

1 **EC - TYPE EXAMINATION CERTIFICATE**

2 **Equipment or Protective System Intended for use in Potentially Explosive Atmospheres  
Directive 94/9/EC**

3 EC - Type Examination Certificate Number: **Baseefa14ATEX0387**

4 Equipment or Protective System: **MTL4514N Switch / Proximity Detector Interface with Line Fault Detection alarm**

5 Manufacturer: **Measurement Technology Limited**

6 Address: **Great Marlings, Butterfield, Luton, Bedfordshire, LU2 8DL**

7 This equipment or protective system and any acceptable variation thereto is specified in the schedule to this certificate and the documents therein referred to.

8 Baseefa, Notified Body number 1180, in accordance with Article 9 of the Council Directive 94/9/EC of 23 March 1994, certifies that this equipment or protective system has been found to comply with the Essential Health and Safety Requirements relating to the design and construction of equipment and protective systems intended for use in potentially explosive atmospheres given in Annex II to the Directive.

The examination and test results are recorded in confidential Report No. **GB/BAS/ExTR14.00351/00**

9 Compliance with the Essential Health and Safety Requirements has been assured by compliance with:

**EN 60079-0: 2012 EN 60079-11: 2012**

except in respect of those requirements listed at item 18 of the Schedule.

10 If the sign "X" is placed after the certificate number, it indicates that the equipment or protective system is subject to special conditions for safe use specified in the schedule to this certificate.

11 This EC - TYPE EXAMINATION CERTIFICATE relates only to the design and construction of the specified equipment or protective system. Further requirements of the Directive apply to the manufacturing process and supply of this equipment or protective system. These are not covered by this certificate.

12 The marking of the equipment or protective system shall include the following :

**⊕ II (1) GD [Ex ia Ga] IIC (-20°C ≤ T<sub>a</sub> ≤ +60°C)**

**[Ex ia Da] IIIC (-20°C ≤ T<sub>a</sub> ≤ +60°C)**

**⊕ I (M1) [Ex ia Ma] I (-20°C ≤ T<sub>a</sub> ≤ +60°C)**

Baseefa Customer Reference No. **0703**

Project File No. **14/0942**

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**SGS Baseefa Limited**

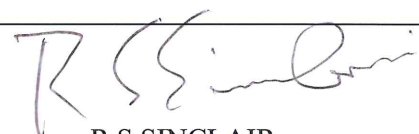
Rockhead Business Park, Staden Lane,  
Buxton, Derbyshire SK17 9RZ

Telephone +44 (0) 1298 766600 Fax +44 (0) 1298 766601

e-mail [info@baseefa.com](mailto:info@baseefa.com) web site [www.baseefa.com](http://www.baseefa.com)

Registered in England No. 4305578.

Registered address: Rossmore Business Park, Ellesmere Port, Cheshire, CH65 3EN



**R S SINCLAIR  
GENERAL MANAGER**

On behalf of SGS Baseefa Limited

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## Schedule

14

Certificate Number Baseefa14ATEX0387

### 15 Description of Equipment or Protective System

The MTL4514N Switch / Proximity Detector Interface with Line Fault Detection alarm is designed to restrict the transfer of energy from unspecified non-hazardous area equipment to an intrinsically safe circuit by limitation of voltage and current. Relays and a transformer provide galvanic isolation between the hazardous and non-hazardous area circuitry.

The interface monitors either a detector or switch located in the hazardous area and control a non-hazardous area loads via relay. The interface is also fitted with independent phase reversal controls and Line Fault Detection (LFD) circuitry allowing an alarm condition to be signalled for either state, set by switches on the side of the interface. The interface has identification circuitry fitted on the non-hazardous area side of the circuit which allows it to be identified when fitted on specific backplanes.

The equipment comprises an isolating transformer, relays, zener diodes and current limiting resistors to provide voltage and current limitation. These, together with other electronic components are mounted on a single printed circuit board and housed in a plastic enclosure. Polarised plug and socket connections are provided for connection to the hazardous and non-hazardous area. LED indication is provided to indicate Power-on, state of the output and LFD status.

#### Input / Output Parameters

##### Non-Hazardous Area Terminals 7 to 14

$$U_m = 253V$$

The circuit connected to non-hazardous area terminals pins 13 & 14 are designed to operate from a d.c. supply voltage of up to 35V d.c.

Non-hazardous area terminals pins 7 to 12 are connected to relay contacts which can switch up to 253V r.m.s, 2A r.m.s and 100VA.

##### Hazardous Area Terminals 1 w.r.t. 2 / 3

$$\begin{aligned} U_o &= 10.5V & C_i &= 0 \\ I_o &= 14mA & L_i &= 0 \\ P_o &= 37mW \end{aligned}$$

The capacitance and either the inductance or inductance to resistance ratio (L/R) of the hazardous area terminals must not exceed the following values:

GROUP	CAPACITANCE ( $\mu$ F)	INDUCTANCE (mH)	OR	L/R RATIO ( $\mu$ H/ohm)
IIC	2.41	175		983
IIB**	16.8	680		1,333
IIA	75.0	1,000		1,333
I	95.0	1,000		1,333

\*\* Group IIB parameters also applicable for associated apparatus [Ex ia Da] IIIC

#### Notes:

- The above load parameters apply when one of the two conditions below is given:
  - the total  $L_i$  of the external circuit (excluding the cable) is < 1% of the  $L_o$  value or
  - the total  $C_i$  of the external circuit (excluding the cable) is < 1% of the  $C_o$  value.

- 2) The above parameters are reduced to 50% when both of the two conditions below are given:
- the total  $L_i$  of the external circuit (excluding the cable) is  $\geq 1\%$  of the  $L_o$  value and
  - the total  $C_i$  of the external circuit (excluding the cable) is  $\geq 1\%$  of the  $C_o$  value.

The reduced capacitance of the external circuit (including cable) shall not be greater than  $1\mu\text{F}$  for Groups IIB, IIA & I and  $600\text{nF}$  for Group IIC.

**16 Report Number**

GB/BAS/ExTR14.00351/00

**17 Specific Conditions of Use**

None

**18 Essential Health and Safety Requirements**

All relevant Essential Health and Safety Requirements are covered by the standards listed at item 9.

**19 Drawings and Documents**

Number	Sheet	Issue	Date	Description
CI4500-100	1 of 1	2	1.13	MTL4500 Case
CI4514N-1	1 of 1	1	11.14	MTL4514N Circuit Diagram
CI4514N-2	1 & 2	1	11.14	MTL4514N Parts List
CI4514N-3	1 of 1	1	11.14	MTL4514N Track Layout
CI4514N-4	1 of 1	1	11.14	MTL4514N Component Layout
CI4514N-5	1 of 1	1	11.14	PCB Detail for TPL308
CI4514N-6	1 of 1	1	11.14	MTL4514N Certification Label Details – Baseefa

The above drawings are associated and held with IECEx Certificate No. IECEx BAS 14.0174