

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: **Baseefa02ATEX0211X**

4 Equipment or Protective System: **SD\*\*xxx Series Surge Protection Devices**

5 Manufacturer: **Measurement Technology Ltd**

6 Address: **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. 02(C)0356

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

**EN 50014: 1997 + A1 & A2 EN 50020: 2002 EN 50284: 1999**

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 G EEx ia IIC T4 (-30°C ≤ Ta ≤ See Schedule)**

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

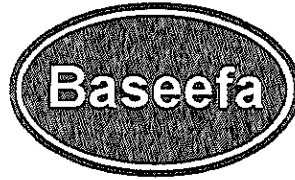
Baseefa (2001) Ltd. Customer Reference No. 0703

Project File No. 02/0356

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.

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



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## Schedule

14

## Certificate Number Baseefa02ATEX0211X

### 15 Description of Equipment or Protective System

The SD\*\*xxx Series Surge Protection Devices are designed to protect instrumentation and electronic systems from surges and transients conducted through signal cables.

The apparatus comprises a printed circuit board (p.c.b.) upon which are mounted all of the electrical components. The units use two and three terminal gas discharge tubes, diodes, zener diodes, resistors and inductors for operational purposes and may be optionally encapsulated. The p.c.b. is housed within a plastic enclosure with two groups of three terminals (1, 2 & 3 and 4, 5 & 6) at either end of the enclosure, for the connection of the interconnecting cables. An earth shoe is fitted to the apparatus to enable connection of an earth bonding conductor with a cross sectional area of at least 4mm<sup>2</sup>.

The SD\*\*xxx Series comprises:- SD\*\*X (two wire and earth with Li = 0.22mH) and SD\*\*T3 (three wire and earth with Li = 0.22mH). The apparatus in each of these series, differ only in the operating voltage. The "\*\*\*" in the apparatus title indicates the nominal voltage the apparatus is designed to work at. For example a unit marked SD07R has a nominal working voltage of 7V and an operating voltage of 7.5V. The working voltage and operating voltage of the devices are not critical for the safety assessment.

The SD\*\*xxx Series Surge Protection Devices may be located in a hazardous area. For all units the permitted input current reduces as the voltage increases and the different input power limit determines the upper limit on the permitted ambient temperature range.

The parameters for all of the SD\*\*X and SD\*\*T3 units are:-

All units are marked  $\text{Ex}$  II 1 G EEx ia IIC T4 For the Ambient Temperature limits, see below

#### Input : Field Terminals

U<sub>i</sub> = 20V      I<sub>i</sub> = 260mA

or      U<sub>i</sub> = 26V      I<sub>i</sub> = 175mA

or      U<sub>i</sub> = 28V      I<sub>i</sub> = 140mA

or      U<sub>i</sub> = 60V      I<sub>i</sub> = 65mA

P<sub>i</sub> = 1W      (-30°C ≤ Ta ≤ 75°C)

or      P<sub>i</sub> = 1.2W      (-30°C ≤ Ta ≤ 60°C)

or      P<sub>i</sub> = 1.3W      (-30°C ≤ Ta ≤ 40°C)

C<sub>i</sub> = 0

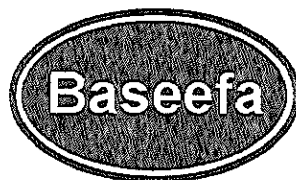
Li = 0.22mH

#### Output : Surge Protected Terminals

U<sub>o</sub> = U<sub>i</sub>

I<sub>o</sub> = I<sub>i</sub>

P<sub>o</sub> = P<sub>i</sub>



#### Variation 0.1

To permit the removal of the inductors and other changes which do not affect the intrinsic safety assessment thus forming the SD\*\*R (two wire and earth with  $L_i = 0$ ) and SD\*\*R3 and SDrtd. (three wire and earth with  $L_i = 0$ ). The SDrtd unit differs from the SD\*\*R3, due to the use of matched resistors in the three signal lines. The apparatus in each of the series differ only in the operating voltage. The “\*\*” in the apparatus title indicates the nominal voltage the apparatus is designed to work at. The nominal working voltage and operating voltage of the devices are not critical for the safety assessment.

The parameters for all of the SD\*\*R, SD\*\*R3 and SDrtd. units are:-

All units are marked  $\text{Ex}$  II 1 G EEx ia IIC T4 For the Ambient Temperature limits, see below

#### Input : Field Terminals

$$U_i = 60V$$

$$I_i = 260mA$$

$$P_i = 1W \quad (-30^\circ C \leq T_a \leq 75^\circ C)$$

or  $P_i = 1.2W \quad (-30^\circ C \leq T_a \leq 60^\circ C)$

or  $P_i = 1.3W \quad (-30^\circ C \leq T_a \leq 40^\circ C)$

$$C_i = 0$$

$$L_i = 0$$

#### Output : Surge Protected Terminals

$$U_o = U_i$$

$$I_o = I_i$$

$$P_o = P_i$$

#### 16 Report Number

02(C)0356

#### 17 Special Conditions for Safe Use

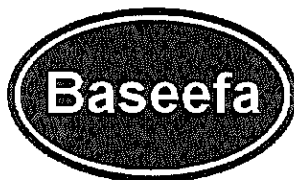
1. The plastic enclosure may present an electrostatic risk and must not be rubbed in service.
2. The range of SD\*\*xxx Series Surge Protection Devices will not meet the 500V insulation requirements to earth, therefore suitable precautions must be taken when installing the apparatus.

#### 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
992-909	1 to 9	03	April 2003	Certification Drawings



1 **SUPPLEMENTARY EC - TYPE EXAMINATION CERTIFICATE**

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

3 Supplementary EC - Type Examination Certificate Number: **Baseefa02ATEX0211X/1**

4 Equipment or Protective System: **SD\*\*xxx Series Surge Protection Devices**

5 Manufacturer: **Measurement Technology Ltd**

6 Address: **Luton, Bedfordshire, LU1 3JJ**

7 This supplementary certificate extends EC – Type Examination Certificate No. Baseefa02ATEX0211X to apply to equipment or protective systems designed and constructed in accordance with the specification set out in the Schedule of the said certificate but having any variations specified in the Schedule attached to this certificate and the documents therein referred to.

This supplementary certificate shall be held with the original certificate.

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

Baseefa Customer Reference No. 0703

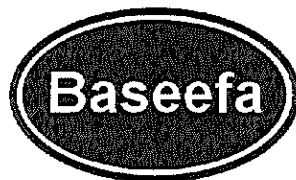
Project File No. 05/0199

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On behalf of  
Baseefa (2001) Ltd.



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### Schedule

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Certificate Number Baseefa02ATEX0211X/1

15 **Description of the variation to the Equipment or Protective System**

**Variation 1.1**

To permit minor changes to the certified drawings, including a change in the manufacturing location. These changes may apply to all models and do not affect the original intrinsically safe assessment.

16 **Report Number**

None

17 **Special Conditions for Safe Use**

None additional to those listed previously

18 **Essential Health and Safety Requirements**

Compliance with the Essential Health and Safety Requirements is not affected by this variation.

19 **Drawings and Documents**

Number	Sheet	Issue	Date	Description
992-909	1 to 9	04	March 2005	Certification Drawings