Product sheet

SBT-2400

Static Blade Transmitter

FEATURES

- **Reliable and recognized consistency measurement. Suitable for less-critical consistency control applications**
- **4-20 mA output signal with HART® as standard. Profibus PA as option**
- **Multiple preset calibration curves for simple start-up. Multi-point calibration for improvement. Four separate, remotely-set, measuring ranges for different pulp grades**

BENEFITS

- **Designed to withstand high-impact forces**
- **Modular design to simplify service. Factory-supported exchange system for critical parts**
- **Leak-free design using multiple seals**

GENERAL / BACKGROUND

The SBT-2400 is a static blade transmitter for measurement of the fiber consistency in pulp suspensions.

The transmitter uses the shear force principle to measure consistency.

In applications where static blade transmitters are used, the SBT-2400 is an highly competitive alternative both in terms of performance and cost.

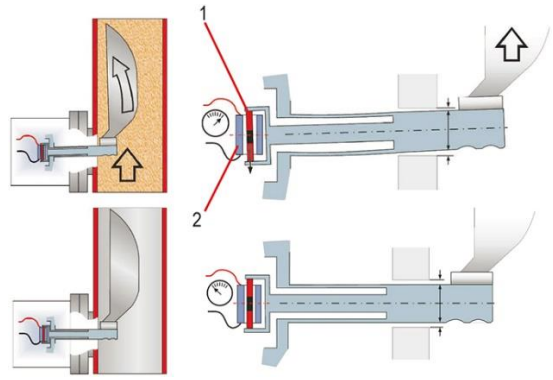
MEASURING PRINCIPLE / MEASUREMENT

The shear force of a pulp suspension depends on the strength of the fiber network, and increase with fiber consistency. As the pulp suspension flows past the SBT-2400 blade, the shear force of the pulp suspension causes the material in the measuring module to stretch. The other end of the measuring spindle moves when fiber consistency changes and this movement is measured by a differential transformer with an extremely high resolution.

The transmitter basically consists of three parts:
- blade
- measuring module
- electronics module

Use QR-code or link for more information
www.btg.com/mybtg/en/instruments/sbt-2400

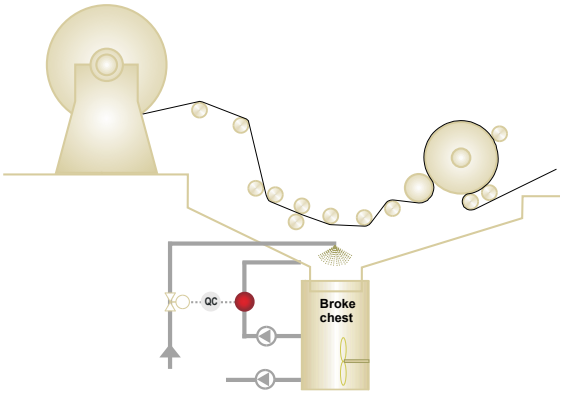
The measuring module consists of a measuring spindle, and a differential transformer. It is delivered as a complete unit to simplify repair. The electronics module in the transmitter contains both analog circuitry and a microprocessor that performs smart transmitter functions. The transmitter can be easily repaired in the field if necessary. To further reduce costs, a factory renovation exchange system is provided for critical parts.



1. Magnetic core
2. Differential transformer coil

APPLICATION EXAMPLE

BROKE CHEST APPLICATION



TECHNICAL DATA / SPECIFICATIONS

GENERAL

Type	SBT-2400 in-line smart electric consistency transmitter for pulp slurries.
Manufacturer	BTG Instruments AB, Säffle, Sweden
Measuring principle	Shear force measurement. Measurement of movement of the stretched sensing element
Operating range	Approx. 1.5 - 16% consistency depending on fiber type. 4 different calibration sets.
Repeatability	0.01% Cs (at 3% in the range 1.8 - 4.3%). Reference pulp: Softwood chemical pulp
Flow limits	0.5 - 5 m/s [1.64 - 16.4 ft/sec] Depending on blade type, fiber type and consistency.
Pressure rating	PN 25 [360 psi at 68 ºF]
Media temperature	Max. 100ºC [212ºF]
Ambient temperature	Max. 60ºC (140ºF)
Material	Wetted parts: Stainless steel EN 1.4404 or 254 SMO/duplex Housing: Aluminum, painted with epoxy/polyurethane. Static O-rings: Flour rubber or EPDM

Electronics

Output signal analog	4 - 20 mA. Current limited to 21 mA. Superimposed signal according to standard HART® protocol
Output signal digital	Profibus PA (optional)
Damping	Programmable between 3 and 99 s
Communication	Keypad and display on the junction box. BTG's SPC-1000 hand-held terminal. Allows HART universal commands.
Connection	10m/[33 ft.] cable. Max. 100 m/[328 ft]
Junction box	Built-in multi voltage power supply. Output power max 40 VA, max. constant power 1800 mA at an ambient temperature of 50°C [122°F]. Approved according to UL, CSA, VDE. Protection rating: IP65, NEMA 4x, UL, CSA

SAFETY & DIRECTIVES

Safety and protection class

Product safety	CE, C-tick, ETL
Protective rating	Equivalent to IP65, NEMA 4x Installation category: III Pollution degree: 2

EU-directives

Designed in accordance with relevant CE standards.

Quality Assurance

Quality-assured in accordance with ISO 9001.

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