

Drainac™ Freeness Analyzer

Product Information Review

Product Overview: The Drainac™ Freeness Analyzer is an on-line, in-process field instrument used as a production orientated tool that directly measures drainage rate (freeness).

How it works... The Drainac™ operates on the basic principle of how easily water will drain through a pad of fiber. Approximately every 30 seconds, the Drainac™ measures the rate of filtrate flow through a fiber pad.

The Drainac™ consists of a totally enclosed vertical riser which has no moving parts. The compact detector is mounted directly in a pressurized stock line, or open vessel, avoiding any sampling lags or transport delay time. For pressurized applications, stock rises into the detector tube under controlled differential pressure. Fibers are retained on a perforated plate and filtrate passes through the pad which is formed. The time required to draw a known volume filtrate through the pad is used to calculate freeness. For non-pressurized applications, the Drainac™ employs negative pressure to draw the stock sample into the detector tube for drainage rate determination.

Once the freeness has been determined, air pressure is increased to return the filtrate and fiber to the stock line in preparation for the next cycle. At the same time, flush water is introduced into the chamber to clean the screen and interior of the chamber. Cycle times range from 30-60 seconds.

Who is it important to ? Production Superintendent / Machine Superintendent / Process Engineers / Machine Operators.... Anyone who has basic paper machine production responsibility.

Why is it important ? This unit is used as a production orientated tool to give a fast, on-line freeness measurement.

This information is regarded as a “window” into the process as an indirect measurement of fiber quality. (*Competitive Advantage: the Drainac™ is the only freeness measurement device that actually measures the true drainage rate*, or from the papermaker’s standpoint, actually measures the drainage of the stock on the forming fabric.)

This on-line process signal then can be used for closed-loop refiner controls and real-time stock blending decisions.

Basic Applications:

Closed Loop Refiner Controls – On-line freeness measurement is commonly used to control the final freeness target (setpoint) for the refiners by cascading the freeness measurement output directly to the horsepower tons / day controller.

Basic On-line Freeness Measurement – Basic on-line freeness measurement is used by production managers and paper machine operators as a “speedometer” of fiber quality enabling them to make real-time decisions that effect final production quality and paper machine runnability.

Stock Blending – Used for monitoring the fiber characteristics of individual furnish streams so that optimal stock blending can be accomplished on a real-time basis. In this manner, the lower cost furnish stream can be maximized without sacrificing final product quality.

Key Features / Benefits:

Fast Sample Rate – 2-3 samples / minute allows for superior refiner control performance.

Directly Measures Drainage Rate – calibrates to any freeness measurement, CSF, Williams Precision Slowness, Schopper-Reigler.

Complete In-line System – no wasted product or sewer samples.

Multiple Calibration Characteristics – for applications with different grades or furnishes.

Self Cleaning System – minimizing maintenance and sampling errors.

Simple Design – easy to use and understand.

Low Installation Cost – the simple design allows for easy, cost effective installation.

Digital Communication – easily integrates into any DCS platform.

