

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 T498

Product Description

Gasmonitor Gas Detection Control Panel

Specific Standards

IEC 61508-1:2005

S.I.L. Level

2

Safety Manner

Simplex

Assessment Results

Hazard	Failure Rate ¹ (λ D)	PFD ²	SFF ³ %	S.I.L.
Failure to Respond 4-20mA gas signal to common relay	0.408	$8.5 \cdot 10^{-4}$	93%	2
Failure to Respond 4-20mA gas signal to discreet relay	0.192	$5.6 \cdot 10^{-4}$	94%	2
Failure to Respond 4-20mA gas signal to recorder output	1.274	$7.1 \cdot 10^{-4}$	93%	2
Failure to Respond Pellistor gas signal to recorder output	1.384	$7.5 \cdot 10^{-4}$	92%	2
Failure to Respond Pellistor gas signal to discreet relay	0.145	$5.1 \cdot 10^{-4}$	93%	2

Assessment conditions

1. Proof test intervals, which are assumed to identify all un-revealed failures, are annual.
2. 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 Gasmonitor software and causes a relay to release or a 4-20mA output signal to the user.
4. The following elements (not pertinent to the safety function) were excluded: The LCD display and associated driver.

1. - Per Million Hours

2. - Probability of Failure on Demand

3. - Safe Failure Fraction

Crowcon Detection Instruments Ltd

2 Blacklands Way, Abingdon Business Park

Abingdon, Oxfordshire, OX14 1DY

United Kingdom

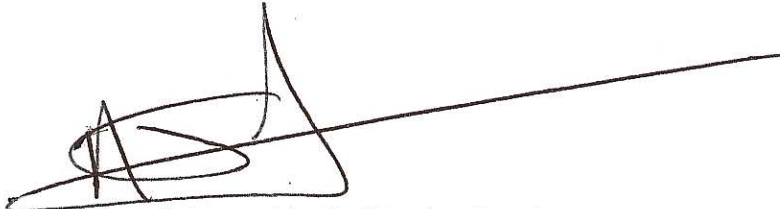
WEB SITE www.crowcon.com

Assessment Body

Technis
26 Orchard Drive
Tonbridge, Kent TN10 4LG
Report number: T498
Issue date: 4th Dec 09

Signatory

Signature:



Name & Position: Mark Osborne, Head of Product Development

Date: 4th Dec 09

1. - Per Million Hours
2. - Probability of Failure on Demand
3. - Safe Failure Fraction