

The manufacturer
may use the mark:



Reports:

FRS 04/09-22 R001
FMEDA Report V2 R1
FRS 07/11-05 R002 IEC
61508 Functional Safety
Assessment Report V1 R1

Validity:

This assessment is valid for
the DeltaV SIS safety logic
solver

This assessment is valid
until May 1, 2010.

Revision 1.3 June 16, 2008


exida
Certification S.A.

Certificate / Certificat Zertifikat / 認証

FRS 071105 C001

exida hereby confirms that the:

DeltaV SIS System

**Emerson Process Management
Fisher Rosemount Systems, Inc.
Austin, TX USA**

Has been assessed per the relevant requirements of:

IEC 61508 Parts 1, 2, 3

NFPA72, EN54-2 Logic Solver

and meets requirements providing a level of integrity to:

Systematic Integrity: SIL 3 Capable

Random Integrity for Type B device:

SIL3, Single Module;

**Therefore can be used as part of a safety
instrumented system as per IEC 61511**

Safety Function:

The DeltaV SIS will perform the configured safety logic and
execute the automatic diagnostics in the specified time period.

Application Restrictions:

The unit must be properly designed into a Safety Instrumented
Function per the Safety Manual requirements.


Michael Medloff

Product Assessor

Benjamin B...

Auditor

**Systematic Integrity: SIL 3 Capable
Random Integrity for Type B device:
SIL3, Single Module;**

SIL 3 Capability:

The product has met manufacturer design process requirements of Safety Integrity Level (SIL) 3. These are intended to achieve sufficient integrity against systematic errors of design by the manufacturer.

A Safety Instrumented Function (SIF) designed with this product must not be used at a SIL level higher than stated without "prior use" justification by end user or diverse technology redundancy in the design.

IEC 61508 Failure Probabilities

Table 1: DeltaV SIS Single Common Failure Rates

| Failure category | Failure rate (FIT) |
|---------------------------|--------------------|
| Fail Safe Detected | 1060 |
| Fail Safe Undetected | 15 |
| Fail Dangerous Detected | 1308 |
| Fail Dangerous Undetected | 6 |
| Annunciation Detected | 1052 |
| Annunciation Undetected | 203 |
| No Effect | 737 |

Table 2: DeltaV SIS I/O Channel Failure Rates

| Failure category | Failure rate (FIT) | | | |
|---------------------------|--------------------|------------|------------|------------|
| | AI CHANNEL | DI CHANNEL | AO CHANNEL | DO CHANNEL |
| Fail Safe Detected | 32 | 13 | 32 | 21 |
| Fail Safe Undetected | 0 | 30 | 0 | 0 |
| Fail Dangerous Detected | 26 | 16 | 26 | 12 |
| Fail Dangerous Undetected | 0.008 | 0 | 0.008 | 0 |
| Annunciation Detected | 8 | 8 | 8 | 5 |
| Annunciation Undetected | 14 | 11 | 14 | 4 |
| No Effect | 43 | 47 | 43 | 15 |

SIL Verification:

The Safety Integrity Level (SIL) of an entire Safety Instrumented Function (SIF) must be verified via a calculation of PFD_{AVG} considering redundant architectures, proof test interval, proof test effectiveness, any automatic diagnostics, average repair time and the specific failure rates of all products included in the SIF. Each subsystem must be checked to assure compliance with minimum hardware fault tolerance (HFT) requirements.

NFPA 72, EN54-2 Logic Solver

The DeltaV SIS Logic Solver was evaluated as the logic solver portion of a Protected Premises Fire Alarm System per the relevant requirements of NFPA 72. All requirements of NFPA 72 and the Authority Having Jurisdiction must be met for any particular application. Any additional regulatory requirements that exist must be followed.

DeltaV SIS System

Emerson Process Management

Austin, TX



| Form | Version | Date |
|--------|---------|----------|
| C61508 | 2.00 | May 2008 |