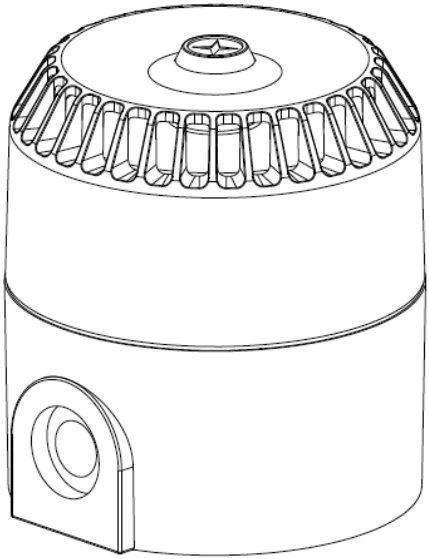
Technical Manual for the Sounders DB5M



Please note that every care has been taken to ensure the accuracy of our technical manual. We do not, however, accept responsibility for damage, loss or expense resulting from any error or omission. We reserve the right to make alterations in line with technical advances and industry standards.

English

1.0 INTRODUCTION

This range of light weight, intrinsically safe sounders has been designed with a high weatherproof rating to cope with the harsh environmental conditions found offshore and onshore in the oil, gas and petrochemical industries.

The unit is available in both 12Vdc and 24Vdc models (ATEX 12Vdc only)

2.0 INSTALLATION

The sounder should be positioned using the two of the available fixing holes in the base. MEDC recommend that stainless steel nuts and bolts be used, if the environment is corrosive.

The sounder will operate in any attitude - from horizontal to vertical. However, it is important to note that the alignment of the Sounder should ensure that:-

1. Dust or debris cannot lodge or settle in the cover apertures.
2. Water from hoses, jets or rain cannot settle in the cover apertures. The sounder should be installed in

accordance with certified parameters.

This apparatus has been designed in accordance with IEC/EN60079-0 and IEC/EN60079-11, therefore the apparatus has been designed to meet the fault tolerance requirements of Electrical Apparatus for Category 'ia'.

The installation and maintenance must be carried out in accordance with all appropriate international, national and local standard codes of practice and site regulations for intrinsically safe apparatus and in accordance with the instructions contained within this manual. Access to the circuitry must not be made during operation.

The equipment must only be installed, operated and maintained by trained competent personnel. The

product must not be installed in a position where it may be attacked by aggressive substances.

The product must not be installed where it may be subjected to an excessive dust laden air flow that may cause an electro-static build up.

2.1 Removing/replacing the cover:

Unscrew the locking screw on the side of the base. Remove the cover by turning it anti-clockwise and pulling it gently away from the base. Replace the cover in a similar, but reverse, manner for that used for removal.

Ensure the seal is fully located over the cover spigot prior to replacing the cover.

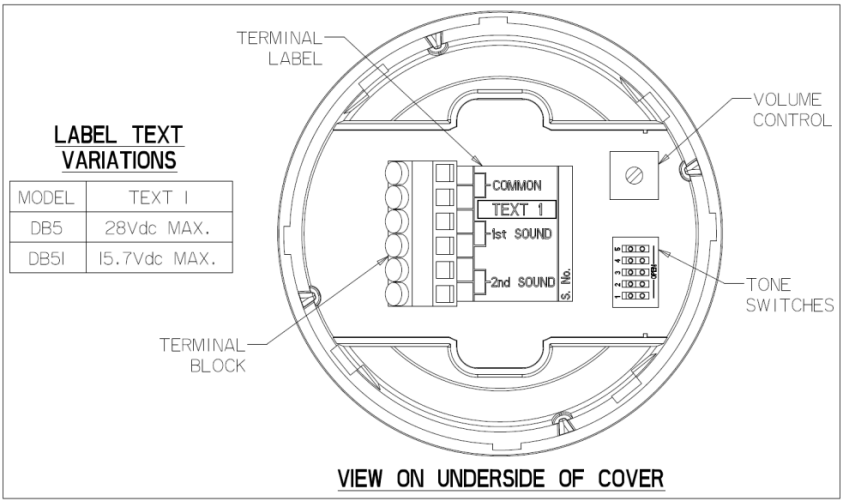
Once the cover has been replaced, ensure the locking screw is fully tightened. Do not over-tighten.

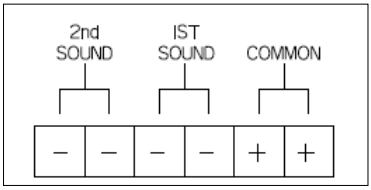
2.2 Cable Termination

Cable termination should be in accordance with specification applying to the application. MEDC recommend that all cables and cores should be fully identified.

Ensure that only the correct glands are used and that the assembly is shrouded.

2.3 Wiring Details





3.0 OPERATION

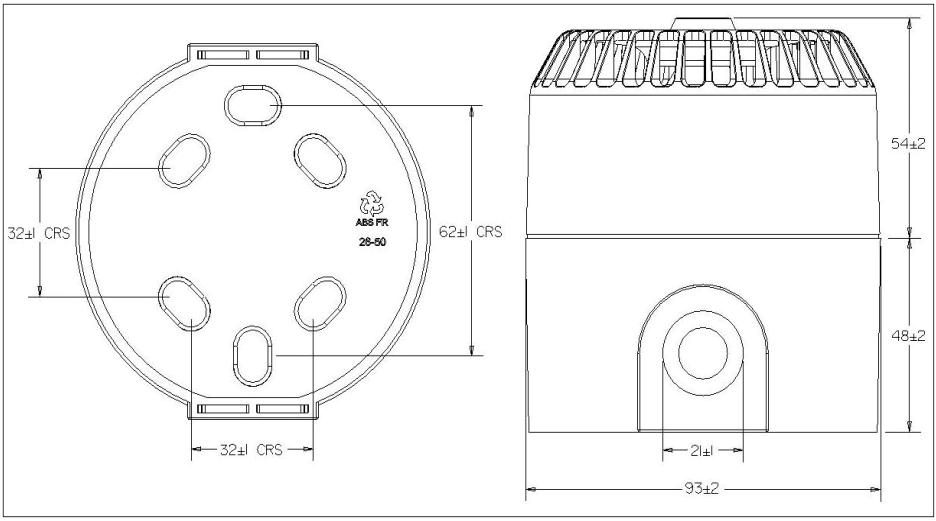
The operating voltage of the unit is stated on the label.

There are no exposed parts of the apparatus which produce excessive surface temperature, infrared, electro- magnetic, ionising radiation or non-electrical dangers.

Information regarding tone selection and installation is contained within each unit supplied.

The unit is fitted with a volume control which is situated adjacent to the tone selection switches. Maximum volume is obtained when this control is turned fully clockwise.

The product has been designed such that the protection afforded will not be reduced due to the corrosion of materials, electrical conductivity, impact strength, ageing resistance and the effects of temperature variation.



4.0 Safety Parameters

The following parameters shall be taken into account during interconnection of the system:

24V unit

Ui	28V
Ii	150mA
Ci	Negligible
Li	20mH
Li/Ri	20uH/ Ω

Note – The DB5 sounder has internal resistance that limits the input current to a nominal 28mA when connected to a 28V source. With an Ii of 150mA and In=28mA, this allows five (5) DB5 sounders to be connected in Parallel.

12V unit

Ui	15.7V
Ii	150mA
Ci	Negligible
Li	20mH
Li/Ri	61.5uH/ Ω

Note – The DB51 sounder has internal resistance that limits the input current to a nominal 37mA when connected to a 15.7V source. With an Ii of 150mA and In=37mA, this allows four (4) DB51 sounders to be connected in Parallel.
An optional end-of-line resistor may be connected across the input terminals.

5.0 MAINTENANCE

During the operation of the sounder, ensure it is checked at regular intervals to ensure that no debris has collected in the cover apertures or that the sounder has not been damaged.

The product must not be subjected to mechanical and thermal stresses in excess of those permitted in the certification documentation and this manual.

During the working life of the sounder, it should require little or no maintenance. However, if abnormal or unusual environmental conditions occur due to plant damage or accident etc., then visual inspection is recommended.

The product cannot be repaired by the user and must be replaced by an identical unit.

6.0 CERTIFICATION

IECEx units

Certified to IEC60079-0.2011 and IEC60079-11.2011

Ex ia unit (IEC certification No. IECEx ITA 15.0010)

Ex ia I Ma (-20°C to +55°C)

The IECEx certificate and product label carry the IECEx equipment protection level marking:
Ma

Where;

I	Signifies suitability for use in underground mining industries
Ma	Signifies equipment for installation in a mine susceptible to firedamp, having a "very high" level of protection, which has sufficient security that it is unlikely to become an ignition source in normal operation, during expected malfunctions or during rare malfunctions, even when left energized in the presence of an outbreak of gas.

ATEX units

Certified to EN50014, EN50020 & EN50303 EEx ia I

ATEX certified No MECS01ATEX4260.

The ATEX certificate and the product label carry the ATEX group and category marking:
 I M1

Where  signifies compliance with ATEX.

I	Signifies suitability for use in underground mining industries.
M1	Signifies the product is intended to remain energised in the event of an explosive atmosphere

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