



The manufacturer may use the mark:



Valid until October 1, 2017  
Revision 2.0 January 17, 2014



ANSI Accredited Program  
PRODUCT CERTIFICATION  
#1004

# Certificate / Certificat Zertifikat / 合格証

## FRS 091023 C003

*exida* hereby confirms that the:

### DeltaV SIS Modules:

**Aux. ETA Relay Module, Aux. DTA Relay Module,  
Relay Diode Module,  
Relay Module, Voltage Monitor Module,  
End of Line Resistance Module, RC Compensator Module  
Current Limiter**

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

Has been assessed per the relevant requirements of:

### IEC 61508 : 2010 Parts 1-7

and meets requirements providing a level of integrity to:

### Systematic Capability: SC 3 (SIL 3 Capable)

### Random Capability: Type A Device

**PFD<sub>AVG</sub> and Architecture Constraints  
must be verified for each application**

#### Safety Function:

The DeltaV SIS Aux. Relay Modules will control a relay in accordance with the input signal. The DeltaV SIS Voltage Monitor and DeltaV SIS Relay Modules will control their output state in accordance with their input signal. The DeltaV SIS Current Limiter and RC Compensator Module will control their output state in accordance with the input signal.

#### Application Restrictions:

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



*Michael Medoff*

Evaluating Assessor

*William M. Goble*

Certifying Assessor

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**Systematic Capability: SC 3 (SIL 3 Capable)**

**Random Capability: Type A Device**

**PFD<sub>AVG</sub> and Architecture Constraints must be verified for each application**

Systematic 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.

Random Capability:

The SIL limit imposed by the Architectural Constraints must be met for each element.

**IEC 61508 Failure Rates in FIT\***

Failure Categories	$\lambda_{SD}$	$\lambda_{SU}$	$\lambda_{DD}$	$\lambda_{DU}$
Aux. ETA Relay Module	21	93	10	40
Aux. DTA Relay Module	21	93	10	40
Relay Diode Module	6	6	10	11
Relay Module	0	62	0	0.018
Voltage Monitor	1	134	0	0.72
End of Line Resistance Module	0	10	4	4
RC Compensator (ETA)	0	2	9	1
RC Compensator (DTA)	9	3	0	0
Current Limiter (ETA)	0	26	9	19
Current Limiter (DTA)	9	44	0	1

\* FIT = 1 failure / 10<sup>9</sup> hours

SIL Verification:

The Safety Integrity Level (SIL) of an entire Safety Instrumented Function (SIF) must be verified via a calculation of PFD<sub>AVG</sub> 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.

The following documents are a mandatory part of certification:

Assessment Report: Emerson 09/10-23 R001 V2 R0

Safety Manual: D800032X012

- DeltaV SIS Aux. ETA Relay Module
- DeltaV SIS Aux. DTA Relay Module
- DeltaV SIS Relay Diode Module
- DeltaV SIS Relay Module
- DeltaV SIS Voltage Monitor
- DeltaV SIS End of Line Resistance Module
- DeltaV SIS RC Compensator Module
- DeltaV SIS Current Limiter



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