quadbeam
NEXT LEVEL EFFICIENCY

Application: Clarifier dosing control

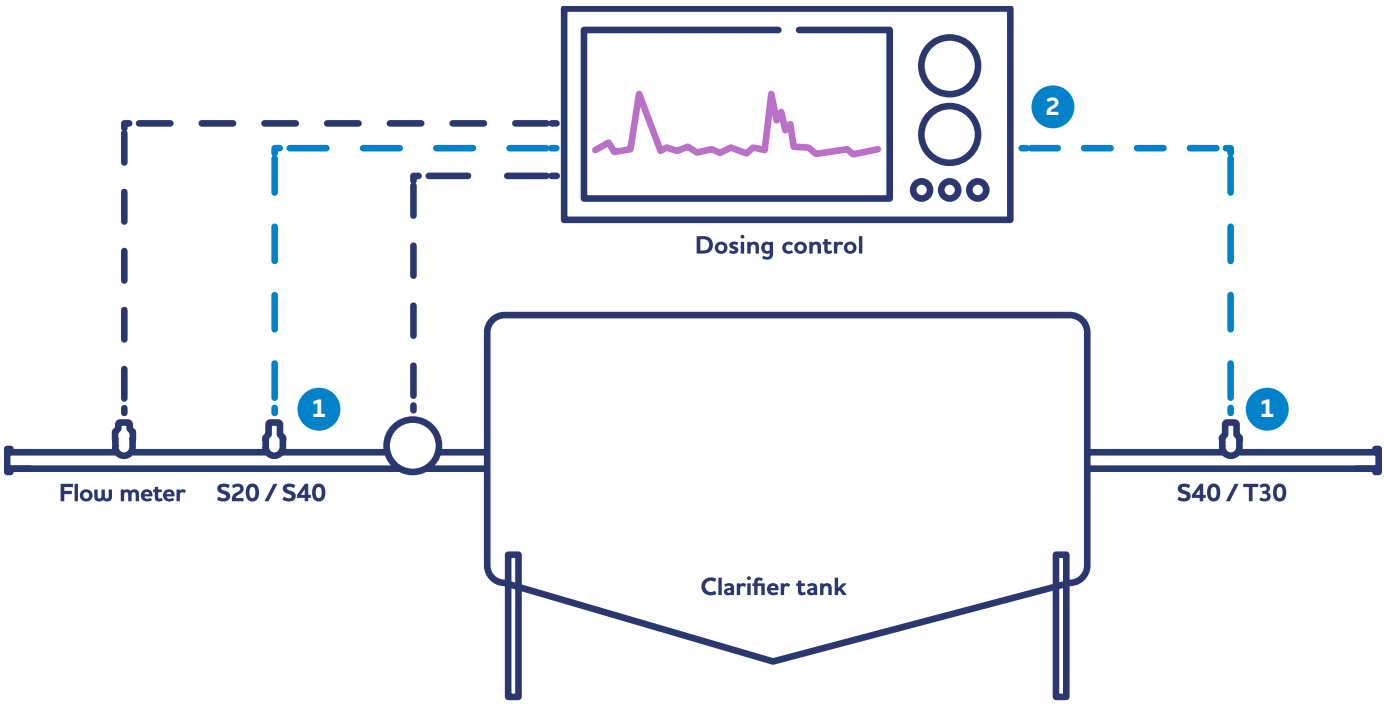
Effective dosing control can improve clarifier performance, reduce chemical costs, and maintain effluent quality. Quadbeam's multi-beam suspended solids sensors are a reliable way to achieve this thanks to their accuracy and repeatability.

By measuring the solids concentration in the feed line, you can automatically adjust coagulant and flocculant dosing in real time to match the actual load. A second sensor on the clarifier output confirms the system is performing as expected and effluent quality is being maintained.

Typical applications include quarry and mining operations, industrial processing, and general industrial wastewater treatment. In environments where the characteristics of incoming solids can vary, Quadbeam's self-compensating multi-beam design handles these variations reliably, and simple on-site calibration means you can set up profiles for different feed conditions.

How to use the Quadbeam sensor

1. Install the sensor in the feed line and treated water output.
2. For connection to the plant control systems the MXD73 and MXD75 provide a 4-20mA output. The AIO sensors have both 4-20mA and Modbus RS485.



A sensor to suit you

The range of Quadbeam sensors suits different applications, conditions, concentrations, and products.
For clarifier dosing control:

The S40-IMM is often used in the feed line to measure incoming solids concentration for dosing control.

The S40-IMM is often used on the clarifier output where solids concentrations are higher.

The T30-IMM is often used on the clarifier output where lower concentrations require turbidity-level sensitivity.

The S40-3HY AIO provides direct 4–20mA and Modbus output without a separate transmitter — ideal for simpler installations.

S40-IMM Sensor

Normal activated sludge

0 to 2.5g/L

T30-IMM Sensor

NTU

0 to 50 - 0 to 1000

S40-3HY AIO Sensor

Milk fat

0 to 1.5%

(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 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.

BUILT FOR HARSH INDUSTRIAL ENVIRONMENTS

In demanding industrial wastewater applications — where process streams carry abrasive solids, mineral fines, or varying particulate loads — the multi-beam design and rugged construction keep measurements reliable with less cleaning and less downtime than conventional sensors.

Results

Chemical dosing optimisation: Automating chemical dosing based on real-time solids measurement means you can match dosing to the actual incoming load — reducing chemical costs when loads are light and maintaining effluent quality when they're heavy. This replaces fixed dose rates that inevitably over-dose or under-dose as conditions change.

Variable feed handling: Where the characteristics of the feed can change — for example, different rock types in a quarry producing finer or coarser sediment — the ability to calibrate for different conditions and switch between profiles gives you consistent treatment performance regardless of what's coming in.

Process stability: The repeatability of Quadbeam's multi-beam technology is particularly valuable for dosing control. Consistent, reliable measurement means your control system can respond to genuine changes in solids concentration, not sensor noise or drift. This leads to more stable clarifier operation with less operator intervention.

Effluent compliance: Monitoring the clarifier output gives you continuous confirmation that effluent quality is being maintained. If solids carry-over increases, you'll know early — allowing you to investigate and correct issues before effluent quality is compromised or consent limits are breached.

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.

Quadbeam Technologies Ltd – Contact us

info@quadbeam.com

quadbeam.com

US – (303) 923 5273
International – +64 9 238 4609
NZ – 09 238 4609