

# ARGUS

---

Installation and Resource Guide





<b>1.0</b>	<b>COMPONENTS</b>	
1.1	DETECTORS	2
1.2	CONTROL PANEL	3
1.3	POWER CARD	4
1.4	ZONE CARD	6
1.5	ALARM/MONITOR CARD	8
1.6	HORN/STROBE LIGHT	10
<b>2.0</b>	<b>INSTALLATION</b>	
2.1	DETECTOR PLACEMENT	11
2.2	INSTALLING DETECTORS	12
2.3	MOUNTING THE PANEL AND SUPPLYING POWER	13
2.4	WIRING ZONE CARDS/DETECTORS	14
2.5	WIRING RELAYS	15
2.6	WIRING HORN/STROBE	16
2.7	TESTING FOR GROUND FAULT	17
<b>3.0</b>	<b>START-UP PROCEDURE</b>	
3.1	TESTING DETECTORS	18
<b>4.0</b>	<b>OPERATION</b>	
4.1	WHAT TO DO IN A SPARK DETECTION SCENARIO	19
<b>5.0</b>	<b>MAINTENANCE</b>	
5.1	LENS REPLACEMENT	20
5.2	ROUTINE MAINTENANCE	22
5.3	TROUBLESHOOTING	23
<b>6.0</b>	<b>INSTALLATION GUIDE</b>	
6.1	DETECTOR INSTALLATION GUIDE	27
6.2	ELECTRICAL WIRING DIAGRAM	36
<b>7.0</b>	<b>WARRANTY</b>	
7.1	WARRANTY	37

## 1.0 COMPONENTS

### 1.1 DETECTORS

The heart of the Argus fire detection is the spark detector. The detector is equipped with a lens that can see infrared light emitted by extremely small sparks and warn you before they have a chance to become a fire.



*There are two types of detectors, the 343 and 535.*

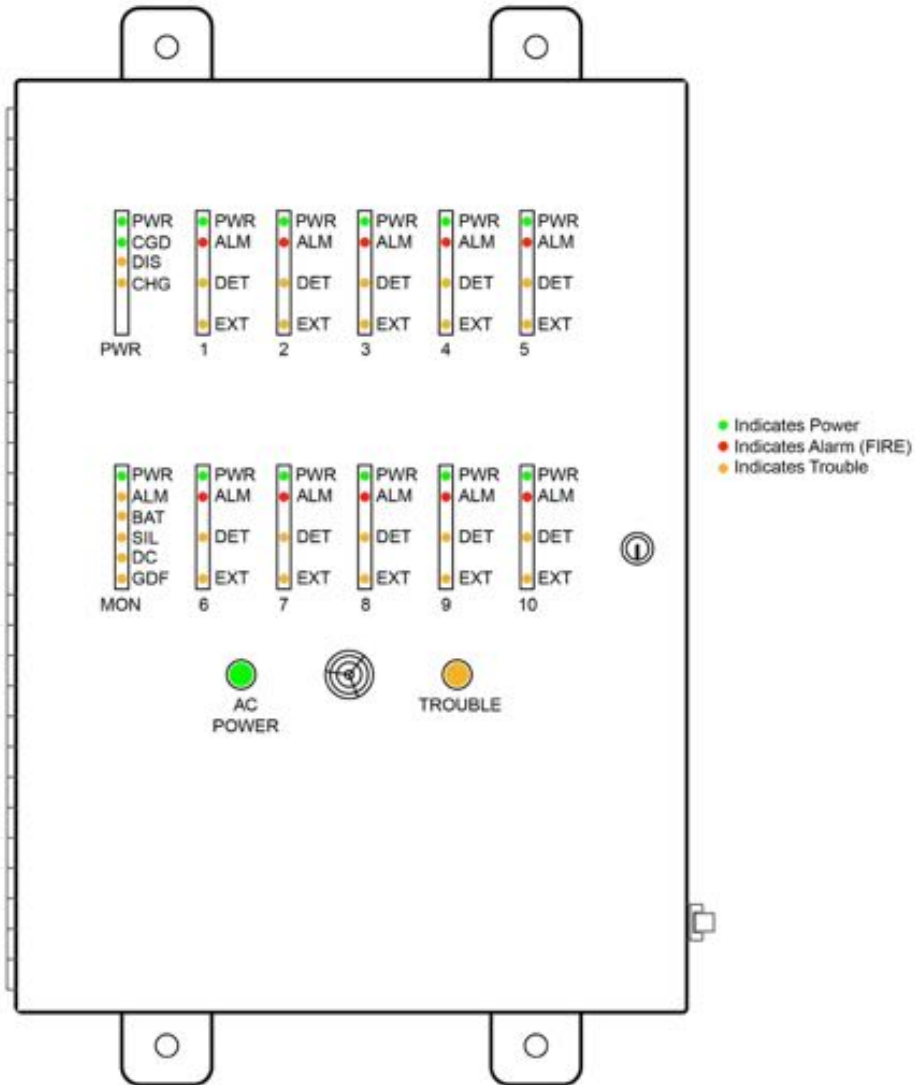
As of 2014 only the 535 detector is available for sale, and all orders for Argus will include the 535 detector only. Although there are a few changes between the two detectors, they operate identically. This means that if you choose to replace one of the old 343 detectors in your gin with a new 535 one, the zone you modified will still work as before.

The changes between the 343 and 535 detectors that you should be aware of are:

- Mounting dimensions are different. When replacing old detectors, new holes must be drilled for the mounting brackets.
- The 535 detector has a two-tone LED that indicates whether detector is in an alarm state (red) or standby (green).
- The End-of-line (EOL) module required for the 343 detector is no longer needed for the 535. Instead, there is a switch on the 535's circuit board that should be toggled in the last detector in a zone. For more information about zone card/detector wiring, please refer to section 2.4.

1.2 CONTROL PANEL

The control panel houses all the electronics, including the power card, monitor card, zone cards, and relays. It should be in an accessible location near the gin's console for easy access in case of a fire.



The 10-zone panel pictured contains one power card, one monitor card, and room for ten zone cards.

### 1.3 POWER CARD

The power card is housed in the top-left slot of the panel and has four indicator lights. The indicators and adjustments are listed below, some of which are not applicable to cotton gins. Also included is information on power supply fusing.

- AC Power Indicator (AC Power) on panel door (28 volt bulb): Normally "ON" unless AC power fails or the bulb fails.
- LED-1 green DC Power Indicator (PWR): Normally "ON" unless fuse F-1 blows (as long as the battery is connected to the system and fuse F-2 is in the circuit)
- LED-2 green Battery Charged Indicator (CHGD): Not applicable to cotton gin uses.
- LED-3 amber Battery Discharging Indicator (DISCH): Not applicable to cotton gin uses.
- LED-4 amber Battery Charging Indicator (CHNG): Not applicable to cotton gin uses.
- P-2 Voltage Regulator (Potentiometer): Adjust for 24 volts DC +/- 0.1 volts (measure across detector output terminals pins 1 & 3) with maximum load on system. Not applicable to cotton gin uses.
- P-1 Battery Charging Voltage Regulator (Potentiometer): Not applicable to cotton gin uses.
- SH1 Battery "YES/NO" Indicator: Jumper should be placed on pins towards desired side.

**NOTE: For cotton gin applications, make sure the black jumper is placed on the pins on the NO side.**

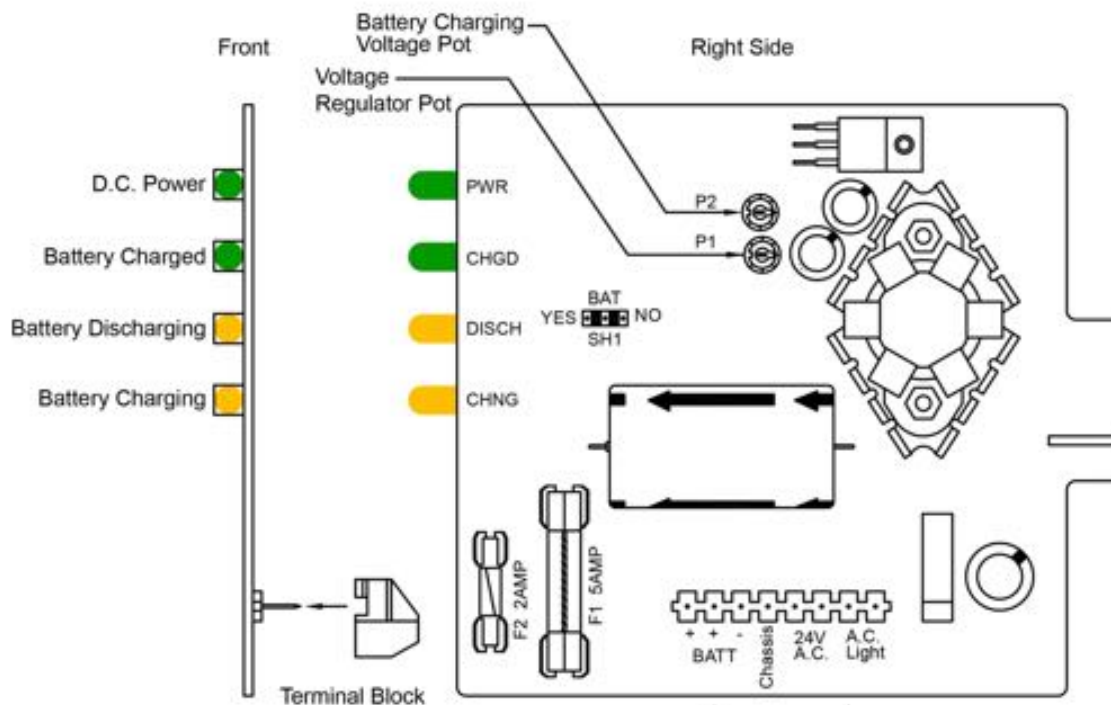
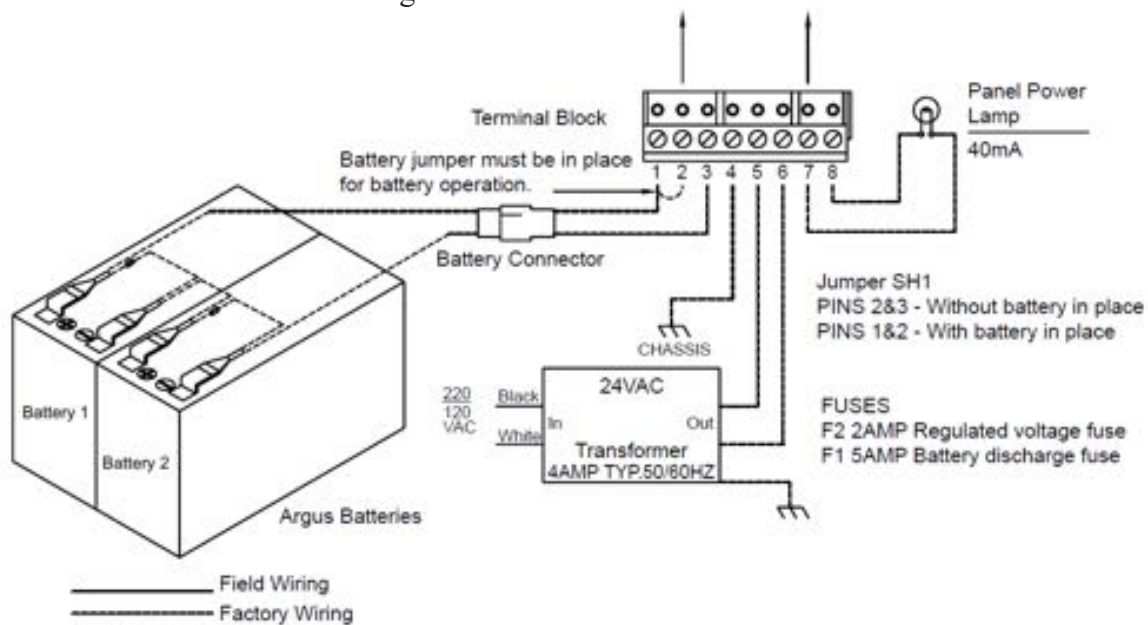


Figure: Power Card

Power Supply Fusing:

- F-1 – Battery Charging Fuse (AGC 5 Amperes):<sup>[SEP]</sup>This fuse passes both the regulated and unregulated current when the system goes into battery mode operation. It must pass current for extinguishers as well as detectors thus it is sized to allow system operation in event of power disruption. Not applicable to cotton gin uses.
- F-2 – Regulated Power Fuse (GMA 2 Amperes): This fuse controls the regulated 24 volts DC supplied to the circuit boards and detectors. The 2 amperes rating is the maximum fuse rating for fuses used in this position. Systems with few detectors and/or zones can use fuses of lesser ratings. Fuses should always be sized to fit the application or demand current.
- Primary Fuse (GMA 5 Amperes): The primary fuse is located in the AC line supplying current to the transformer used in the system. The transformer used and the system configuration or size predicates its size. This fuse passes the entire AC current demand for the system through a 5 to 1 step-down transformer when a 120 volts AC line is used. In addition, this fuse must be sized to blow in the event of transformer failure and/or bridge filter capacitor failure. Typically, the fuse should be a fast blow 5 amperes maximum fuse for maximum power when using a 4 amperes transformer (120 volts AC to 24 volts DC). The fuse should have a 1 ampere rating when used with 240 volts AC to 24 volts DC, 4 amperes transformers.

Power Card connection diagram:



## 1.4 ZONE CARDS

Each set of detectors is wired to its own zone card located in the control panel. For information on wiring zone cards, see section 2.4. This section includes a brief overview of the LED indicators, switches, and fuses located on the card.

### Indicators

- LED #1 – green Power Indicator (PWR): Indicates the presence of 24 volts DC regulated voltage from the power supply regulator.
- LED #2 – red Alarm Indicator (ALM): Indicates an activation of the alarm circuitry by the detector.
- LED #3 – amber Detector Trouble Indicator (DET): Indicates trouble in the external circuits to and from the detector. It will illuminate when the reset switch is operated.
- LED #4 – amber Extinguisher Trouble Indicator (EXT): Indicates trouble in the extinguisher firing circuit, such as extinguisher disconnect switch being in the open position, a fuse is blown, open leads, etc.

### Switches

- Reset Switch: a normally closed, momentary switch that controls 24 volts DC to the detectors connected to the zone.
- When operated (moved to the “UP” position), it disconnects the 24 volts DC power from the detectors, which automatically reset themselves. While operated the amber indicator will flash and the trouble alert will beep.

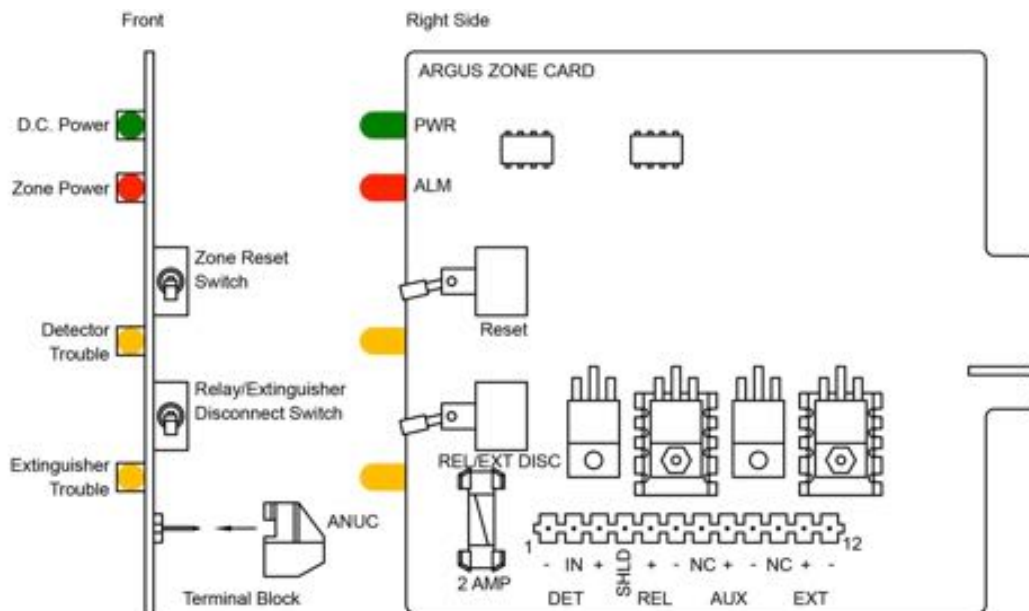


Figure: Zone Card

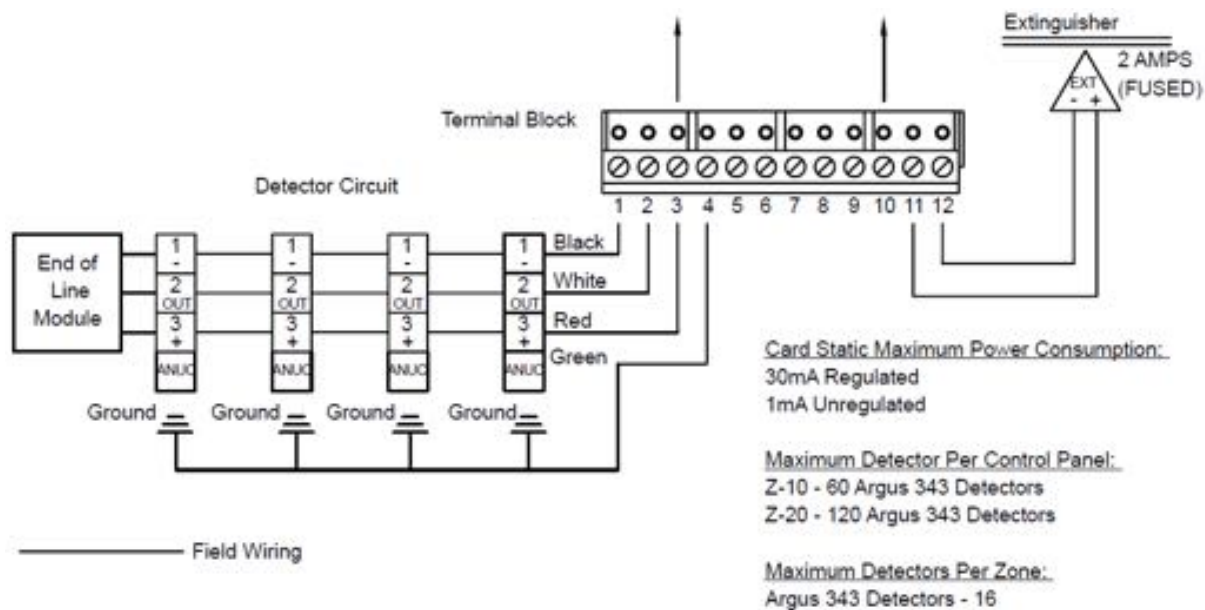


- **Extinguisher Disconnect Switch:** This switch disconnects the extinguisher and relay circuits to allow for maintenance. When this switch is in the “UP” position, the extinguisher amber indicator (EXT) will blink and the trouble alert will beep (unless silenced) until the switch is returned to the normal “DOWN” position.

**Fusing**

- The fuse marked F-1 (2 amp) should not be sized greater than 2 amperes.
- Should this fuse blow, the extinguisher and relay power is disconnected and the amber Extinguisher Trouble Indicator (EXT) will blink.
- Current limiting is provided on the unsupervised relay (terminals 5 and 6) and AUX relay terminals (8 and 9). The maximum current that will be supplied to these terminals is 250mA total for the two relays. Current in excess of this amount will shut down the driving circuit without causing damage to the unit or malfunction of the alarm circuits.

Zone Card connection diagram (For more information, please refer to section 2-4 later in this manual):



## 1.5 ALARM/MONITOR CARD

The Alarm/Monitor card indicates whether the system is working properly or not. If none of the amber LEDs are lit, then the system should be working properly. This section goes over the function of each LED and the silence switch.

### Indicators

- LED #1 green DC Power Indicator (PWR): Indicates regulated 24 volts DC on card when illuminated.
- LED #2 amber Alarm Trouble Indicator (ALM): Indicates trouble in the primary alarm bell circuit.
- LED #3 amber Battery Trouble Indicator (BAT): Indicates battery not in system, SH-1 on Power Supply Card not in circuit to selected battery, or non-battery operation.
- LED #4 amber Silence Switch Trouble Indicator (SIL): Indicates trouble silence switch "ON" in 24 v DC circuit on card or ribbon cable.
- LED #5 amber DC Power Trouble Indicator (DC): Indicates trouble in 24 volts DC circuit on card or on ribbon cable.
- LED #6 amber Ground Fault Trouble Indicator (GDF): Indicates ground fault in system during installation. This is an installation aid. The system is normally grounded when operational.

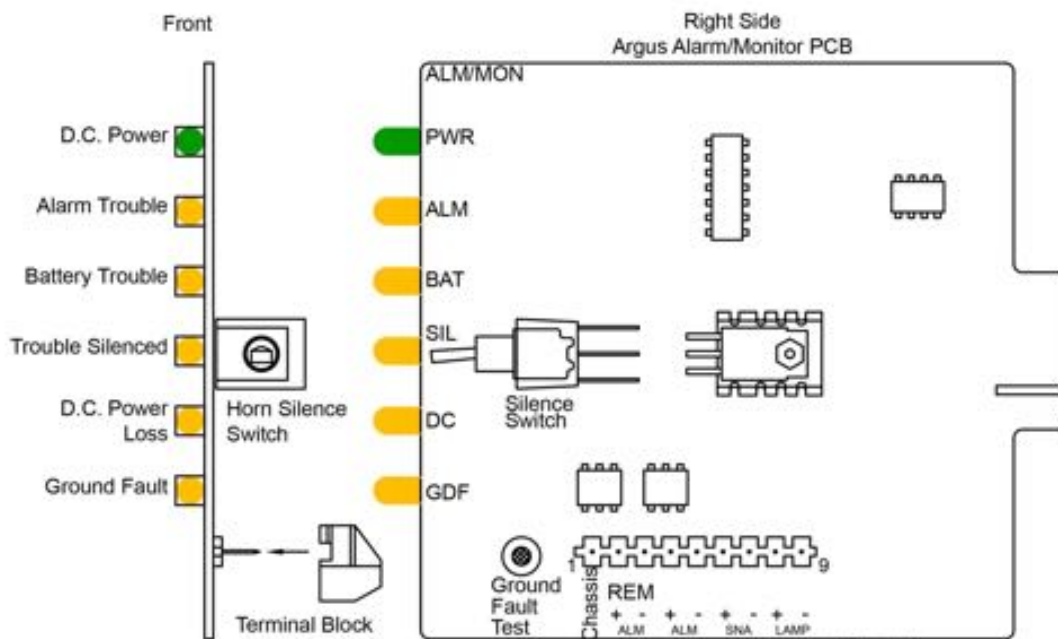
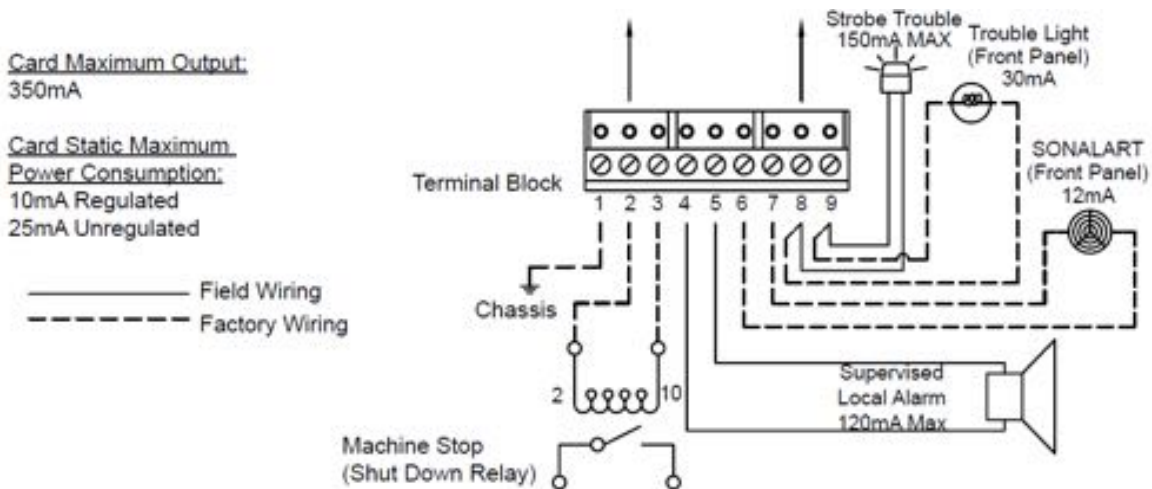


Figure: Alarm/Monitor Card

Silence Switch

- Controls the system trouble beeper. When “UP”, in the silence position, the beeper is suppressed and only the amber indicator (SIL) and the amber trouble indicating LED’s will operate. If silence switch is “UP” with no trouble in the system, the beeper will come on continuously as a reminder that the silence switch needs to be placed in its normal operating position. This feature also provides an audible indication to technicians attempting to isolate trouble in the system. When the trouble is corrected the beeper will emit a continuous tone until the silence switch is returned to normal.

Alarm/Monitor Card connection diagram:



## 1.6 HORN/STROBE LIGHT

The horn and strobe combination alerts you when a fire has been detected.

The horn/strobe is wired to the alarm card. It should be placed near the control panel in a visible location.

For information on wiring the horn/strobe, see section 2.6.



## 2.0 INSTALLATION

### 2.1 DETECTOR PLACEMENT

Here is a list of locations that you will want to have your Argus system installed, listed in order of priority. Keep in mind that the needs of a gin are different from one to the next, and if you need help choosing locations, contact a Samuel Jackson representative.

- Lint flue – Past all lint cleaners, preferably in round pipe rather than rectangular.
- Gin stands
- Overflow – Right before the separator
- Trash – Before the trash fan
- Seed – Gravity dropper
- Precleaning – Before inclines or separators
- Motes – Before the mote separator/cleaner
- Condenser outlet – Inside the building

Locations to Avoid:

- Immediately after any precleaning equipment
- Near windows
- Near access doors that are opened often
- Near free air gates

Ideally detectors should be installed on access doors to allow for easy maintenance and periodic cleaning (see 5.2).

## 2.2 INSTALLING DETECTORS

Here are some general rules to keep in mind when placing detectors in pipe.

- In a horizontal pipe, never put detectors dead bottom center.
- Do not place a detector dead center on the backside of an elbow.
- Typically the detector lens is protruding in the pipe, but spacers can be added if the lens needs to be recessed out of the pipe.
- Always install detectors in a straight line around a pipe.
- Make sure the detectors are evenly spaced around a pipe.

See the supplemental section at the end of the document for a complete guide to installing detectors.

## 2.3 MOUNTING THE PANEL AND SUPPLYING POWER

The control panel houses all the electronics outside of the detectors themselves. When choosing a location for the panel and providing power to it, keep these things in mind:

- Mount the panel near the console. In case of a fire, you will need to access the panel to identify the affected zone and access the reset switch. If the panel cannot be close to the console, it does need to be within eyeshot.
- Power to the panel needs to be dedicated rather than feeding off the power supplied to another device.

**Note:** If you have a Moisture Mirror X system in your gin, you have the option of being able to reset Argus alarms from your Moisture Mirror X with the addition of an Argus Interface Panel. In this case, the above rules do not necessarily apply. If you have any questions, please contact a Samuel Jackson representative. For more information, see Section 6 of the Moisture Mirror X manual.





2.5 WIRING RELAYS

Wiring relays involves connecting two wires to the zone card terminal block. Connect terminal 5 to A1 and connect terminal 6 to A2, according to the figure below.

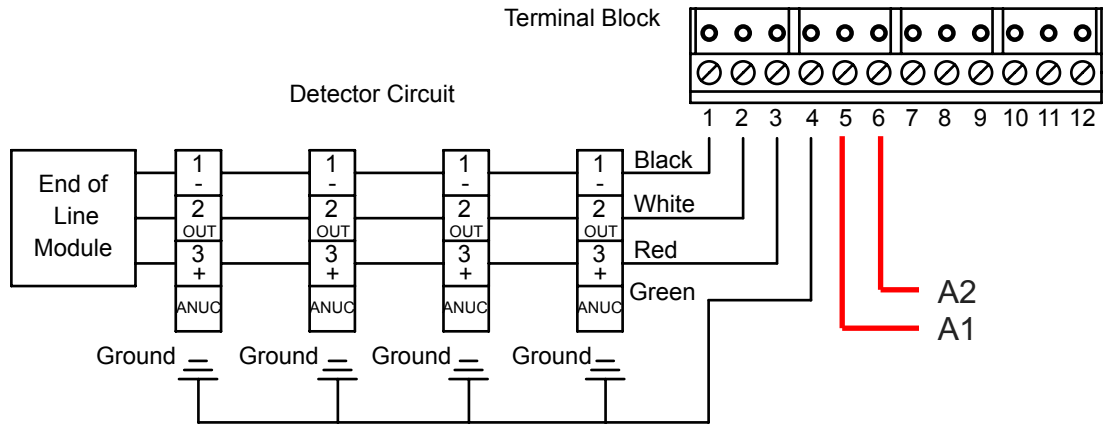


Figure: Alarm relay wiring

- Consult your electrician about tying the relay to equipment that needs to shut down automatically.
- If a relay needs to be replaced, Samuel Jackson supplies a triple pole double throw 24V DC relay that is rated to 10 amps.

**Note:** The resistor between 11 and 12 should be left in place.

2.6 WIRING HORN/STROBE

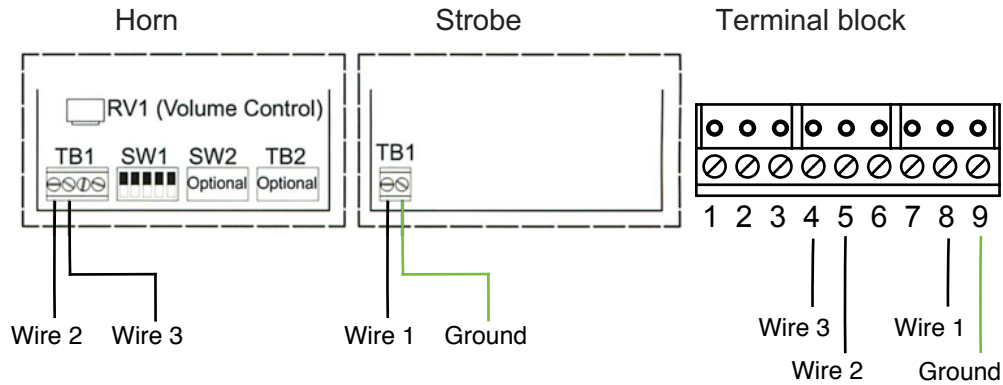


Figure: Horn/Strobe circuit board wiring to Alarm/Monitor terminal block

Wiring the Horn/Strobe the Alarm/Monitor card is very simple. There are four wires: three black wires and one green/yellow grounding wire. Wires 2 and 3 are connected to the horn, and wires 1 and Ground are connected to the strobe. The wiring inside the Horn/Strobe is default from the factory. For setup, all that needs to be wired is the Alarm/Monitor terminal.

**Note:** The buzzer on the door is also wired into terminals 8 and 9, but this is intentional.

**Tip:** Alarm/monitor cards come with a resistor attached between terminals 4 and 5, which work to “fool” the system into thinking a horn is attached. If for some reason the horn is disconnected, it is useful to keep the resistor. This will prevent the trouble light from coming on.

## 2.7 TESTING FOR GROUND FAULT

After all detectors have been wired into the control panel and you are performing a final check of the panel, use this procedure for a ground fault test:

- Monitor Card with Ground Fault Indicator Test Switch:
  - Disconnect chassis ground from Terminal #4 on the power card.
  - Push the Ground Fault Indicator (GFI) Test Switch on the Alarm Monitor Card.
  - Release the Test Switch and re-connect chassis ground to Terminal #4 on the Power Card.
- Monitor Card without Ground Fault Indicator Test Switch:
  - Disconnect chassis ground from Terminal #4 on Power Card.
  - Connect a jumper between Terminal #1 and Terminal #2 on the Alarm Monitor Card.
  - Disconnect the jumper between Terminal #1 and Terminal #2 on Alarm Monitor Card.
  - Reconnect the chassis ground to Terminal #4 on the Power Card.

NOTE: If there is a ground in the system, the amber Ground Fault Indicator LED (GDF) will light on the Alarm Monitor Card. There will be no beeper sound.

If there is not a ground in the system, because there is no trouble signal the amber Ground Fault Indicator LED (GDF) on the Alarm Monitor Card will not light.

### 3.0 START-UP PROCEDURE

#### 3.1 TESTING DETECTORS

- Use a non-LED flashlight or striker to test each detector and assure that each detector functions properly. If you don't have an easy access mounting door, then pull off one sensor to shine the flashlight through that hole.
- Reset the panel after each test to assure that each detector signals the panel properly. When the detector goes into alarm, the red Alarm Indicator (ALM) on the corresponding Zone Card should light, and the horn/strobe should come on.
- In the Machine Shutdown relay should trip the stop circuit of the production machinery intended for stoppage.
- Perform this test after installation of the system and repeat once a year.

---

## 4.0 OPERATION

### 4.1 SPARK DETECTION SCENARIO

- Detector senses a spark, which could initiate a fire.
- Detector latches itself into alarm mode.
- The red LED indicator on the detector illuminates.
- The detector signals the associated Zone of the control panel.
- Upon receiving the signal, the zone will latch itself into alarm mode.
- This causes the red Alarm indicator to illuminate.
- A signal is sent to the Alarm Monitor Card to operate the horn/strobe.

**What to do when the alarm sounds:**

- Look at the control panel to find out which Zone Card's red Alarm LED is illuminated.
- Locate the spark or fire in the indicated zone. Looking at the detector LED could help determine the location of the spark.
- Extinguish the spark or fire.
- Turn off the horn/strobe by resetting the alarming Zone Card with the top switch.

**NOTE: As long as no other spark is present, the Zone Card will reset. If there is still a spark or flame being detected, the alarm will keep sounding.**

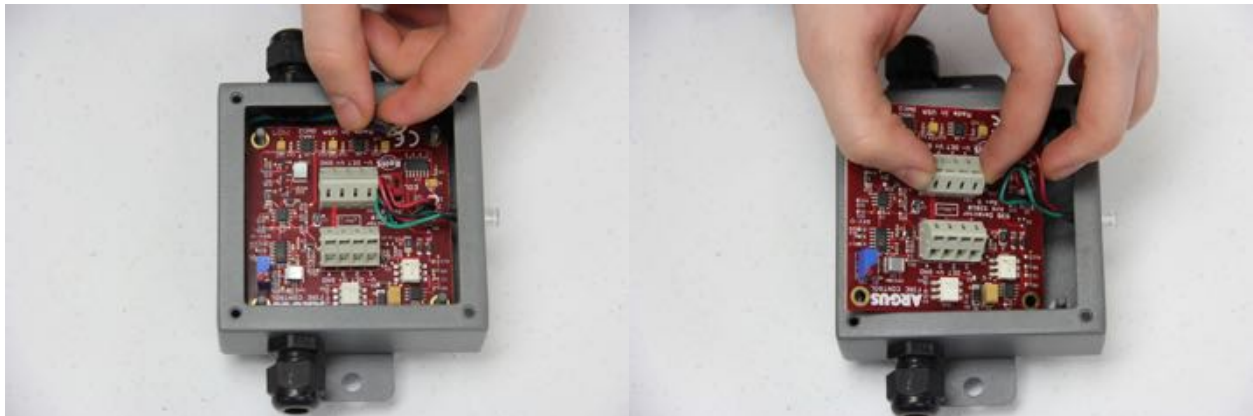
5.0 MAINTENANCE

5.1 LENS REPLACEMENT

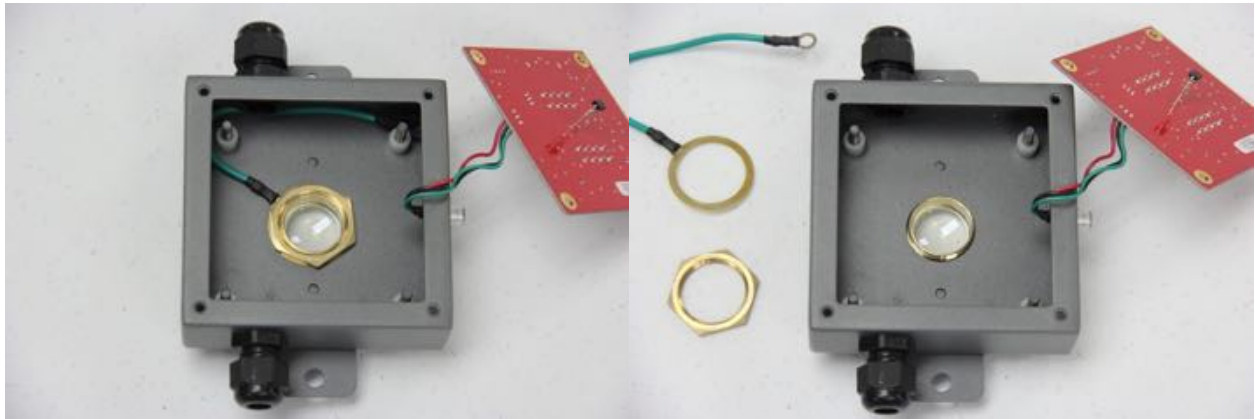
Friction from materials traveling through pipes may wear out lenses over time. If lenses are too worn and are no longer working properly, they need to be replaced. This short guide shows you to replace the lens on a detector.



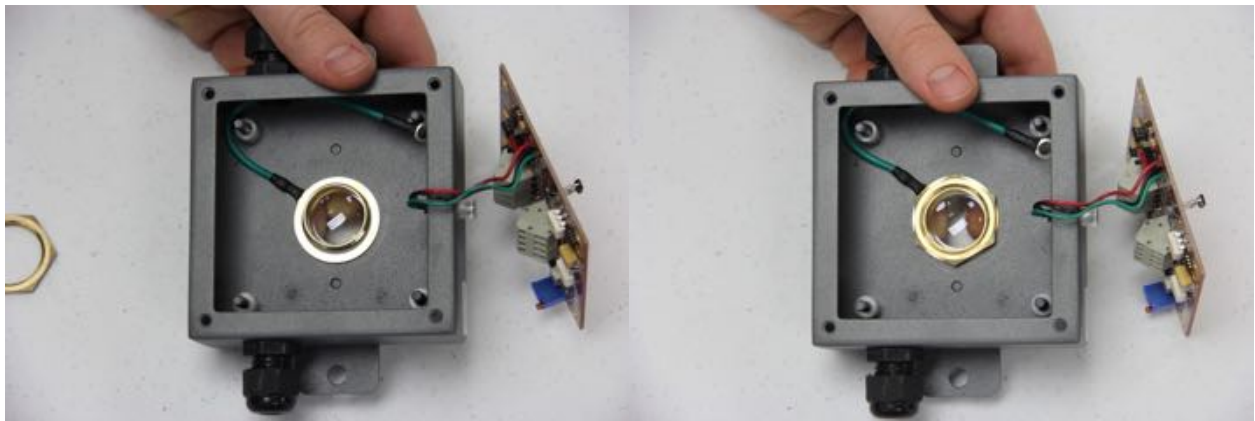
Remove the cover of the detector and disconnect all external wiring.



Remove the nuts from each corner, take the lens grounding wire from the corner bolt, and then carefully remove the internal circuitry.



Set the circuit board aside, loosen the nut on the lens, and remove the nut, grounding wire, and lens from the detector body.



Insert the new lens, add the grounding wire, and replace the nut.



Carefully replace the circuitry inside the body and put the grounding wire back on the corner bolt. Tighten the nuts snugly, but not too tight to avoid damaging the circuit board.

## 5.2 ROUTINE MAINTENANCE

After installation:

- During installation, it is possible that some pieces of metal around the detector's viewing hole were not completely removed. When conveying cotton for the first time after installation, check the detectors to make sure no cotton is tagging and obscuring the view of the detector. If it is, file the edge around the opening again check detectors daily until it is no longer a problem.

For routine operation:

- Keep the door of the control cabinet closed to keep the interior free of dust.
- If there is insufficient air behind the gin stands, periodically check to see if there is any trash buildup obscuring the view of the detectors located there.

At the end of the season:

- Clean and test all detectors in each zone (see 3.1).
- Make sure each lens is clear of lint, dirt, or other trash.
- Test each zone and make sure the LED on each detector turns red. If a detector does not respond to testing, replace it with a new one.

In case of fire:

- Make sure the detectors in the affected zone are clean and check that lenses were not blackened by a flame.



### 5.3 TROUBLESHOOTING

This section covers how to handle potential problems including false alarms, inadequate horn volume, frequent lens replacement, hardware default, and includes a table of miscellaneous troubleshooting issues.

#### False Alarms

- Is it the same detector every time? It could be an issue with an individual detector. The next time the alarm goes off, make a note of which detectors in a zone have a red LED. If it is one detector consistently, remove the detector and inspect it for damage. The lens could be damaged or the unit could be malfunctioning. If the lens appears to be fine, it's likely that the unit is malfunctioning and needs to be replaced.
- Make sure the detector isn't near an area known for cold sparks, like after precleaning equipment. Refer to the recommended locations and locations to avoid for more information.
- Detectors can be set off by ambient light. Make sure any nearby access doors are closed and that detectors are properly attached to the pipe.

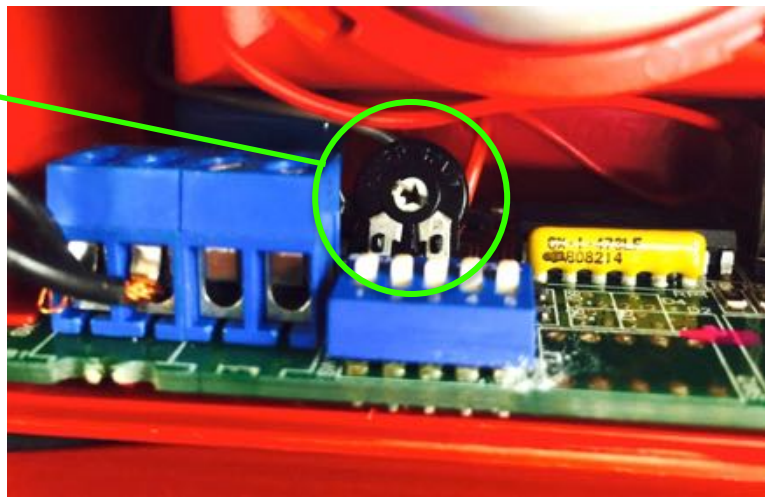
#### Horn volume adjustment

- If the horn is too loud or too quiet, it can be adjusted inside on the circuit board.
- To begin, loosen the two screws on the horn part of the horn/strobe combination and reveal the electronics inside.
- The small black piece is the volume adjustment. Turn the white center clockwise to decrease the volume, and counterclockwise to increase the volume.

Volume Adjuster:  
Rotate interior  
white plastic piece.

INCREASE: rotate  
counterclockwise

DECREASE:  
rotate clockwise



Frequent lens replacement

- If a lens needs replacement frequently, add a few washers to recess the lens out of the pipe to decrease the wear rate.
- Ensure the detector is installed with the bolt pattern aligning with the direction of the pipe. If it is not, the lens will be pressed farther into the pipe than necessary, which will contribute to excessive wear.



Figure: 535 detector with three washers added as a spacer.

Detection of a hardware default:

It is important to distinguish between triggering an alarm when a spark is detected and signaling a hardware default on a card, detector or connection cable.

In the event of a spark detection, the system reacts like this:

- Operation of the external horn and strobe.
- Operation of the buzzer and orange light "Trouble" blinking on the panel door.
- Alarm red led on for the Zone Card that tripped.

The alarm is reset with the switch close to the red led on the Zone Card that tripped.

In the event of a hardware default, the system reacts like this:

- Operation of the external strobe.
- Operation of the buzzer and orange light "Trouble" blinking on the panel door.
- No Alarm red led on and no operation of the external horn.

The system thus signals a fault on a Zone Card, a fault on a detector connection cable or a fault on a detector. In this case, there is no way to stop the fault signaling until it has been corrected except by removing the faulty Zone Card from the panel if it has been identified.

The recommended procedure consists of removing all the Zone Cards from the panel and keeping only the Power Card and the Alarm/Monitor Card connected. These are the two cards to the left of each row of cards. By powering back the panel with these two cards only, the system must remain powered without signaling a

fault. The Zone Cards must then be placed back inside the panel one after the other to identify the faulty Zone Card that causes the hardware default.

Once the faulty zone has been identified, proceed as follows:

- Check the continuity of the cable from the zone card to the last detector.
- Check the state of the detectors (green LED on when the detector is powered).
- Make sure that the "EOL" switch ("End of Line" switch) is "On" only for the last detector of the zone. The switch must be "Off" for all the other detectors.

If you could not identify what the fault is, it is possible that the Zone Card is faulty. Check this hypothesis by connecting the cable coming from the detectors of a card which is functioning on the faulty Zone Card. If the fault persists after connecting the detectors from a zone that is not faulty, the Zone Card itself is faulty. If the fault disappears, the problem is indeed with the cable or the detectors of the faulty Zone and not with the card.

Trouble Condition	Probable Cause
Red Alarm light stays illuminated:	<ul style="list-style-type: none"> <li>• Detector bad/improperly connected.</li> <li>• Detector is still sensing fire.</li> <li>• Detector latched in alarm.</li> <li>• Zone Card bad/improperly connected.</li> </ul>
Trouble light constantly on:	<ul style="list-style-type: none"> <li>• Open detector circuit.</li> <li>• Open bell circuit.</li> <li>• Open solenoid circuit.</li> <li>• Wrong end-line resistance.</li> <li>• Bad Alarm/Monitor Card.</li> <li>• Buzzer silence switch in wrong position.</li> </ul>
Trouble light blinking:	<ul style="list-style-type: none"> <li>• Intermittent connection to detector.</li> <li>• Bad Zone Card.</li> </ul>
Alarm LED will not light during detector light test:	<ul style="list-style-type: none"> <li>• Bad detector.</li> <li>• LED burned out.</li> <li>• Bad Zone Card.</li> </ul>
Trouble light will not illuminate:	<ul style="list-style-type: none"> <li>• Fuse blown.</li> <li>• LED burned out.</li> </ul>
Power LED will not illuminate:	<ul style="list-style-type: none"> <li>• No power.</li> <li>• Fuse blown.</li> <li>• LED burned out.</li> </ul>
Trouble buzzer will not sound off:	<ul style="list-style-type: none"> <li>• Silence switch off.</li> <li>• Bad buzzer.</li> </ul>
Trouble LED will not illuminate:	<ul style="list-style-type: none"> <li>• Bad detector.</li> <li>• Detector shorted.</li> </ul>
Trouble buzzer sounds off intermittently:	<ul style="list-style-type: none"> <li>• Bad 24V power supply.</li> </ul>

## 6.0 SUPPLEMENTAL

### 6.1 DETECTOR INSTALLATION GUIDE

Instructions:

Read completely through these instructions before beginning installation.

1. Using the following three pages, determine the number of detectors needed corresponding to your pipe diameter.  
**Note:** These numbers are specific to cotton gins, consult factory for non-gin applications.
2. Lie out a length of string cut to the length of the pipe perimeter and mark the string by lengths of the perimeter divided by the number of detectors determined from step 1. The ends of the string represent one detector.

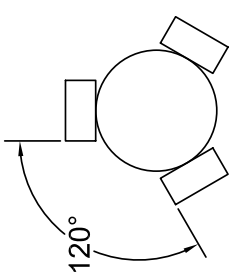
Example: I have a 24" diameter pipe so I will have 5 detectors. My string length will be about 75 inches on which I will place a mark every 15 inches ( $75/5$ ) along the length of the string.

3. Wrap the string around the pipe and transfer the marks on the string to the pipe. These marks are where the template in following step will be centered. Important: Detectors should not be placed at the bottom of horizontal pipes. Place marks such that detectors are as far from the bottom of horizontal pipe as possible. Note: Try to locate the detectors near an access door into the pipe to facilitate installation and enable easy maintenance. The access must be light tight for proper operation.

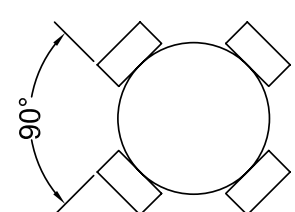
REV	ECN	DESCRIPTION	DATE	BY
A	NONE	RELEASED DWG	08/09	KSS

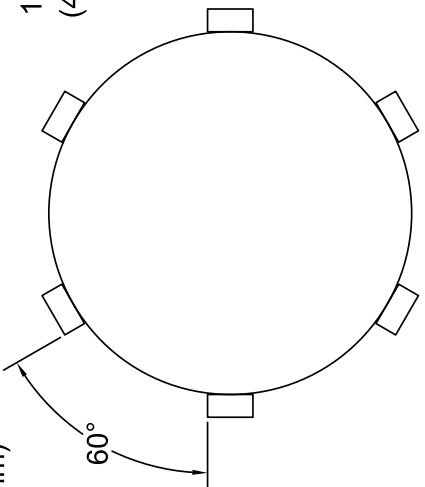
**RECOMMENDED DETECTORS FOR COTTON GINS**



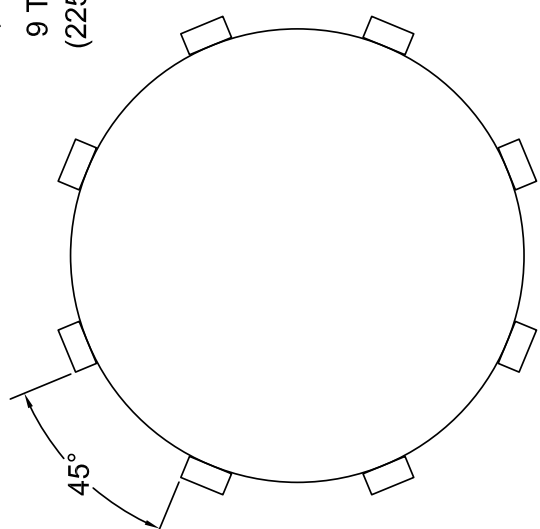
9 TO 15.9"  
(225-399mm)



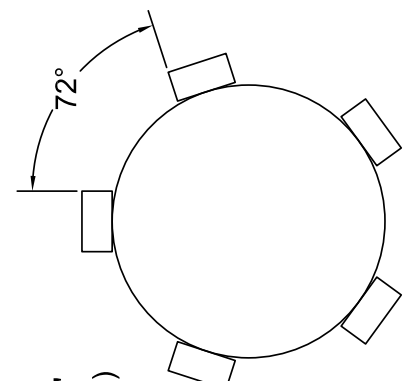
16" TO 21.9"  
(400-555mm)



31" TO 39.9"  
(786-1013mm)




40" TO 50"  
(1014-1270mm)



22" TO 30.9"  
(556-785mm)



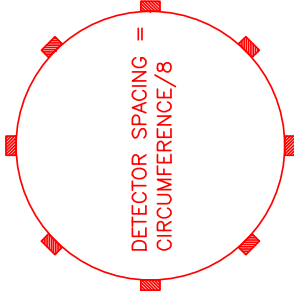
**ARGUS**

CHARLOTTE, NC U.S.A.  
 TEL: +1.704.372.1228  
 www.argusfirecontrol.com  
 e-mail: engineering@argusfirecontrol.com

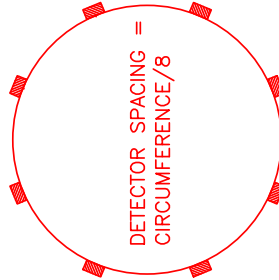
  

DESC: COTTON GIN DETECTOR SPECS FOR ROUND DUCTS				
SIZE	DRAWN BY	DWG NO.	DATE	SHEET
A	KSS	84010	08.25.09	1 OF 1
SCALE	NONE			

ROUND DUCT 51"-60"  
16 DETECTORS TOTAL

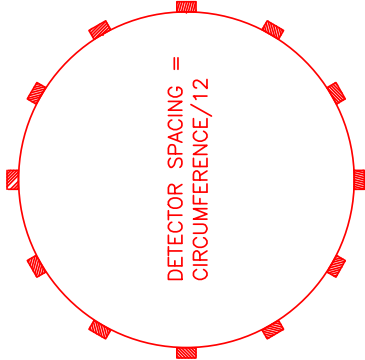


10 FEET SPACING  
BETWEEN ARRAYS

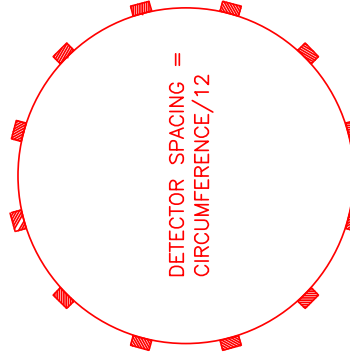


\*\*OFFSET SECOND ARRAY  
BY 22.5 DEGREES

ROUND DUCT 61"-75"  
24 DETECTORS TOTAL

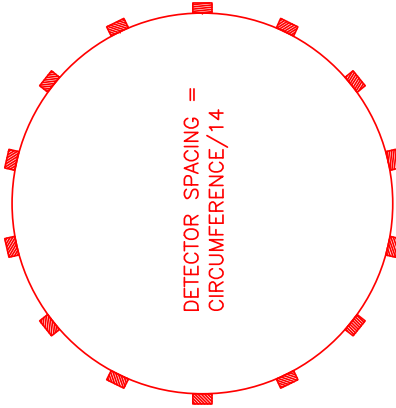


10 FEET SPACING  
BETWEEN ARRAYS

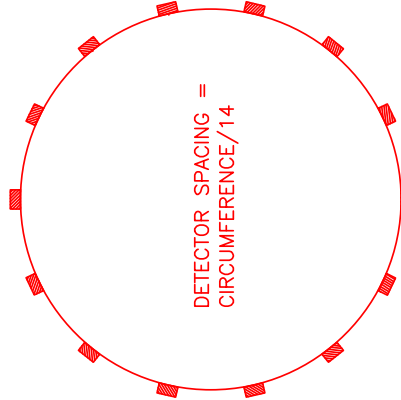


\*\*OFFSET SECOND ARRAY  
BY 15 DEGREES

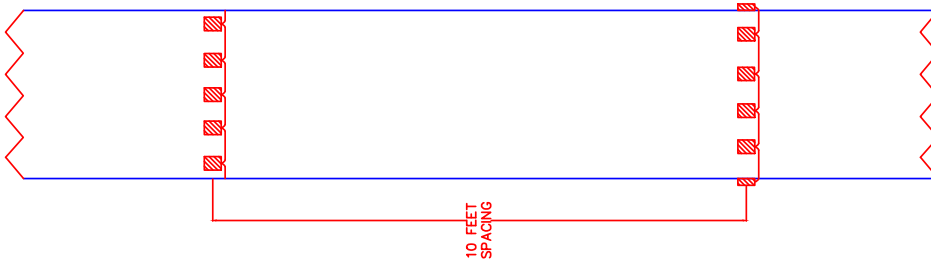
ROUND DUCT 76"-85"  
28 DETECTORS TOTAL



10 FEET SPACING  
BETWEEN ARRAYS



\*\*OFFSET SECOND ARRAY  
BY 12.8 DEGREES



NOTE: MAXIMUM 16 DETECTORS PER ZONE CARD  
NOTE: MAXIMUM 60 DETECTORS PER 10 ZONES  
NOTE: MOUNT DETECTOR IN DIRECTION OF PIPE

SAMUEL JACKSON, INC.

ARGUS ROUND DUCT  
DETECTOR CONFIGURATION

REF:

DRAWING NO.

DWN: WDG  
BY

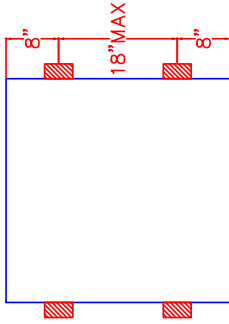
DATE 8-13-2013

14-5377

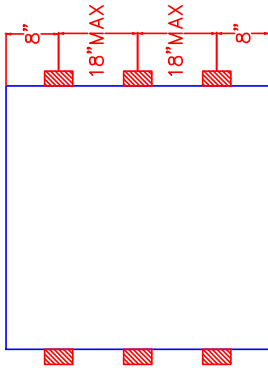
SCALE:

FOR:

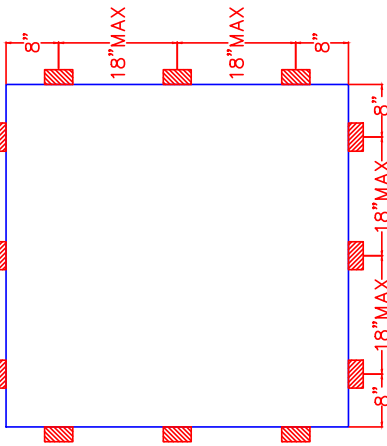
SQUARE DUCT 18" - 34"  
8 DETECTORS



SQUARE DUCT 35" - 40"  
12 DETECTORS



SQUARE DUCT 41" - 52"  
24 DETECTORS

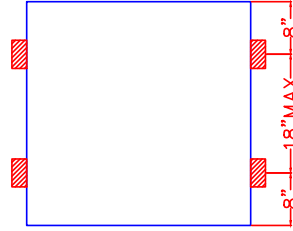
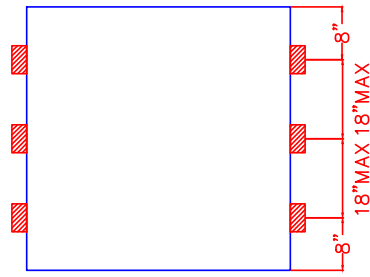
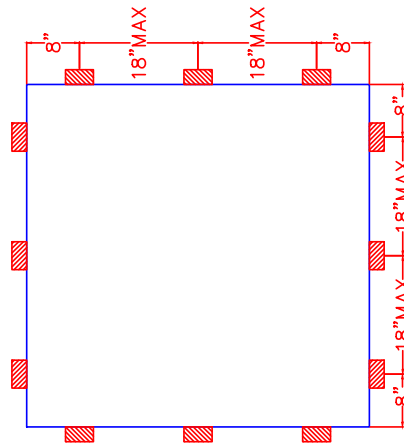


10 FEET SPACING

10 FEET SPACING  
BETWEEN ARRAYS

10 FEET SPACING  
BETWEEN ARRAYS

10 FEET SPACING  
BETWEEN ARRAYS



NOTE: VERTICAL PIPES ONLY - CONTACT FACTORY IF HORIZONTAL  
 NOTE: MAXIMUM 16 DETECTORS PER ZONE CARD  
 NOTE: MAXIMUM 60 DETECTORS PER 10 ZONES  
 NOTE: DETECTORS SHOULD ALWAYS BE PLACED IN ROUND PIPES  
 IF POSSIBLE. USE THIS DRAWING ONLY WHEN PLACEMENT  
 IN ROUND PIPE IS NOT FEASIBLE.

SAMUEL JACKSON, INC.

ARGUS SQUARE DUCT  
 DETECTOR CONFIGURATION

REF:

DWN: WDC  
 BY: [blank]  
 DRAWING NO.

DATE 8-13-2013

14-5376

FOR:

SCALE:



4. With the number of detectors and appropriated placement determined, take the metal template mark the location of each of the three holes per detector on your pipe.  
**Note:** The template holes should be lined up along the length of the pipe, not around the pipe. Incorrect installation will result in detector failure.



**Figure 1: Mark the holes using the template**

5. With the holes marked take the  $\frac{1}{4}$ " drill bit from the installation kit and using a drill, cut out the marked holes. Ream out the outside holes a small amount for easier bolt installation.



**Figure 2: Drill each marked hole using the  $\frac{1}{4}$ " bit**

- Next take the 1-1/8" hole saw and cut out the middle hole on the pipe for each detector.



**Figure 3: Cut out the middle hole**

- Now take the file and begin smoothing the 1-1/8" hole being careful not to enlarge the hole.



**Figure 4: File the sharp edges**

8. Take the sandpaper supplied with the installation kit and begin smoothing the 1-1/8" hole further.

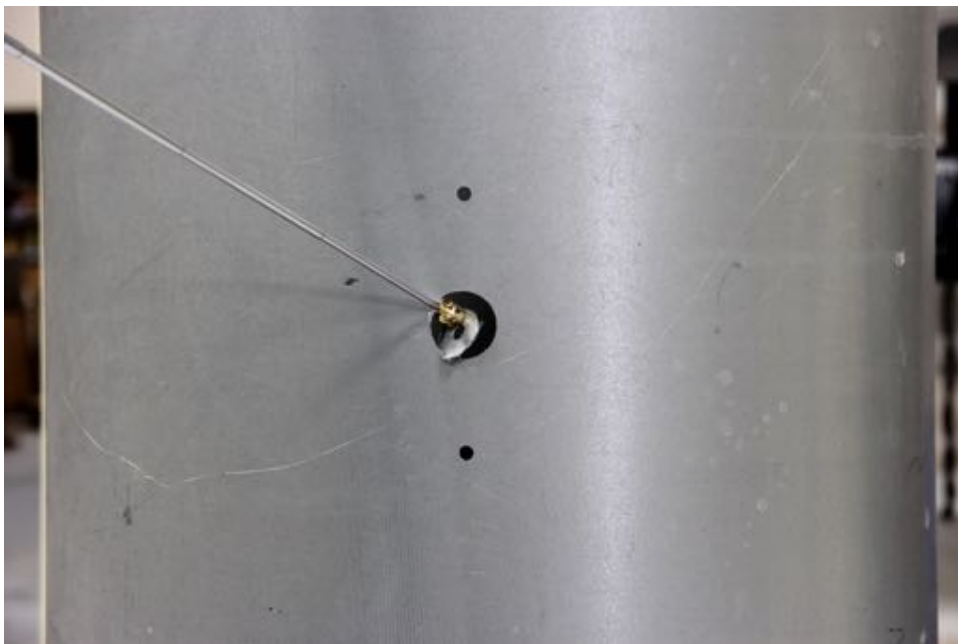
**Note:** These holes need to be very smooth on the inside for effective operation of the detector.



**Figure 5: Sand the hole smooth**

9. Using the magnet remove any metal debris from the inside of the pipe.

**Note:** This debris can damage gin machinery if not removed.



**Figure 6: Remove the metal debris**

10. Take the curved long-nose pliers and use them to insert a detector mounting bolt in one of the ¼" holes from the inside of the pipe.

**Note:** Installation is easier if the detectors are located near an access door.



**Figure 7: Install the mounting bolt with curved nose pliers**

11. Hold the bolt in place while you thread one of the locking nuts onto the bolt from the outside of the pipe.



**Figure 8: Hold bolt in place and thread the lock nut**

- Using the supplied 10mm wrench, tighten the lock nut while holding the bolt stationary with the pliers. Repeat steps 8-10 for each ¼” hole.

**Note:** Be careful not to damage the threads while holding the bolt immobile.

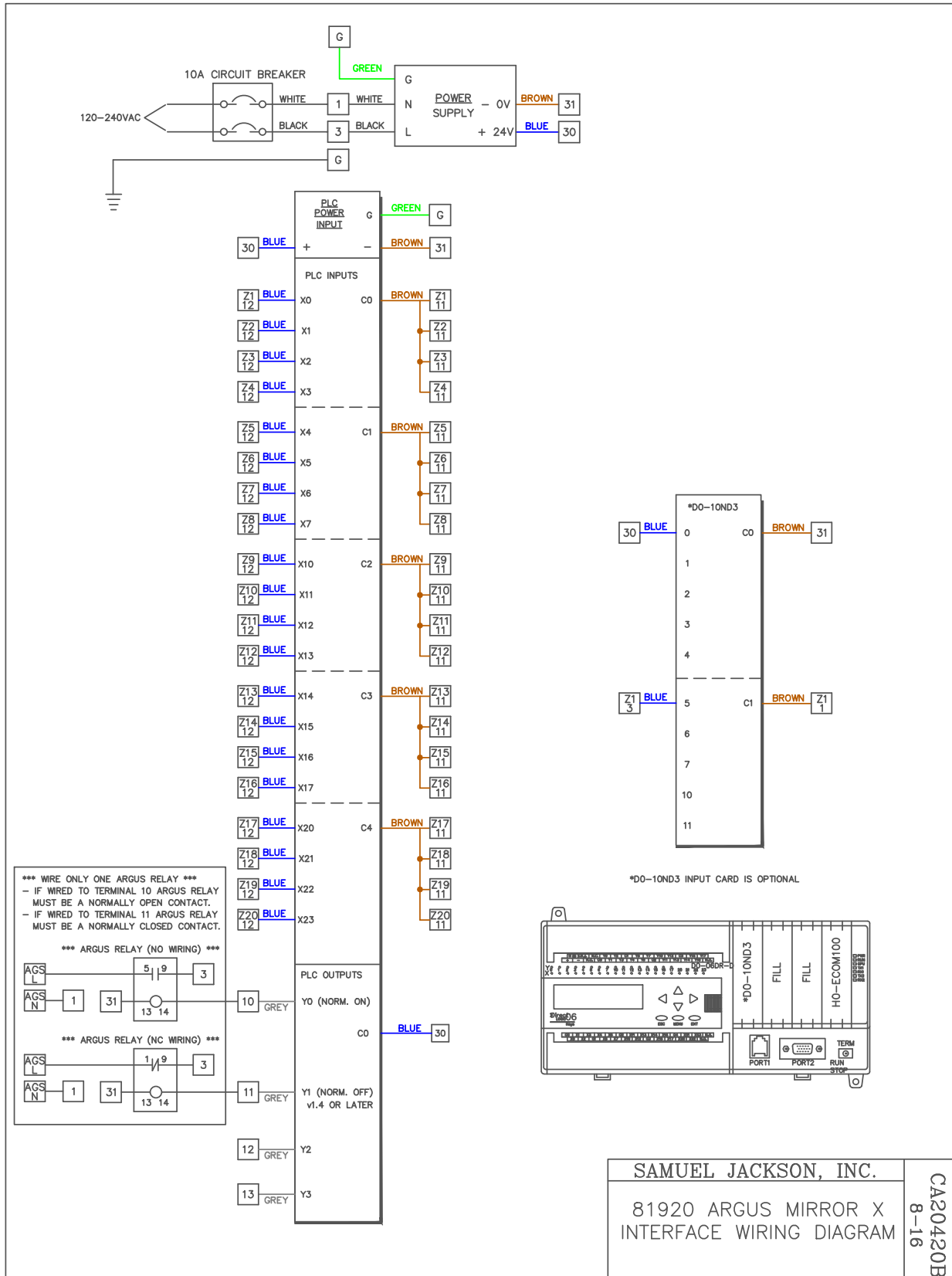


**Figure 9: Tighten the lock nut while holding the bolt steady**

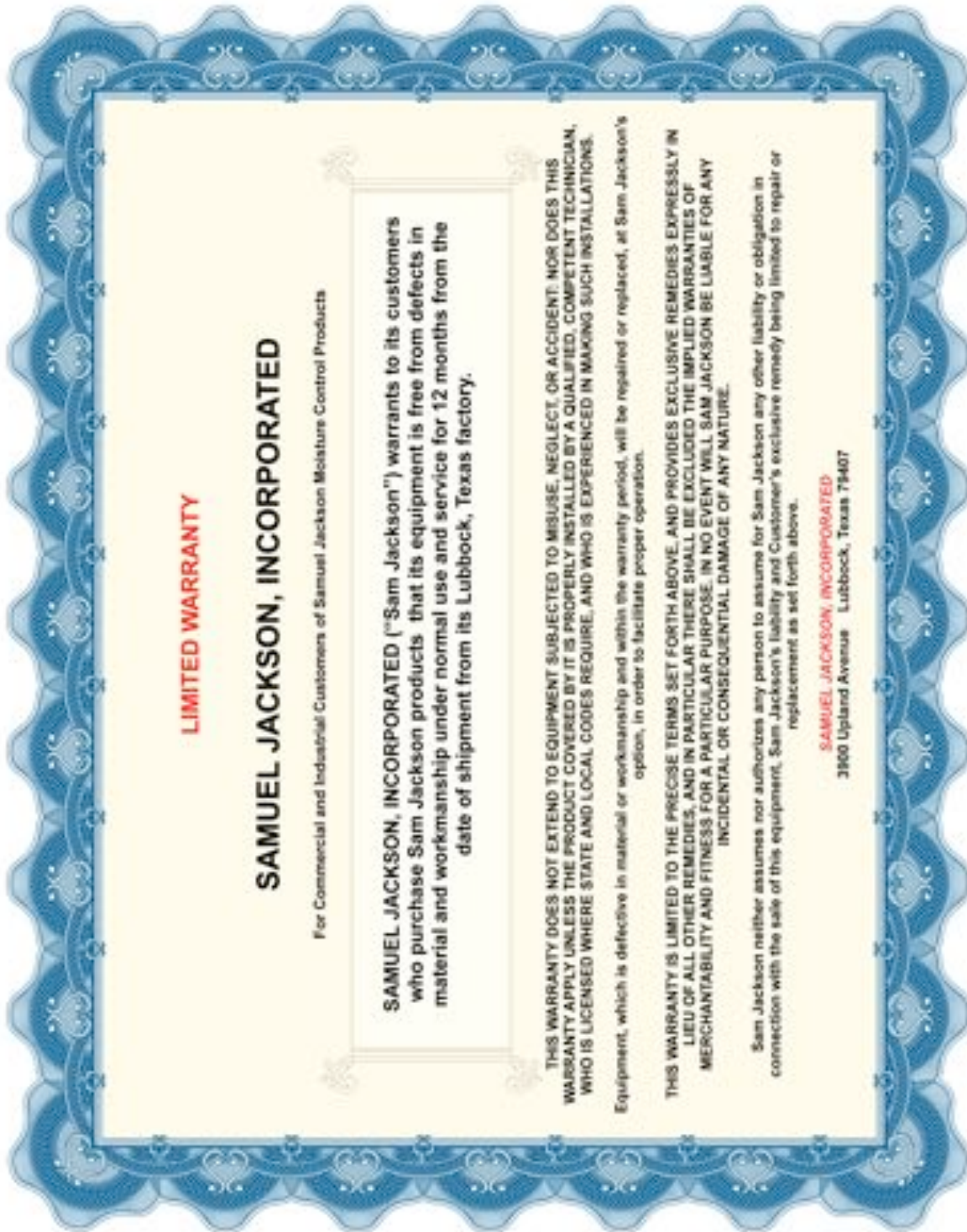
- With the detector bolts mounted you can now mount the detector using the remaining two lock nuts being sure to tighten the nuts with the 10mm nut driver.



**Figure 10: Place detector on bolts and tighten the nuts**







## **Important!**

**The following notice affects your warranty.**

### **Electrical Controls and Your Safety**

Your new Sam Jackson product may be equipped with electrical controls, or designed to interact with controls on a related Sam Jackson product.

In the event that local, state, federal or other specified safety compliance is required, we will consider modifications to meet the particular requirements. Implementation of alternative safety devices may incur additional charges. No warranty of compliance with a particular standard is made in the absence of specific reference to it in our quotation.

If you modify, or permit others to modify, these controls without specific written permission from Sam Jackson, Inc. the warranty on your product will be void and there is a possibility of serious damage to machinery, damage to product, serious injury to personnel, or death. The modifier of the controls assumes all liability for these consequences.



---

This page left intentionally blank.