

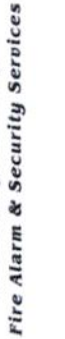
City of Aurora
Building Codes Division
15151 E Alameda Pkwy
Aurora, CO 80012
(303) 739-7420



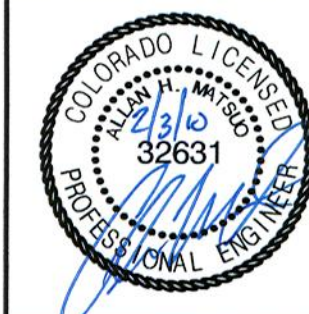
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FIRE ALARM SYSTEM MODIFICATIONS



FA0.1



9457 S. UNIVERSITY BLVD., #514
HIGHLANDS RANCH, CO 80126
(303) 986-9900 FAX (866) 974-9299



FIRE ALARM RISER DIAGRAM,
CALCULATIONS AND WIRING
DETAILS

DRAWING TITLE

CORNERSTONE FAMILY PRACTICE
1411 S POTOMAC ST, STE 300
AURORA, CO

PROJECT No. 10.06.02

DRAWING TITLE

DATE:

02/02/10

SCALE:

AS SHOWN

DRAWN BY:

JBS

CHECKED BY:

AHM

CAD FILE:

DRAWING SHEET No.

FA0.2

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7600 KENNEDY COURT
GOLDEN, CO 80601
(303) 231-8899 FAX (303) 672-6290
10.05.02

Voltage Drop Calculations
 $VD = 2 \times \text{Length} \times \text{Resistance} \times \text{Amps} / 1000$
16V Minimum Operating Voltage
20.4V Starting Voltage
4.4V Voltage Drop Allowed

Device Description	ALMA	Wire used (AWG): 14				Voltage (At Device)
		Distance (Ft)	Total Distance (Ft)	Resistance (per 1000ft): 3.07	Voltage Drop (Volts)	
30cd clg mtd h/s	190	80	80		0.471	19.929
15cd clg mtd h/s	147	30	110		0.141	19.788
15cd clg mtd h/s	147	40	150		0.153	19.635
15cd clg mtd h/s	147	45	195		0.131	19.504
15cd clg mtd strobe	109	20	215		0.04	19.464
15cd clg mtd strobe	109	20	235		0.027	19.437
15cd clg mtd strobe	109	10	245		0.007	19.43
Total NAC load:	958				Total Voltage Drop: 0.97	

BOOSTER POWER SUPPLY CALCULATION

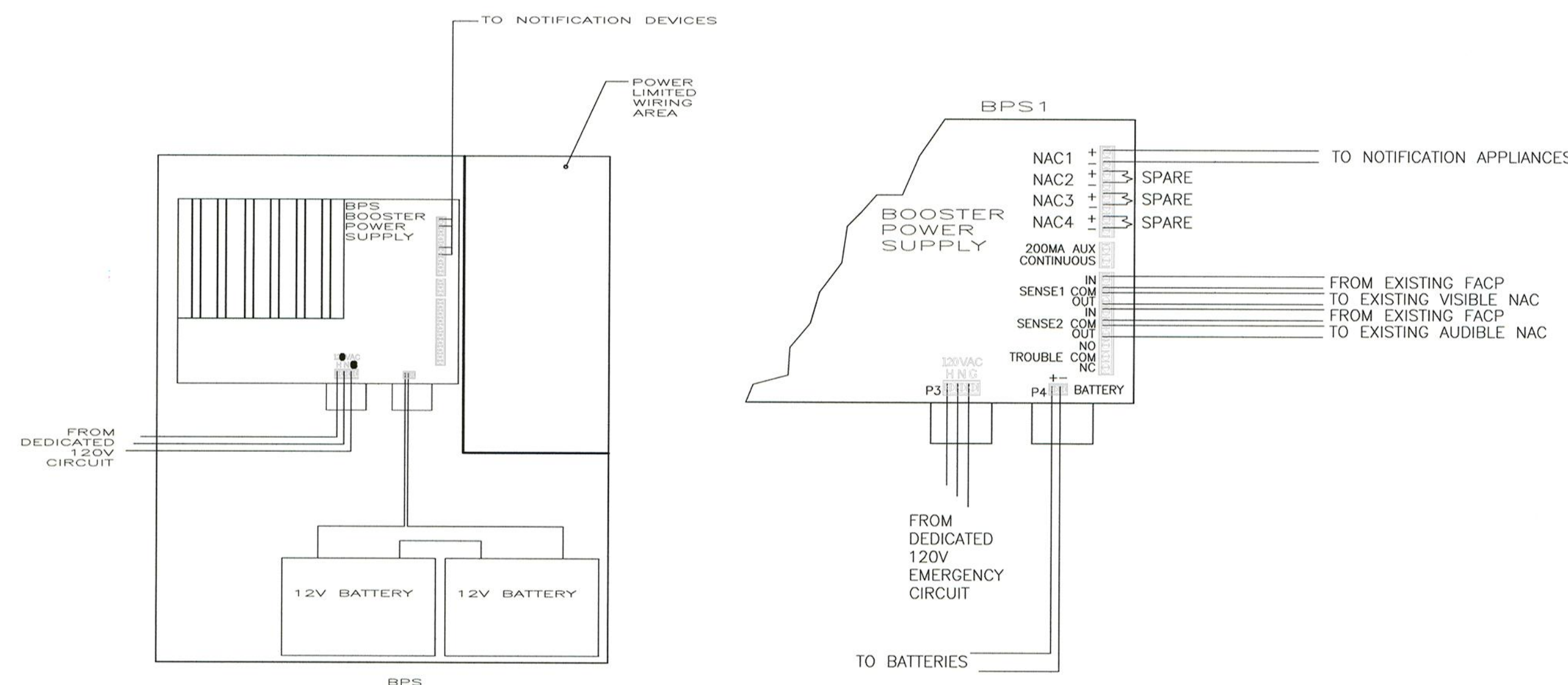
BPS: 24 Hours Standby
5 Minutes Alarm
ALMA

NAC 1:	0.5	958.0
NAC 2:	0.5	0.0
NAC 3:	0.5	0.0
NAC 4:	0.5	0.0
FUSED OUTPUT:	0.0	0.0
TOTAL LOAD:	2.0	958.0

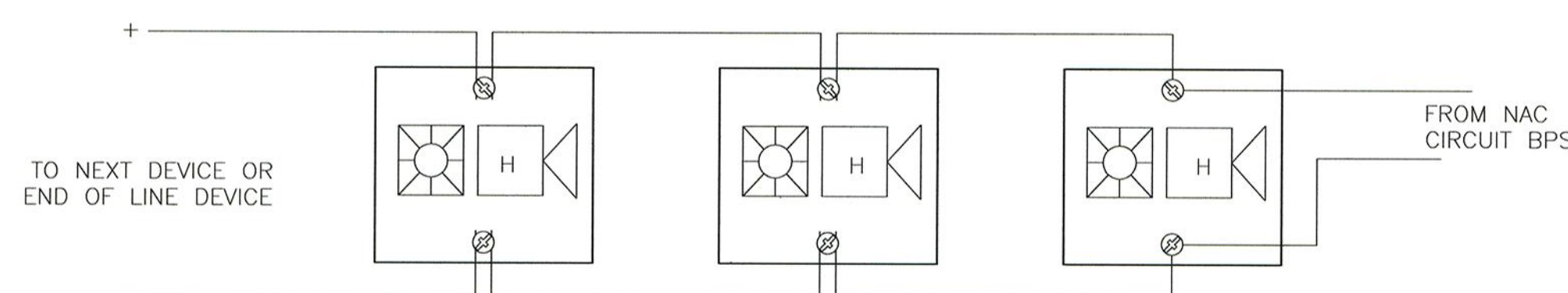
BPS is rated for 3A max each circuit, total of 10A max

Battery Required: 0.13 Amp-hours
(SMA) x hours standby + [(ALMA) x minutes alarm / 60]

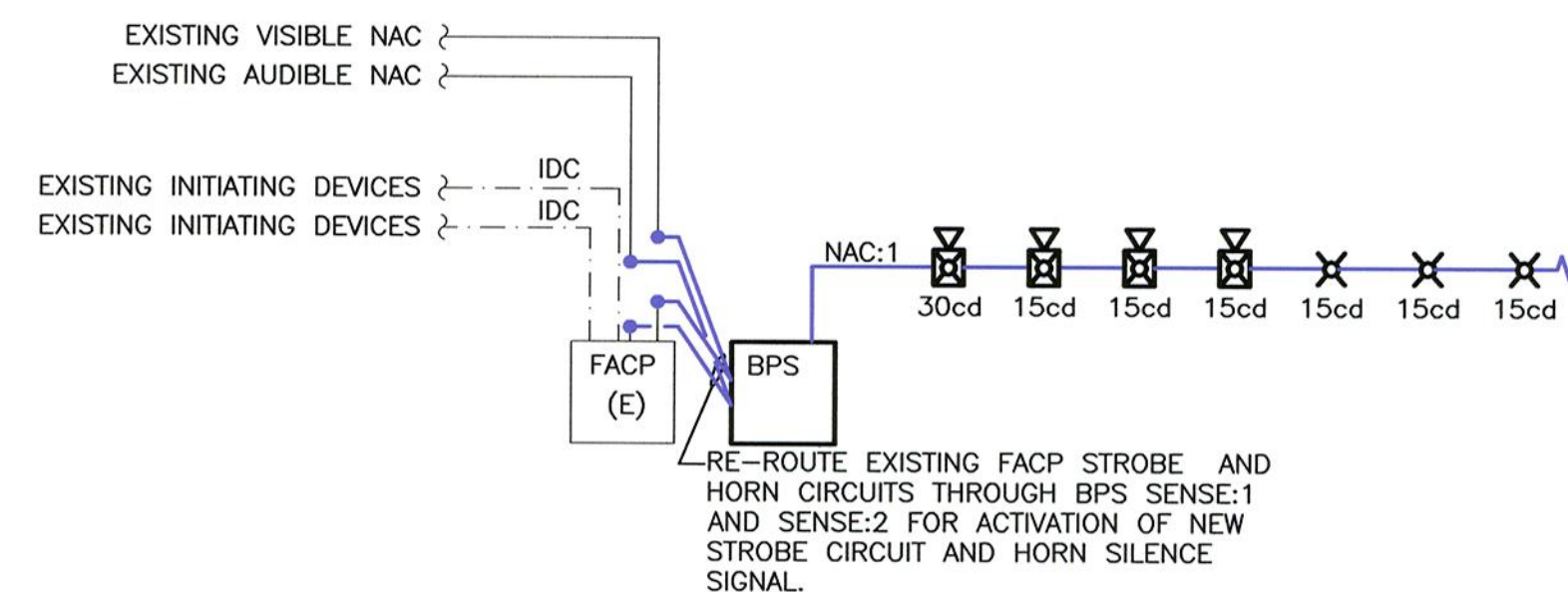
Batteries used: 6.5 Amp-hour, 12V batteries (x2)



BPS POWER SUPPLY WIRING DETAIL



TYPICAL GENESIS HORN/STROBE WIRING DETAIL
SURFACE MOUNTING OR 2 1/8" DEEP
NORTH AMERICAN 4" SQUARE BOX



FIRE ALARM RISER DIAGRAM

SCALE: NONE ***ALL NEW WORK SHOWN BOLD, LIGHT
LINEWEIGHT INDICATES EXISTING TO
REMAIN***

CITY OF AURORA
BUILDING DIVISION
APPROVED AS NOTED JMD
DATE 2/9/10
NFAA 72 (102)

10-452673



9457 S UNIVERSITY BLVD. #514
HIGHLANDS RANCH, CO 80126
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FIRE ALARM PLAN

CORNERSTONE FAMILY PRACTICE
1411 S POTOMAC ST, STE 300
AURORA, CO

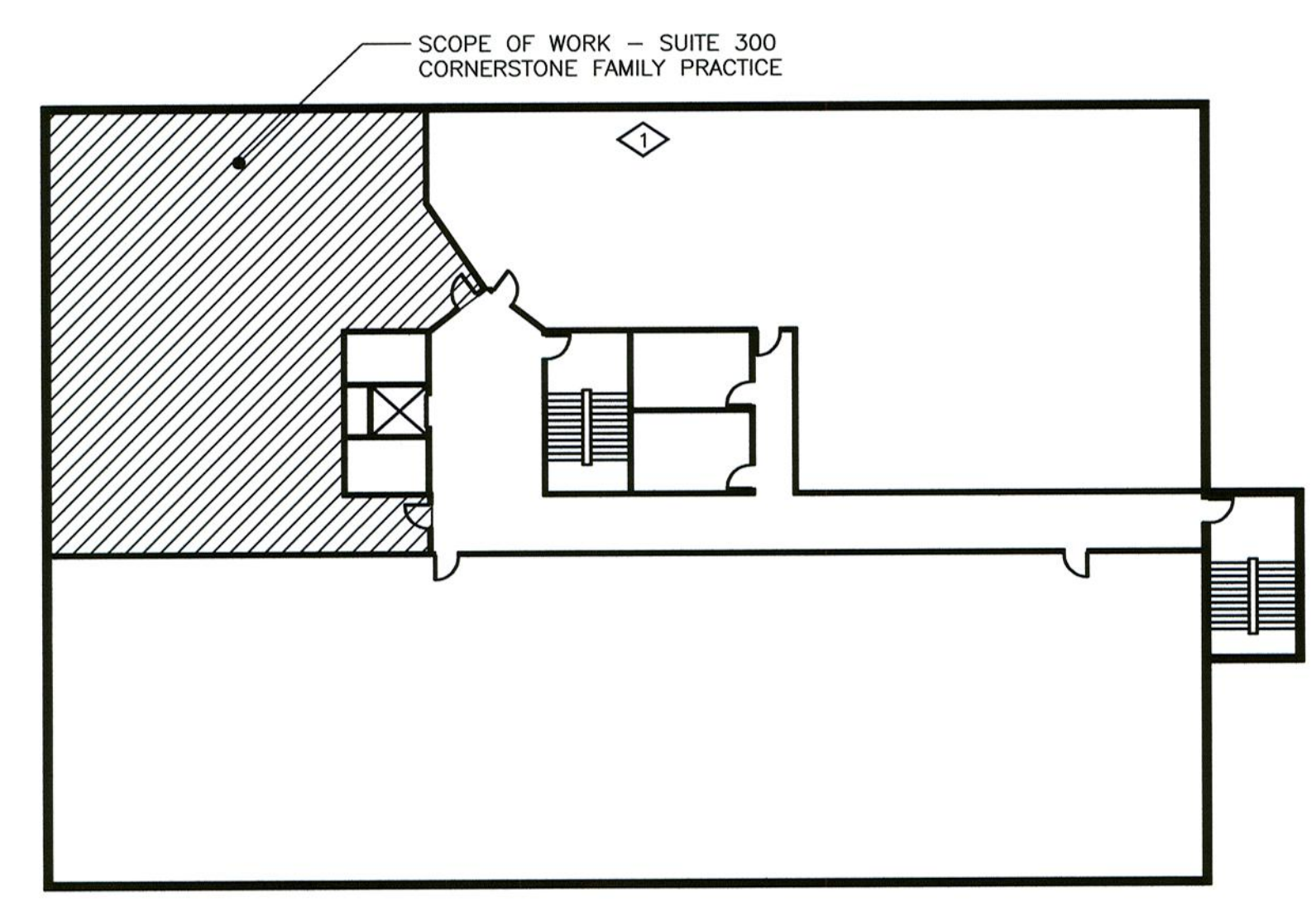
PROJECT No. 10.09.02

PROJECT TITLE
DATE: 02/02/10
SCALE: AS SHOWN
DRAWN BY: JBS
CHECKED BY: AIM
CAD FILE:

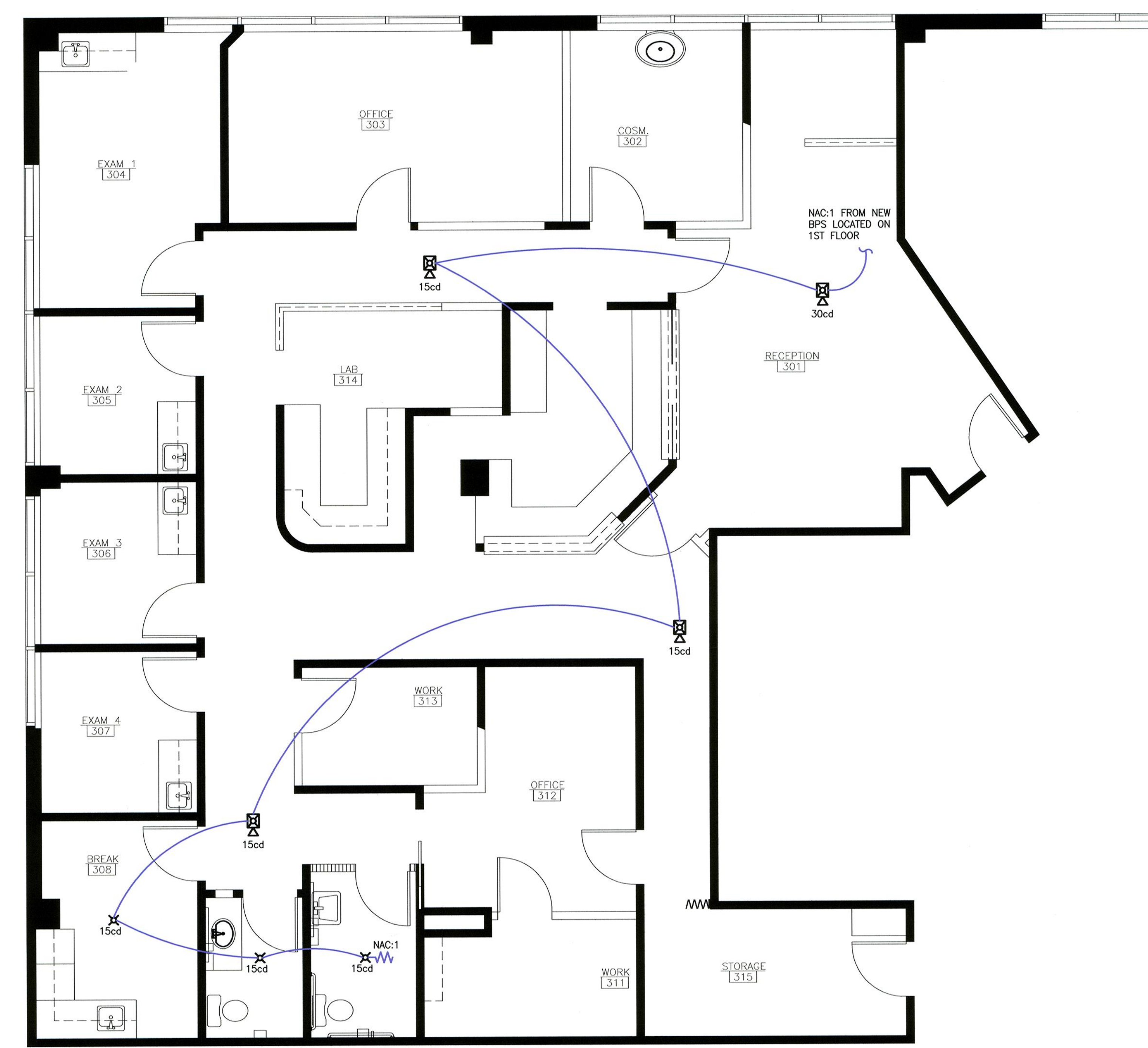
DRAWING SHEET No.

FA1.1

DRAWING NOTES:
1 APPROXIMATE LOCATION OF FACP IN 1ST FLOOR LOBBY. INSTALL NEW BPS IN ELECTRICAL CLOSET NEAR THIS LOCATION, COORDINATE WITH EXISTING FACP NOTIFICATION CIRCUITS FOR BPS ACTIVATION. BOOSTER SHALL BE PROTECTED BY EXISTING SPRINKLER COVERAGE.



KEY PLAN - 3RD FLOOR
SCALE: 1" = 20' - 0"
NORTH



FIRE ALARM PLAN - SUITE 300
SCALE: 1/4" = 1' - 0"
NORTH

CITY OF AURORA
BUILDING DIVISION
APPROVED AS NOTED JMP
DATE: 2/9/10
NFPA 72 (2002)

10-452673

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10.09.02

Overview

The Remote Booster Power Supply is a self-contained 24 Vdc power supply designed to augment fire alarm audible and visual power requirements as well as provide power for auxiliary, access control and security applications. The booster contains all of the necessary circuits to monitor and charge batteries, control and supervise four Class B or two Class A NAC circuits and monitor two controlling inputs from external sources.

Simple switch selection provides a wide variety of operational configurations. Each remote booster power supply is supplied with its own enclosure providing ample space for additional interface modules and battery compartment.

The Remote Booster Power Supply is available in either a 6.5 or 10 amp version @ 24 Vdc.

Standard Features

- Available in 10 amp and 6.5 amp versions.
- Includes four independent 3 amp NACs – each configurable as auxiliary outputs.
- Configurable signal rates.
- Field selectable input-to-output correlation.
- Extends power available to Notification Appliance Circuits (NACs).
- Provides strobe synchronization.
- Use as auxiliary Power Supply.

- Extensive UL Listings
(Listed accessory under the following standards)

Standard	CCN	Description
UL864	UOXX	Fire Alarm Systems
UL636	ANET, UEHX7	Holdup Alarm Units and Systems
UL609	AOTX, AOTX7	Local Burglar Alarm Units and Systems
UL294	ALVY, UEHX7	Access Control Systems
UL365	APAW, APAW7	Police Station Connected Burglar Alarm Units and Systems
ULC-S527	UOXXC	Control Units, Fire Alarm (Canada)
ULC-S303	AOTX7	Local Burglar Alarm Units and Systems (Canada)
ULC-S304	AMCX7	Central and Monitoring Station Burglar Alarm Units (Canada)
C22.2 No. 205		Signaling Equipment (Canada)
UL1076	APOU, APOU7	Proprietary Burglar Alarm System Units
UL1610	AMCX	Central Station Alarm Unit
- Two inputs allow activation by Signature Series modules or existing NACs.
- NACs configure for either four Class B or two Class A circuits.
- 110 Vac and 230 Vac versions
- On-board status LEDs for easy recognition of wiring faults.
- Supports up to 24 Amp hour batteries for fire and security applications, up to 65 Amp hour for access control applications.

Remote Booster Power Supplies

MIRBPS6A, MIRBPS10A

10-452673



Application

Remote Booster Power Supply provides additional power for audible and visual devices helping remove system capacity or site application constraints. The booster may also be used to power auxiliary, access control and security devices, in addition to fire devices.

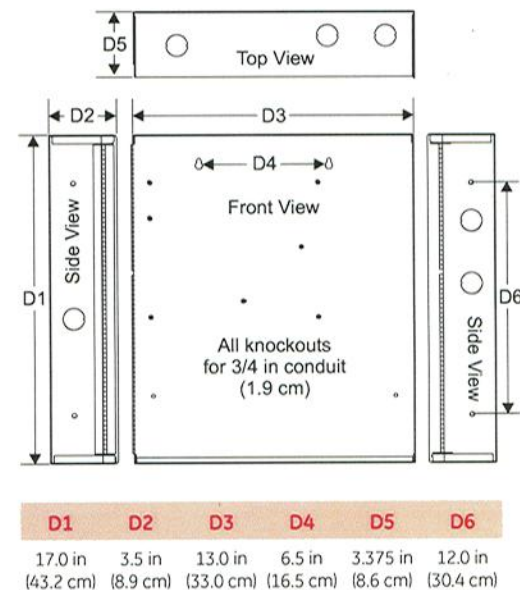
Fault conditions detected by the MIRBPS will open the main panel's NAC. This initiates a trouble condition and eliminates the need to wire a separate trouble contact back to the control panel. During alarm condition, detected faults are overridden and the main panel's default configuration is continuous 24 Vdc on all NACs typically used to drive visual devices. On board trouble contact is supplied for applications requiring trouble contact monitoring.

The booster power supply provides the capability to maximize available power by being able to supply power for multiple services including Access Control, Security and Fire. For security applications, space is provided to mount a tamper switch in the cabinet. When used for Fire Alarm notification with Genesis Notification appliances, the booster provides the ability to synchronize strobes as well as horn signals. The booster flexibility allows synchronization with upstream devices, or, the booster may be used to synchronize downstream devices, as well as other boosters and their connected devices. Up to 10 boosters deep may be configured while maintaining strobe synchronization.

MIRBPS notification appliance circuits easily configure for either of two signaling rates: 3-3-3 temporal or continuous. California rate is also available on certain models. This makes the MIRBPS ideal for applications requiring signaling rates not available from the main panel. It also allows independent setup of a notification appliance circuit without interfering with the main panel and its initiating circuits.

In addition to the generated signal rates, the MIRBPS can also be configured to follow the signal rate of the main panel's notification appliance circuit. This allows seamless expansion of existing NACs.

Dimensions



10-452673

The MIRBPS includes seven on-board LED indicators: one for each resident NAC; one for battery supervision; one for ground fault; and, one for ac power. The trouble contact has a sixteen second delay when an ac power failure or brownout condition is detected. This reduces the reporting of troubles during short duration ac brown-outs.

NAC configuration options include: ac power fail delay (16 seconds or 6 hours); sensing input to NAC output correlations; and, auxiliary outputs. All NACs are configurable as auxiliary outputs. Auxiliary outputs can be always on, or off after 30 seconds without ac power. As auxiliary output, the booster may power access control and security devices. Should an overcurrent occur, the booster automatically opens the circuit. The booster automatically restores the circuit when the overcurrent is removed. Jumpers configure the MIRBPS for Class A or Class B wiring.

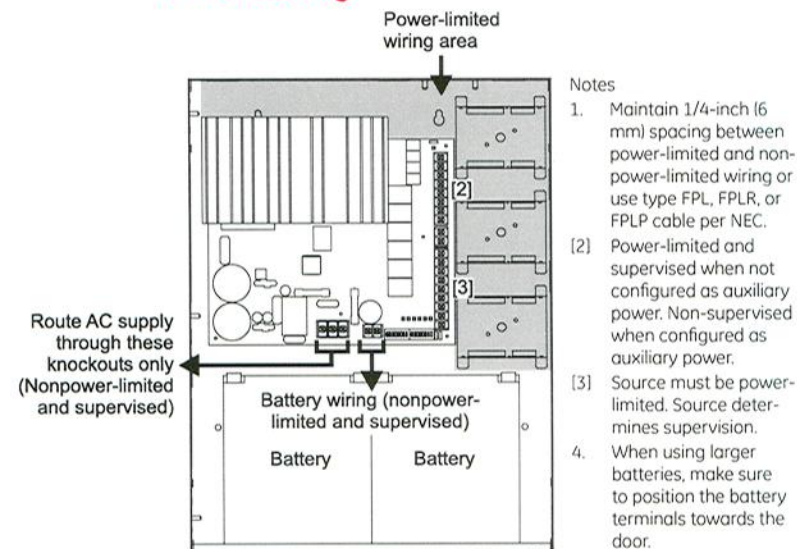
Engineering Specification

Supply where needed GE Security MIRBPS series Booster Power Supplies as an extension of Notification Appliance Circuits. The extension shall be in the form of a stand alone booster power supply. The supply must incorporate its own standby batteries. Batteries must be sized for <24>, <60> hours of standby followed by <5>, <30> minutes of alarm. It must be possible to support up to 24 Amp hour batteries.

The booster supply must incorporate four independent supervised Notification Appliance Circuits. It shall be possible to configure the NACs to follow the main panel's NAC or activate from intelligent Signature Series modules. The booster NACs must be configurable to operate independently at any one of the following rates: continuous, California Rate, or 3-3-3 temporal. Fault conditions on the booster shall not impede alarm activation of host NAC circuits.

The booster must be able to provide concurrent power for Notification devices, Security devices, Access Control equipment and Auxiliary devices such as door holders. The MIRBPS must provide the ability to synchronize Genesis series strobes and horns.

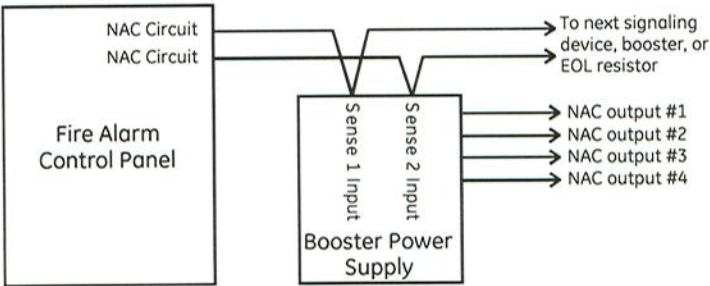
Wire routing



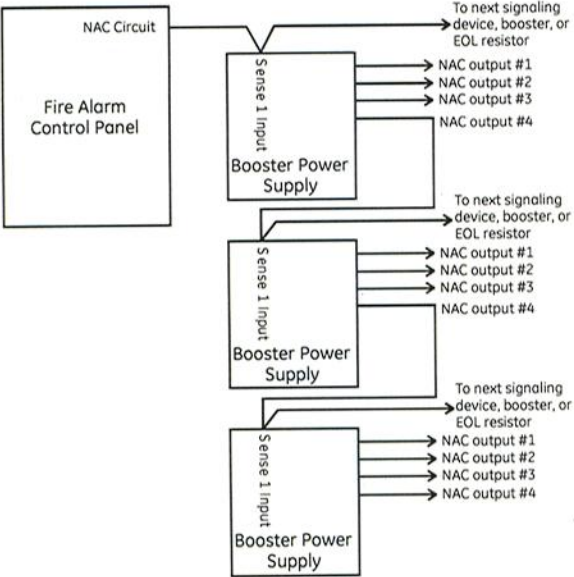
Typical Wiring

Single booster anywhere on a notification appliance circuit

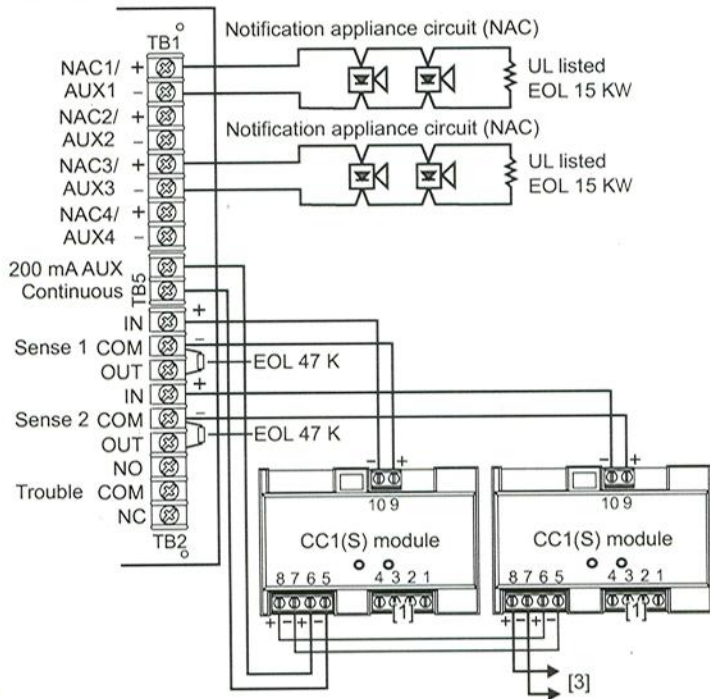
Existing NAC end-of-line resistors are not required to be installed at the booster's terminals. This allows multiple boosters to be driven from a single NAC circuit without the need for special configurations.



Multiple boosters cascaded from a single notification appliance circuit



Multiple CC1(S) modules using the MIRBPS's sense inputs



GE Security

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T 888-244-9979
F 866-503-3996

Canada
T 519 376 2430
F 519 376 7258

Asia
T 852 2907 8108
F 852 2142 5063

Europe
T 32 2 725 11 20
F 32 2 721 86 13

Latin America
T 305 593 4301
F 305 593 4300

www.gesecurity.com/vigilant

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Specifications

Model	6.5 amp Booster	10 amp Booster
AC Line Voltage	120VAC or 220-240VAC 50/60Hz 250 watts	120VAC or 220-240VAC 50/60Hz 375 watts
Notification Appliance Circuit Ratings	3.0A max. per circuit @ 24Vdc nominal 6.5A max total all NACs	3.0A max. per circuit @ 24Vdc nominal 10A max total all NACs
Trouble Relay	2 Amps @ 30Vdc	
Auxiliary Outputs	Four configurable outputs replace NACs 1, 2, 3 or 4. as auxiliary outputs and 200 mA dedicated auxiliary. (See note 2.)	
Input Current (from an existing NAC)	3mA @ 12Vdc, 6mA @ 24Vdc	
Booster Internal Supervisory Current	70mA	
Signature Mounting Space	Accommodates three two-gang modules.	
Maximum Battery Size	10 Amp Hours (2 of 12V10A) in cabinet up to 24 Amp hours with ex- ternal battery cabinet for fire and security applications; up to 65 Amp hours for access control applications in external battery box.	
Terminal Wire Gauge	18-12 AWG	
Relative Humidity	0 to 93% non condensing @ 32°C	
Temperature Rating	32° to 120°F (0° to 49°C)	
NAC Wiring Styles	Class A or Class B	
Output Signal Rates	Continuous, California rate, 3-3-3 temporal, or follow installed panel's NAC. (See note 1.)	
Ground Fault Detection	Enable or Disable via jumper	
Agency Listings	UL, ULC, CSFM	

Notes

- Model MIRBPS*CAA provides selection for California rate, in place of temporal.
- Maximum of 8 Amps can be used for auxiliary output.

Ordering Information

Catalog Number	Description	Shipping Wt. lb (kg)
MIRBPS6A	6.5 Amp Booster Power Supply	13 (5.9)
MIRBPS6A/230	6.5 Amp Booster Power Supply (220V)	13 (5.9)
BPS6CAA	6.5 Amp Booster Power Supply with California rate	13 (5.9)
MIRBPS10A	10 Amp Booster Power Supply	13 (5.9)
MIRBPS10A/230	10 Amp Booster Power Supply (220V)	13 (5.9)
BPS10CAA	10 Amp Booster Power Supply with California rate	13 (5.9)

Related Equipment

12V6A5	7.2 Amp Hour Battery, two required	3.4 (1.6)
12V10A	10 Amp Hour Battery, two required	9.5 (4.3)
3-TAMP	Tamper switch	
BC-1	Battery Cabinet (up to 2 - 40 Amp Hour Batteries)	58 (26.4)
BC-2	Battery Cabinet (up to 2 - 17 Amp Hour Batteries)	19 (8.6)
12V17A	18 Amp Hour Battery, two required (see note 1)	13 (5.9)
12V24A	24 Amp Hour Battery, two required (see note 1)	20 (9.07)
12V40A	40 Amp Hour Battery, two required (see notes 1, 2)	32 (14.5)
12V50A	50 Amp Hour Battery, two required (see notes 1, 2)	40 (18.14)
12V65A	65 Amp Hour Battery, two required (see notes 1, 2)	49 (22.2)

Notes

- Requires installation of separate battery cabinet.
- MIRBPS supports batteries greater than 24 Amp hours for access control applications only.



Overview

Genesis ceiling horn-strobes are small, compact, and attractive audible-visible emergency signaling devices. Protruding no more than 1.6" (41 mm) from the ceiling, Genesis horn-strobes blend with any decor.

Thanks to patented breakthrough technology, GE Security Genesis strobes do not require bulky specular reflectors and lenses. Instead, an exclusive cavity design conditions light to produce a highly controlled distribution pattern. Significant development efforts employing this new technology have given rise to a new benchmark in strobe performance – FullLight technology.

FullLight strobe technology produces a smooth light distribution pattern without the spikes and voids characteristic of specular reflectors. This ensures the entire coverage area receives consistent illumination from the strobe flash. As a result, Genesis strobes with FullLight technology go well beyond the minimum UL-required "cross" pattern.

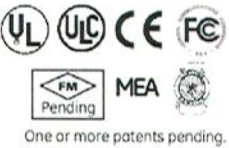
Depending on the model, Genesis horn-strobes feature 15 to 95, or 95 to 177 candela output (see ordering information), which is selectable with a conveniently-located switch on the front of the device. The candela output setting is clearly visible even after final installation, yet it remains locked in place to prevent unauthorized movement after installation.

Genesis horn-strobes feature textured housings in architecturally neutral white or eye-catching fire alarm red. An ingenious iconographic symbol indicates the purpose of the device. This universal symbol is code-compliant and is easily recognized by all building occupants regardless of what language they speak. Models with "FIRE" markings are also available.

Standard Features

- **Field configurable – no need to remove the device!**
 - 15/30/75/95 cd and 95/115/150/177 cd models available
 - Switch settings remain visible even after the unit is installed
 - Low/high dB settings
- **Unique low-profile design**
 - 30 per cent slimmer profile than comparable signals
 - No visible mounting screws
 - Available with white or red housings
- **Easy to install**
 - Fits all standard 4" square electrical boxes with plenty of room behind the signal for extra wire – no extension ring or trim plate needed
 - Pre-assembled with captive hardware – no loose pieces
 - #18 to #12 AWG terminals – ideal for long runs or existing wiring
- **Unparalleled performance**
 - Exclusive FullLight strobe technology produces the industry's most even light distribution
 - Single high-efficiency microprocessor controls both horn and strobe
 - Low current draw minimizes system overhead
 - Independent horn control provided over a single pair of wires
 - Highly regulated in-rush current allows the maximum number of strobes on a circuit
 - 100 dB peak – multiple frequency tone improves wall penetration

Field Configurable
Ceiling Horn-Strobes
Genesis Series



Application

Genesis strobes are UL 1971-listed for use indoors as ceiling-mounted public-mode notification appliances for the hearing impaired. Prevailing codes require strobes to be used where ambient noise conditions exceed 105 dBA (87dBA in Canada), where occupants use hearing protection, and in areas of public accommodation as defined in the Americans with Disabilities Act (see application notes – USA).

Combination horn-strobe signals must be installed in accordance with guidelines established for strobe devices.

Strobes

Genesis strobes are UL 1971-listed for use indoors as wall-mounted public-mode notification appliances for the hearing impaired. Prevailing codes require strobes to be used where ambient noise conditions exceed specified levels, where occupants use hearing protection, and in areas of public accommodation. Consult with your Authority Having Jurisdiction for details.

All Genesis strobes exceed UL synchronization requirements (within 10 milliseconds other over a two-hour period) when used with a synchronization source. Synchronization is important in order to avoid epileptic sensitivity.

NOTE: The flash intensity of some visible signals may not be adequate to alert or waken occupants in the protected area. Research indicates that the intensity of strobe needed to awaken 90% of sleeping persons is approximately 100 cd. GE Security recommends that strobes in sleeping rooms be rated at at least 110 cd.

WARNING: These devices will not operate without electrical power. As fires frequently cause power interruptions, further safeguards such as backup power supplies may be required.

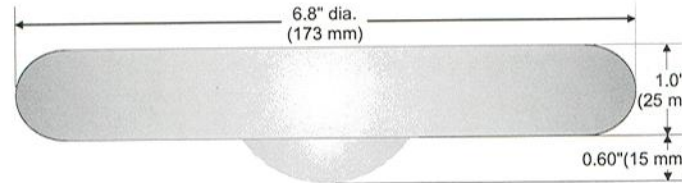
Horns

Genesis horn output reaches as high as 99 dB (peak) and features a unique multiple frequency tone that results in excellent wall penetration and an unmistakable warning of danger. All models may be configured for either coded or non-coded signal circuits. They can also be set for low dB output with a jumper cut that reduces horn output by about 5 dB.

The suggested sound pressure level for each signaling zone used with alert or alarm signals is at least 15 dB above the average ambient sound level, or 5 dB above the maximum sound level having a duration of at least 60 seconds, whichever is greater, measured 5 feet (1.5 m) above the floor. The average ambient sound level is, A-weighted sound pressure measured over a 24-hour period.

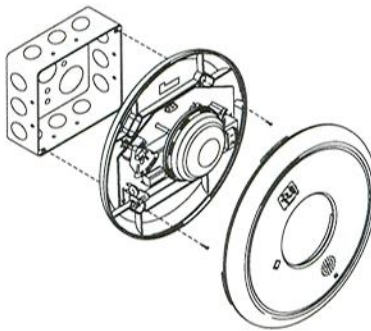
Doubling the distance from the signal to the ear will theoretically result in a 6 dB reduction of the received sound pressure level. The actual effect depends on the acoustic properties of materials in the space. A 3 dBA difference represents a barely noticeable change in volume.

Dimensions



Installation and Mounting

All models are intended for indoor wall or ceiling applications only. Horn-strobes mount to any flush North-American 4" square electrical box.



Genesis ceiling horn-strobes simply unlatch and twist to open. This gains access to mounting screws and the selectable candela switch. The shallow depth of Genesis devices leaves ample room behind the signal for extra wiring. Once installed with the cover in place, no mounting screws are visible.

GE Security recommends that these fire alarm horn-strobes always be installed in accordance with the latest recognized edition of national and local fire alarm codes.

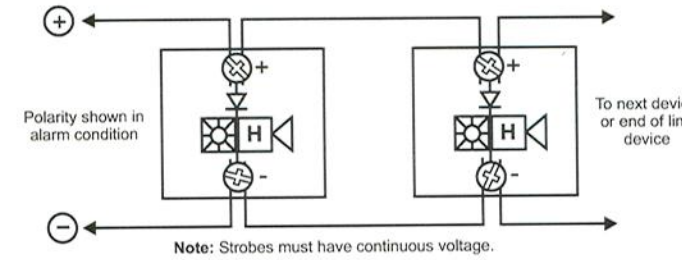
Field Configuration

Depending on the model, Genesis horn-strobes may be set for 15 to 95, or 95 to 177 candela output (see ordering information). The output setting is changed by simply opening the device and sliding the switch to the desired setting. The horn-strobe does not have to be removed to change the output setting. The setting remains visible through a small window on the front of the device after the cover is closed.

The horn-strobe comes factory set for high dB output. Low dB output may be selected by cutting a jumper on the circuit board. This reduces the output by about 5 dB.

Wiring

Field wiring terminals accommodate #18 to #12 AWG (0.75 mm² to 2.5 mm²) wiring. Horn/strobes are interconnected with a single pair of wires as shown below.



10-452673

Current Draw

MGC-HDVM Temporal Horn-strobe: High dB Setting				
UL Rating	15 cd RMS	30 cd RMS	75 cd RMS	95 cd RMS
16 Vdc	147	190	316	372
16 Vfwr	189	253	417	451

MGC-HDVM Temporal Horn-strobe: High dB Setting								
Typical Current	15 cd		30 cd		75 cd		95 cd	
	RMS	Mean	RMS	Mean	RMS	Mean	RMS	Mean
16 Vdc	111	95	152	143	281	276	333	328
20 Vdc	91	80	124	117	219	214	257	251
24 Vdc	80	71	108	101	185	180	212	207
33 Vdc	69	62	89	84	144	140	160	156
16 Vfwr	153	81	218	123	388	240	420	268
20 Vfwr	141	70	190	100	325	188	378	219
24 Vfwr	135	64	176	90	280	154	310	180
33 Vfwr	139	61	167	80	241	122	254	133

MGC-HDVM Temporal Horn-strobe: Low dB Setting								
Typical Current	15 cd		30 cd		75 cd		95 cd	
	RMS	Mean	RMS	Mean	RMS	Mean	RMS	Mean
16 Vdc	108	91	149	139	275	269	327	322
20 Vdc	87	75	120	113	214	209	250	245
24 Vdc	76	66	103	97	180	175	205	201
33 Vdc	64	57	85	80	138	135	153	150
16 Vfwr	141	76	204	118	384	239	418	265
20 Vfwr	127	65	176	95	312	181	371	214
24 Vfwr	118	60	162	82	262	149	301	171
33 Vfwr	127	56	155	73	229	118	249	129

- Notes and Comments
- Current values are shown in mA.
 - UL Nameplate Rating can vary from Typical Current due to measurement methods and instruments used.
 - GE Security recommends using the Typical Current for system design including NAC and Power Supply loading and voltage drop calculations.
 - Use the Vdc RMS current ratings for filtered power supply and battery AH calculations. Use the Vfwr RMS current ratings for unfiltered power supply calculations.
 - Fuses, circuit breakers and other overcurrent protection devices are typically rated for current in RMS values. Most of these devices operate based upon the heating affect of the current flowing through the device. The RMS current (not the mean current) determines the heating affect and therefore, the trip and hold threshold for those devices.
 - Our industry has used 'mean' currents over the years. However, UL will direct the industry to use the 2004 RMS values in the future.

dBA output

High dB Setting	UL464		Average	Peak
	Temporal	Steady	Temporal/ Steady	Temporal/ Steady
16 Vdc	79.8	83.2	90.6	93.6
24 Vdc	83.3	85.4	93.6	96.6
33 Vdc	85	87.8	95.7	98.7

Low dB Setting	UL464		Average	Peak
	Temporal	Steady	Temporal/ Steady	Temporal/ Steady
16 Vdc	75	79.3	86.3	88.7
24 Vdc	78	83	88.8	92.4
33 Vdc	80.9	85.9	91.8	95.1

Notes

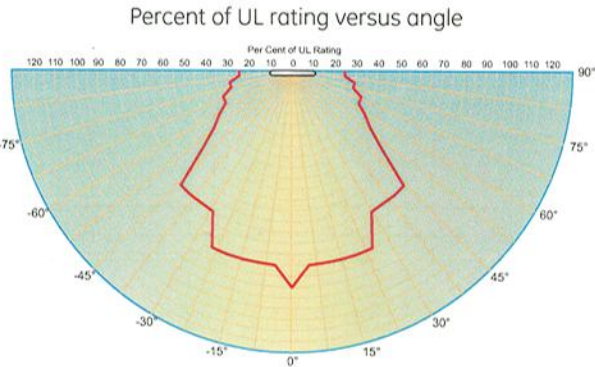
1. All values shown are dBA measured at 10 feet (3.01m); 2. UL464 values measured in reverberation room; 3. Average and Peak values are measured in anechoic chamber.

MGC-HDVMH High cd Temporal Horn-strobe: High dB Setting			
95 cd RMS	115 cd RMS	150 cd RMS	177 cd RMS
341	399	506	570
487	578	670	711

MGC-HDVMH High cd Temporal Horn-strobe: High dB Setting							
95 cd		115 cd		150 cd		177 cd	
RMS	Mean	RMS	Mean	RMS	Mean	RMS	Mean
324	322	377	374	477	474	554	551
258	256	299	296	369	366	417	414
220	217	252	249	304	301	341	338
172	169	188	185	223	220	244	241
463	265	535	312	665	400	718	442
392	211	439	240	517	287	587	334
346	179	382	212	458	246	498	271
296	142	323	152	358	178	387	194

MGC-HDVMH High cd Temporal Horn-strobe: Low dB Setting							
95 cd		115 cd		150 cd		177 cd	
RMS	Mean	RMS	Mean	RMS	Mean	RMS	Mean
317	315	378	376	480	477	544	542
252	250	292	290	364	362	414	411
212	211	245	243	297	295	334	332
159	157	181	179	215	213	234	232
461	265	521	305	656	396	705	432
381	208	437	242	508	285	576	326
335	172	370	195	440	235	485	264
285	134	308	149	349	169	373	186

Light output - (effective cd)



GE Security

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Specifications

Housing	Textured UV stabilized, color impregnated engineered plastic. Exceeds 94V-0 UL flammability rating. Red and white models available.
Lens	Optical grade polycarbonate (clear)
Mounting	North-American 4" square box, 2 1/8" (54 mm) deep (indoor wall or ceiling applications only).
Wire connections	Screw terminals: single input for both horn and strobe. #18 to #12 AWG (0.75 mm² to 2.5 mm²) wire size
Operating environment	Indoor: 32-120°F (0-49°C) ambient temperature. 93% relative humidity
Agency listings/approvals	Meets or exceeds ULC-S541, year 2004 UL requirements for standards UL1638 and UL1971, and complies with UL1480. All horn-strobes comply with ADA Code of Federal Regulation Chapter 28 Part 36 Final Rule. CSFM, MEA, FM pending.
Operating voltage	MGC-HDVM series temporal-tone horn-strobes: non-coded, filtered 16-33 Vdc or unfiltered 16-33 Vdc FWR (or coded (audible NAC only) when used with optional MG1M Genesis Signal Master)
Strobe output rating	UL 1971, UL 1638, ULC S526: selectable 15/30/75/95 cd (MGC-HDVM) and 95/115/150/177 cd (MGC-HDVMH)
Strobe flash rate	MGC-HDVM series temporal-tone horn-strobes: one flash per second synchronized with optional MG1M Genesis Signal Master indefinitely within 10 milliseconds (or self-synchronized within 200 milliseconds over thirty minutes on a common circuit without MG1M Genesis Signal Master) Temporal setting (private mode only): synchronized to temporal output of horns on same circuit
Synchronization Sources	MG1M-RM, MIRBPS6A, MIRBPS10A
Horn pulse rate	MGC-HDVM series temporal-tone horn-strobes: temporal rate synchronized with optional MG1M Genesis Signal Master indefinitely within 10 milliseconds (or self-synchronized within 200 milliseconds over thirty minutes on a common circuit without MG1M Genesis Signal Master)
Temporal audible pattern	½ sec ON, ½ sec OFF, ½ sec ON, ½ sec OFF, ½ sec ON, 1½ sec OFF, then repeat cycle

Ordering Information

Catalog Number	Housing Color	Marking	Description	Ship Wt. lbs (kg)
GC- HDVM	White	None	Genesis Ceiling/Wall Horn-Strobe with selectable 15, 30, 75, or 95 cd output	0.82 (1.8)
GCF- HDVM	White	"FIRE"		
GCFR- HDVM	Red	"FIRE"	Genesis Ceiling/Wall Horn-Strobe with selectable 95, 115, 150, or 177 cd output	
GC- HDVMH	White	None		
GCF- HDVMH	White	"FIRE"		

Accessories		
MG1M- RM	Genesis Signal Master - Remote Mount (1-gang)	0.2 (0.1)



White Field Configurable Ceiling Horn-Strobes may be ordered with or without optional "FIRE" marking. Red Horn-Strobes come with "FIRE" marking.

10-452673



imagination at work

Overview

Genesis ceiling strobes are small, compact, and attractive visible emergency signaling devices. Protruding no more than 1.6" (41 mm) from the ceiling, Genesis strobes blend with any decor.

Thanks to patented breakthrough technology, GE Security Genesis strobes do not require bulky specular reflectors and lenses. Instead, an exclusive cavity design conditions light to produce a highly controlled distribution pattern. Significant development efforts employing this new technology have given rise to a new benchmark in strobe performance – FullLight technology.

FullLight strobe technology produces a smooth light distribution pattern without the spikes and voids characteristic of specular reflectors. This ensures the entire coverage area receives consistent illumination from the strobe flash. As a result, Genesis strobes with FullLight technology go well beyond the minimum UL-required "cross" pattern, significantly exceeding UL-1971 and ULC-S526 light distribution requirements.

Depending on the model, Genesis ceiling strobes feature 15 to 95, or 95 to 177 candela output (see ordering information), which is selectable with a conveniently-located switch. The candela output setting remains clearly visible even after final installation, yet it is locked in place to prevent unauthorized movement after installation.

Genesis strobes feature textured housings in architecturally neutral white or eye-catching fire alarm red. An ingenious iconographic symbol indicates the purpose of the device. This universal symbol is code-compliant and is easily recognized by all building occupants regardless of what language they speak. Models with "FIRE" markings are also available.

Field Configurable
Ceiling Strobes
Genesis Series



Standard Features

- **Field configurable – no need to remove the device!**
 - 15/30/75/95 cd and 95/115/150/177 cd models available
 - Switch settings remain visible even after the unit is installed
- **Unique low-profile design**
 - 30 per cent slimmer profile than comparable signals
 - Attractive appearance
 - No visible mounting screws
 - Available with white or red housings
- **Easy to install**
 - Fits all standard 4" square electrical boxes with plenty of room behind the signal for extra wire – no extension ring or trim plate needed
 - #18 to #12 AWG terminals – ideal for long runs or existing wiring
- **Unparalleled performance**
 - Exclusive FullLight strobe technology produces the industry's most even light distribution
 - Precision timing electronics meet tough synchronizing standards for strobes
 - Low current draw minimizes system overhead
 - Highly regulated in-rush current allows the maximum number of strobes on a circuit
- **Approved for public and private mode applications**
 - UL 1971-listed as signaling devices for the hearing impaired
 - UL 1638-listed as protective visual signaling appliances
 - UL/ULC listed for ceiling or wall use

10-452673



Application

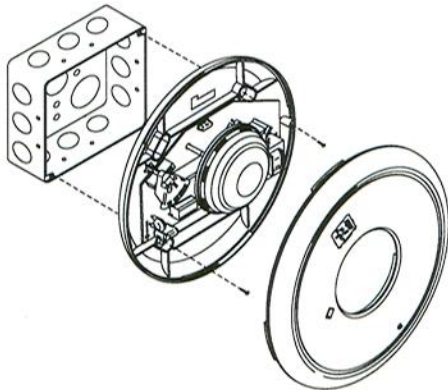
Genesis strobes are UL 1971-listed for use indoors as wall- or ceiling-mounted public-mode notification appliances for the hearing impaired. Prevailing codes require strobes to be used where ambient noise conditions exceed specified levels, where occupants use hearing protection, and in areas of public accommodation. Consult with your Authority Having Jurisdiction for details.

All Genesis strobes exceed UL synchronization requirements (within 10 milliseconds other over a two-hour period) when used with a synchronization source. Synchronization is important in order to avoid epileptic sensitivity.

Installation

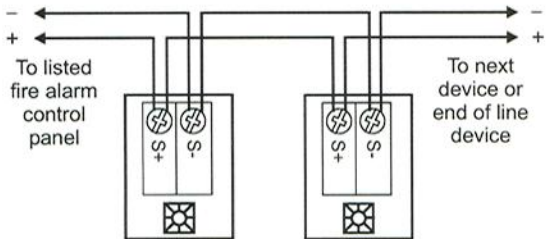
All models are intended for indoor applications only. Strobes mount to any flush North-American 4" square electrical box, 2 1/8" (54 mm) deep.

Genesis ceiling strobes simply unlatch and twist to open. This gains access to mounting screws and the selectable candela switch. The shallow depth of Genesis devices leaves ample room behind the signal for extra wiring. Once installed with the cover in place, no mounting screws are visible.



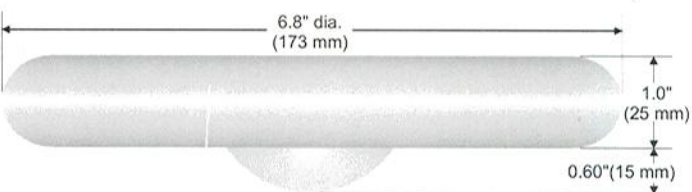
Wiring

Field wiring terminals accommodate #18 to #12 AWG (0.75 mm² to 2.5 mm²) wiring. Strobes are interconnected with a single pair of wires as shown below.

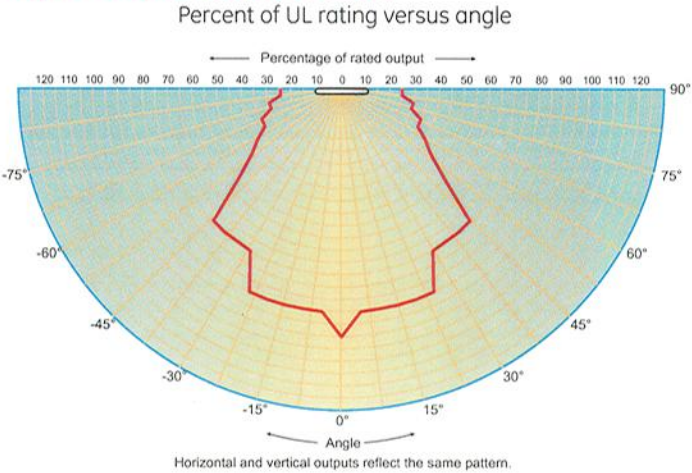


10-452673

Dimensions

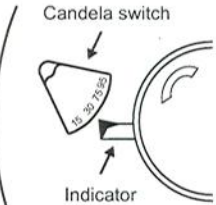


Light output (effective cd)



Field Configuration

Depending on the model, Genesis ceiling strobes may be set for 15 to 95, or 95 to 177 candela output (see ordering information). The output setting is changed by simply opening the device and sliding the switch to the desired setting. The strobe does not have to be removed to change the output setting. The setting remains visible through a small window on the front of the device after the cover is closed.



WARNING: These devices will not operate without electrical power. As fires frequently cause power interruptions, we suggest you discuss further safeguards with your local fire protection specialist.

These visible signal appliances' flash intensity may not be adequate to alert or awaken occupants in the protected area. Research indicates that the intensity of strobe needed to awaken 90% of sleeping persons is approximately 100 cd. GE Security recommends that strobes in sleeping rooms be 110 cd minimum.

Current Draw

UL Rating	15 cd		30 cd		75 cd		95 cd		95 cd		115 cd		150 cd		177 cd	
	RMS		RMS		RMS		RMS		RMS		RMS		RMS		RMS	
16 Vdc	109		151		281		318		330		392		502		565	
16 Vfwr	131		194		379		437		432		518		643		693	

Typical Current	15 cd		30 cd		75 cd		95 cd		95 cd		115 cd		150 cd		177 cd	
	RMS	Mean	RMS	Mean	RMS	Mean	RMS	Mean	RMS	Mean	RMS	Mean	RMS	Mean	RMS	Mean
16 Vdc	94	87	140	135	273	268	325	323	333	330	392	390	499	496	551	545
20 Vdc	74	68	108	105	205	203	244	242	259	257	303	301	378	375	429	426
24 Vdc	63	59	90	88	168	166	194	192	212	210	245	243	306	304	342	340
33 Vdc	48	46	70	68	124	123	139	138	155	153	180	174	211	209	236	234
16 Vfwr	126	67	187	108	368	231	403	260	484	283	570	339	673	411	724	446
20 Vfwr	108	54	156	84	281	168	333	199	380	212	438	248	537	312	604	352
24 Vfwr	97	47	139	71	240	135	270	156	318	172	361	198	434	243	484	273
33 Vfwr	89	39	119	56	197	100	214	111	245	123	269	137	308	160	338	176

- Notes and Comments
- Current values are shown in mA.
 - UL nameplate rating is higher than typical current due to measurement methods and instruments used.
 - GE Security recommends using the typical current for system design including NAC and Power Supply loading and voltage drop calculations.
 - Use the Vdc RMS current ratings for filtered power supply and battery AH calculations. Use the Vfwr RMS current ratings for unfiltered power supply calculations.
 - Fuses, circuit breakers and other overcurrent protection devices are typically rated for current in RMS values. Most of these devices operate based upon the heating affect of the current flowing through the device. The RMS current (not the mean current) determines the heating affect and therefore, the trip and hold threshold for those devices.
 - Our industry has used 'mean' currents over the years. However, UL will direct the industry to use the 2004 RMS values in the future.

Specifications

Housing	Textured UV stabilized, color impregnated engineered plastic. Exceeds 94V-0 UL flammability rating. Red and white models available.
Lens	Optical grade polycarbonate (clear).
Mounting	Flush mount to North American 4-inch square electrical box, 2-1/8 (54 mm) inches deep. No extension ring required. Suitable for indoor wall or ceiling applications.
Wire Connections	Screw terminals: #18 to #12 AWG (0.75 mm² to 2.5 mm²) wire size.
Operating Voltage	Regulated 16 to 33 Vdc, 16 to 33 Vfwr.
Operating environment	Indoor: 32-120° F (0-49° C) ambient temperature; 0-93% relative humidity.
Agency listings/approvals	Meets or exceeds year 2004 UL requirements for standards UL1638 and UL1971 and Canadian requirements for standards CAN/ULC S526-02 and CAN/ULC S524-01. All models comply with ADA Code of Federal Regulation Chapter 28 Part 36 Final Rule. CSFM, MEA. FM pending.
Strobe output rating	UL 1971, UL 1638, ULC S526: selectable 15/30/75/95 cd (MGC-VM) and 95/115/150/177 cd (MGC-VMH)
Strobe operating voltage	MGC-VM series strobes: non-coded, filtered 16-33 Vdc or unfiltered 16-33 Vdc FWR.
Strobe flash rate	MGC-VM series strobes: one flash per second synchronized with optional MG1M Genesis Signal Master indefinitely within 10 milliseconds (or self-synchronized within 200 milliseconds over thirty minutes on a common circuit without MG1M Genesis Signal Master). Temporal setting (private mode only): synchronized to temporal output of Genesis audible signals on same circuit.
Synchronization	Meets or exceeds UL 1971 requirements. Maximum allowed resistance between any two devices is 20 Ohms. Refer to specifications for the synchronization control module, this strobe, and the control panel to determine allowed wire resistance.
Synchronization Sources	MG1M-RM, MIRBPS6A, MIRBPS10A

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Ordering Information

Catalog Number	Housing Color	Marking	Description	Ship Wt. lbs (kg)
GC- VM	White	None	Genesis Ceiling/Wall Strobe (selectable 15, 30, 75, or 95 cd output)	1.8 (0.82)
GCF- VM	White	"FIRE"		
GCFR- VM	Red	"FIRE"		
GC- VMH	White	None	Genesis Ceiling/Wall Strobe (selectable 95, 115, 150, or 177 cd output)	1.8 (0.82)
GCF- VMH	White	"FIRE"		
Accessories				
MG1M- RM	Genesis Signal Master – Remote Mount (1-gang)			0.2 (0.1)



White Field Configurable Ceiling Strobes may be ordered with or without optional 'FIRE' marking. Red Strobes come with 'FIRE' marking.

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