

Functional Safety of Electrical/  
Electronic/Programmable Electronic  
Safety Systems



Certificate No. BAS01SP9411X  
Dated 18 December 2001  
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## Certificate No. BAS01SP9411X

This Certificate is issued for :           The MTL5061 Fire and Smoke Detector Interface

This Certificate is issued to :           Measurement Technology Limited

of   Power Court  
  Luton LU1 3JJ

Provided that the manufacturer maintains a production system in accordance with the requirements of the Certification Mark Licensing Scheme and holds a current licence, the equipment may be marked with the Baseefa IEC 61508 Product Certification Mark reproduced above.

This certificate is issued in respect of the conformance of the equipment as a sub-system for use in a Safety System intended to conform with the requirements of IEC 61508.

In particular, the performance of the equipment as a safety related sub-system is evaluated in the terms expressed in IEC 61508 Part 2 Clause 7.4.7.3 and is summarised in the attached Schedule.

In accordance with 7.4.7.3 (m), the highest Safety Integrity Level (SIL) that can be claimed for a safety function using this sub-system in single channel is SIL 1.

Note that the SIL of the Safety System in which this equipment is integrated may vary from that indicated for the equipment alone, according to the method of integration and other factors.

If the letter X is added after the Certificate Number, this indicates that there is particular information contained in the Schedule concerning the use of the equipment.

This certificate is issued in accordance with the applicable rules of the certification service. It does not necessarily indicate that the equipment may be lawfully used in particular industries or circumstances.

This certificate may be reproduced only in its entirety, without change, schedule included.

Report Reference           00(C)6116/5

File Reference             EECS 0703/44/005

Baseefa Certification from  
**The Electrical Equipment Certification Service**  
The Health and Safety Executive  
Harpur Hill, Buxton, Derbyshire SK17 9JN United Kingdom  
Tel: +44 (0) 1298 28000 Fax: +44 (0) 1298 28244  
baseefa.info.eecs@hsl.gov.uk           www.baseefa.com



I M Cleare  
Director



## Schedule

### Equipment :

The MTL5061 Fire/Smoke Detector Interface is a loop-powered two-channel interface which enables the use of conventional fire and smoke detectors in hazardous areas. In operation the triggering of a detector causes a corresponding change in the safe-area current.

Each module is intended to be mounted with other similar units from the MTL5000 series range on a standard TS 35 mounting rail. Safe and hazardous area signal connections are made by plug-in removable connectors.

For information and circuit parameters relating to the intrinsically safe performance of this module, see Baseefa Certificate No. BAS01ATEX7160

### Documentation :

Item	Number	Issue	Date	Description
1	TC5061-1	2	9.96	Circuit Schematic
2	AD5061-3	2	10.96	PCB Component Layout
3	PLE5061-3	4	.9.00	Component Schedule
4	CI5061-1	2	12.96	PCB Artwork
5	INM5000-1		March 96	Instruction Manual

Items 1 to 4 define the certified product. Item 5, together with this certificate, provide the necessary information for integration of the certified product as a sub-system within a safety system in accordance with IEC 61508.

### Information relating to IEC 61508 Part 2 Clause 7.4.7.3 :

#### a) Functional specification of interfaces :

See Equipment Description, above. Connection information and physical installation information is given in the Instruction Manual.

The following Specifications apply in Safety Related Applications and may differ from catalogue values:

Supply Voltage Range	16 to 35 Vdc
Transfer accuracy	$\pm 1\text{mA}$
Temperature drift	$<1\mu\text{A/degC}$
Operating current range	4 to 20 mA





**g) Diagnostic coverage :**

External equipment must diagnose outputs below 3.5 mA and above 22 mA as dangerous failures and take appropriate action.

**h) Diagnostic test interval :**

Out of range failures shall be detected on a continuous basis. In range failures are detected by performing the test at (f) above.

**i) Additional information regarding Mean Time to Restoration :**

Not applicable.

**j) Safe failure fraction :**

The safe failure fraction is 79.5%.

**k) Hardware fault tolerance :**

The hardware fault tolerance is 0.

**l) Application limits to avoid systematic failures :**

See environmental recommendations at (d) above.

**m) Highest safety integrity level that can be claimed for a safety function using this sub-system :**

SIL 1 may be claimed for a safety system using this subsystem subject to compliance with the diagnostic test interval. See (h) above.

**n) Hardware configuration :**

The hardware is identified by the documentation listed above which is applicable to all manufacture with a date code of 0140 onwards. Applicability of the certificate to future modifications will be confirmed by the issue of supplementary certification listing updated documentation.

**o) Evidence of validation :**

This certificate provides documentary evidence of validation. Associated confidential Certification Report No. 00(C)6116/5 details the evidence used in the validation process.

**Special Information concerning the use of the equipment :**

This certificate refers only to the use of the MTL5061 in 4-20mA systems, employing out of range detection for signals of <3.5mA and >22mA.