

MODEL 1512
COMMAND PROCESSOR
BURGLARY/FIRE
CONTROL PANEL/COMMUNICATOR
INSTALLATION GUIDE

Digital **M**onitoring **P**roducts

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BURGLARY/FIRE
CONTROL PANEL/COMMUNICATOR
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FCC NOTICE

This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.

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PRODUCT SPECIFICATIONS

1.1 Power Supply

Transformer Input 16 VAC 40VA

Battery Input 12 VDC 6.5Ah

Auxiliary 12 VDC output at 450mA

Bell Output 12 VDC at 1000mA

Inherent Power Limited

1.2 Communication

Built in dialer communication to DMP Model SCS-1 Receiver

Can operate as a local control

1.3 Protection Loops

Four Class B grounded 1K Ω EOL loops

One Class B ungrounded 3.3K Ω EOL powered loop with reset

1.4 Keypad Control

Four wire bus to a maximum of four keypads or two keypads and two loop expanders

Operates with DMP Model 670, 770, or 771 Alphanumeric Keypad

Operates with DMP Model 772, 773, or 774 Non-Alpha Keypad

Operates with DMP Model 704, 705, 714, and 715 Loop Expanders

1.5 Enclosure Specifications

The 1512 is shipped installed in its enclosure. The end of line resistors, battery leads, and programming sheet are also included.

Size: 10.5" x 9.0" x 4"

Weight: 4 lbs.

Color: Grey

Construction: 20 gauge cold rolled steel

PRIMARY POWER SUPPLY

2.1 Terminals 1 and 2

Connect the transformer for the 1512 panel to terminals 1 and 2 at the bottom left hand side of the circuit board. Use a minimum 16 to 18 gauge wire between the transformer and the panel.

2.2 Transformer

The 1512 is powered by a 16.5 VAC 40VA transformer. The transformer must be plugged into an unswitched 120 VAC 60 Hz commercial power outlet.

Never share the transformer output with any other equipment.

SECONDARY POWER SUPPLY

3.1 Battery

Connect the battery leads supplied with the panel to terminals 3 and 4. Connect a DMP Model 367, 12 VDC 6.5Ah sealed lead-acid rechargeable battery to the battery leads. Terminal 3 is the positive terminal. Observe polarity when connecting the battery.

A second battery can be connected to the panel by using a Model 318 dual battery harness. Use only sealed lead-acid rechargeable batteries supplied by DMP or manufactured by Eagle Picher or Yuasa to ensure proper charging.

DO NOT USE GEL CELL BATTERIES

3.2 System Ground

Terminal 4 of the panel must be connected to earth ground to provide transient suppression. A cold water pipe or ground rod is recommended. An electrical conduit ground is not recommended. Use a minimum 14 gauge wire for grounding.

3.3 Replacement Period

Digital Monitoring Products recommends the battery be replaced every 3 to 5 years under normal use.

3.4 Discharge/Recharge

The 1512 battery charging circuit is a float charge of 13.9 VDC at a maximum current of 1.2 Amps. The total current available is reduced by the total auxiliary power draw from terminals 6 and 11. The various battery voltage levels are listed below.

Battery Trouble	11.9 VDC
Battery Restored	12.6 VDC

3.5 Battery/Supervision

The 1512 tests the battery once every hour when AC power is present. The test is done at 15 minutes past the hour and lasts five seconds. A load is placed on the battery and if the battery voltage falls below 11.9 VDC a low battery is detected. If AC power has failed, a low battery is detected when the battery voltage falls below 11.9 VDC.

If a low battery is detected while AC power is present, the test is repeated every two minutes until the battery reaches a restored voltage of 12.6 VDC. If a low battery is replaced with a fully recharged battery, the restored battery is not detected until the next two minute test.

3.6 1512 Power Requirements

During AC power failure, the 1512 panel and all connected auxiliary devices draw their power from the battery. All devices must be taken into consideration when calculating the standby capacity of the battery. Below is a list of the current requirements of the 1512 panel and various accessory devices. Add the additional current draw of ALL devices used in the system for the total current required. The total is then multiplied by the total number of standby hours required by the standard to give you the total ampere/hours required.

1512 STANDBY BATTERY POWER CALCULATIONS

Standby Current			Alarm Current		
1512 Control Unit		130mA _____			130mA _____
Active Loops 1 to 4	Qty _____ x	1.6mA _____	Qty _____ x	*2mA _____	
Active Loop 5		4mA _____		30mA _____	
BRK Smoke Detectors	Qty _____ x	.1mA _____	Qty _____ x	.1mA _____	
DS Smoke Detectors	Qty _____ x	.08mA _____	Qty _____ x	.08mA _____	
ESL Smoke Detectors	Qty _____ x	.05mA _____	Qty _____ x	.05mA _____	
				Bell Output 1000mA max.	_____
670, 770, 771 Keypads	Qty _____ x	125mA _____	Qty _____ x	125mA _____	
Annunciator (ON)			Qty _____ x	20mA _____	
Active Loops	Qty _____ x	1.6mA _____	Qty _____ x	*2mA _____	
772, 773, 774 Keypads	Qty _____ x	30mA _____	Qty _____ x	30mA _____	
Annunciator (ON)			Qty _____ x	20mA _____	
Active Loops	Qty _____ x	1.6mA _____	Qty _____ x	*2mA _____	
704 Loop Expander	Qty _____ x	7mA _____	Qty _____ x	7mA _____	
Active Loops	Qty _____ x	1.6mA _____	Qty _____ x	*2mA _____	
705 Loop Expander	Qty _____ x	7mA _____	Qty _____ x	7mA _____	
BRK Smoke Detectors	Qty _____ x	.1mA _____	Qty _____ x	.1mA _____	
DS Smoke Detectors	Qty _____ x	.08mA _____	Qty _____ x	.08mA _____	
ESL Smoke Detectors	Qty _____ x	.05mA _____	Qty _____ x	.05mA _____	
Active Loops	Qty _____ x	4mA _____	Qty _____ x	*9mA _____	
Aux. Powered Devices (Terminal 7)		_____			_____
(Other than 670, 770, 771, 772, 773, 774, 704, 705)					
Total Standby		_____ mA	Total Alarm		_____ mA

* Based on 10% of active loops in alarm condition

Total Standby _____ mA x _____ = _____ mA/hours

Number of standby
hours required

Total Alarm + _____ mA/hours

Total _____ mA/hours

x .001

= _____ Ampere/Hours Required

Cannot Exceed 13.0 with Two 367 Batteries
Cannot Exceed 6.5 with One 367 Battery

BELL OUTPUT

4.1 Terminal 5

Nominal 12 VDC is supplied by the panel at terminal 5 for powering an alarm bell or horn. The output is rated for a maximum of 1 Amp. This output can be steady or pulsed depending upon the Bell Action specified in Output Options. Terminal 6 is the common for the bell circuit. See the wiring diagram in section 1.6 for a list of compatible devices.

KEYPAD, LOOP EXPANDER BUS

5.1 Description

All DMP Security Command keypads and loop expanders connect to the panel through a four conductor cable. The conductors connect to terminals 7,8,9, and 10. The maximum length of all cables connecting keypads and loop expanders to the 1512 is 500 feet using at least 22 gauge wire for all runs. The maximum distance can be increased to 1,000 feet using 18 gauge for each conductor.

Any combination of keypads and loop expanders can be used with only those loops on addresses one and two being programmable. The 1512 does not provide for loops on addresses three and four.

5.2 Terminal 7 - RED

Nominal 12 VDC is supplied at terminal 7 to power Security Command keypads and loop expanders. Terminal 7 also supplies power for auxiliary devices. Terminal 10 is the common for terminal 7 and terminal 11. The maximum output is rated at 450mA. The output current is shared with the smoke detector output on terminal 11 and terminal 12 (loop 5). All devices totaled together must not exceed 450mA.

5.3 Terminal 8 - YELLOW

Terminal 8 is data receive from Security Command keypads and loop expanders. It cannot be used for any other purpose.

5.4 Terminal 9 - GREEN

Terminal 9 is data transmit to Security Command keypads and loop expanders. It cannot be used for any other purpose.

5.5 Terminal 10 - BLACK

Terminal 10 is the common reference for Security Command keypads, loop expanders, and any auxiliary devices powered from terminal 7.

SMOKE DETECTOR OUTPUT

6.1 Terminal 11

Nominal 12 VDC is supplied at terminal 11 to power 4-wire smoke detectors or other latching devices. This output can be turned off for five seconds by the user to reset the detectors. Use the Fire Reset Menu Option accessible through the Security Command keypad. Terminal 10 is the common for the smoke detector circuit and auxiliary power. Refer to LT-0164 for a list of compatible 4-wire smoke detectors.

6.2 Current Rating

The Smoke Detector Output current is shared with the auxiliary power supply from terminal 7 as described in section 5.2. The total current draw for all 4-wire smoke detectors must be included with terminal 7 calculations and must not exceed 450mA.

POWERED LOOP FOR 2-WIRE SMOKE DETECTORS

7.1 Terminals 12 and 13

The 1512 panel provides a 2-wire Style A ungrounded powered loop on terminals 12 and 13. Terminal 12 is the positive side of the loop. When programming, terminals 12 and 13 are referred to as loop number 5. Loop 5 uses a Model 309, 3.3K Ω EOL resistor provided with the panel. The powered loop has an operating range of 8.8 to 14.2 VDC and a compatibility identifier of: A. The loop is compatible with the following detectors.

Man.	Model	Detect Id.	Base	Base Id.	# of Det.
BRK	1400	A			12
BRK	1451	A	B401 or B401B	A	10
BRK	1451DH	A	DH400	A	10
BRK	2400,2400TH	A			10
BRK	2451, 2451TH	A	B401 or B401B	A	10
BRK	2451	A	DH400	A	10
DS	DS200/DS200HD	A	MB200-2W	A	15
ESL	422C/422CT	S10P			25

RA-400 MAY BE USED ON ALL BRK DETECTORS
USE 330 OHM RESISTOR IN MB200-2W BASE
DIFFERENT DETECTOR MODELS MAY NOT BE MIXED

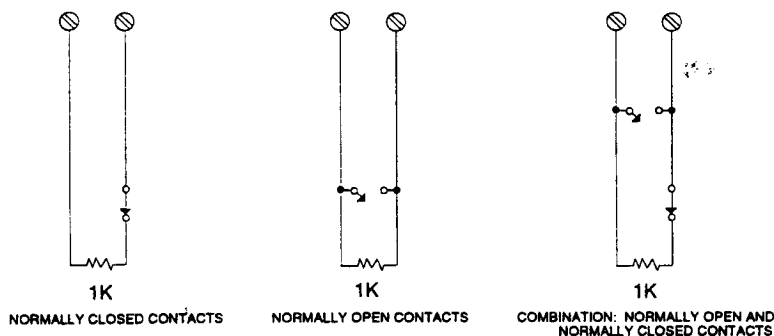
PROTECTION LOOPS

8.1 Description

The four protection loops provided on the 1512 panel are all grounded burglary loops. For programming purposes the loops are numbered 1 through 4. Terminals 14 to 19 provide connection as listed below:

Terminal	Function
14	Loop 1 voltage sensing
15	Ground for loops 1 and 2
16	Loop 2 voltage sensing
17	Loop 3 voltage sensing
18	Ground for loops 3 and 4
19	Loop 4 voltage sensing

The sensing terminal measures the voltage flowing through a 1000 ohm end-of-line resistor to ground. Dry contact sensing devices can be used in series (normally-closed) or in parallel (normally-open) with any of the burglary protection loops.



8.2 Operational Parameters

Each protection loop detects three conditions: open, normal, and short. The voltage ranges for each are listed below:

Condition	Resistance on loop	Voltage on sensing terminal
Open	over 1300 ohms	over 2.0 VDC
Normal	600 to 1300 ohms	1.2 to 2.0 VDC
Short	under 600 ohms	under 1.2 VDC

8.3 Loop Response Time

A condition must be present on a loop for 300 milliseconds before being detected by the panel. Ensure that all detection devices used on the protection loops are rated for use with this delay. The loops can be programmed for a fast response delay of 100 milliseconds.

8.4 Keyswitch Arming Loop

A loop programmed as an Arming Type, arms selected areas when placed into a shorted condition. The selected areas are disarmed when placed into a normal (1K Ω EOL) condition. If the loop is placed into an open condition from a normal, or disarmed condition, a trouble is reported. If the loop is placed into an open condition from a shorted (armed) condition, an alarm is reported and the loop is disabled until another disarming occurs within the system. The areas controlled by the loop are selected with the 891/891A Programmer.

TELEPHONE RJ CONNECTOR

9.1 Description

The connection to the switched telephone network is made by installing the DMP Model 356 RJ Cable into socket J3 located at the top left hand corner of the circuit board.

9.2 FCC Registration

The Model 1512 complies with FCC part 68 and is registered with the FCC.
Registration number: CCKUSA-18660-AL-R Ringer Equivalence: 0.6B

9.3 Notification

Registered terminal equipment must not be repaired by the user. In case of trouble, the device must be immediately unplugged from the telephone jack. The factory warranty provides for repairs. Registered terminal equipment may not be used on party lines or in connection with coin telephones. Notification must be given to the telephone company of:

- a. The particular line(s) to which the service is connected
- b. The FCC registration number
- c. The ringer equivalence
- d. The make, model, and serial number of the device

RESET JUMPER J16

10.1 Description

The reset jumper is located just to the right of the programmer connector and is used to reset the panel's microprocessor. Install the jumper before applying power to the panel. Remove the jumper once power has been applied for proper system operation.

PROGRAMMER CONNECTION

11.1 Description

One 40 pin header is provided for connecting a DMP Model 891/891A Programmer. The connector is located in the top right hand side of the circuit board. The Model 891/891A Programming Manual (LT-0120) provides complete instructions on the operation of the programmer.

UNIVERSAL UL BURGLARY SPECIFICATIONS**12.1 Introduction**

The programming and installation specifications contained in this section must be completed when installing the Model 1512 in accordance with any of the UL burglary standards. Additional specifications may be required by a particular standard.

12.2 Wiring

All wiring must be in accordance with NEC, ANSI/NFPA 70-1984, UL 681, and UL 611 for all burglary installations.

12.3 Control Outside of Protected Areas

A Potter EVD or Sentrol 5402 should be used in place of a lined cabinet when the panel is installed outside of the protected area.

12.4 Police Station Phone Numbers

The digital dialer telephone number programmed for communication must not be a police station phone number unless that phone number is specifically provided for that purpose.

12.5 Bypass Reports

The Bypass Reports option must be programmed as YES for all UL burglary applications. See section 7.5 of the 891/891A Programming Manual.

12.6 System Maintenance

Proper installation and regular maintenance by the installing alarm company and frequent testing by the end user is essential to ensure continuous satisfactory operation of any alarm system. Offering a maintenance program and acquainting the user with the correct procedure for use and testing of the system is also the responsibility of the installing alarm company.

UL 1023 SPECIFICATIONS**Household Burglar-Alarm System Units****13.1 Bell Cutoff**

The bell cutoff time cannot be less than five minutes. See section 9.2 of the 891/891A Programming Manual.

13.2 Entry Delay

The maximum entry delay must not be more than 45 seconds. See sections 8.9 and 8.10 of the 891/891A Programming Manual.

13.3 Exit Delay

The maximum exit delay must not be more than 60 seconds. See section 8.11 of the 891/891A Programming Manual.

UL 1610, 1076 SPECIFICATIONS

Central-Station and Proprietary Burglar-Alarm Units

14.1 Opening/Closing Reports

The Opening/Closing Reports option must be programmed as YES. See section 7.2 of the 891/891A Programming Manual.

14.2 Closing Wait

The Closing Wait option must be programmed as YES. See section 8.6 of the 891/891A Programming Manual.

14.3 Opening Code

The Opening Code option must be programmed as YES. See section 8.4 of the 891/891A Programming Manual.

14.4 Proprietary Dialer

The Model 1512 provides Grade A Proprietary service when configured as a digital dialer.

UL 1635 SPECIFICATIONS

Digital Burglar Alarm Communicator System Units

15.1 System Trouble Display

The Status List Display must include at least one keypad that displays system monitor troubles. See section 11.3 of the 891/891A Programming Manual.

15.2 Digital Dialer Telephone Number

Both telephone numbers programmed must begin with a D or P. See section 3.6B and 3.6C of the 891/891A Programming Manual.

15.3 Entry Delay

The maximum entry delay used must not be more than 60 seconds. See sections 8.9 and 8.10 of the 891/891A Programming Manual.

15.4 Exit Delay

The maximum exit delay used must not be more than 60 seconds. See section 8.11 of the 891/891A Programming Manual.

15.5 Automatic Recall

An automatic recall time must be entered so that the Model 1512 will transmit the automatic recall message once per day. See sections 3.6D,E and F of the 891/891A Programming Manual.

15.6 Closing Wait

The Closing Wait option must be programmed as YES. See section 8.6 of the 891/891A Programming Manual.

15.7 System Test

The System Test menu option must be programmed as YES. See section 10.12 of the 891/891A Programming Manual.

15.8 Grade B Central Station

Grade B Central Station service can be provided under UL 1635 by adding a Grade A Local audible signal appliance and placing the Model 1512 control into the Model 349A Grade A Attack Resistant Housing.

UL 365, 609 SPECIFICATIONS**Police Station Connected and Local Burglar Alarm Units and Systems****16.1 System Trouble Display**

The Status List display must include at least one keypad that displays system monitor troubles. See section 11.3 of the 891/891A Programming Manual.

16.2 Entry Delay

The maximum entry delay used must not be more than 60 seconds when using the Model 349A Grade A housing. See section 8.9 and 8.10 of the 891/891A Programming Manual.

16.3 Grade A Bell

A Grade A Local audible signal appliance must be used.

16.4 Bell Cutoff

The bell cutoff time cannot be less than 15 minutes. See section 9.2 of the 891/891A Programming Manual.

16.5 Automatic Bell Test

The Automatic Bell Test option must be programmed as YES. See section 9.3 of the 891/891A Programming Manual.

16.6 System Test

The System Test menu option must be programmed as YES. See section 10.12 of the 891/891A Programming Manual.

16.7 Grade A Mercantile

For Grade A Mercantile and Police Station Connect operation the Model 1512 must be mounted in a 349A Grade A Attack Resistant Housing.

16.8 Mercantile Safe and Vault

When the DMP Model 349A housing is used, the Model 1512 provides operation as a Mercantile Safe and Vault alarm. Bell Supervision and wiring must be in accordance with UL 681. If the Model 1512 is mounted outside the safe or vault, tamper protection and the Sentrol Model 5402 or Potter EVD listed vibration detectors should be used. The Model 1512 does not provide operation as a Bank Safe and Vault alarm.

16.9 Line Security for Police Connect

Basic line security is provided when the Model 1512 is configured as a dialer system. High line security is provided when configured as a multiplex system.

UNIVERSAL UL, NFPA FIRE ALARM SPECIFICATIONS

17.1 Introduction

The programming and installation specifications contained in this section must be completed when installing the Model 1512 in accordance with any of the UL Fire standards or NFPA Codes. Additional specifications may be required by a particular standard.

17.2 Wiring

All wiring must be in accordance with NEC, ANSI/NFPA 70-1984.

17.3 Transformer

A wire-in transformer should be used. DMP Model 320 16 VAC 40VA.

17.4 End of Line Resistor

The DMP Model 310 1K Ω EOL resistor should be used on all 1K EOL fire loops. The DMP Model 309 3.3K Ω EOL resistor should be used on all 2-wire smoke detector loops.

17.5 System Trouble Display

The Status List display must include at least one keypad that displays system monitor troubles. See section 11.3 of the 891/891A Programming Manual.

17.6 Fire Display

The Status List display must include at least one keypad that displays troubles and alarms on fire type loops. See section 11.4 of the 891/891A Programming Manual.

17.7 Police Station Phone Numbers

The digital dialer telephone number programmed for communication must not be a police station phone number unless that phone number is specifically provided for that purpose.

17.8 System Maintenance

Proper installation and regular maintenance by the installing alarm company and frequent testing by the end user is essential to ensure continuous satisfactory operation of any alarm system. Offering a maintenance program and acquainting the user with the correct procedure for use and testing of the system is also the responsibility of the installing alarm company.

17.9 Audible Alarm

When an audible alarm is used in a fire application, Fire Type loops should be programmed for Bell Action. The bell action for fire type loops should not be programmed as N. See section 9.4 and 9.4A in the 891/891A Programming Manual.

17.10 Fire Loop Programming

Fire loops must be programmed to activate a trouble on open conditions and an alarm on short conditions. The swinger bypass function must not be used on any fire loops. If a retard is used on a waterflow loop it cannot exceed 60 seconds and any retard in the waterflow initiating devices must be subtracted from the 60 seconds allowed. See sections 13.4 through 13.14 in the 891/891A Programming Manual. The retard delay should not be used on a loop with smoke detectors.

UL 985, NFPA 74 SPECIFICATIONS

Household Fire Warning System Units

18.1 Bell Output Definition

The bell output of the Model 1512 must be programmed to operate steady on burglary alarms and pulsed on fire alarms. See sections 9.4A and 9.4B of the 891/891A Programming Manual.

18.2 System Test

The System Test option must be programmed as YES. See section 10.12 of the 891/891A Programming Manual.

CALIFORNIA STATE FIRE MARSHAL SPECIFICATIONS

19.1 Bell Output Definition

The bell output of the Model 1512 must be programmed to operate steady on burglary alarms and pulsed on fire alarms. See sections 9.4A and 9.4B of the 891/891A Programming Manual.

19.2 System Test

The System Test option must be programmed as YES. See section 10.12 of the 891/891A Programming Manual.

