

YUTECH HALL'S EFFECT TYPE DISPLACEMENT SENSING AND TRANSMISSION SYSTEM

FOR SUGAR MILL ROLLER LIFT AND CANE BLANKET LEVEL SENSING

BASED ON YUTECH'S A12 INTELLIGENT ANALYZERS AND SYSTEMS PLATFORM



YUTECH



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YUTECH HALL'S EFFECT TYPE DISPLACEMENT SENSING AND TRANSMISSION SYSTEM

YUTECH

Servicing the Sugar
Industry since 1978

FOR SUGAR MILL ROLLER LIFT AND CANE BLANKET LEVEL SENSING



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HALL'S EFFECT TYPE SENSOR FOR CANE BLANKET LEVEL SENSING

Product Code: ASDCBL1210

HALL'S EFFECT TYPE SENSOR FOR TOP ROLLER LIFT SENSING

Product Code: ASDTRLS1210

YUTECH HALL'S EFFECT TYPE DISPLACEMENT SENSING AND TRANSMISSION SYSTEM

Product Code:

CANE BLANKET LEVEL INDICATOR TRANSMITTER: A12DCHTACCBL1210; A12DCHTACCBL2C2R2GFM;

TOP ROLLER LIFT INDICATOR TRANSMITTER: A12DCHTACTRLS1210; A12DCHTACTRLS2C2R2GFM;



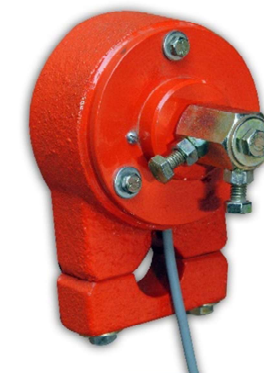
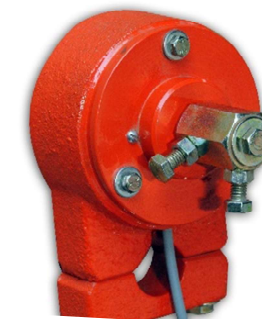
TOP ROLLER LIFT SENSORS



TOP ROLLER LIFT
INDICATOR CUM
TRANSMITTER



CANE BLANKET LEVEL
INDICATOR CUM
TRANSMITTER



CANE BLANKET
LEVEL SENSORS

YUTECH HALL'S EFFECT TYPE DISPLACEMENT SENSING AND TRANSMISSION SYSTEM FOR SUGAR MILL ROLLER LIFT AND CANE BLANKET LEVEL INSTALLATION PICTURE AND SCHEMATIC DIAGRAM

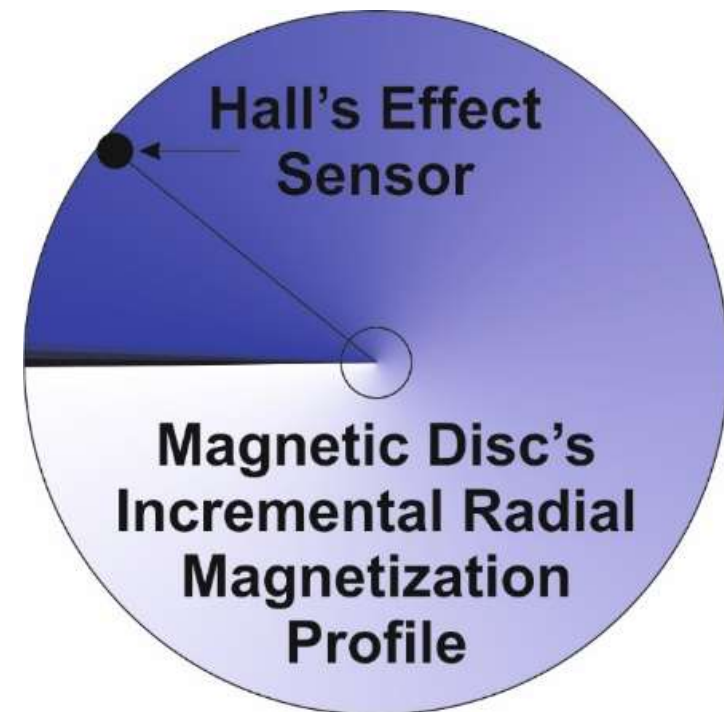


HALL'S EFFECT SENSOR POSITION:

Hall's Effect Technology is based on the Electromagnetic Principle; this type of Electronic Sensing is essentially Contact-less. The Linear Hall's Effect Sensor is fixed on the Wiper, which Glides over a Radial Disc of incrementally varying magnetism, without touching it.

While Gliding over the Magnetic Strip, the Hall's Effect Sensor is induced with a Voltage corresponding to its position on the Disc.

This voltage is then transmitted as Position in radial degree. And is further processed to read Engineering Units or Percentage.



YUTECH HALL'S EFFECT TYPE DISPLACEMENT SENSING AND TRANSMISSION SYSTEM FOR SUGAR MILL ROLLER LIFT AND CANE BLANKET LEVEL INSTALLATION PICTURE AND SCHEMATIC DIAGRAM

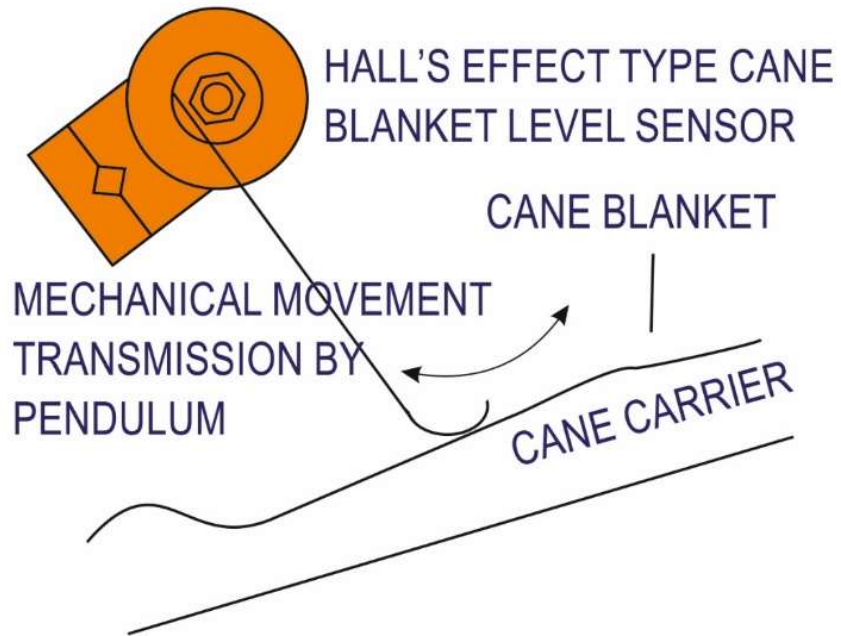


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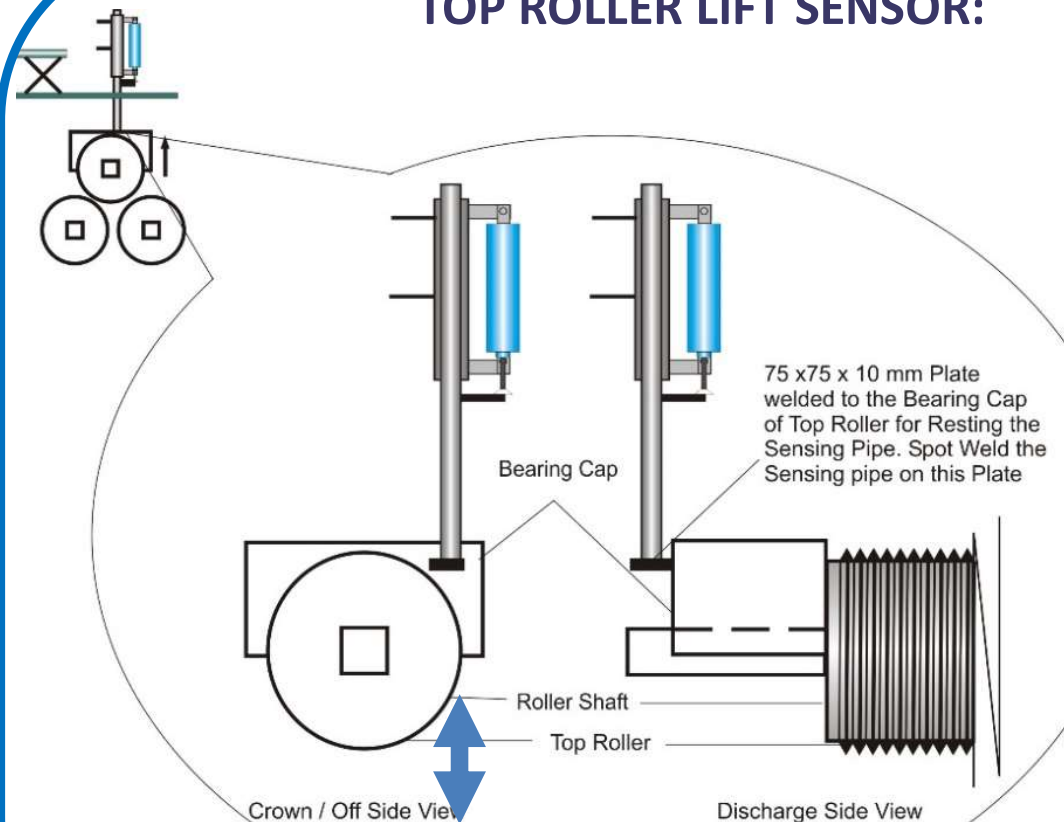
HALL'S EFFECT SENSOR WORKING SCHEMATIC DIAGRAM:

CANE BLANKET LEVEL SENSOR:

HALL'S EFFECT SENSOR WORKING ILLUSTRATION



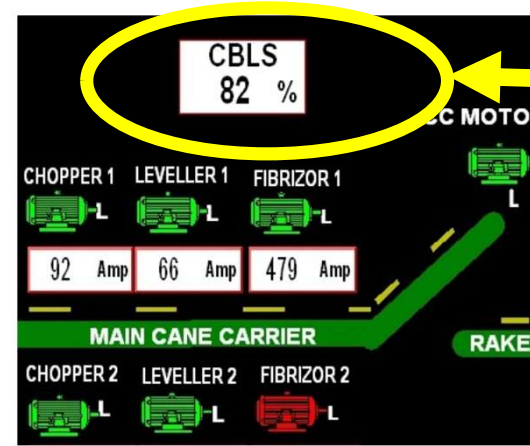
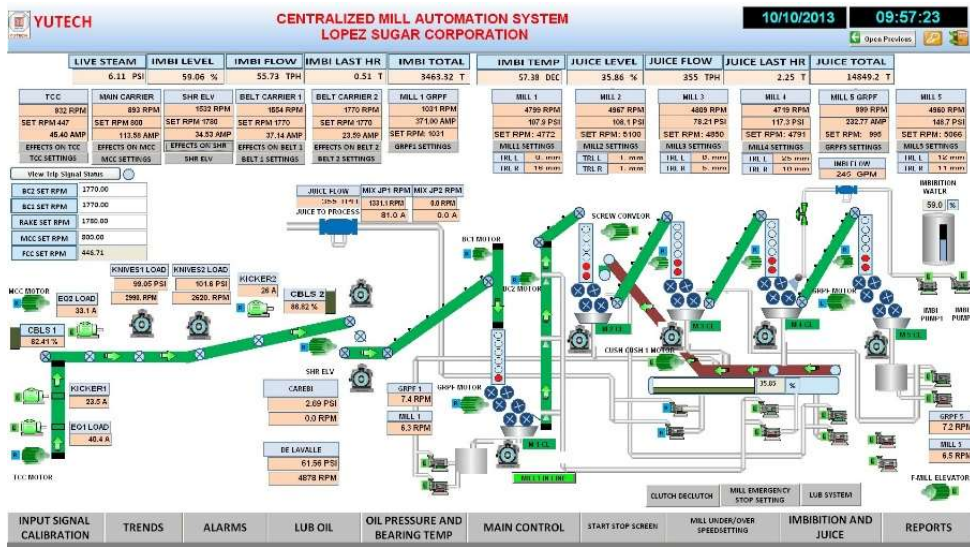
TOP ROLLER LIFT SENSOR:



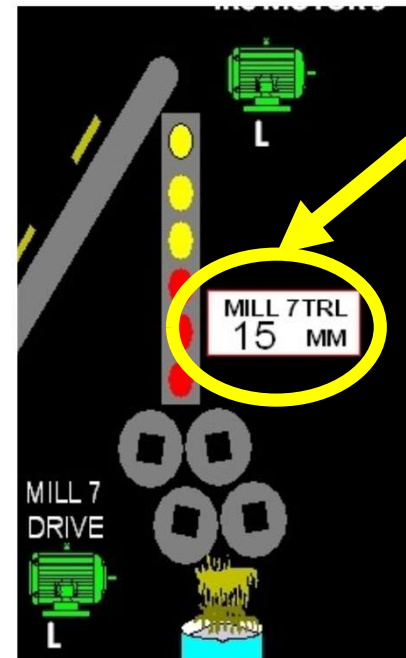
YUTECH HALL'S EFFECT TYPE DISPLACEMENT SENSING AND TRANSMISSION SYSTEM FOR SUGAR MILL ROLLER LIFT AND CANE BLANKET LEVEL INSTALLATION PICTURE AND SCHEMATIC DIAGRAM



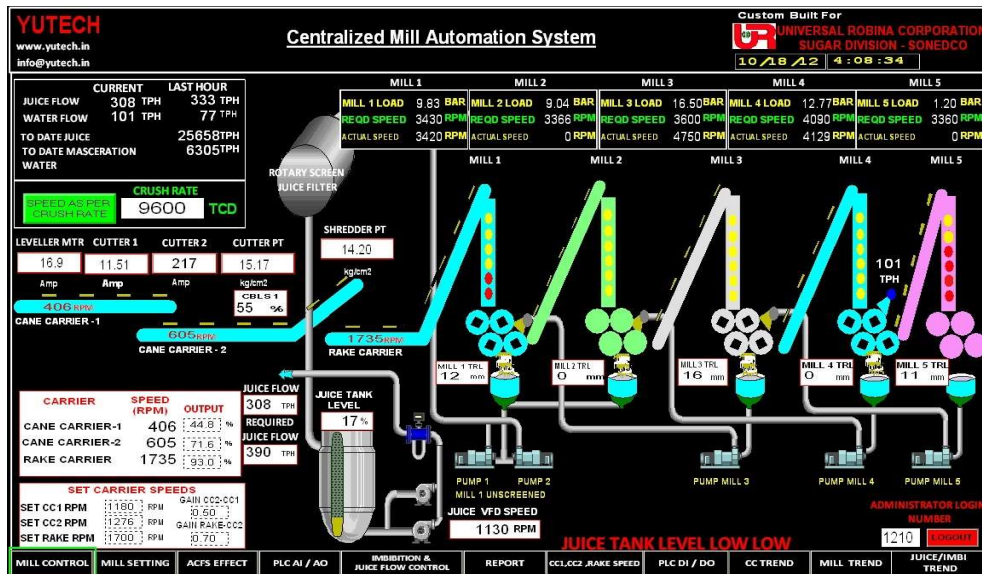
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Cane Blanket Level Sensed in the Cane Carrier is used for Speed Control of: Cane Carrier



Mill Top Roller Lift Sensed is used for Monitoring Top Roller Float Balance



Mill Top Roller Lift Sensed Installation

YUTECH HALL'S EFFECT TYPE DISPLACEMENT SENSING AND TRANSMISSION SYSTEM FOR CANE BLANKET LEVEL



YUTECH CANE BLANKET LEVEL SENSING SYSTEM:

- Cane Level in Carrier is Primarily Sensed by a Pendulum riding on Cane Blanket which Mechanically Transmits the actual Blanket Level or Height to a Contact-less Hall's Effect Sensor.
- 100% True Level Detection through Shocks and Vibrations.
- Extremely Rugged, Heavy Duty, Water-Proof, Ingress Protected Enclosure Protects the Sensor against all external abuse of being hit by Flying Cane pieces, Moisture, Dirt, Juice Mist and Wash Water AND Cane Carrier's Vibrations.
- YUTECH's founder Mr. Arun Dalvi originally invented this Technique way back in 1986 and later upgraded it to Hall's Effect in 2006.
- More than 400 Sugar Mills use YUTECH CBL Sensors and Transmitters in India, Asia Pacific, West Asia and the African Continent.
- Specs: 230 VAC Power Supply, Input: CBL Sensor Dual Channel, Output: Dual Channel 4-20mA.

YUTECH DISPLACEMENT SENSING AND TRANSMISSION SYSTEM FOR SUGAR MILL ROLLER LIFT



YUTECH TOP ROLLER LIFT SENSING SYSTEM:

- Mill Top Roller Lift is Sensed by a Primary Telescopic Sensor whose Sensing End Rests on Mill Pressure Plate, which Mechanically Transmits the actual Lift to a Contact-less Hall's Effect Sensor.
- In Ultra-Sonic Type Sensor, the Primary Sensor's Mechanical Movement is sensed by an Ultrasonic Sensor, which is then transmitted as Top Roller Lift (4-20mA from Indicator). Ultrasonic Sensing was added in 2019.
- Very Rugged, Heavy Duty, Water-Proof, Ingress Protected Enclosure provides 100% True Lift Detection even during Shocks and
- The Enclosure is very well capable of Protecting the Sensor against all external abuse of being hit by Cleaning Sticks by Workers trying to remove stuck Bagasse and also from Direct Hot Wash Water / Steam Spray during Mill Cleaning / Vibrations generated by Full Load Milling Operation . The heavy duty enclosure, also Protects the Sensor against Moisture, Dirt, Juice Mist and Powdered Bagasse Particles.
- YUTECH's founder Mr. Arun Dalvi originally invented this Technique way back in 1992 and upgraded to Hall's Effect in 2006,
- Specs: 230 VAC Power Supply, Input: TRL Sensor Dual Channel, Output: Dual Channel 4-20mA.

YUTECH HALL'S EFFECT TYPE DISPLACEMENT SENSING AND TRANSMISSION SYSTEM FOR SUGAR MILL ROLLER LIFT AND CANE BLANKET LEVEL



Salient Features:

- **Built-in Communication Links: See Product Code to select desired protocol Ethernet:**
 - a. Modbus TCP/IP or EtherNet/IP Communication Protocols
 - b. External Controller Calibration Facility from DCS / PLC- SCADA / HMI System via Ethernet. Control Variables can be accessed and changed from DCS / PLC- SCADA / HMI.
 - c. Process Value Data is Communicated for Data Acquisition and Data Storage within DCS / PLC- SCADA / HMI.

RS485: Modbus RTU

USB Communication Facility: For Calibration from PC or Android using System's USB Port. (This facility is available only with Ethernet Models).

YUTECH Access App: Calibration Software can be installed in PC or Android.

YUTECH HALL'S EFFECT TYPE DISPLACEMENT SENSING AND TRANSMISSION SYSTEM FOR SUGAR MILL ROLLER LIFT AND CANE BLANKET LEVEL



TECHNICAL SPECIFICATIONS:

- **Power Supply:** 85 - 265 VAC, 50 – 60Hz
- **Analyzer Enclosure:** IP67 Field Mounted Dust and Moisture Proof
- **Input:**
 - Hall's Effect Type Cane Blanket Level Sensor Signals
 - OR
 - Hall's Effect Type Top Roller Lift Sensor Signals
 - OR
 - Ultrasonic Type Cane Blanket Level / Top Roller Lift Sensor Signals
- **Calibration can be done from:**
 - **Keyboard:** Keyboard with 4 Keys is provided in the Transmitter
 - **USB Port:** for Windows / Android based YUTECH-AccessApp (Optional)
- **Display:** 4 Digit LED Dual Display, LED
- **Signal Output:**
 - 4 - 20 mA Processed Measured Variable Output
 - 4 - 20 mA Processed Measured Variable Output
 - Potential-Free Relay Output for each Sensor Input
 - Ethernet Communication Protocol: Modbus-TCPIP

YUTECH HALL'S EFFECT TYPE DISPLACEMENT SENSING AND TRANSMISSION SYSTEM FOR SUGAR MILL ROLLER LIFT AND CANE BLANKET LEVEL



PRODUCT CODE:

CANE BLANKET LEVEL INDICATOR TRANSMITTER: A12DCHTACCBL52C2R2GFM;

TOP ROLLER LIFT INDICATOR TRANSMITTER: A12DCHTACTRL52C2R2GFM;

- Example: A12DCHTACCBL52C2R2GFM; A12DCHTACTRL52C2R2GFM;
- A15DCHT is the Product Category - Hall's Effect Type Displacement Sensing and Transmission System
 - AC means AC Power Supply (85 – 260VAC, 50-60Hz)
 - CBLS means Cane Blanket Level Sensor Input (2 Channels)
 - TRLS means Top Roller Lift Sensor Input (2 Channels)
 - C2 means 2 Channel 4-20mA Current Output which is the analyzed output of the sensed parameter
 - R2 means 2 Potential-Free Relay Outputs.
 - GFM means Gol Field Mounted Enclosure
- **Ethernet Model:**
 - A12DCHTACCBL52C2R2GFM**EM**; A12DCHTACTRL52C2R2GFM**EM**
 - EM is for Ethernet (Modbus TCP/IP)

HALL'S EFFECT TYPE SENSOR FOR CANE BLANKET LEVEL SENSING:

Product Code: ASDCBLS1210

HALL'S EFFECT TYPE SENSOR FOR TOP ROLLER LIFT SENSING:

Product Code: ASDTRLS1210

DCS or PLC Based Turnkey Automations or Standalone Control Systems:

- Complete Sugar Mill Automation with all Loops like Cane Feeding, Mill Speed Controls, Imbibition and Juice Flow Controls etc
- Complete Sugar Process Automation with Loops like Evaporator, Pans, Continuous Pans, Melters Conditioners, Direct Contact Heaters, Condensers etc
- Complete Sugar Refinery / Pharma Grade Sugar Plant Automation with Loops like Pans, Continuous Pans, Melters, Melt Clarifier, Melt Filtration Systems, Direct Contact Heaters, Condensers etc
- Complete Boiler and Power Plant Automation
- Complete Sugar Plant Automation and Instrumentation
- Complete Distillery Automation and Instrumentation
- Complete Process Plant (Pharma / Food Processing / Cement / Steel) Automation and Instrumentation
- VCP / CVP / Batch Pan Automation
- Condenser Automation
- Continuous Centrifugal Machine Automation based on CSD or Iris Valve
- Evaporator and FFE Automation
- Direct Contact Heater Automation
- Vertical Crystallizer
- pH Control System

YUTECH'S INTELLIGENT A15 PLATFORM BASED ANALYZERS AND SYSTEMS:

INTELLIGENT & VERY POWERFUL, A15 PLATFORM HAS ANALYTICAL AND HIGHER I/O HANDLING ABILITY WITH HIGH-SPEED COMMUNICATION FOR ETHERNET AND WIRELESS PROTOCOLS



Field Mounted Analyzers and Data Acquisition Systems and Control Systems for PROCESS INDUSTRY, PHARMA, DAIRY AND SUGAR (Milling, Process / Refinery and Boiler) Sector's Challenging and Dynamic Conditions Sugar:

- **Brix Analyzers:** for Clarified Juice, Evaporators, Batch and Continuous Vacuum and Open Pans, Molasses Conditioners, Liming Stations and Sugar Melters
- **Fluid Consistency Analyzers:** for Vertical Continuous Pans, Batch Pans and Processing Vessels
- **Conductivity Analyzers:** for Steam Condensate and Feed Water
- **pH Analyzers:** for Sugar Cane Juice, Liming, Feed Water
- **Continuous Centrifugal Machine Automation System:** With Concentric Split Diaphragm Control Valve also called **Iris Valve**.
- **Condenser Control System:** Multiple or Single Water Spray and Jet Entry Condenser Controls.
- **Infra Red Type Level Sensing and Transmission System:** For Sugar Mill Donnelly Chutes.
- **Infra Red Type Level Sensing and Transmission System:** For Boiler Bagasse Silos or Chutes.
- **Capacitive Type Level Sensing and Transmission System:** For Sugar Mill Donnelly Chutes.
- **Field Mounted Data Acquisition and Communication System:** For Process Data Input / Output, Transmission and Ethernet / Wireless Communication.
- **IoT Field Mounted Data Acquisition and Communication System:** For Process Data Input / Output, Transmission and Internet Communication on GSM and WiFi.

YUTECH'S POWERFUL AND RUGGED A12 PLATFORM BASED INSTRUMENTS:

VERY POWERFUL, A12 PLATFORM HAS DECENT ANALYTICAL ABILITY WITH HIGH-SPEED ETHERNET AND WIRELESS COMMUNICATION PROTOCOLS AND RUGGED FIELD MOUNTED ENCLOSURES



YUTECH

Instruments Specifically Designed and Manufactured for Sugar Mills having IP 67 protection class Enclosures:

- Cane Blanket Level Indicators & Transmitters with Sensor Options of:
 - Hall's Effect Type Sensors
 - Ultrasonic Type Sensors
- Mill Top Roller Lift Indicators & Transmitters with Sensor Options of:
 - Hall's Effect Type Sensors
 - Ultrasonic Type Sensors



Field Mounted Instruments having IP67 protection class Enclosures for any Process Applications:

- Field Mounted Universal Input Process Indicator & Transmitter with Ethernet / Wireless Communication Facility and 4-20mA Retransmission and 2 Potential-Free Relay Outputs
- Field Mounted Dual Channel Universal Input Process Indicator & Transmitter with Ethernet / Wireless Communication Facility and with two 4-20mA Retransmission and two Potential-Free Relay Outputs
- Field Mounted PID Controller and Time Proportionate PID Controller
- Field Mounted Customized Pre-fed Logic Indicators and Controllers
- Function Display
- Electro-Pneumatic Valve Positioner with Position Feedback
- Field Mounted Auto / Manual Stations with External Pot Facility
- Field Mounted Flow Totalizer



YUTECH'S A10 PLATFORM BASED INSTRUMENTS:

A10 PLATFORM IS DESIGNED FOR PROCESS INSTRUMENTS, INDICATORS, SCANNERS AND CONTROLLERS WITH HIGH-SPEED COMMUNICATION FACILITY AND PROTOCOL CONVERTERS



GENERAL INSTRUMENTS FOR ANY PROCESS APPLICATIONS:

- Universal Input Process Indicator & Transmitter
- Dual Channel Universal Input Process Indicator & Transmitter
- PID Controller
- Time Proportionate PID Controller
- Universal Input Jumbo Displays of Digit Sizes from 1" to 12"
- Universal Input Jumbo Displays of Digit Sizes from 1" to 12" with 4-20mA Retransmission and 2 Potential-Free Relay Outputs
- Modbus RTU Input Jumbo Displays of Digit Sizes from 1" to 12"
- Special Machine Controllers customized for YUTECH Machines
- Auto / Manual Stations with External Pot Facility
- 8 AND 16 Channel Scanner



I/O AND PROTOCOL CONVERTER PRODUCTS:

- Universal Input Process Indicator with Modbus RTU, 4-20mA Retransmission and 2 Potential-Free Relay Outputs
- 8 Channel Universal Input Card with Modbus RTU Communication
- 8 Channel Universal Input Card with Wireless Communication
- Wireless to Ethernet Protocol Converter
- Modbus RTU to Modbus TCP/IP Serial to Ethernet Protocol Converter
- EtherNetIP TO Modbus TCP/IP Protocol Converter



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YUTECH SUGAR MILL PROCESS INSTRUMENTS

MEASURING SUGARS BRIX BY BRIX

YUTECH FLOW CONTROLS

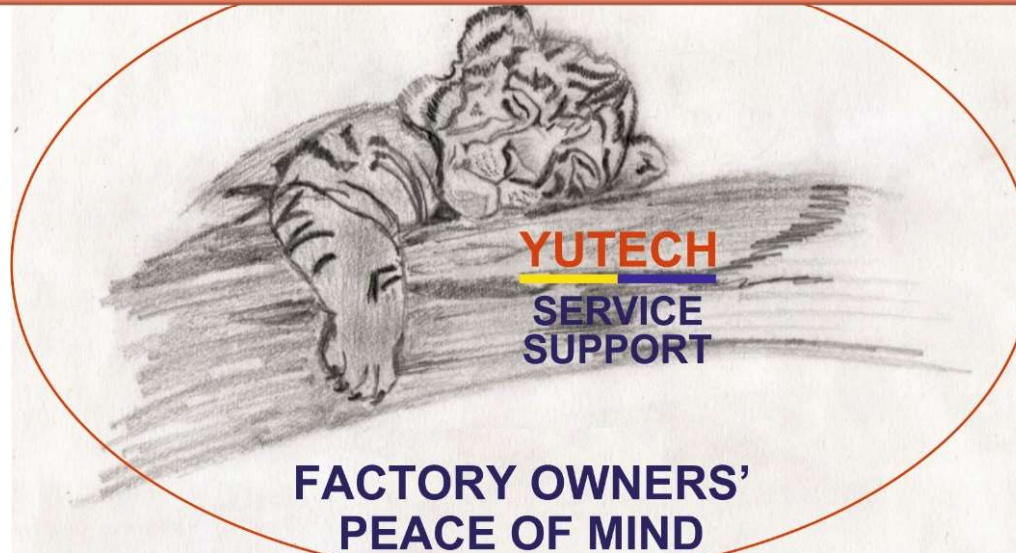
CONTROL SAVE EARN

YUTECH AUTOMATION

THE SWEETENER TO SUCCESS

YUTECH INSTRUMENTS

ANALYZE TRANSMIT CONTROL COMMUNICATE



**SAVE FUEL, REDUCE CARBON FOOTPRINT,
MAKE THE WORLD GREENER
AND YET, MAKE MONEY**

THANK YOU

www.yutechautomation.com; www.yutech.in; sale@yutech.in