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SILENT KNIGHT
by Honeywell

Emergency Communication System

Emergency Communication System

ECS-550

The ECS-550 is a multipurpose emergency voice evacuation panel that may be used for fire applications, mass notification applications or both. This state-of the-art ECS-550 is capable of producing 50 or 100 watts of audio power that can be distributed up to eight speaker circuits (i.e., zones). The ECS-550 comes standard with a single speaker zone output and a built in 25Vrms, 50 watt amplifier. A secondary 50 watt amplifier (ECS-BD50-25V/70V) can be added for backup purposes or for an additional 50 watts of audio power that will be allocated across available speaker zones. In addition, an optional ECS-CE6 module can be added to the ECS-550 to upgrade the system to include a maximum of eight speaker zone outputs. Other key messaging features include the ability to record up to fourteen field programmable messages (up to 60 seconds each) by using an integral microphone or from an external audio source.

Silent Knights fully supervised external data bus on the ECS-550 allows for the connection of up to eight control devices and eight distributed audio circuits that provide a maximum of up to 24 speaker circuits to meet the needs of even the largest and most complex installations. The ECS-550 is capable of supporting most retrofit applications by providing a speaker circuit output of 70.7Vrms with the addition of a built in amplifier converter (ECS-XRM-70V) or by adding a additional secondary 70.7VDC amplifier module (ECS-BD50-70V). Independent backup amplifier protection re-routes power to a backup amplifier in the event of a primary amplifier failure.

The ECS-550 offers the flexibility to be used as an adjunct (slave) to most UL listed FACPs or as standalone unit to provide fire protection and emergency voice evacuation. As an added benefit for fire alarm applications, an on-board, fully supervised Notification Appliance Circuit (NAC) provides 2.0 Amps of synchronized NAC power while supporting most synchronization protocols. In addition, the ECS-550 can be activated by a building's Private Branch Exchange (PBX) by using the integral Night Ring feature. To activate the ECS-550 remotely from any location, the ECS-RTZM option module provides secure access to the system via cell phone or other remote telephone.

Features

- UL Listed to UL2572 Communication and Control Units Mass Notification Systems (Pending).
- Up to 14 recorded messages.
- Modular design for maximum system flexibility and easy expansion.
- Removable terminal blocks for ease of servicing and module replacement.
- 50 watts of 25 V audio power (expandable to 100 watts) RMS.
- 2 amp Notification Appliance Circuit (NAC) output, sync generator, or follower for System Sensor, Wheelock, or Gentex protocols.
- Optional 70.7 V RMS conversion transformer available for the primary amplifier. (Note that speaker wiring continues to be supervised in standby, alarm and when background music is playing with this optional transformer installed).
- External Audio Input can be used for background music.
- Up to 60 second message duration for all messages.

Agency Listings



ECS-550

- Eight Command Input Circuits to activate messages 1 to 8:
  - CMD1 and CMD2 are field selectable to be activated from 12 or 24 VDC Notification Appliance Circuits (reverse polarity) or contact closures.
  - CMD3-CMD8 are activated by contact closures.
- Speaker Circuits
  - Single Style Y (Class B) or Style Z (Class A) speaker Circuit.
  - Two Style Y (Class B) or Style Z (Class A) speaker circuits (with optional ECS-BD50-25/70V Audio Amplifier installed).
  - Eight Style Y (Class B) or Style Z (Class A) speaker circuits (with optional ECS-BD50-25/70V and ECS-CE6 installed).
- Integral supervised microphone.
- Microphone time-out feature which reverts back to pre-recorded message if emergency page exceeds the programmed time.
- Standard, pre-recorded message: "May I have your attention please? May I have your attention please?" The signal you have just heard indicates a report of a fire in this building. Please proceed to the nearest exit and leave the building. Do not re-enter the building unless directed to do so by the proper authorities.

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Features (cont.)

- Field-selectable message and custom message recording capability using the local microphone, a USB port, or an external audio input.
- Integral tone generators field selectable for steady, slow whoop, high-low or chime tones.
- Powered by integral AC power supply or batteries during AC fail.
- Programmable delay of immediate, 2 hours or 6 hours reporting of AC Loss.
- Piezo sounder for local trouble.
- 100 event history log.
- Three Form-C relays:
  - AC Power Loss Relay - TB1
  - System Trouble Relay - TB2
  - Audio System Active - TB3
- 500mA (0.5A) Special Application (auxiliary power) output for addressable modules when interfaced with compatible addressable FACPs and End-of-Line power supervision relays.
- Integral Dress Panel.

Specifications

Electrical

PRIMARY (AC) POWER

ECS-550: 120 VAC, 50/60 Hz, 3.0 amps (HOT, NEU)

Wire size: minimum #14 AWG (2.00mm2) with 600 V insulation.

SECONDARY POWER (BATTERY) CHARGING CIRCUIT

- Supports lead-acid batteries only.
- Float charge voltage at 27.3V
- Maximum charge current: 1.0 Amp
- Maximum battery charge capability 26AH (ECC cabinet holds max. 18AH battery)
- Minimum Battery size:12 Amp Hour

AC LOSS RELAY CONTACT RATING

- 2.0 amps @ 30 VDC (resistive), 0.5 amps @ 30 VAC (resistive).

TROUBLE RELAY CONTACT RATING

- 2.0 amps @ 30 VDC (resistive), 0.5 amp @ 30 VAC (resistive).

AUDIO ACTIVE RELAY CONTACT RATING

- 2.0 amps @ 30 VDC (resistive), 0.5 amps @ 30 VAC (resistive).

NAC OUTPUT RATING - TB19, TERMINALS 1 (B+), 2 (A+), 3 (A-), & 4 (B-)

- One (1) Style Y (Class B) or Style Z (Class A) circuit
- Special Application power
- Power-limited circuitry, supervised
- Nominal operating voltage: 24 VDC
- Maximum signaling current for special application power: 2.0A
- Maximum signaling current for regulated power: 200mA
- Current limit: fuse-less, electronic, power-limited
- End-Of-Line Resistor: 4.7 KΩ, ½ watt, required for Style Y (Class B) operation

REMOTE SYNC - TB18, TERMINALS 3 (IN+), 4 (IN-), 1 (OUT+) & 2 (OUT-)

- Connections for FACP NAC synchronization trigger signal
- Output terminals: pass-through to other system components
- Trigger input voltage: 9 to 32 VDC, 24 VDC rated
- Input current draw in Alarm condition: 10 mA at rated voltage

SPECIAL APPLICATION POWER (AUX. POWER) - TB17 TERMINALS 1(+) & 2(-)

- 500 mA @ 24 VDC
- Used for powering addressable modules and associated End-of-Line power supervision relays.

SPEAKER VOLUME CONTROL OVERRIDE - TB23, TERMINALS 1 (B+), 2 (A+), 3 (A-), & 4 (B-)

- Style Y (Class B) or Style Z (Class A) circuit
- Special Application power
- Power-limited circuitry, supervised
- Nominal operating voltage: 24 VDC
- Maximum signaling current: 0.25 amps
- Current limit: fuse-less, electronic, power-limited
- End-Of-Line Resistor: 4.7 KΩ ½ watt, required for Style Y (Class B) operation.

Speaker Circuits

PRIMARY SPEAKER CIRCUIT - TB20

Terminals 1(+) & 2(-) Style Y (Class B), 4(+) & 5(-) Style Z (Class A), 3 Shield (Standby and Alarm Polarity Shown) on main control board.

SECONDARY SPEAKER CIRCUIT (WITH OPTIONAL AMPLIFIER ONLY) - TB21

Terminals 1(+) & 2(-) Style Y (Class B), 4(+) & 5(-) Style Z (Class A), 3 Shield (Standby and Alarm Polarity Shown) on main control board.

- Power-limited circuitry
- Operation: Circuit can be wired Style Y (Class B) or Style Z(Class A).
- Normal Operating Voltage: 25 VRMS @ 2 amps max and maximum Load Impedance of 12.5Ω, (70.7 VRMS @ 700 mA max. with maximum load Impedance of 100Ω operation possible by plugging optional ECS-XRM-70V conversion transformer into J12 of the main control board).
- Output Power: 50 watts (20 watts when background music is employed).
- Frequency Range: 400Hz - 4,000Hz.
- Maximum total capacitance for each speaker circuit: 250.
- End-of-Line Resistor required for Style Y circuit: 15 KΩ, 1 watt.

Command Input Circuits (alarm polarities shown)

CMD1 - TB4 Terminals 3(+) & 4(-) are input terminals and Terminals 1(-) and 2(+) are output terminals which provide feed through of the NAC circuits to NAC devices down stream.

CMD2 - TB5 Terminals 3(+) & 4(-) are input terminals and Terminals 1(-) and 2(+) are output terminals which provide feed through of the NAC circuits to NAC devices down stream.

CMD3 - TB6 Terminals 1(+) & 2(-) are input terminals for contact closure only.

CMD4 - TB6 Terminals 3(+) & 4(-) are input terminals for contact closure only.

CMD5 - TB7 Terminals 1(+) & 2(-) are input terminals for contact closure only.

CMD6 - TB7 Terminals 3(+) & 4(-) are input terminals for contact closure only.

CMD7 - TB8 Terminals 1(+) & 2(-) are input terminals for contact closure only.

CMD8 - TB8 Terminals 3(+) & 4(-) are input terminals for contact closure only.

- Power-limited and supervised circuitry.
- Normal Operating Voltage Range: 10.5 VDC - 29 VDC; (Maximum Voltage: 29 VDC).
- NAC Reverse Polarity Current (requires End-of-Line Resistor from NAC): 1.6 mA maximum.
- Contact Closure Operation Current (requires 4.7KΩ, ½ watt End-of-Line : 6.6 mA maximum.
- Maximum Wiring Impedance CMD1 - CMD8 (Contact Closure Operation): 200Ω.

MAXIMUM INPUT IMPEDANCE:

- CMD1 & CMD2 (Reverse Polarity Operation): 20KΩ
- CMD1 - CMD8 (Contact Closure Operation): 4.75KΩ

NIGHT RING INPUT - TB16, TERMINALS 1 (+) & 2 (-)

- Contact closure input
- Isolated, non-supervised
- Operation current: 3.8 mA, maximum
- Maximum wiring impedance: 30KΩ
- Minimum isolation withstand voltage: 1500 VRMS

EXTERNAL OPERATOR INTERFACE POWER OUTPUT-TB24, TERMINALS 1 (PWR, +) & 2 (GND, -)

- Non-resettable power for external operator interface components
- Power-limited circuitry, non-supervised
- Nominal operating voltage: 24 VDC
- Maximum output current: 1.30 amps
- Current limit: fuse-less, electronic, power-limited circuit

EXTERNAL DATA BUS (EIA-485) - TB12, TERMINALS 2 (B), 3 (A), 4 (BRTN), 5 (ARTN), & 1 (SHLD)

- Data connections for external operator interface components.
- Redundant transceiver circuitry for Class A operability
- Power-limited circuitry, supervised

EXTERNAL AUDIO RISER TB22/VBUS, TERMINALS 1 (OUT+), 2 (OUT-), 4 (IN+), 5 (IN-), & 3 (SHLD)

- Style Y (Class B) or Style Z (Class A) audio connections to external operator interface components
- Power-limited circuitry, supervised
- Audio signal level: 3.85 V, maximum
- Frequency range: 400 Hz - 4 KHz RMS

ELECTRICAL SPECIFICATIONS DISPLAY BOARD

- TBD

EXTERNAL AUDIO INPUT - TB5, TERMINALS 1(-), 2 (+)

- Input Impedance: 30KΩ maximum
- Input Voltage: 700 mV rms maximum
- Input Current: 1 mA maximum @ 700 mV

NOTE: Some laptops/personal compouters only provide an audio output for headphones. It may be necessary to adjust the headphone outpout level for proper recording of voice messages.

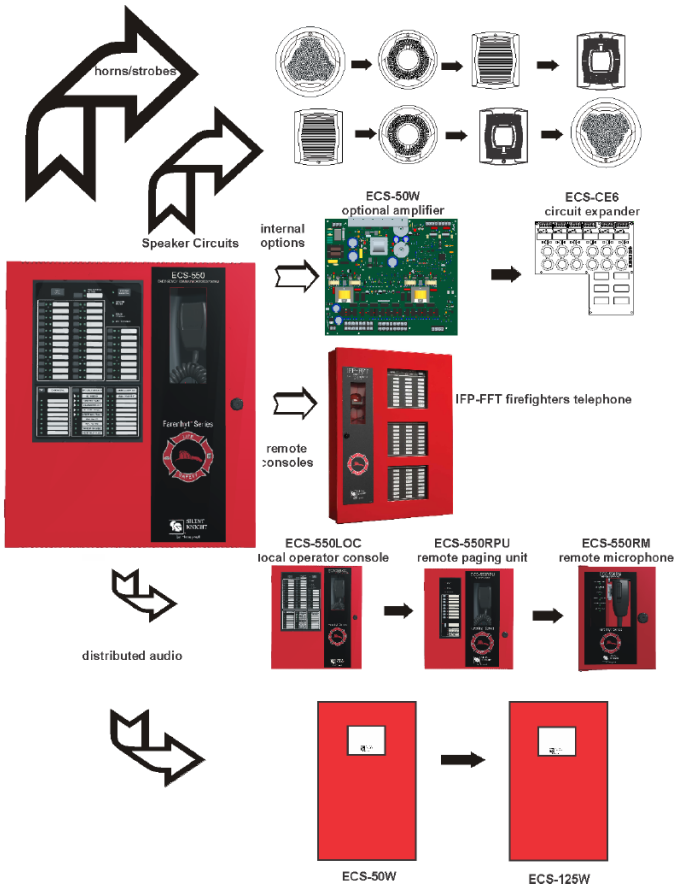
Physical

Backbox: 19.0" H x 16.65" W x 5.20" D
(48.26 cm x 42.29 cm x 13.23 cm).
Door: 19.26” H x 16.82” W x 0.12” D
(48.92 cm x 42.73 cm x .30 cm).
Weight: XX.X lbs (XX.XXkg)

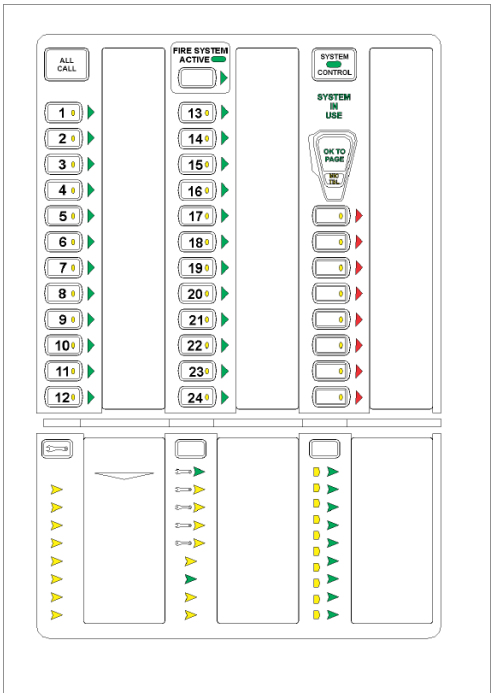
Environmental

Temperature Range: 32 - 120º F (0-49º C)

Humidity: 93% ± 2% RH (non-condensing) at 32°C ± 2°C (90°F ± 3°F).



ECS-550 Emergency Command Center (Possible Configurations)



Control and Indicators

PUSH BUTTON CONTROLS

- All Call
- Fire System Ovveride
- System Control
- Speaker Select 1-24
- Message Select 1-8
- Diagnostic Select
- Trouble Silence
- Console Lamp Test

LED Status Indicators (visible with door closed)

- Fire System Active (green)
- Charger Fault (yellow)
- Fire System Override (green)
- System Control (green
- System in Use (green)
- Speaker Zone 1-24 Active (green)
- Speaker Zone 1-24 Fault (yellow)
- OK to Page (green)
- Microphone Trouble (yellow)
- Message 1-8 Fault (yellow)
- LOC/RPU/RM 1-8 Fault (yellow)
- Main Console Fault (yellow)
- AC Power (green)
- Ground Fault (yellow)
- Battery Fault (yellow)
- Data Bus Fault (yellow)
- NAC Fault (yellow)
- NAC Active (green)
- System Trouble (yellow)
- Audio Riser Fault (yellow)
- Message 1-8 Active (red)
- Remote Amplifier 1-8 Fault (yellow)
- LOC/RPU/RM 1-8 Active (green)

LED Indicators (visible with door and dress panel open)

- Speaker Volume Control Fault (yellow)
- Option Card Fault (yellow)
- Amplifier Over Current Fault (yellow)

Ordering Information

ECS-550: (Primary operating Console) 50 Watt, 25VRMS single speaker zone emergency voice evacuation system, Integral microphone, built in tone generator and 14 recordable messages.

ECS-550HV: Export high voltage unit

Additional Accessories

ECS-50W: 50 Watt audio amp

ECS-125W: 125 Watt audio amp

ECS-550RM: Remote Microphone

ECS-550RPU: Remote Page Unit Hand held microphone, 8 message buttons

ECS-550LOC: Local operator console (eight buttons and a Mic)

ECS-CE4: Distrubuted Audio Speaker Circuit/Zone expander module.

ECS-550CE6: 6-Zone circuit expander (for ECS-550 main control)

ECS-550RTZM: Remote telephone zone module

ECS-XRM-70V: 70 Volt transformer option for main unit

ECS-BD50-25V: 50 watt, 25 volt optional amp for main unit

ECS-BD50-70V: 50 Watt, 70 volt optional amp for main unit

ECS-550LOC: Local Operator Console (Complete user interface)

ECS-550TR: Trim ring for main unit and local operator console (22.00” H x 19.65” W).

ECS-550RPUTR: Trim ring for remote page unit

IFP-FFT: Fire Fighter Telephone System

FFT-FPJ: Remote Phone Jack

FFT-FHS: Fire Fighters Remote Handset

FFT-HSC: Fire Fighters Handset Cabinet

IDP-Minimon: Addressable Mini-Monitor Module

IDP-ISO SLC Line Isolation Module

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This document is not intended to be used for installation purposes. We try to keep our product information up-to-date and accurate. We cannot cover all specific applications or anticipate all requirements. All specifications are subject to change without notice.
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