SELLA
CONTROLS

Company and Process Overview

Our aim is to be the leading systems integrator, meeting our customers' expectations for the provision of cost effective scalable safety and control solutions and quality service without compromising safety requirements, using our expert engineering capability and integration skills alongside our functional safety expertise.

As an independent systems integrator, SELLA CONTROLS have developed a strong reputation of proven expertise in innovative design and engineering for the supply of Safety Instrumented Systems (SIS) and Control Systems across various Industry sectors.

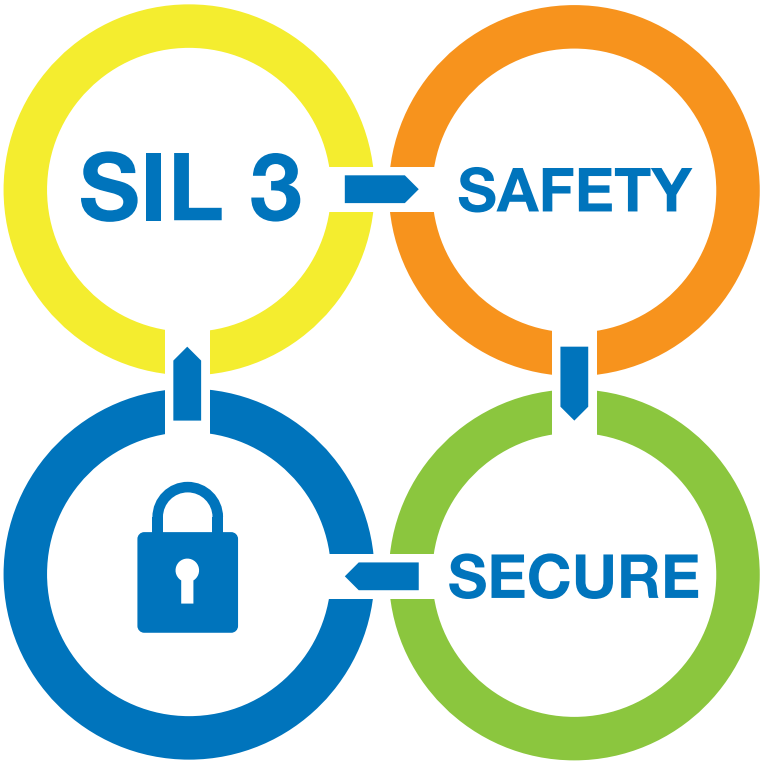
Through our partnerships with key product suppliers and our unrivalled in-house engineering capabilities, the company offers complete best in class, turnkey project capability with the following full lifecycle services:

• **Consultancy**	Functional Safety Management Risk Assessment SIL Determination SIL Verification Safety Requirement Specification Independent Functional Safety Assessment (FSA) Third Party Certification
• **Project Management**	On time delivery of projects Regular customer contact Agreed milestones to monitor progress
• **Engineering & Design**	Functional Design Specification Software Requirements Specification Detailed Hardware Design Software Development Loop Diagrams Test Procedures Design Calculations
• **Manufacturing**	Panel Build System Build System Integration
• **Testing**	In-house Testing Factory Acceptance Testing Site Acceptance Testing
• **Commissioning**	System Inspection Support during Start-up
• **Technical Support**	24 hour call out support Upgrade/Modifications Maintenance (IEC 61511 life cycle) Proof testing
• **Training**	Hardware/Software Design Maintenance and Servicing Customised Courses

Functional Safety is at the heart of everything we do

Safety First

Operating safely calls for compliance with best engineering practices. This means following internationally recognised standards that require a life-cycle approach to identifying, managing and reducing risk across all phases of a safety-critical project.



SELLA CONTROLS work to ensure that every aspect of the safety life-cycle is addressed in a way that guarantees safe operation and full compliance with regulatory expectations.

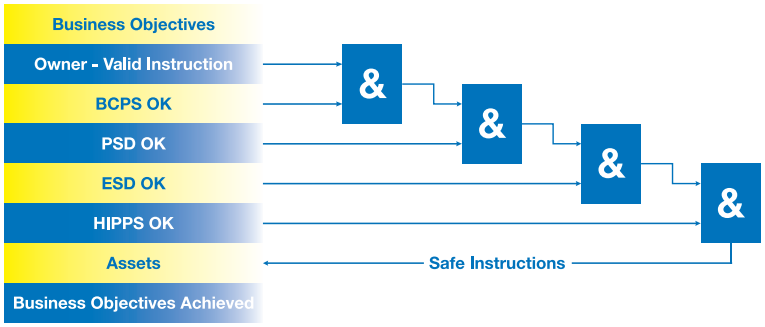
SELLA CONTROLS is a founding member of the 61508 Association and in 2001 was awarded the first UKAS accredited SIRA CASS certificate for Functional Safety Management, an accreditation we have retained ever since. Functional Safety is embedded into our Quality Management System and this ensures the required techniques and measures detailed in IEC 61508 and IEC 61511 are applied to all safety critical projects.

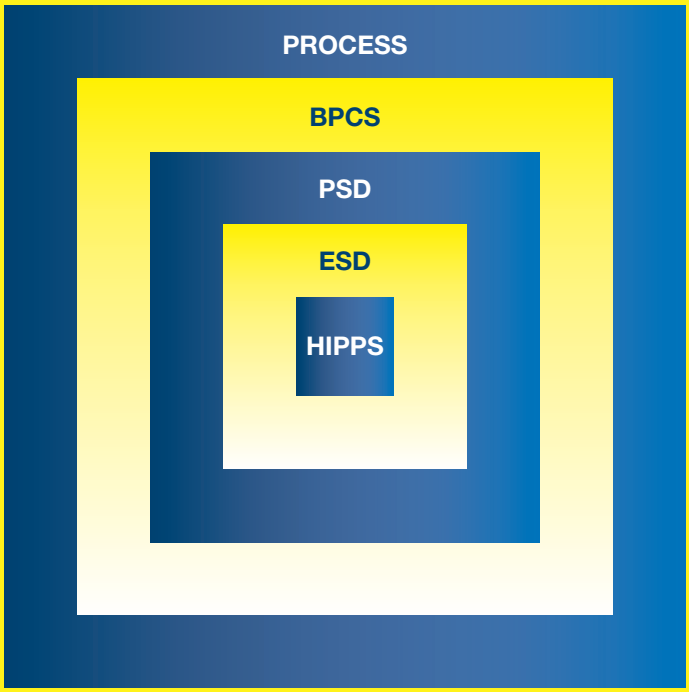
Our pedigree and history make SELLA CONTROLS the logical choice for Safety Instrumented System and Functional Safety solutions.

Integrated Control and Safety Systems

SELLA CONTROLS utilises highly regarded SIS technology products combined with a choice of controls systems, allowing for total flexibility. The combined system integration and Functional Safety knowledge of our dedicated team of engineers enables us to deliver the benefits of a truly integrated control and safety system.

This also ensures independence and avoids the introduction of common cause systematic errors between protective layers.





Cyber Protection

SELLA CONTROLS' procedures for delivery of projects offer safeguards to clients' systems and plant against cyber attacks.

Within most engineering solutions, acceptable cyber-security has been based on following OEM instructions and segmenting the Integrated Administration and Control Systems (IACS) network. SELLA CONTROLS has improved on this stance with an engineering approach which strengthens security without impacting system availability.

SELLA CONTROLS' approach is to have a competent team of engineers to review the network architecture for vulnerabilities; fully documenting code changes in a review sheet allowing for constant updates and traceability with the added security of restricting the configuration of systems to prevent program reloads while the system is online.

Building on an existing and robust ISO 9001 Quality System and Functional Safety Management System, SELLA CONTROLS has developed a Security Management System which closely monitors the usage of portable devices (and the files contained on them).
Secure patch management for software applications and Anti-Virus is achieved by evaluating and approving all necessary patches to the engineering solution during manufacture. This provides our end users with the assurance that the appropriate cyber-security management is applied throughout the duration of a project.

SELLA CONTROLS follow the Principles of IEC 62443-2-4

Project Management

SELLA CONTROLS has gained a worldwide reputation for successful project management and delivery. All projects are assigned a dedicated project delivery team, who use our robust in-house project management tools and procedures, in line with our quality management system (approved to BS EN ISO 9001 since 1989).

Our engineering team will ensure project milestones are realised and client expectations are exceeded.

Strong communication is the key to the success of projects and the SELLA CONTROLS project teams are encouraged to develop strong relationships with the client team.

Functional Safety Consulting

Functional Safety Lifecycle Services

The effective implementation of functional safety standards, practices and processes is increasingly important in ensuring that Safety Instrumented Systems are appropriately specified, designed installed and maintained. IEC 61508 and the process sector specific functional safety standard IEC 61511 promote the concept of the safety lifecycle. Experience shows that engaging experts early in the design process has a positive impact on projects.

SELLA CONTROLS have over 35 years' experience in the specification, design, installation and modification of safety critical systems. Our experience spans multiple industry sectors including Oil and Gas, Petro-chemical, Nuclear and Power.

Our involvement gives you access to our combined functional safety knowledge, competency and our TÜV Rheinland Certified Functional Safety Expert (FS-Expert, SIS, ID#260/15).

We can support you by providing expert led Functional Safety services across the entire lifecycle including:

- Functional Safety Management
- HAZOP / CHAZOP / FMEA Facilitation
- SIL Determination (LOPA, Risk Graph FTA)
- Safety Requirements Specification
- Full Loop SIL Verification
- Proof Test Procedure Development
- HIPPS Dossier Management
- Independent Functional Safety Assessment

Applications

Safety Instrumented System (SIS)

SIS & Emergency Shutdown Systems are used across a wide range of industries and offer personnel, asset and environmental protection by means of instantaneous, fail safe, plant immobilisation.

SIS is arguably the most widely used safety related application in the process industry. By monitoring safety critical field instrumentation the SIS provides automatic preventative action in the case of unsafe operational parameter deviations and ensures rapid isolation if loss of containment occurs.

A series of pre-engineered functions will then bring the facility back into full operation once the cause of the shutdown has been determined and dealt with.

By offering programmable and non-programmable solutions, SELLA CONTROLS provides a versatile range of plant protection up to SIL3 in accordance with IEC 61508 / 61511. Whether the application requirement is for a small number of I/O signals or a complex system consisting of thousands of field devices, SELLA CONTROLS has the expertise to design and build a tailored SIS to meet client specifications.

Burner Management Systems (BMS)

A BMS is required as a safety critical element on most large burner systems. They manage the safety of start-up, the purge cycle, flame ignition signal, flame detection and any shutdown requirements. BMS can also incorporate control and monitoring. SELLA CONTROLS offer solutions that allow the BMS logic solver to be housed either local to the burners / furnace (even in zone classified areas) or remote in a centralised control room, with certified communication channel to other safety related devices. We can also offer communications to remote or local alarm management and operator displays, where our HMI package can assist with control, diagnostics and performance analyses. SELLA CONTROLS can assist with ensuring BMS controls align with both EN746 & IEC 61511.

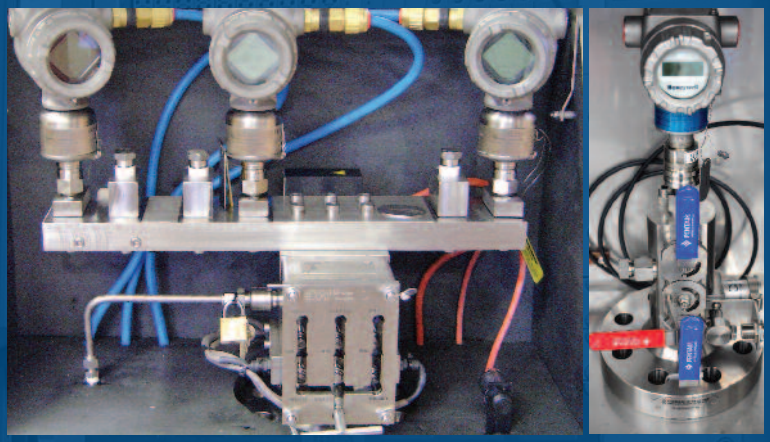
End users requirements and philosophies vary so SELLA CONTROLS offers a number of solutions to meet end user Burner Management Systems preferences. These include configuration with segregated hardware for each burner, (on multi burner systems) which helps in the maintenance of the BMS. Alternatively a centralised logic solver with additional option using distributed PESs on a common network can be provided.

HIPPS

The High Integrity Pressure Protection Systems designed by SELLA CONTROLS provide increased safety for pipelines and other critical plant where normal operation at higher pressures would not be permitted with ordinary SIS systems.

SELLA CONTROLS, with our partners, provide a complete turnkey solution for HIPPS, which is IEC 61508 SIL rated and encompasses the following elements:

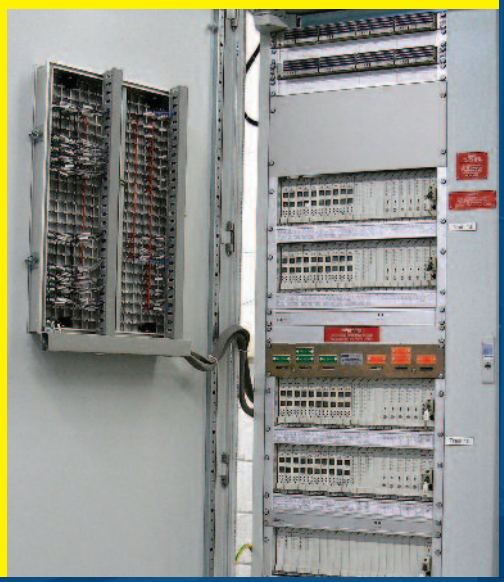
- HIPPS Dossier
- Pressure transmitters
- High integrity manifolds
- Logic solvers - programmable or hardwired
- Axial flow and fully piggable ball or gate valves, complete with actuators incorporating partial stroke testing if required

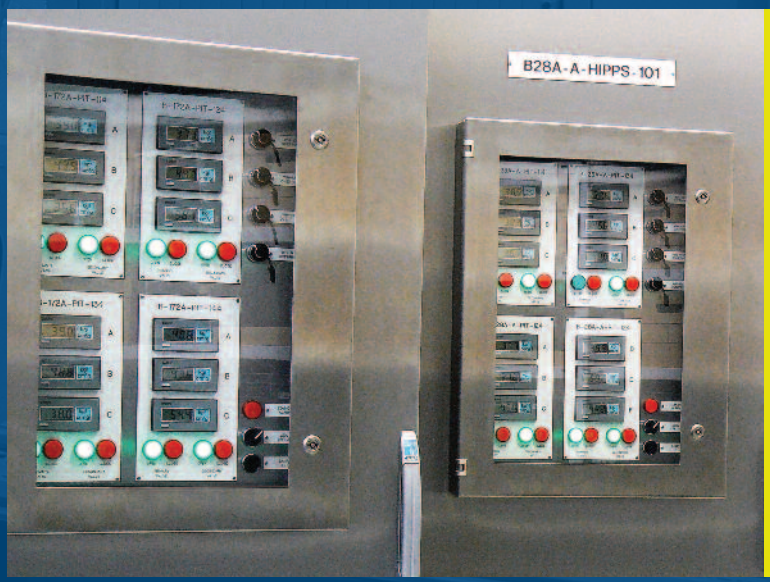


Typically, certified pressure transmitters are used in the classic 2oo3 configuration for improved Probability of Failure on Demand (PFD) on an interlock manifold or individual block and bleed key interlocked assemblies.

Certified logic solvers are either in a single or dual configuration for increased availability. Equipment can be mounted in classified areas deploying; Exn, Exe, Exp and Exd methods for Zone 1 or 2.

Valves can be supplied either as single or dual units for increased safety. The whole system can be TÜV certified for each individual installation, to meet national and international regulatory requirements.





Applications

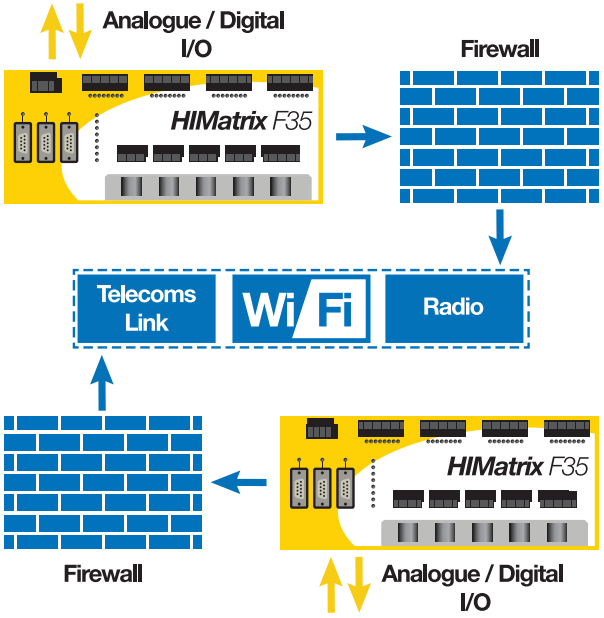
Innovative Black Channel Communications

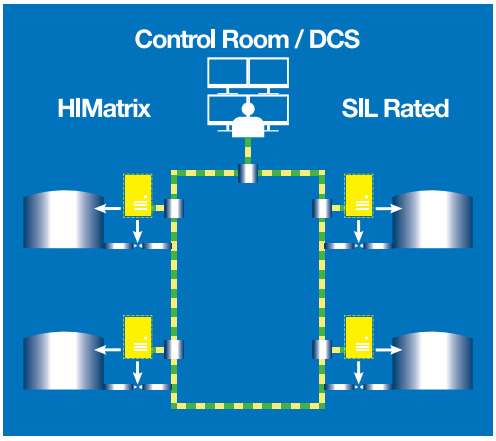
SELLA CONTROLS' black channel solutions for remote wellhead, distributed Fire & Gas Detection and Tank Overfill Protection Solutions (TOPS), provides reliable and highly cost effective protection for both plant and personnel.

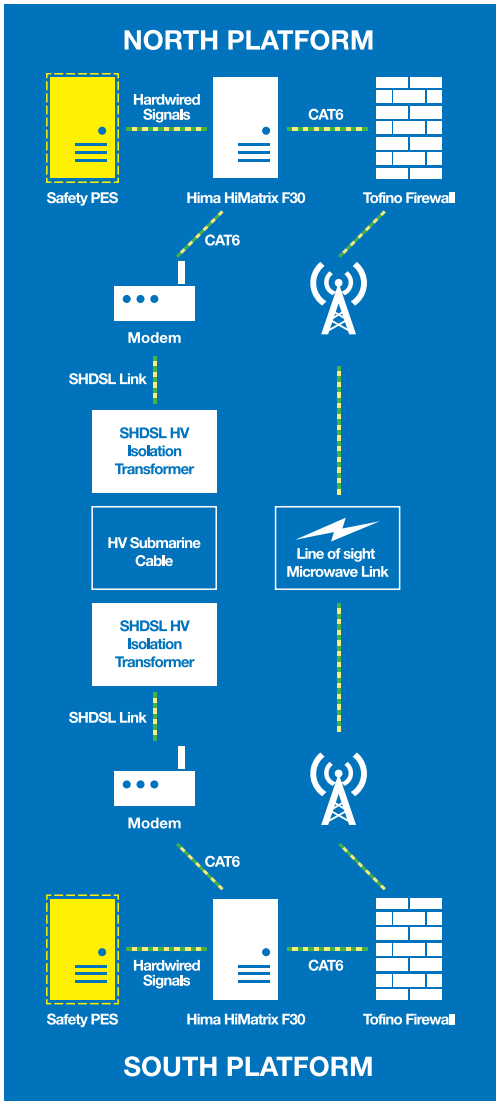
Utilising programmable logic controllers, the system can operate either as single point to point or on a multiple node network installation. With suitable field instruments and valves it can be used in applications up to and including SIL3.

A PES at each end connects directly to the analogue (4-20mA) or digital (24Vdc / VFC) field I/O.

The PESs then transmit the shutdown signals to each other using the Safe Ethernet SIL 3 certified black channel communication protocol. As per IEC 61508, the integrity of the black channel safety is independent of the media due to the properties and deterministic nature of the protocol, therefore the signals have a capability of up to SIL3. The only performance considerations are latency (process safety time) and availability. Availability can be increased through redundant links or redundant PESs.







Fire & Gas detection systems encompass a turnkey solution that includes sensing elements, TÜV certified logic solvers and protection devices.

Fire & Gas Detection (F&G)

SELLA CONTROLS provides equipment from approved third party suppliers and recognised fire and gas detector manufacturers. Protection devices, CCTV, alarm and HVAC control systems can also be supplied.

Our F&G systems are generally programmable in order to cater for complex alarming arrangements and we use equipment certified up to SIL3 in accordance with IEC 61508 that also offers line monitoring as standard. Single or dual I/O versions can be supplied (for increased availability) but even our simplex I/O solutions are SIL3 capable.

Typically, F&G systems are designed with dual communications links for increased availability and are offered with the following protocols: Modbus RTU slave RS485, Ethernet OPC and Profibus DP slave. Giving a wide range of connection possibilities with plant control systems.

Addressable

SELLA CONTROLS in parallel to PES based solutions can also offer addressable systems for F&G applications using various manufacturers.

SCADA/HMI

Over a number of years SELLA CONTROLS have developed SCADA packages for applications such as F&G using proprietary building blocks. Delivering a unique package to clients bespoke requirements, this offers visual indication, visualisation of plant process, status alarms, annunciation, reporting facilities, remote access, CCTV interface and remote alarms.

Panel Build and Design

For over 45 years, SELLA CONTROLS has been designing and manufacturing high quality safety and control panels across a number of industry sectors including oil & gas, chemical, steel, power, nuclear and transport.

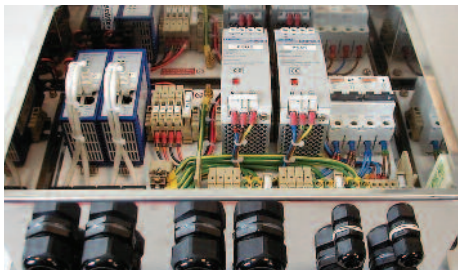
SELLA CONTROLS works directly with end users, product manufacturers and engineering houses. Our specialist systems integrator experience delivers panel build projects which are innovative, cost effective and provide the best solution for the project either as 'build to print' manufacture or as 'design and build'.

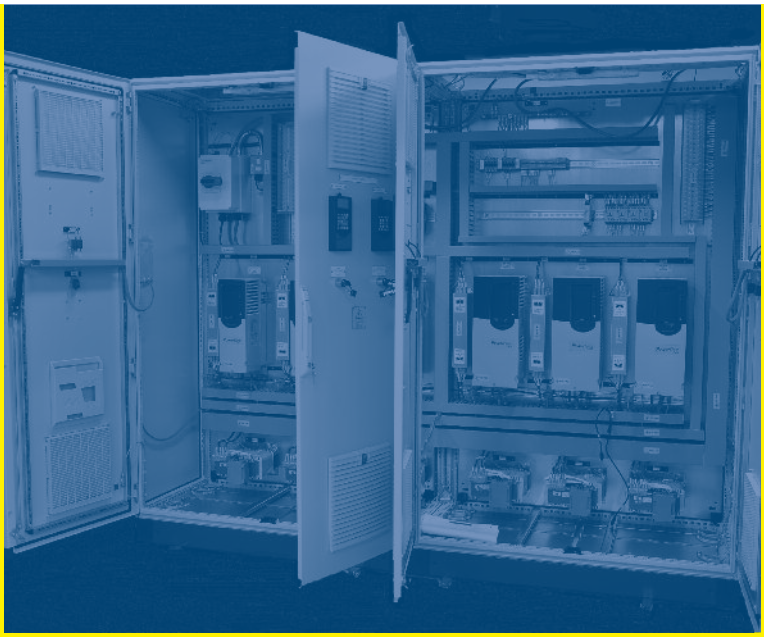
With a reference list of projects at sites across the globe, we design, engineer and manufacture panels which are fully compliant with the international standards specified by our clients. Our build capabilities have been approved by end users for many years and all control panels are built to comply with current relevant standards. Our quality management system has been certified to BS EN ISO 9001 since 1989.

SELLA CONTROLS provides a complete range build solutions utilising over 7,500 sq ft of workshop space dedicated to fabrication, production and testing. Our experienced staff are qualified to design, build and deliver panels diverse in size and complexity. From the very small basic wall mounted variety to a much larger multi suite, mounted in large room size containers, and anything in between. Because these often need to fit into areas on site where space is restricted, our highly skilled team of technicians and engineers will fabricate them to custom dimensions (specified by the client), in a range of standard or specialised materials.

SELLA CONTROLS offers a range of panels and cabinets

- Control Panels - stand alone or fully integrated
- Interface Panels
- Marshalling Cabinets
- Mimics and Mosaics
- Pneumatics
- Drives and Switch Gear
- Demonstration Rigs
- Production Runs
- Multi Panel (Junction Boxes)
- Purge Panels

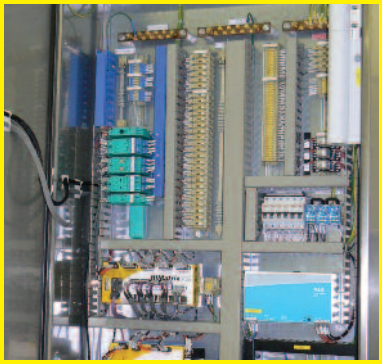




SELLA CONTROLS are also equipped to provide a selection of hazardous area panels which are suitable for use in areas with a high possibility of flammable, dust or gas. These panels are manufactured from materials such as Stainless Steel, Cast Iron, Aluminium or Glass Reinforced Polyester.

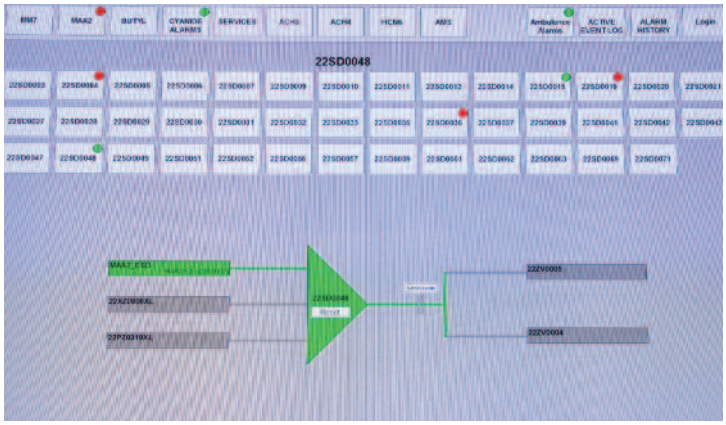
SELLA CONTROLS has experience in providing panels using the following techniques for protection:

- Intrinsically Safe - Exia
- Explosion / Flame Proof - Exe Exd or Exn
- Purged or Pressurised - Exp



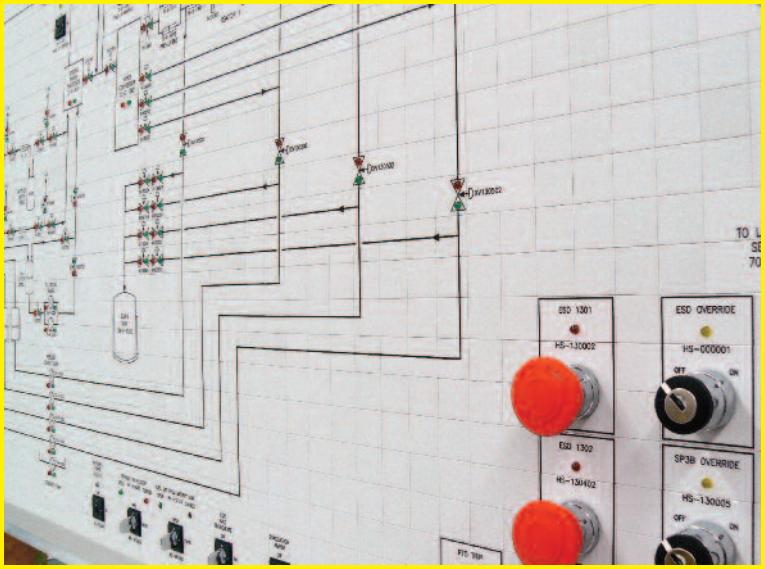
Control Room Equipment

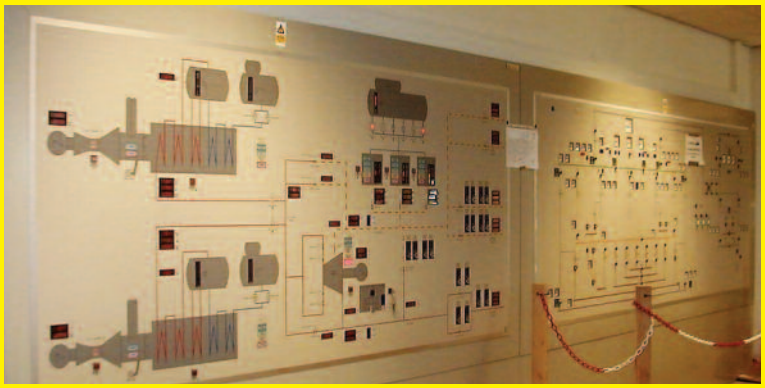
SELLA CONTROLS' capability to provide high quality control panels is complemented by a selection of control room equipment delivered in conjunction with product partners.

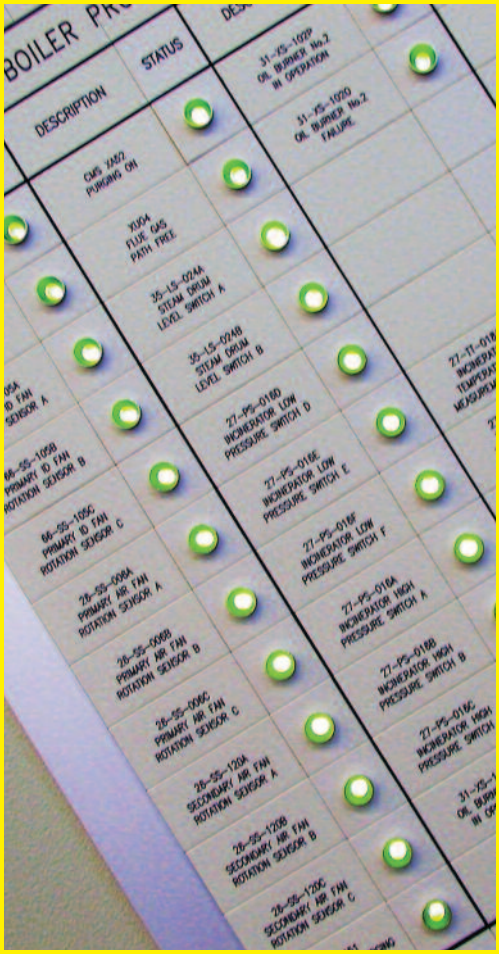


A variety of industrial control room features are offered:

- Modular Display Cubes (incorporating Digital Mirror Technology)
- TFT LCD Systems (Displays for Professional applications)
- Wall management (Control software for Large Screen Systems)
- Supervisory Control and Data Acquisition (SCADA)
- Custom built Desks and Consoles
- Tile Mosaic and Mimic Displays







Management of Legacy and Obsolete Components and Systems

Operator owners are now looking to extend life expectancy of mature plants. Under these conditions, some controls and logic solvers are becoming obsolete or difficult to maintain, therefore an upgrade or replacement is necessary. Replacing the existing systems requires good documentation of the existing systems. With these being in some cases over 25 years old, then the records become incomplete or out of date.

SELLA CONTROLS has gained knowledge and realisation in implementing reverse engineering activities and site surveys to verify and validate the system documentation. This is in parallel with a mature and tested process to deliver a reverse engineering exercise, using a bespoke dynamic software tool to verify the results.

Aftersales

SELLA CONTROLS' dedicated Technical Support Group provides site installation and commissioning services together with a comprehensive range of post installation support and training to fully support any system we have installed. SCATS and OPITO certified personnel can provide technical support for any system we supply either onshore or offshore.

We offer qualified and coordinated services tailored to individual customer requirements for all phases of the safety lifecycle. SELLA CONTROLS can provide your organisation with a number of cost-effective support services. Investment in these services will provide clear benefits to safety and maximise process availability.

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