

SECURITY CONTROL

MPI-50

SPECIFICATIONS & INSTRUCTIONS

MOOSE

APPLICATION

The MPI50 is an ideal basic burglar and fire alarm control panel. Two burglar loops are standard with an optional third (interior) loop. Also standard is an E.O.L. resistor "Class B" supervised fire loop. It is pending UL listing and California Fire Marshal approval as a household fire and burglar alarm control unit and comes complete with battery and transformer.

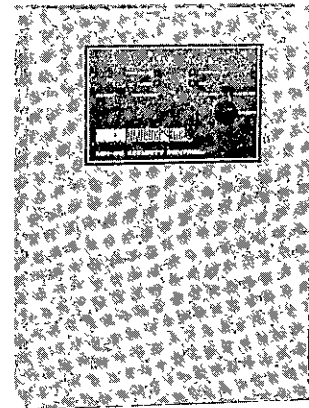
SPECIFICATIONS

- Normally Open and Normally Closed Burglary Loops
- Instant and Delay Burglar Loops
- Optional Configuration: Instant, Delay, and Interior Class "B" Loops, Each Supervised With a 2200 OHM End-Of-Line Resistor
- Momentary Or Maintained Contact Keying
- Front Panel Instant/Delay and Fire Reset Switch
- 24-Hour Panic Circuit: Normally Open, Normally Closed, or Class "B" Supervised With a 2200 OHM End-Of-Line Resistor
- Supervised Class "B" Fire Circuit
- Individual Armed, Circuit Status and Violation LED Output
- Exit Time Adjustable: 45, 90 Seconds
(UL Maximum 60 Seconds)
- Entry Time Adjustable: 15, 30, 45, 90 Seconds
(UL Maximum 45 Seconds)
- Cutoff Time Adjustable: 5, 10, 15 Minutes
(UL Minimum 4 Minutes)
- Built-in Auxilliary Relay
- Heavy Duty Power Supply
- Regulated At 13.8 Volts DC
- 350 Milliamps For Powering Auxilliary Devices
- Auxilliary Output Fused at 2.5 Amps
- Fire Output Fused at 2.5 Amps
- 12 Volt, 4 Amp Hour Sealed Lead-Acid Battery

- Battery Float-Charge Circuit At 13.8 VDC
- 18 Volt, 35 VA 60 Hz UL Listed Class II Transformer
- 18 Gauge Steel Cabinet 11 x 15 x 3.5 Inches
- 5-Stage Lightning/Transient Protection
- Operating Temperature Range: +32 to +120 Degrees F
- Power Limited at 4 Amps

FEATURES

- UL Listed Household Fire and Burglar Control Pending
- Precision Voltage Regulator For Maximum Battery Life
- 4-Year Battery Warranty
- Pre-Alarm (Piezo Resonator) Output
- Panel Mounted Fire/Smoke Detector Reset Switch
- 3-Wire Remote Arming
- Status LED Features 4-Function Output
- Front Panel Status, AC On, Fire, and Fire Trouble LED's
- Alarm Memory: After disarm a violation indication/output remains on until reset by secondary activation of the keyswitch or arming station.



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INSTALLATION INSTRUCTIONS

IMPORTANT: Read this manual completely prior to beginning the installation of any wiring or components.

1. Proper planning is essential in the installation of any fire or security system. Figure 2 is a layout of a typical burglar and fire installation. We recommend that you use this layout as a guide for developing a diagram of your installation.

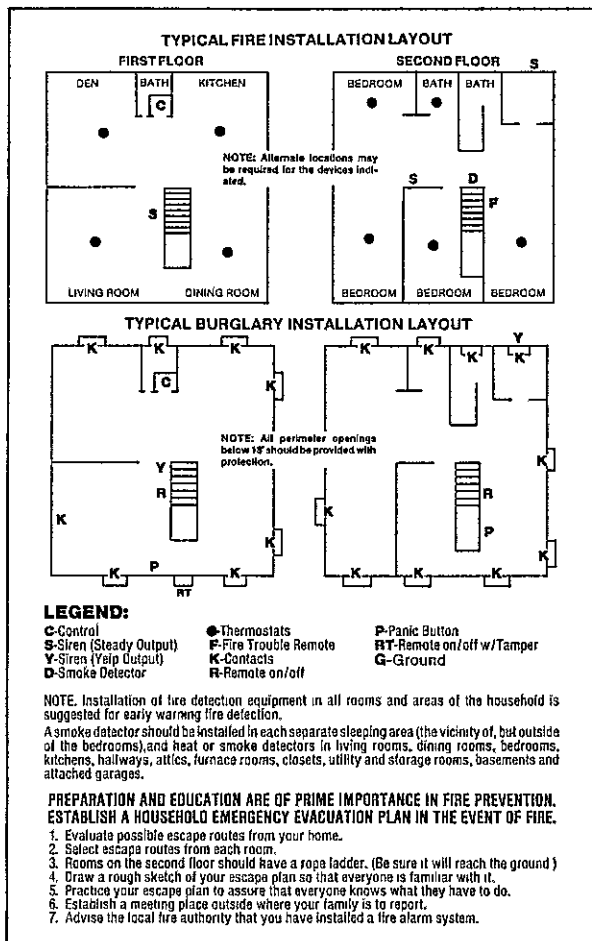


FIGURE 2 TYPICAL INSTALLATION LAYOUTS

2. Remove the foam pack from the control box and remove knockouts for wiring where needed.

3. Mount the control box in a secure dry location with an ambient temperature range of 32 to 122 degrees Fahrenheit (0 to +50 degrees Celsius).

4. Bring all alarm wiring into the box. Connect each wire to its appropriate terminal as per Figure 1 and the following steps. Pay special attention to all U.L. requirements concerning wire, procedures, time limits, customer training and testing. After all wiring is connected, it must be bundled per the Enclosure Wiring diagram (Figure 12).

5. Attach a ground wire (14 ga. min.) from Terminal 3 (Earth Ground) to a "UNIFIED EARTH GROUND". With a unified earth ground the power, telephone, and security system grounds are bonded together to form a grid. This eliminates a common problem during lightning strikes known as "STEP VOLTAGE BLOWOUT". Step voltage is a voltage potential between separated earth grounds resulting in destructive current flow through the building wiring and equipment. With a unified ground ALL equipment is at the same potential.

An acceptable ground bond would be either the electrical ground rod or the electrical ground clamp on the cold water system. If this is not possible, then at least drive and use a metallic ground rod in accordance with local standards.

NOTE: In order for the built-in lightning and transient protection to be effective, the control MUST be earth grounded.

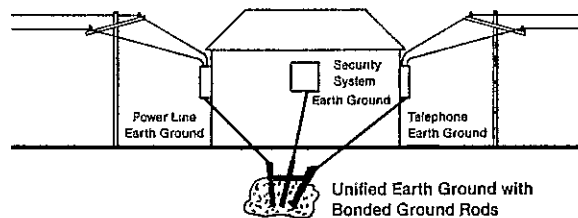


FIGURE 3 UNIFIED EARTH GROUND

Ground wires should be run the shortest and straightest path between the equipment and the ground connection. Avoid sharp bends.

POINTS TO REMEMBER ABOUT GROUNDING

1. Use a minimum 14 gauge wire.
2. Keep wire runs short.
3. Avoid sharp bends. Use a minimum radius of 8 inches for bends.
4. Run ground wires separate from other wires.
5. Use 8 foot copper clad ground rods.
6. Never run parallel to metal without properly bonding to the metal.

6. LOW VOLTAGE TRANSFORMER Terminals 1 and 2.

Connect an 18 Volt AC, 35VA, UL Listed, plug-in transformer (Moose part #T-1835). Use 18 gauge (minimum) stranded U.L. Listed wire. Select an outlet for the transformer that is not switched and is live twenty-four (24) hours a day.

7. STANDBY BATTERY

Two (2) 18 gauge wires with slip-on terminals are provided for connecting the 12 volt, 4.0 Amp hour standby rechargeable battery (part #B1240). The red wire is positive and the black is negative. The charging voltage of the MPI50 is adjusted for 13.8 volts for use with sealed lead acid batteries. Maximum charging current is 350 mA.

NOTE: Do not plug-in the transformer or battery until all other connections have been made.

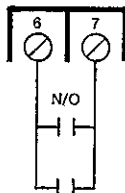
8. 24 Hour Auxiliary Power Terminals 4 and 5.

Terminal 5 is a regulated 13.8 volts positive (+) output and terminal 4 is common negative. The maximum continuous current drain from terminals 5, 7, 17, 20, 21, and 27 should not exceed 350 milliamps. If more current is needed for short durations, the excess will come from the standby battery. Current drains in excess of 350 milliamps will prevent the battery from reaching full charge. The auxiliary output is fused via F-2 which is a 2.5 Amp type 3AG fast blow fuse.

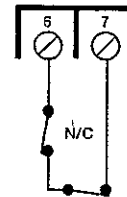
9. 24 HOUR PANIC CIRCUIT Terminals 6 and 7.

The 24 hour panic circuit can be conditioned as a normally open, a normally closed, or a Class "B" supervised loop. Only U.L. Listed devices should be connected.

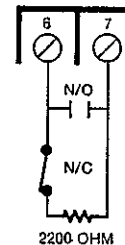
Normally Open Panic Loop: (Factory Setup)
Connect normally open devices across terminals 6 and 7. Resistor J8A and jumper J8B must be intact. Reference the Component/Hookup Diagram, Figure 1.



Normally Closed Panic Loop: (Option)
Cut resistor J8A and jumper J8B. Connect normally closed devices in series between terminals 6 and 7.



Class "B" Panic Loop: (Option)
Cut resistor J8A, but leave jumper J8B intact. Connect a 2200 ohm end-of-line resistor with normally open and/or normally closed device as shown.

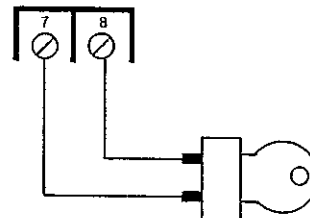


NOTE: Panic alarm activation must be reset by the keyswitch. Two turns of the key are required to reset the status LED and violation output.

10. KEYSWITCH Terminals 8 and 7.

Connect one or more UL listed momentary key switches in parallel to terminals 8 and 7. The keyswitch may be removed or mounted in the hole provided on the front panel of the control. A 1/2 second minimum closure across these terminals is required for activation.

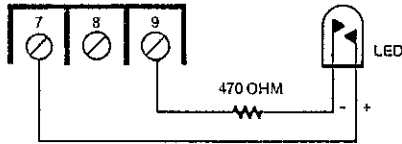
NOTE: A maintained (latching) keyswitch may be used if resistor J6 is removed.



11. REMOTE STATUS LED Terminal 9.

Terminal 9 is a negative (-) output for a remote status LED (Light Emitting Diode). Terminal 7 supplies (+) 12 volts DC for this output. A 470 to 1000 ohm limiting resistor must be installed in series as shown.

NOTE: U.L. Listed remote plates, complete with LEDs and limiting resistors should be used such as Alarm Controls Corporation Part #RP4, #RP7 or equivalent.



STATUS LED - Four (4) functions are indicated:

1. LED OFF: One or more loops are violated. The control is not ready to be armed.
2. LED BLINKING SLOWLY: All protective loops are secure. The control is ready to be armed.
3. LED BLINKING RAPIDLY: The control is armed.
4. LED ON CONTINUOUSLY: A burglar or panic alarm (violation) has occurred. The LED remains ON until reset from the keyswitch.

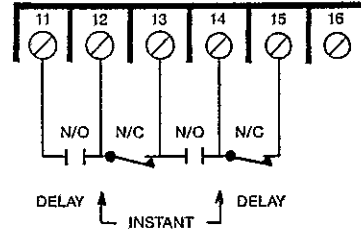
NOTE: The control cannot be armed until all protective circuits are in a non-violated state. Also, the keyswitch circuitry requires a 1/2 second closure for activation. Two turns of the keyswitch are required to reset a violation condition. After a burglar or panic alarm, the first turn of the keyswitch de-activates the alarm output. To reset the status LED and any remote violation LED's, a second turn of the keyswitch is required.

12. PRE-ALARM OUTPUT Terminal 10.

Terminal 10 is a negative output for a U.L. Listed pre-alarm device. Terminal 7 provides the (+) positive connection. The pre-alarm output is on steady during entrance delay and during an alarm ring-off until the control is disarmed. It activates momentarily upon attempted arming with a violated loop. The pre-alarm output also serves as a fire trouble signal. Maximum current drain from terminal 10 is 50 millamps. To eliminate pre-alarm output during alarm ring-off cut jumper J10.

13. WIRING THE BURGLAR LOOPS (FACTORY SETUP) Terminals 11, 12, 13, 14, and 15.

The MPI50 is factory set with instant and delay inputs. Each can be wired for normally open (N/O) and/or normally closed (N/C) operation. Step 15 describes an **OPTIONAL** set up which will configure the MPI50 for three (3) input loops. Only U.L. Listed devices should be connected.



Delay Normally Open Loop (Factory)

The delay normally open loop accepts normally open devices wired in parallel to terminals 11 and 12.

CAUTION: In this configuration, the normally open loops are unsupervised and therefore require periodic testing. To test, violate each loop while watching the circuit status LED on the front panel. The circuit status LED should go out as each loop is violated.

Instant Normally Closed Loop (Factory)

The instant normally closed loop requires normally closed devices wired in series to terminals 12 and 13. If unused, connect a wire jumper between terminals 12 and 13.

Instant Normally Open Loop (Factory)

The instant normally open loop accepts normally open devices wired in parallel to terminals 13 and 14.

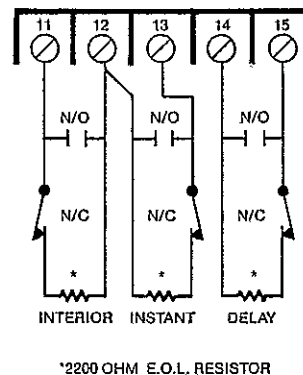
Delay Normally Closed Loop (Factory)

The delay normally closed loop requires normally closed devices wired in series to terminals 14 and 15. If unused, connect a wire jumper between terminals 14 and 15.

14. WIRING THE BURGLAR LOOPS (OPTIONAL SETUP)

The MPI50 may be configured with three (3) Class "B" end-of-line resistor supervised burglar loops (1 instant, 1 delay, and 1 interior). This option is enabled by cutting resistor J14.

NOTE: An end-of-line resistor supervised loop will accept BOTH normally open and normally closed switches. A 2200 Ohm resistor must be installed after the last device on the loop for proper operation and supervision against wire tampering.



Class "B" Delay Loop (Option)

Connect a 2200 ohm end-of-line resistor and any number of normally open or normally closed devices as shown. If end-of-line supervision is not desired, cut jumper J15 and connect **ONLY** normally closed devices in series between terminals 14 and 15.

Class "B" Instant Loop (Option)

Connect a 2200 ohm end-of-line resistor and any number of normally open and/or normally closed devices as shown. If end-of-line supervision is not desired, cut jumper J16 and connect **ONLY** normally closed devices in series between terminals 12 and 13.

Class "B" Interior Loop

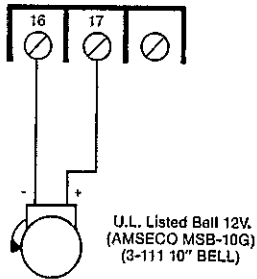
Connect a 2200 ohm end-of-line resistor and any number of normally open and/or normally closed devices as shown. If end-of-line supervision is not desired, cut jumper J17 and connect **ONLY** normally closed devices in series between terminals 11 and 12.

NOTE: The interior loop is automatically bypassed when the instant-delay switch is in the **INSTANT** position. In the **DELAY** position, the interior loop is bypassed during exit delay and during entry delay provided the delay loop is violated first.

15. BURGLAR ALARM BELL OUTPUT Terminal 17.

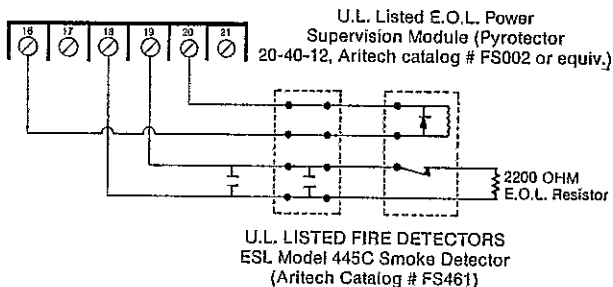
Terminal 17 provides a (+) 12 volt DC output upon a burglar alarm activation. Terminal 4 or 16 is the common negative (-) for this output.

NOTE: For U.L. installations, the maximum combined current drain from terminals 5, 7, 17, 20, 21, and 27 may not exceed 1.7 amps under alarm conditions.



16. FIRE CIRCUIT Terminals 18 and 19.

The fire circuit is a "Class B" end-of-line resistor supervised loop which can detect both shorts and opens. A momentary closure (short) between terminals 18 and 19 by a normally open fire sensor activates the fire alarm output (terminal 20) and lights the fire LED on the front panel.



A fire alarm can only be silenced and reset with the "Reset" slide switch on the front panel or with a remote keyswitch. There is no timed automatic cutoff. Only the "reset" switch removes power from terminal 21 for resetting latching fire detectors. If the fire circuit (opens), or if the reset switch is left in the reset position, the trouble output is active and the fire trouble LED on the front panel will light. The fire trouble output remains active as long as the switch is in the reset position and until the fire protection circuit continuity is restored. The trouble LED also lights if the fire loop remains shorted after the fire alarm has been silenced.

The National Fire Protective Association "Standard for Household Fire Warning Equipment", NFPA-74, requires at least one UL listed smoke detector as part of a household fire warning system. Smoke detectors must be installed outside each sleeping area, in the immediate vicinity of the bedrooms and on each additional story of the family unit, including the basement (excluding crawl space and unfinished attics).

Smoke detector power must be supervised through the use of a UL listed power supervision module (Pyrotector #20-40-12, Aritech catalog # FS002 or eq.) installed after the last smoke detector. The contacts of the relay module are wired in series with the fire circuit so that a break in power to the smoke detector will result in a trouble signal at the control panel.

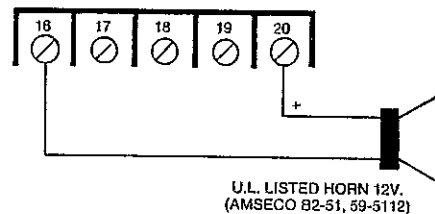
UL listed fire sensors such as heat or smoke detectors should be wired across the supervised fire circuit as shown. A 2200 Ohm ¼ watt E.O.L. resistor must be installed following the last detection device. Total fire circuit loop resistance should not exceed 100 Ohms excluding the 2200 Ohm E.O.L. resistor. Twelve (12) volt smoke detectors should be powered from terminal 21 (+). Terminal 4 or 16 is common negative (-) for this output.

NOTE: Two wire smoke detectors cannot be used with this control.

17. FIRE ALARM HORN OUTPUT Terminal 20.

Terminal 20 provides a (+) 12 volt DC output upon activation of the fire protective circuit. Terminal 4 or 16 is common negative (-) for this output. A transient suppression diode should be placed across the terminals of the bell or horn observing reverse polarity. (1N4003 or equivalent). This may already have been installed on the horn or bell when purchased.

NOTE: For U.L. installations, the maximum combined current drain from terminals 5, 7, 17, 20, 21, and 27 may not exceed 1.7 Amps under alarm conditions.



Solder Pad Options

Solder pads Sp1, 2, 3, are connected to the unused side of the Instant/Delay switch. With the Instant/Delay switch in the delay position Sp-1 is the normally closed contact Sp-2 provides the normally open contact while Sp-3 is the common contact. As the position of the Instant/Delay switch is changed the contacts are switched.

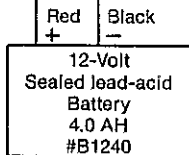
Solder pad Sp 4 Remote Power On indicator. For a remote A.C. power indicator connect the positive led to this solder pad.

Solder pad Sp 5 Remote delay led indicator. A switched negative (-) is available from this point with the Instant/Delay switch in the delay position. Solder pad Sp 6 provides access to the normally closed contact of the burglar alarm relay output.

Solder pad Sp 7 provides access to the normally closed contact of the fire alarm relay output.

For use with the N.C. panic switches cut resistor J8A and jumper J8B.

To provide battery circuit overcurrent protection the MPI-50 control panel incorporates a 4 amp fuse as a power limiting protection device. If the power limit of the fuse is exceeded, it will disconnect the standby battery. The circuit board must then be returned to the factory for repair or be replaced with a new unit.



NOTE: Float-charge voltage 13.6 to 13.8 volts maximum charge-current 350 milliamps quiescent charge-current 20 milliamps. Replace every 3 to 5 years.

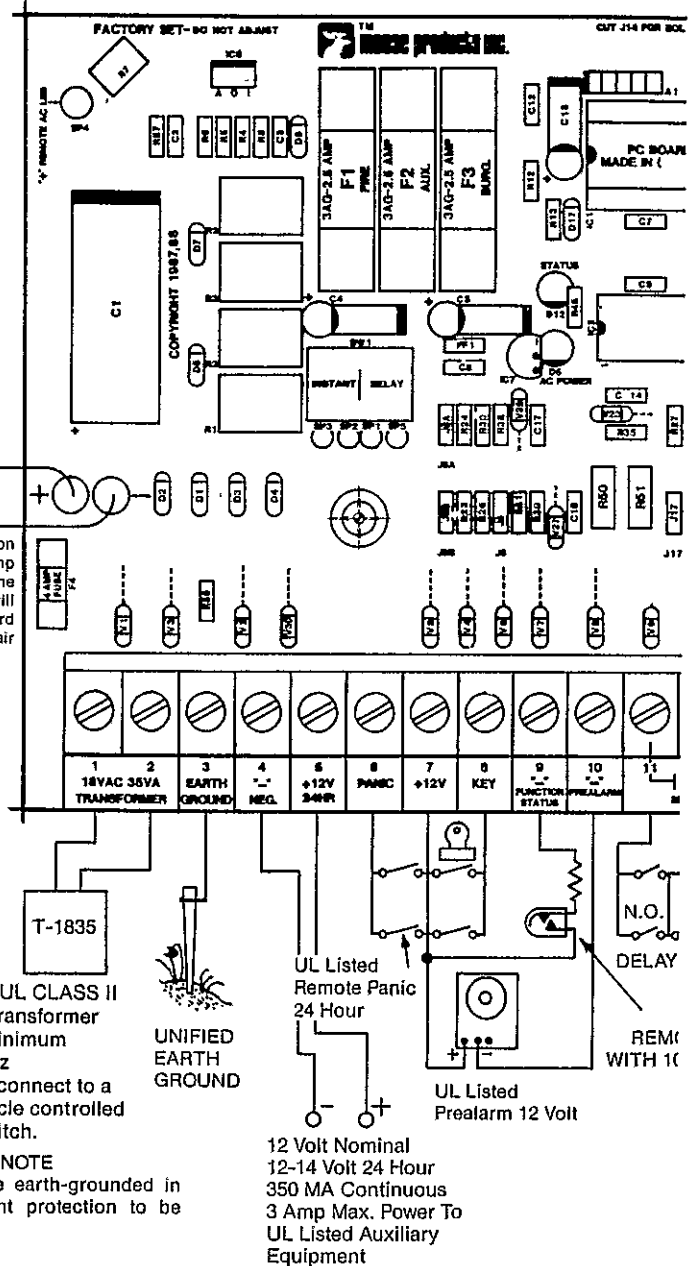
Emergency standby at least 4 hours with a 4.0 Ah battery.

18 VAC UL CLASS II Listed transformer 35VA minimum 50/60 Hz
Do not connect to a receptacle controlled by a switch.

LIGHTNING PROTECTION NOTE
The control panel must be earth-grounded in order for lightning/transient protection to be effective.

WARNING - For continued protection against the of 1 replace only with same type and rating of fu

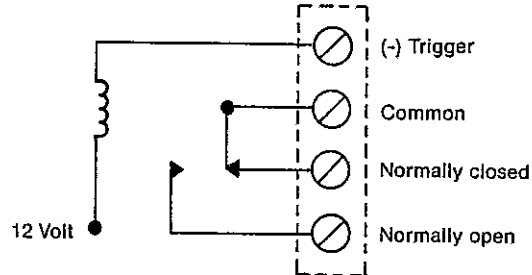
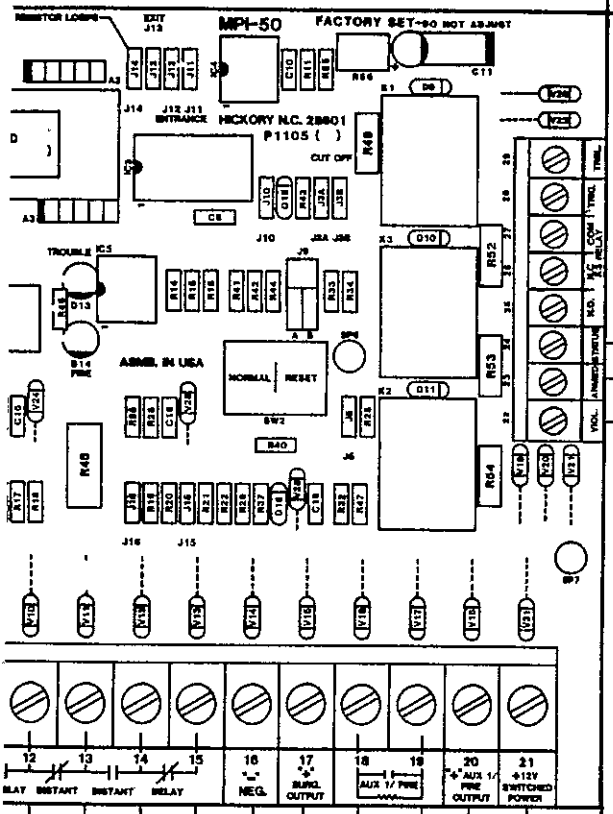
NOTE: Fuse F1 Fire Output, Switched Smoke
Fuse F2 Auxiliary Output, Burglar Output
Fuse F3 Burglar Output



Note: Testing of this system should be performed once a week in both AC On and Standby Battery modes. All switches, contacts and accessories must be UL Listed assemblies. Control panel specifications subject to change without notice. This equipment should be installed in accordance with the National Fire Protection Association's Standard #74 (National Fire Protection Association, Batterymarch Park, Quincy, Mass. 02269).

Cut Jumper J13 for an exit time of 90 seconds
 Cut Jumper J12 for an entrance time of 15 seconds
 Cut Jumper J11 & J12 for an entrance time of 90 seconds
 Cut Jumper J3A for a cutoff time of 10 minutes
 Cut Jumper J3B for a cutoff time of 15 minutes

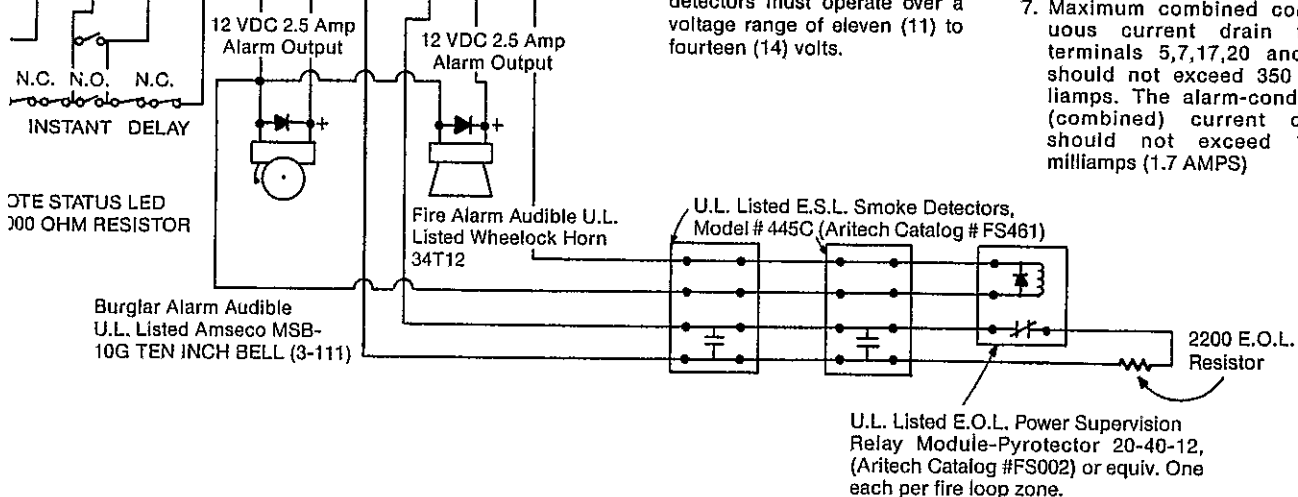
Switch J9 A position for NO alarm cutoff/reset. B position for no cutoff with a violated loop. Leave switch open for normal cutoff.



Auxiliary relay K3 is triggered from a negative (-) input applied to terminal 28. When K3 is energized the + 12 volts from the common relay leg (Term. 27) is applied to the N.O. output on terminal 25. For dry contact closure on relay K3 jumper J5 may be cut.

U.L. and CSFM NOTES:

1. All wiring must be not less than No. 22 AWG and must be listed energy limited cable.
2. Use Fire Marshal approved wire for California installations.
3. Diodes IN 4003 (across the Burglar bell and Fire horn) are for noise suppression.
4. Smoke detectors and motion detectors must operate over a voltage range of eleven (11) to fourteen (14) volts.
5. Alarm sounding devices must be installed so that they are clearly heard in all sleeping areas and must operate over a voltage supply range of eleven (11) and fourteen (14) volts.
6. Rating of K1 and K2 relay contacts: 5A at 28 VDC and 5A at 120VAC.
7. Maximum combined continuous current drain from terminals 5,7,17,20 and 21 should not exceed 350 milliamps. The alarm-condition (combined) current drain should not exceed 1700 milliamps (1.7 AMPS)



Complies with the limits for Class B computer devices in accordance with the specification of Subpart J of Part 15 of the FCC rules as of date of manufacture.

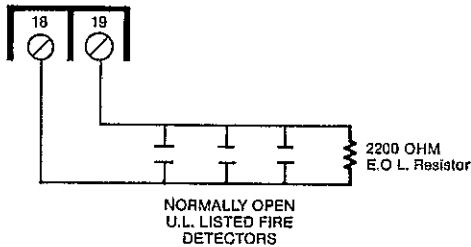
18. SWITCHED SMOKE DETECTOR POWER
Terminal 21.

Terminal 21 supplies (+) 12 volts DC for smoke detector power. The "reset" switch can be used to remove power from terminal 21 in order to reset latching smoke detectors. Terminal 4 or 16 is a common negative (-) for this output. See Step 17 diagram.

NOTE: Maximum continuous current drain from terminals 5, 7, 17, 20, 21, and 27 should not exceed 350 milliamps under standby conditions.

INSTALLER FIRE LOOP CIRCUIT TEST

1. Disconnect one side of the fire protective loop (terminal 18).
2. The fire trouble LED and remote trouble output should activate.
3. Connect an Ohmmeter to terminal 19 and the loose wire removed from terminal 18 and measure the loop resistance. This resistance should not exceed 2300 Ohms (2200 Ohms E.O.L. resistor + maximum 100 Ohms wire resistance).
4. Re-connect terminal 18.
5. Individually activate each fire alarm sensor. Each sensor should activate the fire alarm system.
6. Disconnect the E.O.L. resistor. The fire trouble LED and remote trouble output should activate.
7. Re-connect the E.O.L. resistor. Fire trouble LED and remote trouble should reset.



19. AUXILIARY CONNECTIONS
Terminals 22, 23, 24 and 29.

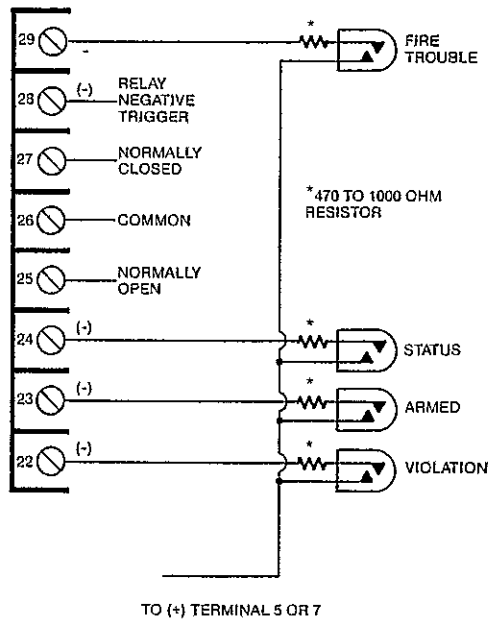
NOTE: DO NOT exceed a 50 milliamp current drain from any one of these terminals. The positive (+) lead from each LED may be connected to terminals 5 or 7.

Violation LED Terminal 22 is a negative output for a remote violation LED. The violation LED will illuminate when a burglar or panic alarm activates, and remains illuminated until reset by two turns of the keyswitch.

Armed LED Terminal 23 is a negative output for a remote "steady" armed LED. The Armed LED will be illuminated when the control is armed.

Status LED Terminal 24 is a negative output for a remote "steady" status LED. The Status LED will illuminate when the burglar protective loops are in a non-violated state.

Fire Trouble Terminal 29 is a negative output for a remote fire trouble LED.



20. AUXILIARY K3 RELAY Terminals 25, 26, 27 and 28.

Auxiliary relay K3 may be triggered from a negative (-) input applied to terminal 28. Terminal 27 is the common relay contact of K3. Terminal 26 is the normally closed (N/C) contact and terminal 25 is the normally open (N/O). For convenience, the common relay contact (terminal 27) is factory jumpered on-board with (+) 12 VDC. When K3 is energized, the (+) 12 VDC is switched from terminal 26 to terminal 25. If dry contacts are required on relay K3, cut jumper J5.

21. TIME SETTINGS AND ADJUSTMENTS

Exit Time: Exit time is 45 seconds by factory default. Cut jumper J13 for an exit time of 90 seconds. **U.L. requires that exit time not exceed 60 seconds.**

Entrance Time: Entrance time is 30 seconds by factory default. Cut ONLY jumper J11 for a 15 second entrance time. Cut ONLY jumper J12 for a 45 second entrance time. Cut BOTH J11 and J12 for a 90 second entrance time. **U.L. requires entrance time not exceed 45 seconds.**

Burglar Alarm Cutoff/Reset Time: Burglar alarm cutoff time is 5 minutes by factory default. Cut ONLY jumper J3A for a cutoff time of 10 minutes. For a cutoff time of 15 minutes cut jumper J3B. For NO cutoff close switch block J9 to the "A" position.

Cutoff may also be selected based upon the state of the protective loop. For NO cutoff when a loop remains violated, close switch block J9 to the "B" position. For normal burglar alarm cutoff leave switch block J9 open. **U.L. requires that exit time not be less than 4 minutes.**

NOTE: There is no automatic cutoff for the fire alarm. All times are +/-20%.

22. JUMPER OPTIONS

JUMPER J3A & J3B With J3A and J3B both intact, the burglar alarm cutoff time is 5 minutes. Cut J3A for 10 minute alarm cutoff time. Cut J3B for 15 minute alarm cutoff time. If J3A and J3B are both cut, the alarm cutoff time is 15 minutes.

JUMPER J5 Cut for dry contact output from auxiliary relay.

RESISTOR J6 Cut for maintained (latching) keyswitch. Control is factory set for momentary keyswitch operation.

JUMPER J8A & J8B Cut J8A and J8B if a normally closed panic loop is desired. Cut J8A ONLY but leave J8B intact for a Class "B" E.O.L. resistor supervised panic loop.

SWITCH BLOCK J9 Close switch J9 in the A position to eliminate alarm cutoff.

Close switch J9 in the B position to eliminate cutoff with a violated loop.

Leave switch open for normal cutoff. The control will reset when the instant and delay loops are in a non-violated condition.

JUMPER J10 Cut J10 for no pre-alarm on violation.

JUMPER J11 & J12 Entry Delay time is 30 seconds with jumper J11 and J12 intact.

Cut J11 for 15 second entry delay.

Open J12 for 45 second entry delay.

Open both J11 and J12 for 90 second entry delay.

NOTE: U.L. requires that entrance time not exceed 45 seconds.

JUMPER J13 Leave J13 closed for 45 second exit time.

Open J13 for 90 second exit time.

NOTE: U.L. requires that exit time not exceed 60 seconds.

23. SOLDER PAD OPTIONS

Solder Pads SP 1, 2, 3, are connected to the unused side of the Instant/Delay switch. With the Instant/Delay switch in the delay position SP-1 is the normally closed contact, SP-2 provides the normally open contact while SP-3 is the common contact. As the position of the Instant/Delay switch is changed the contacts are switched.

Solder Pad Sp-4 Remote Power On Indicator

For a remote A.C. power indicator connect the positive (+) lead of an LED to this solder pad. Install a 470 to 1000 Ohm limiting resistor in series with the negative (-) lead and terminal 4 or 16.

Solder Pad SP-5 Remote Delay LED Indicator

A switched negative (-) is available from this point with the Instant/Delay switch in the delay position. A 470 to 1000 Ohm limiting resistor must be installed in series with an LED indicator.

Solder Pad SP-6 provides access to the normally closed contact of the burglar alarm relay output.

Solder Pad SP-7 provides access to the normally closed contact of the fire alarm relay output.

SYSTEM OPERATION

After all connections are completed and checked, power may be applied by plugging in the AC transformer then connecting the standby battery. The transformer should be connected to a 120 volt AC 50/60Hz 24 hour power outlet not controlled by a wall switch.

The AC LED on the front panel should be on at all times. If it is not on, check the AC transformer and AC power outlet. If the AC power fails, the system transfers to battery operation. When the AC power is restored, the battery will receive recharge current.

WARNING: Prolonged loss of AC power will shorten the life expectancy of any rechargeable battery. To assure proper performance of the standby battery, the control must be tested once a week with the AC electrical power removed. Replace battery after 4 to 5 years of service.

POWER-UP Whenever power is applied or restored, the control automatically comes up armed. At that time any violated zones will be bypassed until the violation is removed. **EXCEPTION:** If an optional maintained keyswitch is used, and is in the disarm position, the control will come up disarmed.

BURGLAR ALARM The burglar alarm output activates when an armed loop or the panic circuit is violated. The burglar alarm may be silenced (reset) with a UL listed keyswitch or can be selected to cut off automatically at the end of 5, 10, or 15 minutes.

FIRE ALARM The fire alarm output activates when the fire loop is shorted. The fire alarm may be silenced and reset with a U.L. listed keyswitch or from the reset switch. There is no timed automatic cutoff.

NOTE: The front panel reset switch can also be used to interrupt DC power to latching type smoke or heat detectors.

TROUBLE LED A trouble condition will be provided should any of the following conditions occur:

- A. If the fire protective circuit loses continuity (open).
- B. If the fire circuit remains shorted after the fire alarm has been silenced.
- C. If the RESET switch is in the RESET position.
- D. If the panic loop remains violated after the alarm has been silenced.

DELAY/INSTANT SWITCH In the delay position the control allows a timed entrance and exit delay to enter and leave the premises. In the instant position all loops are switched to instant with no entry or exit time and interior loop is automatically bypassed.

STATUS LED The status LED is lit whenever the burglar loops are all in the normal (non-violated) condition.

PRE-ALARM The pre-alarm output is on steady during entrance delay and during an alarm ring-off until the control is disarmed. It activates momentarily upon attempted arming with a violated loop. The pre-alarm

output also serves as a fire trouble signal by activating intermittently when there is a break in the fire loop. It can be silenced by repairing the fire loop or by activating the keyswitch. After the loop is repaired, a new break will sound the pre-alarm again.

VIOLATION LED Lights when a burglar or panic alarm occurs. It remains lit until reset by two turns of the keyswitch.

KEYSWITCH The keyswitch is factory set for momentary operation. A momentary closure of the keyswitch will:

1. Arm or disarm the control.
2. Silence burglar, panic and fire alarms.
3. Silence the audible trouble signal.
4. A second closure of the keyswitch is required to reset violation output.

A maintained (latching) keyswitch may be used by cutting resistor J6. In the maintained mode the keyswitch will:

1. Arm the control when closed.
2. Disarm the control and silence the alarms when opened.
3. Reset the violation output and audible trouble signal when closed and then opened a second time.

STANDBY BATTERY Under normal conditions the battery will last 4 to 5 years and should not require any regular maintenance. The battery should be replaced after 5 years of use. The minimum replacement must be a 12 volt 4 amp hour sealed lead acid battery, (Moose part #B-1240).

OPERATIONAL TESTING PROCEDURE Notify the local fire authorities and request their procedure of notification upon completion of the alarm installation. If connected to a central station and or any other reporting device, notify the central station before beginning any test of the system. Testing should be performed once a week in both AC on and Standby battery modes.

TESTING THE BURGLAR ALARM

1. Secure all protected openings. The four function status LED will be blinking slowly.
2. Slide the front panel Instant/Delay switch to Instant. This eliminates entry delay.
3. Arm the control. The status LED on the control panel will change from a slow blink to a fast blink.
4. Violate a Delay area. The control panel should instantly activate the alarm BELL output. The status LED on the control panel should be on steady.
5. Disarm the control to silence the output.
6. The status LED and the violation output will remain on steady until reset by a second turn of the keyswitch.
7. Turn the keyswitch a second time to reset the violation output and the status LED.
8. Slide the front panel Instant/Delay switch to the delay position.
9. Arm the control. The status LED will again change from a slow blink to a fast blink.

10. Allow the exit time to expire, then violate a Delay area. The pre-alarm output will activate during the entrance time. Alarm BELL output will activate after expiration of the entrance time.
11. Disarm and reset the control and arm again.
12. Violate any one of the instant areas. The control panel should give an alarm BELL output, and the status LED should be on.
13. Disarm and reset the control.

TESTING THE FIRE ALARM

1. Activate the test switch on any of the fire detection devices.
2. The fire alarm HORN will activate and the fire LED on the front panel will light.
3. Slide the front panel "reset" switch to the reset position. (The fire alarm HORN and "Fire" LED will reset; The "Trouble" LED and the remote trouble output will activate.
4. Slide the "reset" switch back to the normal position. (Trouble output should reset).

STANDBY BATTERY TEST

1. Remove AC power to the control panel by removing the plug-in transformer from the electrical outlet.
2. Arm the control. The status LED will change from slow to fast blink.
3. Violate an instant loop. The control panel should go into alarm, and the status LED will give a solid indication. If the alarm output will not engage, or the control will not reset, the standby battery may be weak and should be replaced.
4. Reset the control.
5. Restore AC power.

ADDITIONAL NOTES

1. As a completely supervised 24 hour fire alarm system, any number of UL listed thermostats may be used. Separate alarm outputs are provided so that the owner can distinguish between burglary and fire alarms. A fire trouble output is provided to notify occupants if a problem exists with the fire circuit.
2. The National Fire Protective Association publishes a standard for household fire warning equipment, NFPA #74. Their address is: National Fire Protective Association, Batterymarch Park, Quincy, Mass. 02269.
3. Testing of the system should be performed once a week in both the AC and standby battery modes. Your neighbors' cooperation and understanding are important. They play an important role when you are away. Advise them that you do have a system and to notify the proper authorities should they hear your alarm system sounding. Options which provide for remote signaling to the authorities or to a central station may be added quite simply. Call your installing company for details.

4. Location of the MPI50 Burglar and Fire Alarm Control is generally dictated by the needs of each individual home. Variables such as available space, individual decor, desires, etc., are some of the criteria for choosing the control panel location. Control ambient air temperature must be within the range of +32 Degrees F +120 Degrees F. Ambient air temperature extremes below or above this range must be avoided. The control should be located where it is accessible. It SHOULD NOT be in the attic or hidden in a basement corner.
5. Consult your installing company for LED and fuse replacement. Only exact replacement parts should be used.
6. In the event of trouble - Contact your installing company. Use this space to record the installing company's name, address, and phone number.

Name _____

Address _____

Telephone # _____

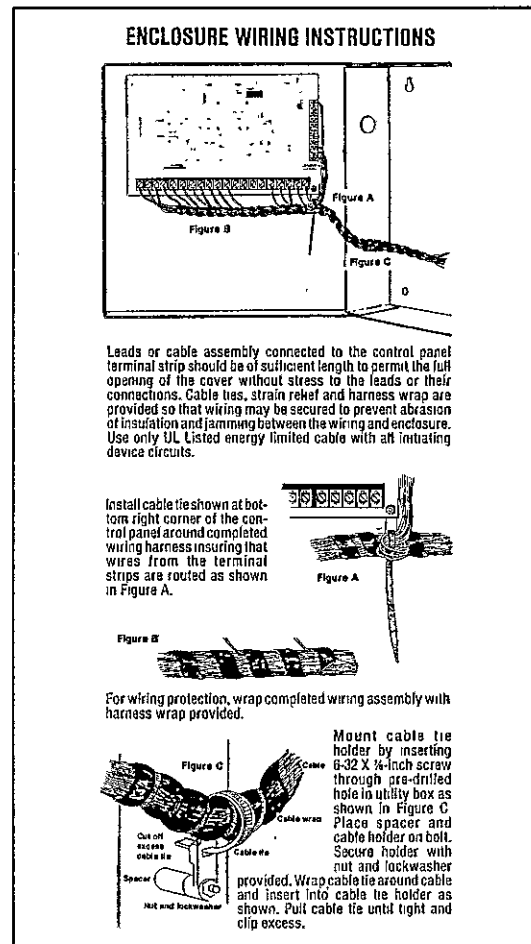


FIGURE 12 ENCLOSURE WIRING INSTRUCTIONS

"LIMITED WARRANTY"

Parties and Products

This warranty is extended to all purchasers of and includes products sold under the trademarks Moose or Moose Power and actually manufactured or sold by Moose Products, Inc., Hickory, N.C. 28601.

Warranty Time Period

All products covered by this warranty are date stamped with a six (6) digit number, the first digit being the tester number, the last two the year and the remaining the day of the year involved. For the eighteen months immediately subsequent to the date stamped thereon, Moose Products will replace or repair at its option, any part that proves to be defective in materials or workmanship. The cost of parts, labor and return transportation, if necessary, are included. All other costs are the responsibility of the purchaser.

Conditions and Exclusions

- (a) There is no other express warranty. All implied warranties and fitness for use are limited to the duration of the express warranty. Some states do not allow limitations on how long an implied warranty last, so the above limitation may not apply to you.
- (b) Moose Products, Inc. is not liable for indirect, incidental, or consequential damages in connection with the use of the products including but not limited to (a) any cost or expense of providing substitute equipment or service during periods of malfunction or non use and/or (b) any destruction to and/or loss of property or bodily injury.
- (c) Repairs by anyone other than Moose Products, Inc. and/or misuse by anyone voids all warranty.

Other Rights

This warranty gives you specific legal rights and you may also have other rights, which may vary from state to state.

Procedure

Should you discover that any products of Moose Products covered by this warranty is defective within the warranty time period, you should contact any Moose Products, Inc. dealer who will instruct you on the proper procedure. If for any reason you are dissatisfied with the suggested procedures, you may contact us in writing at:

Moose Products, Inc., P.O. Box 2904, Customer Service Department, Hickory, N.C. 28603

moose products inc.

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