MARIN SUPPLY

MAIN CATALOGUE

Issue 1.3

MARINSUPPLY

Marin Supply AS har siden selskapet ble etablert i 1974, blitt kjent i Skandinavia som den ledende leverandør av alarm- og varslingsutstyr til industri, skip og offshore markedet.

Vårt brede utvalg av produkter spenner fra små alarmsummere og indikatorlamper til kraftige katastrofe-alarmer, pneumatiske horn og kraftige xenon-blinkere for bruk innendørs, utendørs- og i krevende miljøer så vel som eksplosjonsfarlige områder (Ex).

Relasjoner
Vi er stolte av våre lange relasjoner til våre kunder og leverandører. Det faktum at flere av disse har vært med oss fra starten for mer enn 35 år siden, tar vi som bevis på vår evne til å yte service og oppfølging i forhold til både kunder og leverandører.

- Tross dette, er det en av våre viktigste visjoner å fortsette å videreutvikle våre produkter og tjenester.

Bredt utvalg av produkter
Våre produkter har vist seg pålitelige gjennom et stort antall installasjoner, både i skips- og offshore-sektoren samt den landbaserte industri. Vårt brede produktspekter og fleksible løsninger gjør vårt utstyr velegnet i et stort utvalg av applikasjoner. I mange tilfelle er vi også i stand til å levere skreddersydde løsninger. Vi er viden kjent for våre raske leveranser samt vår evne til å gi råd og hjelpe kundene til å velge rett produkt til oppgaven som skal løses.

Soliditet
Marin Supply har en solid økonomi, som gjør oss i stand til å påta oss større oppdrag. Dette gir en stor grad av forutsigbarhet for både kunder og leverandører, og er en forsikring om at vi også vil være her i morgen.

AAA®
MARIN SUPPLY AS
Orgnr: 936302874
Høyeste kredittverdighet
Soliditet © 2013.04.16

De aller viktigste satsningsområdene er i dag:

Alarm- og varslingsutstyr
bl.a. Sirener, alarmhorn, xenonblinkere, roterende lys, summere og kombinerte enheter i både standard- og Ex-utførelse, samt luft og skipsfartsvarsling

Bunte- og festemateriell
bl.a. strips og buntebånd i rustfritt stål, plastbelagt rustfritt stål og nylon, samt verktøy for dette

Ex-Kabelnipler og tilbehør
bl.a. kabelnipler,adaptere, blindplugger osv. i messing, forniklet messing og rustfritt stål.

Switchgear
bl.a. trådbundet og trådløse brytere i et stort antall utførelser

Punch Tools
Mobile og stasjonære verktøy for stansing, kutting og krymping

Kapslinger og koblingsbokser
Alt fra de enkleste kapslinger i GRP til High-voltage og fire-rated, både for industri og Ex applikasjoner

Marin Supply AS på web
Marin Supply AS sine nettsider er basert på programvare med netthandelsløsning som er direkte integrert med vårt ERP forretningssystem. Denne er optimalisert for å dekke behov for effektiv vareflyt og kundebehandling.

Gjennom automatiserte og kvalitetssikrede prosesser sikres en solid håndtering av hele vareflyten. Enten du velger å logge inn for å handle direkte på vår netthandel, eller velger å bruke vår nettside som et rent oppslagsverk for å finne produkter og nødvendig dokumentasjon, er denne et nyttig verktøy.

Du vil nyte godt av følgende gjennom hele innkjøpsprosessen:

- Kunden oppdateres automatisk med korrekt leveringsinformasjon via ordrebekreftelse.
- Automatisk utsendelse av endringsmeldinger med oppdaterte leveringstider.
- Kundesenter på web. Her kan man selv kan vedlikeholde egen adresse- og kontaktinformasjon.
- Systemet holder rede på hvilken kunde som skal ha hvilken vare til hvilken tid.
- Med integrert pakkesporing har kunde og medarbeider full kontroll på forsendelser.

Hjemmesiden er åpen for alle, men for å kunne se priser og produkt tilgjengelighet, må du være innlogget med brukernavn og passord. (Dette krever at du er registrert som kunde hos oss.)

Spesielle kampanjetilbud
Om du ønsker å benytte deg av våre helt spesielle kampanjetilbud, kan du finne disse under tilbudsvarer. Her vil vi legge ut spesielle tilbud på varer vi ønsker å kvitte oss med, eller "hylle varmere" som vi rett og slett ikke har plass til.

Felles for alle produktene under tilbudsvarer er at salget pågår så lenge lageret rekker. Når lageret er tomt for et spesifikt produkt vil det ikke vises lengere.

www.marinsupply.no

KONTAKTINFO

Lokasjon
Marin Supply er lokalisert i Horten Industripark (HIP) på gamle Karljohansvern orlogsstasjon i Horten.

HIP - Horten Industripark
Horten Industripark - HIP ligger sentralt plassert i forhold til de største byene på østlandsområdet - med direkte tilgang til Oslofjordens vakre kystlandskap.

Bedriftene som i dag er lokalisert i industriparken er satt sammen med tanke på integrasjon og komplementaritet. Derfor har vi også fått et levende industrimiljø der aktørene styrker hverandre gjennom faglig samarbeid og gjensidig kompetanseutfyllende virksomhet.

Området har en sentral, om ikke den mest sentrale plass, i norsk maritim historie hvor gammel tradisjon og ny teknologi møtes.

Vårt salgsteam er tilgjengelig 24/7 på mobiltelefon og epost, og vi vil gjøre vårt beste for å bistå også utenfor åpningstiden vår som er 08:00 – 16:00

- Hos Marin Supply AS er du alltid sikret kontakt.

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BASICS OF SOUNDS

Buzzers
Either Electro Mechanical type where the diaphragm is deflected by a moving magnet which is triggered by a make and break contactor or the Piezo type where the diaphragm is controlled by an electronic circuit. The mechanical versions offer medium/high dB output with low frequency sound and are of robust construction.

Piezo versions are relative low dB and high frequency and are only suitable for local signaling applications.

Electronic Sounders
The Electronics Sounder is a versatile acoustic signal incorporating a number of individual tones. It incorporates a medium dB output with a distinctive multi-tone frequency option to indicate various processes.

The type of signal is suitable for fire, operating, general alarm and other applications that need a reliable signaling device.

Airhorns
Airhorns are non-electrical devices that only operate from a compressed air supply. They offer very high dB output with very low frequency sound making them ideal for very noisy enviroments.

Being non-electrical they can be used in hazardous area category 1 use.

Hooters
Hooters are powerful motor driven horns producing the unique sound used the world over. A serated rotor driven against a hardened steel diaphragm stud creates a high dB output with low frequency sound.

These types of signals are are ideal for indoor and outdoor applications where a rugged and durable sounder is required.

Motor Sirens
Motor sirens are designed for applications where a high output sound is required. Manufactured for heavy duty enviroments with the traditional spin up/spin down effect they are ideal for use over medium to large size areas which demand high dB units with low frequency sound.

Bells
Bells are a cost effective traditional signalling device with a wide range of signaling applications. They offer a medium dB output with a unique sound. Bells are normally used in applications which include fire alarm.

M	Db(A)																									
1	65	70	75	80	85	90	92	94	96	98	100	102	104	106	108	110	112	114	116	118	120	122	124	126	128	130
2	59	64	69	74	79	84	86	88	88	90	92	94	96	100	102	104	106	108	110	112	114	116	118	120	122	124
3	55	60	65	70	75	80	82	84	86	88	90	92	94	96	98	100	102	104	106	108	110	112	114	116	118	120
5	51	56	61	66	71	76	78	80	82	84	86	88	90	92	94	96	98	100	102	104	106	108	110	112	114	116
10	45	50	55	60	65	70	72	74	76	78	80	82	84	86	88	90	92	94	96	98	100	102	104	106	108	110
20	39	44	49	54	59	64	66	68	70	72	74	76	78	80	82	84	86	88	90	92	94	96	98	100	102	104
30	35	40	45	50	55	60	62	64	66	68	70	72	74	76	78	80	82	84	86	88	90	92	94	96	98	100
50	=	36	41	46	51	56	58	60	62	64	66	68	70	72	74	76	78	80	82	84	86	88	90	92	94	96
100		=	=	40	45	50	52	54	56	58	60	62	64	66	68	70	72	74	76	78	80	82	84	86	88	90
200				=	39	44	46	48	50	52	54	56	58	60	62	64	66	68	70	72	74	76	78	80	82	84
300					=	40	42	44	46	48	50	52	54	56	58	60	62	64	66	68	70	72	74	76	78	80
500						=	38	40	42	44	46	48	50	52	54	56	58	60	62	64	66	68	70	72	74	76
1000							=	=	=	38	40	42	44	46	48	50	52	54	56	58	60	62	64	66	68	70
2000										=	=	=	38	40	42	44	46	48	50	52	54	56	58	60	62	64
3000													=	=	38	40	42	44	46	48	50	52	54	56	58	60

BASICS OF LIGHT

Xenon Strobe
Brilliant flashes of light, which can be enhanced through a freznel lens. The tube life is typically 5 to 8 million flashes after which light output are reduced by approx. 70%.

These units are the most efficient available incorporating light output with the brightest and most effective visual signal.

LED
Unlike the filament bulb and the Xenon tube, LEDs emit only one frequency of light.(i.e. one colour) and cannot yet manage the brightness of a Xenon tube. However, they only require a relatively low current and have a very long lifetime, giving an effective solution where an indication or statur is required.

Rotating
An electric motor drives a parabolic reflector around the light source on a vertical axis to create a powerful beam of light travelling through 360°. These units are available with either a filament or halogen bulb.

In general this type of beacons has a greater degree of light output than other models, but this is redused as the parabolic reflector only iluminates on given point at a time. The downside on this units are their very limited lifetime.

Flilament & Halogen Bulb
Usually operated with an additional circuit, to give a steady output or more effective blinking output.

The light output can be improved by the use of a freznel lens. The main advantage of this type of beacon is that the light can be controlled by a separate source control panel, giving the unit more flexibility.

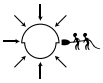
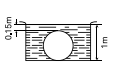
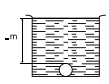
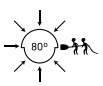
Determining the selection of light
* Safe atmosphere or potentially explosive atmosphere
* The ambient level of existing light
* The light output required from the beacon
* The duration the beacon has to operate
* The IP rating of the beacon
* The electrical supply available

Colour	Purpose	How much the lens colour effect the intensity of a light source.
1: Red	Danger, act now	85%
2: Amber	Warning, proceed with care	49%
3: Yellow	Telephone text	14%
4: Green	Go ahead	85%
5: Blue	Specified Notice/Warning	88%
6: Clear	No specific meaning	0%
7: White	No specific meaning	0%
8: Purple	Radiation	85%

BASICS OF IP-RATINGS

The IP Ingress Protection rating system provides a means of classifying the Degrees of protection from dust and water afforded by electrical equipment and enclosures.

The system is recognised in most countries and is set out in BS En60529 1992 Degrees of protection.

First Number			Second Number		
Protection agains SOLIDS			Protection against LIQUIDS		
IP		TEST	IP		TEST
0		No Protection	0		No protection
1		Protection against objects over 50mm	1		Protection against vertically falling drops of water
2		Protection against objects over 12mm	2		Protection against direct sprays of water up to 15° from the vertical
3		Protection against objects over 2.5mm	3		Protection against 60° from the vertical
4		Protection against objects over 1mm	4		Protection against water sprayed from all directions. Limited ingress permitted
5		Protection against dust. Limited ingress	5		Protected against low pressure jets of water sprayed from all directions. Limited ingress
6		Totally protected against dust	6		Protected against strong pressure jets of water
			7		Protection against the effects of temporary immersion between 15cm and 1m. for 30 min.
			8		Protection against long periods of immersion under pressure.
			9K		Protection against strong pressure jets of water at a temp. of 80°C for duration of 30 seconds.

SYMBOL DESCRIPTIONS

In this catalogue you will find several different symbols indicating sound & light sources, and some indications of which type of applications these are suitable for.

Be advised that application symbols only are suggestions, and that they would be suitable for different applications also.

Applications:

- Fire
- Industry
- Portable
- Automotive
- Marine
- Subsea
- Telephone
- Traffic
- Junction Box

Basics:

- Ingress Protection
- Weight
- Temperature

Sound sources:

- Bell
- Loudspeaker
- Buzzer
- Electronic Sounder
- Airhorn
- Motorsiren

Light sources:

- BPM
- RPM
- Filament
- LED
- Halogen
- Xenon

BASICS OF APPROVALS

One product can obtain several approvals and certifications.

With these symbols you will find products matching your demands, but be aware that certifications are an on-going process, and that it can be changes, and additional certifications achieved after this catalogue was printed.

CE
"CE" marking is a declaration from the manufacturer that their product conforms to a specific Directive(s) adopted by the EEA (European Economic Area) and is a requirement for the product to be sold into any of the countries in this 18 member group.

GOST-r
Certifies quality of actually supplied goods and their compliance with contractual terms. A quality certificate contains a profile of goods or confirms their compliance with certain standards or specifications of a delivery order. A certificate of compliance is intended for certification of goods produced by russian companies or shipped to Russia by an importer-company.

ATEX
ATEX is the name commonly given to the framework for controlling explosive atmospheres and the standards of equipment and protective systems used in them. It is based on the requirements of two European Directives (Directive 99/92/EC and Directive 94/9/EC).

SIL
Safety Integrity Level (SIL) is defined as a relative level of risk-reduction provided by a safety function, or to specify a target level of risk reduction. In simple terms, SIL is a measurement of performance required for a Safety Instrumented Function (SIF).

FM
The Factory Mutual Approvals Division determines the safety and reliability of equipment, materials, or services utilized in hazardous locations in the United States and elsewhere. Factory Mutual certifies to NEC (National Electrical Code) standards for hazardous locations, NEC Standard 500 (Division classification) and also to the new NEC Standard 505 (Zone classification), which attempts to harmonize American and European classifications.

UL
Underwriters Laboratories Inc. is an independent, nonprofit organization that writes testing standards and tests products for safety and certifies them. UL has developed more than 800 standards for safety, and millions of products and their components are tested to UL's safety standards.

M.E.D.
The intention with the EU Marine Equipment Directive is to reduce costs for the end user by having a simplified model and not having unnecessary expenses by several classification societies or companies to do each their approvals of the same products. A classification society can simply do the classing process by looking up authorized products listed in the MarED database. The classification societies does classifications according to the rules and regulations of the Flag state which rules the classification.

IECEx
The IECEx Scheme is an international Conformity Assessment Scheme covering Electrical Equipment for Explosive Atmospheres, as the Internationally accepted means of demonstrating conformity with IEC Standards prepared by IEC TC31.

UKOOA/PFEER
In summary these regulations state the person or company responsible for an installation is also responsible for protecting persons on the installation from fire and explosion and securing effective emergency response. This implies many requirements, one of them being that a suitable means of informing people on the installation of certain alarm states (with sounders and or speech / PA systems, beacons may also be required to supplement the audible signals).

EN 54-3
EN 54-3 is the European standard for voice alarm products. It is part of the European Union's Construction Products Directive. The use of EN 54 certified products for all new voice alarm installations became mandatory in April 2011. Originally introduced as a European standard for fire alarm systems, EN 54 has now been extended to cover voice evacuation to meet a growing trend in the market towards integration of fire alarm and voice evacuation systems. EN 54 offers support in the creation of a safer environment for staff and the general public in premises where these systems are used, competitive advantage for value added resellers (VARs) and integrators, as well as greater clarity for those involved in specification.

EN 54-23
From 1 March 2013 onwards, fire alarm systems must have, according to EN 54, visual and/or visual-audible signaling devices which comply with EN 54-23 requirements. That means that all visual alarm devices (VADs) which do not have the necessary certification will also lose their national approval (e.g. VdS) and may no longer be used for new installations. There is therefore an acute need for action for the following groups of companies and professionals: planners/ specifiers, fire detection technology experts, system integrators and manufacturers of fire alarm systems, electrical installers and specialist companies as well as building operators in all countries in the EU.

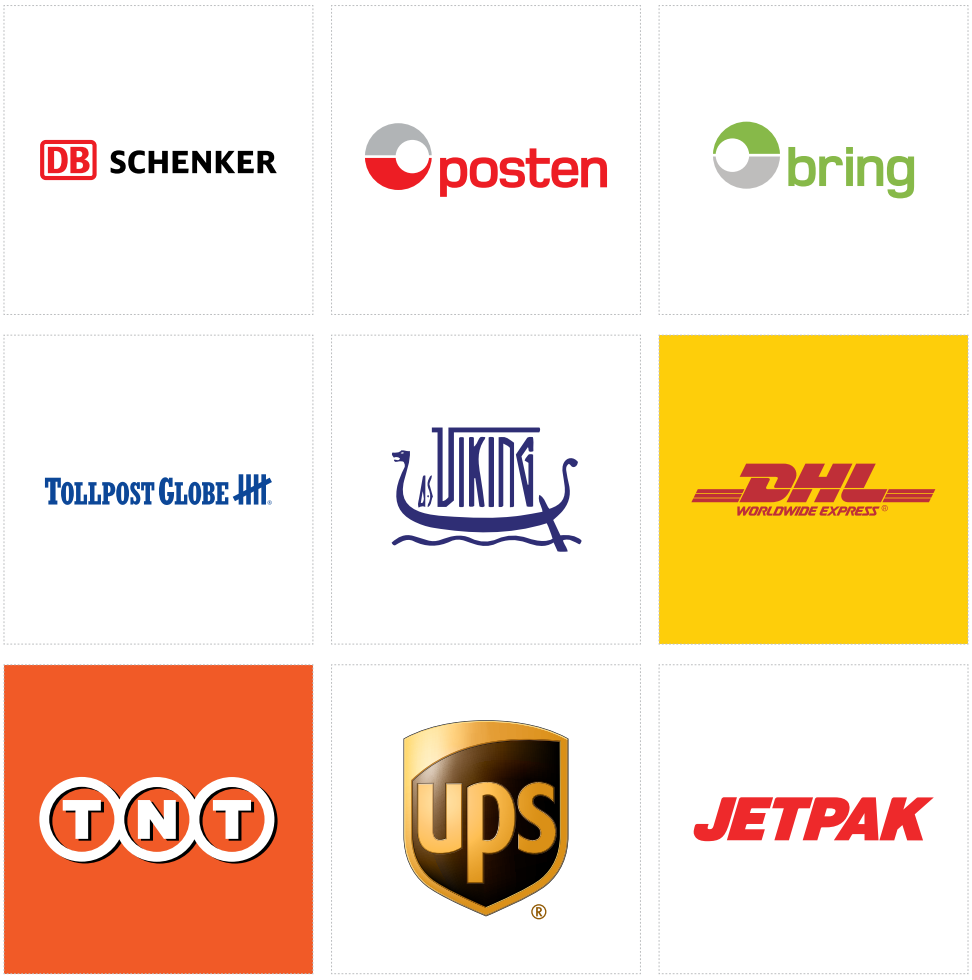
VdS
The approval procedure VdS 2344 is primarily offered for products (components, equipment and systems) in the areas of fire protection and safety technology; it can, however, in some cases also be used for other products. VdS is accredited by the Deutsche Akkreditierungsstelle Technik (DATech) according to DIN EN ISO/IEC 17025 for the testing of products and according to DIN EN 45011 for the certification of products.

INMETRO
Inmetro standards, short for The Instituto Nacional de Metrologia, Normalização e Qualidade Industrial or the National Institute of Metrology, Standardization and Industrial Quality, establish measurement and quality standards in Brazil. Within Brazil, Inmetro standards are responsible for the activities of accreditation of certification bodies, inspection bodies, product performance verification bodies and training bodies, and for the activities of accredita.

SHIPPING

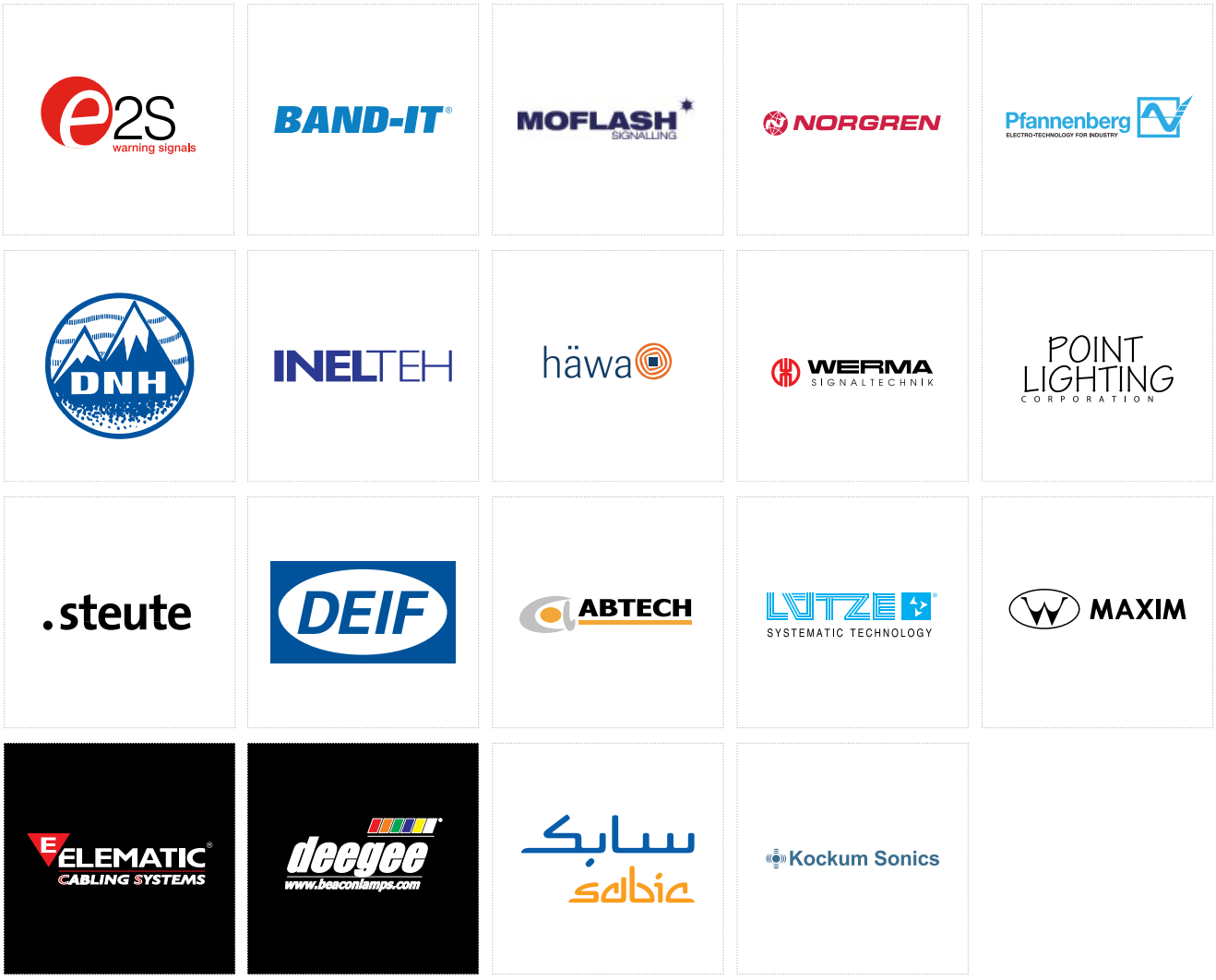
Marin Supply AS have a solid variety of shipping partners, which make us able to deliver the goods to the costumers demand.

- Even same day Express delivery to most places in Scandinavia is possible!



OUR BRANDS

Marin Supply AS have a solid variety of suppliers, which make us able to meet most demands.



SIGNALLING

SIGNALLING IN GENERAL

We offer appropriate solutions that are customized to the relevant requirements of the various areas of signaling technology:

• Indication
• Warning
• Alarm

Indication
E. g. operation display of a machine informs the operator by means of a signaling device. These types of devices inform personnel who are nearby. These devices are not used for the indication of dangerous situations.

The signaling can, e.g. contain the following information:
- Status of a machine, process, test procedure
- Lack of ingoing material / material supply is in danger
- Quality defect, good / defective information
- Process has ended, standby position
- Notification and display of errors
- Display of room occupancy

Warning
E. g. as a start-up signal for a machine. These types of devices warn about situations that could occur.

The warning can, e.g. be executed for the following events:
- Caution: Critical status, proceed with caution
- Ready for handling
- Attention is necessary
- Dangerous situations can occur when no measures are in place
- Corrective action is necessary within a suitable amount of time
- Warning of economic and health damages
- Process is outside the normal operating limit but within an acceptable error limit
- A status change is being executed

Reaction of the user: Monitor and / or take corrective action

Alarm
E. g. the evacuation alarm in case of a fire. Devices of this nature generate an alarm for emergency situations and have the highest priority.

The alarm can, e.g. be executed for the following events:
- A dangerous situation has already occurred
- Danger of life and limb
- Acute health risk
- Risk for the environment
- Abnormal process status
- Exceeds maximum tolerance limits

Reaction of the user: Immediate reaction is necessary

A flash says more than a thousand words!
Visual signalling devices ensure safety at first sight.

Regardless of whether you use flashing lights or continuous lights – Our visual signalling devices are ‚eye-catchers'that can save lives in every respect. They ensure any process status can be displayed in a timely manner. Thanks to their unmistakable demand for action, they offer the best prerequisites for running trouble-free production processes.

Sound waves are a language that everybody understands!
Use our range of audible signalling devices for all industrial areas of application.

A baby's cry, cars sounding their horns, the front door bell – acoustic signals are part of our life right from the very beginning. All over the world. Everybody who hears a loud acoustic signal feels called upon to act in some way, regardless of the situation. On the basis of these conditions, the use of acoustic signalling devices is also of great advantage in the industrial sector.

Malfunctions are reported immediately, dangerous situations are displayed without delay.

Benefit from our wide range of acoustic signalling devices, which are guaranteed to draw the necessary attention in your company - when it really matters.

Seeing and hearing – double alarms warn better!
Visual-audible signalling devices offer double the amount of safety in one package

There are many industrial areas of use for signaling devices that are associated with adverse environmental conditions and higher demands, making the mutual assistance of acoustic and visual signals necessary. For example, when signals need to be noticed at great distances.

Two scenarios make this clear. Visual signals, for example, are easily recognisable in the dark. However, as soon as there is sunlight, other lights, the factory lighting or welding flashes, the observer is faced with a barely distinguishable light smog. Therefore, acoustic assistance of the visual signal is necessary.

The same applies to acoustic signals that have to penetrate through machine noise, environmental noise, voice noise, echoes, running motors and hearing protection. They are only reliable in being noticed with visual assistance.

INDUSTRY & MARINE AUDIBLE

Audible warning devices and Designing them Effectively in to Fire and Evacuation Alarm Systems.

All emergency systems contain audible and visual signals to alert people of danger once a hazard has been detected.

It is now accepted that in most systems a form of electronic alarm sounder is initiated via a control panel in order to evacuate or alert people.

Many countries have a national 'evacuate tone', i.e. Germany, France, Holland, Australia etc. The UK does not. BS5839 Part 1 merely states that the evacuate tone should contain frequencies within the range of 500Hz to 1000Hz.

Fire alarm system designers are in the main very comfortable with designing fire alarm sounders into normal environments such as offices, hotels etc. as they have a relatively low ambient background noise, most areas are fairly small and may be covered with a sounder(s) of approx. 100dB(A) at 1 metre or a 6" bell. The locations of these fire alarm sounders are usually based on experience of previous systems or applications and common sense.

How loud should the installed alarm sounder be?
There are 3 considerations:

1. The size of the area to be covered
2. The background noise
3. The frequency of tone (high frequencies DO get attenuated more severely in an industrial environment than lower BS5839 frequencies)

How do I calculate the effective distance and coverage of an alarm sounder?
Most manufacturers state a dB(A) level at 1 metre*

The rule of thumb (inverse square law) is "every time the distance is doubled from a sounder subtract 6 dB(A)".

i.e. a sounder rated at 106db(A) will travel twice as far as a sounder rated at 100dB(A).

Distance (metres)	Reduction (dB(A))
1	0
2 (1m doubled)	-6
4 (2m doubled)	-12
8	-18
16	-24
32	-30
64	-36
128	-42
256	-48
512	-54

The effective distance of a fire alarm sounder using this simple method is when the calculated dB(A) reaches 5dB(A) above the known ambient background noise (As stated in BS5839 Part 1).

For example the effective distance of a 100dB(A)@1 metre sounder in an ambient of 65dB(A) is the distance at which the sounder output level reduces to 70 dB(A) i.e. 100 dB – 30 dB = 70dB. From the above table (and using the inverse square rule / rule of thumb) a reduction of 30 dB means the sounder has an effective 70dB distance of 32 metres.

Likewise for a 120dB(A) @ 1 metre sounder it has a 70dB distance of approximately 300 metres i.e. ten times the effective distance and even more importantly 100 times the coverage area!

*TIP: make sure you know the rated dB level and tolerance of the actual tone you intend to use on a multi-tone sounder. dB levels of the various user selectable tones available on multi tone electronic alarm sounders vary drastically depending on the tone selected. In general the lower the frequency of tone (< 1000Hz) the lower the dB level and the higher the frequency (> 1000Hz [not BS 5839 compliant]) the higher the dB level and the bigger the attenuation.

More tips: In the open a sounder will spread in all directions, but in an enclosed space some of the sound will be reflected and an increased sound level will result. b) If the alarm sounder, already mounted on a wall, is positioned near to a ceiling, more sound will be reflected. Vice-versa for a ceiling mounted sounder. c) An alarm sounder mounted on a wall is more effective than when mounted on a pillar. d) Sounders should be sited so as to avoid immediate obstacles and at an ideal height of approx. 2 to 2.5 metres. e) Sounders when installed that are synchronised will give a more effective overall effect.

How many alarm sounders do I need?
When the area to be covered is large and / or noisy, many designers feel unsure and or / go for the 'add-lots-more-bells / 100 dB sounders-than-normal-approach'. This usually leads to an inadequate coverage and / or the addition of sounders to achieve the bare minimum alarm level after the system has been evaluated during commissioning along with the costly addition of more cable, terminations and labour.

If a room with an area to be covered with an audible alarm is say 30 metres by 20 metres large with very little background noise (approx. 65dB(A)) then it would be reasonable to assume a 100dB sounder would cover this area as it has a 70dB(A) range of approximately 30 metres in low ambient background i.e. giving 5 dB(A) over the background noise (please see later).

Question: how many sounders would you require if the background noise were 85dB(A) say in a heavy machine shop?

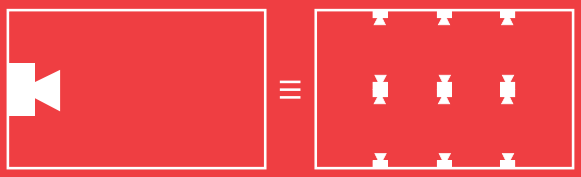
Answer: One! The background noise has increased by 20dB(A) then install a sounder 20dB(A) louder i.e. a sounder rated at 120dB(A). Common sense! This principle may be used in all applications where noise and large areas are to be covered.

What are the benefits of using higher output alarm sounders?

In short the use of higher output sounders in large and / or noisy areas will mean an effective alarm level giving a robust and unambiguous alarm dB(A) level. The use of these sounders will also save considerable installation of cable and labour.

Consider the following, an area 50m by 30m has a background noise of 75dB(A) so an alarm level of 80dB(A) is required. The figure compares one 120dB(A) sounder as equal (actually it would give a slightly better level) to twelve 100dB(A) sounders.

To achieve 80dB(A) in an area 50m x 30m



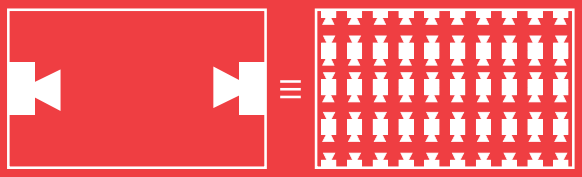
It is obvious which scheme is the most cost effective to install. It may be interesting to note; two, 100dB(A) sounders would be adequate if this was considered as a normal background noise i.e. to achieve a level of approx 70dB(A).

100dB(A) sounder scheme	120dB(A) sounder scheme
12 sounders at 100dB(A)	1 sounder at 120dB(A)
Labour for installation of 12 sounders	Labour for installation of 1 sounder
Labour for installation 24 cable glands	Labour for installation 2 cable glands
Minimum 220 metres of cable	Maximum 50 metres of cable
Labour for installation 200 metres of cable	Labour for installation 50 metres of cable

Put your own costs down next to the above and find out which is most cost effective.

There is no need for calculations to compare the below. Both schemes will give an alarm level of 90dB(A) i.e the background noise is a maximum of 85dB(A). In practice the scheme with the two 120dB sounders will give a more effective alarm level.

To achieve 90dB(A) in an area 50m x 30m



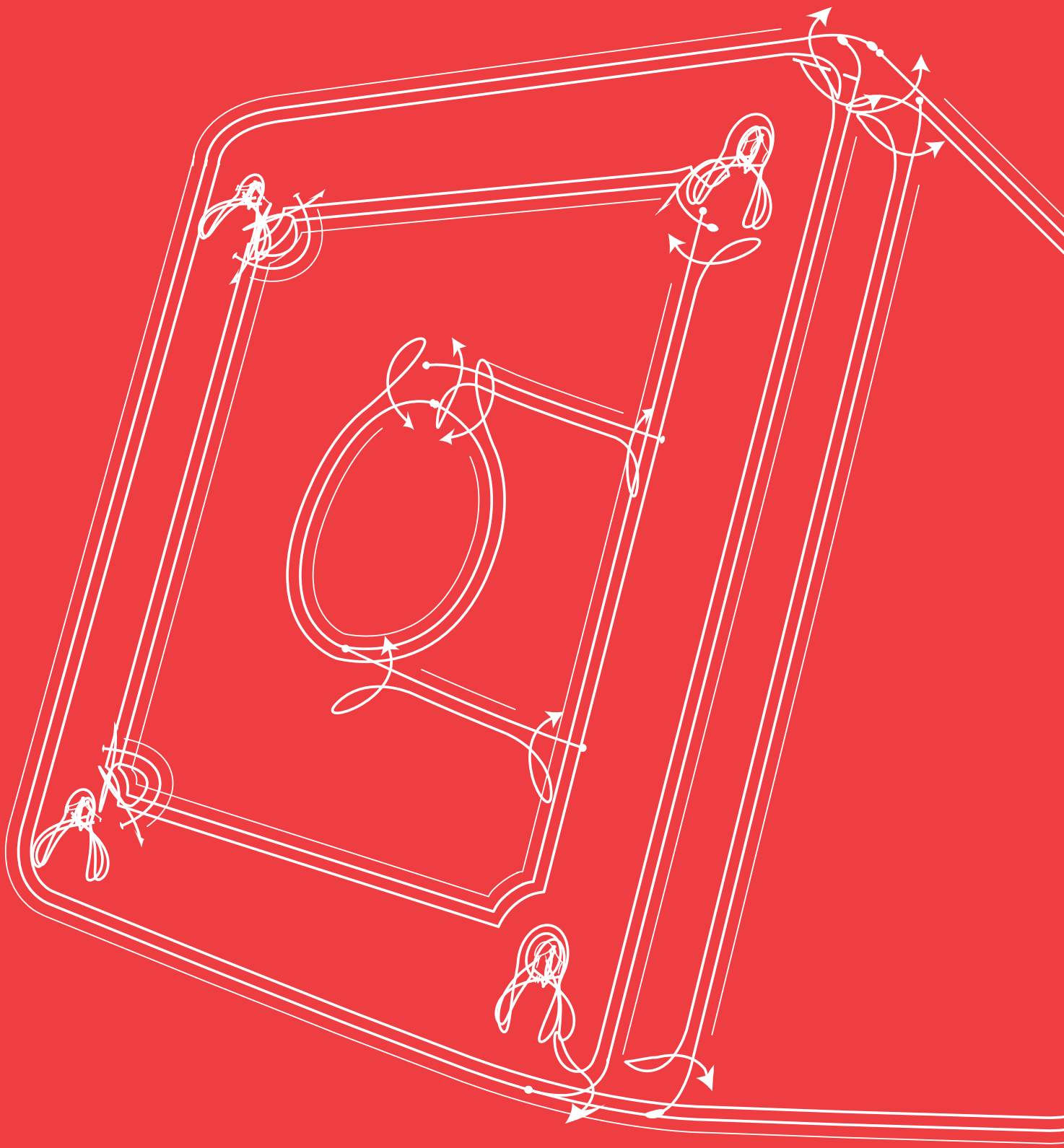
- The above assumes all alarm sounders are synchronised
- Using mid range sounders i.e 105 and 110 dB(A) sounders would require proportionally more / less sounders
- Diagrams are for indicative purposes, no allowance has been made for obstacles or other sound barriers.
- All sites should be subject to a test before installing alarm sounders.

When should I use mains powered alarm sounders?

The use of mains powered alarm sounders means these sounders will have no battery back up. It is difficult to understand why mains powered sounders are still considered when 24v dc sounders are available in versions up to a level of 140dB(A) with the ability to be powered from battery back up.

Where should I not use high output alarm sounders?

High output alarm sounders should not be used in low ambient back ground noises and as a means of "drenching" the area in sound. Alarm systems that are too loud may be dangerous and cause panic, discomfort and make communication very difficult resulting impedance of evacuation procedures. As guidance, the overall alarm level should be a maximum of 10 to 15dB(A) over the ambient background noise.



D105
Alarm Sounder

The D105 is a high output, 112dB(A) alarm sounder. Low current consumption and high SPL in a robust IP66 housing ensure the D105 is suitable for all general signalling applications including fire, security and process control. The corrosion proof, marine grade aluminium die cast enclosure is phosphated and powder coated providing resilence in the harshest of industrial environments.

PRODUCT INFORMATION | PRODUCT IMAGE | AVAILABLE COLOURS

Specification	
Maximum output	112dB(A) @ 1 metre
Nominal output	105dB(A) @ 1m +/- 3dB - Tone 2
No. of tones	32 (UKOOA / PFEER compliant)
No. of stages	3
Volume control	Max. 105dB(A); Min. 96dB(A) - Tone 2
Effective range	60m @ 1KHz
Voltages DC	24V dc (10-30V dc); 48V dc (35-60V dc); [24V dc units can use 24V ac for single stage apps.]
Voltages AC	24V ac; 115V ac; 230V ac
Stage switching	Negative Positive switching option available Reverse polarity stage switching on DC units.
Housing material	Marine grade aluminium A1 Si12 Cu
Cable entries	2 x M20 x 1.5mm threaded gland entries. Supplied with one stopping plug
Terminals	0.5 to 1.5mm² cables
Relative humidity	90% at 20°C

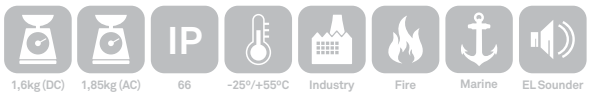
Features

- High output, up to 112dB(A) SPL
- 3 remotely selectable alarm stages.
- Choice of 32 alarm tone frequencies.
- Automatic synchronisation on multi-sounder system.
- Continuously rated.
- Stainless steel fixings.
- Duplicate cable terminations (in & out for daisy-chain installations).
- Tropicalisation available on request.
- Available with custom tone configurations
- and frequencies.
- 'Programmable' version available:
  - 45 alarm tones
  - 4 remotely selectable stages
  - Any tone can be assigned to any stage
  - User configurable continuous frequency tone

Approvals

- UL & cULs approved: General signalling use.

Housing colours:



D112
Alarm Sounder

The D112 is a high output, 119dB(A) alarm sounder. Low current consumption and high SPL in a robust IP66 housing ensure the D112 is suitable for all general signalling applications including fire, security and process control. The corrosion proof, marine grade aluminium die cast enclosure is phosphated and powder coated providing resilence in the harshest of industrial environments.

PRODUCT INFORMATION

PRODUCT IMAGE

AVAILABLE COLOURS

Specification	
Maximum output	119dB(A) @ 1 metre
Nominal output	112dB(A) @ 1m +/- 3dB - Tone 2
No. of tones	45 (UKOOA / PFEER compliant)
No. of stages	3
Volume control	Max. 112dB(A); Min. 100dB(A) - Tone 2
Effective range	125m @ 1KHz
Voltages DC	24V dc (10-30V dc); 48V dc (35-60V dc); [24V dc units can use 24V ac for single stage apps.]
Voltages AC	24V ac; 115V ac; 230V ac
Stage switching	Negative Positive switching option available Reverse polarity stage switching on DC units.
Housing material	Marine grade aluminium A1 Si12 Cu
Cable entries	2 x M20 x 1.5mm threaded gland entries. Supplied with one stopping plug
Terminals	0.5 to 1.5mm² cables
Relative humidity	90% at 20°C

Features

- High output, up to 119dB(A) SPL
- 3 remotely selectable alarm stages.
- Choice of 45 alarm tone frequencies.
- Automatic synchronisation on multi-sounder system.
- Continuously rated.
- Stainless steel fixings.
- Duplicate cable terminations (in & out for daisy-chain installations).
- Tropicalisation available on request.
- Available with custom tone configurations
- and frequencies.
- 'Programmable' version available:
  - 45 alarm tones
  - 4 remotely selectable stages
  - Any tone can be assigned to any stage
  - User configurable continuous frequency tone

Approvals

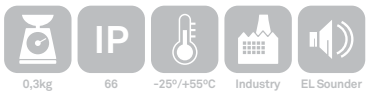
- UL & cULs approved: General signalling use.

Housing colours:

Bedhead Sounder
The BEDHEAD alarm sounder is a low current consumption device suitable for close proximity signalling in fire and security applications.

Electronic Sounder	
Maximum output	90dB(A) @ 1 metre
No. of tones	10
No. of stages	3
Supply Voltage	10-30Vdc
Effective Range	10m @ 1KHz
Measurements	85*50mm

Colours:



SONF1
The SONF1 is a compact, high output, 100dB(A) alarm sounder. Low current consumption and high SPL in a robust fire retardant housing ensure the SONF1 is suitable for all general signalling applications including fire, security and process control.

Electronic Sounder	
Maximum output	100dB(A) @ 1 metre
No. of tones	10 (UK0OA / PFEER compliant)
No. of stages	2
Supply Voltage	10-30Vdc, 115Vac, 230Vac
Effective Range	30m @ 1KHz
Measurements	86*86*56mm

Features
- *Automatic synchronisation on multi-sounder system.*
- *Continuously rated.*
- *Stainless steel fixings.*
- *Unit can be mounted using external lugs or internal BESA compatible fixing positions.*
- *Duplicate cable terminations (in & out for daisy-chain installations).*
- *Tropicalisation available on request.*
- *Available with custom tone configurations and frequencies.*

Colours:

SONF1HO
The SONF1-HO is a compact, high output, 105dB(A) alarm sounder. Low current consumption and high SPL in a robust fire retardant housing ensure the SONF1-HO is suitable for all general signalling applications including fire, security and process control.

Electronic Sounder	
Maximum output	105dB(A) @ 1 metre
No. of tones	10 (UK0OA / PFEER compliant)
No. of stages	2
Supply Voltage	12Vdc, 24Vdc
Effective Range	32m @ 1KHz
Measurements	86*86*56mm

Features
- *Automatic synchronisation on multi-sounder system.*
- *Continuously rated.*
- *Stainless steel fixings.*
- *Unit can be mounted using external lugs or internal BESA compatible fixing positions.*
- *Duplicate cable terminations (in & out for daisy-chain installations).*
- *Tropicalisation available on request.*
- *Available with custom tone configurations and frequencies.*
- *Reverse polarity diode protection*

Colours:

A100

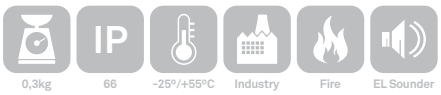
The A100 is a compact, high output, 104dB(A) alarm sounder. Low current consumption and high SPL in a robust fire retardant housing ensure the A100 is suitable for all general signalling applications including fire, security and process control.

Electronic Sounder	
Maximum output	104dB(A) @ 1 metre
No. of tones	32 (UKOOA / PFEER compliant)
No. of stages	3
Supply Voltage	10-30Vdc, 24Vac, 35-60Vdc, 115Vac, 230Vac
Effective Range	32m @ 1KHz
Measurements	86*86*76mm

Features

- *Automatic synchronisation on multi-sounder system.*
- *Continuously rated.*
- *Stainless steel fixings.*
- *Unit can be mounted using external lugs or internal BESA compatible fixing positions.*
- *Duplicate cable terminations (in & out for daisy-chain installations).*
- *Tropicalisation available on request.*
- *Available with custom tone configurations and frequencies.*

Colours:



A105N

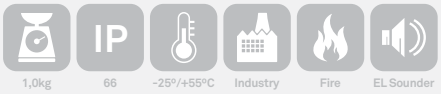
The A105N is a high output, 112dB(A) alarm sounder. Low current consumption and high SPL in a robust fire retardant IP66 housing ensure the A105N is suitable for all general signalling applications including fire, security and process control.

Electronic Sounder	
Maximum output	112dB(A) @ 1 metre
No. of tones	32 (UKOOA / PFEER compliant)
No. of stages	3
Supply Voltage	10-30Vdc, 24Vac, 35-60Vdc, 72-120Vdc, 115Vac, 230Vac
Effective Range	60m @ 1KHz
Measurements	130*130*133mm

Features

- *Automatic synchronisation on multi-sounder system.*
- *Continuously rated.*
- *Stainless steel fixings.*
- *Unit can be mounted using external lugs or internal BESA compatible fixing positions.*
- *Duplicate cable terminations (in & out for daisy-chain installations).*
- *Tropicalisation available on request.*
- *Available with custom tone configurations and frequencies.*

Colours:



A112N

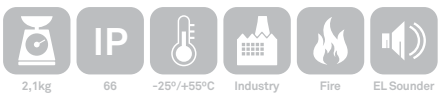
The A112N is a high output, 119dB(A) alarm sounder. High SPL in a robust fire retardant IP66 housing ensure the A112N is suitable for all general signalling applications including fire,security and process control.

Electronic Sounder	
Maximum output	119dB(A) @ 1 metre
No. of tones	45 (UKOOA / PFEER compliant)
No. of stages	3
Supply Voltage	10-30Vdc, 24Vac, 35-60Vdc, 90-250Vdc, 115Vac, 230Vac
Effective Range	125m @ 1KHz
Measurements	168*168*156mm

Features

- *Automatic synchronisation on multi-sounder system.*
- *Continuously rated.*
- *Stainless steel fixings.*
- *Unit can be mounted using external lugs or internal BESA compatible fixing positions.*
- *Duplicate cable terminations (in & out for daisy-chain installations).*
- *Tropicalisation available on request.*
- *Available with custom tone configurations and frequencies.*

Colours:



A121

The A121 is a very high output, 126dB(A) alarm sounder. High SPL in a robust, fire retardant IP66 housing ensure the A121 is suitable for all general signalling applications including fire, security and process control.

Electronic Sounder	
Maximum output	126dB(A) @ 1 metre
No. of tones	45 (UKOOA / PFEER compliant)
No. of stages	3
Supply Voltage	10-30Vdc, 24Vac, 35-60Vdc, 90-250Vdc, 115Vac, 230Vac
Effective Range	300m @ 1KHz
Measurements	190*190*192mm

Features

- *Automatic synchronisation on multi-sounder system.*
- *Continuously rated.*
- *Stainless steel fixings.*
- *Unit can be mounted using external lugs or internal BESA compatible fixing positions.*
- *Duplicate cable terminations (in & out for daisy-chain installations).*
- *Tropicalisation available on request.*
- *Available with custom tone configurations and frequencies.*

Colours:

2,7kg | IP 66 | -25°/+55°C | Industry | Fire | EL Sounder

EN 54-3 | VdS | UL | CE

MA112

The MA112 is a high output, 119dB(A) alarm sounder. With a robust, fire retardant, IP66 & IP67 housing, the MA112 is particularly suitable for harsh environments with high ambient noise levels.

Electronic Marine Sounder	
Maximum output	119dB(A) @ 1 metre
No. of tones	45 (UKOOA / PFEER compliant)
No. of stages	3
Supply Voltage	10-30Vdc, 24Vac, 35-60Vdc, 115Vac, 230Vac
Effective Range	125m @ 1KHz
Measurements	Ø181*273MM

Features

- *Automatic synchronisation on multi-sounder system.*
- *Continuously rated.*
- *Stainless steel fixings.*
- *Ratchet adjustable stainless steel 'U' bracket for 360° positioning*
- *Duplicate cable terminations (in & out for daisy-chain installations).*
- *Tropicalisation available on request.*
- *Available with custom tone configurations and frequencies.*

Colours:

3,0kg | IP 66/67 | -25°/+55°C | Industry | Fire | Marine | EL Sounder

CE

MA121

The MA121 is a very high output, 126dB(A) alarm sounder. With a high SPL in a robust, fire retardant IP66 & IP67 housing, the MA121 is particularly suitable for harsh environments with high ambient noise levels.

Electronic Marine Sounder	
Maximum output	126dB(A) @ 1 metre
No. of tones	45 (UKOOA / PFEER compliant)
No. of stages	3
Supply Voltage	10-30Vdc, 24Vac, 35-60Vdc, 115Vac, 230Vac
Effective Range	300m @ 1KHz
Measurements	Ø220*323MM

Features

- *Automatic synchronisation on multi-sounder system.*
- *Continuously rated.*
- *Stainless steel fixings.*
- *Ratchet adjustable stainless steel 'U' bracket for 360° positioning*
- *Duplicate cable terminations (in & out for daisy-chain installations).*
- *Tropicalisation available on request.*
- *Available with custom tone configurations and frequencies.*

Colours:

3,0kg | IP 66/67 | -25°/+55°C | Industry | Fire | Marine | EL Sounder

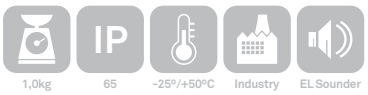
CE

B300SND
The B300SND is a compact signalling horn suitable for mounting on machinery or in general signalling applications. The B300SND reproduces the alert sound of traditional electro-mechanical equivalents but without any of the reliability issues. In addition to the 'buzzer' type sound the unit features a further two alarm sounds.

Electronic Sounder	
Maximum output	98dB(A) @ 1 metre
No. of tones	3
No. of stages	1
Supply Voltage	10-30Vdc/ac, 40-260Vac/dc
Effective Range	10m @ 1KHz
Measurements	Ø100*103MM

Features
- *Bayonet fixing body.*
- *Anti-tamper locking screw.*
- *Stainless steel fixings.*
- *Compatible with B350 and B450 traffic light series.*

Colours:



CE

B400SND
The B400SND is a 110 dB(A) high output signalling horn suitable for a variety of general signalling applications. The B400SND reproduces the alert sound of traditional electro-mechanical equivalents but without any of the reliability issues. In addition to the 'buzzer' type sound the unit features a further two alarm sounds. All first stage sounds have a remotely selectable second stage.

Electronic Sounder	
Maximum output	110dB(A) @ 1 metre
No. of tones	3
No. of stages	2
Supply Voltage	10-30Vdc/ac, 40-260Vac/dc
Effective Range	60m @ 1KHz
Measurements	Ø140*120MM

Features
- *Bayonet fixing body.*
- *Anti-tamper locking screw.*
- *Stainless steel fixings.*
- *Compatible with B350 and B450 traffic light series*

Colours:

CE

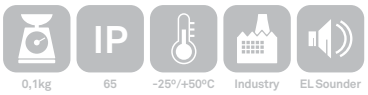
H100B
The H100 series contains two variants of signalling horn, the H100T with trumpet horn and the compact H100B without trumpet horn. Both electronic signals authentically reproduce the alert sound of traditional electro-mechanical units but without any of the reliability issues.

Electronic Sounder	
Maximum output	100dB(A) @ 1 metre
No. of tones	3
No. of stages	1
Supply Voltage	10-30Vdc/ac, 40-260Vac/dc
Effective Range	30m @ 1KHz
Measurements	Ø85*80MM

Features
- *Volume control*
- *Stainless steel fixings.*

Rated for continuous use the H100 series is a compact, high output signal suitable for a variety of installation types. In addition to the 'buzzer' type sound the unit features a further two alarm sounds.

Colours:



CE

H100T

The H100 series contains two variants of signalling horn, the H100T with trumpet horn and the compact H100B without trumpet horn. Both electronic signals authentically reproduce the alert sound of traditional electro-mechanical units but without any of the reliability issues.

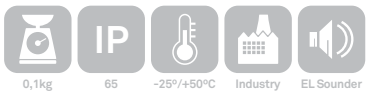
Signalling Horn with Trumpet	
Maximum output	100dB(A) @ 1 metre
No. of tones	3
No. of stages	1
Supply Voltage	10-30Vdc/ac, 40-260Vac/dc
Effective Range	30m @ 1KHz
Measurements	Ø85*80MM

Features

- *Volume control*
- *Stainless steel fixings.*

Rated for continuous use the H100 series is a compact, high output signal suitable for a variety of installation types. In addition to the 'buzzer' type sound the unit features a further two alarm sounds.

Colours:



CE

H110T

The H110T is a very high output electronic signal horn capable of generating a traditional 'buzzer' warning tone traditionally associated with electro-mechanical signals.

Signalling Horn with Trumpet	
Maximum output	110dB(A) @ 1 metre
No. of tones	3
No. of stages	2
Supply Voltage	10-30Vdc/ac, 40-260Vac/dc
Effective Range	30m @ 1KHz
Measurements	Ø112*336MM

Features

- *Volume control*
- *Stainless steel fixings.*

With an output of 110dB(A) the H110T is ideal for all general signalling applications and the ingress protection ratingof IP65 means it is suitable for indoor and outdoor installations.

In addition to the 'buzzer' type sound the unit features a further two alarm tones. The first stage sounds also have a remotely selectable second stage.

Colours:

CE

HA105

Applications and users that have traditionally demanded conventional electromechanical hooters, sirens, buzzers and bells can now choose the next generation alternative. The technology employed in the Hootronic range features the latest in amplifier and digital to analogue conversion technology. The Hootronic series of products faithfully reproduce the sounds made by legacy electro-mechanical signalling devices butin a modern, reliable and cost effective way.

Electronic Siren, Buzzer, Hooter & Bell	
Maximum output	112dB(A) @ 1 metre
No. of tones	5
No. of stages	3
Supply Voltage	10-30Vdc, 115Vac, 230Vac
Effective Range	60m @ 1KHz
Measurements	130*130*133MM

Features

- *Automatic synchronisation on multi-sounder system.*
- *Continuously rated.*
- *Stainless steel fixings.*
- *Unit can be mounted using external lugs or internal BESA compatible fixing positions.*
- *Duplicate cable terminations (in & out for daisy-chain installations).*
- *Tropicalisation available on request.*

Remote switch generates genuine 'tail off' to sound when alarm is terminated.

Colours:

CE

HA121

Applications and users that have traditionally demanded conventional electromechanical hooters, sirens, buzzers and bells can now choose the next generation alternative. The technology employed in the Hootronic range features the latest in amplifier and digital to analogue conversion technology. The Hootronic series of products faithfully reproduce the sounds made by legacy electro-mechanical signalling devices but in a modern, reliable and cost effective way.

Electronic Siren, Buzzer, Hooter & Bell	
Maximum output	121dB(A) @ 1 metre
No. of tones	5
No. of stages	3
Supply Voltage	10-30Vdc, 115Vac, 230Vac
Effective Range	300m @ 1KHz
Measurements	190*190*191MM

Features

• Automatic synchronisation on multi-sounder system.
• Continuously rated.
• Stainless steel fixings.
• Unit can be mounted using external lugs or internal BESA compatible fixing positions.
• Duplicate cable terminations (in & out for daisy-chain installations).
• Tropicalisation available on request.

Colours:

HMA121

Applications and users that have traditionally demanded conventional electromechanical hooters, sirens, buzzers and bells can now choose the next generation alternative. The technology employed in the Hootronic range features the latest in amplifier and digital to analogue conversion technology. The Hootronic series of products faithfully reproduce the sounds made by legacy electro-mechanical signalling devices but in a modern, reliable and cost effective way.

Electronic Siren, Buzzer, Hooter & Bell	
Maximum output	124dB(A) @ 1 metre
No. of tones	5
No. of stages	3
Supply Voltage	10-30Vdc, 115Vac, 230Vac
Effective Range	300m @ 1KHz
Measurements	Ø220*323MM

Features

• Automatic synchronisation on multi-sounder system.
• Continuously rated.
• Large termination area.
• Stainless steel fixings.
• Ratchet adjustable stainless steel 'U' bracket for 360° positioning.
• Duplicate cable terminations(in & out for daisy-chain installations).
• Tropicalisation available on request.

Colours:

GPH

The GPH series are low profile, high output, 105dB(A) alarm horns designed as a maintenance free, reliable alternative to solenoid type buzzers. Low current consumption and high SPL in a robust, fire retardant housing, ensures the GPH is suitable for all general signalling applications.

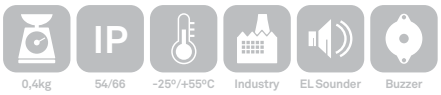
Alarm Horn - Buzzer	
Maximum output	105dB(A) @ 1 metre
No. of tones	3
No. of stages	1
Supply Voltage	10-30Vdc, 24Vac 115Vac, 230Vac
Effective Range	32m @ 1KHz
Measurements	116*116*30-152*152*30MM

Features

• Automatic synchronisation on multi-sounder system.
• Continuously rated.
• Stainless steel fixings.
• Duplicate cable terminations (in & out for daisy-chain installations).
• Tropicalisation available on request.

The GPH1 is a surface mount version with back box, the GPH2 is a flush mount variant for use in panel mount applications or for use with standard 4" back boxes.

Colours:



A105N Appello-X

The A105NAX Appello X is the next generation of user recordable alarm sounder capable of storing up to 2 minutes of content. The A105NAX records, stores and plays back with unsurpassed clarity, user defined voice messages, music or sounds stored directly to non-volatile memory without any intermediate analogue to digital conversion. Low current consumption and CD quality reproduction in a robust fire retardant Type 4/4X/3R/13, IP66 housing ensure the A105NAX Appello X is suitable for all general signalling applications including fire, security and process control.

User recordable alarm siren	
Maximum output	110dB(A) @ 1 metre
No. of tones	45 (UKOOA / PFEER compliant)
No. of Messages	4 (30 Seconds each)
Supply Voltage	10-30VDc, 90-260VAc
Effective Range	60m @ 1KHz
Measurements	130*130*133mm

Features

The A105NAX Appello user recordable unit enables the end user to record any type of content such as voice or music that can then be played back at CD quality output at SPL's of up to 102dB(A) at 1 metre. The user recordable content can be reproduced repeatedly, alternating with or without one of the built-in 45 alarm tones. The alarm tone notification has an output of up to 110dB(A) at 1 metre. The user defined content can be recorded by either using the on-board microphone or through the 'line-in' audio Input using the supplied 3.5mm audio cable from devices such as a PC, MP3 or CD player. For multiple unit installations the recording process is only required once to create a master unit which can then be used to program all other A105NAX units on the system using the supplied 'Synch' cable, thereby Guaranteeing synchronization during playback.

Colours:

A121 Appello-X

The A121AX Appello X is the next generation of user recordable alarm sounder capable of storing up to 2 minutes of content. The A121AX records, stores and plays back with unsurpassed clarity, user defined voice messages, music or sounds stored directly to non-volatile memory without any intermediate analogue to digital conversion. Low current consumption and CD quality reproduction in a robust fire retardant Type 4/4X/3R/13, IP66 housing ensure the A121AX Appello X is suitable for all general signalling applications including fire, security and process control.

User recordable alarm siren	
Maximum output	126dB(A) @ 1 metre
No. of tones	45 (UKOOA / PFEER compliant)
No. of Messages	4 (30 Seconds each)
Supply Voltage	14-30VDc. 90-260VAc
Effective Range	300m @ 1KHz
Measurements	190*184*191mm

Features

The A121AX Appello user recordable unit enables the end user to record any type of content such as voice or music that can then be played back at CD quality output at SPL's of up to 112dB(A) at 1 metre. The user recordable content can be reproduced repeatedly, alternating with or without one of the built-in 45 alarm tones. The alarm tone notification has an output of up to 126dB(A) at 1 metre. The user defined content can be recorded by either using the on-board microphone or through the 'line-in' audio input using the supplied 3.5mm audio cable from devices such as a PC, MP3 or CD player. For multiple unit installations the recording process is only required once to create a master unit which can then be used to program all other A121AX units on the system using the supplied 'Synch' cable, thereby guaranteeing synchronization during playback.

Colours:

MV121 Appello-X

The MV121 Appello X is the next generation of user recordable alarm sounder capable of storing up to 2 minutes of content. The MV121 records, stores and plays back with unsurpassed clarity, user defined voice messages, music or sounds stored directly to non-volatile memory without any intermediate analogue to digital conversion. Low current consumption and CD quality reproduction in a robust fire retardant Type 4/4X/3R/13, IP66/67 housing ensure the MV121 Appello X is suitable for all general signalling applications including fire, security and process control.

User recordable alarm siren	
Maximum output	126dB(A) @ 1 metre
No. of tones	45 (UKOOA / PFEER compliant)
No. of Messages	4 (30 Seconds each)
Supply Voltage	14-30VDc. 90-260VAc
Effective Range	300m @ 1KHz
Measurements	190*184*191mm

Features

The MV21AX Appello user recordable unit enables the end user to record any type of content such as voice or music that can then be played back at CD quality output at SPL's of up to 112dB(A) at 1 metre. The user recordable content can be reproduced repeatedly, alternating with or without one of the built-in 45 alarm tones. The alarm tone notification has an output of up to 126dB(A) at 1 metre. The user defined content can be recorded by either using the on-board microphone or through the 'line-in' audio input using the supplied 3.5mm audio cable from devices such as a PC, MP3 or CD player. For multiple unit installations the recording process is only required once to create a master unit which can then be used to program all other MV121AX units on the system using the supplied 'Synch' cable, thereby guaranteeing synchronization during playback.

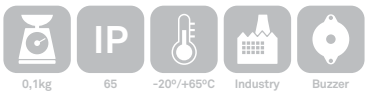
Colours:

E2S22D
The E2S-22D range consists of the highest quality FloydBell continuous tone and dual tone panel mounted piezo buzzers. The built-in volume control provides variable attenuation up to 20dB(A). The terminals are standard 6.35mm/0.25" quick-connect blades for push-on or direct solder attachment.

ø22mm Buzzers - Panel Mount Indicators	
Maximum output	95dB(A) @ 1 metre
No. of tones	2
No. of stages	1
Supply Voltage	10-30Vdc, 115Vac, 230Vac
Effective Range	10m @ 1KHz
Measurements	Ø22mm

Features
- *Volume control.*
- *Stainless steel diaphragm.*
- *Withstands vibration between 0 and 55 Hz. on all axes.*

Colours:



E2S28D
The E2S-22D range consists of the highest quality FloydBell continuous tone and dual tone panel mounted piezo buzzers. The built-in volume control provides variable attenuation up to 20dB(A). The terminals are standard 6.35mm/0.25" quick-connect blades for push-on or direct solder attachment.

ø28mm Buzzers - Panel Mount Indicators	
Maximum output	95dB(A) @ 1 metre
No. of tones	2
No. of stages	1
Supply Voltage	10-30Vdc, 115Vac, 230Vac
Effective Range	10m @ 1KHz
Measurements	Ø28mm

Features
- *Volume control.*
- *Stainless steel diaphragm.*
- *Withstands vibration between 0 and 55 Hz. on all axes.*

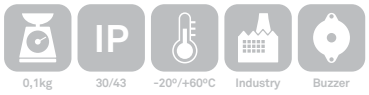
Colours:

118 & 119 Buzzers
The 118 & 119 range consists of continuous tone and dual tone panel mounted piezo buzzers. The Optional dust cover will provide extra protection against harsh environments. Quick-connect blades for push-on or direct solder attachment.

ø28mm Buzzers - Panel Mount Indicators	
Maximum output	90dB(A) @ 1 metre
No. of tones	1
No. of stages	1
Supply Voltage	12Vdc/ac, 24Vdc/ac, 48Vdc/ac, 115Vac, 230Vac
Effective Range	10m @ 1KHz
Measurements	Ø28mm

Features
- *Stainless steel diaphragm.*

Colours:

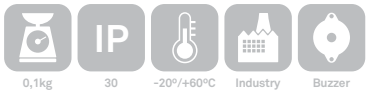


114 Buzzer

The 114 range consists of continuous tone panel mounted piezo buzzers.. Quick-connect blades for push-on or direct solder attachment.

Ø30,5mm Buzzers - Panel Mount Indicators	
Maximum output	85dB(A) @ 1 metre
No. of tones	1
No. of stages	1
Supply Voltage	12-30Vdc/ac, 110-240Vac/dc
Effective Range	10m @ 1KHz
Measurements	Ø30,5mm

Colours:



DS5

The sounders from the DS 5 series can be used for tough demands under industrial conditions and as universal alarms. The sounders, which are suitable for use both indoors and outdoors, generate warning signals in 31 different tones can be selected with the aid of an internal switch.

Electronic Sounder	
Maximum output	105dB(A) @ 1 metre
No. of tones	32 (UK0OA / PFEER compliant)
No. of stages	3
Supply Voltage	12Vdc, 24Vdc, 24Vac, 48Vdc, 115Vac, 230Vac
Effective Range	60m @ 1KHz
Measurements	130*130*133mm

Features

- *Die-cast aluminium body.*
- *Stainless steel fixings.*
- *Duplicate cable terminations (in & out for daisy-chain installations).*

Colours:

DS10

The sounders from the DS 10 series can be used for tough demands under industrial conditions and as universal alarms. The sounders, which are suitable for use both indoors and outdoors, generate warning signals in 31 different tones can be selected with the aid of an internal switch.

Electronic Sounder	
Maximum output	110dB(A) @ 1 metre
No. of tones	32 (UK0OA / PFEER compliant)
No. of stages	3 (Total of 16 seconds)
Supply Voltage	12Vdc, 24Vdc, 24Vac,-48Vdc, 115Vac, 230Vac
Effective Range	60m @ 1KHz
Measurements	130*130*133mm

Features

- *Die-cast aluminium body.*
- *Stainless steel fixings.*
- *Duplicate cable terminations (in & out for daisy-chain installations).*

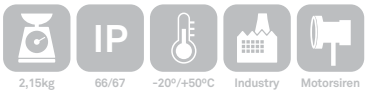
Colours:

AS300
The AS300M range of sirens were designed for a wide range of industrial signalling applications where a very powerful high output signal is required. The sirens incorporate a fractional horse power motor that drives an internal impellor at high RPM forcing air through the slotted front cover creating its unique penetrating sound.

Motor siren	
Maximum output	127dB(A) @ 1 metre
No. of tones	1
No. of stages	1
Supply Voltage	10-30Vdc, 115Vac, 230Vac
Effective Range	300+m @ 1KHz
Measurements	Ø113*170mm

Features
- *Continuously rated*
- *Suitable for wall or pole mounting*
- *Omni-directional 3600 coverage*
- *Very high sound output*
- *Dustproof and Weatherproof (when mounted as per instructions)*

Colours:



212 Motor siren
The sirens types 212 may be used for all applications, as e.g. factories, ports and for marine use. The DEIF sirens were previously manufactured by the company MALLING. The MALLING marine products were widely recognized for their applicability and reliability, being thorougly tested and very robust. The DEIF sirens combine these advantages with an updating of the construction to ensure that the sirens now are designed to meet the latest requirements of the Machinery Directive and of the EMC Directive.

Motor siren	
Maximum output	118dB(A) @ 1 metre
No. of tones	1
No. of stages	1
Supply Voltage	24Vdc/ac, 230Vac/dc
Effective Range	300+m @ 1KHz
Measurements	Ø150*190mm

Features
- *Extremely reliable*
- *Enclosure to IP54*
- *Sound pressures 110...118dB*
- *Voltages 24 and 220V*
- *Pendant or upright mounting*

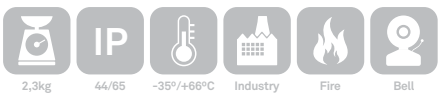
Colours:

A8BK
The Adaptabel range is a high quality solenoid driven bell designed for use in commercial, industrial and transportation applications. With a choice of three gong sizes, this unit delivers a clear, loud ring which is free from mechanical clatter. The bigger the gong, the deeper, louder and more penetrating the sound. When fitted with the optional back box, the units are weatherproof and suitable for mounting in exposed locations.

Industrial bell	
Maximum output	102dB(A) @ 1 metre
No. of tones	1
No. of stages	1
Supply Voltage	24Vdc/ac, 230Vac/dc
Effective Range	30+m @ 1KHz
Measurements	Ø203*85mm

Features
- *Supplied with a universal mounting plate for all installation options*
- *Rugged die-cast construction*
- *Robust and reliable*
- *Wide range of voltages available*
- *Optional IP65 weatherproof back box*

Colours:



TDE

The AP Series of air horns are suitable for general purpose signalling where high output is required such as foundries, steelworks and petrochemical plants. Operated from a compressed air supply, their powerful low frequency sound cuts through background noise to provide an effective alarm. Optional compressor is available for applications which do not have an on-site air supply.

Air Horn	
Maximum output	125dB(A) @ 1 metre
No. of tones	1
No. of stages	55-140 Psi
Supply Voltage	24Vdc / 230Vdc
Effective Range	300+m
Measurements	Ø203*85mm

Features

- *Continuous signal*
- *Optional compressor if no direct air supply available*
- *Robust construction*
- *Optional solenoid valve available with 24Vdc or 230Vac supply*

Colours:

RoHS CE

AQUA

Aqua 30 is a completely sealed loudspeaker designed for underwater applications. The Aqua 30 features rated power 30 watts at 8 ohms and is constructed from ABS materials. The Aqua 30 is ideal for applications including synchronised swimming, diving courses, hotels, leisure parks and special applications such as test laboratories.

PA Underwater Loadspeaker	
Maximum output	118dB(A) @ 1 metre
No. of tones	80 – 20.000 Hz
No. of stages	20 W / 30 W
Supply Voltage	(-6dB) 1kHz / 4kHz: 180° / 180°
Effective Range	200m2
Measurements	103*137*53mm

Features

- *Cable termination code: Green/yellow: Ground Brown: (+). Blue: (-)*
- *Recommended installation deep 0,5m to 2m.*
- *Warning, this loudspeaker generates very high sound pressures even when driven at low power.*
- *For optimum performance, always use the correct voltage / power and operate within the frequency limits as stated.*
- *Do not open loudspeaker when energized.*
- *This loudspeaker is supplied with a 2 year warranty against defective workmanship.*

Colours:

CE

ML15

The ML15 15W PA loudspeaker features a robust, fire retardant, IP66 & IP67 housing; suitable for harsh environments with high ambient noise levels.

PA Horn Loudspeaker	
SPL	108dB +/-3dB @ 1w @ 1m - Pink noise 118dB +/-3dB @ 15w (rated power) @ 1m
Rated power	15 Watts RMS
Dispersion	120° @ 1kHz & 32° @ 4kH
Frequency range	400Hz to 8000 Hz
Impedence/ line	8/16 Ohm or 70v/100v Line
Measurements	Ø181*273MM

Features

- *Continuously rated.*
- *Large termination area.*
- *Stainless steel fixings.*
- *Ratchet adjustable stainless steel 'U' bracket for 360° positioning.*
- *Duplicate cable terminations (in & out for daisy-chain installations).*
- *Tropicalisation available on request.*

Colours:

CE

PRODUCT INFORMATION | PRODUCT IMAGE | AVAILABLE COLOURS

ML25

The ML15 15W PA loudspeaker features a robust, fire retardant, IP66 & IP67 housing; suitable for harsh environments with high ambient noise levels.

PA Horn Loudspeaker	
SPL	111dB +/-3dB @ 1w @ 1m - Pink noise 121dB +/-3dB @ 25w (rated power) @ 1m
Rated power	25 Watts RMS
Dispersion	120° @ 1kHz & 32° @ 4kH
Frequency range	400Hz to 8000 Hz
Impedence/line	8/16 Ohm or 70v/100v Line
Measurements	Ø220*323MM

Features

- *Continuously rated.*
- *Large termination area.*
- *Stainless steel fixings.*
- *Ratchet adjustable stainless steel 'U' bracket for 360° positioning.*
- *Duplicate cable terminations (in & out for daisy-chain installations).*
- *Tropicalisation available on request.*

Colours:

"Did you know that Marin Supply AS offer the option of electronic invoice?"

INDUSTRY & MARINE VISUAL

A few tips to assist you in selecting the right visual signalling devices
Doubling the distance reduces the light power by 75% to 1/4 of its strength.

If the distance is quadrupled, the light power is reduced to 1/16. Visual alarms are ideal when there is a direct (unobstructed) line of sight between the beacon and the observer.

Reflected light can be perceived inadequately. In an alarm area (dangerous condition, immediate action), the beacon will also be perceived without direct visual contact provided that the light intensity of the alarm device is 10 times brighter than the ambient light.

In a warning area (critical condition, intervene), the signal will be perceived adequately via direct visual contact or reflection provided that the light intensity of the warning device is 5 times brighter than the ambient light.

Visual signalling takes place by means of colour, light intensity and lighting duration. Four types of beacons with different signalling effects are essentially offered in signal technology

Continuous lights – lowest signalling effect
The light intensity of the continuous light changes with the power of the lamp and the use of different colours and types of lenses. This type of beacon is normally used to display a status and serves to a lesser extent as a means of an alarm.

Blinking lights – increased signalling effect
The observer's attention is increased by means of switching the lamp on and off with a blinking frequency of normally 1 to 2 Hz. This type of beacon is used, for example, as a warning signal.

Rotating mirror lights – high signalling effect
A rotating light cone is generated by means of diverting the light using the internal rotating mirror. Higher attention is gained at faster rotary speeds. Smooth lenses are used for these beacons in order to exploit the light effect to its fullest and to avoid scattering effects. As opposed to flashing beacons, the dazzling effect is reduced with rotating mirror beacons.

Flashing lights – highest signalling effect
The charged capacitor discharges its energy into the gas-filled glass tube and forms a light arc. This very short and very intensive light effect generates the highest signal attention. Among other things, this type of beacon is used as a top priority alarm.

L101

The L101 is a compact, robust beacon ideal for all general signaling applications including fire, security and process control. Available with either a Xenon or L.E.D. lamp source.

Beacon	
Supply Voltage Xenon	12Vdc/ac, 24Vdc/ac, 48Vdc, 115Vac, 230Vac
Supply Voltage LED	12Vdc, 24Vdc, 48Vdc, 115Vac, 230vac
Measurements	86 x 86 x 83 mm

Features

- *Back boxes available with and without mounting lugs*
- *Tropicalisation available on request*
- *Can be stacked to create multi-signal units*
- *Can be combined with alert alarm & Sonora audible signals*

Also available as telephone initiated and synchronized units
**Not available in LED*

Lens colours:

Housing colours:

L101X – EN54-23

The L101X - EN54-23 is a compact, robust beacon ideal for all general signaling applications including fire, security and process control. Available with Xenon lamp source.

Beacon, 5Joule	
Supply Voltage Xenon	24Vdc, 48Vdc
Measurements	86 x 86 x 83 mm

Features

Approved to EN54-23:2010 for use in fire-alarm systems. Featuring an automatically synchronised flash rate of 1Hz (60 flashes per minute) as standard, the DC voltage versions also have user selectable 1.5Hz (90 flashes per minute) and double-strike flash rates.

Lens colours:

Housing colours:

B100

The B100 Series is comprised of a Xenon strobe beacon, permanent filament bulb, blinking filament bulb and a permanent LED array beacon version.The panel mount base incorporates a pluggable terminal block ensuring rapid installation and maintenance.

Panel Mount Beacon	
Supply Voltage Xenon	10-30Vdc/ac, 115Vac, 230Vac
Supply Voltage LED	10-30Vdc, 90-230Vdc
Supply Voltage Filament	12Vdc, 24Vdc, 48Vdc, 115Vac, 230vAC
Lens type	Prismatic (standard) or plain
Measurements	Ø60*65MM(PG23 Thread)

Features

- *Bayonet fixing lens.*
- *Anti-tamper locking screw.*
- *Stainless steel fixings*

Lens colours:

Housing colours:

B200

The B200 Series is comprised of a Xenon strobe beacon, permanent filament bulb, blinking filament bulb and a permanent LED array beacon version. The surface mount base can also be supplied with a right angle bracket or with a pole mounted assembly.

Panel Mount Beacon	
Supply Voltage Xenon	10-30Vdc, 115Vac, 230Vac
Supply Voltage LED	10-30V dc/ac, 90-230Vac
Supply Voltage Filament	12Vdc, 24Vdc, 48Vdc, 115vAC, 230Vac
Lens type	Prismatic (standard) or plain
Measurements	Ø60x80mm

Features

- *Bayonet fixing lens.*
- *Anti-tamper locking screw.*
- *Stainless steel fixings*

Wall bracket and pole mount bracket available.

Lens colours:

Housing colours:

B300

The B300 series is comprised of a Xenon strobe beacon, permanent filament bulb or halogen beacon, blinking filament bulb or halogen beacon, rotating beacon and a multi-function LED array beacon. The surface mount base can also be supplied with a right angle bracket or with a pole mounted surface.

Beacon	
Supply Voltage Xenon	12Vdc/ac, 24Vdc/ac, 48Vdc/ac, 115Vac, 230Vac
Supply Voltage LED	10-50Vdc, 90-230Vac
Supply Voltage Filament	12Vdc, 24Vdc, 48Vdc, 115Vac, 230Vac
Supply Voltage Halogen	12Vdc, 24Vdc, 115Vac, 230Vac
Lens type	Prismatic or plain
Measurements	Ø100x150mm

Features

- *Bayonet fixing lens.*
- *Anti-tamper locking screw.*
- *Stainless steel fixings*
- *Total of 9 user selectable operation modes:*
  - *4 rotating configurations*
  - *4 flashing configurations*
  - *Steady mode for status applications*
- *The multi-voltage DC unit also features a remotely*
- *Selectable 2nd stage flash pattern.*

Wall bracket and pole mount bracket available

Lens colours:

Housing colours:

B400

The series is comprised of a Xenon strobe beacon, permanent filament bulb or halogen beacon, blinking filament bulb or halogen beacon, rotating beacon and a multi-function LED array beacon. The surface mount base can also be supplied with a right angle bracket or with a pole mounted surface.

Beacon	
Supply Voltage Xenon	24Vdc/ac, 48Vdc/ac, 115Vac, 230Vac
Supply Voltage LED	10-50Vdc, 115Vac, 230Vac
Supply Voltage Filament	24Vdc, 115Vac, 230Vac
Supply Voltage Halogen	12Vdc, 24Vdc, 115Vac, 230Vac
Lens type	Prismatic (standard) or plain
Supply Voltage Filament	Ø140x220mm

Features

- *Bayonet fixing lens.*
- *Anti-tamper locking screw.*
- *Stainless steel fixings*
- *Total of 9 user selectable operation modes:*
  - *4 rotating configurations*
  - *4 flashing configurations*
  - *Steady mode for status applications*
- *The multi-voltage DC unit also features a remotely selectable 2nd stage flash pattern.*

Also available as synchronized units.
Wall bracket and pole mount bracket available.

Lens colours:

Housing colours:

B350 Traffic Light

The B350 series of traffic light beacons are available in single E14 filament bulb or high output L.E.Darray versions. The compact housing is ideal for space constrained applications or for mounting directly onto machinery.

Traffic Light Beacon	
Supply Voltage LED	10-30Vdc, 90-230V ac 50/60Hz
Supply Voltage Filament	12-250V
Measurements	Ø100x140mm

Features

- *Bayonet fixing lens.*
- *Anti-tamper locking screw.*
- *Stainless steel fixings.*
- *L.E.D. unit is supplied with a clear prismatic lens to optimize visibility*

In applications with high ambient light levels.

Mounting brackets for single and multiple units available.

Lens colours:

CE

B450 Traffic light

The B450 series of traffic light beacons are available in single E27 filament lamp, dual E14 filament lamp or high output L.E.D array versions.

Marine Light Beacon	
Supply Voltage LED	10-30Vdc, 90-230V ac 50 / 60Hz
Supply Voltage Filament	12-250V
Measurements	ø140*177mm

Features

- *Bayonet fixing lens.*
- *Anti-tamper locking screw.*
- *Stainless steel fixings.*
- *L.E.D. unit is supplied with a clear prismatic lens to optimize visibility*

In applications with high ambient light levels.

Lens colours:

CE

MB Marine Beacons

The MB Series is a beacon featuring a robust, fire retardant, IP66 & 67 housing; suitable for harsh environments.

Marine Beacons	
Supply Voltage Xenon	12Vdc, 24Vdc, 48Vdc, 115Vac, 230Vac
Supply Voltage LED	10-50Vdc, 24Vac, 115Vac, 230vac
Measurements	ø170*230mm

Features

- *Continuously rated*
- *Large termination area*
- *Stainless steel fixings*
- *Ratchet adjustable U bracket for 360° positioning*

Lens colours:

Housing colours:

CE

STB

The STB2, STB3 and STB4 are customisable visual signals featuring a tower of 2, 3 or 4 AlertAlight L101 type beacons.

Light column	
Supply Voltage Xenon	12Vdc/ac, 24Vdc/ac, 48Vdc, 115Vac, 230Vac
Supply Voltage LED	12Vdc, 24Vdc, 48Vdc, 115Vac, 230vac
Measurements	86 x 86 x 83 mm (each unit)

Features

Each beacon position can contain either a Xenon or high output L.E.D. light source.

The STB2, STB3 or STB4 Assembly features a pre-wired junction box and cable loom enabling the end user to determine beacon type and position during installation.

Also available as telephone initiated and synchronized units
**Not available in LED*

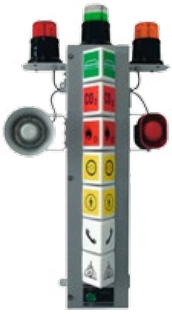
Lens colours:

Housing colours:

ITS

Can be customised on request, and be delivered with sounders and beacons on demand. Available with up to 8 sources, lamp test &control unit.

Light column	
Supply Voltage	12Vdc, 24Vdc, 48Vdc, 115Vac, 230Vac



Lens colours:

Housing colours:

Other colours available on request.

Kombisign

The kombisign range allows a completely free combination of optical and adible signal elements.

Light column	
Supply Voltage Xenon	24Vdc/ac, 115Vac, 230Vac

Features

Also available with sound units, GSM alarm, an a wide range of mounting brackets.

Can be delivered with a customized indication board.

Lens colours:

Housing colours:

EHS

Rotating mirror beacon in painted mild steel housing, for less aggressive environments. Quite enduring with low noise friction-gear. Not suited for outdoor use and/or temperatures below freezing point.

Rotating Beacon	
Supply Voltage LED	12Vdc, 24Vdc, 115Vac, 230Vac
Measurements	Ø148 x 215 mm

Should be mounted preferably in upright position.

NB: Mounting in horizontal position will increase were & tear on motor, ball bearings and gear, and may cause over heating and meltdown.

Lens colours:

Housing colours:

WBS/WBL

Sturdy anodized aluminum makes these units able to handle harsh environments. With the shock proof lens these are well suited to be used in industrial environments.

Beacon, 5 Joule	
Supply Voltage WBL	24Vac, 42Vac, 48Vac, 110Vac, 230Vac
Supply Voltage WBS	12Vdc, 24Vdc, 48Vdc, 60Vdc, 80Vdc, 110Vdc
Measurements	Ø54*200 mm

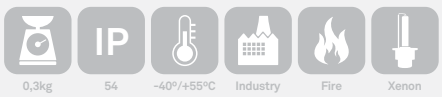
Features

- *Back boxes available with and without mounting lugs*
- *Tropicalisation available on request*
- *Can be stacked to create multi-signal units*
- *Can be combined with alertalarm & Sonora audible signals*

Also available as telephone initiated and synchronized units
**Not available in LED*

Lens colours:

Housing colours:



ABS/ABL

Sturdy anodized aluminum makes these units able to handle harsh environments. With the shock proof lens these are well suited to be used in industrial environments.

Beacon,15 Joule	
Supply Voltage ABL	24Vac, 42Vac, 48Vac, 110Vac, 230Vac
Supply Voltage ABS	12Vdc, 24Vdc, 48Vdc, 60Vdc, 80Vdc, 110Vdc
Measurements	Ø80*242 mm

Features

- *Bayonet fixing lens.*
- *Anti-tamper locking screw.*
- *Stainless steel fixings*

Lens colours:

Housing colours:

PRODUCT INFORMATION | PRODUCT IMAGE | AVAILABLE COLOURS

PB/PD 2005/2010
A classic flashing light for indoors and outdoors.

Beacon, 5/10 Joule	
Supply Voltage PB2005	12Vdc/ac, 24Vdc/ac, 48Vdc/ac, 60Vdc, 80Vdc, 110Vac, 127Vac, 230Vac
Supply Voltage WBS	12Vdc, 24Vdc, 36Vdc, 42Vac, 48Vdc, 60Vdc, 80Vdc, 110Vac, 230Vac
Measurements	111*166*127mm

High angled pyramided lens secures good visibility from all angels.

Lens colours:

Housing colours:

1,30kg | IP 66 | -25º/+55ºC | Industry | Fire | Filament | Xenon

Quadro
Extraordinary housing protection (IP 66, IK 08 and UV-protected PC housing) and innovative LED technology provide for very bright signals, long service lives and reliable operation.

Beacon	
Supply Voltage Xenon	18-30Vdc, 95-120Vac, 195-253Vac
Supply Voltage LED	10-60Vac/dc, 95-253Vac
Measurements	130*130*130mm

Also available as traffic lights.

Lens colours:

Housing colours:

1,3kg | IP 66 | -25º/+55ºC | Industry | Fire | Traffic | LED | Xenon

X401
X401/400 Series provides a 360degree light ouput and has a Single Flash or Double Flash option. The Double Flash option extends the signal duration making it more noticeable to the humaneye. Brightness is increased by the use of a Dioptric (Fresnel) lens which magnifies the light output.

Beacon	
Supply Voltage Xenon	12Vdc, 24Vdc, 48Vac, 115Vac, 230Vac
Measurements	Ø150*205 mm

Features
- *Continuously rates*
- *Suitable for surface or wall mounting*
- *Single or double flash option*
- *Diode polarised (DP) options available for fire alarm systems.*

The X401/400 DIN Base Series utilises a discharge capacitor and converter circuit to ignite xenon gas inside a tube, resulting with a flash of light.

Lens colours:

Housing colours:

1,3kg | IP 66 | -25º/+55ºC | Industry | Fire | RPM 180 | Xenon

PMF

The PMF Series gives extreme light outputs of up to 30Joules.
reliable performance even under the toughest working and production conditions, e.g. possible voltage fluctuations, highambient temperatures up to + 55 °C, high relative humidity up to 90 %.

Beacon	
Supply Voltage Xenon	24Vdc, 230Vac
Measurements	Ø177*170 mm

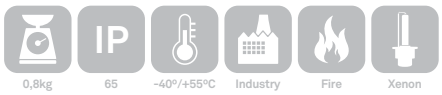
Features

- *Mounting-friendly; large variety of mounting methods*
- *Very good perceptibility over great distances; low power consumption*
- *Mounting-friendly; large variety of mounting methods*

Secure 360° alarm for large distances (indoors or outdoors)

Lens colours:

Housing colours:



E-Flare

The E-flare Portable LED beacon offer a simple signalling solution by creating a highly visible RED warning signal which does not require hardwiring and which is operated by two D cell batteries (not included) which give over 40 hours life.

Portable Beacon	
Supply Voltage	2 x 1,5v D cell batteries
Measurements	Ø60*200 mm

Features

- *40 hours of peak brightness operation on 1 set of batteries*
- *Shock resistant*
- *Versatile accessory options*

Suitable for a wide range of applications the E-flare beacon has been designed with versatility in mind.

Lens colours:

Housing colours:

Pilot lights

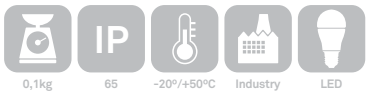
The E2S-22D range includes buzzers, combination units and pilot lights featuring super bright multichip LEDs. Ingress protection to IP65, low current consumption and unsurpassed reliability under extreme conditions are all standard features of the E2S-22D range.

Pilot light	
Supply Voltage	24Vdc/ac, 48Vdc/ac, 110-130Vac/dc, 230Vac
Measurements	Ø22*50 mm

The range utilises screw terminals with wire guards for ease of installation and the ability to daisy chain the lights into an array.

Lens colours:

Housing colours:



LT3X
The LT3X is a small low output beacon that offers good cost value, and a reliable flashing unit suitable for small to medium areas.

Beacon	
Supply Voltage	24Vdc, 230Vac
Measurements	Ø76*95 mm

Lens colours:

Housing colours:

897
The 897 is a Large signal beacons for powerful signal effectiveness.
It offers a strong output with double/single flash Xenon, or steady filament version for status applications.

Beacon	
Supply Voltage Xenon	24Vdc/ac, 230Vac/dc
Supply Voltage Filament	12-250Vac/dc
Measurements	Ø150*147 mm

Features
• Can be stacked to create multi-signal units

High light intensity thanks to optimised lens.

Lens colours:

Housing colours:

850
The 850 is a small status beacon that are suitable for small areas not in demand for high outputs.

Status Beacon	
Supply Voltage	MAX 250V
Measurements	Ø56*88 mm

Through-hole cable entries, cable diameter max. 8.5 mm

Lens colours:

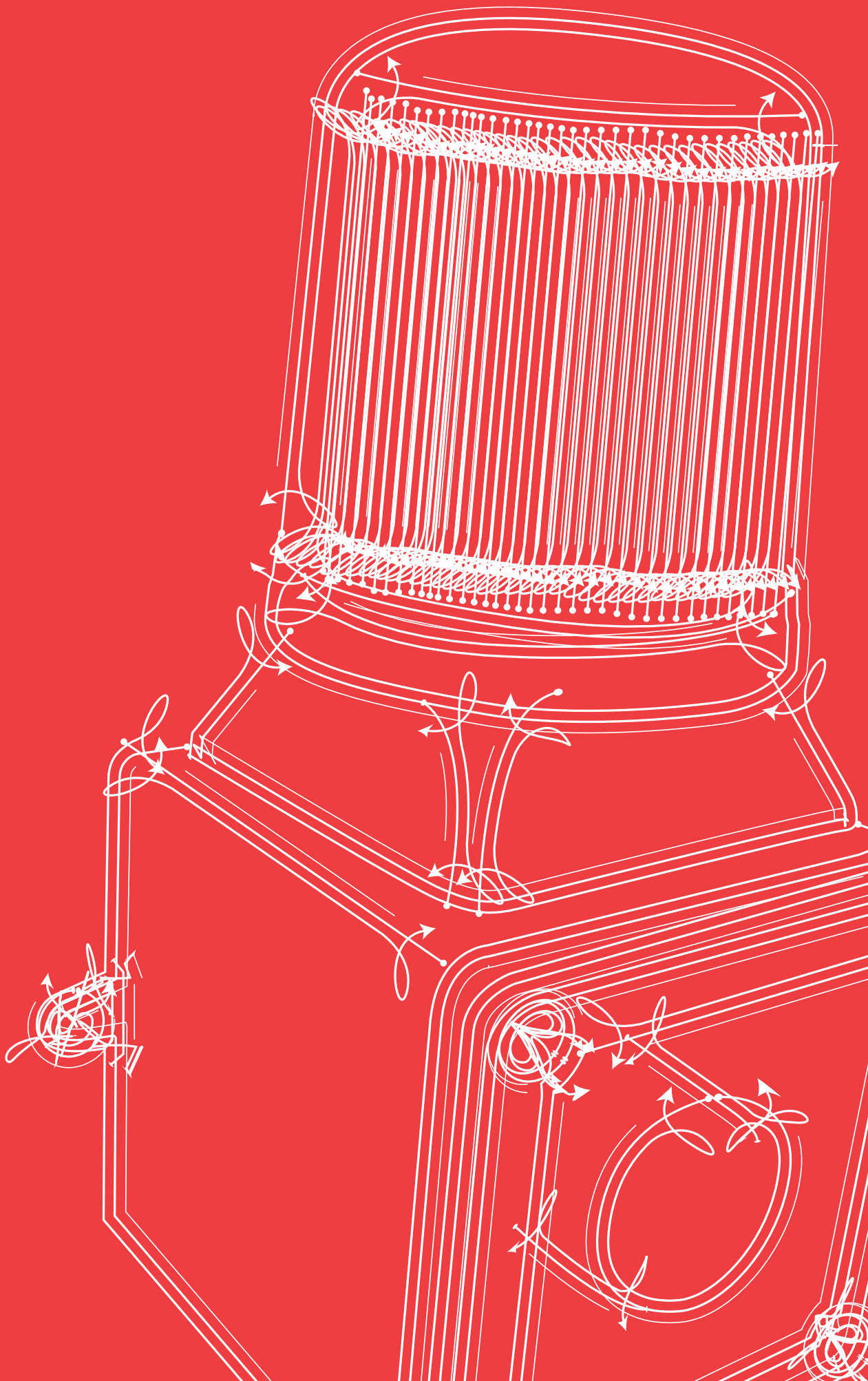
Housing colours:

INDUSTRY & MARINE COMBINED

Seeing and hearing - Double alarms warn better!

Visual-audible signaling devices offer double the amount of safety in one package.

There are many industrial areas of use for signaling devices that are associated with adverse environmental conditions and higher demands, making the mutual assistance of acoustic and visual signals necessary. In loud surroundings e.g. a flashing light can be of great assistance for audible signals as well as audible signaling devices. They can be of great aid for visual signaling in bright surroundings



DL105H

Alarm Sounder & L.E.D. Beacon

The DL105H is a high output, 112dB(A) alarm sounder with integrated L.E.D. beacon. Low current consumption and high SPL in a robust IP66 housing ensure the DL105H is suitable for all general signalling applications including fire, security and process control. The corrosion proof, marine grade aluminium die cast enclosure is phosphated and powder coated providing resilence in the harshest of industrial environments.

PRODUCT INFORMATION | PRODUCT IMAGE | AVAILABLE COLOURS

Sounder	
Maximum output	112dB(A) @ 1 metre
Nominal output	105dB(A) @ 1m +/- 3dB - Tone 2
No. of tones	32 (UKOOA / PFEER compliant)
No. of stages	3
Volume control	Max. 105dB(A); Min. 96dB(A) - Tone 2
Effective range	60m @ 1KHz
Stage switching	Negative Reverse polarity stage switching on DC units.

Beacon	
Light source	High intensity L.E.D. array 24 x Superflux type high output L.E.D's
Flash options	Steady or 2Hz flash mode (on board select)
Effective Intensity cd	120 cd*

General	
Voltages DC	24V dc (12-30V dc); 48V dc (35-60V dc) DC units can use 24V ac for single stage applications.
Voltages AC	115V ac; 230V ac
Housing material	Marine grade aluminium A1 Si12 Cu
Cable entries	2 x M20 x 1.5mm threaded gland entries supplied with one stoppoing plug
Terminals	0.5 to 1.5mm² cables
Relative humidity	90% at 20°C

Features

- High output, up to 112dB(A) SPL.
- 3 remotely selectable alarm stages.
- Choice of 32 alarm tone frequencies.
- Automatic synchronisation on multi-sounder system.
- High intensity 120 candela L.E.D. array .
- Continuously rated.
- Stainless steel fixings.
- Duplicate cable terminations (in & out for daisy-chain installations).
- Tropicalisation available on request.
- Available with custom tone configurations
- and frequencies.
- 'Programmable' version available:
  - 45 alarm tones
  - 4 remotely selectable stages
  - Any tone can be assigned to any stage
  - User configurable continuous frequency tone

Approvals

- UKOOA/PFEER compliant alarm tones.
- UL approved version available.

L.E.D. colours:

Housing colours:

2,10kg (DC) 2.35kg (AC) IP 66 -25°/+55°C Industry Fire Marine EL Sounder LED

DL105X

Alarm Sounder & Xenon Beacon

The DL105X is a high output, 112dB(A) alarm sounder with integrated Xenon beacon. Low current consumption and high SPL in a robust IP66 housing ensure the DL105X is suitable for all general signalling applications including fire, security and process control. The corrosion proof, marine grade aluminium die cast enclosure is phosphated and powder coated providing resilence in the harshest of industrial environments.

PRODUCT INFORMATION

PRODUCT IMAGE

AVAILABLE COLOURS

Sounder	
Maximum output	112dB(A) @ 1 metre
Nominal output	105dB(A) @ 1m +/- 3dB - Tone 2
No. of tones	32 (UK00A / PFEER compliant)
No. of stages	3
Volume control	Max. 105dB(A); Min. 96dB(A) - Tone 2
Effective range	60m @ 1KHz
Stage switching	Negative Reverse polarity stage switching on DC units.

Beacon	
Energy	5 Joules (5Ws)
Flash rate	1Hz (60 fpm)
Peak Candela	86,953 cd
Effective Intensity cd	200 cd*
Tube life	Emissions are reduced to 70% after 8 million flashes

General	
Voltages DC	12V dc; 24V dc; 48V dc DC units can use 24V ac for single stage applications.
Voltages AC	24V ac; 115V ac; 230V ac
Housing material	Marine grade aluminium A1 Si12 Cu
Cable entries	2 x M20 x 1.5mm threaded gland entries supplied with one stoppoing plug
Terminals	0.5 to 1.5mm² cables
Relative humidity	90% at 20°C

Features

- High output, up to 112dB(A) SPL.
- 3 remotely selectable alarm stages.
- Choice of 32 alarm tone frequencies.
- Automatic synchronisation on multi-sounder system.
- High intensity 120 candela L.E.D. array .
- Continuously rated.
- Stainless steel fixings.
- Duplicate cable terminations (in & out for daisy-chain installations).
- Tropicalisation available on request.
- Available with custom tone configurations
- and frequencies.
- 'Programmable' version available:
  - 45 alarm tones
  - 4 remotely selectable stages
  - Any tone can be assigned to any stage
  - User configurable continuous frequency tone

Approvals

- UK00A/PFEER compliant alarm tones.
- UL approved version available.

L.E.D. colours:

Housing colours:

2,10kg (DC) 2.35kg (AC) 66 -25°/+55°C Industry Fire Marine EL Sounder Xenon

DL112H

Alarm Sounder & L.E.D. Beacon

The DL112H is a high output, 119dB(A) alarm sounder with integrated L.E.D. beacon. Low current consumption and high SPL in a robust IP66 housing ensure the DL112H is suitable for all general signalling applications including fire, security and process control. The corrosion proof, marine grade aluminium die cast enclosure is phosphated and powder coated providing resilence in the harshest of industrial environments.

PRODUCT INFORMATION | PRODUCT IMAGE | AVAILABLE COLOURS

Sounder	
Maximum output	119dB(A) @ 1 metre
Nominal output	112dB(A) @ 1m +/- 3dB - Tone 2
No. of tones	45 (UKOOA / PFEER compliant)
No. of stages	3
Volume control	Max. 112dB(A); Min. 100dB(A) - Tone 2
Effective range	125m @ 1KHz
Stage switching	Negative Reverse polarity stage switching on DC units.

Beacon	
Light source	High intensity L.E.D. array 24 x Superflux type high output L.E.D's
Flash options	Steady or 2Hz flash mode (on board select)
Effective Intensity cd	120 cd*

General	
Voltages DC	24V dc (12-30V dc); 48V dc (35-60V dc) [24V dc units can use 24V ac for single stage applications].
Voltages AC	115V ac; 230V ac
Housing material	Marine grade aluminium A1 Si12 Cu
Cable entries	2 x M20 x 1.5mm threaded gland entries supplied with one stoppoing plug
Terminals	0.5 to 4.0mm² cables
Relative humidity	90% at 20°C

Features

- High output, up to 119dB(A) SPL.
- 3 remotely selectable alarm stages.
- Choice of 45 alarm tone frequencies.
- Automatic synchronisation on multi-sounder system.
- High intensity 120 candela L.E.D. array .
- Continuously rated.
- Stainless steel fixings.
- Duplicate cable terminations (in & out for daisy-chain installations).
- Tropicalisation available on request.
- Available with custom tone configurations
- and frequencies.
- 'Programmable' version available:
  - 45 alarm tones
  - 4 remotely selectable stages
  - Any tone can be assigned to any stage
  - User configurable continuous frequency tone

Approvals

- UKOOA/PFEER compliant alarm tones.
- UL approved version available.

L.E.D. colours:

Housing colours:

2,80kg (DC) 3.10kg (AC) IP 66 -25°/+55°C Industry Fire Marine EL Sounder LED

DL112X

Alarm Sounder & Xenon Beacon

The DL112X is a high output, 119dB(A) alarm sounder with integrated Xenon beacon. Low current consumption and high SPL in a robust IP66 housing ensure the DL112X is suitable for all general signalling applications including fire, security and process control. The corrosion proof, marine grade aluminium die cast enclosure is phosphated and powder coated providing resilence in the harshest of industrial environments.

PRODUCT INFORMATION

PRODUCT IMAGE

AVAILABLE COLOURS

Sounder	
Maximum output	119dB(A) @ 1 metre
Nominal output	112dB(A) @ 1m +/- 3dB - Tone 2
No. of tones	45 (UK0OA / PFEER compliant)
No. of stages	3
Volume control	Max. 112dB(A); Min. 100dB(A) - Tone 2
Effective range	125m @ 1KHz
Stage switching	Negative Reverse polarity stage switching on DC units.

Beacon	
Energy	5 Joules (5Ws)
Flash rate	1Hz (60 fpm)
Peak Candela	86,953 cd
Effective Intensity cd	200 cd*
Tube life	Emissions are reduced to 70% after 8 million flashes

General	
Voltages DC	12Vdc; 24V dc; 48V dc [24V dc units can use 24V ac for single stage applications].
Voltages AC	24V ac; 115V ac; 230V ac
Housing material	Marine grade aluminium A1 Si12 Cu
Cable entries	2 x M20 x 1.5mm threaded gland entries supplied with one stoppoing plug
Terminals	0.5 to 4.0mm² cables
Relative humidity	90% at 20°C

Features

- High output, up to 119dB(A) SPL.
- 3 remotely selectable alarm stages.
- Choice of 45 alarm tone frequencies.
- Automatic synchronisation on multi-sounder system.
- High intensity 120 candela L.E.D. array .
- Continuously rated.
- Stainless steel fixings.
- Duplicate cable terminations (in & out for daisy-chain installations).
- Tropicalisation available on request.
- Available with custom tone configurations
- and frequencies.
- 'Programmable' version available:
  - 45 alarm tones
  - 4 remotely selectable stages
  - Any tone can be assigned to any stage
  - User configurable continuous frequency tone

Approvals

- UK0OA/PFEER compliant alarm tones.
- UL approved version available.

L.E.D. colours:

Housing colours:

2,80kg (DC) 3.10kg (AC) 66 -25°/+55°C Industry Fire Marine EL Sounder Xenon

SON4

The SON4 is a compact, high output, 104dB(A) alarm sounder with integral Xenon strobe beacon, L.E.D. array or filament bulb. The robust fire retardant housing ensures the SON4 is suitable for all general signaling applications including fire, security and process control.

Sounder and Beacon, 100dB, 32 Tones	
Supply Voltage Xenon	24Vdcm 24Vac, 115Vac, 230Vac
Supply Voltage LED	12Vdc, 24Vdc, 48Vdc, 24Vac, 115Vac, 230Vac
Supply Voltage Filament	24Vdc 24Vac, 115Vac, 230Vac
MAX/MIN Output	100dB/96dB
Measurements	86*86*102mm

Features

- *Automatic synchronisation on multi-sounder system*
- *Continuously rated*
- *Stainless steel fixings*
- *Unit can be mounted using external lugs or internal BESA compatible fixing positions*
- *Duplicate cable terminations (in & out for daisy-chain installations)*
- *Wire to base installation*
- *Tropicalisation available on request*
- *Available with custom tone configurations and frequencies.*

** Not available with LED*

Lens colours:

Housing colours:

0,4kg | IP 66 | -25°/+55°C | Industry | Fire | EL Sounder | Xenon | LED | Filament

SONFL1

The SONFL1 is a compact 100dB(A) alarm sounder combined with a 5 joule Xenon strobe beacon. The IP66 housing is ideal for all general signaling applications including fire, security and process control.

Sounder and Beacon, 100Db, 10 Tones	
Supply Voltage Xenon	12Vdc, 24Vdc, 24Vac, 115Vac, 230Vac
Supply Voltage LED	12Vdc, 24Vdc, 115Vac, 230vac
MAX/MIN Output	100dB/96dB
Measurements	86 x 86 x 83 mm

Features

- *Automatic synchronisation on multi-sounder system*
- *Continuously rated*
- *Stainless steel fixings*
- *Unit can be mounted using external lugs or internal BESA compatible fixing positions*
- *Duplicate cable terminations (in & out for daisy-chain installations)*
- *Wire to base installation*
- *Tropicalisation available on request*
- *Available with custom tone configurations and frequencies.*

Also available as telephone initiated and synchronized units.
** Not available with LED*

Lens colours:

Housing colours:

0,5kg | IP 66 | -25°/+55°C | Industry | Fire | EL Sounder | Xenon | LED | Filament

STA Alarm tower

The STA2, STA3 and STA4 are customisable audio-visual signals featuring a tower of 2, 3 or 4 AlertAlight L101 type beacons combined with a SONF1 alarm sounder. Each beacon position can contain either a Xenon or high output L.E.D. light source. The STA2, STA3 or STA4 assembly features a prewired junction box and cable loom enabling the end user to determine beacon type and position during installation.

Sounder and Beacon, 100Db, 10 Tones	
Supply Voltage Xenon	12Vdc, 24Vdc, 115Vac, 230Vac
Supply Voltage LED	10-30Vdc, 90-260Vdc/ac
MAX/MIN Output	100dB / 99dB
Measurements	86*86*83mm pr. piece

Features

- *SONF1 alarm sounder synchronises automatically on multi-unit systems.*
- *Multiple configurations of Xenon and LED beacons.*
- *Internal cable loom and termination PCB simplifies installation.*
- *Common negative/neutral supply minimises cabling.*
- *High output LED unit can be set to steady or flashing.*
- *Also available without SONF1 audible signal - see the STB2/3/4 data sheet (2.1.021v10a). Also available as telephone initiated and synchronized units. * Not available with LED*

Lens colours:

Housing colours:

0,5kg | IP 66 | -25°/+55°C | Industry | Fire | Traffic | Junction Box | EL Sounder | Xenon | LED | Filament

H100B Combined
Rated for continuous use the H100 series is a compact, high output signal suitable for a variety of installations. In addition to the 'buzzer' type sound the unit features a further two alarm sounds.

Sounder and Beacon, 100Db, 3 Tones	
Supply Voltage Xenon	24Vdc, 24Vac, 115Vac, 230Vac
Supply Voltage LED	12Vdc, 24Vdc, 115Vac, 230vac
MAX/MIN Output	100dB/96dB
Measurements	Ø84*71,5 mm

Features
- *Volume control.*
- *Stainless steel fixings.*
- *Bayonet fixing lens.*
- *Anti-tamper locking screw*

Lens colours:

Housing colours:

CE

H100T Combined
Rated for continuous use the H100 series is a compact, high output signal suitable for a variety of installations. In addition to the 'buzzer' type sound the unit features a further two alarm sounds.

Trumpet horn and Beacon, 100Db, 3 Tones	
Supply Voltage Xenon	24Vdc, 24Vac, 115Vac, 230Vac
Supply Voltage LED	12Vdc, 24Vdc, 115Vac, 230vac
MAX/MIN Output	100dB/96dB
Measurements	Ø84*71,5 mm

Features
- *Volume control.*
- *Stainless steel fixings.*
- *Bayonet fixing lens.*
- *Anti-tamper locking screw*

Lens colours:

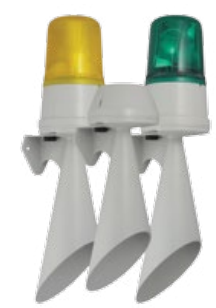
Housing colours:

CE

H110T Combined
The H110T is a very high output electronic signal horn capable of generating a traditional 'buzzer' warning tone traditionally associated with electro-mechanical signals.

Trumpet horn and Beacon, 110Db, 3 Tones	
Supply Voltage Xenon	24Vdc/ac, 24Vdc/ac,-48Vdc/ac 115Vac, 230Vac
Supply Voltage LED	12Vdc, 24Vdc, 48Vdc 115Vac/dc, 230Vac
Supply Voltage Rotating	12Vdc, 24Vdc, 115Vac, 230Vac
MAX/MIN Output	110dB/108dB
Measurements	Ø84*71,5 mm

Features
- *Volume control.*
- *Stainless steel fixings.*
- *Bayonet fixing lens.*
- *Anti-tamper locking screw*



Lens colours:

Housing colours:

CE

AL100

The AL100 is a high output, 104dB(A) alarm sounder combined with a 5 Joule Xenon strobe beacon or LED beacon. The compact, robust housing is ideal for all general signalling applications including fire, security and process control.

Sounder and Beacon, 104Db, 32 Tones	
Supply Voltage Xenon	12Vdc, 24Vdc/ac, 48Vdc, 115Vac, 230Vac
Supply Voltage LED	12Vdc, 24Vdc, 48Vdc, 115Vac, 230Vac
MAX/MIN Output	104dB/93dB
Measurements	172 x 86 x 83 mm

Also available as telephone initiated and synchronized units.

Features

- *Automatic synchronisation on multi-sounder system.*
- *Continuously rated.*
- *Stainless steel fixings.*
- *Unit can be mounted using external lugs or internal BESA compatible fixing positions.*
- *Duplicate cable terminations (in & out for daisy-chain installations).*
- *Tropicalisation available on request.*
- *Available with custom tone configurations and frequencies.*
- *'Programmable' version available:*
  - *45 alarm tones*
  - *4 remotely selectable stages*

**Not available with LED.*

Lens colours:

Housing colours:

AL105N

The AL105N is a high output, 112dB(A) alarm sounder combined with a 5 Joule Xenon beacon. The robust, fire retardant IP66 housing ensures the AL105N is suitable for all general signalling applications including fire, security and process control.

Sounder and Beacon, 112Db, 32 Tones	
Supply Voltage Xenon	12Vdc, 24Vdc/ac, 48Vdc, 115Vac, 230Vac
MAX/MIN Output	112dB/102dB
Measurements	214 x 130 x 132 mm

Also available as telephone initiated and synchronized units.

Features

- *Automatic synchronisation on multi-sounder system.*
- *Continuously rated.*
- *Stainless steel fixings.*
- *Unit can be mounted using external lugs or internal BESA compatible fixing positions.*
- *Duplicate cable terminations (in & out for daisy-chain installations).*
- *Tropicalisation available on request.*
- *Available with custom tone configurations and frequencies.*
- *'Programmable' version available:*
  - *45 alarm tones*
  - *4 remotely selectable stages*

Lens colours:

Housing colours:

AL112N

The AL112N is a high output, 119dB(A) alarm sounder combined with a 5 Joule Xenon beacon. The robust, fire retardant IP66 housing ensures the AL112N is suitable for all general signalling applications including fire, security and process control.

Sounder and Beacon, 119Db, 45 Tones	
Supply Voltage Xenon	12Vdc, 24Vdc/ac, 48Vdc, 115Vac, 230Vac
MAX/MIN Output	119dB/106dB
Measurements	252 x 168 x 155 mm

Also available as telephone initiated and synchronized units.

Features

- *Automatic synchronisation on multi-sounder system.*
- *Continuously rated.*
- *Stainless steel fixings.*
- *Unit can be mounted using external lugs or internal BESA compatible fixing positions.*
- *Duplicate cable terminations (in & out for daisy-chain installations).*
- *Tropicalisation available on request.*
- *Available with custom tone configurations and frequencies.*
- *'Programmable' version available:*
  - *45 alarm tones*
  - *4 remotely selectable stages*
  - *User configurable continuous frequency tone.*

Lens colours:

Housing colours:

AL121
The AL121 is a high output, 126dB(A) alarm sounder combined with a 5 Joule Xenon beacon. The robust, fire retardant IP66 housing ensures the AL121 is suitable for all general signalling applications including fire, security and process control.

Sounder and Beacon, 119Db, 45 Tones	
Light sources	Xenon
Supply Voltage Xenon	12Vdc, 24Vdc/ac, 48Vdc, 115Vac, 230Vac
MAX/MIN Output	126dB/113dB
Measurements	274 x 190 x 210 mm

Also available as telephone initiated and synchronized units.

Features
- *Automatic synchronisation on multi-sounder system.*
- *Continuously rated.*
- *Stainless steel fixings.*
- *Unit can be mounted using external lugs or internal BESA compatible fixing positions.*
- *Duplicate cable terminations (in & out for daisy-chain installations).*
- *Tropicalisation available on request.*
- *Available with custom tone configurations and frequencies.*
- *'Programmable' version available:*
  - *45 alarm tones*
  - *4 remotely selectable stages*
  - *User configurable continuous frequency tone.*

Lens colours:

Housing colours:

AB105 Combined
The AB105 combines a high output 112dB(A) alarm sounder with a powerful 5J Xenon strobe warning beacon, multi-function LED beacon or a 25W halogen rotating beacon. The beacon and sounder can be operated from the same power source or controlled individually.

Sounder and Beacon, 112Db, 32 Tones	
Supply Voltage Xenon	12Vdc, 24Vdc/ac, 48Vdc, 115Vac, 230Vac
Supply Voltage LED	10-50Vdc, 115Vac, 230Vac
Supply Voltage Rotating	10-30Vdc, 115Vac, 230Vac
MAX/MIN Output	112dB/100dB
Measurements	274 x 144 x134mm

Features
- *Automatic synchronisation on multi-sounder system.*
- *Continuously rated.*
- *Stainless steel fixings.*
- *Unit can be mounted using external lugs or internal BESA compatible fixing positions.*
- *Duplicate cable terminations (in & out for daisy-chain installations).*
- *Tropicalisation available on request.*
- *Available with custom tone configurations and frequencies.*
- *'Programmable' version available:*
  - *45 alarm tones*
  - *4 remotely selectable stages*
  - *User configurable continuous frequency tone.*

Lens colours:

Housing colours:

AB112 Combined
The AB112 combines a high output 119dB(A) alarm sounder with a powerful 5J Xenon strobe warning beacon, multi-function LED beacon or a 40W halogen rotating beacon. The beacon and sounder can be operated from the same power source or controlled individually.

Sounder and Beacon, 119Db, 45 Tones	
Supply Voltage Xenon	12Vdc, 24Vdc/ac, 48Vdc, 115Vac, 230Vac
Supply Voltage LED	10-50Vdc, 115Vac, 230Vac
Supply Voltage Rotating	10-50Vdc, 115Vac, 230Vac
MAX/MIN Output	119dB/107dB
Measurements	313 x 190 x157mm

Features
- *Automatic synchronisation on multi-sounder system.*
- *Continuously rated.*
- *Stainless steel fixings.*
- *Unit can be mounted using external lugs or internal BESA compatible fixing positions.*
- *Duplicate cable terminations (in & out for daisy-chain installations).*
- *Tropicalisation available on request.*
- *Available with custom tone configurations and frequencies.*
- *'Programmable' version available:*
  - *45 alarm tones*
  - *4 remotely selectable stages*
  - *User configurable continuous frequency tone.*

Lens colours:

Housing colours:

AB121 Combined

The AB121 combines a high output 126dB(A) alarm sounder with a powerful 5J Xenon strobe warning beacon, multi-function LED beacon or a 40W halogen rotating beacon. The beacon and sounder can be operated from the same power source or controlled individually.

Sounder and Beacon, 126Db, 45 Tones	
Supply Voltage Xenon	12Vdc, 24Vdc/ac, 48Vdc, 115Vac, 230Vac
Supply Voltage LED	10-50Vdc, 115Vac, 230Vac
Supply Voltage Rotating	10-30Vdc, 115Vac, 230Vac
MAX/MIN Output	126dB/113dB
Measurements	389 x 190 x191mm

Features

• Automatic synchronisation on multi-sounder system.
• Continuously rated.
• Stainless steel fixings.
• Unit can be mounted using external lugs or internal BESA compatible fixing positions.
• Duplicate cable terminations (in & out for daisy-chain installations).
• Tropicalisation available on request.
• Available with custom tone configurations and frequencies.
• 'Programmable' version available:
- 45 alarm tones
- 4 remotely selectable stages
- User configurable continuous frequency tone.

Lens colours:

Housing colours:

2,7kg | IP 65 | -25°/+55°C | Industry | Fire | EL Sounder | RPM 180 | Xenon | LED

EN 54-3 | UKOOA/PFEER | VdS | CE

MCA112 Combined

The MCA112-05 combines a high output, 119dB(A) alarm sounder with a 5 Joule Xenon beacon, or multi-function LED. With a robust, fire retardant, IP66 & IP67 housing, the MCA112-05 is particularly suitable for harsh environments with high ambient noise levels. The sounder & beacon can be operated individually or simultaneously.

Marine Sounder and Beacon, 119Db, 45 Tones	
Supply Voltage Xenon	12Vdc, 24Vdc/ac, 48Vdc, 115Vac, 230Vac
Supply Voltage LED	12Vdc, 24Vdc/ac, 48Vdc, 115Vac, 230Vac
MAX/MIN Output	119dB/106dB
Measurements	Ø181*385mm

Features

• Automatic synchronisation on multi-sounder system.
• Automatic synchronised flash, or Flip-Flop alternating mode.
• Xenon tube mechanically secured against vibration.
• Continuously rated.
• Large termination area.
• Stainless steel fixings.
• Ratchet adjustable stainless steel 'U' bracket for 360° positioning.
• Duplicate cable terminations.(in & out for daisy-chain installations).

Lens colours:

Housing colours:

3,5kg | IP 66/67 | -25°/+55°C | Industry | Fire | Marine | EL Sounder | Xenon | LED

UKOOA/PFEER | CE

MCB Dual Beacon

The MCB005-05 is a dual 5 Joule Xenon strobe beacon featuring a robust, fire retardant, IP66 & IP67 housing; suitable for harsh environments. The unique design minimises installation time and allows the beacons to be operated simultaneously from the single power source (either in synchronisation or in 'flip-flop' mode) or independently.

Dual Marine Beacon	
Supply Voltage Xenon	12Vdc, 24Vdc/ac, 48Vdc, 115Vac, 230Vac
Supply Voltage LED	12Vdc, 24Vdc/ac, 48Vdc, 115Vac, 230Vac
Measurements	Ø166*345mm

Features

• Automatic synchronised flash, or Flip-Flop alternating mode.
• Xenon tubes mechanically secured against vibration.
• Continuously rated.
• Large termination area.
• Stainless steel fixings.
• Ratchet adjustable stainless steel 'U' bracket for 360° positioning.
• Duplicate cable terminations (in & out for daisy-chain installations).
• Tropicalisation available on request.

Lens colours:

Housing colours:

1,48kg | IP 66/67 | -25°/+55°C | Industry | Fire | Marine | Xenon | LED

CE

MCL15-05

The MCL15-05 combines a 15W PA horn loudspeaker with a 5 Joule Xenon beacon. With a robust, fire retardant, IP66 & IP67 housing, the MCL15-05 is particularly suitable for harsh environments with high ambient noise levels.

PA Horn Speaker and Beacon, 118Db, 15W	
Supply Voltage Xenon	12Vdc, 24Vdc, 48Vdc, 115Vac, 230Vac
Impedence/Tappings	8/16Ohm, 70v/100V Line
MAX/MIN Output	119dB/106dB
Measurements	Ø181*385mm

Features

• Automatic synchronised flash, or Flip-Flop alternating mode.
• Xenon tube mechanically secured against vibration.
• Continuously rated.
• Large termination area.
• Stainless steel fixings.
• Ratchet adjustable stainless steel 'U' bracket for 360° positioning.
• Duplicate cable terminations (in & out for daisy-chain installations).
• Tropicalisation available on request.

Lens colours:

Housing colours:

HAB105 Combined

Applications and users that have traditionally demanded conventional electromechanical hooters, sirens, buzzers and bells can now choose the next generation alternative. The Hootronic series of products faithfully reproduce the sounds made by legacy electro-mechanical signaling devices but in a modern, reliable and cost effective way. With output levels of up to 112dB(A) at 1 metre the HAB105TRH surpasses legacy electro-mechanical devices in performance and effectiveness, it is also continuously rated, requires zero maintenance and the signal quality will not degrade with age.

Siren, Buzzer, Hooter and Beacon, 112Db, 5 Tones	
Supply Voltage Rotating	10-30Vdc, 115Vac, 230Vac
MAX/MIN Output	112dB/100dB
Measurements	274 x 144 x134mm

Features

The products in the Hootronic range have 5 user selectable 'traditional' sounds including:
• Tone 1 : Industrial Hooter, Tone 2 : High Frequency Mechanical Siren
• Tone 3 : Medium Frequency Mechanical Siren, Tone 4 : Electro Mechanical Buzzer
• Tone 5 : Mechanical Bell

Each of these sounds have two additional, remotely selectable, alarm stages. Remote switch generates genuine 'tail off' to sound when alarm is terminated.

Lens colours:

Housing colours:

HAB121 Combined

Applications and users that have traditionally demanded conventional electromechanical hooters, sirens, buzzers and bells can now choose the next generation alternative.The E2S Hootronic series of products faithfully reproduce the sounds made by legacy electro-mechanical signalling devices but in a modern, reliable and cost effective way.With output levels of up to 121dB(A) at 1 metre the HAB121RTH surpasses legacy electro-mechanical devices in performance and effectiveness, it is also continuously rated, requires zero maintenance and the signal quality will not degrade with age.

Siren, Buzzer, Hooter and Beacon, 121Db, 5 Tones	
Supply Voltage Rotating	10-30Vdc, 115Vac, 230Vac
MAX/MIN Output	121dB/113dB
Measurements	388 x 210 x192mm

Features

The products in the Hootronic range have 5 user selectable 'traditional' sounds including:
• Tone 1 : Industrial Hooter, Tone 2 : High Frequency Mechanical Siren
• Tone 3 : Medium Frequency Mechanical Siren, Tone 4 : Electro Mechanical Buzzer
• Tone 5 : Mechanical Bell

Each of these sounds have two additional, remotely selectable, alarm stages. Remote switch generates genuine 'tail off' to sound when alarm is terminated.

Lens colours:

Housing colours:

HMCA112 Combined

Applications and users that have traditionally demanded conventional electromechanical hooters, sirens, buzzers and bells can now choose the next generation alternative. The Hootronic series of products faithfully reproduce the sounds made by legacy electro-mechanical signaling devices but in a modern, reliable and cost effective way. With output levels of up to 122dB(A) at 1 metre the HMCA112-05 surpasses legacy electro-mechanical devices in performance and effectiveness, it is also continuously rated, requires zero maintenance and the signal quality will not degrade with age.

Marine Siren, Buzzer, Hooter and Beacon, 122Db, 5 Tones	
Supply Voltage Xenon	12Vdc, 24Vdc/ac, 48Vdc, 115Vac, 230Vac
MAX/MIN Output	122dB/112dB
Measurements	Ø181*385mm

Features

The products in the Hootronic range have 5 user selectable 'traditional' sounds including:

- *Tone 1: Industrial Hooter,*
- *Tone 2: High Frequency Mechanical Siren*
- *Tone 3: Medium Frequency Mechanical Siren,*
- *Tone 4: Electro Mechanical Buzzer*
- *Tone 5: Mechanical Bell*

Each of these sounds have two additional, remotely selectable, alarm stages. Remote switch generates genuine 'tail off' to sound when alarm is terminated.

Lens colours:

Housing colours:

3,5kg | IP 66/67 | -25°/+55°C | Industry | Fire | Marine | Bell | Motorsiren | Buzzer | Xenon

LEDA125

This beacon type offers maximum flexibility in terms of visual and audible requirements. The beacon can produce 3 colours, Amber, Green and Red in conjunction with an audible signal. Two piezo sounders situated in the base of the unit can be synchronised with any colour and flash rate required. The unit requires PLC control to function. Ideally suited to status control the beacon is a cost effective alternative to the traditional tower light. An M12 sealing grommet in the base allows for cable entry and termination inside the enclosure. Maximum cable size is 5mm.

Tri-Colour Audible Beacon, 90Db, 1 Tones	
Supply Voltage LED	24Vdc
MAX/MIN Output	90dB/90dB
Measurements	252 x 168 x 155 mm

Features

- *Tri-colour*
- *LED Long life*
- *Extra bright*
- *Combined audible & visual signal*
- *360° visibility*

Lens colours:

Housing colours:

0,4kg | IP 65 | -25°/+55°C | Industry | Fire | EL Sounder | LED

444 Combined

The 444 is a high output, 114dB(A) alarm sounder combined with LED beacon. The compact, robust housing is ideal for all general signalling applications including fire, security and process control. It`s neat design makes it usable also in public areas.

Electronic Sounder and Beacon, 114Db, 32 Tones	
Supply Voltage LED	24Vdc, 115Vac, 230Vac
MAX/MIN Output	114dB/90dB
Measurements	150 x 113 x 109 mm

Features

- *LED Long life*
- *Extra bright*
- *Combined audible & visual signal*
- *360 °visibility*

Lens colours:

Housing colours:

0,4kg | IP 65 | -25°/+55°C | Industry | Fire | EL Sounder | LED

AL105N Appello-X

The AL105NAX Appello X is the next generation of user recordable alarm sounder, capable of storing up to 2 minutes of content, combined with either a Xenon strobe or high output LED beacon. The AL105NAX records, stores and plays back with unsurpassed clarity, user defined voice messages, music or sounds stored directly to non-volatile memory without any intermediate analogue to digital conversion.

User recordable alarm sounder and beacon	
Maximum output	110dB(A) @ 1 metre
No. of tones	45 (UKOOA / PFEER compliant)
No. of Messages	4 (30 Seconds each)
Supply Voltage Xenon	12VDc, 24VDc, 115Vac, 230VAc
Supply Voltage LED	10-30VDc, 90-260VAc
Effective Range	60m @ 1KHz
Measurements	133*144*216mm

Features

- *Direct content storage on non-volatile memory.*
- *CD quality reproduction.*
- *Message length: 4 x 30 seconds*
- *Easy message creation with built in microphone or line-in audio input.*
- *Edits automatically to message length.*
- *DC versions have reverse polarity diode protection.*
- *Unit can be mounted using external lugs or internal BESA compatible fixing positions.*
- *Volume controls for user content and alarm tones.*
- *Available with custom tone configurations and frequencies.*

Lens colours:

Housing colours:

AL121 Appello-X

The AL121AX Appello X is the next generation of user recordable alarm sounder, capable of storing up to 2 minutes of content, combined with either a Xenon strobe or high output LED beacon. The AL121AX records, stores and plays back with unsurpassed clarity, user defined voice messages, music or sounds stored directly to non-volatile memory without any intermediate analogue to digital conversion.

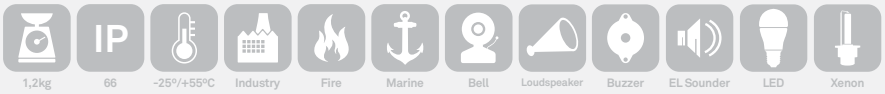
User recordable alarm sounder and beacon	
Maximum output	126dB(A) @ 1 metre
No. of tones	45 (UKOOA / PFEER compliant)
No. of Messages	4 (30 Seconds each)
Supply Voltage Xenon	12VDc, 24VDc, 115Vac, 230VAc
Supply Voltage LED	10-30VDc, 90-260VAc
Effective Range	300m @ 1KHz
Measurements	190*191*276mm

Features

- *Direct content storage on non-volatile memory.*
- *CD quality reproduction.*
- *Message length: 4 x 30 seconds*
- *Easy message creation with built in microphone or line-in audio input.*
- *Edits automatically to message length.*
- *DC versions have reverse polarity diode protection.*
- *Unit can be mounted using external lugs or internal BESA compatible fixing positions.*
- *Volume controls for user content and alarm tones.*
- *Available with custom tone configurations and frequencies.*

Lens colours:

Housing colours:



"Did you know that Marin Supply AS`s staff are available 24/7?"

ATEX AUDIBLE

Safety has no limits
There is a danger of explosion wherever combustible gases, vapours, fluids or dusts occur and can mix with air, oxygen or another reactive gas. The danger can arise in very diverse locations, e.g. in the petrochemical and chemical industry or at filling stations and oil/gas rigs.

However, facilities such as corn silos and coating plants are also potentially at risk of an explosion. Explosions endanger man and the environment. For this reason, international measures have been developed that are intended to prevent explosions or to minimise their effects.

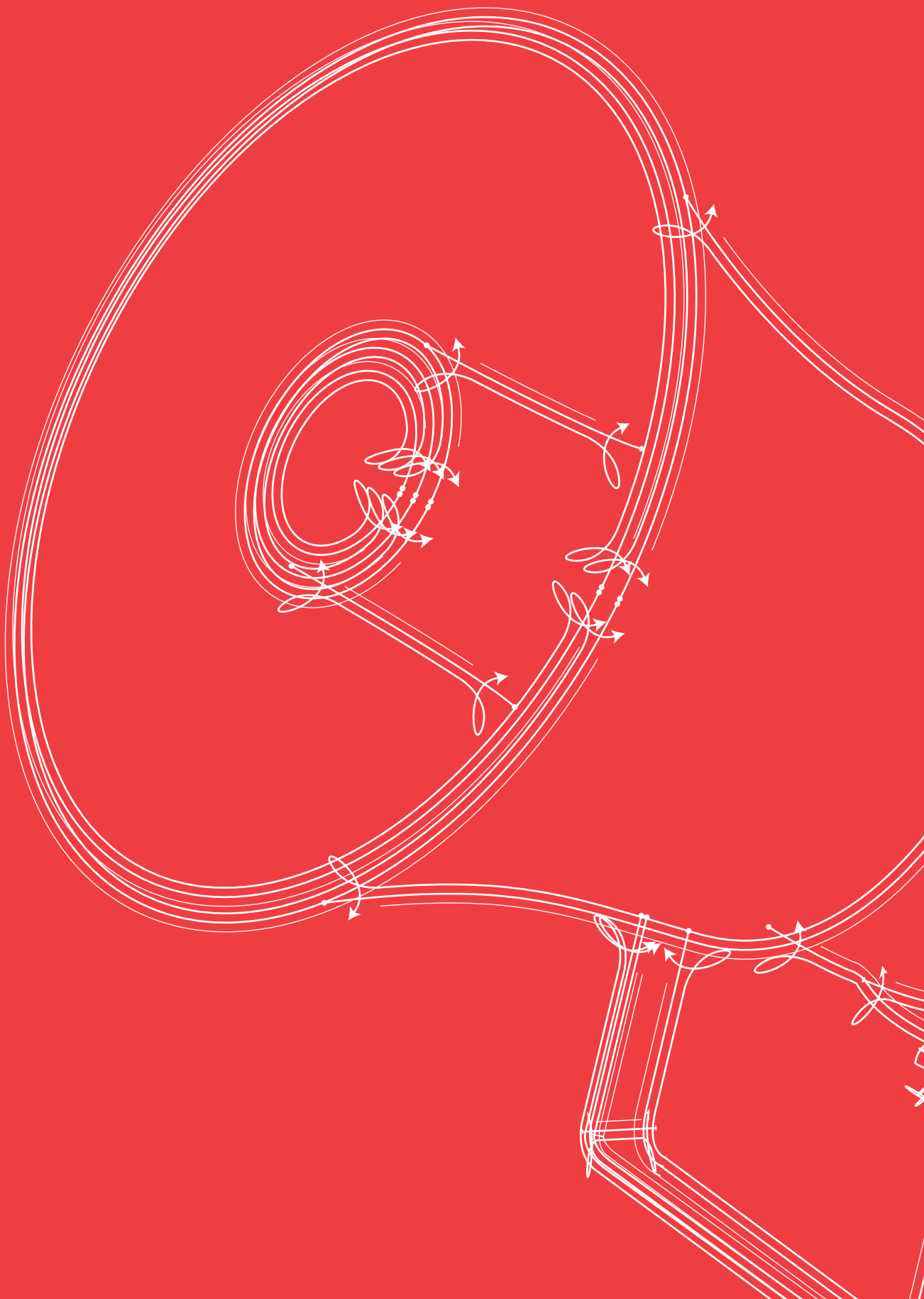
Our Ex signaling devices meet the toughest requirements and are subjected to the most stringent checks. Their quality and safety are checked by responsible bodies for compliance with the highest quality standards.

Flame proof enclosure ‘d’
In the case of pressure-resistant encapsulation, the actual operating equipment is built into a pressure-resistant housing. In the event of an explosion inside, the housing prevents an ignition breakthrough into the surrounding area. The explosion is therefore restricted to the interior of the device. On account of the necessary wall thickness, devices in this protection system are of a very sturdy construction and thus also often very well suited for adverse environmental conditions.

Enhanced safety ‘e’
This type of enhanced protection is usable with only a few types of equipment/components (e.g. terminals). This type of protection is conveniently often combined with pressure resistant encapsulation. In alarm products, this means that all essential components are housed in the pressure-resistant housing and only the connection terminals are accessible in the increased safety housing.

For this reason we also offers most devices with an ‘e connection box’ in order to enable simple and safe electrical connections to be made. The sensitive electronic components are therefore protected against accidental damage during mounting.

Intrinsically safety ‘i’
In the ignition protection type ‘i‘, the current and voltage of allenergy storage devices as well as the complete device are limited to the extent that no ignition sparks and no excessively hot surfaces can be generated. An explosive atmosphere can develop, but it will not be ignited.



BExH120-R/BExDH120-R

'Belltronic' Ex Bell

The flameproof BExH120-R 'Belltronic' Signalling Bell is suitable for Zone 1 & 2 applications. The BExH120D authentically reproduces the traditional sound of a electro-mechanical bell whilst providing a significantly higher level of performance and reliability. The BExDH120-R variant is also suitable for Zone 21 & 22.

PRODUCT INFORMATION
PRODUCT IMAGE
AVAILABLE COLOURS

The digitally stored bell recording is output via a class D amplifier achieving sound levels exceeding the performance of a mechanical bell whilst offering a continuously rated signal. The radial horn design not only physically emulates the traditional bell it also replicates the distribution of the audible signal.

Specification	
Nominal output	106dB(A) @ 1m +/- 3dB
Volume control	Yes
Voltages DC	24vdc
Voltages AC	115vac; 230vac
Housing material	Marine grade copper free LM6 Aluminium
Housing finish	Phosphated & powder coated finish - anti-corrosion
BExH120-R flare	High impact UL94 V0 & 5VA FR ABS
BExDH120-R flare	Anti-Static High impact ABS (Black)
Cable entries	Dual M20 ISO (one stopping plug inc)
Terminals	0.5 to 4.0mm² cables

Current Consumption		
Voltage		***Current***
24V dc		400mA
115V ac	50/60Hz	130mA
230V ac	50/60Hz	65mA

Tone table			
Stage 1	***Frequency Description***	***Stg 2***	***Stg 3***
T 5	Mechanical Bell	T 1	T 2
T 1	Industrial Hooter	T 3	T 5
T 2	High Frequency Mechanical Siren	T 1	T 5
T 3	Medium Frequency Mechanical Siren	T 1	T 5
T 4	Electro Mechanical Buzzer	T 2	T 5
Country specific or custom tone configurations and alarm frequencies are available upon request.			

Features

- Omni-directional sound output.
- Stainless Steel guard.
- Very large termination area.
- Ratchet adjustable stainless steel 'U' bracket.
- 'Programmable' version available:
  - 45 alarm tones
  - 4 remotely selectable stages
  - Any tone can be assigned to any stage
  - User configurable continuous frequency tone

Approvals	
ATEX certificate	KEMA 99ATEX6312 EN 60079-0 : 2006 EN 60079-1 : 2007 EN 61241-0 : 2006 EN 61241-1 : 2004
IECEx certificate	IECEx KEM 10.0003 IEC 60079-0 : 2004 (Ed4) IEC 60079-1 : 2007 (Ed6) IEC 61241-0 : 2004 (Ed1) IEC 61241-1 : 2004 (Ed1)
GOST-R certificate	POCC GB.JB05.B03365
Safety-integrity suitability	SIL1
Inmetro certificate	10-IEx-0009

Gong Colours:

Housing Colours:

DC: 3.20kg
AC: 3.40kg
IP 66/67
EL Sounder
Bell

BExH120 & BExDH120

Alarm Sounder

The flameproof BExH120 'Hootronic' Siren is suitable for Zone 1 & 2 applications.

PRODUCT INFORMATION | PRODUCT IMAGE | AVAILABLE COLOURS

The BExH120D authentically reproduces the traditional sounds of electro-mechanical devices whilst providing a significantly higher level of performance and reliability. The BExDH120 variant is also suitable for Zone 21 & 22. Sound level ouputs are up to 117.5dB(A) at 1 metre with a choice of 5 alarm sounds combining the signalling power of mutliple electromechanical products in one unit. 1. Industrial Hooter / 2. High Frequency Mechanical Siren / 3. Medium Frequency Mechanical Siren /4. Electro Mechanical Buzzer / 5. Mechanical Bell.

Ex Alarm Sounder	
Maximum output	117dB(A) @ 1 metre
No. of tones	5
No. of stages	3
Supply Voltage	24Vdc, 115Vac, 230Vac
Effective Range	200m @ 1KHz
Ingress protection	IP66/67
Housing	Ex d
Housing material	Marine grade copper free LM6 Aluminium
Housing finish	Phosphated & powder coated finish -anti-corrosion
Cable entries	Dual M20 ISO (one stopping plug included)
Terminals	0.5 to 4.0mm² cables
Measurements	Ø220*313MM

Approvals	
ATEX certificate	KEMA 99ATEX6312, EN 60079-0 : 2006, EN 60079-1 : 2007, EN 60079-7 : 2003, EN 61241-0 : 2006, EN 61241-1 : 2004
IECEx certificate: IECEx KEM 10.0003	IEC 60079-0 : 2004 (Ed4), IEC 60079-1 : 2007 (Ed6), IEC 60079-7 : 2001 (Ed3), IEC 61241-0 : 2004 (Ed1), IEC 61241-1 : 2004 (Ed1)
VdS certificate	G206011
Safety-integrity suitability	SIL1
Inmetro certificate: 10-IEx-0009	10-IEx-0009

Features

- Very large termination area.
- Ratchet adjustable stainless steel 'U' bracket.

Assemblies

The products from the BEx range are available as multiple unit assemblies with and without junction boxes. See the BExP data paget for further info.

Colours:

3,24kg | IP 66/67 | EL Sounder | Bell | Motorsiren

GNExS1

Alarm Sounder

The flameproof GNExS1 alarm sounder is suitable for Zone 1 & Zone 2 applications - certified to ATEX and IECEx.

PRODUCT INFORMATION

PRODUCT IMAGE

Sound level ouputs are up to 117dB(A) at 1 metre with a choice of 45 alarm tones and 3 remotely selectable stages. The alarm tone frequencies for the first 2 stages are independently selectable. The GNEx range features enclosures manufactured from GRP (glass reinforced polyester), moulded in natural red, but also available in other colours. The re-entrant flare horn is high impact, fire retardant ABS. All models have two M20 cable entries, large termination areas containing in & out terminals and an ingress protection of IP66/67.

Specification	
Maximum output	117dB(A) @ 1 metre
Nominal output	110dB(A) @ 1m +/- 3dB - Tone 2
No. of tones	45 (UKOOA / PFEER compliant)
No. of stages	3
Volume control	Max. 110dB(A); Min. 72dB(A) - Tone 2
Effective range	100m @ 1KHz
Voltages DC	24vdc (10-30vdc), 48vdc (38-60vdc)
Voltages AC	230vac (100-260vac/dc)
Stage switching	Negative or positive
Housing material	GRP
Flare	High impact UL94 V0 & 5VA FR ABS (Red)
Cable entries	Dual M20 ISO
Terminals	0.5 to 4.0mm² cables
Line monitoring	Min. 500 Ohm 2w, or 3k3 Ohm 0.5w res. or diode within Exd enclosure (dc versions)

Approvals	
ATEX certificate	SIRA 13ATEX1139X EN 60079-0 : 2012, EN 60079-1 : 2007
IECEx certificate	IECEx KEM 10.0003 IECEx SIR 13.0029X IEC 60079-0 : 2011 (Ed6), IEC 60079-1 : 2007 (Ed6)

Current consumption		
Version	***Voltage***	***Current mA***
24V dc	10-30vdc	140mA @ 24vdc
48V dc	38-60vdc	73mA @ 48vdc
115V ac/dc 50/60Hz	100-260vac/dc	86mA @ 115vac
230V ac/dc 50/60Hz	100-260vac/dc	75mA @ 230vac
Current at nominal voltage		

Features

- Automatic synchronisation on multi-sounder system.
- Very large termination area.
- Ratchet adjustable stainless steel 'U' bracket.
- IN & OUT terminals.
- Independently selectable tones for 1st & 2nd stages.

Coding

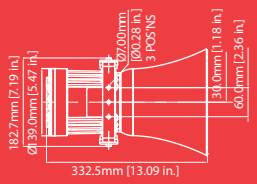
- II 2G Ex d IIC T4 Ta. -60° to +50°C
- II 2G Ex d IIC T3 Ta. -60° to +70°C
- II 2G Ex d IIB T6 Ta. -60° to +50°C
- II 2G Ex d IIB T5 Ta. -60° to +65°C
- II 2G Ex d IIB T4 Ta. -60° to +70°C

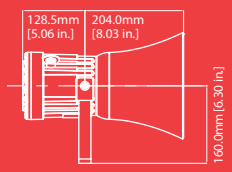
Part codes	
Code	***Description:***
GNExS1	S1 alarm sounder
DC024	24vdc (10-30vdc)
DC048	48vdc (35-60vdc)
AC230	230vac (100-260vac/dc)
-N	No stopping plug (default)
-B	Brass stopping plug
-S	Stainless steel stopping plug
-P	Nickel plated brass stopping plug
-1	Mounting bracket 304 stainless steel (A2) (default)
-2	Mounting bracket 316 stainless steel (A4)
-A-1	Approval to ATEX & IECEx (default)
-R	Housing colour Red (default)
-S	Other housing colour - please specify

Example

GNExS1DC024-B-1-A-1-R

GNExS1 24vdc with brass stopping plug, 304 stainless steel mounting bracket, approved to ATEX & IECEx in a red housing.





AVAILABLE COLOURS

Tone table				
Stage 1	***Frequency Description.***	***Stage 2***	***Stage 3***	***Stage 4***
Tone 1	340 Hz Continuous	Any Stage 1 tone	Tone 5	Tone 29
Tone 2	800/1000Hz @ 0.25 sec Alternating	Any Stage 1 tone	Tone 5	Tone 45
Tone 3	500/1200Hz @ 0.3Hz 0.5 sec Slow Whoop	Any Stage 1 tone	Tone 5	Tone 29
Tone 4	800/1000Hz @ 1Hz Sweeping	Any Stage 1 tone	Tone 5	Tone 34
Tone 5	2400Hz Continuous	Any Stage 1 tone	Tone 20	Tone 29
Tone 6	2400/2900Hz @ 7Hz Sweeping	Any Stage 1 tone	Tone 5	Tone 45
Tone 7	2400/2900Hz @ 1Hz Sweeping	Any Stage 1 tone	Tone 5	Tone 45
Tone 8	500/1200/500Hz @ 0.3Hz Sweeping	Any Stage 1 tone	Tone 5	Tone 45
Tone 9	1200/500Hz @ 1Hz - DIN / PFEER P.T.A.P.	Any Stage 1 tone	Tone 2	Tone 38
Tone 10	2400/2900Hz @ 2Hz Alternating	Any Stage 1 tone	Tone 5	Tone 45
Tone 11	1000Hz @ 1Hz Intermittent	Any Stage 1 tone	Tone 5	Tone 29
Tone 12	800/1000Hz @ 0.875Hz Alternating	Any Stage 1 tone	Tone 5	Tone 45
Tone 13	2400Hz @ 1Hz Intermittent	Any Stage 1 tone	Tone 5	Tone 29
Tone 14	800Hz 0.25sec on, 1 sec off Intermittent	Any Stage 1 tone	Tone 5	Tone 45
Tone 15	800Hz Continuous	Any Stage 1 tone	Tone 5	Tone 34
Tone 16	660Hz 150mS on, 150mS off Intermittent	Any Stage 1 tone	Tone 5	Tone 29
Tone 17	544Hz (100mS)/440Hz (400mS) - NF S 32-001	Any Stage 1 tone	Tone 27	Tone 45
Tone 18	660Hz 1.8sec on, 1.8sec off Intermittent	Any Stage 1 tone	Tone 5	Tone 45
Tone 19	1.4KHz-1.6KHz 1s, 1.6KHz-1.4KHz 0.5s -NFC48-265	Any Stage 1 tone	Tone 5	Tone 29
Tone 20	660Hz Continuous	Any Stage 1 tone	Tone 5	Tone 34
Tone 21	554Hz/440Hz @ 1Hz Alternating	Any Stage 1 tone	Tone 5	Tone 29
Tone 22	544Hz @ 0.875 sec. Intermittent	Any Stage 1 tone	Tone 5	Tone 29
Tone 23	800Hz @ 2Hz Intermittent	Any Stage 1 tone	Tone 5	Tone 29
Tone 24	800/1000Hz @ 50Hz Sweeping	Any Stage 1 tone	Tone 5	Tone 34
Tone 25	2400/2900Hz @ 50Hz Sweeping	Any Stage 1 tone	Tone 5	Tone 45
Tone 26	Bell	Any Stage 1 tone	Tone 15	Tone 34
Tone 27	554Hz Continuous	Any Stage 1 tone	Tone 5	Tone 29
Tone 28	440Hz Continuous	Any Stage 1 tone	Tone 5	Tone 45
Tone 29	800/1000Hz @ 7Hz Sweeping	Any Stage 1 tone	Tone 5	Tone 45
Tone 30	300Hz Continuous	Any Stage 1 tone	Tone 5	Tone 45
Tone 31	660/1200Hz @ 1Hz Sweeping	Any Stage 1 tone	Tone 5	Tone 29
Tone 32	Two tone chime	Any Stage 1 tone	Tone 15	Tone 45
Tone 33	745Hz @ 1Hz Intermittent	Any Stage 1 tone	Tone 5	Tone 29
Tone 34	1000 & 2000Hz @ 0.5 sec Alternating - Singapore	Any Stage 1 tone	Tone 45	Tone 37
Tone 35	420Hz @ 0.625 sec Australian Alert	Any Stage 1 tone	Tone 5	Tone 34
Tone 36	500-1200Hz 3.75sec /0.25sec. Australian Evac.	Any Stage 1 tone	Tone 5	Tone 45
Tone 37	1000Hz Continuous - PFEER Toxic Gas	Any Stage 1 tone	Tone 45	Tone 38
Tone 38	2000Hz Continuous	Any Stage 1 tone	Tone 45	Tone 37
Tone 39	800Hz 0.25sec on, 1 sec off Intermittent	Any Stage 1 tone	Tone 17	Tone 37
Tone 40	544Hz (100mS)/440Hz (400mS) - NF S 32-001	Any Stage 1 tone	Tone 27	Tone 38
Tone 41	Motor Siren - slow rise to 1200 Hz	Any Stage 1 tone	Tone 5	Tone 29
Tone 42	Motor Siren - slow rise to 800 Hz	Any Stage 1 tone	Tone 5	Tone 29
Tone 43	1200 Hz Continuous	Any Stage 1 tone	Tone 5	Tone 45
Tone 44	Motor Siren - slow rise to 2400 Hz	Any Stage 1 tone	Tone 5	Tone 34
Tone 45	1KHz 1s on, 1s off Intermittent - PFEER Gen. Alarm	Any Stage 1 tone	Tone 34	Tone 37

Country specific or custom tone configurations and alarm frequencies are available upon request.

Colours:

Other colours available on request.

GNExS2

Alarm Sounder

The flameproof GNExS2 alarm sounder is suitable for Zone 1 & Zone 2 applications - certified to ATEX and IECEx.

PRODUCT INFORMATION

PRODUCT IMAGE

Sound level ouputs are up to 123dB(A) at 1 metre with a choice of 45 alarm tones and 3 remotely selectable stages. The alarm tone frequencies for the first 2 stages are independently selectable. The GNEx range features enclosures manufactured from GRP (glass reinforced polyester), moulded in natural red, but also available in other colours. The re-entrant flare horn is high impact, fire retardant ABS. All models have two M20 cable entries, large termination areas containing in & out terminals and an ingress protection of IP66/67.

Specification	
Maximum output	123dB(A) @ 1 metre
Nominal output	110dB(A) @ 1m +/- 3dB - Tone 2
No. of tones	45 (UKOOA / PFEER compliant)
No. of stages	3
Volume control	Max. 117dB(A); Min. 108dB(A) - Tone 2
Effective range	200m @ 1KHz
Voltages DC	24vdc (10-30vdc), 48vdc (38-60vdc)
Voltages AC	230vac (100-260vac/dc)
Stage switching	Negative or positive
Housing material	GRP
Flare	High impact UL94 V0 & 5VA FR ABS (Red)
Cable entries	Dual M20 ISO
Terminals	0.5 to 4.0mm² cables
Line monitoring	Min. 500 Ohm 2w, or 3k3 Ohm 0.5w res. or diode within Exd enclosure (dc versions)

Approvals	
ATEX certificate	SIRA 13ATEX1139X EN 60079-0 : 2012, EN 60079-1 : 2007
IECEx certificate	IECEx KEM 10.0003 IECEx SIR 13.0029X IEC 60079-0 : 2011 (Ed6), IEC 60079-1 : 2007 (Ed6)

Current consumption		
Version	***Voltage***	***Current***
24V dc	10-30vdc	811mA @ 24vdc
48V dc	38-60vdc	434mA @ 48vdc
115V ac/dc 50/60Hz	100-230vac/dc	297mA @ 115vac
230V ac/dc 50/60Hz	100-230vac/dc	196mA @ 230vac
Current at nominal voltage		

Features

- Automatic synchronisation on multi-sounder system.
- Very large termination area.
- Ratchet adjustable stainless steel 'U' bracket.
- IN & OUT terminals.
- Independently selectable tones for 1st & 2nd stages.

Coding

- II 2G Ex d IIC T4 Ta. -60° to +50°C
- II 2G Ex d IIC T3 Ta. -60° to +58°C
- II 2G Ex d IIB T6 Ta. -60° to +50°C
- II 2G Ex d IIB T5 Ta. -60° to +58°C

Part codes	
Code	***Description:***
GNExS2	S2 alarm sounder
DC024	24vdc (10-30vdc)
DC048	48vdc (35-60vdc)
AC230	230vac (100-260vac/dc)
-N	No stopping plug (standard)
-B	Brass stopping plug
-S	Stainless steel stopping plug
-P	Nickel plated brass stopping plug
-1	Mounting bracket 304 stainless steel (A2) (standard)
-2	Mounting bracket 316 stainless steel (A4)
-A-1	Approval to ATEX & IECEx (standard)
-R	Housing colour Red (standard)
-S	Other housing colour - please specify

Example

GNExS2DC024-B-1-A-1-R

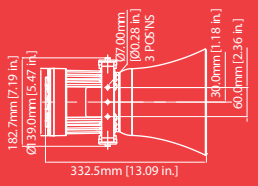
GNExS2 24vdc with brass stopping plug, 304 stainless steel mounting bracket, approved to ATEX & IECEx in a red housing.

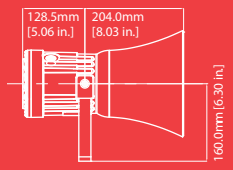
DC: 3.35kg
AC: 3.55kg

IP 66/67

EL Sounder

Bell





AVAILABLE COLOURS

Tone table				
Stage 1	**Frequency Description.**	**Stage 2**	**Stage 3**	**Stage 4**
Tone 1	340 Hz Continuous	Any Stage 1 tone	Tone 5	Tone 29
Tone 2	800/1000Hz @ 0.25 sec Alternating	Any Stage 1 tone	Tone 5	Tone 45
Tone 3	500/1200Hz @ 0.3Hz 0.5 sec Slow Whoop	Any Stage 1 tone	Tone 5	Tone 29
Tone 4	800/1000Hz @ 1Hz Sweeping	Any Stage 1 tone	Tone 5	Tone 34
Tone 5	2400Hz Continuous	Any Stage 1 tone	Tone 20	Tone 29
Tone 6	2400/2900Hz @ 7Hz Sweeping	Any Stage 1 tone	Tone 5	Tone 45
Tone 7	2400/2900Hz @ 1Hz Sweeping	Any Stage 1 tone	Tone 5	Tone 45
Tone 8	500/1200/500Hz @ 0.3Hz Sweeping	Any Stage 1 tone	Tone 5	Tone 45
Tone 9	1200/500Hz @ 1Hz - DIN / PFEER P.T.A.P.	Any Stage 1 tone	Tone 2	Tone 38
Tone 10	2400/2900Hz @ 2Hz Alternating	Any Stage 1 tone	Tone 5	Tone 45
Tone 11	1000Hz @ 1Hz Intermittent	Any Stage 1 tone	Tone 5	Tone 29
Tone 12	800/1000Hz @ 0.875Hz Alternating	Any Stage 1 tone	Tone 5	Tone 45
Tone 13	2400Hz @ 1Hz Intermittent	Any Stage 1 tone	Tone 5	Tone 29
Tone 14	800Hz 0.25sec on, 1 sec off Intermittent	Any Stage 1 tone	Tone 5	Tone 45
Tone 15	800Hz Continuous	Any Stage 1 tone	Tone 5	Tone 34
Tone 16	660Hz 150mS on, 150mS off Intermittent	Any Stage 1 tone	Tone 5	Tone 29
Tone 17	544Hz (100mS)/440Hz (400mS) - NF S 32-001	Any Stage 1 tone	Tone 27	Tone 45
Tone 18	660Hz 1.8sec on, 1.8sec off Intermittent	Any Stage 1 tone	Tone 5	Tone 45
Tone 19	1.4KHz-1.6KHz 1s, 1.6KHz-1.4KHz 0.5s -NFC48-265	Any Stage 1 tone	Tone 5	Tone 29
Tone 20	660Hz Continuous	Any Stage 1 tone	Tone 5	Tone 34
Tone 21	554Hz/440Hz @ 1Hz Alternating	Any Stage 1 tone	Tone 5	Tone 29
Tone 22	544Hz @ 0.875 sec. Intermittent	Any Stage 1 tone	Tone 5	Tone 29
Tone 23	800Hz @ 2Hz Intermittent	Any Stage 1 tone	Tone 5	Tone 29
Tone 24	800/1000Hz @ 50Hz Sweeping	Any Stage 1 tone	Tone 5	Tone 34
Tone 25	2400/2900Hz @ 50Hz Sweeping	Any Stage 1 tone	Tone 5	Tone 45
Tone 26	Bell	Any Stage 1 tone	Tone 15	Tone 34
Tone 27	554Hz Continuous	Any Stage 1 tone	Tone 5	Tone 29
Tone 28	440Hz Continuous	Any Stage 1 tone	Tone 5	Tone 45
Tone 29	800/1000Hz @ 7Hz Sweeping	Any Stage 1 tone	Tone 5	Tone 45
Tone 30	300Hz Continuous	Any Stage 1 tone	Tone 5	Tone 45
Tone 31	660/1200Hz @ 1Hz Sweeping	Any Stage 1 tone	Tone 5	Tone 29
Tone 32	Two tone chime	Any Stage 1 tone	Tone 15	Tone 45
Tone 33	745Hz @ 1Hz Intermittent	Any Stage 1 tone	Tone 5	Tone 29
Tone 34	1000 & 2000Hz @ 0.5 sec Alternating - Singapore	Any Stage 1 tone	Tone 45	Tone 37
Tone 35	420Hz @ 0.625 sec Australian Alert	Any Stage 1 tone	Tone 5	Tone 34
Tone 36	500-1200Hz 3.75sec /0.25sec. Australian Evac.	Any Stage 1 tone	Tone 5	Tone 45
Tone 37	1000Hz Continuous - PFEER Toxic Gas	Any Stage 1 tone	Tone 45	Tone 38
Tone 38	2000Hz Continuous	Any Stage 1 tone	Tone 45	Tone 37
Tone 39	800Hz 0.25sec on, 1 sec off Intermittent	Any Stage 1 tone	Tone 17	Tone 37
Tone 40	544Hz (100mS)/440Hz (400mS) - NF S 32-001	Any Stage 1 tone	Tone 27	Tone 38
Tone 41	Motor Siren - slow rise to 1200 Hz	Any Stage 1 tone	Tone 5	Tone 29
Tone 42	Motor Siren - slow rise to 800 Hz	Any Stage 1 tone	Tone 5	Tone 29
Tone 43	1200 Hz Continuous	Any Stage 1 tone	Tone 5	Tone 45
Tone 44	Motor Siren - slow rise to 2400 Hz	Any Stage 1 tone	Tone 5	Tone 34
Tone 45	1KHz 1s on, 1s off Intermittent - PFEER Gen. Alarm	Any Stage 1 tone	Tone 34	Tone 37

Country specific or custom tone configurations and alarm frequencies are available upon request.

Colours:

Other colours available on request.

GNExS1-R

Omni-directional Alarm Sounder

The flameproof GNExS1-R alarm sounder with a unique radial horn. Suitable for Zone 1 & Zone 2 applications - certified to ATEX and IECEx.

PRODUCT INFORMATION

PRODUCT IMAGE

The unique radial horn on the compact GNExS1-R distributes the warning signal omni-directionally. Sound level ouputs are up to 117dB(A) at 1 metre with a choice of 45 alarm tones and 3 remotely selectable stages. The alarm tone frequencies for the first 2 stages are independently selectable. The GNEx range features enclosures manufactured from GRP (glass reinforced polyester), moulded in natural red, but also available in other colours. The omni-directional flare horn is high impact, fire retardant ABS. All models have two M20 cable entries, large termination areas containing in & out terminals and an ingress protection of IP66/67.

Specification	
Maximum output	117dB(A) @ 1 metre
Nominal output	110dB(A) @ 1m +/- 3dB - Tone 2
No. of tones	45 (UKOOA / PFEER compliant)
No. of stages	3
Volume control	Max. 110dB(A); Min. 72dB(A) - Tone 2
Effective range	100m @ 1KHz
Voltages DC	24vdc (10-30vdc), 48vdc (38-60vdc)
Voltages AC	230vac (100-260vac/dc)
Stage switching	Negative or positive
Housing material	GRP
Flare	High impact UL94 V0 & 5VA FR ABS (Red)
Cable entries	Dual M20 ISO
Terminals	0.5 to 4.0mm² cables
Line monitoring	Min. 500 Ohm 2w, or 3k3 Ohm 0.5w res. or diode within Exd enclosure (dc versions)

Approvals	
ATEX certificate	SIRA 13ATEX1139X EN 60079-0 : 2012, EN 60079-1 : 2007
IECEx certificate	IECEx SIR 13.0029X IEC 60079-0 : 2011 (Ed6), IEC 60079-1 : 2007 (Ed6)

Current consumption		
Version	***Voltage***	***Current***
24V dc	10-30vdc	140mA @ 24vdc
48V dc	38-60vdc	73mA @ 48vdc
115V ac/dc 50/60Hz	100-260vac/dc	86mA @ 115vac
230V ac/dc 50/60Hz	100-260vac/dc	75mA @ 230vac

Features

- Omni-directional sound output.
- Automatic synchronisation on multi-sounder system.
- Very large termination area.
- Ratchet adjustable stainless steel 'U' bracket.
- IN & OUT terminals.
- Independently selectable tones for 1st & 2nd stages.

Coding

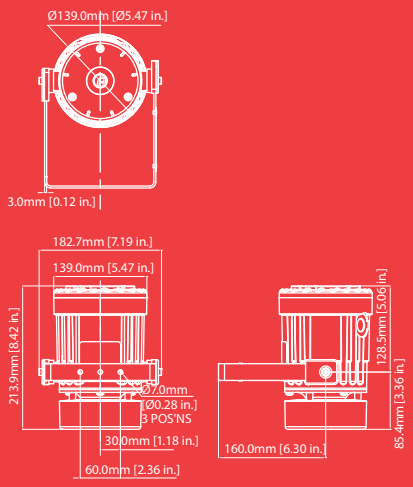
- II 2G Ex d IIC T4 Ta. -60° to +50°C
- II 2G Ex d IIC T3 Ta. -60° to +70°C
- II 2G Ex d IIB T6 Ta. -60° to +50°C
- II 2G Ex d IIB T5 Ta. -60° to +65°C
- II 2G Ex d IIB T4 Ta. -60° to +70°C

Part codes	
Code	***Description:***
GNExS1-R	S1 alarm sounder with radial horn
DC024	24vdc (10-30vdc)
DC048	48vdc (35-60vdc)
AC230	230vac (100-260vac/dc)
-N	No stopping plug (standard)
-B	Brass stopping plug
-S	Stainless steel stopping plug
-P	Nickel plated brass stopping plug
-1	Mounting bracket 304 stainless steel (A2) (standard)
-2	Mounting bracket 316 stainless steel (A4)
-A-1	Approval to ATEX & IECEx (standard)
-R	Housing colour Red (standard)
-S	Other housing colour - please specify

Example

GNExS1RDC024-B-1-A-1-R

GNExS1 24vdc with brass stopping plug, 304 stainless steel mounting bracket, approved to ATEX & IECEx in a red housing.



AVAILABLE COLOURS

Tone table				
Stage 1	***Frequency Description.***	***Stage 2***	***Stage 3***	***Stage 4***
Tone 1	340 Hz Continuous	Any Stage 1 tone	Tone 5	Tone 29
Tone 2	800/1000Hz @ 0.25 sec Alternating	Any Stage 1 tone	Tone 5	Tone 45
Tone 3	500/1200Hz @ 0.3Hz 0.5 sec Slow Whoop	Any Stage 1 tone	Tone 5	Tone 29
Tone 4	800/1000Hz @ 1Hz Sweeping	Any Stage 1 tone	Tone 5	Tone 34
Tone 5	2400Hz Continuous	Any Stage 1 tone	Tone 20	Tone 29
Tone 6	2400/2900Hz @ 7Hz Sweeping	Any Stage 1 tone	Tone 5	Tone 45
Tone 7	2400/2900Hz @ 1Hz Sweeping	Any Stage 1 tone	Tone 5	Tone 45
Tone 8	500/1200/500Hz @ 0.3Hz Sweeping	Any Stage 1 tone	Tone 5	Tone 45
Tone 9	1200/500Hz @ 1Hz - DIN / PFEER P.T.A.P.	Any Stage 1 tone	Tone 2	Tone 38
Tone 10	2400/2900Hz @ 2Hz Alternating	Any Stage 1 tone	Tone 5	Tone 45
Tone 11	1000Hz @ 1Hz Intermittent	Any Stage 1 tone	Tone 5	Tone 29
Tone 12	800/1000Hz @ 0.875Hz Alternating	Any Stage 1 tone	Tone 5	Tone 45
Tone 13	2400Hz @ 1Hz Intermittent	Any Stage 1 tone	Tone 5	Tone 29
Tone 14	800Hz 0.25sec on, 1 sec off Intermittent	Any Stage 1 tone	Tone 5	Tone 45
Tone 15	800Hz Continuous	Any Stage 1 tone	Tone 5	Tone 34
Tone 16	660Hz 150mS on, 150mS off Intermittent	Any Stage 1 tone	Tone 5	Tone 29
Tone 17	544Hz (100mS)/440Hz (400mS) - NF S 32-001	Any Stage 1 tone	Tone 27	Tone 45
Tone 18	660Hz 1.8sec on, 1.8sec off Intermittent	Any Stage 1 tone	Tone 5	Tone 45
Tone 19	1.4KHz-1.6KHz 1s, 1.6KHz-1.4KHz 0.5s -NFC48-265	Any Stage 1 tone	Tone 5	Tone 29
Tone 20	660Hz Continuous	Any Stage 1 tone	Tone 5	Tone 34
Tone 21	554Hz/440Hz @ 1Hz Alternating	Any Stage 1 tone	Tone 5	Tone 29
Tone 22	544Hz @ 0.875 sec. Intermittent	Any Stage 1 tone	Tone 5	Tone 29
Tone 23	800Hz @ 2Hz Intermittent	Any Stage 1 tone	Tone 5	Tone 29
Tone 24	800/1000Hz @ 50Hz Sweeping	Any Stage 1 tone	Tone 5	Tone 34
Tone 25	2400/2900Hz @ 50Hz Sweeping	Any Stage 1 tone	Tone 5	Tone 45
Tone 26	Bell	Any Stage 1 tone	Tone 15	Tone 34
Tone 27	554Hz Continuous	Any Stage 1 tone	Tone 5	Tone 29
Tone 28	440Hz Continuous	Any Stage 1 tone	Tone 5	Tone 45
Tone 29	800/1000Hz @ 7Hz Sweeping	Any Stage 1 tone	Tone 5	Tone 45
Tone 30	300Hz Continuous	Any Stage 1 tone	Tone 5	Tone 45
Tone 31	660/1200Hz @ 1Hz Sweeping	Any Stage 1 tone	Tone 5	Tone 29
Tone 32	Two tone chime	Any Stage 1 tone	Tone 15	Tone 45
Tone 33	745Hz @ 1Hz Intermittent	Any Stage 1 tone	Tone 5	Tone 29
Tone 34	1000 & 2000Hz @ 0.5 sec Alternating - Singapore	Any Stage 1 tone	Tone 45	Tone 37
Tone 35	420Hz @ 0.625 sec Australian Alert	Any Stage 1 tone	Tone 5	Tone 34
Tone 36	500-1200Hz 3.75sec /0.25sec. Australian Evac.	Any Stage 1 tone	Tone 5	Tone 45
Tone 37	1000Hz Continuous - PFEER Toxic Gas	Any Stage 1 tone	Tone 45	Tone 38
Tone 38	2000Hz Continuous	Any Stage 1 tone	Tone 45	Tone 37
Tone 39	800Hz 0.25sec on, 1 sec off Intermittent	Any Stage 1 tone	Tone 17	Tone 37
Tone 40	544Hz (100mS)/440Hz (400mS) - NF S 32-001	Any Stage 1 tone	Tone 27	Tone 38
Tone 41	Motor Siren - slow rise to 1200 Hz	Any Stage 1 tone	Tone 5	Tone 29
Tone 42	Motor Siren - slow rise to 800 Hz	Any Stage 1 tone	Tone 5	Tone 29
Tone 43	1200 Hz Continuous	Any Stage 1 tone	Tone 5	Tone 45
Tone 44	Motor Siren - slow rise to 2400 Hz	Any Stage 1 tone	Tone 5	Tone 34
Tone 45	1KHz 1s on, 1s off Intermittent - PFEER Gen. Alarm	Any Stage 1 tone	Tone 34	Tone 37

Country specific or custom tone configurations and alarm frequencies are available upon request.

Colours:

Other colours available on request.

GNExL1

PA Loudspeaker

The flameproof GNExL1 PA loudspeaker is suitable for Zone 1 & Zone 2 applications.

PRODUCT INFORMATION

PRODUCT IMAGE

The GNEx range features enclosures manufactured from GRP (glass reinforced polyester), moulded in natural red, but also available in other colours. The re-entrant flare horn is high impact, fire retardant ABS. All models have two M20 cable entries, large termination areas containing in & out terminals and an ingress protection of IP66/67.

Specification	
SPL	102dB +/-3dB @ 1w @ 1m - Pink 113dB +/-3dB @ 15w (rated) @ 1m
Rated power	15 Watts RMS
70v line tappings	15w / 7.5w / 3w / 1w
100v line tappings	15w / 7.5w / 3w / 1w
Low impedence	8 Ohm or 16 Ohm
Dispersion	120° @ 1kHz & 32° @ 4kHz
Frequency range	400Hz to 8000 Hz
DC Line monitoring	2.2µF Capacitor (Transformer) 470µF Capacitor (Low impedance)
Housing material	GRP
BExL15 flare	High impact UL94 V0 & 5VA FR ABS (Red)
Cable entries	Dual M20 ISO
Terminals	0.5 to 4.0mm² cables.

Approvals	
ATEX certificate	SIRA 13ATEX1139X EN 60079-0 : 2012, EN 60079-1 : 2007
IECEx certificate	IECEx SIR 13.0029X IEC 60079-0 : 2011 (Ed6), IEC 60079-1 : 2007 (Ed6)

Features

- Very large termination area.
- Ratchet adjustable stainless steel 'U' bracket.
- IN & OUT terminals

Coding

- II 2G Ex d IIC T4 Ta. -60° to +50°C
- II 2G Ex d IIC T3 Ta. -60° to +70°C
- II 2G Ex d IIB T6 Ta. -60° to +50°C
- II 2G Ex d IIB T5 Ta. -60° to +65°C
- II 2G Ex d IIB T4 Ta. -60° to +70°C

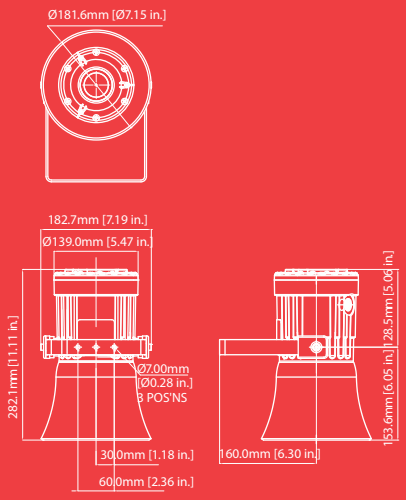
Part codes	
Code	***Description:***
GNExL1	15W PA Loudspeaker
V100	70/100V line transformer
R008	8 Ohm low impedance
R016	16 Ohm low impedance
-N	No stopping plug (standard)
-B	Brass stopping plug
-S	Stainless steel stopping plug
-P	Nickel plated brass stopping plug
-1	Mounting bracket 304 stainless steel (A2) (standard)
-2	Mounting bracket 316 stainless steel (A4)
-A-1	Approval to ATEX & IECEx (standard)
-R	Housing colour Red (standard)
-S	Other housing colour - please specify

Example

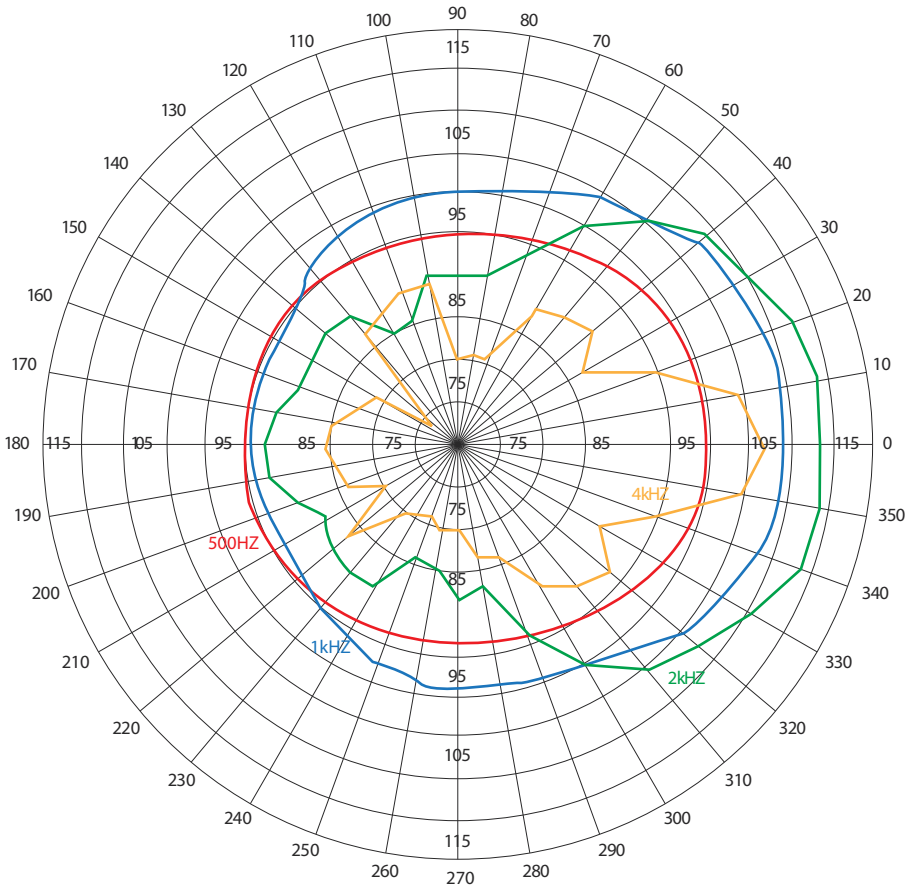
GNExL1V100-B-1-A-1-R

GNExL1 70/100V lne transformer version with brass stopping plug, 304 stainless steel mounting bracket, approved to ATEX & IECEx in a red housing.

3.8kg / 3.45kg | IP 66/67 | Loudspeaker



AVAILABLE COLOURS



Colours:

Other colours available on request.

GNExL2

PA Loudspeaker

The flameproof GNExL2 PA loudspeaker is suitable for Zone 1 & Zone 2 applications.

PRODUCT INFORMATION

PRODUCT IMAGE

The GNEx range features enclosures manufactured from GRP (glass reinforced polyester), moulded in natural red, but also available in other colours. The re-entrant flare horn is high impact, fire retardant ABS. All models have two M20 cable entries, large termination areas containing in & out terminals and an ingress protection of IP66/67.

Specification	
SPL	105dB +/-3dB @ 1w @ 1m - Pink 119dB +/-3dB @ 25w (rated) @ 1m
Rated power	25 Watts RMS
70v line tappings	25w / 12.5w / 6w / 2w tappings
100v line tappings	25w / 12.5w / 6w / 2w tappings
Low impedence	8 Ohm or 16 Ohm
Dispersion	130° @ 1kHz & 32° @ 4kHz
Frequency range	300Hz to 8000 Hz
DC Line monitoring	2.2µF Capacitor (Transformer) 470µF Capacitor (Low impedance)
Housing material	GRP
BExL15 flare	High impact UL94 V0 & 5VA FR ABS (Red)
Cable entries	Dual M20 ISO
Terminals	0.5 to 4.0mm² cables.

Approvals	
ATEX certificate	SIRA 13ATEX1139X EN 60079-0 : 2012, EN 60079-1 : 2007
IECEx certificate	IECEx SIR 13.0029X IEC 60079-0 : 2011 (Ed6), IEC 60079-1 : 2007 (Ed6)

Features

- Very large termination area.
- Ratchet adjustable stainless steel 'U' bracket.
- IN & OUT terminals

Coding

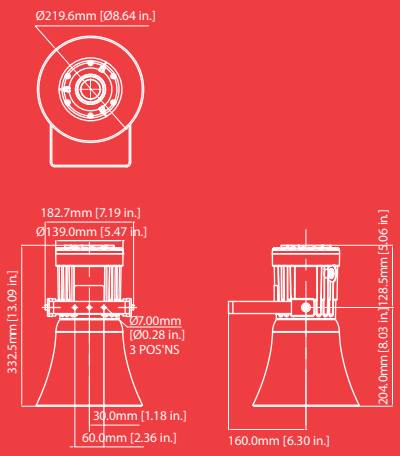
- II 2G Ex d IIC T4 Ta. -60° to +50°C
- II 2G Ex d IIC T3 Ta. -60° to +65°C
- II 2G Ex d IIB T6 Ta. -60° to +50°C
- II 2G Ex d IIB T5 Ta. -60° to +65°C

Part codes	
Code	***Description:***
GNExL2	25W PA Loudspeaker
V100	70/100V line transformer
R008	8 Ohm low impedance
R016	16 Ohm low impedance
-N	No stopping plug (standard)
-B	Brass stopping plug
-S	Stainless steel stopping plug
-P	Nickel plated brass stopping plug
-1	Mounting bracket 304 stainless steel (A2) (standard)
-2	Mounting bracket 316 stainless steel (A4)
-A-1	Approval to ATEX & IECEx (standard)
-R	Housing colour Red (standard)
-S	Other housing colour - please specify

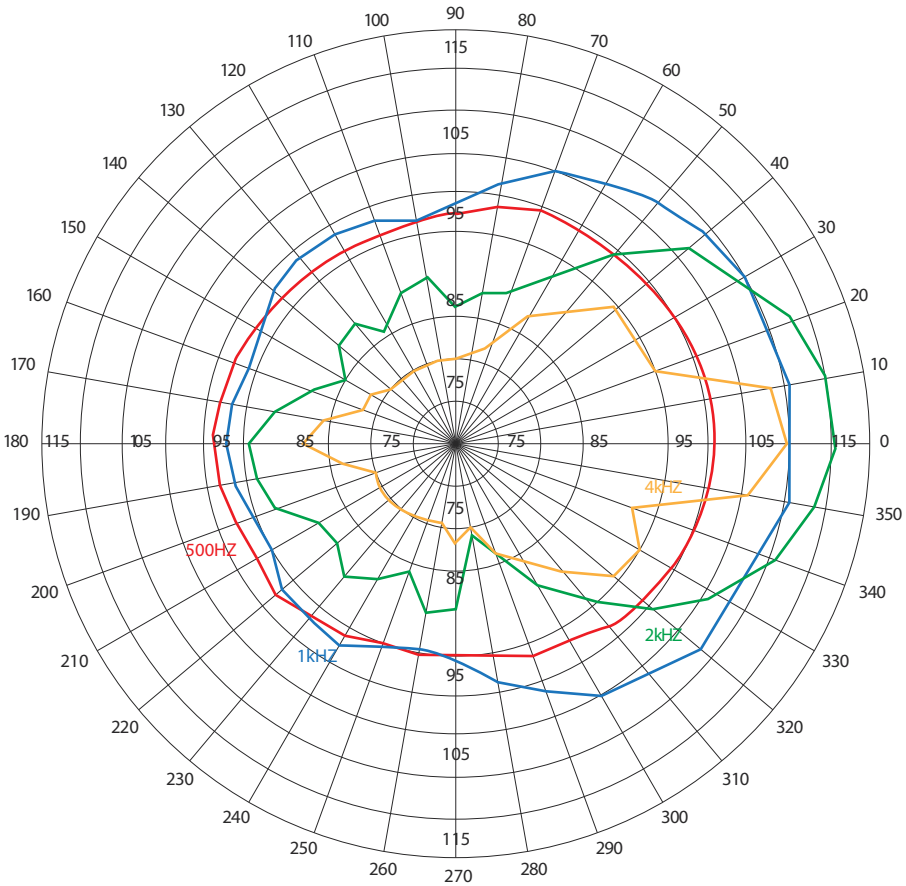
Example

GNExL2V100-B-1-A-1-R
GNExL2 70/100V lne transformer version with brass stopping plug, 304 stainless steel mounting bracket, approved to ATEX & IECEx in a red housing.

4.3kg / 3.95kg | IP 66/67 | Loudspeaker



AVAILABLE COLOURS



Colours:

Other colours available on request.

BExS110

Alarm Sounder

The flameproof BExS110 alarm sounders are suitable for Zone 1 & Zone 2 applications and the BExDS110 sounders also for Zone 21 & 22.

PRODUCT INFORMATION
PRODUCT IMAGE
AVAILABLE COLOURS

Sound level ouputs are up to 117dB(A) at 1 metre with a choice of 32 alarm tones and 3 remotely selectable stages. The BEx range features enclosures manufactured from corrosion proof, marine grade copper free LM6 aluminium which is phosphated and powder coated. The re-entrant flare horns are high impact, fire retardant ABS. All models have two M20 cable entries, large termination areas containing in & out terminals (Ex de version only) and an ingress protection of IP66/67 (Ex d) and IP66 (Ex de). For fire applications the BExS110D 24V dc siren is CPD EN89/106/EEC compliant (EN54-3 tested).

Ex Alarm Sounder	
Maximum output	117dB(A) @ 1 metre
No. of tones	32 (UKOOA / PFEER compliant)
No. of stages	3
Supply Voltage	12Vdc, 24Vdc, 48Vdc, 115Vac, 230Vac
Effective Range	100m @ 1KHz
Ingress protection	S110D : IP66/67 S110E : IP66
Housing	Ex d and Ex de
Housing material	Marine grade copper free LM6 Aluminium
Housing finish	Phosphated & powder coated finish -anti-corrosion
Cable entries	Dual M20 ISO (one stopping plug included)
Terminals	0.5 to 4.0mm² cables
Line monitoring	Min. 500 Ohm 2w, or 3k3 Ohm 0.5w res. or diode within Exd enclosure (dc)
Measurements	Ø181*262MM

Approvals	
ATEX certificate	KEMA 99ATEX6312, EN 60079-0 : 2006, EN 60079-1 : 2007, EN 60079-7 : 2003, EN 61241-0 : 2006, EN 61241-1 : 2004
IECEx certificate: IECEx KEM 10.0003	IEC 60079-0 : 2004 (Ed4), IEC 60079-1 : 2007 (Ed6), IEC 60079-7 : 2001 (Ed3), IEC 61241-0 : 2004 (Ed1), IEC 61241-1 : 2004 (Ed1)
VdS certificate	G206011
Safety-integrity suitability	SIL1
Inmetro certificate	10-IEx-0009

Features

- Automatic synchronisation on multi-sounder system.
- Very large termination area.
- Ratchet adjustable stainless steel 'U' bracket.
- IN & OUT terminals (Ex de version only).
- 'Programmable' version available:
  - 45 alarm tones
  - 4 remotely selectable stages
  - Any tone can be assigned to any stage
  - User configurable continuous frequency tone

Colours:

3,2kg | IP S110D: 66/67 | IP S110E: 66 | EL Sounder | Bell

BExS120

Alarm Sounder

The flameproof BExS120 alarm sounders are suitable for Zone 1 & Zone 2 applications and the BExDS120 sounders also for Zone 21 & 22.

PRODUCT INFORMATION
PRODUCT IMAGE
AVAILABLE COLOURS

Sound level ouputs are up to 123dB(A) at 1 metre with a choice of 32 alarm tones and 3 remotely selectable stages. The BEx range features enclosures manufactured from corrosion proof, marine grade copper free LM6 aluminium which is phosphated and powder coated. The re-entrant flare horns are high impact, fire retardant ABS. All models have two M20 cable entries, large termination areas containing in & out terminals (Ex de version only) and an ingress protection of IP66/67 (Ex d) and IP66 (Ex de). For fire applications the BExS120D 24V dc siren is CPD EN89/106/EEC compliant (EN54-3 tested).

Ex Alarm Sounder	
Maximum output	123dB(A) @ 1 metre
No. of tones	32 (UKOOA / PFEER compliant)
No. of stages	3
Supply Voltage	12Vdc, 24Vdc, 48Vdc, 115Vac, 230Vac
Effective Range	200m @ 1KHz
Ingress protection	S120D : IP66/67 S120E : IP66
Housing	Ex d and Ex de
Housing material	Marine grade copper free LM6 Aluminium
Housing finish	Phosphated & powder coated finish -anti-corrosion
Cable entries	Dual M20 ISO (one stopping plug included)
Terminals	0.5 to 4.0mm² cables
Line monitoring	Min. 500 Ohm 2w, or 3k3 Ohm 0.5w res. or diode within Exd enclosure (dc)
Measurements	Ø220*326MM

Approvals	
ATEX certificate	KEMA 99ATEX6312, EN 60079-0 : 2006, EN 60079-1 : 2007, EN 60079-7 : 2003, EN 61241-0 : 2006, EN 61241-1 : 2004
IECEx certificate: IECEx KEM 10.0003	IEC 60079-0 : 2004 (Ed4), IEC 60079-1 : 2007 (Ed6), IEC 60079-7 : 2001 (Ed3), IEC 61241-0 : 2004 (Ed1), IEC 61241-1 : 2004 (Ed1)
VdS certificate	G206011
Safety-integrity suitability	SIL1
Inmetro certificate: 10-IEx-0009	10-IEx-0009

Features

- Automatic synchronisation on multi-sounder system.
- Very large termination area.
- Ratchet adjustable stainless steel 'U' bracket.
- IN & OUT terminals (Ex de version only).
- 'Programmable' version available:
  - 45 alarm tones
  - 4 remotely selectable stages
  - Any tone can be assigned to any stage
  - User configurable continuous frequency tone

Colours:

3,4kg · IP S120D: 66/67 · IP S120E: 66 · EL Sounder · Bell

BExSH1

Alarm Sounder

PRODUCT INFORMATION | PRODUCT IMAGE | AVAILABLE COLOURS

BExSH1The BExSH1 produces a powerful, low frequency warning tone for applications where a traditional buzzer sound is required. Ideally suited for warning, calling and indicating purposes in zone 1 and 2 environments, the signalling hooterproduces a sound volume of approx. 108 dB(A) at 1 m distance.

Ex Alarm Sounder	
Maximum output	108Db(A) @ 1 metre
No. of tones	1
No. of stages	1
Supply Voltage	24Vdc, 115Vac, 230Vac
Effective Range	100m @ 1KHz
Ingress protection	IP54
Housing	Ex e
Housing material	PC
Cable entries	one M20 ISO
Measurements	Ø140*345MM

Features

- The driver system consists of a strong, non-polarised electromagnet, whose striker hits the diaphragm between 100 and 120 times a second. All DC versions are equipped with an electronic contact breakrer.

Approvals

- ATEX II 2G Ex e mb II T4

1,3kg | IP 54 | EL Sounder

Colours:

BExTS110

Ex Loudspeaker

Zone 1, 2, 21 & 22 Telephone Sounders
The flameproof BExTS110 telephone initiated sounders are suitable for Zone 1 & Zone 2 applications and the BExDTS110 version also for Zone 21 & 22.

PRODUCT INFORMATION | PRODUCT IMAGE | AVAILABLE COLOURS

Sound level ouputs are up to 117dB(A) at 1 metre with a choice of 32 alarm tones. The ring-tone circuit senses the ringing voltage on the telephone line and swtiches the supply onto signal until the telephone is answered. The sound can be continuous or it can follow the telephone ring (selectable option).

Ex Telephone Sounder	
Maximum output	117dB(A) @ 1 metre
No. of tones	32 (UK0OA / PFEER compliant)
No. of stages	1
Supply Voltage	115Vac, 230Vac
Effective Range	100m @ 1KHz
Housing	Ex d
Housing material	Marine grade copper free LM6 Aluminium
Housing finish	Phosphated & powder coated finish -anti-corrosion
Cable entries	Dual M20 ISO (one stopping plug included)
Terminals	0.5 to 4.0mm² cables
Measurements	Ø181*262MM

Approvals	
ATEX certificate	KEMA 99ATEX6312, EN 60079-0 : 2006, EN 60079-1 : 2007, EN 60079-7 : 2003, EN 61241-0 : 2006, EN 61241-1 : 2004
IECEx certificate: IECEx KEM 10.0003	IEC 60079-0 : 2004 (Ed4), IEC 60079-1 : 2007 (Ed6), IEC 60079-7 : 2001 (Ed3), IEC 61241-0 : 2004 (Ed1), IEC 61241-1 : 2004 (Ed1)
VdS certificate	G206011
Safety-integrity suitability	SIL1
Inmetro certificate: 10-IEx-0009	10-IEx-0009

Features
The BEx range features enclosures manufactured from corrosion proof, marine grade copper free LM6 aluminium which is phosphated and powder coated.

The re-entrant flare horns are high impact, fire retardant ABS. All models have two M20 cable entries, large termination areas and an ingress protection of IP66/67.

Colours:

3,2kg | IP 66/67 | EL Sounder | Telephone

BExL15
Ex Loudspeaker

The flameproof BExL15 PA loudspeakers are suitable for Zone 1 & Zone 2 applications and the BExDL15 sounders also for Zone 21 & 22.

PRODUCT INFORMATION
PRODUCT IMAGE
AVAILABLE COLOURS

The BEx range features enclosures manufactured from corrosion proof, marine grade copper free LM6 aluminium which is phosphated and powder coated.

The re-entrant flare horns are high impact, fire retardant ABS. All models have two M20 cable entries, large terminationareas containing in & out terminals (Ex de version only) and an ingress protection of IP66/67 (Ex d) and IP66 (Ex de).

An independent test report is available on request, or online, detailing the performance of the BEx loudspeaker range.

Ex PA Loudspeakers	
SPL	102dB +/-3dB @ 1w @ 1m - Pink noise 113dB +/-3dB @ 15w (rated power) @ 1m
Rated power	15 Watts RMS
Impedence/Tappings	8/16 Ohm – 70V/100V Line
Supply Voltage	115Vac, 230Vac
Effective Range	100m @ 1KHz
Housing	Ex d and Ex de
Housing material	Marine grade copper free LM6 Aluminium
Housing finish	Phosphated & powder coated finish -anti-corrosion
Cable entries	Dual M20 ISO (one stopping plug included)
Terminals	0.5 to 4.0mm² cables
Measurements	Ø181*262MM

Approvals	
ATEX certificate	KEMA 99ATEX6312, EN 60079-0 : 2006, EN 60079-1 : 2007, EN 60079-7 : 2003, EN 61241-0 : 2006, EN 61241-1 : 2004
IECEx certificate: IECEx KEM 10.0003	IEC 60079-0 : 2004 (Ed4), IEC 60079-1 : 2007 (Ed6), IEC 60079-7 : 2001 (Ed3), IEC 61241-0 : 2004 (Ed1), IEC 61241-1 : 2004 (Ed1)
VdS certificate	G206011
Safety-integrity suitability	SIL1
Inmetro certificate: 10-IEx-0009	10-IEx-0009

Features
- Very large termination area.
- Ratchet adjustable stainless steel 'U' bracket.
- IN & OUT terminals (Ex de version only).

The BEx range features enclosures manufactured from corrosion proof, marine grade copper free LM6 aluminium which is phosphated and powder coated.

The re-entrant flare horns are high impact, fire retardant ABS. All models have two M20 cable entries, large termination areas and an ingress protection of IP66/67

Colours:

3,45kg IP 66/67 Loudspeaker

BExL25
Ex Loudspeaker

The flameproof BExL15 PA loudspeakers are suitable for Zone 1 & Zone 2 applications and the BExDL25 sounders also for Zone 21 & 22.

PRODUCT INFORMATION
PRODUCT IMAGE
AVAILABLE COLOURS

The BEx range features enclosures manufactured from corrosion proof, marine grade copper free LM6 aluminium which is phosphated and powder coated. The re-entrant flare horns are high impact, fire retardant ABS. All models have two M20 cable entries, large terminationareas containing in & out terminals (Ex de version only) and an ingress protection of IP66/67 (Ex d) and IP66 (Ex de). An independent test report is available on request, or online, detailing the performance of the BEx loudspeaker range.

Ex PA Loudspeakers	
SPL	105dB +/-3dB @ 1w @ 1m - Pink noise 119dB +/-3dB @ 15w (rated power) @ 1m
Rated power	25 Watts RMS
Impedence/Tappings	8/16 Ohm – 70V/100V Line
Supply Voltage	115Vac, 230Vac
Effective Range	200m @ 1KHz
Housing	Ex d and Ex de
Housing material	Marine grade copper free LM6 Aluminium
Housing finish	Phosphated & powder coated finish -anti-corrosion
Cable entries	Dual M20 ISO (one stopping plug included)
Terminals	0.5 to 4.0mm² cables
Measurements	Ø220*313MM

Approvals	
ATEX certificate	KEMA 99ATEX6312, EN 60079-0 : 2006, EN 60079-1 : 2007, EN 60079-7 : 2003, EN 61241-0 : 2006, EN 61241-1 : 2004
IECEx certificate: IECEx KEM 10.0003	IEC 60079-0 : 2004 (Ed4), IEC 60079-1 : 2007 (Ed6), IEC 60079-7 : 2001 (Ed3), IEC 61241-0 : 2004 (Ed1), IEC 61241-1 : 2004 (Ed1)
VdS certificate	G206011
Safety-integrity suitability	SIL1
Inmetro certificate: 10-IEx-0009	10-IEx-0009

Features

- Very large termination area.
- Ratchet adjustable stainless steel 'U' bracket.
- IN & OUT terminals (Ex de version only).

The BEx range features enclosures manufactured from corrosion proof, marine grade copper free LM6 aluminium which is phosphated and powder coated.

The re-entrant flare horns are high impact, fire retardant ABS. All models have two M20 cable entries, large termination areas and an ingress protection of IP66/67.

Colours:

3,95kg IP 66/67 Loudspeaker

E2xS112

Alarm Sounder

The hazardous area E2xS112 alarm sounder is certified for Zone 2 applications and also UL approved for Class I Div 2 applications.

Currently not available with ATEX approval

PRODUCT INFORMATION | PRODUCT IMAGE | AVAILABLE COLOURS

With a nominal sound level output of 116dB(A) at 1 metre and a choice of 45 alarm tones and 3 remotely selectable stages the E2xS112 alarm sounder horn is suitable for all general signalling duties. The E2x range features enclosures manufactured from lightweight, corrosion proof PPS and high impact, fire retardant ABS re-entrant flare horns; both of which are suitable for the harshest of environments.

Ex Alarm Sounder	
Maximum output	116dB(A) @ 1 metre
No. of tones	45 (UKOOA / PFEER compliant)
No. of stages	3
Supply Voltage	24Vdc, 48Vdc, 115Vac, 230Vac
Effective Range	100m @ 1KHz
Ingress protection	IP66/67
Cable entries	2 x M20 ISO cable gland entries
Measurements	Ø181*270MM

Approvals	
UL File ref	E230764

UL Version:			
E2xS112UL**			
Class I,	Div 2,	Grps A,B,C,D T3C	(160°C) at +55°C
Class I,	Div 2,	Grps A,B,C,D T4	(135°C) at +40°C
Class II,	Div 2,	Grps F & G T6	(85°C) at +40°C
Class II,	Div 2,	Grps F & G T5	(100°C) at +55°C
Class III,	Div 1,	T6	(85°C) at +40°C
Class III,	Div 1,	T5	(100°C) at +55°C

** = Voltage reference

Features

- Automatic synchronisation on multi-sounder system.
- Very large termination area.
- Ratchet adjustable stainless steel 'U' bracket.

Colours:

3,0kg | IP 66/67 | EL Sounder | Bell

E2xS121

Alarm Sounder

The hazardous area E2xS121 alarm sounder is certified for Zone 2 applications and also UL approved for Class I Div 2 applications.

Currently not available with ATEX approval

PRODUCT INFORMATION
PRODUCT IMAGE
AVAILABLE COLOURS

With a maximum sound level output of 121dB(A) at 1 metre and a choice of 45 alarm tones and 3 remotely selectable stages the E2xS121 alarm sounder horn is suitable for all signalling applications with high ambient noise levels. The E2x range features enclosures manufactured from lightweight, corrosion proof PPS and high impact, fire retardant ABS re-entrant flare horns; both of which are suitable for the harshest of environments.

Ex Alarm Sounder	
Maximum output	121dB(A) @ 1 metre
No. of tones	45 (UK00A / PFEER compliant)
No. of stages	3
Supply Voltage	24Vdc, 48Vdc, 115Vac, 230Vac
Effective Range	200m @ 1KHz
Ingress protection	IP66/67
House material	UL94V0 PPS & ABS
Cable entries	2 x M20 ISO cable gland entries
Measurements	Ø220*323MM

Approvals	
UL File ref	E230764

** = Voltage reference

Features

- Automatic synchronisation on multi-sounder system.
- Very large termination area.
- Ratchet adjustable stainless steel 'U' bracket.

Colours:

3,21kg IP 66/67 EL Sounder Bell

IS-D105
Alarm Sounder

The IS-D105 unit is an intrinsically safe field mounting alarm horn with ATEX & IECEx approval which provides a loud audible signal.

PRODUCT INFORMATION
PRODUCT IMAGE
AVAILABLE COLOURS

There is a choice of 49 alarm tones with 2 remotely selectable alarm stages. The enclosure is marine grade aluminium with a phosphate and powder coat finish for durability in the harshest of environments.

Specification	
Nominal output	105dB(A) @ 1m +/- 3dB - Tone 2*
No. of tones	49 (UKOOA/PFEER compliant)
No. of stages	3
Volume control	Max. 105dB(A); Min. 96dB(A) - Tone 2
Effective range	60m @ 1KHz
Voltage	16-28vdc via Zener barrier or galvanic isolator
Current	25mA typical when powered from 24v supply via 28v 300 Ohm Zener barrier
Rating	Continuous
Enclosure material	A1-Si12 Marine Grade Aluminium
Fixings	Stainless Steel
Cable entries	2 x M20
Terminals	0.5 to 2.5mm²
Relative humidity	90% at 20°C

Approvals	
ATEX certificate	SIRA 04ATEX2301X ATEX certificate: SIRA 04ATEX2302X EN 60079-0 : 2006 EN 60079-11 : 2007 EN 60079-26 : 2007
IECEx certificate	IECEx SIR 04.0038X IECEx certificate: IECEx SIR 04.0039X IEC 60079-0 : 2007 IEC 60079-11 : 2006 IEC 60079-26 : 2006

Features

- Input overload and reverse current protection
- Marine grade aluminium enclosure
- Auto synchronised sound output
- External mounting lugs
- Duplicate cable terminations (in & out for daisy-chain installations).
- Available with custom tone configurations and frequencies.

Colours:

“Did you know that Marin Supply AS has the highest credit rating of AAA?”

BExSB1

The BExSB1 ideally suits applications requiring a traditinal bell sound designed to warn, call and signal in areas with explosive atmospheres. The protection type II 2G EEx de IIC T6 allows the signalling bell to be used without restriction in all Ex areas classified Zone 1 or 2. The signalling bell produces a sound volume of approx. 105dB(A) at 1 metre. The emphasis of the ring is at approx. 1000Hz, as a result of which the signal stands out clearly against lower frequency ambient noises. We offer the'Hootronic' range which offers the same sound from an all-electronic solution.

Ex Alarm Bell	
Maximum output	100dB(A) @ 1metre
No. of tones	1
No. of stages	1
Supply Voltage	24Vdc, 115Vac, 230Vac
Effective range	100m @ 1KHz
Housing material	Glass-fibre reinforced polyester (GRP)
Cable entries	2 x M20 ISO cable gland entries
Measurements	Ø200*270MM

Features

• Explosion protection is ensured by the flameproof enclosure of the driver system and increased safety terminal box. The enclosure is made completely of GRP (glass-fibre reinforced polyester) thus guaranteeing protection against corrosion. All D.C. versions are equipped with an electronic contact breaker which considerably increases service life compared with other available devices.

Colours:

3,5kg | IP 66 | Bell

761

The Ex signal horn 761 can be used for a range of applications in gas and dust explosion endangered areas, e.g. in joinery and wood processing plants. Zone 1 and 2, Zone 21 and 22 suitable for use in areas liable to explosion caused by both gas or dust without the need for additional accessories.

Ex Signal horn	
Maximum output	105dB(A) @ 1 metre
No. of tones	1
No. of stages	1
Supply Voltage	24Vdc/ac, 48Vdc, 115Vac, 230Vac
Effective range	60m @ 1KHz
Housing material	PC
Cable entries	1 xM16*1,5 entries
Measurements	232*178*108MM

Fixing

Wall mounting, base mounting

Explosion protection

II 2G Ex emb II T5
II 2D Ex td A21 IP65 T70°C

Approval

BVS 03 ATEX E 118X

Colours:

1,6kg | IP 66 | EL Sounder

718

Intrinsically safe Ex installation buzzer for Zone 1 and 2 (EEx ib - not for zone 0) For use with a Zener Barrier If added the optinal Dust cap this buzzer can be used in more demanding areas. Low current consumption and Continuous tone makes this unit an exelent alternativ for cabinets etc in Ex areas.

Ex Electronic Installation Buzzer	
Maximum output	90dB(A) @ 1 metre
No. of tones	1
No. of stages	1
Supply Voltage	24V Zener barrier
Effective range	10m @ 1KHz
Housing material	PC
Measurements	43*13MM

Fixing

Panel mount

Explosion protection

II 2G Ex ib IIC T4 / T5 / T6

Approval

DMT 98 ATEX E 005 X

Colours:

0,1kg | IP 30/43 | Buzzer

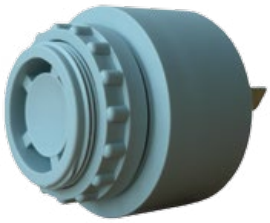
IS-pA1 Panel Mount Sounder

The IS-pA1 is a compact, panel mount 100dB(A) alarm sounder. Producing a high frequency continuous tone, the IS-pA1 can be pulsed to produce different sounds. Utilising the supplied threaded lock nut the IS-pA1 mounts into a 28mm hole - ideal for applications in control panels where a fault indication or other process alarm is required.

Intrinsically Safe Panel Mount Sounder, 100dB, 1 Tone	
Light sources	100dB(A) @ 1m +/- 3dB
No. of tones	1 - Continuous tone
Frequency	2900Hz
Supply	Zener barrier
Housing material	UL94V0 & 5VA FR ABS
Measurements	86*86*102mm

Features

• Input overload and reverse current protection.
Approvals:
• ATEX certificate: SIRA 10ATEX2137X, EN 60079-0 : 2009, EN 60079-11 : 2007, EN 60079-26 : 2007
• IECEx certificate: IECEx SIR 10.0073X, IEC 60079-0 : 2007,IEC 60079-11 : 2006, IEC 60079-26 : 2006



Housing colours:

0,1kg | IP 66 | Buzzer

IS-MA1 IS-minialarm

The IS-mA1 is a compact, 100dB(A) alarm sounder. Approvals includeATEX, IECEx and GOST-R for Zone 0 applications and FM approval forClass I Division 1 and Class I Zone 0 applications. The IS-mA1 is suitable for all intrinsically safe signalling applications including fire, security and process control. The IS-mA1M version is also available for Group I mining environments.

Intrinsically Safe Sounder, 100dB, 49 Tones	
Nominal output	100dB(A) @ 1m +/- 3dB
No. of tones	49 (UKOOA/PFEER compliant)
No. of stages	3
Effective range	40m @ 1KHz
Supply Voltage	16-28vdc via Zener barrier or galvanic isolator
Current	25mA if powered from 24v supply via 28v 300 Ohm Zener barrier
Measurements	Ø89*99MM

Features

• Input overload and reverse current protection
• End of line resistor certified
• Auto synchronised sound output
• Available with custom tone configurations and frequencies.

Colours:

0,2kg | IP 66 | EL Sounder

IS-A105 - Alarm Sounder

The IS-A105N is a high output, 105dB(A) alarm sounder. Approvals include ATEX, IECEx and GOST-R for Zone 0 applications and FM approval for Class I Division 1 and Class I Zone 0 applications.The IS-A105N is suitable for all intrinsically safe signalling applications including fire, security and process control.

Intrinsically Safe Sounder, 105dB, 49 Tones	
Nominal output	105dB(A) @ 1m +/- 3dB
No. of tones	49 (UKOOA/PFEER compliant)
Stages	3
Effective range	60m @ 1KHz
Supply Voltage	16-28Vdc via Zener barrier or galvanic isolator
Current	25mA if powered from 24v supply via 28v 300 Ohm Zener barrier
Measurements	130*130*133MM

Features

• Input overload and reverse current protection
• Auto synchronised sound output
• Unit can be mounted using external lugs or internal BESA compatible fixing positions.
• Duplicate cable terminations (in & out for daisychain installations).
• Available with custom tone configurations and frequencies.

Colours:

0,75kg | IP 66 | EL Sounder

ATEX VISUAL

Safety has no limits
There is a danger of explosion wherever combustible gases, vapours, fluids or dusts occur and can mix with air, oxygen or another reactive gas.

The danger can arise in very diverse locations, e.g. in the petrochemical and chemical industry or at filling stations and oil/gas rigs. However, facilities such as corn silos and coating plants are also potentially at risk of an explosion. Explosions endanger man and the environment. For this reason, international measures have been developed that are intended to prevent explosions or to minimise their effects.

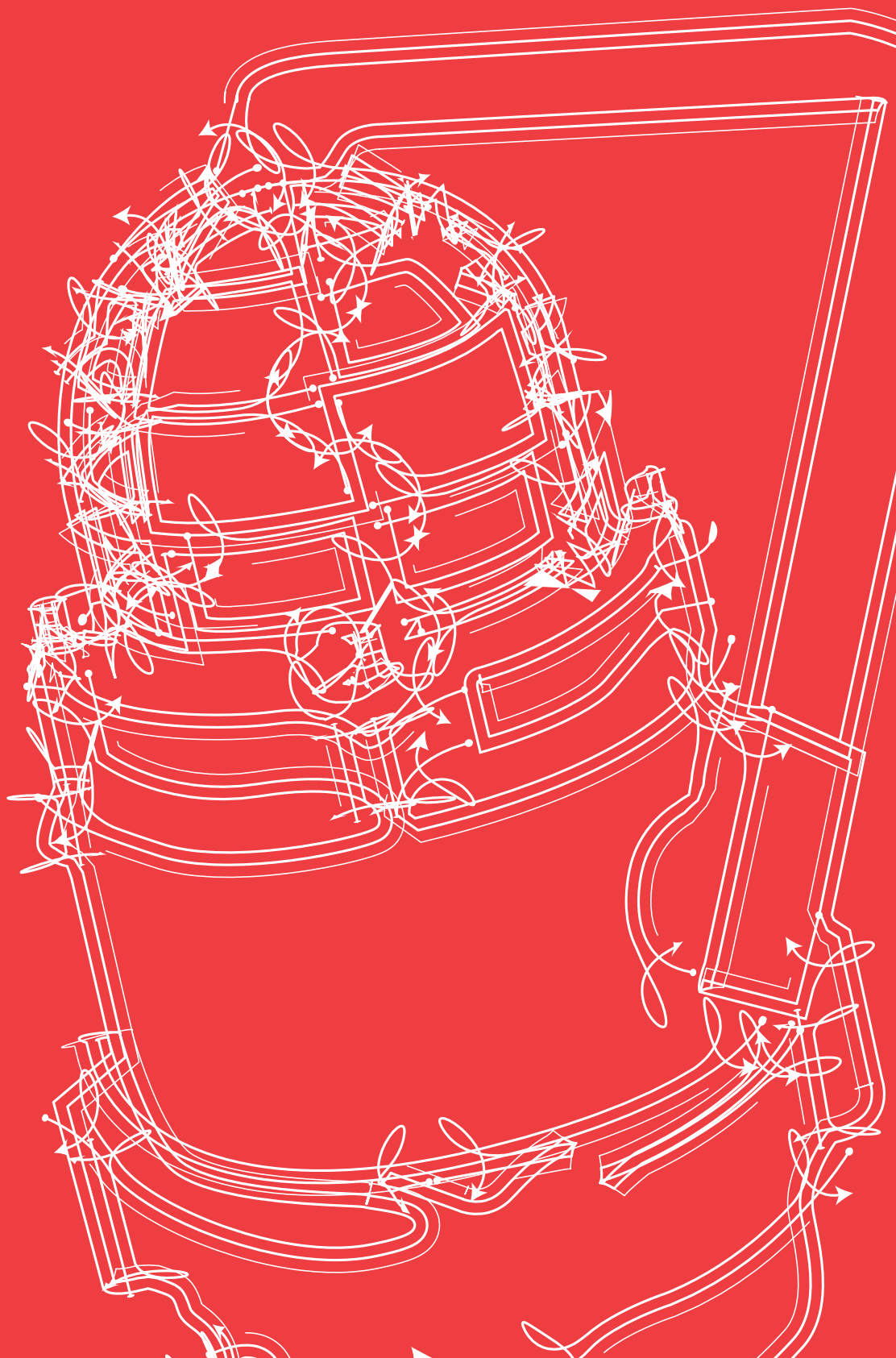
Our Ex signaling devices meet the toughest requirements and are subjected to the most stringent checks. Their quality and safety are checked by responsible bodies for compliance with the highest quality standards.

Flame proof enclosure ‘d’
In the case of pressure-resistant encapsulation, the actual operating equipment is built into a pressure-resistant housing. In the event of an explosion inside, the housing prevents an ignition breakthrough into the surrounding area. The explosion is therefore restricted to the interior of the device. On account of the necessary wall thickness, devices in this protection system are of a very sturdy construction and thus also often very well suited for adverse environmental conditions.

Enhanced safety ‘e’
This type of enhanced protection is usable with only a few types of equipment/components (e.g. terminals). This type of protection is conveniently often combined with pressure resistant encapsulation.

In alarm products, this means that all essential components are housed in the pressure-resistant housing and only the connection terminals are accessible in the increased safety housing. For this reason we also offers most devices with an ‘e connection box’ in order to enable simple and safe electrical connections to be made. The sensitive electronic components are therefore protected against accidental damage during mounting.

Intrinsically safety ‘i’
In the ignition protection type ‘i‘, the current and voltage of allenergy storage devices as well as the complete device are limited to the extent that no ignition sparks and no excessively hot surfaces can be generated. An explosive atmosphere can develop, but it will not be ignited.



IS-pB1 Intrinsically Safe Panel Mount Indicator

The IS-pB1 is a compact, panel mount L.E.D. indicator providing reliable cost-effective visual status indication in all hazardous areas. Each IS-pB1 contains a group of high efficiency light emitting diodes mounted behind a coloured diffuser to produce a bright, uniform output with a typical life greater than ten years.

Specification	
Current	18 to 22mA
Rating	Continuous
Housing material	Nylon 6
Lens material	Polycarbonate
Mounting	Panel mont - 22.5mm
Terminals	Screw clamp for 1.5mm2
Storage temp	-40 to 85°C
Relative humidity	5 to 95% non condensing

Features

Two lamps may be powered from a single IIC intrinsically safe Zener barrier or galvanic isolator and up to four lamps from a IIB device.

• Red, amber, green, blue and white comply with the indicator light colour requirements specified in IEC204-1, allowing all plant conditions to be annunciated.

• Mounting is via a single industry standard 22.5mm diameter hole.

Approvals:

• ATEX certificate: BAS 01ATEX1062X, EN 50014 : 1997 + Amd 1& 2, EN 50020 : 1994, EN 50284: 1999

• IECEx certificate: IECEx ITS 08.0030X, IEC 60079-0 : 2007-10, IEC 60079-11 : 2006, IEC 60079-26 : 2006

• FM file: 3022662

3610: Entity, 3611: Nonincendive

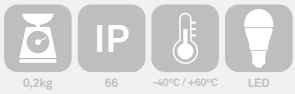
Lens colours:

Housing colours:

IS-L101 Intrinsically Safe L.E.D Beacon

The IS-L101L unit is an intrinsically safe field mounting beacon which provides a bright flashing warning signal. The unit can be used independently or combined with an IS-A105N 49 alarm sounder. Combination units can utilize a common zener barrier or galvanic isolator and may be coupled together or mounted seperately. With the IS-A105N the alarm accept function can be utilised. By closing a pair of external contacts (i.e push switch) the operator may silence the alarm for set periods between 5 seconds and 2 hours. If after the preset time the alarm condition still exists the sounder will activate again.

Specification	
Supply Voltage	16-28Vdc via Zener barrier or galvanic isolator
Rating	Continuous
Housing material	UL94V0 & 5VA FR ABS & PC
Lens material	Polycarbonate
Terminals	0.5 to 2.5mm²
Storage temp	-40°C to +70°C
Relative humidity	90% at 20°C
Measurements	86*86*93MM



Features

• Input overload and reverse current protection

• Prismatic lens optimises L.E.D effectiveness

• The IS-L101L can be combined with the ISA105N intrinsically safe alarm sounder.

Approvals:

• ATEX certificate: SIRA 04ATEX2302X, EN 60079-0 : 2006, EN 60079-11 : 2007, EN 60079-26 : 2007

• IECEx certificate: IECEx SIR 04.0039X, IEC 60079-0 : 2007, IEC 60079-11 : 2006, IEC 60079-26 : 2006

• FM approved: Class 3600 1998, Class 3610 1999, Class 3810 2005, IEC 60529 : 1989

• GOST-R certificate: POCC GB.JB05.B02205

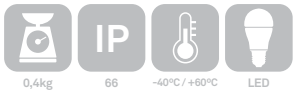
Lens colours:

Housing colours:

IS-mB1 Intrinsically Safe minialite

The IS-mB1 is a compact beacon with an array of six high output L.E.D's. Approvals include ATEX, IECEx and GOST-R for Zone 0 applications and FM approval for Class I Division 1 and Class I Zone 0 applications. The IS-mB1 is suitable for all intrinsically safe signalling applications including fire, security and process control.

Specification	
Current	25mA typical if powered from 24v via 28v 300 Ohm Zener barrier
Supply Voltage	16-28Vdc via Zener barrier or galvanic isolator
Rating	Continuous
Housing material	UL94V0 & 5VA FR ABS & PC
Lens material	Polycarbonate
Terminals	0.5 to 2.5mm²
Storage temp	-40°C to +70°C
Relative humidity	90% at 20°C
Measurements	Ø89*85MM



Features

• Input overload and reverse current protection

• End of line resistor certified

• Prismatic lens optimises L.E.D effectiveness

Approvals:

• ATEX certificate: SIRA 05ATEX2084X, EN 60079-0 : 2006,EN 60079-11 : 2007, EN 60079-26 : 2007

• IECEx certificate: IECEx SIR 06.0045X, IEC 60079-0 : 2004, IEC 60079-11 : 2006, IEC 60079-26 : 2006

• FM approved Class 3600 1998, Class 3610 1999, Class 3810 2005

• GOST-R certificate: POCC GB.JB05.B02205

Lens colours:

Housing colours:

BExBG05 Ex-Xenon Beacon 5Joule

The flameproof BExBG05 Xenon beacons are suitable for Zone 1, 2, 21 & 22 applications. The BExBG05 5 Joule beacons are ideal for general signalling duties whilst their robust construction makes installation in the harshest of environments possible. Additional features include automatic synchronisation on multibeacon systems and stainless steel guard and mounting bracket as standard.

Specification	
Energy	5 Joules (5Ws)
Supply Voltage	12Vdc, 24Vdc, 48Vdc, 115Vac, 230Vac
Flash rate	1Hz (60 fpm)
Peak/effective Candela	34,812 cd / 105 cd
Housing alternatives	Ex d / Ex de
Cable entries	Dual M20 ISO (one stopping plug included)
Terminals	0.5 to 4.0mm² cables
Measurements	Ø153*246MM
Line monitoring	Min. 500 Ohm 2w,or 3k3 Ohm 0.5w res. or diode with Exd enclosure (dc)

2,75kg IP 66/67 Xenon

Features

- *Automatic synchronisation on multi-beacon system.*
- *Beacons can be set to 'flip-flop' alternating mode with other units on multi-beacon systems.*
- *Xenon tubes mechanically secured against shock & vibration*
- *Glass lens & Stainless Steel guard*
- *Very large termination area.*
- *Ratchet adjustable stainless steel 'U' bracket.*
- *IN & OUT terminals (Ex de version only).*

Approvals:

- *ATEX certificate: KEMA 00ATEX2006, EN 60079-0 : 2006, EN 60079-1 : 2007, EN 60079-7 : 2003, EN 61241-0 : 2006, EN 61241-1 : 2004*
- *IECEx certificate: IECEx KEM 10.0002, IEC 60079-0 : 2004 (Ed4), IEC 60079-1 : 2007 (Ed6), IEC 60079-7 : 2001 (Ed3), IEC 61241-0 : 2004 (Ed1), IEC 61241-1 : 2004 (Ed1)*
- *GOST-R certificate: POCC GB.JB05.B02205*
- *Inmetro certificate: 10-IEx-0010*

Lens colours:

Housing colours:

Other colours available on request.

BExBG10 Ex-Xenon Beacon 10Joule

The flameproof BExBG10 Xenon beacons are suitable for Zone 1, 2, 21 & 22 applications. The BExBG10 10 Joule beacons are ideal for general signalling duties whilst their robust construction makes installation in the harshest of environments possible. Additional features include automatic synchronisation on multibeacon systems and stainless steel guard and mounting bracket as standard.

Specification	
Energy	10 Joules (10Ws)
Supply Voltage	12Vdc, 24Vdc, 48Vdc, 115Vac, 230Vac
Flash rate	1Hz (60 fpm)
Peak/effective Candela	79,531 cd / 346 cd
Housing alternatives	Ex d / Ex de
Cable entries	Dual M20 ISO (one stopping plug included)
Terminals	0.5 to 4.0mm² cables
Measurements	Ø153*246MM
Line monitoring	Min. 500 Ohm 2w,or 3k3 Ohm 0.5w res. or diode with Exd enclosure (dc)

2,75kg IP 66/67 Xenon

Features

- *Automatic synchronisation on multi-beacon system.*
- *Beacons can be set to 'flip-flop' alternating mode with other units on multi-beacon systems.*
- *Xenon tubes mechanically secured against shock & vibration*
- *Glass lens & Stainless Steel guard*
- *Very large termination area.*
- *Ratchet adjustable stainless steel 'U' bracket.*
- *IN & OUT terminals (Ex de version only).*

Approvals:

- *ATEX certificate: KEMA 00ATEX2006, EN 60079-0 : 2006, EN 60079-1 : 2007, EN 60079-7 : 2003, EN 61241-0 : 2006, EN 61241-1 : 2004*
- *IECEx certificate: IECEx KEM 10.0002, IEC 60079-0 : 2004 (Ed4), IEC 60079-1 : 2007 (Ed6), IEC 60079-7 : 2001 (Ed3), IEC 61241-0 : 2004 (Ed1), IEC 61241-1 : 2004 (Ed1)*
- *GOST-R certificate: POCC GB.JB05.B02205*
- *Inmetro certificate: 10-IEx-0010*

Lens colours:

Housing colours:

Other colours available on request.

BExBG15 Ex-Xenon Beacon 15Joule

The flameproof BExBG15 Xenon beacons are suitable for Zone 1, 2, 21 & 22 applications. The BExBG15 15 Joule beacons are ideal for general signalling duties whilst their robust construction makes installation in the harshest of environments possible. Additional features include automatic synchronisation on multibeacon systems and stainless steel guard and mounting bracket as standard.

Specification	
Energy	15 Joules (15Ws)
Supply Voltage	12Vdc, 24Vdc, 48Vdc, 115Vac, 230Vac
Flash rate	1Hz (60 fpm)
Peak/effective Candela	94,748 cd / 444 cd
Housing Alternatives	Ex d / Ex de
Cable entries	Dual M20 ISO (one stopping plug included)
Terminals	0.5 to 4.0mm² cables
Measurements	Ø153*246MM
Line monitoring	Min. 500 Ohm 2w,or 3k3 Ohm 0.5w res. or diode with Exd enclosure (dc)

2,75kg IP 66/67 Xenon

Features

- *Automatic synchronisation on multi-beacon system.*
- *Beacons can be set to 'flip-flop' alternating mode with other units on multi-beacon systems.*
- *Xenon tubes mechanically secured against shock & vibration*
- *Glass lens & Stainless Steel guard*
- *Very large termination area.*
- *Ratchet adjustable stainless steel 'U' bracket.*

Approvals:

- *ATEX certificate: KEMA 00ATEX2006, EN 60079-0 : 2006, EN 60079-1 : 2007, EN 60079-7 : 2003, EN 61241-0 : 2006, EN 61241-1 : 2004*
- *IECEx certificate: IECEx KEM 10.0002, IEC 60079-0 : 2004 (Ed4), IEC 60079-1 : 2007 (Ed6), IEC 60079-7 : 2001 (Ed3), IEC 61241-0 : 2004 (Ed1), IEC 61241-1 : 2004 (Ed1)*
- *GOST-R certificate: POCC GB.JB05.B02205*
- *Inmetro certificate: 10-IEx-0010*

Lens colours:

Housing colours:

Other colours available on request.

BExBG21 Ex-Xenon Beacon 21Joule

The BExBG21 21 Joule beacons are ideal for general signalling duties whilst their robust construction makes installation in the harshest of environments possible. The BExBG21 has three distinct user selectable flash patterns and for units with DC operating voltages a second stage flash pattern can be selected remotely. Additional features include a stainless steel guard and stainless steel mounting bracket as standard.

Specification	
Energy	21 Joules (21Ws)
Supply Voltage	24Vdc, 48Vdc, 115Vac, 230Vac
Flash rate	1Hz (60 fpm)
Peak/effective Candela	110,780 cd / 485 cd
Housing alternatives	Ex d
Cable entries	Dual M20 ISO (one stopping plug included)
Terminals	0.5 to 4.0mm² cables
Measurements	Ø153*246MM
Line monitoring	Min. 500 Ohm 2w,or 3k3 Ohm 0.5w res. or diode with Exd enclosure (dc)

Features

• Automatic synchronisation on multi-beacon system.
• Beacons can be set to 'flip-flop' alternating mode with other units on multi-beacon systems.
• Xenon tubes mechanically secured against shock & vibration
• Glass lens & Stainless Steel guard
• Very large termination area.
• Ratchet adjustable stainless steel 'U' bracket.
• IN & OUT terminals (Ex de version only).

Approvals:

• ATEX certificate: KEMA 0ATEX2006, EN 60079-0 : 2006, EN 60079-1 : 2007, EN 61241-0 : 2006, EN 61241-1 : 2004
• IECEx certificate: IECEx KEM 10.0002, IEC 60079-0 : 2004 (Ed4), IEC 60079-1 : 2007 (Ed6), IEC 61241-0 : 2004 (Ed1), IEC 61241-1 : 2004 (Ed1)
• Inmetro certificate: 10-IEx-0010.

Lens colours:

Housing colours:

Other colours available on request.

BExBGL1 Ex-Multi-Function LED Beacon

With an array of 32 high output L.E.D.s the BExBGL1 unit is a multi-functional beacon suitable for all signalling applications. The robust construction makes installation in the harshest of environments possible. Additional features include UV stable prismatic lens, stainless steel guard and mounting bracket as standard. Multi-function: The BExBGL1 features a total of 9 modes of operation: 4 rotating effect modes, 4 flashing modes and a steady mode for use in indicator / status applications. Based on the mode selected the user can also select two alternative L.E.D. modes remotely.

Specification	
Supply Voltage	10-50Vdc, 115Vac, 230Vac
Flash rate	9 Modes
Effective Candela	11 cd
Housing Alternatives	Ex d
Cable entries	Dual M20 ISO (one stopping plug included)
Terminals	0.5 to 4.0mm² cables
Measurements	Ø153*246MM
Line monitoring	Min. 500 Ohm 2w,or 3k3 Ohm 0.5w res. or diode with Exd enclosure (dc)

Features

• Glass dome with optically enhanced prismatic PC lens
• Stainless Steel guard
• Very large termination area.
• Ratchet adjustable stainless steel 'U' bracket.

Approvals:

• ATEX certificate: KEMA 00ATEX2006, EN 60079-0 : 2006, EN 60079-1 : 2007, EN 61241-0 : 2006, EN 61241-1 : 2004
• IECEx certificate: IECEx KEM 10.0002, IEC 60079-0 : 2004 (Ed4), IEC 60079-1 : 2007 (Ed6), IEC 61241-0 : 2004 (Ed1), IEC 61241-1 : 2004 (Ed1)
• GOST-R certificate: POCC GB.JB05.B02205
• Safety-integrity suitability: SIL1
• Inmetro certificate: 10-IEx-0010

Lens colours:

Housing colours:

Other colours available on request.

E2xB05 Zone2 Ex-Xenon Beacon 5Joule

The hazardous area E2xB05 Xenon strobe beacon is ULcertified for Zone 2 applications and also UL approved for Class I Div 2 applications. The E2xB05 is a 5 Joule Xenon strobe beacon with a 1Hz (60 fpm) flash rate. The E2x range features enclosures manufactured from lightweight, high performance PPS which, with its corrosion proof properties, is suitable for the harshest of environments.

Specification	
Energy	5 Joules (5Ws)
Supply Voltage	12Vdc, 24Vdc, 48Vdc, 115Vac, 230Vac
Flash rate	1Hz (60 fpm)
Peak/effective Candela	31,950 cd / 101 cd
Housing Alternatives	EEx nA
Cable entries	Dual M20 ISO (one stopping plug included)
Terminals	0.5 to 4.0mm² cables
Measurements	Ø153*246MM

Currently not available with ATEX approval

Features

• Very large termination area.
• Ratchet adjustable stainless steel 'U' bracket.
• Stainless Steel dome guard as standard
• Xenon tube mechanically secured against vibration/shock.
• User replaceable Xenon tube assembly.

Approvals:

• UL File ref: E245313

Lens colours:

Housing colours:

E2xB10 Zone2 Ex-Xenon Beacon 10Joule

The hazardous area E2xB10 Xenon strobe beacon is UL certified for Zone 2 applications and also UL approved for Class I Div 2 applications. The E2xB10 is a 10 Joule Xenon strobe beacon with a 1Hz (60 fpm) flash rate. The E2x range features enclosures manufactured from lightweight, high performance PPS which, with its corrosion proof properties, is suitable for the harshest of environments.

Specification	
Energy	10 Joules (5Ws)
Supply Voltage	12Vdc, 24Vdc, 48Vdc, 115Vac, 230Vac
Flash rate	1Hz (60 fpm)
Peak/effective Candela	57,270 cd / 255 cd
Housing alternatives	EEx nA
Cable entries	Dual M20 ISO (one stop-ping plug included)
Terminals	0.5 to 4.0mm² cables
Measurements	Ø153*246MM

Features

- *Very large termination area.*
- *Ratchet adjustable stainless steel 'U' bracket.*
- *Stainless Steel dome guard as standard*
- *Xenon tube mechanically secured against vibration/shock.*
- *User replaceable Xenon tube assembly.*

Approvals:

- *UL File ref: E245313*

Currently not available with ATEX approval

Lens colours:

Housing colours:

BExCBG05-05 Ex- Dual Xenon Beacon

The flameproof BExCBG05-05 dual xenon beacons are suitable for Zone 1, 2, 21 & 22 applications. The BExCBG05-05D dual 5 Joule beacons are ideal for general signalling duties whilst their robust construction makes installation in the harshest of environments possible.

Specification	
Energy	5 Joules (5Ws) x2
Supply Voltage	12Vdc, 24Vdc, 48Vdc, 115Vac, 230Vac
Flash rate	1Hz (60 fpm)
Peak/effective Candela	34,812 cd / 105 cd x2
Housing alternatives	Ex d / Ex de
Cable entries	Dual M20 ISO (one stopping plug included)
Terminals	0.5 to 4.0mm² cables
Measurements	Ø153*246MM
Line monitoring	Min. 500 Ohm 2w,or 3k3 Ohm 0.5w res. or diode with Exd enclosure (dc)

Features

- *Automatic synchronisation on multi-beacon system.*
- *Beacons can be set to 'flip-flop' alternating mode with other units on multi-beacon systems.*
- *Xenon tubes mechanically secured against shock & vibration*
- *Glass lens & Stainless Steel guard*
- *Very large termination area.*
- *Ratchet adjustable stainless steel 'U' bracket.*

Approvals:

- *ATEX certificate: KEMA 01ATEX2222X, EN 60079-0 : 2006, EN 60079-1 : 2007, EN 61241-0 : 2006, EN 61241-1 : 2004*
- *IECEx certificate: IECEx KEM 10.0024, IEC 60079-0 : 2004 (Ed4), IEC 60079-1 : 2007 (Ed6), IEC 61241-0 : 2004 (Ed1), IEC 61241-1 : 2004 (Ed1)*
- *GOST-R certificate: POCC GB.JB05.B02205*
- *Inmetro certificate: 10-IEx-0010*

Lens colours:

Housing colours:

Other colours available on request.

BExMP Ex-Plated Assemblies

The BEx range is manufactured from marine grade LM6 Aluminium Alloy which has been chromated and powder coated offering superb resistant to corrosion even under the mostsevere operating conditions. Standard sets are certified ATEX EX II 2G Exd IIB T4 but other options are available for higher gas groups, temperature ratings and approvals.

The BEx range is manufactured from marine grade LM6 Aluminium Alloy which has been chromated and powder coated offering superb resistant to corrosion even under the mostsevere operating conditions. Standard sets are certified ATEX EX II 2G Exd IIB T4 but other options are available for higher gas groups, temperature ratings and approvals.

- *Multi Function LED*
  - *Status Light mode*
  - *Flashing modes*
  - *Rotating modes*
- *Xenon Strobe 5, 10, 15 and 21J versions*
- *Alarm Sounders 110dB(A) and 117dB(A) versions*
- *Junction Box*

Specification	*Approval*
BExBG05D 5 Joule Xenon Beacon	ATEX/IECEx GOST-R
BExBG10D/15D 10/15 Joule Xenon Beacon	ATEX/IECEx GOST-R
BExBG21D 21 Joule Xenon Beacon	ATEX/IECEx GOST-R
BExBGL1D L.E.D Array Beacon	ATEX/IECEx GOST-R
BExS110D 110dB(A) Alarm Sounder	ATEX/IECEx GOST-R
BExS120D 117dB(A) Alarm Sounder	ATEX/IECEx GOST-R

Lens colours:

Colours available on request.

Housing colours:

Colours available on request.

783 Ex-Rotating Mirror Beacon

The flameproof 783 Rotating beacons are suitable for Zone 1, 2, 21 & 22 applications. The 783 Ex-Rotating beacons are ideal for general signalling duties whilst their robust construction makes installation in the harshest of environments possible. The BEx range features enclosures manufactured marine grade copper free LM6 aluminium which is phosphated and powder coated.

Specification	
Energy	20W / 35W
Supply Voltage	24Vdc/ac, 48Vdc, 115Vdc, 230Vac
Housing Alternatives	Ex d / Ex de
Cable entries	M20 ISO
Terminals	5-13MM cables
Measurements	Ø209*315MM

Features

- *Suitable for use in gas and dust explosion endangered areas (Zone 1 and 2, Zone 21 and 22)*
- *Flame-proof enclosure "d" with "e" connection area*
- *High life duration thanks to low wear wheel and disc drive*
- *Can be mounted as required*
- *Salt water resistant*

Accessories:

Wire guard/Mounting plate/Clamp for tube mounting 11/4"/Clamp for tube mounting 11/2"/ Clamp for tube mounting 2"/Bracket

Explosion protection:

II 2G Ex de IIC T3–T4 (depending on version)
II 2D Ex tD A21 IP 66 T 105 °C – T 150 °C (depending on version)

Approval:

PTB 06 ATEX 1039

Lens colours:

Housing colours:

CWB-ATEX Ex-Xenon Beacon 5Joule

The flameproof CWB-ATEX Xenon beacons are suitable for Zone 1, 2, 21 & 22 applications. The CWB-ATEX 5 Joule beacons are ideal for general signalling duties whilst their robust construction makes installation in the harshest of environments possible. The CWB-ATEX features enclosures manufactured from corrosion proof, marine grade copper free LM6 aluminium which is phosphated and powder coated. These models have one M20 cable entries.

Specification	
Energy	5 Joules (5Ws)
Supply Voltage	12-48Vdc, 24Vdc, 60-80Vdc, 24-42Vac, 110-127Vac, 230Vac
Flash rate	1Hz (60 fpm)
Peak/effective Candela	34,812 cd / 105 cd
Housing alternatives	Ex de
Cable entries	Dual M20 ISO (one stopping plug included)
Terminals	0.5 to 4.0mm² cables
Measurements	Ø82*282MM

Features

- *The flashing lights from the CWB-ATEX series are explosion protected equipment and serve as visual alarms in potentially explosive workplaces in Zones 1, 2, 21 and 22*
- *housing made of aluminium, therefore usable in all chemical and petrochemical plants as well as offshore plants*
- *high protection system and stable mechanical construction allow use under the toughest operating conditions*
- *various mounting brackets and a protective cage are available as accessories*

Explosion protection

II 2G Ex de IIC T6
II 2G Ex de IIC T5
IID Ex dt A21 IP 66 T80°C
IID Ex dt A21 IP 66 T100°C

Lens colours:

Housing colours:

Other colours available on request.

BExTBG05 Ex- Telephone Xenon Beacon 5Joule

The flameproof BExBG05 Xenon beacons are suitable for Zone 1, 2, 21 & 22 applications. The BExTBG05 5 Joule units are telephone initiated beacons. Their robust construction makes installation in the harshest of environmentspossible. Additional features include stainless steel lens guard and stainless steel mounting bracket as standard. The ring tone detect circuit senses the ringing voltage on the telephone line and switches the supply (115V ac or 230V ac) to enable the beacon until the telephone is answered. The BEx range features enclosures manufactured from corrosion proof, marine grade copper free LM6 aluminium which is phosphate and powder coated. All models have two M20 cable entries, large termination areas and an ingress protection of IP66/67.

Specification	
Energy	5 Joules (5Ws)
Supply Voltage	115Vac, 230Vac
Flash rate	1Hz (60 fpm)
Peak/effective Candela	34,812 cd / 105 cd
Housing Alternatives	Ex d
Cable entries	Dual M20 ISO (one stopping plug included)
Terminals	0.5 to 4.0mm² cables
Measurements	Ø153*246MM

Features

- *Xenon tubes mechanically secured against shock & vibration*
- *Glass lens & Stainless Steel guard*
- *Very large termination area.*
- *Ratchet adjustable stainless steel 'U' bracket.*

Approvals:

- *ATEX certificate: KEMA 00ATEX2006, EN 60079-0 : 2006, EN 60079-1 : 2007, EN 61241-0 : 2006, EN 61241-1 : 2004*
- *IECEx certificate: IECEx KEM 10.0002, IEC 60079-0 : 2004 (Ed4), IEC 60079-1 : 2007 (Ed6), IEC 61241-0 : 2004 (Ed1), IEC 61241-1 : 2004 (Ed1)*
- *GOST-R certificate: POCC GB.JB05.B02205*
- *Inmetro certificate: 10-IEx-0010*

Lens colours:

Housing colours:

Other colours available on request.

Ex E-Flare Ex-Portable Beacon

The HZ 610 series portable LED beacon has been designed for use in Zone 2, Potentially Explosive Atmospheres. The beacon is ideally suited for marking /warning of temporary hazards in an explosion proof environment. It is of robust construction and can be set for either a Flashing or Static (steady On) light mode by twisting the lens to the left or to the right. The beacon comes with a wide range of accessories making the product extremely versatile in a wide range of applications. The beacon requires two 'D' cell Alkaline batteries for operation (not supplied) which give over 40 hours life. product extremely versatile in a wide range of applications. The beacon requires two 'D' cell Alkaline batteries for operation (not supplied) which give over 40 hours life.

Specification	
Ex Classification	Zone 2 Ex II 3G EX 11C T4 Gc
Nominal Voltage	Powered from 2 x 1,5v D cell batteries (not included)
Flash Frequecy	160 FPM
Operation time	40 hours of peak brightness operation on 1 set of batteries
Housing Material	High Impact UV Stable ABS Body
Lens Material	High Impact UV Stable Polycarbonate Lens
Operating temp	-20 to +50°C

Features

- *Activates flashing mode by turning the lens links.*
- *Activates steady mode by turning the lens on-off-on.*
- *LED long life*
- *360° visibility*
- *Low battery indicator*
- *Shock resistant*
- *40 hours life on 1 set of batteries*
- *Ultra quick installation*
- *Versatile accessory options*
- *Zone 2 Ex II 3G EX 11C T4 Gc.*

Lens colours:

Housing colour:

CE

"Did you know that Marin Supply AS was initially founded to supply the panelbuilding company Marin Service?"

ATEX COMBINED

Safety has no limits
There is a danger of explosion wherever combustible gases, vapours, fluids or dusts occur and can mix with air, oxygen or another reactive gas.

The danger can arise in very diverse locations, e.g. in the petrochemical and chemical industry or at filling stations and oil/gas rigs. However, facilities such as corn silos and coating plants are also potentially at risk of an explosion. Explosions endanger man and the environment. For this reason, international measures have been developed that are intended to prevent explosions or to minimise their effects.

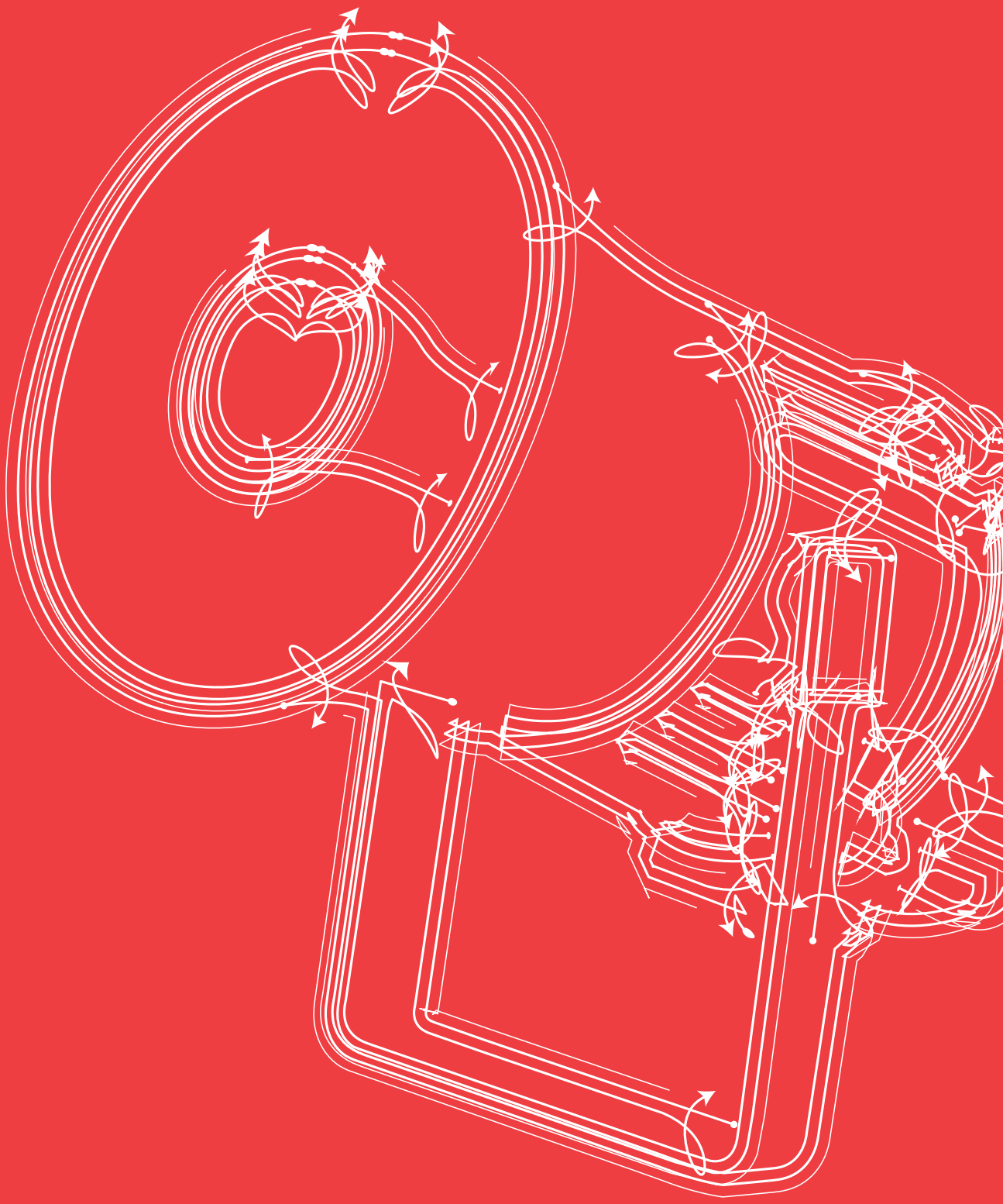
Our Ex signaling devices meet the toughest requirements and are subjected to the most stringent checks. Their quality and safety are checked by responsible bodies for compliance with the highest quality standards.

Flame proof enclosure ‘d’
In the case of pressure-resistant encapsulation, the actual operating equipment is built into a pressure-resistant housing. In the event of an explosion inside, the housing prevents an ignition breakthrough into the surrounding area. The explosion is therefore restricted to the interior of the device. On account of the necessary wall thickness, devices in this protection system are of a very sturdy construction and thus also often very well suited for adverse environmental conditions.

Enhanced safety ‘e’
This type of enhanced protection is usable with only a few types of equipment/components (e.g. terminals). This type of protection is conveniently often combined with pressure resistant encapsulation.

In alarm products, this means that all essential components are housed in the pressure-resistant housing and only the connection terminals are accessible in the increased safety housing. For this reason we also offers most devices with an ‘e connection box’ in order to enable simple and safe electrical connections to be made. The sensitive electronic components are therefore protected against accidental damage during mounting.

Intrinsically safety ‘i’
In the ignition protection type ‘i‘, the current and voltage of allenergy storage devices as well as the complete device are limited to the extent that no ignition sparks and no excessively hot surfaces can be generated. An explosive atmosphere can develop, but it will not be ignited.



IS-mC1

IS-minialert

The IS-mC1 is a compact combined 100dB(A) alarm sounder and L.E.D. beacon - only one Zener barrier or galvanic isolator required to run both sounder & beacon or alternatively the unit can be operated as individual signals.

PRODUCT INFORMATION
PRODUCT IMAGE
AVAILABLE COLOURS

Alarm Sounder	
Nominal output	100dB(A) @ 1m +/- 3dB - Tone 2*
No. of tones	49 (UKOOA/PFEER compliant)
No. of stages	3
Volume control	Max. 100dB(A);Min. 90dB(A) - Tone 2
Effective Range	40m @ 1KHz

L.E.D. Beacon	
Light source	Array of 6 high intensity L.E.D's
Flash modes	Double flash at 2Hz and 1Hz
Effective intensity cd	23cd*

General	
Voltage	16-28Vdc via Zener barrier or galvanic isolator
Combined current	Approx: 30mA typical when powered from 24v supply via 28v 300Ohm Zener barrier
Rating	Continuous
Housing material	UL94V0 & 5VA FR ABS & PC
Fixings	Stainless Steel
Cable entries	2 xM20 clearance gland knockouts. Custom configurations also available.
Terminals	0.5 to 2.5mm²
Storage temp	-40° to +70°C
Relative humidity	90% at 20°C

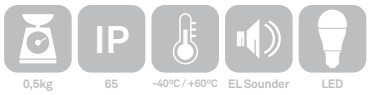
Approvals	
ATEX certificate	SIRA05ATEX2084X, EN 60079-0 : 2006, EN 60079-11 : 2007, EN 60079-26 : 2007
IECEx certificate	IECEx SIR 06.0045X, IEC 60079-0 : 2004, IEC 60079-11 : 2006, IEC 60079-26 : 2006
FM approved	Class 3600 1998, Class 3610 1999 Class 3810 2005
GOST-R certificate	POCC GB.JB05.B02205

Features

- Input overload and reverse current protection
- End of line resistor certified
- Auto synchronised sound output
- Prismatic lens optimises L.E.D effectiveness
- Available with customtone configurations and frequencies

L.E.D. Colours:

Housing Colours:



IS-A105N/IS-L101L

Intrinsically Safe Alarm Sounder & LED beacon

Intrinsically Safe combination L.E.D beacon/light & alarm horn.

PRODUCT INFORMATION

PRODUCT IMAGE

AVAILABLE COLOURS

The IS-A105N+IS-L101L unit is an intrinsically safe field mounting combined alarm horn with L.E.D. beacon/light which provides a a loud audible and bright flashing visual signal utilising a common zener barrier or galvanic isolator. The alarm horn features an alarm accept function - by closing a pair of external contacts (i.e push switch) the operator may silence the alarm for set periods between 5 seconds and 2 hours. If after the preset time the alarm condition still exists the sounder will activate again. Certified for use in application requiring Ex ia or Class I Div 1 equipment the IS-A105N+IS-L101L is a globally accepted solution to fire or process control signalling.

Sounder/Horn	
Nominal output	105dB(A) @ 1m +/- 3dB - Tone 2*
No. of tones	49 (UKOOA/PFEER compliant)
No. of stages	3
Volume control	Max. 105dB(A); Min. 96dB(A) - Tone 2
Effective Range	60m @ 1KHz

Beacon/light	
Light source	Array of 6 high intensity L.E.D's
Standalone mode	2Hz (2 double flashes per second)
Effective intensity cd	48cd* - measured ref. to I.E.S.
Flash rate	On: 1 Hz (1 double flash per second) Silenced: 2 Hz (2 double flashes per second) (alarm accepted)

General	
Voltage	16-28vdc via Zener barrier or galvanic isolator
Current	25mA typical when powered from 24v supply via 28v 300 Ohm Zener barrier
Rating	Continuous
Housing material	UL94V0 & 5VA FR ABS
Fixings	Stainless Steel
Cable entries	2 x M20 clearance gland knockouts. Custom configurations also available.
Terminals	0.5 to 2.5mm²
Relative humidity	90% at 20°C

Features

- Input overload and reverse current protection
- Prismatic lens optimises L.E.D effectiveness
- Auto synchronised sound output
- Unit can be mounted using external lugs or internal BESA compatible fixing positions.
- Duplicate cable terminations (in & out for daisy-chain installations).
- Available with custom tone configurations and frequencies.

Approvals	
ATEX certificate	SIRA 04ATEX2301X ATEX certificate: SIRA 04ATEX2302X EN 60079-0 : 2006 EN 60079-11 : 2007 EN 60079-26 : 2007
IECEx certificate	IECEx SIR 04.0038X IECEx certificate: IECEx SIR 04.0039X IEC 60079-0 : 2007 IEC 60079-11 : 2006 IEC 60079-26 : 2006
FM approved	Class 3600 1998 Class 3610 1999 Class 3810 2005 IEC 60529 : 1989
GOST-R certificate	POCC GB.JB05.B03365

L.E.D. Colours:

Housing Colours:

1,15kg | IP66 | -40°C / +60°C | EL Sounder | LED

BExCS110-L1-R/ BExDCS110-L1-R

Omnidirectional Horn & LED

The flameproof BExCS110-L1-R combination omni-directional alarm sounder and high output L.E.D. beacon is suitable for Zone 1 & Zone 2 applications. The BExDCS110-L1-R is suitable for Zone 1, 2, 21 & 22 applications.

PRODUCT INFORMATION
PRODUCT IMAGE
AVAILABLE COLOURS

The unique radial horn on the compact BExCS110-L1-R distributes the audible warning signal omni-directionally allowing the visual signal to be orientated optimally. Sound level ouputs are up to 117dB(A) at 1 metre with a choice of 32 alarm tones and 3 remotely selectable stages. The beacon contains an array of 32 high output, multi-function L.E.D.s. with a total of 9 modes of operation - 4 rotating effect modes, 4 flashing modes and a steady mode for use in indicator / status applications.

Sounder/Horn	
Maximum output	117dB(A) @ 1 metre
Nominal output	110dB(A) @ 1m +/- 3dB - Tone 2
No. of tones	32 (UKOOA / PFEER compliant)
No. of stages	3
Volume control	Max. 110dB(A);Min. 72dB(A) - Tone 2
Effective range	100m @ 1KHz
Voltages DC	12Vdc, 24Vdc, 48Vdc
Voltages AC	115Vac, 230Vac
Stage switching	Negative or positive

L.E.D. Beacon	
Light source	Array of 32 high output L.E.D.s
Effective Candela	11cd* - measured ref. to I.E.S.
Voltages DC	10-50Vdc
Voltages AC	115Vac, 230Vac

General	
Housing material	Marine grade copper free LM6 Aluminium
Housing finish	Phosphated & powder coated
BExCS110-L1 flare	High impact UL94 V0 & 5VA FR ABS (Red)
BExDCS110-L1 flare	Anti-Static High impact ABS (Black)
Cable entries	Dual M20 ISO (one stopping plug inc)
Terminals	0.5 to 4.0mm² cables.
Line monitoring	Min. 500 Ohm 2w, or 3k3 Ohm 0.5w res. or diode (dc versions).

Current Consumption				
	Alarm Sounder		***LED Beacon***	
Version	***Voltage***	***Current***	***Voltage***	***Current***
12V dc	+/-25%	195mA	10-14V	760mA
24V dc	+/-25%	265mA	20-28V	400mA
48V dc	+/-25%	130mA	42-54V	210mA
115V ac 50/60Hz	+/-10%	110mA	+/-10%	135mA
230V ac 50/60Hz	+/-10%	56mA	+/-10%	65mA

Features

- Omni-directional sound output.
- Glass dome with optically enhanced prismatic PC lens.
- Stainless Steel guard.
- Very large termination area.
- Ratchet adjustable stainless steel 'U' bracket.
- The sounder & beacon may be connected from a single supply for simultaneous operation or from separate supplies for independent operation.
- 'Programmable'version available:
  - 45 alarm tones
  - 4 remotely selectable stages
  - Any tone can be assigned to any stage
  - User configurable continuous frequency tone

Approvals	
ATEX certificate	KEMA 01ATEX2223X EN 60079-0 : 2006 EN 60079-1 : 2007 EN 61241-0 : 2006 EN 61241-1 : 2004
IECEx certificate	IECEx KEM 10.0025 IEC 60079-0 : 2004 (Ed4) IEC 60079-1 : 2007 (Ed6) IEC 61241-0 : 2004 (Ed1) IEC 61241-1 : 2004 (Ed1)
GOST-R certificate	POCC GB.JB05.B03365
Safety-integritysuitability	SIL1

Lens Colours:

Housing Colours:

5,0kg · IP 66/67 · EL Sounder · Bell · LED

BExCS110-05D

Combination Alarm

The flameproof BExCS110-05 combination alarm sounders and Xenon beacons are suitable for Zone 1 & Zone 2 applications and the BExDCS110-05 versions also for Zone 21 & 22.

PRODUCT INFORMATION | PRODUCT IMAGE | AVAILABLE COLOURS

Sound level ouputs are up to 117dB(A) at 1 metre with a choice of 32 alarm tones and 3 remotely selectable stages. Sounder & beacon may be connected from a single supply for simultaneous operation or from separate supplies for independent operation.

Sounder/Horn	
Maximum output	117dB(A) @ 1 metre
Nominal output	110dB(A) @ 1m +/- 3dB - Tone 2
No. of tones	32 (UKOOA / PFEER compliant)
No. of stages	3
Volume control	Max. 110dB(A);Min. 72dB(A) - Tone 2
Effective Range	100m @ 1KHz
Voltages DC	12Vdc, 24Vdc, 48Vdc
Voltages AC	115vac; 230vac
Stage switching	Negative or positive

Beacon	
Energy	5 Joules(5Ws)
Flash rate	1Hz(60 fpm)
Peak Candela	34,812 cd
Effective Intensity cd	105 cd*
Tube life	Emissions are reduced to 70% after 8 million flashes

General	
Housing material	Marine grade copper free LM6 Aluminium
Housing finish	Phosphated & powder coated
BExCS110-05 flare	High impact UL94 V0 & 5VA FR ABS (Red)
BExDCS110-05 flare	Anti-Static High impact ABS (Black)
Cable entries	DualM20 ISO (one stopping plug included)
Terminals	0.5 to 4.0mm² cables
Line monitoring	Min. 500 Ohm 2w, or 3k3 Ohm 0.5w res. or diode (dc versions)

Approvals	
ATEX certificate	KEMA 01ATEX2223X, EN 60079-0 : 2006, EN 60079-1 : 2007, EN 61241-0 : 2006, EN 61241-1 : 2004
IECEx certificate	IECEx KEM10.0025, IEC 60079-0 : 2004 (Ed4), IEC 60079-1 : 2007 (Ed6), IEC 61241-0 : 2004 (Ed1), IEC 61241-1 : 2004 (Ed1)
GOST-R certificate	POCC GB.JB05.B02205

Features

- Automatic synchronisation on multi-beacon & sounder systems.
- Beacons can be set to 'flip-flop' alternating mode with other units on multi-beacon systems.
- Xenon tubes mechanically secured against shock
- & vibration.
- Ratchet adjustable stainless steel 'U' bracket.
- 'Programmable' version available:
  - 45 alarm tones
  - 4 remotely selectable stages
  - Anytone can be assigned to any stage
  - User configurable continuous frequency tone

Lens Colours:

Housing Colours:

4,80kg (DC) 5,00kg (AC) IP 66/67 EL Sounder Xenon

BExCS110-L1D

Sounder & L.E.D

The flameproof BExCS110-L1 combination alarm sounders and high output L.E.D. beacons are suitable for Zone 1 & Zone 2 applications. The BExDCS110-L1 is suitable for Zone 1, 2, 21 & 22 applications.

PRODUCT INFORMATION
PRODUCT IMAGE
AVAILABLE COLOURS

The BExCS110-L1 features sound level ouputs of up to 117dB(A) at 1 metre with a choice of 32 alarm tones and 3 remotely selectable stages. The beacon contains an array of 32 high output, multi-function L.E.D.s. with a total of 9 modes of operation - 4 rotating effect modes, 4 flashing modes and a steady mode for use in indicator / status applications. Based on the mode selected the user can also select two alternative L.E.D. modes remotely.

Alarm Sounder	
Maximum output	117dB(A) @ 1 metre
Nominal output	110dB(A) @ 1m +/- 3dB - Tone 2
No. of tones	32 (UKOOA / PFEER compliant)
No. of stages	3
Volume control	Max. 110dB(A);Min. 72dB(A) - Tone 2
Effective range	100m @ 1KHz
Voltages DC	12Vdc, 24Vdc, 48Vdc
Voltages AC	115Vac, 230Vac
Stage switching	Negative or positive

L.E.D. Beacon	
Light source	Array of 32 high output L.E.D.s
Effective Candela	11 cd*
Voltages DC	10-50Vdc
Voltages AC	115Vac, 230Vac

General	
Housing material	Marine grade copper free LM6 Aluminium
Housing finish	Phosphated & powder coated
BExCS110-L1 flare	High impact UL94 V0 & 5VA FR ABS (Red)
BExDCS110-L1 flare	Anti-Static High impact ABS (Black)
Cable entries	DualM20 ISO (one stopping plug included)
Terminals	0.5 to 4.0mm² cables.
Line monitoring	Min. 500 Ohm 2w, or 3k3 Ohm 0.5w res. or diode (dc versions).

Approvals	
ATEX certificate	KEMA 01ATEX2223X, EN 60079-0 : 2006, EN 60079-1 : 2007, EN 61241-0 : 2006, EN 61241-1 : 2004
IECEx certificate	IECEx KEM10.0025, IEC 60079-0 : 2004 (Ed4), IEC 60079-1 : 2007 (Ed6), IEC 61241-0 : 2004 (Ed1), IEC 61241-1 : 2004 (Ed1)
GOST-R certificate	POCC GB.JB05.B02205
Safety-integritysuitability	SIL1

Features

- Glass dome with optically enhanced prismatic PC lens
- Stainless Steel guard
- Verylarge termination area.
- Ratchet adjustable stainlesssteel 'U' bracket.
- The sounder & beacon may be connected from a single supply for simultaneous operation or from seperate supplies for independent operation.
- 'Programmable'version available:
  - 45 alarm tones
  - 4 remotely selectable stages
  - Anytone can be assigned to any stage
  - User configurable continuous frequency tone

L.E.D. Colours:

Housing Colours:

5,0kg | IP 66/67 | EL Sounder | Bell | LED

BExCL15-05

Combination PA Loudspeaker

The flameproof BExCL15-05 combination PA loudspeakers and Xenon beacons are suitable for Zone 1 & Zone 2 applications and the BExDCL15-05 versions also for Zone 21 & 22.

PRODUCT INFORMATION

PRODUCT IMAGE

AVAILABLE COLOURS

Loudspeaker	
SPL	102dB +/-3dB @ 1w @ 1m - Pink noise 113dB +/-3dB @ 15w (rated power) @ 1m
Rated power	15 Watts RMS
70v Line tappings	15w / 7.5w / 3w / 1w (z=336.67 Ohms /653.33 Ohms / 1.6k Ohms / 4.9k Ohms)
100v Line tappings	15w / 7.5w / 3w / 1w (z=666.87 Ohms / 1.34k Ohms / 3.34k Ohms / 10k Ohms)
Low impedence	8 Ohm or 16 Ohm
Dispersion	120° @ 1kHz & 32° @ 4kHz
Frequency range	400Hz to 8000 Hz
DC Line monitoring	2.2µF Capacitor (Transformerversion) 470µF Capacitor (Impedance version)

Beacon	
Energy	5 Joules(5Ws)
Flash rate	1Hz(60 fpm)
Peak Candela	34,812 cd
Effective Intensity cd	105 cd*
Tube life	Emissions are reduced to 70% after 8 million flashes

General	
Housing material	Marine grade copper free LM6 Aluminium
Housing finish	Phosphated & powder coated
BExCL15-05 flare	High impact UL94 V0 & 5VA FR ABS (Red)
BExDCL15-05 flare	Anti-Static High impact ABS (Black)
Cable entries	DualM20 ISO (one stopping plug included)
Terminals	0.5 to 4.0mm² cables
Line monitoring	Min. 500 Ohm 2w, or 3k3 Ohm 0.5w res. or diode (dc versions).

Approvals	
ATEX certificate	KEMA 01ATEX2223X, EN 60079-0 : 2006, EN 60079-1 : 2007, EN 61241-0 : 2006, EN 61241-1 : 2004
IECEx certificate	IECEx KEM10.0025, IEC 60079-0 : 2004 (Ed4), IEC 60079-1 : 2007 (Ed6), IEC 61241-0 : 2004 (Ed1), IEC 61241-1 : 2004 (Ed1)
GOST-R certificate	POCC GB.JB05.B02205
Safety-integritysuitability	SIL1

Features

- Glass dome with optically enhanced prismatic PC lens
- Stainless Steel guard
- Very large termination area.
- Ratchet adjustable stainless steel 'U' bracket.
- The sounder & beacon may be connected from a single supply for simultaneous operation or from separate supplies for independent operation
- 'Programmable' version available:
  - 45 alarm tones
  - 4 remotely selectable stages
  - Any tone can be assigned to any stage
  - User configurable continuous frequency tone

L.E.D. Colours:

Housing Colours:

5,0kg · IP 66/67 · Loudspeaker · Xenon

BExMP
Plated Assemblies

The BEx range of beacons can be configured to create sets of status lightssuitable for onshore and offshore applications.

Mounted onto a stainless steel backplate, E2S can offer up to 5 different components complete with the option of Exe Junction Box to make installation easier. Status lights utilise a high power LED solution which gives good light output and long life, which is important for continuous operation. Warning beacons normally use xenon strobe technology which is available in 5, 10, 15 and 21J outputs (up to 485 Cd) and which give effective warning in all conditions. The BEx range is manufactured from marine grade LM6 Aluminium Alloy which has been chromated and powder coated offering suberb resistant to corrosion even under the most severe operating conditions. Standard sets are certified ATEX EX II 2G Exd IIB T4 but other options are available for higher gas groups, temperature ratings and approvals.

Plated assembly components		
Part Code	***Approval***	***Classification***
BExBG05D 5 Joule Xenon Beacon	ATEX/IECEx	I 2G Ex d IIC T4 Ta. -50°C to +70°C II 2G Ex d IIC T5 Ta. -50°C to +55°C II 2G Ex d IIC T6 Ta. -50°C to +40°C II 2D Ex tD A21 IP67 T115°C based on max. Ta. 70°C
	GOST-R	1ExdIICT4 Ta. -50° to +55°C DIP A21 Ta T4
BExBG10D 10 Joule Xenon Beacon	ATEX/IECEx	II 2G Ex d IIC T4 Ta. -50°C to +70°C II 2G Ex d IIC T5 Ta. -50°C to +40°C II 2D Ex tD A21 IP67 T125°C based on max. Ta. 70°C
	GOST-R	1ExdIICT4 Ta. -50° to +55°C DIP A21 Ta T4
BExBG15D 15 Joule Xenon Beacon	ATEX/IECEx	II 2G Ex d IIC T4 Ta. -50°C to +70°C II 2G Ex d IIC T5 Ta. -50°C to +40°C II 2D Ex tD A21 IP67 T125°C based on max. Ta. 70°C
	GOST-R	1ExdIICT4 Ta. -50° to +55°C DIP A21 Ta T4
BExBGL1D L.E.D Array Beacon	ATEX/IECEx	II 2G Ex d IIC T4 Ta. -50° to +70°C II 2G Ex d IIC T5 Ta. -50° to +40°C II 2D Ex tD A21 IP67 T120 Ta. +70°C based on max. Ta. 70°C
	GOST-R	1ExdIICT5 Ta. -50° to +55°C 1ExdIICT4 Ta. -50° to +40°C DIP A21 Ta T4
BExS110D 110dB(A) Alarm Sounder	ATEX/IECEx	II 2G Ex d IIB T4 Ta. -50° to +70°C II 2G Ex d IIC T4 Ta. -50° to +55°C
	GOST-R	1ExdIICT4 Ta. -50° to +55°C
BExS120D 117dB(A) Alarm Sounder	ATEX/IECEx	II 2G Ex d IIB T4 Ta. -50° to +70°C II 2G Ex d IIC T4 Ta. -50° to +55°C
	GOST-R	1ExdIICT4 Ta. -50° to +55°C

Features

- Multi Function LED
  - Status Light mode
  - Flashing modes
  - Rotating modes
- Xenon Strobe
  - 5, 10, 15 and 21J versions
- Alarm Sounders
  - 110dB(A) and 117dB(A) versions
- Junction Box

Lens Colours:

Housing Colours:

3.00kg (DC) 3,50kg (AC) IP 66/67 EL Sounder Bell Xenon LED

E2xCS112-5

Combined Alarm Sounder and Xenon Strobe Beacon

The hazardous area E2xCS112-5 combined alarm sounder and Xenon strobe beacon is ATEX certified for Zone 2 applications and also UL approved for Class I Div 2 applications.

Currently not available with ATEX approval

PRODUCT INFORMATION

PRODUCT IMAGE

AVAILABLE COLOURS

The E2xCS112-5 combines a 116dB(A) alarm sounder with a 5 Joule Xenon strobe beacon providing a complete audio-visual signalling solution whilst reducing the installation time and costs associated with multiple unit installations. The E2xrange features enclosures manufactured from lightweight, corrosion proof PPS and high impact, fire retardant ABS re-entrant flare horns; both of which are suitable for the harshest of environments.

Alarm Sounder	
Maximum output	116dB(A) @ 1 metre
Nominal output	113dB(A) @ 1m +/- 3dB - Tone 2
No. of tones	45 (UKOOA/PFEER compliant)
No. of stages	3
Volume control	Max. 113dB(A);Min. 105dB(A) - Tone 2
Effective range	100m @ 1KHz

Beacon	
Energy	5 Joules(5Ws)
Flash rate	1Hz(60 fpm)
Peak Candela	31,950 cd
Effective Intensity cd	101 cd*

General	
Voltages DC	24Vdc, 48Vdc
Voltages AC	115Vac, 230Vac
Housing material	UL94V0 PPS & ABS
UL cable entries	1 x 1/2"NPT cable gland entry with 0.5m flying leads

Approvals	
UL File ref	E230764

**Candela measurements representative of performance with clear lens at optimum voltage. SPL readings are at nominal voltage, typically +/-3dB and are for indication purposes only. Where applicable, reduce outputs by 5dB when a 10-30vdc unit is supplied 12vdc.*

Features

- Very large termination area.
- Ratchet adjustable stainless steel 'U' bracket.
- Stainless Steel dome guard as standard
- Xenon tube mechanically secured against vibration/shock.
- User replaceable Xenon tube assembly.
- Automatic synchronisation on multi-sounder system.

Lens Colours:

Housing Colours:

3.00kg (DC) 3,50kg (AC) 66/67 EL Sounder Bell Xenon

ATEX CALLPOINTS

Manual Call Points and Push Buttons are a key part of any safety system giving local personnel the ability to activate an alarm in the event of an emergency situation which has not been triggered by the automatic fire and gas detection systems.

Normally a break glass is used for fire or CO2/FM200 Release with push buttons often used for ESD (Emergency Shut Down), Abandon Platform or CO2/FM200 Inhibit.

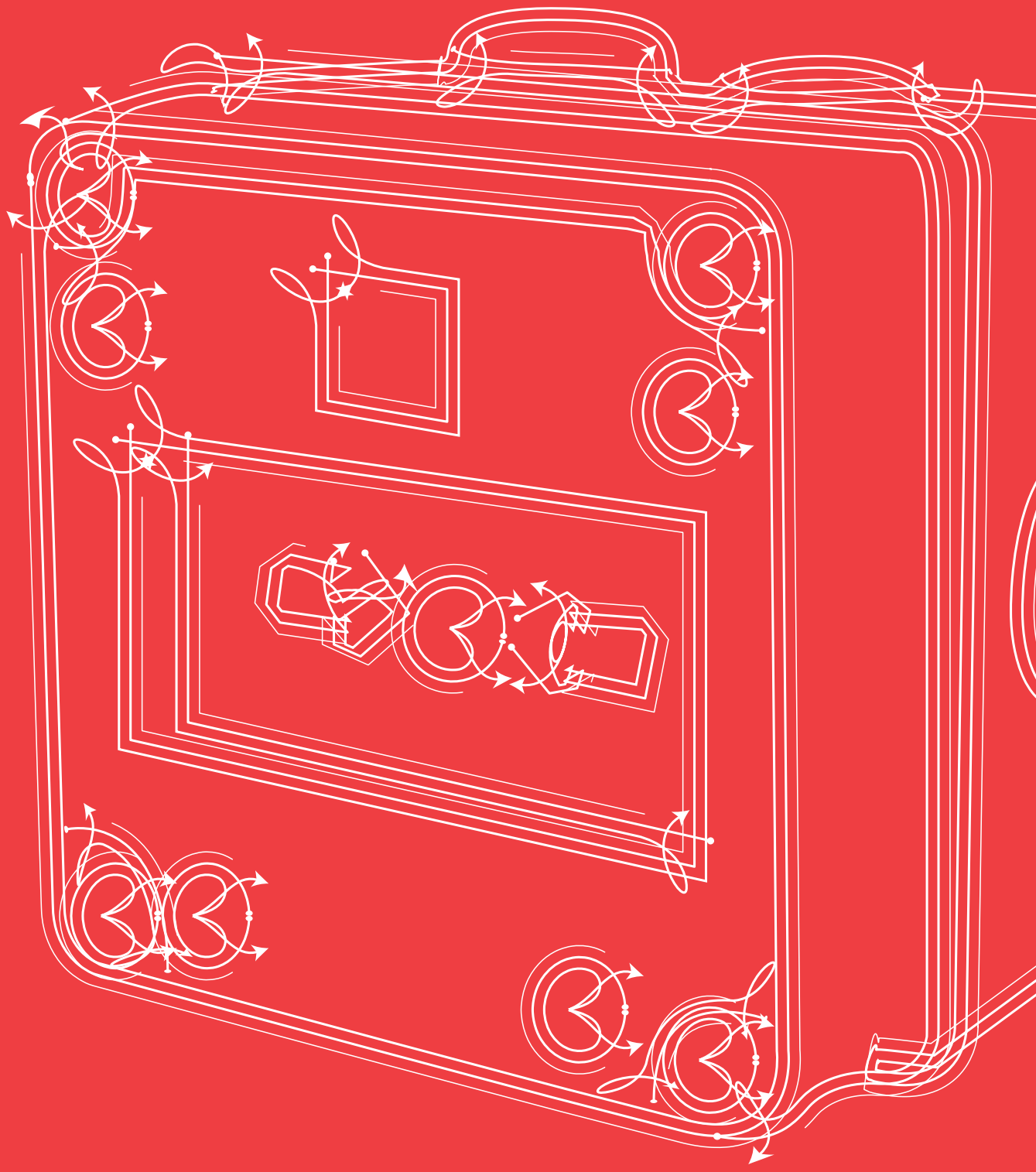
There is quite often confusion regarding the "breaking" of the glass and we still see requests for a hammer to do this. Modern call points use a plastic coated glass element which is designed to crack down the middle using minimal force and will not splinter allowing for safe operation. The idea of breaking the glass is a safety hazard and should be avoided at all costs and this type of call point will only be seen on system more than 20 years old.

Push Button Call Points come in two different versions. A self-reset which can be activated/reset by the anyone and a tool reset which only allows for a supervisor to reset with a special key and is typical of installation on an offshore platform where investigation of an activation would be required.

There doesn't appear any universal use of colours with Manual Call Points but the following is typical of many installations;

RED	Fire or CO2/FM200 Release
BLUE	CO2/FM200 Inhibit
YELLOW OR YELLOW WITH BLACK STRIPES	Abandon Platform or emergency Shutdown

In many applications, there is a requirement for the call point to trigger or interface with more than one system. In these instances, a double pole switching arrangement allows each system to remain isolated electrically.



IS-CP4A/B-BG

Break Glass Call Point

The IS-CP4A-BG and IS-CP4B-BG break glass manual call points are approved for Zones 0, 1, 2, 21 & 22 requiring intrinsically safe equipment for the control of fire and gas alarm systems. Available with and without monitoring resistors all versions are certified to ATEX and IECEx standards.
The IS-CP4 range features enclosures manufactured from corrosion proof, marine grade, copper free LM6 (A413) aluminium which is phosphated and powder coated.

Specification	
IS-CP4A-BG	II 1G Ex ia IIC T6 Ga II 2D Ex t IIIC T60°C Db
BExCP3B-BG	II 1G Ex ia IIC T4 Ga II 2D Ex t IIIC T70°C Db
Ambient	Ta = -40°C to +55°C
Housing material	Marine grade copper free LM6 Aluminium
Housing finish	Phosphated & powder coated finish: anti-corrosion
Cable entries	2 x M20 clearance top and 1 x M20 clearance side. Back box can be rotated to give 2 x bottom and 1 x side entries
Stopping plugs	2 x nylon plugs as standard Brass and stainless steel plugs optional
Terminals	6 x 4.0mm² cables

Approvals	
ATEX certificate	SIRA 09ATEX2287X, IEC 60079-0:2007 Ed 5, EN 60079-11:2007, EN 60079-26:2007, EN 61241-1:2004
IECEx certificate	IECEx SIR 09.0122X, IEC 60079-0:2007-10 Edition: 5, IEC 60079-11:2006 Edition: 5, IEC 60079-26:2006 Edition: 2, IEC 61241-1:2004 Edition: 1

Features

- Alternative housing colours are available to meet specific requirements.
- DIN rail mounted terminal blocks: 8 x 2.5mm²
- Stainless Steel lift flap
- Metalised Polyester "Duty" label.
- Series and/or End of Line resistors.)

Colours:

Other colours available on request.

IP 66

0,5kg

IS-CP4A/B-PB

Push Button Call Point

The IS-CP4A-PB and IS-CP4B-PB push button manual call points are approved for Zones 0, 1, 2, 21 & 22 requiring intrinsically safe equipment for the control of fire and gas alarm systems. Available with and without monitoring resistors all versions are certified to ATEX and IECEx standards. The push button mechanism is protected by a spring loaded cover therefore the switch requires a two-action activation. The product is user resettable by rotating the push button. The IS-CP4 range features enclosures manufactured from corrosion proof, marine grade, copper free LM6 (A413) aluminium which is phosphated and powder coated.

Specification	
IS-CP4A-PB	II 1G Ex ia IIC T6 Ga II 2D Ex t IIIC T60°C Db
BExCP3B-PB	II 1G Ex ia IIC T4 Ga II 2D Ex t IIIC T70°C Db
Ambient	Ta = -40°C to +55°C
Housing material	Marine grade copper free LM6 Aluminium
Housing finish	Phosphated & powder coated finish: anti-corrosion
Cable entries	2 x M20 clearance top and 1 x M20 clearance side. Back box can be rotated to give 2 x bottom and 1 x side entries
Stopping plugs	2 x nylon plugs as standard Brass and stainless steel plugs optional
Terminals	6 x 4.0mm² cables

Approvals	
ATEX certificate	SIRA 09ATEX2287X, IEC 60079-0:2007 Ed 5, EN 60079-11:2007, EN 60079-26:2007, EN 61241-1:2004
IECEx certificate	IECEx SIR 09.0122X, IEC 60079-0:2007-10 Edition: 5, IEC 60079-11:2006 Edition: 5, IEC 60079-26:2006 Edition: 2, IEC 61241-1:2004 Edition: 1

Features

- Alternative housing colours are available to meet specific requirements.
- DIN rail mounted terminal blocks: 8 x 2.5mm²
- Metalised Polyester "Duty" label.
- Series and/or End of Line resistors.

Colours:

Other colours available on request.

0,5kg IP 66

IS-CP4A/B-PT

Tool Reset Call Point

The IS-CP4A-PT and IS-CP4B-PT push button, tool resettable, manual call points are approved for Zones 0, 1, 2, 21 & 22 requiring intrinsically safe equipment for the control of fire and gas alarm systems. Available with and without monitoring resistors all versions are certified to ATEX and IECEx standards. The push button mechanism is protected by a spring loaded cover therefore the switch requires a two-action activation. The push button is user resettable via the use of the special key supplied with the unit. The IS-CP4 range features enclosures manufactured from corrosion proof, marine grade, copper free LM6 (A413) aluminium which is phosphate and powder coated.

Specification	
IS-CP4A-PT	II 1G Ex ia IIC T6 Ga II 2D Ex t IIIC T60°C Db
BExCP3B-PT	II 1G Ex ia IIC T4 Ga II 2D Ex t IIIC T70°C Db
Ambient	Ta = -40°C to +55°C
Housing material	Marine grade copper free LM6 Aluminium
Housing finish	Phosphated & powder coated finish: anti-corrosion
Cable entries	2 x M20 clearance top and 1 x M20 clearance side. Back box can be rotated to give 2 x bottom and 1 x side entries
Stopping plugs	2 x nylon plugs as standard Brass and stainless steel plugs optional
Terminals	6 x 4.0mm² cables

Approvals	
ATEX certificate	SIRA 09ATEX2287X, IEC 60079-0:2007 Ed 5, EN 60079-11:2007, EN 60079-26:2007, EN 61241-1:2004
IECEx certificate	IECEx SIR 09.0122X, IEC 60079-0:2007-10 Edition: 5, IEC 60079-11:2006 Edition: 5, IEC 60079-26:2006 Edition: 2, IEC 61241-1:2004 Edition: 1

Features

- Alternative housing colours are available to meet specific requirements.
- DIN rail mounted terminal blocks: 8 x 2.5mm²
- Metalised Polyester "Duty" label.
- Series and/or End of Line resistors.

Colours:

Other colours available on request.

IP 66

0,5kg

GNExCP6A-BG

Break Glass Call Point

The GNExCP6A manual call points are available as break glass, push button or tool reset versions. They are approved for Zone 1, 2, 21 and 22 hazardous areas for the control of fire and gas alarm systems. Available with either single or double pole change over switches. All versions are certified to ATEX and IECEx standards.

Specification	
GNExCP6A	II 2G Ex e d IIC T6 Gb II 2D Ex t IIIC T60°C Db
Ambient	Ta = -40°C to +55°C
Housing material	GRP - glass reinforced polyester (UV stable)
Cable entries	2 x M20 clearance top and 1 x M20 clearance side. Back box can be rotated to give 2 x bottom and 1 x side entries
Stopping plugs	2 x nylon plugs as standard Brass and stainless steel plugs optional
Terminals	6 x 4.0mm² cables

Approvals	
ATEX certificate	Sira 09ATEX3286X, IEC 60079-0:2007 Ed 5, EN 60079-1:2004, EN 60079-7:2007, IEC 60079-18:2009 Ed 3, EN 61241-1:2004
IECEx certificate	IECEx SIR 09.0121X, IEC 60079-0:2007-10 Edition: 5, IEC 60079-1:2003 Edition: 5, IEC 60079-18:2009 Edition: 3, IEC 60079-7:2006-07 Edition: 4, IEC 61241-1:2004 Edition: 11

Features

- Alternative housing colours are available to meet specific requirements.
- Single or double pole c/o switch.
- Metalised polyester or stainless steel “Duty” label.

Colours:

Other colours available on request.

IP 66

0,5kg

GNExCP6A-PB

Push Button Call Point

The GNExCP6A manual call points are available as break glass, push button or tool reset versions. They are approved for Zone 1, 2, 21 and 22 hazardous areas for the control of fire and gas alarm systems. Available with either single or double pole change over switches. All versions are certified to ATEX and IECEx standards.

Specification	
GNExCP6A	II 2G Ex e d IIC T6 Gb II 2D Ex t IIIC T60°C Db
Ambient	Ta = -40°C to +55°C
Housing material	GRP - glass reinforced polyester (UV stable)
Cable entries	2 x M20 clearance top and 1 x M20 clearance side. Back box can be rotated to give 2 x bottom and 1 x side entries
Stopping plugs	2 x nylon plugs as standard Brass and stainless steel plugs optional
Terminals	6 x 4.0mm² cables

Approvals	
ATEX certificate	Sira 09ATEX3286X, IEC 60079-0:2007 Ed 5, EN 60079-1:2004, EN 60079-7:2007, IEC 60079-18:2009 Ed 3, EN 61241-1:2004
IECEx certificate	IECEx SIR 09.0121X, IEC 60079-0:2007-10 Edition: 5, IEC 60079-1:2003 Edition: 5, IEC 60079-18:2009 Edition: 3, IEC 60079-7:2006-07 Edition: 4, IEC 61241-1:2004 Edition: 11

Features

- Alternative housing colours are available to meet specific requirements.
- Single or double pole c/o switch.
- Metalised polyester or stainless steel “Duty” label.

Colours:

Other colours available on request.

0,5kg

IP 66

GNExCP6A-PT

Tool Reset Call Point

PRODUCT INFORMATION
PRODUCT IMAGE
AVAILABLE COLOURS

The GNExCP6A manual call points are available as break glass, push button or tool reset versions. They are approved for Zone 1, 2, 21 and 22 hazardous areas for the control of fire and gas alarm systems. Available with either single or double pole change over switches. All versions are certified to ATEX and IECEx standards.

Specification	
GNExCP6A	II 2G Ex e d IIC T6 Gb II 2D Ex t IIIC T60°C Db
Ambient	Ta = -40°C to +55°C
Housing material	GRP - glass reinforced polyester (UV stable)
Cable entries	2 x M20 clearance top and 1 x M20 clearance side. Back box can be rotated to give 2 x bottom and 1 x side entries
Stopping plugs	2 x nylon plugs as standard Brass and stainless steel plugs optional
Terminals	6 x 4.0mm² cables

Approvals	
ATEX certificate	Sira 09ATEX3286X, IEC 60079-0:2007 Ed 5, EN 60079-1:2004, EN 60079-7:2007, IEC 60079-18:2009 Ed 3, EN 61241-1:2004
IECEx certificate	IECEx SIR 09.0121X, IEC 60079-0:2007-10 Edition: 5, IEC 60079-1:2003 Edition: 5, IEC 60079-18:2009 Edition: 3, IEC 60079-7:2006-07 Edition: 4, IEC 61241-1:2004 Edition: 11

Features

- Alternative housing colours are available to meet specific requirements.
- Single or double pole c/o switch.
- Metalised polyester or stainless steel “Duty” label.

Colours:

Other colours available on request.

IP 66

0,5kg

BExCP3A/B-BG

Break Glass Call Point

The BExCP3A-BG and BExCP3B-BG break glass manual call points are approved for Zone 1, 2, 21 and 22 hazardous areas for the control of fire and gas alarm systems. Available with and without monitoring resistors all versions are certified to ATEX and IECEx standards. The BEx range features enclosures manufactured from corrosion proof, marine grade, copper free LM6 (A413) aluminium which is phosphated and powder coated.

Specification	
BExCP3A-BG	II 2G Ex e d IIC T6 Gb II 2D Ex t IIIC T60°C Db
BExCP3B-BG	II 2G Ex e d mb IIC T4 Gb II 2D Ex t IIIC T70°C Db
Ambient	Ta = -40°C to +55°C
Housing material	Marine grade copper free LM6 Aluminium
Housing finish	Phosphated & powder coated finish: anti-corrosion
Cable entries	2 x M20 clearance top and 1 x M20 clearance side. Back box can be rotated to give 2 x bottom and 1 x side entries
Stopping plugs	2 x nylon plugs as standard Brass and stainless steel plugs optional
Terminals	6 x 4.0mm² cables

Approvals	
ATEX certificate	Sira 09ATEX3286X, IEC 60079-0:2007 Ed 5, EN 60079-1:2004, EN 60079-7:2007, IEC 60079-18:2009 Ed 3, EN 61241-1:2004
IECEx certificate	IECEx SIR 09.0121X, IEC 60079-0:2007-10 Edition: 5, IEC 60079-1:2003 Edition: 5, IEC 60079-18:2009 Edition: 3, IEC 60079-7:2006-07 Edition: 4, IEC 61241-1:2004 Edition: 1
Inmetro certificate	10-IEx-0011X

Complies with design requirements of EN54-11.

Features

- Alternative housing colours are available to meet specific requirements.
- DIN rail mounted terminal blocks: 8 x 2.5mm²
- Stainless Steel lift flap
- Metalised Polyester "Duty" label.
- Series and/or End of Line resistors.

Colours:

Other colours available on request.

0,5kg

IP 66

BExCP3A/B-PB

Push Button Call Point

The BExCP3A-PB and BExCP3B-PB push button manual call points are approved for Zone 1, 2, 21 and 22 hazardous areas for the control of fire and gas alarm systems. Available with and without monitoring resistors all versions are certified to ATEX and IECEx standards. The push button mechanism is protected by a spring loaded cover therefore the switch requires a two-action activation. The product is user resettable by rotating the push button. The BEx range features enclosures manufactured from corrosion proof, marine grade, copper free LM6 (A413) aluminium which is phosphated and powder coated.

Specification	
BExCP3A-PB	II 2G Ex e d IIC T6 Gb II 2D Ex t IIIC T60°C Db
BExCP3B-PB	II 2G Ex e d mb IIC T4 Gb II 2D Ex t IIIC T70°C Db
Ambient	Ta = -40°C to +55°C
Housing material	Marine grade copper free LM6 Aluminium
Housing finish	Phosphated & powder coated finish: anti-corrosion
Cable entries	2 x M20 clearance top and 1 x M20 clearance side. Back box can be rotated to give 2 x bottom and 1 x side entries
Stopping plugs	2 x nylon plugs as standard Brass and stainless steel plugs optional
Terminals	6 x 4.0mm² cables

Approvals	
ATEX certificate	Sira 09ATEX3286X, IEC 60079-0:2007 Ed 5, EN 60079-1:2004, EN 60079-7:2007, IEC 60079-18:2009 Ed 3, EN 61241-1:2004
IECEx certificate	IECEx SIR 09.0121X, IEC 60079-0:2007-10 Edition: 5, IEC 60079-1:2003 Edition: 5, IEC 60079-18:2009 Edition: 3, IEC 60079-7:2006-07 Edition: 4, IEC 61241-1:2004 Edition: 1
Inmetro certificate	10-IEx-0011X

Complies with design requirements of EN54-11.

Features

- Alternative housing colours are available to meet specific requirements.
- DIN rail mounted terminal blocks: 8 x 2.5mm²
- Stainless Steel lift flap
- Metalised Polyester "Duty" label.
- Series and/or End of Line resistors.

Colours:

Other colours available on request.

0,5kg IP 66

BExCP3A/B-PT

Tool Reset Call Point

PRODUCT INFORMATION | PRODUCT IMAGE | AVAILABLE COLOURS

The BExCP3A-PT and BExCP3B-PT push button, tool resettable manual call points are approved for Zone 1, 2, 21 and 22 hazardous areas for the control of fire and gas alarm systems. Available with and without monitoring resistors all versions are certified to ATEX and IECEx standards. The push button mechanism is protected by a spring loaded cover therefore the switch requires a two-action activation. The push button is user resettable via the use of the special key supplied with the unit. The BEx range features enclosures manufactured from corrosion proof, marine grade, copper free LM6 (A413) aluminium which is phosphated and powder coated.

Specification	
BExCP3A-PT	II 2G Ex e d IIC T6 Gb II 2D Ex t IIIC T60°C Db
BExCP3B-PT	II 2G Ex e d mb IIC T4 Gb II 2D Ex t IIIC T70°C Db
Ambient	Ta = -40°C to +55°C
Housing material	Marine grade copper free LM6 Aluminium
Housing finish	Phosphated & powder coated finish: anti-corrosion
Cable entries	2 x M20 clearance top and 1 x M20 clearance side. Back box can be rotated to give 2 x bottom and 1 x side entries
Stopping plugs	2 x nylon plugs as standard Brass and stainless steel plugs optional
Terminals	6 x 4.0mm² cables

Approvals	
ATEX certificate	Sira 09ATEX3286X, IEC 60079-0:2007 Ed 5, EN 60079-1:2004, EN 60079-7:2007, IEC 60079-18:2009 Ed 3, EN 61241-1:2004
IECEx certificate	IECEx SIR 09.0121X, IEC 60079-0:2007-10 Edition: 5, IEC 60079-1:2003 Edition: 5, IEC 60079-18:2009 Edition: 3, IEC 60079-7:2006-07 Edition: 4, IEC 61241-1:2004 Edition: 1
Inmetro certificate	10-IEx-0011X

Complies with design requirements of EN54-11.

Features

- Alternative housing colours are available to meet specific requirements.
- DIN rail mounted terminal blocks: 8 x 2.5mm²
- Stainless Steel lift flap
- Metalised Polyester "Duty" label.
- Series and/or End of Line resistors.

Colours:

Other colours available on request.

0,5kg

IP 66

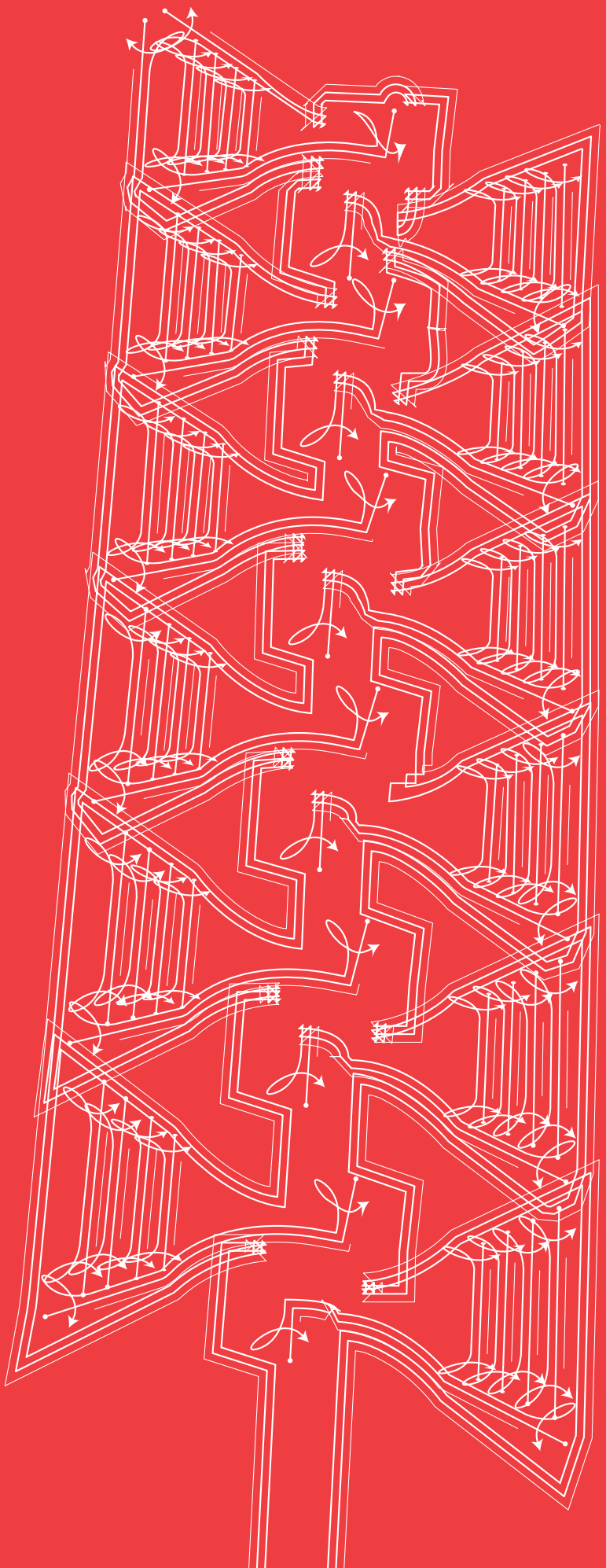
“Did you know that Marin Supply is situated in what used to be the main naval base for Norway?”

WIDE AREA AUDIBLE

Typically, wide area signalling alarm systems such as horn loudspeakers or PA loudspeakers consist of three individual sounders that are pole-mounted at 120° to give full 360° coverage; in order to minimise cabling costs, the systems are often battery powered and are radio controlled.

As well as providing wide area coverage, such systems are often used on building and construction sites, where they provide excellent protection levels for the workforce. Typically, the horn loudspeakers are initiated from radio manual call points, either through a system of master/slave control panels or directly if the system is self-contained.

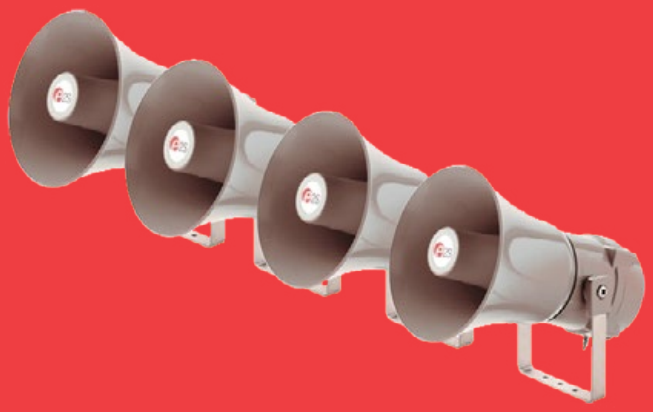
Mobility is a key feature, with the individual units being moved around the site as the work progresses. Wide area warning sirens and alarm systems are particularly useful on a temporary basis when construction work is being carried out on large or congested sites or for more permanent installations like those needing to meet obligations under the Control of Major Accident Hazard (COMAH) regulations.



A131

High level audible warning system

The A131 is a high output 131dB(A) @ 1 meter electronic siren in a compact and easy to Install package. Using up to four speakers, it can be mounted in a variety of ways and is Ideal as a plant alarm to cover outdoor locations, areas with high background noise or smaller COMAH (Seveso II) applications with sound coverage requirements up to 300m.



PRODUCT INFORMATION
PRODUCT IMAGE
AVAILABLE COLOURS

The A131 has the option of battery back-up which means it can deliver it's safety warning even in the event of a power failure, for up to 30 days in standby and 30 minutes in alarm. The siren is operated by push buttons either on the siren control box or via a remote panel or remote contact from another system which can be linked by hardwire, telephone cables or radio control using telemetry to create a secure communication network.

Horn unit	
Maximum output	131dB(A) @ 1 metre
No. of tones	45 (UKOOA/PFEER compliant
No. of stages	3
Operating temp	-20°C to +55°C
Horn body Material	Aluminium LM6 phosphated & powder coated
Horn flare material	UL94 V0 & 5VA ABS
Connection	Supplied with 10m of cable for connection to the control unit as standard. Custom lengths available.
Mounting	Adjustable U bracket

Control Panel	
Input voltage DC	24Vdc (18Vdc to 30Vdc range)
Input voltage AC	115 or 230Vac (90V to 264Vac range)
Terminals	0.5 to 4.0mm² cable

Features
The speaker horns are suitable for pole or wall mounting and are protected to IP66 which makes them suitable for use in the most hazardous locations. They come pre-wired with 10m of cable to ensure a quick installation and can be positioned in a variety of ways to suit the application. Marin Supply AS has considerable experience in this field.

Colours:

A141

High level audible warning system

The A141 is the latest in a new generation of high output electronic sounders from E2S which are ideal for wide area and disaster warning applications such as COMAH (Seveso II) Alarm, Toxic Gas Release, Fire, Security, Flood Warning, Tsunami Alert and Civil Defence requiring sound coverage up to 750m.

PRODUCT INFORMATION | PRODUCT IMAGE | AVAILABLE COLOURS

With a choice of 45 standard warning tones including many of the standard international signals the A141 can offer up to 4 different stages of alarm. A "Hootronic" version of the A141 is also available which replicates the traditional signaling sounds of bells, buzzers, sirens and hooters. By re-playing digital recordings of these products, the Hootronic produces the exact sound but without the reliability and rating problems of electro-mechanical devices. Marin Supply AS has considerable experience in this field and is able to offer full pre and post installation support including assistance with siren selection.

Horn unit	
Maximum output	141dB(A) @ 1 metre (Effective distance 400-700m)
No. of tones	45 (UK0OA/PFEER compliant
No. of stages	3
Horn body Material	Glass fibre reinforced plastic
Dimensions	(L) 680 X (H) 425 X (D) 550 mm
Connection	Supplied with 10m of cable for connection to the control unit as standard. Custom lengths available.
Mounting	Adjustable U bracket

Control Panel	
Input voltage DC	24Vdc (18Vdc to 30Vdc range)
Input voltage AC	115 or 230Vac (90V to 264Vac range)
Terminals	0.5 to 4.0mm² cable

Features

Using four 100W drivers, the A141 produces a powerful sound with an output in excess of 140 dB and is ideal for warning over distances of between 400m and 700m. The A141 has a lightweight, compact housing designed for easy mounting and is protected to IP65 making it suitable for installation in all locations.

Optional extras include:

- Custom Tones
- Battery Back Up (giving up to 30 minutes of alarm)
- Radio Control

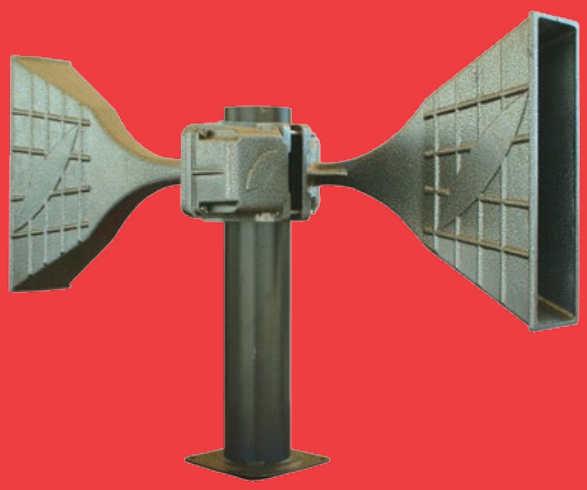
Horn colours:

14kg (Horn unit) | 2,9kg (Control Panel) | IP 65 (Horn unit) | IP 65 (Control Panel) | -20°C / + 55°C

A151

High level audible warning system

Output of up to 125dB@30m (>150dB@1m) are available in both Omni-directional and directional speaker arrays.



PRODUCT INFORMATION | PRODUCT IMAGE | AVAILABLE COLOURS

A151 Sirens can be configured into complete systems and have the ability to communicate via RS232/485, TCP/IP, Radio control (VHF, UHF and Tetra) and can be controlled by either LCD control panel or a software solution.

Because many of the applications are critical alarms, it is essential to know the siren is fully functional at all times. The A151 sirens have built fault diagnostics and use a silent test function to check all the key features of the siren at pre-determined time intervals (usually every 3 hours)

A choice of warning tones is available together with the option of pre-recorded or live voice and the same control panels can be used to power 100V line loudspeakers for effective warning inside building or areas with high background noise levels.

For applications which do not require fault monitoring, a more basic siren (A145) is available

Marin Supply AS offer full technical support during the design and commissioning phase of a project.

Marin Supply AS offer a range of solutions for disaster and outdoor warning such as:

- **Toxic Gas Release (COMAH, SEVESO II)**
- **Flood Warning**
- **Tsunami Alert**
- **Civil Defence**
- **Tornado and Weather Warning**
- **Wide Area Fire and Security Alert**

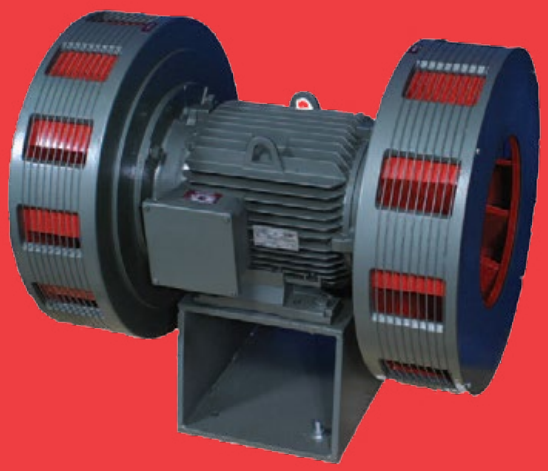
Colours:

CE

K-SML05/10/15

Motor Driven Sirens

The E2S range of motor driven sirens offer the traditional “air raid” type warning signal designed to give effective warning over wide areas.



PRODUCT INFORMATION
PRODUCT IMAGE
AVAILABLE COLOURS

The E2S range of motor driven sirens offer the traditional “air raid” type warning signal designed to give effective warning over wide areas. The powerful low frequency sound is ideal for covering long distances and is instantly recognisable.

The simple, rugged design is low maintenance and offers the lowest cost solution to disaster warning applications such as COMAH (SEVESO II) toxic gas alarms, flood and tsunami warning, security alert, civil defence, tornado and bad weather alert. Using the matching control panel, these sirens can produce up to 3 distinct warning tones and there are a variety of control options to suit customer requirements. Controls can be linked by hard wire, telephone cables or radio control using digital telemetry to create a secure communication network.

Features	*K-SML05*	*K-SML10*	*K-SML15*
Maximum Output	135 db (A) @ 1m	140 db (A) @ 1m	145 db (A) @ 1m
Tones	Continuous or Wail Tone	Continuous or Wail Tone	Continuous or Wail Tone
Frequency	560Hz	560Hz	560Hz
Effective range	1km	1,5km	2,5km
Voltage	400V 3 Phase	400V 3 Phase	400V 3 Phase
Motor Power	2.2kW	4kW	7.5kW
Duty	Continuous	Continuous	Continuous
Material	Cast Aluminium	Cast Aluminium	Cast Aluminium
Storage Temperature	-40 to +70°C	-40 to +70°C	-40 to +70°C
Relative Humidity	90% at 20°C	90% at 20°C	90% at 20°C

Horn colours:

50kg (K-SML05) 68kg (K-SML 10) 118kg (K-SML 15) -20°C / +40°C

CE

WIDE AREA SAILING

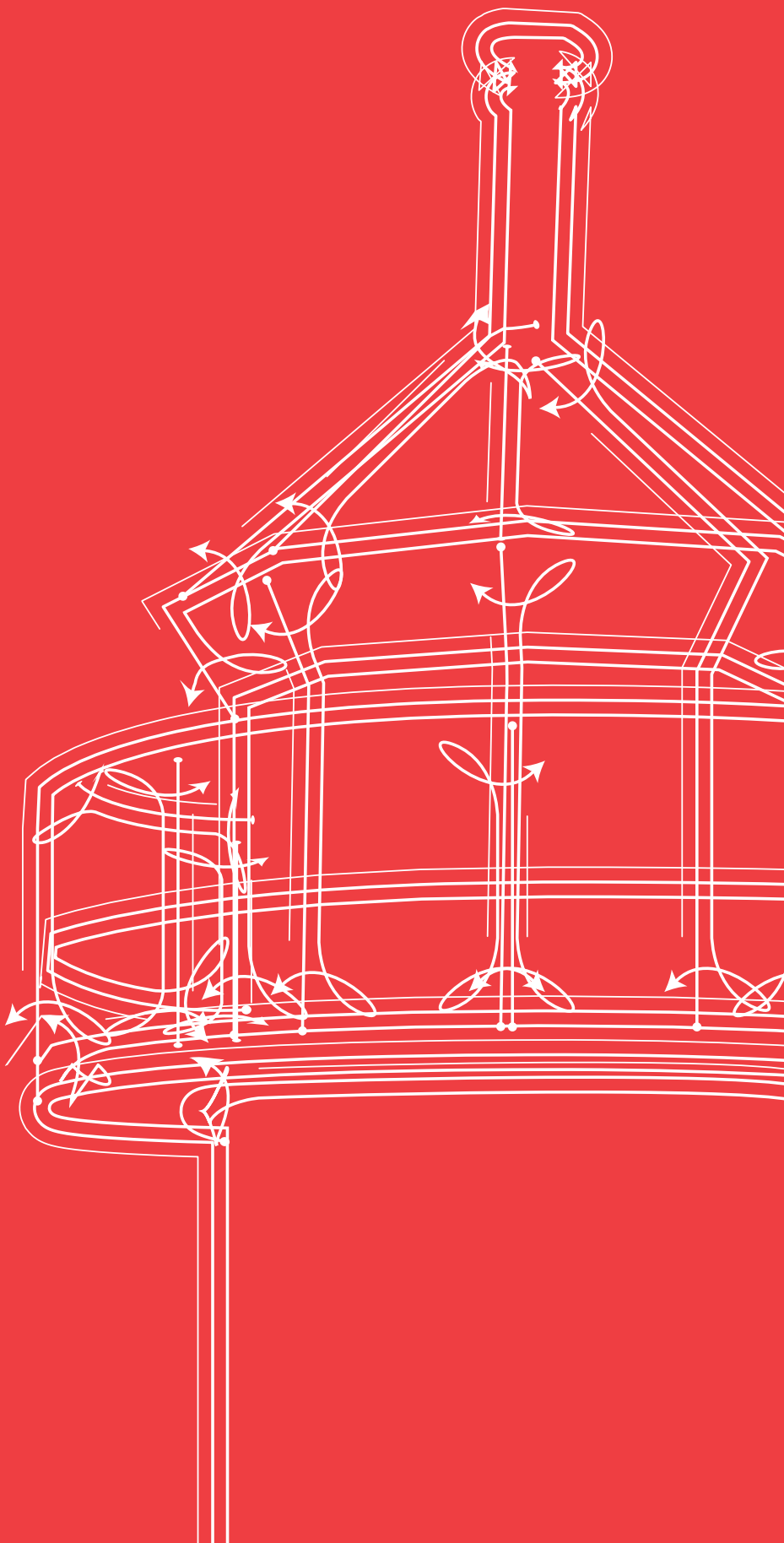
LED signals for all applications

Today LED technology is the preferred solution for all signal lights in the marine aids to navigation industry. our range of LED lanterns is the most comprehensive available:

- Buoy lanterns
- Ice buoy lanterns
- Medium and long range beacon lanterns
- Range lights
- Sector lights
- Light tubes for structure illumination
- Self contained lights

Our lanterns are appreciated for their luminous performance, reliability, modularity and functionality. By selecting one of our lanterns you not only get a reliable light but also a complete palette of intelligent solutions. Our customers have the possibility to choose right features for their specific needs to operate their aids to navigation efficiently and at lower life time cost.

Marin Supply AS is able to deliver a big range of lanterns, contact us to find the right solution.



LED 155

Marine LED light for buoys and minor beacons

LED 155 is a general purpose LED lantern commonly used on both fixed and floating structures. The lantern is modular in design. It can be configured with two different vertical divergencies and 1-3 tiers depending on operational requirements.

PRODUCT INFORMATION
PRODUCT IMAGE
AVAILABLE COLOURS

Technical Specification LED 155

Main Technical Specification LED 155	
Lens visual/Mechanical diameter	160 mm
Lens material	UV stabilized Polycarbonate
Light source	Light Emitting Diodes (LEDs)
Vertical divergence	6° or 10° @ 50% (±1°) and 10° or 20° @ 10% (±2°) of peak intensity
Unit lifetime	Up to 10 years
Supply Voltage	8 – 30 Vdc
Solar Panel Charger	16 ampere PWM charger
Power consumption	6 watts / tier

Main Technical Specification LED 155 B/Y	
Lens visual/Mechanical diameter	160 mm
Lens material	UV stabilized Polycarbonate
Light source	Light Emitting Diodes (LEDs)
Vertical divergence	10° @ 50 % (± 1°) of peak intensity
Unit lifetime	Up to 10 years
Supply Voltage	9 – 30 Vdc
Power consumption	6 watts / tier

Optical performance LED 155				
Maximum fixed intensity, narrow lens (fixed structures)				
Simplex, 6 W	140 cd	270 cd	420 cd	200 cd
Duplex, 12 W	266 cd	513 cd	720 cd	380 cd
Triplex, 18 W	392 cd	756 cd	1080 cd	560 cd
Maximum fixed intensity, wide lens (floating structures)				
Simplex, 6 W	120 cd	180 cd	250 cd	100 cd
Duplex, 12 W	228 cd	342 cd	450 cd	190 cd
Triplex, 18 W	336 cd	504 cd	675 cd	280 cd

Optical performance LED 155 B/Y		
Maximum fixed intensity		
Nominal 5 W	45 cd	45 cd

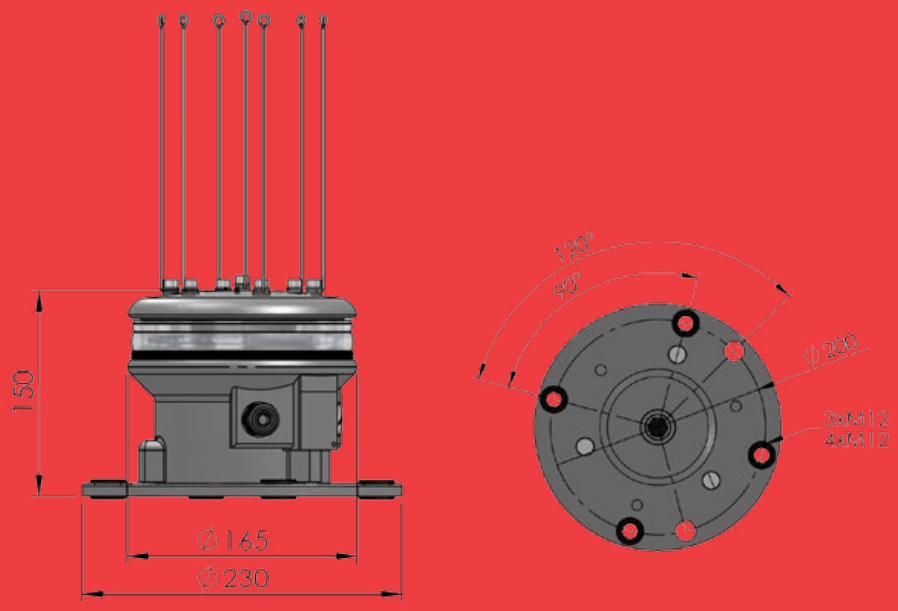
Features

- Range up to 8 nm at Tc = 0.74 (12 nm at Tc = 0.85)
- Standard IALA colours Red, Green, White, Yellow and Blue/Yellow
- Rugged aluminium housing for installation in harsh marine environment
- Extremely low power consumption, suitable for solar and battery operation
- Integrated flasher with day-night switch
- Integrated 16a solar panel charger using pulse width modulation
- Adjustable intensity and range
- Available with narrow (6°) or wide (10°) vertical divergence
- Programming with any of Sabik wireless programmers
- Integrated event log for 365 days
- Optionally integrated GPS synchronization
- Optionally integrated GSM Remote monitoring

Colours:

3,9kg (LED 155) | 4,2kg (LED 155 B/Y) | IP 68 | -40°C / +60°C | Marine | LED

CE



Order Overview LED 155

Option matrix	
LightGuard GSM	Integrated GSM based monitoring including GSM antenna
LightGuard GPS	Integrated GSM based monitoring including GSM/GPS antennas
GPS sync	Integrated GPS sync only unit including GPS antenna in lantern top
Optical Feedback System	Integrated LED performance measurement
Shock & Tilt Sensor	Integrated 3-axis G sensor for tilt and shock sensing

Single tier (standard)		Single tier (standard)		Single tier (standard)	
Red	980124SMC	Red	980114SMC	Red	980117SMC
Yellow	980125SMC	Yellow	980119SMC	Yellow	980118SMC
Green	980126SMC	Green	980115SMC	Green	980116SMC
White	980127SMC	White	980132SMC	White	980133SMC

Lens Option	Additional Options (several can be selected)
N = Narrow (6° @ 50 % of peak intensity)	1: Optical Feedback System (OFBS)
W = Wide (10° @ 50 % of peak intensity	4: GPS sync including integrated GPS antenna
	7: External GPS antenna
	8: Shock and Tilt sensor
	9: LightGuard SMC + GPS (Integrated antennas included)
	10: LightGuard SMC (integrated antennas included)

Order Overview LED 155 B/Y

Wreck marking lantern

Option matrix	
GPS sync	GPS Synchro unit with GPS antenna integrated in the top of the lantern

Product codes	
LED-155 BLUE/YELLOW WRECK MARK	980106

Product code example: 980124SMC-N-1.9

- 980124 is Sabik code for a single tier LED 155 R
- N is the code for a Narrow lens
- 1 stands for the option 1 Optical FeedBack System
- 9 indicates that option 2 Light Guard SMC is chosen

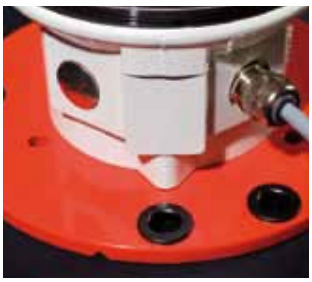
CODE **980124SMC** - **N** - **1** - **9** - **X**

- X: OPTION X
- 9: OPTION 2
- 1: OPTION 1
- N: LENS TYPE (DIVERGENCE)

Bird spikes
Stainless steel as standard. Easy to replace. Special spikes for protection agains cormorants and other large birds on request.

GPS
GPS unit and antenna integrated in the lantern for wireless synchronization and for position monitoring.

Light Guard GSM
GSM unit and antenna integrated in the lantern for remote monitoring and control.

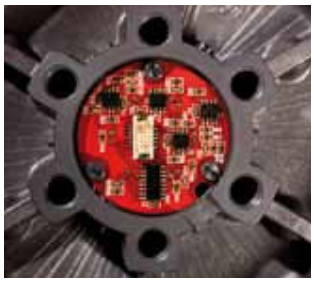


Additional cable entry
Equipped as standard with two cable entries. If the second entry is needed e.g. for a solar module, a standard M20 cable gland can be fitted.

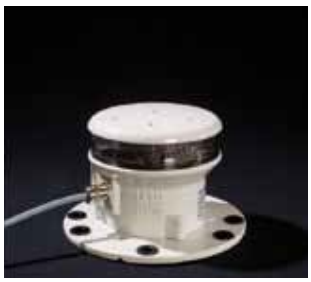
Sabik Easy Programmer
User friendly and compact wireless two-way programmer.

PDA Programmer
Wireless two way infrared communication with Sabik PDA programmer to set flash code, range, photocell switch level etc. The event log data is also readable with the programmer.

Installation
The bottom plate supports installation on structure with 3 x M12 bolts on a 200 mm radius. The mounting holes are galvanic isolated with plastic isolators. PTFE breathing vent for pressure release.



OFBS
The Optical Feedback System (OFBS) enables built-in monitoring of LED degradation over time.



Simplex

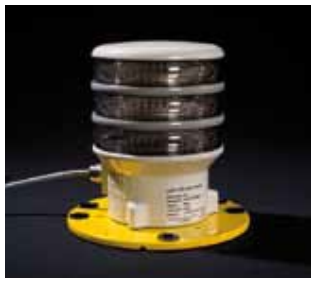
Duplex

Triplex

White

Red

Green

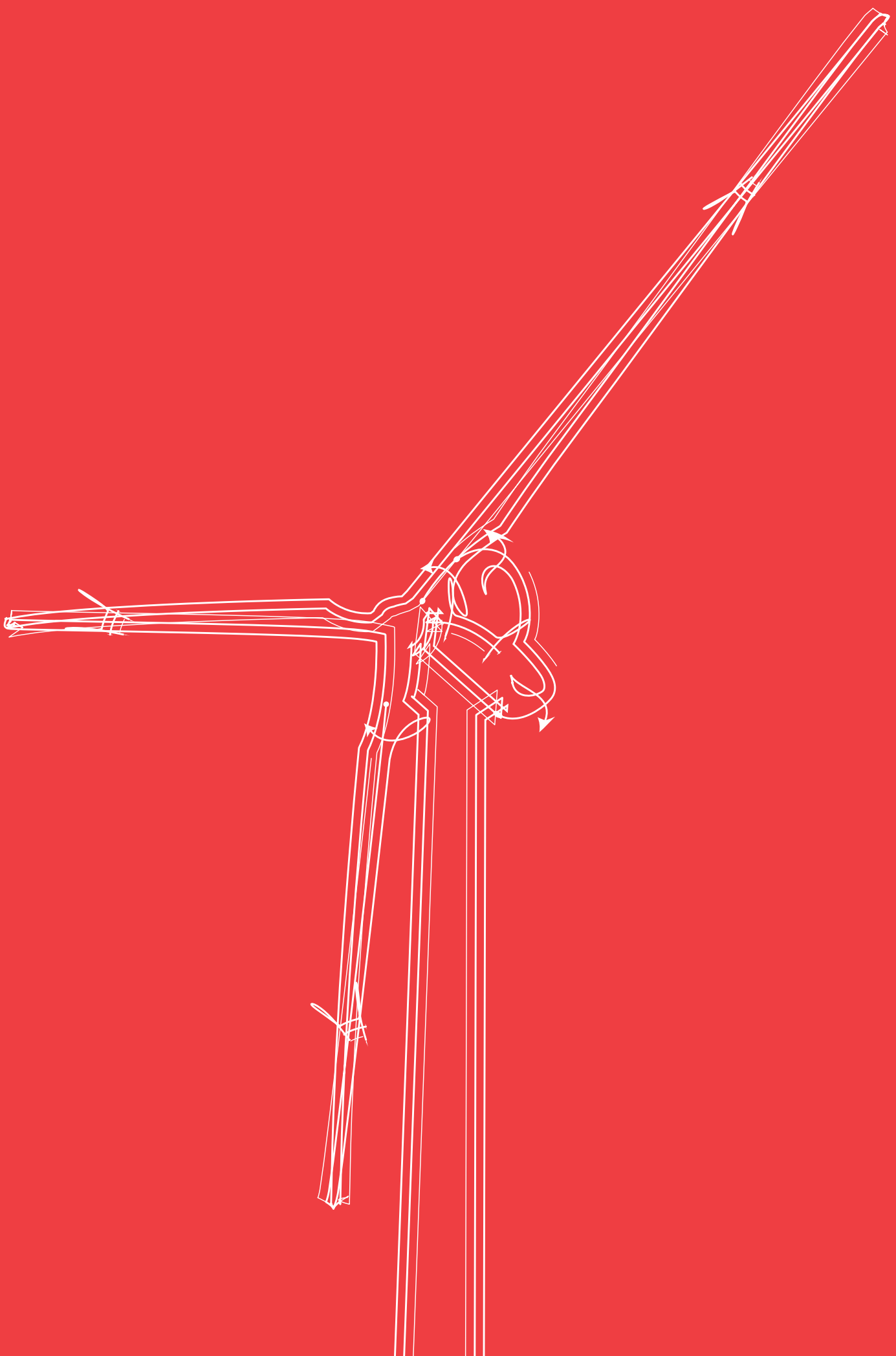


Yellow

“Have you signed up
for Marin Supply`s
newsletter?”

WIDE AREA AVIATION

Obstruction lights
LED hazard beacons for the night identification of aviation obstructions such as wind energy turbines and high buildings/structures



POL POINTSPEC
POINT OBSTRUCTION LIGHTS

The POL POINTSPEC series of red LED aviation obstruction lights presents the highest grade technical features and the most options available in the industry.

POL steady-burning obstruction lights are used to mark tall structures that present hazards to air navigation..

PRODUCT INFORMATION | PRODUCT IMAGE | AVAILABLE COLOURS

TECHNICAL NOTES & OPTIONS
Alarm options must be selected at time of initial order. Alarms cannot be added in the field or retrofitted. POL LED lights cannot be monitored by 3rd party systems or controllers without selecting an alarm version of the POL LED.

The POL optical subassembly is factory sealed to prevent moisture penetration and it is not serviceable.

Option - MT - Marine Treatment
The fixture shall be treated for marine conditions by cleaning per US MIL method III of TT-C-490, chromate priming per US MIL-C-5541, epoxy powder base coat and glossy polyester powdercoat finish coat in color RAL6003 (FED-STD-595 color #14097) green. Oven cured per US MIL-PRF-24712A.

Option - NC
NVG Compatible Adds infrared LED to allow visibility to pilots with or without night vision goggles.

Option - P
Photoelectric Control adds a prewired FAA PEC to single with junction box or double.

Option - FF
Floor Flange Mounting see Details OL19 & OL20 in file 0MOUNTINGS For use with photoelectric controller option –P. Cover mounted 3-position switch ON-OFF-AUTO. Requires a double or single with junction box. For remote override switch, add item PL40110-3.

Option - CF[C]
Cable Fitting – For single with junction box or double Through holes with 1.5-inch long ¼-20 hex head stainless steel screws and sealing washers. Cable compression fitting for outside diameter: 0.5 to 0.625-inch (12.7 to 15.9-mm).

Option - BKT
Bracket for Wall Mounting see Detail OL17 in file 0MOUNTINGS Simple aluminum bracket for single or double. Screw holes for the structure to be drilled in the field.

Option - OS
Override Switch For use with photoelectric controller option –P. Cover mounted 3-position switch ON-OFF-AUTO. Requires a double or single with junction box. For remote override switch, add item PL40110-3.

Compliances
- ETL Listed to UL 1598A Marine Vessels at -40 deg C to +55 deg C
- ETL Listed to CSA C22.2 No. 137-M1981 & No. 250.0-08 Canada
- ETL Listed to UL 1598 at -40 deg C to +55 deg C
- ETL Verified FAA L-810 to FAA Advisory Circular 150/5345-43F
- ETL Verified ICAO Annex 14 Low Intensity Types A (10 cd) & B (32 cd)
- Compliance to Transport Canada CAR 621.19, Table 5-1
- Compliance to UK CAP 168 Table 6A.1 Low Intensity (Group A)
- IMO 2009 MODU Code (2010) paragraphs 13.5.24 & 13.5.25
- American Bureau of Shipping (ABS) Type Approved Product

Colours:

Other colours available on request.

CE

LED Obstacle Lights

POL 10-H, POL 32-H

LED obstacle lights, AVV-approved, compliant to ICAO Annex 14, Volume 1, Chapter 6.

PRODUCT INFORMATION

PRODUCT IMAGE

AVAILABLE COLOURS

Mechanical Data	*POL 10-H*	*POL 32-H*
Operating mode	Continuous light	
Light Source	High output LEDs	
Light Intensity (DIN 5037)	> 10 cd	> 32 cd
Beam Angle Vertical	- 2° / + 10°	
Beam Angle Horizontal	> 180°	
Operating Temperature	- 40 °C / + 50 °C	
Storage Temperature	- 40 °C / + 70 °C	
Relative Humidity	100%	
Duty cycle	100%	
Service life of light source	> 100 000 hrs	
Lens Material	Polymethyl methacrylate (PMMA), UV resistant	
Housing Material	Sea water-resistant aluminium (anodised)	
Mounting	Horizontal, push-through mounting	
Dimensions	Ø 50 mm, length on request	
Type of connection	Plug connection	
Approvals	ICAO / AVV (pending)	ICAO / AVV (pending)
ICAO Type	Low Intensity, type A	Low Intensity, type B

Electrical Data	*POL 10-H*	*POL 32-H*
Rated voltage	24 V DC	
Operating range	15-30 V DC	15-30 V DC
Power consumption	2W	3W

Features

Especially designed for horizontal mounting/ operation.

- Therefore highly suitable for night marking of aviation obstacles such as windturbines and chimneys
- Easiest push-through mounting solution for quick and safe fixation on concrete steel towers
- Horizontal radiation angle of 180° requires only 4 units per light level
- Seawater resistant, anodized aluminium and UV resistant lens material
- Integrated twilight switch for day/night switchover
- Extremely long service life of over 100.000 hours, hence maintenance-free
- Equipped with mounting-friendly plug contact

1kg

IP 68

Lens colour:

Light colour:

CE

LED Obstacle Lights

POL 10, POL 32

LED obstacle lights, AVV-approved, compliant to ICAO, Annex 14, Volume 1, Chapter 6.

PRODUCT INFORMATION | PRODUCT IMAGE | AVAILABLE COLOURS

Electrical Data		***POL 32***			***POL 10***		
Rated Voltage		15-230 Vdc	48 Vdc	12/24 Vdc	115/230 Vdc	48 Vdc	12/24 Vdc
Rated Frequency		50/60 Hz			50/60 Hz		
Operating Range		85-265 V	40-57 V	9.6-28.8 V	85-265 V	40-57 V	9.6-28.8 V
Current consumption, determined arithmetacilly	115 V	96 mA			60 mA		
	230 V	45 mA			40 mA		
	48 V		270 mA			180 mA	
	24 V			430 mA			350 mA
	12 V			800 mA			600 mA
Fault Contact		max. 230 V, 80 mA					

Mechanical Data		***POL 32-M***	***POL 10-M***	***POL 10-M-R***	***POL 10-M-RA***
Operating mode		Continuous light			
Light Source		LED array (red)		2 x LED array	
Version	Monitored (Standard)	•	•	•	•
	Redundant			•	•
Activation of standby light in case of error by means of				External switching	External switching
Light intensity (DIN 5037)		> 32 cd	> 10 cd		
Beam angle	Vertical	Approx. ± 35°			
	Horizontal	360°			
Operating temperature		- 40 °C / + 55 °C			
Storage temperature		- 40 °C / + 70 °C			
Relative humidity		100%			
Duty cycle		100%			
Service life of light source		> 50 000 hrs			
Lens material		Poly carbonate (PC)			
Base material		Polybutylene terephtalate (PBT)			
Mounting		Direct mounting			
Connection terminals		0.5 - 1.5mm2 fine wire - H05(07)V-K, 0.5 - 2.5mm2 single wire - H05(07)V-U			
Approvals		ICAO	ICAO / AVV	ICAO / AVV	ICAO / AVV

Features

- Omnidirectional light with a radiation angle of 360° for operation at night and twilight (night identification of aviation obstacles)
- 2 in 1: Optional completely redundant construction of LED, electronics and power supply in one housing. A second light is therefore not necessary
- Automatic switching over to standby light in case of error or by means of external control system
- Integrated function monitoring with potential-free fault contact
- Extremely long service life of over 50.000 hours, hence maintenance-free
- Optionally equipped with mounting-friendly plug contact

750g

IP 68

Lens colour:

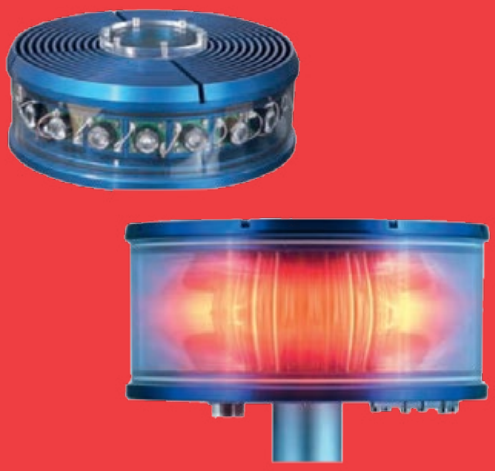
Light colour:

CE

LED Obstruction Lights

POL 170W-R, POL 2.000R

LED obstruction lights for the night identification of aviation obstructions such as wind energy turbines and high buildings/structures.



PRODUCT INFORMATION

PRODUCT IMAGE

AVAILABLE COLOURS

Features

- Dimmable light intensity depending upon the visual range
- Integrated degradation and function monitoring of the LEDs
- Integrated lightning protection
- Passive cooling; No wearing parts requiring maintenance
- Extremely long useful life of more than 20 years (depending upon ambient temperature)
- Extreme vibration resistance due to LED technology
- Sea-water resistant housing material
- Mechanically compatible to combi lights
- Integrated flash synchronisation of several lights
- Integrated twilight switch for switching between day/night operation
- Integrated data logger for visibility adjustment

Electrical data		***POL 170W-RED***	***POL 170W-RED-ES***	***POL 2.000R-B***	***POL 2.000R-C***
Rated voltage		24 V DC (15 – 30 V DC)			
Power Consumption	@100%	15 W	6 W	11 W	35 W

Mechanical Data	***POL 170W-RED***	***POL 170W-RED-ES***	***POL 2.000R-B***	***POL 2.000R-C***
Operating mode	Blinking light	Blinking light	Blinking light	Continuous light
Light source	18 high output LEDs	144 medium output LEDs	24 high output LEDs	24 high output LEDs
Blinking frequency	1 s ON - 0.5 s OFF - 1 s ON - 1.5 s OFF	1 s ON - 0.5 s OFF - 1 s ON - 1.5 s OFF	20/min. or 40/min.	steady
Light intensity (DIN 5037)	170 cd according to AVV	170 cd according to AVV	2 000 cd according to ICAO	2 000 cd according to ICAO
Intensity control	30% / 10% (only in connection with a visibility measuring device)			
Operating temperature	- 40 °C / + 50 °C			
Storage temperature	- 55 °C / + 55 °C			
Relative humidity	100%			
Duty cycle	100%			
Service life of light source	> 100 000 hrs @ 25 °C			
Material Lens	polymethyl methacrylate (PMMA), UV resistant			
Material Housing	sea water-resistant aluminium (anodised) and sea water-resistant stainless steel			
Type of connection	plug connection, Hummel M23			
Weight	8kg	15kg	15kg	15kg
Approvals	AVV	AVV	ICAO / AVV / FAA	ICAO / AVV / FAA
ICAO type	-	-	Medium Intensity, type B	Medium Intensity, type C

8/15kg

IP 68

Lens colour:

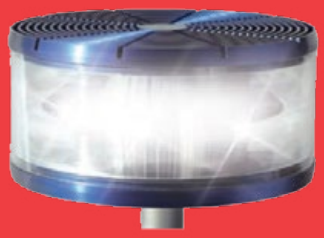
Light colour:

CE

LED (Combi) Obstruction Lights

POL 20.000-R/2.000R, POL 2.000/170W-R, POL 20.000/2.000W

LED hazard beacons for the night identification of aviation obstructions such as wind energy turbines and high buildings/structures.



PRODUCT INFORMATION | PRODUCT IMAGE | AVAILABLE COLOURS

Features

- Dimmable light intensity depending upon the visual range
- Integrated degradation and function monitoring of the LEDs
- Integrated lightning protection
- Passive cooling; No wearing parts requiring maintenance
- Extremely long useful life of more than 20 years (depending upon ambient temperature)
- Extreme vibration resistance due to LED technology
- Sea-water resistant housing material
- Mechanically compatible to combi lights
- Integrated flash synchronisation of several lights
- Integrated twilight switch for switching between day/night operation
- Integrated data logger for visibility adjustment

Electrical data		***POL 20.000/2.000R-C***	***POL 20.000/ 170W-RED-ES***	***POL 20.000/2.000R-B***	***POL 20.000/2.000W***
Rated voltage		24 V DC (15 – 30 V DC)			
Power Consumption	@100%	77 W / 35 W	77 W / 6 W	77 W / 11 W	77 W / 11 W

Mechanical Data		***POL 20.000/2.000R-C***	***POL 20.000/ 170W-RED-ES***	***POL 20.000/2.000R-B***	***POL 20.000/2.000W***
Operating mode		Blinking or continuous light	Blinking light		
Light source		24 LEDs (white) & 24 LEDs (red)	24 LEDs (white) & 144 LEDs (red)	24 LEDs (white) & 24 LEDs (red)	24 LEDs (white)
Blinking frequency		20/min. or 40/min. / steady	20/min. or 40/min. / 1 s ON - 0.5 s OFF - 1 s ON - 1.5 s OFF	20/min. or 40/min. / 20/min. or 40/min.	20/min. or 40/min. / 20/min. or 40/min.
Light intensity (DIN 5037)	Day identification	20 000 according to ICAO			
	Night identification	2000 cd according to AVV	170 cd according to AVV	2 000 cd according to ICAO	2 000 cd
Intensity control		30% / 10% (only in connection with a visibility measuring device)			
Operating temperature		- 40 °C / + 50 °C			
Storage temperature		- 55 °C / + 55 °C			
Relative humidity		100%			
Duty cycle		100%			
Service life of light source		> 100 000 hrs @ 25 °C			
Material Lens		polymethyl methacrylate (PMMA), UV resistant			
Material Housing		sea water-resistant aluminium (anodised) and sea water-resistant stainless steel			
Type of connection		plug connection, Hummel M23			
Approvals		AVV	AVV	ICAO / AVV / FAA	ICAO / AVV / FAA
ICAO type		Medium Intensity, type A&C	Medium Intensity, type A	Medium Intensity, type A&B	Medium Intensity, type A&A

15kg

IP 68

Lens colour:

Light colour:

CE

Power Supply / Battery Backup

Technical Data	*Power Supply / Battery Backup*					
	Night	**Night-MINI**	**Day/Night**	**Day/Night - Plug**	**Day/Night - Plug/MAXI**	**Night-Tower Plug**
Input						
Rated Voltage	100 - 240 Vac	100 - 240 Vac	200 - 240 Vac	200 - 240 Vac	200 - 240 Vac	200 - 240 Vac
Rated Frequency	50/60 Hz	50/60 Hz	50/60 Hz	50/60 Hz	50/60 Hz	50/60 Hz
Rated current	1.4 A @ 230 V	1.4 A @ 230 V	1.4 A @ 230 V	1.4 A @ 230 V	1.4 A @ 230 V	1.4 A @ 230 V
Inrush current	45 A	45 A	14 A	14 A	14 A	45 A
Output						
Voltage	24 Vdc	24 Vdc	24 Vdc	24 Vdc	24 Vdc	24 Vdc
Max. current	22 A	10 A	2 x 22 A	40 A	40 A	4 x 350 mA
Capacity of the batteries	51 Ah	3.5 Ah	51 Ah	51 Ah	92 Ah	3.5 Ah
Operating temperature	- 15 °C / + 50 °C	- 10 °C / + 50 °C	- 15 °C / + 50 °C	- 15 °C / + 50 °C	- 15 °C / + 50 °C	- 10 °C / + 50 °C
Storage temperature	- 20 °C / + 65 °C	- 20 °C / + 65 °C	- 20 °C / + 65 °C	- 20 °C / + 65 °C	- 20 °C / + 65 °C	- 20 °C / + 65 °C
Dimensions (HxWxD)	540 x 500 x 225mm	340 x 380 x 210mm	540 x 500 x 225mm	540 x 500 x 225mm	540 x 500 x 225mm	340 x 380 x 210mm
Weight	50 kg	17 kg	50 kg	50 kg	90 kg	50 kg
Cable connection	open end cable	connector	open end cable	connector	connector	connector
	Back-up time (number of lights x time [h]) @ + 25 °C					
POL 170W-RED	2 x 40 h	2 x 2 h	2 x 40 h	2 x 35 h	-	-
POL 170W-RED-ES	2 x 95 h	2 x 5 h	2 x 95 h	2 x 75 h	-	-
POL 2000R-B	2 x 50 h	2 x 2.5 h	2 x 50 h	2 x 45 h	-	-
POL 2000R-C	-	-	2 x 17 h	2 x 14 h	2 x 25 h	-
POL 20.000/2.000W-A	-	-	2 x 8.5 h	2 x 7 h	2 x 13 h	-
POL 20.000/170W-RED-ES	-	-	2 x 8.5 h	2 x 7 h	2 x 13 h	-
POL 20.000/2.000R-B	-	-	2 x 8.5 h	2 x 7 h	2 x 13 h	-
POL 20.000/2.000R-C	-	-	2 x 8.5 h	2 x 7 h	2 x 13 h	-
POL 10	-	-	-	-	-	4 x 2.5 h
POL 10-H	-	-	-	-	-	4 x 2.5 h
POL 32	-	-	-	-	-	4 x 2 h
POL 32-H	-	-	-	-	-	4 x 2 h

Ordering details						
	Article numbers					
	Night	**Night-MINI**	**Day/Night**	**Day/Night - Plug**	**Day/Night - Plug/MAXI**	**Night-Tower Plug**
Rated Voltage	280 11 00 0 002	280 13 00 0 006	280 11 00 0 003	on request	on request	280 13 00 0 007

Features

- Complete solution for uninterrupted power supply of obstruction lights
- Plug&play solutions with integrated connectors available
- Several back-up times for all applications and countries
- Always integrated in a switch cabinet

Colour:

CE

Accessories
Visibility Sensor and assembly kits

Technical Data		*Visibility Sensor*
Rated Voltage	Electronics	12 / 50 Vdc
	Hood Heating	24 Vac/dc
Power Concumption	Incl. Window Heater	3 W @ 12 Vdc
	Incl. Hood Heater	65 W
Functional principle		Optical forward scattering
Relay contacts		3 pieces, programmable visibility alarm thresholds and delays can be configured, error message
Serial ports		RS-232, RS 485
Analog exit		0 -1 mA, 4 - 20 mA
Operating temperature		- 40 °C / + 60 °C
Relative humidity		0 - 100%
Dimensions (HxWxD)		199 x 695 x 404 mm

Visibility Sensor

Features
The visibility sensor identifies different precipitation types, such as rain, drizzle, leet, snow and other weather-related constraint factors such as fog, mist or haze caused by smoke and sand. It allows a reliable determination of visibility over a range from 10 to 20,000 meters and is designed for both onshore and offshore use.

3kg IP 66

Ordering details *Accessories*	*Article numbers*
Circular mounting base, aluminium (seawater-resistant)	On request
Waisted mounting base, aluminium (seawater-resistant)	
Square mounting base, aluminium (seawater-resistant)	
Mounting pillar, aluminium (seawater-resistant)	
Outrigger, aluminium, as support for lightning arrester	
Fixing screw set stainless steel (A4) natural	
Stainless steel cable ties, natural, for outdoor use, minimum retention force 670 N	
Cable ties, plastic for indoor installation	
Sturdy UV and weather-resistant cable, of various lengths, fi nished on the lamp side with a Hummel M23 stainless steel connector. The side opposite the cable can be customized freely	
Cable glands, fi ller plugs and sealing plugs	
Cable lugs / cable end ferrules for replacement sets	
Fuses for replacement sets	
Service terminals	
Lighting arrester for installation at the outrigger	
Visibility Sensor PWD 20W	280 13 00 0 001
Thermo-Reflector	280 13 00 0 004

Assembly Kits

Features
The range of accessories for Pfannenberg obstruction lights includes several assembly kits, where the extent and compilation of components vary depending on the respective installation tasks. In general, the Pfannenberg package for the provision of obstructions lights and their installation also includes the corresponding sets.

CE

LED ICAO
Heliport Identification Beacon

The PHB LED medium intensity identification beacon PATENT PENDING) is specified to mark the heliport or airport location. All castings are aluminum, all hardware is stainless steel and the lens is glass. There is no plastic. All exterior metal beacon parts are powdercoat painted aviation yellow for corrosion resistance that meets the US Military Standard Salt Fog Test conducted per MIL-STD-810E, Method 509,3, Procedure I.

PRODUCT INFORMATION

PRODUCT IMAGE

AVAILABLE COLOURS

LED ICAO Heliport Identification Beacon	
Voltage	220-240V, 50/60 Hz With Morse Code (ICAO) Flash Control (Standard flashing H) MT Marine Treatment (housing finish colour RAL 6003 - olive green)
Intensity	2,000 candelas
Wattage	70.2 watts Peak (AC & DC) 52,5 watts Average (AC & DC)
Volt-Amps	110.4 VA (120V AC only)
Input Range	93 to 144 volts (120V unit)
Effective range	100m @ 1KHz 176 to 264 volts (220V unit)
Dimensions	15 (381) x 1 (381) x 12 (304) H Inches (mm)
Mounting	4 Holes on 13,25-inch circle

Specification
The PHB POINTSPEC- series LED heliport identification beacon (PATENT PENDING) shall be listed Suitable for Use in Wet Locations to UL1 598A Marine Vessels, UL1 598 2nd Edition Luminaries; CSA C222 No.2500-04, 2nd Edition. Sealed to IP66 ingress protection.

The high intensity LED arrays shall be replaceable and fitted with plug-in connectors. All hardware shall be stainless steel. All exterior aluminum cast beacon parts shall be powdercoat painted aviation yellow for corrosion resistance that meets the US Military Standard Salt Fog Test conducted per MIL-STD-810E, Method 5093, Procedure I. The clear lens shall be made of strong soda-lime glass manufactured by Kopp Glass. There shall be no plastics used in the structural construction of the beacon.

Compliances
ETL Listed to UL 1 598 & UL 1598A Marine Vessels
ETL Listed to CSA C22.2 No.250.0-04 Canada
ETL Verified FAA L-864 to FAA Advisory Circular 150/5345-43F
Registered ISO 9001:2008
FAA Advisory Circular 150/5390-2 B, para. 21 0.f, 31 Oh, 41 Of.
ICAO Annex 14 Heliports, Volume II, para. 5.3.2. 1 to 5
ICAO Annex 14 Aerodromes, Volume I, para. 5.3.3.3 to 14
Army TM 5-811-5, para. 7-5b. Station Identification
Class I, Division 2, Groups A B C D, T6 (option—EX)
Class I, Zone 2, Groups IIA llB+H2 ilC, T6 (option —EX)
American Bureau of Shipping (ABS) Type Approved Product

Features
- Over voltage & over current protection
- Short circuit & open circuit protection
- Metal oxide varistor surge protection
- No external plastic parts
- Modular components for servicing
- Replaceable LED array sections (5)

18.6kg | IP 66 | ± 55°C

Lens colour:

Housing colour:

CE

PSL-AX

Helideck Status Light System

The status light system consists of one or two flashing red LED main status lights visible from any direction of approach and on any landing heading. Additional PRL-AX-LSM repeater lights may be placed at the helideck. If a condition exists on an installation which may be hazardous for the helicopter or its occupants a visual warning system should be installed. The aeronautical meaning of the flashing red light is either *Do not land, aerodrome not available for landing* or *Move clear of landing area*. The system may be automatically initiated by means of a remote alarm signal (by others) as well as manual activation. All castings are aluminium, all hardware is stainless steel and the lens is glass.

PRODUCT INFORMATION | PRODUCT IMAGE | AVAILABLE COLOURS

Specification

The LED red status light system shall comply with UK CAA CAP 437. All exterior aluminium cast beacon parts shall be corrision resistant. The repeater lights shall be treated for marine conditions by cleaning per US MIL method III of TT-C-490, chromate priming per US MIL-C-5541, epoxy powder base coat and glossy polyester powdercoat finish coat in color RAL 6003 (FED-STD-595 color #14097). Oven cured per US MIL-PRF-24712A. There shall be no exterior plastic parts; all shall be cast aluminium, glass and stainless steel.

The main status lights shall flash in sync if two or more are installed. For each main status light there shall also be installed a reduced intensity status light which will similarly synchronize flashing when in use. Additional repeater lights may be installed at the landing area and shall not exceed 150mm in height. The repeater lights shall be at the reduced intensity level.

The system may be switched ON by a remote signal or manually. When ON, the system may be manually switched to reduced intensity. After 30 minutes, the system will automatically revert to normal intensity. Failure of any light will display as an alarm at the controller.

System	Color	Voltage	Main Lights	ATEX	Options
PSL-35002	R: Red	1: 120 volts	1B: One (1)	AX: Zone 1 & Zone 2	1R: One (1) Repeater Light
		2: 220 volts	2B: Two (2)	AX2: **	2R: Two (2) Repeater Lights
		4: 24 volts DC			LTP: Lamp Test Pushbutton
					ROS: Remote Operating Station*
					ROSAX: as above for Zone 1
** System - AX has zone 1 lights only with safe area control unit. System - AX2 has zone 1 lights and zone 1 control unit.					

Technical information	
Intensity: Main status light	< 700 candelas
Flash rate: Main status light	120 per minute
Intensity: Reduced intensity light	< 60 candelas
Flash rate: Reduced intensity light	120 per minute
Wattage per Main status light	110 watts Peak (AC & DC) 82.5 watts Average (AC & DC)
Frequency (AC)	50/60 Hz
Input Voltage Range*	93 to 144 volts (120V unit) 187 to 264 volts (220V unit) 21.6 to 26.4 Vdc (24V unit)
*Note: Input to the control unit; output to the lights is 24V.	

Options - ROS and - ROSAX (Remote Override Station)

Provided for emergency remote manual operation of the status light system. When ordered, this station uses line voltage and connects to the "RTO" terminal block in the PSL system control unit. For a third party detection system intended to automatically activate the PSL system, the detection system control wire must provide line voltage matching the PSL to the ROS. The ROS switch will normally be set in the AUTO position, but may be manually switched ON.

Note: For PSL systems without the ROS option, the third party detection system control wire connects directly to the "RTO" terminal block in the PSL system control unit.

Compliances
Listed to ATEX Zones 1 & 2 at -52°C to +60°C Listed by Ineris EXII 2 GD Ex de IIC T4 IP66 UK CAA CAP 437 Offshore Helideck Status Light System Registered ISO 9001:2008 IMO 2009 MODU Code (2010) paragraph 13.5.26 ABS Green Passport per MEPC179 (59)

IP 66

-52°C / +60°C

Lens colour:

Housing colour:

PRL-AX-LSM LED V4

Point Helideck Lights

The PRL-AX-LSM is an 8-inch diameter surface mounted light *less than 6-inches high* used for metal helidecks or existing pavement heliports on the FATO perimeter. Standard with our marine treatment finish and internal & external ground lugs. Suitable for use for all gas groups in Zone 1 and Zone 2 areas.

PRODUCT INFORMATION

PRODUCT IMAGE

AVAILABLE COLOURS

Point type	Voltage	Array	Color	ATEX	Mounting	Options
PRL-97004	1: 120V	H: Helidecks	G: Green	AX: Zone 1	LSM: Low surface mount	M20: Metric M20
	2: 220V	C: CAP 437	Y: Yellow	AX: Zone 2		M25: Metric M25
	3: 12v DC	N: NVG*	W: White			NC: Night Vision NVG Compatibility*
	4: 24V DC		B: Blue			
			R: Red			
			IR: Infrared NVG			

Note: Array H brightness exceeds ICAO Annex 14
*For NVG tactical use only: PRL-97704-1N-IR-LSM-MT
**For use with visible (non-IR) array; adds IR LEDs.

The PRL v4 H array is 4.5 watts at 120-220V
The PRL v4 C array is 7.4 watts at 120-220V

Power consumption					
Code	Type	Voltage	Frequency	Watts*	VA*
-1H	Array H	120 AC	50/60Hz	4.5	5.24
-2H	Array H	220 AC	50/60Hz	4.5	5.47
-3H	Array H	12 DC	---	4.0	---
-4H	Array H	24 DC	---	4.0	---
-1C	Array C	120 AC	50/60HZ	7.4	8.4
-2C	Array C	220 AC	50/60Hz	7.4	8.0
-3C	Array C	12 DC	---	6.2	---
-4C	Array C	24 DC	---	6.0	---

* Power consumption for AC units includes the effect of the unit's power factor which accounts for the difference between watts and volt-amperes. Measurements were made at the nominal AC voltages. The operating range for 120v units is 93 - 144v. The operating range for 220v units is 176 - 250v.

Technical information	
Instruction Sheet	IS97004-AX-LSM
LED Life (hours)	100.000
Housing Dia	8.0 (203)
Height	5.75 (146)
Bolt Circle (4)	9.75 (248)
Bolt Hole diameter	0.406-inch 10.3 mm

Compliances

EX II 2 G Ex e mb IIC T5 Gb
Notified Body: 0518 Sira Testing & Certification Ltd.
UK CAA CAP 437
Registered ISO 9001:2008
American Bureau of Shipping (ABS) Type Approved Product
ABS Green Passport per MEPC179 (59)
IMO 2009 MODU Code (2010) paragraph 13.5.20
Transport Canada TP14371, AGA 7.17
FAA AC 150/5390-2B Heliport Design Guide
ICAO Annex 14, Volume II

Lens colour:

Housing colour:

5.5kg | IP 66 | ± 55°C

PRL-AX LED v4

Point Rollover Lights

The PRL-AX LED Point Rollover Light is a 12-inch diameter semiflush light used for metal helidecks on the TLOF and/or the FATO perimeter used for ATEX Zone 1 & 2 helideck TLOF and FATO applications. The PRL may be dropped into a hole cut in the metal deck and secured with six screws on a 10-¼ inch bolt circle. The thick glass dome lens passed the impact test per IEC 60079-0:2007.The lens and optical assembly are sealed mechanically. Standard with our marine treatment finish and internal & external ground lugs on the PLB base. Standard with 2 x 1-inch NPT at entries 0 & 180-degrees. Suitable for use for all gas groups in Zone 1 and Zone 2 areas. Note: Minimum opening in the helideck is 207mm per side square opening or minimum 222mm diameter round opening.

PRODUCT INFORMATION

PRODUCT IMAGE

AVAILABLE COLOURS

Point type	Voltage	Array	Color	ATEX	Mounting	Options
PRL-97704	1: 120V	H: Helidecks	G: Green	AX: Zone 1	PLB: Base 254mm	M20: Metric M20
	2: 220V	C: CAP 437	Y: Yellow	AX: Zone 2	PLS: Base 102mm (Base depth)	M25: Metric M25
	3: 12v DC		W: White			NC: NVG* Compatibility
	4: 24V DC		B: Blue			MTY: MT Yellow
			R: Red			MTW: White

Note: Array H brightness exceeds ICAO Annex 14
*For use with visible (non-IR) array; adds IR LEDs.

The PRL v4 H array is 4.5 watts at 120-220V
The PRL v4 C array is 7.4 watts at 120-220V
The green Marine Treatment finish is standard

Power consumption

Code	Type	Voltage	Frequency	Watts*	VA*
-1H	Array H	120 AC	50/60Hz	4.5	5.24
-2H	Array H	220 AC	50/60Hz	4.5	5.47
-3H	Array H	12 DC	---	4.0	---
-4H	Array H	24 DC	---	4.0	---
-1C	Array C	120 AC	50/60HZ	7.4	8.4
-2C	Array C	220 AC	50/60Hz	7.4	8.0
-3C	Array C	12 DC	---	6.2	---
-4C	Array C	24 DC	---	6.0	---

* Power consumption for AC units includes the effect of the unit's power factor which accounts for the difference between watts and volt-amperes. Measurements were made at the nominal AC voltages. The operating range for 120v units is 93 -144v. The operating range for 220v units is 176 - 250v.

Technical information	
Instruction Sheet	IS97704-AX-LSM
LED Life (hours)	100.000
Projection (Above Deck)	1.63 (41)
Base Diameter	8.0 (203)
PLB Depth	10.0 (254)
PLS Depth	4.0 (102)
Volume	.013m

Compliances

EX II 2 G Ex e mb IIC T5 Gb
Notified Body: 0518 Sira Testing & Certification Ltd.
UK CAA CAP 437
Registered ISO 9001:2008
American Bureau of Shipping (ABS) Type Approved Product
IMO 2009 MODU Code (2010) paragraph 13.5.20
FAA AC 150/5390-2B Heliport Design Guide
ICAO Annex 14, Volume II

7.7kg | IP 66 | ±55°C

Lens colour:

Housing colour:

PRL-AX-SR LED v4

Point Rollover Lights

The PRL-AX-SR LED Point Rollover Lights is a semiflush light used for metal helidecks on the TLOF and/or the FATO perimeter used for ATEX Zone 1 & 2 helideck TLOF and FATO applications. The PRL may be dropped into a hole cut in the metal deck and secured with four screws. The thick glass dome lens passed the impact test per IEC 60079-0:2007. The lens and optical assembly are sealed mechanically. Standard with our marine treatment. The seating ring mounting flange and all external hardware is grade 316 (A4) stainless steel.

PRODUCT INFORMATION

PRODUCT IMAGE

AVAILABLE COLOURS

Point type	Voltage	Array	Color	ATEX	Mounting	Options
PRL-97704	1: 120V	H: Heliport	G: Green	AX: Zone 1	SR: Seating Ring	PLS: Base 4-inch
	2: 220V	C: CAP 437	Y: Yellow	AX: Zone 2	Stainless steel	PLB: Detail h51*
	3: 12v DC		W: White			NC: NVG** Compatibility
	4: 24V DC		B: Blue			MTY: MT Yellow
			R: Red			MTW: MT White

Note: Array H brightness exceeds ICAO Annex 14
**For use with visible (non-IR) array; adds IR LEDs.

The PRL v4 H array is 4.5 watts at 120-220V
The PRL v4 C array is 7.4 watts at 120-220V
The green Marine Treatment finish is standard

Power consumption					
Code	Type	Voltage	Frequency	Watts*	VA*
-1H	Array H	120 AC	50/60Hz	4.5	5.24
-2H	Array H	220 AC	50/60Hz	4.5	5.47
-3H	Array H	12 DC	---	4.0	---
-4H	Array H	24 DC	---	4.0	---
-1C	Array C	120 AC	50/60HZ	7.4	8.4
-2C	Array C	220 AC	50/60Hz	7.4	8.0
-3C	Array C	12 DC	---	6.2	---
-4C	Array C	24 DC	---	6.0	---

* Power consumption for AC units includes the effect of the unit's power factor which accounts for the difference between watts and volt-amperes. Measurements were made at the nominal AC voltages. The operating range for 120v units is 93 -144v. The operating range for 220v units is 176 - 250v.

Technical information	
Instruction Sheet	IS97004-AX-SR
LED Life (hours)	100.000
Projection (Above Deck)	0.944 (24)

Compliances

EX II 2 G Ex e mb IIC T5 Gb
Notified Body: 0518 Sira Testing & Certification Ltd.
UK CAA CAP 437
Registered ISO 9001:2008
American Bureau of Shipping (ABS) Type Approved Product
IMO 2009 MODU Code (2010) paragraph 13.5.20
Mechanical Load Tested by Intertek to CAP 437 para. 4.2.3 & 5.2.3
ICAO Annex 14, Volume II

9.1kg / 10.4kg

IP 66

±55°C

Lens colour:

Housing colour:

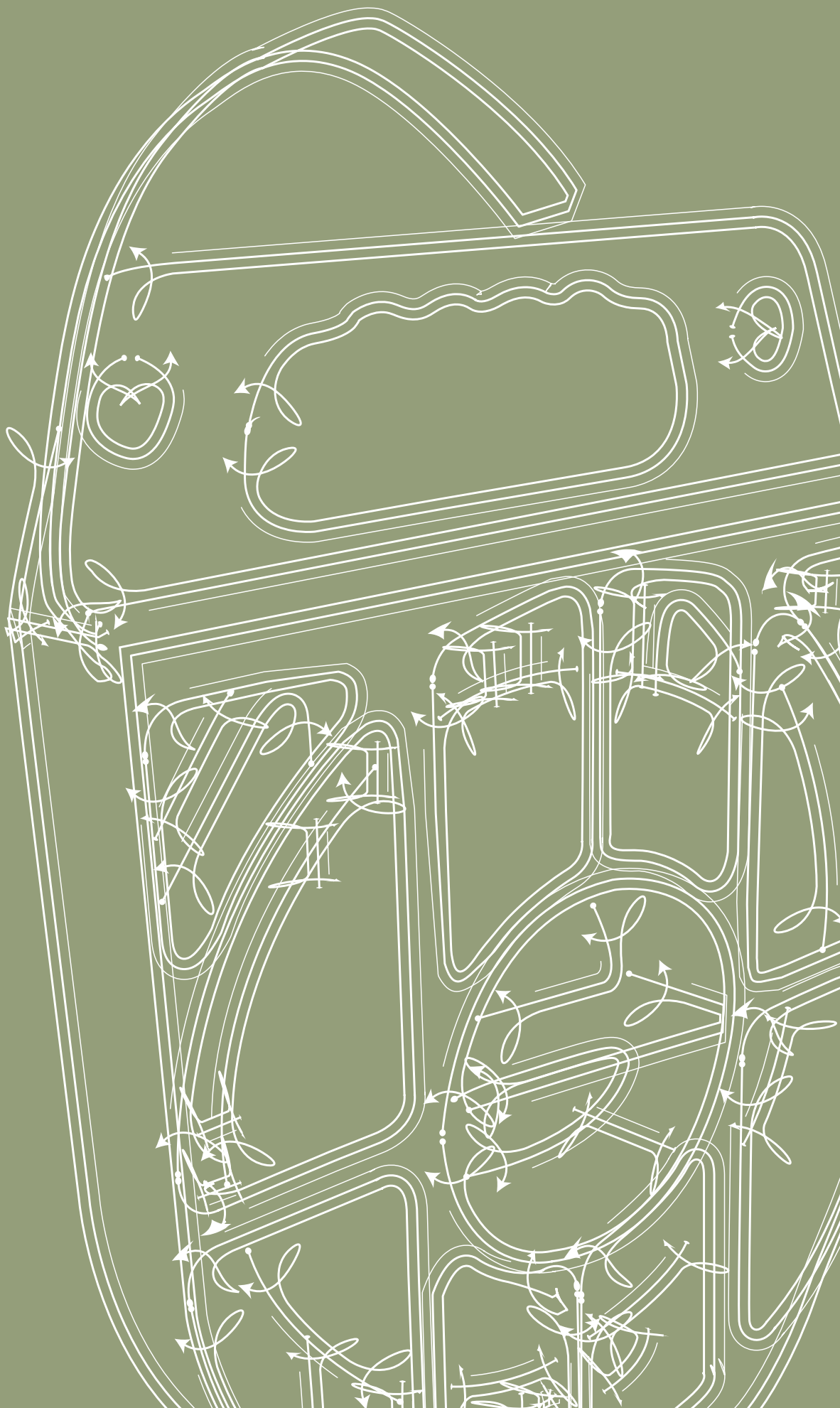
STRAPPING & BUNDLING

STRAPPING & BUNDLING

Established in 1937, BAND-IT® is a global manufacturer of stainless steel band clamping products & identification systems. Using simple application tools, versatile stainless steel band clamps have hundreds of applications including cable bundling, hose clamping, sign mounting, and many more.

With superior strength, corrosion and heat resistance, BAND-IT® stainless steel products are ideally suited to the harshest of environments experienced in markets such as Shipbuilding, Petrochemical, Mining, Power Generation, Food & Agriculture, Automotive, and Aerospace.

As well as its original coil band products, BAND-IT® has developed a range of pre-cut BAND-FAST™ Clamps, Preformed Clamps, Cable Tie & Identification products making installation even quicker and easier for the end user.



Polyamide Cable Ties

Our Cable ties are made exclusively of polyamide 6.6 so that they do not cause issues of material separation during recycling or interferences in electronic equipment.

PRODUCT INFORMATION

PRODUCT IMAGE

Technical information	
Humidity absorption	2,7% (50% relative humidity)
Working temperature	-40°C +85°C
Tightening temperature	-10°C +60°C
Max admissible point	+110°C for short time
Melting temperature	+256°C
Limit Oxygen Index	27%
Flammability rating	UL 94 class V2
Dielectric strength	50.000 volts/mm

According to EN 50 146

Also available:

- *ID cable ties*
- *Releasable cable ties*
- *Push mount cable ties*
- *Cable ties with mounting hole*
- *Cable tray Ties*
- *Big variety of mounting bases etc.*
- *Identification plate bases*

Dimensions					
Code Natural / Black	*Dimensions (mm)*	*Code Natural / Black*	*Dimensions (mm)*	*Code Natural / Black*	*Dimensions (mm)*
5201 / 5301	2,2*75	5217 / 5317	4,8*290	5237 / 5337	12,5*500
5203 / 5302	2,5*98	5218 / 5318	4,8*390	5239 / 5339	12,5*720
5205 / 5305	2,5*135	5219 / 5319	4,8*360	5241 / 5341	12,5*850
5206 / 5306	2,6*160	5220 / 5320	4,8*430	5243 / 5343	12,5*1000
5207 / 5307	2,6*200	5221 / 5321	7,8*120	-	-
5208 / 5308	3,6*370	5223 / 5323	7,8*180	-	-
5209 / 5309	3,6*140	5225 / 5325	7,8*240	-	-
5210 / 5310	3,6*290	5226 / 5326	7,8*300	-	-
5211 / 5311	4,5*160	5227 / 5327	7,8*365	-	-
5212 / 5312	4,5*120	5229 / 5329	7,8*450	-	-
5213 / 5313	48*178	5231 / 5331	7,8*540	-	-
5214 / 5314	3,6*200	5233 / 5333	7,8*750	-	-
5215 / 5315	4,8*200	5234 / 5334	9,0*780	-	-
5216 / 5316	4,8*250	5235 / 5335	12,5*225	-	-

CE

Ball-lock Ties SS316

Uncoated

Our Ball-lock ties are available in both SS304 and SS316. Self-locking ties ensuring quick installation by hand, or with tensioning tools.

PRODUCT INFORMATION

PRODUCT IMAGE

Technical information	
Maximum Operating Temperature	300°C
Minimum Loop Tensile Strength 4,6mm	200 lbs. (890N)
Minimum Loop Tensile Strength 7,9mm	300 lbs. (1334N)

Also available:

- *Re-usable stainless steel cable ties*
- *Multi-lock ladder ties*
- *ID ties with low profile*
- *Variety of ID tag systems*

Dimensions			
Code	***Dimensions (mm)***	***Code***	***Dimensions (mm)***
XE0118	150 x 4,6	XE0328	200 x 7,9
XE0128	200 x 4,6	XE0338	260 x 7,9
XE0138	260 x 4,6	XE0348	360 x 7,9
XE0148	360 x 4,6	XE0358	520 x 7,6
XE0158	520 x 4,6	XE0368	620 x 7,9
XE0168	620 x 4,6	XE0378	840 x 7,9
XE0178	840 x 4,6	XE0388	1000 x 7,9
XE0188	1000 x 4,6	-	-

Ball-Lok™ stainless steel cable ties are ideal for securing small cables and attaching identification tags.

- *Self locking design*
- *Easy and quick to install by hand or using simple application tools*
- *4.6mm and 7.9mm widths*
- *304 or 316 stainless steel to suit corrosive environments*
- *Epoxy coated 316ss also available for extra corrosion resistance and protection to cable*
- *Resistant to extreme temperatures*

CE

Ball-lock Ties SS316 PP
Coated

Our coated Ball-lock ties are available in SS316 and are Fully Epoxy coated making them resistant to stress cracking, adverse weather conditions, detergents, salt spray and typical airbourne pollutants.

Self-locking ties ensuring quick installation by hand, or with tensioning tools.

PRODUCT INFORMATION

PRODUCT IMAGE

Technical information	
Maximum Operating Temperature	149°C
Minimum Loop Tensile Strength 4,6mm	150 lbs. (668N)
Minimum Loop Tensile Strength 7,9mm	175 lbs. (779N)

Also available:
- *Re-usable stainless steel cable ties*
- *Multi-lock ladder ties*
- *ID ties with low profile*
- *Variety of ID tag systems*

Dimensions			
Code	***Dimensions (mm)***	***Code***	***Dimensions (mm)***
XE0218	150 x 4,6	XE0418	150 x 7,9
XE0228	200 x 4,6	XE0428	200 x 7,9
XE0238	260 x 4,6	XE0438	260 x 7,9
XE0248	360 x 4,6	XE0448	360 x 7,9
XE0258	520 x 4,6	XE0458	520 x 7,9
XE0268	620 x 4,6	XE0468	620 x 7,9
XE0278	840 x 4,6	XE0478	840 x 7,9

Ball-Lok™ stainless steel cable ties are ideal for securing small cables and attaching identification tags.
- *Self locking design*
- *Easy and quick to install by hand or using simple application tools*
- *4.6mm and 7.9mm widths*
- *304 or 316 stainless steel to suit corrosive environments*
- *Epoxy coated 316ss also available for extra corrosion resistance and protection to cable*
- *Resistant to extreme temperatures*

CE

Bands & Buckles

BAND-IT® Band is the industry standard in stainless steel banding. BAND-IT® Band offers high strength fastening and clamping and can be formed to any diameter and shape.

Strong and flexible band on rolls either uncoated or PPA Coated, low Smoke, flame retardant Stainless Steel Band on coil, in handy plastic dispenser, and SS 316 uncoated Buckels.

PRODUCT INFORMATION

PRODUCT IMAGE

Dimensions	
Dimensions (mm)	**Dimensions (in.)**
6,35	¼
9,53	3/8
12,7	½
16	5/8
19	¾
26	1

Also available:

- *Re-usable Screw buckles*
- *Ear wing buckles*
- *All-purpose bands*
- *ID ties with low profile*
- *Variety of ID tag systems*
- *Variety of tensioning tools*

BAND-IT® Band & Buckle is a versatile stainless steel banding system which can be used for many applications. Supplied in coil form with boxes of separate buckles, the user can cut the band to the required length in order to produce the correct size clamp for their application. Most Band & Buckle products can be double wrapped for extra strength.

- *201 / 304 / 316 grade stainless steel versions available. (Other alloy material grades also available for extreme corrosion resistance).*
- *Various widths and thicknesses available*
- *Coiled band can be supplied in cardboard dispensers or plastic totes*
- *Low cost, easy to use application tools*

CE

PPA Coated BAND-FAST™ Clamps

The low cost alternative to cable cleats

PPA Coated BAND-FAST™ Clamps are a low cost alternative to heavy and expensive Cable Cleats.

PRODUCT INFORMATION

PRODUCT IMAGE

Features:

- *Low profile finish*
- *316 grade stainless (0.4mm band thickness) with PPA 571 Coating for excellent protection to cables*
- *Double wrap version (with 201ss clip) available for superior strength*
- *Quick and easy to install using C075 Bantam Tool*
- *No accessories required*
- *Light weight, easy to handle and transport around site*
- *One size fits all = less inventory*
- *Tested for short circuit capability*
- *PPA 571 coating (0.4mm coating thickness)*
- *Zero halogen, low smoke & fume*
- *DNV and GL Type Approved Materials*
- *Logistical and handling benefits (easier to move around site in bulk)*
- *Standard width 5/8" (15.88mm) - other widths available*
- *Standard colour black (other colours available upon request)*
- *Captive sealing clip*
- *Fully rounded edges*
- *Round profile on end of band*
- *DNV and GL Type Approved Materials*
- *Logistical and handling benefits (easier to move around site in bulk)*
- *Standard width 5/8" (15.88mm) - other widths available*
- *Standard colour black (other colours available upon request)*
- *Captive sealing clip*
- *Fully rounded edges*
- *Round profile on end of band*
- *Low profile finish*
- *316 grade stainless (0.4mm band thickness) with PPA 571 Coating for excellent protection to cables*
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- *Tested for short circuit capability*
- *PPA 571 coating (0.4mm coating thickness)*
- *Zero halogen, low smoke & fume*
- *DNV and GL Type Approved Materials*
- *Logistical and handling benefits (easier to move around site in bulk)*
- *Standard width 5/8" (15.88mm) - other widths available*
- *Standard colour black (other colours available upon request)*
- *Captive sealing clip*
- *Fully rounded edges*
- *Round profile on end of band*
- *Reduced inventory - one size fits all*
- *No accessories required (fixing, liners, packers, studding, etc)*
- *Accomodates variations in cable diameter*
- *Reduced environmental impact during manufacture / transportation / decommissioning*
- *50% Labour saving versus cleats*
- *Independently tested for shock and short circuit*

Part number	Width	Length	Max bundle dia	Single / Double wrap	Pack Q'ty piece	Weight per piece (kg)
LFAC-F1015M030-A900	-	300mm	40mm	Single	100	0.025
LFAC-F1015M040-A900	-	400mm	75mm	Single	100	0.030
LFAC-F1015M050-A900	-	500mm	100mm	Single	100	0.038
LFAC-F1015M060-A900	-	600mm	130mm	Single	100	0.045
LFAC-F1015M040-A900	5/8"	400mm	40mm	Double	100	0.030
LFFC-F1015M050-A900	(15.88mm)	500mm	55mm	Double	100	0.038
LFFC-F1015M060-A900	-	600mm	70mm	Double	100	0.045
LFFC-F1015M070-A900	-	700mm	85mm	Double	100	0.052
LFFC-F1015M080-A900	-	800mm	100mm	Double	100	0.060
LFFC-F1015M100-A900	-	1000mm	130mm	Double	100	0.075
Ref C075 Bantam Tool for application of all PPA Coated Band-Fast™ Clamps						1.040

Other sizes available upon request

Multi-Lok™ Ties

Multi-Lok™ Ties are a high strength stainless steel cable tie with multiple locking teeth for securing cables in the harshest of environments.

PRODUCT INFORMATION

PRODUCT IMAGE

Features:

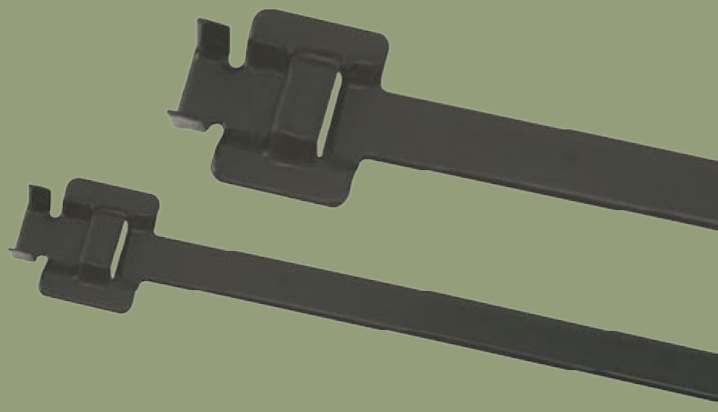
- *Self Locking*
- *Flame retardant*
- *U.V. and corrosion resistant*
- *Applied by hand or M503, KE922, AE200 and AE201 tools*
- *Coated in Nylon 11 For greater corrosion resistance*
- *Excellent minimum loop tensile strength. In excess of 890N (7mm wide) and 1112N (12mm wide) for both coated and uncoated versions*
- *Multiple teeth in buckle provide high strength lock*
- *Easy and quick to install by hand or using simple application tools*
- *316 stainless steel to suit corrosive environments*
- *Low Smoke Zero Halogen Nylon 11 coating provides extra corrosion resistance and protection to cable*
- *Resistant to extreme temperatures*
- *Ideal for areas of high vibration*

Multi-Lok Ties Coated (Type 316 Stainless Steel Coated with Nylon 11)								
Cat. no	*Maximum bundle Dia*		*Width*		*Length*		*Weight*	
	In.	*mm*	*In.*	*mm*	*In.*	*mm*	*Lbs.*	*Kg*
AE611	1.9	48	0.28	7	6	150	0.66	0.30
AE612	2.8	71	0.28	7	9	225	0.99	0.45
AE613	3.8	96	0.28	7	12	300	1.32	0.60
AE614	5.7	144	0.28	7	18	450	1.76	0.80
AE615	7.6	193	0.28	7	24	610	2.64	1.20
AE711	1.9	48	0.47	12	6	150	1.10	0.50
AE712	2.8	71	0.47	12	9	225	1.65	0.75
AE713	3.8	96	0.47	12	12	300	2.20	1.00
AE714	5.7	144	0.47	12	18	450	2.97	1.35
AE715	7.6	193	0.47	12	24	610	4.29	1.95

Multi-Lok Ties Uncoated (Type 316 Stainless Steel Uncoated)								
Cat. no	*Maximum bundle Dia*		*Width*		*Length*		*Weight*	
	In.	*mm*	*In.*	*mm*	*In.*	*mm*	*Lbs.*	*Kg*
AE601	1.9	48	0.28	7	6	150	0.66	0.30
AE602	2.8	71	0.28	7	9	225	0.81	0.45
AE603	3.8	96	0.28	7	12	300	1.21	0.55
AE604	5.7	144	0.28	7	18	450	1.98	0.90
AE605	7.6	193	0.28	7	24	610	2.64	1.20
AE701	1.9	48	0.47	12	6	150	1.10	0.50
AE702	2.8	71	0.47	12	9	225	1.65	0.75
AE703	3.8	96	0.47	12	12	300	2.20	1.00
AE704	5.7	144	0.47	12	18	450	3.19	1.45
AE705	7.6	193	0.47	12	24	610	4.29	1.95

PPA Coated BAND-IT Reusable Cable Ties

PPA Coated BAND-IT® Cable Ties are a reusable tie with a secure fold-over lock. With a thick PPA 571 coating for superior cable protection, they are ideally suited to the most harsh and hazardous environments



PRODUCT INFORMATION

PRODUCT IMAGE

BAND-IT cable Ties - AA and AE series
BAND-IT® Ties have been developed for use in applications where long-term corrosion protection is a must! Both styles of stainless steel cable ties can be reused unlike traditional nylon cable ties, which become brittle, crack and often fall off due to UV breakdown, harsh chemicals and extreme temperatures.

Features:
The BAND-IT Cable Tie - AE Series
- *Constructed of 316 Stainless Steel with PPA571 coating*
- *PPA 571 is resistant to stress cracking, adverse weather conditions, detergents, salt spray and typical airbourne pollutants*
- *One-piece construction with unique buckle designs capable of double wrapping for special strength requirements and reliable installation*
- *DNV Approved*

Product Benefits
- *Quick and easy application*
- *Durable, can be unfastened and reused again and again without breaking*
- *Nontoxic and flameproof with low smoke*
- *Secure installation and strong enough to resist vibration*
- *Applied without tools*
- *Nonconductive cable tie coating*
- *High resistance to corrosion; sand, salt, acids, temperatures and chemicals*
- *Flexible even at low temperatures*
- *Long life expectancy*

Tools
- *C075*
- *AE200*
- *AE201*

Easy Read products

Easy Read™ Stainless Steel identification system comprises individual stainless steel characters which can be slid onto carriers or cable ties to make ID tags on site.

PRODUCT INFORMATION

PRODUCT IMAGE

Easy Read Characters (Type 316 Stainless Steel)			
Cat. no	Description/Order No.	Weight	
		Lbs.	Kg.
AE010	EASY A	0.31	0.14
AE011	EASY B	0.31	0.14
AE012	EASY C	0.31	0.14
AE013	EASY D	0.31	0.14
AE014	EASY E	0.31	0.14
AE015	EASY F	0.31	0.14
AE016	EASY G	0.31	0.14
AE017	EASY H	0.31	0.14
AE018	EASY I	0.31	0.14
AE019	EASY J	0.31	0.14
AE020	EASY K	0.31	0.14
AE021	EASY L	0.31	0.14
AE022	EASY M	0.31	0.14
AE023	EASY N	0.31	0.14
AE024	EASY O	0.31	0.14
AE025	EASY P	0.31	0.14
AE026	EASY Q	0.31	0.14
AE027	EASY R	0.31	0.14
AE028	EASY S	0.31	0.14
AE029	EASY T	0.31	0.14
AE030	EASY U	0.31	0.14
AE031	EASY V	0.31	0.14
AE022	EASY W	0.31	0.14
AE032	EASY X	0.31	0.14
AE033	EASY Y	0.31	0.14
AE034	EASY Z	0.31	0.14
AE018	EASY 1	0.31	0.14
AE037	EASY 2	0.31	0.14
AE038	EASY 3	0.31	0.14
AE039	EASY 4	0.31	0.14
AE040	EASY 5	0.31	0.14
AE041	EASY 6	0.31	0.14
AE021	EASY 7	0.31	0.14
AE042	EASY 8	0.31	0.14
AE041	EASY 9	0.31	0.14
AE024	EASY 0	0.31	0.14
AE035	EASY MINUS/HYPHEN -	0.31	0.14
AE036	EASY BLANK	0.31	0.14
AE046	EASY PLUS +	0.31	0.14
AE047	EASY EARTH	0.31	0.14
AE048	EASY SINE	0.31	0.14
AE049	EASY SLASH/	0.31	0.14
AE053	EASY ARROW	0.31	0.14

Easy Read Carriers							
Cat. no	Description/Order No.	Width		Length		Weight	
		In.	mm	In.	mm	Lbs.	Kg
AE043	EASY CARRIER 6	0.38	9.7	3.64	92.5	0.73	0.33
AE044	EASY CARRIER 10	0.38	9.7	5.14	130.6	1.25	0.56
AE045	EASY CARRIER 16	0.38	9.7	7.39	187.7	1.47	0.66
AE050	EASY STRIP Short	0.38	9.7	4.25	108.0	0.98	0.44
AE051	EASY STRIP Medium	0.38	9.7	5.75	146.0	1.33	0.60
AE052	EASY STRIP Long	0.38	9.7	8.00	203.2	1.85	0.83

Easy Read Kit			
Cat. no	Description/Order No.	Weight	
		Lbs.	Kg
AE060	EASY READ Kit - Contains 50 of each character/carrier/strip	5.60	2.54

Features:

- *316 stainless steel characters and carriers for the harshest environments*
- *Carriers coated in black Low Smoke Zero Halogen Nylon 11 for excellent character definition*
- *Easy to read in low light and from distance*
- *No sharp edges*
- *Quick and easy to install using Ball-Lok / Tie-Lok / Multi-Lok ties up to 7.9mm wide*
- *Characters can also be applied directly on to 9.53mm wide PPA Coated band / Cable Ties*
- *Easy Read Kit available with 50x each character / carrier in handy carry case*

CE

PRODUCT INFORMATION

PRODUCT IMAGE

All Purpose Band
All Purpose Band is a general purpose fixing band used to secure cables or pipes to cable tray / walls etc.

Features:
- *12, 17 or 26mm widths*
- *10m or 25m coils*
- *Galvanized Carbon Steel or 316 stainless steel*
- *Uncoated or PPA Coated for extra corrosion resistance & protection to cables*
- *Secure using standard fixings (nuts & bolts or screws)*
- *Easy to form around any section*
- *Flame retardant Low Smoke PPA coating*
- *Thick coating - kind to hands / cable*
- *Simple fastening with nuts, bolts, screws*

CE

C075 Bantam Tool
BAND-IT® Bantam tool is a compact, lightweight, ratchet action tool with built in cutter.

Features:
- *3 way handle adjusts for one or two-handed tensioning*
- *Zinc plated for corrosion resistance*
- *Useful in tight areas with minimal access*
- *Designed for easy loading and removing of material*

For use with PPA coated band and uncoated stainless steel band up to 0.5mm thick.

CE

BAND-IT® Tool C00169
Standard BAND-IT® Banding Tool. For use on band widths of 3/16" to 3/4". Comes with a spin handle retaining ring to keep parts intact.

Features:
- *Tensions over 2,400 lbs of force and cuts off the tail of the clamp being formed*
- *Used to apply BAND-IT® Stainless Steel Band, Galvanized Carbon Steel Band, BAND-FAST®, general use band and miscellaneous strapping*
- *Drop forged tool with built in cutter*
- *Spring loaded gripper lever improves ease of use*
- *Blue epoxy powder coated finish resists corrosive element*

For bands and buckles.

CE

PRODUCT INFORMATION

PRODUCT IMAGE

RR-G01 Tensioning Tool
Tensioning tool with adjustable tensioning and automatic cut-off function.

Features:
- *Easy and quick installation*
- *pistol grip*
- *Grey epoxy powder coated finish resists corrosive element*
- *Useful in tight areas with minimal access*
- *Duplicate cable terminations (in & out for daisy-chain installations)*

For ball-lock ties.

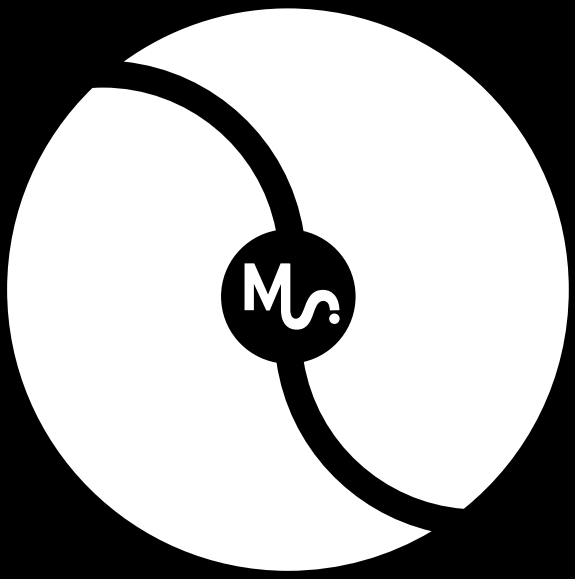
CE

KE922 Tensioning Tool
Manual Tension Tool with tail cut-off lever.

Features:
- *Tensions and cuts off Ties up to 12mm wide regardless of material or coating.*
- *Secures firm tightening at all time*
- *Manual cut-of lever*
- *Use with Ball-Lok or Multi-Lok ties*

CE

“Did you know that Marin Supply AS has been in the market for over 30 Years?”



Ex CABLEGLANDS & ACCESSORIES

Ex CABLEGLANDS & ACCESSORIES

What is a cable gland?
Standard Definition:
"A device designed to permit the entry of a cable into electrical equipment and which provides sealing and retention. It may also provide other functions such as earthing (or grounding), bonding, insulation, strain relief or a combination of these."

In addition to this a cable gland should maintain the overall integrity of the enclosure into which it is to be fitted.

Step 1 – What is the basic construction of the cable and how do we want to terminate it?
Unarmoured cables will require the outer sheath seal within the gland to not only provide ingress protection but also a degree of retention. Armoured cables require a gland that features a clamping mechanism to terminate the armour both mechanically and electrically. The gland will usually be required to provide ingress protection by sealing on the outer sheath and retention by clamping the armour. Typically, armoured cables feature an inner sheath that the gland may be required to seal on.

Step 2 - The correct gland size
The entry thread (i.e. M20) is not, as often perceived the gland size but simply the entry thread size and specification. It is important to understand that selection of the correct gland size is based solely on the cable dimensions:

- Outer Sheath Diameter
- and where applicable:
  Inner Sheath Diameter
- Armour / Braid Thickness

Step 3 – Maintaining the overall integrity of the installation
In order to maintain the overall integrity of the installation it is important to consider the equipment into which the cable is to be glanded and the surrounding environment. The areas to consider are:
Cable entry - Ingress Protection - Impact Resistance – Material - External Influences - Certification

Cable entry
Entry type and/or thread specification
Clearance holes - A locknut will be required to fix the gland securely within a clearance hole. The additional use of a serrated washer will provide a greater level of fixing security, this is definitely worth considering if the equipment is likely to be subject to vibration or severe temperature changes.

Threaded Entries
Glands can generally be supplied with a male thread to match the female entry thread. If this is not possible Thread Adaptors or Reducers can be used to match dissimilar threads. If the wall thickness will permit, the use of a locknut will provide additional security.

Ingress Protection
The gland selected should maintain the IP integrity of the enclosure. In order to maintain the required IP rating for different entry types the following sealing arrangements should be used:

Clearance Holes - Integral 'O' ring seal or nylon IP washer
Parallel Threaded Entries - Integral 'O' ring seal, IP washer or non-hardening thread sealant
Taper Threaded Entries - Non-hardening thread sealant

Impact Resistance
The gland selected should maintain the impact integrity of the enclosure. For hazardous location equipment the minimum impact resistance is usually 7Nm. Special care should be taken when selecting Nylon glands as these often have reduced impact capabilities.

Material
The gland should be manufactured from a material that is suitable for the surrounding environment and will not react adversely with the material of the enclosure into which it is installed. In particular it should be noted that Brass, the standard material for metallic glands, can react adversely with Aluminium as if moisture becomes present bi-metallic corrosion may occur. When using brass glands H2S, SO2 and ammonia are the most problematic environments. Nickel, tin or zinc plating can be applied to brass to both minimize the potential for bi-metallic corrosion and provide a degree of protection from the surrounding environment.

External Influences - Operating Temperature
The metallic body of the gland is suitable for operating temperatures from –100°C to +600°C The seal material is generally the limiting factor. Neoprene is suitable from –35°C to +90°C. Silicon is suitable for extended operating temperatures of –60°C to +180°C and should be used for low temperature applications as the seal performance can be maintained throughout the lifetime of the installation.

Earthing, Grounding, Continuity, Bonding or Insulation
The gland may be required to provide electrical functions in conjunction with its basic functions of sealing and retention. Earth tags can be used to provide an electrical connection point to earth the cable gland, and by extension the cable armour or screen where it has been terminated within the gland. Alternatively it may be a requirement to insulate the equipment enclosure from the cable armour. The most flexible and straightforward way of achieving this is to fit an Insulated Adaptor between the enclosure and the gland.

Ex Certification
When selecting Ex certified glands for use in Hazardous Locations it is important to ensure that the product selected not only performs the task required, i.e. terminating the cable, but must also maintain the overall integrity of the equipment into which it will be fitted. The following has been prepared to help gland selection. However, when selecting equipment for use in the hazardous areas the appropriate national or international standards or codes of practice must be considered.

Hazardous Location Requirements
Cable glands must maintain:
- The Method of Explosion Protection, Gas Group & Temperature Classification
- The Ingress Protection (min IP54, realistically IP 66 68)
- Impact Resistance (min 7Nm)

The Method of Explosion Protection
The cable gland must be certified to a suitable method of protection (preferably the same) and for use in the same gas group as the equipment into which it will be fitted. Flameproof Exd glands are suitable for use with both Flameproof and Increased Safety enclosures as the have met the requirements of both the standard for General Requirements within hazardous areas and the additional requirements of the Flameproof standard Increased Safety Exe glands are only suitable for Increased Safety applications but not Flameproof applications as they have met the standard for General Requirements within hazardous area but not the additional requirements of the Flameproof standards.

Gas Groups
Gas Group I – Atmospheres containing firedamp found in underground mines.
Gas Group II – All other potentially explosive atmospheres, group II is subdivided into 3 groups for Ex d & Ex ia:
- IIA – Typical gas propane
- IIB – Typical gas ethylene
- IIC – Typical gas acetylene or hydrogen

ATEX categories
Within Europe we now have the additional requirements of the ATEX Directive to consider, staying specifically with product selection this now adds the requirement to select a gland with a suitable category status for the equipment and installation.

Mining (M):	Category M1, M2
Surface gases (G):	Category 1G (Zone 0), 2G (Zone 1), 3G (Zone 2)
Dusts (D):	Category 1D (Zone 20), 2 D (Zone 21), 3D (Zone 22)

Temperature Classification
To ensure that the surface temperature of the equipment will not ignite gases or vapours in the surrounding atmosphere, the equipment will specify a 'T' rating based on the maximum surface temperature that can occur during its operation. As glands are passive and do not generate heat they have no effect on the equipment's 'T' rating and this need not be considered when selecting the gland.

Barrier glands
A barrier gland is an Ex d cable gland incorporating a compound filled chamber sealing around the individual cores of the cable to maintain the Flameproof integrity of the equipment into which it has been fitted. A barrier gland must be used where the standard method of glanding (elastomeric seals) an Ex cable entry is considered unlikely to maintain the integrity of Flameproof equipment and contain an explosion within the enclosure due either to:

- The construction of the cable and/or
- The magnitude of the potential explosion

Barrier Glands
Glands featuring elastomeric Flameproof seals are often used where barrier glands are required. Their specification and marking appear to confirm that the glands are suitable for use in ATEX categories 2G (Zones 1 & 2), gas group IIC and as passive components they have no temperature classification limitations. When the installation code covering electrical installations in hazardous areas IEC 60079-14 is considered it is clear that a more detailed examination of specific Flameproof applications must be made.

The Cable Construction
The first questions that must be asked are with regard to the construction of the cable:

- Is the cable substantially round and compact?
- Can the cable be deemed to be effectively filled?
- Is the cable effectively filled are the fillers non-hygroscopic?

If the answer to any of these questions is no, a barrier gland must be used. If the answer to all 3 questions is yes, the application must then be considered using the selection chart within IEC 60079-14.

The Cable Construction
Determining whether the cable is effectively filled can often be difficult as cable companies do not declare their cable's compliance and it is left to the specifying engineer to decide whether or not an explosion within the enclosure could be transmitted to the surrounding atmosphere through the cable.

Armour clamps
Armour clamps have traditionally been armour specific, which is to say that a gland would require a different armour cone/ring arrangement for each type of armour it could accommodate, this created many logistical problems. Peppers' solution has been the development of a "universal" armour clamp that caters for all armour types. We discovered that by extending the length of the cone and reducing the taper angle we could not only clamp all armour types without the need for a reversible ring, but we could also achieve improved clamping of the armour with a lower installation torque. The universal armour clamp is featured within Croclock (CR-***) and the Croclock family of glands.

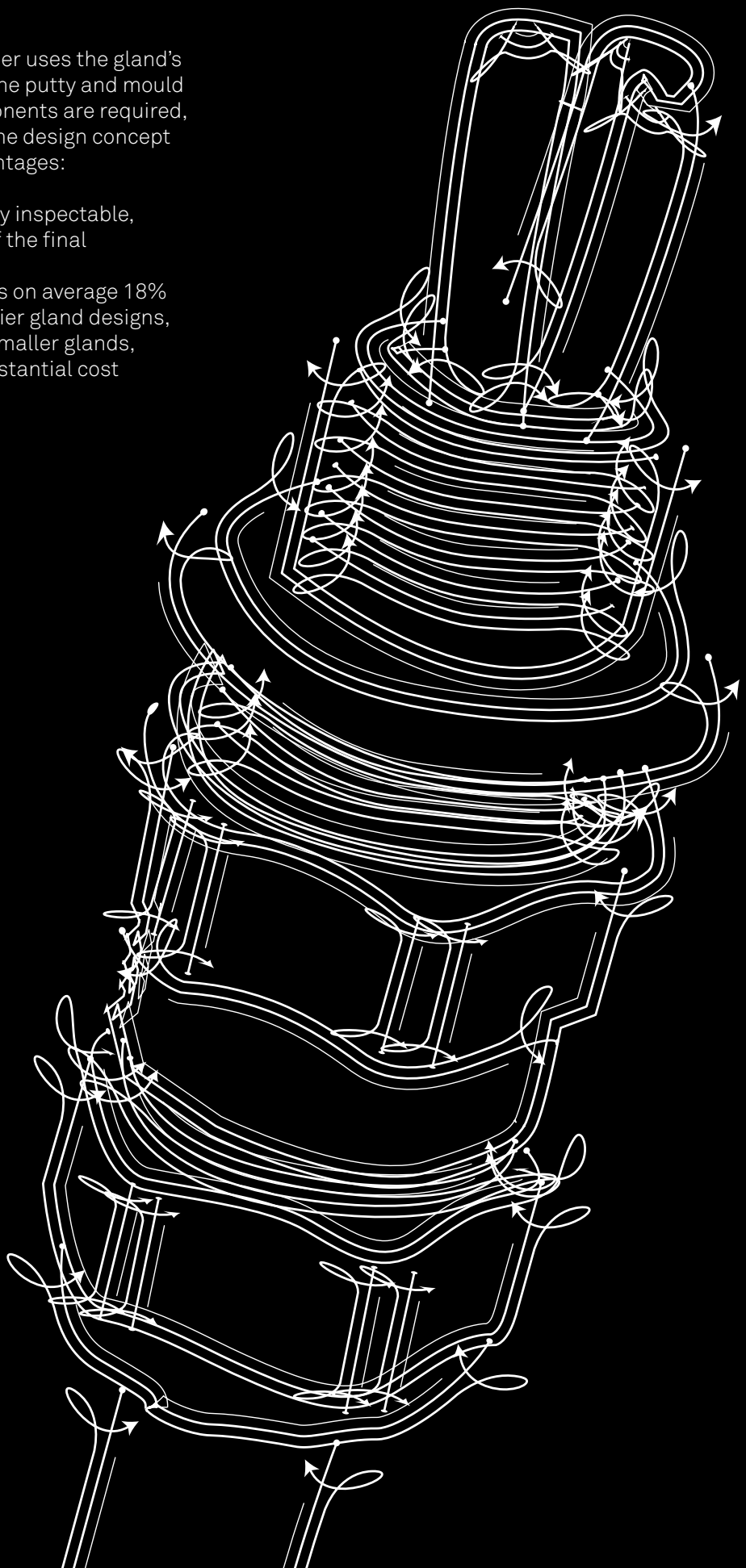
Seals
Compression seals, the original style of seal where a rubber ring is compressed between 2 gland parts causing the seal to seal on the cable. *Displacement seals* are similar to compression seals in that the seal itself is a rubber ring. However, the seal is affected by one gland part pushing the seal down an internal taper. This allows for a more controlled application of the "sealing force" onto the cable sheath.

Diaphragm seals are affected simply by pushing the inner sheath of the cable through the seal. In our opinion this style of seal has two main drawbacks. First it is liable to rupture if installed incorrectly and second it cannot be removed without damage once installed.

Additional Features
We now, where applicable, certify our cable glands to protection concepts Ex d, Ex e, Ex ta and Ex nR. Our ATEX approved glands are Category II 1D / II2G and where applicable II 3DG being suitable for Group II surface gases and Group I dusts and are suitable for us in Zone 1, Zone 2, Zone 20, Zone 21 and Zone 22. All metallic glands have an impact rating of at least 7Nm. Our cable glands featuring an elastomeric seal now maintain now maintain ingress protection levels of IP66 and IP68 (50 metres) whilst our compound barrier glands maintain IP66 and IP68 (100 metres). Version for deluge protection are also available.

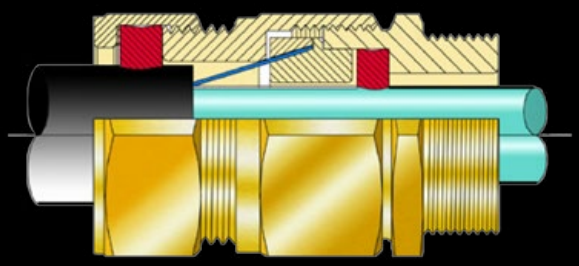
Compound Chamber
Our unique compound chamber uses the gland's entry component to extrude the putty and mould the seal. No additional components are required, simplifying the installation. The design concept also offers 2 significant advantages:

- The compound seal is fully inspectable, enhancing the integrity of the final installation.
- A cable acceptance that is on average 18% greater than existing barrier gland designs, allowing users to select smaller glands, smaller glands mean substantial cost reduction.



Type E
Double compression Cable Glands

"E Type" double compression glands, certified Flameproof Ex d, Increased Safety Ex e, Dust Protected Ex ta & Restricted Breathing Ex nR are suitable for use in Zone 1, Zone 2, Zone 20, Zone 21, Zone 22 and in Gas Groups IIA, IIB, IIC and Dust Groups IIIA, IIIB and IIIC.



PRODUCT INFORMATION

PRODUCT IMAGE

They provide a controlled Ex d & IP seal on the cable inner sheath, an environmental seal on the outer sheath and a detachable armour specific clamping system for wire (W) and braid/tape (X) armoured cables. The gland has been tested to IP66 and IP68 to 50 metres when suitable secured into the equipment. The IE version allows the gland to be used with HV cables where the fault load is greater than 10.4kA and options are available for use with lead sheath, LSOH cables and extreme temperature applications.

CABLE GLAND SELECTION TABLE

Gland Size	Entry Thread Size		ISO Thread Length (B)	Cable Acceptance Details						Armour Acceptance Range		Max Protrusion Length (L)	Dimensions/Weight (Metric)			Shroud Size
				Inner Sheath (C)		Outer Sheath (D)		Reduced (D)		W	X		Across Flats	Across Corners (A)	Weight (kgs)	
	Metric	NPT		Min	Max	Min	Max	Min	Max							
16	M20x1.5	1/2" or 3/4"	16	4.0	8.4	8.4	13.5	4.9	10.3	0.9	0.15-0.35	58	24.0	26.5	0.154	L24
20S	M20x1.5	1/2" or 3/4"	16	8.0	11.7	11.5	16.0	9.4	12.5	0.90-1.25	0.15-0.35	58	24.0	26.5	0.125	L24
20	M20x1.5	1/2" or 3/4"	16	6.7	14.0	15.5	21.1	12.0	17.6	0.90-1.25	0.15-0.50	58	30.0	33.0	0.180	L30
25	M25x1.5	3/4" or 1"	16	13.0	20.0	20.3	27.4	16.8	23.9	1.25-1.60	0.15-0.50	58	38.0	41.4	0.256	L38
32	M32x1.5	1" or 1 1/4"	16	19.0	26.3	26.7	34.0	23.2	30.5	1.60-2.00	0.15-0.55	65	46.0	50.6	0.400	L46
40	M40x1.5	1 1/4" or 1 1/2"	16	25.0	32.2	33.0	40.6	28.6	36.2	1.60-2.00	0.20-0.60	72	55.0	60.5	0.649	L55
50S	M50x1.5	1 1/2" or 2"	16	31.5	38.2	39.4	46.7	34.8	42.4	2.00-2.50	0.20-0.60	73	65.0	71.5	0.940	L65
50H	M50x1.5	1 1/2" or 2"	16	31.5	38.2	45.7	53.2	41.1	48.5	2.00-2.50	0.20-0.60	73	65.0	71.5	0.940	L65
50	M50x1.5	2"	16	36.5	44.1	45.7	53.2	41.4	48.5	2.00-2.50	0.30-0.80	73	65.0	71.5	0.707	L65
63S	M63x1.5	2" or 2 1/2"	19	42.5	50.1	52.1	59.5	47.5	54.8	2.5	0.30-0.80	76	80.0	88.0	1.369	L80
63H	M63x1.5	2" or 2 1/2"	19	42.5	50.1	58.4	65.8	53.8	61.2	2.5	0.30-0.80	76	80.0	88.0	1.369	L80
63	M63x1.5	2 1/2"	19	49.5	56.0	58.4	65.8	53.8	61.2	2.5	0.30-0.80	76	80.0	88.0	1.123	L80
75S	M75x1.5	2 1/2" or 3"	19	54.5	62.0	64.8	72.2	60.2	68.0	2.5	0.30-1.00	82	90.0	99.0	1.660	L90
75H	M75x1.5	2 1/2"	19	54.5	62.0	71.1	78.0	66.5	73.4	2.5	0.30-1.00	82	90.0	99.0	1.660	L90
75	M75x1.5	3"	19	60.5	68.0	71.1	78.0	66.5	73.4	2.5	0.30-1.00	82	90.0	99.0	1.310	L90
80	M80x2	3" or 3 1/2"	25	62.2	72.0	77.0	84.0	71.9	79.4	3.15	0.45-1.00	110	104.0	115.2	2.718	L104
80H	M80x2	3" or 3 1/2"	25	62.2	72.0	79.6	90.0	75.0	85.4	3.15	0.45-1.00	110	104.0	115.2	2.718	L104
85	M85x2	3" or 3 1/2"	25	69.0	78.0	79.6	90.0	75.0	85.4	3.15	0.45-1.00	110	104.0	115.2	2.326	L104
90	M90x2	3 1/2" or 4"	25	74.0	84.0	88.0	96.0	82.0	91.4	3.15	0.45-1.00	110	114.0	125.7	2.852	L104
90H	M90x2	3 1/2" or 4"	25	74.0	84.0	92.0	102.0	87.4	97.4	3.15	0.45-1.00	110	114.0	125.7	2.852	L104
100	M100x2	3 1/2" or 4"	25	82.0	90.0	92.0	102.0	87.4	97.4	3.15	0.45-1.00	110	114.0	125.7	2.496	L114

All dimensions in mm

Example Part Numbering (See below for details)	E1WBFCK1/NP/20/050NPT
E	Type of gland featuring armour specific clamping
1	Neoprene Seals (1) - Silicone (3) - Neoprene/Lead (2) - Silicone/Lead (4)
W	SWA (W) / SWB or STA (X)
B	Brass (B) / Stainless Steel (S) / Aluminium (HA)
IE	Integral Earth (See page TR-3)
R	Reduced Bore Seal
C	PVC Shroud (C) - PCP Shroud (P) - LSOH Shroud (3)
F	Multiple Certification
K or V	Locknut, Earth Tag & Nylon (K) or Fibre (V) IP Washer
S	Including Serrated Washer
1	Quantity per kit
NP	Nickel Plated (NP) - Zinc Plated (ZP)
20	Gland shell size
050NPT	1/2"NPT Entry Thread

Options

IP 66/68

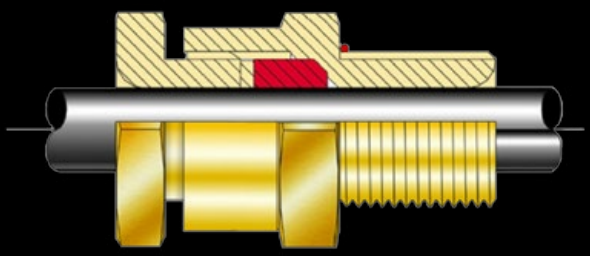
Features:

- *Exd/Exe Double compression for Armoured Cables*
- *IP66, IP67 & IP68 (50 metres for 7 days)*
- *Dedicated Armour Locking Suitable for SWA (W) SWB/STA (X)*
- *Available with optional silicone seal for use at -60°to +180°C*
- *Brass, Stainless Steel or Aluminium*

Technical information	
Compliance with	EN 60079-0, EN 60079-1, EN 60079-7, EN 60079-15, EN 60079-31, IEC 60079-0, IEC 60079-1, IEC 60079-7, IEC 60079-15, IEC 60079-31 and IEC 60529.
IP Rating	IP66 & IP68 (35 metres - 7 days)
Operating temperature	Neoprene Seals -35°C to +90°C / Silicone Seals -60°C to +180°C
Materials	Brass / Stainless Steel / Aluminium
Plating	Nickel, Zink
Variations	D****F - Omission of Outer Seal

Type A
Single compression Cable Glands

"A Type" glands, certified Flameproof Ex d, Increased Safety Ex e, Dust Protected Ex ta & Restricted Breathing Ex nR are suitable for use in Zone 1, Zone 2, Zone 20, Zone 21, Zone 22 and in Gas Groups IIA, IIB, IIC and Dust Groups IIIA, IIIB and IIIC.



PRODUCT INFORMATION

PRODUCT IMAGE

Commonly referred to as "stuffing glands" they provide a controlled pull resistant environmental displacement seal on the cable outer sheath, minimising damage to cables that exhibit "cold flow" characteristics. The gland maintains IP66 & IP68 to 50 metres and is deluge proof without the use of an additional seal or deluge boot. It is supplied with an IP O-ring seal as standard on metric entry threads. Options are available for use with LSOH cables and extreme temperature applications.

CABLE GLAND SELECTION TABLE

Gland Size	Entry Thread Size		ISO Thread Length (B)	Cable Acceptance Details		Normal Protrusion Length (L)	Dimensions/Weight (Metric versions)			Metric Thread Shroud Size
				Outer Sheath						
	Metric	NPT		Min	Max		Across Flats	Across Corners (A)	Weight Kgs	
12	M12x1.5	3/8"	16	0.9	6.0	26	19.0	20.9	0.041	L19
12	M16x1.5	3/8" or 1/2"	16	0.9	6.0	26	25.4	27.9	0.072	L24
12	M20x1.5	1/2"	16	0.9	6.0	26	25.4	27.9	0.094	L24
16	M16x1.5	1/2"	16	4.0	8.4	33	25.4	28.0	0.078	L24
16	M20x1.5	1/2" or 3/4"	16	4.0	8.4	33	25.4	28.0	0.078	L24
20S	M20x1.5	1/2" or 3/4"	16	7.2	11.7	33	25.4	28.0	0.101	L24
20	M20x1.5	1/2" or 3/4"	16	9.4	14.0	33	30.0	33.0	0.127	L30
25	M25x1.5	3/4" or 1"	16	13.5	20.0	33	37.6	41.4	0.166	L38
32	M32x1.5	1" or 1 1/4"	16	19.5	26.3	33	46.0	50.6	0.244	L46
40	M40x1.5	1 1/4" or 1 1/2"	16	23.0	32.2	37	55.0	60.5	0.396	L55
50S	M50x1.5	1 1/2" or 2"	16	28.1	38.2	37	65.0	71.5	0.558	L65
50	M50x1.5	2"	16	33.1	44.1	37	65.0	71.5	0.438	L65
63S	M63x1.5	2" or 2 1/2"	19	39.2	44.1	37	65.0	71.5	0.438	L65
63	M63x1.5	2 1/2"	19	46.7	56.0	37	80.0	88.0	0.664	L80
75S	M75x1.5	2 1/2" or 3"	19	52.1	62.0	37	90.0	99.0	0.924	L90
75	M75x1.5	3"	19	58.0	68.0	37	90.0	99.0	0.714	L90
80	M80x2	3" or 3 1/2"	25	62.2	72.0	50	104.0	115.2	1.514	L104
85	M85x2	3" or 3 1/2"	25	69.0	78.0	50	104.0	115.2	1.332	L104
90	M90x2	3 1/2" or 4"	25	74.0	84.0	50	114.0	125.7	1.622	L114
100	M100x2	3 1/2" or 4"	25	82.0	90.0	50	114.0	125.7	1.523	L114

All dimensions in mm

Features:

- *Exd/Exe Single compression for unarmored or armored cables*
- *IP66, IP68 (50 metres for 7 days) and deluge proof*
- *Double compression and conduit versions optional*
- *Available with optional silicone seal for use at -60°to +180°C*
- *Brass, stainless steel or aluminium*

Example Part Numbering (See below for details)	A2LBFCK1/NP/20/050NPT
A	Type of gland featuring controlled displacement sealing
2	1 - Neoprene/Lead seals / 2 - Neoprene seals 3 - Silicone seals / 4 - Silicone/Lead seals
L	Peppers Lightweight Design
B	Brass (B) / Stainless Steel (S) / Aluminium (HA)
F	Multiple Certification
C	PVC Shroud (C) - PCP Shroud (P) - LSOH Shroud (3)
K or V	Locknut, Earth Tag & Nylon (K) or Fibre (V) IP Washer
T	Including Earth Tag
S	Including Serrated Washer
1	Quantity per kit
NP	Nickel Plated (NP) - Zinc Plated (ZP)
20	Gland shell size
050NPT	1/2"NPT Entry Thread

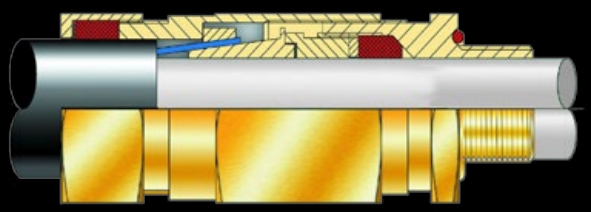
Options

Technical information	
Compliance standard	EN 60079-0, EN 60079-1, EN 60079-7, EN 60079-15, EN 60079-31, IEC 60079-0, IEC 60079-1, IEC 60079-7, IEC 60079-15, IEC 60079-31 and IEC 60529
IP Rating	IP66 & IP68 (50 metres - 7 days), NEMA 4X & DTS01 1991
Operating temperature	Neoprene Seals -35°C to +90°C Silicone Seals -60°C to +180°C
Materials	Brass, Stainless Steel or Aluminium
Plating	Nickel, Zink

TYPE CR

Universal Double compression Cable Glands

"CR Type" glands, certified Flameproof Ex d, Increased Safety Ex e, Dust Protected Ex ta & Restricted Breathing Ex nR are suitable for use in Zone 1, Zone 2, Zone 20, Zone 21, Zone 22 and in Gas Groups IIA, IIB, IIC and Dust Groups IIIA, IIIB and IIIC.



PRODUCT INFORMATION

PRODUCT IMAGE

They provide a controlled Ex d & IP displacement seal on the cable inner sheath minimising damage to cables that exhibit "cold flow" characteristics, an environmental seal on the outer sheath and "CROCLOCK", a unique non reversible multi clamping system for wire, braid and tape armoured cables. The gland maintains IP66 & IP68 to 50 metres and is deluge proof without the use of an additional seal or deluge boot. It is supplied with an O-ring seal as standard on metric entry threads. Options are available for use with lead sheath, LSOH cables and extreme temperature applications.

CABLE GLAND SELECTION TABLE

Gland Size	Entry Thread Size		ISO Thread Length (B)	Cable Acceptance Details						Armour Acceptance Range	Max Protrusion Length (L)	Dimensions/Weight (Metric)			Shroud Size
				Inner Sheath (C)		Outer Sheath (D)		Reduced (D)				Across Flats	Across Corners (A)	Weight (kgs)	
	Metric	NPT		Min	Max	Min	Max	Min	Max						
16	M20x1.5	1/2" or 3/4"	16	3.4	8.4	8.4	13.5	6.7	10.3	0.15-1.25	78	25.4	28.0	0.178	EL24
20S	M20x1.5	1/2" or 3/4"	16	7.2	11.7	11.5	16.0	9.4	12.5	0.15-1.25	78	25.4	28.0	0.173	EL24
20	M20x1.5	1/2" or 3/4"	16	9.4	14.0	15.5	21.1	12.0	17.6	0.15-1.25	78	30.0	33.0	0.233	EL30
25	M25x1.5	3/4" or 1"	16	13.5	20.0	20.3	27.4	16.8	23.9	0.15-1.60	90	38.0	41.4	0.416	EL38
32	M32x1.5	1" or 1 1/4"	16	19.5	26.3	26.7	34.0	23.2	30.5	0.15-2.00	105	46.0	50.6	0.772	EL46
40	M40x1.5	1 1/4" or 1 1/2"	16	23.0	32.2	33.0	40.6	28.6	36.2	0.20-2.00	113	55.0	60.5	1.093	EL55
50S	M50x1.5	1 1/2" or 2"	16	28.1	38.2	39.4	46.7	34.8	42.4	0.20-2.50	125	65.0	71.5	1.255	EL65
50H	M50x1.5	1 1/2" or 2"	16	28.1	38.2	45.7	53.2	41.1	48.5	0.20-2.50	125	65.0	71.5	1.255	EL65
50	M50x1.5	2"	16	33.1	44.1	45.7	53.2	41.1	48.5	0.30-2.50	125	65.0	71.5	1.400	EL65
63S	M63x1.5	2" or 2 1/2"	19	39.2	50.1	52.1	59.5	47.5	54.8	0.30-2.50	125	80.0	88.0	2.550	EL80
63H	M63x1.5	2 1/2"	19	39.2	50.1	58.4	65.8	53.8	61.2	0.30-2.50	125	80.0	88.0	2.104	EL80
63	M63x1.5	2 1/2"	19	46.7	56.0	58.4	65.8	53.8	61.2	0.30-2.50	125	80.0	88.0	2.104	EL80
75S	M75x1.5	2 1/2" or 3"	19	52.1	62.0	64.8	72.2	60.2	68.0	0.30-2.50	131	90.0	99.0	2.916	EL90
75H	M75x1.5	2 1/2" or 3"	19	52.1	62.0	71.1	78.0	66.5	73.4	0.30-2.50	131	90.0	99.0	2.916	EL90
75	M75x1.5	3"	19	58.0	68.0	71.1	78.0	66.5	73.4	0.30-2.50	131	90.0	99.0	2.315	EL90
80	M80x2	3" or 3 1/2"	25	62.2	72.0	77.0	84.0	71.9	79.4	0.45-3.15	170	104.0	115.2	4.953	EL104
80H	M80x2	3" or 3 1/2"	25	62.2	72.0	79.6	90.0	75.0	85.4	0.45-3.15	170	104.0	115.2	4.953	EL104
85	M85x2	3" or 3 1/2"	25	69.0	78.0	79.6	90.0	75.0	85.4	0.45-3.15	170	104.0	115.2	4.070	EL104
90	M90x2	3 1/2" or 4"	25	74.0	84.0	88.0	96.0	82.0	91.4	0.45-3.15	170	114.0	125.7	5.129	EL114
90H	M90x2	3 1/2" or 4"	25	74.0	84.0	92.0	102.0	87.4	97.4	0.45-3.15	170	114.0	125.7	5.129	EL114
100	M100x2	3 1/2" or 4"	25	82.0	90.0	92.0	102.0	87.4	97.4	0.45-3.15	170	114.0	125.7	4.368	EL114

All dimensions in mm

Example Part Numbering (See below for details)	CR-1BCK1/NP/20/050NPT
CR	Type of gland featuring "CROCLOCK", single orientation clamping
1	Neoprene Seals (1) - Silicone (3) - Neoprene/Lead (2) - Silicone/Lead (4)
B	Brass (B) / Stainless Steel (S)
R	Reduced Bore Seal
C	PVC Shroud (C) - PCP Shroud (P) - LSOH Shroud (3)
K or V	Locknut, Earth Tag & Nylon (K) or Fibre (V) IP Washer
S	Including Serrated Washer
1	Quantity per kit
NP	Nickel Plated (NP) - Zinc Plated (ZP)
20	Gland shell size
050NPT	1/2"NPT Entry Thread

Options

Features:

- *Exd/Exe Double compression for universal clamping*
- *IP66, IP67 & IP68 (50 metres for 7 days)*
- *CROCKLOCK- No reversible components – No mistakes*
- *Available with optional silicone seal for use at -60°to +180°C*
- *Brass or Stainless steel*

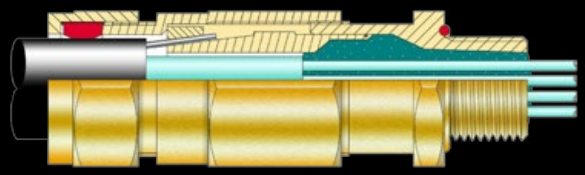
Technical information	
Compliance standard	EN 60079-0, EN 60079-1, EN 60079-7, EN 60079-15, EN 60079-31, IEC 60079-0, IEC 60079-1, IEC 60079-7, IEC 60079-15, IEC 60079-31 and IEC 60529
IP Rating	IP66 & IP68 (50 metres - 7 days), NEMA 4X & DTS01 1991
Operating temperature	Neoprene Seals -35°C to +90°C Silicone Seals -60°C to +180°C
Materials	Brass, Stainless Steel
Plating	Nickel, Zink

IP 66/68

TYPE CR-C

Universal Compound Cable Glands

"CR-C Type" glands, certified Flameproof Ex d, Increased Safety Ex e, Dust Protected Ex ta & Restricted Breathing Ex nR are suitable for use in Zone 1, Zone 2, Zone 20, Zone 21, Zone 22 and in Gas Groups IIA, IIB, IIC and Dust Groups IIIA, IIIB and IIIC.



PRODUCT INFORMATION

PRODUCT IMAGE

Occasionally referred to as "potting glands", they provide a compound barrier Ex d & IP seal on the cable inner cores, eliminating damage to cables that exhibit "cold flow" characteristics and an environmental seal on the outer sheath. The unique features include, "CROCLOCK®", the non reversible multi clamping system for wire, braid and tape armoured cables and Peppers T1000, the sealing compound that enables a quick and easy installation.
The innovative barrier chamber provides a cable acceptance that is on average 17% greater than other designs. The gland maintains IP66 & IP68 to 100 metres and is deluge proof without the use of an additional seal or deluge boot. It is supplied with an IP O-ring seal as standard on metric entry threads and options are available for use with lead sheath.

CABLE GLAND SELECTION TABLE

Gland Size	Entry Thread Size		ISO Thread Length (B)	Cable Acceptance Details							Armour Acceptance Range	Normal Protrusion Length (L)	Dimensions/Weight (Metric)			Metric Thread Shroud Size
				Cable Inner Sheath (C)			Cable Outer Sheath (D)									
				Number of Cores	Max Ø Over Cores	Max Inner Sheath	Standard		Reduced				Across Flats	Across Corners (A)	Weight (kgs)	
	Metric	NPT					Min	Max	Min	Max						
16	M20x1.5	1/2" or 3/4"	16	15	10.4	11.7	9.0	13.5	6.7	10.3	0.15-1.25	79	25.4	28.0	0.177	EL24
20S	M20x1.5	1/2" or 3/4"	16	35	10.4	11.7	12.9	16.0	9.4	12.5	0.15-1.25	79	25.4	28.0	0.166	EL24
20	M20x1.5	1/2" or 3/4"	16	40	12.5	14.0	15.5	21.1	12.0	17.6	0.15-1.25	79	30.0	33.0	0.245	EL30
25	M25x1.5	3/4" or 1"	16	60	17.8	20.0	20.3	27.4	16.8	23.9	0.15-1.60	89	37.6	41.4	0.402	EL38
32	M32x1.5	1" or 1 1/4"	16	80	23.5	26.3	26.7	34.0	23.2	30.5	0.15-2.00	110	46.0	50.6	0.738	EL46
40	M40x1.5	1 1/4" or 1 1/2"	16	130	28.8	32.2	33.0	40.6	28.6	36.2	0.20-2.00	110	55.0	60.5	1.079	EL55
50S	M50x1.5	1 1/2" or 2"	16	200	34.2	38.2	39.4	46.7	34.8	42.4	0.20-2.50	125	65.0	71.5	1.455	EL65
50	M50x1.5	2"	16	400	39.4	44.1	45.7	53.2	41.1	48.5	0.20-2.50	125	65.0	71.5	1.366	EL65
63S	M63x1.5	2" or 2 1/2"	19	400	44.8	50.1	52.1	59.5	47.5	54.8	0.30-2.50	125	80.0	88.0	2.157	EL80
63	M63x1.5	2 1/2"	19	425	50.0	56.0	58.4	65.8	53.8	61.2	0.30-2.50	125	80.0	88.0	2.035	EL80
75S	M75x1.5	2 1/2" or 3"	19	425	55.4	62.0	64.8	72.2	60.2	68.0	0.30-2.50	130	90.0	99.0	2.399	EL90
75	M75x1.5	3"	19	425	60.8	68.0	71.1	78.0	66.5	73.4	0.30-2.50	130	90.0	99.0	2.313	EL90
80	M80x1.5	3" or 3 1/2"	25	425	64.4	72.0	77.0	84.0	71.9	79.4	0.45-3.15	162	104.0	115.2	4.763	EL104
85	M85x1.5	3" or 3 1/2"	25	425	69.8	78.0	79.6	90.0	75.0	85.4	0.45-3.15	162	104.0	115.2	4.122	EL104
90	M90x1.5	3 1/2" or 4"	25	425	75.1	84.0	88.0	96.0	82.0	91.4	0.45-3.15	162	114.0	125.7	5.114	EL114
100	M100x1.5	3 1/2" or 4"	25	425	80.5	90.0	92.0	102.0	87.4	97.4	0.45-3.15	162	114.0	125.7	4.356	EL114

All dimensions in mm

Example Part Numbering (See below for details)	CR-1BCK1/NP/20/050NPT
CR-C	Type of gland featuring "CROCLOCK", single orientation clamping, Compound (Barrier) Inner seal & Silicone Elastomeric Outer Seal
2	For Lead Sheath Cables
B	Brass (B) / Stainless Steel (S)
R	Reduced Bore Seal
C	PVC Shroud (C) - PCP Shroud (P) - LSOH Shroud (3)
K or V	Locknut, Earth Tag & Nylon (K) or Fibre (V) IP Washer
S	Including Serrated Washer
1	Quantity per kit
NP	Nickel Plated (NP) - Zinc Plated (ZP)
20	Gland shell size
M20	M20 Entry Thread

Options

Features:

- *Exd/Exe Double compression barrier gland*
- *IP66, 68 (100metres for 7 days) deluge*
- *Featuring Peppers T-1000 fast curing compound*
- *Temperature rating -60° to +135°C*
- *Brass or stainless steel*

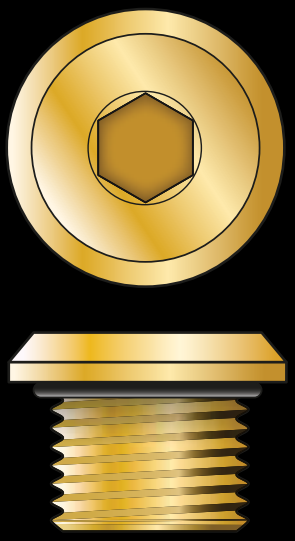
Technical information	
Compliance standard	EN 60079-0, EN 60079-1, EN 60079-7, EN 60079-15, EN 60079-31, IEC 60079-0, IEC 60079-1, IEC 60079-7, IEC 60079-15, IEC 60079-31 and IEC 60529
IP Rating	IP66 & IP68 (100 metres - 7 days), NEMA 4X & DTS01 1991
Operating temperature	-60°C to +135°C
Materials	Brass or Stainless Steel
Plating	Nickel, Zink

SPMH Series Metallic plugs

Dome head

"SPMH" Series Certified Metallic Stopping (blanking) plugs provide a method of sealing unused entries in Ex equipment. They maintain Ex d, Ex e, Ex tb and Ex nR methods of protection and IP66, IP68 for IEC type applications. They also maintain Class I, Division 1 and NEMA 4X for CEC type applications.

PRODUCT IMAGE



PRODUCT INFORMATION

ISO Thread	*Hex Socket A/F*	*Overall Length*	*Weight*	*NPT Thread*	*Hex Socket A/F*	*Overall Length*
M16	8.0	21.5	0.032	1/2"	10.0	25.4
M20	10.0	21.5	0.049	3/4"	12.0	25.7
M25	12.0	21.5	0.078	1"	12.0	30.5
M32	12.0	21.5	0.134	1-1/4"	14.0	31.1
M40	14.0	21.5	0.218	1-1/2"	17.0	31.5
M50	17.0	21.5	0.333	2"	17.0	32.4
M63	17.0	21.5	0.544	2-1/2"	19.0	45.4
M75	19.0	21.5	0.777	3"	22.0	47.0
M80	22.0	25.5	1.050	3-1/2"	22.0	48.3
M85	22.0	25.5	1.225	4"	22.0	49.5
M90	22.0	25.5	1.326	Head diameter = Minimum 5.5mm Larger than the major thread diameter		
M100	22.0	25.5	1.680			
All dimensions in mm						

Example Part Numbering (See below for details)	SPMH1BF/NP/M20	
SPMH	Stopping Plug with mushroom/Dome head	
1	No IP O-Ring (0) - Nitrile (1) - Silicone (3)	
B	Brass (B) / Stainless Steel (S) / Aluminium (A)	
F	Multiple Certification	
NP	Nickel Plated (NP) - Zinc Plated (ZP)	
M20	Male entry thread	
Optional Accessories	[N/V] IP Washers	Nylon [N] (ACNSW) / Fibre [V] (ACFSW)
	[T] Earth tag	Brass (ACBET) / Stainless Steel (ACSET)
	[L] Lockout	Brass (ACBLN(/ Stainless Steel (ACSLN)
	[S] Serrated Washer	Stainless Steel (ACSSW)

Features:

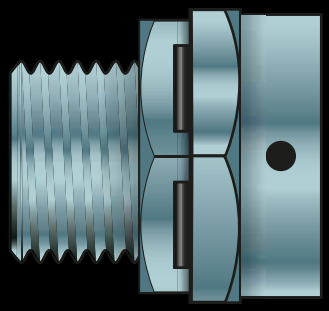
- *IP 66 & IP68 (100 metres for 7 days) & NEMA 4X*
- *Impact resistance 20Nm (Aluminum 7Nm)*
- *Available in Brass, Stainless steel or Aluminium*
- *Plating: Nickel, Zink*
- *Operating temperature without O-ring: -100°C to +400°C*
- *Operating temperature with Silicone O-ring: -60°C to +200°C*

Technical information		
Compliance standard	EN 60079-0, EN 60079-1, EN 60079-7, EN 60079-15, EN 60079-31, IEC 60079-0, IEC 60079-1, IEC 60079-7, IEC 60079-15, IEC 60079-31 & 60529	
IP Rating	IP66 & IP68 (100 metres - 7 days), NEMA 4X	
Impact Resistance	20Nm (Aluminium 7Nm)	
Materials	Brass, Stainless Steel or Aluminium	
Plating	Nickel, Zink	
Operating Temperature	O-Ring - None O-Ring - Silicone O-Ring - Nitrile	-100°C to +400°C -60°C to +200°C -30°C to +100°C

IP 66/68

ACDP Series Metallic breather drains

ACDP Series Breather Drains allow the inside of the equipment to breathe with the outside atmosphere and provide a method of effectively draining any moisture from within the equipment. ACDP series breather drains maintain Ex e method of protection and IP66 for IEC type applications. A Castellated Locknut and O-ring is supplied with every Breather Drain.



PRODUCT INFORMATION

PRODUCT IMAGE

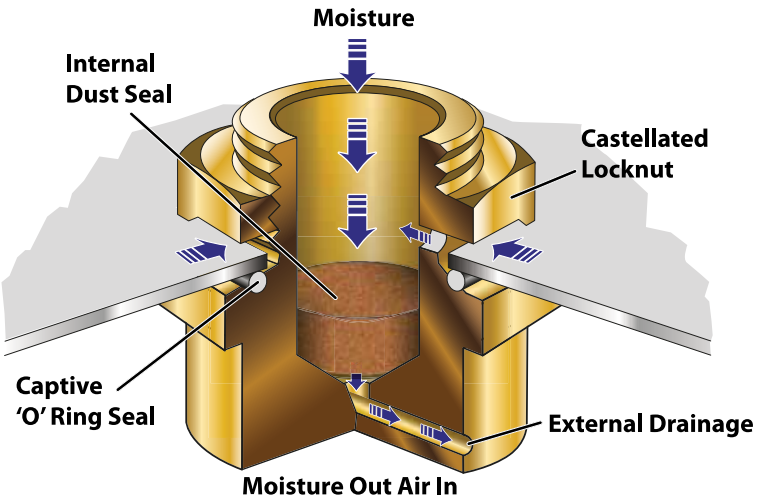
Dimension Data					
Thread Size	***A/F***	***A/C [A]***	***Length [B]***	***Length [L]***	***Weight***
M20 x 1.5	27.0	29.7	10 or 15	12.0	0.065
M25 x 1.5	31.8	34.9	10 or 15	12.0	0.097
M32 x 1.5	37.6	41.3	10 or 15	12.0	0.107
1/2" NPT	28.6	31.4	15	12.0	0.075
3/4" NPT	33.0	36.3	15	12.0	0.107
All dimensions in mm					

Example Part Numbering (See below for details)	ACDP1BE/NP/M20/10
ACDP	Breather Drain c/w Castellated Locknut
1	No IP O-Ring (0) - Nitrile (1) - Silicone (3)
B	Brass (B) / Stainless Steel (S) / Aluminium (A)
E	Ex e certification
NP	Nickel Plated (NP) - Zinc Plated (ZP)
M20	Male Entry Thread
10	Entry Thread Length 10mm or 15mm

Features:

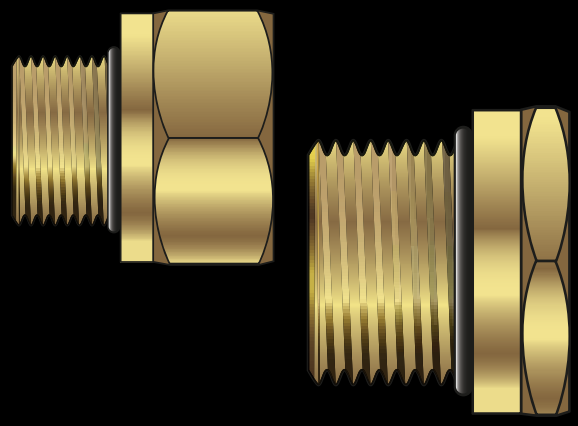
- *Impact resistance 20Nm (Aluminum 7Nm)*
- *Flow rate: 0,25 litres per hour*
- *Operating temperature with Silicone O-ring: -60°C to +200°C*
- *Operating temperature with Nitrile O-ring: -30°C to +100°C*
- *Materials: Brass, Stainless steel or aluminium*
- *Plating: Nickel, Zink*

Technical information		
Compliance standard	EN 60079-0, EN 60079-1, EN 60079-31, IEC 60079-0, IEC 60079-7, IEC 60079-31 & 60529	
IP Rating	IP66	
Impact Resistance	20Nm (Aluminium 7Nm)	
Flow Rate	0.25 litres per Hour	
Materials	Brass, Stainless Steel or Aluminium	
Plating	Nickel, Zink	
Operating Temperature	O-Ring - None O-Ring - Silicone O-Ring - Nitrile	-60°C to +400°C -60°C to +200°C -30°C to +100°C



AR Series Metallic adaptors and reducers

AR Series Dual Certified Adaptors & Reducers provide a method of matching electrical thread forms on Ex equipment whilst maintaining Ex d / Ex e methods of explosion protection. In addition they are approved to IP66 & IP68 for IEC type applications and Class I Division 1, NEMA 4X & 6P for CEC type applications.



PRODUCT INFORMATION

PRODUCT IMAGE

Example Part Numbering (See below for details)	AR1BF/NP/M20/M25	
AR	Thread converting Adaptor/Reduce	
1	No IP O-Ring (0) - Nitrile (1) - Silicone (3)	
B	Brass (B) / Stainless Steel (S) / Aluminium (A)	
F	Ex d & Ex e certification	
NP	Nickel Plated (NP) - Zinc Plated (ZP)	
M20	Male Entry Thread	
M25	Female Entry Thread	
Optional Accessories	[N/V] IP Washers	Nylon [N] (ACNSW) / Fibre [V] (ACFSW)
	[T] Earth Tag	Brass (ACBET) / Stainless Steel (ACSET)
	[L] Lockout	Brass (ACBLN) / Stainless Steel (ACSLN)
	[S] Serrated Washer	Stainless Steel (ACSSW)

Features:

- *IP 66 & IP68 (100 metres for 7 days) & NEMA 4X*
- *Impact resistance 20Nm (Aluminum 7Nm)*
- *Operating temperature without O-ring: -100°C to +400°C*
- *Operating temperature with Silicone O-ring: -60°C to +200°C*
- *Operating temperature with Nitrile O-ring: -30°C to +100°C*
- *Plating: Nickel, Zink*

Technical information		
Compliance standard	EN 60079-0, EN 60079-1, EN 60079-31, IEC 60079-0, IEC 60079-7, IEC 60079-31 & 60529	
IP Rating	IP66, IP68 (100 metres for 7 days)	
Impact Resistance	20Nm (Aluminium 7Nm)	
Materials	Brass, Stainless Steel or Aluminium	
Plating	Nickel, Zink	
Operating Temperature	O-Ring - None O-Ring - Silicone O-Ring - Nitrile	-100°C to +400°C -60°C to +200°C -30°C to +100°C

Thread Reference Tables

ISO Metric ISO 965-1, ISO 965-3, BS 3643, IEC 60423							
Thread	***Peppers Reference***	***Standard Pitch***	***TPI***	***Major Dia***	***Thread Length***	***Bore***	***Max Clearence Hole Dia***
M16	M16	1.50	16.93	15.97	16.0	10.0	16.7
M20	M20	1.50	16.93	19.97	16.0	14.0	20.7
M25	M25	1.50	16.93	24.97	16.0	18.0	25.7
M32	M32	1.50	16.93	31.97	16.0	24.0	32.7
M40	M40	1.50	16.93	39.97	16.0	32.0	40.7
M50	M50	1.50	16.93	40.97	16.0	41.0	50.7
M63	M63	1.50	16.93	62.97	16.0	53.0	63.7
M75	M75	1.50	16.93	74.97	16.0	64.0	75.7
M80	M80	2.00	12.70	79.97	20.0	69.0	80.8
M85	M85	2.00	12.70	84.97	20.0	73.0	85.7
M90	M90	2.00	12.70	89.97	20.0	78.0	90.7
M100	M100	2.00	12.70	99.97	20.0	88.0	100.7
M110	M110	2.00	12.70	109.97	20.0	98.0	110.7
M120	M120	2.00	12.70	119.97	20.0	108.0	120.7

NPS ANSI B1.20.1							
Thread	***Peppers Reference***	***Pitch***	***TPI***	***Major Dia***	***Thread Length***	***Bore***	***Max Clearence Hole Dia***
1/2”	050NPS	1.81	14.0	20.90	19.9	14.1	21.60
3/4”	075NPS	1.81	14.0	26.26	20.1	19.0	26.96
1”	100NPS	2.20	11.5	32.84	25.0	25.0	33.54
1-1/4”	125NPS	2.20	11.5	41.61	25.6	32.0	42.31
1-1/2”	150NPS	2.20	11.5	47.67	26.0	38.0	48.37
2”	200NPS	2.20	11.5	59.72	26.9	49.0	60.42
2-1/2”	250NPS	3.18	8.0	72.16	39.9	60.0	72.86
3”	300NPS	3.18	8.0	88.06	41.5	75.0	88.76
3-1/2”	350NPS	3.18	8.0	100.78	42.8	88.0	101.48
4”	400NPS	3.18	8.0	113.43	44.0	100.0	114.13

IP
66/68

ISO Pipe Parallel ISO 228 BS2779 (BSPP, C, G, R, PF & Tpy 6) ISO Pipe Taper ISO 7-1 BS21 (BSPT, Gc, Gk, Rk, PT & Kmpy 6)							
Thread	**Peppers Reference**	**Pitch**	**TPI**	**Major Dia**	**Thread Length**	**Bore**	**Max Clearence Hole Dia**
1/2"	050BSP/BST	1.81	14.0	20.96	19.9	14.1	21.66
3/4"	075BSP/BST	1.81	14.0	26.44	20.1	19.0	27.14
1"	100BSP/BST	2.31	11.0	33.25	25.0	25.0	33.95
1-1/4"	125BSP/BST	2.31	11.0	41.91	25.6	32.0	42.61
1-1/2"	150BSP/BST	2.31	11.0	47.80	26.0	38.0	48.50
2"	200BSP/BST	2.31	11.0	59.61	26.9	49.0	60.31
2-1/2"	250BSP/BST	2.31	11.0	75.18	39.9	60.0	75.78
3"	300BSP/BST	2.31	11.0	87.88	41.5	75.0	88.58

NPT ANSI B1.20.1							
Thread	**Peppers Reference**	**Pitch**	**TPI**	**Major Dia**	**Thread Length**	**Bore**	**Max Clearence Hole Dia**
3/8"	038NPT	1.41	18.0	17.15	15.3	10.0	17.85
1/2"	050NPT	1.81	14.0	21.34	19.9	14.1	22.04
3/4"	075NPT	1.81	11.5	26.67	20.1	19.0	27.37
1"	100NPT	2.20	11.5	33.40	25.0	25.0	34.10
1-1/4"	125NPT	2.20	11.5	42.16	25.6	32.0	42.86
1-1/2"	150NPT	2.20	11.5	48.26	26.0	38.0	48.96
2"	200NPT	2.20	11.5	60.33	26.9	49.0	61.03
2-1/2"	250NPT	3.18	8.0	73.03	39.9	60.0	73.73
3"	300NPT	3.18	8.0	88.90	41.5	75.0	89.60
3-1/2"	350NPT	3.18	8.0	101.60	42.8	88.0	102.30
4"	400NPT	3.18	8.0	114.30	44.0	100.0	115.00
5"	500NPT	3.18	8.0	141.30	46.7	120.0	142.00

PG DIN 40430							
Thread	**Peppers Reference**	**Pitch**	**TPI**	**Major Dia**	**Thread Length**	**Bore**	**Max Clearence Hole Dia**
PG7	PG7	1.27	20.0	12.50	16.0	8.0	13.20
PG9	PG9	1.41	18.0	15.20	16.0	10.0	15.90
PG11	PG11	1.41	18.0	18.60	16.0	13.5	19.30
PG13.5	PG13.5	1.41	18.0	20.40	16.0	14.0	21.10
PG16	PG16	1.41	18.0	22.50	16.0	16.0	23.20
PG21	PG21	1.59	16.0	28.30	16.0	21.0	29.00
PG29	PG29	1.59	16.0	37.00	16.0	29.0	37.70
PG36	PG36	1.59	16.0	47.00	16.0	38.0	47.70
PG42	PG42	1.59	16.0	54.00	16.0	45.0	54.70
PG48	PG48	1.59	16.0	59.30	16.0	50.0	60.00

ET Imperial Conduit BS31							
Thread	**Peppers Reference**	**Pitch**	**TPI**	**Major Dia**	**Thread Length**	**Bore**	**Max Clearence Hole Dia**
5/8"	058ET	1.41	18	15.88	16	10	16.58
3/4"	075ET	1.59	16	19.05	16	14	19.75
1"	100ET	1.59	16	25.40	16	18	26.10
1-1/4"	125ET	1.59	16	31.75	16	24	32.45
1-1/2"	150ET	1.81	14	38.10	16	32	38.80
2"	200ET	1.81	14	50.80	16	41	51.50
2-1/2"	250ET	1.81	14	63.50	16	53	64.20
3"	300ET	1.81	14	76.20	16	64	76.90

ARMR & ARFR Series Metallic 90 Degree Adaptors

"ARMR" & "ARFR" Series Dual Certified Right Angled Adaptors are designed to protect cables when installed in confined spaces where the cable may otherwise be subject to excessive bending and or stress.

PRODUCT INFORMATION

PRODUCT IMAGE

Features:
The Series is available with Male/Female or Female/Female connection threads. They are approved for Ex d, Ex e, Ex tb and Ex nR methods of explosion protection whilst maintaining IP66, IP68 for IEC type applications and Class I Division 1, and NEMA 4X for NEC/CEC type applications. All external parallel threads are fitted with a O-ring as standard.

Technical information		
Compliance standard	EN 60079-0, EN 60079-1, EN 60079-7, EN 60079-15, EN 60079-31 IEC 60079-0, IEC 60079-1, IEC 60079-7, IEC 60079-15, IEC 60079-31 & 60529	
IP Rating	IP66 & IP68 (100 metres for 7 days) & NEMA 4X	
Impact Resistance	20Nm (Aluminium 7Nm)	
Materials	Brass, Stainless Steel or Aluminium	
Plating	Nickel, Zink	
Operating Temperature	O-ring - None O-ring - Silicone O-ring - Nitrile	-100°C to +400°C -60°C to +200°C -30°C to +100°C

- *Differing threads and thread forms are avaible upon request*
- *90 Degree Adaptors are approved and available up to size M100*
- *Aluminium versions are not suitable for Group I Mining application*
- *When used in an Ex nR application ARMR & ARFR adaptors must be fitted with an appropriate seal.*

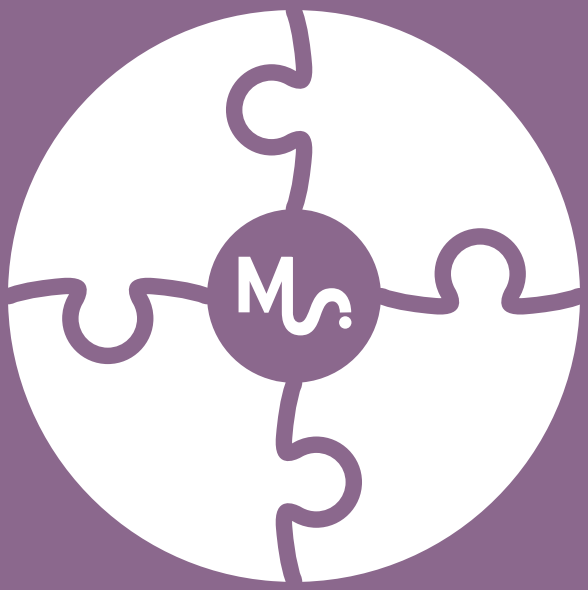
Example Part Numbering (See below for details)	ARMR1BF/NP/M20/M20
ARMR OR ARFR	90 Degree Adaptor Male/Female (Right Angled) 90 Degree Adaptor Female/Female (Right Angled)
1	No IP O-ring (0) - Nitrile (1) - Silicone (3) (Only available on ARMR)
B	Brass (B) - Stainless Steel (S) - Aluminium (A)
F	Ex d & Ex e certification
NP	Nickel Plated (NP) - Zinc Plated (ZP)
M20	Male Entry Thread
M20	Female Entry Thread

Size	***Bore***	***Height***	***Length***	***Width***
M16 x M16	10.0	38.1	27.0	25.4
M20 x M20	14.0	38.1	27.0	25.4
M25 x M25	18.0	44.4	37.0	31.8
M32 x M32	24.0	50.8	45.0	38.1
M40 x M40	32.0	63.5	52.0	50.8
M50 x M50	41.0	72.0	67.0	60.0
M63 x M63	53.0	90.0	83.0	75.0
M75 x M75	64.0	102.0	94.0	88.0
All dimensions in mm				

Dimension apply to only ARMR version.

IP 66/68

“Did you know that Marin Supply AS keep about 3500 units in stock at every given time?”



ENCLOSURES & JUNCTION BOXES

ENCLOSURES & JUNCTION BOXES

Since the first ABTECH sheet steel enclosure was manufactured in the 1970's the company has never lost sight of it's goal, to become a leading supplier of quality electrical enclosures and junction boxes suitable for both industrial and hazardous area markets. This we believe has been achieved through innovation, market leading design, rigorous testing and adherence to quality.

In recent years ABTECH have extended their range of enclosures to cope with ever increasing customer demands for unique solutions to their problems. These solutions include high current connection boxes (up to 3000Amps), high temperature junction boxes (up to 950°C for 3 hours) and IP68 enclosures (up to 120ft depth).

ABTECH rose to the challenge when the Channel Tunnel was being constructed and produced over 12,500 junction boxes and emergency lighting actuators to the most exacting of standards. With the emphasis on reliability and safety, ABTECH designed a solution that more than met the rigorous specification laid down by Eurotunnel. The new millennium has seen ABTECH once more expanding their range of products and services to help their customers cope with the need to meet ever changing international standards.

In addition to fulfilling the requirements of the ATEX legislation, the majority of ABTECH products also comply with the IEC Ex scheme and are certified for use in Category 2 (Zone 1) and Category 3 (Zone 2) areas for both gas and dust hazards.

ABTECH operate in the global market place as the nature of the Oil & Gas & Petrochemical industry demands and to meet this requirement ABTECH operate at an International level. With the headquarters based in Sheffield, UK and factories and offices in USA, Germany, Netherlands, South Korea and Singapore and a network of agents covering over 40 countries worldwide, ABTECH have the coverage to manage any project.Indeed over the last 25 years, ABTECH have been involved in many projects throughout the world.

ABTECH also manufacture restricted breathing enclosures (EEx'nR') which are capable of housing sparking and hot components and are suitable for use in Zone 2 areas and can often be a cost effective alternative to flameproof enclosures (EEx'd').

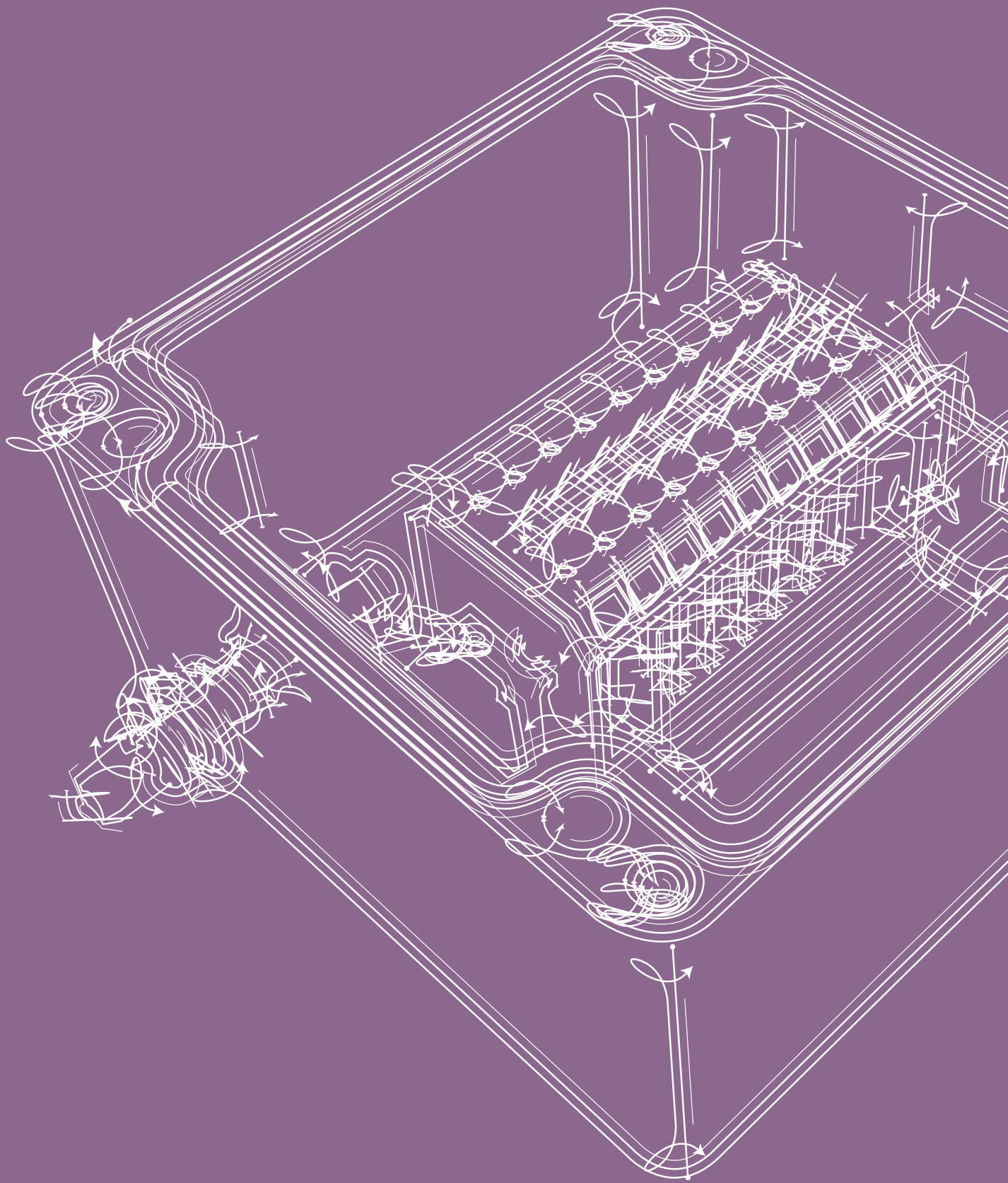
The durability of our products is measured in decades. Whether the product is for an industrial or hazardous area application, ABTECH place the utmost importance on quality as would be expected from a leading manufacturer.

The success of the company has been built on this dedication to total quality control and with over 30 years history of supply to the leading oil & gas companies throughout the world it is a policy that has been proven to work.

With approvals such as BS EN ISO 9001:2000, certification to British, European and International standards and approvals from certifying authorities in the UK, USA, Canada and Russia, the company's commitment to quality ensures that safety is never compromised.

Enclosures manufactured in stainless steel, mild steel, glass reinforced polyester, aluminium,polycarbonate and ABS are suitable for a wide range of industrial and OEM applications and we have the facilities to modify the standard enclosure to meet the customer's requirements.

These services include machining, painting, silk screen printing and electro-polishing. We are also able to mould any of the plastic range of enclosures in a wide range of colours (subject to minimum order quantity).



PRODUCT INFORMATION

PRODUCT IMAGE

SX Range - Stainless steel and Mild steel Enclosures
The SX range comprises 14 sizes of enclosure manufactured in either mild steel or stainless steel. 11 sizes are available in depths of 140 or 200mm and 8 sizes are available in depths of 140, 200 or 300mm. The majority of the range can be fitted with removable gland plates on any or all of the four sides. The mild steel version (MSX) is available with a number of paint options (most RAL colours are available) and anti-corrosion finishes.

Features
- *Wide Operating Temperature (- 70°C to + 175°C) (-94°F to +347°F)*
- *Ingress Protection up to IP68*
- *Fire Resistant to IEC331*
- *Impact Resistant > 10 Nm*
- *Corrosion Resistant*
- *Gland plates can be fitted to any or all four sides (size SX66 and above)*
- *Certification for use in Zone 1 and 2*
- *UL, CSA, IEC Ex, ATEX, FM, InMetro and GOST R and K Approvals*
- *Ideal for Petrochemical and Marine applications)*

CE

BPG Range - Glass Reinforced Polyester Enclosures
The BPG range comprises 16 sizes of enclosure manufactured in glass reinforced polyester (GRP). This material is highly resistant to contamination from oils, fats, aliphatic and aromatic carbohydrates, bacteria and enzymes. It is also suitable for LSOH (low smoke zero halogen) applications. Polyester gives excellent mechanical strength and life expectancy. The wall thickness is sufficient to allow tapped entry holes to be machined in the walls of the enclosure and it provides a very good alternative to aluminium or cast iron.

Features
- *Wide Operating Temperature (- 70°C to + 130°C) (-94°F to +266°F)*
- *Ingress Protection up to IP67*
- *Fire Resistant to IEC331*
- *Impact Resistant > 7Nm*
- *UV Resistant*
- *Can be drilled and tapped to accommodate most thread forms (NPT for example)*
- *Certification for use in Zone 1 and 2*
- *UL, CSA, IEC Ex, ATEX, InMetro and GOST R and K Approvals*
- *Ideal for Petrochemical and Marine applications*

CE

ZAG Range - Die-cast Aluminium Enclosures
The ZAG range of enclosures comprises of 19 different sizes of enclosures and is precision die cast in AL-Si 12 grade (LM24) aluminium alloy. This is considered to be the most suitable grade of aluminium for maximum corrosion resistance especially in salt laden atmospheres. Additional optional protection methods such as alochrome, anodising and epoxy polyester painting coupled with the fitment of captive 316 grade stainless steel lid retaining screws further enhance the anti-corrosion properties of the enclosure.

Features
- *Wide Operating Temperature (- 70°C to +130°C) (-94°F to +266°F)*
- *Ingress Protection up to IP67*
- *Painted and Unpainted versions*
- *Impact Resistant > 7 Nm*
- *Corrosion Resistant*
- *Can be drilled and tapped to accommodate most thread forms (NPT for example)*
- *Certification for use in Zone 1 and 2*
- *UL, CSA, ATEX, FM, InMetro and GOST Approvals*
- *Ideal for Petrochemical and Marine applications)*

CE

High Voltage Enclosures
All ABTECH high voltage enclosures are manufactured in 316 grade stainless steel and have an IP rating of IP66 as standard. IP67 versions are also available. All enclosures are ATEX certified by SIRA for use in a Category 2/Zone 1 areas and Category 3/Zone 2 areas. The entire range offers flexibility in terms of both connection options and mounting arrangements.

Features

DPJB Range
The original high voltage 'down hole pump' connection box which has been used by many customers all over the world.

HVJB Range
The latest in the High Voltage range offering enhanced flexibility over the choice of cables, entries and cable terminations. Maximum voltage 35kV.

LR Range
The LR range was originally designed for a specialist application for a specific customer. However, this type of enclosure has since been used in more general applications where a need for the flexible connection arrangements is required. Maximum voltage 11kV.

Busbar Box
A busbar enclosure with a maximum voltage of 11kV, a current capacity of 3000A per phase and a fault rating of 80kA for 1 second. Capable of connecting 3 phase & neutral and up to 6 cables per phase.

SX125 Box
A unique solution to the termination of umbilical cables to offshore platform or on-shore distribution systems. A power conductor compartment is provided for use at up to 15 kV and a separate control compartment for terminating optical fibres and/or control conductors.

CE

ZP Range - ABS and Polycarbonate Enclosures
The ABTECH ZP range of enclosures comprises of 19 different sizes which are injection moulded in either ABS plastic or polycarbonate material. There is also an option of a clear polycarbonate lid which can be fitted to either base. The enclosures are lightweight yet extremely robust and offer good protection against both corrosion and oil based contamination. The enclosure shares the labyrinth seal arrangement which is common to both the ZAG and BPG ranges and can offer protection up to IP65.

Features

- *Wide Operating Temperature (- 70°C to + 120°C) (-94°F to +248°F)*
- *Ingress Protection up to IP65*
- *Available in Polycarbonate and ABS*
- *Optional Transparent lid*
- *Can be moulded any colour (subject to minimum quantities)*
- *Can be easily machined and silk screen printed*
- *Ideal for Instrument housings and junction boxes)*

CE

GRN Enclosures
The ABTECH GRN8 enclosure has been designed as a cost-effective junction box for use in hazardous areas. There are a number of terminal and entry configurations available, resulting in a highly versatile enclosure which is suitable for a wide variety of installations. The enclosure is manufactured in a UL approved UV stabilized polycarbonate and is available as a preassembled terminal box or as an empty enclosure for OEM applications.

Features
The GRN8 is a competitive product for lower risk applications in both safe and hazardous areas. It is designed to operate within the ambient temperature range of - 20°C to + 40°C (-4°F to 104°F) but for non hazardous application the upper ambient temperature range can be extended to 120°C (248°F). As well as being UV stable, polycarbonate is resistant to a wide variety of chemicals. The use of silicone rubber lid gasket and 316 stainless steel lid fixings ensures that the chemical resistance of the GRN8 is not compromised.

CE

PRODUCT INFORMATION

PRODUCT IMAGE

BPC Range - Control Stations
The BPC range of control stations have been designed for use in potentially explosive atmospheres and are suitable for most gas groups including hydrogen. Based on the popular BPGC range of enclosures, they are manufactured from carbon loaded glass reinforced polyester (GRP). This material gives excellent mechanical strength and life expectancy, making these control stations particularly suitable for use in harsh environmental conditions. Additionally, the anti-static properties of the enclosure material make them ideal for use in dust hazard environments. A number of common actuator types can be fitted, including Start, Stop, Emergency Stop and rotary type switches. Tag and individual actuator labels can be fitted as required.

Features
- *Application :Industrial and Hazardous areas*
- *Protection Degree: IP66*
- *Certification :ATEX II 2 GD EEx ed IIC T4 IEC Ex*
- *Material: Carbon Loaded Glass Reinforced Polyester (Black)*
- *Temperature Rating: -40o to 80o C (-40o to 176o F)*
- *Maximum Voltage: 415V*
- *Maximum Switching Current: 6A*

CE

SXC Range - Control Stations
The SXC range of control stations have been designed for use in potentially explosive atmospheres and are suitable for all gas groups including hydrogen. Based on the SX range of enclosures, they are manufactured from high quality 316 stainless steel. This material offers the highest degree of environmental protection and is suitable for even the most arduous of conditions. Additionally, stainless steel prevents the build up of static electricity, making these controls stations ideal for use in dust hazard applications.

Features
- *Application :Industrial and Hazardous areas*
- *Protection Degree: IP66*
- *Certification :ATEX II 2 GD EEx ed IIC T4 IEC Ex*
- *Material: Stainless steel 316 (1.4404)*
- *Temperature Rating: -40o to 80o C (-40o to 176o F)*
- *Maximum Voltage: 415V*
- *Maximum Switching Current: 6A*

CE

“Did you know that
Marin Supply AS
offer about 5-10 000
different units?”

SWITCH GEAR

SWITCH GEAR

Safe switchgear for demanding and critical applications.

True to this motto, steute has been providing its customers with innovative, practical and durable switchgear solutions – for over 50 years. When our customers are successful, so are we. Because we always focus on our customers, our company has grown steadily and sustainably over the last decades. steute is committed to continuing this growth – in close cooperation with our customers.

We are situated in East Westphalia, a key region for machine building and electrical goods manufacturing. It is home to qualified specialists committed to developing and manufacturing innovative products. It is also the location of renowned universities, research and educational institutions to which we maintain healthy contacts.

Markets are no longer restricted by national borders. This is why our products are developed and tested for extreme conditions all over the world. We take care to ensure that our products are always certified according to the latest international standards. In every industrial or emerging nation in the world, steute has access to qualified specialists who can guarantee competent support and a quick service.

As a medium-sized company we are able to react with speed to customer wishes and market trends. We are continually developing innovative products and using new technologies as we consistently open up new fields of application for our switchgear. steute is currently active in four different business fields, producing switchgear, sensors and control units for use in industry and in medical equipment:

Wireless
Cable free switchgear and sensors for use in machinery and process plants. These industrial-strength wireless switches communicate with higher level control systems via reliable radio transmission. »Energy harvesting« can play a major role in these products.

Automation
Standard and customised switchgear for machinery and process plants. Tried and tested electromechanical and non-contact technologies for classical applications in industrial automation and process control – always with a view to the latest global requirements.

Extreme
Switchgear and sensors for use in extreme environments or under extreme conditions. Certified products for use in hazardous areas worldwide (e. g. ATEX, IECEx, GOST).

If you cannot find the solution for your application: just get in touch. We have already helped numerous customers by developing »tailormade« switchgear for their individual needs.

Industrial Switchgear - Wired

Systematic control switchgear

Standard and customised switchgear is available for machinery and process plants. Tried and tested electromechanical and non-contact technologies for classical applications in industrial automation and process control – always with a view to the latest global requirements. Safety switchgear is suitable for safety applications according to the Machinery Directive.

PRODUCT INFORMATION

PRODUCT IMAGE

Features:
- *Safety switchgear with positive break NC contacts*
- *High degree of protection*
- *Thermoplastic or metal enclosure*
- *With cable or wiring compartment*

Available switches
Solenoid interlocks
Safety switches with separate actuator
Safety sensors
Safety switches for hinged guards
Position switches with safety function
Safety relay modules
Position switches
Micro switches
Command devices
Multi-function handles
Foot switches with max. five pedals
Safety foot switches
Emergency pull-wire switches
Belt-alignment switches
Pull-wire switches
Slack-wire switches
Magnetic sensors

Approvals/Features
- *Worldwide approvals available depending on the product series*

CE

Industrial Switchgear - Wireless

Cable free switch control

Technology platforms and wireless standards have been developed which are perfectly adapted to their application fields. One development focus is the »Energy Harvesting« principle: the switching devices generate the energy required for the transmission of wireless signals themselves – for example via a solar module or a robust electrodynamic energy generator. For demanding industrial applications different wireless technologies are available: sWave® 868, sWave® 915, sWave® 2.4 GHz or sWave® 2.4 GHz-safe.

PRODUCT INFORMATION

PRODUCT IMAGE

Available switches

- *Different frequency ranges 868 MHz, 915 MHz and 2.4 GHz*
- *sWave® 868/915 applicable in Europe, North America, Australia and Asia*
- *sWave® 2.4 GHz applicable in Europe, North America and Australia*
- *sWave® 2.4 GHz-safe applicable in Europe, North America and Australia*
- *Self-sufficient with energy harvesting, rechargeable battery or long-life battery*
- *Uni- or bi-directional depending on the wireless standard*
- *Wireless safety foot switch available for SIL 2 and PL d to EN ISO 13849-1*
- *Sensing range up to 700 m outside and 60 m inside*
- *Max. 40 transmitters per receiver*

Specification

Wireless position switches
Wireless command devices
Wireless multi-function handles
Wireless foot switches
Wireless pull-wire switches
Wireless magnetic sensors
Wireless inductive sensors
Wireless universal transmitters
Wireless optical transmitters
Wireless receivers and repeaters

CE

Ex-Switchgear - Wired

Switch control under extreme conditions

Many of these requests can be summed up by the phrase »Extreme«. Our customers are looking for switchgear, for example: to be applied at extremely high or low temperatures, to withstand high-pressure cleaner, to meet the international gas and dust explosion hazard requirements, to be installed on offshore platforms and in submarines or to be applied in heavily vibrating machines without any problems.

PRODUCT INFORMATION

PRODUCT IMAGE

Features:
- *Approved for Ex zones 1 and 21, as well as 2 and 22 according to Atex*
- *Safety switchgear with positive break NC contacts*
- *High degree of protection*
- *Thermoplastic or metal enclosure*
- *With cable or wiring compartment*
- *Corrosion-resistant versions*

Available switches
Solenoid interlocks
Safety switches with separate actuator
Safety sensors
Safety switches for hinged guards
Position switches with safety function
Safety relay modules
Position switches
Command devices
Foot switches with max. three pedals
Safety foot switches
Emergency pull-wire switches
Belt-alignment switches
Pull-wire switches
Magnetic sensors
Inductive sensors

Approvals/Features
- *Worldwide approvals available depending on the product series*

CE

Ex-Switchgear - Wireless

Cable free switch control under extreme conditions

Technology platforms and wireless standards have been developed which are perfectly adapted to extreme application fields. One development focus is the »Energy Harvesting« principle: the switching devices generate the energy required for the transmission of wireless signals themselves via a robust electrodynamic energy generator. Steute Wireless switchgear is approved to Atex gas and dust Ex zones.

PRODUCT INFORMATION

PRODUCT IMAGE

Features:
- *Approved for Ex zones 1 and 21, as well as 2 and 22 according to Atex*
- *High degree of protection*
- *Thermoplastic or metal enclosure*
- *Corrosion-resistant versions*
- *Sensing range up to 300 m outside and 30 m inside*
- *Max. 40 transmitters per receiver*

Available switches
Wireless position switches
Wireless command devices
Wireless foot switches
Wireless pull-wire switches
Wireless receivers and repeaters

Approvals/Features
- *Worldwide approvals available depending on the product series*

CE

PUNCH TOOLS

PUNCH TOOLS

Mobile devices - Easy and flexible
Searching for tools that can punch, press, or cut,independent of location? Then look no further!

In this we presents: Manual operated punches, through different shaped punches in sheet metal. This makes processing of various materials such as steel, stainless steel, aluminium or even brass in thicknesses between 1.5 and 3 mm, no problem!

Hydraulic hand tools to press cable lugs and connectors are also available.

Interesting facts about mobile punching equipment
• In the absence of a drilled hole pre-drilling or pre-punching is required
• With an actuation screw measuring:
- Ø 9.5 mm = Ø 10.5 mm
- Ø 11.1 mm = Ø 12 mm
- Ø 19 mm = Ø 20 mm
• Our sheet drills are particularly suitable for this function
• The dies have a cross hair feature for easy marking and precision alignment
• The maximum shearing capacity of pumps and tools, depends on the following factors:
- circumference of the punch
- type of material (steel/stainless steel/ aluminium etc)
- thickness of workpiece
- diameter of actuation screw
- punching force of the tool

Punching tools for processing steel, stainless steel, aluminium and synthetic material
• Quick, easy and effortless
• Flexible, easy to operate and clean
• Shaving-, and burr-free, no rework required
• Also for adjusting existing cut-outs
• Economical
• Dies with cross hairs for easy marking and precision alignment
• Easy to remove cutting waste
• Special shaped punches according to customer specification available

Workshop equipment
• Saves time and money
• Simple and variable
• Special- or customized tools insertable
• Work without marking and align with available stops
• Hands can work freely
• Everything for trimming, punching with punching pump and press
• Optional with stamp at bottom or top
• One hydraulic pump to drive multiple tools

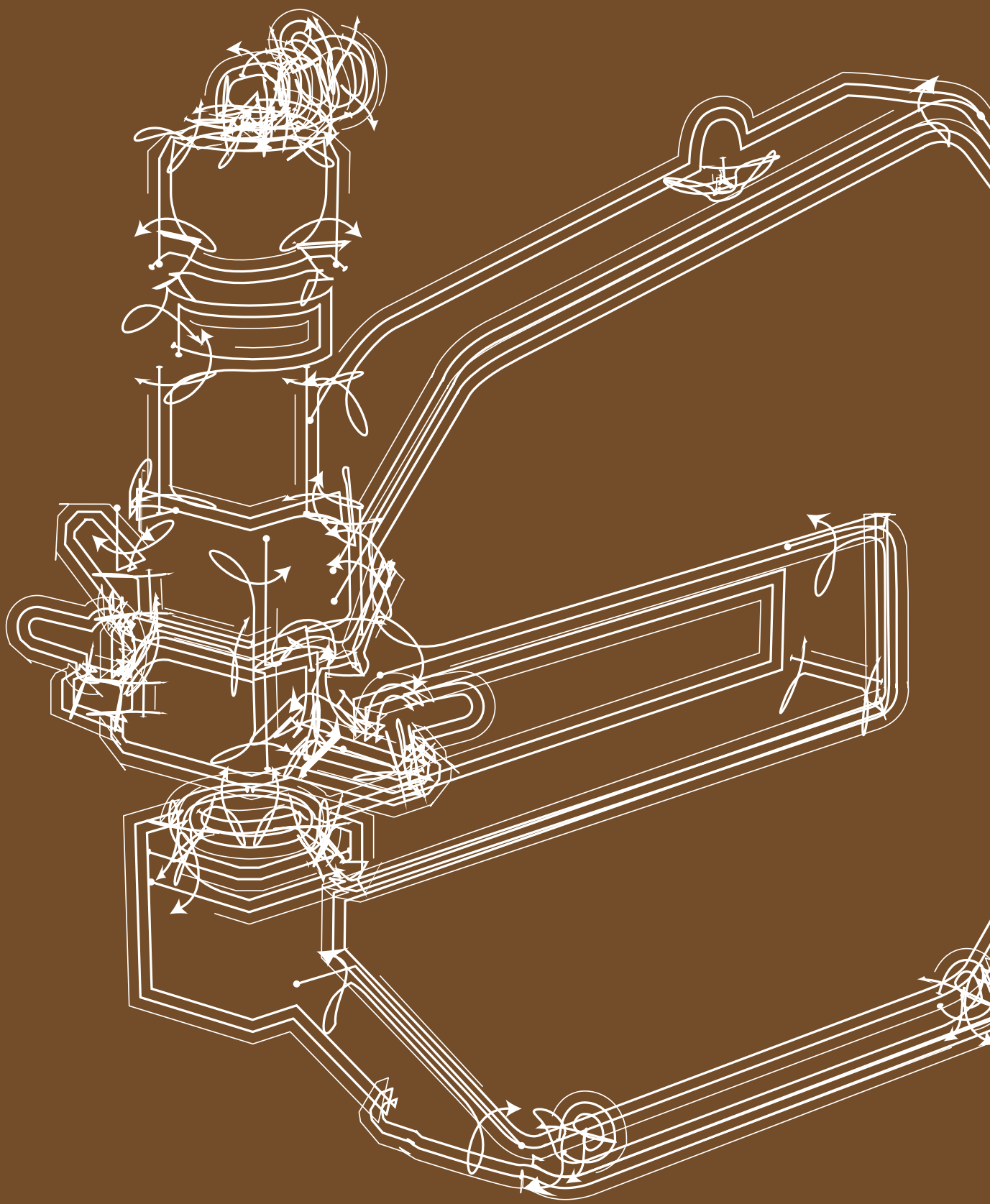
Duct processing
• Combination tool for trimming and punching, as well as for bending and cutting.
• Through C-shaped design of punch tool, long curved ducts can also be processed

Crimping of cable lugs
Various manufacturers of cable lugs exist on the market. Through the construction of cable lugs, specific regulations in regards to output values and current resistors, must correspond to the compressed cross sections. Which outer diameter the manufacturer chooses, depends on own selection. Each manufacturer thereby produces its own press dies to process his own cable lugs. Most manufacturers therefore produce cable lugs andconnectors of the largest supplier with the highest market shares.

These are, among others, Klauke and Weitkowitz. For dimensional identical products, such as from Klauke, we have the Euro series and for the dimensional identical products as from Weitkowitz, we have the standard series in our product range.

Sole exception: production of DIN cable lugs. These are standardized according to DIN specifications and only allowed for specified tolerances.

This means that our DIN press inserts, all DIN cable lugs of all manufacturers can be processed.



Powerlec Vario

Battery powered punch tool

Latest generation powerful battery, with compact size and a low weight of only 2.3 kg, makes the Powerlec Vario the ideal device for applications in confined spaces, delivering great results.
User-friendly and with the its revolving punch press head, it is ideal for working in confined spaces or for assembly.With the use of 19 mm actuation screw, cut-outs of ø 80 mm in 2.5 mm sheet steel can be made.

PRODUCT INFORMATION

PRODUCT IMAGE

Features:

- *Type: with round punches*
- *Easy operation - even in hard to reach spaces - through pivoting punching cylinder.*
- *The microprocessor control of the device switches off automatically after the metal sheet is punched.*
- *The return stroke follows automatically as well.*
- *Punch time of 5 seconds at 22.5 mm diameter with 3 mm thickness.*
- *Weight of the device with battery, without tool: 2.3 kg.*
- *With the included threaded bush, tools with a 9.5mm actuation screw, can be used.*
- *User-friendly operation and control through punching center, as the die with cross thread marking is directly on the device.*

- *Suitable for:*
  - *Round holes up to Ø 80 mm*
  - *Square holes up to 68 mm*
  - *Rectangular holes up to 96 mm diagonal*
- *Maximum sheet thickness in relation to the above mentioned cross-sections:*
  - *Sheet steel up to 2.5 mm*
  - *Stainless steel up to 2.0 mm*
  - *Aluminium up to 4.0 mm*
- *Battery capacity 18V/3Ah*
- *Charging time: 22 min*
- *Noise level: 70.6 dB (A)*
- *Cutting pressure: 60 kN*
- *Screw holder: 19mm*

4,5kg

CE

Powerman Junior
Manual Punch tool

Our “smallest” - small but tough, suitable for small to medium size applications. Lightweight comfortable handling, makes it easy to handle every day. Punchable cross section Ø 50.5 mm in 2 mm sheet steel.

PRODUCT INFORMATION

PRODUCT IMAGE

Features:

- *Easy operation and control through punching centre, since the die is directly on the unit*
- *Product weight: 2.35 kg without inserts*
- *Tool dimensions: pump head; Ø 52 mm, tool length; 300 mm*
- *With punches for through holes: M12 to M50,5*

- *Suitable for:*
  - *Round punches up to Ø 50.5 mm*
  - *Square punches up to 25.4 mm*
  - *Rectangular punches up to 35 mm, diagonal*
- *Max. sheet metal thickness regarding above-mentioned cross-sections:*
  - *Sheet steel up to 2.0 mm*
  - *Stainless steel up to maximum 1.5 mm*
  - *Aluminium up to 3.0 mm*
- *Cutting pressure: 40 kN*
- *Oil filling: 0.11 l*
- *Screw holder: 9,5 mm*

3kg

CE

Powerman Mini

Tool for enlarging or adapting cut-outs

For adapting round, square, and rectangular cut-outs and for producing elongated holes. Small dimensions allow operation in confined spaces. Cutting waste stays within the “mini” Powerman, allowing the tool to be implemented in spaces where no waste is allowed.

PRODUCT INFORMATION

PRODUCT IMAGE

Features:

- *Suitable for:*
  - *Round holes: ø 4.5; 5.5; 6.5; 9 and 11 mm*
  - *From a Ø 22 mm drilled hole , a square cut-out can be made*
  - *From a 17 X 17 mm cut-out, a square or rectangular cut-out can be enlarged*
- *Max. sheet metal thickness regarding above-mentioned cross-sections:*
  - *Sheet steel up to 2.0 mm*
  - *Stainless steel up to 1.5 mm*
  - *Aluminium up to 3 mm*
- *Cutting pressure: 18 kN*
- *Oil filling: 0.1 l*
- *Cylinder stroke: 5 mm*

1,5kg

CE

Powerman Vario

Manual Punch tool

Punching pump with unique selling point: inimitable cutting cylinder mounting allows 360° rotation on 2 axes without functional limitations. Conveniently practical in hard to reach spaces. With the 19 mm actuation screw, cut-outs in size of 80 mm in a 3 mm sheet steel possible. With lesser metal thickness, larger cut-outs possible.

PRODUCT INFORMATION

PRODUCT IMAGE

Features:

- *Operation in hard to reach spaces possible through rotating and pivoting punching cylinder.*
- *Easy operation and control through punching center, since the die is directly on the unit.*
- *Compact design: length; 360 mm*
- *With the included threaded bush, tools with a 9.5 actuation screw, can be used.*
- *Solid construction*

- *Suitable for:*
  - *Round punches up to Ø 80.0 mm*
  - *Square punches up to 68 mm*
  - *Rectangular punches up to 96 mm diagonal*
- *Max. sheet metal thickness regarding above-mentioned cross-sections:*
  - *Sheet steel up to 3.0 mm*
  - *Stainless steel up to 2.0 m*
  - *Aluminium up to 4.0 mm*
- *Cutting pressure: 50 kN*
- *Oil filling: 0.17 l*
- *Screw holder: 19 mm*
- *Type: M1*

2,46kg

CE

Powerman Compact
Manual Punch tool

All-rounder among the punching pumps. This pump combines power with flexibility. Through the hydraulic hose and the compact, rotatable mounted cylinder, the punch allows operation in hard to reach spaces. Punchable cross section Ø 60 mm in 3 mm steel plate.

PRODUCT INFORMATION

PRODUCT IMAGE

Features:

- *Punch cylinder dimensions: Ø 58 x 94 mm*
- *Hydraulic high pressure hose with rotatable connection*
- *Wide selection of round and formed punches available*

- *Suitable for:*
  - *Round punches up to Ø 60 mm*
  - *Square punches up to 46 mm*
  - *Rectangular punches up to 65 mm diagonal*
- *Max. sheet metal thickness regarding above-mentioned cross-sections:*
  - *Sheet steel up to maximum 3.0 mm*
  - *Stainless steel up to 2.0 mm*
  - *Aluminium up to maximum 4.0 mm*
- *Cutting pressure: 50 kN*
- *Oil filling: 0.19 l*
- *Screw holder: 9,5 mm*
- *Tube length: 700 mm*

10kg

CE

Quick-press 300

Work station punch tool

For fast and precise punching without pre-drilling. Stamp and die, can be implemented at top or bottom. Punch midpoint display option; with laser LED or with spring centering pin.

PRODUCT INFORMATION

PRODUCT IMAGE

Features:

- *Suitable for:*
  - *Round punch; max. diameter 40.5 mm*
  - *Square punch; max. 25.4 mm*
- *Repositioning not possible*
- *Maximum sheet thickness:*
  - *Steel sheet: 2.0 mm*
  - *Stainless steel: 1.5 mm*
  - *Aluminium: 3.0 mm*
- *Length stop adjustable from 0-500 mm*
- *Depth stop adjustable from 23-300 mm*
- *Repositioning stop with precision screw adjustment from 25-70 mm punch spacing*
- *Housing Ø for clamping pin: 13 mm*
- *Punching force: 45 kN*
- *To operate the laser LED module, a 230V / 50 Hz power supply is required*
- *When ordering a special punch, it is important to specify the die housing Ø*
- *Cutting pressure: 45 kN*
- *Compression hydraulic ram: 450 bar*

48kg

CE

Maxi-press 500

Work station punch tool

For the fast and precise punching without pre-drilling, of smooth or up to 30 mm folded sheet metal. Solid machine construction allows for repositioning. Powerful cylinder allows the cutting of cross sections up to Ø 63.5 mm, in up to 3 mm steel plates. Usable processing depth: 500 (900) mm.

PRODUCT INFORMATION

PRODUCT IMAGE

Features:

- *Suitable for:*
  - *Round punch: maximum Ø 63.5 mm*
  - *Square punch: maximum 46 mm*
  - *Rectangular punch: maximum 60 mm diagonal*
- *Max sheet thickness:*
  - *Sheet steel: 3.0 mm*
  - *Stainless steel: 2.0 mm*
  - *Aluminium: 3.5 mm (Depending on the size of punch)*
- *Housing Ø for clamping pin: 20 mm*
- *Punching force: 100 kN*
- *Cylinder stroke: 42 mm*
- *Working pressure: 450 bar*
- *Cutting pressure: 100 kN*
- *Operating pressure: 450 bar*
- *Cylinder stroke: 42 mm*

92kg

CE

“Did you know that Marin Supply AS sells about 59 000 units per year?”

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