Pulp & Paper Solution

Instruments and Solution for
Pulp & Paper Industry

LF3BUSS03-00EN

YOKOGAWA

Pulp & Paper Plant for the World

Process for Fundamental Materials, Requires Effective Production with vast Operational Excell

Challenges in the pulp & paper plant

Continuous technology improvement is ongoing in the pulp & paper industry to obtain the best possible performance. The improved plant performance translates to the higher quality improvement and lower cost, and simultaneously environmental friendly plant operation.
In the pulp & paper plant, there are many critical applications to measure the severe process condition, such as corrosive chemicals, aggressive pulp slurry with extremely high temperature and pressure condition. And stable and accuratsssssse measurement and control in these severe process condition and hash environments is the key to optimize the process control and the performance of plant operation.

As your best solution partner

For many years, Yokogawa has developed the process measurement & control product line-up with the collaboration with pulp & paper industry based on the process know-how and experiences.
Yokogawa's wide and powerful sensors line-up are available with "best-fit-model selection" for every process in the pulp & paper plant, and delivers stability, precision, robustness in process measurement even under the challenging application such as digester and washer in chemical pulp plant. The high performance and intelligent controller helps to achieve higher quality production control in the pulp and paper.

Safe and Realizable Plant Operation

The predictive diagnostics availability of sensors delivers the predictive maintenance capability. The combination of the reliability of field-proven technology, and the latest technology of intelligent diagnosis strongly support higher level of safe and reliable plant operation at low cost.

Why buy Yokogawa?

The reliable and accurate measurement & control with Yokogawa's sensors and controllers support to achieve the dual aim of the high quality production at low cost and environmental friendly plant operation. In addition, the Yokogawa's experienced project handling and service capability in the pulp & paper industry support the successful project execution and life-cycle optimization in your plant.

Washer — Monitor Filtrate Liquor

Overview and Problems

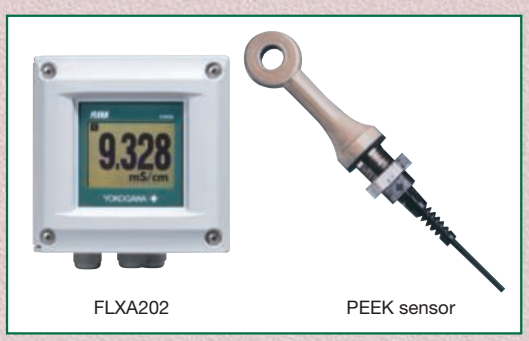
- Filtrate conductivity monitor
- Existing electrode type conductivity sensors are easy to clog

Solution

- Wide measurement span
- No clogging of black liquor

Benefits

- Fast response
- Low maintenance cost and time



FLXA202 PEEK sensor

Bleaching filtrate — Monitoring pH Value

Overview and Problems

- Excessive Cl_2O weaken paper intensity
- Existing residual Chlorine deteriorate the electrode

Solution

- Special anticorrosive glass membrane
- Special anticorrosive structure of Ag ion trap

Benefits

- High accuracy to improve paper intensity
- Low maintenance cost and time

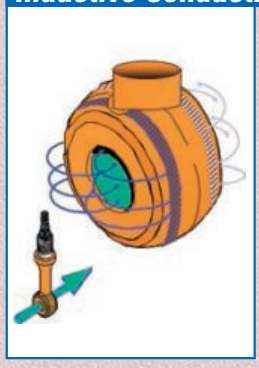
FLXA202 PH4C

Technologies Commit Users' Benefits

Our Goal

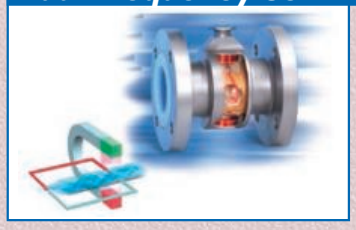
Our shared goal is customer satisfaction through operational excellence.
Yokogawa has brought true innovations to industry. We are committed to ensuring accuracy, reliability, and safety of your production system throughout your business life cycle. Our comprehensive solutions and expertise help you achieve more results with less total costs of ownership. Below key technologies shall aim for your operational excellence.

Inductive Conductivity Sensors



The ISC sensors use a high performance engineering plastic of PEEK (polyetheretherketone) that provides abrasion and corrosion resistance.
The sensor has a large bore (17 mm) for optimal resistance to fouling processes and when properly installed, the flow will keep the sensor clean, to help avoid measuring errors. This large bore also allows quick response even on low flow measurement. Also available upon request is a PFA lined sensor that provides excellent heat and chemical resistance.

Dual Frequency Coil Excitation

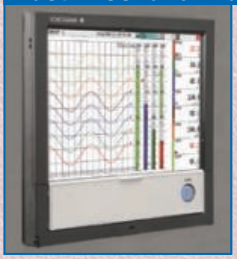


Magnetic Flowmeters measure flow volume with Faraday's law. The frequecy of excitation current given to coils affects in the measurement accuracy and response time.
Dual Frequency Coil Excitation is Yokogawa's original technology to ensure ±0.35 % accurate measurement as well as 0.1 second fast response simultaneously.
Our signal processing technique enables us to bring the benefits of an AC & DC magnetic flowmeter into a single magnetic flowmeter.

Manual Operation "Hard Manual"

Independent manual override is built into the control circuits, ensuring that control output can continue even when a control circuit including the CPU experiences a problem.

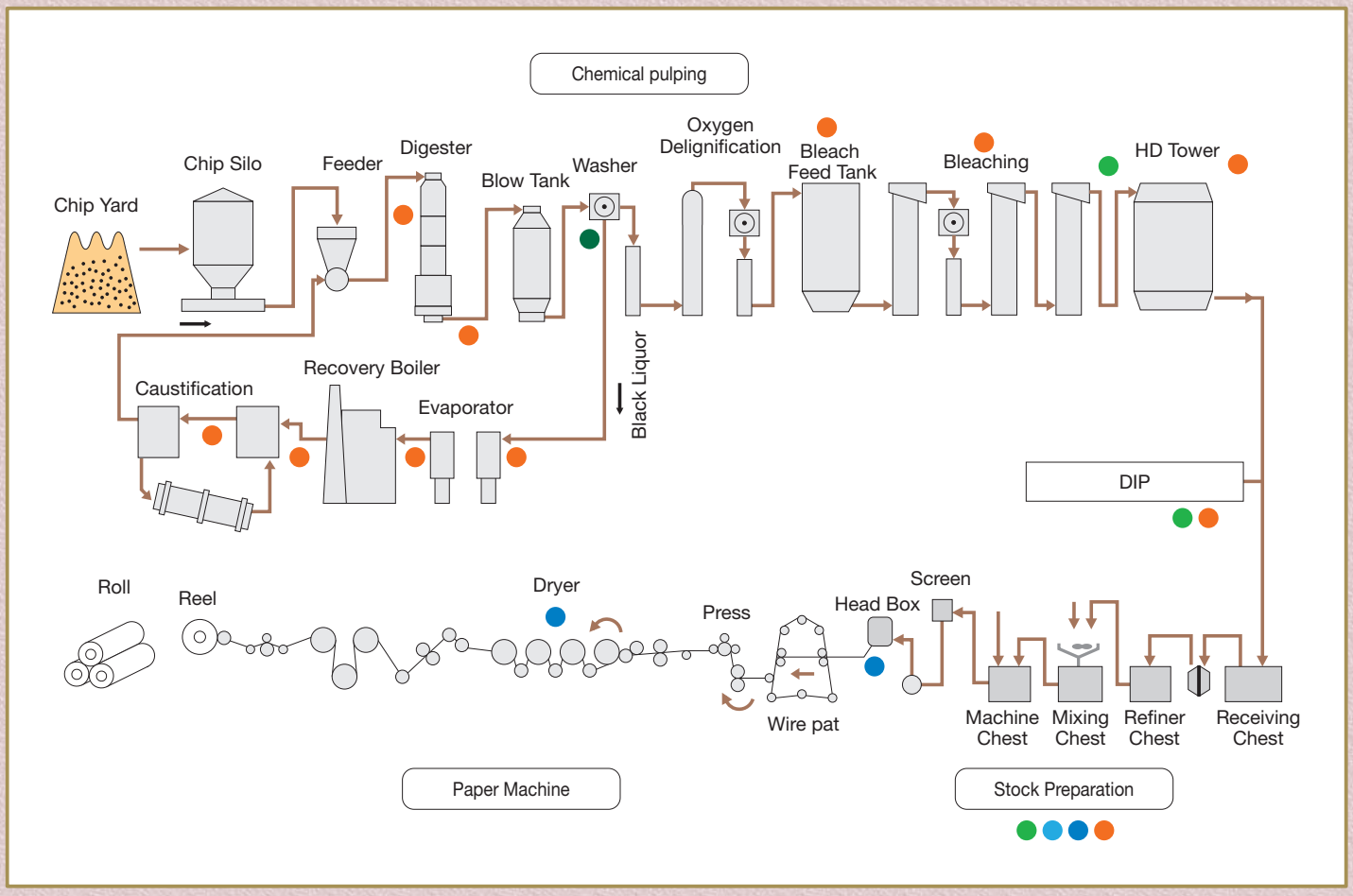
Dust-Proof and Water-Proof Front Panel



The front panel has a dust-proof, water-proof design which is compliant with the IEC529-IP65 and NEMA No.250 TYPE4* standard. This structure provides good protection for the recorder's internal components and the removable storage media drive mechanism.
*Except external icing test.

DPharp Silicone Resonant Sensor

DPharp Pressure Transmitters with digital silicon resonant sensor delivers the maximum benefits from the elasticity of the single crystal silicon material while enhancing sensitivity and repeatability. The properties of the resonators remain constant over time. This makes DPharp the ideal pressure sensor for harsh industrial automation environments. DPharp delivers stability, repeatability and reliability that you can rely on.



Digester / Blow Line

Pulp Slurry Flow Measurement

Overview and Problems

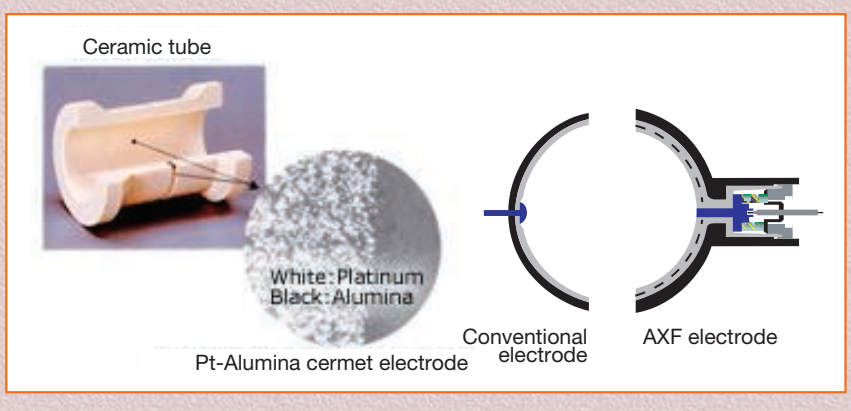
- Slurry noise (10 wt% pulp slurry)
- High abrasive fluid (solid material)

Solution

- Dual frequency excitation
- Standard high frequency 75 Hz
- Optional high frequency 160 Hz
- Ceramics lined AXF
- PFA Lined AXF with metal hat earthring

Benefits

- Stable and accurate measurement under aggressive slurry
- Leak-free ceramic liner construction
- Longer life-time by robust design



Adhesive Fluid Measurement

Overview and Problems

- Adhesive chemicals
- Wood resin adhesion
- Dye adhesion

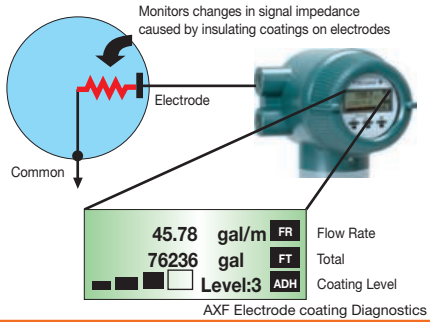
Solution

- ADMAG CA
- Mirror finished AXF
  - Ceramics lining
  - PFA lining
- Predictive electrode coating Diagnostics function

Benefits

- Accurate and stable measurement under adhesion
- Reduce the effect of built-up on the lining
- Reduce the maintenance cost


ADMAG CA



AXF Electrode coating Diagnostics

Dryer


YS1000 series

Overview and Problems

- Steam pressure control in drying process
- Renewal demand for obsolete controllers
- Need centralized data monitoring

Pressure Control

Solution

- Easy to use
  Color LCD display with a wide variety of screens includes meter display that is suitable for the replacement of conventional controllers
- Control output backup function
  Dual CPU & Hard manual
- Remote data monitoring via Ethernet

Benefits

- Safe and stable control at low cost
- Less engineering for replacement

YS1000 series is available also for other processes in pulp & paper industry.

Stock Preparation


SMARTDAC+ with UTA/MDL model

Overview and Problems

- Control pulp density and flow
- Need both functions of controllers and recorders
- Need high reliability under harsh environment

Density Control

Solution

- SMARTDAC+ recorder can be manipulated connected UTAdvanced controllers through the RS485 communication by touch panel operation*
- Custom display
  You can make graphic objects which can be shown stock preparation process*
- Powerful calculation function
  Pulp dry mass flow calculation and other sequential control for stock preparation can be realized by powerful embedded calculation functions*

*Mandatory options: /C3,/CG and /MT (SMARTDAC+)
RS485 communication (UTAdvanced)

Benefits

Combination of SMARTDAC+ and UTAdvanced brings easy operation and cost saving.
Dust-proof and water proof front panel (IP65,NEMA No.250 TYPE4* compliant)
*Except external icing test

For Your Operational Excellence

Inductive Conductivity Transmitter

FLXA202

- Single stain-resistant sensor covers a wide measuring range
- Process-independent customized temperature compensation
- Touch screen display
- Intrinsically safe version

pH Transmitter

FLXA202

- Designed for two-wire system configuration
- Touch screen display
- Rugged cast aluminum case
- Intrinsically safe version

Single Loop Controller

YS1000 Series

- Two programming method
- High reliability
- Compact and light weight
- Expandable I/O
- Compatible with YS170 and SLPC

Control and Recording Devices

SMARTDAC+ Recorder Series
UT Advanced Controller Series

- Variety screen with touch panel operation
- Robust data recording and SD card available.
- Expandability of control and measurement modules
- Powerful control function

Magnetic Flowmeter

ADMAG AXF™

ADMAG AXF Series

- Best-in-class performance with dual frequency excitation method
- Predictive electrodes adhesion diagnostics
- Variety of liners & electrode materials
- Fieldbus communication capability

Pressure Transmitter

DPharp

DPharp EJA/EJX Series

- Best installed performance
- Compact and rugged design
- Multi-sensing digital sensor
- SIL2 as standard*
- Fieldbus communication capability*

* : Applicable for wired transmitters

Temperature Transmitter

YTA Series/YTMX580

- High resolution, high stability and high versatility
- Dual compartment housing for harsh environments**
- SIL2 safety as standard feature*
- Fieldbus communication capability*

* : Applicable for wired transmitters
** : Applicable for YTA Series

Multi Protocol / Function Adapters

FN310/FN510

- Enhancing Field Wireless product portfolio
- FN310 : HART (4-20 mA), Modbus (SENCOM)
- FN510 : DI/DO, AI (4-20 mA), Pulse
- Compact and low cost design
- Full battery powered solution available

YOKOGAWA ELECTRIC CORPORATION **http://www.yokogawa.com/**
YOKOGAWA CORPORATION OF AMERICA **http://www.yokogawa.com/us/**
YOKOGAWA EUROPE B.V. **http://www.yokogawa.com/eu/**
YOKOGAWA ENGINEERING ASIA PTE. LTD. **http://www.yokogawa.com/sg/**

Printed in Japan, 905(KP) [Ed : 02/b]

YOKOGAWA