



# GENTEX CORPORATION

## Combination Photoelectric Smoke and Carbon Monoxide Alarm

### 120VAC/9VDC Single/Multiple Station Smoke and CO Alarm

## GN - 503 SERIES

### Applications

The GN-503 (120VAC/9VDC) Series of combination photoelectric smoke and electrochemical sensor carbon monoxide alarms are for use as evacuation devices in all dwelling units, including but not limited to homes, apartments, hospitals, hotels, motels and other commercial occupancies. The GN-503 Series is listed in compliance with ANSI/UL 217, ANSI/UL 2034, for installation per NFPA 720 and NFPA 72.

Available in three models, the GN-503 Series is engineered to virtually eliminate nuisance alarms and deliver outstanding performance wherever reliable smoke and CO protection is required. The GN-503F features one (1) set of Form A/Form C contacts that activate for smoke and/or CO events. **THE GN-503FF FEATURES TWO (2) SETS OF FORM A/ FORM C CONTACTS THAT ACTIVATE INDEPENDENTLY FOR SMOKE AND CO EVENTS.** Both the GN-503F and GN-503FF provide a connection to a protected premises alarm system to provide a supervisory/trouble signal.

The GN-503 Series is provided with a 9VDC alkaline battery for electrical back-up in the event building power is lost. The battery impedance is verified and the alarm provides a low or missing battery warning. The battery drawer provides easy replacement without removing the unit from the wall or ceiling.

The GN-503 Series is designed with a self test feature that quickly notifies if the alarm is functioning properly or needs attention (signified by a series of chirps) by simply pressing the test button. The functionality tests that the smoke/CO alarm is operating properly (signified by going into alarm). The self and functionality tests are in compliance with NFPA 72, NFPA 720 and ANSI/UL Standards.

The GN-503 Series provides a temporal 3 evacuation tone for smoke alarm annunciation and all units provide a temporal 4 tone for CO alarm annunciation. Per NFPA 720, the temporal 3 evacuation tone for smoke alarm will take precedence over the temporal 4 tone for CO alarm.



### Product Listings

SIGNALING



LISTED



- ANSI/UL 217 and ANSI/UL 2034 Listed
- CSFM # 5276-0569:144

### Product Compliance



- NFPA 72 and NFPA 720
- IBC/IFC/IRC
- City & State Ordinances/Laws/Regulations
- Quality Management System is certified to: ISO 9001:2008

### Standard Product Features

- GN-503 available in 120VAC with 9VDC battery back-up
- Horn frequency 3100 Hz (nominal)
- Meets sensitivity requirements of ANSI/UL 2034
- F Model: One (1) set of Form A/Form C contacts that activate for smoke and/or CO events
- FF Model: **Two (2) sets of Form A/Form C contacts that activate independently for smoke and CO events**
- Relay contacts operate on battery back-up
- Push button self test feature
- Push button functional test feature
- Quick-disconnect wiring harness
- Non-latching (self restoring) alarm
- Fully insect protected
- Red LED pulses every 30 seconds, green LED for AC power on

- Mounting hardware adapts to standard junction boxes, including but not limited to 4x4x2-1/8 octagon
- Dust cover to prevent contamination during installation
- Low or missing battery indicator
- 1 year warranty from date of purchase
- 5 year limited warranty on CO sensor

### Additional Smoke Alarm Features

- Photoelectric smoke sensing technology
- Temporal 3 evacuation sounding pattern for smoke annunciation
- Nominal 2.5% sensitivity (smoke)
- Solid state red LED to indicate smoke presence

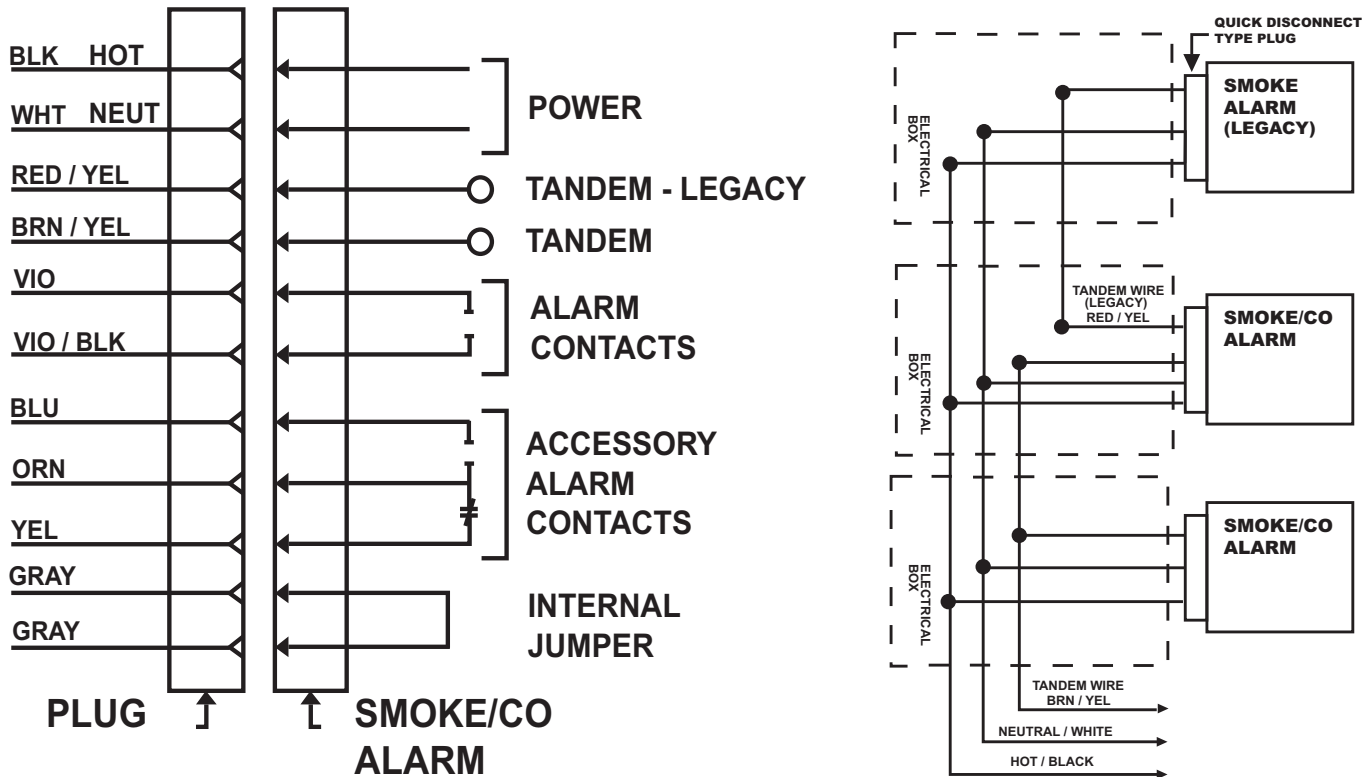
### Additional CO Alarm Features

- Electrochemical sensor
- Temporal 4 sounding pattern for CO annunciation
- End of life signal indicates CO sensor has reached depletion state and unit must be replaced

## GN-503 Series Combination Smoke/CO Alarm

Model Number	Voltage	9VDC Battery Back-Up	One (1) Set Form A/ Form C Relay Contacts	Two (2) Sets Form A/ Form C Relay Contacts
GN-503	120VAC	●		
GN-503F	120VAC	●	●	
GN-503FF	120VAC	●		●

### GN-503 AND GN-503F Wiring Diagrams



### GN-503/GN-503F ADDITIONAL PRODUCT INFORMATION

THE GN-503F AND GN-503FF PRODUCT WIRING HARNESS IS NOT INTERCHANGEABLE. THE GN-503F AND GN-503FF MUST USE PROPER WIRING HARNESS. PRODUCT WILL NOT FUNCTION IF INCORRECT HARNESS IS USED.

- DO NOT connect Gentex alarms to other manufacturers' alarms.
- Per NFPA 72, a maximum of 18 compatible smoke, heat, CO and/or combination smoke/CO alarms may be interconnected. No more than 12 of the 18 can be smoke alarms.
- All units connected in tandem MUST get their power from the same circuit, that is, all smoke alarms in tandem must be controlled by the same fuse or circuit breaker.

**NOTICE:** PER NFPA 72, A MAXIMUM OF 12 SMOKE/CO ALARMS OF GN-503 WITH THE RELAY OPTION (F) MAY BE TANDEM INTERCONNECTED.

The GN-503/GN-503F may be tandem interconnected with other Gentex tandem capable smoke alarms, CO alarms or smoke/CO alarms. To interconnect with Gentex 9000 Series, 7000 Series, 710CS Series, 7109CS Series, GN-200 Series & GN-300 Series the LEGACY TANDEM WIRE must be used. Refer to installation manual for detailed information.

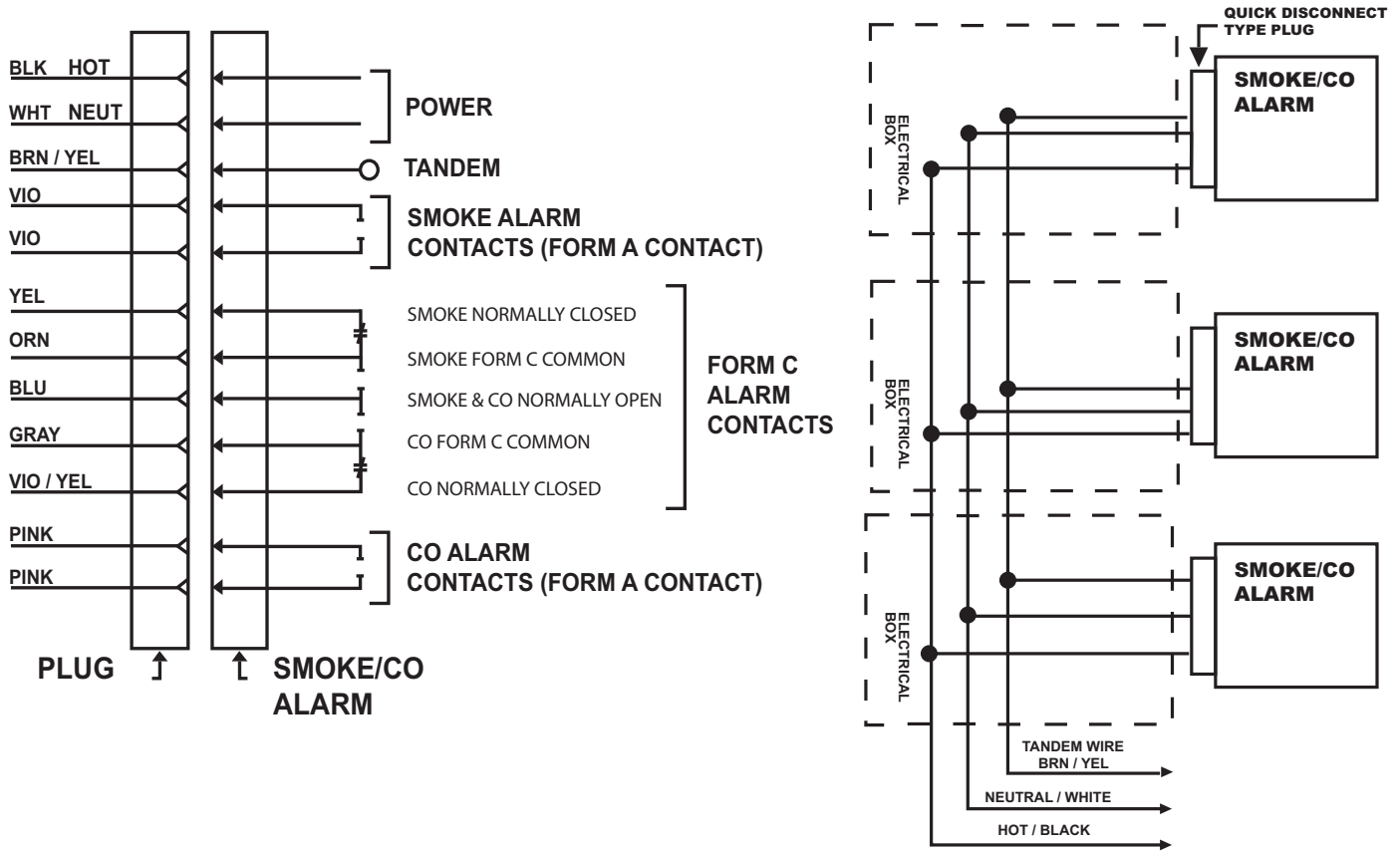
**CAUTION:** RED/YELLOW & BROWN/YELLOW wire to be capped when not in use. This wire is for tandem connection only. Do not connect to any other circuit.

- If a GN-503 Series or CO1209 Series unit is annunciating for a CO event, legacy products that are tandem interconnected will not activate and will remain silent.
- If smoke alarm portion of device goes into alarm, all smoke alarms, CO alarms or combination smoke/CO alarms tandem wired will sound smoke alarm warning.
- When both smoke and CO conditions are present, smoke condition will have priority and alarm will sound smoke annunciation.

# USING THE GENTEX GN-503FF COMBINATION SMOKE AND CARBON MONOXIDE ALARM ALLOWS THE ABILITY TO:

- Interface with a FACP Panel
- Interface with NAC Circuits

## GN-503FF Wiring Diagrams



### GN-503FF ADDITIONAL PRODUCT INFORMATION

Use brown/yellow wire to tandem interconnect GN-503FF alarms to additional GN-503 Series, S1209 Series and CO1209 Series.

**NOTICE:** THE GN-503FF IS ONLY CAPABLE OF TANDEM INTERCONNECT WITH GN-503 SERIES, CO1209 SERIES AND S1209 SERIES.

THE GN-503F AND GN-503FF PRODUCT WIRING HARNESS IS NOT INTERCHANGEABLE. THE GN-503F AND GN-503FF MUST USE PROPER WIRING HARNESS. PRODUCT WILL NOT FUNCTION IF INCORRECT HARNESS IS USED.

- DO NOT connect Gentex alarms to other manufacturers' alarms.
- Per NFPA 72, a maximum of 18 compatible smoke, heat, CO and/or combination smoke/CO alarms may be interconnected. No more than 12 of the 18 can be smoke alarms.
- All units connected in tandem MUST get their power from the same circuit, that is, all smoke alarms in tandem must be controlled by the same fuse or circuit breaker.

**NOTICE:** PER NFPA 72, A MAXIMUM OF 12 SMOKE/CO ALARMS OF GN-503 WITH THE RELAY OPTION (FF) MAY BE TANDEM INTERCONNECTED.

**CAUTION:** BROWN/YELLOW wire to be capped when not in use. This wire is for tandem connection only. Do not connect to any other circuit.

- If smoke alarm portion of device goes into alarm, all smoke alarms, CO alarms or combination smoke/CO alarms tandem wired will sound smoke alarm warning.
- When both smoke and CO conditions are present, smoke condition will have priority and alarm will sound smoke annunciation.

# GN-503 SERIES

## Electrical Specifications

Operating Voltage .....	120VAC, 60Hz
Operating Current .....	.045 amps
Operating Current (Relay Options) .....	.070 amps
Operating Ambient Temp Range .....	40°F to 100°F (4.4°C-38°C)
Alarm Horn Rating .....	85dBA at 10 feet (3.048 m)
Auxiliary Relay (GN-503F) .....	1 Form A & 1 Form C (0.5 amp)
Auxiliary Relay (GN-503FF) .....	2 Form A & 2 Form C (0.3 amp)
Size .....	Diameter at base: 5.75 in. (14.605 cm)
.....	Overall diameter 6.25 in. (16.51 cm)
.....	Depth: 1.8 in. (4.572 cm)
Secondary Power Source .....	Alkaline 9VDC battery (Duracell® MN 1604)
CO Sensing Cell .....	Electrochemical Cell

## Architect & Engineering Specifications

The combination photoelectric smoke and carbon monoxide alarm shall be a Gentex Model GN-503/GN-503F/GN-503FF or approved equal which shall provide at least the following features and functions:

- Nominal smoke sensitivity shall be 2.5%.
- The smoke alarm portion of device shall utilize an infrared LED sensing circuit which pulses in 4 to 5 second intervals when subjected to smoke. After 2 consecutive pulses in smoke, the alarm shall activate.
- The CO alarm shall utilize an electrochemical sensing element with a minimum 5-year life.
- The carbon monoxide alarm portion of device is adjusted not to detect CO levels below 30 PPM and will not alarm when exposed to constant levels of 30 PPM for 30 days. Per ANSI/UL 2034 requirements, the device will alarm at the following levels: 70 PPM CO between 1 to 4 hours, but not less than 1 hour. 150 PPM CO between 10 to 50 minutes. 400 PPM between 4 to 15 minutes.
- The GN-503 Series device shall have a Duracell® MN 1604 9VDC alkaline battery as a back-up in the event building power is lost.
- The 9VDC battery impedance shall be verified by the circuit of the smoke/CO alarm.
- The alarm shall provide an indicator when the battery is low in power, high impedance or is missing.
- The CO alarm will provide an audible indicator of 3 quick chirps every 30 seconds at end of life of CO sensor.
- The sensing chamber shall be fully protected to prevent entrance of small insects, thus reducing the probability of false alarms.
- The alarm shall include a solid state red color LED that will indicate presence of CO at the unit.
- The alarm shall include a solid state piezo alarm rated at 85dBA at 10ft.
- A visual LED monitor (condition indicator) shall slow pulse in normal operation and rapid pulse in alarm (red color)
- An easily accessible test button shall be provided. Push down on button for 5 seconds causing smoke/CO alarm to activate. If device does not go into alarm, the device is not working properly.
- The device shall have tandem interconnect capability of up to 12 smoke/CO alarms.
- The GN-503 and GN-503F alarm shall have the capability to tandem interconnect with all Gentex tandem capable smoke alarms, CO alarms or combination smoke/CO alarms, including 7000/7003 Series, 9000/9003 Series, 710CS/713CS Series, 7109CS/7139CS Series, GN-200/GN-300 Series, S1209 Series and CO1209 Series.
- The GN-503FF alarm shall have the capability to tandem interconnect with the following Gentex alarms, CO alarms or combination smoke/CO alarms: GN-503 Series, S1209 Series and CO1209 Series.
- The manufacturer shall provide models with the optional feature of auxiliary Form A/Form C relay contacts for initiating remote functions and annunciation and a relay option that is capable of activation by tandem interconnect wire.
- The combination smoke/CO alarm shall be non-latching (self-restoring).
- Unit must be ANSI/UL 217 and ANSI/UL 2034 listed for both wall and ceiling mounting.
- Unit shall be listed by Underwriters Laboratories and California State Fire Marshal (CSFM).

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. Alarms which do not meet all of the requirements of this specification will not be considered.

For complete product specifications, refer to product installation manual.

24 units per carton  
24 pounds per carton



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

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