

British Approvals Service for Electrical
Equipment in Flammable Atmospheres



Certificate of Conformity

BAS No. Ex 01E2024

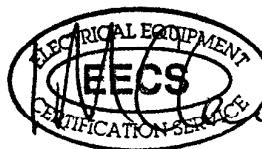
- 1
- 2
- 3 This certificate is issued for the intrinsically safe electrical system:
A DB5* SOUNDER SYSTEM
- 4 Submitted for certification by:
MEDC LTD
of Pinxton, Nottingham, NG16 6JF
- 5 This electrical system and any acceptable variation thereto is specified in the Schedule to this Certificate and 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 Standards:
EN50 039 (1980)
and has successfully met the examination and test requirements recorded in confidential Report number:
BASEEFA Report No. 00(CI)0771/1 dated 1 March 2001
- 7 The system is coded:
EEx ia IIC T4
- 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.

File No: EECS 0676/02/014

Sheet 1 of 5

This certificate is granted subject to the general conditions of the Electrical Equipment Certification Service. It does not necessarily indicate that the system may be used in particular industries or circumstances. A system is an assembly of apparatus (all of which are subject to certification and licensing requirements in their own right) and is therefore not listed on an EECS Manufacturing Licence.



I M CLEARE
DIRECTOR

1 March 2001



Electrical Equipment Certification Service
Health and Safety Executive
Harpur Hill, Buxton, Derbyshire. SK17 9JN. United Kingdom
Tel: 01298 28000 Fax: 01298 28244



Registration Number
020
The use of the Accreditation
Mark indicates accreditation in
respect of those activities
covered by the accreditation
certificate number 020.



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SYSTEM DESCRIPTION

A DB5 Sounder System comprising of:-

1. Apparatus located in the non-hazardous area (safe area).

1.1 Any Single Channel Shunt Zener Diode Safety Barrier or any Single Channel of a Dual Channel Shunt Zener Diode Safety Barrier certified by BASEEFA or any EC Approved Body to [EEEx ia] IIC having the following output parameters:

$$U_o = 28V$$

$$I_o = 93mA$$

$$P_o = 0.65W$$

OR

$$U_o = 22V$$

$$I_o = 147mA$$

$$P_o = 0.81W$$

In any safety barrier used the output current must be limited by a resistor "R" such that $I_o = U_o/R$. Barriers must be polarised and of like polarity


OR

1.2 One of the following Isolating Interface each having $U_o = 28V$, $I_o = 93mA$, $P_o = 0.65W$

| Type No | Manufacturer | Certification No | No of Channels |
|----------------|-----------------|------------------|----------------|
| 3021 | MTL | Ex 86B2079 | 1 |
| 2241 | MTL | Ex 812280 | 1 |
| 2242 | MTL | Ex 802208 | 4 |
| KHD3-ICD/Ex132 | Pepperl & Fuchs | Ex 88B2373 | 1 |
| KHD3-ISL/Ex148 | Pepperl & Fuchs | Ex 88C2410 | 1 |
| ZG47/Ex | Pepperl & Fuchs | Ex 86B2159 | 1 |
| ZG48/Ex | Pepperl & Fuchs | Ex 86B2159 | 1 |
| ZG47/Ex-L | Pepperl & Fuchs | Ex 86B2160 | 1 |
| ZG48/Ex-L | Pepperl & Fuchs | Ex 86B2160 | 1 |
| E1220 | Weidmuller | Ex 93C2021 | 1 |



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- 1.3 Apparatus which is unspecified except that it must not be supplied from nor contain in normal or abnormal conditions a source of potential with respect to earth in excess of 250 volts r.m.s. or 250 volts d.c.
2. Apparatus which may be located in the Hazardous Area
- 2.1 Either a Sounder Type DB5 to BASEEFA Certificate No Ex 92C2014 and Coded EEx ia IIC T4 ($-20^{\circ}\text{C} \leq T_a \leq +55^{\circ}\text{C}$)
- 2.2 Or a Sounder Type DB5 to BASEEFA Certificate No BAS00ATEX1259 and Coded  II 1 G EEx ia IIC T4 ($-20^{\circ}\text{C} \leq T_a \leq +55^{\circ}\text{C}$)
3. Permissible Interconnecting Cables.
- 3.1 The capacitance and either the inductance or the inductance to resistance ratio (L/R) of the hazardous area cables must not exceed the following values:

| GROUP | CAPACITANCE in μF | INDUCTANCE in mH | OR L/R RATIO in $\mu\text{H}/\text{ohm}$ |
|--|---------------------------------|---------------------|--|
| 28V / 300 ohm Zener Barrier or Isolating Interface | | | |
| IIC | 0.083 | 4.30 | 56 |
| IIB | 0.650 | 17.72 | 210 |
| IIA | 2.150 | 36.02 | 444 |
| 22V / 150 ohm Zener Barrier | | | |
| IIC | 0.165 | 1.45 | 45 |
| IIB | 1.140 | 7.22 | 180 |
| IIA | 4.200 | 14.42 | 373 |

- 3.2 Wiring may be achieved by separate cables or by separate circuits within a Type A or Type B multicore cable (as defined in clause 5.3 of EN50 039) subject to the following:-
- a. The circuit to be individually screened when used within a Type A multicore cable.
- b. The peak voltage of any other circuit within a Type B multicore cable must not exceed 60V.



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Schedule

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DRAWING

| <u>Number</u> | <u>Issue</u> | <u>Date</u> | <u>Description</u> |
|---------------|--------------|-------------|--------------------|
| 187-197 | A | 17.01.01 | System Diagram DB5 |

VARIATION ONE

A DB51 Sounder System comprising of:-

1. Apparatus located in the non-hazardous area (safe area).

1.1 Any Single Channel Shunt Zener Diode Safety Barrier or any Single Channel of a Dual Channel Shunt Zener Diode Safety Barrier certified by BASEEFA or any EC Approved Body to [EEx ia] IIC having the following output parameters:

$$U_o = 15.7V$$

$$I_o = 150mA$$


$$P_o = 0.56W$$

In any safety barrier used, the output current must be limited by a resistor "R" such that $I_o = U_o/R$. Barriers must be polarised and of like polarity.

1.2 Apparatus which is unspecified except that it must not be supplied from nor contain in normal or abnormal conditions a source of potential with respect to earth in excess of 250 volts r.m.s. or 250 volts d.c.

2. Apparatus which may be located in the Hazardous Area

2.1 A Sounder Type DB51 to BASEEFA Certificate No BAS00ATEX1259 and Coded

 II 1 G EEx ia IIC T4 (-20°C ≤ T_a ≤ +55°C).

3. Permissible Interconnecting Cables.

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



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| GROUP | CAPACITANCE in μF | INDUCTANCE in mH | OR | L/R RATIO in $\mu\text{H}/\text{ohm}$ |
|-------------------------------|---------------------------------|---------------------|----|--|
| 15.7V / 150 ohm Zener Barrier | | | | |
| IIC | 0.487 | 1.45 | | 63 |
| IIB | 2.950 | 7.22 | | 251 |
| IIA | 11.900 | 14.42 | | 520 |

3.2 Wiring may be achieved by separate cables or by separate circuits within a Type A or Type B multicore cable (as defined in clause 5.3 of EN50 039) subject to the following:-

- The circuit to be individually screened when used within a Type A multicore cable.
- The peak voltage of any other circuit within a Type B multicore cable must not exceed 60V.

DRAWING

| <u>Number</u> | <u>Issue</u> | <u>Date</u> | <u>Description</u> |
|---------------|--------------|-------------|---------------------|
| 187-198 | A | 17.01.01 | System Diagram DB51 |

BASEEFA List Keywords

2ALARMS