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3A Signals and Alarms

Application and Selection

Application:

Material listed in this section provides the essential components for an integrated alarm and signaling system in areas made hazardous by flammable vapors, gases or dusts.

For audible signals in non-hazardous locations, WH horns (page 575) and W2H flexible signaling devices (page 572) are used. For signals in hazardous locations, ESR bells (page 573 and 574), W2H, and ETH horns, and flexible signaling devices (pages 566 through 572) are used. For visual signals in hazardous locations, such as when ambient noise levels make audible signals impractical, EV or VDAS series strobe lights are used. Corrective action may then be taken in the control area and personnel in other areas informed, using the D2TW or ETW hazardous locations telephones (pages 576 through 578).

Considerations for Selection:

Environmental:

- Compliance with NEC/CEC material and construction to withstand rough usage and atmospheric conditions, noise levels and other conditions requiring visual as well as audible signals or alarms.

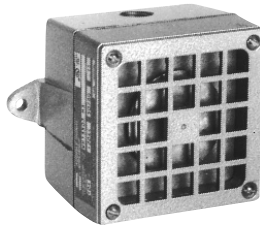
Electrical:

- Compatibility with electrical system (new installation or existing system).

General Information

When selecting from the listings on the following pages, a signal for use in hazardous or non-hazardous atmospheres, several factors should be taken into consideration:

- The character of the noise found in the area where the signal will be used is of first importance. A signal producing a sound with the greatest contrast to the room noise should always be selected. For example, a horn signal would not be suitable in surroundings where a constant hum or whine is present, whereas a bell signal could readily be heard. Conversely, a bell signal would be inadequate in surroundings where noise is produced by hammering on metal, whereas a horn signal would give good contrast.
- Careful consideration should also be given to the number of signals used to cover an area. Past experience has shown that sound output should be handled in the same manner as light distribution. In other words, much better coverage is obtained by even distribution of several low output units than by one or two high output units. For example, two high powered horn signals, one mounted at each end of a large room, could produce excessively high volume at each end with low volume at the center. However, three standard volume horn signals spaced evenly throughout the area would provide proper volume at all points.
- The listings indicate the sound output of the various signals in decibels. An ETH horn signal rated at 106 decibels produces nearly 20% more sound output than a horn signal rated at 104 decibels.
- The tables on pages 566 and 574 lists the current in amperes at the rated voltages for bell, horn, and siren signals. This makes it possible to calculate the wire size for one or more signals.



WH Horn



ESR Bell



W2H Solid State Audible Signaling Device



ETH Grill Type Horn Signal



ETH Flex•Tone™ Signaling Devices

3A ETH Horn Signals

Factory Sealed

Cl. I, Div. 1 & 2, Groups B†,C,D
 Cl. II, Div. 1, Groups E,F,G
 Cl. II, Div. 2, Groups F,G
 Cl. III
 NEMA 7B*CD,9EFG

Explosionproof
 Dust-Ignitionproof
 Raintight
 Wet Locations

3A Signals & Alarms

Application:

ETH horn signals are used:

- for call signals, alarms, and various other signalling applications
- in specific hazardous atmospheres as found in chemical plants, oil and gas refineries, bulk loading stations, paint and varnish manufacturing plants, grain processing industries and grain elevators, as well as in certain metal, coal, combustible fiber processing or handling areas
- in conduit systems and mounted on a flat surface with the projectors aimed in the desired direction

Features:

- No external conduit seal is required.
- The ac signals do not have arcing contacts.
- The dc horns have factory sealed wire leads in the interconnecting nipple and hub.
- The body cover joint of ac horn signals is of serrated construction, machined to close tolerance to ensure flametightness and secured by a clamping ring. The DC unit has a ground joint design.

Standard Materials:

- Copper-free aluminum

Standard Finishes:

- Natural

Size Ranges:

- Hub – 1/2" or 3/4" size

Sound Levels:

- See page 557 for individual ratings

Electrical Rating Ranges:

- Nominal voltage –
 24, 115, 230 VAC
 24 VDC

See Table 1 for more complete ratings

Table 1/Operating Current in Amperes at the Nominal Voltage for Horn and Siren Signals

Horn Signal

Nom. Volts	Amperes		
	Single Projector	Grill Type	
		50 to 60 hertz AC	
	50 to 60 hertz AC	ETH2313,	DC
	ETH2702, ETH2703	ETH2316,	ETH2416
		ETH2312	
24	—	0.625	0.16
115	.45	0.13	
230	.2	0.065	

†Grill type horns are certified for Group B.

Certifications and Compliances:

- NEC: Class I, Division 1 & 2, Groups B† C,D
 Class II, Division 1, Groups E,F,G
 Class II, Division 2, Groups F,G
 Class III
- UL Standard: 464, 1203
- CSA Standard: C22.2 No. 30



ETH grill type horn signal

Ordering Information

Single Projector Horn Signal

Supply	Nom. Volts ♦	Nom. Watts	Minimum audibility rating (dB) at 10':	Hub Size	Cat. #
50 to 60 hertz AC	115	33	105 dB	1/2	ETH2703
	230	33	105 dB	1/2	ETH2702

Grill Type Horn Signals

Supply	Nom. Volts ♦	Nom. Watts	Minimum audibility rating (dB) at 10':	Hub Size	Cat. #
50 to 60 hertz AC	24	49	100 dB	3/4	ETH2316
	115		100 dB	3/4	ETH2313
	230		100 dB	3/4	ETH2312
DC	24	30	100 dB	3/4	ETH2416

♦ See Table 1, page 566, for more complete ratings.

ETH Horn Signals

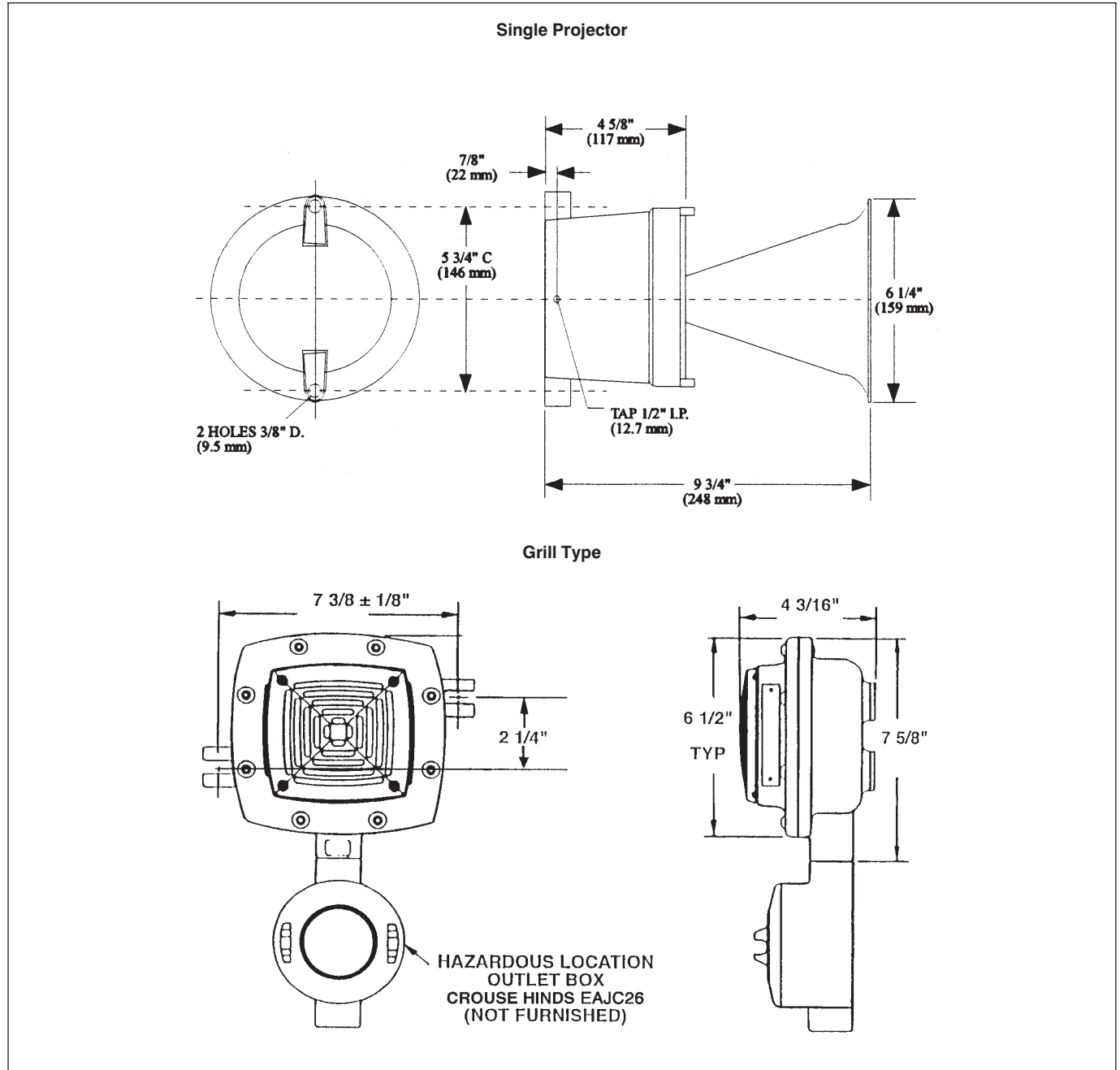
Factory Sealed

Cl. I, Div. 1 & 2, Groups B,†C,D Explosionproof
Cl. II, Div. 1, Groups E,F,G Dust-Ignitionproof
Cl. II, Div. 2, Groups F,G Raintight
Cl. III Wet Locations

3A

Dimensions* (inches)

* Dimensions are approximate, not for construction purposes.



† Grill type horns are certified for Group B.

3A
Signals &
Alarms



**EXPLOSIONPROOF
 ELECTRONIC SIGNAL
 STAND - ALONE UNIT**

Cooper Crouse-Hinds **Flex-Tone Series Electronic Signals** are explosionproof, heavy-duty, tone-selectable signaling devices capable of producing volume-controlled, high-decibel tones. Certified for use in Class I, Division 1, Group B, C & D applications, the Flex-Tone Series is ideal for signaling warning or emergency conditions.

The **Flex-Tone ETH855** accepts up to two contact closures and delivers two audible output signals selected from 55 available tones. The two tones are selected by setting miniature switches within the unit. One of the tones can be assigned a priority status to override the other tone.

The **Flex-Tone ETHD855** is diode polarized for applications requiring electrical supervision of signaling circuit field wiring. The signal delivers one audible output signal selected from the 55 tones available.

PRIMARY APPLICATIONS:

- For use where a high-decibel sound is required for alert or evacuation in hazardous locations.

KEY FEATURES AND BENEFITS:

- Heavy duty zinc cast construction.
- 55 tone capacity — No additional tone modules needed.
- Internal volume control with internal potentiometer.
- Corrosion-resistant heat-flowed epoxy finish.
- Supplied with factory sealed ½-inch threaded fitting for quick installation.
- Speaker can swivel 180° vertically or horizontally depending on orientation of mounting bracket.
- Mounts onto any surface using only three bolts.
- 30-inch numbered wire leads

CERTIFICATIONS AND COMPLIANCES:

- Class I, Division 1, Groups B, C & D
- Class II, Division 1, Groups E, F & G
- Class III
- UL and cUL 464 and 1203 Listed

MATERIALS & FINISHES:

- Body — Heavy-duty zinc cast construction
- External hardware — Stainless steel

RATINGS:

- 24VDC, 36VDC, 125VDC, 250VDC, 24VAC, 120VAC & 240VAC (ETH)
- 20–31VDC (ETHD)

OUTPUT SOUND PRESSURE:

- 109 decibel (dBA) output

ORDERING INFORMATION:

Catalog Number	Voltage	Signal OFF Standby Current (Amps)	Signal ON Operating Current (Amps)
EXPLOSIONPROOF, TWO OUTPUT			
ETH855/24	24VDC	0.061	0.250
ETH855/36	36VDC	0.077	0.380
ETH655/24	24VAC, 50/60Hz	0.250	0.950
ETH655/120	120VAC	0.088	0.260
ETH655/240	240VAC	0.091	0.190
ETH855/125	125VDC	0.031	0.130
ETH855/250	250VDC	0.019	0.070
DIODE POLARIZED, EXPLOSIONPROOF, SINGLE OUTPUT FOR FIRE ALARM APPLICATIONS			
Meets min. 75 dBA for fire alarm indication			
ETHD855/24	20–31VDC	0.061	0.950

ETH Flex • Tone™ Series Signaling Devices

Factory Sealed

Cl. I, Div. 1 & 2, Groups B,C,D
 Cl. II, Div. 1 & 2, Groups E,F,G
 Cl. III
 UL and cUL 464 and 1203 listed

Explosionproof
 Dust-Ignitionproof
 Raintight
 Wet Locations

3A



EXPLOSIONPROOF REMOTE SPEAKER/AMPLIFIER

Cooper Crouse-Hinds **Flex-Tone Series Explosionproof Remote Speaker/Amplifier** is designed for remote mounting in Division 1 areas where simultaneous high-decibel signaling is required.

Used in connection with the Panel Control Signal Generator, the **Flex-Tone ETH845** operates directly from local power sources, allowing remote speaker/amplifiers of different voltages to be connected within the same system. Available in both AC and DC voltages, the Flex-Tone 3 can be mixed and matched throughout an application using the available line power.

ETH845 Series Remote Speaker/Amplifiers must be used with Cooper Crouse-Hinds Flex-Tone Panel Control Signal Generator on page 570.

PRIMARY APPLICATIONS:

- For use where simultaneous signaling of a high-decibel sound is required for alert or evacuation in hazardous locations.

KEY FEATURES AND BENEFITS:

- Heavy duty zinc cast construction.
- Individual volume control.
- Corrosion-resistant heat-flowed epoxy finish.
- Supplied with factory sealed ½-inch threaded fitting for quick installation.
- Speaker can swivel 180° vertically or horizontally depending on orientation of mounting bracket.
- Mounts onto any surface using only three bolts.
- 30-inch numbered wire leads.

CERTIFICATIONS AND COMPLIANCES:

- Class I, Division 1, Groups B, C & D
- Class II, Division 1, Groups E, F & G
- Class III
- UL and cUL 464 and 1203 Listed

MATERIALS & FINISHES:

- Body — Heavy-duty zinc cast construction
- External hardware — Stainless steel

RATINGS:

- 120VAC, 240VAC, 125VDC and 250VDC

OUTPUT SOUND PRESSURE:

- 109 decibel (dBA) output

ORDERING INFORMATION:

Catalog Number	Voltage	Signal OFF Standby Current (Amps)	Signal ON Operating Current (Amps)
EXPLOSIONPROOF REMOTE SPEAKER/AMP			
ETH845/24	24VDC	0.061	0.250
ETH645/24	24VAC, 50/60Hz	0.250	0.950
ETH645/120	120VAC	0.088	0.260
ETH645/240	240VAC	0.091	0.190
ETH845/125	125VDC	0.031	0.130
ETH845/250	250VDC	0.091	0.070

* ETH845 Series Remote Speaker/Amplifiers must be used with Cooper Crouse-Hinds Flex-Tone Panel Control Signal Generator on page 570.

ETH845 Series Remote Speaker/Amplifiers **accept a 10VAC audio signal** from Flex-Tone Panel Control Signal Generator.

3A Signals & Alarms



Cooper Crouse-Hinds **Flex-Tone Series Panel Control Signal Generator** controls and initiates a synchronous signaling sound from all Flex-Tone 3 remote Speaker/Amps installed in a system. The Panel Control Signal Generator is mounted in a Division 2 area, while controlling the Flex-Tone 3 Speaker/Amps that are remotely mounted in Division 1 areas.

The Panel Control Signal Generator produces 27 sounds. Four tones may be activated from field-wired, normally open contacts, or a 24VDC or 120VAC external voltage source such as an output from a PLC.

PRIMARY APPLICATIONS:

- Hazardous area applications calling for high-decibel output with simultaneous signal delivery over all speakers installed in a system
- Emergency warning systems, plant evacuation alarms, security intrusion alarms, process monitoring, shift start and dismissal horns, and paging signals

KEY FEATURES AND BENEFITS:

- 27 tone capability — No additional tone modules needed.
- Centralized programmable tone selection.
- PLC compatible.
- System-wide priority tone.
- 24 VDC battery backup terminals.
- Short circuit protected.

CERTIFICATIONS AND COMPLIANCES:

- Class I, Division 2, Groups A, B, C & D
- Class II, Division 2, Groups F & G
- Class III
- UL 464 and 1604 Listed
- cUL C22.2 No. 205
- CE Marked — Cenelec LV & EMC Directives
- NEMA 3R, IP 44

MATERIALS & FINISHES:

- Zinc-cast construction with an epoxy powder coat finish

RATINGS:

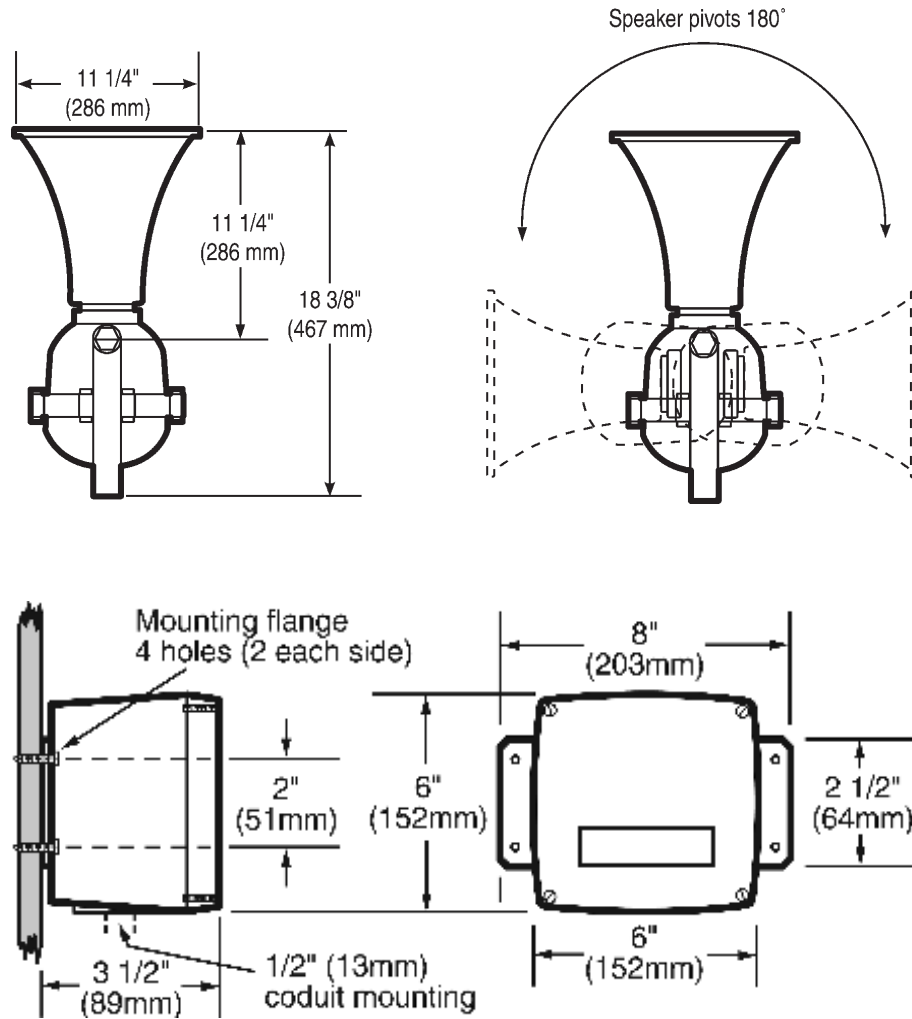
- See table below

ORDERING INFORMATION*:

Catalog Number	Voltage	Input Card Activation Voltage	Signal OFF Standby Current (Amps)	Signal ON Operating Current (Amps)
PANEL CONTROL SIGNAL GENERATOR				
ETH840/24E74	24VDC	24VDC	0.10	0.74
ETH640/24E13	24VAC, 50/60Hz	24VDC	0.10	1.30
ETH640/120E36	120VAC, 50/60Hz	24VDC	0.10	0.36
ETH640/120M38	120VAC, 50/60Hz	120VAC	0.10	0.38
ETH640/120E32	120VAC, 50/60Hz	24VDC	0.10	0.32
ETH640/240E20	240VAC, 50/60Hz	24VDC	0.10	0.20
ETH840/125E21	125VDC	24VDC	0.10	0.21
ETH840/250E10	250VDC	24VDC	0.02	0.10
ETH640/120M31	120VAC, 50/60Hz	120VAC	0.10	0.31
ETH640/240M20	240VAC, 50/60Hz	120VAC	0.10	0.20
ETH840/125M20	125VDC	120VAC	0.10	0.20
ETH840/250M10	250VDC	120VAC	0.02	0.10
ETH640/120R31	120VAC, 50/60Hz	RS485	0.10	0.31
ETH640/240R20	240VAC, 50/60Hz	RS485	0.10	0.20
ETH840/125R20	125VDC	RS485	0.10	0.20
ETH840/250R10	250VDC	RS485	0.02	0.10

* Flex-Tone Panel Control Signal Generator must be used with Cooper Crouse-Hinds ETH845 Remote Speaker/Amps on page 569.

Dimensions



3A W2H Signaling Devices

Cl. I, Div. 2, Groups A,B,C,D Wet Locations
 Cl. II, Div. 2, Group G
 NEMA 3,7ABCD (Div. 2),9G (Div. 2)
 Raintight
 Dust-tight

3A Signals & Alarms

Application:

- W2H series signaling devices are used:
- as independent audible signal or warning devices
 - in Class I, Division 2, Groups A,B,C,D hazardous areas where flammable vapors or gases may be present due to accidental or abnormal operation
 - in Class II, Division 2, Group G hazardous areas where combustible dusts may be present due to accidental or abnormal operation

Features:

- The W2H is solid-state, compact, rugged but lightweight. The system is programmable, which allows the convenience of tone selection, without the need for separate tone modules. Each unit can be programmed for any one of four different tones (whoop, wail, hi-lo and horn), by wiring to the corresponding terminal on the unit's terminal strip. Separate sound modules not required.
- Unit may be field wired for multiple signal selection by manual or automatic control.
- 180° speaker rotation allows flexibility in direction of sound
- Corrosion-resistant conformal coating protects the printed circuit and other interior components.

Standard Materials:

- Body – die-cast aluminum
- Projector – spun aluminum
- Hardware – stainless steel

Standard Finishes:

- Body and projector – gray hammertone enamel
- Stainless steel – natural

Sound Levels:

- Minimum audibility rating (dB) at 10': W2H Series – 93dB

Electrical Rating Ranges:

- Nominal voltage – 24, 120, 240 ac; 60 Hz
24 dc

Certifications and Compliances:

- UL: Standard 886
- NEC: Class I, Division 2, Groups A,B,C,D, Class II, Division 2, Group G
- NEMA 3,7ABCD Division 2
9G Division 2



W2H programmable signal

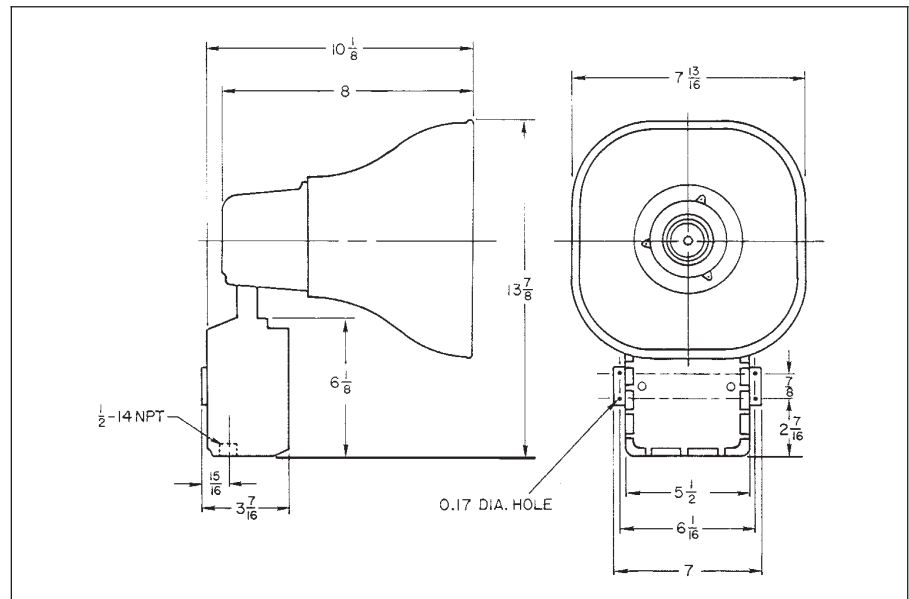
Signal Selection:

Signal Terminal	Sound Description	Audible Frequency	Repetition Rate
#4 Whoop	Ascending low to high, repeated	Low tone – 400 Hz High tone – 850 Hz	48 cy/min.
#5 Wail	Conventional Siren	400 – 1100 Hz	24 cy/min.
#6 Hi-Lo	Alternating Hi-Lo	Low tone – 650 Hz; High tone – 850 Hz	24 cy/min.
#7 Horn	Steady	630 Hz	Continuous

Normal Power

Nominal Voltage	Operating Current	Standby Current	Cat. #
24VDC	0.55A	0.06A	W2H840
24VAC	1.25A	0.13A	W2H640
120VAC	0.27A	0.03A	W2H620
240VAC	0.15A	0.02A	W2H660

Dimensions (inches) Dimensions are approximate, not for construction purposes.



ESR Bell Signals

Factory Sealed

Cl. I, Div. 1 & 2, Groups B,C,D
 Cl. II, Div. 1, Groups E,F,G
 Cl. II, Div. 2, Groups F,G
 Cl. III

Explosionproof
 Dust-Ignitionproof
 Raintight
 Wet Locations

3A

Application:

ESR bell signals are used:

- for call signals, alarms, or in various other signalling applications
- in specific hazardous atmospheres such as in chemical plants, oil and gas refineries, bulk loading stations, paint and varnish manufacturing plants, grain processing industries and grain elevators, as well as in certain metal, coal, combustible fiber processing or handling areas
- in conduit systems, and mounted on a vertical flat surface with the striker at the bottom

Features:

- The conduit hub contains an integral bushing.
- The body cover assembly permits the location of a hub at the top, bottom or either side (the striker must be located at the bottom for proper operation).
- There are no external seals required except when used in Group B hazardous areas.
- The ac signal does not have arcing contacts.
- Binding screw terminals are provided in ac signals for supply conductors.
- A vibrating or single stroke striker mechanism is furnished with 6 or 10 inch diameter gongs.

Standard Materials:

- Body – *Feraloy*® iron alloy
- Cover – copper-free aluminum
- Junction box – body – *Feraloy* iron alloy
 – cover – copper-free aluminum
- Gong – steel

Standard Finishes:

- *Feraloy* iron alloy – electrogalvanized and aluminum acrylic paint
- Aluminum – natural
- Steel – gray matte

Size Ranges:

- Hub – one 3/4" size

Sound Levels:

- See page 574 for individual ratings

Electrical Rating Ranges:

- Nominal voltage – 12, 24, 48, 115, 230 ac
- See Table 1 (page 574) for complete ratings.

Certifications and Compliances:

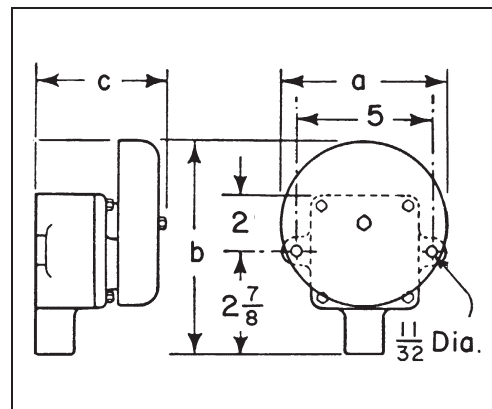
- Standard Units:
 - NEC/CEC:
 - Class I, Division 1 & 2, Groups C,D
 - Class II, Division 1, Groups E,F,G
 - Class II, Division 2, Groups F,G
 - Class III
 - NEMA/EEMAC: 7CD,9EFG
 - UL Standard: 464, 1203
 - CSA Standard: C22.2 No. 30
- Group B Units:
 - NEC/CEC:
 - Class I, Division 1 & 2, Groups B,C,D
 - Class II, Division 1, Groups E,F,G
 - Class II, Division 2, Groups F,G
 - Class III
 - NEMA/EEMAC: 7BCD,9EFG
 - UL Standard: 464, 1203
 - CSA Standard: C22.2 No. 30



ESR bell signal for AC

Dimensions (in inches)

Dimensions are approximate, not for construction purposes.



Dia. Gong	a	b	c
6	6	6 ³ / ₄	5 ¹ / ₄
10	10	10 ³ / ₄	6

3A Signals & Alarms

3A ESR Bell Signals

Factory Sealed

Cl. I, Div. 1 & 2, Groups B,C,D Explosionproof
 Cl. II, Div. 1, Groups E,F,G Dust-Ignitionproof
 Cl. II, Div. 2, Groups F,G Raintight
 Cl. III Wet Locations
 NEMA 7BCD,9EFG

Table 1/Operating Current in Amperes at the Nominal Voltage For Bell Signals

Nom. Volts	Amperes	
	All Vibrating 25 to 60 hertz AC	All Single Stroke 50 to 60 hertz AC
12	1.67	1.75
24	.53	.62
48	.44	.41
115	.189	.189
230	.092	.086

Bell Signals

Hub Size	Supply	Nom. Volts	Voltage Range	Dia. Bell	Vibrating Hammer (25 to 60 hertz)		Minimum audibility rating (dB) at 10':	Single Stroke Hammer (50 to 60 hertz) Cat. #	Minimum audibility rating (dB) at 10':
					Standard Units Cat. #	Group B Units‡ Cat. #			
3/4	AC	12	9.6 to 13.2	6	ESR2675	ESR2675-GB	67	ESR2665	64
		24	19.2 to 26.4		ESR2674	ESR2674-GB	82	ESR2664	64
		48	38.4 to 52.8		ESR2673	ESR2673-GB	88	ESR2663	67
		115	92 to 126.5		ESR2672	ESR2672-GB	88	ESR2662	67
		230	184 to 253		ESR2671	ESR2671-GB	85	ESR2661	67
		12	9.6 to 13.2	10	ESR2615	ESR2615-GB	82	ESR2625	64
		24	19.2 to 26.4		ESR2614	ESR2614-GB	85	ESR2624	64
		48	38.4 to 52.8		ESR2613	ESR2613-GB	85	ESR2623	67
		115	92 to 126.5		ESR2612	ESR2612-GB	91	ESR2622	67
		230	184 to 253		ESR2611	ESR2611-GB	85	ESR2621	67

‡ Install seal within 1 1/2" of conduit opening.

Application:

- WH vibrating horn signals are used:
- for code or call signals, or as a general alarm in a signal system that might involve hours of continuous operation
 - in non-hazardous atmospheres of industrial areas such as warehouses, yards, exteriors of buildings, and in-plant areas
 - mounted on walls or other flat surfaces with projectors aimed in a desired direction

Features:

- The joint between the body and horn assembly is gasketed for raintightness.

Standard Materials:

- Copper-free aluminum and die cast zinc

Standard Finishes:

- Gray hammertone enamel

Capacity Ranges:

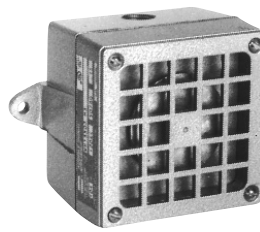
- Minimum audibility rating (dB) at 10':
 - ac – 87 decibels
 - dc – 96 decibels

Electrical Rating Ranges:

- Nominal voltage – 120 ac, 50/60 hertz
– 24 dc
- Operating characteristics
 - voltage range +10%, -20%
 - nominal watts – 4.8 on 24 VDC
18 VA on 120 VAC

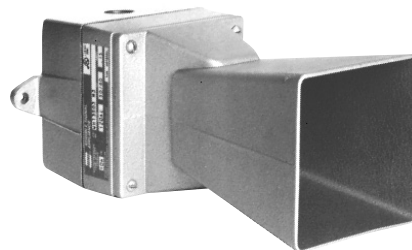
Certifications and Compliances:

- UL Standard: 464

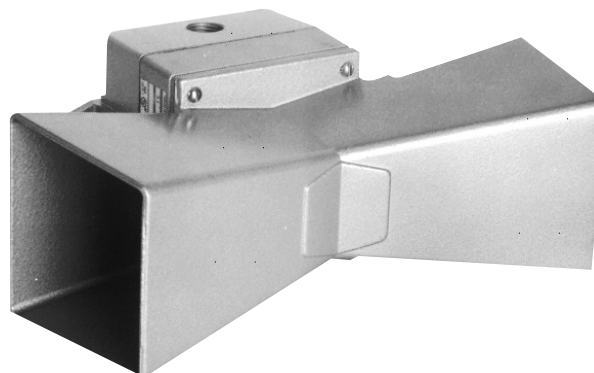


WH with grill

Nom. Amps	Nom. Volts	Grill Cat. #	Single Projector Cat. #	Double Projector Cat. #
.20	24 DC	WH14506	WH14516	WH14526
.15	120 AC 50 to 60 hertz	WH13503	WH13513	WH13523

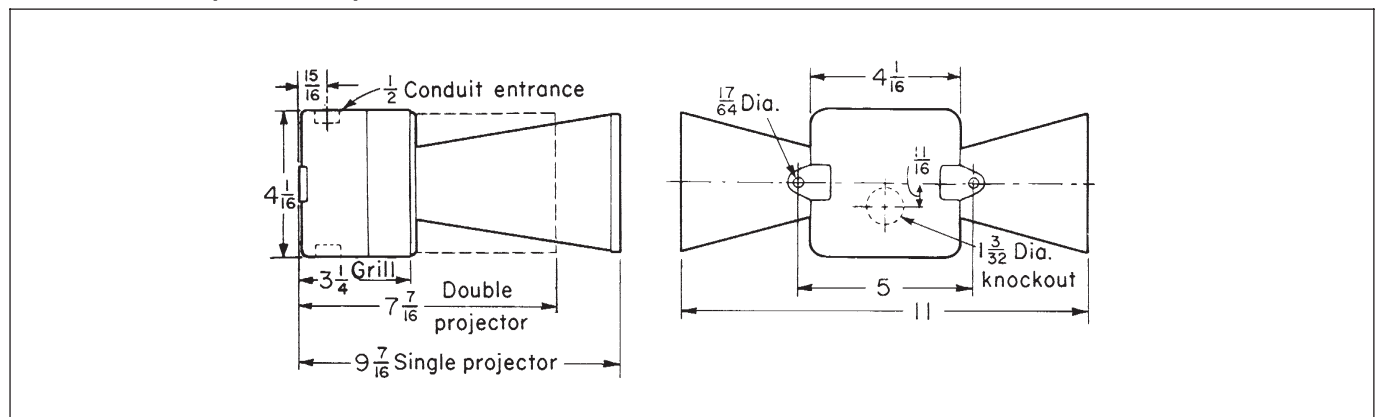


WH with single projector



WH with double projector

Dimensions: (in inches)



Dimensions are approximate, not for construction purposes.

3A ETW Telephones

Cl. I, Div. 1 & 2, Groups B,C,D
 Cl. II, Div. 1, Groups E,F,G
 Cl. II, Div. 2, Groups F,G
 Cl. III

Explosionproof
 Dust-Ignitionproof
 Raintight
 Wet Locations

3A Signals & Alarms

Application:

ETW series telephones are used:

- For communication in areas which may be hazardous due to the presence of flammable gases or vapors, and/or combustible dusts.
- In chemical plants, oil refineries, bulk loading stations, paint and varnish manufacturing plants, grain processing and similar industries.

Features:

- Modern styled, pushbutton wall-mount unit is very rugged in design, suitable for the harshest industrial applications.
- Large, easy to read keyboard allows gloves-on operation.
- Cast copper-free aluminum housing, with baked on powder coat finish, is highly resistant to corrosive atmospheres.
- Units are tone or pulse compatible and offer superior audio clarity.
- Handset cord features a pin-type connector for easy field replacement. Handset circuit is intrinsically safe.
- Up to ten units can be connected on one line.

Standard Materials:

- Enclosure – copper-free aluminum
- Handset – high impact plastic

Standard Finishes:

- Enclosure – baked powder paint (safety blue)

Ordering Information:

Phone w/handset ETW401
 Replacement handset (10' cord) ETW: 301SC
 Replacement handset (20' cord)
 ETW: 301SC20
 Phone w/headset ETW401 HS
 Phone push-to-talk handset ETW401 PB
 Replacement headset ETW: P7200
 Explosionproof ringer ETR1

Certifications and Compliances:

- NEC/CEC:
 - Class I, Divisions 1 & 2, Groups B,C,D
 - Class II, Division 1, Groups E,F,G
 - Class II, Division 2, Groups F,G
- UL Standard: 1203, 698
- CSA Standard: C22.2 No. 30
- FCC Approved

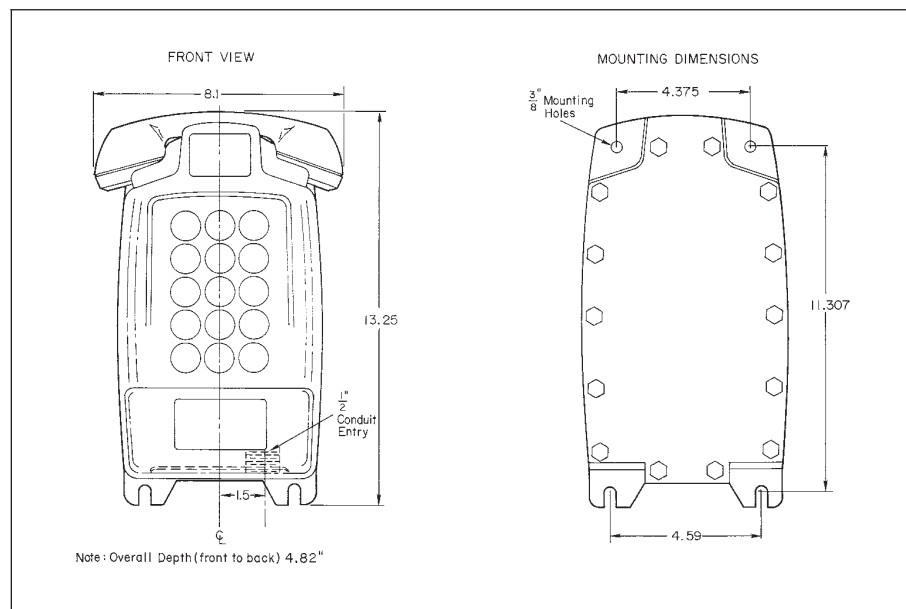
Accessories:

- A standard volume explosionproof ringer (ETR1) is available, see page 578 for listing.
- For locations with a high level of ambient noise, a louder ringer can be installed. An ESR bell or ETH horn may be used by installing an ETC relay between the telephone line switch and the bell or horn. The relay coil is energized by the ringing current and the relay contacts control a separate power source to the signal.



ETW401

Dimensions (in inches)



Dimensions are approximate, not for construction purposes.

D2TW600

Telephone for Hazardous Areas

Cl. I, Div. 2, Groups A,B,C,D
Cl. II, Div. 1, Groups E,F,G
Cl. II, Div. 2, Groups F,G
NEMA 3,4X*,7 Div. 2 ABCD, 9 EFG, 12

Dust-Ignitionproof
Watertight
Wet Locations

3A

Application:

These single-line, fully functional electronic telephones are used:

- for communication in locations which may be hazardous due to the presence of flammable gases or vapors (Division 2), and/or combustible dusts or fibers.
- as a single line telephone in chemical plants, oil refineries, bulk loading stations, paint and varnish manufacturing plants, grain processing and similar industries.

Features:

- Water-, dust- and corrosion-resistant enclosure for durability and long-life.
- Corrosion-resistant electronics with conformal coating for dependable performance in the harshest of environments.
- Spring loaded door with auto-latch to prevent unit from being exposed to elements.
- Factory set tone dialing (DTMF).
- Units are also pulse compatible and offer superior audio clarity.
- Magnetic reed hook-switch operation for ease of use.
- Highly visible Safety-Yellow color.
- Access plate for field wiring.
- Integral backplate mount for ease of installation.
- Conduit hub 1/2" NPT.
- Operating environment from -30° to +50°C.
- Ringer output: 80dB
- Internal, adjustable bell ringer.
- Lightning arrester for added unit protection.

Standard Materials:

- Enclosure – General Electric's Valox® 357 resin
- Faceplate – anodized aluminum
- Dial pad overlay – silicone rubber
- Handset cradle – ABS polyurethane

Ordering Information

Catalog number D2TW600

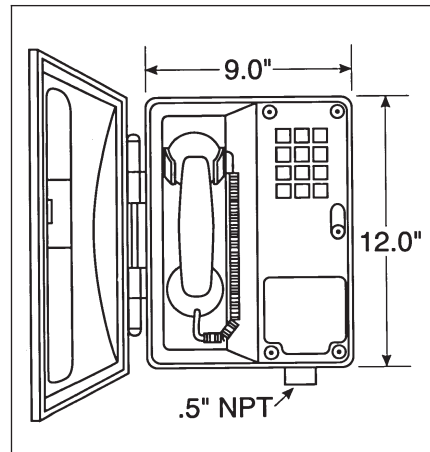
Option:

- Pulse Dial D2TW600 PULSE

Certifications and Complies:

- UL Standard: 1604
- CSA Standard: C22.2 No. 213, No. 25
- UL: Class I, Division 2, Groups A, B, C, D
- CSA: Class I, Division 2, Groups A, B, C, D; Class II, Division 1, Groups E, F, G; Class II, Division 2, Groups F, G
- FCC: Parts 15 and 68 hearing aid compatible
- DOC: 2
- Line level: normal telephony voice quality per IEEE standard RS-470

Dimensions



Weight:

- 4.85 lbs.



3A Signals & Alarms

* Watertight with spring door closed.

3A Telephone Accessories

Cl. I, Div. 1 & 2, Groups B*,C,D Explosionproof
 Cl. II, Div. 1, Groups E,F,G Dust-Ignitionproof
 Cl. II, Div. 2, Groups F,G Raintight
 Cl. III Wet Locations

Features:

- ETC232 power relays are used with ESR bells and ETH, W2H or WH horns. The relay coil is energized by the telephone ringing circuit, and the relay contacts control the separate 115vac, 60 hertz power source.
- ETR1 external ringer for ETW401 telephone. For low ambient noise areas, ring tone level is similar to a general use telephone. Includes a ring detect relay which is powered by the telephone line voltage, (maximum 90VAC).

Standard Materials:

- Bodies – copper-free aluminum
- Covers – copper-free aluminum

Standard Finishes:

- Aluminum – baked epoxy powder paint

Certifications and Compliances:

- NEC/CEC:
 - Class I, Division 1 & 2, Groups B*,C,D
 - Class II, Division 1, Groups E,F,G
 - Class II, Division 2, Groups F,G
 - Class III
- UL Standard: 886, 1203
- CSA Standard: C22.2 No. 30



Power Relay

Description	Rating	Hub Size	Cat. #
Relay for Horn Signal	10A 115VAC 60 hertz	¾	ETC232



Ringer

Description	Hub Size	Cat. #
Normal volume external ringer for ETW401 telephone	¾	ETR1

* For use in Group B hazardous areas, seals must be installed within 1½" of each conduit entrance.