

Intermittent electrical problems and how to solve them

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By Frank Bournon

In a previous article I shared several ideas that would help press operators resolve press drive surging.

Some motor problems that could cause this condition are shorted armature windings, missed wired shunt field windings, insulation of the windings breaking down and worn motor brushes or weak brush springs.

Recently, I encountered another press surging problem I had never experienced before.

The newspaper's press would surge throughout the press run and would finally come to a complete stop. The press operator would then turn the dampening system on and off until the press would run again.

Was the dampening system affecting the motor controller since it was so close to the triggering circuit?

No. What did happen was that the dampener contactor was vibrating the back plate, upon which the motor controller's electronics were mounted. And upon that plate was the armature feedback circuit. Although the two fuses in the circuit tested OK, they had become corroded enough to create a non-conductive surface between the end of the fuse and the fuse holder.

The only way to solve this problem was to find out - using a voltmeter - where the feedback signal was being interrupted.

In the event you encounter a surge problem, consider removing each fuse from its holder, then remove any corrosion you find from the fuse and holder with an emery cloth.

Keep in mind that the corrosion is not that evident. It will appear as a light discoloration on the ends of the fuse.

Wild motor fluctuations also sometimes occur as a result of misadjusted motor controllers.

Check the door

I recently worked on a press that, when it was configured as four units, worked fine. But once the newspaper added more units, the machine would fluctuate wildly if press speed was allowed to advance rapidly. If the press drive was advanced very slowly, it would fluctuate for a moment

and then stabilize. The problem? The gain was set too high. The isolation scaling pot had been misadjusted. The press drive responded properly once the gain was reduced.

In another instance, I was asked to troubleshoot some motor actuators on some Goss Metro and Metroliner presses (ink control motors for the page pack system).

The predicament: Column switches appeared to work intermittently and failed to cause the appropriate motor actuator to respond.

It was a difficult problem to diagnose because the switches would work correctly at times.

After careful and persistent troubleshooting, we were able to determine that the ink column board PC connector had a loose wire that wouldn't work whenever the control door was closed. Once the door was open, the wire made its connection and the actuator would perform as designed. The lesson: Check the connection first if you are experiencing this problem. The wire connector makes its connections in the same way as trailer connectors.

It's made when the insulated wire is forced between two flat sharp metal posts, which causes the insulation of the wire to be cut, thus exposing the wire to the metal post.

Forcing a small screwdriver down on each wire causes the wire to move between the metal posts, making the wire form a better connection with the metal posts, eliminating any intermittent connection issues.

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