Product sheet

RET-2512

PeakTwo

FEATURES

- **High accuracy of ash and total consistency**
- **Easy calibration on lab ash**
- **Inline installation**
- **Real time results**
- **One state-of the art communication platform**
- **Lean design and top functionality**

BENEFITS

- **Retention chemical savings**
- **Faster grade changes**
- **Tight ash and total retention control**
- **Optimized DIP flotation yield**
- **Lowest total cost of operation**
- **Low start-up and installation cost**

GENERAL / BACKGROUND

BTG's RET-2512 PeakTwo is an in-line transmitter for measuring ash and total consistency of pulp suspensions in the range 0.01-3%. It can easily be calibrated to secure stable and accurate ash consistency based on laboratory ash determination. Ash and total consistency values are independent of variation in pulp brightness or color.

The transmitter is mounted in-line without any special bypass arrangement and provides real time results. The PeakTwo has a unique low-maintenance probe, without electronic components attached which makes the transmitter insensitive to variations in temperature and vibration.

The sensor electronic employs modern microprocessor technology with advanced signal analysis. It is operated using BTG's electronic platform, the CPM, which ensures capability with present and future communication interface requirements, from analogue output with HART® to field buses.

The RET-2512 PeakTwo offers a number of advanced capabilities. It is the ideal transmitter for accurate ash control applications. Combination of this in-line sensor with BTG´s specialist application know how is the perfect solution for all retention control applications and DIP flotation optimization.

Its ability to hook up with a pre-configured PC allows chemical suppliers convenient data storage, remote equipment access and retention calculation – all through one customer-friendly software.

As part of the new generation of easier smaller, smarter and lighter product range, the PeakTwo is designed to help you rapidly optimize the paper making process, for significant cost and productivity improvements.

Use QR-code or link for more information
www.btg.com/mybtg/en/instruments/ret-25x2

MEASURING PRINCIPLE / MEASUREMENT

Measurement of PeakTwo is based on the patented BTG Peak Method of optical analysis. This technology is based on the fact that suspensions contain both large and small particles. Large particles are typically the fibers and small particles are the fillers and fines.

A close study of a certain volume of suspension shows that the number of small particles in a suspension is high and relatively constant over time, whereas the number of large particles is small and varies significantly over time.

The large particles form a relatively transparent network, within which the small particles move freely. A narrow light beam directed through the suspension is generally affected by both large and small particles. If only small particles come before the light source, transmission is higher and a so-called Peak is detected.

Three signals are computed out of the detector signal: the mean value, VDC, the Peak value, VP and the AC component, VAC. Figure 1 is a typical time-diagram showing the detector signal. The total consistency is obtained by adding the processed VP and the VDC values. Filler consistency is calculated mainly from the Peak value V_P.

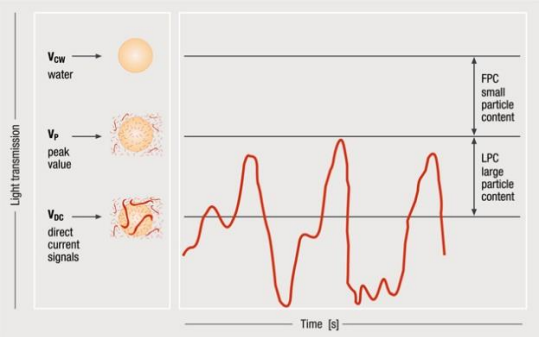

Figure 1: Time diagram of the detector signal

APPLICATION EXAMPLE

CLOSED LOOP RETENTION AID CONTROL

On paper machines with a dilution headbox, the optimum solution for retention control is to install two RET-2512 PeakTwo sensors in the headbox sample (HC flow) and one sensor in the white water sample (LC flow). The optimum installation position is directly on the pressure side of process pumps. (Figure 2)

Retention aid additions can be controlled by in-line measuring of the white water consistency. In many process steps white water is used for dilution and for consistency control. Thus white water consistency stabilization results in faster grade changes, reduced basis weight variability and optimized disc filter operation.

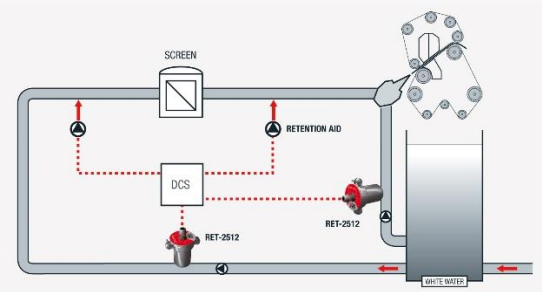

Figure 2: Typical installation of PeakTwo in a dilution headbox paper machine

DIP FLOTATION OPTIMIZATION

Constant consistency and constant flow to the inlet of the deinking cells and in the accept are important to maximize efficiency of the flotation process. Continuous total consistency and ash measurements will allow to adjust ash removal rate, decrease fiber/fines losses and to establish a mass balance around the flotation cells. A well controlled total consistency is also precondition for trouble-free operation of hydrocyclones and fine screens. Reduced ash variability will improve brightness control due to minimized impact on brightness measurement.

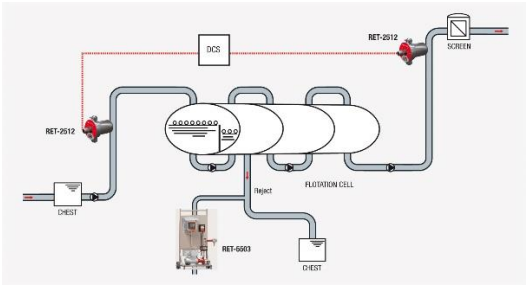

Figure 3: Typical installation of PeakTwo around DIP flotation cell

TECHNICAL DATA / SPECIFICATIONS

GENERAL

Type	RET-2512 In-line smart optical total consistency transmitter for pulp suspensions
Manufacturer	BTG Instruments AB, Säffle, Sweden
Measuring principle	Light transmission and scattering using BTG's patented Peak-method. Performed by light transmission of NIR, 880 nm
Measuring range	0.01 to 3.00 % total consistency and 0.01 to 2.00 % ash consistency depending on filler content and fiber type
Repeatability	± 0.002% Cs

PROCESS SPECIFICATIONS

Process pressure	PN16 (16 bar at 20°C [230 psi at 68°F])
Media temperature	Max. 100°C [212°F] Min. 5°C [16°F]
Max. ambient temperature	Probe: 80°C [176°F] Electronics: 50°C [122°F]
Flow velocity	1.5 - 5 m/s
Process pH	4 – 9
Material:	
Wetted parts	Stainless steel, EN 1.4404, equiv. to ASTM 316L
Electronics box	Painted aluminum
Weight:	
Transmitter, RET-2512	1.3 Kg [2.9 lb]
Sluice valve	0.4 Kg [0.9 lb]
Sensor electronics box	0.3 Kg [0.7 lb]

Functions:	
Analog output	4-20mA, HART® protocol
Output signal	Total consistency in %, g/l, or mg/l Ash consistency in %, g/l, mg/l, or %ash
Calibration sets	Four separate calibration sets, individually programmable, and externally controllable
Alarm function	Provides alarm signal on low and high consistency level, unstable signal
User interface	See Communication platform (CPM)
Serial port	RS 485
Mounting:	
Min pipe diameter	80 mm [3.2"], normal stud. DN40-DN65 [1½"-2½"], weld-on pipe stud.
Electrical connection	100-240 ±10% VAC, 50/60 Hz. Connected in CPM
Power consumption	Max 50 VA, a 2A slow blow fuse must be used

SAFETY & DIRECTIVES

Safety and protection class

Product safety	CE, C-tick, ETL
Protective rating	Equivalent to IP65, NEMA 4x

EU-directives

Designed in accordance with relevant CE standards.

Quality Assurance

Quality-assured in accordance with ISO 9001.

Optional:

Software	BTG Software
Cleaning device	

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Use QR-code or link for more information
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DIMENSION DRAWINGS

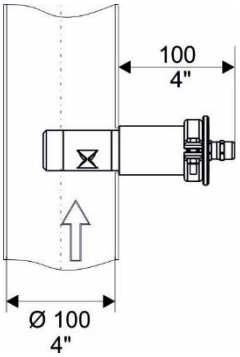

Figure 4: RET-2512 Probe 100 mm [4"], normal stud.

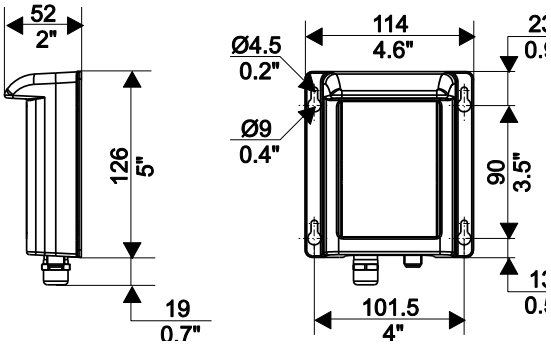

Figure 5: Sensor electronics