

CHECKFIRE 110 Detection and Actuation System

Features

- Supervised power, detection, and release circuits
- LED system status indicators
- External primary power with an internal reserve power source
- Selectable release time delay
- Automatic and/or manual actuation
- Electric “DELAY/Reset/Silence” button
- “PUSH To Activate / Alarm When Lit” electric manual activation button
- Color-coded “Plug and Play” cable connections
- Cables provide quick installation and easy replacement
- 85 dB internal sounder
- System isolate feature
- Dust and water tight (IP67 rated)
- Designed for harsh environments
- Compact size
- Adjustable mounting bracket

Application

The CHECKFIRE 110 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.

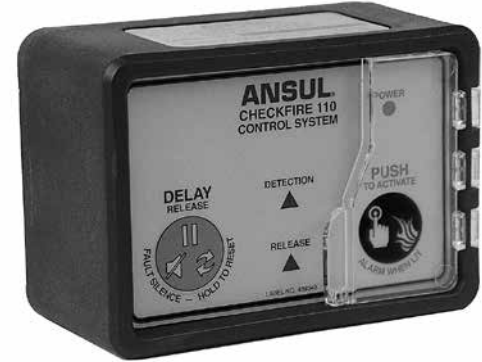
Industries where vehicles use CHECKFIRE 110 Systems:

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

Description

The CHECKFIRE 110 Automatic Detection and Actuation System provides supervised input/output circuits to activate an ANSUL fire suppression system. Upon detecting a fire condition, the control module activates the release circuit resulting in the discharge of an expellant gas cartridge initiating fire suppression system operation.

Operating components include the control module; spot thermal detectors; linear detectors; electric manual actuators; PADs (Protracting Actuation Device); electric-pneumatic actuators; and power, detection, and release cables. The entire system is electronics based for supervision, communication, and control of system components.



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Typical System Connections

The CHECKFIRE 110 Control Module includes four cable leads with corresponding color-coded connectors for ease of installation.

System Cabling: Enables communication and control of components.

- IP67 connections
- Color-coded, anti-vibration connectors
- Integral connectors on each end of cable
- Multiple lengths for versatility
- Temperature rating: 302 °F (150 °C)

Detection Circuit Lead: Permits multiple-detection options using detection circuit cable and tees for the main detection trunk and branch lines.

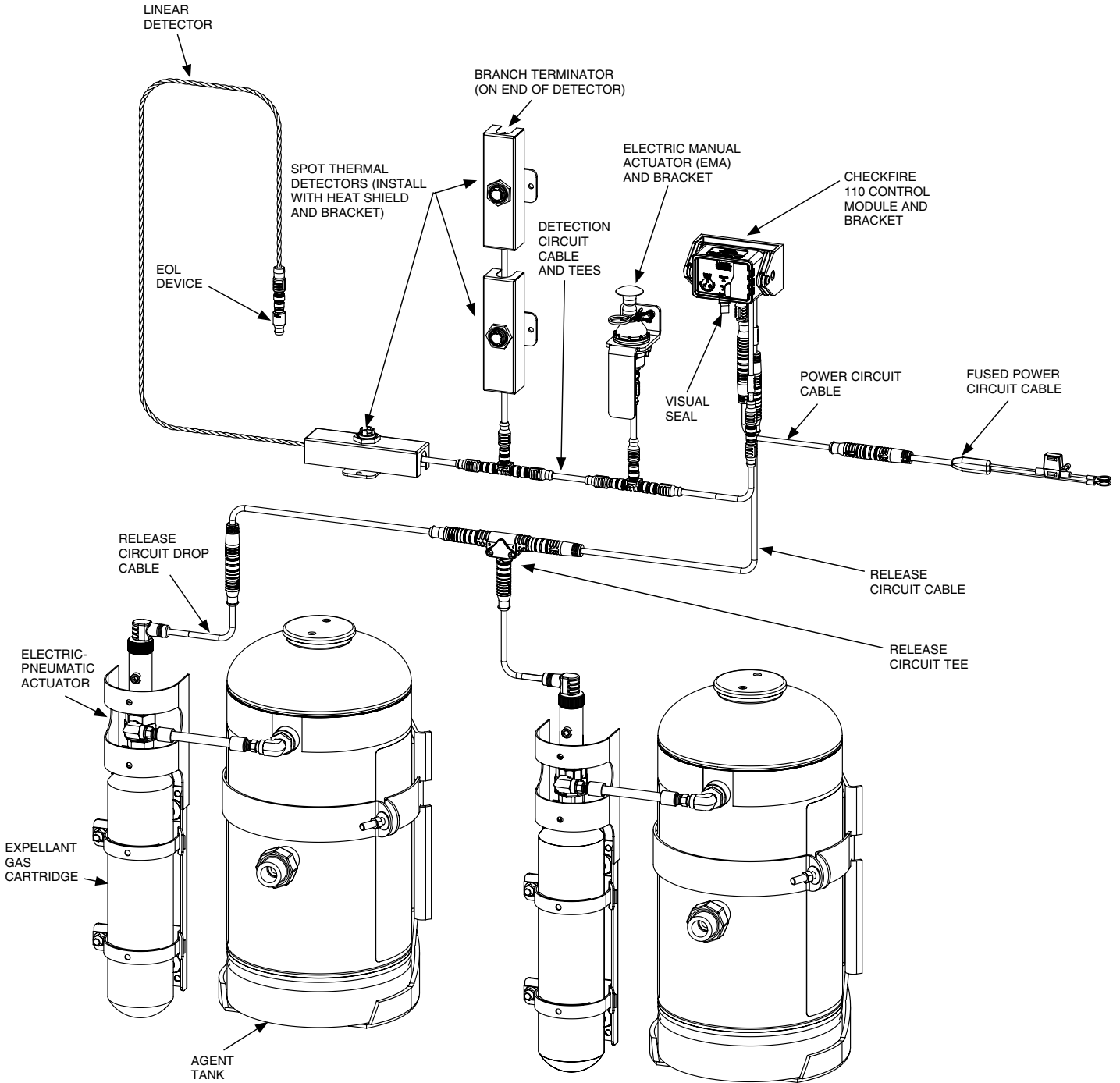
- Electric manual actuators
- Linear detectors
- Spot thermal detectors

Release Circuit Lead: Connects to a maximum of 2 electric-pneumatic actuators installed on agent tank expellant gas cartridges using release circuit cable(s), tee (needed on second tank), and release circuit drop cable(s).

External Power Circuit Lead: Provides a direct connection to the vehicle power source using power circuit cable(s) and a single fused power circuit cable.

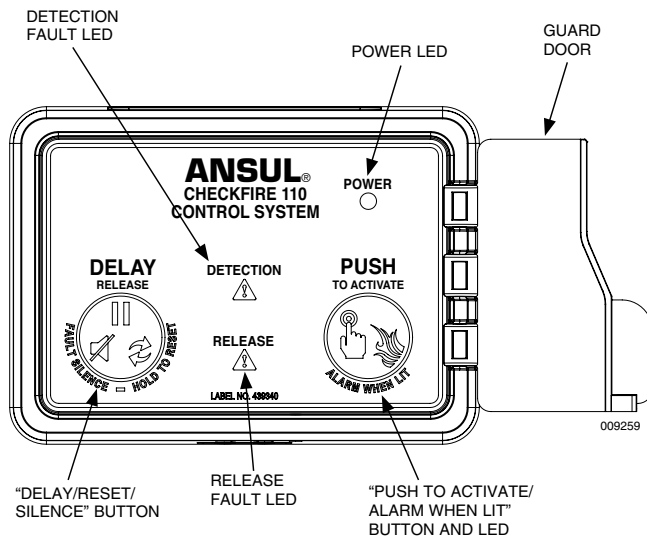
Alarm Output Lead: Connects to vehicle electronics (by others) as needed.

CHECKFIRE 110 SYSTEM – SAMPLE CONNECTIONS



Control Module

The CHECKFIRE 110 Control Module communicates through the cable system to supervise and control components. Installation within reach of the operator provides easy access to operator controls. Indicator LEDs and internal sounder notify operator of system status.



- Four color-coded lead cables accessible at back of control module
- Dust and water tight (IP67 rated)
- Durable high-strength glass-filled nylon
- Surface or bracket mounted
- Two index pins on back for secure mounting
- Ambient temperature range: – 40 °F to 140 °F (– 40 °C to 60 °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 sequence when initiated before release function activates
 - Resets control module
 - Silences audible notifications during fault conditions

Detection

A Linear Detector with an activation temperature rating of 356 °F (180 °C) provides fire detection in the protected area. Two twisted spring steel conductors separated by a heat-sensitive insulator are limited to a minimum bend radius of 2 1/2 in. (64 mm). For easy installation, red color-coded connectors match the red connectors of the entire detection circuit.

Spot Thermal Detectors have the temperature rating stamped on the detector and are color-coded blue for 250 °F (121 °C) and red for 350 °F (177 °C) operating temperatures.

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



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For installer safety during assembly of the Electric-Pneumatic Actuator to an expellant gas cartridge, the actuator includes a new preventor. The integral preventor reduces the possibility of attaching the actuator with the pin not completely retracted. It also provides a metal to metal seat with the expellant gas cartridge eliminating the spacing washer.

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 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

Control Module Power:	12/24 VDC nominal vehicle primary power (24 hour operation) and: Internal 72 hour reserve power
Operating Temperature Range:	- 40 °F to 140 °F (- 40 °C to 60 °C)
Shock:	In accordance with UL1254
Vibration:	In accordance with UL1254
Moisture and Dust:	IP67 per IEC 60529
Electromagnetic Compatibility:	Automotive EMC Directive Compliant (2004/104/EC)

Approvals

FM Approved and CE marked

Ordering Information

Part No.	Description
System Components	
439559	Control Module, CHECKFIRE 110
439564	Mounting Bracket, CHECKFIRE 110/210
439569	Electric-Pneumatic Actuator (normally supplied with agent tanks)
439400	Electric Manual Actuator (EMA)
440537	Electric Manual Actuator Bracket
Detection Circuit Cables and Fittings	
439384	Cable, Detection Circuit; 2 ft (0.61 m)
439386	Cable, Detection Circuit; 5 ft (1.53 m)
439388	Cable, Detection Circuit; 10 ft (3.05 m)
439390	Cable, Detection Circuit; 20 ft (6.10 m)
440759	Cable, Detection Circuit; 30 ft (9.15 m)
440762	Cable, Detection Circuit; 50 ft (15.24 m)
439394	Connector, Tee, Detection Circuit (MxFxF)
439396	Connector, EOL Device, Detection Circuit
439398	Connector, Branch Terminator, Detection Circuit
439404	Connector, Bulkhead, Detection Circuit

Part No.	Description
Linear Detectors	
439406	Linear Detector; 2 ft (0.61 m)
439478	Linear Detector; 5 ft (1.53 m)
439480	Linear Detector; 10 ft (3.05 m)
439408	Linear Detector; 20 ft (6.10 m)
439410	Linear Detector; 30 ft (9.15 m)
440765	Linear Detector; 50 ft (15.24 m)
Release Circuit Cables and Fittings	
439418	Cable, Release Circuit; 2 ft (0.61 m)
439420	Cable, Release Circuit; 5 ft (1.53 m)
439422	Cable, Release Circuit; 10 ft (3.05 m)
439424	Cable, Release Circuit; 20 ft (6.10 m)
439426	Cable, Release Circuit; 30 ft (9.15 m)
439428	Cable, Release Circuit; 50 ft (15.24 m)
439430	Cable, Release Circuit Drop; 30 in. (0.77 m)
439432	Cable, Release Circuit Drop; 38 in. (0.97 m)
439434	Connector, Tee, Release Circuit (MxFxF)
439436	Connector, Branch Terminator, Release Circuit
439405	Connector, Bulkhead, Release and Power Circuits
439448	Protracting Actuation Device (PAD), w/Spade Connectors
Power Circuit Cables and Fittings	
439438	Cable, Power Circuit; 2 ft (0.61 m)
439440	Cable, Power Circuit; 5 ft (1.53 m)
439442	Cable, Power Circuit; 10 ft (3.05 m)
439444	Cable, Power Circuit; 20 ft (6.10 m)
439446	Cable, Power Circuit; 30 ft (9.15 m)
440187	Cable, Power Circuit; 50 ft (15.24 m)
439405	Connector, Bulkhead, Release and Power Circuits
439492	Cable, Fused Power Circuit (w/Inline Fuse Holder); 3 ft (0.91 m)
Accessory Equipment	
438280	Spot Thermal Detector, 250 °F (121 °C)
438281	Spot Thermal Detector, 350 °F (177 °C)
440905	Spot Thermal Detector Bracket and Heat Shield
440090	Pressure Switch Shipping Assembly
440737	Double-Loop Cable Ties (Pkg. of 50)
56692	Rubber Sleeve (Pkg. of 20)
440798	Label Package
440097	Detection Circuit Tester (DCT)
441021	Release Circuit Tester (RCT)
440912	Release Circuit Test Plug (Pkg. of 3)