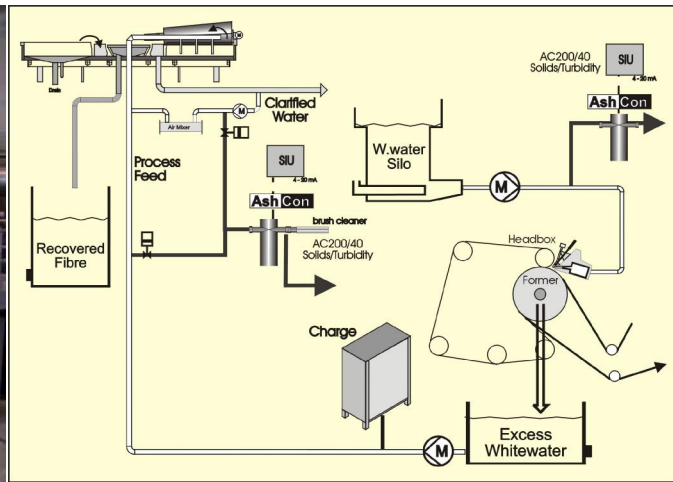


DAF Water recovery, consistency control and charge demand stability for Tissue applications



Tissue Applications

The Tissue production process has high demands for; productivity, quality and efficiency. Maintaining process stability and having the capability to respond to process changes during; start-up, normal operation or during grade changes is essential. Invista provide a range of process measurements to allow a mill to manage these changing conditions and optimise the process.

Understanding the operation of the wet end / forming section of the machine aids process stability. An in-balance in material or chemical (ionic) additives can cause poor wet-end retention. Fines concentration can increase leading to sheet breaks, loss of quality and poor runnability.

AshCon Sensors provide an accurate optical measurement of; consistency, suspended solids and ultra-low solids / turbidity around the process. They are used to provide a continuous measurement of key parameters around the wet end and excess water loops. This allows control schemes to be used to stabilise the process.

Process disturbances can be seen quickly and the correct remedial action taken by operators to avoid losses.

Each sensor is factory pre-calibrated on a custom material mix to simplify on-site calibration. Sensors are self-cleaning and correct for any drift.



DAF water recovery

In Tissue applications the Ashcon AC200 sensor is often used around a DAF. The DAF is used to clarify the backwater and reduce fresh water usage. The clarified water solids from the DAF can be controlled to either maximise throughput within limits or minimise clarified water solids. Polymer addition can be controlled and alarm limits can give an immediate indication of a process disturbance. Excess backwater is fed to the DAF clarifier (whitewater solids) and gives an indication of the retention conditions on the machine.

Retention monitoring

The measurement of whitewater solids gives a direct indication of the retention conditions on the machine. Poor retention will increase the level of the consistency (solids) in the whitewater. Machine adjustment or material additives can be changed to maintain or optimise the retention on the machine. The measurement of the thinstock at the headbox (multi-layer) will allow the retention to be continuously calculated and the proportion of different layers to be correctly adjusted.

Ionic charge demand

The **ionTEK** SCD charge sensor measures the ionic charge demand in the wet end.

This measurement of colloidal dissolved materials at the wet end of a machine provides an indication of the charge balance affected by material and chemical additives. Conditioning the feedstock at the wet end can reduce process variability to help stabilise machine production. Upto two samples feed the charge measurement unit in a batch sequenced titration. Three (3) cross-filters are used to remove fibrous material and the unit is automatically cleaned after each cycle. A separate **Lab. Check** sequence allows manual samples to be measured either for measurement verification or as a laboratory instrument replacement. The unit is enclosed within a cabinet with easy access for routine cleaning.

A measurement for cationic or anionic charge demand (μ .equiv/Ltr) is provided with data analysis tools built-in.



Consistency control

Tissue furnish does not normally carry fillers (ash) and this allows optical consistency sensors that can be affected by ash, to be used throughout the process.



The Ashcon AC500 sensor measures the consistency of process streams containing a uniform pulp mix (0-60g/L / 0-6%Cs.) The sensor uses a high-energy nIR diode light source with focused optics and dual measurement channels. The sensor is factory pre-calibrated on a custom material mix to simplify on-site calibration.

The head design reduces pulp flow resistance and mounting is by an industry standard clamp. The sensor includes a flush cleaner port to clean the optics for heavily contaminated furnishes as required.

The AC500 is effective in broke systems where there are large changes in the consistency.

The implementation of process consistency control together with wet-end control schemes around retention and charge applications can provide a fast payback on investment.

Improved process stability helps to reduce the production environmental impact. Savings on water usage, effluent load and energy can be realised.

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