

EXTRUSION AUTOMATION

BCi AUTOPILOT™
**Integrated
Extrusion
Control
System**



Bachelor Controls, Inc.

Systems Integration for Manufacturing



Turning Processing Art into Extrusion Science

First and most advanced automated cooking extrusion control system available



www.bciautopilot.com

Leveraging more than a decade of extrusion integration experience, Bachelor Controls (BCI) developed *BCI AUTOPILOT™* – the industry’s first and most advanced automated cooking extrusion control system available, built on a flexible platform and capable of automating most extruder brands and models. *BCI AUTOPILOT™* can be expanded to handle multiple extrusion lines and auxiliary equipment, such as dryers, coolers, coating, and product transfer equipment.

Tight Moisture Control / Operator Consistency

Improper extrusion control costs manufacturers thousands of dollars in wasted product. Even with an experienced, attentive, accomplished operator, consistent results can still mean a moisture variation that exceeds $\pm 5\%$. *BCI AUTOPILOT™* uses a computerized model that learns the delivery characteristics of the particular mix being processed and can achieve a variance of less than $\pm 1\%$.

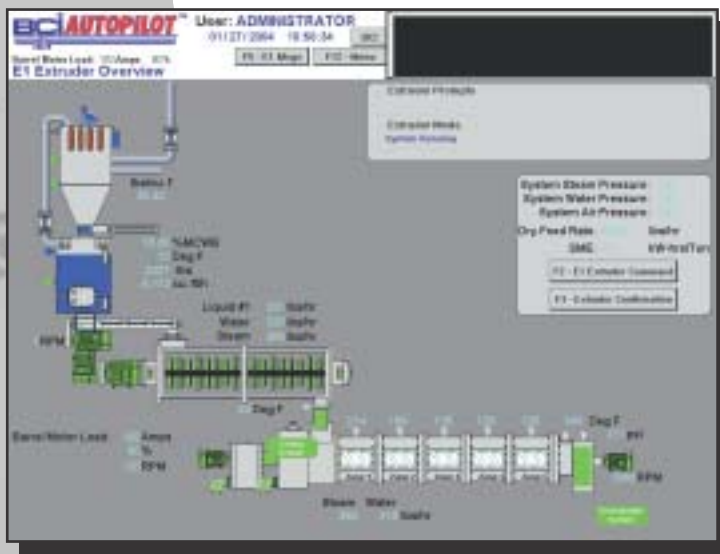
Advanced Diagnostics / Messaging Technology

Receive valuable, *real-time feedback* with continuous operator updates and descriptive alarm information.

Scalable / Expandable System Architecture

Built on state-of-the-art control and database technology, *BCI AUTOPILOT™* offers an integrated, scalable architecture to accommodate the needs of traditional, standalone HMI/PLC systems and highly distributed industrial automation systems.

- Tight Moisture Control ($\pm 1\%$)
- Operator Consistency
- Advanced Diagnostics and Smart Messaging
- Scalable and Expandable System Architecture
- “Cockpit” Instrumentation Overview Screen
- Unlimited Recipe/Formula Management and Editing (with Version Control)
- Efficient Pre-Warm and Warm Start-Up Modes
- Built-In Preventative Maintenance Utility
- On-Line Help/Troubleshooting
- Excellent ROI – Potential Payback in Weeks



Overview — “Cockpit”

Preventative Maintenance Utility

Avoid surprise outages and extended downtime with *BCI AUTOPILOT's™* built-in, flexible preventative maintenance utility, which monitors, logs and inventories an unlimited number of components. Operators can then set alerts for everything from routine maintenance and inspection task reminders to notification of the end of a component’s anticipated useful life.

Excellent Return on Investment (ROI)

Automatic sequencing and more consistent product mean less waste and overdrying, leading to more savings for you. Payback can be realized in weeks!

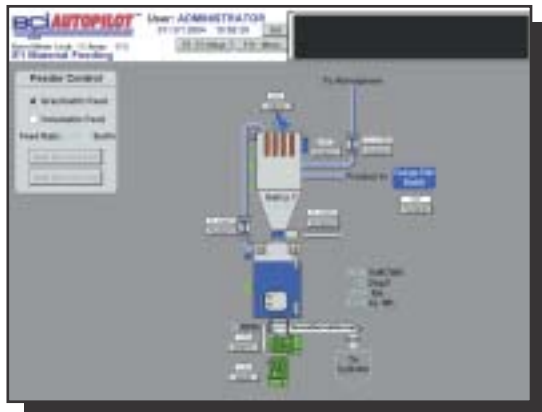


Bachelor Controls, Inc.

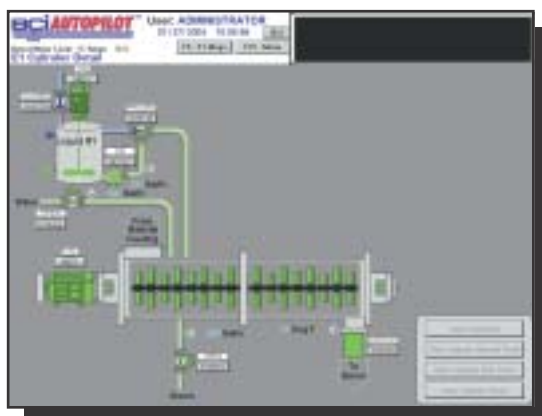
Systems Integration for Manufacturing

Check out the “ROI Calculator”
at www.bciautopilot.com

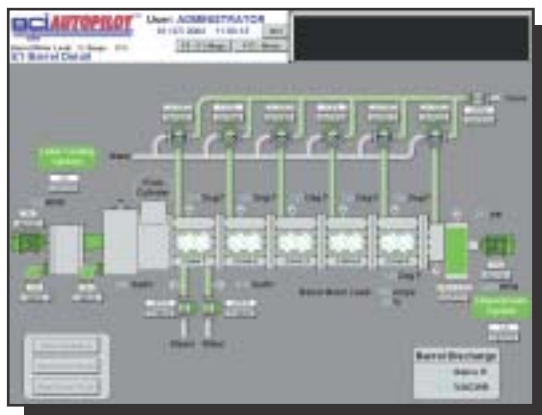
Easy-to-use system takes the mystery out of the process



Material Feeding



Cylinder Detail



Barrel Detail

Overview Screen / Screen Navigation

BCI AUTOPILOT™ features an easy-to-use interface with few screens to navigate, dynamic graphics and HMI pop-up windows at critical points in the extrusion process. Designed to serve as the “cockpit,” the Overview screen contains information that allows the operator to evaluate from one screen how the entire extrusion process is performing. Operators are more efficient and can concentrate on improving product quality and consistency.

New or Retrofit Options

BCI AUTOPILOT™ works equally well for retrofit applications as it does for new systems. Each unit is shipped with a configuration setup module that BCI will tailor to your needs before it is shipped.

Formula Management

Capture the parameters of your best operator’s setup and save it to the formula database as your standard. Then, adjust the parameters for specific formulas and save the new formula with a unique name that is meaningful to your facility. *BCI AUTOPILOT™* has enough storage capacity to handle an almost unlimited number of formulas, so you can pick the formula from a list and load it for another consistent, successful run.

Remote Recipe Editing/Control

Keep your operations up and running. You can add/edit/delete recipes and formulas from any computer networked to the SQL Server with remote recipe editing capabilities.

Back to School...

Twice a year, Bachelor Controls extrusion experts accept an invitation from the Texas A&M University Extrusion Technology Program to teach an “Automated Control of Extrusion Systems” lecture to students from all over the world.

We’ve broken three production records in a row, seen over a 40-percent increase in throughput on average, and seen change-over times drop by over 65 percent.

Jeff Lang
Vice President
DAD’S Products Company





Guidance for today's business climate.

Organizational values, production goals and systems design all work together to create a unique and complex interaction of forces. It is important to find a systems integrator who can negotiate these factors on your behalf to find the most effective solution for your business and your processes.

At Bachelor Controls, we understand that your project is unique and carries a significant amount of risk for your organization. You need a systems integrator you can trust to provide the leadership necessary to guide you through the risk associated with automating your systems and processes.

Trust is something that must be earned. We strive to earn it every day.

Our best customers trust us and see us as an integral extension of their staff. They know that we are working in their best interest, keeping them on track with the latest technology and best practices.

We work to continuously improve our processes and methodologies, formulating and documenting a set of best practices. Combined with our extensive experience managing nearly 1,800 projects, our project management procedures enable us to create repeatable, predictable results that positively affect your bottom line.

Our reputation extends outside our customers to the industry at large. Some of the best equipment manufacturers in the industry have placed their trust in us to exclusively provide the controls for their best products.

A licensed engineering firm, Bachelor Controls is well-respected by the leaders in the automation industry and has been recognized as a Charter CSIA Certified Member, Charter Rockwell Automation Solution Provider, and Microsoft Certified Partner.

Leveraging our experience and strategic partnerships, we are a single-source point of contact you can trust to provide the solutions you need to succeed in today's business climate.



Bachelor Controls, Inc.

Systems Integration for Manufacturing



Sabetha • Kansas City • Memphis

785.284.3482 • sales@bachelorcontrols.com • www.bachelorcontrols.com