ProSam™ 10 & 20 Process Sampler

ProSam™10 — A Safe & Easy Process Sampling

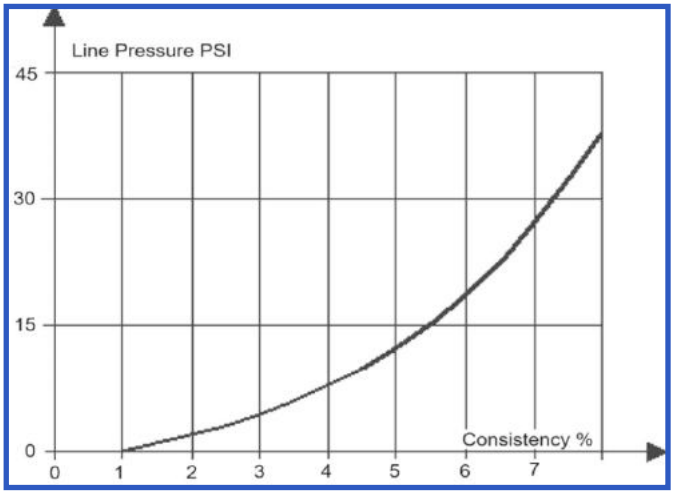
The ProSam™10 Manual Sampler is a reliable solution for extracting a representative sample from a pulp and paper process line. This sample can be utilized in laboratory analysis to determine the value of the process parameter under investigation. The non-biased nature of the sample facilitates the rapid calibration of a measuring transmitter. The Sampler's design ensures minimal interference with the flow of a representative sample from the process stream. Consequently, the operator can safely extract the sample without being exposed to harsh process conditions that may accompany the sample extraction.
The ProSam™10 & 20 are manufactured in the United States..

ProSam™10 Description.

The ProSam™10 is designed exclusively for use in screened pulp, devoid of shives or debris, within a consistency range of 0 to 7%. The sampling valve is activated by drawing the handle towards the user. Closing the valve is achieved by releasing the tension on the SS spring when the handle is released. The stroke length can be adjusted by manipulating the handle. The ProSam™10 sampler head penetrates the stock line, bypassing the water layer. Its unique shape ensures that dewatering of the sample does not occur during the sampling process. The inner components of the valve can be flushed with water after the sample has been taken. This flushing action prevents the buildup of debris or obstructions within the sample valve, thereby minimizing errors in subsequent sample extractions.
The ProSam™ piston forms a seamless metal-to-metal seal, ensuring long-term durability.

Specifications:

Measurement Range: *Consistency 0...7%*
Minimum Pressure: *See the chart*
Maximum Pressure: *350 PSI*
Connectors: *Stainless Steel 316*
Valve threads: *1-1/2 " NPT Tapered*
Mounting nipple: *1-1/2 " NPS Straight*
Water flushing nipple: *1/4" NPT*



Installation:
The ProSam™10 manual sampler must be installed in a suitable location within the process where a representative sample can be withdrawn. The chosen location should correspond to the process parameter being measured. It cannot be installed anywhere in the pipe. Pressures and process conditions must be appropriate for the measured parameter and the applied transmitter. The sampler must not interfere with the measurement process and must have sufficient pressure to extract a sample.

The ProSam™10 is mounted through a 1 1/2" NPT coupling that is welded onto the process pipe. It should be positioned 24 inches downstream of the measuring transmitter. Rotating the ProSam 45 degrees from the transmitter measurement location minimizes any interaction between the transmitter and the sampler's operation.

Flushing the sampler with water is recommended. A waterline and a shut-off valve are necessary. A hose is attached to the outlet to reduce splashing.

Automated Sampling:
ProSam™20, a user-friendly sample extraction system, features an operating cylinder and a push button, simplifying the extraction process. It can be seamlessly integrated with ProEye™CS or ProEye™100 for synchronized sampling, ensuring consistent and reliable results. ProEye™ captures sample time and measured values, storing them in its memory for future review and transmitter calibration purposes.

Mounting the Sample valve:

Calculating the consistency

The calculation method depends on how the sample was diluted:

1. Consistency up to 1% Cs. There was no need to dilute the sample:

$$p = \frac{100\,(d-b)}{c}$$

2. Consistency 1 - 4% Cs. Dilution to about 5 litres:

$$p = \frac{A+a}{a} * \frac{100\,(d-b)}{c}$$

3. Consistency above 4% Cs. Dilution to about 10 litres:

$$p = \frac{B+a}{a} * \frac{100\,(d-b)}{c}$$

p = Consistency % Cs
a = Weight of pulp sample quantity to be diluted
b = Weight of dry filter paper
c = Weight of pulp quantity to be filtered
d = Weight dry filtered pulp cake
A = Mass of dilution water about 5l. 1l = 1000g
B = Mass of dilution water about 10l.
Note: Weights in grams