

Application: Separator control

Effective monitoring can improve separator performance and protect the separator itself, increasing yields and efficiencies and saving money. Quadbeam's multi-beam suspended solids sensors are a very effective way to achieve these gains thanks to their accuracy and reliability.

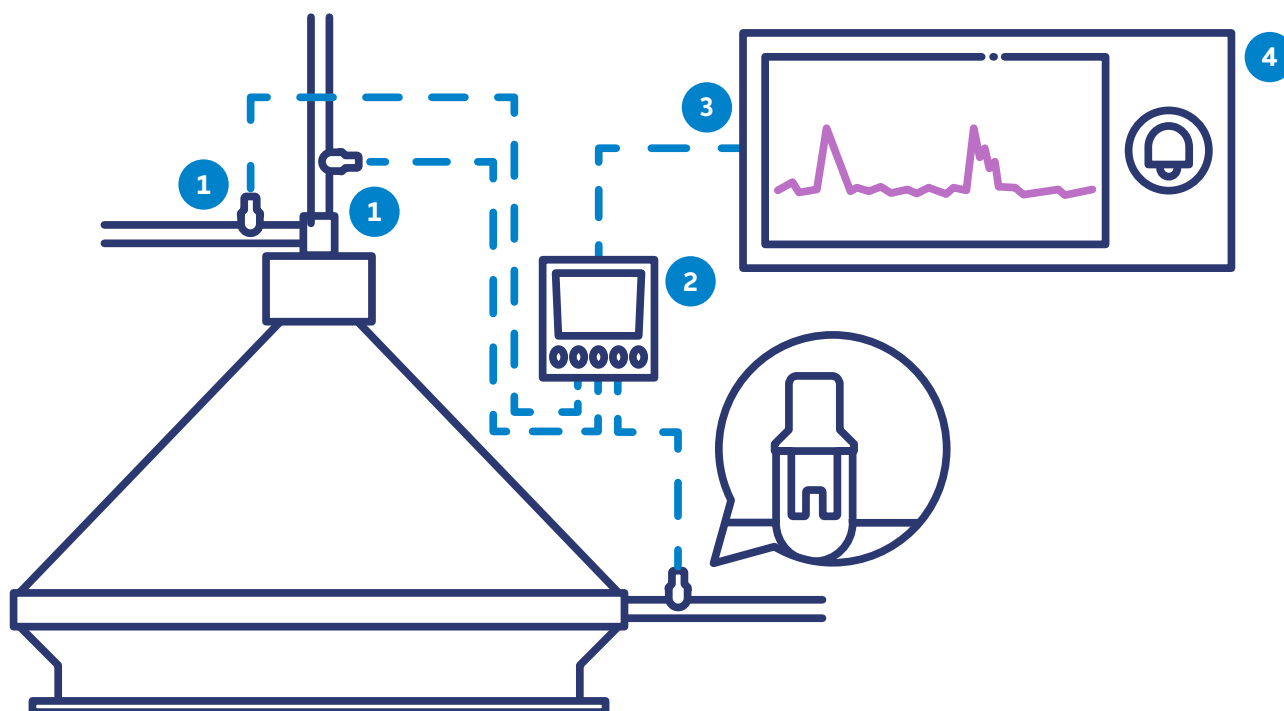
For example, monitoring suspended solids in the feed line prevents high solids concentrations from entering the separator, where they could clog and damage it. Monitoring the centrate line ensures that valuable solids are not escaping and depending on separator and product type optimisation of discharge times and feed rates will improve overall operational performance which could lead to significant savings.

Typical applications include dairy (milk, whey, cream, yoghurt), plant-based protein, juice, and oil production.

Some plants use single-beam sensors for separator control, but they contain inferior technology and may not offer the accuracy needed for reliable process control. Quadbeam sensors use multi-beam light and a ratio-metric algorithm to self-compensate for common sources of measurement error, and they're extremely robust.

How to use the Quadbeam sensor

- 1 Install the sensor directly into the feed line, the centrate line, and the concentrate line using a 3-inch tri-clamp fitting.
- 2 Connect the sensor to the MXD73 or MXD75 transmitter and simply calibrate against the solids to be measured.
- 3 The transmitter provides a 4-20mA output for each sensor for connection into the plant control system.
- 4 Alarms can be set on transmitter relays or within the plant system, for example to detect excessive solids concentrations in the feed line.



A sensor to suit you

The range of Quadbeam sensors suits different applications, conditions, concentrations, and products.

The S10-3HY is often used in concentrate lines.

The S20-3HY sensor is often used in feed lines and concentrate lines.

The S40-3HY is often used in feed lines and concentrate lines.

The T30-3HY is often used in concentrate lines.



S10-3HY Sensor

Milk fat

0 to 40%



S20HT-3HY Sensor

Milk fat

0 to 20%



S40-3HY Sensors

Milk fat

0 to 1.5%



T30-3HY Sensor

NTU

0 to 50 - 0 to 1000

(the measuring range will vary according to media and particle characteristics)

Key features



SELF-COMPENSATING

Quadbeam sensors are incredibly accurate because they're multi-beam, so they can eliminate measurement error that single-beam sensors can't cope with. Two LEDs fire near-infrared (NIR) light at two detectors to generate multiple light intensity measurements that represent the suspended solids concentration. These measurements are combined into a ratio-metric algorithm that self-compensates for common sources of measurement error like contamination or component ageing.



ONE-PIECE BODY

Quadbeam sensors are also tough because they're made from a one-piece polymer body, with no glass lenses that could leak or break.



SIMPLE TO USE

Quadbeam sensors are simple to calibrate on-site, so they give results that are directly relevant and meaningful to the site. There are easy calibration [instructions](#) on our website, or [contact us](#) for assistance.

Results

A clogged separator is an expensive event, so monitoring feed lines and diverting excessive solids concentrations is worthwhile insurance which can become a valuable return on investment. Identifying high solids events also allows you to investigate what caused them and to discover process control improvements.

Monitoring centrate and concentrate lines allows you to improve separator performance. This in turn improves product consistency and prevents product being produced out of specification. It also reduces the need for operator intervention. Both of these help to get more product into the packaging and out to market.

For example, monitoring the centrate output can indicate when to discharge high solids outputs. In nozzle-style separators, sensors in the concentrate output provide feedback which can be used to control the input through the feed line for optimum performance.

For help or to find out more

If you want to discuss your installation or have another question, or just want to find out more, [contact us](#). You can also see our full product range [online](#), and visit our [website](#) for data sheets, manuals, and technical information.

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