

## Fast Industrial Controller Provides Web Tension that Follows Package

### Better Let-Off Tension Control Improves Web Press Registration

by John N. McMurray, Sales Engineer

Pulsating tension of the cardboard web feeding a box press is often overlooked as a cause of problems with print registration. When supply rolls are eccentric and the holdback brake is fed with constant pressure, the tension not only oscillates with every revolution but steadily increases as the roll diameter decreases. The result can be slippage of the web in the pull-roll stand and a corresponding shift in printer registration.

A cost-effective solution is the addition of an ultrasonic sensor and microprocessor controller to measure the average and instantaneous roll radius and then modulate the brake pressure to keep the web tension constant throughout each roll revolution. The sensor must be mounted at the tangent where the web breaks contact with the roll because this is the point of application of the brake torque.

Accuracy can depend on several factors, including roll speed, response of the E/P converter, and the tuning of the PID loop in the controller. If a turret unwind is used, the ultrasonic sensor should be mounted in a position that will not interfere with turret rotation, and solenoid valves may be utilized to automatically switch from one brake to another.



The Cortex LT by Carotron, Inc. is a general-purpose microcontroller with flexibility to meet this application. Driven by a powerful DSP (digital signal processor), the unit has the speed and processing capability to handle even the most difficult tasks. There is also built-in driver circuitry for the ultrasonic range sensor, so that extra hardware is not needed.

The [Cortex LT Pneumatic Brake Controller](#) is packaged in a Nema 12 industrial enclosure and operates from common 120 VAC power.

Let our trained service engineers help with your application. *Call Carotron today at: 1-888-286-8614*



Scan the QR  
code with your  
phone or visit  
Carotron.com

**Carotron, Inc.**  
3204 Rocky River Rd  
Heath Springs, SC 29058

**Phone:** (888) 286-8614  
(803) 286-8614

**Fax:** (800) 286-6063

**Email:** saleserv@carotron.com

**Website:** <http://www.carotron.com>