



INDUSTRIAL CONTROL SPECIALISTS
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CUSTOM CONTROL SOLUTIONS, LLC

Full System Design PLC Programming PC-Based Control Programming HMI Design and Integration Variable Frequency Drive Application & Programming DC Drives and Solid State Starters Field Service and Startup Services Documentation Services Project Management Hardware Sales & Application Process Evaluation Machine Design and Upgrade or Retrofit Technical Training

Full System Design

Our engineering staff's extensive controls experience enables us to design systems utilizing time-proven technologies in state-of-the-art configurations. We have designed systems in a variety of industries some of which include:

Pulp and Paper
Material Handling

HVAC

Freshwater Pumping

Shipbuilding Dry-docks

Alternative Fuel Reformation

Bottling

Automated Packaging and Wrapping

Wire and Cable

Entertainment

Wastewater Treatment

Coal, Rock, and Gravel Mining and Processing

Barge Hauls

Specialized Medical Equipment

Palletizers

Please see our Application Stories Section (Coming Soon) for details on many of these projects.

We can design a full turn-key system for many industries or integrate as part of a larger team to produce a fully functioning system. System sizes can range from a couple of thousand dollars for small PLC or drive applications to 10-15 million dollar production area installations or upgrades.

No matter what the size you will find our quotations professional and competitive. Pride in workmanship starts from the first phone call.

PLC Programming

Our PLC programming backgrounds and experience range from simple discrete I/O control to complex multi-motor and PID control applications. We have an extensive experience base from which to draw when it comes to writing PLC control programs.

Our hardware/software platform experience includes:

Automation Direct (all families) using DirectSoft and all ADC supplemental programs such as DSData Server, Workbench Applications, etc.

Allen Bradley / Rockwell (MicroLogix, SLC and PLC5 families) using RSLogix, RSLinx, and other Rockwell applications.

Siemens (S300 family) using Step 7 software.

We can provide fixed-price programming quotations based on a specific project or requirement and can also provide on-site T&M (Time and Materials) programming support for machine upgrades or de-bugging.

Our programs are fully documented and written with strong reliable operation at the top of the priority list.

We will work with local technicians and operators to ensure smooth trouble-free operation well after our services are completed.

PC-Based Control Programming

Our Experience in PC-Based control with Entivity Software is unmatched. We have been users of Think & Do since its earliest releases and have worked closely with Think & Do / Entivity as their package has evolved into a full-featured 32-bit controls platform.

We have used PC-based control for several demanding applications where the complexity of control dictates intricate operator interfaces or the data exchange requirements with both the operator and upstream management or automation is more effectively accomplished in the PC environment.

PC-based control provides several advantages over traditional PLC control such as an integral HMI and high-level math capabilities. We can write non-linear equations to characterize valves or flow transducers using high-order polynomials. The programming is accomplished using the Microsoft Visio Interface which creates a clean, understandable program layout for ease of training local maintenance personnel.

We will customize the interface to match the requirements of the application. From the PC-based environment we can control a vast array of hardware using ethernet or serial interface. We can also provide real-time data to operators at the machine level, supervisory personnel at various management levels, or databases and SQL servers for data storage or corporate use.

We can evaluate your application and give you the information you need to determine if PC-based control fits your requirements.

Please visit www.entivity.com for more information on this powerful and cost-effective package.

HMI Design and Integration

Our HMI (Human Machine Interface) designs range from integration of small text or pushbutton displays to design of detailed PC-based screens. We can program and install a variety of small Operator interfaces from Automation Direct, Allen Bradley, Exor, etc.

As part of machine or process upgrades we can integrate these displays with existing hardware and write the supporting PLC logic to communicate with the display. In larger or newer applications the display can be customized to the machine operational requirements. From text messages to color touch screens our design engineers will work with the customer.

In the PC-based control environment the design of the HMI screens becomes even more critical as there can be a vast amount of information for both setup and process operation that must be presented in a manner that does not hinder the process.

We have experience in control panel layout and design:

Entertainment Industry -	Operator ride interfaces and large display control and programming
Flight simulators / trainers -	Operator console controls layout
Industrial test stands -	Single and multi-bay layouts with trends and reports
Bag house and Filtration -	PC-based layouts with graphical equipment layout backgrounds
Bottling and Palletizing -	Operator touch screens and product tracking summaries
Skydiving Simulation -	Operator touch screens including setup, trends, and reporting

Let us help determine your HMI requirements and make recommendations that we stand behind and support long after the installation.

Variable Frequency Drive Sales, Application, and Programming

Variable Frequency Drive (VFD) technology advancement in recent years have resulted in a marketplace that offers full-featured drives at reasonable prices. The introduction of open and closed-loop vector controls can, in many cases, be used in applications traditionally reserved for servo drive/motor configurations.

We can engineer, supply, and install a single or multi-motor drive systems complete with controls or as a retrofit or add-on to an existing installation. Direct experience with drive panel construction, installation, and setup enables us to supply turnkey systems with smooth startups that always exceed our customer's expectations.

We offer extensive drives support for both Automation Direct and Safronics, Inc. As distributors of these products we can offer competitive pricing coupled with an unexpected degree of applications knowledge and support.

We can also evaluate the power system requirements related to linear vs. non-linear loading for harmonics and power factor levels and, if required, offer solutions to on-site problems to bring systems into compliance. Our engineering staff is familiar with the application of Power Factor Correction Capacitors, Harmonics traps and filters, and input and output reactors for drive installations. We can discuss the advantages and cost of the various solutions and make recommendations accordingly.

Custom Control Solutions can help determine cost offset of drive installations on fans and pumps using energy savings software supplied by baseblock, Inc. The cost payback of these installation can be realized in months or weeks instead of years.

Please visit www.baseblock.com for additional information on energy savings and other software.

DC Drives and Solid State Starters

Custom Control Solutions is an authorized distributor of Safronics DC Drives and Solid State Reduced Voltage Starters. Our knowledge of the application and installation of DC drives and starters is extensive.

We have direct industry experience of these products used in:

Coal Mining Conveyors and Processing
Plastics Extruders
Line shafted applications in Pulp and Paper
Hoists and Cranes
Wood Yard De-Barkers

Rock and Gravel Crushing
Printing Presses
Large Constant and Variable Speed Blowers
Variable Voltage Heater Supplies

DC Drives from fractional to 2000HP (and larger if required)
Single and three phase input
Analog and Digital control
Regenerative and Non-regen applications
Torque control applications
6-pulse and 12-pulse

Starters in both analog and digital configurations
Pre-packaged heater controllers
Pre-packaged crusher duty starter panels

Let us quote a custom engineered package that fits your requirements.

Field Service and Startup Services

Custom Control Solutions can supply Startup Services on a vast array of control equipment. We can work as a sub-contractor for integrators whom are not able to supply on-site personnel or directly with end customers to supply direct services on purchased equipment. We can fully document the startup process and are adept at solving unforeseen on-site issues.

We can evaluate startup requirements in advance and, if necessary, provide documented timelines in advance to keep contractors and customers informed of other equipment shutdowns or modifications required to support the startup effort. All required equipment and tools can be anticipated to ensure startups are well planned and accomplished in minimum time.

In some cases we can offer field service on drives and controls equipment. We will supply all testing and measurement equipment. In some cases we can research equipment prior to a site visit and be prepared to test key points in the system immediately upon arrival.

Custom Control Solutions can provide both Fixed-Price and T&M (Timer and Materials) startup and field service quotations.

Documentation Services

Custom Control Solutions provides CAD and technical writing services. We can supply service manuals or system drawings to supplement existing information or research and document systems with no pre-existing documentation.

We prepare operator's and setup manuals at any level of machine integration or control in a variety of printed and electronic formats.

Project Management

We can be introduced at any stage of an overall integration or upgrade project and provide concise summaries of the status and proposed requirements for successful project completion. We have managed several types of integration projects and can easily integrate with other vendors or direct internal company resources.

Hardware Sales and Application

As a value added reseller for Automation Direct products, Custom Control Solutions can assist in the application of the products offered and advise about other products that may be required to complete your application.

We are also an authorized distributor of Safronics Drives and Starters.

Please call us for a quotation.

Process Evaluation

Custom Control Solutions can make a complete evaluation of your process system or sub-system and provide documented feedback as to efficiency, expected lifetime, maintenance problem areas, or potential areas of improvement to operation cost, efficiency, and technology.

Many customers desire improvements to system performance or in-service (up) time and have nowhere to turn for professional advice. Custom control solutions can evaluate your current process or system and make sensible, cost-effective recommendations as to possible improvements that will provide maximum bang for the buck. We can help devise an implementation plan that minimizes interruptions in production time during the upgrade or retrofit process.

Our professional team will meet with you to obtain the necessary information as to the current process operation and determine the primary evaluation targets (efficiency, overall speed, down vs. up time, etc. and take an objective look at your current configuration. We will then weigh possible system improvements against implementation cost to help determine if a particular upgrade fits the process.

Our feedback is well-documented and concise. Call Custom Control Solutions first when considering process improvement.

Machine Design and Upgrade or Retrofit

As improvements to manufacturing or material handling process require you to evolve your current system let Custom Control Solutions partner with you to upgrade your current process or design a new fixture or entire machine to fit a new production aspect.

We have extensive experience in the design and implementation of machine upgrades and have real field experience at overcoming some of the obstacles often encountered when interfacing or expanding existing control systems. Our team will ensure the new production area or newly expanded line performs well beyond your expectations and is easily maintained. We provide full documentation on all mechanical, electrical, and software modifications and will subsequently train local maintenance personnel on the new features and/or equipment.

Contact Custom Control Solutions for a professional and accurate quotation on your control upgrade requirements.

Technical Training

Our engineering staff can provide technical training for maintenance personnel, machine operators, or facility engineers. This service can be purchased in conjunction with other programming, engineering, or installation services. However, we also offer training independently and can provide it in a variety of flexible formats and locations. Any environment from the classroom to the production floor can be made into a productive learning environment.

We can offer training in several areas:
PLC or PC-based control programming
Basic electronics
Advance electronics
Control schemes and devices
Machine operation

Allow us to improve your team by providing them with the knowledge the need to excel.

System Calculations and 3rd Party Review

Custom Control Solutions provides engineering services related to calculations of system fault currents, transformer sizing, motor sizing, and locations/sizing of protection devices. We can assist in your determination as to loading of feed transformers and panel board upgrades. We can provide calculations related to short circuit faults that will help you make informed decisions as to your system needs.

We can also provide 3rd party review services related to controls and electrical design services that may be supplied by other vendors. We commonly provide these services for larger customer where the engineering services of another vendor

must be evaluated to ensure compliance with specifications or to find and correct any possible deficiencies in proposed designs and/or components.

Call Custom Control Solutions for a professional quotation.

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