AADvance Safety System

ics triplex

Scalable Safety Instrumented System (SIS)

Benefits

Scalable Architecture

- Distributed processor architecture
- Flexible controller redundancy configurations
- Flexible I/O fault tolerant configurations
- Can mix fail safe & fault tolerant architectures in the same architecture
- Black channel communications

Feature Rich Hardware

- Comprehensive diagnostics
- Integrated HART communications (AI & AO)
- Channel isolation
- Electronically protected outputs
- Online replaceable

Comprehensive Programming Environment

- Supports all five IEC 61131 programming languages
- Online programming changes
- Online debugging
- Offline simulation
- Built in version control
- T3 compliant online modifications and expansion
- Single programming environment to manage multiple controllers for distributed safety applications

Communications Options

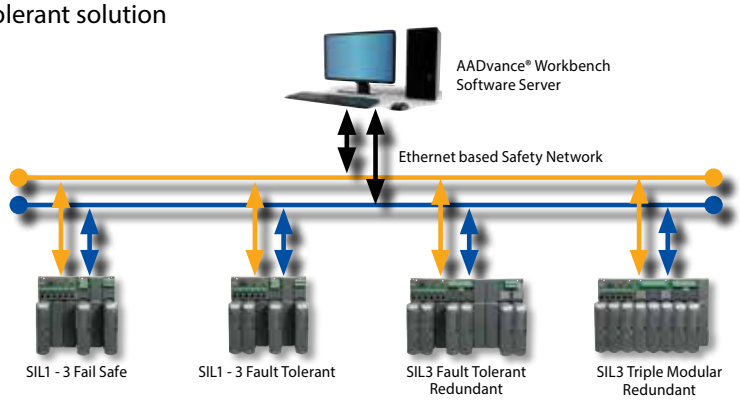
- EtherNet/IP™ (with CIP™) communications to ControlLogix® Programmable Automation Controllers
- OPC DA (Data Access) & A&E (Alarm & Event) communications
- Modbus communications
- Integrated with PlantPAx®
- Can be deployed standalone

AADvance System

The AADvance® system consists of processor modules, I/O modules and field termination assemblies that can easily be assembled and configured. You can build a system from one or more controllers, a combination of I/O modules, power sources, communications networks and user workstations. The system can be used for many different applications based on how you configure it. All of the configurations are readily achieved by combining modules and assemblies without using special cables or interface units.

As a highly flexible system, the following aspects of the AADvance system are all configurable by you, the user:

- System architectures – can be changed without major system modifications
- Processor and I/O redundancy – choose between fail-safe and fault tolerant
- Scalability – there is no change to the complexity of operations or programming if you choose to add redundant capacity to create a fault tolerant solution



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Rockwell Automation

AADvance Workbench Engineering Configuration Software

AADvance Workbench Software is a complete design, configuration and maintenance software environment that enables you to design the complete multi controller safety strategy as a single project, then to target parts of the strategy for each controller.

The software supports five of the IEC 61131 languages and produces validated code for use in safety applications, regardless of the language used.

This leading-edge programming environment is comprised of a powerful set of features:

- Offline simulation of the entire distributed controller environment, including controller to controller communications
- Centralized repository for archiving of application source, which provides automatic archiving whenever a change is made to a running controller.
- Collaborative programming environment, allowing controlled multiple user access to a single project.
- Online monitoring (also a collaborative environment) of applications across multiple controllers.
- Online updates of changes, including the addition of new controllers into the distributed network.

Typical Applications	SIL Target	Demand
Emergency Shutdown (ESD)	2 & 3	Low / High
Fire and Gas (F&G)	2	Low
High Integrity Pressure System (HIPPS)	3	Low
Burner Management Systems (BMS)	2	High
Subsea Blowout Prevention (BoP)	2	Low

Performance Characteristics	
Safety Integrity Level	IEC 61508 SIL 2, SIL 3 (depending on processor and I/O module configuration)
Safety Degradation Modes	Simplex 1-0, Dual 2-1-0, TMR 3-2-1-0
Processor Modules supported	Three

TÜV Rhineland Certification	
IEC 61508, Part 1-7:1998-2000	EN 61000-6-4:2007
EN 50178:1997	EN 50156-1:2004
IEC 61511-1:2004	EN 54-2:1997, A1:2006[1]
EN 61131-2:2007	NFPA 72:2007
EN 61326-3-1:2008	NFPA 85:2015
EN 61000-6-2:2005	NFPA 86:2015

[1] The AADvance Analogue Output modules are not certified to EN 54-2.

AADvance Certification	
Electrical Safety	UL508, CSA22.2 (142-M1987), EN 60079
Hazardous Area Location	Class 1 Div II - ANSI/ISA 12.12.01:2010, Class 1 Div II - CSA 22.2 (213-M1987), Zone 2 – ATEX (94/9/EC)

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