Our product range

e2s
warning signals

E2S is the world's leading independent warning signals manufacturer with over 20 years of engineering expertise. Our worldwide approved products combine the latest technology with leading industrial design and build quality to deliver signals you can depend on.

Working together with system integrators, engineers and end users we continuously innovate to develop the most comprehensive range of signalling products with substantial benefits such as ease of interface, quick installation, flexible customisation and reliable performance. This is why our clients around the world trust E2S to protect their people and promote safety in their processes.

The E2S global network of distributors and partners, sustained by our highly efficient operations and logistics, provide fast product delivery and excellent local customer support.

Find out more at e2s.com

GOST-R

Hazardous
Area Signalling

BEx Combination Signals
Zone 1, 2, 21, 22 - Haz Loc.

BExCS110-05/
BExDCS110-05

BExCS110-05-
R/BExDCS110-05-R

BExCS110-L1/
BExDCS110-L1

BExCS110-L1-
R/BExDCS110-L1-R

The combination devices offer a dual signal from one installation point enabling the most cost-effective way to produce a warning signal in the protected area.

The Xenon or L.E.D. beacons can be combined with an alarm horn sounder either employing a traditional flare horn design, or the more compact radial horn design which distributes sound omni-directionally and enables the beacon to be oriented optimally in any direction.

Range Info:

Material
Corrosion proof, marine grade copper free LM6 aluminium, chromated and powder coated.

Ingress Protection
Ex d IP67, Ex de IP66

Fixings
Stainless steel.

Mounting
Ratchet adjustable stainless steel 'U' bracket.

Cable entries
Dual M20 ISO. One stopping plug included.

Approvals:

II 2G Ex d IIB T4 - Zone 1 & 2
II 2G Ex d IIB T4, II 2D Ex tD A21
- Zone 1, 2, 21 & 22

ATEX, IECEx, EAC Ex

Combination Signals
with Xenon Strobes

Ref: 1-23-010
BExCS110-05/BExDCS110-05
Alarm Horn & Xenon Strobe
12/24/48Vdc & 115/230Vac 50/60HZ.
Max output: 117dB(A) @ 1 metre
- 108dB(A) @ 10ft/3m
32 alarm tones with 3 stages/channels
5 Joule Xenon beacon
Effective intensity 250cd
Amber, Blue, Clear, Green, Magenta,
Red & Yellow lenses
181.0mm x 365.0mm (7.13" x 14.37")

Ref: 1-23-020
BExCS110-05-R/BExDCS110-05-R
Omnidirectional Horn & Strobe
12/24/48Vdc & 115/230Vac 50/60HZ.
Max output: 117dB(A) @ 1 metre
- 108dB(A) @ 10ft/3m
32 alarm tones with 3 stages/channels
5 Joule Xenon beacon
Effective intensity 250cd
Amber, Blue, Clear, Green, Magenta,
Red & Yellow lenses
165.0mm x 296.7mm (6.50" x 11.69")

Combination Signals
with L.E.D Beacons

Ref: 1-23-030
BExCS110-L1/BExDCS110-L1
Combination Horn & L.E.D
10-50Vdc & 115/230Vac 50/60HZ.
Max output: 117dB(A) @ 1 metre
- 108dB(A) @ 10ft/3m
32 alarm tones with 3 stages/channels
Array of 32 high output L.E.D.s
Effective intensity 11cd
Amber, Blue, Clear, Green, Red & Yellow lenses
181.0mm x 365.0mm (7.13" x 14.37")

Ref: 1-23-040
BExCS110-L1-R/BExDCS110-L1-R
Omnidirectional Horn & L.E.D
10-50Vdc & 115/230Vac 50/60HZ.
Max output: 117dB(A) @ 1 metre
- 108dB(A) @ 10ft/3m
32 alarm tones with 3 stages/channels
Array of 32 high output L.E.D.s
Effective intensity 11cd
Amber, Blue, Clear, Green, Red & Yellow lenses
165.0mm x 296.7mm (6.50" x 11.69")

GOST-R

Full specifications at **e2s.com**

BEx Visual Signals

Zone 1, 2, 21, 22 - Haz Loc.

BExBG05/10/15   BExBG21   BExBGL1   BExTBG05   BExCBG05-05

The BEx beacons are ideal for general signalling duties whilst their robust construction makes installation in the harshest of environments possible.

The BExBG range includes 5, 10, 15 and 21 Joule Xenon strobe beacons. The 21 Joule version has three distinct user selectable flash patterns and for units with DC operating voltages a second stage flash pattern can be selected remotely. The BExBGL1 multi-function L.E.D. beacon 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.

All versions feature a stainless steel guard, stainless steel mounting bracket and stopping plug as standard. All models have dual M20 cable entries, large termination areas and an ingress protection level of up to IP67.

For installations requiring defined safety integrity levels, the BExBG05D, BExBG10D and BExBG15D Xenon beacons are available in a SIL 2 compliant version.

Range Info:

Material
Corrosion proof, marine grade copper free LM6 aluminium, chromated and powder coated.

Ingress Protection
Ex d IP67, Ex de IP66

Fixings
Stainless steel.

Mounting
Ratchet adjustable stainless steel 'U' bracket.

Cable entries
Dual M20 ISO. One stopping plug included.

Approvals:

II 2G Ex d IIC T6-T3 - Zone 1 & 2
II 2G Ex de IIC T5-T4 - Zone 1 & 2
II 2D Ex tD A21 - Zone 1, 2, 21 & 22

ATEX, IECEx, INMETRO, EAC Ex

Xenon Strobe Beacons

Ref: 1-21-110
BExBG05 Xenon Beacon 5 Joule
12/24/48Vdc & 115/230Vac 50/60Hz.
Effective intensity 250cd
Amber, Blue, Clear, Green, Magenta,
Red & Yellow lenses
153.6mm x 259.0mm (6.05'' x 10.20'')

Ref: 1-21-120
BExBG10 Xenon Beacon 10 Joule
12/24/48Vdc & 115/230Vac 50/60Hz.
Effective Intensity 500cd
Amber, Blue, Clear, Green, Magenta,
Red & Yellow lenses
153.6mm x 259.0mm (6.05'' x 10.20'')

Ref: 1-21-130
BExBG15 Xenon Beacon 15 Joule
24/48Vdc & 115/230Vac 50/60Hz.
Effective intensity 750cd
Amber, Blue, Clear, Green, Magenta,
Red & Yellow lenses
153.6mm x 259.0mm (6.05'' x 10.20'')

Ref: 1-21-090
BExBG21 Xenon Beacon 21 Joule
24/48Vdc & 115/230Vac 50/60Hz.
Effective intensity 1,050cd
Amber, Blue, Clear, Green, Magenta,
Red & Yellow lenses
153.6mm x 259.0mm (6.05'' x 10.20'')

L.E.D. Beacons

Ref: 1-21-100
BExBGL1 L.E.D. Beacon
10-50Vdc & 115/230Vac 50/60Hz.
Array of 32 high output L.E.D.s
Effective intensity 11cd
Amber, Blue, Green, Red & Yellow lenses
153.6mm x 246.0mm (6.05'' x 9.69'')

Telephone Initiated Beacons

Ref: 1-21-150
BExTBG05 Telephone Beacon 5 Joule
115/230Vac 50/60Hz.
Effective intensity 250cd
Amber, Blue, Clear, Green, Magenta,
Red & Yellow lenses
153.6mm x 246.0mm (6.05'' x 9.69'')

Dual Xenon Strobe Beacons

Ref: 1-21-140
BExCBG05-05 Dual Xenon Beacon 5 Joule
12/24/48Vdc & 115/230Vac 50/60Hz.
Effective intensity 250cd x 2
Amber, Blue, Clear, Green, Magenta,
Red & Yellow lenses
165.0mm x 332.0mm (6.05'' x 13.07'')

Full specifications at **e2s.com**

BEx Audible Signals

Zone 1, 2, 21, 22 - Haz Loc.

BExS110/BExDS110

BExS120/BExDS120

BExS110-R/BExDS110-R

BExTS110/BExDTS110

The powerful BEx alarm horn sounders are available with traditional flare horn design or radial horn design which distributes the warning signal omni-directionally in a compact form.

All versions offer 32 different first stage alarm sounds which can be selected via an internal switch. Each tone one can be remotely triggered to change to a second or third stage alarm sound.

For installations requiring defined safety integrity levels the BExS110 is available in a SIL 2 compliant version.

The BExTS110 telephone initiated version has a ring-tone circuit that 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.

Range Info:

Material
Corrosion proof, marine grade copper free LM6 aluminium, chromated and powder coated.

Ingress Protection
Ex d IP67, Ex de IP66

Fixings
Stainless steel.

Mounting
Ratchet adjustable stainless steel 'U' bracket.

Cable entries
Dual M20 ISO. One stopping plug included.

Approvals:

II 2G Ex d IIC T4 - Zone 1 & 2
II 2G Ex de IIC T4 - Zone 1 & 2
II 2G Ex d IIC T4, II 2D Ex tD A21
- Zone 1, 2, 21 & 22
II 2G Ex de IIC T4, II 2D Ex tD A21
- Zone 1, 2, 21 & 22

ATEX, IECEx, INMETRO, EAC Ex, VdS, MED

Alarm Sounders/Horns

Ref: 1-22-040
BExS110/BExDS110 Alarm Horn Sounders
12/24/48Vdc & 115/230Vac 50/60HZ.
Max output: 117dB(A) @ 1m
- 108dB(A) @ 10ft/3m
32 alarm tones with 3 stages/channels
181.0mm x 275.0mm (7.13" x 10.83")

Ref: 1-22-050
BExS120/BExDS120 Alarm Horn Sounders
12/24/48Vdc & 115/230Vac 50/60HZ.
Max output: 121dB(A) @ 1m
- 112dB(A) @ 10ft/3m
32 alarm tones with 3 stages/channels
220.0mm x 326.0mm (8.66" x 12.83")

Omnidirectional Alarm Horns

Ref: 1-22-060
BExS110-R/BExDS110-R Radial Output Alarm Sounders
12/24/48Vdc & 115/230Vac 50/60HZ.
Max output: 117dB(A) @ 1m
- 108dB(A) @ 10ft/3m
32 alarm tones with 3 stages/channels
154.1mm x 194.0mm (6.07" x 7.64")

Telephone Initiated Alarm Horn
Ref: 1-22-090
BExTS110/BExDTS110 Telephone Initiated Alarm Horn
115/230Vac 50/60HZ.
Max output: 117dB(A) @ 1m
- 108dB(A) @ 10ft/3m
32 alarm tones with 3 stages/channels
181.0mm x 262.6mm (7.13" x 10.34")

GOST-R

G206011

0786-CPD-20225

Full specifications at **e2s.com**

BEx PA Loudspeakers
Zone 1, 2, 21, 22 - Haz Loc.

BExL15/BExDL15

BExL25/BExDL25

There are four versions of each PA loudspeaker, 8 ohm or 16 ohm and 70V or 100V Line transformer.

On 70V and 100V line transformer units there are multiple tappings for each version of loudspeaker. The BExL25D unit produces output levels in the 117dB(A) range and the BExL15D unit produces output levels in the 112dB(A) range.

Range Info:

Material
Corrosion proof, marine grade copper free LM6 aluminium, chromated and powder coated.

Ingress Protection
Ex d IP67, Ex de IP66

Fixings
Stainless steel.

Mounting
Ratchet adjustable stainless steel 'U' bracket.

Cable entries
Dual M20 ISO. One stopping plug included.

Approvals:

II 2G Ex d IIC T4 - Zone 1 & 2
II 2G Ex de IIC T4 - Zone 1 & 2
II 2G Ex d IIC T4, II 2D Ex tD A21
- Zone 1, 2, 21 & 22
II 2G Ex de IIC T4, II 2D Ex tD A21
- Zone 1, 2, 21 & 22

ATEX, IECEx, INMETRO, EAC Ex

PA Loudspeakers

Ref: 1-22-120
BExL15/BExDL15 PA Loudspeakers 15W
70 or 100V or 8 or 16 Ohm low impedance
Rated SPL 113dB +/-3dB @ 15W @ 1m
181.0mm x 275.0mm (7.13mm x 10.83'')

Ref: 1-22-130
BExL25/BExDL25 PA Loudspeakers 25W
70 or 100V or 8 or 16 Ohm low impedance
Rated SPL 119dB +/-3dB @ 15W @ 1m
220.0mm x 326.0mm (8.66'' x 12.83'')

BEx Specialist Audible Products
Zone 1, 2, 21, 22 - Haz loc.

BExH120-R/BExDH120-R

BExH120/BExDH120

The BEx specialist audible products authentically reproduce the traditional sounds of electro-mechanical devices whilst providing a significantly higher level of performance and reliability.

The digitally stored recordings are output via a class D amplifier achieving sound levels exceeding the performance of the original mechanical devices whilst offering a continuously rated signal. The Belltronic model with its radial horn design not only physically emulates the traditional bell it also replicates the distribution of the audible signal.

Range Info:

Material
Corrosion proof, marine grade copper free LM6 aluminium, chromated and powder coated.

Ingress Protection
IP67

Fixings
Stainless steel.

Mounting
Ratchet adjustable stainless steel 'U' bracket.

Cable entries
Dual M20 ISO. One stopping plug included.

Approvals:

II 2G Ex d IIC T4 - Zone 1 & 2
II 2G Ex d IIC T4, II 2D Ex tD A21
- Zone 1, 2, 21 & 22

ATEX, IECEx, INMETRO, EAC Ex

'Belltronic ' Alarm Sounders/Horns

Ref: 1-22-080
BExH120-R/BExDH120-R 'Belltronic' Ex Bell
24/48Vdc & 115/230Vac 50/60Hz.
Max output: 106dB(A) @ 1m
- 97dB(A) @ 10ft/3m
Digitally stored mechanical bell sound.
154.1mm x 194.0mm (6.07'' x 7.64'')

'Hootronic ' Alarm Sounders/Horns

Ref: 1-22-070
BExH120/BExDH120 'Hootronic' Alarm Horn
24/48Vdc & 115/230Vac 50/60Hz.
Max output: 117.5dB(A) @ 1m
- 108.5dB(A) @ 10ft/3m
5 digitally stored electro-mechanical horn, siren & bell alternatives.
220.0mm x 313.0mm (8.66'' x 12.32'')

GOST-R

Full specifications at **e2s.com**

BEx plated assemblies
Zone 1, 2, 21, 22 Haz loc.

The BEx range of beacons can be configured to create sets of status lights suitable 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 simplify and redcue installation costs.

Any product from the BEx range of signals can be combined to provide status indication, through the use of BExBGL1 L.E.D beacons, or visual warning by using the BExBG 5, 10, 15 or 21J Xenon strobe beacons all of which can be combined with BExS audible signals.

Range Info:

Signal Material
Corrosion proof, marine grade copper free LM6 aluminium, chromated and powder coated.

Back Plate Material
Powder coated stainless steel 304 or 316.

Junction Box Material
GRP - glass reinforced polyester.

Ingress Protection
Ex d IP67, Ex de IP66

Fixings
Stainless steel.

Mounting
Multiple fixing positions via back plate

Junction Box Cable Entries
4 x M20 ISO as standard - custom sizes and qtys available.

Full specifications at **e2s.com**

BEx Manual Call Points
Zone 1, 2, 21, 22 - Haz Loc.

BExCP3A-BG/BExCP3B-BG

BExCP3A-PB/BExCP3B-PB

BExCP3A-PT/BExCP3B-PT

The BEx 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 the break glass, push button and tool reset versions are certified to ATEX and IECEx standards. The back box can be rotated to give one M20 side entry and dual M20 entries either on the top or bottom.

Range Info:

Material
Corrosion proof, marine grade, copper free LM6 (A413) aluminium.

Ingress Protection
IP66

Fixings
Stainless steel.

Cable entries
2 x M20 top/bottom and 1 x M20 left/right.

Stopping Plugs
2 x Ex e nylon plugs as standard.
Brass and stainless steel plugs optional.

Options

End of line and/or series monitoring resistors
Alternative housing colours are available to meet specific requirements.
DIN rail mounted terminal blocks: 8 x 2.5mm²
Stainless steel lift flap for break glass model.
Metalised polyester "Duty" label.
2'' pipe mount kit

Approvals:

II 2G Ex e d IIC T6 Gb, II 2D Ex t IIIC T60°C Db
II 2G Ex e d mb IIC T4 Gb,
II 2D Ex t IIIC T70°C Db

ATEX, IECEx, INMETRO, EAC Ex

Break Glass Call Point

Ref: 1-24-070
BExCP3A-BG/BExCP3B-BG
Break Glass Call Point
98.0mm x 98.0mm x 76.0mm
(3.86'' x 3.86'' x 2.99'')

Push Button Call Point

Ref: 1-24-080
BExCP3A-PB/BExCP3B-PB
Push Button Call Point
98.0mm x 98.0mm x 76.0mm
(3.86'' x 3.86'' x 2.99'')

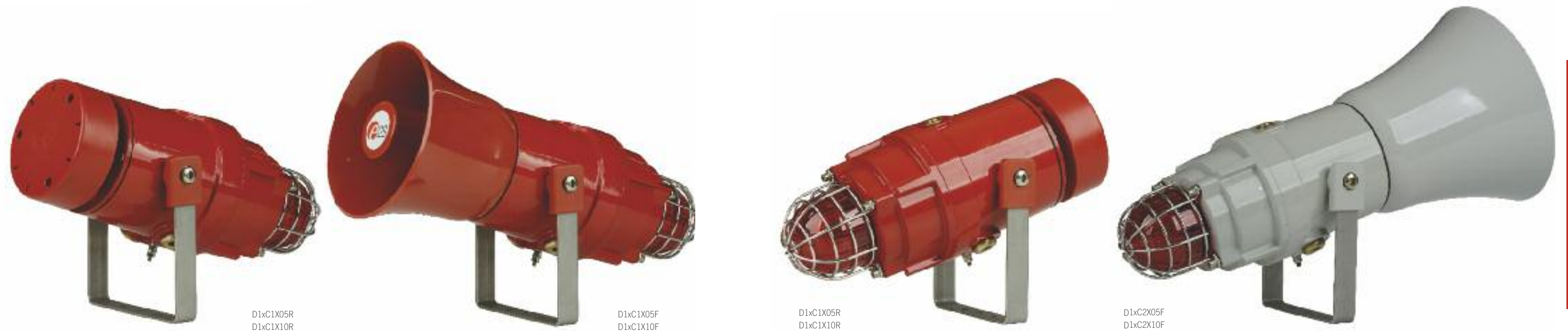### Tool Reset Call Point

Ref: 1-24-090
BExCP3A-PT/BExCP3B-PT
Tool Reset Call Point
98.0mm x 98.0mm x 76.0mm
(3.86'' x 3.86'' x 2.99'')

GOST-R

INMETRO

Full specifications at **e2s.com**

D1x Combination Signals Class I/II Div 1, Zone 1, Zone 20

D1xC1X05R
D1xC1X10R

D1xC1X05F
D1xC1X10F

D1xC1X05R
D1xC1X10R

D1xC2X05F
D1xC2X10F

The D1x combined signals - audible and visual warning from one device.

The Xenon strobe beacons are combined with alarm horn sounders either employing a traditional flare horn design, or the compact radial horn design which distributes sound omni-directionally and enables the beacon to be oriented optimally in any direction.

Strobe versions include 5 or 10 Joules with candela outputs of up to 1,000,000cd. Available in seven colours with a UV stable PC, field replaceable, filter. The flare version alarm horn sounders are available in sound pressure levels of up to 117 and 125dB(A).

The D1xC1X05 variants with 24Vdc operating voltage are also approved for audible public mode and visual private mode fire alarm use.

A threaded flame path enable quick installation and simplifies maintenance inspection whilst the innovative internal arrangement maximises wiring space. The ratchet adjustable mounting bracket allows the device to be positioned for maximum effectiveness.

Approvals:

Class I Division 1 Group ABCD
Class I Zone 1 IIC
D1xC1X05:
T5 Ta -40°C to +70°C
T6 Ta -40°C to +55°C
D1xC1X10, D1xC2X05, D1xC2X10:
T5 Ta -40°C to +55°C
T6 Ta -40°C to +50°C
UL, cULs

Class II Division 1 Group FG
Zone 20 IIIB
D1xC1X05, D1xC2X05:
T4 Ta -40°C to +55°C
T4A Ta -40°C to +40°C

UL, cULs

Range Info:

Enclosure Material
Corrosion proof, marine grade, copper free LM6 aluminium, chromated and powder coated.

Flare Material
ABS - UL94 V0 5VA FR

Enclosure & Flare colour
Red (RAL3000) or Grey (RAL7038)

Lens colour filters
Amber, Blue, Clear, Green, Magenta, Red & Yellow

Ingress Protection
Type 4, 4X, 13, 3R, IP67

Fixings
Stainless steel.

Mounting
Ratchet adjustable stainless steel 'U' bracket.

Cable entries
1 x 1/2" NPT
2 x M20 ISO (or adapted to 1/2" or 3/4" NPT)
Stopping plugs included (brass, nickel plated or stainless steel).

Combination Signals with Xenon Strobes

Ref: 1-23-060
D1xC1X05R
Radial Alarm Horn & 5 Joule Strobe
24Vdc & 115/230Vac 50/60HZ
Max output: 115dB(A) @ 1 metre
- 106dB(A) @ 10ft/3m
64 alarm tones with 4 stages/channels
5 Joule Xenon beacon
Effective intensity 250cd
Peak intensity 500,000cd
122.0mm x 339.0mm (4.80" x 13.33")

D1xC1X10R
Radial Alarm Horn & 10 Joule Strobe
24Vdc & 115/230Vac 50/60HZ
Max output: 115dB(A) @ 1 metre
- 106dB(A) @ 10ft/3m
64 alarm tones with 4 stages/channels
10 Joule Xenon beacon
Effective intensity 500cd
Peak intensity 1,000,000cd
122.0mm x 339.0mm (4.80" x 13.33")

Ref: 1-23-050
D1xC1X05F
Flare Alarm Horn & 5 Joule Strobe
24Vdc & 115/230Vac 50/60HZ
Max output: 117dB(A) @ 1 metre
- 108dB(A) @ 10ft/3m
64 alarm tones with 4 stages/channels
5 Joule Xenon beacon
Effective intensity 250cd
Peak intensity 500,000cd
181.0mm x 408.0mm (7.13" x 16.06")

D1xC1X10F
Flare Alarm Horn & 10 Joule Strobe
24Vdc & 115/230Vac 50/60HZ
Max output: 117dB(A) @ 1 metre
- 108dB(A) @ 10ft/3m
64 alarm tones with 4 stages/channels
10 Joule Xenon beacon
Effective intensity 500cd
Peak intensity 1,000,000cd
181.0mm x 408.0mm (7.13" x 16.06")

Ref: 1-23-070
D1xC2X05F
Flare Alarm Horn & 5 Joule Xenon
24Vdc & 115/230Vac 50/60HZ
Max output: 125dB(A) @ 1 metre
- 116dB(A) @ 10ft/3m
64 alarm tones with 4 stages/channels
5 Joule Xenon beacon
Effective intensity 250cd
Peak intensity 500,000cd
220.0mm x 458.0mm (8.66" x 18.04")

D1xC2X10F
Flare Alarm Horn & 5 Joule Xenon
24Vdc & 115/230Vac 50/60HZ
Max output: 125dB(A) @ 1 metre
- 116dB(A) @ 10ft/3m
64 alarm tones with 4 stages/channels
10 Joule Xenon beacon
Effective intensity 500cd
Peak intensity 1,000,000cd
220.0mm x 458.0mm (8.66" x 18.04")

Full specifications at **e2s.com**

D1x Horns & Loudspeakers Class I/II Div 1, Zone 1, Zone 20

D1xS1F
D1xL1F

D1xS2F
D1xL2F

D1xS2F
D1xL2F

D1xS1R

The powerful D1x alarm horn sounders are available with traditional flare horn design or the compact radial horn design which distributes the warning signal omni-directionally.

All versions offer 64 different first stage/channel alarm sounds which can be selected via an internal switch. Each tone can be remotely triggered e.g. via an external relay, to change to a second, third or fourth stage/channel alarm sound.

The D1xS1 alarm horn variants, in 24Vdc operating voltage, are also available approved for public mode fire alarm use.

The D1x PA loudspeaker driver and flare horn is available in 15 or 25W versions. Input options include 8 or 16 ohm low impedance and 70V line transformer.

The 70V line transformer units feature multiple tappings for each version of the loudspeaker.
Field replaceable flare - driver employs standard 1 3/8'' -18 male thread coupling.

Approvals:
Class I Division 1 Group ABCD
Class I Zone 1 IIC
T6 Ta -40°C to +70°C
Class II Division 1 Group FG
Zone 20 IIIB
T6 Ta -40°C to +70°C

UL, cULs

Range Info:
Enclosure Material
Corrosion proof, marine grade, copper free LM6 aluminium, chromated and powder coated.

Flare Material
ABS - UL94 V0 5VA FR

Enclosure & Flare colour
Red (RAL3000) or Grey (RAL7038)

Ingress Protection
Type 4, 4X, 13, 3R, IP67

Fixings
Stainless steel.

Mounting
Ratchet adjustable stainless steel 'U' bracket.

Cable entries
1 x 1/2" NPT
2 x M20 ISO (or adapted to 1/2" or 3/4" NPT)
Stopping plugs included (brass, nickel plated or stainless steel).

Alarm Sounders/Horns
Ref: 1-22-140
D1xS1F Flare Alarm Horn Sounders
24Vdc (10-30vdc) & 115/230Vac 50/60HZ
Max output: 117dB(A) @ 1m
- 108dB(A) @ 10ft/3m
64 alarm tones with 4 stages/channels
181.0mm x 285.0mm (7.13" x 11.20")

Ref: 1-22-160
D1xS2F Flare Alarm Horn Sounders
24Vdc (10-30vdc) & 115/230Vac 50/60HZ
Max output: 125dB(A) @ 1m
- 116dB(A) @ 10ft/3m
64 alarm tones with 4 stages/channels
220.0mm x 334.mm (8.66" x 13.14")

Omnidirectional Alarm Horns
Ref: 1-22-150
D1xS1R Radial Horn Alarm Sounders
24Vdc (10-30vdc) & 115/230Vac 50/60HZ
Max output: 115dB(A) @ 1m
- 106dB(A) @ 10ft/3m
64 alarm tones with 4 stages/channels
122.0mm x 215.0mm (4.80" x 8.48")

PA Loudspeakers
Ref: 1-22-180
D1xL2F PA Loudspeakers 25W
Re-entrant flare horn
70V line transformer
8 or 16 Ohm low impedance
Rated SPL 119dB +/-3dB @ 25W @ 1m
220.0mm x 334.mm (8.66" x 13.14")

Ref: 1-22-170
D1xL1F PA Loudspeakers 15W
Re-entrant flare horn
70V line transformer
8 or 16 Ohm low impedance
Rated SPL 113dB +/-3dB @ 15W @ 1m
181.0mm x 285.0mm (7.13" x 11.20")

Full specifications at **e2s.com**

GNEx Visual Signals

Zone 1, 2, 21 & 22 - Haz Loc.

GNExB2X21

GNExB2X15

GNExB2X10

GNExB1X05

GNExJ2

The GNEx explosion proof Xenon strobe beacon range is IECEx & ATEX approved. The robust IP66 corrosion proof GRP enclosure and extended temperature range ensures the GNExB1 and GNExB2 strobes are suitable for all Zone 1, 2, 21 & 22 hazardous location signalling applications.

The GNExB2 beacon range produces up to 902cd effective candela - a very high output Xenon strobe flash as required for efficient signalling over greater distances and in high ambient light. The GNExB2 beacons are available in 10, 15 and 21 Joule variants. The GNExB1 is available as a compact 5 Joule Xenon.

For both beacon sizes the optically enhanced, field replaceable, colour filter enhances the strobe and are constructed from UV stable PC. The GRP enclosure features a threaded flame path, multiple cable entries and a large termination area - all of which significantly reduce installation time.

Complimening the GNEx range is the GNExJ2 Ex d junction box. Suitable for any use the box features multiple cable entries and terminal configurations.

Range Info:

Material
Corrosion proof, glass-reinforced polyester.

Ingress Protection
IP66

Fixings
Stainless steel.

Mounting
Surface mount

Cable entries
Dual & triple M20 ISO. Stopping plug included. M25, 1/2"NPT and 3/4" NPT available.

Approvals:

ATEX
EN 60079-0 : 2012
EN 60079-1 : 2014
EN 60079-31 : 2014

IECEx
IEC 60079-0 : 2011
IEC 60079-1 : 2014
IEC 60079-31 : 2013

Xenon Strobe Beacons

Ref: 1-21-052
GNExB2 Xenon Strobe 21 Joule
20-28/42-54Vdc & 110-125V/220-240V ac.
Effective intensity 902.69cd
Amber, Blue, Clear, Green, Magenta,
Red & Yellow lenses
157.4mm x 242.5mm (6.19'' x 9.55'')
II 2G Ex db IIC Gb T4 Ta -50°C to +70°C
II 2D Ex tb IIIC Db T130°C Ta-50°C to +70°C

Ref: 1-21-050
GNExB2 Xenon Strobe 15 Joule
20-28/42-54Vdc & 110-125V/220-240V ac.
Effective intensity 666.92cd
Amber, Blue, Clear, Green, Magenta,
Red & Yellow lenses
157.4mm x 242.5mm (6.19'' x 9.55'')
II 2G Ex db IIC Gb T5 Ta -50°C to +40°C
II 2G Ex db IIC Gb T4 Ta -50°C to +70°C
II 2D Ex tb IIIC Db T120°C Ta-50°C to +70°C

Ref: 1-21-052
GNExB2 Xenon Strobe 10 Joule
20-28/42-54Vdc & 110-125V/220-240V ac.
Effective intensity 479.39cd
Amber, Blue, Clear, Green, Magenta,
Red & Yellow lenses
157.4mm x 242.5mm (6.19'' x 9.55'')
II 2G Ex db IIC Gb T5 Ta -50°C to +40°C
II 2G Ex db IIC Gb T4 Ta -50°C to +70°C
II 2D Ex tb IIIC Db T120°C Ta-50°C to +70°C

Ref: 1-21-052
GNExB1 Xenon Strobe 5 Joule
20-28/42-54Vdc & 110-125V/220-240V ac.
Effective intensity 117.93cd
Amber, Blue, Clear, Green, Magenta,
Red & Yellow lenses
121.3mm x 155.7mm (4.77'' x 6.13)
II 2G Ex db IIC Gb T6 Ta -50°C to +40°C
II 2G Ex db IIC Gb T5 Ta -50°C to +55°C
II 2G Ex db IIC Gb T4 Ta -50°C to +70°C
II 2D Ex tb IIIC Db T110°C Ta-50°C to +70°C

Junction Box

Ref: 1-22-500
GNExJ2 Junction Box
60Vdc max & 260Vac 50/60Hz max.
5W max power
II 2G Ex db IIC Gb T6 Ta -50°C to +70°C
II 2D Ex tb IIIC Db T80°C Ta -50°C to +70°C
157.4mm x 108.5mm (6.19'' x 4.27'')

Full specifications at **e2s.com**

GNEx Audible signals & PA loudspeakers
Zone 1 & 2 - Haz Loc.

GNExS1

GNExS2

GNExS1-R

GNExL1

GNExL2

These high-powered alarm horn sounders offer sound level outputs of up to 123dB(A) at 1 metre with a choice of 45 alarm tones and 4 remotely selectable stages.

The alarm tone frequencies for the first 2 stages are independently selectable. The radial horn presents a compact form and distributes the warning signal omni-directionally.

Also available are three versions of PA loudspeaker: 8 ohm or 16 ohm and 70V/100V Line transformer. On the 70V/100V line transformer units there are multiple output tappings for each version of loudspeaker.

Range Info:

Material
Corrosion proof, glass-reinforced polyester.

Ingress Protection
IP67

Fixings
Stainless steel.

Mounting
Ratchet adjustable stainless steel 'U' bracket.

Cable entries
Dual M20 ISO. One stopping plug included.

Approvals:

ATEX
EN 60079-0 : 2012
EN 60079-1 : 2007

IECEx
IEC 60079-0 : 2011
IEC 60079-1 : 2007

Alarm Sounders/Horns

Ref: 1-22-010
GNExS1 Alarm Horn Sounder
10-30/38-60Vdc & 100-260Vdc/ac 50/60Hz.
Max output: 117dB(A) @ 1m
- 108dB(A) @ 10ft/3m
45 alarm tones with 4 stages/channels
182.7mm x 282.1mm (7.19" x 11.11")
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

Ref: 1-22-020
GNExS2 Alarm Horn Sounder
10-30/38-60Vdc & 100-260Vac 50/60Hz.
Max output: 123dB(A) @ 1m
- 114dB(A) @ 10ft/3m
45 alarm tones with 4 stages/channels
182.7mm x 332.5mm (7.19" x 13.09")
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

Radial Horn Alarm Sounder

Ref: 1-22-030
GNExS1-R Radial Alarm Sounder/Horn
10-30/38-60Vdc & 100-260Vdc/ac 50/60Hz.
Max output: 117dB(A) @ 1m
- 108dB(A) @ 10ft/3m
45 alarm tones with 4 stages/channels
182.7mm x 213.9mm (7.19" x 8.42")
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

PA Loudspeakers

Ref: 1-22-100
GNExL1 PA Loudspeaker 15W
70V/100V or 8 or 16 Ohm low impedance
Rated SPL 113dB +/-3dB @ 15W @ 1m
182.7mm x 282.1mm (7.19" x 11.11")
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

Ref: 1-22-110
GNExL2 PA Loudspeaker 25W
70V/100V or 8 or 16 Ohm low impedance
Rated SPL 119dB +/-3dB @ 25W @ 1m
182.7mm x 332.5mm (7.19" x 13.09")
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

Full specifications at **e2s.com**

GNEx Manual Call Points
Zone 1 & 2 - Haz Loc.

GNExCP6A-BG/GNExCP6B-BG

GNExCP6A-PB/GNExCP6B-PB

GNExCP6A-PT/GNExCP6B-PT

The ATEX & IECEx approved GNEx manual call point range is available in 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.

All types are available with single or double pole change over switches, EOL or series resistors, diode or Zener diodes or an L.E.D indicator and also with either single or double pole change over switches. The back box can be rotated to give one M20 side entry and dual M20 entries either at the top or bottom.

Alternative housing colours are available to meet specific requirements as are metalised polyester or stainless steel "Duty" labels.

For the BG break glass model a stainless steel lift flap can be specified.

Range Info:
Material
Corrosion proof, glass-reinforced polyester.

Ingress Protection
IP66

Fixings
Stainless steel.

Cable entries
2 x M20 top and 1 x M20 side.

Stopping Plugs
2 x Ex e nylon plugs as standard.
Brass and stainless steel plugs optional.

Approvals:
ATEX
IEC 60079-0 : 2007
EN 60079-1 : 2004
EN 60079-7 : 2007
IEC 60079-18 : 2009
EN 61241-1 : 2004

IECEx
IEC 60079-0 : 2007-10
IEC 60079-1 : 2003
IEC 60079-18 : 2009
IEC 60079-7 : 2006-07
IEC 61241-1 : 2004

Break Glass Call Points
Ref: 1-24-010
GNExCP6A-BG Break Glass Call Point
120.0mm x 120.0mm x 79.0mm
4.73'' x 4.73'' x 3.11''
II 2G Ex e d IIC T6 Gb
II 2D Ex t IIIC T60°C Db IP66

Ref: 1-24-020
GNExCP6B-BG Break Glass Call Point
(with EOL & series devices)
End of line and/or series monitoring resistors.
Diodes or Zener diodes or L.E.D. indicator.
Optional DIN rail mounted terminal blocks:
8 x 2.5mm².
120.0mm x 120.0mm x 79.0mm
4.73'' x 4.73'' x 3.11''
II 2G Ex e d mb IIC T4 Gb
II 2D Ex t IIIC T80°C Db IP66

Push Button Call Points
Ref: 1-24-030
GNExCP6A-PB Push Button Call Point
120.0mm x 120.0mm x 78.0
4 18/25'' x 4 18/25'' x 3''
II 2G Ex e d IIC T6 Gb
II 2D Ex t IIIC T60°C Db IP66

Ref: 1-24-040
GNExCP6B-PB Push Button Call Point
(with EOL & series devices)
End of line and/or series monitoring resistors.
Diodes or Zener diodes or L.E.D. indicator.
Optional DIN rail mounted terminal blocks:
8 x 2.5mm².
120.0mm x 120.0mm x 79.0mm
4.73'' x 4.73'' x 3.11''
II 2G Ex e d mb IIC T4 Gb
II 2D Ex t IIIC T80°C Db IP66

Tool Reset Call Points
Ref: 1-24-050
GNExCP6A-PT Tool Reset Call Point
120.0mm x 120.0mm x 79.0mm
4.73'' x 4.73'' x 3.11''
II 2G Ex e d IIC T6 Gb
II 2D Ex t IIIC T60°C Db IP66

Ref: 1-24-060
GNExCP6B-PT Tool Reset Call Point
(with EOL & series devices)
End of line and/or series monitoring resistors.
Diodes or Zener diodes or L.E.D. indicator.
Optional DIN rail mounted terminal blocks:
8 x 2.5mm².
120.0mm x 120.0mm x 79.0mm
4.73'' x 4.73'' x 3.11''
II 2G Ex e d mb IIC T4 Gb
II 2D Ex t IIIC T80°C Db IP66

Full specifications at **e2s.com**

D2x Visual & Audible Signals
Zone 2, Class I Div 2 - Haz Loc.

D2xS1

D2xS1

D2xC1X05 / D2xC1X10

D2xC1X05 / D2xC1X10

The D2x range provides high-performance signalling for hazardous environments in a compact enclosure. The alarm horn sounders and combination signals are globally certified: IECEx & ATEX Zone 2, NEC Class I Div 2 and NEC & CEC Class I Zone 2.

With sound output up to 116dB(A), 64 alarm tone frequencies and 4 remotely selectable stages/channels the D2x range can provide safe signalling for multiple scenarios from one device. The alarm horn sounder can also be combined with either a 5 or 10 Joule Xenon strobe beacon which features field replaceable prismatic coloured lenses. The A1-Si12 marine grade aluminium enclosure with an ingress protection of IP66 / Type 4, 4X is suitable for the harshest of environments. The range is approved for use in both gas and dust atmospheres.

Range info

Material
A1-Si12 Marine Grade Aluminium.

Ingress Protection
IP66, Type 4, 4X, 13

Fixings
Stainless steel.

Mounting
Surface mount - via extenral mounting lugs.

Cable entries
Dual M20 ISO cable gland entries.

Enclosure colour
RAL3000 Red, RAL7038 Grey.

Approvals

Zone 2 II 3G Ex n IIC Gc
Zone 22 II 3D Ex tc IIC Dc

Class I Zone 2 AEx nA IIC Gc
Class I Zone 22 AEx tc IIC Dc

Class I Div 2 Groups A, B, C, D
Class II Div 2 Groups E, F & G
Class III Div 1 & 2

ATEX, IECEx, NEC, CEC

Alarm Sounders/Horns

Ref: 1-32-025
D2xS1 Alarm Horn Sounder
12/24/48Vdc & 115/230Vac 50/60Hz.
Max 116dB(A) @ 1m - 107dB(A) @ 10ft/3m
64 alarm tones with 4 stages/channels
181.0mm x 273.1mm (7.13" x 10.75")

Combination Signals with Xenon Strobes

Ref: 1-34-020
D2xC1X05 Alarm Horn Sounder & Xenon Strobe Beacon
12/24/48Vdc & 115/230Vac 50/60Hz.
Max 116dB(A) @ 1m - 107dB(A) @ 10ft/3m
64 alarm tones with 4 stages/channels
5 Joule Xenon beacon.
Effective intensity 250cd
Amber, Blue, Clear, Green, Magenta, Red
& Yellow lenses
181.0mm x 385.1mm (7.13" x 15.17")

Ref: 1-34-030
D2xC1X10 Alarm Horn Sounder & Xenon Strobe Beacon
12/24/48Vdc & 115/230Vac 50/60Hz.
Max 116dB(A) @ 1m - 107dB(A) @ 10ft/3m
64 alarm tones with 4 stages/channels
10 Joule Xenon beacon.
Effective intensity 500cd
Amber, Blue, Clear, Green, Magenta, Red
& Yellow lenses
181.0mm x 385.1mm (7.13" x 15.17")

Full specifications at **e2s.com**

E2x Visual & Audible Signals
Class I Div 2 - Haz Loc.

E2xB05/E2xB10

E2xS112/E2xL15

E2xS121/E2xL25

E2xCS112-5

E2x range provides high-performance and cost effective signalling for hazardous environments. The alarm horn sounders and Xenon strobe beacons are approved for Class I & II Division 2 and Zone 2, 22 applications.

The E2x products have corrosion proof, light-weight PPS enclosures and impact resistant ABS flares with a stainless steel adjustable U bracket for ease of mounting. Dual cable entries and duplicate terminations reduce the need for junction boxes in multiple unit installations.

Range info

Material
Corrosion proof, light-weight PPS.

Ingress Protection
IP67, Type 4, 4X, 13

Fixings
Stainless steel.

Mounting
Ratchet adjustable stainless steel 'U' bracket.

Cable entries
M20 ISO or 1/2"NPT

Approvals

Class I, Div 2, Grps A,B,C,D
Class I, Div 2, Grps A,B,C,D
Class II, Div 2, Grps F & G
Class III, Div 1

Zone 2 II 3G Ex n IIC Gc
Zone 22 II 3D Ex tc IIC Dc

ATEX, IECEx, NEC, CEC

Xenon Strobe Beacons

Ref: 1-31-010
E2xB05 Xenon Strobe 5 Joules
12/24Vdc/Vdc & 115/230Vac 50/60Hz.
Effective intensity 250cd
Amber, Blue, Clear, Green, Red & Yellow lenses
166.0mm x 233.0mm (6.54" x 9.17")

Ref: 1-31-020
E2xB10 Xenon Strobe Beacon 10 Joule
12/24/48Vdc & 115/230Vac 50/60Hz.
Effective intensity 500cd
Amber, Blue, Clear, Green, Red & Yellow lenses
166.0mm x 233.0mm (6.54" x 9.17")

Alarm Sounders/Horns

Ref: 1-32-010
E2xS112 Alarm Horn Sounder
12/24/48Vdc & 115/230Vac 50/60Hz.
Max 116dB(A) @ 1m - 107dB(A) @ 10ft/3m
45 alarm tones with 3 stages/channels
181.0mm x 273.1mm (7.13" x 10.75")

Ref: 1-32-020
E2xS121 Alarm Horn Sounder
12/24/48Vdc & 115/230Vac 50/60Hz.
Max 121dB(A) @ 1m - 112dB(A) @ 10ft/3m
45 alarm tones with 3 stages/channels
220.0mm x 323.5mm (8.66" x 12.74")

Combination Signal

Ref: 1-33-010
E2xCS112-5 Alarm Horn & Xenon Beacon
24/48Vdc & 115/230Vac 50/60Hz.
Max 116dB(A) @ 1m - 107dB(A) @ 10ft/3m
45 alarm tones with 3 stages/channels
5 Joule Xenon beacon.
Effective intensity 250cd
Amber, Blue, Clear, Green, Red & Yellow lenses
181.0mm x 385.1mm (7.13" x 15.17")

PA Loudspeakers

Ref: 1-32-030
E2xL15 PA Loudspeaker 15W
70V or 100V or 8 or 16 Ohm low impedance
Rated SPL 118dB +/-3dB @ 15W @ 1m
181.0mm x 273.1mm (7.13" x 10.75")

Ref: 1-32-040
E2xL25 PA Loudspeaker 25W
70V or 100V or 8 or 16 Ohm low impedance
Rated SPL 124dB +/-3dB @ 25W @ 1m
220.0mm x 323.5mm (8.66" x 12.74")

Full specifications at **e2s.com**

IS-mini Range
Class I Div 1, Zone 0, 1 & 2 - Haz Loc.

IS-mA1   IS-mB1   IS-mC1

The compact IS mini-range offers a complete audible and visual signalling solution for Zone 0 applications.

The IS-mA1M minialarm is also suitable for group I mining use. The devices can be operated from a single Zener barrier or galvanic isolator. The sounders feature 49 alarm tones that can be selected by an internal switch, each one can be remotely changed to a second or third stage alarm sound. The beacon section can be set internally for a flash rate of either 1Hz or 2Hz. The combined unit sounder and beacon can be operated simultaneously from one barrier or from separate barriers if independent operation is required.

Range info

Material & Colour
UL94V0 & 5VA FR ABS & PC, RAL 3000 Red

Ingress Protection
IP65

Fixings
Stainless steel.

Mounting
Surface mount.

Cable entries
2 x M20 clearance gland knockouts.

Approvals

II 1G Ex ia IIC T4 Ga - Zone 0, 1 & 2
IS Class I, Div 1, Groups A, B, C, D T4
IS Class I, Zone 0, AEx ia IIC T4
IS-mA1M:
I M1 Ex ia I Ma (Mining)

ATEX, IECEx, FM

L.E.D Warning Signal

Ref: 1-11-010
IS-mB1 IS-minialite L.E.D Beacon
16-28Vdc via Zener barrier or galvanic isolator
Array of 6 high intensity L.E.D.s.
Effective intensity 23cd
Double flash at 1Hz and 2Hz
Red, Amber, Blue, Green & Clear lenses
Diameter: 88.7mm Length: 85.0mm
Diameter: 3.49" Length: 3.35"

Alarm Sounder/Horn

Ref: 1-12-010
IS-mA1 IS-minialarm
16-28vdc via Zener barrier or galvanic isolator
100dB(A) @ 1m - 91dB(A) @ 10ft/3m
49 alarm tones with 3 stages/channels
Diameter: 88.7mm Length: 99.0mm
Diameter: 3.49" Length: 3.90"

Combination Signal

Ref: 1-13-010
IS-mC1 IS-minialert
16-28Vdc via Zener barrier or galvanic isolator
100dB(A) @ 1m - 91dB(A) @ 10ft/3m
49 alarm tones with 3 stages/channels
Array of 6 high intensity L.E.D.s.
Effective intensity 23cd
Double flash at 1Hz and 2Hz
Red, Amber, Blue, Green & Clear lenses
Diameter: 88.7mm Length: 116.0mm
Diameter: 3.49" Length: 4.57"

GOST-R

0786-CPD-20338

Full specifications at **e2s.com**

IS Audible & Visual Signals

Class I Div 1, Zone 0, 1 & 2 - Haz Loc.

IS-L101L   IS-A105N   IS-A105N/IS-L101L   IS-D105   IS-DL105L

The **IS-A105N & IS-L101L** range devices can be operated utilising a common zener barrier or galvanic isolator. Certified for use in applications requiring Ex ia or Class I Div 1 equipment these products are a globally accepted solution for fire or process control signalling.

When install.e.d as a combination audio-visual signal the alarm accept function can be employed. By closing a pair of external contacts (i.e a 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.

IS-D105 and IS-DL105L: intrinsically safe audible & visual signals with metal enclosures.

The marine grade aluminium enclosures are chromated and powder coated for durability in the harshest of environments. The IS-DL105 also features an alarm accept function where the alarm can be silenced for set periods by the operator. The alarm horn sounder will reactivate if the fault is not cleared within the set time.

Range info

Supply
16-28vdc via Zener barrier or galvanic isolator.

Material
UL94V0 & 5VA FR ABS & PC

Ingress Protection
IP66

Fixings
Stainless steel.

Mounting
Surface mount

Cable entries
L.E.D. Beacon: 1 x M20 clearance gland knockouts.
Sounder/Combination devices: 2 x M20 clearance gland knockouts.

Approvals

II 1G Ex ia IIC T4 Ga - Zone 0, 1 & 2
IS Class I, Div 1, Groups A, B, C, D T4
IS Class I, Zone 0, AEx ia IIC T4

ATEX, IECEx, FM

L.E.D Beacon

Ref: 1-11-020
IS-L101L L.E.D Beacon
Array of 6 high intensity L.E.D.s.
Effective intensity 48cd
2Hz (2 double flashes per second).
Red, Amber, Blue & Green L.E.D's
86.0mm x 86.0mm x 93.0mm
3.39'' x 3.39'' x 3.66''

Alarm Sounder/Horn

Ref: 1-12-020
IS-A105N Alarm Sounder
105dB(A) @ 1m - 96dB(A) @ 10ft/3m
49 alarm tones with 3 stages/channels
130.0mm x 130.0mm x 133.5mm
5.12'' x 5.12'' x 5.26''

Combination Signal

Ref: 1-13-020
IS-A105N/IS-L101L Intrinsically Safe Alarm Sounder & L.E.D beacon
105dB(A) @ 1m - 96dB(A) @ 10ft/3m
49 alarm tones with 3 stages/channels
Array of 6 high intensity L.E.D.s.
Effective intensity 48cd
Red, Amber, Blue & Green L.E.D's
130.0mm x 216.2mm x 133.5mm
5.12'' x 5.2'' x 8.52''

Range info

Supply
16-28vdc via Zener barrier or galvanic isolator.

Material
A1-Si12 Marine Grade Aluminium.

Ingress Protection
IP66

Fixings
Stainless steel.

Mounting
Surface mount

Cable entries
2 x M20 clearance gland knockouts.

Approvals

II 1G Ex ia IIC T4 Ga - Zone 0, 1 & 2
IS Class I, Div 1, Groups A, B, C, D T4
IS Class I, Zone 0, AEx ia IIC T4

Alarm Sounder/Horn

Ref: 1-12-030
IS-D105 Alarm Sounder
105dB(A) @ 1m - 96dB(A) @ 10ft/3m
49 alarm tones with 3 stages/channels
Enclosure: RAL3000 Red or RAL7038 Grey
130.0mm x 180.0mm x 125.0mm
5.12'' x 7.09'' x 4.93''

Combination Signal

Ref: 1-13-030
IS-DL105L Intrinsically Safe Alarm Sounder & L.E.D beacon
105dB(A) @ 1m - 96dB(A) @ 10ft/3m
49 alarm tones with 3 stages/channels
Array of 6 high intensity L.E.D.s.
Effective intensity 48cd
Red, Amber, Blue & Green L.E.D's
Enclosure: RAL3000 Red or RAL7038 Grey
130.0mm x 267.5mm x 125.0mm
5.12'' x 10.54'' x 4.93''

GOST-R

Full specifications at **e2s.com**

IS Call Points
Zone 0, 1 & 2 - Haz Loc.

IS Panel Mount Indicators
Class I Div 1, Zone 0, 1 & 2 - Haz Loc.

IS-CP4A-BG/IS-CP4B-BG   IS-CP4A-PB/IS-CP4B-PB   IS-CP4A-PT/IS-CP4B-PT   IS-pB1/IS-pA1   IS-pA1

The IS call points offer a solution 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 the break glass, push button and tool reset versions are certified to ATEX and IECEx standards. The back box can be rotated to give one M20 side entry and dual M20 entries either on the top or bottom.

The IS panel mount indicators and buzzer provide signalling solutions for operator notification from control panels and instrument clusters.

With high ingress protection levels and standard cut out sizes the IS buzzer and L.E.D indicator offer quick instatallation.

Range info
Material
Corrosion proof, marine grade, copper free LM6 (A413) aluminium.

Ingress Protection
IP66

Fixings
Stainless steel.

Cable entries
2 x M20 top/bottom and 1 x M20 left/right. Back box can be rotated to give 2 x bottom and 1 x side entries.

Stopping Plugs
2 x Ex e nylon plugs as standard. Brass and stainless steel plugs optional.

Approvals
II 1G Ex ia IIC T6 Ga, II 2D Ex t IIIC T60°C Db
II 1G Ex ia IIC T4 Ga, II 2D Ex t IIIC T70°C Db

ATEX, IECEx, EAC Ex

Break Glass Call Point
Ref: 1-14-010
IS-CP4A-BG/IS-CP4B-BG Break Glass Call Point
95.0mm x 98.0mm x 76.0mm
3.74" x 3.86" x 2.99"

Push Button Call Point
Ref: 1-14-020
IS-CP4A-PB/IS-CP4B-PB Push Button Call Point
95.0mm x 98.0mm x 76.0mm
3.74" x 3.86" x 2.99"

Tool Reset Call Point
Ref: 1-14-030
IS-CP4A-PT/IS-CP4B-PT Tool Reset Call Point
95.0mm x 98.0mm x 76.0mm
3.74" x 3.86" x 2.99"

Panel Mount Indicator
Material
Housing: Nylon 6. Lens: Polycarbonate.

Ingress Protection
Front IP66 - Rear IP20.
Optional IP65 rear sealing assembly available.

Mounting
Panel mount - 22.5mm

Terminals
Screw clamp for 1.5mm2

Ref: 1-11-030
IS-pB1 Panel Mount Indicator
14-30Vdc via barrier or isolator.
Typical Output: Red 190 lux, Amber 150 lux, Green 250 lux, Blue 150 lux & White 300 lux
Diameter: 30.0mm x Length: 57.0mm
Diameter: 1.18" x Length: 2.24"

Panel Mount Buzzer
Material
UL94V0 & 5VA FR ABS. RAL7038 Grey.

Ingress Protection
IP66.

Mounting
Panel mount - 28.5mm

Terminals
Spade terminals

Ref: 1-12-040
IS-pA1 Panel Mount Sounder
16-28vdc via Zener barrier or galvanic isolator
Max ouput: 89.6dB(A) @ 1m
- 80.6dB(A) @ 10ft/3m
Diameter: 43.0mm x Length: 36.0mm
Diameter: 1.69" x Length: 1.42"

Fire & Industrial Signalling

SpectrAlarm
Combination audible & visual signals

AB105STR/
AB105LDA/
AB105RTH

AB112STR/
AB112LDA/
AB112RTH

AB121STR/
AB121LDA/
AB121RTH

The SpectrAlarm range combines the AlertAlarm audible devices with the Spectra beacons to create a series of products optimised for industrial signalling applications.

The alarm horn sounders and beacons can be connected separately to allow the audible and visual signal to warn on individual events. Alternatively a common power source can be used to simplify installation and reduce cabling.

With sound levels up to 126dB(A) and combined with a 15 Joule Xenon strobe beacon the AB121STR Spectralarm combination device provides clear audible and visual warning where the highest levels of ambient noise and light exist.

Range info

Material
High impact UL94 V0 & 5VA FR ABS
UV stable PC UL94 V0 FR

Ingress Protection
IP65

Fixings
Stainless steel.

Mounting
Surface mount - via extenral mounting lugs or internal BESA compatible fixing positions.

Enclsoure colours
Red (RAL3000) or grey (RAL7038)

Lens colours
Amber, Blue, Clear, Green, Magenta,
Red & Yellow

Cable Entries
2 x 20mm clearance entries

Features

Automatic synchronisation on multi-sounder system.
Continuously rated.
Duplicate cable terminations
(in & out for daisy-chain installations).
Tropicalisation available on request.
Available with custom tone configurations and frequencies.

AB105 Combination signal

Max. 112dB(A) @ 1m - 103dB(A) @ 10ft/3m
32 alarm tones with 3 stages/channels
144.0mm x 273.9mm x 133.5mm
5.67'' x 10.78'' x 5.25''

Ref: 2-31-160
AB105STR Alarm sounder & Xenon strobe
12Vdc, 24Vdc, 48Vdc
24Vac, 115Vac & 230Vac
Xenon strobe 5 Joule.
Effective intensity 250cd.
1Hz flash rate automatically synchronised.
DC units: Optionally 1.5Hz & double strike

Ref: 2-31-170
AB105RTH Alarm Sounder & rotating beacon
12Vdc, 24Vdc & 115Vac, 230Vac
Halogen Bulb G6,35/GY6,35, 25W.
Effective intensity 125cd.

Ref: 2-31-170
AB105LDA Alarm sounder & L.E.D beacon
24Vdc (10-30Vdc), 48Vdc (35-60Vdc)
& 115Vac, 230Vac
Array of 16 high power L.E.D.s.
Effective intensity 19cd.

AB112 Combination signal

Max. 119dB(A) @ 1m - 110dB(A) @ 10ft/3m
45 alarm tones with 3 stages/channels
169.0mm x 312.8mm x 156.5mm
6.65'' x 12.31'' x 6.16''

Ref: 2-31-210
AB112STR Alarm sounder & Xenon strobe
12Vdc, 24Vdc, 48Vdc
24Vac, 115Vac & 230Vac
Xenon strobe 5 Joule.
Effective intensity 250cd.
1Hz flash rate automatically synchronised.
DC units: Optionally 1.5Hz & double strike

Ref: 2-31-200
AB112RTH Alarm Sounder & rotating beacon
12Vdc, 24Vdc & 115Vac, 230Vac
Halogen Bulb G6,35/GY6,35, 25W.
Effective intensity 125cd

Ref: 2-31-220
AB112LDA Alarm sounder & L.E.D beacon
24Vdc (10-30Vdc), 48Vdc (35-60Vdc) &
115Vac, 230Vac
Array of 16 high power L.E.D.s.
Effective intensity 19cd.

AB121 Combination signal

Max. 126dB(A) @ 1m - 117dB(A) @ 10ft/3m
45 alarm tones with 3 stages/channels
210.0m x 388.5mm x 191.5mm
8.26'' x 15.29'' x 7.65''

Ref: 2-31-260
AB121STR Alarm sounder & Xenon strobe
24Vdc, 48Vdc
115Vac, 230Vac
Xenon strobe 15 Joule.
Effective intensity 250cd.
1Hz flash rate automatically synchronised.
DC units: Optionally 1.5Hz & double strike

Ref: 2-31-250
AB121RTH Alarm sounder & rotating beacon
12Vdc, 24Vdc & 115Vac, 230Vac
Halogen Bulb G6,35/GY6,35, 40W.
Effective intensity 324cd.

Ref: 2-31-270
AB121LDA Alarm sounder & L.E.D beacon
24Vdc (10-30Vdc), 48Vdc (35-60Vdc)
& 115Vac, 230Vac
Array of 32 high power L.E.D.s.
Effective intensity 30cd.

CE

EAC

AlertAlight

General purpose audible and visual signals

L101X/L101H/
L101FLASHTEL

AL100X/AL100H/
AL100SONTELFLASH

AL105NX/
AL105NSONTELFLASH

DL105X/DL105H/
DL112X/DL112H

AL112NX/
AL112NH

AL121X/AL121H

The AlertAlight range contains high performance industrial alarm horn sounders combind with Xenon strobe beacons or high output L.E.D. beacons. A choice of enclosure materials and form factors are available to suit any environment and application.

The range is CPR compliant (EN54-3 & EN54-23) for use in fire systems within the EU and is also UL and cULs approved for general signalling duties. Globally approved, the AlertAlight range is the ideal solution for fire, security, process control and industrial signalling. For harsh conditions the DL105 and DL112 marine grade, aluminium enclosure alarm horn combinations provide a robust solution for on and offshore safe area applications.

Features

Automatic synchronisation on multi-sounder system.
Continuously rated.
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

Xenon Strobe Beacons

Ref: 2-13-010
L101X Xenon Beacon
12/24/48Vdc & 24/115/230Vac 50/60Hz.
Effective intensity 250cd
Amber, Blue, Clear, Green, Magenta, Red & Yellow lenses
Red RAL3000, Grey RAL7038, white enclosure
Max. 86.4mm x 86.4mm x 92.7mm
Max. 3.40'' x 3.40'' x 3.65''

Also available in telephone initiated L101XFLASHTEL version Ref: 2-13-020.

L.E.D. Beacon

Ref: 2-14-010
L101H L.E.D. Beacon
10-30Vdc, 90-260Vdc 50/60Hz.
Array of 24 high superflux L.E.D.s.
Effective intensity 176cd
Amber Blue, Green, Red and White L.E.D's
Red RAL3000, Grey RAL7038 or white housing.
Max. 86.4mm x 86.4mm x 92.7mm
Max. 3.40'' x 3.40'' x 3.65''

AL100 Combination signals

Max. 104dB(A) @ 1m - 95dB(A) @ 10ft/3m
32 alarm tones with 3 stages/channels
Red RAL3000, Grey RAL7038, white enclosure
Max. 86.6mm x 172.0mm x 84.6mm
Max. 3.41'' x 6.77'' x 3.33''

Ref: 2-31-090
AL100X Alarm sounder & Xenon strobe
24Vdc (10-30Vdc), 48Vdc (35-60Vdc), 24Vac, 115Vac, 230Vac 50/60Hz.
Xenon strobe 5 Joule.
Effective intensity 250cd.
Ref: 2-31-100
AL100H Alarm sounder & L.E.D beacon
24Vdc (10-30Vdc), 48Vdc (35-60Vdc), 115Vac, 230Vac 50/60Hz.
Array of 24 high superflux L.E.D.s.
Effective intensity 176cd

AL105N Combination Signals

Max. 112dB(A) @ 1m - 103dB(A) @ 10ft/3m
32 alarm tones with 3 stages/channels
Red RAL3000, Grey RAL7038, white enclosure
Max. 130.0mm x 216.2mm x 133.5mm
Max. 5.12'' x 8.52'' x 5.26''

Ref: 2-31-120
AL105NX Alarm sounder & Xenon strobe
24Vdc (10-30Vdc), 48Vdc (35-60Vdc), 24Vac, 115Vac, 230Vac 50/60Hz.
Xenon strobe 5 Joule.
Effective intensity 250cd
Ref: 2-31-130
AL105NH Alarm sounder & L.E.D beacon
24Vdc (10-30Vdc) & 115/230Vac 50/60Hz.
Array of 24 high superflux L.E.D.s.
Effective intensity 176cd

Ref: 2-31-360
DL105X Alarm sounder & Xenon beacon
24Vdc (10-30Vdc), 48Vdc (35-60Vdc), 24Vac, 115Vac, 230Vac 50/60Hz.
Xenon strobe 5 Joule.
Effective intensity 250cd
Ref: 2-31-370
DL105H Alarm sounder & L.E.D beacon
24Vdc (10-30Vdc) & 115/230Vac 50/60Hz.
Array of 24 high superflux L.E.D.s.
Effective intensity 176cd

AL112N Combination signals

Max. 119dB(A) @ 1m - 110dB(A) @ 10ft/3m
45 alarm tones with 3 stages/channels
Red RAL3000 or Grey RAL7038 enclosure
Max. 168.0mm x 255.0mm x 156.5mm
Max. 6.6'' x 10.0'' x 6.2''

Ref: 2-31-180
AL112NX Alarm Sounder & Xenon strobe
24Vdc (10-30Vdc), 48Vdc (35-60Vdc), 24Vac, 115Vac, 230Vac 50/60Hz.
Xenon strobe 5 Joule.
Effective intensity 250cd
Ref: 2-31-190
AL112NH Alarm sounder & L.E.D beacon
24Vdc (10-30Vdc) & 115Vac, 230Vac 50/60Hz.
Array of 24 high superflux L.E.D.s.
Effective intensity 176cd.
Ref: 2-31-380
DL112X Alarm Sounder & Xenon strobe
24Vdc (10-30Vdc), 48Vdc (35-60Vdc), 24Vac, 115Vac, 230Vac 50/60Hz.
Xenon strobe 5 Joule.
Effective intensity 250cd
Ref: 2-31-390
DL112H Alarm sounder & L.E.D beacon
24Vdc (10-30Vdc) & 115Vac, 230Vac 50/60Hz.
Array of 24 high superflux L.E.D.s.
Effective intensity 176cd

AL121 Combination signals

Max. 126dB(A) @ 1m - 117dB(A) @ 10ft/3m
45 alarm tones with 3 stages/channels
Red RAL3000 or Grey RAL7038 enclosure
Max. 190.0mm x 275.9mm x 191.5mm
7.5'' x 10.9'' x 7.5''

Ref: 2-31-230
AL121X Alarm sounder & Xenon strobe
24Vdc (10-30Vdc), 48Vdc (35-60Vdc), 24Vac, 115Vac, 230Vac 50/60Hz.
Xenon strobe 5 Joule.
Effective intensity 250cd.
Ref: 2-31-240
AL121H Alarm sounder & L.E.D beacon
24Vdc (10-30Vdc) & 115Vac, 230Vac 50/60Hz
Array of 24 high superflux L.E.D.s.
Effective intensity 176cd.

Telephone initiated signals

A100SONTELFLASH Ref: 2-31-110.
A105NXSONTELFLASH Ref: 2-31-140.

GOST-R

VdS
G211077

CE
0786-CPD-21247

EAC

AlertAlarm
General purpose audible signals

A100/A100SONTEL

A105N/A105NSONTEL

D105/D112

A112N

A121

The AlertAlarm range contains high performance industrial alarm horn sounders with a choice of enclosure materials and form factors to suit any environment and application.

The range is CPR compliant (EN54-3) for use in fire systems within the EU and is also UL approved for general signalling duties. Globally approved, with EAC, VdS and MED certification on specific products within the range, AlertAlarm is the ideal solution for fire, security, process control and industrial signalling. For harsh conditions the D105 and D112 marine grade, aluminium enclosure alarm horn sounders provide a robust solution for on and offshore safe area applications.

Range info

Material
A100/A105N/A112/A121: High impact
UL94 V0 & 5VA FR ABS Enclosure
D105/D112: Marine grade aluminium A1
Si12 Cu enclosure

Ingress Protection
IP66
D105/D112: IP66, Type 4/4X/3R

Fixings
Stainless steel.

Mounting
Surface mount - via extenal mounting lugs or internal BESA compatible fixing positions.

Cable entries
2 or 3 x M20 or 20mm clearance entries.

Features

Automatic synchronisation on multi-sounder systems.
Continuously rated.
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

Alarm Sounders/Horns

Ref: 2-21-040
A100 Alarm Sounder
24Vdc (10-30Vdc), 48Vdc (35-60Vdc) &
24/115Vac & 230Vac 50/60Hz
Max output 104dB(A) @ 1m
- 95dB(A) @ 10ft/3m
32 alarm tones with 3 stages/channels
RAL3000 Red, RAL7038 Grey or White housing.
86.0mm x 86.0mm x 85mm
3.39'' x 3.39'' x 3.35''

Also available in telephone initiated
A100SONTEL version Ref: 2-21-050.
Powered direct from telephone line (REN 1).
Max output 104B(A) @ 1m
- 91dB(A) @ 10ft/3m

Ref: 2-21-060
A105N Alarm Sounder
24Vdc (10-30Vdc), 48Vdc (35-60Vdc),
100Vdc (72-120Vdc) & 24/115/230Vac
50/60Hz
Max output 112dB(A) @ 1m
- 103dB(A) @ 10ft/3m
32 alarm tones with 3 stages/channels
Red RAL3000, Grey RAL7038 or white housing.
130.0mm x 130.0mm x 133.5mm
(5.12'' x 5.12'' x 5.26'')

Also available in telephone initiated
A105NSONTEL version Ref: 2-21-070.
Powered direct from telephone line (REN 1).
Max output 105B(A) @ 1m
- 96dB(A) @ 10ft/3m

Alarm Sounder/Horn

Ref: 2-21-080
A112N Alarm Sounder
24Vdc (10-30Vdc), 48Vdc (35-60Vdc),
110Vdc (90-250Vdc) & 24Vac, 115Vac,
230Vac 50/60Hz
Max output 119dB(A) @ 1m
- 110dB(A) @ 10ft/3m
45 alarm tones with 3 stages/channels
Red RAL3000
168.0mm x 168.0mm x 156.5mm
6.62'' x 6.62'' x 6.16''

Ref: 2-21-090
A121 Alarm Sounder
24Vdc (10-30Vdc), 48Vdc (35-60Vdc)
& 24Vac, 115Vac, 230Vac 50/60Hz
Max output 126dB(A) @ 1m
- 117dB(A) @ 10ft/3m
45 alarm tones with 3 stages/channels
Red RAL3000 or Grey RAL7038 housing.
190.0mm x 190.0mm x 191.5mm
7.48'' x 7.48'' x 7.54''

Metal Bodied Rugged Sounders

Ref: 2-21-100
D105 Alarm Sounder
24Vdc (10-30Vdc), 48Vdc (35-60Vdc)
& 24Vac, 115Vac, 230Vac 50/60Hz
Max output 112dB(A) @ 1m
- 103dB(A) @ 10ft/3m
32 alarm tones with 3 stages/channels
RAL3000 Red or RAL7038 Grey housing.
130.0mm x 180.0mm x 112.0mm
5.12'' x 7.09'' x 4.93''

Ref: 2-21-110
D112 Alarm Sounder
24Vdc (10-30Vdc), 48Vdc (35-60Vdc)
& 24Vac, 115Vac, 230Vac 50/60Hz
Max output 119dB(A) @ 1m
- 110dB(A) @ 10ft/3m
45 alarm tones with 3 stages/channels
Red RAL3000 or Grey RAL7038 housing.
130.0mm x 180.0mm x 112.0mm
5.12'' x 7.09'' x 4.93''

GOST-R

VdS
G205121

CE
0786-CPD-20199

EAC

Full specifications at **e2s.com**

Sonora
Compact audible and visual signals

SONF1/SONF1-HO

SON2

SONFL1X/SONFL1X-H/
SONFL1H/SONFL1H-H

SON4/SON4L/SON4B

BEDHEAD

Sonora range offers compact audio visual signalling for fire, industrial, process control and machine safety applications.

The range features low current consumption combined with high performance. The SONF1 is available with two levels of sound level output and is CPR compliant (tested to EN54-3) for fire alarm use.

The SONF1 and SONF1-HO can be combined with either a Xenon strobe beacon or L.E.D beacon to create the SONFL1X or SONFL1H. Key audible products from the Sonora range are UL and cULs listed for general signalling and outdoor use in addition to VdS and EAC approval.

The SONF1 is EN54-3 tested and the SONFL1X and SONFL1X-H are EN54-3 & EN54-23 tested for CPR compliance (CPR 305/2011/EU).

Range info

Material
High impact UL94 V0 & 5VA FR ABS Enclosure

Ingress Protection
IP66, UL version Type 13 & 3R

Fixings
Stainless steel.

Mounting
Surface mount - via extenral mounting lugs (where applicable) or internal BESA compatible fixing positions.

Cable entries
2 or 3 or 4 x 20mm clearance gland entries.

Enclosure colours
Red RAL3000, Grey RAL7038 or white.

Alarm Sounders/Horns

Ref: 2-21-010
SONF1 Alarm Sounder
24Vdc (10-30Vdc) & 24Vac, 115Vac & 230Vac 50/60Hz
Max. 100dB(A) @ 1m - 91dB(A) @ 10ft/3m
10 alarm tones with 2 stages/channels
86.0mm x 86.0mm x 54.2mm
3.39'' x 3.39'' x 2.13''

Ref: 2-21-020
SONF1-HO High Output Alarm Sounder
12Vdc, 24Vdc
Max. 105dB(A) @ 1m - 96dB(A) @ 10ft/3m
10 alarm tones with 2 stages/channels
86.0mm x 86.0mm x 85mm
3.39'' x 3.39'' x 3.35''

Ref: 2-21-030
SON2 Alarm Sounder
24Vdc (10-30Vdc) & 24Vac,115Vac, 230Vac 50/60Hz
Max. 105dB(A) @ 1m - 96dB(A) @ 10ft/3m
32 alarm tones with 3 stages/channels
86.0mm x 86.0mm x 85mm
3.39'' x 3.39'' x 3.35''

BEDHEAD alarm sounder

Ref: 2-21-230
BEDHEAD Alarm Sounder
24Vdc
Max. 90dB(A) @ 1m - 81dB(A) @ 10ft/3m
10 alarm tones with 3 stages/channels
White enclosure
85.5mm x 85.5mm x 11.0mm cover depth
3.37'' x 3.37'' x 0.43'' cover depth

Combination Signals

SONFL1 Type Combination Signals
Max. 100dB(A) @ 1m - 91dB(A) @ 10ft/3m
10 alarm tones with 2 stages/channels
86.6mm x 172.0mm x 84.0mm
3.41'' x 6.77'' x 3.31''

Ref: 2-31-050
SONFL1X Xenon strobe
12Vdc, 24Vdc & 24Vac, 115Vac, 230Vac
5 Joule
Effective intensity 200cd
Amber, Blue, Clear, Green, Magenta, Red & Yellow lenses

Ref: 2-31-050
SONFL1H Xenon strobe
10-30Vdc, 115Vac, 230Vac
Array of 24 high superflux L.E.D.s.
Effective intensity 200cd.
Amber, Blue, Green, Red & White L.E.D's

SONFL1-HO Type Combination Signals
Max. 105dB(A) @ 1m - 96dB(A) @ 10ft/3m
10 alarm tones with 2 stages/channels
86.6mm x 172.0mm x 84.0mm
3.41'' x 6.77'' x 3.31''

Ref: 2-31-070
SONFL1X-H High Output Horn & Xenon
12Vdc, 24Vdc
10 alarm tones with 2 stages/channels
Xenon strobe 5 Joule.
Effective intensity 200cd.
Amber, Blue, Clear, Green, Magenta, Red & Yellow lenses

Ref: 2-31-050
SONFL1H-H High Output Horn & L.E.D
12Vdc, 24Vdc
Array of 24 high superflux L.E.D.s.
Effective intensity 200cd.
Amber, Blue, Green, Red & White L.E.D's

Integrated Combination Signals

Ref: 2-31-040
SON4 Alarm Sounder & Xenon Beacon
24Vdc (18-30Vdc) & 24Vac, 115Vac, 230Vac
Max. 104dB(A) @ 1m - 95dB(A) @ 10ft/3m
32 alarm tones with 3 stages/channels
Xenon strobe 0.5 Joule.
Effective intensity 25cd.
Amber, Blue & Red lenses
86.0mm x 86.0mm x 102.0mm
3.39'' x 3.39'' 4.02''

Ref: 2-31-030
SON4L Alarm Sounder & L.E.D Beacon
12Vdc, 24Vdc, 48Vdc & 24Vac, 115Vac, 230Vac
Max. 100dB(A) @ 1m - 99dB(A) @ 10ft/3m
10 alarm tones with 3 stages/channels
Array of 5 high intensity L.E.D.s.
Effective intensity 3cd.
Amber & Red lenses
86.0mm x 86.0mm x 76.9(dc),102.0mm(ac)
3.39'' x 3.39'' 3.03'' (dc) 4.02'' (ac)

Ref: 2-31-020
SON4B Alarm Sounder & Filament Lamp Beacon
24Vdc & 24Vac, 115Vac, 230Vac
Max. 100dB(A) @ 1m - 99dB(A) @ 10ft/3m
10 alarm tones with 3 stages/channels
1.3W Filament bulb/lamp.
Effective intensity 6cd.
Amber, Blue & Red lenses
86.0mm x 86.0mm x 76.9(dc),102.0mm(ac)
3.39'' x 3.39'' 3.03'' (dc) 4.02'' (ac)

GOST-R

VdS
G205054

0786-CPD-20191

Sonora
Signal towers

STB2

STB3

STA2

STA3

STB4

STA4

The STA and STB stack signal towers are customisable audio-visual signals featuring a tower of 2, 3 or 4 AlertAlight L101X or L101H type beacons optionally combined with a SONF1 alarm sounder.

Each beacon position can contain either a Xenon or high output L.E.D. light source. The STA and STB assemblies feature a pre-wired junction box and cable loom simplifying installation and enabling the end user to determine beacon type and position during installation.

The STA and STB range are UL and cULs listed for general signalling and EAC certified.

Range info

Material
High impact UL94 V0 & 5VA FR ABS
Enclosure: Red RAL3000, Grey RAL7038
or white.

Ingress Protection
IP66, UL version Type 13 & 3R

Fixings
Stainless steel.

Mounting
Surface mount - via extenral mounting lugs
(where applicable) or internal BESA
compatible fixing positions.

Cable entries
2 or 3 or 4 x 20mm clearance gland entries.

Enclosure colours
Red RAL3000, Grey RAL7038 or white.

Visual Signal Tower

Visual signal stack units with Xenon or
L.E.D. Beacons. Pre-wired junction box
and cable loom.
12Vdc, 24Vdc & 115Vac, 230Vac
Xenon effective intensity 200cd.
Xenon lenses: Amber, Blue, Clear, Green,
Magenta, Red, Yellow
L.E.D. effective intensity 120cd.
L.E.D.: Amber Blue, Green, Red and White

Ref: 2-11-010
STB2 Xenon &/or L.E.D x 2
86.4mm x 262.5mm x 83.7mm
3.4" x 10.34" x 3.3"

Ref: 2-11-011
STB3 Xenon &/or L.E.D x 3
86.4mm x 351.5mm x 83.7mm
3.4" x 13.85" x 3.3"

Ref: 2-11-012
STB4 Xenon &/or L.E.D x 4
86.4mm x 438.5mm x 83.7mm
3.4" x 17.28" x 3.3"

Audible & Visual Signal Tower

Visual and audible stack units with Xenon
or L.E.D. Beacons. Pre-wired junction box
and cable loom.
12Vdc, 24Vdc & 115Vac, 230Vac
Max. 100dB(A) @ 1m - 99dB(A) @ 10ft/3m
10 alarm tones with 3 stages/channels
Xenon effective intensity 200cd.
Xenon lenses: Amber, Blue, Clear, Green,
Magenta, Red, Yellow
L.E.D. effective intensity 120cd.
L.E.D.: Amber Blue, Green, Red and white

Ref: 2-31-010
STA2 Alarm Horn w. Xenon &/or L.E.D x 2
86.4mm x 350.5mm x 83.7mm
3.4" x 13.81" x 3.3"

Ref: 2-31-011
STA3 Alarm Horn w. Xenon &/or L.E.D x 3
86.4mm x 439.5mm x 83.7mm
3.4" x 17.32 x 3.3"

Ref: 2-31-012
STA4 Alarm Horn w. Xenon &/or L.E.D x 4
86.4mm x 527.8mm x 83.7mm
3.4" x 20.79" x 3.3"

GOST-R

Full specifications at **e2s.com**

M Visual & Audible Signals
Heavy industrial & marine

MB005/010/MBL1   MA112/ML15   MA121/ML25   MCA112-05/MCA112-L   MCB005-05   MB021

The 'M' series of products have been designed to withstand the harshest of environments. Constructed from lightweight, impact and fire resistant ABS, the range features stainless steel, ratchet adjustable mounting brackets and has been third party tested to IP66/67.

The alarm horn sounders have 45 alarm tone frequencies and 3 alarm stages/channels that can be remotely selected. Xenon strobe beacons and multi-function L.E.D. lights are available as standalone devices or combined with an alarm horn sounder. All models have large termination areas and dual M20 cable entries. The MB021 version features a 21J Xenon strobe beacon in a PPS enclosure suitable for extreme conditions.

The ML15 and ML25 PA loudspeakers (70V models) are UL & cUL approved for Fire Alarm & Emergency and Professional & Commercial use for the US and Canada.

Xenon Strobe Beacons
Ref: 2-13-070
MB005 Xenon Strobe Beacon
12/24/48Vdc & 115/230Vac 50/60Hz.
5 Joule Xenon beacon.
Effective intensity 250cd
Amber, Blue, Clear, Green, Red & Yellow lenses
170.6mm x 233.0mm (6.72" x 9.17")

Ref: 2-13-080
MB010 Xenon Strobe Beacon
12/24/48Vdc & 115/230Vac 50/60Hz.
10 Joule Xenon beacon.
Effective intensity 500cd
Amber, Blue, Clear, Green, Red & Yellow lenses
170.6mm x 233.0mm (6.72" x 9.17")

L.E.D. Beacon
Ref: 2-14-060
MBL1 Multi-function L.E.D Beacon
24/115/230Vac 50/60Hz.
Array of 32 high output L.E.D.s.
Effective intensity 11cd
Amber, Blue, Green, Red & Yellow lenses
170.6mm x 233.0mm (6.72" x 9.17")

Dual Xenon Strobe Beacon
Ref: 2-13-090
MCB005-05 Dual Xenon Strobe Beacon
12/24/48Vdc & 115/230Vac 50/60Hz.
5 Joule Xenon beacons.
Effective intensity 250cd x 2
Amber, Blue, Clear, Green, Red & Yellow lenses
170.6mm x 344.9mm (6.72" x 13.58")

Alarm Sounders/Horns
Ref: 2-21-190
MA112 Alarm Horn Sounder
24Vdc (10-30Vdc), 48Vdc (35-60Vdc) &
24Vac, 115Vac, 230Vac 50/60Hz
Max 119dB(A) @ 1m - 110dB(A) @ 10ft/3m
45 alarm tones with 3 stages/channels
181.0mm x 273.1mm (7.13" x 10.75")

Ref: 2-21-200
MA121 Alarm Horn Sounder
24Vdc (10-30Vdc), 48Vdc (35-60Vdc) &
24Vac, 115Vac, 230Vac 50/60Hz
Max 126dB(A) @ 1m - 117dB(A) @ 10ft/3m
45 alarm tones with 3 stages/channels
220.0mm x 323.5mm (8.66" x 12.74")

Combination Signals with Xenon or L.E.D Beacon
Ref: 2-31-400
MCA112-05 Alarm Horn & Xenon Strobe
24Vdc (10-30Vdc), 48Vdc (35-60Vdc) &
24Vac, 115Vac, 230Vac 50/60Hz
Max 119dB(A) @ 1m - 110dB(A) @ 10ft/3m
5 Joule Xenon beacon.
Effective intensity 250cd
Amber, Blue, Clear, Green, Red & Yellow lenses
181.0mm x 385.1mm (7.13" x 15.17")

Ref: 2-31-410
MCA112-L1 Alarm Horn & L.E.D
24Vdc (10-30Vdc), 48Vdc (35-60Vdc) &
24Vac, 115Vac, 230Vac 50/60Hz
Max 119dB(A) @ 1m - 110dB(A) @ 10ft/3m
Array of 32 high output L.E.D.s.
Effective intensity 11cd.
Amber, Blue, Clear (white L.E.D.s) Green, Red & Yellow lenses
181.0mm x 385.1mm (7.13" x 15.17")

PA Loudspeakers
Ref: 2-24-010
ML15 PA Horn Loudspeaker
70V or 100V or 8 or 16 Ohm low impedance
Rated SPL 118dB +/-3dB @ 15W @ 1m
181.0mm x 273.1mm (7.13" x 10.75")

Ref: 2-24-020
ML25 PA Horn Loudspeaker
70V or 100V or 8 or 16 Ohm low impedance
Rated SPL 121dB +/-3dB @ 25W @ 1m
220.0mm x 323.5mm (8.66" x 12.74")

MBO21 Xenon Strobe
Ref: 2-13-110
MB021 Xenon Strobe Beacon 21 Joule
24/48Vdc & 115/230Vac 50/60Hz.
21 Joule Xenon beacon.
Effective intensity 1,050cd
Amber, Blue, Clear, Green, Red & Yellow lenses
170.6mm x 233.0mm (6.72" x 9.17")

GOST-R

Range info
Material
High impact UL94 V0 & 5VA FR ABS

Ingress Protection
IP66/67.

Fixings
Stainless steel.

Mounting
Ratchet adjustable stainless steel 'U' bracket.

Cable entries
2 x M20 supplied with 1 blanking plug.

MBO21 Xenon Strobe
Material
Corrosion proof, light-weight PPS.

Ingress Protection
IP66/67.

Fixings
Stainless steel.

Mounting
Ratchet adjustable stainless steel 'U' bracket.

Cable entries
2 x M20 supplied with 1 blanking plug.

Appello X user recordable
Combination alarm horn sounders

AL105NAXX/AL105NAXH   DL105AXX/DL105AXH   AL121AXX/AL121AXH

The Appello range is the next generation user recordable annunciators capable of storing up to 2 minutes of content.

The Appello X range records, stores and plays back recorded content with unsurpassed clarity and stores sounds directly to non-volatile memory. The recordable devices enables any type of content such as voice, music or custom tones and messages to be recorded via built in microphone or line-in audio input. Additionally, factory programming for supplied content is also available.

The combination versions of the Appello X range provide additional visual signalling to enforce the warning provided by the alarm horn. A variety of enclosure types and sizes are available to suit any application. The range is UL & cULs approved for general signalling and is also EAC certified.

Range info

Material
AL105 devices: UL94V0 & 5VA FR ABS
DL105 devices: Marine grade aluminium A1
Si12 Cu

Ingress Protection
IP66, Type 4, 4X, 13

Fixings
Stainless steel.

Mounting
Surface mount - via extenral mounting lugs or internal BESA compatible fixing positions.

Cable entries
2 x M20 or 20mm clearance entries.

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.
Volume controls for user content and alarm tones.
Available with custom tone configurations and frequencies.
Factory programming of user supplied content also available.
UL approved for general signalling use.

Combination Signal with Xenon Beacon

Ref: 2-32-010
AL105NAXX Appello X Recordable Sounder & Xenon Beacon
12Vdc, 24Vdc & 115Vac, 230Vac 50/60Hz.
Max output alarm tone: 110dB(A) @ 1m - 101dB(A) @ 10ft/3m
Max output user recorded content: 102dB(A) @ 1m - 93dB(A) @ 10ft/3m
45 alarm tones with 3 stages/channels
5 Joule Xenon beacon.
Effective intensity 200cd
Amber, Blue, Clear, Green, Red & Yellow lenses
RAL3000 Red, RAL7038 Grey or White housing.
DC: 130.0mm x 130.0mm x 216.2mm AC: 130.0mm x 133.5mm x 275.4mm
DC: 5.12" x 5.12" x 8.52"
AC: 5.12" x 5.2" x 10.85"

Combination Signal with L.E.D. Beacon

Ref: 2-32-020
AL105NAXH Appello X Recordable Sounder & L.E.D Beacon
10-30Vdc & 90-260Vac 50/60Hz
Max output alarm tone: 110dB(A) @ 1m - 101dB(A) @ 10ft/3m
Max output user recorded content: 102dB(A) @ 1m - 93dB(A) @ 10ft/3m
45 alarm tones with 3 stages/channels
Array of 24 high output L.E.D.s.
Effective intensity 120cd
Amber, Blue, White, Green and Red L.E.D's
RAL3000 Red, RAL7038 Grey or White housing.
DC: 130.0mm x 130.0mm x 216.2mm
AC: 130.0mm x 133.5mm x 275.4mm
DC: 5.12" x 5.12" x 8.52"
AC: 5.12" x 5.2" x 10.85"

Combination Signal with Xenon Beacon

Ref: 2-32-030
DL105AXX Appello X Recordable Sounder & Xenon Beacon
10-30Vdc
Max output alarm tone: 110dB(A) @ 1m - 101dB(A) @ 10ft/3m
Max output user recorded content: 102dB(A) @ 1m - 93dB(A) @ 10ft/3m
45 alarm tones with 3 stages/channels
5 Joule Xenon beacon.
Effective intensity 200cd
Amber, Blue, Clear, Green, Magenta, Red & Yellow lenses
RAL3000 Red or RAL7038 Grey housing.
130.0mm x 267.4mm x 125.0mm
5.12" x 4.93" x 10.54"

Combination Signal with L.E.D. Beacon

Ref: 2-32-040
DL105AXH Appello X Recordable Sounder & L.E.D Beacon
10-30Vdc
Max output alarm tone: 110dB(A) @ 1m - 101dB(A) @ 10ft/3m
Max output user recorded content: 102dB(A) @ 1m - 93dB(A) @ 10ft/3m
45 alarm tones with 3 stages/channels
Array of 24 high output L.E.D.s.
Effective intensity 120cd
Amber, Blue, White, Green and Red L.E.D's
RAL3000 Red or RAL7038 Grey housing.
130.0mm x 267.4mm x 125.0mm
5.12" x 4.93" x 10.54"

Combination Signal with Xenon Beacon

Ref: 2-32-050
AL121AXX Appello X Recordable Sounder & Xenon Beacon
24Vdc & 115Vac, 230Vac 50/60Hz.
Max output alarm tone: 126dB(A) @ 1m - 117dB(A) @ 10ft/3m
Max output user recorded content: 111dB(A) @ 1m - 102dB(A) @ 10ft/3m
45 alarm tones with 3 stages/channels
5 Joule Xenon beacon.
Effective intensity 200cd
Amber, Blue, Clear, Green, Red & Yellow lenses
RAL3000 Red or RAL7038 Grey housing.
190.0mm x 275.9mm x 191.5mm
7.5" x 10.9mm x 7.54"

Combination Signal with L.E.D. Beacon

Ref: 2-32-060
AL121AXH Appello X Recordable Sounder & L.E.D Beacon
10-30Vdc & 90-260Vac 50/60Hz
Max output alarm tone: 126dB(A) @ 1m - 117dB(A) @ 10ft/3m
Max output user recorded content: 111dB(A) @ 1m - 102dB(A) @ 10ft/3m
45 alarm tones with 3 stages/channels
Array of 24 high output L.E.D.s.
Effective intensity 120cd
Amber, Blue, White, Green and Red lenses
RAL3000 Red or RAL7038 Grey housing.
190.0mm x 275.9mm x 191.5mm
7.5" x 10.9mm x 7.54"

GOST-R

Appello X user recordable
Alarm horn sounders

A105NAX   D105AX   A121   MV121

The Appello range is the next generation user recordable annunciators capable of storing up to 2 minutes of content.

The Appello X range records, stores and plays back recorded content with unsurpassed clarity and stores sounds directly to non-volatile memory. The recordable devices enables any type of content such as voice, music or custom tones and messages to be recorded via built in microphone or line-in audio input. Additionally, factory programming for customer supplied content is also available. The range is UL & cULs approved for general signalling and is also EAC certified.

Range info

Material
A105, A121 & MV121 devices: UL94V0 & 5VA FR ABS
D105AX: Marine grade aluminium A1 Si12 Cu

Ingress Protection
IP66, Type 4, 4X, 13

Fixings
Stainless steel.

Mounting
A105NAX/A121AX: Surface mount - via extenral mounting lugs or internal BESA compatible fixing positions.
MV121: Ratchet adjustable stainless steel 'U' bracket.

Cable entries
2 x M20 or 20mm clearance entries.

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.
Volume controls for user content and alarm tones.
Available with custom tone configurations and frequencies.
Factory programming of user supplied content also available.
UL approved for general signalling use.

Alarm Horn Sounder

Ref: 2-22-010
A105NAX Appello X Recordable Horn
24Vdc (10-30Vdc) & 90-260Vac 50/60Hz
RAL3000 Red, RAL7038 Grey or White housing.
Max output alarm tone: 110dB(A) @ 1m
- 101dB(A) @ 10ft/3m
Max output user recorded content: 102dB(A)
@ 1m - 93dB(A) @ 10ft/3m
45 alarm tones with 3 stages/channels
DC: 130.0mm x 130.0mm x 133.5mm
AC: 130.0mm x 132.0mm x 188.0mm
DC: 5.12" x 5.12" x 5.26"
AC: 5.12" x 5.2" x 7.4"

Ref: 2-22-030
D105AX Appello X Recordable Horn
24Vdc (10-30Vdc)
RAL3000 Red or RAL7038 Grey housing.
Max output alarm tone: 110dB(A) @ 1m
- 101dB(A) @ 10ft/3m
Max output user recorded content: 102dB(A)
@ 1m - 93dB(A) @ 10ft/3m
45 alarm tones with 3 stages/channels
130.0mm x 180.0mm x 115.0mm
5.12" x 7.09" x 4.93"

Alarm Horn Sounder

Ref: 2-22-020
A121AX Appello X Recordable Horn
24Vdc (14-30Vdc) & 90-260Vac 50/60Hz
RAL3000 Red or RAL7038 Grey housing.
Max output alarm tone: 126dB(A) @ 1m
- 117dB(A) @ 10ft/3m
Max output user recorded content: 111dB(A)
@ 1m - 102dB(A) @ 10ft/3m
45 alarm tones with 3 stages/channels
190.0mm x 190.0mm x 191.5mm
7.48" x 7.48" x 7.54"

Ref: 2-22-040
MV121 Appello X Recordable Horn
24Vdc (10-30Vdc) & 90-260Vac 50/60Hz
RAL7038 Grey housing.
Max output alarm tone: 126dB(A) @ 1m
- 117dB(A) @ 10ft/3m
Max output user recorded content: 111dB(A)
@ 1m - 102dB(A) @ 10ft/3m
45 alarm tones with 3 stages/channels
220.0mm x 323.5mm (8.66" x 12.74")

GOST-R

Full specifications at **e2s.com**

Hootronic
Electro-mechanical alternative with visual signal

HAB105RTH

HAB121RTH

HAL121X

HAL121H

HMCA112-05

The Hootronic range utilises the latest in amplifier and digital to analogue conversion technology to create alternatives to traditional mechanical industrial signals such as sirens, buzzers, claxons & bells, with improved reliability at significantly lower current consumption and without a reduction in performance.

The products are zero maintenance (continuously rated) and accurately reproduce the following sounds: 470Hz industrial hooter, 1.7KHz high frequency sounder, 1.0KHz medium frequency siren, 450Hz buzzer and a mechanical bell. Each of these sounds have two additional, remotely selectable, alarm stages. The remote switch-off function generates genuine 'tail off' to sound when the alarm is terminated.

The combination versions of the Hootronic range provide additional visual signalling to enforce the warning provided by the alarm horn. A variety of enclosure types and sizes are available to suit any application.

Range info

Material
Enclosure High impact UL94 V0
& 5VA FR ABS

Ingress Protection
IP66
HMA121: IP66/67.

Fixings
Stainless steel.

Mounting
HA105*/HA121*: Surface mount - via extenal mounting lugs or internal BESA compatible fixing positions.
HMCA121: Ratchet adjustable 'U' bracket.

Cable entries
2 x M20 cable entries.

Features

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

Combination Signal
with Rotating Beacon

Ref: 2-33-030
HAB105RTH
Hootronic & Rotating Beacon
24Vdc (10-30Vdc) & 115/230Vac 50/60Hz
Max output 112dB(A) @ 1m
- 103dB(A) @ 10ft/3m
5 electro-mechanical replacement sounds with
3 stages/channels
Halogen Bulb G6,35/GY6,35.
Effective intensity 125cd
Amber, Blue, Clear, Green, Red & Yellow lenses
RAL3000 Red or RAL7038 Grey housing.
130.0mm x 130.0mm x 273.9mm
5.12" x 5.12" x 10.78"

Ref: 2-33-040
HAB1215RTH
Hootronic & Rotating Beacon
12/24Vdc & 115/230Vac 50/60Hz.
Max output 121dB(A) @ 1m
- 112dB(A) @ 10ft/3m
5 electro-mechanical replacement sounds with
3 stages/channels
Halogen Bulb G6,35/GY6,35.
Effective intensity 325cd
Amber, Blue, Clear, Green, Red & Yellow lenses
RAL3000 Red or RAL7038 Grey housing.
190.0mm x 388.5mm x 191.5
7.48" x 15.29" x 7.54"

Combination Signal
with Xenon Strobe

Ref: 2-33-010
HAL121X Hootronic & Xenon Strobe
12/24/115Vac, 230Vac 50/60Hz.
Max output 121dB(A) @ 1m
- 112dB(A) @ 10ft/3m
5 electro-mechanical replacement sounds with
3 stages/channels
5 Joule Xenon beacon.
Effective intensity 250cd
RAL3000 Red or RAL7038 Grey housing.
190.0mm x 275.9mm x 191.5mm
7.48" x 10.9" x 7.5"

Combination Signal with
L.E.D. Beacon

Ref: 2-33-020
HAL121H Hootronic & L.E.D Beacon
12/24Vdc & 115/230Vac 50/60Hz.
Max output 121dB(A) @ 1m
- 112dB(A) @ 10ft/3m
5 electro-mechanical replacement sounds with
3 stages/channels
Array of 24 high intensity L.E.D.s.
Effective intensity 176cd
Amber Blue, Green, Red and White lenses
RAL3000 Red or RAL7038 Grey housing.
190.0mm x 275.9mm x 190.05mm
7.48" x 10.9" x 7.48"

Electronic Siren, Buzzer, Claxon
& Bell with Xenon Strobe

Ref: 2-33-050
HMCA112-05 & Xenon Strobe
12/24Vdc & 115/230Vac 50/60Hz.
Max output 124dB(A) @ 1m
- 115dB(A) @ 10ft/3m
5 electro-mechanical replacement sounds with
3 stages/channels
5 Joule Xenon beacon.
Effective intensity 250cd
Amber, Blue, Clear, Green, Red & Yellow lenses
Grey RAL7038 housing.
181.0mm x 385.1mm (7.13" x 15.17")

РГ
GOST-R

CE

EAC

Hootronic & GPH
Electro-mechanical alternative

HA105N

HA121

HMA121

GPH1/2/3/4

The Hootronic range utilises the latest in amplifier and digital to analogue conversion technology to create alternatives to traditional mechanical industrial signals such as sirens, buzzers, claxons and bells, with improved reliability at significantly lower current consumption and without a reduction in performance.

The products are zero maintenance (continuously rated) and accurately reproduce the following sounds: 470Hz industrial hooter, 1.7KHz high frequency sounder, 1.0KHz medium frequency siren, 450Hz buzzer and a mechanical bell. Each of these sounds have two additional, remotely selectable, alarm stages. The remote switch-off function generates genuine 'tail off' to sound when the alarm is terminated.

The GPH range is a UL approved general purpose signal in a lightwieght, robust PC enclosure.

The three alarm tones include a simulated electro-mechanical buzzer sound, traditionally only available from heavy, unreliable mechanical devices, plus two further warning tones. Suitable for 4" back box mounting the range includes surface mount and flush mount versions.

Range info

Material
HA105N, HA121 & HMA121:
High impact UL94 V0 & 5VA FR ABS
GPH Buzzers: High impact UL94 V0 (f1) PC

Ingress Protection
HA105N, HA121, HMA121: IP66.
HMA121: IP66/67.
GPH: IP66 Type 4/4X/13

Fixings
Stainless steel.

Mounting
HA105N/HA121: Surface mount - via extenral mounting lugs or internal BESA compatible fixing positions.
HMA121: Ratchet adjustable 'U' bracket.
GPH buzzers: surface mount.

Cable entries
2 x M20 or 20mm clearance entries.

Features

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

Alarm Sounder/Horn

Ref: 2-23-010
HA105N Hootronic
24Vdc (10-30Vdc) & 115/230Vac 50/60Hz
Max output 112dB(A) @ 1m
- 103dB(A) @ 10ft/3m
5 electro-mechanical replacement sounds
with 3 stages/channels
130.0mm x 130.0mm x 133.5mm
5.12'' x 5.12'' x 5.26''

Ref: 2-23-020
HA121 Hootronic
10-30Vdc & 24/230Vac 50/60Hz
Max output 121dB(A) @ 1m
- 112dB(A) @ 10ft/3m
5 electro-mechanical replacement sounds
with 3 stages/channels
210.0mm x 190.0mm x 191.5mm
8.27'' x 7.48'' x 7.54''

Ref: 2-23-030
HMA121 Hootronic
24Vdc (10-30Vdc) & 115/230Vac 50/60Hz
Max output 124dB(A) @ 1m
- 115dB(A) @ 10ft/3m
5 electro-mechanical replacement sounds
with 3 stages/channels
220.0mm x 323.5mm (8.66'' x 12.74'')

GPH Buzzers

Ref: 2-21-120
GPH1 & GPH2 Alarm Horn - Buzzer
24Vdc (10-30Vdc) & 115/230Vac 50/60Hz
Max output 105dB(A) @ 1m
- 96dB(A) @ 10ft/3m
3 buzzer/sounder tones
152.0mm 152.0mm x 29.8mm
with optional backbox 65.5mm
5.98'' x 5.98'' x 1.17''
with optional backbox 2.58''

Ref: 2-21-130
GPH3 & GPH4 Alarm Horn - Buzzer
10-30Vdc & 40-260Vac 50/60Hz
Max output 110dB(A) @ 1m
-101dB(A) @ 10ft/3m
3 buzzer/sounder tones
152.0mm 152.0mm x 29.8mm
with optional backbox 65.5mm
5.98'' x 5.98'' x 1.17''
with optional backbox 2.58''

GOST-R

Full specifications at **e2s.com**

Spectra
Audible and combination signalling horns & buzzers

H100B   H100T   H110T   H100BX/H100BL   H100TX/H100TL/H100TF   H110TX/H110TL/H110TR

The Spectra horns, buzzers and combination devices are ideal for industrial environments requiring signalling for process control and machine safety.

The H100 and H110 devices feature a very high output electronic signal capable of generating a traditional 'buzzer' warning tone traditionally associated with electro-mechanical signals as well as a further two alarm tone frequencies. Also available combined with visual signals.

Range info

Material
High impact ABS (UL94V0 & 5VA)

Ingress Protection
IP65

Fixings
Stainless steel.

Mounting
Surface mount.

Enclosure colour
Grey RAL7038 housing.

Cable Entries
1 x 5-7mm push through grommet

Alarm horn sounders

Ref: 2-21-170
H100B Signalling Horn
12-30Vdc/Vac, 40-260Vdc/Vac 50/60Hz
Max. 100dB(A) @ 1m - 91dB(A) @ 10ft/3m
3 buzzer/alarm tones
Grey RAL7038.
94.2mm x 71.5mm (3.71" x 2.82")

Ref: 2-21-160
H100T Signalling Horn with Trumpet
12-30Vdc/Vac, 40-260Vdc/Vac 50/60Hz
Max. 100dB(A) @ 1m - 91dB(A) @ 10ft/3m
3 buzzer/alarm tones
94.2mm x 177.5mm (3.71" x 6.99")

Ref: 2-21-180
H110T Signalling Horn with Trumpet
12-30Vdc/Vac, 40-260Vdc/Vac 50/60Hz
Max. 110dB(A) @ 1m - 101dB(A) @ 10ft/3m
3 buzzer/alarm tones with 3 stages/channels
135.0mm x 336.7mm (5.32" x 13.27")

Combination signal & filament lamp

Ref: 2-31-320
**H100TF Trumpet Horn
& Filament Lamp Flashing Beacon**
12Vdc, 24Vdc & 115Vac, 230Vac
Max. 100dB(A) @ 1m - 91dB(A) @ 10ft/3m
3 buzzer/alarm tones
Filament lamp BA9s, 5W.
Flash frequency 1Hz.
Effective intensity 2cd.
Amber, Blue, Clear, Green, Red & Yellow lenses
94.2mm x 241.2mm (3.41" x 9.5")

Combination Signal &
Rotating Beacon

Ref: 2-31-330
**H110TR Trumpet Horn
& Rotating Beacon**
12Vdc, 24Vdc & 115Vac, 230Vac
Max. 110dB(A) @ 1m - 101dB(A) @ 10ft/3m
3 buzzer/alarm tones with 3 stages/channels
Halogen Lamp G6,35/GY6,35, 20/25W.
Effective intensity 125cd.
Amber, Blue, Clear, Green, Magenta, Red
& Yellow lenses
135.0mm x 462.9mm (5.32" x 18.24")

Combination signals & Xenon strobe

Ref: 2-31-280
H100BX Signal Horn & Xenon Strobe
24Vdc & 24Vac, 115Vac, 230Vac
Max. 100dB(A) @ 1m - 91dB(A) @ 10ft/3m
3 buzzer/alarm tones
Xenon strobe 1 Joule.
Effective intensity 50cd.
Amber, Blue, Clear, Green, Red & Yellow lenses
94.2mm x 135.2mm (3.41" x 5.33")

Ref: 2-31-300
H100TX Trumpet Horn & Xenon Strobe
24Vdc & 24Vac, 115Vac, 230Vac
Max. 100dB(A) @ 1m - 91dB(A) @ 10ft/3m
3 buzzer/alarm tones
Xenon strobe 1 Joule
Effective intensity 50cd.
Amber, Blue, Clear, Green, Red & Yellow lenses
94.2mm x 241.2mm (3.41" x 9.5")

Ref: 2-31-340
H110TX Trumpet Horn & Xenon Strobe
12Vdc, 24Vdc, 48Vdc & 12Vac, 24Vac,
48Vdc, 115Vac, 230Vac
Max. 110dB(A) @ 1m - 101dB(A) @ 10ft/3m
3 buzzer/alarm tones with 3 stages/channels
Xenon strobe 5 Joule.
Effective intensity 250cd.
Amber, Blue, Clear, Green, Magenta, Red
& Yellow lenses
135.0mm x 462.9mm (5.32" x 18.24")

Combination signals & L.E.D. beacon

Ref: 2-31-290
H100BL Signal Horn & L.E.D Beacon
12-30Vdc, 90-260Vdc/Vac
Max. 100dB(A) @ 1m - 91dB(A) @ 10ft/3m
3 buzzer/alarm tones
Array of 9 high powered L.E.D.s.
Effective intensity 5.5cd.
Amber, Blue, Clear (white L.E.D), Green, Red
& Yellow lenses
94.2mm x 135.2mm (3.41" x 5.33")

Ref: 2-31-310
H100TL Trumpet Horn & L.E.D Beacon
12-30Vdc, 90-260Vdc/Vac
Max. 100dB(A) @ 1m - 91dB(A) @ 10ft/3m
3 buzzer/alarm tones
Array of 9 high powered L.E.D.s.
Effective intensity 5.5cd.
Amber, Blue, Clear (white L.E.D), Green, Red
& Yellow lenses
94.2mm x 241.2mm (3.41" x 9.5")

Ref: 2-31-350
H110TL Trumpet Horn & L.E.D Beacon
10-30Vdc, 48Vdc, 90-260Vac
Max. 110dB(A) @ 1m - 101dB(A) @ 10ft/3m
3 buzzer/alarm tones with 3 stages/channels
Array of 16 high powered L.E.D.s.
Effective intensity 19cd.
Amber, Blue, Clear (white L.E.D), Green, Red
& Yellow lenses
135.0mm x 462.9mm (5.32" x 18.24")

Spectra
Visual signals

B300STR/B300LDA/B300SLF/
B300FLF/B300SLH/B300FLH

B400STR/B400LDA/B400SLF/
B400FLF/B400SLH/B400FLH

B300RTH

B400RTH

The Spectra visual signalling range includes Xenon, L.E.D., Halogen, incadescent and filament lamp light sources.

The B400 and the compact B300 series, provide reliable and robust visual signallng solutions. The UV stable, impact resistant polycarbonate enclosures, seal.e.d to IP65, are ideal for a host of applications such as process control and machine safety warning, status indication, and general alert.

Range info

Material
High impact UL94 V0 (f1) PC

Ingress Protection
IP65

Fixings
Stainless steel.

Mounting
The surface mount base can also be supplied with a right angle bracket or with a pole mounted assembly.

Cable entries
1 x 5-7mm push through grommet
B300: 1 x M20 cable entry
B400: 2 x M20 cable entry

Enclosure colour
Black

Features

Range of functions and technologies.
Suitable for indoor and outdoor use.
Beacons can be linked together to create a sequence of signals.

B300 beacons

Amber, Blue, Clear, Green, Red & Yellow lenses
Diameter 100.0mm x 150.0mm high
Diameter 3.94'' x 5.91'' high

Ref: 2-12-010
B300RTH Rotating Beacon [Halogen Bulb]
12Vdc, 24Vdc, & 115Vac, 230Vac 50/60Hz.
Halogen Lamp G6,35/GY6,35. 20/25W
Effective intensity 125cd.
Diameter 100.0mm x 150.0mm high
Diameter 3.94'' x 5.91'' high

Ref: 2-13-030
B300STR Xenon Strobe Beacon
12Vdc, 24Vdc, 48Vdc & 12 Vac, 24Vac,
48Vac, 115Vac, 230Vac 50/60Hz.
5 Joule Xenons Beacon.
Effective intensity 250cd
Flash rate 1Hz (60fpm).
DC units optionally 1.5Hz & double strike.

Ref: 2-14-020
B300LDA L.E.D Beacon [Multi-Function Array]
10-50Vdc & 90-230Vac 50/60Hz
Array of 16 high output L.E.D.s.
Effective intensity 19cd.
Functions: 4 rotating configurations.
4 flashing configurations.
Steady mode for status applications.

Ref: 2-15-010
B300SLF Status Beacon [Filament Lamp]
12/24/48Vdc & 115/230Vac 50/60Hz
Filament lamp E14, 25W
Permanent beacon.
Effective intensity 15cd.

Ref: 2-15-030
B300FLF Blinking Beacon [Filament Lamp]
12/24/48Vdc & 115/230Vac 50/60Hz
Filament lamp E14, 25W
Flash frequency user selectable during installation: 0.5Hz, 1Hz & 2Hz.
Effective intensity 15cd.

Ref: 2-15-020
B300SLH Status Beacon [Halogen Lamp]
12/24/48Vdc & 115/230Vac 50/60Hz
Halogen Lamp G6,35/GY6,35. 20/25W
Permanent beacon.
Effective intensity 21cd.

B400 beacons

Amber, Blue, Clear, Green, Red & Yellow lenses
Diameter 140.0mm x 220.0mm high
Diameter 5.52'' x 8.67'' high

Ref: 2-12-020
B400RTH Rotating Beacon [Halogen Bulb]
12Vdc, 24Vdc, & 115Vac, 230Vac 50/60Hz.
Halogen Lamp G6,35/GY6,35. 35/40W..
Effective intensity 325cd.
Diameter 140.0mm x 220.0mm high.
Diameter 5.52'' x 8.67" high.

Ref: 2-13-040
B400STR Xenon Strobe Beacon
24Vdc, 48Vdc & 24Vac, 48Vac, 115Vac,
230Vac 50/60Hz.
15 Joule Xenons Beacon.
Effective intensity 750cd.
1Hz flash rate automatically synchronised.

Ref: 2-14-030
B400LDA L.E.D Beacon [Multi-Function Array]
10-50Vdc & 115Vac, 230Vac 50/60Hz
Array of 32 high output L.E.D.s.
Effective intensity 30cd.
Functions: 4 rotating configurations.
4 flashing configurations.
Steady mode for status applications.

Ref: 2-15-050
B400SLF Status Beacon [Filament Lamp]
12Vdc, 24Vdc & 115Vac, 230Vac 50/60Hz
Filament lamp E14, 40W
Permanent beacon.
Effective intensity 27cd.

Ref: 2-15-080
B400FLH Blinking Beacon [Halogen Lamp]
12Vdc, 24Vdc & 115Vac, 230Vac 50/60Hz
Halogen lamp G6,35/GY6,35. 35/40W.
Flash frequency user selectable during installation: 0.5Hz, 1Hz & 2Hz.
Effective intensity 34cd.

Accessories

A range of right angle mounting brackets and pole mounting assemblies are available for the Spectra beacon range and also spare lamps and bulbs.

GOST-R

Full specifications at e2s.com

Spectra
Panel mount visual range

B100STR/B100LDA/B100SLF/B100FL

B200STR/B200LDA/B200SLF/B200FLF

E2S22D

E2S28D

The Spectra range panel & surface mount beacons and buzzers come in a range of sizes and technologies. The B100 and B200 series is comprised of a Xenon strobe beacon, steady filament lamp, blinking filament lamp and a steady L.E.D array version.

The B200 offers a compact signal ideal for operator indication whilst the B100 panel mount base incorporates a pluggable terminal block ensuring rapid installation and maintenance. The E2S22D and E2S28D with industry standard 22 and 28mm panel cut outs provide solutions for general signalling for control panels and instrument clusters.

Range info

Material
High impact UL94 V0 (f1) PC

Ingress Protection
IP65

Fixings
Stainless steel.

Mounting
Panel mount

Terminals
B200: 0.5 to 1.5mm².
B100: 0.5 to 1.5mm² pluggable.

Features

Bayonet fixing lens.
Anti-tamper locking screw.

Accessories

A range of right angle mounting brackets and pole mounting assemblies are available for the Spectra beacons as well as lamps and bulbs.

B200 beacons

Amber, Blue, Clear, Green, Red & Yellow lenses
Diameter 60.0mm x 80.0mm beacon height.
Diameter 2.36'''' x 3.15'' beacon height.

Ref: 2-13-060
B200STR Xenon Strobe Beacon
10-30Vdc & 115Vac, 230Vac 50/60Hz
1 Joule Xenons Beacon.
Effective intensity 50cd
Flash frequency 0.75 Hz.

Ref: 2-14-050
B200LDA L.E.D Permanent Beacon
10-30Vdc & 90-230Vac
Array of 9 high powered L.E.D.s.
Effective intensity 5.5cd
Permanent beacon.

Ref: 2-15-120
B200FLF Blinking Beacon
12Vdc, 24Vdc, 48Vdc
115Vac, 230Vac 50/60Hz
Filament lamp BA9s, 5W
Flash frequency 1Hz.
Effective intensity 2cd.

Ref: 2-15-110
**B200SLF Status Beacon
[Filament Lamp]**
12Vdc, 24Vdc, 48Vdc
115Vac, 230Vac 50/60Hz
Filament lamp BA9s, 5W
Permanent beacon.
Effective intentsity 5cd.

B100 Panel mount beacons

Amber, Blue, Clear, Green, Red & Yellow lenses
Diameter 60.0mm x 65.5mm beacon height.
Diameter 2.36'''' x 2.58'' beacon height.

Ref: 2-13-050
B100STR Panel Mount Xenon Strobe
10-30Vdc & 115Vac, 230Vac 50/60Hz
1 Joule Xenons Beacon.
Effective intensity 50cd
Flash frequency 0.75 Hz.

Ref: 2-14-040
B100LDA Panel Mount L.E.D Beacon
10-30Vdc & 90-230Vac
Array of 9 high powered L.E.D.s.
Effective intensity 5.5cd
Permanent beacon.

Ref: 2-15-100
B100FLF Panel Mount Blinking Beacon
12Vdc, 24Vdc, 48Vdc
115Vac, 230Vac 50/60Hz
Filament lamp BA9s, 5W
Flash frequency 1Hz.
Effective intensity 2cd.

Ref: 2-15-090
**B100SLF Panel Mount Status Beacon
[Filament Lamp]**
12Vdc, 24Vdc, 48Vdc
115Vac, 230Vac 50/60Hz
Filament lamp BA9s, 5W
Permanent beacon.
Effective intensity 5cd.

E2S22D Panel buzzers & lights

Ingress Protection
IP65.

Mounting
Panel mount - 22mm

Terminals
Screw terminals with wire guards with ability to daisy chain the lights into an array.

Voltage
24 or 48Vac/dc, 110-130vac/dc or 230Vac

Ref: 2-21-210
E2S22DBZ Buzzer: 80dB @ 10cm
E2S22DFS Flashing Light: Flash rate: 2Hz
E2S22DBF Combination: 80dB @ 10cm with steady red L.E.D.

E2S28D Panel buzzers

Mounting
Panel mount - 28mm

Terminals
6.35mm/0.25'' quick-connect blades for push-on or direct solder attachment.

Max. Output
95±5 dB(A) at 48 Vdc at 24 inches (61 cm)

Ref: 2-21-220
E2S28DMC948: Continuous tone 9-48 Vdc
E2S28DMC201: Continuous tone 30-120 Vac
E2S28DMC301: Cont. tone 130-220 Vac
E2S28DMB530: Dual function beep/ continuous tone 5-30Vdc

GOST-R

Spectra
Traffic light/access control visual signals and alarm horn sounders

B350TLA/B350TSB

B450TLA/B450TSB/B450TDB

B300SND

B400SND

The Spectra range includes traffic light / access control indicators utilising either filament lamp or L.E.D light sources. The B450 and the compact B350 lights can be complemented by the B400SND or B300SND alarm horn sounder to provide an additional audible signal.

The UV stable, impact resistant polycarbonate enclosures, seal.e.d to IP65, are ideal for a host of applications such as traffic management, loading bays, fork lift access as well as process control and machine safety warning, status indication, and general alert.

Range info

Material
High impact UL94 V0 (f1) PC

Ingress Protection
IP65

Fixings
Stainless steel.

Mounting
Surface mount (Wall mount bracket available)

Cable Entries
1 x 5-7mm push through grommet
1 x M20 cable entry

Enclosure colour
Black

Features

Bayonet fixing lens.
Anti-tamper locking screw.

B350 traffic light indicators

Diameter 100.0mm x 139.7mm height.
Diameter 3.94'''' x 5.5'' height.

Ref: 2-11-050
B350TLA L.E.D Traffic Light
10-30Vdc & 90-230Vac 50/60Hz
Array of 15 high output L.E.D.s.
Effective intensity 54cd.
Permanent (steady) beacon.
Amber, Blue, Green & Red L.E.D's.

Ref: 2-11-060
B350TSB Filament Lamp Traffic Light
12-250V
Filament Lamp E14, 25W.
Effective intensity 21cd.
Permanent (steady) beacon.
Amber, Blue, Green, Red & Yellow lenses.

B450 traffic light indicators

Diameter 140.0mm x 177.0mm height.
Diameter 5.52'''' x 6.97'' height.

Ref: 2-11-020
B450TLA L.E.D Traffic Light
10-30Vdc & 90-230Vac 50/60Hz
Array of 24 high output L.E.D.s.
Effective intensity 54cd.
Permanent (steady) beacon.
Amber, Blue, Green & Red L.E.D's.

Ref: 2-11-030
B450TSB Filament Lamp Traffic Light
12-250V
Filament Lamp E27, 25W.
Effective intensity 32cd.
Permanent (steady) beacon.
Amber, Blue, Green, Red & Yellow lenses.

Ref: 2-11-040
B450TDB Dual Filament Lamp Traffic Light
12-250V
Filament Lamp E14, 15W x 2.
Effective intensity 24cd.
Permanent (steady) beacon.
Amber, Blue, Green, Red & Yellow lenses.

B300SND Signalling Horn

Ref: 2-21-140
B300SND Signalling Horn
12-30Vac/dc, 40-260Vac/dc
Max. 98dB(A) @ 1m - 89dB(A) @ 10ft/3m
3 alarm tones.
Diameter 100.0mm x 98.0mm height.
Diameter 3.94'' x 4.04'' height.

B400SND Signalling Horn

Ref: 2-21-150
B400SND Signalling Horn
10-30Vac/dc, 40-260Vac/dc
Max. 110dB(A) @ 1m - 101dB(A) @ 10ft/3m
3 alarm tones
Remotely selectable second stage.
Diameter 140.0mm x 119.5mm height.
Diameter 5.52'' x 4.71'' height.

GOST-R

CE

EAC

Wide Area Signalling

Wide Area Sirens

General signalling.

A131

A141

The A131 is a high output 131dB(A) @ 1 metre 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.

Offering a choice of three alarm stages, selected from a choice 45 tones including many national standard tones, it can be incorporated in fire, security and general alarm systems where existing equipment is not powerful enough or the system needs expanding.

131dB(A) audible warning system

Ref: 3-11-010
A131 Alarm sounder
Max. 131dB(A) @ 1m - 102dB(A) @ 30m
45 alarm tones with 3 stages/channels
Automatic synchronisation
300m range
24Vdc (18-30Vdc)
115Vac & 230Vac
Aluminium/ABS horn enclosure.
Control panel available with battery back-up.
IP66 ingress protection.
1 to 4 horn configurations

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.

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 claxons.

By re-playing digital recordings of these products, the Hootronic produces the exact sound but with improved reliability and rating compared to electro-mechanical devices. E2S has considerable experience in this field and is able to offer full pre and post installation support including assistance with siren selection.

141dB(A) audible warning system

Ref: 3-11-020
A141 Alarm sounder
Max. 141dB(A) @ 1m - 112dB(A) @ 30m
45 alarm tones with 3 stages/channels
Automatic synchronisation
750m range
24Vdc (18-30Vdc)
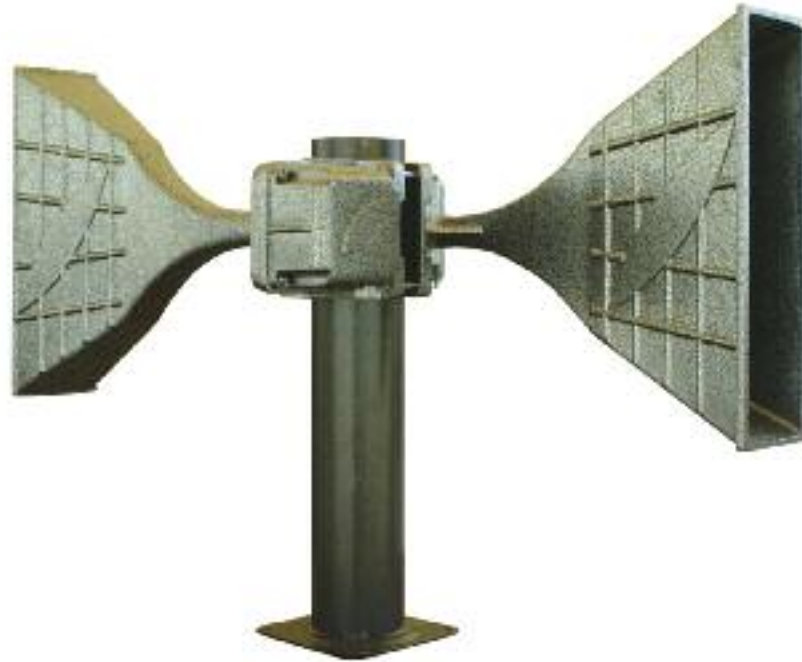115Vac & 230Vac
Glass fibre horn enclosure.
Control panel available with battery back-up.
IP65 ingress protection.

GOST-R

Full specifications at **e2s.com**

Wide Area Sirens
General signalling.

A151

K-SML05/10/15

E2S wide area products provide solutions for public and mass notification for a range of applications including tsunami warning alert, disaster warning and evacuation warning as well as for many other emergency signalling requirements.

E2S can provide advice and site surveys to assist with system specifications. The advanced system options include battery back-up and radio control options.

K-SML Motor driven sirens

Enclosure: Aluminium
Colour: Grey
Frequency: 560Hz
Tones: Continuous or Wail Tone
Voltages: 400V 3 phase

Ref: 3-21-010
K-SML05
1Km effective range
2.2kW motor
Max. 135dB(A) @ 1m

K-SML10
1.5Km effective range
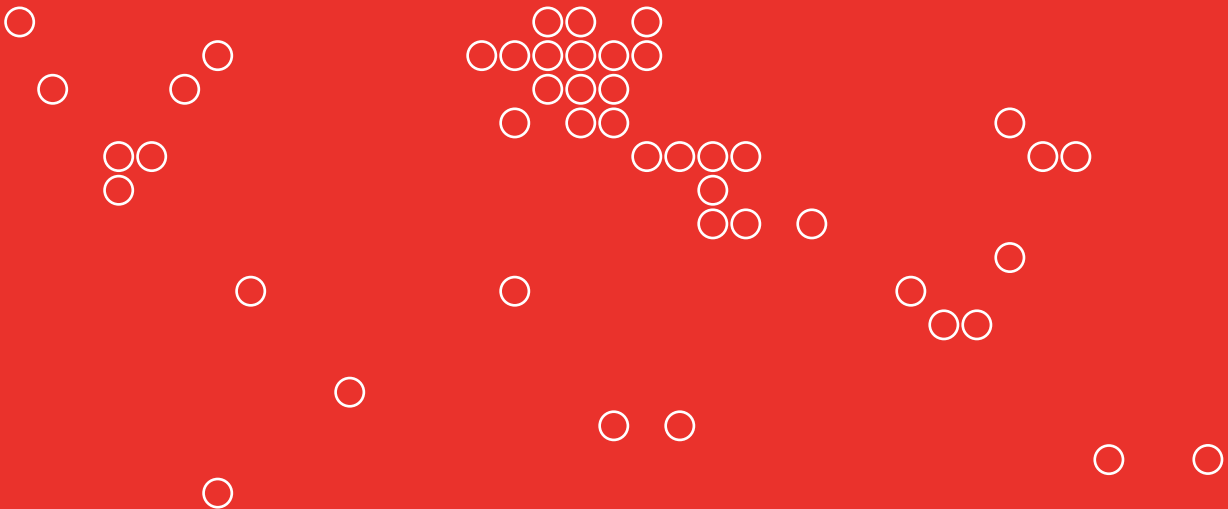4.0kW motor
Max. 140dB(A) @ 1m

K-SML15
2.5Km effective range
7.5kW motor
Max. 145dB(A) @ 1m

A151 Wide area system

E2S offer a range of solutions for disaster and outdoor warning:
Toxic Gas Release (COMAH, SEVESO II)
Flood Warning
Tsunami Alert
Civil Defence
Tornado and Weather Warning
Wide Area Fire and Security Alert

Full specifications at **e2s.com**

E2S global network

Afghanistan	Finland	Lebanon	Slovakia
Algeria	France	Libya	South Africa
Australia	Germany	Malaysia	South Sudan
Austria	Ghana	Malta	Spain
Azerbaijan	Hungary	Mauritania	Sultanate of Oman
Bahrain	India	Mauritius	Sweden
Belgium	Indonesia	Mexico	Switzerland
Brazil	Iran	Morocco	Syria
Canada	Iraq	Netherlands	Taiwan
Canary Islands	Ireland	New Zealand	Tanzania
Chile	Israel	Nigeria	Thailand
China	Italy	Norway	Trinidad and Tobago
Cyprus	Japan	Philippines	Tunisia
Czech Republic	Jordan	Poland	Turkey
Denmark	Kazakhstan	Qatar	U.A.E
Egypt	Kenya	Russia	U.S.A
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