



Collaborate | Automate | Support

Automation specialist and system integrator

A reliable, flexible, highly-skilled supplier of complex automation, robotics and special purpose machines for a wide range of industrial applications.



Optimal Industrial Automation

Automating and supporting process industries since 1987

Established in 1987, Optimal is based in Westerleigh Business Park, Yate, near Bristol.

We operate from a modern, purpose-built building, strategically located to nearby rail and road links. Combining 12,000 square feet of offices and workshops, our premises support our employees and clients with excellent facilities. This space enables us to provide a complete in-house design and build capability covering all automation aspects.

Adapting to an evolving professional landscape, our team have the tools and skills to work competently remotely or to be embedded on your site.

Our business is focused on the application of high-quality industrial automation and maintaining long-term working relationships with our clients.

Optimal employs a large team of expert and innovative engineers, qualified in software, electrical, electronic, vision, robotics, mechanical and control hardware disciplines.

Within the team, there is wide-ranging software capability for projects and products. Typical projects involve:

- Automation using PLC, DCS, SCADA and high level software platforms
- Electrical design and build
- Special purpose machinery design and assembly
- Complete unit operation assembly and test in our factory
- Documentation and validation services
- International installation and commissioning
- Application and implementation of Process Analytical Technology (PAT)
- A range of training and post-sale support offerings which includes our application support package, *Optimal Assured*

A project lifecycle typically begins with the initial definition, either in the form of project meetings or a dedicated front-end study of the scope and the requirements of the system, through to post-commissioning support and longer-term support contracts. Optimal is accredited to ISO 9001:2008 and 27001:2013, we are fully conversant with the requirements of GAMP and our systems are designed and manufactured in compliance with appropriate quality standards.

As part of the Optimal Group, our competencies extend beyond designing and installing bespoke automation systems. Our sister company, Optimal Industrial Technologies, is the developer of the market-leading, PAT knowledge management solution, synTQ. As such, we are uniquely placed to support the implementation of PAT technology and have experience working with all aspects of a PAT system.

Our Commitment to You

At Optimal, we pride ourselves on delivering outstanding service to all our customers. Customers are our business – we focus solely on meeting their evolving needs in an efficient and timely manner through solid research, best practice initiatives and focused investment.

Our working style is flexible, friendly and professional. Where applicable, Optimal can provide experienced, embedded engineers to ensure maximum support and availability.

Our continuing investment in software, hardware and staff training is a demonstration of our commitment to you. You can leverage this investment by utilising Optimal's application packages that deliver tangible benefits enterprise-wide.

Our Values

We believe in building a sustainable business based on long-term relationships.

By:

Providing a broad-ranging and responsive service using our vast experience in industrial automation.

Working proactively alongside our clients from project conception to successful completion.

Providing stable employment for our staff.

We care about people.

Because:

Our staff are people, our clients are people and the end users are people.

Safety is paramount in everything we do.

We embrace cultural diversity.

We value honesty, trust and mutual respect.

Through openness and transparency.

We are committed, competent and capable.

With our knowledgeable team of friendly people.

We take pride in the work that we do and the value that it adds to society.

Life Sciences

Pharmaceutical

Designing, building and modifying automation solutions for the pharmaceutical industries is core to our business. We have provided successful batch, continuous and discrete process implementations that have delivered substantial benefits to our customers.

Process Analytical Technology (PAT) is quickly becoming commonplace within pharmaceutical production, and Optimal is uniquely placed to deliver PAT product consultancy and implementations.

Our team provide all necessary validation services, together with comprehensive post-sale support.

We are ISO accredited and have experience working within the restrictions and regulations that the industry demands, including: GAMP guidelines, FDA 21 CFR Part 210/211 (Pharmaceutical Industry GMPs) and FDA 21 CFR Part 11 (Electronic Records and Signatures).



Biopharmaceuticals

Our extensive pharmaceutical activities include the automation of biotechnology development and manufacturing processes.

Over recent years, most of the biotech projects that we have been involved in, within the Optimal group, have included the use of PAT and more specifically synTQ to optimise both upstream and downstream processes.

As an example, one company reported the tripling of titre when synTQ was used at the heart of their PAT development and manufacturing strategy.



Chemical

Chemical Industry

We have delivered projects for a wide range of companies within the chemical sector, from fine chemical to heavy chemical complexes, employing our skills and experience with PLC and DCS systems in batch and continuous processes.

Optimal is fully compliant with SIL assessments, safety systems and ATEX. Our projects cover the building, installation and testing of hardware as well as software.

The implementation of new technologies, such as PAT, can hugely improve productivity and reduce waste in this sector, as we have proven with our own installations.

Fast Moving Consumer Goods (FMCG)

Optimal has provided high quality control systems and consultancy work to some of the UK's largest companies – from chocolate bars to cosmetics.

We have worked on projects ranging from the control of chillers to the operation of packaging machinery. Our clients benefit from our ability to implement systems quickly, with minimal disruption, often during overnight maintenance periods and weekends. Technologies include PLC, SCADA and robotics.

Paints and Coatings

We are proud to have worked with the largest paint and coating manufacturers in the UK and overseas. We have provided this dynamic and quality-driven industry with DCS, PLC and SCADA systems for more than ten years.

We combine our skills in safety, automation and control to deliver complete applications to an industry in which downtime is rarely possible, maintaining production while systems are installed and updated.

Working flexibly to adapt to a changing working environment, our engineers have commissioned and supported systems remotely.



Food & Beverage

We have used robotic, machine vision and special purpose machinery, alongside pure automation systems, to revitalise existing food and beverage production facilities and to create new ones.

Like all process industries, the food and beverage industry must be able to embrace and apply Industry 4.0 principles to continue to thrive in a global market where seasonal issues and changes in consumer demands and expectations are ever shifting.

Optimal has enabled companies working in all forms of food and beverage manufacture to create flexible automation systems that use technology and resources more efficiently, improving productivity and reducing waste.

Aerospace & Military

Optimal have executed a diverse range of projects in the aerospace industry, covering both civil and military applications, on structures and engines. The projects have covered all tiers of aerospace manufacture, encompassing track and trace, workflow management, data capture and recording, automatic component inspection, various forms of process automation, and assembly and test rig automation.

In addition to our competencies in PLC, SCADA, machine vision and robotics, we are also pleased to offer OEE (Overall Equipment Effectiveness), aM&T (Automated Monitoring and Targeting) and production optimisation technologies for many of the processes, systems and unit operations within this industry sector.

Green Energy

For seven years, Optimal have provided complex automation services to innovative companies that are driving the development of sustainable methods to create and store energy.

We have been selected to deliver projects in key areas, including consultancy on cyber security, automation and control. Our capabilities in the design, build and installation of DCS and PLC/SCADA controls have also been demonstrated by our work in this sector.

Recently, we have worked in close collaboration with creative enterprises to develop controls from the earliest stages, including at the process concept stage. We have taken part in developing several prototype systems that have been expanded to supply the National Grid and to provide energy in other forms. For many years, we have been involved with Combined Heat & Power (CHP) plants, including fully integrated district heating and cooling systems.

Experience

For more than 30 years, Optimal has accumulated vast experience in a wide range of industries. We have worked on most types of unit operation, encompassing batch, continuous and discrete processes.

Batch Manufacture

Optimal has successfully developed enviable experience in batch manufacturing unit operations. Many of these solutions have used PLC/SCADA systems, whilst others have been developed using DCS systems in full compliance with ISA S88.

In the pharmaceutical industry, we have implemented systems for the high-volume batch manufacture of Oral Solid Dose (OSD) products for major manufacturers in a GMP environment. We are vendor-neutral and offer impartial advice on hardware and software. We have provided both bespoke projects and 'packaged', standard solutions.

In paints and coatings, optimising batch manufacture is central to the production of high-quality product, typically in 24-hour manufacturing sites, where keeping downtime to a minimum is critical.

Continuous Manufacture

The adoption of Process Analytical Technology (PAT) in manufacturing has enabled real-time, holistic quality measurement, assurance and control.

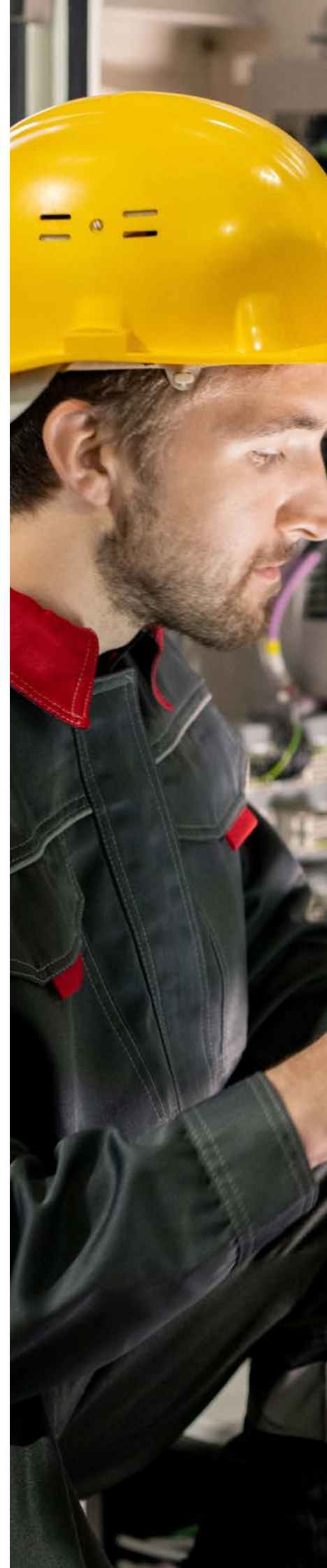
Optimal has a rare blend of skills and experiences in the implementation of complex, continuous manufacturing processes, and has access to specialist PAT skills and products. We have the unique ability to convert less robust batch processes to continuous manufacturing.

Having successfully automated many PAT-enabled continuous manufacturing production lines, we can say with confidence that the potential return-on-investment gains result in an impressively short payback period. These benefits include: less waste, giveaway and work-in-progress; faster and less expensive manufacturing; and improved quality and consistency of quality. Alongside Optimal Industrial Technologies, we have implemented systems that have achieved payback in less than two years, improved product quality and reduced batch failures to close to zero.

Discrete Manufacture

Optimal has gained significant experience and skills in many filling and packaging processes, including some that are at very high speed, plus a vast array of discrete assembly and inspection tasks. We have the in-house skills and facilities to not only automate such processes, but where appropriate we can apply servo systems, robotics, machine vision and build special purpose machinery.

Systems may comprise processing, assembly, packaging and even quality assurance. We have recently developed a machine that inspects metered dose inhalers for micro gram leakages, processing three canisters per second.





Technical Competencies

- ▶ Programming multiple types of PLC/SCADA/DCS
- ▶ Machine vision
- ▶ Robotics
- ▶ High-level software and database
- ▶ Process Analytical Technology (PAT)
- ▶ Special purpose machine design and build
- ▶ Control system and control panel design and build
- ▶ SIL assessments
- ▶ ATEX design and build
- ▶ Emergency shutdown systems
- ▶ Redundant systems
- ▶ Project management
- ▶ Front-end design exercises
- ▶ Extensive documentation preparation
- ▶ Validation documentation and execution
- ▶ Post-sale support and service

Standard Automation Offerings

Packaged solutions

- ▶ Freeze dryers
- ▶ Blenders
- ▶ Fluidised bed dryers
- ▶ Tablet coaters
- ▶ CIP sets
- ▶ Continuous Oral Solid Dose (OSD) manufacturing
- ▶ Dosimetry and irradiation automation

Standard product offerings

Within the Optimal group, we have developed a range of standard products:

- ▶ synTQ for Process Analytical Technology (PAT)
- ▶ synTI for Machine Vision and product serialisation
- ▶ Robotised System for 100% Leak Detection of pMDIs
- ▶ Robotised System for 100% Leak Detection within food packaging
- ▶ RMS for complex recipe management
- ▶ DFM for continuous product tracking
- ▶ iPass for serialized product handling



Optimal *Assured*

Global Application Support

Optimal *Assured* Global Application Support provides comprehensive, bespoke support for automation systems and services. These services are available to our customers on third-party systems as well as our own.

Support is available when you need it – whether that is via dedicated phone support, remote system login support by our automation experts, or in the form of an embedded engineer based at your site or factory.

Specific skill sets

We have experience collaborating with, and using products by, many major companies. These include but are not limited to:



SIMATIC
PCS 7
SIEMENS

KEYENCE

BECKHOFF

synTQ

RA Rockwell
Automation

PlantPAx
Distributed Control System



Image courtesy of Gericke



Optimal Industrial Automation Limited

Goodrich Close, Westerleigh Business Park, Yate, Bristol BS37 5YT, UK

Phone: +44 (0) 1454 333222

Email: enquiries@optimal-ltd.co.uk

www.optimal-ltd.co.uk

Find us on



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