


Scope: EXcite USER MANUAL BH 125 / BH 150			BARTEC TECHNOR		
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TECHNICAL MANUAL



EXPLOSION PROOF SOUNDER / HORN

BH 125 / BH 150

ATEX Marking:  II 2GD
Code: EPL Gb, Db
Ex d IIC T4/T5/T6 IP66
Ex tb IIIC TXXX



Marking details:

		Alternative T class:	
CE 0470 	Presafe 14ATEX 5381X IECEX PRE 14.0044X	1;	
Ex d IIC T6 Gb	IP66	Ex d IIC T5 Gb	
Ex tb IIIC T85°C		Ex tb IIIC T100°C	
T.amb; -40°C < Ta < +55°C	U <input type="checkbox"/> VDC <input type="checkbox"/> AC 50/60Hz	T.amb; -40°C < Ta < +60°C	
Serial NO.:		2;	
WARNING - DO NOT OPEN WHEN AN EXPLOSIVE ATMOSPHERE IS PRESENT		Ex d IIC T4 Gb	
BARTEC TECHNOR		Ex tb IIIC T135°C	
STAVANGER NORWAY		T.amb; -40°C < Ta < +70°C	

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.

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1.0 INTRODUCTION

BH 125 / 150 series Explosion-proof Sounder / Horn & Loudspeaker is designed according to EN / IEC 60079-0, EN / IEC 60079-1 and EN 54 (SB 5879) standard. Enclosure material is UV and corrosion resistance GRP (Glass Reinforced Polyester). This product certified for use and installation in Zone 1 and Zone 2 areas with gases groups of IIA, IIB, IIC and temperature classification of T4~T6. The BH 125 version is made in SS 316 and the BH 150 version is made in GRP.

Users can choose single sounder, speaker or two-in-one sounder & loudspeaker. The design of two-in-one sounder & loudspeaker is unique. According to user control system, 4 stages of alarm tones can be sent out. 63 tones are selectable. Users can record sounds or customize sounds into the sounder by using 5 spare tones. Tone can be preset during installation.

2.0 EXPLOSION-PROOF LABELING

All products have a rating label, which carries the following important information:

Product order no.: e.g
BH125DCARD
(Refer to the datasheet for product order selection)

Input voltage: up to 48V DC or 100-254V AC

Code: Ex d IIC Txx Gb
Ex tb IIIC Txx Db

ATEX Marking: Gas Group and Category: II 2GD

CE Mark: 

Warning: DO NOT OPEN WHEN AN EXPLOSIVE GAS ATMOSPHERE IS PRESENT

Finish product serial no. (Include date of construction)

Note; exact information is given on the actual label, ref also example on page 1.

3.0 TYPE APPROVAL STANDARD

The BH 125 / 150 series products have been approved according the following standards:

IEC/ EN 60079-0 General requirements
IEC/ EN 60079-1 Flameproof enclosure "d"
IEC/ EN 60079-31 Dust atmosphere "t"

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4.0 ZONES, GASGROUP, CATEGORY AND TEMPERATURE CLASSIFICATION

The BH 125 / 150 series products have been certified Ex d IIC T4~T6. This means that the units can be installed in locations with the following conditions:

Area Classification:

Zone 1: Explosive gas air mixture likely to occur in normal operation.

Zone 2: Explosive gas air mixture not likely to occur, and if it does, it will only exist for a short time.

Gas Groupings: Group IIA Propane
Group IIB Ethylene
Group IIC Hydrogen and Acetylene

Equipment Category: ATEX, 2GD

EPL: Gb / Db

Temperature Range: See label, ref page 1

5.0 INSTALLATION

General Requirement

Selection, Installation, Maintenance and repair of electrical apparatus for use in potentially explosive atmosphere should be done in according to IEC/ EN 6079-14/ -17/ -19. Product installation must be carried out in accordance with any local codes that may apply and should only be carried out by a competent electrical engineer.

Location

The location of the unit should be made with due regard to the area over which both the sounder and beacon warning signal must be audible and visible. The unit should only be fixed to services that can carry the weight of the unit.

Mounting

Bracket mounting

The BH 125 / 150 mounts via a 'U' shaped stainless steel bracket by using one 12mm diameter and two 8.5mm diameter bolt holes in the center of the bracket. The alignment and positions can be adjusted by loosening the two M8 screws, which fastened the stainless steel bracket to the sounder. The sounder should be positioned such that dust, debris or water cannot enter into the horn opening.

6.0 WIRING

General Requirement

BARTEC TECHNOR recommends that all cables and cores should be fully identified (suggest using cable from 2.0 to 2.5 mm²).

Ensure that all nuts, bolts and screws are secured. Ensure that only the right and certified cable glands are used and earthed correctly. Ensure that only the right and certified stopping plugs are used to blank off unused gland entry points. In order to maintain the IP rating of the product, we recommend SS316L for this application.

Cable Connection

The cable connection is connected with the terminal blacks on the electronic **PCB** assembly located in the flameproof enclosure of sounder. Cable connection should be carried out in accordance with relevant technical requirements.

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Remove End Cover

Unscrew the six (6 for BH 150 and 4 for BH 125) M5 retained hex socket head screws of the end cover. This will release the cover from the base. Before replacing the cover, check that the flameproof joints are clean and not damaged, the gasket is still retained in its groove.

CAUTION: Before removing the cover, ensure the power to the product is isolated. Remove the six pieces of M5 socket screws to open the cover. Twist the cover gently clockwise and anti-clockwise, whilst pulling away from the base, until it comes off. Replace the cover in similar way, but operate in reverse manner as above.

Power Supply

Up to 48V DC or 100-254V AC

PCB WIRING TERMINALS

Apply power supply to up to 48V DC or 100-250V AC to 'L' & 'N' (See Fig 1)

Four Alarm Stages

No sound for Stage 1. There will be sounds for the subsequence Stages

Stage 1: apply power supply to 'L' & 'N'

Stage 2: connect S1 to 0/ com

Stage 3: apply power supply to 'L' & 'N' and connect S2 to 0/COM

Stage 4: apply power supply to 'L' & 'N' and connect S1, S2 to 0/COM

Stage DIY (recording sound): apply power supply to 'L' & 'N' and connect DYI to 0/COM.

7.0 TONE SELECTION

The sounder provides 63 tones to be selected for the alarm stage 2 to 4. Three stages of alarm tones can be preset via switch on the Sounder PCB.

Tone Selection Switch

Use the three (3) DIP switches with 6 binary codes on the **Sounder PCB** to select tones (See Fig 3).

Tone Selection Table (see attached table 1)

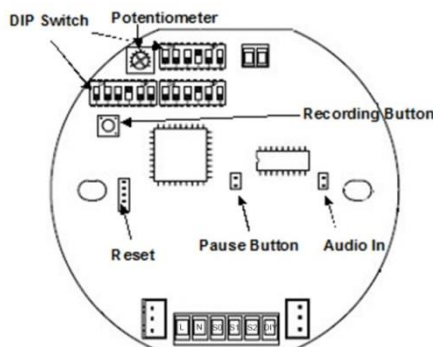


Fig. 1

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8.0 VOLUME CONTROL

The sounder has a volume control to adjust the output volume of the sounder component. To set the required output volume, adjust the potentiometer-VR1 on the PCB (See Fig 3). The potentiometer should be set to fully clockwise position if maximum output volume is needed.

9.0 SOUNDER RECORDING

The sounder can provide 4 tones can be recorded by the user. Use the Audio In and Recording Button (See Fig 3) to record.

Recording procedure

1. Turn off S1 and S2.
2. Set up any DIP Switches as tone 60-63 (refer to Attached Table 1-Tone Selection table).
3. Insert the Audio IN plug
4. Press the recording button and hold the button until the record is finished.

CAUTION: The sounder will begin to record after 3 seconds from pressing the button. Don't release the button when the recording is in process. The maximum of recording time is 20 seconds.

10.0 SOUND PAUSE

The sound can pause by pressing the Recording Button (See Fig. 3)
As the pausing period, please refer to the below table:

Pressing	Default Setting	Option
1	1 minute	10 minute
2	5 minute	30 minute
3	10 minute	60 minute
4	Restore to the sound	Restore to the sound

In order to have the option function, please inform BARTEC TECHNOR in advance before BARTEC TECHNOR begins the production of the sounder.

11.0 CABLE GLAND

The BH series product has cable gland entries. Only cable glands approved for Ex d applications can be used, which must be suitable for the type of cable being used and also meet the requirements of the Ex d flameproof installation standard EN/IEC 60079-14.

SAFETY WARNING: If the BH is used at high ambient temperatures, i.e. over +40°C, then the cable entry temperature may exceed +70°C and therefore suitable heat resisting cable glands must be used, with a rated service temperature of at least +95°C.

If a high IP (Ingress Protection) rating is required, a suitable sealing washer must be fitted under the cable gland.

When only one cable entry is used, the other one must be closed with an Ex d flameproof blanking plug, which must be suitably approved for the installation requirements.

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12.0 END OF LINE MONITORING

An end of line monitoring diode or an end of line monitoring resistor can be connected across the 24V+ and 0 terminals. If an end of line monitoring resistor is used, it must have a maximum resistance value of 3k ohms and a minimum wattage of 0.5 Watts; or a minimum resistance value of 1.2k ohms and a maximum wattage of 2 Watts.

13.0 MAINTENANCE

During working life of the product, little or no maintenance is required. GRP and SS 316 are resistant to most of the acids, alkalis and chemicals. If abnormal or unusual environmental conditions occur due to accident etc., visual inspection is recommended.

As to avoid electrostatic charge build-up, only exterior of the product can be cleaned with a damp cloth. If spare parts are required, these can be supplied by BARTEC TECHNOR Company.

SAFETY WARNING: In the case of Anti-Static and UV Resistant GPR and SS 316, the painting of the enclosure surface has been processed specially. To maintain the product to be Anti-Static, extra normal painting is not allowed.

If any failure occurs but not cause by human factor, the product can be returned to BARTEC TECHNOR for free repair or replacement during warranty period.

14.0 CONDITIONS FOR SAFETY USE

- i. This apparatus is suitable to be used only in ambient temperature as stated at the label
- ii. Other than product manufacturer, painting and surface finishing are not permitted by the third party.
- iii. When used in dust atmosphere, flameproof cable entry devices or stopping plugs have to be selected and installed carefully in order to maintain the IP rating (IP66/67) of the product.

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Attached Table 2: Tone Selection Table

ITEM	DESCRIPTION				Max dB	SW1,SW2,SW3,SW4
Tone	Frequency	Tone Description	Tone Application	Waveform	(DB)@1M	Bit 123456
0	0	0	0	0	0	000000
01	300Hz	Continuous			105	100000
02	340Hz	Continuous			105	010000
03	440Hz	Continuous			105	110000
04	554Hz	Continuous			106	001000
05	660Hz	Continuous	All-clear, Sweden		104	101000
06	800Hz	Continuous			105	011000
07	1000Hz	Continuous	PFEER Toxic Gas		109	111000
08	1200Hz	Continuous			106	000100
09	2000Hz	Continuous			105	100100
10	2400Hz	Continuous			103	010100
11	2850Hz	Continuous			102	110100
12	420Hz@0.625 sec	intermittent	Australian, AS2220		100	001100
13	544Hz@0.875 sec	intermittent			104	101100
14	660Hz@150ms on,150ms off	intermittent	Swedish Fire Alarm		100	011100
15	660Hz@1.8sec on,1.8sec off	intermittent	Swedish Fire Alarm		103	111100
16	745Hz@500ms on,500ms off	intermittent			102	000010
17	800Hz@250ms on,250ms off	intermittent			102	100010
18	800Hz@250ms on,1sec off	intermittent			100	010010
19	1000Hz@250ms on,250ms off	intermittent			105	110010
20	1000Hz@500ms on,500ms off	intermittent	Back-up Alarm(LF)		105	001010
21	1000Hz@250ms on,1sec off	intermittent			105	101010
22	1000Hz@1sec on,1sec off	intermittent	PFEER Gen, Alarm		105	011010
23	2400Hz@250ms on,250ms off	intermittent			101	111010
24	2400Hz@500ms on,500ms off	intermittent			100	000110
25	2850Hz@1sec on,1sec off	intermittent	Back-up Alarm(HF)		101	100110
26	2850Hz@150ms on,100ms off	intermittent	Pelican Crossing		101	010110
27	970Hz@0.5sec on/0.5sec off,1.5sec off	3 Pulses	ISO 8201 Low tone		105	110110
28	2850Hz@0.5sec on/0.5sec off,1.5sec off	3 Pulses	ISO 8201 Low tone		101	001110
29	700Hz@2sec on/2sec off	intermittent	Air-raid, Sweden		105	101110
30	700Hz@125ms on/125ms off	intermittent	Local warning, Sweden		105	011110
31	720Hz@0.7sec on/0.3sec off	intermittent	Industrial alarm, Germany		105	111110
32	544Hz/440Hz@500ms	Alternating	Swedish Fire Alarm		101	000001
33	544Hz/440Hz@100ms/400ms	Alternating	AFNOR,NFS 32-001		101	100001
34	544Hz/440Hz@1sec	Alternating	Turn-out, Sweden		100	010001
35	800Hz/1000Hz@125ms	Alternating	Increased Urgency		104	110001
36	2400Hz/2900Hz@125ms	Alternating	Security Deterrent		100	001001
37	800Hz/1000Hz@250ms	Alternating	Fire Alarms		104	101001
38	800Hz/1000Hz@580ms	Alternating			104	011001
39	1000Hz/2000Hz@500ms	Alternating			104	111001
40	2400Hz/2900Hz@250ms	Alternating	Security Alarms		100	000101
41	500Hz-1000Hz@6Hz	Fast whoop			103	100101
42	500Hz-1200Hz@0.3Hz	Sweeping			102	010101
43	660Hz-1200Hz@1Hz	Sweeping			101	110101
44	800Hz-1000Hz@1Hz	Med Sweeping(LF)			101	001101
45	800Hz-1000Hz@7Hz	Fast Sweeping(LF)			102	101101
46	2400Hz-2900Hz@1Hz	Sweeping			100	011101
47	2400Hz-2900Hz@7Hz	Fast Sweeping			100	111101
48	800Hz-1000Hz@50Hz	Low Freq Buzz	Buzz		100	000011
49	2400Hz-2900Hz@50Hz	High Freq Buzz	Buzz		100	100011
50	500Hz-1200Hz@2.5sec ↑, 0.5sec ↓	Slow Whoop			102	010011
51	500Hz-1200Hz@5sec ↑, 0.25sec ↓	Slow Whoop	Evacuation,Netherlands		102	110011
52	1200Hz-500Hz@1Hz	Reverse sweeping	Evacuation,Germany		102	001011
53	1400Hz-1600Hz@1sec ↑, 0.5sec ↓	sweeping	NFC 48-265		100	101011
54	Simulated Bell	Fast Shake	Bell		98	011011
55	800Hz/660Hz	Tow tone chime	Int'l evacuation alarm		102	111011
56	800Hz/1000Hz	ISO 8201 Evacuation	Int'l evacuation alarm		102	000111
57	250Hz-1200Hz@3sec ↑, 6sec 3sec ↓	Motor Siren-slow rise			104	100111
58	250Hz-800Hz@3sec ↑, 6sec 3sec ↓	Motor Siren-slow rise			105	010111
59	250Hz-2400Hz@6sec ↑, 6sec 6sec ↓	Motor Siren-slow rise			100	110111
60	Client Spare recording					001111
61	Client Spare recording					101111
62	Client Spare recording					011111
63	Client Spare recording					111111