

Always call for backup of PLC software programs

This installment of OEM Insight warns astute customers about the dangers of losing PLC software programs, and how important it is to backup your PC programs while they are still alive in the processor.

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By William Love, [Kredit Automation & Controls](#)

WHERE'S THE program for this machine? This is a question we often have to ask customers, and it isn't fun.

We're a small, full-service system integrator that does large and small projects and service calls. We're routinely called to come fix a machine that's down and has a red fault light on the PLC. Some of these PLCs have been running for years, and the user is entirely unaware of the danger of the controller losing the program—until we ask that question.

Sometimes we just get online and reset the processor, and the service call is over in minutes. Sometimes the fault reoccurs, and we have to do a bit of troubleshooting to make it stay away—find a bad output card or an improper operator entry that causes a register overflow.

However, about half the time, a processor can't be reset or uploaded. Then we ask the customer the question that often hurts: "Do you have the program on disk, or even a printout?" At this point, everyone involved repeats the question in a mad, sometimes circular scramble.

Usually the program is found on a disk sitting in a drawer or file. It also can be reentered from a printout. Sometimes changes made over the years aren't saved, and a lot of sweat is expended to fully restore the machine's recent operational status.

But even this is a picnic compared to the last possibility. Sometimes the question of where the program is culminates in the troubling realization that the program can't be found, and only some reverse engineering will restore the machine. Ugh.

If you're a machine builder, there's not much incentive to avoid this situation, but you should put a disk in a special compartment in the panel, so it won't fall out when the schematics are accessed, or be moved to somebody's filing cabinet and forgotten.

An EPROM also is a good idea. Many machines don't have them, perhaps for the same reason we don't use them on our custom, one-of-a-kind projects: we make so many changes that the EPROM becomes a pain. But for a stable design, a repeat machine, it seems a good idea to use it.

If you're a system integrator, you have an incentive and some responsibility to avoid the lost-program scenario. It's a good investment for customers to have you inventory the machines, components, or lines that have programs, and back them up. This might stretch out over days, if they have old processors, especially from multiple vendors. You'll have to find the software and the cables. You might even have to install DOS or Windows 3.1 to run an old programming package.

Astute customers will realize how important it is to get this done while the program is alive in the processor. Getting a programming PC or laptop up and running with the right software is worthwhile and revealing, and better done when there is no emergency.

As a system integrator, we make a habit of doing this kind of thing. It starts by getting commented copies of the programs when possible. The processors don't have the comments to upload, so we have to look for disks, and call the machine builders. We connect to the processor and merge the existing program

uploaded from the processor with the documented version of the program. The extra effort is doing this for other controllers besides the one we're there to service. We often make a routine change to a line, adjust a timer setting, troubleshoot, or get the program prior to an expansion.

We also make that extra effort to create a folder for each customer on our office server for all the programs we can get our hands on. We have saved a customer's bacon a few times as a result—usually years later.

This certainly isn't make-work, and not a boondoggle. Ask any plant or maintenance manager who finally found a program after searching and sweating bullets wondering what to do about the mission-critical blender that has the whole plant down.

For the end user, this is like a time bomb. Remember Y2K? Well, this is the real deal. Is the OEM that made your slurry delivery system or your palletizer still in business today? What will you do if it goes down in the middle of production tonight?

You've been warned. The rest is up to you.

About the Author

William Love has programmed controllers and HMIs for dozens of manufacturing and process lines and handled hundreds of service calls with [Kredit Automation & Controls](#) in Phoenix, Arizona. He can be reached at 602/454-7244.