

Product sheet

TCT-2501

PeakOne
Total Low Consistency Transmitter

FEATURES

- In-line low consistency measurement
- High accuracy of true total consistency
- Easy calibration with long term stability
- High installation flexibility – no flushing required
- One state-of the art communication platform
- Lean design and top functionality

BENEFITS

- Tight control through real time results
- Retention chemical savings
- Faster grade changes
- Improved screen and disc filter performance
- Lowest total cost of operation
- Low start-up and installation cost

GENERAL / BACKGROUND

BTG's TCT-2501 PeakOne is an in-line transmitter for measuring total consistency of pulp suspensions in the range 0.01-3%. It measures the large and fine particles individually and can because of that deliver an accurate total consistency value independently of variation in fiber, fines or ash. The pulp brightness or color does not affect the measurement.

The transmitter is mounted in-line without any special bypass arrangement and provides real time results. The PeakOne 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 TCT-2501 PeakOne offers a number of advanced capabilities. It is the ideal transmitter for all control applications where high accuracy of true total consistency is required.



Use QR-code or link for more information
www.btg.com/mybtg/en/instruments/tct-25x1

The performance of hydrocyclones can be optimized with fast payback. Due to its real time results this sensor is ideal for all chemical control applications like retention control around board/liner machines and to improve performance of disc filters or flotation cells.

Its ability to hook up with a pre-configured PanelPC 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 PeakOne is designed to help you rapidly optimize the paper making process, for significant cost and productivity improvements.

MEASURING PRINCIPLE / MEASUREMENT

The TCT-2501 employs the patented Peak Method for measuring total consistency of pulp suspensions. 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.

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 the large and small particles.

Close study of a certain volume of suspension shows that the number of small particles in the suspension is great and relatively constant over time. On the other hand, the number of large particles is small and varies significantly over time.

If a short time period is studied, in which only a single fiber passes the light gap, the fiber covers the light. On the other hand when no fiber is in the gap a lot of light comes through. This is the “Peak” period and provides valuable information on the fine/ash content in the pulp suspension. As the suspension passes the gap, a DC-signal is created with information on both large and small particles.

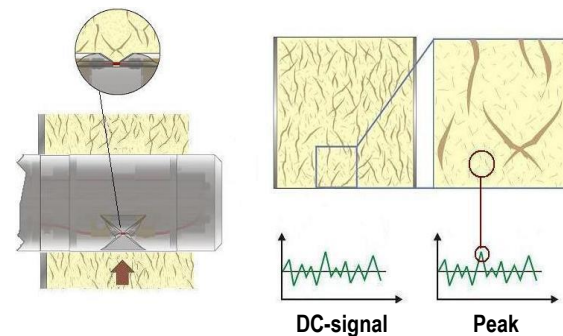


Figure 1: BTG's patented Peak Method

APPLICATION EXAMPLE HYDROCYCLONING

To control the consistency up to the optimum capacity and cleaning effect will save a lot of power. To do this at low consistency in an accurate way is not easy. With PeakOne this can be done and a short return of investment can be achieved.

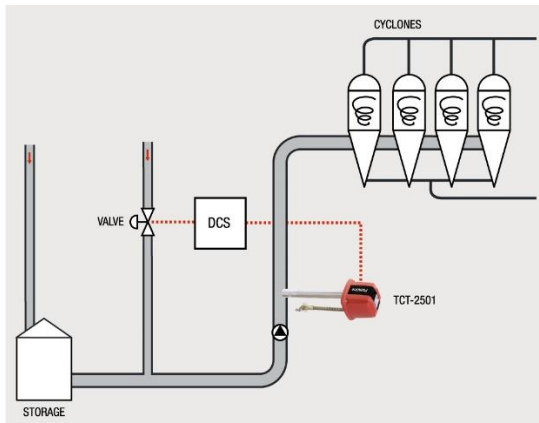


Figure 2: PeakOne in hydrocycloning application

RETENTION CONTROL

In board/liner machines retention and dewatering 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. Due to high ash loads in RCF containing grades the true white water total consistency stabilization results in faster grade changes, reduced basis weight variability and optimized disc filter operation.

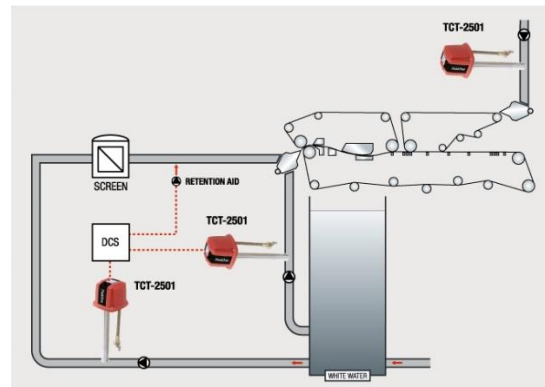


Figure 3: Typical installation of PeakOne in the wet end

TECHNICAL DATA / SPECIFICATIONS

GENERAL

Type	TCT-2501 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 max. 3 % total consistency, depending on filler content and fiber type

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 [41°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	SS, EN 1.4404, equiv. to ASTM 316L
Electronics box	Painted aluminum

Weight:

Transmitter	3.4 Kg [7.5 lb]
Sluice valve	4.0 Kg [8.8 lb]
Sensor electronics box	0.3 Kg [0.7 lb]

Communication platform (CPM)

For information about the CPM, including input and output signals, see the CPM product sheet PS2026

Functions:

Output signal	Total consistency in % or mg/l
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	RS485

Mounting:

Min pipe diameter 100 mm [4"]

Electrical connection

100 - 240 ±10% VAC, 50/60 Hz.

Power consumption

Connected in CPM
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:

Cleaning device

YOUR LOCAL BTG OFFICE



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DIMENSION DRAWINGS

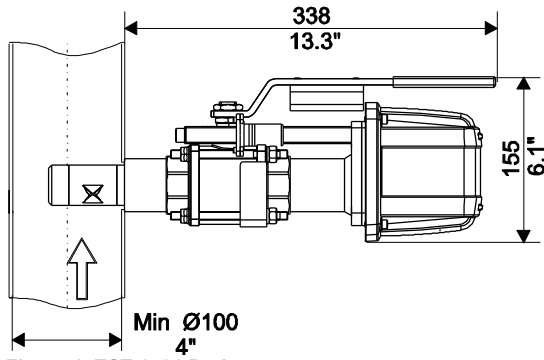


Figure 4: TCT-2501 Probe

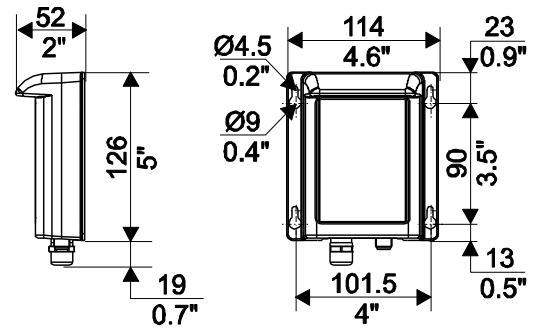


Figure 5: Sensor electronics