GEN
CORPO

Reviewed for Code Compliance
Inspections Division
Approved with Conditions

Date: 10/01/14

Photoelectric Smoke Alarm with Visual Signaling Appliance

710/713CS/LS 7109/7139CS/ SERIES

Applications

The 710/713CS/LS and 7109/7139CS/LS photoelectric single/multiple station smoke alarms are designed to give reliable early warning of the presence of smoke where both audible and visual alarms are required. The series features a 90dBA solid state piezo signal and a 177 Candela strobe with “FIRE” lettering. The strobe is listed per UL 1971.

The smoke alarm operates on the light scattering principle, a superior method of detection in smoldering fires, utilizing a pulsing LED light source and a photodiode sensor in a fully screened sensing chamber.

Every 4 to 5 seconds the pulsing LED emits an infrared beam that by passes the photodiode under normal conditions. However, when smoke enters the sensing chamber, the infrared beam is deflected onto the sensor by the smoke particles. The LED pulse rate increases to 8 times the normal rate, and after the photodiode confirms that smoke is present for 2 consecutive pulses, it will produce the signal necessary to trip an alarm.

Upon activation, the alarm will emit a 90dBA local audible signal and activate the high intensity strobe. During the alarm period the strobe will flash at a brightness of 177 candela 60 times per minute. After the smoke has cleared from the detector, the unit will revert to the normal stand-by condition.

Easy Wash™ - On Site Maintenance Program

Standard Features

- Available in 120VAC
- 177 candela rating (UL 1971 listed)
- Horn frequency 3100Hz (nominal)
- Patented three position test switch
- Nominal 2.5% Sensitivity
- Quick-Disconnect Wiring Harness (CS Models)
- Form C Auxiliary Relay Contacts for Remote Annunciation (CS Models)
- 9VDC Battery Back-Up (7109/7139CS/LS) w/Audible Low Battery Chirp
- 120VAC with 9VDC Battery Back-up Models, Visual Does Not Operate on Battery Back-Up
- Relays Operate on Battery Back-Up
- Relay Contacts Will Activate From the Tandem Wire
- 90dBA Continuous Piezo Horn (710CS/LS & 7109CS/LS Series)
- 90dBA Temporal 3 Evacuation Piezo Horn (713CS/LS & 7139CS/LS Series)
- 5-to-1 Signal-to-Noise Ratio
- Fully Insect Screened
- Interconnect with all Gentex tandem capable smoke alarms
- Interconnect up to 6 Alarms (CS Models)
- Easy Wash™ on-site maintenance washing program
- 9 Foot Line Cord (LS Models)
- Mounting Hardware Adapts to Standard Junction Boxes
- Warranty is 1 Year From Date of Purchase

Product Listings

SIGNALING UL LISTED

- **UL 217 and UL 1971 Listed**
- **CSFM: 7257-0569:104 (710/713CS/LS)**
  7257-0569:118 (7109/7139CS/LS)
- **BS+A/MEA: 285-91-E**
- **BFP (City of Chicago)**
- **MSFM Listing #1929**

Product Compliance

- **NFPA 72**
- **Americans with Disabilities Act (ADA)**

NEMA MEMBER

ASSEMBLED IN THE USA

Reviewed for Code Compliance
Inspections Division
Approved with Conditions

Date: 10/01/14

710CS/LS and 7109CS/LS Series - Continuous Piezo Sounder

Model Number	Part Number	Voltage	Wall Mount	Ceiling Mount	9 Foot Line Cord	Interconnect Up To 6 Units	Form C Contacts	
710CS-W	907-0231-002	120 VAC	●			●	●	
710CS-C	907-0232-002	120 VAC		●		●	●	
710CSX-W	907-0235-002	120 VAC	●			●	●	
710CSX-C	907-0236-002	120 VAC		●		●	●	
710LS	907-0239-002	120 VAC	●		●			
7109CS-W	917-0007-002	120 VAC	●			●	●	●
7109CS-C	917-0008-002	120 VAC		●		●	●	●
7109CSX-W	917-0010-002	120 VAC	●			●	●	●
7109CSX-C	917-0011-002	120 VAC		●		●	●	●
7109LS	917-0006-002	120 VAC	●		●			●

713CS/LS and 7139CS/LS Series - Temporal 3 Piezo Sounder

Model Number	Part Number	Voltage	Wall Mount	Ceiling Mount	9 Foot Line Cord	Interconnect Up To 6 Units	Form C Contacts	9VDC Battery Back-Up
713CS-W	907-0248-002	120 VAC	●			●	●	
713CS-C	907-0249-002	120 VAC		●		●	●	
713CSX-W	907-0252-002	120 VAC	●			●	●	
713CSX-C	907-0253-002	120 VAC		●		●	●	
713LS	907-0256-002	120 VAC	●		●			
7139CS-W	917-0019-002	120 VAC	●			●	●	●
7139CS-C	917-0020-002	120 VAC		●		●	●	●
7139CSX-W	917-0021-002	120 VAC	●			●	●	●
7139CSX-C	917-0022-002	120 VAC		●		●	●	●
7139LS	917-0018-002	120 VAC	●		●			●

NOTES:

Candela Rating: 177 Candela UL 1971 Listed Strobe Light
Flash Rate per Minute: 60 Minimum

"W" = Wall Mount
"C" = Ceiling Mount

- Available in square configuration only.
- Ceiling mount not available in line cord models.
- The X models have the ability to turn the strobe on from a field mounted relay
- When testing 713/7139 units, it may take up to 16 seconds longer for smoke alarm to go in or out of alarm mode.
- It is recommended that 710/713/7109/7139 Series smoke alarm be tested weekly.
- Refer to Technical Bulletin 002 for Easy Wash™ on site washing instructions
- 710/7109 units produce a non-temporal audible alarm and are therefore not intended for locations where the desired action of the occupant(s) is evacuation.
- 713/7139 units produce a temporal 3 audible alarm. Per NFPA 72, the American National Standard Audible Emergency Evacuation Signal as defined in ANSI S3.41, is required whenever the intended response is to evacuate the building.

Reviewed for Code Compliance
Inspections Division
Approved with Conditions

Date: 10/01/14

Wiring Diagram

710CS
7109CS
713CS
7139CS

Electrical Specifications

Operating Voltage. . . . . .120 VAC, 60Hz
Operating Current. . . . . 0.400 amps (Peak)
Operating Ambient Temp Range. . . . . 40°F to 100°F
Alarm Horn Rating. . . . . 90 Decibels at 10 Ft.
Nominal Sensitivity. . . . . 2.5% Obscuration
Auxiliary Relay (Standard). . . . . 1 Form C (0.6 amp)
(710/713CS and 7109/7139CS)
Size . . . . . .5.5” Square x 4.75” Overall Depth
Secondary Power Source. . . . . Alkaline 9VDC battery (supplied)
(7109CS/LS and 7139CS/LS)

The CSX models are used for remote annunciation of the strobe.

710/713CS/LS 7109/7139CS/ SERIES

Reviewed for Code Compliance
Inspections Division
Approved with Conditions

Date: 10/01/14

Architect & Engineering Specifications

The photoelectric smoke alarm shall be a Gentex Model 710LS, 713LS, 7109LS, 7139LS or approved equal which shall provide at least the following features and functions.

1. Nominal sensitivity shall be 2.5%.
2. The smoke alarm shall utilize an infrared LED sensing circuit which pulses in 4 to 5 second intervals; when subjected to smoke the pulse rate shall increase 8 times. After 2 consecutive pulses in smoke, the detector will alarm.
3. The smoke alarm shall provide minimum 5-to-1 signal-to-noise ratio in the optics frame to assure stability of operation in environments of high RF and transient conditions.
4. The sensing chamber shall be fully screened to prevent entrance of small insects, thus reducing the probability of false alarms.
5. A continuous piezo horn rated at 90dBA at 10 ft. (710CS/LS & 7109CS/LS units) and a temporal 3 piezo horn rated at 90dBA at 10 ft. (713CS/LS & 7139CS/LS units).
6. A visual LED monitor (condition indicator) will pulse in normal operation and steady on in alarm.
7. The visual signal shall have a minimal light output of 177 Candela.
8. An easily accessible test knob shall be provided. The test knob in the TEST position will simulate an actual smoke condition of approximately 3.5% causing the smoke alarm to alarm within 20-36 seconds. Also the alarm shall test for the most sensitive setting. An alarm during this test will be a maintenance indicator. Return to Gentex Corporation for maintenance.
9. The smoke alarm shall be provided with a 9 foot line cord with a strain relief connection, if a portable unit.
10. Unit must be capable of providing a monitored battery back-up.
11. Unit must be UL 217 and UL 1971 listed for wall mount.
12. Unit shall also meet all requirements of the State of California Fire Marshal, Bureau of Standards and Appeals and the Americans with Disabilities Act (ADA).

Architect & Engineering Specifications

The photoelectric smoke alarm shall be a Gentex Model 710CS, 713CS, 7109CS, 7139CS or approved equal which shall provide at least the following features and functions.

1. Nominal sensitivity shall be 2.5%.
2. The smoke alarm shall utilize an infrared LED sensing circuit which pulses in 4 to 5 second intervals; when subjected to smoke the pulse rate shall increase 8 times. After 2 consecutive pulses in smoke, the smoke alarm will alarm.
3. The smoke alarm shall provide minimum 5-to-1 signal-to-noise ratio in the optics frame to assure stability of operation in environments of high RF and transient conditions.
4. The sensing chamber shall be fully screened to prevent entrance of small insects, thus reducing the probability of false alarms.
5. A continuous piezo horn rated at 90dBA at 10 ft. (710CS/LS & 7109CS/LS units) and a temporal 3 piezo horn rated at 90dBA at 10ft. (713CS/LS & 7139CS/LS units).
6. A visual LED monitor (condition indicator) will pulse in normal operation and will remain solid in alarm.
7. The visual signal shall have a minimal light output of 177 Candela and will flash one time per second.
8. An easily accessible test knob shall be provided. The test knob in the TEST position will simulate an actual smoke condition of approximately 3.5% causing the smoke alarm to alarm within 20-36 seconds. Also the detector shall test for the most sensitive setting. An alarm during this test will be a maintenance indicator. Return to Gentex Corporation for maintenance.
9. The smoke alarm shall be provided with a Form C contact for remote annunciation purposes.
10. The manufacturer shall provide other compatible detector models with the following optional features: a) auxiliary Form C relay contact for initiating remote functions and annunciation; b) relay option that is capable of activation by tandem interconnect wire.
11. Unit must be capable of providing a monitored battery back-up.
12. Unit must be UL 217 and UL 1971 listed for wall mount or ceiling mount.
13. Unit shall also meet all requirements of the State of California Fire Marshal, Bureau of Standards and Appeals and the Americans with Disabilities Act ADA).

All equipment shall be completely factory assembled, wired and tested, and the contractor shall be prepared to submit a certified letter testifying to this condition. Detectors which do not meet all of the requirements of this specification will not be considered.

12 units per carton
21 pounds per carton

GENTEX CORPORATION

Fire Protection Products Group • www.gentex.com
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.

Important Notice:

These materials have been prepared by Gentex Corporation ("Gentex") for informational purposes only, are necessarily summary, and are not purported to serve as legal advice and should not be used as such. Gentex makes no representations and warranties, express or implied, that these materials are complete and accurate, up-to-date, or in compliance with all relevant local, state and federal laws, regulations and rules. The materials do not address all legal considerations as there is inevitable uncertainty regarding interpretation of laws, regulations and rules and the application of such laws, regulations and rules to particular fact patterns. Each person's activities can differently affect the obligations that exist under applicable laws, regulations or rules. Therefore, these materials should be used only for informational purposes and should not be used as a substitute for seeking professional legal advice. Gentex will not be responsible for any action or failure to act in reliance upon the information contained in this material.

551-0037-02

Printed on Recycled Paper