

# The challenge: To stabilize pulp dryer operations

## The solution: BrainWave pulp dryer

**BrainWave is a proven control system that stabilizes the operation of pulp dryers, resulting in improved moisture control of the final product and reduced energy consumption.**

BrainWave pulp dryer applies patented model-based, predictive, adaptive, control technology to regulate moisture in the pulp drying process and pulp gramature (mass of pulp per square meter). BrainWave achieves tight, stable control over moisture content and gramature by precisely adjusting the stock flow and steam supply.

BrainWave is ideally suited to control the drying process due to its ability to account for the long transport delay times as the product moves through the dryer to the moisture measurement sensor. As well, key process variables such as sheet speed, broke flow, and consistency may be used as feedforward signals. BrainWave provides for excel-



lent coordination between the feedforward and feedback control; as a result, the controller compensates for changes in these variables, preventing disturbance to pulp quality and guaranteeing consistent pulp moisture and gramature.

The BrainWave pulp dryer solution is typically installed within a few weeks and the benefits are immediately obvious. Because BrainWave achieves low variability moisture control, there are much fewer process upsets, less

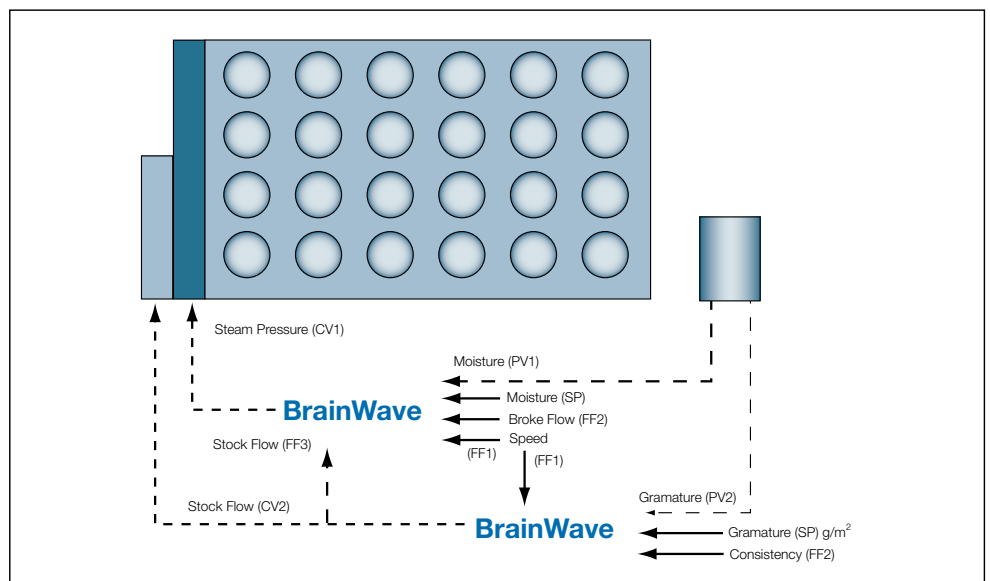
pulp sent to recycle, and higher production. In addition, since moisture variability is less, the average pulp moisture can be kept closer to maximum, leading to increased production and energy savings.

BrainWave control is smoother and more precise than operator or conventional automatic control. Start-up times will be reduced and there will be fewer disturbances to the boiler.

### Benefits

- Decrease moisture variability
- Increase production and yield
- Decrease energy consumption
- Achieve smoother operation
- Provide a more consistent product
- Reduce quality variations

Pulp dryer control schematic ▼



## Success story

**Customer:** Veracel Celulose S.A.

**Control objective:**

- Reduce moisture variability
- Stabilize operations
- Control system: Foxboro IA

The largest pulp dryer in the world can be found at Veracel, a state-of-the-art pulp plant, located in Eunapolis, Brazil. Veracel Celulose implemented the BrainWave advanced controller to improve efficiency of their 3,000 t/d eucalyptus pulp dryer.



BrainWave was deployed within two weeks and the results were seen immediately.

Full automatic operation was achieved, decreasing operator workload and helping the dryers stabilize faster after start-up and during production rate changes. With Brain-

Wave, moisture variability was reduced by 75% to 85%. “The pulp dryer immediately stabilized and BrainWave was accurately controlling moisture and basis weight,” said Walter Martins, Technical Director of Veracel. “There was no question the performance

was much better. We have never seen our dryer operate so smoothly.”

Rubine Gouveia, Advanced Control Project Leader for Veracel, added, “I have been part of other advanced control projects, but never ones that provided such great results so fast. I am amazed; I expected this to take months.”

BrainWave (BWC) versus original control (QCS) at the Veracel dryer (March 2007) ▼

