

## Photoelectric Smoke Alarm with Visual Signaling Appliance

### Applications

The 710/713CS/LS and 7109/7139CS/LS photoelectric single 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 713/7139 Series provides the temporal 3 evacuation tone as a standard feature. When testing the 713/7139 Series it may take up to 16 seconds longer to go in or out of alarm.

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.

### Standard Features

- Available in 120VAC
- 177 Candela Rating (UL1971)
- Horn Frequency 3100Hz (Nominal)
- Full Function Test Switch—Patented Three Position Test
- Nominal 2.5% Sensitivity
- Quick-Disconnect Wiring Harness (CS Models)
- Form C Auxiliary Relay Contacts for Remote Annunciation (CS Models)
- 9 VDC Battery Back-Up (7109/7139CS/LS) w/Audible Low Battery Chirp (Visual Does Not Operate on Battery Back-Up)
- Solid State 90dBA Horn
- Temporal 3 Evacuation Sounding Device (713CS/LS & 7139CS/LS Series)
- 5-to-1 Signal-to-Noise Ratio
- Fully Insect Screened
- Tandem Connection up to 6 Detectors Per System (CS Models)
- 9 Foot Line Cord (LS Models)
- Mounting Hardware
- Warranty is 1 Year From Date of Purchase
- Dry Contacts Will Activate From the Tandem Wire
- Relays Operate on Battery Back-Up, Visual Does Not Operate

## 710/713CS/LS 7109/7139CS/LS

# S E R I E S



### Product Listings



This symbol on the product's nameplate means it is Listed by UNDERWRITERS LABORATORIES, INC.

- UL 217
- CAN/ULC 552-02/553-02 Listed (710CS & 7109CS Only)
- BFP (City of Chicago)
- BS+A/MEA #285-91-E
- MSFM Listing #1929
- CSFM Listing #7257-569:104 (710/713CS/LS)
- CSFM Listing #7257-569:118 (7109/7139CS/LS)

Also UL 1730 listed for Commercial Residential and Commercial Residential Multiple-station Smoke Alarms.

### Product Compliance

- NFPA 72
- Americans with Disabilities Act (ADA)



## 710 Series Photoelectric Smoke Detector with Signaling Appliance

Model Number	Part Number	Voltage	Local 90dBA Piezo	Wall Mount	Ceiling Mount	9 Foot Line Cord	Tandem Up To 6 Units	Form C Contacts	9VDC Battery Back-Up
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	●	●		●			●

## 713 Series Photoelectric Smoke Detector with Signaling Appliance and Temporal 3 Sounder

Model Number	Part Number	Voltage	Local 90dBA Piezo	Wall Mount	Ceiling Mount	9 Foot Line Cord	Tandem 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	●	●			●	●	●
7139CS-C	917-0022-002	120 VAC	●		●		●	●	●
7139LS	917-0018-002	120 VAC	●	●		●			●

### NOTES:

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

Available in square configuration only.

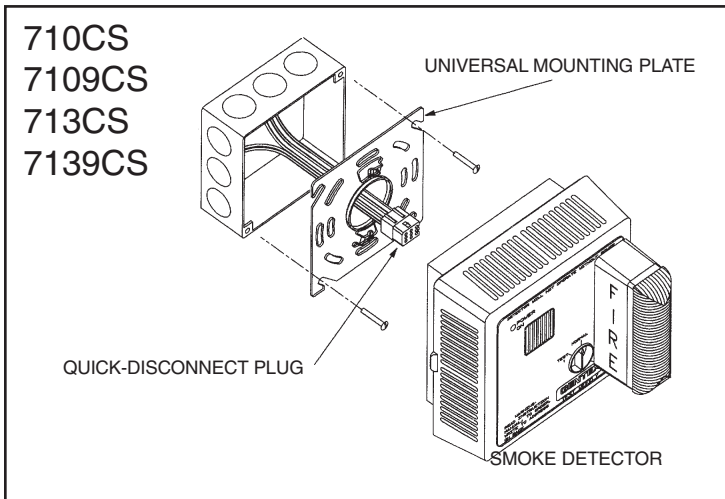
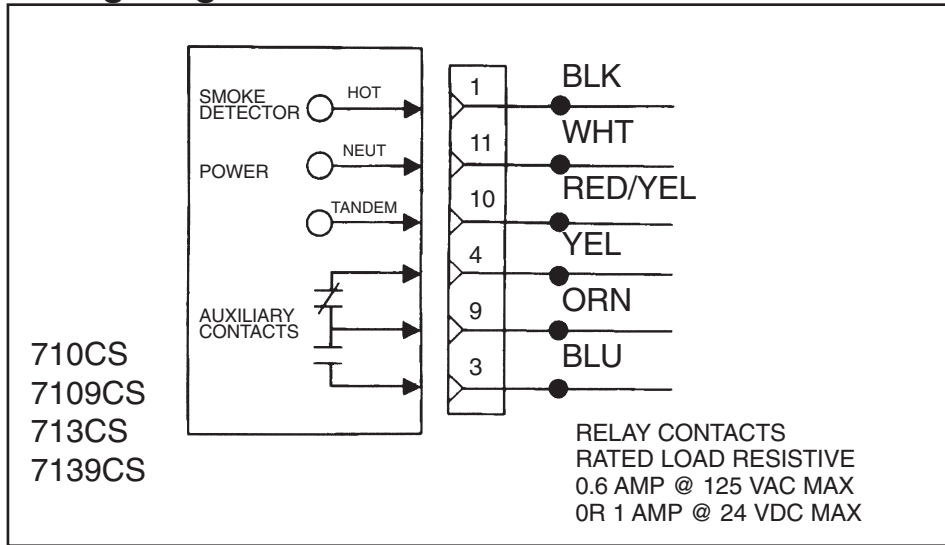
Ceiling mount not available in line cord models.

The X models have the ability to turn the strobe on from a field mounted relay.

\*"W" = Wall Mount

\*"C" = Ceiling Mount

## Wiring Diagram



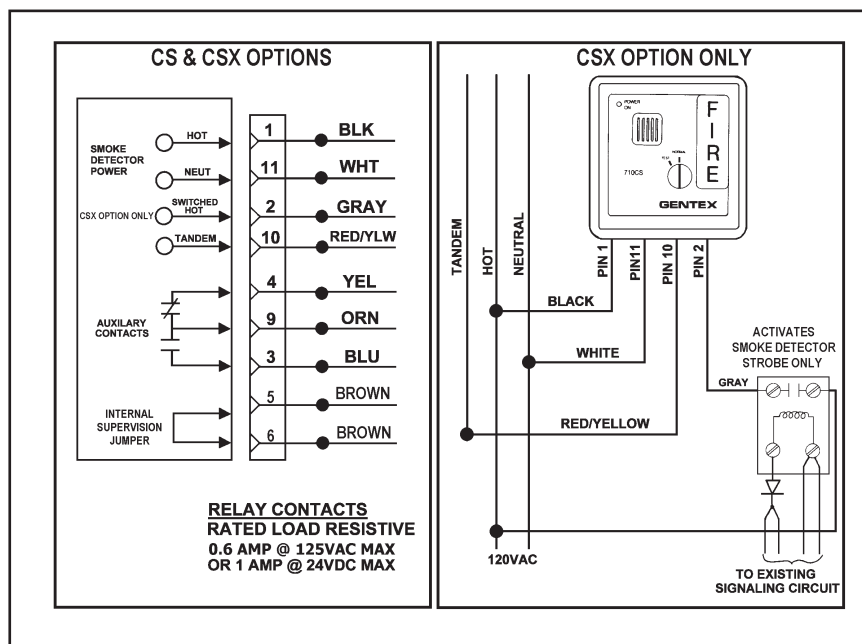
## Electrical Specifications

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)

\*9 VDC alkaline battery (supplied)

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



# 710/713CS/LS 7109/7139CS/LS S E R I E S

## Architect & Engineering Specifications

The Photoelectric Detector Shall be a Gentex Model 710/713LS/7109/7139LS or approved equal which shall provide at least the following features and functions.

1. Nominal sensitivity shall be 2.5%.
2. The 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 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 solid state piezo alarm rated at 90dBA at 10 ft.
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 detector 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.
9. The 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 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).

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3. The 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 solid state piezo alarm rated at 90dBA at 10 ft.
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 detector 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 for maintenance.
9. The 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.
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
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**GENTEX**  
CORPORATION

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