

1) Introduction

The BExS120D and BExS110D are flameproof sounders which are certified to meet the requirements of the ATEX directive 94/9/EC and the IECEx scheme. The sounders produce loud warning signals and can be used in hazardous areas where potentially flammable atmospheres may be present. Thirty-two different first stage alarm sounds can be selected by internal switches, and each one can be externally changed to a second or third stage alarm sound (see *tone table on Page 4*). The BExS120D unit produces output levels in the 117dB(A) range and the BExS110D unit produces output levels in the 110dB(A) range. Both sounders can be used in Zone 1 and Zone 2 areas with gases in groups IIA, IIB and IIC and temperature Classifications of T1, T2, T3 and T4. For ambient temperatures over +55°C the gas groups are limited to IIA and IIB.

2) Marking

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

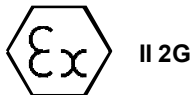
Unit Type No. BExS120D or BExS110D

Input Voltage: DC Units 12V or 24V or 48V
AC Units 230V or 110V or 115V

Codes: Ex d IIC T4 for Ta -50°C to +55°C
Ex d IIB T4 for Ta -50°C to +70°C

Certificate No's KEMA 99ATEX6312
IECEX KEM 10.0003

Epsilon x:
Equipment Group
and Category:



CE Marking:
Notified Body No.



“Warnings” DO NOT OPEN WHEN AN EXPLOSIVE
GAS ATMOSPHERE IS PRESENT

COVER BOLTS CLASS A4-80

USE HEAT RESISTING CABLES AND CABLE GLANDS
(Rated 110°C) AT AMB. TEMPERATURES OVER 40°C

Year of Construction /
Serial No. i.e. 10 / 1S21000001

3) Type Approval Standards

The sounders have an EC Type Examination and IECEx certificates issued by KEMA and have been approved to the following standards:-

EN60079-0:2006 IEC60079-0:2004 (Ed4) General Requirements
EN60079-1:2007 IEC60079-1:2007 (Ed6) Flameproof Enclosure 'd'

4) Installation Requirements

The sounders must be installed in accordance with the latest issues of the relevant parts of the EN 60079 and IEC60079 standards – Selection, Installation and maintenance of electrical apparatus for use in potentially explosive atmospheres (other than mining applications or explosive processing and manufacture):-

EN60079-14:2008 Electrical Installations in Hazardous Areas (other than mines)

EN60079-10:2003 Classification of Hazardous Areas
IEC60079-10:2008 (Ed1)

The installation of the units must also be in accordance with any local codes that may apply and should only be carried out by a competent electrical engineer who has the necessary training.

5) Zones, Gas Group, Category and Temperature Classification

The BExS120D and BExS110D sounders have been certified Ex d IIC T4 for Ta -50°C to +55°C and Ex d IIB T4 for Ta -50°C to +70°C. 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 (Up to +55°C only)	Hydrogen and Acetylene

Equipment Category: 2G

Temperature Classification:

T1	400°C
T2	300°C
T3	200°C
T4	135°C

Ambient Temperature Range:

-50°C to +55°C Gas Groups IIA, IIB and IIC
-50°C to +70°C Gas Group IIA and IIB

6) Sounder Location and Mounting

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

The sounder should be securely bolted to a suitable surface using the 7mm diameter boltholes in the stainless steel U shaped mounting bracket (see figure 1). The angle can then be adjusted in the direction that the sound is primarily required to cover. This can be achieved by loosening the two large bracket screws in the side of the unit, which allow adjustment in steps of 18°. On completion of the installation the two large bracket adjustment screws on the side of the unit must be fully tightened to ensure that the unit cannot move in service.

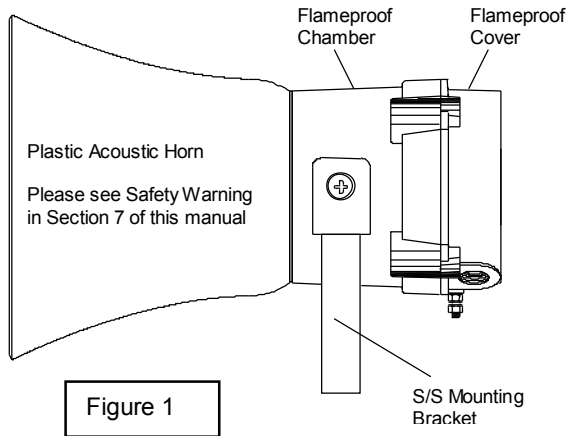


Figure 1

7) Safety Warning (Electrostatic Hazard)

The acoustic horn section is made of ABS Plastic, therefore to avoid a possible ELECTROSTATIC CHARGE the unit must only be cleaned with a damp cloth.

8) Access to the Flameproof Enclosure

In order to connect the electrical supply cables to the sounder it is necessary to remove the flameproof cover to gain access to the flameproof chamber. To achieve this remove the four M6 hexagon socket head screws (see figure 2) and withdraw the flameproof cover taking extreme care not to damage the flameproof joints in the process.

Note the four **M6 screws are Class A4-80 stainless steel and only screws of this category can be used on these sounders**. It is therefore important that these screws and their spring washers are kept in a safe place during installation.

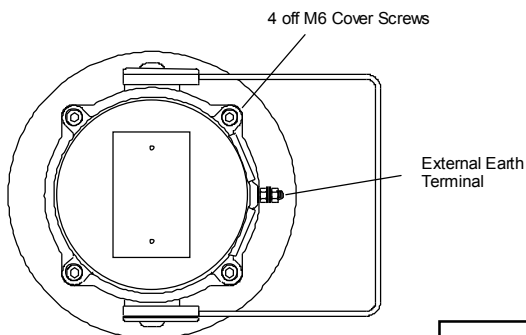


Figure 2

On completion of the cable wiring installation the flameproof joints should be inspected to ensure that they are clean and that they have not been damaged during installation. Also check that the earth bonding wire between the two casting

sections is secure and the 'O' ring seal is in place. When replacing the flameproof cover casting ensure that it is square with the flameproof chamber casting before inserting. Carefully push the cover in place allowing time for the air to be expelled. Only after the cover is fully in place should the four M6 Stainless Steel A4-80 cover bolts and their spring washer be inserted and tightened down. If the cover jams while it is being inserted, carefully remove it and try again. Never use the cover bolts to force the cover into position.

9) Power Supply Selection

It is important that a suitable power supply is used to run the sounders. The power supply selected must have the necessary capacity to provide the input current to all of the sounders connected to the system.

The following table shows the input current taken by the various sounder units:-

Unit Type	Input Voltage	Input Current	Max. I/P Volts
BExS120D	24V DC	800mA	30V
BExS120D	12V DC	850mA	15V
BExS120D	48V DC	420mA	58V
BExS120D	230V AC	90mA	264V
BExS120D	110V AC	200mA	121V
BExS120D	115V AC	180mA	126V
BExS110D	24V DC	265mA	30V
BExS110D	12V DC	195mA	15V
BExS110D	48V DC	130mA	58V
BExS110D	230V AC	56mA	264V
BExS110D	110V AC	93mA	121V
BExS110D	115V AC	110mA	126V

The input current will vary according to the voltage input level and the frequency of the tone selected. The current levels shown above are for the 440Hz Continuous tone @ nominal input voltage. The 24V and 48V DC units and the 230V AC, 115V AC and 110V AC units have a switching voltage regulator circuit and therefore the input current level will decrease slightly as the input voltage is increased and will increase slightly as the input voltage is reduced. The 12V units do not have a voltage regulator and therefore their input current will increase when the input voltage is increased.

The above table also shows the maximum voltages at which the sounders can be operated.

10) Cable Selection

When selecting the cable size consideration must be given to the input current that each unit draws (see table above), the number of sounders on the line and the length of the cable runs. The cable size selected must have the necessary capacity to provide the input current to all of the sounders connected to the line.

SAFETY WARNING: If the high output BExS120D sounders are used at high ambient temperatures, i.e. over +40°C, then the cable entry temperature may exceed +70°C and therefore suitable heat resisting cables must be used, with a rated service temperature of at least 110°C.

11) Earthing

Both AC and DC sounder units must be connected to a good quality earth. The units are provided with internal and external earthing terminals which are both located on the terminal chamber section of the unit (see figures 2 and 3).

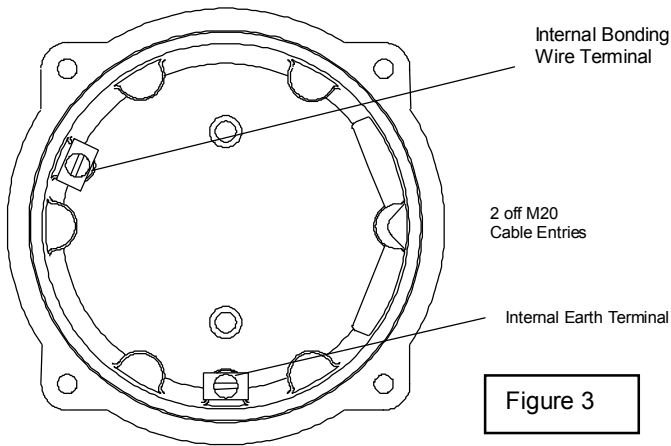


Figure 3

When using the internal earth terminal ensure that the stainless steel M4 flat washer is between the incoming earth wire and the enclosure.

When using the external earth terminal a cable crimp lug must be used. The cable lug should be located between the two M5 stainless steel flat washers. The M5 stainless steel spring washer must be fixed between the outer flat washer and the M5 stainless steel nut to ensure that the cable lug is secured against loosening and twisting.

The internal earth bonding wire ensures that a good quality earth is maintained between the flameproof chamber casting and the flameproof cover casting.

12) Cable Glands

The BExS120D and BExS110D sounders have dual cable gland entries which have an M20 x1.5 entry thread as standard or a PG13.5 thread as a special. 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 standards EN 60079-14:2008 / IEC60079-14:2007.

SAFETY WARNING: If the high output BExS120D sounders are 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 110°C.

If a high IP (Ingress Protection) rating is required then 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.

13) Cable Connections

The cable connections are made into the terminal blocks on the electronic pcb assembly located in the flameproof enclosure. See section 8 of this manual for access to the

flameproof enclosure. On the AC units a two-way terminal block is provided for the live and neutral mains supply wires and a three way terminal block is provided for linking the second and third stages, (see figures 5 and 7). On the DC units a four way terminal block is provided for +ve and -ve supply input and second and third stage modes of operation, (see figures 4 and 6).

BExS120D DC Sounder

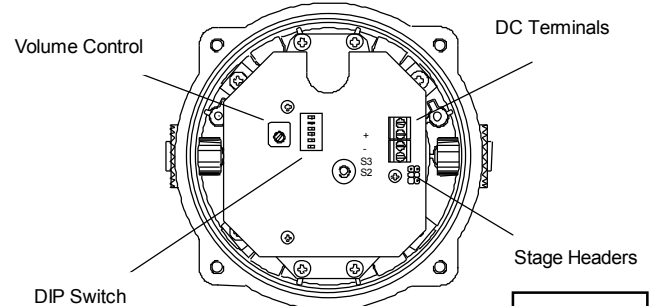


Figure 4

A single wire with a cross sectional area of up to 4mm² can be connected to each terminal way or if an input and output wire is required two 2.5mm² wires can be connected to each terminal way. When connecting wires to the terminals great care should be taken to dress the wire so that when the cover is inserted into the chamber the wires do not exert excess pressure on the terminal blocks. This is particularly important when using cables with large cross sectional areas such as 2.5mm² and above.

BExS120D AC Sounder

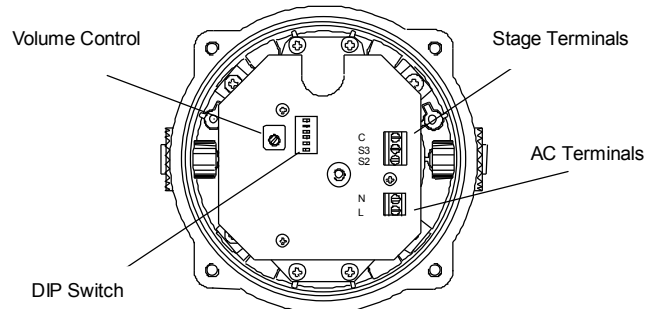


Figure 5

BExS110D DC Sounder

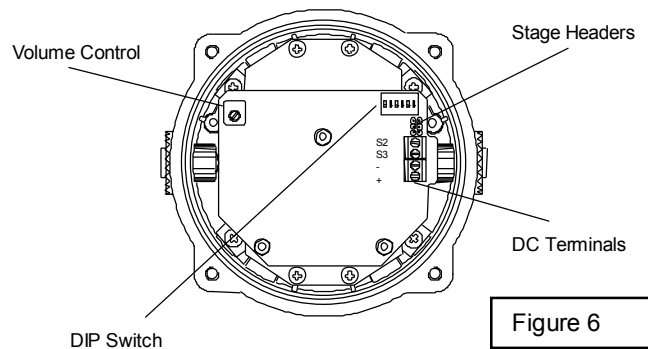


Figure 6

BExS110D AC Sounder

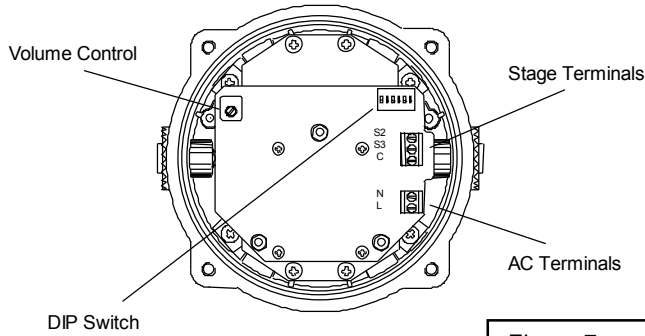


Figure 7

blocking diode fitted in their supply input lines. An end of line monitoring diode or an end of line monitoring resistor can be connected across the +ve and -ve terminals. If an end of line resistor is used it must have a minimum resistance value of 3k3 ohms and a minimum wattage of 0.5 watts or a minimum resistance value of 500 ohms and a min. wattage of 2 watts.

TONE SELECTION TABLE

Tone Selection		DIP Switch Settings					Stage Selection	
Stage 1	Frequency Description	1	2	3	4	5	Stage 2	Stage 3
1	Continuous 1000Hz <i>Toxic Gas Alarm</i>	0	0	0	0	0	Tone 31	Tone 11
2	Alternating 800/1000Hz at 0.25s intervals	1	0	0	0	0	Tone 17	Tone 5
3	Slow Whoop 500/1200Hz at 0.3Hz with 0.5s gap repeated	0	1	0	0	0	Tone 2	Tone 5
4	Sweeping 800/1000 at 1Hz	1	1	0	0	0	Tone 6	Tone 5
5	Continuous at 2400Hz	0	0	1	0	0	Tone 3	Tone 27
6	Sweeping 2400/2900Hz at 7Hz	1	0	1	0	0	Tone 7	Tone 5
7	Sweeping 2400/2900Hz at 1Hz	0	1	1	0	0	Tone 10	Tone 5
8	Siren 500/1200/500Hz at 0.3Hz	1	1	1	0	0	Tone 2	Tone 5
9	Sawtooth 1200/500Hz at 1Hz	0	0	0	1	0	Tone 15	Tone 2
10	Alternating 2400/2900Hz at 2Hz	1	0	0	1	0	Tone 7	Tone 5
11	Intermittent 1000Hz at 0.5Hz <i>General Alarm</i>	0	1	0	1	0	Tone 31	Tone 1
12	Alternating 800/1000Hz at 0.875Hz	1	1	0	1	0	Tone 4	Tone 5
13	Intermittent 2400Hz at 1Hz	0	0	1	1	0	Tone 15	Tone 5
14	Intermittent 800Hz 0.25s on 1s off	1	0	1	1	0	Tone 4	Tone 5
15	Continuous at 800Hz	0	1	1	1	0	Tone 2	Tone 5
16	Intermittent 660Hz 150mS on, 150mS off	1	1	1	1	0	Tone 18	Tone 5
17	Alternating 544Hz (100mS)/440Hz(400mS)	0	0	0	0	1	Tone 2	Tone 27
18	Intermittent 660Hz 1.8s on, 1.8s off	1	0	0	0	1	Tone 2	Tone 5
19	1400Hz to 1600Hz sweep up over 1s - 1600Hz to 1400Hz sweep down over 0.5s	0	1	0	0	1	Tone 2	Tone 5
20	Continuous 660Hz	1	1	0	0	1	Tone 2	Tone 5
21	Alternating 554/440Hz at 1Hz	0	0	1	0	1	Tone 2	Tone 5
22	Intermittent 554Hz at 0.875Hz	1	0	1	0	1	Tone 2	Tone 5
23	800Hz pulsing at 2Hz	0	1	1	0	1	Tone 6	Tone 5
24	Sweeping 800/1000Hz at 50Hz	1	1	1	0	1	Tone 29	Tone 5
25	Sweeping 2400/2900Hz at 50Hz	0	0	0	1	1	Tone 29	Tone 5
26	Simulated bell sound	1	0	0	1	1	Tone 2	Tone 1
27	Continuous 554Hz	0	1	0	1	1	Tone 26	Tone 5
28	Continuous 440Hz	1	1	0	1	1	Tone 2	Tone 5
29	Sweeping 800/1000Hz at 7Hz	0	0	1	1	1	Tone 7	Tone 5
30	420Hz repeating 0.625s on, 0.625s off <i>Australian alert signal</i>	1	0	1	1	1	Tone 32	Tone 5
31	1200/500Hz at 1 Hz <i>Prepare to Abandon Platform</i>	0	1	1	1	1	Tone 11	Tone 1
32	Sweeping 500/1200Hz 3.75s on, 0.25s off 15Hz	1	1	1	1	1	Tone 26	Tone 1

14) Tone Selection and 2nd and 3rd Stage Alarms

The BExS120D and BExS110D sounders have 32 different tones that can be selected for the first stage alarm. The sounders can then be switched to sound second and third stage alarm tones. The tones are selected by operation of a DIP switch on the pcb for both DC and AC units. The tone table on page four shows the switch positions for the 32 tones and which tones are available for the second and third stages. To operate the sounder on stage one simply connect the supply voltage to the normal supply terminals (+ve and -ve for DC units, L and N for AC units).

The operation of the second and third stages is different for DC and AC units.

DC Units Second and Third Stage Tone Selection

The BExS120D and BEx110D DC sounders have the facility to use either +ve or -ve switching to change the tone to the second and third stages. For -ve switching connect the two headers on the pcb to the left-hand (marked -ve) and centre pins. For +ve switching connect the headers to the right hand (marked +ve) and the centre pins. To change to the second stage tone, connect either a -ve or +ve supply line to terminal S2, depending on which switching mode is being used while maintaining the dc supply to the +ve and -ve terminals. Similarly for the third stage tone, connect a -ve or +ve supply line to terminal S3. The supply to the S3 terminal will automatically override a supply to the S2 terminal.

AC Units Second and Third Stage Tone Selection

To select the second and third stage tones on the BExS120D and BExS110D AC sounders the Common (C) terminal on the three way terminal block on the pcb is connected to the S2 terminal for the second stage tone and the S3 terminal for the third stage tone.

15) Volume Control

All BExS120D and BExS110D sounders, with the exception of 12V DC units, have a volume control to adjust the output level. To set the required output level, adjust the potentiometer on the pcb. For maximum output level the potentiometer should be set to the fully clockwise position.

16) End of Line Monitoring (DC Units)

On BExS120D and BExS110D DC units, dc reverse line monitoring can be used if required. All DC sounders have a

2) Marking

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

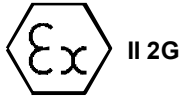
Unit Type No. BExS120D or BExS110D

Input Voltage: DC Units 12V or 24V or 48V
 AC Units 230V or 110V or 115V

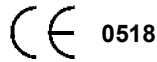
Codes: Ex d IIC T4 for Ta -50°C to +55°C
 Ex d IIB T4 for Ta -50°C to +70°C

Certificate No's KEMA 99ATEX6312
 IECEx KEM 10.0003

Epsilon x:
 Equipment Group
 and Category:



CE Marking:
 Notified Body No.



“Warnings” DO NOT OPEN WHEN AN EXPLOSIVE
 GAS ATMOSPHERE IS PRESENT

COVER BOLTS CLASS A4-80

USE HEAT RESISTING CABLES AND CABLE GLANDS
 (Rated 110°C) AT AMB. TEMPERATURES OVER 40°C

4) Installation Requirements

Sounders must be installed in accordance with the following or equivalent standards.

EN60079-14:2008 Electrical Installations in Hazardous
 IEC60079-14:2007 (Ed4) Areas (other than mines)

EN60079-10:2003 Classification of Hazardous Areas
 IEC60079-10:2008 (Ed1)

Installation should only be carried by competent personnel
 and any local codes of practice applied.

5) Zones, Gas Group, Category and Temperature Classification

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 (Up to +55°C only)	Hydrogen and Acetylene

Equipment Category: 2G

Temperature Classification:

T1	400° C
T2	300° C
T3	200° C
T4	135° C

Ambient Temperature Range:

-50°C to +55°C Gas Groups IIA, IIB and IIC
 -50°C to +70°C Gas Group IIA and IIB

6) Sounder Location and Mounting

See drawing A

7) Safety Warning (Electrostatic Hazard)

The acoustic horn section is made of ABS Plastic; therefore to avoid a possible ELECTROSTATIC CHARGE the unit must only be cleaned with a damp cloth.

8) Access to the Flameproof Enclosure

See drawing B

Note the four **M6 screws** are **Class A4-80 stainless steel** and **only screws of this category can be used on these sounders**. It is therefore important that these screws and their spring washers are kept in a safe place during installation.

9) Power Supply Selection

The system power supply must have the necessary capacity to provide the input current to all of the sounders connected to the system.

The following table shows the input current taken by the various sounder units:-

Unit Type	Input Voltage	Input Current	Max. I/P Volts
BExS120D	24V DC	800mA	30V
BExS120D	12V DC	850mA	15V
BExS120D	48V DC	420mA	58V
BExS120D	230V AC	90mA	264V
BExS120D	110V AC	200mA	121V
BExS120D	115V AC	180mA	126V

BExS110D	24V DC	265mA	30V
BExS110D	12V DC	195mA	15V
BExS110D	48V DC	130mA	58V
BExS110D	230V AC	56mA	264V
BExS110D	110V AC	93mA	121V
BExS110D	115V AC	110mA	126V

The above table also shows the maximum voltages at which the sounders can be operated.

10) Cable Selection

Cables must be capable of handling the current drawn from all of the units on the line.

SAFETY WARNING: If the high output BExS120D sounders are used at high ambient temperatures, i.e. over +40°C, then the cable entry temperature may exceed +70°C and therefore suitable heat resisting cables must be used, with a rated service temperature of at least 110°C.

11) Earthing

Both AC and DC sounder units must be connected to a good quality earth. The units are provided with internal and external-earthing terminals, which are, both located on the terminal chamber section of the unit (see figures 2 and 3).

When using the internal earth terminal ensure that the stainless steel M4 flat washer is between the incoming earth wire and the enclosure.

When using the external earth terminal a cable crimp lug must be used. The cable lug should be located between the two M5 stainless steel flat washers. The M5 stainless steel spring washer must be fixed between the outer flat washer and the M5 stainless steel nut to ensure that the cable lug is secured against loosening and twisting.

12) Cable Glands

The sounders have dual cable gland entries with M20 x1.5 entry threads. 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 EN60079-14:2008 / IEC60079-14:2007.

SAFETY WARNING: If the high output BExS120D sounders are 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 110°C.

If a high IP (Ingress Protection) rating is required then 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.

13) Cable Connections

See drawing C and D

14) Tone Selection and 2nd and 3rd Stage Alarms

See wiring diagram E

15) Volume Control

See drawing F

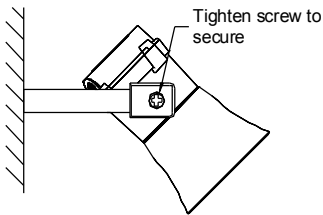
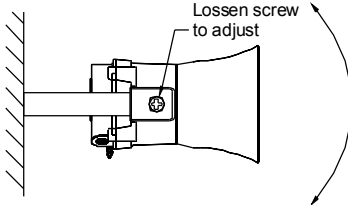
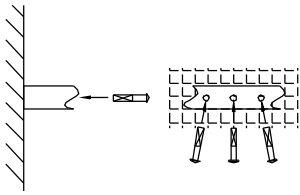
16) End of Line Monitoring (DC Units)

On BExS120D and BExS110D DC units, dc reverse line monitoring can be used if required. All DC sounders have a blocking diode fitted in their supply input lines. An end of line monitoring diode or an end of line monitoring resistor can be connected across the +ve and -ve terminals. If an end of line resistor is used it must have a minimum resistance value of 3k3 ohms and a minimum wattage of 0.5 watts or a minimum resistance value of 500 ohms and a min. wattage of 2 watts.

STONE SELECTION TABLE

Tone Selection		DIP Switch Settings					Stage Selection	
Stage 1	Frequency Description	1	2	3	4	5	Stage 2	Stage 3
1	Continuous 1000Hz <i>Toxic Gas Alarm</i>	0	0	0	0	0	Tone 31	Tone 11
2	Alternating 800/1000Hz at 0.25s intervals	1	0	0	0	0	Tone 17	Tone 5
3	Slow Whoop 500/1200Hz at 0.3Hz with 0.5s gap repeated	0	1	0	0	0	Tone 2	Tone 5
4	Sweeping 800/1000 at 1Hz	1	1	0	0	0	Tone 6	Tone 5
5	Continuous at 2400Hz	0	0	1	0	0	Tone 3	Tone 27
6	Sweeping 2400/2900Hz at 7Hz	1	0	1	0	0	Tone 7	Tone 5
7	Sweeping 2400/2900Hz at 1Hz	0	1	1	0	0	Tone 10	Tone 5
8	Siren 500/1200/500Hz at 0.3Hz	1	1	1	0	0	Tone 2	Tone 5
9	Sawtooth 1200/500Hz at 1Hz	0	0	0	1	0	Tone 15	Tone 2
10	Alternating 2400/2900Hz at 2Hz	1	0	0	1	0	Tone 7	Tone 5
11	Intermittent 1000Hz at 0.5Hz <i>General Alarm</i>	0	1	0	1	0	Tone 31	Tone 1
12	Alternating 800/1000Hz at 0.875Hz	1	1	0	1	0	Tone 4	Tone 5
13	Intermittent 2400Hz at 1Hz	0	0	1	1	0	Tone 15	Tone 5
14	Intermittent 800Hz 0.25s on 1s off	1	0	1	1	0	Tone 4	Tone 5
15	Continuous at 800Hz	0	1	1	1	0	Tone 2	Tone 5
16	Intermittent 660Hz 150mS on, 150mS off	1	1	1	1	0	Tone 18	Tone 5
17	Alternating 544Hz (100mS)/440Hz(400mS)	0	0	0	0	1	Tone 2	Tone 27
18	Intermittent 660Hz 1.8s on, 1.8s off	1	0	0	0	1	Tone 2	Tone 5
19	1400Hz to 1600Hz sweep up over 1s - 1600Hz to 1400Hz sweep down over 0.5s	0	1	0	0	1	Tone 2	Tone 5
20	Continuous 660Hz	1	1	0	0	1	Tone 2	Tone 5
21	Alternating 554/440Hz at 1Hz	0	0	1	0	1	Tone 2	Tone 5
22	Intermittent 554Hz at 0.875Hz	1	0	1	0	1	Tone 2	Tone 5
23	800Hz pulsing at 2Hz	0	1	1	0	1	Tone 6	Tone 5
24	Sweeping 800/1000Hz at 50Hz	1	1	1	0	1	Tone 29	Tone 5
25	Sweeping 2400/2900Hz at 50Hz	0	0	0	1	1	Tone 29	Tone 5
26	Simulated bell sound	1	0	0	1	1	Tone 2	Tone 1
27	Continuous 554Hz	0	1	0	1	1	Tone 26	Tone 5
28	Continuous 440Hz	1	1	0	1	1	Tone 2	Tone 5
29	Sweeping 800/1000Hz at 7Hz	0	0	1	1	1	Tone 7	Tone 5
30	420Hz repeating 0.625s on, 0.625s off <i>Australian alert signal</i>	1	0	1	1	1	Tone 32	Tone 5
31	1200/500Hz at 1 Hz <i>Prepare to Abandon Platform</i>	0	1	1	1	1	Tone 11	Tone 1
32	Sweeping 500/1200Hz 3.75s on, 0.25s off 15Hz	1	1	1	1	1	Tone 26	Tone 1

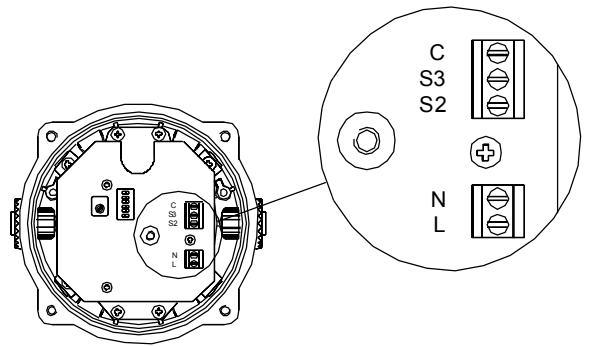
Drawing A



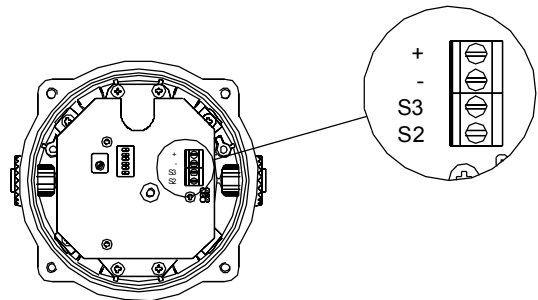
Loosen screw to adjust.
 Løsn skruen for at tilpasse.
 Schroef losdraaien om af te stellen.
 Desserrer la vis pour régler.
 Zum Regulieren Schraube lockern.
 Allentare la vite per poter effettuare la regolazione.
 Løse skruen for å justere.
 Desaperte o parafuso para ajustar.
 Afloje el tornillo para ajustar.
 Lossa skruven för att justera.

Tighten screw to secure.
 Spænd skruen for at fastgøre.
 Schroef aandraaien om vast te zetten.
 Serrer la vis pour une fixation sûre.
 Zum Sichern Schraube anziehen.
 Stringere la vite per il fissaggio.
 Stram skruen for å feste.
 Aperte o parafuso para fixar.
 Apriete el tornillo para asegurar.
 Dra åt skruven för att fästa.

Drawing C

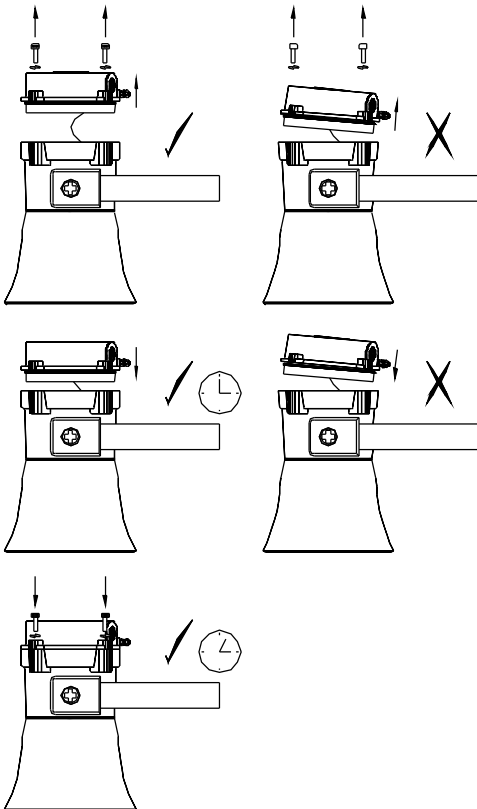


BExS120D AC

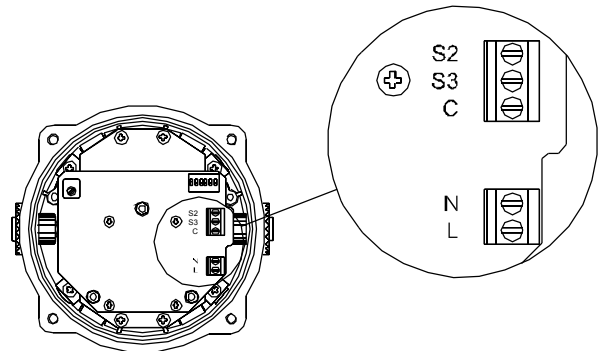


BExS120D DC

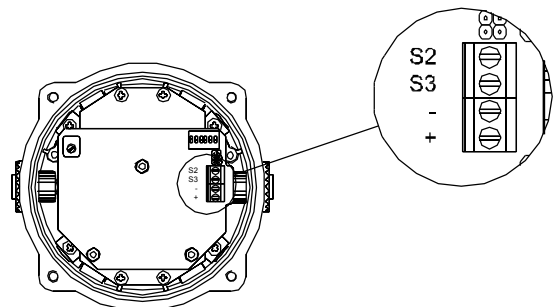
Drawing B



Drawing D



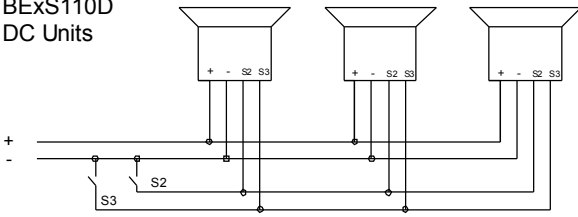
BExS110D AC



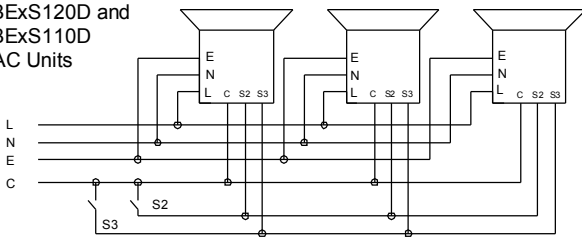
BExS110D DC

Wiring Diagram E

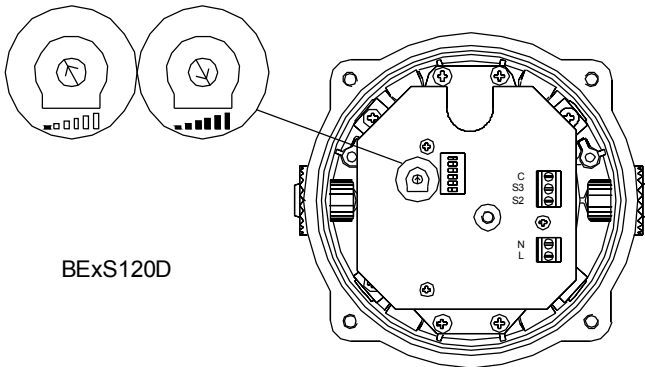
BExS120D and
BExS110D
DC Units



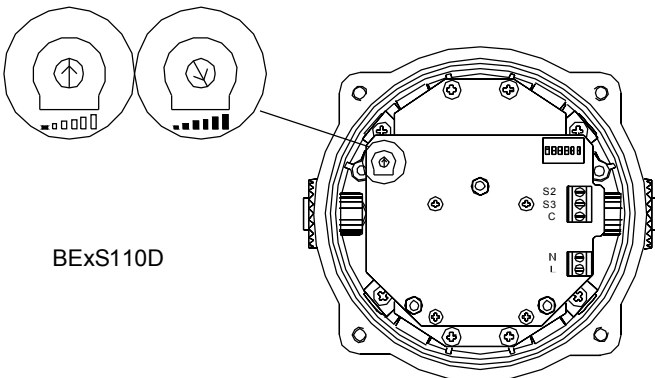
BExS120D and
BExS110D
AC Units



Drawing F



BExS120D



BExS110D

2) Mærkater

Alle enheder har en klassificeringsmærkat, der bærer følgende vigtige oplysninger:

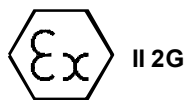
Enhedstypenr. BExS120D eller BExS110D

Indgangsspænding: DC-enheder 12V eller 24V eller 48V
AC-enheder 230V eller 110V eller 115V

Kodes: Ex d IIC T4 for Ta -50°C to +55°C
Ex d IIB T4 for Ta -50°C to +70°C

Certifikatnr. KEMA 99ATEX6312
IECEx KEM 10.0003

Epsilon x:
Udstyrets gruppe
og kategori:



CE-mærke:
Noteret
myndighedsnr.



"Advarsler"

MÅ IKKE ÅBNES
I EKSPLOSIV
GASATMOSFÆRE

DÆKBOLTE KLASSE A4-80

BRUG VARMEBESTANDIGE KABLER OG PAKDÅSER
(Mærket 110°C) VED OMGIVENDE TEMP. OVER 40°C

4) Installationskrav

Soundere skal installeres i overensstemmelse med følgende eller tilsvarende standarder.

EN60079-14:2008 Elektriske installationer i sundhedsfarlige områder (undtagen miner)
IEC60079-14:2007 (Ed4)

EN60079-10:2003 Klassifikation af sundhedsfarlige områder
IEC60079-10:2008 (Ed1)

Installation bør kun udføres af kompetent personale og under iagttagelse af lokale regler.

5) Zone-, gasgruppe-, kategori- og temperaturklassifikation

Enhederne kan installeres på områder med følgende forhold:

Områdeklassifikation:

Zone 1	Ekspliv gas- og luftblanding kan forekomme ved normal drift.
Zone 2	Ekspliv gas- og luftblanding forekommer sandsynligvis ikke, og hvis det sker, vil det kun være for en kort tidsperiode.

Gasgrupperinger:

Gruppe IIA	Propan
Gruppe IIB	Ethylen
GruppellC < +55°C	Hydrogen og acetylen

Udstyrskategori: 2G

Temperaturklassifikation:

T1	400° C
T2	300° C
T3	200° C
T4	135° C

Omgivende temperatur:

-50°C til +55°C Gasgrupperinger IIA, IIB og IIC
-50°C til +70°C Gasgrupperinger IIA og IIB

6) Sounderplacering og -montering

Se illustration A

7) Sikkerhedsadvarsel (Elektrostatisk sundhedsfare)

Delen med det akustiske horn er fremstillet af ABS-plast, og for at undgå en mulig ELEKTROSTATISK LADNING må enheden kun rengøres med en fugtig klud.

8) Adgang til flammesikker indkapsling

Se illustration B

Bemærk, at de fire **M6 skruer er klasse A4-80, rustfri stål, og der må kun anvendes skruer af denne kategori på sounderne**. Det er derfor vigtigt, at skruerne og deres fjederskiver opbevares på et sikkert sted under installation.

9) Strømforsyningsudvalg

Systemets strømforsyning skal have den nødvendige kapacitet for at kunne yde indgangsstrøm til alle soundere forbundet til systemet.

Nedenstående tabel viser indgangsstrømbehovet for forskellige sounderenheder:

Enhedstype	Indgangsspænding	Indgangsstrøm	Maks. I/P Volt
BExS120D	24V DC	800mA	30V
BExS120D	12V DC	850mA	15V
BExS120D	48V DC	420mA	58V
BExS120D	230V AC	90mA	264V
BExS120D	110V AC	200mA	121V
BExS120D	115V AC	180mA	126V

BExS110D	24V DC	265mA	30V
BExS110D	12V DC	195mA	15V
BExS110D	48V DC	130mA	58V
BExS110D	230V AC	56mA	264V
BExS110D	110V AC	93mA	121V
BExS110D	115V AC	110mA	126V

Ovenstående tabel viser også maksimalspændingen, som sounderne kan betjenes ved.

10) Kabeludvalg

Kablerne skal kunne håndtere den samlede strøm fra alle anvendte enheder.

SIKKERHEDSADVARSEL: Hvis de højtydende BExS120D-soundere anvendes ved høje omgivende temperaturer, dvs. over +40°C, kan kablets indgangstemperatur overstige +70°C, og der skal derfor anvendes passende varmebestandige kabler med en nominel arbejdstemperatur på mindst 110°C.

11) Jordforbindelse

Både AC- og DC-souderenheder skal være forbundet til en jordforbindelse af høj kvalitet. Enhederne har indvendige og udvendige jordklemmer, der begge befinder sig på enhedens klemkammerdel (se figur 2 og 3).

Når den udvendige jordklemmel anvendes, skal der bruges en kabelklemmesko. Kabelskoen skal befinde sig mellem to flade M5-spændeskiverr af rustfrit stål. De rustfri stål M5-spændeskiver skal fastgøres mellem den ydre flade skive og M5-møtrikken af rustfrit stål for at sikre, at kabelskoen ikke løsner eller vrider sig.

12) Kabelafslutning

Sounderne har dobbelte kabelafslutningsindgange med M20 x1,5 indgangsgevind. Kun kabelafslutninger godkendt til Ex 'd'-applikationer må anvendes og skal passe til den type kabel, der anvendes samt opfylde kravene i Ex 'd', standard for flammesikker installation EN60079-14:2008 / IEC60079-14:2007.

SIKKERHEDSADVARSEL: Hvis de højtydende BExS120D-soundere anvendes ved høje omgivende temperaturer, dvs. temperaturer over +40°C, kan kablets indgangstemperatur overstige +70°C, og der skal derfor anvendes passende varmebestandige kabler med en nominel arbejdstemperatur på mindst 110°C.

Hvis der kræves en høj IP-klassificering (beskyttelse mod indtrængen), skal der monteres en egnet tætningskive under kabelafslutningen.

Når der kun anvendes en kabelindgang, skal den anden lukkes med en Ex 'd', flammesikker blindprop, der skal være korrekt godkendt i overensstemmelse med installationskravene.

13) Kabelforbindelser

Se illustrationen C og D

14) Tonevalg og 2. og 3. niveau alarmer

Se ledningsdiagram E

15) Volumenkontrol

Se illustration F

16) Linielutovervågning (DC-enheder)

På BExS120D og BExS110D DC-enheder kan der anvendes returlinieovervågning, efter behov. Alle DC-soundere har en spærrediode i strømindgangsledningerne. En diode til linielutovervågning eller en linielutmodstand kan forbindes på tværs af +ve- og -ve- klemmerne. Hvis en linielutmodstand anvendes, skal den have en minimum modstandsværdi på 3k3 ohm og et minimum watt-tal på 0,5 watt eller en minimum modstandsværdi på 500 ohm og et minimum watt-tal på 2 watt.

TONEVALGSTABEL

Tone Selection		DIP Switch Settings					Stage Selection	
Stage 1	Frequency Description	1	2	3	4	5	Stage 2	Stage 3
1	Continuous 1000Hz <i>Toxic Gas Alarm</i>	0	0	0	0	0	Tone 31	Tone 11
2	Alternating 800/1000Hz at 0.25s intervals	1	0	0	0	0	Tone 17	Tone 5
3	Slow Whoop 500/1200Hz at 0.3Hz with 0.5s gap repeated	0	1	0	0	0	Tone 2	Tone 5
4	Sweeping 800/1000 at 1Hz	1	1	0	0	0	Tone 6	Tone 5
5	Continuous at 2400Hz	0	0	1	0	0	Tone 3	Tone 27
6	Sweeping 2400/2900Hz at 7Hz	1	0	1	0	0	Tone 7	Tone 5
7	Sweeping 2400/2900Hz at 1Hz	0	1	1	0	0	Tone 10	Tone 5
8	Siren 500/1200/500Hz at 0.3Hz	1	1	1	0	0	Tone 2	Tone 5
9	Sawtooth 1200/500Hz at 1Hz	0	0	0	1	0	Tone 15	Tone 2
10	Alternating 2400/2900Hz at 2Hz	1	0	0	1	0	Tone 7	Tone 5
11	Intermittent 1000Hz at 0.5Hz <i>General alarm</i>	0	1	0	1	0	Tone 31	Tone 1
12	Alternating 800/1000Hz at 0.875Hz	1	1	0	1	0	Tone 4	Tone 5
13	Intermittent 2400Hz at 1Hz	0	0	1	1	0	Tone 15	Tone 5
14	Intermittent 800Hz 0.25s on 1s off	1	0	1	1	0	Tone 4	Tone 5
15	Continuous at 800Hz	0	1	1	1	0	Tone 2	Tone 5
16	Intermittent 660Hz 150mS on, 150mS off	1	1	1	1	0	Tone 18	Tone 5
17	Alternating 544Hz (100mS)/440Hz(400mS)	0	0	0	0	1	Tone 2	Tone 27
18	Intermittent 660Hz 1.8s on, 1.8s off	1	0	0	0	1	Tone 2	Tone 5
19	1400Hz to 1600Hz sweep up over 1s - 1600Hz to 1400Hz sweep down over 0.5s	0	1	0	0	1	Tone 2	Tone 5
20	Continuous 660Hz	1	1	0	0	1	Tone 2	Tone 5
21	Alternating 554/440Hz at 1Hz	0	0	1	0	1	Tone 2	Tone 5
22	Intermittent 554Hz at 0.875Hz	1	0	1	0	1	Tone 2	Tone 5
23	800Hz pulsing at 2Hz	0	1	1	0	1	Tone 6	Tone 5
24	Sweeping 800/1000Hz at 50Hz	1	1	1	0	1	Tone 29	Tone 5
25	Sweeping 2400/2900Hz at 50Hz	0	0	0	1	1	Tone 29	Tone 5
26	Simulated bell sound	1	0	0	1	1	Tone 2	Tone 1
27	Continuous 554Hz	0	1	0	1	1	Tone 26	Tone 5
28	Continuous 440Hz	1	1	0	1	1	Tone 2	Tone 5
29	Sweeping 800/1000Hz at 7Hz	0	0	1	1	1	Tone 7	Tone 5
30	420Hz repeating 0.625s on, 0.625s off <i>Australian alert signal</i>	1	0	1	1	1	Tone 32	Tone 5
31	1200/500Hz at 1 Hz <i>Prepare to Abandon Platform</i>	0	1	1	1	1	Tone 11	Tone 1
32	Sweeping 500/1200Hz 3.75s on, 0.25s off 15Hz	1	1	1	1	1	Tone 26	Tone 1

2) Labels

Alle eenheden zijn voorzien van een label, waarop de volgende belangrijke informatie staat:

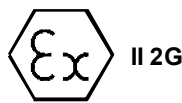
Typenr. eenheid: BExS120D of BExS110D

Ingangsspanning: DC-eenheden 12 V of 24 V of 48 V
AC-eenheden 230 V of 110 V of 115 V

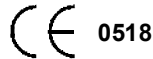
Codes: Ex d IIC T4 for Ta -50°C to +55°C
Ex d IIB T4 for Ta -50°C to +70°C

Certificaatnr. KEMA 99ATEX6312
IECEx KEM 10.0003

Epsilon x:
De uitrustingsgroep
Categorie



CE-certificaat:
Instantienr.



“Waarschuwingen” NIET OPENEN INDIEN EEN
ONTPLOFBARE GAS-ATMOSFEER
AANWEZIG IS

DEKSELBOUTEN KLASSE A4-80

BIJ OMGEVINGSTEMP. HOGER DAN 40° C
HITTEBESTENDIGE KABELS EN KABELWARTELS
GEBRUIKEN (geschikt voor 110° C)

4) Vereisten voor installatie

Alarmgevers moeten worden geïnstalleerd in overeenstemming met de volgende of equivalente normen.

EN60079-14:2008 Elektrische installaties in gevaarlijke
IEC60079-14:2007 (Ed4) omgevingen (anders dan mijnen)

EN60079-10:2003 Classificatie van gevaarlijke
IEC60079-10:2008 (Ed1) omgevingen

Installatie mag alleen worden uitgevoerd door deskundig personeel en met inachtneming van plaatselijke gedragscodes en praktijkrichtlijnen.

5) Classificatie t.a.v. zones, gasgroep, categorie en temperatuur

De eenheden kunnen worden geïnstalleerd op plaatsen waar de volgende omstandigheden heersen:

Classificatie van ruimte:

Zone 1	Ontpofbaar gas-/luchtmengsel is waarschijnlijk bij normaal bedrijf.
Zone 2	Ontpofbaar gas-/luchtmengsel is onwaarschijnlijk, en indien dit ontstaat zal het waarschijnlijk slechts korte tijd aanwezig blijven.

Gasgroeperingen:

Groep IIA	Propana
Groep IIB	Ethyleen
Groep IIC <+55°C	Waterstof en acetyleen

Apparatuurcategorie: 2G

Temperatuurclassificatie:

T1	400° C
T2	300° C
T3	200° C
T4	135° C

Omgevingstemperatuur:

-50° C tot +55° C Gasgroeperingen IIA, IIB en IIC
-50° C tot +70° C Gasgroeperingen IIA en IIB

6) Plaatsing en bevestiging van alarmgever

Zie tekening A

7) Veiligheidswaarschuwing (Elektrostaticsch gevaar)

Het akoestische hoorngedeelte is vervaardigd uit ABS plastic. Om ELEKTROSTATISCHE LADING te voorkomen mag de eenheid derhalve alleen met een vochtige doek worden gereinigd.

8) Toegang tot de vuurvaste behuizing

Zie tekening B

Houdt u er rekening mee dat de vier **M6-schroeven van Klasse A4-80 roestvrij staal zijn en dat op deze alarmgevers alleen schroeven van deze categorie kunnen worden gebruikt.** Het is derhalve belangrijk dat deze schroeven en de bijbehorende veerringen tijdens de installatie op een veilige plaats worden bewaard.

9) Kiezen van voedingsbron

De voedingsbron van het systeem dient voldoende capaciteit te hebben om alle alarmgevers die op het systeem zijn aangesloten van elektrische voeding te voorzien.

In de onderstaande tabel staat vermeld welke ingangsstroom de verschillende alarmgevers trekken:

Type eenheid	Ingangsspanning	Ingangsstroom	Max. I/P volt
BExS120D	24 V DC	800 mA	30 V
BExS120D	12 V DC	850 mA	15 V
BExS120D	48 V DC	420 mA	58 V
BExS120D	230 V AC	90 mA	264 V
BExS120D	110 V AC	200 mA	121 V
BExS120D	115 V AC	180 mA	126 V

BExS110D	24 V DC	265 mA	30 V
BExS110D	12 V DC	195 mA	15 V
BExS110D	48 V DC	130 mA	58 V
BExS110D	230 V AC	56 mA	264 V
BExS110D	110 V AC	93 mA	121 V
BExS110D	115 V AC	110 mA	126 V

In de bovenstaande tabel wordt tevens vermeld op welke maximumspanningen de alarmgevers kunnen werken.

10) Kiezen van kabels

Kabels moeten bestand zijn tegen de stroom die door alle eenheden op de lijn wordt getrokken.

VEILIGHEIDSWAARSCHUWING: als de BExS120D alarmgevers met hoge uitvoer worden gebruikt bij hoge omgevingstemperaturen, m.a.w. hoger dan +40° C, dan kan de temperatuur bij de kabelingang hoger zijn dan +70°C en moeten dus geschikte hittebestendige kabels worden gebruikt, met een nominale werktemperatuur van ten minste 110° C.

11) Aarding

Zowel alarmgevers op wisselstroom als gelijkstroom moeten worden aangesloten op aarding van goede kwaliteit. De eenheden worden geleverd met interne en externe aardaansluitingen, beide aangebracht op het gedeelte met de aansluitkast op de eenheid (zie Afb. 2 en 3).

Bij gebruik van de externe aardaansluiting dient een kabelkrimpous te worden gebruikt. De kabelous moet worden aangebracht tussen de twee M5 roestvrijstalen platte borgschijfjes. De M5 roestvrijstalen veerring moet worden bevestigd tussen het buitenste platte borgschijfje en de M5 roestvrijstalen moer, zodat de kabelous goed is vastgezet en niet kan draaien of losraken.

12) Kabelwartels

De alarmgevers zijn voorzien van dubbele kabelwartelingen met M20 x 1,5 ingangsschroefdraad. Er kunnen alleen kabelwartels worden gebruikt die zijn goedgekeurd voor Ex 'd'-toepassingen, geschikt zijn voor het bekabelingstype dat wordt gebruikt en voldoen aan de vereisten van de norm EN60079-14:2008 / IEC60079-14:2007 ten aanzien van de Ex 'd' vuurvaste installatie.

VEILIGHEIDSWAARSCHUWING: als de BExS120D alarmgevers met hoge uitvoer worden gebruikt bij hoge omgevingstemperaturen, m.a.w. hoger dan +40° C, dan kan de temperatuur bij de kabelingang hoger zijn dan +70°C en moeten dus geschikte hittebestendige kabelwartels worden gebruikt, met een nominale werktemperatuur van ten minste 110° C.

Indien een hoge IP-waarde is vereist, dient een geschikte afdichtingsring onder de kabelwartel te worden aangebracht.

Indien slechts een kabelingang wordt gebruikt, dient de andere te worden afgesloten met een Ex 'd' vuurvaste afdichtplug, die moet zijn goedgekeurd voor de installatievereisten.

13) Kabelaansluitingen

Zie tekening C en D

14) Toonkeuze en alarmen in 2e en 3e fase

Zie bedradingschema E

15) Volumeregeling

Zie tekening F

16) Bewaking aan einde van lijn (DC-eenheden)

Op BExS120D en BExS110D DC-eenheden kan desgewenst omgekeerde gelijkstroomlijnbewaking worden gebruikt. Alle DC-alarmgevers zijn uitgerust met een blokkeringsdiode in de ingangslijnen voor de elektrische voeding. Een bewakingsdiode of bewakingsweerstand aan het einde van de lijn kan worden aangesloten op de +ve en -ve contacten. Indien een weerstand aan het einde van de lijn wordt gebruikt, dient deze een minimumweerstandswaarde van 3k3 ohm en een minimumwattage van 0,5 watt te hebben, of een minimumweerstandswaarde van 500 ohm en een minimumwattage van 2 watt.

TABEL VOOR TOONKEUZE

Tone Selection		DIP Switch Settings	Stage Selection	
Stage 1	Frequency Description	1 2 3 4 5	Stage 2	Stage 3
1	Continuous 1000Hz <i>Toxic Gas Alarm</i>	0 0 0 0 0	Tone 31	Tone 11
2	Alternating 800/1000Hz at 0.25s intervals	1 0 0 0 0	Tone 17	Tone 5
3	Slow Whoop 500/1200Hz at 0.3Hz with 0.5s gap repeated	0 1 0 0 0	Tone 2	Tone 5
4	Sweeping 800/1000 at 1Hz	1 1 0 0 0	Tone 6	Tone 5
5	Continuous at 2400Hz	0 0 1 0 0	Tone 3	Tone 27
6	Sweeping 2400/2900Hz at 7Hz	1 0 1 0 0	Tone 7	Tone 5
7	Sweeping 2400/2900Hz at 1Hz	0 1 1 0 0	Tone 10	Tone 5
8	Siren 500/1200/500Hz at 0.3Hz	1 1 1 0 0	Tone 2	Tone 5
9	Sawtooth 1200/500Hz at 1Hz	0 0 0 1 0	Tone 15	Tone 2
10	Alternating 2400/2900Hz at 2Hz	1 0 0 1 0	Tone 7	Tone 5
11	Intermittent 1000Hz at 0.5Hz <i>General alarm</i>	0 1 0 1 0	Tone 31	Tone 1
12	Alternating 800/1000Hz at 0.875Hz	1 1 0 1 0	Tone 4	Tone 5
13	Intermittent 2400Hz at 1Hz	0 0 1 1 0	Tone 15	Tone 5
14	Intermittent 800Hz 0.25s on 1s off	1 0 1 1 0	Tone 4	Tone 5
15	Continuous at 800Hz	0 1 1 1 0	Tone 2	Tone 5
16	Intermittent 660Hz 150mS on, 150mS off	1 1 1 1 0	Tone 18	Tone 5
17	Alternating 544Hz (100mS)/440Hz(400mS)	0 0 0 0 1	Tone 2	Tone 27
18	Intermittent 660Hz 1.8s on, 1.8s off	1 0 0 0 1	Tone 2	Tone 5
19	1400Hz to 1600Hz sweep up over 1s - 1600Hz to 1400Hz sweep down over 0.5s	0 1 0 0 1	Tone 2	Tone 5
20	Continuous 660Hz	1 1 0 0 1	Tone 2	Tone 5
21	Alternating 554/440Hz at 1Hz	0 0 1 0 1	Tone 2	Tone 5
22	Intermittent 554Hz at 0.875Hz	1 0 1 0 1	Tone 2	Tone 5
23	800Hz pulsing at 2Hz	0 1 1 0 1	Tone 6	Tone 5
24	Sweeping 800/1000Hz at 50Hz	1 1 1 0 1	Tone 29	Tone 5
25	Sweeping 2400/2900Hz at 50Hz	0 0 0 1 1	Tone 29	Tone 5
26	Simulated bell sound	1 0 0 1 1	Tone 2	Tone 1
27	Continuous 554Hz	0 1 0 1 1	Tone 26	Tone 5
28	Continuous 440Hz	1 1 0 1 1	Tone 2	Tone 5
29	Sweeping 800/1000Hz at 7Hz	0 0 1 1 1	Tone 7	Tone 5
30	420Hz repeating 0.625s on, 0.625s off <i>Australian alert signal</i>	1 0 1 1 1	Tone 32	Tone 5
31	1200/500Hz at 1 Hz <i>Prepare to Abandon Platform</i>	0 1 1 1 1	Tone 11	Tone 1
32	Sweeping 500/1200Hz 3.75s on, 0.25s off 15Hz	1 1 1 1 1	Tone 26	Tone 1

2) Marquage

Les caractéristiques nominales de toutes les unités figurent sur une étiquette comportant les informations importantes suivantes :

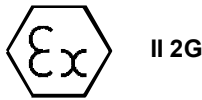
N° de type d'unité : BExS120D ou BExS110D

Tension d'entrée : Unités CC 12 V, 24 V ou 48 V
Unités CA 230 V, 110 V ou 115 V

Codes: Ex d IIC T4 for Ta -50°C to +55°C
Ex d IIB T4 for Ta -50°C to +70°C

N° certificat : KEMA 99ATEX6312
IECEX KEM 10.0003

Epsilon x :
Groupe d'équipement
catégorie du gaz :



Marquage CE :
N° de l'organisme
notifié



"Avertissements" NE PAS OUVRIR DANS UNE ATMOSPHERE
CONTENANT UN GAZ EXPLOSIF

BOULONS DE COUVERCLE DE CLASSE A4-80

UTILISER DES CABLES ET DES PRESSE-ETOUPE
RESISTANTS A LA CHALEUR (Valeur nominale 110°C)
A DES TEMPERATURES AMBIANTES
SUPERIEURES A 40°C

4) Spécifications d'installation

Les alarmes sonores doivent être installées selon les normes suivantes, ou des équivalents.

EN60079-14:2008 Installations électriques dans des
IEC60079-14:2007 (Ed4) zones dangereuses (autres que des
mines)
EN60079-10:2003 Classification des zones dangereuses
IEC60079-10:2008 (Ed1)

L'installation doit être effectuée uniquement par un personnel compétent et conformément aux codes de pratique locaux.

5) Classification des zones, du groupe et de la catégorie de gaz et des températures

Les unités peuvent être installées dans des endroits respectant les conditions suivantes :

Classification de zone :

Zone 1	Mélange d'air et de gaz explosif pouvant survenir en condition normale.
Zone 2	Mélange d'air et de gaz explosif ne pouvant pas survenir et qui, dans le cas contraire, serait présent que très brièvement.

Groupes de gaz :

Groupe IIA	Propane
Groupe IIB	Ethylène
Groupe IIC <+55°C	Hydrogène et Acétylène

Catégorie de matériel : 2G

Classification des températures :

T1	400°C
T2	300°C
T3	200°C
T4	135°C

Plage de températures ambiantes :

-50°C à +55°C Groupes de gaz IIA, IIB et IIC
-50°C à +70°C Groupes de gaz IIA et IIB

6) Assemblage et emplacement de l'alarme sonore

Se reporter au schéma A

7) Avertissement de sécurité (Danger électrostatique)

Le pavillon acoustique est composé de plastique ABS ; c'est pourquoi l'unité doit être nettoyée avec un chiffon humide afin d'éviter tout risque de CHOC ELECTROSTATIQUE.

8) Accès au boîtier antidéflagrant

Se reporter au schéma B

Remarque : les quatre vis M6 sont en acier inoxydable de classe A4-80 et seules des vis de ce type doivent être utilisées sur ces alarmes sonores. C'est pourquoi il est important de les conserver, ainsi que leurs rondelles à ressort, en un endroit sûr pendant l'installation.

9) Sélection de l'alimentation électrique

L'alimentation électrique du système doit posséder la capacité nécessaire pour procurer le courant d'entrée à toutes les alarmes sonores connectées au système.

Le tableau suivant indique le courant d'entrée pour les diverses unités d'alarme sonore :

Type d'unité	Tension d'entrée	Courant d'entrée	Volts I/P max.
BExS120D	24 V CC	800 mA	30 V
BExS120D	12 V CC	850 mA	15 V
BExS120D	48 V CC	420 mA	58 V
BExS120D	230 V CA	90 mA	264 V
BExS120D	110 V CA	200 mA	121 V
BExS120D	115 V CA	180 mA	126 V

BExS110D	24 V CC	265 mA	30 V
BExS110D	12 V CC	195 mA	15 V
BExS110D	48 V CC	130 mA	58 V
BExS110D	230 V CA	56 mA	264 V
BExS110D	110 V CA	93 mA	121 V
BExS110D	115 V CA	110 mA	126 V

Le tableau ci-dessus indique également les tensions maximales de fonctionnement des alarmes sonores.

10) Sélection des câbles

Les câbles doivent pouvoir prendre en charge le courant utilisé par toutes les unités sur la ligne.

AVERTISSEMENT DE SECURITE : si les alarmes sonores BExS120D à haut rendement sont utilisées à des températures ambiantes élevées, c'est-à-dire supérieures à +40°C, la température d'entrée du câble peut excéder +70°C et des câbles résistants à la chaleur doivent être utilisés, d'une température de service assignée de 110°C minimum.

11) Mise à la terre

Les unités d'alarme sonore CA et CC doivent être connectées à un système de mise à la terre de bonne qualité. Les unités sont fournies avec des bornes de mise à la terre externe et interne qui sont toutes les deux situées sur la section de chambre terminale de l'unité (se reporter aux figures 2 et 3).

Lors de l'utilisation de la borne de mise à la terre externe, employer une cosse à sertir. La cosse à sertir doit être située entre les deux rondelles plates M5 en acier inoxydable. La rondelle à ressort M5 en acier inoxydable doit être fixée entre la rondelle plate externe et l'écrou M5 en acier inoxydable afin que la cosse à sertir ne se desserre ni ne se torde.

12) Presse-étoupe

Les alarmes sonores ont deux entrées de presse-étoupe avec des filetages d'entrée M20 x1,5. Seuls les presse-étoupe approuvés pour les applications Ex 'd' peuvent être utilisés, et ils doivent être adéquats pour le type de câble utilisé et répondre aux exigences d'installation d'antidéflagrant Ex 'd' de norme EN60079-14:2008 / IEC60079-14:2007.

AVERTISSEMENT DE SECURITE : si les alarmes sonores BExS120D à haut rendement sont utilisées à des températures ambiantes élevées, c'est-à-dire supérieures à +40°C, la température d'entrée du câble peut excéder +70°C et des câbles résistants à la chaleur doivent être utilisés, d'une température de service assignée de 110°C minimum.

Si un degré de protection d'entrée (IP) élevé est requis, alors une rondelle d'étanchéité adéquate doit être installée sous le presse-étoupe.

Lorsqu'une seule entrée de câble est utilisée, un bouchon obturateur antidéflagrant Ex 'd', répondant aux exigences d'installation, doit être appliqué sur l'autre entrée.

13) Connexions de câble

Se reporter au schéma C et D

14) Sélection du timbre et alarmes de 2^{ème} et 3^{ème} étape

Se reporter au schéma de câblage E

15) Contrôle du volume

Se reporter au schéma F

16) Contrôle de fin de ligne (Unités CC)

Sur les unités CC BExS120D et BExS110D, un contrôle de ligne inverse cc peut être utilisé si nécessaire. Toutes les alarmes sonores CC possèdent une diode de blocage installée sur leur ligne d'entrée d'alimentation. Une diode de contrôle de fin de ligne ou une résistance de contrôle de fin de ligne peut être connectée sur les bornes positive et négative. En cas d'utilisation d'une résistance de fin de ligne, celle-ci doit avoir une valeur de résistance minimum de 3k3 ohms et une puissance minimum de 0,5 watt ou une résistance minimum de 500 ohms ainsi qu'une puissance minimum de 2 watts.

TABLEAU DE SELECTION DU TIMBRE

Tone Selection		DIP Switch Settings	Stage Selection	
Stage 1	Frequency Description	1 2 3 4 5	Stage 2	Stage 3
1	Continuous 1000Hz <i>Toxic Gas Alarm</i>	0 0 0 0 0	Tone 31	Tone 11
2	Alternating 800/1000Hz at 0.25s intervals	1 0 0 0 0	Tone 17	Tone 5
3	Slow Whoop 500/1200Hz at 0.3Hz with 0.5s gap repeated	0 1 0 0 0	Tone 2	Tone 5
4	Sweeping 800/1000 at 1Hz	1 1 0 0 0	Tone 6	Tone 5
5	Continuous at 2400Hz	0 0 1 0 0	Tone 3	Tone 27
6	Sweeping 2400/2900Hz at 7Hz	1 0 1 0 0	Tone 7	Tone 5
7	Sweeping 2400/2900Hz at 1Hz	0 1 1 0 0	Tone 10	Tone 5
8	Siren 500/1200/500Hz at 0.3Hz	1 1 1 0 0	Tone 2	Tone 5
9	Sawtooth 1200/500Hz at 1Hz	0 0 0 1 0	Tone 15	Tone 2
10	Alternating 2400/2900Hz at 2Hz	1 0 0 1 0	Tone 7	Tone 5
11	Intermittent 1000Hz at 0.5Hz <i>General Alarm</i>	0 1 0 1 0	Tone 31	Tone 1
12	Alternating 800/1000Hz at 0.875Hz	1 1 0 1 0	Tone 4	Tone 5
13	Intermittent 2400Hz at 1Hz	0 0 1 1 0	Tone 15	Tone 5
14	Intermittent 800Hz 0.25s on 1s off	1 0 1 1 0	Tone 4	Tone 5
15	Continuous at 800Hz	0 1 1 1 0	Tone 2	Tone 5
16	Intermittent 660Hz 150mS on, 150mS off	1 1 1 1 0	Tone 18	Tone 5
17	Alternating 544Hz (100mS)/440Hz(400mS)	0 0 0 0 1	Tone 2	Tone 27
18	Intermittent 660Hz 1.8s on, 1.8s off	1 0 0 0 1	Tone 2	Tone 5
19	1400Hz to 1600Hz sweep up over 1s - 1600Hz to 1400Hz sweep down over 0.5s	0 1 0 0 1	Tone 2	Tone 5
20	Continuous 660Hz	1 1 0 0 1	Tone 2	Tone 5
21	Alternating 554/440Hz at 1Hz	0 0 1 0 1	Tone 2	Tone 5
22	Intermittent 554Hz at 0.875Hz	1 0 1 0 1	Tone 2	Tone 5
23	800Hz pulsing at 2Hz	0 1 1 0 1	Tone 6	Tone 5
24	Sweeping 800/1000Hz at 50Hz	1 1 1 0 1	Tone 29	Tone 5
25	Sweeping 2400/2900Hz at 50Hz	0 0 0 1 1	Tone 29	Tone 5
26	Simulated bell sound	1 0 0 1 1	Tone 2	Tone 1
27	Continuous 554Hz	0 1 0 1 1	Tone 26	Tone 5
28	Continuous 440Hz	1 1 0 1 1	Tone 2	Tone 5
29	Sweeping 800/1000Hz at 7Hz	0 0 1 1 1	Tone 7	Tone 5
30	420Hz repeating 0.625s on, 0.625s off <i>Australian alert signal</i>	1 0 1 1 1	Tone 32	Tone 5
31	1200/500Hz at 1 Hz <i>Prepare to Abandon Platform</i>	0 1 1 1 1	Tone 11	Tone 1
32	Sweeping 500/1200Hz 3.75s on, 0.25s off 15Hz	1 1 1 1 1	Tone 26	Tone 1

2) Kennzeichnung

Alle Geräte sind mit einem Typenschild mit den folgenden wichtigen Informationen versehen:-

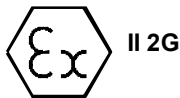
Gerätetyp-Nr. BExS120D oder BExS110D


Eingangsspannung:

Gleichstromgeräte (DC) 12V, 24V oder 48V
 Wechselstromgeräte (AC) 230V, 110V oder 115V

Codes: Ex d IIC T4 for Ta -50°C to +55°C
 Ex d IIB T4 for Ta -50°C to +70°C

Zertifikat-Nr. KEMA 99ATEX6312
 IECEx KEM 10.0003



CE-Kennzeichnung:/
 Bekannt gegebene Nr.  0518

Warnung NICHT IN EXPLOSIVER GAS-ATMOSPHERE
 ÖFFNEN

ABDECKSCHRAUBEN KLASSE A4-80

WÄRMEBESTÄNDIGE KABEL UND
 KABELFLANSCHEN VERWENDEN
 (Nennleistung 110°C) BEI UMGEB.-TEMP. ÜBER 40°C

4) Installationsanforderungen

Die Sounder müssen gemäß den folgenden oder vergleichbaren Standards installiert werden.

EN60079-14:2008 Elektrische Installationen in
 IEC60079-14:2007 (Ed4) Gefahrenbereichen (außer
 Bergwerken)
 EN60079-10:2003 Klassifizierung von Gefahrenbereichen
 IEC60079-10:2008 (Ed1)

Die Installation sollte nur von qualifiziertem Fachpersonal vorgenommen werden. Örtliche anerkannte Verfahren sind zu beachten.

5) Zonen, Gasgruppe, Kategorie und Temperaturklassifizierung

Die Geräte können an Standorten aufgestellt werden, an denen die folgenden Bedingungen vorliegen:-

Klassifizierung des Bereichs:

Zone 1	Bei normalem Betrieb kann mit hoher Wahrscheinlichkeit eine explosive Gas-Luft-Mischung vorliegen.
Zone 2	Explosive Gas-Luft-Mischung unwahrscheinlich und sollte sie doch auftreten, dann nur kurzfristig.

Gasgruppen:

Gruppe IIA	Propan
Gruppe IIB	Äthylen
Gruppe IIC <+55°C	Wasserstoff und Azetylen

Geräteklasse: 2G

Temperaturklassifizierung:

T1	400°C
T2	300°C
T3	200°C
T4	135°C

Umgebungstemperaturbereich:

-50°C bis +55°C Gasgruppen IIA, IIB und IIC
 -50°C bis +70°C Gasgruppen IIA und IIB

6) Sounder-Standort und Montage

Siehe Zeichnung A

7) Sicherheitshinweise (Gefahr der elektrostatischen Aufladung)

Der Trichterlautsprecher ist aus ABS-Kunststoff gefertigt; um eine mögliche ELEKTROSTATISCHE AUFLADUNG zu vermeiden, darf das Gerät nur mit einem feuchten Tuch gereinigt werden.

8) Zugang zum schwer entflammbaren Gehäuse

Siehe Zeichnung B

Hinweis: Die vier **Schrauben M6 sind aus Edelstahl Klasse A4-80 gefertigt. Für diese Sounder sind nur Schrauben dieser Kategorie geeignet.** Diese Schrauben und die zugehörigen Federringe sind beim Einbau daher sorgfältig aufzubewahren.

9) Stromversorgung

Die Stromversorgung der Anlage muss ausreichen, um alle angeschlossenen Sounder mit Eingangsstrom zu versorgen.

Folgende Tabelle zeigt den von den verschiedenen Sounder-Geräten entnommenen Eingangsstrom:-

Gerätetyp	Eingangsspannung	Eingangsstrom	Max. I/P Spannung
BExS120D	24V DC	800 mA	30V
BExS120D	12V DC	850 mA	15V
BExS120D	48V DC	420 mA	58V
BExS120D	230V AC	90 mA	264V
BExS120D	110V AC	200 mA	121V
BExS120D	115V AC	180 mA	126V

BExS110D	24V DC	265 mA	30V
BExS110D	12V DC	195 mA	15V
BExS110D	48V DC	130 mA	58V
BExS110D	230V AC	56 mA	264V
BExS110D	110V AC	93 mA	121V
BExS110D	115V AC	110 mA	126V

Obige Tabelle zeigt auch die maximale Spannung an, mit der die Sounder betrieben werden können.

10) Kabelwahl

Die Kabel müssen den Strom aller angeschlossenen Geräte führen können.

SICHERHEITSHINWEIS: Wenn die BExS120D High-Output-Sounder bei hohen Umgebungstemperaturen eingesetzt werden (d. h. bei über +40°C), kann die Kabeleingangstemperatur +70°C übersteigen. Daher sind geeignete hitzebeständige Kabel mit einer Nennbetriebstemperatur von mindestens 110°C zu verwenden.

11) Erdung

Die Wechsel- und Gleichstrom-Soundergeräte müssen mit einer hochwertigen Erdung verbunden werden. Die Geräte sind mit internen und externen Erdklemmen (am Klemmkammerteil des Geräts, siehe Abb. 2 und 3) versehen.

Bei Verwendung der externen Erdklemme ist ein Quetschkabelschuh zu verwenden, der zwischen den beiden flachen M5-Edelstahl-Unterlegscheiben eingesetzt werden sollte. Die M5-Unterlegscheiben sind zwischen der äußeren flachen Unterlegscheibe und der M5-Edelstahlmutter einzusetzen, um zu gewährleisten, dass der Kabelschuh sich nicht lösen oder verdrehen kann.

12) Kabelflansche

Die Sounder sind mit doppelten Kabelflanscheingängen mit Eingangsgewinden von M20 x1.5 versehen. Es dürfen nur Kabelflansche verwendet werden, die für Ex 'd'-Anwendungen zugelassen sind. Die Kabelflansche müssen für den eingesetzten Kabeltyp geeignet sein und zudem den Anforderungen der Ex 'd'-Norm zur Installation schwer entflammbarer Geräte EN60079-14:2008 / IEC60079-14:2007 entsprechen.

SICHERHEITSHINWEIS: Wenn die BExS120D High-Output-Sounder bei hohen Umgebungstemperaturen eingesetzt werden (d. h. bei über +40°C), kann die Kabeleingangstemperatur +70°C übersteigen. Daher sind geeignete hitzebeständige Kabelflansche mit einer Nennbetriebstemperatur von mindestens 110°C zu verwenden.

Wenn eine hohe IP-Leistung (Eintrittsschutz) erforderlich ist, muss eine geeignete Dichtungsscheibe unter dem Kabelflansch eingesetzt werden.

Wenn nur ein Kabeleingang verwendet wird, muss der andere mit einem schwer entflammaren Ex 'd' Handlochverschluss, der für die Installationsbedingungen zugelassen ist, verschlossen werden.

13) Kabelanschlüsse

Siehe Zeichnung Cund D

14) Tonwahl und Alarm der 2. und 3. Stufe

Siehe Schaltbild E

15) Lautstärkeregelung

Siehe Zeichnung F

16) Überwachung des Leitungsendes (Gleichstromgeräte)

Bei BExS120D- und BExS110D-Gleichstromgeräten kann bei Bedarf eine Wechselstrom-Sperrleitungskontrolle eingesetzt werden. Alle Gleichstrom-Sounder sind mit einer Sperrdiode versehen, die in die Speise-Eingangleitungen eingesetzt ist. Eine Überwachungsdiode oder ein Kontrollwiderstand für das Leitungsende können über die Klemmen +ve und -ve miteinander verbunden werden. Wird ein Widerstand für das Leitungsende verwendet, muss sein Widerstandswert mindestens 3k3 Ohm und die Mindestleistung 0,5 Watt betragen, oder aber es muss ein Widerstandswert von mindestens 500 Ohm und eine Mindestleistung von 2 Watt vorliegen.

TONEVALGSTABEL

Tone Selection		DIP Switch Settings					Stage Selection	
Stage 1	Frequency Description	1	2	3	4	5	Stage 2	Stage 3
1	Continuous 1000Hz <i>Toxic Gas Alarm</i>	0	0	0	0	0	Tone 31	Tone 11
2	Alternating 800/1000Hz at 0.25s intervals	1	0	0	0	0	Tone 17	Tone 5
3	Slow Whoop 500/1200Hz at 0.3Hz with 0.5s gap repeated	0	1	0	0	0	Tone 2	Tone 5
4	Sweeping 800/1000 at 1Hz	1	1	0	0	0	Tone 6	Tone 5
5	Continuous at 2400Hz	0	0	1	0	0	Tone 3	Tone 27
6	Sweeping 2400/2900Hz at 7Hz	1	0	1	0	0	Tone 7	Tone 5
7	Sweeping 2400/2900Hz at 1Hz	0	1	1	0	0	Tone 10	Tone 5
8	Siren 500/1200/500Hz at 0.3Hz	1	1	1	0	0	Tone 2	Tone 5
9	Sawtooth 1200/500Hz at 1Hz	0	0	0	1	0	Tone 15	Tone 2
10	Alternating 2400/2900Hz at 2Hz	1	0	0	1	0	Tone 7	Tone 5
11	Intermittent 1000Hz at 0.5Hz <i>General alarm</i>	0	1	0	1	0	Tone 31	Tone 1
12	Alternating 800/1000Hz at 0.875Hz	1	1	0	1	0	Tone 4	Tone 5
13	Intermittent 2400Hz at 1Hz	0	0	1	1	0	Tone 15	Tone 5
14	Intermittent 800Hz 0.25s on 1s off	1	0	1	1	0	Tone 4	Tone 5
15	Continuous at 800Hz	0	1	1	1	0	Tone 2	Tone 5
16	Intermittent 660Hz 150mS on, 150mS off	1	1	1	1	0	Tone 18	Tone 5
17	Alternating 544Hz (100mS)/440Hz(400mS)	0	0	0	0	1	Tone 2	Tone 27
18	Intermittent 660Hz 1.8s on, 1.8s off	1	0	0	0	1	Tone 2	Tone 5
19	1400Hz to 1600Hz sweep up over 1s - 1600Hz to 1400Hz sweep down over 0.5s	0	1	0	0	1	Tone 2	Tone 5
20	Continuous 660Hz	1	1	0	0	1	Tone 2	Tone 5
21	Alternating 554/440Hz at 1Hz	0	0	1	0	1	Tone 2	Tone 5
22	Intermittent 554Hz at 0.875Hz	1	0	1	0	1	Tone 2	Tone 5
23	800Hz pulsing at 2Hz	0	1	1	0	1	Tone 6	Tone 5
24	Sweeping 800/1000Hz at 50Hz	1	1	1	0	1	Tone 29	Tone 5
25	Sweeping 2400/2900Hz at 50Hz	0	0	0	1	1	Tone 29	Tone 5
26	Simulated bell sound	1	0	0	1	1	Tone 2	Tone 1
27	Continuous 554Hz	0	1	0	1	1	Tone 26	Tone 5
28	Continuous 440Hz	1	1	0	1	1	Tone 2	Tone 5
29	Sweeping 800/1000Hz at 7Hz	0	0	1	1	1	Tone 7	Tone 5
30	420Hz repeating 0.625s on, 0.625s off <i>Australian alert signal</i>	1	0	1	1	1	Tone 32	Tone 5
31	1200/500Hz at 1 Hz <i>Prepare to Abandon Platform</i>	0	1	1	1	1	Tone 11	Tone 1
32	Sweeping 500/1200Hz 3.75s on, 0.25s off 15Hz	1	1	1	1	1	Tone 26	Tone 1

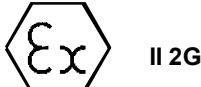
2) Marchio

Tutte le unità sono dotate di etichetta contenente le seguenti importanti informazioni:-

N. tipo unità BExS120D o BExS110D
 Tensione in ingresso: Unità CC 12 V o 24 V o 48 V
 Unità CA 230 V o 110 V o 115 V

Codice: Ex d IIC T4 for Ta -50°C to +55°C
 Ex d IIB T4 for Ta -50°C to +70°C

N. certificato KEMA 99ATEX6312
 IECEx KEM 10.0003

Epsilon x:
 Gruppo e categoria
 apparecchiatura 

Marchio CE:  0518
 N. notifica

“Attenzione” NON APRIRE L'ATTREZZATURA IN
 PRESENZA DI GAS ESPLOSIVI NELL'ARIA

COPRIRE I BULLONI CON UNA COPERTURA
 CLASSE A4-80

USARE CAVI E PREMISTOPPA PER CAVI RESISTENTI AL
 CALORE (temp. nominale 110 °C) SE LA
 TEMPERATURA AMB. È SUPERIORE A 40 °C

4) Requisiti di installazione

Le sirene devono essere installate in conformità con i seguenti standard o standard equivalenti.

EN60079-14:2008 Installazioni elettriche in aree
 IEC60079-14:2007 (Ed4) pericolose (tranne che nelle miniere)

EN60079-10:2003 Classificazione delle aree pericolose
 IEC60079-10:2008 (Ed1)

L'installazione deve essere eseguita da personale competente e devono essere applicati tutti i codici professionali I °Cali.

5) Classificazione delle zone, dei gruppi di gas, delle categorie e delle temperature

Le unità possono essere installate in ambienti che presentano le seguenti condizioni:-

Classificazione delle aree:

Zona 1	È probabile la presenza di gas esplosivo durante il normale funzionamento.
Zona 2	Non è probabile che sia presente gas esplosivo, e se esso dovesse essere presente, potrà esserlo solo per un breve periodo di tempo.

Gruppi di gas:

Gruppo IIA	Propano
Gruppo IIB	Etilene
Gruppo IIC < +55°C	Idrogeno e Acetilene

Categoria di attrezzature: 2G

Classificazione delle temperature:

T1	400 °C
T2	300 °C
T3	200 °C
T4	135 °C

Intervallo della temperatura ambientale:

da -50 °C a +55 °C Gruppi di gas IIA, IIB e IIC
 da -50 °C a +70 °C Gruppi di gas IIA e IIB

6) Posizione e montaggio delle sirene

Vedere figura A

7) Avviso di sicurezza (Pericolo di cariche elettrostatiche)

La tromba acustica è in plastica ABS; quindi, onde evitare possibili CARICHE ELETTROSTATICHE, l'unità deve essere pulita solo con un panno umido.

8) Accesso al sistema antincendio

Vedere figura B

Le quattro viti M6 sono in acciaio inossidabile classe A4-80; su queste sirene possono essere usate solo viti di questa categoria. Quindi è importante che queste viti e le relative rondelle a molla siano conservate in un luogo sicuro durante l'installazione.

9) Scelta dell'alimentazione

L'alimentazione deve essere in grado di fornire una corrente in ingresso a tutte le sirene collegate al sistema.

La seguente tabella mostra la corrente in ingresso prelevata da varie unità sirene:-

Tipo unità	Tensione in ingresso	Corrente in ingresso	Volt I/P max.
BExS120D	24 V CC	800 mA	30 V
BExS120D	12 V CC	850 mA	15 V
BExS120D	48 V CC	420 mA	58 V
BExS120D	230 V CA	90 mA	264 V
BExS120D	110 V CA	200 mA	121 V
BExS120D	115 V CA	180 mA	126 V

BExS110D	24 V CC	265 mA	30 V
BExS110D	12 V CC	195 mA	15 V
BExS110D	48 V CC	130 mA	58 V
BExS110D	230 V CA	56 mA	264 V
BExS110D	110 V CA	93 mA	121 V
BExS110D	115 V CA	110 mA	126 V

La tabella sopra riportata mostra inoltre le tensioni massime previste per il funzionamento delle sirene.

10) Scelta dei cavi

I cavi devono essere capaci di sostenere la corrente proveniente da tutte le unità presenti sulla linea.

AVVISO DI SICUREZZA: Se le sirene BExS120D ad alta emissione vengono utilizzate in ambienti a temperature elevate, ad esempio superiori a +40 °C, la temperatura in ingresso dei cavi può superare +70 °C, per cui occorre utilizzare cavi adeguati resistenti al calore, con una temperatura nominale di esercizio di almeno 110 °C.

11) Collegamento di terra

Sia le unità sirene CA sia quelle CC devono essere collegate correttamente a terra. Le unità vengono fornite con morsetti di collegamento a terra interni ed esterni, entrambi situati sulla morsettiera dell'unità (vedere figure 2 e 3).

Quando si utilizza il morsetto di collegamento a terra esterno, occorre utilizzare un capocorda aggraffato per cavi. Il capocorda deve essere posto tra due rondelle piatte in acciaio inossidabile M5. La rondella a molla in acciaio inossidabile M5 deve essere fissata tra la rondella piatta esterna e il dado in acciaio inossidabile M5, in modo da garantire che il capocorda sia fissato saldamente e che quindi non possa allentarsi o attorcigliarsi.

12) Premistoppa per cavi

Le sirene sono dotate di due ingressi per premistoppa con filettature M20 x1.5. Utilizzare solo premistoppa approvati per le applicazioni Ex 'd'; essi inoltre devono essere adeguati al tipo di cavo in uso e devono rispettare gli standard di installazione antincendio Ex 'd' EN60079-14:2008 / IEC60079-14:2007.

AVVISO DI SICUREZZA: Se le sirene BExS120D ad alta emissione vengono utilizzate in ambienti a temperature elevate, ad esempio superiori a +40 °C, la temperatura in ingresso dei cavi può superare +70 °C, per cui occorre utilizzare premistoppa adeguati resistenti al calore, con una temperatura nominale di esercizio di almeno 110 °C.

Se è richiesta un'elevata protezione in ingresso IP (Ingress Protection), occorre fissare una rondella di tenuta adeguata sotto al premistoppa per cavi.

Quando si utilizza solo un ingresso per cavi, l'altro ingresso deve essere chiuso con un maschio di chiusura antincendio Ex 'd' che deve essere approvato per i requisiti di installazione.

13) Connessioni dei cavi

Vedere figura C e D

14) Scelta del tono e allarmi di secondo e terzo livello

Vedere lo schema dei collegamenti elettrici E

15) Controllo del volume

Vedere figura F

16) Sistema di controllo di fine linea (unità CC)

Sulle unità CC BExS120D e BExS110D, se richiesto, è possibile utilizzare il sistema di controllo della linea di inversione CC. Tutte le sirene CC sono dotate di un diodo di bloccaggio nelle linee di ingresso dell'alimentazione. È possibile collegare ai morsetti positivo e negativo un diodo o un resistore di controllo di fine linea. Se viene utilizzato un resistore di fine linea, questo deve avere un valore di resistenza minimo di 33k ohm ed un wattaggio minimo di 0,5 W oppure un valore di resistenza minimo di 500 ohm ed un wattaggio minimo di 2 W.

TABELLA DI SELEZIONE DEI TONI

Tone Selection		DIP Switch Settings	Stage Selection	
Stage 1	Frequency Description	1 2 3 4 5	Stage 2	Stage 3
1	Continuous 1000Hz <i>Toxic Gas Alarm</i>	0 0 0 0 0	Tone 31	Tone 11
2	Alternating 800/1000Hz at 0.25s intervals	1 0 0 0 0	Tone 17	Tone 5
3	Slow Whoop 500/1200Hz at 0.3Hz with 0.5s gap repeated	0 1 0 0 0	Tone 2	Tone 5
4	Sweeping 800/1000 at 1Hz	1 1 0 0 0	Tone 6	Tone 5
5	Continuous at 2400Hz	0 0 1 0 0	Tone 3	Tone 27
6	Sweeping 2400/2900Hz at 7Hz	1 0 1 0 0	Tone 7	Tone 5
7	Sweeping 2400/2900Hz at 1Hz	0 1 1 0 0	Tone 10	Tone 5
8	Siren 500/1200/500Hz at 0.3Hz	1 1 1 0 0	Tone 2	Tone 5
9	Sawtooth 1200/500Hz at 1Hz	0 0 0 1 0	Tone 15	Tone 2
10	Alternating 2400/2900Hz at 2Hz	1 0 0 1 0	Tone 7	Tone 5
11	Intermittent 1000Hz at 0.5Hz <i>General alarm</i>	0 1 0 1 0	Tone 31	Tone 1
12	Alternating 800/1000Hz at 0.875Hz	1 1 0 1 0	Tone 4	Tone 5
13	Intermittent 2400Hz at 1Hz	0 0 1 1 0	Tone 15	Tone 5
14	Intermittent 800Hz 0.25s on 1s off	1 0 1 1 0	Tone 4	Tone 5
15	Continuous at 800Hz	0 1 1 1 0	Tone 2	Tone 5
16	Intermittent 660Hz 150mS on, 150mS off	1 1 1 1 0	Tone 18	Tone 5
17	Alternating 544Hz (100mS)/440Hz(400mS)	0 0 0 0 1	Tone 2	Tone 27
18	Intermittent 660Hz 1.8s on, 1.8s off	1 0 0 0 1	Tone 2	Tone 5
19	1400Hz to 1600Hz sweep up over 1s - 1600Hz to 1400Hz sweep down over 0.5s	0 1 0 0 1	Tone 2	Tone 5
20	Continuous 660Hz	1 1 0 0 1	Tone 2	Tone 5
21	Alternating 554/440Hz at 1Hz	0 0 1 0 1	Tone 2	Tone 5
22	Intermittent 554Hz at 0.875Hz	1 0 1 0 1	Tone 2	Tone 5
23	800Hz pulsing at 2Hz	0 1 1 0 1	Tone 6	Tone 5
24	Sweeping 800/1000Hz at 50Hz	1 1 1 0 1	Tone 29	Tone 5
25	Sweeping 2400/2900Hz at 50Hz	0 0 0 1 1	Tone 29	Tone 5
26	Simulated bell sound	1 0 0 1 1	Tone 2	Tone 1
27	Continuous 554Hz	0 1 0 1 1	Tone 26	Tone 5
28	Continuous 440Hz	1 1 0 1 1	Tone 2	Tone 5
29	Sweeping 800/1000Hz at 7Hz	0 0 1 1 1	Tone 7	Tone 5
30	420Hz repeating 0.625s on, 0.625s off <i>Australian alert signal</i>	1 0 1 1 1	Tone 32	Tone 5
31	1200/500Hz at 1 Hz <i>Prepare to Abandon Platform</i>	0 1 1 1 1	Tone 11	Tone 1
32	Sweeping 500/1200Hz 3.75s on, 0.25s off 15Hz	1 1 1 1 1	Tone 26	Tone 1

2) Merking

Alle enheter har en etikett med følgende viktige informasjon:

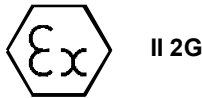
Enhetsstypenr. BExS120D eller BExS110D

Inngangsspenning: DC-enheter 12 V eller 24 V eller 48 V
AC-enheter 230 V eller 110 V eller 115 V

Kode: Ex d IIC T4 for Ta -50°C to +55°C
Ex d IIB T4 for Ta -50°C to +70°C

Sertifikat nr. KEMA 99ATEX6312
IECEx KEM 10.0003

Epsilon x:
Utstyrsguppe og –
kategori:



CE-merking:
Varslet organ nr.



“Advarsler”

MÅ IKKE ÅPNES I EKSPLOSIV
GASSATMOSFÆRE

DEKKEBOLTER KLASSE A4-80

BRUK VARMEBESTANDIGE KABLER OG
KABELMUFFER (godkjent for 110 °C) VED
OMGIVELSESTEMPERATURER OVER 40 °C

4) Installasjonskrav

Lydalarmer må installeres i samsvar med følgende eller tilsvarende standarder.

EN 60079-14:2008 Elektriske installasjoner i farlige
IEC60079-14:2007 (Ed4) områder (unntatt gruver)

EN 60079-10:2003 Klassifisering av farlige områder
IEC60079-10:2008 (Ed1)

Installering må kun utføres av kompetente personer, og alle gjeldende lokale bransjestandarder må overholdes.

5) Soner, gassgruppe, kategori og temperatur klassifisering

Enheterne kan installeres på steder med følgende forhold:

Områdeklassifisering:

Sone 1	Eksplisiv gass/luft-blanding som sannsynligvis forekommer ved normal drift.
Sone 2	Eksplisiv gass/luft-blanding som ikke vanligvis vil forekomme, og om den gjør det, kun vil forekomme i kort tid.

Gassgrupperinger:

Gruppe IIA	Propan
Gruppe IIB	Etylen
Gruppe IIC < +55°C	Hydrogen og acetylen

Utstyrskategori: 2G

Temperaturklassifisering:

T1	400 °C
T2	300 °C
T3	200 °C
T4	135 °C

Omgivelsestemperaturområde:

-50 °C til +55 °C Gassgrupperinger IIA, IIB og IIC
-50 °C til +70 °C Gassgrupperinger IIA og IIB

6) Plassering og montering av lydalarmer

Se tegningen. A

7) Sikkerhetsvarsel (elektrostatisk fare)

Lydhorndelen er laget av ABS-plast. For å unngå mulig ELEKTROSTATISK LADNING må enheten derfor kun rengjøres med fuktig klut.

8) Tilgang til flammesikkert hus

Se tegningen. B

Merk: De fire **M6-skrue**ne er av rustfritt stål klasse **A4-80**, og kun skruer i denne kategorien kan brukes til disse lydalarmerne. Derfor er det viktig at disse skruene med tilhørende fjærskiver oppbevares på et sikkert sted under installeringen.

9) Valg av strømtilførsel

Strømtilførselen til systemet må ha nødvendig kapasitet til å gi inngangsstrøm til alle lydalarmerne som er koplet til systemet.

Følgende tabell viser inngangsstrømmen som benyttes av de forskjellige lydalarmerne:

Enhetsstypenr.	Inngangsspenning	Inngangsstrøm	Maks I/P volt
BExS120D	24 V DC	800 mA	30 V
BExS120D	12 V DC	850 mA	15 V
BExS120D	48 V DC	420 mA	58 V
BExS120D	230 V AC	90 mA	264 V
BExS120D	110 V AC	200 mA	121 V
BExS120D	115 V AC	180 mA	126 V

BExS110D	24 V DC	265 mA	30 V
BExS110D	12 V DC	195 mA	15 V
BExS110D	48 V DC	130 mA	58 V
BExS110D	230 V AC	56 mA	264 V
BExS110D	110 V AC	93 mA	121 V
BExS110D	115 V AC	110 mA	126 V

Tabellen ovenfor viser også maksimale spenninger som lydalarmene kan benyttes ved.

10) Valg av kabler

Kablene må kunne håndtere strømmen som trekkes fra alle enhetene på linjen.

SIKKERHETSVARSEL: Hvis høyeffektalarmene BExS120D benyttes ved høye omgivelsestemperaturer, dvs. over +40 °C kan kabelinngangstemperaturen overstige +70 °C, og derfor må egnede varmebestandige kabler benyttes, med godkjent driftstemperatur på minst 110 °C.

11) Jording

Både AC- og DC-alarmenheter må koples til jordforbindelse av god kvalitet. Enhetene leveres med interne og eksterne jordingsterminaler, som begge sitter på terminalkammerdelen av enheten (se figur 2 og 3).

Ved bruk av eksterne jordterminaler må en benytte en kabelkrypesko. Kabelskoen skal settes mellom de to flate M5-fjærskivene av rustfritt stål. M5-fjærskiven må festes mellom den ytre flate skiven og M5-mutteren av rustfritt stål for å sikre at kabelskoen ikke kan løsnes eller vris.

12) Kabelmuffer

Lydalarmene har doble kabelmuffeinnganger med M20 x 1,5 inngangsgjenger. Kun kabelmuffer godkjent for Ex 'd'-bruk kan brukes, og de må være egnet for typen kabel som brukes, samt overholde kravene i standarden for Ex 'd' flammesikker installering, EN60079-14:2008 / IEC60079-14:2007.

SIKKERHETSVARSEL: Hvis lydalarmene BExS120D med høy effekt brukes ved høye omgivelsestemperaturer, dvs. over +40 °C, kan kabelinngangstemperaturen overstige +70 °C, og derfor må egnede varmebestandige kabelmuffer benyttes, med godkjent driftstemperatur på minst 110 °C.

Hvis høy IP-grad (inntrengningsbeskyttelse) er nødvendig, må egnet tetningsskive monteres under kabelmuffen.

Når kun én kabelinngang benyttes, må den andre lukkes med en Ex 'd' flammesikker lukkeplugg, som må være godkjent for de aktuelle installasjonskravene.

13) Kabelforbindelser

Se tegningen. C og D

14) Tonevalg og 2.- og 3.-trinnsalarmer

Se kablingskjemaet. E

15) Volumkontroll

Se tegningen. F

16) Slutt på linje-overvåking (DC-enheter)

På BExS120D- og BExS110D DC-enheter, kan likestrømsreversert linjeovervåking benyttes om nødvendig. Alle DC-alarmer har en blokkeringsdiode montert i inngangslinjene. En slutt på linje-overvåkingsdiode eller slutt på linje-overvåkingsresistor kan kobles over +ve- og -ve-terminalene. Hvis en slutt på linje-resistor benyttes, må den ha minste motstandsverdi 3k3 ohm, og minste wattverdi 0,5 watt, eller minste motstandsverdi 500 ohm og minste wattverdi 2 watt.

TONEVALGTABELL

Tone Selection		DIP Switch Settings					Stage Selection	
Stage 1	Frequency Description	1	2	3	4	5	Stage 2	Stage 3
1	Continuous 1000Hz <i>Toxic Gas Alarm</i>	0	0	0	0	0	Tone 31	Tone 11
2	Alternating 800/1000Hz at 0.25s intervaks	1	0	0	0	0	Tone 17	Tone 5
3	Slow Whoop 500/1200Hz at 0.3Hz with 0.5s gap repeated	0	1	0	0	0	Tone 2	Tone 5
4	Sweeping 800/1000 at 1Hz	1	1	0	0	0	Tone 6	Tone 5
5	Continuous at 2400Hz	0	0	1	0	0	Tone 3	Tone 27
6	Sweeping 2400/2900Hz at 7Hz	1	0	1	0	0	Tone 7	Tone 5
7	Sweeping 2400/2900Hz at 1Hz	0	1	1	0	0	Tone 10	Tone 5
8	Siren 500/1200/500Hz at 0.3Hz	1	1	1	0	0	Tone 2	Tone 5
9	Sawtooth 1200/500Hz at 1Hz	0	0	0	1	0	Tone 15	Tone 2
10	Alternating 2400/2900Hz at 2Hz	1	0	0	1	0	Tone 7	Tone 5
11	Intermittent 1000Hz at 0.5Hz <i>General alarm</i>	0	1	0	1	0	Tone 31	Tone 1
12	Alternating 800/1000Hz at 0.875Hz	1	1	0	1	0	Tone 4	Tone 5
13	Intermittent 2400Hz at 1Hz	0	0	1	1	0	Tone 15	Tone 5
14	Intermittent 800Hz 0.25s on 1s off	1	0	1	1	0	Tone 4	Tone 5
15	Continuous at 800Hz	0	1	1	1	0	Tone 2	Tone 5
16	Intermittent 660Hz 150mS on, 150mS off	1	1	1	1	0	Tone 18	Tone 5
17	Alternating 544Hz (100mS)/440Hz(400mS)	0	0	0	0	1	Tone 2	Tone 27
18	Intermittent 660Hz 1.8s on, 1.8s off	1	0	0	0	1	Tone 2	Tone 5
19	1400Hz to 1600Hz sweep up over 1s - 1600Hz to 1400Hz sweep down over 0.5s	0	1	0	0	1	Tone 2	Tone 5
20	Continuous 660Hz	1	1	0	0	1	Tone 2	Tone 5
21	Alternating 554/440Hz at 1Hz	0	0	1	0	1	Tone 2	Tone 5
22	Intermittent 554Hz at 0.875Hz	1	0	1	0	1	Tone 2	Tone 5
23	800Hz pulsing at 2Hz	0	1	1	0	1	Tone 6	Tone 5
24	Sweeping 800/1000Hz at 50Hz	1	1	1	0	1	Tone 29	Tone 5
25	Sweeping 2400/2900Hz at 50Hz	0	0	0	1	1	Tone 29	Tone 5
26	Simulated bell sound	1	0	0	1	1	Tone 2	Tone 1
27	Continuous 554Hz	0	1	0	1	1	Tone 26	Tone 5
28	Continuous 440Hz	1	1	0	1	1	Tone 2	Tone 5
29	Sweeping 800/1000Hz at 7Hz	0	0	1	1	1	Tone 7	Tone 5
30	420Hz repeating 0.625s on, 0.625s off <i>Australian alert signal</i>	1	0	1	1	1	Tone 32	Tone 5
31	1200/500Hz at 1 Hz <i>Prepare to Abandon Platform</i>	0	1	1	1	1	Tone 11	Tone 1
32	Sweeping 500/1200Hz 3.75s on, 0.25s off 15Hz	1	1	1	1	1	Tone 26	Tone 1

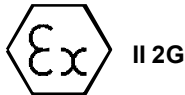
2) Marcação

Todas as unidades têm uma placa de especificações com a seguinte informação importante:

Nº de Tipo de Unidade BExS120D ou BExS110D

Tensão de entrada: Unidades CC 12V ou 24V ou 48V
Unidades CA 230V ou 110V ou 115V

Épsilon x:
Grupo e Categoria
do Equipamento:



Código: Ex d IIC T4 for Ta -50°C to +55°C
Ex d IIB T4 for Ta -50°C to +70°C

Certificado Nº KEMA 99ATEX6312
IECEX KEM 10.0003

Marcação CE:  0518
Nº Entidade Notificada

“Advertências” NÃO ABRIR NA PRESENÇA DE
ATMOSFERA GASOSA EXPLOSIVA
PARAFUSOS COBERTURA CLASSE A4-80
USE CABOS E TUBOS RESISTENTES AO CALOR
(Capacidade 110°C) A TEMPERATURAS AMB. ACIMA 40°C

4) Requisitos de instalação

As sirenes devem ser instaladas em conformidade com as seguintes normas ou outras equivalentes.

EN60079-14:2008 Instalações eléctricas em áreas
IEC60079-14:2007 (Ed4) perigosas (excepto minas)

EN60079-10:2003 Classificação de áreas perigosas
IEC60079-10:2008 (Ed1)

A instalação deve ser efectuada apenas por pessoal competente e aplicam-se quaisquer códigos de prática vigentes no local.

5) Classificação de zonas, grupo de gases, categoria e temperatura

As unidades podem ser instaladas em locais com as seguintes condições:

Classificação da área:

Zona 1	Probabilidade de ocorrência de mistura gasosa explosiva em funcionamento normal.
Zona 2	Improbabilidade de ocorrência de mistura gasosa explosiva; mesmo que tal ocorra, só será por período curto.

Grupos de gases:

Grupo IIA	Propano
Grupo IIB	Etileno
Grupo IIC < +55°C	Hidrogénio e acetileno

Categoria do equipamento: 2G

Classificação da temperatura:

T1	400° C
T2	300° C
T3	200° C
T4	135° C

Variação da temperatura ambiente:

-50°C a +55°C Grupos de gases IIA, IIB e IIC
-50°C a +70°C Grupos de gases IIA e IIB

6) Localização e montagem da sirene

Consulte o desenho A

7) Aviso de segurança (Perigo electrostático)

A secção da buzina acústica é feita de Plástico ABS; por isso, para evitar uma possível CARGA ELECTROSTÁTICA, a unidade deve ser limpa apenas com um pano húmido.

8) Acesso à caixa à prova de fogo

Consulte o desenho B

Note que os quatro parafusos M6 são de aço inoxidável da Classe A4-80; apenas podem ser utilizados parafusos desta categoria nestas sirenes. Por isso, é importante que estes parafusos e respectivas anilhas de mola sejam guardados num lugar seguro durante a instalação.

9) Selecção da fonte de alimentação

A fonte de alimentação do sistema deve ter a capacidade necessária para fornecer a corrente de entrada a todas as sirenes ligadas ao sistema.

A tabela que se segue mostra a corrente de entrada de várias unidades de sirene:

Tipo de Unidade	Tensão de entrada	Corrente de entrada	Tensão máx. I/P
BExS120D	24V CC	800mA	30V
BExS120D	12V CC	850mA	15V
BExS120D	48V CC	420mA	58V
BExS120D	230V CA	90mA	264V
BExS120D	110V CA	200mA	121V
BExS120D	115V CA	180mA	126V

BExS110D	24V CC	265mA	30V
BExS110D	12V CC	195mA	15V
BExS110D	48V CC	130mA	58V
BExS110D	230V CA	56mA	264V
BExS110D	110V CA	93mA	121V
BExS110D	115V CA	110mA	126V

A tabela acima mostra também as tensões máximas permitidas para funcionamento das sirenes.

10) Selecção de cabos

Os cabos têm de suportar a corrente consumida por todas as unidades na linha.

AVISO DE SEGURANÇA: Se as sirenes BExS120D de elevada saída forem usadas a temperaturas ambiente elevadas, isto é acima de +40° C, então a temperatura de entrada do cabo pode exceder os +70° C e, por isso, devem usar-se cabos resistentes ao calor, com uma capacidade nominal de temperatura de serviço nunca inferior a 110° C.

11) Ligação à terra

Tanto as unidades de sirene CA como CC devem ter uma boa ligação à terra. As unidades estão equipadas com terminais internos e externos de ligação à terra, ambos localizados na secção da câmara de terminais da unidade (veja as figuras 2 e 3).

Quando usar o terminal externo de ligação à terra deve usar um terminal do condutor cravado. O terminal do condutor deve estar localizado entre as duas anilhas chatas de aço inoxidável M5. A anilha de mola em aço inoxidável M5 deve estar presa entre a anilha chata externa e a porca em aço inoxidável M5 para garantir a fixação do terminal do condutor e que o mesmo não se solta nem torce.

12) Tubos

As sirenes possuem tubos para entrada de dois cabos com fios de entrada M20 x1.5. Pode-se usar somente tubos aprovados para aplicações à prova de explosão, que devem ser adequados ao tipo de cabo a ser usado e satisfazer também os requisitos da norma EN60079-14:2008 / IEC60079-14:2007 relativa à instalação à prova de fogo e de explosão.

AVISO DE SEGURANÇA: Se as sirenes BExS120D de elevada saída forem utilizadas a temperaturas ambiente elevadas, isto é acima de +40° C, então a temperatura de entrada do cabo pode exceder os +70° C e, por isso, devem usar-se tubos resistentes ao calor, com uma capacidade de temperatura de serviço nunca inferior a 110° C.

Se for exigida uma capacidade IP (Ingress Protection – Protecção de Entrada) elevada, então deve colocar-se sob o tubo uma anilha de vedação adequada.

Quando se usar somente uma entrada de cabo, a outra deve estar fechada com tampão de disco à prova de fogo e explosão, que deve ser aprovado para os requisitos de instalação.

13) Ligações do cabo

Consulte o desenho C e D

14) Selecção de tom e alarmes de 2ª e 3ª fases

Consulte o diagrama de ligações E

15) Controlo do volume

Consulte o desenho F

16) Monitorização de fim de linha (Unidades CC)

Nas unidades CC BExS120D e BExS110D DC, pode-se utilizar monitorização de linha inversa cc, se necessário. Todas as sirenes CC possuem um diodo de bloqueio nas suas linhas de entrada de alimentação. Um diodo de monitorização de fim de linha ou uma resistência de monitorização de fim de linha podem ser ligada aos terminais +ve e –ve. Se for utilizada uma resistência de fim de linha, esta deve ter um valor de resistência mínimo de 3k3 ohms e uma potência mínima de 0,5 watts ou um valor de resistência mínimo de 500 ohms e uma potência mínima de 2 watts.

TONE SELECTION TABLE

Tone Selection		DIP Switch Settings	Stage Selection	
Stage 1	Frequency Description	1 2 3 4 5	Stage 2	Stage 3
1	Continuous 1000Hz <i>Toxic Gas Alarm</i>	0 0 0 0 0	Tone 31	Tone 11
2	Alternating 800/1000Hz at 0.25s intervals	1 0 0 0 0	Tone 17	Tone 5
3	Slow Whoop 500/1200Hz at 0.3Hz with 0.5s gap repeated	0 1 0 0 0	Tone 2	Tone 5
4	Sweeping 800/1000 at 1Hz	1 1 0 0 0	Tone 6	Tone 5
5	Continuous at 2400Hz	0 0 1 0 0	Tone 3	Tone 27
6	Sweeping 2400/2900Hz at 7Hz	1 0 1 0 0	Tone 7	Tone 5
7	Sweeping 2400/2900Hz at 1Hz	0 1 1 0 0	Tone 10	Tone 5
8	Siren 500/1200/500Hz at 0.3Hz	1 1 1 0 0	Tone 2	Tone 5
9	Sawtooth 1200/500Hz at 1Hz	0 0 0 1 0	Tone 15	Tone 2
10	Alternating 2400/2900Hz at 2Hz	1 0 0 1 0	Tone 7	Tone 5
11	Intermittent 1000Hz at 0.5Hz <i>General Alarm</i>	0 1 0 1 0	Tone 31	Tone 1
12	Alternating 800/1000Hz at 0.875Hz	1 1 0 1 0	Tone 4	Tone 5
13	Intermittent 2400Hz at 1Hz	0 0 1 1 0	Tone 15	Tone 5
14	Intermittent 800Hz 0.25s on 1s off	1 0 1 1 0	Tone 4	Tone 5
15	Continuous at 800Hz	0 1 1 1 0	Tone 2	Tone 5
16	Intermittent 660Hz 150mS on, 150mS off	1 1 1 1 0	Tone 18	Tone 5
17	Alternating 544Hz (100mS)/440Hz(400mS)	0 0 0 0 1	Tone 2	Tone 27
18	Intermittent 660Hz 1.8s on, 1.8s off	1 0 0 0 1	Tone 2	Tone 5
19	1400Hz to 1600Hz sweep up over 1s - 1600Hz to 1400Hz sweep down over 0.5s	0 1 0 0 1	Tone 2	Tone 5
20	Continuous 660Hz	1 1 0 0 1	Tone 2	Tone 5
21	Alternating 554/440Hz at 1Hz	0 0 1 0 1	Tone 2	Tone 5
22	Intermittent 554Hz at 0.875Hz	1 0 1 0 1	Tone 2	Tone 5
23	800Hz pulsing at 2Hz	0 1 1 0 1	Tone 6	Tone 5
24	Sweeping 800/1000Hz at 50Hz	1 1 1 0 1	Tone 29	Tone 5
25	Sweeping 2400/2900Hz at 50Hz	0 0 0 1 1	Tone 29	Tone 5
26	Simulated bell sound	1 0 0 1 1	Tone 2	Tone 1
27	Continuous 554Hz	0 1 0 1 1	Tone 26	Tone 5
28	Continuous 440Hz	1 1 0 1 1	Tone 2	Tone 5
29	Sweeping 800/1000Hz at 7Hz	0 0 1 1 1	Tone 7	Tone 5
30	420Hz repeating 0.625s on, 0.625s off <i>Australian alert signal</i>	1 0 1 1 1	Tone 32	Tone 5
31	1200/500Hz at 1 Hz <i>Prepare to Abandon Platform</i>	0 1 1 1 1	Tone 11	Tone 1
32	Sweeping 500/1200Hz 3.75s on, 0.25s off 15Hz	1 1 1 1 1	Tone 26	Tone 1

2) Marcas

Todas las unidades llevan una etiqueta de clasificación con la siguiente información importante: -

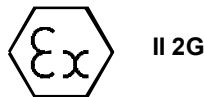
Nº de tipo de unidad. BExS120D o BExS110D

Voltaje de entrada: Unidades de CC 12 V o 24 V o 48V
Unidades de CA 230 V o 110 V o 115V

Código Ex d IIC T4 for Ta -50°C to +55°C
Ex d IIB T4 for Ta -50°C to +70°C

Nº de certificado KEMA 99ATEX6312
IECEX KEM 10.0003

Epsilon x:
Categoría y grupo
de equipamiento:



Marca CE:
Nº de cuerpo de
notificación
"Avisos"



NO ABRIR EN PRESENCIA DE GAS
ATMOSFÉRICO EXPLOSIVO

PERNOS DE LA CUBIERTA CLASE A4-80

UTILICE CABLES Y CASQUILLOS DE CABLE RESISTENTES AL
CALOR (Clasificados a 110°C) A TEMPERATURAS AMBIENTE
SUPERIORES A 40°C

4) Requisitos de instalación

Las sondas acústicas deben instalarse conforme a las siguientes normas o sus equivalentes.

EN60079-14:2008 Instalaciones eléctricas en áreas
IEC60079-14:2007 (Ed4) peligrosas (exceptuando minas)

EN60079-10:2003 Clasificación de áreas peligrosas
IEC60079-10:2008 (Ed1)

La instalación únicamente debe llevarse a cabo por parte de personal competente y debe observarse cualquier código de práctica local.

5) Clasificación de zonas, grupo de gas, categoría y temperatura

Las unidades pueden instalarse en ubicaciones que cumplan las siguientes condiciones: -

Clasificación del área:

Zona 1	Mezcla explosiva de aire y gas que es posible ocurra durante el funcionamiento normal.
Zona 2	Mezcla explosiva improbable de aire y gas que, de producirse, lo hará sólo por breve tiempo.

Grupos de gas:

Grupo IIA	Propano
Grupo IIB	Etileno
Grupo IIC < +55°C	Hidrógeno y acetileno

Categoría de equipo: 2G

Clasificación de temperatura:

T1	400°C
T2	300°C
T3	200°C
T4	135°C

Rango de temperatura ambiente:

-50°C a +55°C Grupos de gas IIA, IIB y IIC
-50°C a +70°C Grupos de gas IIA y IIB

6) Ubicación y montaje de la sonda acústica

Véase el diagrama A

7) Aviso sobre seguridad (peligro electrostático)

La sección de bocina acústica está fabricada de plástico ABS, por lo tanto, a fin de evitar una CARGA ELECTROSTÁTICA, la unidad únicamente debe limpiarse con un paño húmedo.

8) Acceso a la caja antideflagrante

Véase el diagrama B

Obsérvese que los cuatro tornillos M6 son de acero inoxidable de clase A4-80 y que con estas sondas acústicas únicamente deben utilizarse tornillos de esta categoría. Por ello, es importante que estos tornillos, y las arandelas elásticas se guarden en un lugar seguro durante la instalación.

9) Selección de la fuente de alimentación

La fuente de alimentación del sistema debe tener la capacidad necesaria para proporcionar la corriente de entrada a todas las sondas acústicas conectadas al sistema.

La tabla que aparece a continuación muestra la corriente de entrada que usan las diferentes unidades de sondas acústicas: -

Tipo de unidad	Voltaje entrada	Corriente entrada	IP máx volts
BExS120D	24V CC	800mA	30V
BExS120D	12V CC	850mA	15V
BExS120D	48V CC	420mA	58V
BExS120D	230V CA	90mA	264V
BExS120D	110V CA	200mA	121V
BExS120D	115V CA	180mA	126V

BExS110D	24V CC	265mA	30V
BExS110D	12V CC	195mA	15V
BExS110D	48V CC	130mA	58V
BExS110D	230V CA	56mA	264V
BExS110D	110V CA	93mA	121V
BExS110D	115V CA	110mA	126V

Esta tabla también muestra los voltajes máximos con los que pueden funcionar las sondas acústicas.

10) Selección de cables

Los cables deben tener la capacidad necesaria para manipular la corriente extraída de todas las unidades en la línea.

AVISO SOBRE SEGURIDAD: Si las sondas acústicas de salida alta BExS120D se utilizan a temperaturas ambiente altas, es decir, superiores a 40°C, la temperatura de entrada del cable puede superar +70°C; por lo tanto, deben usarse cables resistentes al calor adecuados, con una temperatura de servicio nominal de al menos 110°C.

11) Puesta a tierra

Tanto las sondas acústicas de CA como de CC deben tener una buena conexión a tierra. Las unidades tienen bornes de tierra internos y externos, ubicadas en la sección de la cámara de bornes de la unidad (véanse las ilustraciones 2 y 3).

Cuando se utilicen los bornes de tierra externos, debe utilizarse un talón de cable fruncido. El talón de cable se situará entre las dos arandelas planas M5 de acero inoxidable. La arandela elástica M5 de acero inoxidable debe colocarse entre la arandela plana exterior y la tuerca M5 de acero inoxidable a fin de asegurar que el talón del cable no se afloje ni retuerza.

12) Casquillos de los cables

Las sondas acústicas tienen casquillos de cable de entrada doble con roscas de entrada de M20 x 1,5. Únicamente deben utilizarse casquillos de cable aprobados para aplicaciones Ex 'd', los cuales deben ser adecuados para el tipo de cable que se está utilizando, además de satisfacer los requisitos de la norma EN60079-14:2008 para instalaciones antideflagrantes Ex 'd'.

AVISO SOBRE SEGURIDAD: Si las sondas acústicas BExS120D de salida alta se utilizan a temperaturas ambiente altas, es decir, superiores a 40°C, la temperatura de entrada del cable puede superar +70°C; por lo tanto, deben usarse casquillos de cable resistentes al calor adecuados, con una temperatura de servicio nominal de al menos 110°C.

Si se precisa una clasificación IP (Protección contra Ingreso) alta, debe instalarse una arandela estanca adecuada debajo del casquillo del cable.

Cuando solamente se utilice una entrada de cable, la otra deberá cerrarse con un tapón de obturación antideflagrante Ex 'd' debidamente aprobado para los requisitos de la instalación.

13) Conexiones de los cables

Véase el diagrama C y D

14) Selección de tono y alarmas de 2ª y 3ª fase

Véase el diagrama de cableado E

15) Control del volumen

Véase el diagrama F

16) Vigilancia de fin de línea (Unidades de CC)

En las unidades BExS120D y BExS110D de CC, puede utilizarse la vigilancia de línea inversa si fuera necesario. Todas las sondas acústicas de CC llevan un diodo de bloqueo en las líneas de entrada de suministro. Puede ajustarse un diodo de vigilancia de fin de línea o una resistencia de vigilancia de fin de línea a lo largo de los bornes +ve y -ve. Si se utiliza una resistencia de fin de línea, ésta deberá tener un valor mínimo de resistencia de 3k3 ohmios y un vataje mínimo de 0,5 vatios o un valor mínimo de resistencia de 500 ohmios y un vataje mín. de 2 vatios.

TABLA DE SELECCIÓN DE TONO

Tone Selection		DIP Switch Settings	Stage Selection	
Stage 1	Frequency Description	1 2 3 4 5	Stage 2	Stage 3
1	Continuous 1000Hz <i>Toxic Gas Alarm</i>	0 0 0 0 0	Tone 31	Tone 11
2	Alternating 800/1000Hz at 0.25s intervals	1 0 0 0 0	Tone 17	Tone 5
3	Slow Whoop 500/1200Hz at 0.3Hz with 0.5s gap repeated	0 1 0 0 0	Tone 2	Tone 5
4	Sweeping 800/1000 at 1Hz	1 1 0 0 0	Tone 6	Tone 5
5	Continuous at 2400Hz	0 0 1 0 0	Tone 3	Tone 27
6	Sweeping 2400/2900Hz at 7Hz	1 0 1 0 0	Tone 7	Tone 5
7	Sweeping 2400/2900Hz at 1Hz	0 1 1 0 0	Tone 10	Tone 5
8	Siren 500/1200/500Hz at 0.3Hz	1 1 1 0 0	Tone 2	Tone 5
9	Sawtooth 1200/500Hz at 1Hz	0 0 0 1 0	Tone 15	Tone 2
10	Alternating 2400/2900Hz at 2Hz	1 0 0 1 0	Tone 7	Tone 5
11	Intermittent 1000Hz at 0.5Hz <i>General alarm</i>	0 1 0 1 0	Tone 31	Tone 1
12	Alternating 800/1000Hz at 0.875Hz	1 1 0 1 0	Tone 4	Tone 5
13	Intermittent 2400Hz at 1Hz	0 0 1 1 0	Tone 15	Tone 5
14	Intermittent 800Hz 0.25s on 1s off	1 0 1 1 0	Tone 4	Tone 5
15	Continuous at 800Hz	0 1 1 1 0	Tone 2	Tone 5
16	Intermittent 660Hz 150ms on, 150ms off	1 1 1 1 0	Tone 18	Tone 5
17	Alternating 544Hz (100ms)/440Hz(400ms)	0 0 0 0 1	Tone 2	Tone 27
18	Intermittent 660Hz 1.8s on, 1.8s off	1 0 0 0 1	Tone 2	Tone 5
19	1400Hz to 1600Hz sweep up over 1s - 1600Hz to 1400Hz sweep down over 0.5s	0 1 0 0 1	Tone 2	Tone 5
20	Continuous 660Hz	1 1 0 0 1	Tone 2	Tone 5
21	Alternating 554/440Hz at 1Hz	0 0 1 0 1	Tone 2	Tone 5
22	Intermittent 554Hz at 0.875Hz	1 0 1 0 1	Tone 2	Tone 5
23	800Hz pulsing at 2Hz	0 1 1 0 1	Tone 6	Tone 5
24	Sweeping 800/1000Hz at 50Hz	1 1 1 0 1	Tone 29	Tone 5
25	Sweeping 2400/2900Hz at 50Hz	0 0 0 1 1	Tone 29	Tone 5
26	Simulated bell sound	1 0 0 1 1	Tone 2	Tone 1
27	Continuous 554Hz	0 1 0 1 1	Tone 26	Tone 5
28	Continuous 440Hz	1 1 0 1 1	Tone 2	Tone 5
29	Sweeping 800/1000Hz at 7Hz	0 0 1 1 1	Tone 7	Tone 5
30	420Hz repeating 0.625s on, 0.625s off <i>Australian alert signal</i>	1 0 1 1 1	Tone 32	Tone 5
31	1200/500Hz at 1 Hz <i>Prepare to Abandon Platform</i>	0 1 1 1 1	Tone 11	Tone 1
32	Sweeping 500/1200Hz 3.75s on, 0.25s off 15Hz	1 1 1 1 1	Tone 26	Tone 1

2) Märkning

Samtliga enheter är försedda med märkplåt med följande viktiga information:

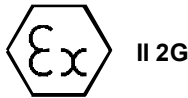
Typ: BExS120D eller BExS110D

Matningsspänning: DC-enheter 12V, 24V eller 48V
AC-enheter 230V, 110V eller 115V

Kod: Ex d IIC T4 for Ta -50°C to +55°C
Ex d IIB T4 for Ta -50°C to +70°C

Certifiering: KEMA 99ATEX6312
IECEx KEM 10.0003

Epsilon x:
Utrustningsgrupp
och kategori:



CE-märkning:
Ansvarigt organ:



"VARNING" FÄR EJ ÖPPNAS I EXPLOSIV GASATMOSFÄR

KAPSLINGSBULTAR KLASS A4-80

ANVÄND VÄRMEBESTÄNDIGA KABLAR OCH
KABELGENOMFÖRINGAR (med märktemp 110°C) VID
OMGIVNINGSTEMPERATURER ÖVER 40°C

4) Installationskrav

Högtalarna skall installeras enligt följande eller likvärdiga standarder.

EN60079-14:2008 Elektriska installationer inom
IEC60079-14:2007 (Ed4) riskområden (utom gruvor)

EN60079-10:2003 Klassning av explosionsfarliga
IEC60079-10:2008 (Ed1) områden

Installation skall endast göras av behörig personal under tillämpande av lokala bestämmelser.

5) Zoner, explosionsgrupper, kategori och T-klasser

Enheterna får installeras på platser där följande förhållanden råder:-

Områdesklassificering:

Zon 1	Explosiv gasblandning förväntas förekomma vid normal drift.
Zon 2	Explosiv gasblandning förväntas förekomma sällan och då endast kortvarigt.

Explosionsgrupper:

Grupp IIA	Propan
Grupp IIB	Etylen
Grupp IIC < +55°C	Väte och acetylen

Kategori på utrustning: 2G

T-klasser:

T1	400° C
T2	300° C
T3	200° C
T4	135° C

Omgivningstemperatur:

-50°C till +55°C Explosionsgrupper IIA, IIB och IIC
-50°C till +70°C Explosionsgrupper IIA och IIB

6) Monteringsinstruktion och val av plats för högtalare

Se ritning A

7) Säkerhetsvarning (statisk elektricitet)

Den akustiska sirendelen är tillverkad av ABS-plast; därför skall enheten endast rengöras med en fuktig trasa för att undvika ELEKTROSTATISK LADDNING.

8) Åtkomst till den explosionstäta kapslingen

Se ritning B

Observera att de fyra **M6-skruvarna** är av klass **A4-80** och av **rostfritt stål**. Endast dessa skruvar skall användas till högtalarna. Därför är det viktigt att dessa skruvar och dess fjäderbrickor läggs på ett säkert ställe under installationen.

9) Val av strömförsörjning

Strömförsörjningsaggregatet måste ha tillräcklig kapacitet för att förse alla högtalare anslutna till systemet med ström.

Tabellen nedan visar den ingångsspänning som behövs för de olika högtalarna:

Typ	Ingångsspänning	Ingångsström	Max. spänning
BExS120D	24V DC	800mA	30V
BExS120D	12V DC	850mA	15V
BExS120D	48V DC	420mA	58V
BExS120D	230V AC	90mA	264V
BExS120D	110V AC	200mA	121V
BExS120D	115V AC	180mA	126V

BExS110D	24V DC	265mA	30V
BExS110D	12V DC	195mA	15V
BExS110D	48V DC	130mA	58V
BExS110D	230V AC	56mA	264V
BExS110D	110V AC	93mA	121V
BExS110D	115V AC	110mA	126V

Tabellen ovan visar också högtalarnas högsta driftspänning.

10) Val av kabel

Kablarna måste vara dimensionerade för att klara strömbelastningen från alla anslutna enheter.

SÄKERHETSVARNING: Om BExS120D-högtalarna med hög uteffekt används vid höga omgivningstemperaturer, dvs över +40°C, kan ledningarnas temperatur överskrida +70°C vid införingsstället. Därför skall lämpliga värmeresistenta kablar, med en märktemperatur på minst 110°C, användas.

11) Jordning

Både AC- och DC-högtalarna måste jordas på tillfredsställande sätt. Enheterna har interna och externa jordanslutningar, vilka båda är placerade i enhetens kopplingshus (se bild 2 och 3).

När den externa jordanslutningen används skall en kontaktpressad kabelsko monteras. Kabelskon skall placeras mellan de två flata rostfria stålbrickorna (M5). Fjäderbrickorna av rostfritt stål (M5) skall monteras mellan den yttre flata brickan och den rostfria stålmuttern (M5) för att säkerställa att kabelskon inte lossnar eller vrids.

12) Kabelgenomföringar

Högtalarna har dubbla kabelgångar med M20 x 1,5 gänga. Endast kabelgenomföringar godkända för Ex 'd'-bruk får användas. Dessa måste passa den typ av kabel som används och dessutom uppfylla kraven för explosionstät kapsling (Ex 'd') enligt EN60079-14:2008 / IEC60079-14:2007.

SÄKERHETSVARNING: Om BExS120D-högtalarna med hög uteffekt används vid höga omgivningstemperaturer, dvs över +40°C, kan ledningarnas temperatur överskrida +70°C vid införingsstället. Därför skall lämpliga värmeresistenta kablar, med en märktemperatur på minst 110°C, användas.

Om det finns krav på en hög IP-kapslingsklass skall en passande tätningsbricka monteras under kabelgenomföringen.

Om endast en kabelgång används skall den andra tillslutas med en Ex 'd' explosionssäker avslutningsnippel som är certifierad enligt installationskraven

13) Kabelanslutningar

Se ritning C och D

14) Tonval och 2- och 3-lägeslarm

Se kopplingschema. E

15) Volymkontroll

Se ritning F

16) Ledningsövervakning (DC-enheter)

Ledningsövervakning kan vid behov användas på DC-enheterna BExS120D och BExS110D. Alla DC-högtalare har en blockeringsdiod installerad i ingångsledningen. En bevakningsdiod eller ett bevakningsmotstånd kan anslutas över plus- och minuspolerna. Om ett bevakningsmotstånd används skall resistansen vara minst 3,3 kohm och effekten minst 0,5 watt eller minst 500 ohm och minst 2 watt.

TONVALSTABELL

Tone Selection		DIP Switch Settings					Stage Selection	
Stage 1	Frequency Description	1	2	3	4	5	Stage 2	Stage 3
1	Continuous 1000Hz <i>Toxic Gas Alarm</i>	0	0	0	0	0	Tone 31	Tone 11
2	Alternating 800/1000Hz at 0.25s interval	1	0	0	0	0	Tone 17	Tone 5
3	Slow Whoop 500/1200Hz at 0.3Hz with 0.5s gap repeated	0	1	0	0	0	Tone 2	Tone 5
4	Sweeping 800/1000 at 1Hz	1	1	0	0	0	Tone 6	Tone 5
5	Continuous at 2400Hz	0	0	1	0	0	Tone 3	Tone 27
6	Sweeping 2400/2900Hz at 7Hz	1	0	1	0	0	Tone 7	Tone 5
7	Sweeping 2400/2900Hz at 1Hz	0	1	1	0	0	Tone 10	Tone 5
8	Siren 500/1200/500Hz at 0.3Hz	1	1	1	0	0	Tone 2	Tone 5
9	Sawtooth 1200/500Hz at 1Hz	0	0	0	1	0	Tone 15	Tone 2
10	Alternating 2400/2900Hz at 2Hz	1	0	0	1	0	Tone 7	Tone 5
11	Intermittent 1000Hz at 0.5Hz <i>General Alarm</i>	0	1	0	1	0	Tone 31	Tone 1
12	Alternating 800/1000Hz at 0.875Hz	1	1	0	1	0	Tone 4	Tone 5
13	Intermittent 2400Hz at 1Hz	0	0	1	1	0	Tone 15	Tone 5
14	Intermittent 800Hz 0.25s on 1s off	1	0	1	1	0	Tone 4	Tone 5
15	Continuous at 800Hz	0	1	1	1	0	Tone 2	Tone 5
16	Intermittent 660Hz 150mS on, 150mS off	1	1	1	1	0	Tone 18	Tone 5
17	Alternating 544Hz (100mS)/440Hz(400mS)	0	0	0	0	1	Tone 2	Tone 27
18	Intermittent 660Hz 1.8s on, 1.8s off	1	0	0	0	1	Tone 2	Tone 5
19	1400Hz to 1600Hz sweep up over 1s - 1600Hz to 1400Hz sweep down over 0.5s	0	1	0	0	1	Tone 2	Tone 5
20	Continuous 660Hz	1	1	0	0	1	Tone 2	Tone 5
21	Alternating 554/440Hz at 1Hz	0	0	1	0	1	Tone 2	Tone 5
22	Intermittent 554Hz at 0.875Hz	1	0	1	0	1	Tone 2	Tone 5
23	800Hz pulsing at 2Hz	0	1	1	0	1	Tone 6	Tone 5
24	Sweeping 800/1000Hz at 50Hz	1	1	1	0	1	Tone 29	Tone 5
25	Sweeping 2400/2900Hz at 50Hz	0	0	0	1	1	Tone 29	Tone 5
26	Simulated bell sound	1	0	0	1	1	Tone 2	Tone 1
27	Continuous 554Hz	0	1	0	1	1	Tone 26	Tone 5
28	Continuous 440Hz	1	1	0	1	1	Tone 2	Tone 5
29	Sweeping 800/1000Hz at 7Hz	0	0	1	1	1	Tone 7	Tone 5
30	420Hz repeating 0.625s on, 0.625s off <i>Australian alert signal</i>	1	0	1	1	1	Tone 32	Tone 5
31	1200/500Hz at 1 Hz <i>Prepare to Abandon Platform</i>	0	1	1	1	1	Tone 11	Tone 1
32	Sweeping 500/1200Hz 3.75s on, 0.25s off 15Hz	1	1	1	1	1	Tone 26	Tone 1

EC DECLARATION OF CONFORMITY



Manufacturer: European Safety Systems Ltd.
Impress House, Mansell Road, Acton
London, W3 7QH, UK

Equipment Type: BExS110D, BExS120D, BExS110E, BExS120E,
BExDS120D, BExDS110D, BExDS120E, BExDS110E,
BExL25D, BExL15D, BExL25E, BExL15E,
BExDL25D, BExDL15D, BExDL25E, BExDL15E,
BExA110D, BExA120D, BExA110E, BExA120E,
BExDA110D, BExDA120D, BExDA110E, BExDA120E,
BExTS110D, BExDTS110D, BExH120D, BExDH120D, BExL25GD, BExDL25GD

Directive 94/9/EC: Electrical and Mechanical equipment for use in explosive atmospheres (ATEX)

Notified Body for EC type Examination: KEMA Quality B.V.
Notified Body No.: 0344
Utrechtseweg 310, 6812 AR Arnhem, The Netherlands

EC-type Examination Certificate: KEMA 99ATEX6312

Notified Body for Quality Assurance Notification: Sira Certification Service
Notified Body No.: 0518
Rake Lane, Eccleston, Chester CH4 9JN, UK

Quality Assurance Notification: SIRA 05 ATEX M342

Provisions fulfilled by the equipment: II 2 G Ex d IIB or IIC T4 or
II 2 G Ex de IIB or IIC T4
II 2 D Ex tD A21 IP66 or IP67 T100 °C or T115 °C

Standards applied: EN 60079-0:2006
EN 60079-1:2007
EN 60079-7:2003
EN 61241-0:2006
EN 61241-1:2004

Directive 89/106/EEC: Construction Products Directive (CPD) – BExS110D24DC / BExS120D24DC (tones 2, 3, 9, 15, 16, 17) only

Notified Body for EC type Examination: VdS Schadensverhütung GmbH
Notified Body No.: 0786
Amsterdamer Str 172-174, 50735 Köln, Germany

EC-type Examination Certificate: 0708-CPD-20225

Standards applied: EN 54-3:2001 + A1:2002

Directive 2009/26/EC: Marine Equipment Directive (MED) – BExS110D24DC-M only

Notified Body for EC type Examination: Germanischer Lloyd SE
Notified Body No.: 0098
Brooktorkai 18, 20457 Hamburg, Germany

EC-type Examination Certificate: 19 702 - 11 HH

Standards applied: EN 54-3:2001 + A1:2002 + A2:2006
IEC 60092-504: 2001
IEC 60533: 1999

Directive 2004/108/EC: Electromagnetic Compatibility Directive (EMC)

Standards applied: EN 61000-6-1:2007
EN 61000-6-2:2005
EN 61000-6-3:2007
EN 61000-6-4:2007

The standards EN 60079-0: 2006, EN 60079-7:2003, EN 61241-0:2006 and EN 61241-1:2004 are no longer harmonized. The requirements of these standards have been checked against the harmonized standards EN 60079-0:2009, EN 60079-7:2007 and EN 60079-31:2009 and there were no major technical changes affecting the latest technical knowledge for the products listed above.

On behalf of European Safety Systems Ltd., I declare that, on the date the equipment accompanied by this declaration is placed on the market, the equipment conforms with all technical and regulatory requirements of the above listed directives.

A handwritten signature in black ink, appearing to read 'Martin Streetz'.

Martin Streetz
Quality Assurance Manager

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