I. INTRODUCTION

Models WGEC24, WGES24, are high quality audible and/or visible signalling appliances. The high intensity strobe utilizes a Xenon flash tube that generates a high-intensity flash visible from all angles. This appliance is intended to provide a visible, audible or audible/visible, depending on the model, notification signal for the purpose of life safety and property protection.

The are fixed candela units, available in a 75 candela intensity only. This appliance is ideal for any occupancy that requires notification appliances per the applicable building or fire code or wherever dependable alarms are required.

II. LOCATION

This appliance is intended for use in fire alarm systems and is to be installed in accordance with this manual, the recommendation of the local authorities having jurisdiction, and other NFPA documents that provide standards on notification appliances for protective signaling systems.

The WGEC24, WGES24 are intended for indoor or outdoor installations; this appliance is rated for outdoor or drip proof applications when used in conjunction with the GOE or GOELP Enclosure.

Wall mounted strobe and horn/strobe appliances shall have their entire lens at heights above the finished floor of not less than 80 in. (2m) and not greater than 96 in. (2.4m)**. Spacing shall be in accordance with Table A. If a room configuration is not square, the room size that will entirely encompass the room or subdivide the room into multiple squares shall be used.

Wall mounted horn only appliances shall have their tops above the finished floors at heights of not less than 90 in. (2.30m) and below the finished ceilings at heights of not less than 6 in. (152mm). Different mounting heights shall be permitted by the AHJ provided the sound pressure level requirements of NFPA 72 are met.

III. MOUNTING, ROUGH-IN BOX AND RUN WIRING

This unit is designed for mounting to most single gang boxes, 4" square outlet boxes, 2-gang masonry boxes or non-metallic 2-gang switch boxes. Conduit entrance to boxes should be selected to insure sufficient wiring clearance.

1. Run a minimum 18 gauge insulated 2 or more conductor cable.

2. Mount a box for each remote signalling appliance. Screw bracket onto box. Insert signal into bracket and slide to the right firmly into the terminal block receptacle. Place housing over mounted assembly and screw together with single screw at the bottom of the signal. Cover screw with plastic tab.

NOTICE:

- WIRING SHOULD BE CONNECTED TO MOUNTING BRACKET PRIOR TO MOUNTING SIGNAL.
- INCOMING POSITIVE POWER LEAD MUST BE BROKEN AND EACH LEAD IS TO BE INSERTED INTO EACH OF THE TOP TWO TERMINALS.
- IF TWO POWER RUNS ARE MADE TO THE SIGNAL, ONE FOR THE STROBE AND ONE FOR THE HORN, ONLY ONE OF THE RUNS MUST HAVE ITS POSITIVE LEAD BROKEN AND PLACED UNDER THE TWO SEPARATE TOP TERMINALS.
- A BARRIER IS PROVIDED TO PREVENT BOTH LEADS FROM BEING PLACED UNDER THE SAME TERMINAL.

PRODUCT INFORMATION

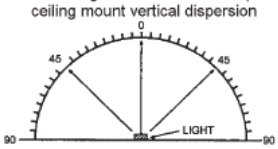
Table A

Room Spacing for Wall-Mounted Visible Appliances per NFPA 72, 2013 Edition			
Maximum Room Size		Minimum Required Light Output (Effective Intensity, Cd)	
Meters	Feet	One Light per Room	Four Lights per Room (One Light per Wall)
6.10 x 6.10	20 x 20	15	NA
8.53 x 8.53	28 x 28	30	NA
9.14 x 9.14	30 x 30	34	NA
12.2 x 12.2	40 x 40	60	15
13.7 x 13.7	45 x 45	75	19
15.2 x 15.2	50 x 50	94	30
16.5 x 16.5	54 x 54	110	30
16.8 x 16.8	55 x 55	115	30
18.3 x 18.3	60 x 60	135	30
19.2 x 19.2	63 x 63	150	37
20.7 x 20.7	68 x 68	177	43
21.3 x 21.3	70 x 70	184	60
24.4 x 24.4	80 x 80	240	60
27.4 x 27.4	90 x 90	304	95
30.5 x 30.5	100 x 100	375	95
33.5 x 33.5	110 x 110	455	135
36.6 x 36.6	120 x 120	540	135
39.6 x 39.6	130 x 130	635	185

NA = Not allowable

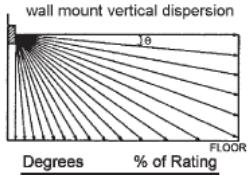
LIGHT OUTPUT IN PERCENTAGE WHEN MEASURED FROM THE FOLLOWING DIRECTIONS – PER UL1971

wall and ceiling mount horizontal dispersion
ceiling mount vertical dispersion



Degrees	% of Rating
0	100
5-25	90
30-45	75
50	55
55	45
60	40
65	35
70	35
75	30
80	30
85	25
90	25

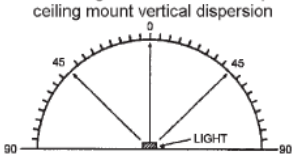
wall mount vertical dispersion



Degrees	% of Rating
0	100
5-30	90
35	65
40	46
45	34
50	27
55	22
60	18
65	16
70	15
75	13
80	12
85	12
90	12

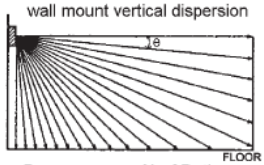
LIGHT OUTPUT IN PERCENTAGE WHEN MEASURED FROM THE FOLLOWING DIRECTIONS – PER UL1638

wall and ceiling mount horizontal dispersion
ceiling mount vertical dispersion



Degrees	% of Rating
0	100
30	95
60	55
90	15

wall mount vertical dispersion

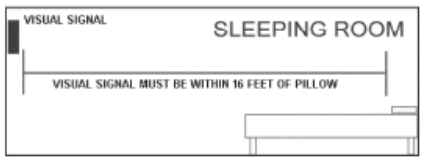


Degrees	% of Rating
0	100
30	30
60	10
90	5

****Effective Intensity Requirements for Sleeping Areas**

Visible Notification Appliance	
Distance from Ceiling to Top of Lens	Intensity
greater than or equal to 24"	110cd
less than 24"	177cd

CAUTION:
Strobe light must be installed within 16 feet of the pillow when used in a sleeping area.



PRODUCT INFORMATION Cont……..

24VDC Clear Lens Outdoor Strobe Current Ratings		
Use with WGEC24 & WGES24 Products		
Candela	Regulated 24VDC Max. Operating Current (mA)	Regulated 24VFWR Max. Operating Current (mA)[1]
75	170	263

NOTICE:
DC VOLTAGE RANGE LIMITS: 16-33V. FWR VOLTAGE RANGE LIMITS: 16-33V.

THIS PRODUCT WAS ONLY TESTED TO THE STATED VOLTAGE RANGE(S); DO NOT APPLY 80% AND 110% OF THIS RANGE FOR SYSTEM OPERATION.

1 When using products manufactured after 7-1-10, these values are to be used when calculating current draws.

HORN DECIBEL AND CURRENT RATINGS PRODUCT INFORMATION

	Horn Decibel Levels: Reverberant Room		Horn Current Ratings Over Input Voltage Range of 16-33V		24VDC Nominal Horn Current Ratings	
Horn Mode	Minimum SPL at 10Ft. Per ANSI/UL 464 (HIGH)	Minimum SPL at 10Ft. Per ANSI/UL 464 (LOW)	Regulated 24VDC Max. Operating Current (mA) HIGH Setting	Regulated 24VFWR Max. Operating Current (mA) HIGH Setting	24VDC Operating Current (mA) HIGH Setting	24VFWR Operating Current (mA) HIGH Setting
Temp 3 2400Hz	78 dBA	71* dBA	28	48	10.7	26.8
Temp 3 Mechanical	76 dBA	70* dBA	25	44	9.7	24.5
Temp 3 Chime	70* dBA	66* dBA	15	30	8.6	20.6
Continuous 2400Hz	81 dBA	74* dBA	28	48	20.4	43.7
Continuous Mechanical	80 dBA	72* dBA	25	44	17.0	39.3
Continuous Chime	70* dBA	66* dBA	15	30	9.6	23.0
Whoop	82 dBA	69* dBA	56	62	45.4	60.2

NOTICE:

- THE THREE PULSE TEMPORAL PATTERN IS TO BE USED FOR EVACUATION USE ONLY.
- THE SOUND OUTPUT FOR THE TEMPORAL 3 TONE IS RATED LOWER SINCE THE TIME THE HORN IS OFF IS AVERAGED INTO THE SOUND OUT PUT RATING. WHILE THE HORN IS PRODUCING A TONE
- IN THE TEMPORAL 3 MODE ITS SOUND PRESSURE IS THE SAME AS THE CONTINUOUS MODE. UNITS HAVE BEEN TESTED TO 0°C, 49°C AND 93% HUMIDITY.

*Operating the horn in this mode at this voltage will result in not meeting the minimum ANSI/UL 464 sound level required for public mode fire protection service.

These settings are acceptable only for private mode fire alarm signalling use.

Use the high dBA setting for public mode applications (the chime tone is always private mode).

IV. WIRING

Wiring for synchronized strobes and horns.
Using this method you may:

- Use only two wires to synchronize the temporal horn and strobe with the ability to mute the horn (place switches **1** and **2** inthe ON position on the WGEC24
- Mute the horn **only** when the temporal horn option has been selected.

Wiring for synchronized parallel (unison) horn/strobe operation.
Using this method you may:

- Use four wires where two wires are used to power and synchronize the strobe and two additional wires are used to power
- and synchronize the horn (place switches **1** and **2** in the OFF position on the WGEC24..
- Choose either continuous horn and allow the FACP to control the horn or choose temporal horn and synchronize the horns.

$$\text{MAX. WIRE DISTANCE (IN FEET)} = \frac{\text{(PANEL VOLTAGE-APPLIANCE MIN. VOLT) X WIRE CONDUCTIVITY}}{\text{TOTAL CURRENT DRAW}}$$

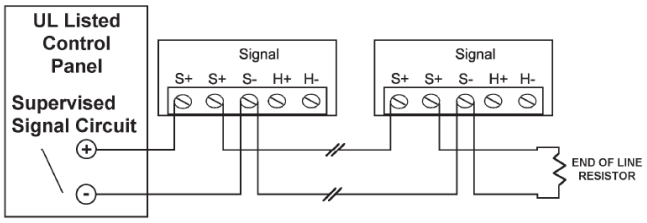
WIRE	CONDUCTIVITY
18AWG	60
16AWG	95
14AWG	153
12AWG	244

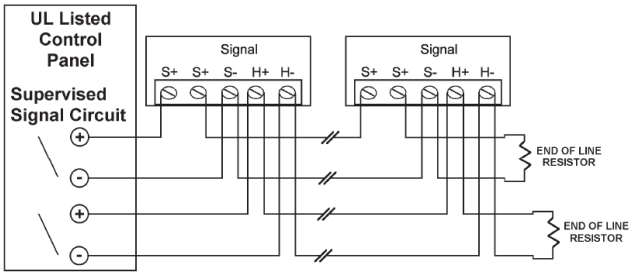
Includes wire to and from appliance. **CAUTION:** Applies only to regulated supplies. Assumes all appliances are at the end of wire run (worst case).

Conventional Method:
You may connect both the strobe and the horn directly from a source of rated power without the use of a control module. However, the horns and strobe lights will NOT be synchronized.

Place switches **1** and **2** in the ON position on the WGEC24, to power both the audible and visible from a single pair of power wires. If you wish to power the horn and strobe from independent sources of power, place switches **1** and **2** in the OFF position on the WGEC24 and connect power to the appropriate terminals.

IV WIRING Cont……



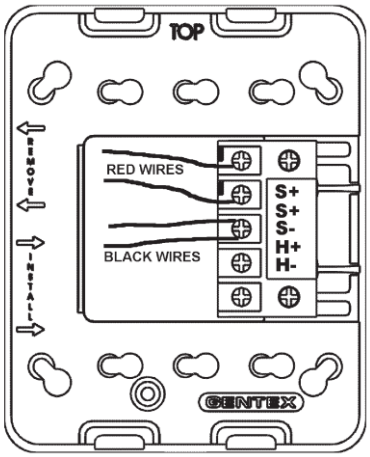


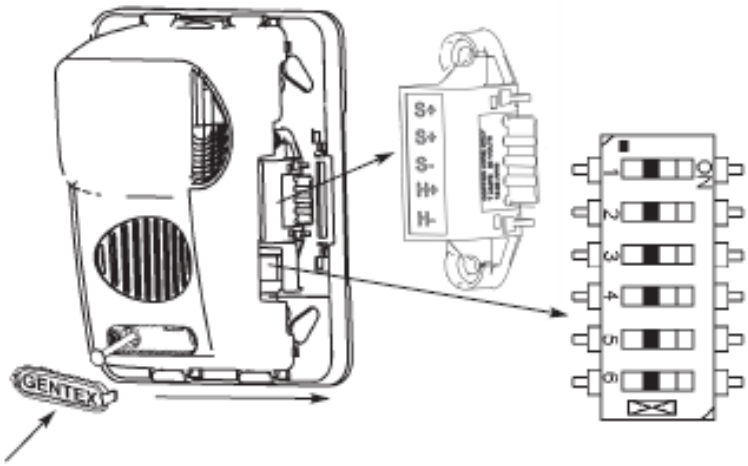
CAUTION: When using only a single power source to energize the strobe and horn (switches 1 and 2 in the ON position), the in/out wiring must be under the S+ and S- terminals only. Failure to do so may result in damage to your signal.

	SWITCH POSITION		
TONE	3	4	5
Mechanical Temporal 3	ON	ON	ON
Mechanical - Continuous	OFF	ON	ON
2400Hz - Temporal 3	ON	OFF	ON
2400Hz - Continuous	OFF	OFF	ON
Chime - Temporal 3	ON	ON	OFF
Chime - Continuous	OFF	ON	OFF
Whoop	ON	OFF	OFF
Whoop	OFF	OFF	OFF

NOTICE:

- SWITCH POSITIONS 1 AND 2 IN THE OFF POSITION TO SELECT ISOLATED HORN AND STROBE POWER INPUTS
- SWITCH POSITION 6 ON = HIGH DBA
- SWITCH POSITION 6 OFF = LOW DBA





Gentex Super-Slide® Mounting Bracket:
Allows the installer to pre-wire the system, test for system supervision, remove the signal head until occupancy, switch out Gentex signals without changing mounting brackets and has locking edge connector for snap-in-place installation.

Gentex Checkmate® Instant Voltage Verification:
It is often necessary to confirm the voltage drop along a line of devices. The access holes are provided in the back of the terminal block to allow the voltage to be measured directly without removing the device. Typically this would be done at the end of the line to confirm design criteria. Most measurements will be taken using the S+ and S- locations although access is provided to other locations.

NOTICE: CARE SHOULD BE TAKEN TO NOT SHORT THE TEST PROBES.

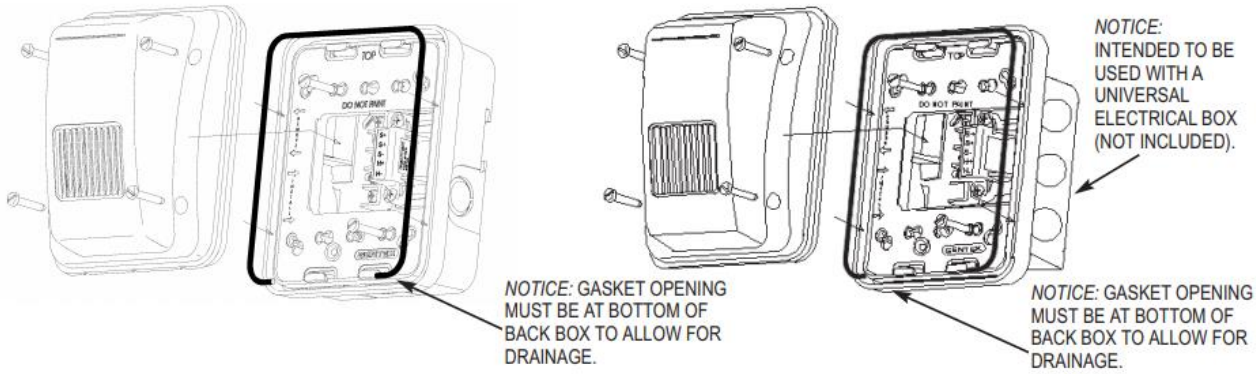
CAUTION: A jumper card is provided to test for correct wiring in the supervisory mode only. DO NOT pass alarm current through the jumper.

⚠ WARNING
THIS APPLIANCE WILL NOT OPERATE WITHOUT ELECTRICAL POWER. AS FIRES FREQUENTLY CAUSE POWER INTERRUPTIONS, GENTEX SUGGESTS YOU DISCUSS FURTHER SAFEGUARDS WITH YOUR LOCAL FIRE PROTECTION SPECIALIST.

WEATHER RESISTANT ENCLOSURE:
Only for WGES/WGEC strobes, horn/strobes OUTDOOR ENCLOSURE.

WHITE BACK BOX GOELP-R: LOW PROFILE OUTDOOR ENCLOSURE, RED BACK BOX GOELP-W: LOW PROFILE OUTDOOR ENCLOSURE, WHITE BACK BOX NOTICE: w THE GOE ENCLOSURE PROVIDES AN INGRESS PROTECTION RATING OF 54 (IP54). WHEN IP54 IS INTENDED, THE FOLLOWING CONDITIONS MUST BE MET:
1) GASKET AND HARDWARE INCLUDED WITH THE GOE ENCLOSURE MUST BE USED
2) ALL CONDUIT FITTINGS MUST MEET OR EXCEED IP54 RATINGS.

- INSERT GASKET(S) IN BETWEEN THE BOX AND MOUNTING BRACKET. THE SIGNAL (NOT SHOWN) SHALL BE INSERTED IN THE MOUNTING BRACKET PRIOR TO ATTACHING THE COVER
- TIGHTEN SCREWS UNTIL THE ENCLOSURE COVER FITS SNUGLY AGAINST THE BACK BOX. DO NOT OVER-TIGHTEN OR DAMAGE TO THE ENCLOSURE COVER WILL OCCUR w PRODUCT DOES NOT MEET ANSI/UL 1971 LIGHT DISTRIBUTION REQUIREMENTS.
- TO ALLOW FOR DRAINAGE, THE SEAL ON THE BOTTOM EDGE IS NOT WATER-TIGHT w GOELP ONLY: BOX INCLUDES WEATHER SEAL FOR MOUNTING TO WALL. ON EXCEPTIONALLY ROUGH SURFACES (SUCH AS MASONRY) APPROPRIATE CAULKING OF THE WALL IS RECOMMENDED PRIOR TO MOUNTING UNIT TO WALL.
- SEE GEH/WGES/WGEC SERIES MANUAL (550-0011, MANUAL ISSUE DATE 2-1-10) FOR CAN/ULC S525 REQUIREMENT(S): DIRECTIONAL SOUND CHARACTERISTICS, HORN CURRENT RATINGS AND HORN DECIBEL LEVELS AND CAN/ULC S526 REQUIREMENT(S): LIGHT OUTPUT PERCENTAGES.



Pack Includes
1 - Clear high impact plastic lens
1 - High impact plastic surface box
6 - 8-32 x 1 1/2" stainless steel screws
1 - Rubber O ring/gasket
3 - Metal washers
2 - Tabs

V. CHECKOUT AND TROUBLESHOOTING

1. Supply power to the system control panel. The auxiliary signalling appliances in the system should not be activated.

2. If the signal is activated:

- Check all smoke and fire detectors in the system to make sure they have not been activated.
- Check all wiring connections to make sure the signal detection circuits are not reversed or shorted together. Check wire colour codes and traces.
- Verify that the jumpers and switches are properly set on both the control module and signal appliance. If the jumper on the AVSM is removed, the horns will not produce any sound unless there is an input to the H+ and H- terminals on the control module.

3. To test the signal appliances, trip the auxiliary panel or activate the alarm circuit at the main control panel or activate one of the Fire detection units in the system. All auxiliary signals should be activated.

4. An operational test on this product should be conducted in accordance with National Standards or at a minimum annually and more often if dictated by local and state codes or authorities having jurisdiction.

NOTICE: THESE TESTING PROCEDURES AND TROUBLESHOOTING INSTRUCTIONS ARE GENERALIZED. PLEASE REFER TO THE SYSTEM CONTROL PANEL OPERATING
INSTRUCTIONS FOR PROPER OPERATION OF THE PANEL AND FIRE DETECTION SYSTEM.

SIGNALING APPLIANCE LIMITATION:
Your horn and horn/strobe meet or exceed the current audibility requirements of ANSI/UL 464. However, if the appliance is located outside a bedroom it may not wake up a sound sleeper, especially if the room door is closed or only partially open.

VI. TO RETURN AN APPLIANCE

Should you experience problems with your appliance, proceed as follows:

1. Turn off electrical power to the auxiliary alarm circuit.
2. Remove the bezel, nameplate, then mounting screw and slide signal off from bracket
3. Replace unit that was removed to restore wiring supervision and to eliminate system trouble alert.
4. Carefully pack the defective unit (the manufacturer cannot be responsible for consequential damage due to shipping or mishandling). Include a return address and complete details as to the nature of the difficulties being experienced and date of installation.
5. Contact your nominated Distributor.