

Safety Integrity Level [S.I.L.] Declaration

In accordance with ISO / IEC 17050-1:2004

We the undersigned declare under our sole responsibility that the product to which this declaration relates have been independently assessed and found to conform to the requirements of IEC 61508:2005.

Conformity has been derived from a combination of failure mode and effect analysis [FMEA] and proven in use returns data, in respect of Safe Failure Fraction (SFF) the unit has been judged to be suitable for use, as specified below:

Reference No / Version

Report T508

Product Description

Vortex Gas Detection Control Panel

Specific Standards

IEC 61508-1:2005

S.I.L. Level

1

Safety Manner

Simplex

Assessment Results

Hazard	PFD ¹	SFF ² %	S.I.L.
Failure to respond 4-20mA gas input via an Output Relay	1.5 10 ⁻³	>60%	1

Assessment conditions

1. Proof test intervals, which are assumed to identify all un-revealed failures, are annual.
2. A Vortex system will have a relay module fitted with one relay configured to indicate a fault on all fitted input channels, and one relay configured to indicate 'system faults'. Output relays are energised and release to open a contact as the executive function.
3. A revealed failure constitutes a hardware component failure which is detected by the Vortex software and causes a relay to release. It is assumed that the user makes use of this diagnostic facility.
4. The following elements (not pertinent to the safety function) were excluded: The RS232 and RS485 communications interfaces on the Node Controller module, the sounder fitted within the Node Controller module, the display module.

1. - Probability of Failure on Demand

2. - Safe Failure Fraction

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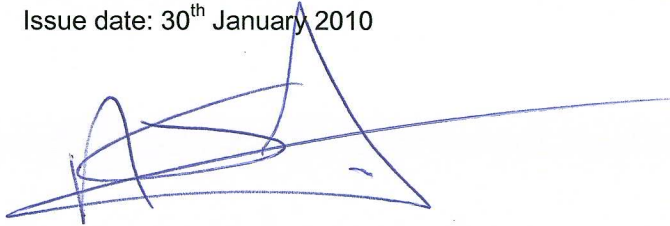
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Assessment Body

Technis
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Report number: T498
Issue date: 30th January 2010

Signatory

Signature:



Name & Position: Mark Osborne, Head of Product Development

Date: 30th January 2010

1. - Probability of Failure on Demand
2. - Safe Failure Fraction