CHECKFIRE 210-D Detection and Actuation System

Features

- FM 5970 Approved, 2022 Edition Tested to meet or exceed vehicle equipment manufacturer's specifications for environment, vibration and EMC profiles
- Supervised power, detection, release, and communication circuits
- System can be independently powered by utilizing either the primary power input or secondary power input.
  NOTE: Both primary and secondary power supplies must be utilized to maintain FM 5970 approval.
- Two time delays programmable to 0, 5, 10 or 15 seconds
- "DELAY / Reset / Silence" button
- PUSH To Activate / Alarm When Lit" electric manual activation button and LED
- Minimum 75 dB internal sounder
- Dust and water tight connectors (IP68 rated)
- Manual programming button
- Computer programmable via mini USB port
- Two analog detection circuits, detection circuit #2 may be programmed for pressure switch feedback
- Detection circuits are programmable for independent detection and release, cross-zone detection and release or detection only
- Auxiliary Power output available when external power is connected
- Two internal programmable SPDT Form "C" relays (6A @ 30 VDC resistive, 3A @ 30 VDC Inductive)
- Isolate function via Display Module
- Downloadable 4000+ Event History Log

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Application

The CHECKFIRE 210-D Detection and Actuation System is typically used with an ANSUL® A-101 or LVS Vehicle Fire Suppression System for 24-hour protection of equipment. The system is designed for vehicles and equipment in extreme environmental and physical conditions.

Industries where vehicles use CHECKFIRE 210-D Systems:

- Forestry
- Agriculture
- Construction
- Public transportation
- Public utilities
- Land fills
- Waste disposal
- Mining

Description

The CHECKFIRE 210-D Automatic Detection and Actuation System provides supervised input/output circuits to activate an ANSUL® fire suppression system. Upon detecting a fire condition, the interface control module activates the release circuit, resulting in the discharge of an expellant gas cartridge, initiating fire suppression system operation.

Green, amber, and/or red pulsing LEDs, and the internal sounder notify operator of system status. The sounder only activates for faults, isolate mode, and system release.

Operating components include the display module, interface control module, linear detectors, electric manual actuators, protracting actuation devices (PAD), electric-pneumatic actuators, and cables for power, detection, and release circuits. The entire system is electronics based for supervision, communication, and control of system components.

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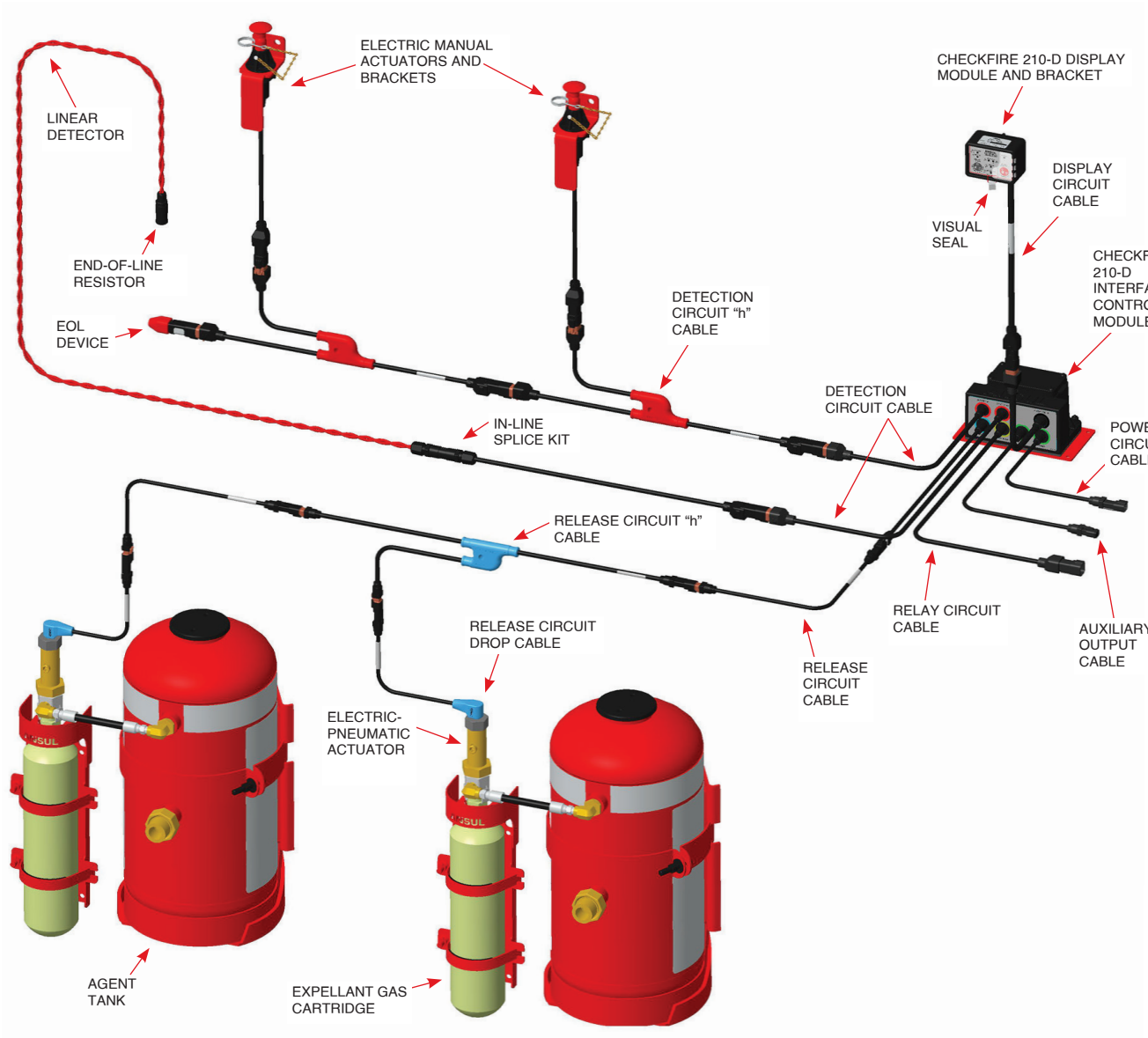
CHECKFIRE 210-D SYSTEM – SAMPLE CONNECTIONS



Typical System Connections

The CHECKFIRE 210-D Display Module communicates with the CHECKFIRE 210-D Interface Control Module (ICM) through the display cable. The ICM is the central connection point for all system cables.

System Cabling:

- Enables communication and control of components
- IP68 connectors
- Integral connectors on each end of cable
- Offered in factory set lengths or can be custom fabricated on site
- Temperature rating: 221 °F (105 °C)

Detection Circuits #1 and #2: Permits multiple-detection options using detection circuit cable and detection circuit "h" cables for the main detection trunk and branch lines.

- Electric manual actuators
- Linear detectors
- Pressure switch (detection circuit #2 only)

Release Circuit: Connects to a maximum of 8 electric-pneumatic actuators installed on agent tank expellant gas cartridges using release circuit cables, "h" cables, and release circuit drop cables.

External Power Circuit: Provides a direct connection to the vehicle power source using power circuit cables and a single fused power circuit cable, when external power is required.

Auxiliary Output Circuit: Connects to external notification devices.

Display Circuit: Connects display module with ICM.

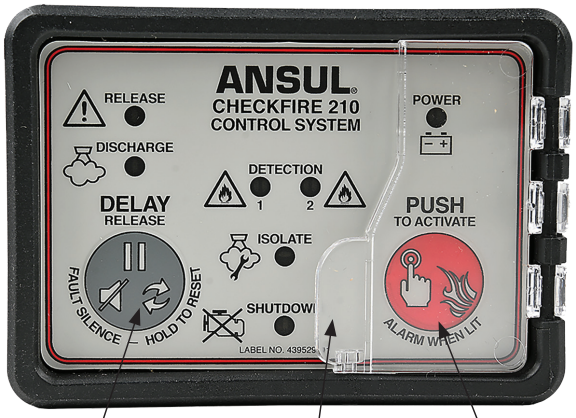
Relay Circuit: Provides connection for two independent internal relay contacts for connection by others.

Detection

A Linear Detector with a predetermined temperature rating provides fire detection in the protected area. Color coded temperature ratings offer quick identification of linear cable selection. 356 °F (180 °C) cables are red, while 220 °F (105 °C) cables are white.

Display Module

The CHECKFIRE 210-D Display Module communicates with the Interface Control Module (ICM) to indicate system status. Installation within reach of the operator provides easy access to operator controls.



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DELAY/RESET/ SILENCE BUTTON

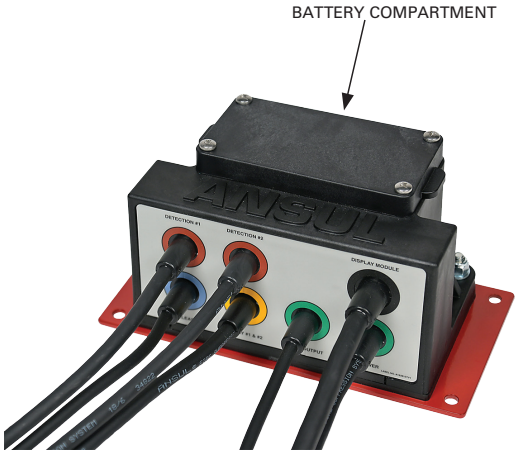
GUARD DOOR

PUSH TO ACTIVATE/ ALARM WHEN LIT BUTTON AND LED

- Durable high-strength glass-filled nylon material
- Surface or bracket mounted
- Two index pins on back for secure mounting
- Ambient temperature range: -40 °F to 185 °F (-40 °C to 85 °C)
- LED indicators provide notification of system status (internal sounder matches LED pulse rate)
- PUSH To Activate / Alarm When Lit manual-activation button and LED
  - Provides manual actuation (immediate release)
  - Indicates alarm condition
- Guard door with visual seal to protect manual-activation button
- DELAY/Reset/Silence Button
  - Restarts Time Delay #1 (TD1) before TD1 sequence expires
  - Resets system (during non-alarm status)
  - Silences internal sounder during fault conditions and isolate mode
  - Activates/deactivates Isolate Mode

Interface Control Module (ICM)

The CHECKFIRE 210-D Interface Control Module (ICM) is the central connection point for input/output circuits. Through communication with the display module, operators receive continuous system status updates, and operator input commands go directly to the ICM.



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The protective battery compartment cover is held in place with 4 captive screws. Besides the internal power supply, the compartment includes a mini USB connection port and the programming interface (button and LEDs). The system programming may be accomplished with the manual programming button or by using a computer with the ANSUL® CHECKFIRE 210 Programmer software communicating through the mini USB port.

The system can be put into Isolate mode at the display module to temporarily disable the automatic system release function. While disabled, manual system release is still available. An amber isolate LED on the display module continues to pulse until the switch is returned to normal.

- Dust and water tight (IP67 rated)
- Durable high-strength glass-filled nylon material
- UL94 Flame rating
- Ambient temperature range: -40 °F to 185 °F (-40 °C to 85 °C)
- Steel mounting plate

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Battery Module

A supervised 3.6 VDC lithium CHECKFIRE 210-D Battery Module provides internal power for the CHECKFIRE 210-D System.

Electric-Pneumatic Actuator

With a focus on ease of installation and safety, the Electric-Pneumatic Actuator reduces system complexity. The Protracting Actuation Device (PAD) directly actuates the electric-pneumatic actuator pin eliminating the need for pneumatic actuation.

The PAD with plug-in spade connectors is easy to install and replace without tools. After plugging the PAD into the re-designed release circuit drop cable, the cable is attached to the top of the electric-pneumatic actuator.

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If required, optional pneumatic actuation is available.

Electric Manual Actuator

The newly designed Electric Manual Actuator (EMA) provides electrical activation of the fire suppression system. Pulling the pin and striking the red button sends a signal to the interface control module for immediate actuation of the electric-pneumatic actuator. Upon actuation, the expellant gas cartridge initiates fire suppression system operation.

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EMAs are typically accessible from ground level and/or in a path of egress. An index nub ensures the EMA remains at the proper angle for access to the pull pin.

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System Specifications

Interface Control Module Power:	Internal power source and/or: 12/24 VDC nominal external power (24 hour operation)
Operating Temperature Range:	-40 °F to 185 °F (-40 °C to 85 °C)
Shock:	In accordance with UL1254
Vibration:	In accordance with UL1254
Electromagnetic Compatibility:	Heavy Industrial EMC Directive Compliant (2004/108/EC)

Approvals

FM 5970 Approved and CE Marked

Ordering Information

Part No.	Description
System Components	
A16381C9PK	CHECKFIRE 210-D Display Module
439564	Mounting Bracket, CHECKFIRE 110/210
A16381C9PL	Interface Control Module (ICM), CHECKFIRE 210-D
439569	Electric-Pneumatic Actuator (EPA)
440352	CHECKFIRE 210 Battery
Display/Communication Circuit	
A16381EW4C	100 ft (30.5 m) Bulk Display/ Communication Circuit Cable Box
A16381EW48	200 ft (61.0 m) Bulk Display/ Communication Circuit Cable Spool
A16381CBC1	2 ft (0.61 m) Display/Communication Circuit Cable
A16381CBC2	3 ft (0.92 m) Display/Communication Circuit Cable
A16381CBC3	5 ft (1.53 m) Display/Communication Circuit Cable
A16381CBC4	10 ft (3.05 m) Display/ Communication Circuit Cable
A16381CD2V	20 ft (6.10 m) Display/ Communication Circuit Cable
A16381CD2W	30 ft (9.15 m) Display/ Communication Circuit Cable
A16381CD30	50 ft. (15.24 m) Display/ Communication Circuit Cable
Detection Circuit	
A16381EW49	100 ft (30.5 m) Bulk Detection/Relay Circuit Cable
A16381EW45	500 ft (152.4 m) Bulk Detection/ Relay Circuit Cable Spool
A16381C9PN	2 ft (0.61 m) Detection Circuit Cable
A16381CB0F	3 ft (0.91 m) Detection Circuit Cable
A16381CB0G	5 ft (1.53 m) Detection Circuit Cable
A16381CB62	10 ft (3.05 m) Detection Circuit Cable
A16381CB63	20 ft (6.10 m) Detection Circuit Cable
A16381CB64	30 ft (9.15 m) Detection Circuit Cable
A16381CB65	50 ft (15.24 m) Detection Circuit Cable
A16381CD32	”h” Cable, Detection Circuit
A16381C9PM	Electric Manual Actuator (EMA)
440537	Electric Manual Actuator Bracket
426520	End-of-Line Resistor
426461	End-of-Line Resistor (10 Pack)
A16381CB66	EOL (End-of-Line) Device, Detection Circuit

Ordering Information (Continued)

Part No.	Description
Detection Circuit (Continued)	
A16381CB6Y	Branch Terminator, Detection Circuit
428375	In-Line Splice Kit
A16381TK26	Discharge Pressure Switch
Linear Detectors (Red)	
071230	100 ft (30.5 m) Red Bulk Linear Detection Wire 356 °F (180 °C)
Linear Detectors (White)	
A16381ULBP	100 ft (30.5 m) White Bulk Linear Detection Wire 220 °F (105 °C)
Relay Circuit	
A16381EW49	100 ft (30.5 m) Bulk Detection/Relay Circuit Cable
A16381EW45	500 ft (152.4 m) Bulk Detection/ Relay Circuit Cable Spool
A16381CB9R	2 ft (0.61 m) Relay Circuit Cable
A16381CB9T	5 ft (1.53 m) Relay Circuit Cable
A16381CB9U	10 ft (3.05 m) Relay Circuit Cable
A16381CB9Y	20 ft (6.10 m) Relay Circuit Cable
Release Circuit	
A16381EW4B	100 ft (30.5 m) Bulk Release/Power Circuit Cable
A16381EW47	500 ft (152.4 m) Bulk Release/Power Circuit Cable Spool
A16381CB70	2 ft (0.61 m) Release Circuit Cable
A16381CB71	3 ft (0.91 m) Release Circuit Cable
A16381CB72	5 ft (1.53 m) Release Circuit Cable
A16381CB73	10 ft (3.05 m) Release Circuit Cable
A16381CB74	20 ft (6.10 m) Release Circuit Cable
A16381CB7D	30 ft (9.15 m) Release Circuit Cable
A16381CB7E	50 ft (15.24 m) Release Circuit Cable
A16381CD33	”h” Cable, Release Circuit
439436	Branch Terminator, Release Circuit
A16381CB7H	38 in. (0.97 m) Release Circuit Drop Cable
439448	Protracting Actuation Device (PAD)
Power Circuit	
A16381EW4B	100 ft (30.5 m) Bulk Release/Power Circuit Cable
A16381EW47	500 ft (152.4 m) Bulk Release/Power Circuit Cable Spool
A16381CB7K	2 ft (0.61 m) Power Circuit Cable
A13681CB7L	3 ft (0.92 m) Power Circuit Cable
A16381CB7M	5 ft (1.53 m) Power Circuit Cable
A16381CB7P	10 ft (3.05 m) Power Circuit Cable
A16381CB7T	20 ft (6.10 m) Power Circuit Cable
A16381CB8K	30 ft (9.15 m) Power Circuit Cable

Part No.	Description
Power Circuit (Continued)	
A16381CB8M	50 ft (15.24 m) Power Circuit Cable
A16381CB9P	Fused Power Circuit Cable – 3 ft (0.91 m) (w/Fuse Holder)
Bulk Circuit Connector Kits	
A16381TK21	2-Pin Connector Kit, 1 pack Release/ Power Circuits
A16381TK20	2-Pin Connector Kit, 5 packs Release/Power Circuits
A16381TK1Y	6-Pin Connector Kit, 1 pack Display/ Detection/Relay Circuits
A16381TK1V	6-Pin Connector Kit, 5 packs Display/ Detection/ Relay Circuits
Cable Mounting Hardware	
448174	Bulkhead Cord Grip, (Pkg. 50)
440737	Double Loop Cable Tie (Pkg. 50)
447931	2-Hole Grommet (25 Pack)
447928	3-Hole Grommet (25 Pack)
447321	Linear Detector Grommet (Pkg. 25)

Note: The converted values in this document are provided for dimensional reference only and do not reflect an actual measurement.

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