOP. VALUE OF SUGAR MELT'S FLUID-DENSITY-BRIX / BRUX SENSED BY A FLUID-DENSITY-BRIX ANALYZER OR HIGH-FREQUENCY BRUX ANALYZER IS USED AS THE PROCESS VARIABLE FOR THIS PID ACTION..

**TEMPERATURE CONTROL:**

- SUGAR MELT TEMPERATURE IS MAINTAINED CONSTANT BY CONTROLLED APPLICATION OF STEAM USING A CONTROL VALVE IN A PID LOOP USING MELT TEMPERATURE VALUE AS THE PROCESS VARIABLE FOR PID ACTION.



SUGAR MELTER AUTOMATION MOLASSES CONDITIONER AUTOMATION USING FLUID-DENSITY-BRIX ANALYZER

# BRIX ANALYZER AND FLUID DENSITY BRIX SENSOR

SUGAR PROCESS AND REFINERY APPLICATIONS: SENSES BRIX AND DENSITY IN KG/M<sup>3</sup>  
ACCURATELY SENSES BRIX AND DENSITY IN KG/M<sup>3</sup> 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](http://www.yutechautomation.com).

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