



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: **Baseefa02ATEX0184**

4 Equipment or Protective System: **LN1000 I.S. Alarm Annunciator**

5 Manufacturer: **RTK Engineering Limited**

6 Address: **Harrogate, North Yorkshire, HG2 0NP**

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)0149 dated 10 February 2003**

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

EN50014:1997 + A1 & A2 EN50020:2002 EN50284:1999

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 (-20°C ≤ Ta ≤ +60°C)

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

Baseefa (2001) Ltd. Customer Reference No. **2308**

Project File No. **02/0149**

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 (2001) Ltd.

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R S SINCLAIR

DIRECTOR

On behalf of
Baseefa (2001) Ltd.



Schedule

15 Description of Equipment or Protective System

The LN1000 I.S. Alarm Annunciator is designed to be mounted within a hazardous area and to provide a local visual display of the status of a number of remote alarm contacts, give a visual alarm and can operate an external audible alarm.

The apparatus is a self contained rack mounting assembly comprising up to two Backplane printed circuit cards (pcb's) into which slot a Common Sequence Card pcb and up to 16 Dual Channel Alarm Card pcb's all housed within a robust metallic enclosure with a plastic lid. Each Alarm Card has an LCD display which can be viewed through a window in the enclosure lid. Four push buttons are located on a push button card mounted on the lid and are connected to the Common Sequence Card pcb.

Two versions of the Annunciator are covered namely the 12 Way LN1000 I.S. Alarm Annunciator and the 32 Way LN1000 I.S. Alarm Annunciator. Each version has fitted one Common Sequence Card pcb and up to either six or sixteen Dual Channel Alarm Cards respectively. The 32 Way LN1000 I.S. Alarm Annunciator uses two Backplane printed circuit cards and is housed in a larger enclosure than the 12 Way LN1000 I.S. Alarm Annunciator.

Electrical connections to the external apparatus are made via the field terminals located on the Backplane printed circuit cards.

1. Common Sequence Card - Input parameters - Connector J1 pins 1 & 2:-

$$U_i = 30V$$

$$I_i = 165mA$$

$$P_i = 1.2W$$

$$C_i = 47nF$$

$$L_i = 0.44mH$$

2. Common Sequence Card - Output parameters - Connector J1 pins 3 & 4:-

$$U_o = 7.2V$$

$$I_o = 135mA$$

$$P_o = 244mW$$

Cable Parameters.

The Capacitance and either the Inductance or the Inductance to Resistance (L/R) ratio of the cables connected to the terminals of the Alarm Annunciator should not exceed the following values:-

Common Sequence Card - Output parameters - Connector J1 pins 3 & 4

GROUP	C μF	L mH	OR	L/R Ratio $\mu H/ohm$
II C	13.5	2.05		150
II B	240	8.87		590
II A	1000	17.64		1230



3. Common Sequence Card - Output parameters - Connector J1 pins 9 to 12:-

$$U_o = 7.2V$$

$$I_o = 13.2mA$$

$$P_o = 24mW$$

Cable Parameters.

The Capacitance and either the Inductance or the Inductance to Resistance (L/R) ratio of the cables connected to the terminals of the Alarm Annunciator should not exceed the following values:-

Common Sequence Card - Output parameters - Connector J1 pins 9 to 12

GROUP	C μF	L mH	OR	L/R Ratio $\mu H/ohm$
II C	13.5	188		1352
II B	240	733		1833
II A	1000	1000		1833

4. Common Sequence Card - Output parameters - Connector J1 pins 5, 6, 7, 8 and 12:-

$$U_o = 7.2V$$

$$I_o = 9.5mA$$

$$P_o = 17.1mW$$

Cable Parameters.

The Capacitance and either the Inductance or the Inductance to Resistance (L/R) ratio of the cables connected to the combined output terminals of the isolator should not exceed the following values:-

Common Sequence Card - Output parameters - Connector J1 pins 5, 6, 7, 8 and 12

GROUP	C μF	L mH	OR	L/R Ratio $\mu H/ohm$
II C	13.5	390		1319
II B	240	1000		1319
II A	1000	1000		1319

5. Each Alarm Card - Output parameters, per card - Connector J1 pins 1 to 12:-

$$U_o = 7.2V$$

$$I_o = 32.2mA$$

$$P_o = 58mW$$



Cable Parameters.

The Capacitance and either the Inductance or the Inductance to Resistance (L/R) ratio of the cables connected to the combined output terminals of the isolator should not exceed the following values:-

Each Alarm Card - Output parameters, per card - Connector J1 pins 1 to 12

GROUP	C μF	L mH	OR	L/R Ratio $\mu\text{H}/\text{ohm}$
IIC	13.5	33.94		570
IIB	240	124.7		2178
IIA	1000	258.2		4041

16 Report No.

02(C)0149

17 Special Conditions for Safe Use

None

18 Essential Health and Safety Requirements

None additional to those covered by the Standards listed at item 9

19 Drawings and Documents

Number	Issue	Date	Description
CE 3814	-	16/6/1997	Alarm Card Parts List
CE 3815	-	16/6/1997	Sequence Card Parts List
CE 3816	-	12/6/1997	12 Way Backplane Circuit Diagram
CE 3817	-	12/6/1997	16Way Backplane Circuit Diagram
CE 3818	-	12/6/1997	Alarm Card Circuit Diagram
CE 3819	-	13/6/1997	Sequence Card Circuit Diagram
CE 3820	-	12/6/1997	12 Way Backplane pcb Track & Component Layout
CE 3821	-	12/6/1997	16Way Backplane pcb Track & Component Layout
CE 3822	-	12/6/1997	Alarm Card pcb Track Layout
CE 3823	-	12/6/1997	Sequence Card pcb Track Layout
CE 3824	-	24/6/1997	Alarm Card pcb Component Layout
CE 3825	-	12/6/1997	Sequence Card pcb Component Layout
CE 3826	2	30/01/2003	12 Way Annunciator General Assembly
CE 3827	2	30/01/2003	32 Way Annunciator General Assembly
CE 3828	2	30/01/2003	LN1000 I.S. Annunciator Front Panel Layout



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: Baseefa02ATEX0184/1

4 Equipment or Protective System: LN1000 LS. Alarm Annunciator

5 Manufacturer: RTK Engineering Limited

6 Address: Harrogate, North Yorkshire, HG2 0NP

7 This supplementary certificate extends EC – Type Examination Certificate No. Baseefa02ATEX0184 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 (2001) Ltd. Customer Reference No. 2308

Project File No. 03/0770

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Schedule

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Certificate Number Baseefa02ATEX0184/1

15 Description of the variation to the Equipment or Protective System

Variation 1.1

To permit the use of two alternative Anti Static Coatings, DESCO Statgard and Staticide Ultra #4600.

16 Report Number

02(C)0415

17 Special Conditions for Safe Use

None

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	Issue	Date	Description
CE2836	3	16/09/2003	GA for 12 Way LN1000 Annunciator
CE3827	3	16/09/2003	GA for 32 Way LN1000 Annunciator