



INDUSTRY BRIEF

Rail

Tunnel, station and depot control systems, designed to rail standards.



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

The railway runs to a timetable, and the systems behind it cannot fail quietly. Tunnels, stations and depots rely on ventilation, pumping, power and building services that are safe, available and assured to rail standards. Work happens in short possessions, and every change has to be evidenced.

Assured, evidenced change

Every change to railway infrastructure needs hazard analysis, test evidence and sign-off. Control systems have to fit your safety management system and assurance process from day one.

Work in short possessions

Much of the work happens in short overnight possessions. New systems must arrive fully tested, cut over quickly and hand the railway back on time.

Tunnel and station safety

Tunnels and stations depend on ventilation, drainage pumping, lighting and fire interfaces working every time, with clear alarms and status for the control room and maintainers.

Cyber security

Connected stations, depots and power systems widen the attack surface. Networks and remote access need to be designed to rail cyber security guidance from the outset.

WHAT WE WORK ON

Systems we engineer

- Tunnel ventilation and smoke control
- Tunnel and station drainage pumping
- Station and infrastructure SCADA
- Lighting, power and building services
- Depot plant: train wash, lifting, fuelling
- Traction power SCADA interfaces

PLATFORMS WE WORK WITH

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

What this means on your project

Railway work is planned around possessions and assurance. We agree interfaces and hazard records early, prove logic against a simulated plant and in factory testing, and plan each cut-over to fit the possession with a tested fall-back. You receive the evidence your assurance process needs, and the code and documentation to maintain the system.

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 50126 (RAMS)	Reliability, availability, maintainability and safety, specified and demonstrated through the railway system lifecycle.	RAMS targets agreed at specification and traced through design, testing and handover records.
BS EN 50716:2023	Software development for railway applications, replacing EN 50128 and EN 50657.	Planned, version-controlled development, reviews and test records that follow its lifecycle for the non-signalling systems we deliver.
CLC/TS 50701	Cyber security for railway applications, applying the IEC 62443 approach to the rail environment.	Zones, conduits and security requirements agreed with you and built into our network design.
ROGS 2006	The Railways and Other Guided Transport Systems (Safety) Regulations: safety management duties enforced by the ORR.	Change records, test evidence and documentation that feed your safety management system.
Common Safety Method (CSM-RA)	Risk evaluation and assessment of significant changes to the railway, with independent assessment where required.	Hazard records, interface definitions and test evidence prepared to support your risk assessment.
Network Rail company standards	Requirements for design, equipment and works on Network Rail infrastructure, including product acceptance.	We work to the standards your contract calls up and supply the documentation its assurance asks for.

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.

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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

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Talk to us about your project

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