

# BONNER

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[bonner.ie](http://bonner.ie)

Control  
Solutions

# Control Solutions Overview

Our Control Solutions service includes the design, build and commissioning of industrial automation systems that incorporate the latest in technological innovations. Using a variety of sensors and data loggers, like temperature probes, flowmeters and transmitters, our systems generate a data feed from your plant floor that delivers precise measurements around your mission-critical processes.

Incorporating both traditional and the latest Industry 4.0 methods, our systems incorporate the existing plant infrastructure, or where none exists, we can provide solutions that will not require additional infrastructure investments.

Working with DCS, SCADA, HMIs, industrial PCs and PLCs, we install systems that then automate aspects of your production process based on the data communicated. We provide condition monitoring, energy control and IIoT technology, allowing you to access data remotely, exchange information across your systems and introduce or upgrade the industrial automation to your plant.

By partnering with leading industrial automation experts B&R (part of ABB), we can offer clients a full range of sophisticated, high-end, yet easy to use solutions, including HMI, I/O, motion control, transport and DCS systems. These present our SME customers with the opportunity to upgrade their plant technology and to establish a modern automation architecture within their industrial processes.

We also understand that not every control solution is best served by a PLC level system. As such we have a range of innovative smart systems to allow for local and “Edge” control and data acquisition ranging from very basic to network integratable non-PLC control systems.

# Automation Services

By leveraging our unique mix of instrumentation and automation services, we can provide a full plant wide range of services to help with new builds or to retro-fit automation control systems to ensure the client experiences a detailed, planned and executed strategy for the system. Our expertise span across all industries including Food Ingredients, Dairy, Beverage, Pharmaceutical and Manufacturing.

Our project management, system and detailed documentation follows for good engineering practices including system design, control philosophies, HMI, DCS and SCADA programming and configuration; database programming; business interface development; and add on services including calibration and maintenance schedules. All decisions are planned and signed off with the client before implementation giving confidence in joint partnership planning.

**Project Management**

**DCS, PLC Control Systems Design**

**Procedural Designs** *(completed solutions delivered)*

**Technical Support**

**Installation**

**Commissioning (FAT, SAT)**

**PLC & HMI Programming**

**Technical Drawings**

**System Security**

**Training**

**Specialised Machines** *(design and supply)*

**Analysis & RCM program**

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# SCADA and DCS Systems

Data from machines and systems enables comprehensive online performance monitoring and visualization. Long-term archiving ensures the ability to assess the quality of the manufacturing process. Integrated reports provide detailed analysis of all process data in order to optimise production processes. Combined display of ongoing data, alarms and events in the TrendViewer make it easy to trace cause and effect.

## CENTRALISED DATA

Centralised data acquisition enables complete online performance monitoring and visual overviews. Powerful and extremely reliable long-term archiving makes it possible to track quality for the entire manufacturing process. Highly flexible reports with integrated analysis functions provide support for production optimisation.

Modern manufacturing processes demand extremely high levels of precision. Consistent monitoring and statistical analysis are the only way to ensure maximum product quality. Acquisition of raw data directly from the production level in real time can be a seamless acquisition of operating and process data from machines and equipment and is now much easier to display in a browser, with Business Intelligence (BI), Local Operating Terminal or remotely via a web browser.

## WORLDWIDE VISIBILITY

With our systems, we can monitor numerous sites spread all around the world. The local projects all communicate with a central master project. The individual projects can even have a different release numbers and software versions. Each location is equipped with an autonomous PLC/SCADA solution and all monitoring and management functions run directly on site. Poor network connections or low bandwidth do not affect functionality. Local storage of all collected data helps prevent loss and ensure that data is available for analysis at any time.

## FEATURES

**Dashboard** provides a quick and intuitive overview of key data in speedometers, line diagrams, traffic lights and maps.

**Mobile Data Analysis** dashboards and reports can also be viewed on iOS and Android mobile devices

**Audit Trail** all asset-related operator activities are recorded using Audit Trail

**Business Intelligence Reports** A user-friendly report design tool makes it easy to create, format and distribute reports for a standard browser or mobile devices using drag-and-drop.



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# Energy Monitoring System

Integrated energy measurement modules supply all electrical and current values by collecting data from all energy sources (natural gas, oil, etc.) to provide complete and automatic collection of actual energy usage. Energy management systems as defined in ISO 50001 are easily implemented with measurement and display of consumption and cost data. Historical data allows detailed analysis of energy consumption, making it easy to identify cause and effect.

Significant savings through improved energy efficiency. As part of the monitoring, a control element can be added to automatically control the building management systems, control redundancies and reduce loss due to non-use.

Energy monitoring systems have a small physical foot-print as the power sensing and switching takes place directly on the PLC and as such does not need additional electrical equipment.

The energy monitoring system also provides all the benefits of a SCADA system, fully upgradable, may be fully incorporated into an existing control system, and at a significantly reduced cost and simpler, more intuitive engineering.

# Condition Monitoring

Condition-based predictive maintenance reduces the number of unpredicted outages, thus keeping the costs associated with downtime and repairs to an absolute minimum

## VIBRATION MONITORING

Online vibration measurement may be integrated via a PLC or a standalone controller/monitor and makes it possible to identify the mechanical condition of the machine and allows performance degradations to be detected early on so that serious damage can be prevented.

Additionally, vibration monitoring and vibration checks may also be performed as a service.

## PROCESS VALUES

Process values are recorded from existing plant sensors, or additional units are supplied. The data is correlated for varying process changes, operational conditions and bases-lines are determined.

Variations from these base lines are highlighted and recorded. A root-cause analysis is now determined and an early warning is created.

Additionally, a solution may now be found and preventative measures can be put in place, ensuring the maximum plant availability and avoiding costly break-downs and additional knock-on damage affects.

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## ORANGEBOX

As an Industrial IoT solution package, the Orange Box brings smart-factory intelligence to brownfield installations. It is now possible to read and analyse data from previously isolated machinery and equipment. A controller collects runtime data via I/O or fieldbus and processes it using intelligent software components. The greatest advantage is that there's no need for any changes to existing hardware and software.



# Remote Monitoring and Telemetry

Remote tank level monitoring systems are proven to help reduce costs associated with logistics, ordering and alarming. Our telemetry systems are reliable, flexible and affordable and it will interface into existing business tools, such as SAP. We connect thousands of different types of sensors to the internet, allowing you to view data securely through a simple web browser, visible on a computer, tablet or smartphone.

Our Water Telemetry Solutions can be used for any application which needs to be able to monitor the level of water or liquid in a specific area container or the level in comparison to a specific point.

Other Remote Monitoring Solutions can be provided for ATEX Environments, Condition Monitoring, and Pump Station Monitoring.

## PROCESS TELEMETRY

In the same way, process data may be gathered and secured in either a local storage (such as a PC, SCADA or Database) or directly sent to a cloud host.

This is particularly beneficial and provides a cost effective option where either no site infrastructure is in place (such as remote skids), no operators are present or where a non-intrusive add-on system is desired.

## SECURE REMOTE MAINTENANCE

Bonner can provide Secure Remote Maintenance for solutions we install or can be applied to existing systems that makes diagnosing and maintaining machinery and equipment easier than ever. The solution utilises the latest IT and security standards and allows for significant savings with low investment costs.



# EDGE and IoT

We provide complete solutions for our clients for all their plant automation and control. Our product range from International manufacturers includes everything needed for one-off client requests or as part of a wider plant upgrade plus machine and system automation. A decisive factor here is that all the products work together seamlessly.

## EDGE

Edge computing hardware ensures that your data gets from its source to the cloud safely and securely. Take advantage of this potential to boost your network performance. Bonner and B&R's edge solutions send aggregated, pre-processed data to the cloud. The cloud handles any remaining computational tasks as well as providing long-term archiving. Implement long-term evaluation and forecasting – Industrial IoT becomes reality.

An Edge Controller is a powerful industrial PC equipped with monitoring software to read control data from machines and lines. Features include control, safety functions, data aggregation and intermediate local archiving, business intelligence and machine learning.

## INDUSTRIAL IOT

We offer complete hardware and software solutions, comprehensive service along with expertise in the automation and digitalisation of machinery and equipment.

Industrial IoT can improve plant performance using:

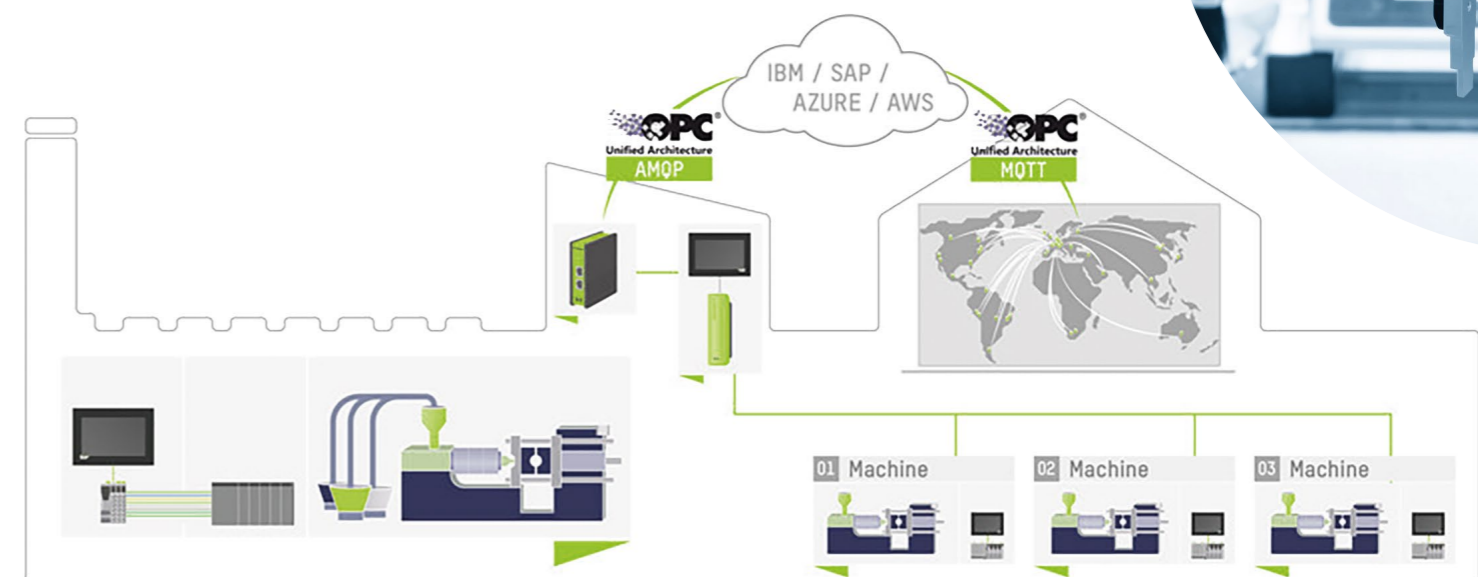
**Plantwide data exchange**

**Remote data access**

**Analysis of data from heterogeneous sources**

**Integration of different fieldbus technologies**

**Digitalization of manufacturing systems**



# Hardware



## Industrial PCs

### Box PCs

Powerful Atom and Core™ i technology processors ensure that the most demanding automation systems run smoothly. A special form factor is available for drive system integration.

### Panel PCs

Panel PCs combine a display and a PC unit into a single extremely compact device and are available in a wide variety of display sizes with a touch or multi-touch screen and/or input keys. Designs with IP65 protection are perfect for use in especially harsh environments.

### Transmission Technology

New Smart Display Link 4 transfer technology offers clear advantages for constructing modular machines and systems.

### Industrial Monitors

Automation Panels are the perfect HMI devices to accompany box PCs or expand panel PCs. They are available in a wide variety of display sizes with a single-touch or multi-touch screen and/or input keys

## HMI

Whether operation takes place intuitively via touch screen, function keys or a combination of the two, B&R control panels provide unbeatable ergonomic comfort. Brilliant displays with a wide viewing angle provide an outstanding overview of all machine and system states. Industry-specific solutions, e.g. for the food industry, and even custom adaptations round off this extensive range of products.

### Industrial Monitors

As Automation Panels, they are the perfect visualization devices for Box PCs or expanding Panel PCs. They are available in a wide variety of display sizes with a touch or Automation Panel multi-touch screen and/or input keys. Designs with IP65 protection are perfect for use in especially harsh environments.

### Mobile panels

Ergonomic, light and extremely impact-resistant – these are the qualities of Mobile Panels that enable safe and simple on-site operation and monitoring. Display sizes 7.0" WSVGA and 10.1" WXGA are available.

### Panel-based control

Control, motion control and HMI combined in a single device. That is what distinguishes the Power Panel C-Series. With its scalable performance range, the C-Series is equally suitable for simple conveyor belt systems or the most complex robotics and CNC applications. A wide range of display sizes with analog resistive touch screens are available.

### Terminals

Compact remote HMI devices without control functionality. Power Panel T-Series devices can be used either with the integrated web browser or as a VNC client. The mode is set easily using the device's internal configuration.

## Programmable Logic Controllers (PLCs)

With a performance range reaching all the way to Intel® Atom™ CPUs, the X20 System can handle all tasks, large or small. This system is extremely compact and highly modular as a result of its unique "slice" system. Perfectly integrated fieldbus connections provide the highest degree of freedom for decentralized machine and system concepts.

### Panel-Based Control

PLC, motion control and visualisation all in one device. This is what sets the Power Panel product family apart. This range of performance, which includes Intel® Atom™ technology, can cover even the most complex robotics and CNC applications. Operator panels with a wide range of display sizes, touch screens and/or keypads are available.

### PC-Based Controllers

PC-based controllers use industrial PCs from B&R as their hardware platform. Box PCs or Panel PCs are the main options here.

## I/O SYSTEMS

B&R I/O systems are versatile and easy to use. With IP20 and IP67 protection, this is true in any combination, both inside and outside the control cabinet. And they also support all standard fieldbus systems. Complete flexibility regarding topology makes it possible for the I/O system to be optimally adapted to the machine. Standard I/O can be mixed with safe I/O, and decentralized intelligence is embedded in the I/O system so that things like condition monitoring can be easily implemented.

### Inside the control cabinet

The very compact X20 system offers a wide range of different modules and is especially efficient to wire and maintain thanks to its 3-slice design.

### Outside the control cabinet

The X67 system is compatible with the X20 system and can be combined with it as needed. In addition, the IP67 protection makes them especially well-suited for harsh environmental conditions.

### Directly integrated valve manifolds

The XV System allows valve terminals to be directly integrated in the I/O network. This results in fewer I/O modules and less wiring, which also reduces machine manufacturing costs.



# Hardware

## Vision Systems

At the heart of our vision solution is a broad selection of Intelligent Camera Technology by B&R. Options at the lower end will replace simple machine vision sensors, while the top of the range will harness the full potential of high-end smart cameras. For the entire portfolio of cameras, there are easy-to-configure machine vision functions for creating applications with minimal programming.

## Intelligent Lighting

Lighting elements are available integrated in the camera or as an external device and are synchronized with image capture. This ensures that even rapidly moving objects are perfectly illuminated with maximum precision and strobe intensity. With the strobe controller integrated directly into the lights, no additional hardware is required.

Object-specific requirements such as bright-field or dark-field illumination can be implemented through simple configuration. There is no need for error-prone manual settings with mounting screws.



## Motion Control

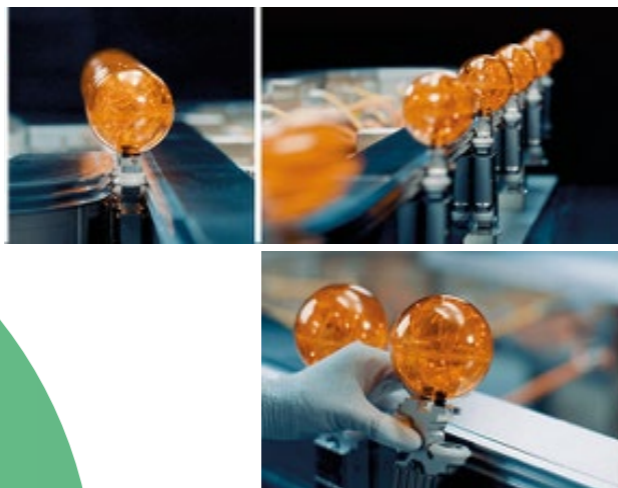
Motion Control Technology melds seamlessly into its overall automation system – along with Machine Control, HMI and Safety Technology – to create a complete system solution for machines and equipment. Our motion control components are fully interoperable, so individual devices can be swapped out at any time to adapt to changes in the machine's configuration or requirements.

Choose from a broad spectrum of motors, gearboxes and motor-gearbox assemblies. Components are developed to meet the specific needs of both standard and specialty machinery in a wide range of industries – from metalworking to food and beverage.

Drive systems, the full spectrum of drive technology including compact drives, single- and multi-axis drive systems, distributed drive systems, motor-mounted drive systems and frequency inverters

Motors, the right motor for any job - compact servo motors, servo gear motors, servo motors, torque motors and stepper motors.

Gearboxes, innovative and efficient gearboxes stand up to the highest demands.



## Transport Systems

Versatile industrial transport systems let you move products through your production line more efficiently while simultaneously improving quality. Based on long-stator linear motors, B&R's next-generation industrial transport solutions make production lines more flexible, more reliable and faster.

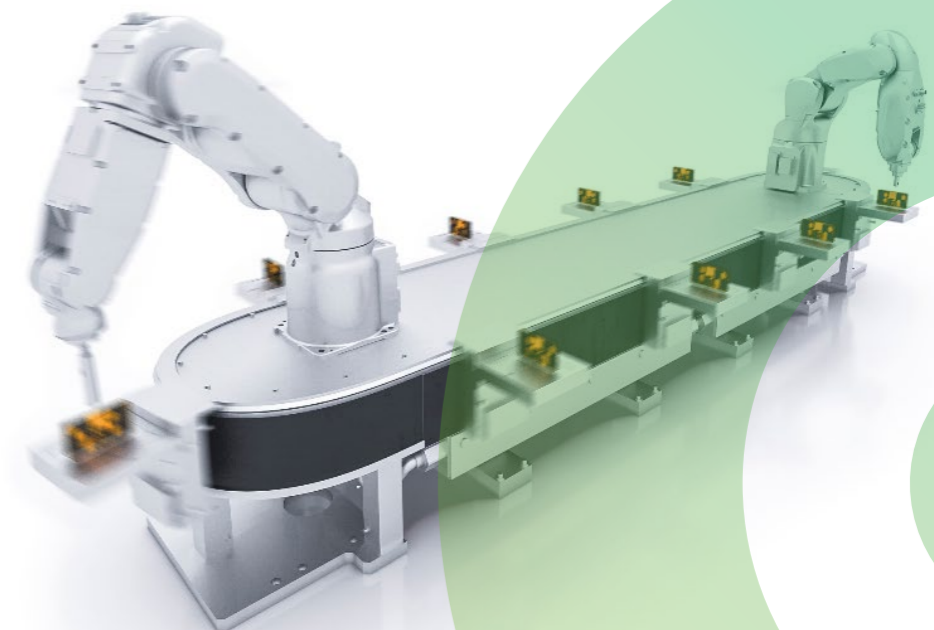
In place of belts and chains, products are transported along the track on independently controlled shuttles. With control resolution down to 10 µm, the nearly frictionless shuttle movement enables implementation of highly precise production processes.

## Acopostrak

Acopostrak is a revolution in adaptive manufacturing. This highly flexible transport system extends the economy of mass production down to batches of one. Parts and products are transported quickly and flexibly from processing station to processing station on independently controlled shuttles.

## Supertrak Transport System

The versatile Supertrak Industrial Transport System uses magnet technology to guide individually controllable shuttles along a track using long stator linear motors.



## Mobile Automation

The new mobile automation lineup gives you all the tools you need to build and defend your competitive edge as a technological leader in your market. Every aspect of the mobile automation system is designed for modular, concurrent engineering. This gets your products to market faster and allows you to react flexibly to new requirements and special requests. Decoupled hardware and software make it easy to switch out hardware components at any time.

## Mobile & Outdoor Applications

With the X90 Mobile CPU System, Bonner have automation solutions designed specifically for the critical environmental conditions often present in commercial vehicle and outdoor applications.



# Services

The Bonner Instrumentation Programme is designed to meet the specific demands of highly regulated industries, including the Food & Beverage, Dairy, Pharmaceutical, Medical Devices and Manufacturing sectors.

*Our range of services includes:*

- Instrumentation Analysis**
- Calibration & Maintenance**
- Control Solutions**
- Temperature Mapping & Environment Monitoring**
- Commissioning**
- Procurement & Supply**

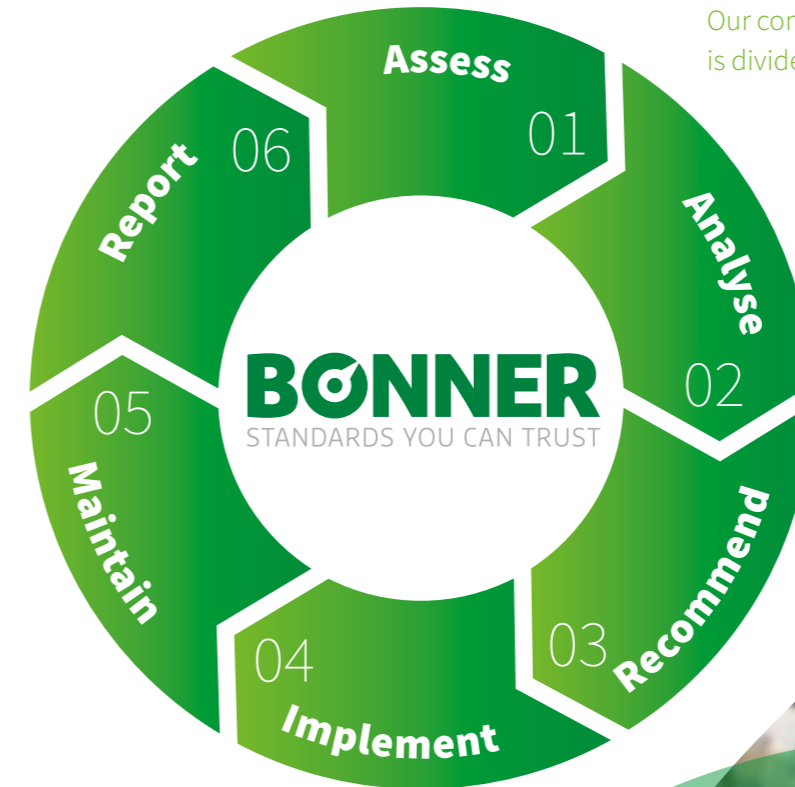
# Bonner Instrumentation Programme

Our programme brings something different to the market. We don't just maintain and protect your existing infrastructure. We work with you to proactively analyse and plan, helping to modernise your facilities and future-proof your systems.

We partner with your team to deliver an exceptional level of service, ensuring continuous productivity and compliance. And we work across your entire site, looking after process and laboratory instrumentation.

We tailor the scope of our programme to meet your precise needs and all our services can be provided on a separate project basis. The Bonner Instrumentation Programme is designed to meet the specific demands of highly regulated industries, including the Food & Beverage, Dairy, Pharmaceutical, Medical Devices and Manufacturing sectors.

Our comprehensive programme is divided into six stages:





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