

735 Washington Avenue

South Portland, ME

Fire Alarm System
Equipment Submittal
01/13/17



30 Thomas Drive
Westbrook, ME 04092-3824

Project: 735 Washington Avenue
735 Washington Ave
South Portland, ME 05104

Customer: T. A. Napolitano, Inc.
P.O. Box 2301
South Portland, ME 04116

Sales Representative: Christopher Ayres

FIRE ALARM SYSTEM EQUIPMENT SUBMITTAL

Please contact the SimplexGrinnell Service Department **TWO WEEKS IN ADVANCE** to schedule a technician for checkout.

SimplexGrinnell District Contact Information:

District Manager: Allen Paul

SimplexGrinnell
30 Thomas Drive
Westbrook, ME 04092

Sales: 207-842-6440
Service: 207-842-6440
Fax: 207-842-6439

Prepared by:

SimplexGrinnell
Engineering Support Services
Northern New England
50 Technology Drive
Westminster, MA 01441

Sr. Project Engineer: Steven C. Kalafarski
NICET #77524, Level IV

Submittal Approval:

Approved By: _____

Date: _____

735 WASHINGTON AVENUE
FIRE ALARM SYSTEM EQUIPMENT

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INSERT 1

Project Bill of Material

Bill Of Material

Project Number		Project Name			
997079601		735 Washington Ave			
PID	DESCRIPTION	Quantities			Notes
		Sold	Required	Difference	
Panel Components					
CWSI-CP-3600	WIRELESS FIRE ALARM CONTROL PANEL	1	1	0	
CWSI-BA-12V-7AHS	7AH BATTERY	2	2	0	
CWSI-OM-1S	OMNI ANTENNA	2	2	0	
SSU00505	SPACE AGE BATTERY CABINET, RED	1	1	0	
ETHEDROP	ETHERNET-NETWORK COMPATIBLE	1	1	0	
DIALER					
CWSI-KD-1S	KELTRON DIALER	1	1	0	
CWSI-KPS-1S	KELTRON POWER SUPPLY	1	1	0	
CWSI-CA-SDACT	SDACT TO SERIAL DIALER CABLE	1	1	0	
CWSI-345	FIRE TRANSMITTER	1	1	0	
REPEATER					
CWSI-OM-1S	OMNI ANTENNA	1	1	0	
CWSI-AR-5	AR5 REPEATER	1	1	0	
CWSI-BA-12V-4AHS	4AH BATTERY	1	1	0	
Initiating / Control Devices					
CWSI-302	SMOKE DETECTOR (NON-AUDIBLE)	10	10	0	
CWSI-310	PULL STATION	5	5	0	
CWSI-320	HEAT DETECTOR	3	3	0	
CWSI-345	FIRE TRANSMITTER	2	2	0	
CWSI-350	CO DETECTOR	1	1	0	
Notification Devices					
CWSI-520W	520 LOW FREQUENCY SOUNDER, WHITE	4	4	0	
GEC3-24WR	MULTI CD HORN/STROBE, 24VDC, WALL, RED	8	8	0	
Miscellaneous Equipment					
3200	KNOX BOX KEY REPOSITORY	1	1	0	

INSERT 2

Control Equipment, Batteries & Accessories Data Sheets



CP-3600/3600+

FIRE ALARM CONTROL PANEL

Overview

The CP3600(+) is an intelligent Fire Alarm Control Panel suitable for any type occupancy regardless of size. The versatility, network integration, and scalability make this panel ideal for virtually any application.

The CP-3600(+) will support up to 1024/2048 addressable devices and repeaters while providing true network operation and communication. Network operation includes wireless command signals to repeaters and wireless relays for activation of control functions such as appliance circuits, elevator recall, HVAC control and more. The CP3600(+) allows for the reporting of up to four separate alarm types and provides for event memory recall of alarm, supervisory and all control functions. Alarm and trouble signals are also wirelessly transmitted to remote annunciators.

The CP3600(+) incorporates dual transceiver technology and utilizes Frequency Hopping Spread Spectrum (FHSS) signaling as well as reception protocols to assure the most secure and reliable fire alarm network available. The CP3600(+) meets all National Code Requirements and is UL Listed for Protected Premises, Remote Station, Central Station, Proprietary, Auxiliary Service, Manual, Waterflow and Sprinkler Supervisory.



Features

- **UL 864 10th Edition Listed**
- 3600 offers 1024 / 3600+ offers 2048 device capability
- 4 Alarm Priority Types
- Bi-Directional RF Communication
- 900 MHz Frequency Hopping Spread Spectrum Format
- CRC Data Validation
- Supervisory Self-Restore
- Trouble Self-Restore
- 2-Device Alarm Zones
- Tandem Smoke Detector Control
- 24 or 60 Hour Battery Standby Time
- Field Selectable NAC Output (2-Class B or 1-Class A)
- 4 N.O. Alarm Dry Contact Outputs
- **2 Form C Programmable Dry Contact Alarm Outputs**
Programmable by zones rather than alarm types
- Form C Trouble Output
- Auxiliary Municipal City Box Output
- Time and Date with Daylight Savings Self Adjustment
- Device Enrollment Feature
- Test Mode Automatically Times out in 4 Hours
- Password and Key Lock Protected
- Non-volatile Memory
- **History of events for:**
2000 Alarm/Supervisory Signals
2000 Trouble Signals
2000 Test Log Signals
4000 All Event Log Report
- Point Specific Fire Alarm Reporting
- Pinpoint Off-Site Annunciation
- SIA Format Event Reporting
- Supervised Dialer Interface
- Compatible with Keltron SDACT 2 Communicator
- **Listings:**
Protected Premises, Remote Station, Proprietary, Central Station, Auxiliary Service, Automatic, Smoke Detector Monitor, Manual, Waterflow Sprinkler Supervisory
- **1500 software zones / 5 per device**



CP-3600/3600+ FIRE ALARM CONTROL PANEL

Specifications

- **Power Source:** 120/240Vac 50/60Hz 1 Amp dedicated
- **Battery Type:** Two 12Vdc 4Ah Sealed Lead Acid Batteries Connected in Series for up to 24 Hours Standby Operation or two 12Vdc 7Ah Sealed Lead Acid Batteries Connected in Series for 60 Hours Standby Operation
- **Special Application NACs:**
Programmable Non Power Limited. 1 Class "A" (Style Z) or 2 Class "B" (Style Y) Field Selectable
Class A Ratings: 24Vdc @ 1 Amp
Class B Ratings: 24Vdc @ 1 Amp Each
- **Regulated NACs:**
Programmable Non-power Limited. 1 Class "A" (Style Z) or 2 Class "B" (Style Y) Field Selectable
Class A Ratings: 24Vdc @ 100 Milliamps
Class B Ratings: 24Vdc @ 100 Milliamps
- **Dry Contact Alarm Relays:**
4 N.O. Common type Rated 24Vdc @ 1 Amp. Resistive
2 Form "C" Programmable Rated 24Vdc @ 1 Amp. Resistive
- **Dry Contact Trouble Relays:**
1 Form C Common type Rated 24Vdc @ 1 Amp. Resistive
- **Auxiliary Output:** Current 350 ma. Max Coil Resistance 14.6 Ohms
- **Transceiver Operating Frequency:** 900 MHz Band
- **Antenna Type:** Omni
- **Enclosure:** Powder Coated 16 Gauge Steel
- **Testing:** Follow the CP3500D CWSI Manual and NFPA 72 or Local Requirements
- **Transmission:** Complies to FCC Part 15



Height 17" // Width 17" // Depth 3.25" // Weight 29 lbs.



MODEL AR-5

AC POWERED REPEATER

Overview

The Model AR-5 Repeater, UL Listed 864 Accessory Device, is an addressable bi-directional repeater which is used to form a wireless network which receives, screens, verifies, and retransmits low power radio signals from other CWSI wireless initiating devices, repeaters and control panels. In addition to providing RF signaling within the installation, the AR-5 provides two supervised addressable Notification Appliance Circuits (NACs). **An optional RM-5 Plug-in Relay Module adds 5 Form C Relays to the AR-5.**

AR-5 Specifications

- **Power Source:** 120/240Vac 50/60Hz 1 Amp Dedicated
- **Battery Type:** Two 12Vdc 4Ah Sealed Lead Acid Batteries Connected in Series for up to 60 Hours Standby Operation
- **Dry Contact Relays:**
Available when optional Model RB-10, 20, 30 or 40 Relay Box is connected to the AR-5. All relay outputs are programmable and rated for 24Vdc @ 1Amp. The number after RB indicates the number of outputs provided.
- **Transceiver Operating Frequency:** 900 MHz Band
- **Antenna Type:** Omni, Yagi
- **Enclosure:** Powder coated 18 Gauge Steel
- **Testing:** Follow the Model AR-5 CWSI Manual and NFPA 72 or Local Requirements
- **Transmission:** Complies with FCC Part 15
- **Test Transmission:** 200 Second Supervisory Polling
- **Panel Compatibility:** With CWSI Control Panel, refer to Product Manual

Height 10" // Width 10" // Depth 3.25" // Weight 14 lbs.



AR-5 Features

- **UL Listed 864 Accessory Device**
- Bi-Directional RF communication
- 900 MHz Frequency Hopping Spread Spectrum Format
- CRC Data Validation
- Dual Transceiver Design
- **AR-3A Legacy Mode Switch**
- **Field Programmable Special Application and Regulated NACs:**
Special Application NACs:
 - › Programmable Non-power Limited. 1 Class "A" (Style Z) or 2 Class "B" (Style Y) Field Selectable
 - › Class A Ratings: 24Vdc @ 1 Amp
 - › Class B Ratings: 24Vdc @ 1 Amp
- **Regulated NACs**
- Synchronization of NAC outputs when used with compatible Gentex products

RM-5 Specifications

- **Plug-in Installation**
- **Relays:** 5 Form C Relays Rated 30Vdc 5A Resistive
- **Compatibility:** Commercial Wireless Systems International, LLC Model AR-5

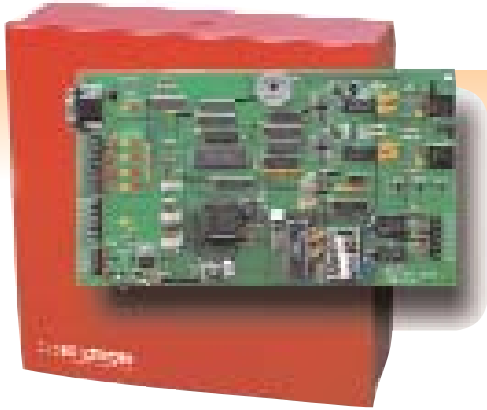
Height 2.25" // Width 3.75" // Depth 0.6" // Weight 1 oz.

RM-5 Features

- 5 Form C Relays
- 5 Amps, 30Vdc
- 3 Programming Zones per relay



Keltron Fire Dialer Serial Digital Alarm Communicator Transmitter



Enhances FACP Performance

Allows Point-Specific Fire Alarm Reporting

Enables Pinpoint Off-Site Annunciation

Keltron's Fire Dialer is a unique solution that interfaces with fire alarm control panels (FACPs) and enables an appropriate and instantaneous response from personnel at a life safety event-monitoring center. The Keltron Fire Dialer provides a remedy for today's FACPs that cannot report point-specific and critical fire alarm information to an on- or off-site central station-style digital receiver through the dial-up public switched telephone network (PSTN).

How the Keltron Fire Dialer works

From the FACP, the Fire Dialer accepts data that was originally intended for a printer or CRT and converts it to a standard, digital receiver-compatible, alarm-reporting format using unique personality module software. The Fire Dialer enables intelligent and addressable FACPs that do not have a PSTN-compatible, point-ID capable, dialer/communicator, to report critical, point-specific fire alarm information. In the unlikely event of a serial port failure, the Fire Dialer's seven input zones ensure that event signals are transmitted to indicate the global event type such as fire, trouble, water flow or supervisory. These signals are provided by contact outputs from the panel that are monitored through the ultra-reliable hard-wired connection provided by the zone inputs.

Keltron Fire Dialer features

The Keltron Fire Dialer is comprised of a powerful microprocessor, an ASCII data-to-SIA converter and a seven-zone digital communicator. This unique communicator includes both seven hardwired zone inputs and an RS232 serial port.

- Primary alarm reporting is accomplished with the four EOL-resistor supervised zone inputs by monitoring the alarm, trouble, and optionally the water flow and supervisory output contacts from the FACP.
- The RS232 port adds detector-specific reporting of all available additional information that enables accurate monitoring of event status, panel status, and fire progression.
- Transmits signals in industry standard SIA format.
- Test code call-in cycles are programmable and both normal and off-normal condition test codes are transmitted as appropriate. A manual test button is also included.
- Provides a programming utility that requires only a PC or laptop with serial port and a cable.
- The RS232 port is personality-matched to the intended data source through a software interface. When the monitored FACP can support it, this may include communications supervision and interruption reporting.
- Zones 5, 6 and 7 are available for loss of ac and battery fail indications, which are also reported using standard SIA event codes.
- Local LEDs and audible devices clearly indicate Fire Dialer status.
- General alarm and general trouble relay outputs provide trouble indication for local annunciation at the FACP per UL864.

15:36:09 15:36:09 15:36:09
02/15/07 02/15/07 02/15/07
15:36:09 15:36:09 15:36:09
05/18/08 05/18/08 05/18/08
20:36:09 20:36:09 20:36:09

www.keltroncorp.com

Specifications

Phone lines: 2 RJ-45 receptacles

Hardwired zone inputs: 7 (4-EOL resistor supervised)

EOL resistor value: 10K Ohms

Maximum input line resistance: 100 Ohms

Relays: 2 SPDT, 1 common alarm, 1 common trouble
Contact ratings: 2A @ 30VDC

LED Indicators:

One green 24VDC power indicator

One yellow external power source monitor trouble

One red zone alarm for each supervised zone input (4 total)

One yellow zone trouble for each supervised zone input (4 total)

One red serial port event pending transmission alert

One yellow serial port fault alert

One yellow line trouble for each telephone line (2 total)

One red line active for each telephone line (2 total)

One red relay active for each relay (2 total)

Audible device: Rated at 92 DB

Ringer equivalence: 0.1

FCC registration # US: KELAL01ASFDACT

User controls

Jumpers (8 total):

- ▶ J1 & J2 configure RS-232 port handshake lines set according to the FACP being monitored.
- ▶ J3 audible device disconnect jumper will physically disconnect power from the audible device
- ▶ J4 if removed disable supervision of FACP serial port (SDACT only) set according to the FACP being monitored.
- ▶ J5-J7 set the normal condition of auxiliary power monitor (zones 5-7 respectively)
- ▶ J8 installed - sets 2 hour transmission delay for zone 5 (AC power fail), uninstalled - sets no delay

Pushbuttons: reset, manual test, silence, program

Compatible FACP's

Edwards EST-2, EST-3 and IRC-3

FCI 7100 series (7100-1, 7100-2, 7100-1D, 7100-2D)

FCI 7200 series

Gamewell IF 600 Series

Mirtone MIR-2

Siemens MXL/MXLV

Consult factory for additional interfaces

Keltron develops and manufactures secure, reliable, UL-listed fire and security alarm response management systems and components for the municipal and proprietary life safety markets. Products include radio fire alarm, coded fire alarm and high-line security systems, digital alarm receivers, universally compatible fire alarm control panel networking solutions and a full line of alarm annunciators. For more information, visit www.keltroncorp.com or contact us at 781-894-8710 X26, or info@keltroncorp.com.

User-programmable items

Number of telephone lines to be used

Primary telephone number

Secondary telephone number

Sends trouble signals to secondary phone#

Primary account number

Secondary account number

Daily test time-of-day

Daily test check-in interval

Event codes for all zones

Real time clock

SIA transmitter:

Transmit all events that are in the SIA transmit queue (multiple events per call), per SIA Digital Communication Standard of November 1991. Transmissions will be in accordance with the requirements of a Level 1 transmitter as defined in Section 5 (compatibility), Table 3 (SIA digital compatibility levels) - (SIA20).

Power Requirements

Power input - regulated or unregulated, filtered 24VDC
20.4 - 27.5 VDC acceptable range

Power requirements - Idle and Alarm: 75mA, 200mA all alarm or lamp test

Size of PC board: 6" H x 10.5" W

Weight: 11 oz

Enclosure information: 14" H x 17" W x 4" D
Exterior red textured surface with removable door

Download Utility Requirements

Windows 98, 2000, XP

Ordering options

The Keltron Fire Dialer is available in two versions:

The Serial DACT (SDACT) includes a seven zone digital communicator and an RS232 serial interface port for connection with addressable FACP's to enable point specific event reporting.

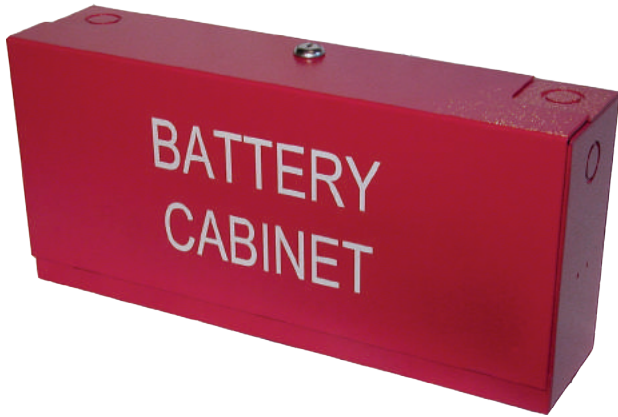
The Fire DACT (FDACT) is a seven zone, slave fire alarm, digital dialer/communicator.

Both models include a serial upload port, CD for easy programming and user manual.



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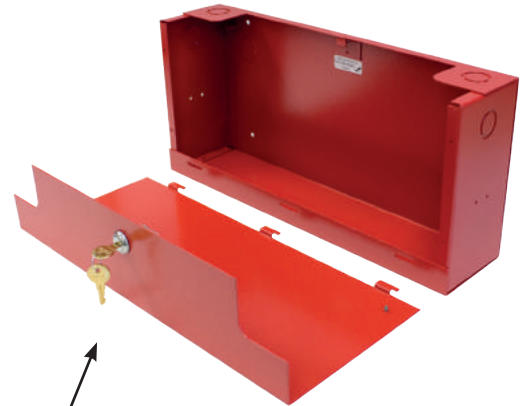
NO EXCUSES!



Mini Battery Cabinet

The MBC "BATTERY CABINET" is designed for the professional installation of systems requiring battery storage and meets the requirement of NFPA 72 (1-5.2.9) stand-by battery storage for battery backup.

The MBC allows for easy access and maintenance of the batteries while also assisting against unnecessary power drain, interference or degeneration of the battery. The unit can be mounted securely to a wall, preventing mechanical injury or damage to other equipment.



The door of the MBC lifts away for worry free wiring and battery change-out.

Standard Features:

- 16 Gauge (.062 thk.) cold rolled steel
- White 2" lettering "BATTERY CABINET"
- Green ground screw with threaded insert
- Formed lift-a-way hinge
- Red or Black textured finish
- CAT 30 keyed door lock
- Dimensions:
17" wide x 8" high x 4" deep
- Six 1/2" and 3/4" EMT conduit knockouts located on both sides, top and back
- NFPA 72 National Electric Code



ISO 9001 REGISTERED COMPANY

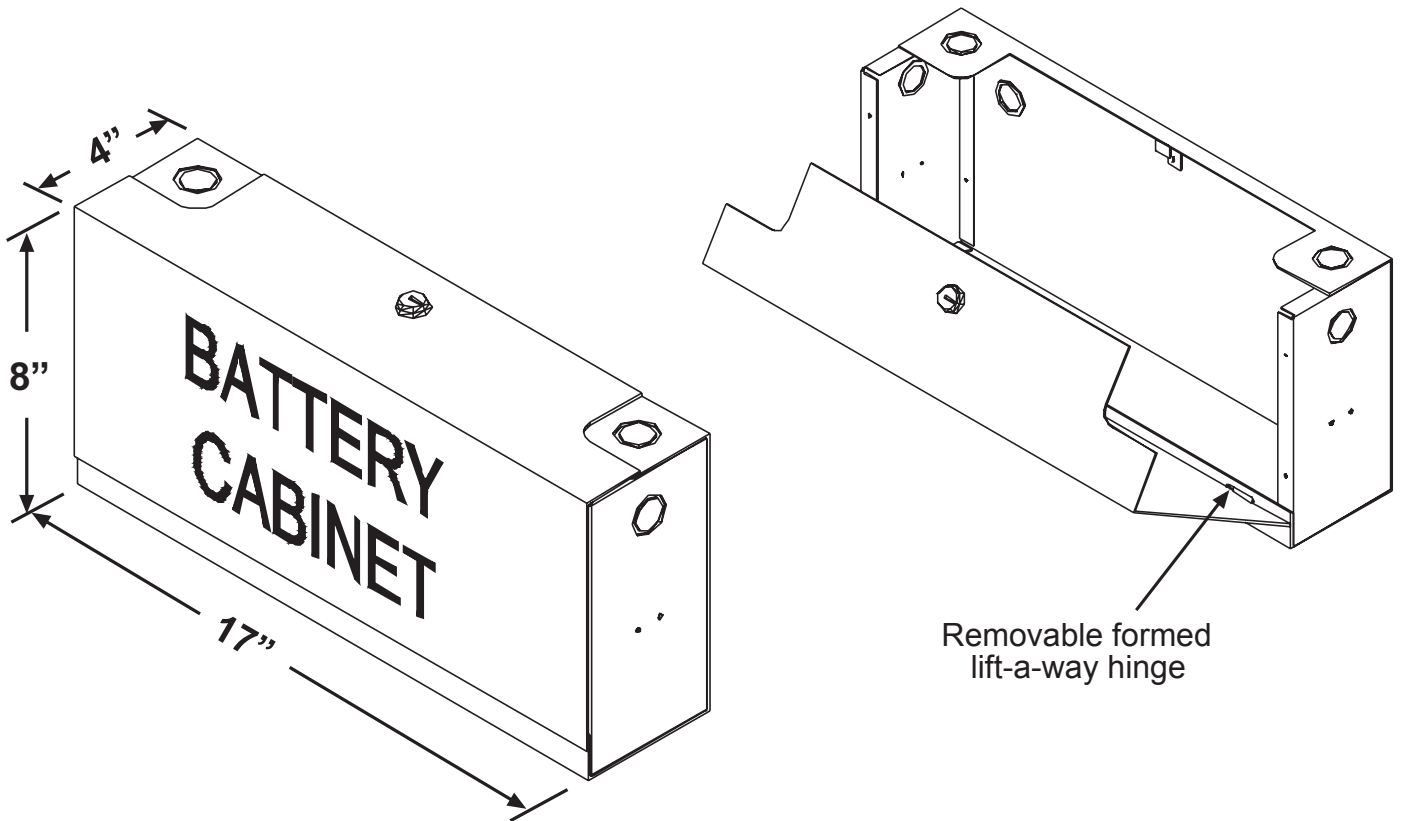


ACEBOX

Space Age Electronics, Inc.
www.1sae.com
800.486.1723 Toll Free
508.485.0966 Local
508.485.4740 Fax

Specifications:

The MBC Mini Battery Cabinet is constructed of 16 gauge (.062 thk.) cold rolled steel and finished with a durable red or black textured, heat-resistant baked-on enamel finish. The front cover is engineered with a removable formed lift-a-way hinge, displays "BATTERY CABINET" in 2" white screened lettering and includes a high security CAT 30 keyed door lock. The unit comes with a green ground screw with threaded insert. Overall dimensions measure 17" wide by 8" high by 4" deep. Six 1/2" and 3/4" EMT conduit knockouts are located on both sides, top and back. The battery cabinet meets NFPA 72 National Electric Code requirements. Batteries not included.



Agency Approvals:

UOXX.S2580

UL Listed Control Unit Accessories

Ordering Information:

Part #	Description
SSU00505	MBC Mini Battery Cabinet - Red
SSU00506	MBC Mini Battery Cabinet - Black

ACEBOX

Space Age Electronics, Inc.
www.1sae.com
800.486.1723 Toll Free
508.485.0966 Local
508.485.4740 Fax

No Excuses, Just Solutions!

This document is subject to change without notice, see doc # ED0479 for legal disclaimer

ED0247

LT10247

Rev.C

2/2

High Security Industrial/Government Key Box

Recessed Mount
with Face Flange



Surface Mount



The number one high-security KNOX-BOX® is used for most commercial applications including businesses, schools, government and public buildings, community associations and apartment complexes. The 3200 Series KNOX-BOX holds keys, access cards and other small items necessary for emergency access.

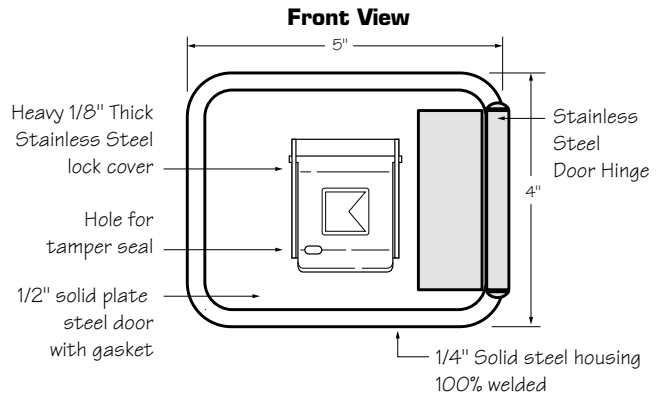
The hinged-door 3200 Series KNOX-BOX is more convenient than the lift-off door version because it allows single-handed operation and opened or closed, it's all one unit.

Features and Benefits

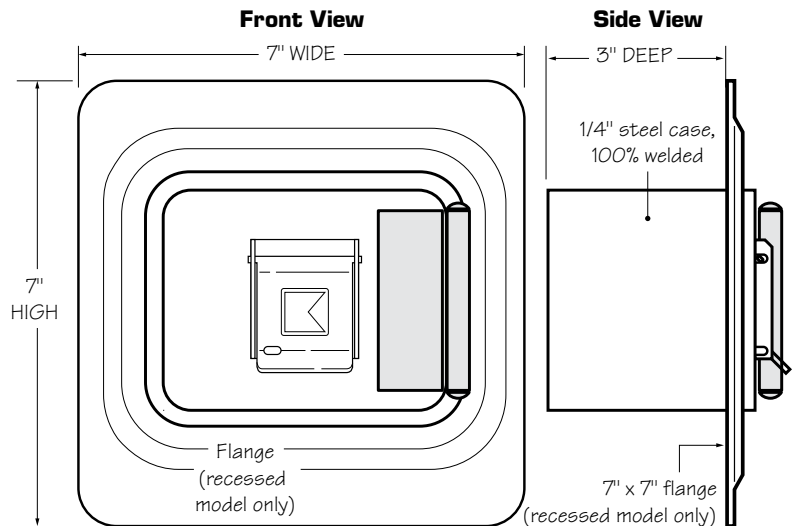
- Holds up to 10 keys or 1 access card in interior compartment
- Ensures high security. Box and lock are UL® Listed
- Includes a Knox-Coat® proprietary finishing process that protects Knox products up to four times better than standard powder coat
- Resists moist conditions with a weather resistant door gasket
- Hinged door allows single-handed operation
- Colors: Black, Dark Bronze or Aluminum
- Weight: Surface mount - 8 lbs.
Recessed mount - 9 lbs.

Options

- Alarm tamper switches (UL Listed)
- Additional rust and corrosion protection (Aluminization)
- Recessed Mounting Kit (RMK) for recessed models only
- Inside switch for use on electrical doors, gates and other electrical equipment



3200 Surface Mount



3200 Recessed Mount

Ordering Specifications

To insure procurement and delivery of the 3200 Series KNOX-BOX, it is suggested that the following specification paragraph be used:

KNOX-BOX surface/recessed mount with hinged door, with/without UL Listed tamper switches. 1/4" plate steel housing, 1/2" thick steel door with interior gasket seal and stainless steel door hinge. Box and lock UL Listed. Lock has 1/8" thick stainless steel dust cover with tamper seal mounting capability.

Exterior Dimensions: Surface mount body- 4"H x 5"W x 3 1/4"D
Recessed mount flange- 7"H x 7"W

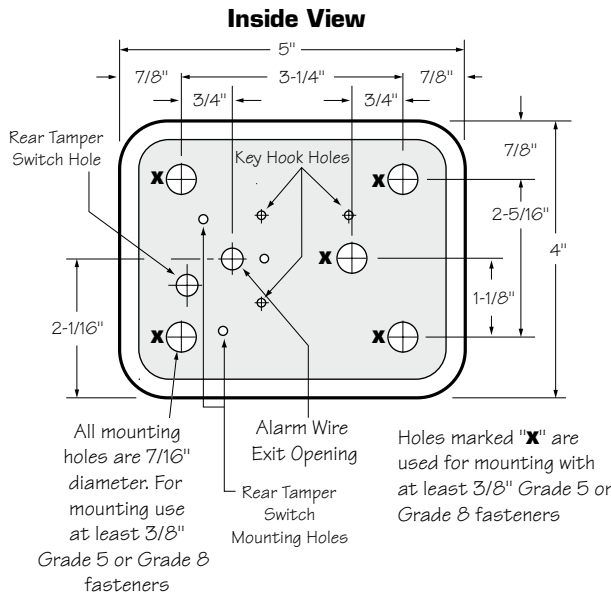
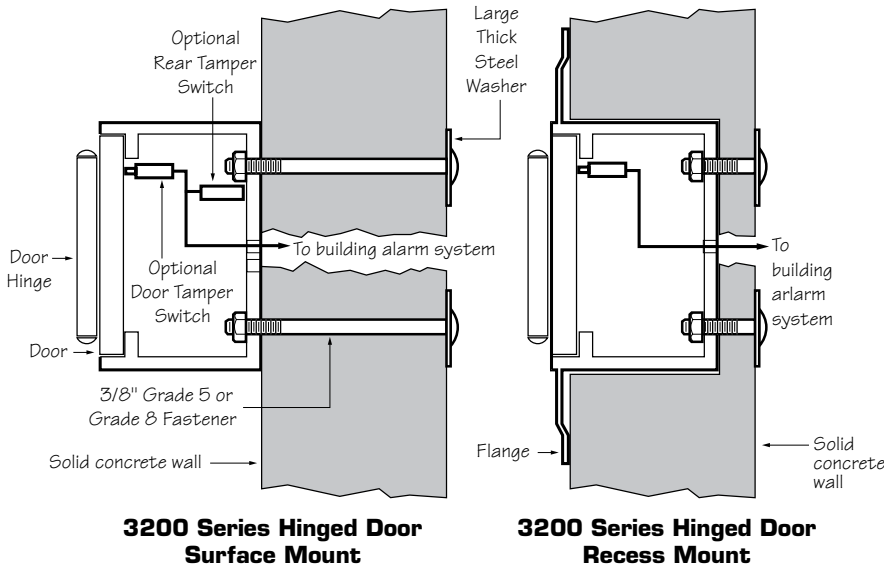
Lock: UL Listed. Double-action rotating tumblers and hardened steel pins accessed by a biased cut key.

Finish: Knox-Coat® proprietary finishing process
Colors: Black, Dark Bronze or Aluminum

P/N: 3200 Series KNOX-BOX (mfr's cat. ID)

Mfr's Name: **KNOX COMPANY**

**Suggested minimum mounting height
6 feet above ground**



Attention: KNOX-BOX® is a very strong device that MUST be mounted properly to ensure maximum security and resist physical attack.

Knox® Rapid Entry System

The Knox Company manufactures a complete line of high security products including Knox-Box key boxes, key vaults, cabinets, key switches, padlocks, locking FDC caps, plugs and electronic master key security systems. For more information or technical assistance, please call Customer Service at 1-800-552-5669.

Recessed Mounting Kit

The 3200 Recessed Mounting Kit (RMK) is used for recessed models only. It contains a shell housing and mounting hardware to be cast-in-place in new concrete or masonry construction. After construction is completed, the KNOX-BOX mounts inside the RMK. The RMK may only be used in new concrete or masonry construction.

Installation In Cast Concrete

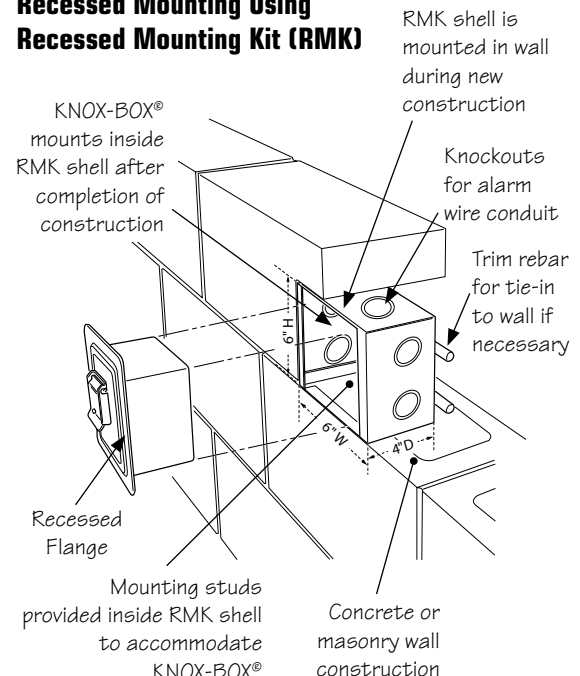
The optional Recessed Mounting Kit is for use in new concrete or masonry construction only. The kit includes a shell housing and mounting hardware to be cast-in-place. The KNOX-BOX is mounted into the shell housing after construction is completed.

Dimensions

Rough-in Dimensions: 6-1/2"H x 6-1/2"W x 5"D

IMPORTANT: Care should be taken to insure that the front of the RMK shell housing, including the cover plate and screw heads, is flush with the finish wall. The RMK must be plumbed to insure vertical alignment of the vault.

Recessed Mounting Using Recessed Mounting Kit (RMK)



MODEL YA-1
YAGI ANTENNA

Overview

The Yagi Antenna is a highly directional antenna used to provide long distance reception and re-transmission of signals to outlying facilities. Range varies depending upon the installation characteristics. CWSI field testing has found the Yagi antenna is best suited for unobstructed line of sight reception and transmission. The Yagi Antenna is not recommended for dense, clustered applications.



MODEL OM-1
OMNI ANTENNA

Overview

The Omni OM-1 antenna is an omni-directional antenna used for bi-directional reception and re-transmission of signals equally, in all directions. Range varies depending upon the installation characteristics. CWSI field testing has found that the Omni OM-1 antennas are best suited for dense applications where line of site is obstructed.

CWSI requires an on-site RF survey to determine the proper signal path for every installation.



MODEL OM-3
OMNI ANTENNA

Overview

The OM-3 is a new High Gain 5dB Antenna with a higher penetration capability compared to the OM-1. Use of the OM-3 will vary based on the site specific needs. The antenna is intended for use only on the Control Panel, Repeaters and FAST survey tool (use on the FAST tool requires the FST-Kit). The OM-3 is 17.5 inches in length and mounts directly onto the Control Panel or Repeater with no additional equipment necessary.

CWSI requires an on-site RF survey to determine the proper signal path for every installation.



NP SERIES - NP4-12

Reliability is your Security

Utilizing the latest advance design Oxygen Recombination Technology, Yuasa have applied their 80 years experience in the lead acid battery field to produce the optimum design of Sealed Lead Acid batteries.

FEATURES

- Superb recovery from deep discharge.
- Electrolyte suspension system.
- Gas Recombination.
- Multipurpose: Float or Cyclic use.
- Usable in any orientation.
- Superior energy density.
- Lead calcium grids for extended life.
- Manufactured World wide.
- Application specific designs.

Technical Features

Sealed Construction

Yuasa's unique construction and sealing technique ensures no electrolyte leakage from case or terminals.

Electrolyte Suspension System

All NP batteries utilize Yuasa's unique electrolyte suspension system incorporating a microfine glass mat to retain the maximum amount of electrolyte in the cells. The electrolyte is retained in the separator material and there is no free electrolyte to escape from the cells. No gels or other contaminants are added.

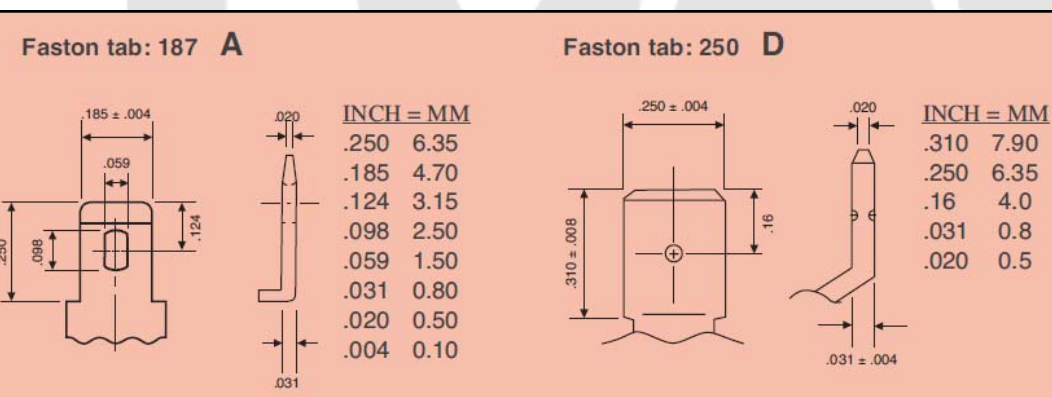
Control of Gas Generation

The design of Yuasa's NP batteries incorporates the very latest oxygen recombination technology to effectively control the generation of gas during normal use.

Low Maintenance Operation

Due to the perfectly sealed construction and the recombination of gasses within the cell, the battery is almost maintenance free.

Terminals



Terminals

NP batteries are manufactured using a range of terminals which vary in size and type. Please refer to details as shown.

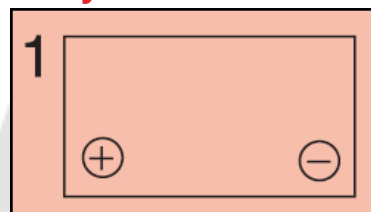
Operation in any Orientation

The combination of sealed construction and Yuasa's unique electrolyte suspension system allows operation in any orientation, with no loss of performance or fear of electrolyte leakage.

Valve Regulated Design

The batteries are equipped with a simple, safe, low pressure venting system which releases excess gas and automatically reseals should there be a build up of gas within the battery due to severe overcharge. Note. On no account should the battery be charged in a sealed container.

Layout



General Specifications

Nominal Capacity (Ah)	NP4-12
20hr to 1 .75vpc 30°C	4
1 0hr to 1 .75vpc 20°C	3.7
5hr to 1.70vpc 20°C	3.4
1 hr to 1 .60vpc 20°C	2.4
Voltage	12
Energy Density (Wh.L.20hr)	75
Specific Energy (Wh.kg.20hr)	27
Int. Resistance (m.Ohms)	40
Maximum discharge (A)	40/75
Short Circuit current (A)	1 20
Dimensions (mm)	
Length	90
Width	70
Height overall	106
Weight (Kg)	1 .75
Terminal	A/D
Layout	1
Terminal Torque Nm	-

NP SERIES - NP4-12

Lead Calcium Grids

The heavy duty lead calcium alloy grids provide an extra margin of performance and life in both cyclic and float applications and give unparalleled recovery from deep discharge.

Long Cycle Service Life

Depending upon the average depth of discharge, over a thousand discharge/charge cycles can be expected.

Float Service Life

The expected service life is five years in float standby applications.

Separators

The use of the special separator material provides a very efficient insulation between plates preventing inter-plate short circuits and prohibiting the shedding of active materials.

Long shelf Life

The extremely low self discharge rate allows the battery to be stored for extended periods up to one year at normal ambient temperatures with no permanent loss of capacity.

Operating Temperature Range

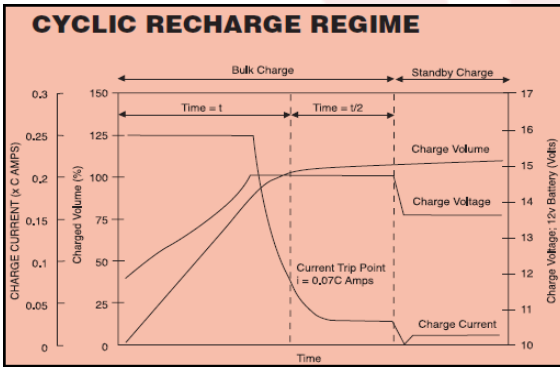
The batteries can be used over a broad temperature range permitting considerable flexibility in system design and location.

Charge – 15°C to 50°C

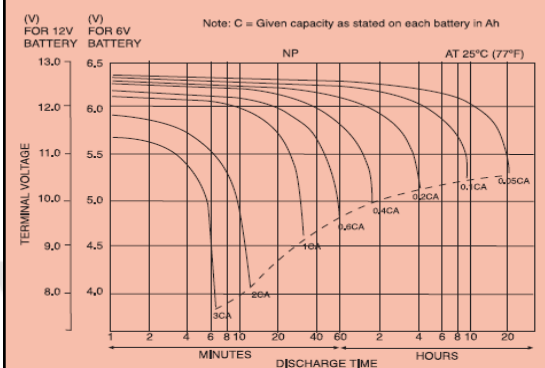
Discharge – 20°C to 60°C

Storage – 20°C to 50°C (fully charged battery)

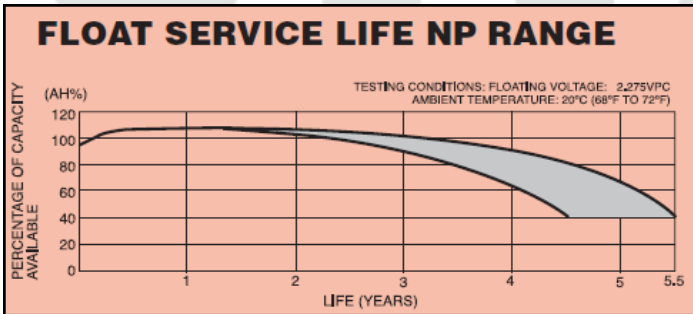
CYCLIC RECHARGE REGIME



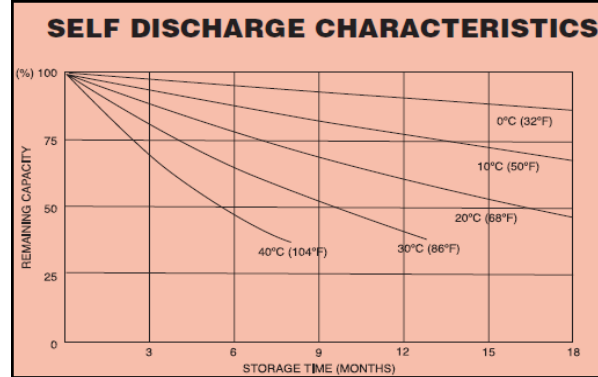
NP DISCHARGE CHARACTERISTICS CURVES AT 25°C (77°F)



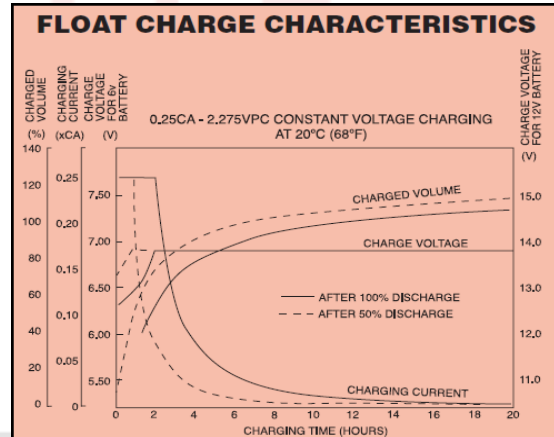
FLOAT SERVICE LIFE NP RANGE



SELF DISCHARGE CHARACTERISTICS



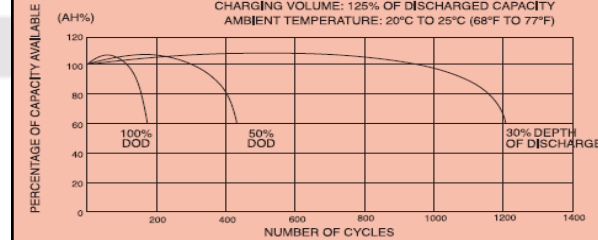
FLOAT CHARGE CHARACTERISTICS



TYPICAL DISCHARGE CHARACTERISTICS NP RANGE

CYCLE SERVICE LIFE IN RELATION TO DEPTH OF DISCHARGE

TESTING CONDITIONS: DISCHARGE CURRENT: 0.17C Amp. (E.V. 1.7V/CELL)
CHARGING CURRENT: 0.09C Amp.
CHARGING VOLUME: 125% OF DISCHARGED CAPACITY
AMBIENT TEMPERATURE: 20°C TO 25°C (68°F TO 77°F)



Yuasa Battery Inc.
2901 Montrose Ave
Laureldale, PA 19605
www.yuasabatteries.com

Registered number 1548820

Cat. No. NP7-12 January 08

Distributed by



NP SERIES - NP7-12

Reliability is your Security

Utilizing the latest advance design Oxygen Recombination Technology, Yuasa have applied their 80 years of experience in the lead acid battery field to produce the optimum design of Sealed Lead Acid batteries.

FEATURES

- Superb recovery from deep discharge.
- Electrolyte suspension system.
- Gas Recombination.
- Multipurpose: Float or Cyclic use.
- Usable in any orientation
- Superior energy density.
- Lead calcium grids for extended life.
- Manufactured World wide.
- Application specific designs.

Technical Features

Sealed Construction

Yuasa's unique construction and sealing technique ensures no electrolyte leakage from case or terminals.

Electrolyte Suspension System

All NP batteries utilize Yuasa's unique electrolyte suspension system incorporating a microfine glass mat to retain the maximum amount of electrolyte in the cells. The electrolyte is retained in the separator material and there is no free electrolyte to escape from the cells. No gels or other contaminants are added.

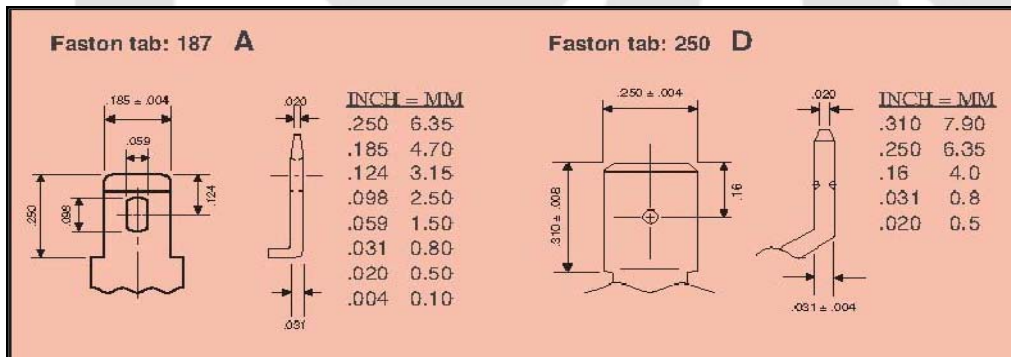
Control of Gas Generation

The design of Yuasa's NP batteries incorporates the very latest oxygen recombination technology to effectively control the generation of gas during normal use.

Low Maintenance Operation

Due to the perfectly sealed construction and the recombination of gasses within the cell, the battery is almost maintenance free.

Terminals



Terminals

NP batteries are manufactured using a range of terminals which vary in size and type. Please refer to details as shown.

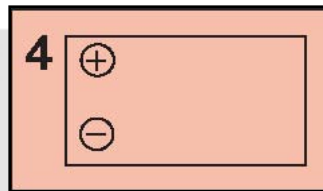
Operation in any Orientation

The combination of sealed construction and Yuasa's unique electrolyte suspension system allows operation in any orientation, with no loss of performance or fear of electrolyte leakage.

Valve Regulated Design

The batteries are equipped with a simple, safe low pressure venting system which releases excess gas and automatically reseals should there be a build up of gas within the battery due to severe overcharge. Note. On no account should the battery be charged in a sealed container.

Layout



General Specifications

Nominal Capacity (Ah)	NP7-12
20hr to 1 .75vpc 30°C	7
1 0hr to 1 .75vpc 20°C	6.4
5hr to 1.70vpc 20°C	5.9
1 hr to 1 .60vpc 20°C	4.2
Voltage	12
Energy Density (Wh.L.20hr)	91
Specific Energy (Wh.kg.20hr)	32
Int. Resistance (m.Ohms)	25
Maximum discharge (A)	40/75
Short Circuit current (A)	210
Dimensions (mm)	
Length	151
Width	65
Height overall	97.5
Weight (Kg)	2.65
Terminal	A/D
Layout	4
Terminal Torque Nm	-

NP SERIES - NP7-12

Lead Calcium Grids

The heavy duty lead calcium alloy grids provide an extra margin of performance and life in both cyclic and float applications and give unparalleled recovery from deep discharge.

Long Cycle Service Life

Depending upon the average depth of discharge, over a thousand discharge/charge cycles can be expected.

Float Service Life

The expected service life is five years in float standby applications.

Separators

The use of the special separator material provides a very efficient insulation between plates preventing inter-plate short circuits and prohibiting the shedding of active materials.

Long shelf Life

The extremely low self discharge rate allows the battery to be stored for extended periods up to one year at normal ambient temperatures with no permanent loss of capacity.

Operating Temperature Range

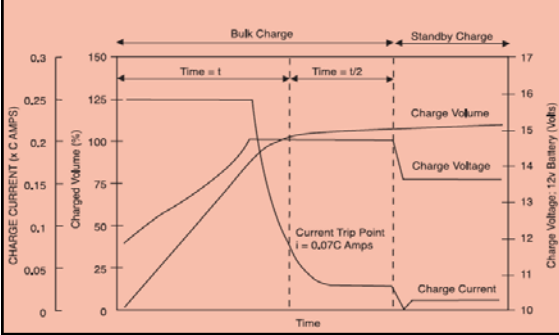
The batteries can be used over a broad temperature range permitting considerable flexibility in system design and location.

Charge – 15°C to 50°C

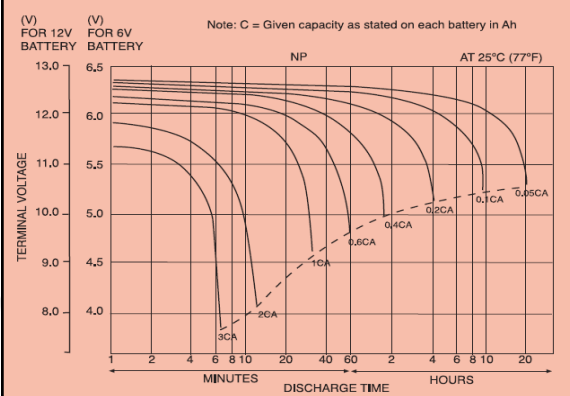
Discharge – 20°C to 60°C

Storage – 20°C to 50°C (fully charged battery)

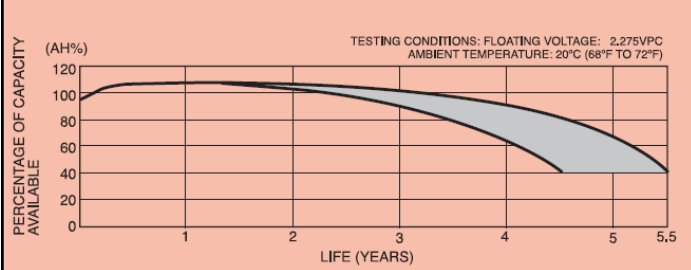
CYCLIC RECHARGE REGIME



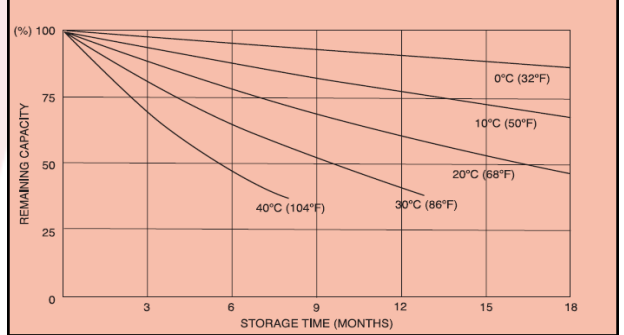
NP DISCHARGE CHARACTERISTICS CURVES AT 25°C (77°F)



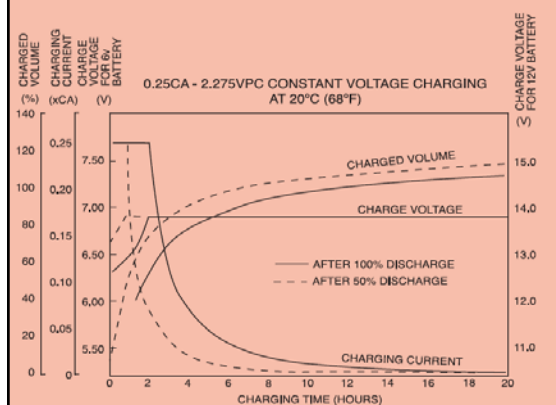
FLOAT SERVICE LIFE NP RANGE



SELF DISCHARGE CHARACTERISTICS



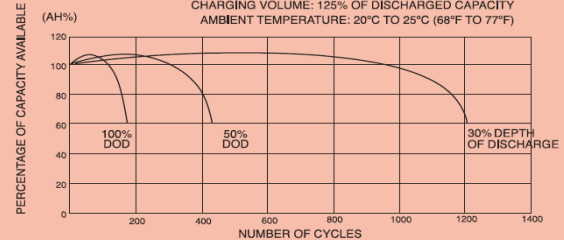
FLOAT CHARGE CHARACTERISTICS



TYPICAL DISCHARGE CHARACTERISTICS NP RANGE

CYCLE SERVICE LIFE IN RELATION TO DEPTH OF DISCHARGE

TESTING CONDITIONS: DISCHARGE CURRENT: 0.17C Amp. (F.V. 1.7V/CELL)
CHARGING CURRENT: 0.09C Amp.
CHARGING VOLUME: 125% OF DISCHARGED CAPACITY
AMBIENT TEMPERATURE: 20°C TO 25°C (68°F TO 77°F)



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Registered number 1548820

Cat. No. NP7-12 January 08

Distributed by



INSERT 3

Addressable Initiating/Control Devices & Accessories Data Sheets

MODEL 310 FIRE ALARM PULL STATION

Overview

The Model 310 Manual Fire Alarm Pull Station is a self contained addressable dual action lexan fire pull station with a built in transmitter. It is UL Listed 38 and complies with ADA requirements of maximum pull force.

In addition to the supervisory features such as low battery and tamper, the Model 310 also meets the 200 second polling requirement. The Model 310 Manual Fire Alarm Pull Station utilizes Frequency Hopping Spread Spectrum (FHSS) signaling technology and provides bi-directional system communication to assure a secure and reliable communication network.

Both attractive and cost effective, the Model 310 incorporates a built in transmitter and is ideal for any application.



Specifications

- **Battery Type:** 3 Volt Lithium Duracell DL123A or Panasonic CR123A
- **Battery Life:** 12 Months Minimum
- **Battery Replacement:** Upon Low Battery Report and/or During Annual Maintenance
- **Testing:** Follow the 310 CWSI Manual and NFPA 72 or Local Requirements
- **Transmission:** Complies to FCC Part 15
- **Test Transmission:** 200 Second Supervisory Polling
- **Panel Compatibility:** With CWSI Control Panel, refer to Product Manual

Height 5.5" // Width 4.12" // Depth 2.8" // Weight 10 oz.

Features

- **UL 38**
- ADA Compliant
- Highly Visible
- Key Reset
- Operates on Single 3 Volt Lithium Battery
- Fully Supervised
- 900 MHz Band FHSS Transmission Format



MODELS 301/302

WIRELESS SMOKE DETECTORS

Overview

The Models 301/302 are state-of-the-art wireless addressable photoelectric smoke detectors, which incorporate a unique protocol not produced by other manufacturers. The Model 301 provides an internal 75dB temporal horn for smoke detector applications, requiring signal point audibility and annunciation. It also offers tandem activation of multiple detectors making this product the first commercially listed wireless smoke detector to offer this feature. The Model 302 is a no-sounder smoke detector for use in common areas. In addition to the performance features, the Models 301/302 are supervised for low battery, tamper and 200 second polling. They also provide for the first bi-directional communication between the transmitter and smoke detector, allowing for hardware fault supervision of the detector itself.

The Models 301/302 utilize Frequency Hopping Spread Spectrum (FHSS) signaling technology, assuring the most secure and reliable network.

Cost effective and easy to install, the low profile Models 301/302 incorporate built in transmitters and sounders. Both comply with UL Listed 864 Accessory Device, may be used in commercial and residential applications, and are also listed for open area protection. The Model 301 tandem smoke detector is typically used for high-rise residential and hotel applications.



Specifications

- **Model 301** – 75dB Tandem Operation with Temporal Code 3 Sounder
- **Model 302** – Non-audible
- **Battery Type:** 3 Volt Lithium Duracell DL123A
- **Battery Life:** 12 Months Minimum
- **Battery Replacement:** Upon Low Battery Report and/or During Annual Maintenance
- **Tamper Switch:** On Base
- **Sounder:** 75dB at 10' Temporal Pattern
- **Reset:** Automatic
- **Sensitivity:** 2.0% Nominal
- **Testing:** Follow the 301/302 CWSI Manual and NFPA 72 or Local Requirements
- **Transmission:** Complies with FCC Part 15
- **Test Transmission:** 200 Second Supervisory Polling
- **Compatibility:** With CWSI Control Panel, refer to Product Manual

Mounting base diameter 5.30" // Weight 6.4 oz.

Features

- **UL Listed 268**
- **Tandem Operation**
- Automatic Drift Compensation
- Hardware Fault Supervision
- Precise Field Sensitivity Diagnostics
- Pre-Alarm Maintenance Signal
- Pre-Low Battery Signal 48 Hour Prior to Horn Chirp
- Field Replaceable Chamber
- Operates on Single 3 Volt Lithium Battery
- Temporal Code 3 Sounder
- Low Profile
- 900 MHz Band FHSS Transmission Format



MODEL 350
WIRELESS CO DETECTOR

Overview

The Model 350 Wireless CO Detector is a state-of-the-art wireless addressable Carbon Monoxide Detector which provides an internal 85dB temporal horn for CO detector applications, requiring signal point audibility and annunciation. The 350 is supervised for low battery, tamper, cell health, cell end of life and meets 200 second supervisory polling requirements.

The Model 350 utilizes Frequency Hopping Spread Spectrum (FHSS) signaling technology, assuring the most secure and reliable network.

Both cost effective and easy to install, the low profile Model 350 incorporates a built in transmitter and sounder which complies with UL 2075.



Specifications

- **Battery Type:** 3 Volt Lithium Panasonic CR123A
- **Battery Life:** 12 Months Minimum
- **Battery Replacement:** Upon Low Battery Report and/or During Annual Maintenance
- **Tamper Switch:** On Base
- **Sounder:** 85dB at 10 feet Temporal 4 Pattern
- **Reset:** Automatic
- **Testing:** Follow the CWSI 350 Manual and NFPA 720 or Local Requirements
- **Transmission:** Complies with FCC Part 15
- **Test Transmission:** 200 Second Supervisory Polling
- **Panel Compatibility:** With CWSI Control Panel, refer to Product Manual

Mounting base diameter 5.30" // Weight 7.4 oz.

Features

- **UL Listed 2075**
- Operates on a Single 3 Volt Lithium Panasonic Battery
- Pre-Low Battery Signal 7 Days Prior to Horn Chirp
- Temporal 4 Sound Pattern
- 900 MHz Band FHSS Transmission Format
- Electrochemical CO Sensing Element
- CO Cell Supervised for Health and End of Life
- Test/Hush Switch
- Low Profile





Smoke/Heat Detector with Transmitter Model 325/320

Description:

The Model 325 is a self-contained photoelectric type smoke detector with an integral transmitter, heat detector, and sounder for open area detection. The model 320 is a heat detector only with a transmitter. The detector complies with UL268 and UL521. The detector is fully supervised for tamper, low batteries, chamber contamination, low temperature and RF signal integrity. The smoke detector is powered by 3 AAA batteries as listed under the specifications section of this manual and the label on the product. The Model 325/320 is intended to be used with a compatible CWSI Fire Alarm Control Panel. Refer to the FACP installation instructions for additional details.

IMPORTANT: Detectors must be tested and maintained regularly following NFPA 72 requirements. At a minimum, cleaning should be performed annually.

Programming:

The 325/320 must be enrolled into the Fire Alarm Control Panel before installing the device.

The Model 325/320 will not report Alarms, Supervisory or trouble signals unless it is enrolled into the control panel. The detector can be enrolled at the control panel or any enrolled repeater. Place the FACP in enrollment mode then install the batteries in the detector observing polarity. The model 325/320 serial number will be displayed on the FACP. Refer to the control panel installation instructions for further details on enrollment and

transmitter programming options. After the model 325/320 is enrolled, remove the batteries and reinstall them only at the transmitters intended mounting location.

Installation:

Select an accessible location that is not prone to tampering or accidental damage. **The Model 325/320 must be installed and maintained in accordance with the National Fire Protection Association's Standards (NFPA), the National Electrical Code and all local fire and electrical requirements.** The mounting surface should be relatively flat and capable of accepting screws or anchors. The smoke detector is to be installed in an indoor dry location. Exposure to weather or corrosive conditions may damage the unit. Smoke detectors are not to be used with detector guards unless the combination has been evaluated and found suitable for that purpose. **Perform the signal test described in this manual prior to and after permanently mounting the unit.** Note: If the detector is mounted to a removable ceiling tile, the tile must be secured with the appropriate fasteners to prevent tile removal or mount the detector across a ceiling panel support as shown in figure 1. First install the mounting bracket using the screws supplied. Install the batteries in the battery holders. The polarity is marked on each holder. Attach the detector to the bracket

by turning the detector in a clockwise direction until it clicks into place, then perform the signal test and fully test the unit for alarm as described in **Alarm Testing**.

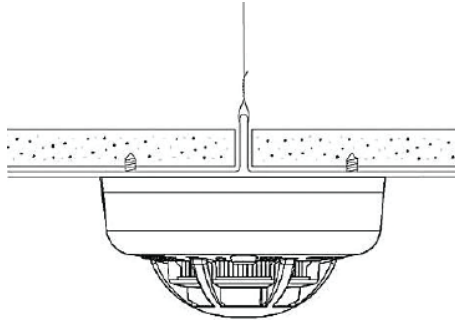


Figure 1 Proper Mounting to Ceiling Tile

Tamper-Resistant Feature

The smoke detector includes a tamper-resistant feature that prevents removal from the mounting base without the use of a tool. To engage the tamper-resistant feature, cut the small plastic tab located on the mounting base (Figure 2), and then install the detector. To remove the detector from the base once it has been made tamper resistant, insert a small screwdriver in hole located near the alignment mark, and turn the detector counterclockwise.

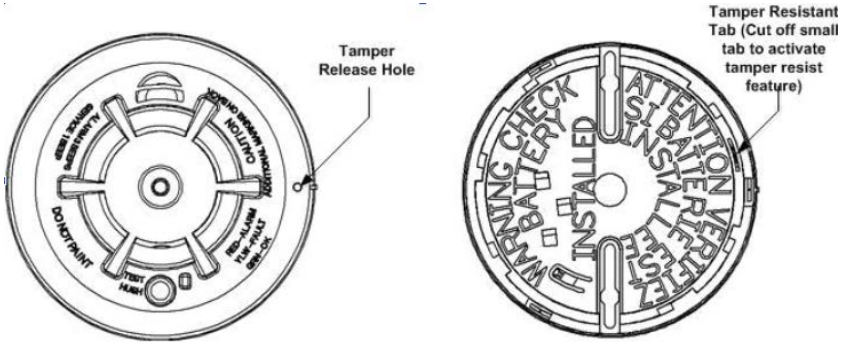


Figure 2 Tamper Resistant Feature

Cautions:

1. Make sure the batteries are firmly installed in the smoke detector battery holders.
2. The unit must be secured tightly to the wall, so as to not be dislodged.
3. Test the unit after any service, changing the batteries or as often as local or national codes dictate.

Do NOT Install Detectors in the Following Areas:

- In or near areas where particles of combustion are normally present such as kitchens; in garages; near furnaces, hot water heaters, or gas space heaters.
- In very cold or very hot areas.
- In wet or excessively humid areas, or next to bathrooms with showers.
- In dusty, dirty, or insect-infested areas.
- Near fresh air inlets or returns or excessively drafty areas.

Consult NFPA 72, the local Authority Having Jurisdiction (AHJ), and/or applicable codes for specific information regarding the spacing and placement of smoke detectors. Refer to technical bulletin part number IM-300-TB-RevB for more information.

Operation:

LED status indicators and Sounder

The 325/320 detector is equipped with a tricolored LED status indicator and a sounder to provide local visual and audible indication of the detector's status. The table below explains the LED and sounder functions.

LED Status and Sounder Operation

Condition	LEDs	Sounder Transmitted Signal to FACP
Power up	Red, yellow, green flash sequence	Sequence One chirp at the end of power-up
Standby	Off	Power Up Reset
Off Test	Off	90s
Detector Trouble	Yellow flash every 4 seconds	Off
Hardware Fault	Low Batteries	Off
Low Batteries	Yellow flash every 12 seconds	Off
Low Battery Trouble	Tamper	Off
Tamper	Red, yellow, green flash sequence every 12 seconds	Off
Trouble	Smoke Alarm	Off
Smoke Alarm	(325 Only) Red flash every 1 second	ANSI S3.41 temporal 3 (press button to hush for 5-10 minutes)
Alarm	Smoke Test	Off
Smoke Test	(325 Only) Red flash every 1 second	ANSI S3.41 temporal 3 (press button to hush for 5-10 minutes)
Alarm	Test Alarm	Off
Test Alarm	(325 Only) Red flash every 1 second	ANSI S3.41 temporal 3
Heat	Alarm/Test	None
Alarm/Test	(325 Only) Red flash every 1 second	ANSI S3.41 temporal 3
Alarm	Freeze Warning*	Alarm
Freeze Warning*	(325 Only) 3 yellow flashes every 4 seconds	Off
Freeze Trouble	Detector	Off

Dirty

(325 Only)

Yellow flash every 8

seconds Off Maintenance

Trouble

Heat

Alarm/Test

(320 Only)

Red flash every 1

second Off Alarm

Table 1

*Model 320 LED flashes locally during a freeze event, it **does not** transmit a Freeze Trouble signal to the panel. Only Model 325 does this.

Alarm Operation:

When the detector senses smoke (325) or heat (325/320) the Red LED flashes once a second, the internal sounder turns on in the temporal pattern (325 Only) and the following occurs:

1. An initial alarm signal is transmitted.
2. A 60 second delay occurs. If during this delay the alarm condition is reset, a restore signal is sent ending the alarm cycle.
3. The continued alarm condition causes a repeat alarm transmission.
4. Another 60 second delay as in step 2 occurs.
5. Step 4 repeats at 60 second intervals until reset.

Alarm Testing

Detectors must be tested after installation and following maintenance or batteries replacement. **NOTE: Before testing, notify the proper authorities that maintenance is being performed and the system will be temporarily out of service.** Place the control panel in test to prevent any unwanted alarms (refer to the FACP manual). Perform tests A and B and C below to properly test the 325 detector. Perform test C only for the 320 detector.

If a detector fails any of the tests below, it should be cleaned as outlined in the Maintenance section. If the detector still fails, it should be replaced.

A. Test Switch

Note: This test will only function if the detector is operating within its proper sensitivity limits and is not in a low battery condition. The purpose of this test is to check the functionality of the circuitry. It **will not** cause an alarm signal to be transmitted.

1. The test button is located on the detector housing. (Figure 3)
2. Push and hold the test button for a minimum of 5 seconds.
3. If the detector is within the listed sensitivity limits, the following will occur:
 - a. The Red LED will flash
 - b. The sounder activates with the temporal pattern.
4. Perform step B below.

B. Smoke Entry Test

Note: This test **will** cause an alarm signal to be transmitted. Wait at least two minutes after power up before performing this test.

1. Hold a smoldering punk stick or cotton wick at the side of the detector and gently blow smoke through the detector until the unit alarms. Canned aerosol is also an acceptable method
2. Verify the alarm signal was received at the control panel.

Also acceptable is use of the UL Listed Trutest™ detector sensitivity tester. Below is the maximum/minimum that the Trutest™ device should consider acceptable in the field.

Maximum: 2.78% / foot

Minimum: 5.08% / foot

C. Direct Heat Test

1. Using a hair dryer or heat gun, direct the heat toward the thermistor, holding the heat source 12 inches away to avoid damage to the plastic housing.
2. The LED on the detector will flash and an alarm signal will be sent to the panel when temperature reaches the alarm set point. (135° F)

If all tests pass, remove the panel from test mode (Refer to the FACP manual) and notify the proper authorities when the system is back in service.

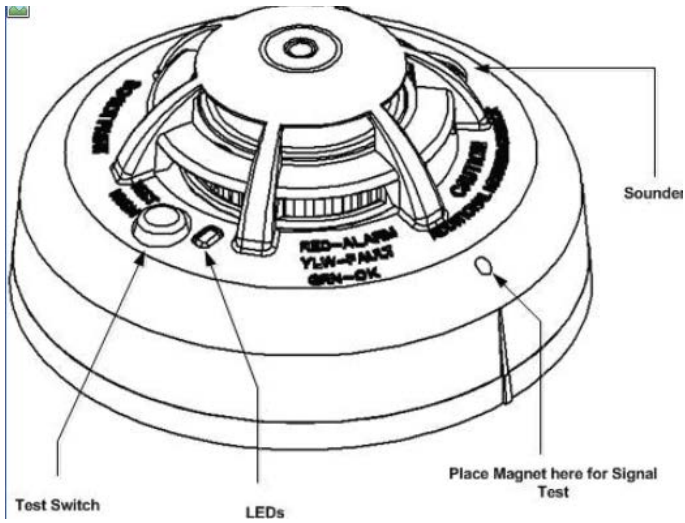


Figure 3 LEDS, Sounder, Test Switch and Signal Test Locations

Signal Test:

The test must be performed while the smoke detector is held in its intended mounting location. Install batteries in the smoke detector. Initiate the test by placing a strong magnet on the smoke detector housing at the location shown in figure 3. The model 325/320 piezo sounder will beep once. A delay of up to 15 seconds will occur followed by either one or two beeps. One beep indicates an unacceptable location and two beeps indicate an acceptable location. If only one beep is heard then relocate the model 325/320 mounting position closer to the nearest repeater or control panel and perform the test again. Continue this procedure until 2 beeps are achieved. Do not mount the smoke detector unless 2 beeps are heard when performing 5 consecutive signal tests. This test **must** be performed before and after transmitter installation. Note: A CWSI model AR-5 repeater or CP-3500D Control Panel must be powered up, installed and enrolled before running this test.

Test Switch Functions (325 Only):

This switch has multiple functions and is located on the detector housing as shown in figure 3. To activate the switch, push and hold for 5 seconds. Pressing this switch will not cause an alarm at the control panel.

The functions of the Test Switch are:

1. Test the functionality of the detectors circuitry when pressed while the detector is in standby.
2. Silence the detector sounder for 5-10 minutes if pressed anytime while the sounder is turned on in the temporal pattern.

Low batteries:

The Wireless Smoke Heat Alarm is powered by 3 AAA Duracell Procell or 3 AAA Energizer E92 batteries (included). The detector regularly checks for low batteries. If low batteries are detected, the transmitter sends a low battery message to the control panel, which displays the detector's ID. In addition, the yellow LED of the detector will blink every 12 seconds. Be sure to replace all of the batteries with fresh ones.

Batteries Installation and Replacement:

Warning: Always install three new batteries of one of the approved types as listed in the Specifications section of this manual and the product label. When batteries are first inserted, a low battery test is performed. If the batteries pass the test, the LED's should indicate the power up sequence. If the power up sequence is not indicated replace the batteries. If the issue still exists replace the detector.

To replace the batteries:

1. Place the Control Panel in Test mode to prevent any unwanted alarms. (Refer to the FACP manual)
2. Remove the detector from its mounting base by twisting the detector counterclockwise. Remove the batteries and dispose of properly. If the Tamper Resistant feature was implemented during installation then follow the instructions under that section for removing the detector.
3. To insure proper power down sequence, wait a minimum of 20 seconds before installing new batteries.
4. Install 3 new AAA batteries of a type listed in the specifications section of this manual in the batteries compartment following the polarity diagram inside the compartment. A power up reset trouble signal should be indicated on the Control Panel within 60 seconds of installing the new batteries on an enrolled detector. A tamper trouble will also be indicated if the smoke alarm is not attached to the base.
5. Reinstall the smoke detector onto the mounting base by turning the detector clockwise.
6. The LEDs should indicate Power up and then Normal Standby conditions as shown in the LED status and sounder table.
7. Test the detector for alarm operation described in the **Alarm Testing** section of this manual.
8. If the detector does not function as described in items 6+7 then start over at step 2. If it still doesn't operate correctly then replace the entire unit.
9. Remove the panel from test mode. (Refer to the FACP manual)

Tamper:

The Model 325/320 contains a built in contact that will cause a tamper signal to be transmitted if the detector is removed from its mounting position. Upon detector removal, a tamper signal is transmitted and repeated every 90 seconds until the detector is mounted on its base.

Power Up Reset:

The Model 325/320 will report this trouble when first powered up. This is normal. If a power up reset occurs any time after the initial indication then the transmitter is malfunctioning. Replace the unit.

Test Failure:

The Model 325/320 transmits a periodic test signal to the FACP. This trouble condition will be displayed within 200 seconds on the control panel if it does not receive the test transmission.

The detector may be out of reception range of a repeater or Control Panel, or the detector itself may have an internal problem. Perform the signal test described in this manual to determine if there is a reception problem.

Hardware Fault:

The Model 325/320 monitors the integrity of the internal electronics. A Hardware Fault trouble will be displayed on the FACP if there is a failure with the internal circuitry or memory. If this occurs replace the detector.

Maintenance / Fault:

The Model 325/320 contain circuitry that allows the detector to automatically adjust its sensitivity back to proper limits when it becomes more sensitive due to contaminants settling in its chamber. If the sensitivity has shifted outside the listed limits a maintenance required signal will be sent and repeated every 90 seconds until the condition is corrected. Perform maintenance on the detector as described in this manual. If the problem persists, replace the detector.

Maintenance

Perform maintenance yearly or whenever a Maintenance Req. Trouble signal is indicated.

NOTE: Before performing maintenance on the detector, notify the proper authorities that maintenance is being performed and the system will be temporarily out of service. Place the control panel in test mode to prevent any unwanted alarms. (Refer to the FACP manual)

1. Place the Control Panel in Test mode to prevent any unwanted alarms. (Refer to the FACP manual)
2. Remove the detector by turning counterclockwise.
3. Vacuum through the openings around the perimeter of the alarm or use canned air to remove any dust or debris. The outside of the alarm can be wiped with a damp cloth.
4. Reinstall the detector onto the mounting base by turning the detector clockwise.
5. Test the detector for alarm operation as described in the **Alarm Testing** section of this manual.
6. If the detector does not function as described in item 5 then start over at step 2. If it still doesn't operate correctly then replace the entire unit.
7. Remove the panel from test mode. (Refer to the FACP manual)

Specifications:

- Batteries Type: Three (3) AAA PC2400 Duracell Procell or three (3) AAA Energizer E92 batteries
- Batteries Life: 12 Months Minimum
- Batteries Replacement: Upon Low batteries report and/or during annual maintenance.
- Average Standby Current: 35uA
- Average Alarm Current: 35mA
- Max Current: 50mA
- Tamper Switch: On base
- Sounder: 85db at 10' temporal pattern.
- Reset: Automatic
- Sensitivity: 1.26 – 2.68%/foot
- Supplementary heat rating: 135°F
- Operating Temperature Range: 40°F to +100°F.
- Operating Humidity Range 15 to 95% RH.
- Testing: Follow this manual and NFPA 72 or local requirements.
- Transmission: In compliance with FCC part 15 for reception on equipment manufactured by Tyco Fire & Security GmbH.
- Test Transmission: Every 90 seconds.
- Mounting base diameter 5"
- Weight (including batteries) 8.57 oz.

FCC Statement

Important: Any changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment. This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

Disclaimer

The information contained in this document is believed to be accurate and reliable at the time of printing. Known corrections or omissions may be found on errata sheets included in the various product manuals. However, CWSI a Tyco Fire & Security GmbH Company (CWSI), may not be held accountable for errors or omissions in this or other CWSI publications. No license is granted by implication or otherwise under any patent rights of CWSI. Applicable terms and conditions can be found at http://tycofsbp.com/TFPPTerms_of_Sale/TFPPTerms_of_Sale.pdf

MODEL 345/345TS

FIRE TRANSMITTERS

Overview

The Model 345/345TS Fire Transmitters are addressable transmitters (monitoring modules) designed specifically for connection to initiating devices, sprinkler flow and supervisory switches, and other UL miscellaneous accessories with normally open contacts. The Model 345/345TS Fire Transmitters are UL Listed 864 Accessory Devices.

In addition to the supervisory features such as low battery, tamper, and end of line violation, the Models 345/345TS offer the option of either Style 1 or Style 2 wiring configuration. Jumper selection enables it to either transmit a Trouble or Alarm signal on Contact Closure. When monitoring a trouble on a third party panel it will now be displayed as a Trouble instead of Supervisory.

The Models 345/345TS Fire Transmitters utilize Frequency Hopping Spread Spectrum (FHSS) signaling technology and provide bi-directional system communication to assure a secure and reliable network.

Both easy to install and cost effective, the low profile Model 345 incorporates a built in transmitter and is ideal for applications such as monitoring of flow and tamper switches, connection to existing hardwired panel outputs, PIV monitoring, and a host of other connections utilizing minimal wiring from the desired connection to the transmitter.

The 345TS is available for installations requiring horizontal mounting.



Specifications

- **Battery Type:** 3 Volt Lithium Duracell DL123A or Panasonic CR123A
- **Battery Life:** 12 Months Minimum
- **Battery Replacement:** Upon Low Battery Report and/or During Annual Maintenance
- **Testing:** Follow the 345/345TS CWSI Manual and NFPA 72 or Local Requirements
- **Low Battery:** 2.70 Volts Nominal
- **Initial Loop Rating:** 3Vdc, 1ma
- **Transmission:** Complies to FCC Part 15
- **Test Transmission:** 200 Second Supervisory Polling
- **Compatibility:** With CWSI Control Panel, refer to Product Manual

Height 4.75" // Width 2.55" // Depth 1.58" // Weight 6.4 oz

Features

- **UL Listed 864 Accessory Device**
- Selectable Style 1 or Style 2 Wiring
- Bi-Directional RF Communication
- Operates on a single 3V Lithium Battery
- Fully Supervised
- 900 MHz Band FHSS Transmission Format
- Remote Reset



INSERT 4

Notification Appliances & Accessories Data Sheets

Commander³ Series Selectable Candela Evacuation Signals

Applications

The Commander³ Series is a low profile strobe and horn/strobe combination that offers dependable audible and visual alarms and the absolute lowest current available.

The GE3 Series 24VDC offers tamperproof field selectable candela options of 15, 30, 60, 75, and 110 candela. The 12VDC offers tamperproof field selectable candela options of 15, 30, 60, and 75 candela.

The Commander³ Series horn offers a continuous or synchable temporal three in 2400Hz and mechanical tone, a chime and whoop tone. All tones are easy for the professional to change in the field by the use of switches.

The GE3 Series has a minimal operating current and has a minimum flash rate of 1Hz regardless of input voltage.

The Commander³ Series is shipped with a standard 4" metal mounting plate which incorporates the popular Super-Slide[®] feature that allows the installer to easily test for supervision. The product also features a locking mechanism which secures the product to the bracket without any screws showing.

The Commander³ also features the patented Checkmate[®] - Instant Voltage Verification feature which allows the installer to check the voltage drop draw and match it to the blueprint.

The GE3 Series appliances are ANSI/UL 464 and ANSI/UL 1971, listed for use with fire protective systems and are warranted for three years from date of purchase.

Standard Features

- Nominal voltage 12VDC and 24VDC
- 24VDC units have field selectable candela options of 15, 30, 60, 75 & 110
- 12VDC units have field selectable candela options of 15, 30, 60 & 75
- GEH horn is available in 12VDC or 24VDC
- Unit Dimensions: 5" (12.7 cm) high x 4.5" (11.43 cm) wide x 2.5" (6.35 cm) deep
- Super-Slide[®] Bracket - Ease of Supervision Testing
- Checkmate[®] - Instant Voltage Verification
- Synchronize strobe and/or horn with Gentex AVSM Control Module
- Prewire entire system, install mounting bracket, then install signals
- Documented lower installation and operating costs
- Input terminals accept 12 to 18 AWG
- Switch selection for high or low dBA
- Switch for chime, whoop, mechanical and 2400Hz tone
- Tamperproof re-entrant style grill
- Switch for continuous or temporal 3 tone (not available on whoop tone)
- Surface mount with the GSB (Gentex Surface Mount Box)
- Silence audible while visual appliance will remain flashing (for use in accepted jurisdictions)
- Faceplate available in red or off-white

GEC3/GES3 12 & 24 VDC S E R I E S



Product Listings

SIGNALING



- ANSI/UL 464 & ANSI/UL 1971 Listed
- CSFM: 7135-0569:122 (GEC3-24 & GEH-24)
7125-0569:123 (GES3-24)
7125-0569:129 (GES3-12)
7135-0569:130 (GEC3-12 & GEH-12)
- MEA: 285-91-E (GEC3-24 & GES3-24)
580-06-E (GEC3-12 & GES3-12)

Patents

- 7,375,617 May 20, 2008

Product Compliance

- NFPA 72
- Americans with Disabilities Act (ADA)
- IBC/IFC/IRC
- Quality Management System is certified to: ISO 9001:2008



GEH 12VDC or 24VDC Low Profile Evacuation Horn

Model Number	Part Number	Nominal Voltage	Reverberant dBA at 10ft., per ANSI/UL 464	In Anechoic Room dBA at 10ft.
GEH12-R	904-1239-002	12VDC	62-82	100
GEH12-W	904-1241-002	12VDC	62-82	100
GEH24-R	904-1205-002	24VDC	62-82	100
GEH24-W	904-1207-002	24VDC	62-82	100

GES3 12VDC or 24VDC Selectable Candela, Low Profile Evacuation Strobe

Model Number	Part Number	Nominal Voltage	Candela (ANSI/UL 1971)
GES3-12WR	904-1235-002	12 VDC	15, 30, 60, 75
GES3-12WW	904-1237-002	12 VDC	15, 30, 60, 75
GES3-24WR	904-1321-002	24 VDC	15, 30, 60, 75, 110
GES3-24WW	904-1319-002	24 VDC	15, 30, 60, 75, 110

GEC3 12VDC or 24VDC Selectable Candela, Low Profile Evacuation Horn/Strobe

Model Number	Part Number	Nominal Voltage	Candela (ANSI/UL 1971)	Reverberant dBA at 10ft., per ANSI/UL 464	In Anechoic Room dBA at 10ft.
GEC3-12WR	904-1231-002	12 VDC	15, 30, 60, 75	62-82	100
GEC3-12WW	904-1233-002	12 VDC	15, 30, 60, 75	62-82	100
GEC3-24WR	904-1317-002	24 VDC	15, 30, 60, 75, 110	62-82	100
GEC3-24WW	904-1315-002	24 VDC	15, 30, 60, 75, 110	62-82	100

GE3 Product Strobe Current Ratings (mA)

	12 VDC (8-17.5 Volts)		24 VDC (16-33 Volts)	
	Candela	UL Max ¹	24VDC	UL Max ¹
15cd	106mA	92mA	30mA	42mA
30cd	131mA	141mA	35mA	58mA
60cd	186mA	260mA	66mA	97mA
75cd	237mA	312mA	80mA	116mA
110cd			103mA	161mA

Model Designations:

W = Wall mount

R = Red Faceplate W = White Faceplate

All units are available in plain (no lettering).

Plain units are non-returnable.

ALERT bezel available for order

AGENT bezel available for order

GE3-12 Product Horn Current Ratings

Horn Mode	Horn Decibel Levels		Regulated 12VDC Max. Operating @ High Setting (mA)
	Minimum SPL at 10ft., per ANSI/UL 464 (HIGH)	Minimum SPL at 10ft., per ANSI/UL 464 (LOW)	
Temp 3 2400Hz	76 dBA	69* dBA	29mA
Temp 3 Mechanical	75 dBA	68* dBA	26mA
Temp 3 Chime	62* dBA	60* dBA	13mA
Continuous 2400Hz	79 dBA	74* dBA	29mA
Continuous Mechanical	78 dBA	72* dBA	26mA
Continuous Chime	63* dBA	61* dBA	13mA
Whoop	78 dBA	71* dBA	55mA

GE3-24 Product Horn Current Ratings

Horn Mode	Horn Decibel Levels		Regulated 24VDC Max. Operating @ High Setting (mA)
	Minimum SPL at 10ft., per ANSI/UL 464 (HIGH)	Minimum SPL at 10ft., per ANSI/UL 464 (LOW)	
Temp 3 2400Hz	78 dBA	71* dBA	28mA
Temp 3 Mechanical	76 dBA	70* dBA	25mA
Temp 3 Chime	70* dBA	66* dBA	15mA
Continuous 2400Hz	81 dBA	74* dBA	28mA
Continuous Mechanical	80 dBA	72* dBA	25mA
Continuous Chime	70* dBA	66* dBA	15mA
Whoop	82 dBA	69* dBA	56mA

NOTES:

- Operating temperature: 32° to 120°F (0° to 49°C). The GEC3 and GES3 Series is **not** listed for outdoor use.
- For nominal and peak current across ANSI/UL regulated voltage range for filtered DC power and unfiltered (FWR [Full Wave Rectified]) power, see installation manual. 12VDC models are DC only.
- Gentex does not recommend using a coded or pulsing signaling circuit with any of our strobe products (see Technical Bulletin Number 014).**
- The sound output for the temporal 3 tone is rated lower since the time the horn is off is averaged into the sound output rating. While the horn is producing a tone in the temporal 3 mode its sound pressure is the same as the continuous mode.
- * Operating the horn in this mode at this voltage will result in not meeting the minimum ANSI/UL 464 reverberant sound level required for public mode fire protection service. These settings are acceptable only for private mode fire alarm use. Use the high dBA setting for public mode application (not applicable when using the chime tone. The chime tone is always private mode).

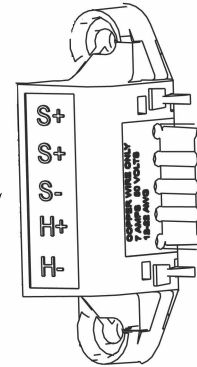
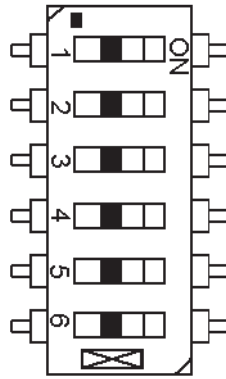
¹ RMS current ratings are per ANSI/UL average RMS method. ANSI/UL max current rating is the maximum RMS current within the listed voltage range (16-33VDC for 24VDC units) (8-17VDC for 12VDC units). For strobes the UL max current is usually at the minimum listed voltage (16VDC for 24VDC units) (8VDC for 12VDC units). For audibles the max current is usually at the maximum listed voltage. For unfiltered FWR ratings, see installation manual.

Tone Switch Locations

TONE	SWITCH POSITION		
	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

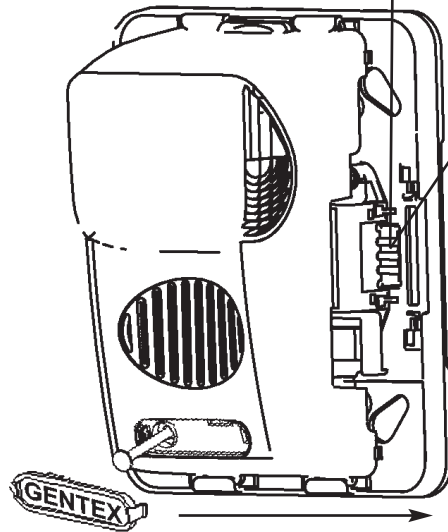
NOTE:

- 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.



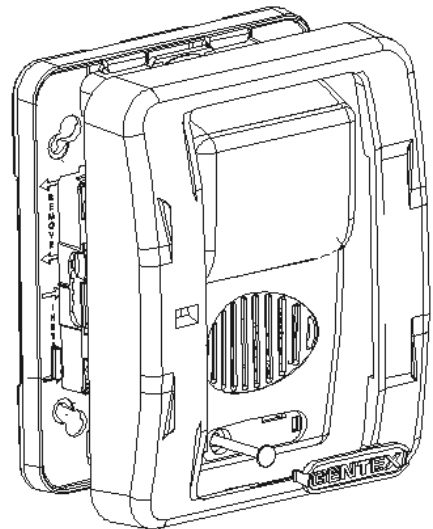
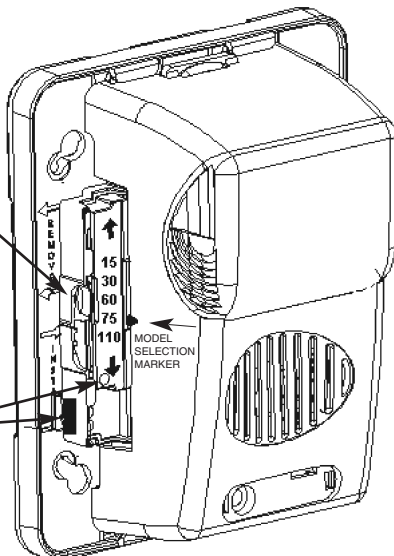
Gentex Checkmate® Instant Voltage Verification

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.

NOTE: Care should be taken to not short the test probes.

Candela selection slider switch. Depress center and slide switch to desire brightness level.

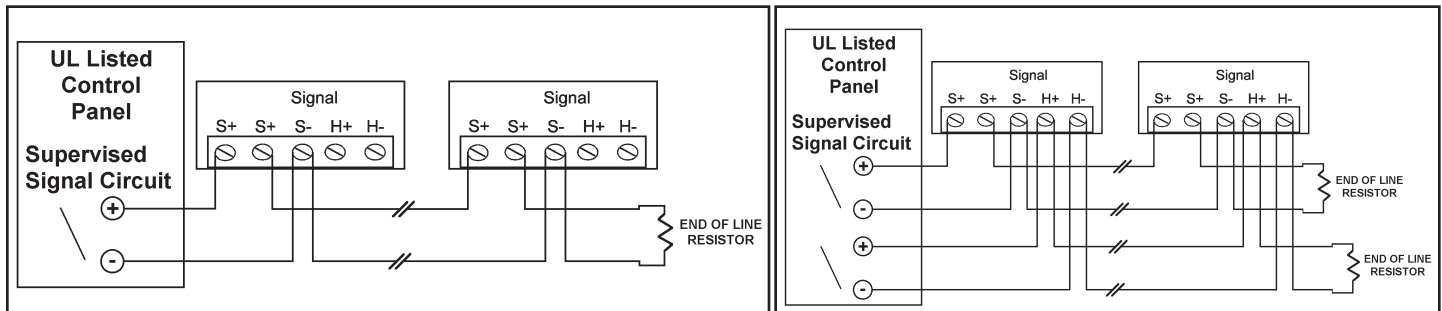
Break off pin and insert into hole at the bottom of the selector to lock candela setting. Signal must be removed from bracket and pin pushed forward from backside out of hole to change candela.



To remove bezel, grip both sides of bezel and pull in a downward and outward motion.

GEC3/GES3 12 & 24 VDC S E R I E S

Conventional Wiring Diagrams for Emergency Notification Evacuation Series



NOTES:

- All strobes are designed to flash as specified with continuous applied voltage. Strobes should not be used on coded or pulsing signaling circuits. However, use of the Gentex AVSM control module or Gentex synchronization protocol is permitted to synchronize the strobe, horn and/or mute the horn. See Technical Bulletin 014 for additional information.
- **FOR SYNCHRONIZATION WIRING INFORMATION, REFERENCE AVSM CONTROL MODULE DATA SHEET (551-0031) AND/OR AVSM CONTROL MODULE MANUAL (550-0284) FOR SYNCHRONIZATION MODULE WIRING DIAGRAMS. AVSM CONTROL MODULE DATA SHEET AND MANUAL CAN BE OBTAINED AT <http://www.gentex.com> OR CALL GENTEX CORPORATION AT 1-800-436-8391.**
- When synchronizing the GE3 12VDC Series, the Gentex AVSM control module or Gentex synchronization protocol **MUST** be used.

Architect & Engineering Specifications

The audible and/or visible signal shall be Gentex GEH, GES3, GEC3 Series or approved equal and shall be listed by Underwriters Laboratories, Inc. per ANSI/UL 1971 and/or ANSI/UL 464. The notification appliance shall also be listed with Factory Mutual Listing Service (FM) and the California State Fire Marshal (CSFM).

The notification appliance (combination audible/visible) shall produce a peak sound output of 100dBA or greater at 12VDC or 24VDC as measured in an anechoic chamber. The signaling appliance shall also have the capability to silence the audible signal while leaving the visible signal energized with the use of a single pair of power wires. Additionally, the user shall be able to select either continuous or temporal tone output with the temporal signal having the ability to be synchronized.

Unit shall be capable of being installed so that any unauthorized attempt to change the candela setting will result in a trouble signal at the fire alarm control panel.

The audible/visible and visible signaling appliance shall also maintain a minimum flash rate of 1Hz or up to 2Hz regardless of power input voltage. The strobe appliance shall have an operating current of 42mA or less at 24VDC for the 15Cd strobe circuit and 92mA or less at 12VDC for the 15Cd strobe circuit.

The appliance shall be polarized to allow for electrical supervision of the system wiring. The unit shall be provided with a mounting bracket with terminals and barriers for input/output wiring and be able to mount to a single gang or double gang box or double workbox without the use of an adapter plate. The unit shall have an input voltage range of 16-33 volts with either direct current or full wave rectified power for 24VDC models or a voltage range of 8-17.5 volts for 12VDC models.

The appliance shall be capable of testing supervision without disconnecting wires, verify voltage without removing unit and be capable of mounting to a surface back box.

24 units per carton
28 pounds per carton

GENTEX CORPORATION

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10985 Chicago Drive • Zeeland, Michigan 49464
616.392.7195 • 1.800.436.8391 • 616.392.4219 Fax

Gentex Corporation reserves the right to make changes to the product data sheet at their discretion.

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551-0050-06

Model 520 Low Frequency Sounder

Overview

The industry's FIRST Wireless Notification Solution, the Model 520, is completely battery operated and fully supervised. This product features Temporal 3 & Temporal 4 Notifications for smoke detector applications. The Model 520 provides extensive battery life and is the economical solution for applications requiring Low Frequency compliance such as:

- Hotels and Motels
- Colleges and Universities
- Condominiums and Apartments
- Military Barracks

A built in sounder test allows for accurate decibel level verification prior to installation. Synchronization can be achieved through interconnecting multiple units.

Specifications

- **Model 520** – Available in Red (520R) or White (520W)
- **Battery Type:** RF Battery 3.6 Vdc at 19Ah and Alarm Batteries (2) 3.6 Vdc at 13Ah
- **Battery Life:** 12 Months Minimum
- **Battery Replacement:** Upon Low Battery Report
- Tamper Tilt Switch
- **Sounder:** Minimum 75db at 10 Feet
- **Testing:** Follow the 520 CWSI Manual and NFPA 72 or Local Requirements
- **Transmission:** Complies with FCC Part 15
- **Test Transmission:** 200 Second Supervisory Polling
- **Compatibility:** With CWSI Control Panel, refer to Product Manual

Height 8.25" // Width 5.5" // Depth 2.5" // Weight 1.9lbs



Features

- Complies with NFPA 2010 - 2013 - 2016 Editions
- UL 464 Listed and CSFM Listed, NYFD Approval to Follow
- Temporal 3 & Temporal 4 Notification with Adjustable Level
- Fully Supervised
- Frequency Hopping Spread Spectrum (FHSS) Protocol



