The manufacturer may use the mark:

Certificate / Certificat
Zertifikat / 認証

FRS 060530 C003

exida hereby confirms that the:

DeltaV SIS Relay Module, KJ2231X1- EA1

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

Has been assessed per the relevant requirements of:

IEC 61508 Parts 1, 2

and meets requirements providing a level of integrity to:

Systematic Integrity: SIL 3 Capable
Random Integrity for Type A device: SIL3, Single Module;
Therefore can be used as part of a safety instrumented system as per IEC 61511

Safety Function:
The DeltaV SIS Relay Module will control a relay in accordance with the input signal.

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

Reports:
FRS 06-11-27 R001 FMEDA Report V1 R1
FRS 07-11-05 R002 Assessment Report V1 R1

Validity:
This assessment is valid for the DeltaV SIS Relay Module, KJ2231X1-EA1.

This assessment is valid until May 1 2010.
Revision 1.3 June 16, 2008

Product Assessor

Auditor

exida Certification S.A.

Certificate / Certificat / Zertifikat / 認証
FRS 071105 C001

Systematic Integrity: SIL 3 Capable
Random Integrity for Type A 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.

DeltaV SIS Relay Module, KJ2231X1- EA1

Emerson Process Management

Austin, TX

IEC 61508 Failure Probabilities

Table 1: DeltaV SIS Relay Module Failure Rates

Failure category	Failure rate (in FIT)
Fail Dangerous Undetected	0.018
Fail Safe Undetected	36.3
No Effect	25.4

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.

exida
Certification S.A.

Form	Version	Date
C61508	2.00	May 2008