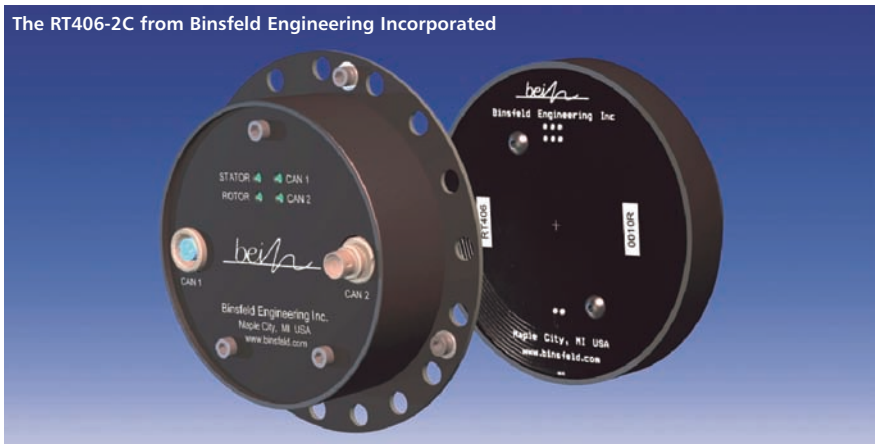
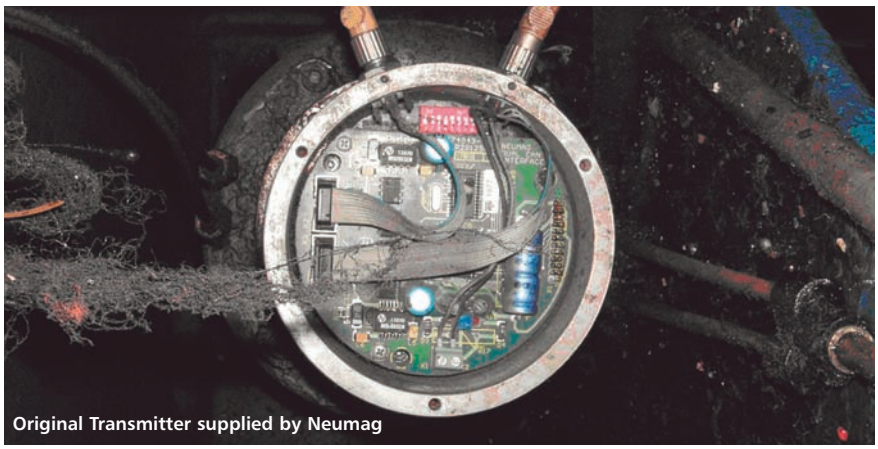
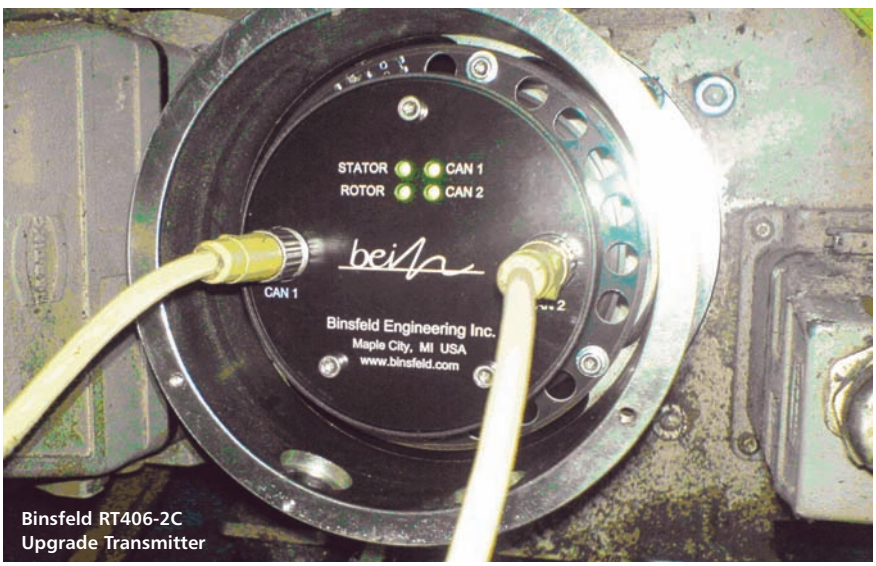
Invisible operator

From Dalton, Georgia, USA to Gaziantep, Turkey – heated godet rolls are running smooth, flat temperature plots as a result of new technology from Binsfeld



The RT406-2C from Binsfeld Engineering Incorporated


Original Transmitter supplied by Neumag



Binsfeld RT406-2C
Upgrade Transmitter

BINSFELD ENGINEERING, based in Maple City, Michigan, USA, recently introduced the RT406-2C godet temperature transmitter for Neumag S5 and NPT lines producing BCF yarn.

"The new RT406-2C incorporates sophisticated digital electronics that not only monitor and communicate six temperature signals from the rotating godet, but also control the temperature for each zone using a PID algorithm, sending digital instructions directly to the heater via a CAN bus communication system," said the company's president Michael Binsfeld. "The reason we chose the Neumag S5/NPT rolls for our latest transmitter is that Neumag machines have been very popular in the BCF market where we do a lot of our business. Customers who run these machines have encouraged us to build a more robust aftermarket temperature transmitter. It's a valuable improvement to a great machine."

Versatile

Binsfeld first presented the RT400 technology at ITMA 2007 in Munich, where the versatility of the design was highlighted. The initial release was a two-channel version with time-multiplexed frequency output for SwissTex rolls.

"The adaptability of the RT400 series allows various channel inputs and a wide variety of output signals to best match our customers' needs", said Binsfeld CEO Stephen Tarsa. "We added the PID loop temperature controller into the RT406-2C, further expanding our offering."

The company plans to eventually develop a complete turnkey heat control system to integrate into new machinery designs, which could be particularly

attractive to the OEM market.

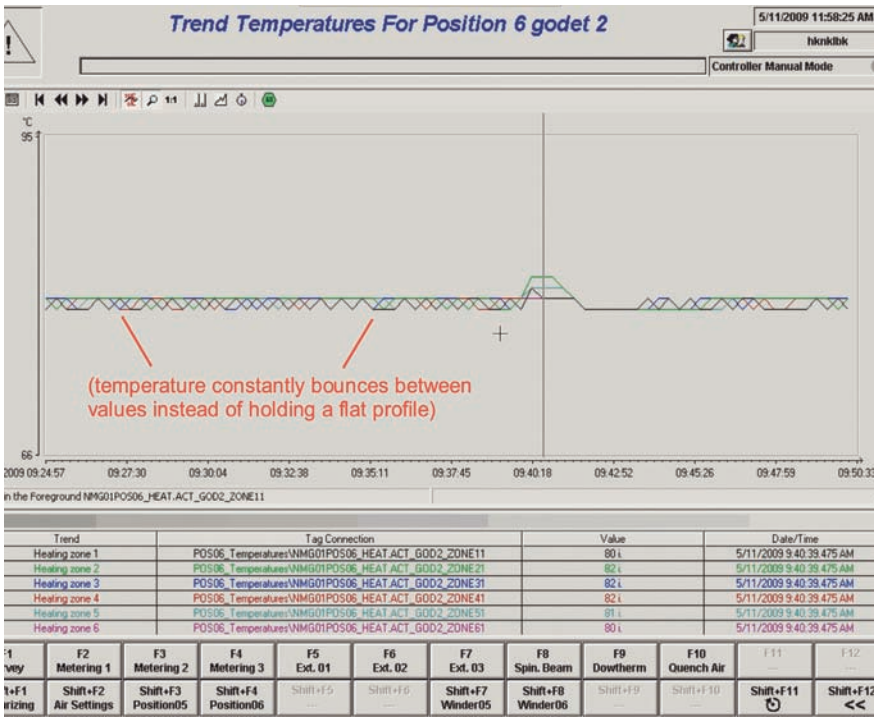
Re-inventing the temperature transmitters for heated rolls is nothing new for Binsfeld. The RT100, RT200 and RT300 series developed over the last 15 years have been very popular and run on a majority of heated rolls in many synthetic fibre plants around the world. Rotating sensor communication is the core focus of the company, which offers both temperature and torque monitoring systems for rotating applications.

Mechanical integrity

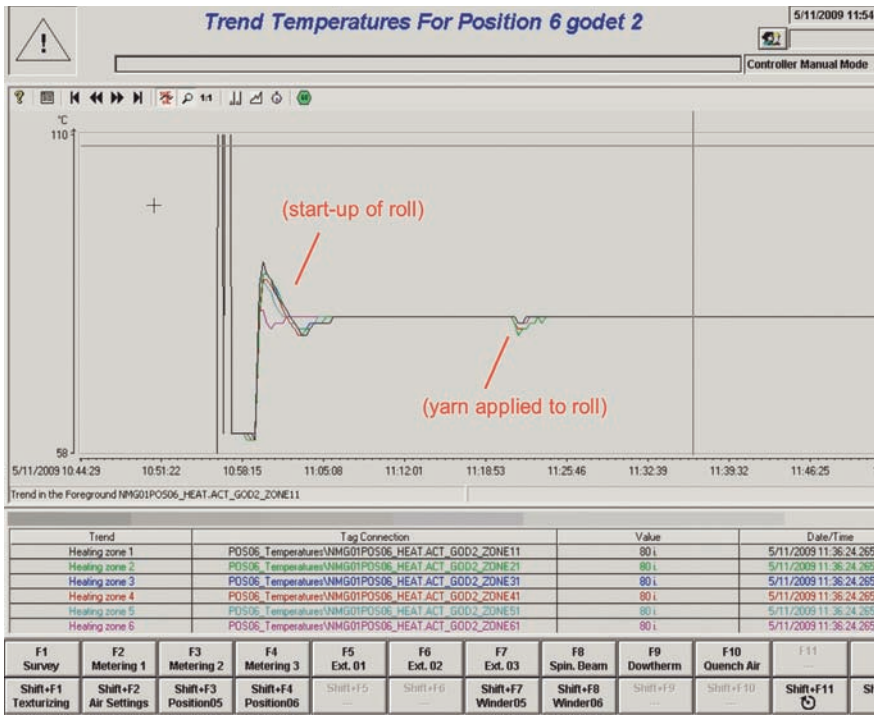
Binsfeld Engineering has a strong reputation for reliable, precision instrumentation designed to operate in the harsh environment of man-made fibre extrusion plants. The RT406-2C starts with mechanical integrity. The entire instrument is encapsulated in a tough, chemical-resistant epoxy to protect the electronics from vibration and dirt. The specialised circuits and components are designed to run in applications that generate a lot of heat.

Perhaps most significant is the rotating-to-stationary communication link.

Where other designs rely on closely-spaced coil pairs and optical links to communicate power and data, Binsfeld uses tuned-resonant technology for power transfer that allows greater spacing between rotor and stator. A generous, non-critical rotor/stator separation of 5-25 mm is achieved (compared to the 1-2 mm gap required by others). And by communicating data signals via the same resonant power coupling Binsfeld eliminates the optical link that can cause erratic temperature signals when compromised by grime and fibre debris. This reduces maintenance downtime on the production position, ultimately increasing yield.



Temperature plot with original transmitter



Temperature plot with Binsfeld RT406-2C

Diagnostics

When other problems occur in the temperature control loop the RT406-2C performs its own diagnostic tests. Clear, simple error indicators direct the operator to any problems associated with the device, or with issues upstream and downstream of the transmitter. This greatly expedites corrective action and gets the position back on line in the shortest time. More detailed diagnostics such as error logging and CAN bus monitoring are also available. If required, the RT406-2C firmware can be reprogrammed with the device still installed in the machine.

Rounding out the benefits of the RT406-2C is its simplicity of installation – easily accomplished without removing the roll motor from the line. Typical installation takes less than 30 minutes from position shut down to re-heated roll. From there, it is the RT406-2C's invisible operation that is most appreciated by maintenance and production personnel alike. **TMI**