



INDUSTRY BRIEF

Metals & Metallurgy

Precise, safe control for hot, heavy, energy-hungry processes.



Control system engineering, integration and analytics since 1997
ISO 9001 certified • Cyber Essentials • CHAS • Constructionline • SafeContractor

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YOUR PRIORITIES

What matters most

Metals plants run hot, heavy and energy-hungry processes, from melting and refining to casting and rolling. Temperature, current and chemistry must be held tightly, while people work near molten metal, high-power supplies and heavy machinery. Customers expect traceable material, and high energy costs expose every inefficiency.

Process control and quality

Temperature, current and composition have to stay within tight limits, batch after batch. Stable control, recipe management and good data help cut scrap and rework and protect your customer approvals.

Safety around heavy plant

Molten metal, furnaces, cranes and high-power electrical plant carry serious hazards. Interlocks, safe stops and burner protection must be designed and proven to the level the risk demands.

Energy use and cost

Furnaces, electrolysis and large drives use vast amounts of energy. Metering, monitoring and reporting show where it goes, so you can control it and support your energy management system.

Traceable material

Customers want to know how every cast, coil or part was made. Linking process data to batches and products gives you the evidence behind inspection documents and quality investigations.

WHAT WE WORK ON

Systems we engineer

- Melting and holding furnaces
- Electrolysis, electrowinning and refining
- High-power substations and transformers
- Casting, rolling and finishing lines
- Recipe handling and MES part tracking
- Energy monitoring and production reporting

PROJECT EXPERIENCE

Aluminium smelter

Matrix delivered the software, electrical and SCADA system for an aluminium smelter: the electrolytic cells and their anodes and cathodes, a high-power substation and transformers, control of cell current and anode and cathode replacement, with SCADA recipe handling, maintenance reporting, MES part tracking and reporting.

What this means on your project

Many metals processes run continuously, and an unplanned stop on a furnace or pot line can be very costly. We plan changes around your production and shutdowns, and prove new logic against a simulation of the process before it reaches site. You get the design, code and documentation to run and maintain the system yourselves.

STANDARDS

The standards that shape your project

Customers ask us first about standards. These are the ones we meet most often in this sector, and what they mean in practice.

Standard	What it covers	How we work with it
BS EN 746-1, BS EN ISO 13577-2 and -4	Safety of industrial furnaces: general requirements, combustion and fuel handling, and protective systems.	Burner management, purging and furnace protective systems designed to their requirements.
BS EN 60204-1	Safety of machinery: electrical equipment of machines, including stopping and emergency stop.	Control panels and machine electrics designed to it and verified before and after installation.
BS EN ISO 13849-1	Design of the safety-related parts of machine control systems, rated by performance level (PL).	Safety functions designed and verified to the performance level your risk assessment requires.
ISO 50001	Requirements for an energy management system that measures and improves energy performance.	Energy metering, monitoring and reporting that give your energy management system reliable data.
BS EN 10204	Types of inspection document for metallic products, such as 3.1 and 3.2 certificates.	Process and test data captured against each batch, so your certificates are traceable.
IEC 62443	Cyber security for industrial automation and control systems, for owners, integrators and suppliers.	Its zones, conduits and security levels shape how we design networks and remote access.

The standards listed are those most often relevant to control-system work in this sector. Which apply to your project, and how, is agreed with you at specification stage.

The evidence you receive at handover

✓ Functional design specification	✓ I/O list and cause-and-effect	✓ Alarm list and HMI interface
✓ FAT and SAT records	✓ As-built drawings and source code	✓ Method statements for common faults

ABOUT MATRIX

Standards-led, fully documented control systems that you own and can support.

Matrix International (UK) Ltd has designed, built and supported industrial control systems since 1997. We take projects from specification and electrical design, through PLC, DCS and SCADA software, to installation, commissioning and long-term support, and we build the analysis software that shows how a plant is really performing. We are ISO 9001 certified and hold Cyber Essentials, CHAS, Constructionline and SafeContractor accreditation.

Siemens TIA Portal, S7 and PCS 7 • Rockwell • ABB • Schneider • Mitsubishi • Beckhoff • Emerson DeltaV • Honeywell • GE • WinCC, Ignition, AVEVA (Wonderware), FactoryTalk, iFIX and Citect SCADA

HOW WE DELIVER

From specification to long-term support

01 Specify

Requirements, applicable standards and risks agreed with you up front, itemised into a clear plan.

02 Design

Electrical and control design, PLC/DCS and SCADA software, to your standards and ours.

03 Test

Logic proven against a simulated plant, then factory acceptance testing before anything reaches site.

04 Commission

Installation, commissioning and site acceptance testing, planned around your operation.

05 Hand over

Full documentation, method statements for common faults, and training for your team.

06 Support

Maintenance, upgrades and analysis for the life of the system, with 24/7 cover under a support agreement.

WHY MATRIX

Why customers choose us

Standards first

An ISO 9001 certified quality system, designing to the standards your sector demands, plus any you specify.

You own the system

Clear structure, open interfaces and complete documentation, so you can support it yourself or with any vendor.

Tested before site

Control code is version-controlled and tested against a simulated plant before factory and site acceptance.

Multi-vendor

Siemens, Rockwell, ABB, Schneider, Mitsubishi, Beckhoff, Emerson, Honeywell and GE platforms.

In it for the long term

For us a project is not finished until the control system is decommissioned. 24/7 support is available under a support agreement.

OUR PROMISE

Standards-led, fully documented control systems that you own and can support.

Talk to us about your project

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