

AMS[®] Suite: Intelligent Device Manager and Safety Instrumented Systems

This paper gives an overview of how AMS Device Manager works with DeltaV[™] in an SIS installation to provide device diagnostics and appropriate permissions and safeguards to ensure the integrity of the system.

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AMS Device Manager and Safety Instrumented Systems



There are many benefits to using AMS Device Manager in a Safety Instrumented System (SIS) installation. First, since the devices involved in an SIS are important, but often infrequently utilized, AMS Device Manager can provide proactive diagnostic data of the health of the instruments and valves in the SIS loop. If a device is having a problem, the alert will be sent to your AMS Device Manager system so you know if there is a problem. Knowing that your SIS system will respond when necessary is critical, and AMS Device Manager provides the information you need to make sure the SIS system will respond when you need it to.

Works with the DeltaV Digital Automation System

AMS Device Manager and DeltaV work together to ensure that only those individuals with appropriate permissions can write to SIS devices. Setting up users in AMS Device Manager provides you with the option to assign permissions for SIS access, meaning that no one can write to a device when the logic solver is locked, and only authorized personnel can write to a device when the logic solver is unlocked. This feature safeguards your SIS system so that no unauthorized changes can be made.

AMS Device Manager and DeltaV also provide support for both basic process control and SIS systems, meaning your users will need to learn and be familiar with only one system for both applications. This reduces the risk of error due to unfamiliarity with the systems in place.

AMS Device Manager can help you by:

- Extending the time between proof tests
- Preventing procedural errors through test automation
- Decreasing the proof test duration (which is important since the SIS may be unavailable during the proof test)

- Reducing safety risk of exposing personnel to hazardous locations by conducting SIS proof testing from the maintenance shop
- Providing automatic documentation of proof tests for regulatory requirements

Further, AMS Device Manager provides you with configuration, calibration, and documentation for your SIS devices, such that you can always be sure that changes will be documented and calibrations will occur on time, providing you the tools you need to make sure your SIS devices are working properly in good condition in case of an incident.

SNAP-ON™ Applications Add Value

SNAP-ON applications for AMS Device Manager provide additional value in SIS installations. AMS ValveLink® allows you to perform valve diagnostics while the process is running, without having to take the valve out of service. This capability gives you the ability to confirm whether the valve will respond in an emergency without having the safety system unavailable.

QuickCheck provides the ability to verify the Safety Instrumented Function (SIF) in a more efficient manner by saving the test format and stepping through it automatically, making it easy for one person to complete a task that normally takes at least two people. In addition, customizable reports allow you to record the results in a way that makes sense for your business.

Approved by Exida

AMS Device Manager has been approved by Exida for use in SIS systems during the following life cycle phases: SIS Design and Engineering, Installation and Commissioning, SIS Operation and Maintenance, and Management of Change.

“Emerson Process Management’s AMS® Suite: Intelligent Device Manager system can be effectively used to meet many of the requirements of IEC 61511 in safety instrumented system applications. AMS Device Manager can be effective in SIS installation and commissioning, SIS maintenance, SIS modification and the design requirements associated with those phases of the safety

life cycle. Features of AMS Device Manager including individual login security, automatic audit trail and SNAP-ON diagnostics will allow the user to meet specific safety lifecycle requirements.

For SIS installation and commissioning, AMS Device Manager allows the user to verify proper setup and operation of field instruments. AMS Device Manager increases effectiveness of operation and maintenance (mechanical integrity) programs. Remote diagnostic capabilities allow periodic proof tests to be performed thereby extending the time period between offline proof tests. During SIS modification, AMS Device Manager can be used to compare new configurations with previous configuration. This is done to confirm that only changes per the update plan were made and that they were made correctly.

Compared to current practices, AMS Device Manager usage should be less error prone and clearly traceable.”

~AMS Safety Analysis: Using AMS in Safety Instrumented System Applications, Exida.com, 2003.



AMS Suite: Intelligent Device Manager powers PlantWeb through predictive and proactive maintenance of intelligent field devices to improve availability and performance.

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