

## Safety Manager SC

### Product Information Note

**The Safety Manager SC, when combined with Experion, dramatically reduces integration costs for integrated control and safety (ICSS) of plant operations, minimizes downtime through unified support, decreases risk with embedded cyber security, and lowers total cost of ownership through Experion-level extended system lifecycle.**

The Safety Manager SC, designed and developed by Honeywell ensures safety, simplifies operations and reduces costs by providing one safety system platform to support small packaged applications to large distributed plant-wide architectures.

Safety Manager SC simplifies engineering, development and testing using advanced features from Honeywell including LEAP™, Universal IO, offline simulation, and Experion® integration. It reduces time and money needed for spares, training and engineering tools that were previously required for multiple systems.

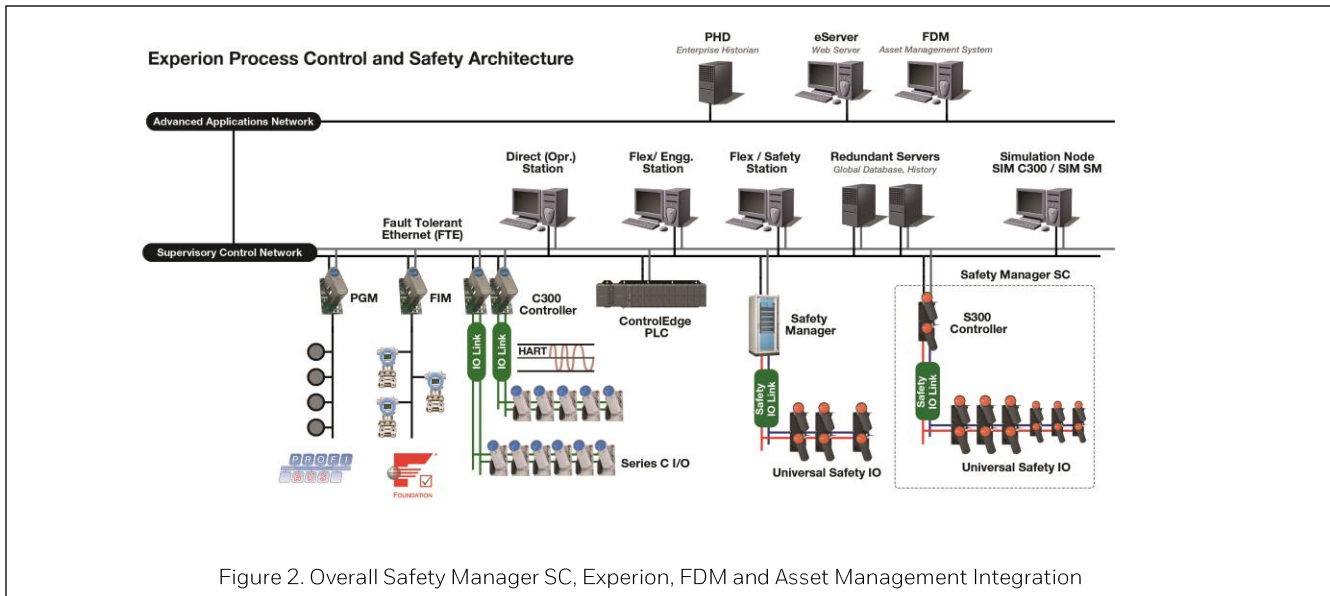
The Safety Manager SC system is based on Universal IO technology and LEAP which allows a reduction in project costs and execution times. Two Universal IO module types are available, a USIO module providing 32 configurable channels for either AI, AO, DI, or DO signals supporting HART pass through and an SDIO module providing 32 configurable channels for either DI or DO signals. Both modules support short circuit detection and line monitoring capability. Universal IO allows for early system hardware ordering, late binding of IO points, a smaller amount of system spare IO points, and a reduced number of IO cards for spare parts inventory. With a temperature rating from -40 to 70 C, Safety Manager systems with



*Figure 1. S300 redundant processors (shown) make-up the central core of the Safety Manager SC architecture and support multiple communication networks and protocols.*

## FEATURES & BENEFITS

- Full system redundancy providing maximum availability for critical safety applications.
- Vertical orientation allows easy module installation, wiring and maintenance.
- Universal IO with per channel selection of Digital Input, Digital Output, Analog Input, Analog Output.
- Slanted module mounting design creates a uniform heat distribution to extend module life and increase operating temperatures by reducing hot spots.
- Field power integrated with the IO modules, eliminating external loop wiring and separate power supplies.
- Honeywell's LEAP project methodology allows early hardware selection and late changes to IO.
- HART enabled Universal I/O for greater configuration flexibility.
- IEC 61131 compliant Safety Builder engineering tool.
- ISASecure certified cyber security ensuring the safety of the system, personnel and critical information.
- Tightly integrated with Experion, Honeywell's best-in-class Distributed Control System (DCS) and Honeywell's Field Device Manager (FDM) for smart field device management.
- Single vendor service and support across the Safety System, DCS, PLC and Field Device Manager.



Universal IO can be located throughout the process, installed both indoors in control room environments and outdoors in field cabinets.

With the Safety Manager SC solution, industrial process facilities are assured of the utmost cost and performance benefits over the life of the asset. They will also realize significant value from simplified configuration and integration across their control and safety architecture.

The Safety Manager SC system can support a wide variety of safety solutions, easily configured to meet small to large distributed safety applications requiring varying levels of redundancy. Because the system is IEC 61511/61508 SIL3 TUV certified, it can provide the optimal level of safety and process control integration while still maintaining functional safety separation as mandated by those standards.

Through the Safety Manager SC operational integration, all process control and safety sub-systems are unified into one architecture, providing a unique opportunity to improve safety, process availability and efficiency.

### Superior Integration Capability

With Honeywell technology, industrial process sites have a flexible way to efficiently access data in a seamless manner, ensuring easy configuration and maintenance.

An advanced feature available as part of the tight integration between Safety Manager SC and Experion is Process Safety Analyzer. It provides automated tracking, recording and validation of the condition of safety instrumented systems and final elements, with views and reports for analyzing their current and past condition and helping to quickly identify areas of attention for testing or maintenance.

PSA includes three main modules:

- Shutdown Analyzer (SDA) focuses on safety instrumented systems, and validates that all recorded operations were executed as expected in a timely manner.
- Safety Element Scout (SES) focuses on final elements, keeping track of all operations and validating that these occur as expected.
- SIL Reporting (SIL) gathers KPIs from Shutdown Analyzer and Safety Element Scout and automatically generates reports to support SIL analysis.

Honeywell can serve as a single vendor for all automation needs, including the DCS, Safety System, PLC, SCADA, and Asset Management, Field Device Manager and PSA. By partnering with an automation vendor offering integrated DCS and Safety solutions, users have a single point of contact from project inception to support, substantially reducing CAPEX and OPEX.

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## Safe and Secure

Every Safety Manager SC Controller includes an embedded and certified safety firewall to protect the critical Safety Instrumented System (SIS) layer of protection from cyberattacks and disruption of service. Safety Manager SC is certified as compliant with ISASecure Embedded Device Security Assurance (EDSA) Level 1 and 2 certification, and protected against cyber threats.

## Compliance to Safety Standards

The Safety Manager SC complies with the following international standards:

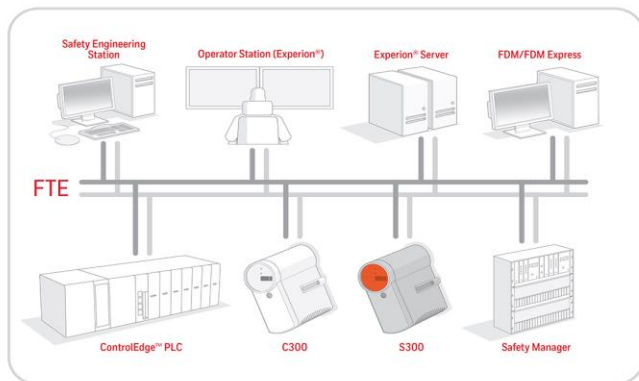
- 1) For emergency shutdown and other critical applications: IEC 61508, IEC61511, ISA S84.01, DIN V 19250, UL, FM, ATEX.
- 2) For fire and gas: EN54-2, NFPA 72
- 3) For burner management: NFPA 85, 86, VDE 0116

Honeywell certifies safety system cabinet designs to these standards, ensuring compliance of all system components and the overall system design. Safety Manager SC provides the basis for critical control and safety unification, reducing risks and installed costs, and improving plant safety while increasing plant uptime.

## Operational integration with Experion

Safety Manager SC integration delivers fast, safe and reliable data exchange with Honeywell's Experion, enhancing operational efficiency and performance. Since 1996, Honeywell has offered an integrated process control and safety solution driven by the separation principle—hardware and software diversification, integrated operator interface, data processing, analysis and alarm management.

The operational integration provided with the Experion system allows plant personnel to have a seamless interface to the plant processes that are being controlled, while maintaining safe separation. This allows for a wide range of process control and safety applications to be monitored plant-wide from any operator console. From an operational perspective, it makes no difference where the applications are running as all the required information is available to the operator.



A complete overview of all information needed from the operator's point of view is available on the Experion operator stations. This includes integrated Sequence of Events (SOE), Alarm & Events and relevant safety system related diagnostic and status information.

When connected to the Honeywell Fault Tolerant Ethernet (FTE) network through TUV approved safety communication interfaces, multiple Safety Manager SC Safety Controllers can be unified into one process control and safety solution architecture.

## Safety Builder — Integrated Configuration

The Safety Builder engineering and maintenance software improves engineering and design efficiency. With simple drag and drop functionality, a complete and complex network can be designed within minutes without programming, saving valuable engineering and testing time. The complete network design is available on a one-page view without requiring additional documentation.

An integrated editor facilitates fast and effective application design, allowing clear and distinct views of all logic with full compliance to IEC 61131 standards. Logic inputs, outputs and symbols are placed with drag and drop functionality from the toolbar and are easily configurable.

Safety Manager SC supports offline and Cloud based simulation for faster development and checkout of safety logic using the Safety Builder engineering tool. In the early implementation phase of a project, the design of the safety functions can be validated against the safety requirements without the actual hardware being present.

Honeywell's UniSim® simulation environment is also supported by Safety Manager SC. It provides step by step simulation, freezing the application and building snapshots. This simulation is integrated into the overall UniSim architecture supporting plant-wide simulation.

## Easy and Intuitive Engineering and Modifications

Safety Builder, provides plant-wide management of safety-critical databases and application programming for easy network design. TUV-approved, menu-driven online modifications prevent errors while maintaining and optimizing the safety application.

A major requirement for compliance to IEC 61511 and IEC 61508 is the availability of a change history of applications. With the Safety Builder engineering tool, change history is efficiently tracked with the Safety Audit Tracker through an automatically enabled audit trail. It tracks all changes performed on an application.- Manual procedures and extensive data loggings are not necessary. The Safety Audit Tracker, together with the automated embedded Application Verification mechanism is all that is required.

## Scalable to a Broad Range of Applications

Honeywell's Safety Manager SC solution enables you to configure the safety system with the size, functionality and cost to suit your specific application needs. The modular design allows you to choose an architecture to meet your reliability and availability requirements. In addition, the system offers a variety of networking options supporting different communication standards to communicate with other systems.

Safety Manager SC is designed to allow you to use one safety system across the plant to address small applications such as wellhead, skid, pipeline, burner, etc. to large sub-systems such as SIS/ESD, Fire & Gas, BMS, Critical Control, HIPPS, etc.

## Expert Service & Support

Honeywell has been recognized as an automation industry leader for more than four decades. Our technology is installed in some of the largest refineries, plants, platforms and pipelines in the world.

## For More Information

To learn more about easy integration and flexible deployment of Safety Manager SC, visit [www.honeywellprocess.com](http://www.honeywellprocess.com) or contact your Honeywell account manager

## Honeywell Process Solutions

1250 West Sam Houston Parkway South  
Houston, TX 77042

Honeywell House, Skimped Hill Lane  
Bracknell, Berkshire, England RG12 1EB UK

Building #1, 555 Huanke Road,  
Zhangjiang Hi-Tech Industrial Park,  
Pudong New Area, Shanghai 201203

[www.honeywellprocess.com](http://www.honeywellprocess.com)

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Honeywell automation systems are easy to install and use, and are the most reliable and scalable systems available.

Honeywell understands that knowledgeable support and implementation services—delivered when and where they're needed—are critical to the success of any automation project.

## Safety Services

Honeywell's service offerings go beyond supplying hardware and software, establishing a unique safety knowledge community located in our expertise centers around the world in North America, Europe, South Africa, Asia and Australia. Over 500 certified safety engineers employed in these centers offer a wide range of consulting, project and lifecycle support services. Honeywell's consulting and lifecycle management services include:

- Process hazards and risk assessment
- Safety Integrity Levels classification
- IEC61508 and IEC61511 CFSE training
- Safety requirement specifications development
- Front-end feed studies with customers to jointly develop their requirements
- IEC61508, IEC61511 and ISA S84 compliant solutions development
- Safety Instrumented Systems implementation
- Live, hot cutover implementation and execution of revamp projects
- Installation and commissioning
- SIL verification
- SIL validation
- Periodic proof-testing
- System maintenance
- Solution Enhancement Support Program (SESP)
- Parts management

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