High Energy Physics

Providing high power, high voltage and ultimate reliability to the global scientific market.
Introduction

About us

We have supplied high power, often bespoke, products to many of the world’s most powerful particle accelerators for over 60 years.

We partner with our customers to provide switching solutions across the particle physics market; supporting research experiments in Discovery Science, diagnosis and therapy in Medicine, manufacturing in Industry and inspection in Security.

Through continuous product and technology development and expert support throughout customer partnership, we offer unique solutions to meet exacting requirements.

Our vision

We aim to extend our reach in the high energy physics market, partnering with customers to design and manufacture products that meet evolving technical specifications.

Our mission

We will maintain and grow our affiliation with prestigious science experiments around the world, offering first class support, product quality and technical excellence.
Continuous design and development for life science applications

Solution Provider
Our commitment to continually developing thyatron technology and circuit techniques ensures the best possible solution is available to our customers.
High Profile Projects

CERN
CERN, the European Organization for Nuclear Research, is one of the world’s largest and most respected centres for scientific research. Its business is fundamental physics, finding out what the Universe is made of and how it works.

Our partnership began in the 1960s during the development of a major storage ring which required high power switching technology. Our thyatrons power kicker magnets which enable the transition of a particle beam from one chamber to the next.

RIKEN
RIKEN is Japan’s largest comprehensive research institution, renowned for high-quality research in a diverse range of scientific disciplines.

The RIKEN SPring-8 Center (RSC) is a photon science research complex to enhance the distinctive capabilities of X-ray science. Since the 1990s e2v has provided pulsed power components to SPring-8 in their linear accelerator driven light source.

FAIR
FAIR, a large-scale accelerator facility for heavy ions, will be fully operational by 2025 and will be one of the world’s largest scientific research projects.

We will supply 30 thyatrons to act as superfast, high power switches that drive the kicker magnets.

OSAKA UNIVERSITY
The team at Osaka University aim to realise laser fusion as a next generation energy source.

Laser fusion is a clean, safe way to produce nuclear energy and has the potential to solve the world’s energy crisis. Our products are used in high energy physics laser fusion experiments around the world, bringing the possibility of a limitless energy supply closer to reality.
High Energy Physics Overview

High Energy Physics
Since the 1950s, we have designed and developed a range of switching capabilities to meet the performance requirements of many of the world’s high energy physics experiments.

Today, our diverse product range continues to provide the power to switch a particle beam between two paths in physics experiments that study the nature of the particles that constitute matter and radiation.

Our technical experts offer bespoke solutions to meet exact requirements and work in partnership with our customers from concept design through to install and aftercare.

Key Capabilities

+ We have designed over 450 thyratrons in the last six decades, and work with our customers to manufacture bespoke products for exacting requirements.

+ Our engineers offer technical expertise throughout the product lifecycle.

+ We offer high power, high voltage, consistent switching capability across a range of applications.
Components to support emerging scientific applications

Switching
We offer a diverse portfolio of switching solutions that meet the requirements of demanding science applications around the world.
High Energy Physics

**Product Overview**

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**Thyratrons**

High power pulsed thyratrons provide high voltage, high speed and high current switching capability with precise timing. The product range includes glass, ceramic and metal envelope designs that switch voltages up to 100kV and currents up to 20kA.

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**Spark Gaps**

Our range of specialised two and three-electrode spark gaps and trigger transformers are used to provide a fast high voltage pulse in high energy switches.

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**Inductive Output Tubes**

Our Inductive Output Tubes for High Energy Physics applications offer both continuous and pulse power to accelerate particle beams around a fixed closed-loop path in synchrotrons.