

# OptiSIS™ Solution

Optimized and Packaged Process Safety Instrumented System

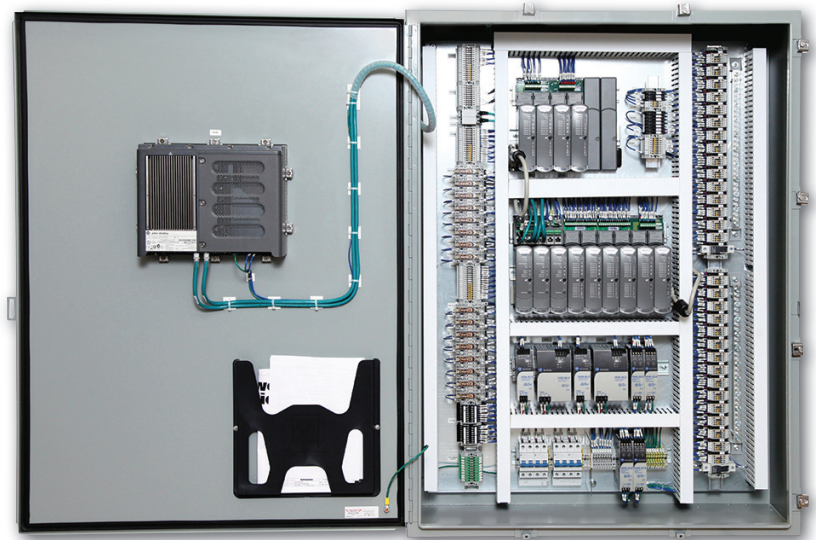
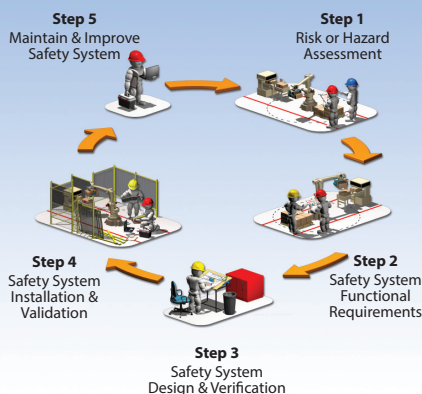
## Features and Benefits:

The OptiSIS packaged solution helps reduce lead times associated with customized safety solutions. The focus is on configuring safety functions, rather than engineering and safety manual compliance tasks.

- Rapid deployment to the field
- Quick installation, easy upgrades
- No programming
- Reduced risk at installation
- Rapid verification
- Connectivity to smart field devices and asset management systems
- Meets SIL 3 requirements

Rockwell Automation® can provide a range of services to support the deployment of the OptiSIS Solution, from safety assessment services on the front end, to installation, commissioning, safety validations, and start-up services on the back end.

## Functional Safety Life Cycle



## Why Safety Instrumented Systems

All industries face risk, representing potential harm to personnel, damage to the environment, or damage to equipment.

A Process Hazard Analysis (PHA) is performed to identify risk associated with a process facility, utilizing different methods to determine the level of risk and how it can be mitigated. Often there is a level of residual risk that can only be mitigated by a Safety Instrumented System (SIS).

An SIS may implement one or many Safety Instrumented Functions (SIF), each varying from one or two signals to many signals, meaning that the SIS itself can vary significantly from one process facility to another.

Rockwell Automation offers a complete range of SIS solutions with two main offerings: pre-engineered (OptiSIS) and engineered-to-order. For applications in the range of 100 I/O or less, the OptiSIS solution offers risk mitigation, shorter lead time, and lower installed cost.

Compliant with ISA 84/IEC61511, the OptiSIS solution includes ready-to-install, TUV-certified hardware and validated application software. The OptiSIS simplifies SIS implementation within the process safety lifecycle.

LISTEN.  
THINK.  
SOLVE.

Because these safety solutions protect personnel, equipment, and the environment, the OptiSIS safety instrumented solution focuses on defining simple responses when process parameters (i.e. pressure, levels, and temperatures) are exceeded.

The OptiSIS Solution not only reduces long lead times between risk identification and solution implementation, it also helps ease maintenance and upgrade activities.

When a process safety system can no longer be maintained, or a change is required due to non-compliance, plant management will pursue a cost-effective and short delivery replacement solution. Many times, these upgrade projects could require several small standalone SIS systems.

The OptiSIS safety instrumented system is an ideal solution for diverse SIS replacement/upgrade projects, utilizing an “off the shelf” common solution. Featuring a standard logic solver capable of meeting SIF requirements up to SIL 3, it is simpler, faster, and more cost-effective to deploy than a custom-designed SIS solution.

### Quick Installation with Reduced Risk

Flexible inputs and outputs mean you don't need to determine the type of I/O before the OptiSIS packaged solution arrives to your site. Additionally, future upgrades to analog process transmitters can be completed in the field with a simple configuration change. You won't need new hardware or a new program to write and validate. This solution features pre-built hardware and pre-programmed safety logic, configured using a Cause and Effect graphical interface.

### No programming required

Configurable using Cause & Effect (C&E) charts, the OptiSIS Solution removes the need for different programming languages and allows the user to implement the packaged solution (SIFs) – saving time and money – while keeping the focus on safety.

### Rapid verification

Once the C&E diagrams have been configured and tested, a download routine is available to allow the configuration to be stored safely and verified against the original safety function requirements. This configuration ‘master’ can be used to restore the system to a known state and as verification evidence during an audit.

<b>Cabinet</b>	<ul style="list-style-type: none"> <li>• Safe Area (indoor/NEMA 4/IP54) or Hazardous Area (outdoor/NEMA 4x/IP66)</li> <li>• Designed to accept field wiring from top and/or bottom of the cabinet</li> <li>• An industrial PC, serving as both the local operator interface and configuration interface</li> </ul>	
<b>Power</b>	<ul style="list-style-type: none"> <li>• Separate, redundant, isolated power supplies for both system and field power</li> <li>• Terminals ready to land 24 VDC, 125 VDC, or 220 VAC power sources</li> <li>• Circuit breakers for incoming power protection/isolation</li> <li>• Fuse disconnect terminals for all internal 24 VDC power distribution</li> </ul>	
<b>Inputs/Outputs</b>	<ul style="list-style-type: none"> <li>• Available in 50 I/O; 100 I/O version available in October 2015</li> <li>• 29 flexible inputs (for 50 I/O) and 60 flexible inputs (for 100 I/O)</li> <li>• 16 digital outputs (for 50 I/O) or 32 digital outputs (for 100 I/O) available as dry contact outputs (with internal contact feedback for safety) and 24 VDC powered digital outputs, capable of driving up to 0.5 A for 100 I/O</li> <li>• 8 analog outputs support HART and can be used to interface with ‘smart’ valve positioners for partial stroke testing</li> <li>• Simplex or fault tolerant (dual) I/O modules</li> </ul>	
<b>Software</b>	<p><b>Operator Mode (default)</b></p> <ul style="list-style-type: none"> <li>• Current state of SIS, ‘Cause &amp; Effect’ diagrams</li> <li>• System and I/O status using diagnostic graphics</li> <li>• Alarms, Date &amp; Time stamps</li> </ul>	<p><b>Configure Mode (admin)</b></p> <ul style="list-style-type: none"> <li>• I/O type, tag/description, alarm levels, direct/reverse acting</li> <li>• I/O points configured to suit the connected field device (functional loops checks can be done at this stage)</li> <li>• Cause &amp; Effect, two-step select and drop each ‘intersection’</li> </ul>
	<ul style="list-style-type: none"> <li>• HART pass thru to an AMS System</li> <li>• Import utility to load configuration (I/O &amp; C&amp;E)</li> </ul>	

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