



SIEMENS

SITRANS LUT400

The world's strongest fiber meets the world's most accurate level controller



To haul in around 200 billion pounds of fish and shellfish each year, commercial fishing vessels worldwide need to have strong ropes, lines, and nets.

For the past 25 years, the company DSM has manufactured Dyneema® – the world's strongest fiber – for use in fishing lines, personal armor, performance textiles, and cut-resistant gloves.

Siemens ultrasonic technology helps DSM produce tons of Dyneema material each year. Because for the world's strongest fiber, only the world's most accurate level controller will do.

Putting a spin on things

On four production lines, the Dyneema manufacturing process involves a method of gel spinning, which results in the fiber's extreme strength combined with softness.

After extrusion of the basic material and then raw string processing, the material is then pressed through a plate with extremely fine holes. Finally, the fiber finishing process takes place and then the Dyneema product is ready to be shipped worldwide.

[siemens.com/sitransLUT400](https://www.siemens.com/sitransLUT400)



SITRANS LUT400 can be installed quickly and in a variety of mounting locations, saving technicians a great deal of time in setup and programming.

Measuring the infeed of basic material into the extruder requires accuracy. Technicians need to know the correct amount of material being fed into the extruder so that feeding remains constant and production is not slowed down.

Previously DSM used an older ultrasonic controller and sensors. However, the system's beam angles were too wide and there was no echo processing over the short distance of less than one meter.

As well, occasionally false echoes created from nearby pipes obstructed the measurement, making reliable level readings extremely difficult.

Weaving a solution

To fix unreliable material level measurements, DSM chose Siemens SITRANS LUT420 ultrasonic controller paired with an Echomax XPS-10 transducer. The Echomax XPS-10 is mounted on top of a large nozzle using a metal flange with nylon coupling.

Setting up the ultrasonic level system was simple, as technicians used the controller's Quick Start Wizard to commission the instrument. Connecting the system to Siemens SIMATIC PCS-7 allows control room staff to ensure material levels remain within the correct range.

In fact, technicians can monitor the entire Dyneema manufacturing process from the comfort of the control room. If a particular part of the process requires attention, SIMATIC PCS-7 will send an alarm to technicians so the problem can be fixed immediately and production is not halted.



With the pipe obstructions in this application, Echomax XPS-10's narrow beam angle works well, providing DSM with accurate and reliable level measurements.

A string of benefits

"Installing and commissioning SITRANS LUT400 was easy and reduced typical instrument installation downtimes so our production process is hardly interrupted," says René Reijnen, Projects-Maintenance Engineer at DSM.

With such high production quantities, DSM cannot afford excessive maintenance of any single instrument or process. Slowing down or halting manufacturing operations would cost the company money.

However, the combination of quick installation of the ultrasonic system and the reliability of the instruments means smoothly running production without excessive downtime.

Technicians can trust the readings from the ultrasonic level system and its extremely accurate measurement capabilities. The world's strongest fiber and the world's most accurate level controller: a match made in measurement heaven.

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