

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: **Baseefa07ATEX0212**  
4 Equipment or Protective System: **MTL552\* Series Solenoid / Alarm Drivers**  
5 Manufacturer: **Measurement Technology Limited**  
6 Address: **Power Court, Luton, Bedfordshire LU1 3JJ**

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 (2001) Ltd., 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/ExTR07.0128/00**


9 Compliance with the Essential Health and Safety Requirements has been assured by compliance with:  
**EN 60079-0: 2006 EN 60079-11: 2007 EN 61241-0: 2006 EN 61241-11: 2005**  
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** See Schedule for model certification markings

 **I (M1)**

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

Baseefa Customer Reference No. **0703**

Project File No. **07/0627**

This certificate is granted subject to the general terms and conditions of Baseefa (2001) Ltd. It does not necessarily indicate that the equipment may be used in particular industries or circumstances.

**Baseefa**

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)  
Baseefa is a trading name of Baseefa (2001) Ltd  
Registered in England No. 4305578 at the above address

**R S SINCLAIR**  
**DIRECTOR**  
On behalf of  
Baseefa (2001) Ltd.



13

## Schedule

14

Certificate Number Baseefa07ATEX0212

### 15 Description of Equipment or Protective System

The MTL552\* Series Solenoid / Alarm Drivers are designed to control and monitor a device located in the hazardous area and restrict the transfer of energy from unspecified apparatus in the non-hazardous area to an intrinsically safe circuit in the hazardous area by limitation of voltage and current. A transformer and opto-isolators provide galvanic isolation between the hazardous and non-hazardous area circuitry.

The apparatus comprise an isolating transformer, opto-isolators, duplicated zener diode chains and current limiting resistors to provide voltage and current limitation. The above, together with other electronic components are mounted on a printed circuit board (PCB) and housed in a moulded plastic enclosure. Polarised plugs and sockets are provided for hazardous and non-hazardous area connections.

The MTL552\* Series Solenoid / Alarm Drivers comprises a number of different models denoted by \* in the model number. All models are built on a common PCB and configured having certain features such as Line Fault Detection (LFD) and Phase Reversal facilities. There are also models in the range that are loop powered or have low current hazardous area outputs. All models have LED indication dependent on the model configuration.

The following models are covered by this certificate and are marked as follows: -

MTL5522	Loop Powered Solenoid / Alarm Driver, IIB	$\text{Ex}$ II (1) GD [Ex ia] IIB (-20°C ≤ T <sub>a</sub> ≤ +60°C) [Ex iaD] $\text{Ex}$ I (M1) [Ex ia] I (-20°C ≤ T <sub>a</sub> ≤ +60°C)
MTL5521	Loop Powered Solenoid / Alarm Driver	$\text{Ex}$ II (1) GD [Ex ia] IIC (-20°C ≤ T <sub>a</sub> ≤ +60°C) [Ex iaD] $\text{Ex}$ I (M1) [Ex ia] I (-20°C ≤ T <sub>a</sub> ≤ +60°C)
MTL5523	Solenoid / Alarm Driver with Line Fault Detection Alarm	
MTL5524	Solenoid / Alarm Driver with Logic Control, Phase Reversal	
MTL5525	Low Current Loop Powered Solenoid / Alarm Driver	

### Input/Output Parameters – MTL5521, MTL5523 & MTL5524 Models

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

$$U_m = 253 \text{ V r.m.s.}$$

The circuit connected to non-hazardous area terminals 7 to 14 is designed to operate from a d.c. supply voltage up to 35V.

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

$$\begin{aligned}
 U_o &= 25\text{V} \\
 I_o &= 147\text{mA} \\
 P_o &= 0.92\text{W} \\
 C_i &= 0 \\
 L_i &= 0
 \end{aligned}$$



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

GROUP	CAPACITANCE ( $\mu\text{F}$ )	INDUCTANCE OR (mH)	L/R RATIO ( $\mu\text{H}/\text{ohm}$ )
IIC	0.11	1.4	40
IIB*	0.84	7.2	159
IIA	2.97	14.4	328
I	4.28	20.2	478

\* Group IIB parameters also applicable for associated apparatus [Ex iaD]

Note: The above load parameters apply where:

1. The external circuit contains no combined lumped inductance  $L_i$  and capacitance  $C_i$  greater than 1% of the above values
- or 2. The inductance and capacitance are distributed as in a cable.
- or 3. The external circuit contains either only lumped inductance or lumped capacitance in combination with a cable.

In all other situations e.g. the external circuit contains combined lumped inductance or lumped capacitance, up to 50% of each of the L and C values is allowed.

**Input/Output Parameters – MTL5522 [Ex ia] IIB model only**

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

$U_m = 253\text{V r.m.s.}$

The circuit connected to non-hazardous area terminals 7 to 14 is designed to operate from a d.c. supply voltage up to 35V.

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

$U_o = 25\text{V}$   
 $I_o = 166\text{mA}$   
 $P_o = 1.04\text{W}$   
 $C_i = 0$   
 $L_i = 0$

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

GROUP	CAPACITANCE ( $\mu\text{F}$ )	INDUCTANCE OR (mH)	L/R RATIO ( $\mu\text{H}/\text{ohm}$ )
IIB*	0.84	5.6	132
IIA	2.97	10.4	286
I	4.28	16.0	428

\* Group IIB parameters also applicable for associated apparatus [Ex iaD]

Note: The above load parameters apply where:

1. The external circuit contains no combined lumped inductance  $L_i$  and capacitance  $C_i$  greater than 1% of the above values
- or 2. The inductance and capacitance are distributed as in a cable.



or 3. The external circuit contains either only lumped inductance or lumped capacitance in combination with a cable.

In all other situations e.g. the external circuit contains combined lumped inductance or lumped capacitance, up to 50% of each of the L and C values is allowed.

**Input/Output Parameters – MTL5525 model only**

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

$$U_m = 253V \text{ r.m.s.}$$

The circuit connected to non-hazardous area terminals 7 to 14 is designed to operate from a d.c. supply voltage up to 35V.

**Hazardous Area Terminals 2 /3 w.r.t. I**

$$\begin{aligned} U_o &= 25V \\ I_o &= 83.3mA \\ P_o &= 0.52W \\ C_i &= 0 \\ L_i &= 0 \end{aligned}$$

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

GROUP	CAPACITANCE ( $\mu\text{F}$ )	INDUCTANCE OR (mH)	L/R RATIO ( $\mu\text{H}/\text{ohm}$ )
IIC	0.11	5.3	68
IIB*	0.84	21.8	254
IIA	2.97	44.7	536
I	4.28	64.9	814

\* Group IIB parameters also applicable for associated apparatus [Ex iaD]

Note: The above load parameters apply where:

1. The external circuit contains no combined lumped inductance  $L_i$  and capacitance  $C_i$  greater than 1% of the above values
- or 2. The inductance and capacitance are distributed as in a cable.
- or 3. The external circuit contains either only lumped inductance or lumped capacitance in combination with a cable.

In all other situations e.g. the external circuit contains combined lumped inductance or lumped capacitance, up to 50% of each of the L and C values is allowed.

**16 Report Number**

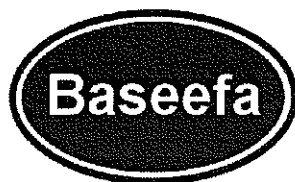
GB/BAS/ExTR07.0128/00

**17 Special Conditions for Safe 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
CI4521-1	1 of 6	1	9.06	Parts List for MTL452X
CI4521-1	2 of 6	2	5.07	Circuit Diagram for MTL452X
CI4521-1	3 of 6	2	5.07	MTL452X Track Layout
CI4521-1	4 of 6	2	5.07	MTL452X Component Layout
CI4521-1	5 of 6	2	1.07	PCB Detail for TPL301
CI4500-100	1 of 1	1	8.06	MTL 4500 Case
CI5521-1	1 of 1	1	9.07	MTL5521 Certification Label Details – Baseefa

The above drawings are associated and held with IECEx Certificate No. IECEx BAS 07.0068