



A Rockwell Automation Company

Hinz, A Rockwell Automation Company I/O Simulation Tools—Typical Test Setup

The Client:

Hinz is a single discipline Engineering firm focused on System Integration in the areas of SCADA, electrical, communications, plant, and machine automation. Hinz can supply engineering services from the field systems; including instrumentation, panel and wiring specifications, through to the control room; including graphics systems, host systems, and networking.

Standard services also include applications, database, and IS connectivity.

Hinz has grown since 1971 to include offices throughout Canada and the United States.

The Requirement:

Hinz endeavors to preserve its image in producing a quality product. In the area of PLC programming this has lead to the continued growth in expertise of PLC documentation and system testing. To facilitate system testing, Hinz adopted I/O simulation tools for Allen Bradley, GE Fanuc and Schneider Modicon PLCs, as a company wide Quality Assurance (QA) standard in 1984. I/O simulation tools are a combination of hardware and computer based software utilized to simulate the actions of real world I/O. Historically various hardware based systems incorporating pushbuttons, lights and relays wired into

the PLCs I/O were utilized to test the PLC program. This was frequently prohibitive in both cost and time constraints encountered on typical project work and left many areas of a system untested. In addition, the setup of the test was inflexible and most often performed at a panel vendors shop away from easy access by designers, process engineers and operations personnel.

The Design Solution:

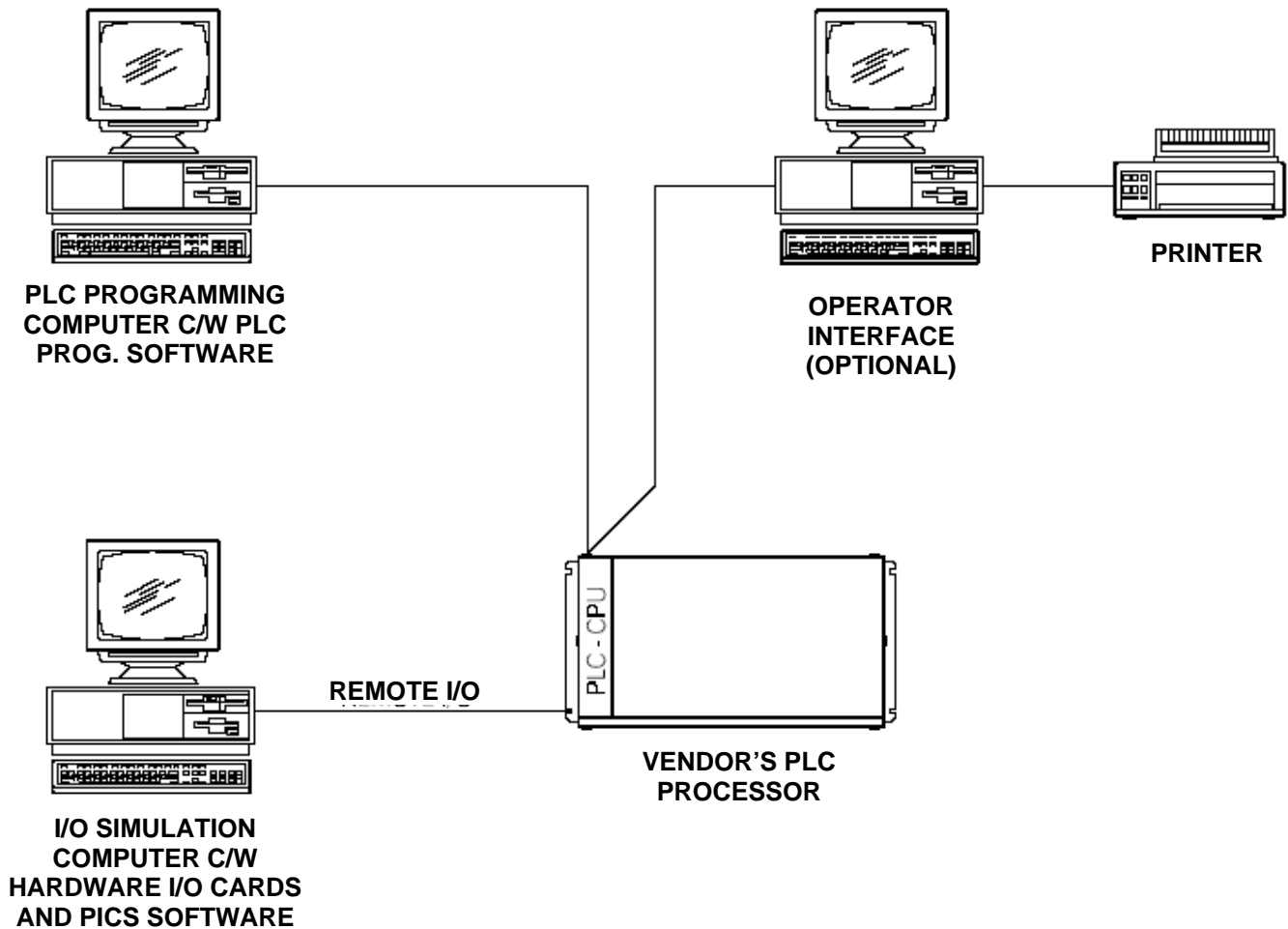
The acquisition of I/O simulation software packages for the most frequently utilized PLC vendors has permitted a more thorough execution of system testing. I/O simulation packages require either QNX or Windows 3.1, 3.11 and 95 operating systems running on 386, 486 or higher processors. Hardware interface cards are required in the computer for direct connection to the PLC processor in the individual vendors format of remote I/O. Simulation test programs are then “written” in the I/O simulation computer to reflect the process actions and interactions of real world I/O. This has enabled not only enhanced testing of critical areas in the PLC program but has permitted thorough testing of associated operator interfaces connected to the PLC. Software bugs are eliminated in the design office at a lower cost than

during commissioning . Expensive hardware and custom made wiring for I/O simulation has been eliminated. Process engineers and operations personnel can review the process for verification of operation and conduct extensive testing of various sequences including; shutdown, startup and emergency conditions. Operators can be trained more safely and more efficiently as training can take place off-line to avoid the risk of injury or equipment damage. The result of this initiative is greater efficiency of process startups at a reduced cost to our clients.



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System Specifications:

PLC Vendors:

- Allen Bradley
- Schneider Modicon
- GE Fanuc

Simulation Packages:

- S&S Technologies PICS Simulation for Windows or QNX.

Computer Hardware for I/O Simulation:

QNX systems require 286 or 386 processors with Windows 3.11 or 95 requires 486 DX /66 or higher processors with 8 meg RAM, 15 MB of Hard drive space and one 3.5" high density disk drive. GE Fanuc, Modicon and Allen Bradley I/O simulation requires 1 spare slot for insertion of the applicable I/O hardware card.

For further information or to contact a Hinz office near you, please check our website at:

www.hinz.com