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British Approvals Service for Electrical
Equipment in Flammable Atmospheres

CERTIFICATE OF CONFORMITY

- 1.
 2. BAS No Ex 92C2355
 3. This certificate is issued for the intrinsically safe electrical system:

DAC 134 XENON BEACON SYSTEM
 4. submitted for certification by:

LINDEN INSTRUMENTS LTD
of Darlington, DL1 2UH
 5. This electrical system and any acceptable variation thereto is specified in the Schedule to this Certificate and the documents therein referred to.
 6. BASEEFA being an Approved Certification Body in accordance with Article 14 of the Council Directive of the European Communities of 18 December 1975 (76/117/EEC) certifies that the system has been found to comply with harmonised European Standard.

EN50 039 (1980)
- and has successfully met the examination and test requirements as recorded in confidential Report No ERA Ref 3627/558, dated August 1992
7. The system is coded EEx ia IIC T6 or EEx ia IIB T6

File No: EECS 1577/02/004



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3863/51-C

I M CLEARE
DIRECTOR EECS
21 August 1992



Electrical Equipment Certification Service
Health and Safety Executive
Harpur Hill, Buxton, Derbyshire, SK17 9JN, United Kingdom
Tel: 0298 262111 Fax: 0298 79514 Telex: 668113 RLSD G



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8. It is the responsibility of the system certificate holder to supply the relevant documentation to the installer of the intrinsically safe electrical system referred to in this certificate.

The installer has the responsibility to ensure that the system conforms to the specification laid down in the Schedule to this certificate and has satisfied routine verifications and tests specified therein.

9. This system may be marked with the Distinctive Community Mark specified in Annex II to the Commission Directive of 16 January 1984 (Doc 84/47/EEC). A facsimile of this mark is printed on sheet 1 of this certificate.

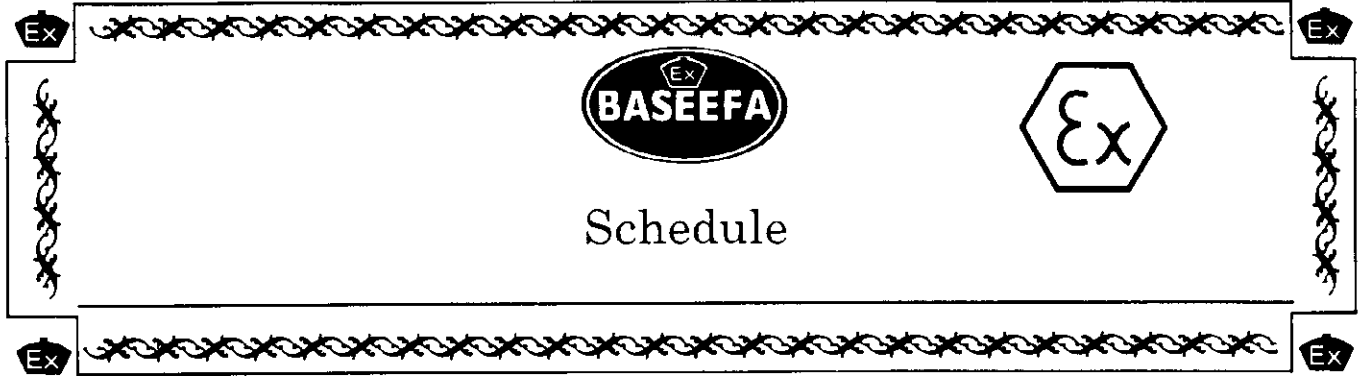
This certificate is granted subject to conditions applicable to the Approval Service, it does not necessarily indicate that the apparatus may lawfully be used in particular industries or circumstances.

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SYSTEM

A DAC 134 XENON BEACON SYSTEM comprises:

1 Apparatus located in a non-hazardous area.

1.1 Apparatus which is unspecified except that it must not be supplied from nor contain under normal or abnormal conditions a source of potential with respect to earth in excess of 250 V rms or 250 V dc.

1.2 One or two MTL 3021 Isolating Drivers, Certificate BAS No Ex 86B2079, Coded [EEx ia] IIC or

1.3 One or two shunt zener diode safety barrier with the following or lower output parameters

$$U_z = 28 \text{ V}, I_{\text{max:out}} = 120 \text{ mA}, W_{\text{max:in}} = 0.84 \text{ W}.$$

The barrier must be certified by an EEC approved body to [EEx ia] IIC.

The output current of each barrier must be limited by a resistor R such that $I_{\text{max:out}} = U_z/R$.

2 Apparatus which may be located in the hazardous area.

2.1 A DAC 134 Xenon Beacon. Certificate BAS No Ex 92C8354, Coded EEx m ia IIC T6 ($T_{\text{amb}} = 60^\circ\text{C}$)



Schedule



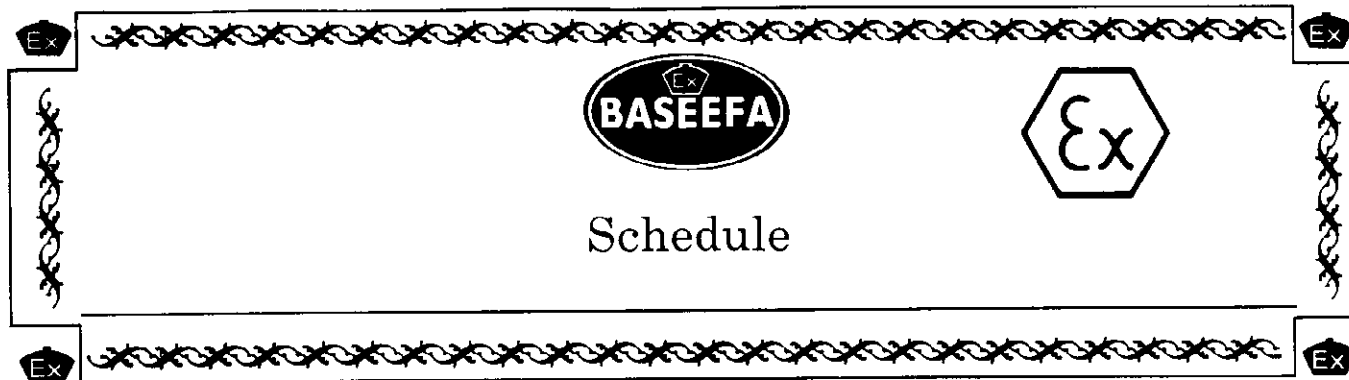
Certificate of Conformity BAS No Ex 92C2355 dated 21 August 1992

3 Permissible interconnecting cables.

3.1 The capacitance and inductance or inductance to resistance (L/R) ratio of the cable connected to the output (hazardous area) terminals of each of the isolating drivers or barriers must not exceed the following values:

| Group | Capacitance μF | Inductance mH | or L/R Ratio $\mu\text{H}/\Omega$ |
|-----------------|------------------------------|---------------------------|---|
| MTL 3021 | | | |
| IIC | 0.13 | 4.2 | 55 |
| IIB | 0.39 | 12.6 | 165 |
| IIA | 1.04 | 33.6 | 440 |
| Barriers | | | |
| IIC | 0.13 | 2.47 | 42 |
| IIB | 0.39 | 7.41 | 126 |
| IIA | 1.04 | 19.76 | 336 |

3.2 If a multicore cable is used between the output terminals of the isolating drivers or barriers and the beacon, it must be of Type A or Type B as specified in EN50 039. A Type B cable must be fixed and effectively protected against damage.



Certificate of Conformity BAS No Ex 92C2355 dated 21 August 1992

DRAWING

| Number | Issue | Date | Description |
|---------------|--------------|-------------|--------------------|
| C1913 | C | -7.92 | System Diagram |

VARIATION ONE

To permit alternative non-hazardous area power supplies thus forming a system coded EEx ia IIB T6.

Item 1.2 An alternative power supply of an MTL 3022 Isolating Driver Certificate BAS No 86B2080, coded [EEx ia] IIB or

Item 1.3 An alternative power supply of a shunt zener diode safety barrier with the following or lower output parameters

$$U_z = 28 \text{ V}, I_{\text{max:out}} = 171 \text{ mA}, W_{\text{max:out}} = 1.2 \text{ W}.$$

The barrier must be certified by an EEC approved body to [EEx ia] IIB.

The output current must be limited by a resistor such that $I_{\text{max:out}} = U_z/R$.



Schedule

Certificate of Conformity BAS No Ex 92C2355 dated 21 August 1992

Item 3 Alternative permissible interconnecting cables.

3.1 The capacitance and inductance or inductance to resistance (L/R) ratio of the cable connected to the output (hazardous area) terminals of the isolating driver or barrier must not exceed the following values:

| Group | Capacitance μF | Inductance mH | or | L/R Ratio $\mu\text{H}/\Omega$ |
|-----------------|------------------------------|------------------|----|-----------------------------------|
| MTL 3022 | | | | |
| IIB | 0.39 | 4.3 | | 110 |
| IIA | 1.04 | 8.2 | | 215 |
| Barriers | | | | |
| IIB | 0.39 | 5 | | 121 |
| IIA | 1.04 | 13.3 | | 320 |



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Certificate of Conformity Variation

THIS IS TO CERTIFY THAT CERTIFICATE BAS NO Ex 92C2355

Held by **LINDEN INSTRUMENTS LTD**
of Darlington, DL1 2UH

for the **DAC 134 XENON BEACON SYSTEM**

is hereby extended to apply to the system conforming to the specification set out in the Schedules of the said Certificate but having the variations specified in the following Schedule.

A copy of this Supplementary Certificate shall be attached to the original Certificate.

VARIATION TWO

To provide clarification that the apparatus described in paragraph 2.1 of the original schedule also includes either the DAD 134 or the DAE 134 Xenon Beacons to BASEEFA Certificate No Ex 92C8354. Either of these Beacons may also be substituted in Variation One. In each case the Certification Code remains as stated in the schedule. There are no drawings associated with this variation

File No: EECS 1577/02/004



CERTIFICATE BAS NO Ex 92C2355/1

BP

I M CLEARE
DIRECTOR EECS
4 August 1994

This certificate is issued under NACCB accreditation No. 020



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