

Another satisfied paper mill has done the transition from analog to digital magmeters. Nordic-Paper Åmotfors praises Promag P500 for its easy installation

One year ago, Åmotfors needed to expand with more flow monitoring and searched for suitable magmeters. The choice became the Promag P500 thanks to price and delivery time. In retrospect, they are particularly satisfied with the simplified connection that digital technology offered the staff.

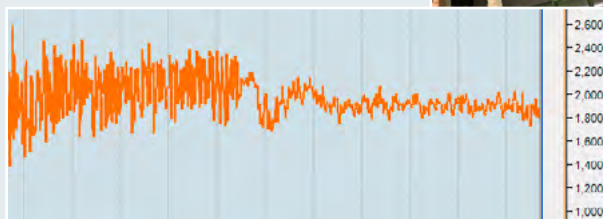
Digital magmeters save time during installation and simplify troubleshooting since the meter itself detects cable breaks, which analog cannot do fully. In the event of a faulty connection, the entire display lights up red. Another convenience is that tube diameter, k-factor and zero point is uploaded automatically upon power up. That way you avoid the hassle to program and match them manually when replacing broken tube or signal converters.

One of four paper mills

Åmotfors is one of four paper mills in the Nordic-Paper group, all of which lay within a radius of 250 kms. They produce unbleached kraft paper and natural greaseproof paper. At Åmotfors where paper has been manufactured since 1896, kraft paper is >>



Promag P500 on pulper circulation flow.



Output signal from Promag P500 before and after changing to adaptive amplification.



>> made at the mill's two paper machines.

The pulp comes from Nordic-Paper Bäckhammar's Kraft pulp mill in the form of dried bales and first goes to a pulp dissolver "pulper" where a DN150 Promag P500 measure the pulp from the pulper that pass through a deflaker to homogenize the dissolved pulp. Sulfuric acid is added for pH adjustment. Dissolved pulp may contain a lot of air that interferes with magmeters. Dosage of sulfuric acid also pose a challenge as the acid creates large variations in conductivity, which are the physics magmeters are based upon according to Faraday's law. The meter also has no control valve after it and so does not get any back pressure but only the liquid column above it before the flow falls back down into the pulper as a circulation.

Greatly reduced interference

Owing to Promag's adaptive amplification mode in the signal converter the meter could strongly reduce the fiber and air disturbances arising from the beginning. The trend curve example on the image has just 1 second damping on the 4-20mA output.

The adaptive function is something you get with digital technology

and have proven to be effective to handle problematic flows. To obtain good flow control one need flow-meters which responds quickly so that valves and pumps can be controlled precisely and with minimal changes, says Ulf Johansson, Endress+Hauser Norrköping.

Two other positions where Promag P500 were installed was on the reject from two pressure screens before the paper machine. That pulp or stock approach flow as it is called closer the machine is filtered and free of unwanted particles is very important for the headbox where the pulp flows out onto the wire and excess water drains off before moving on to become dry a paper web in the press and drying section. The last meter sits on dilution to a pulp broke dissolver. Broke is the excess width of the paper web which is collected and recycled in a special dissolver to become pulp again.

We are very happy to get Åmotfors trust in delivering new magmeters for their paper machine, which is a fast process with small margins for error and where the performance of individual measuring sensors can really matter for the final paper quality, concludes Ulf.



Digital magmeter tubes allows easy wiring with standard instrument cable.



With Promag P500 vendor specific cables (grey) are no longer necessary. One shielded four wire cable (black) is enough.

