AV-GAD
systems ltd.

EasyLoader
AV-2004, AV-2048

Integrated Alarm Control/Communicator

Year 2000 ready

Express
Installation and Operation Manual

Version 3.08

Edition I (Nov 01 2011)

This product is subject to continual enhancement and therefore
specifications may be changed or altered without prior notice

Item: 4718_2004 (A4BKE)

CE

1. INTRODUCTION

System planning

When the panel reaches you it will be factory programmed. This is done for testing purposes but also can be used for installation if required without first entering to programming. This present program is referred to as 'Factory Defaults'.

> **This is a short format manual. Make sure you are familiar with all the features and options before attempting to install and program. Refer to the full version manual (AV-2008 full version available our web site), this manual includes glossary and more details. PRO type panels are compatible only with LCD keypads; refer to the AV-705, 706, 707 LCD keypads manual.**

System supplied with or without transformer according to approval requirements in each country. Order the keypad or/and transformer separately (few types available). Using none approved transformer is risky. Blinking 'h' after power-up, reminds to adjust system's clock and date (see page No. 10). Default arming code is 1, 2, 3, 4.

Version 3.00 ("D" Suffix): New and improved PCB, DTMF control (arm, disarm, etc) option with "D" panels, PRO panels available, panel version identifies itself as AV-2004/48D (EasyLoad software), self test at initialization (STI) - Dial LED blinks for the first 50 seconds after power on, new factory defaults, address 052: Set the CS signal test per days, remote text transfer for PRO panels. RS-232 and SVM sockets added. Home Automation features for remote control of output A1. **Version 3.02:** First alarm indication by DTMF, A1 at Latch mode. **Version 3.04:** New at 072-4, activate ON output to drive ADSL filter line disconnect, added 999 to exit programming mode, during Answer Now mode keypad display CA, telephone line monitor intervals (add 094) changed to minutes. 3.04A: Zone 4 or 8 as aux. Key. **Version 3.06:** AV-2048D new zone wiring at 075-2, new feature: Enable – Keypad & Sir sounds at Home mode at 075-1. 3.08: Added "very slow zone" for refrigerator defrosting alarm. **Version 3.08:** New factory defaults (remote PC modem disabled), new feature **"disable fast dial"** at 076-7.

Electronic Fuse Overview

The Electronic Fuse device is installed as a series element in a circuit. In response to an over current it protects the circuit by going from a low-resistance to a high-resistance state that reduces the current to a level that's safe for the circuit elements. The change in resistance is a result of a rapid increase in the temperature of the device. Like traditional fuses, Electronic Fuse devices interrupt the flow of dangerously high current. However, unlike traditional fuses, they automatically reset after the fault is cleared and power to the circuit is removed. Because they are solid-state, Electronic Fuses are also better able to withstand mechanical shock and vibration, and provide reliable protection in a wide variety of applications. In case of over current, carefully touch the fuse body (yellow round disc), hot body means the Electronic Fuse in protection mode, disconnect the load and wait 2-3 minutes until the fuse body get cooler.

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2. MOUNTING THE CONTROL PANEL

Refer to detailed wiring diagram. Note: 'h' is displayed after power-up to remind installer to set the time; 'h' will be removed after time setting (by using keys 0 and 1 refer to page 10).

Select a mounting location as following:

1. A continuously powered (non-switched) AC power source, compatible with step-down supplied transformer. Make sure the mains (110 or 220V) are fused.
2. A cold water pipe Ground, ideally no more than 3 meters (10 feet) from the panel. Use 16 AWG or 0.5 mm^2 wires.
3. Telephone line socket.

Always install the control panel box in a hard-to-access location

Locate one of the Keypads near the Entrance/Exit door. Install a tamper-switch to secure the control panel box. Connect the tamper-switch to a 24H zone (is active at all times).

Zone Wiring Mode:

Your system provides few ways of zone wiring: Non EOL resistor loop, EOL resistor loop. The EOL loop protects the zone lines against tampering. It's recommended to use the EOL mode; it's safer and keeps lower EMI and RFI interference.

Via programming, select either End-Of-Line (EOL.) resistor protection, or non-EOL mode. The EOL is defined at address 029; the default program is set at non-EOL for all zones. To select EOL mode enter at address 029 the required zone to be EOL, or enter '0' to enable all zones as EOL. Note: Address 029 at the AV-2048 is blocked. Only EOL mode is available.

If EOL mode is selected (recommended), install the EOL resistor (2.2K/4.7K) inside the detection device (e.g. PIR, Beam, etc). **Maximum zone wiring length is 200 meters using 0.5-mm^2 wires, EOL mode wiring is highly recommended.**

Note: 'Zone' and 'Sector' are interchangeable terms in this manual.

Always use EOL resistor, to prevents EMI and RFI interference and higher security

An EOL zone will report Tamper alarm in case of zone shorting (if it has been EOL programmed). For connecting N.O. zones, programming is required, refer to address 042. Do not connect few sensors to one zone in EOL mode.

AV-2048, eight zone panel zone wiring

The AV-2048D printed electronic board looks similar to the AV-2004D, the AV-2048 board carries a specific identification label (on board center). The hardware and software are different.

The AV-2048/D works in EOL mode (can't work in none EOL), it means always using EOL resistors. The zones are referred to –V. Connect two wires to the same terminal, one wire in series with the 2.2.K resistor and the sensor contacts (relay), the other wire in series with 4.7K resistor and other contacts. Refer to figure 1. Tamper alarm per zone is not available with AV-2048.

The 2.2K resistors are wired with the odd zones (1, 3, 5, 7), the 4.7K are wired with the even zones (2, 4, 6, 8) as table below shows, for latest AV-2048 starting version 3.05.

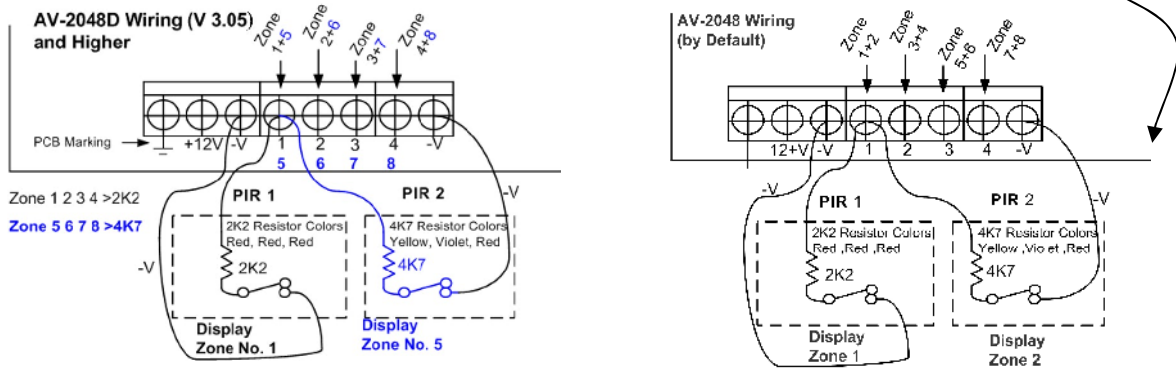| Terminal wire No.	Resistor 2.2K	Resistor 4.7K
1	Zone No. 1	Zone No. 5
2	Zone No. 2	Zone No. 6
3	Zone No. 3	Zone No. 7
4	Zone No. 4	Zone No. 8

Version 3.00 to 3.04

Figure 1: Optional zones wiring in AV-2048D from version 3.05 (left side)

Very Slow Response Zone
This feature entered to AV-2048D PRO Version 3.08. At 032 select the zone to act "Very Slow", at address 059 set the time in minutes; at 075-4 enable the "Very Slow" feature.

3. KEYPAD WIRING

Up to two AV-701T/TI or four AV-702 Keypads can be connected to AV-2004/48 Control Panel. When few keypads are connected, wire each one directly to the panel, not from one keypad to the other. Refer to drawing in next page.

> **Important Note: Up to two (2) AV-701T/TI or four (4) AV-702 Keypads can be connected to AV-2004/48 Alarm Control Panel**

When using few keypads connect them in parallel. Each keypad has four terminal wires:
➢ (+) Power, connect to + Aux. Power ➢ System Data, connect to OR
➢ (–) Power, connect to – Aux. Power ➢ System Strobe, connect to YE
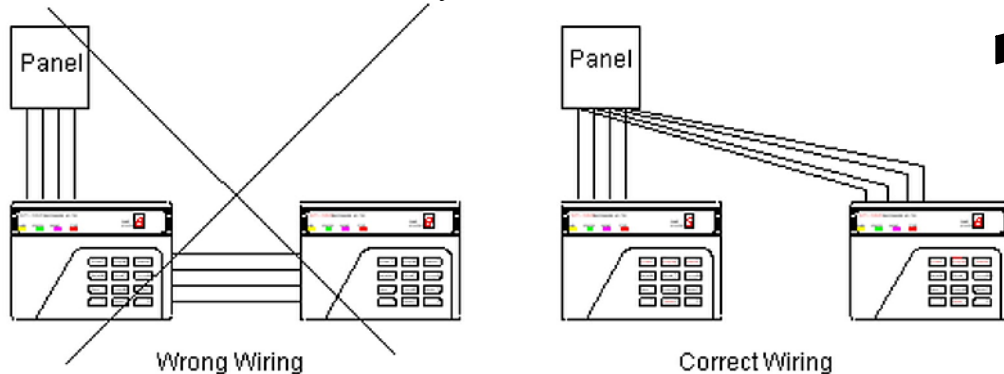

Figure 2: Wiring more than one keypad

> **When a non-blinking '8' is displayed and keys do not respond, it is an indication that the keypad is not communicating with the panel. Check wiring and polarity**

- Wire length for each AV-701 Keypad should not exceed 100 meters (when using 0.5 mm^2 wires).
- For longer than 100 meter keypad wiring, contact manufacturer's consultant. For AV-701TIP (with tamper) run five (5) wires. Connect the TMP terminal to a 24H or Tamper zone.
- Power at Keypad should be a minimum of 11.5 Volts.

> **IMPORTANT! Never run Keypad wires alongside telephone wires, high voltage wires, or transmitting antennae. Wire the keypad wires separately and <u>not</u> in same cable with other devices (telephone, PIR etc.)**

For proper connection, refer to wiring diagrams at the end of the manual.

Easy Tip

4. SIRENS

- The control unit contains single siren outputs, protected by Electronic Fuse.
- Siren should be of an outdoor type with a minimum power of 15W, 8 Ohms Impedance. Enclose the siren in a metal housing, with anti-tamper switch protection.
- Siren mode is factory default, in Siren mode install only speaker-type sirens, which DO NOT contain sound driver or electronic modules.
- The alarm issued by the siren differs according to the type of zone.
- 'Bell Mode' converts Siren outputs into 13.6V DC outputs (no sound is issued). Bell mode is applicable for driving self-powered sirens or bells, or combined sirens and strobes. 13.6V DC is issued at Bell mode. It's recommended to use Bella sirens series.
- In Bell mode, connect **only** sirens, which contain sound driver or electronic modules.
- Self contain Bell mode is programmable (address 072-1 and 073-3). This mode provides connection of Bells or Sirens that requires 13.6V at idle and 0V during alarm.
- Contact manufacturer's consultant before connecting higher power loads.
- To connect self-contained sirens, Bells, and inner-oscillating sirens refer to address 072-1 for Bell mode. Bella sirens support internal battery charge and monitor for higher security. Recommended Bella siren series, none approved siren is risky.

> **Warning, Output current for Bell should not exceed 1.0 Ampere**

5. AV-2004/48 Remote Indication Terminals

Indication	Application
ON	(-V) on closing (Arming) or if cross-zoning feature selected
A1	(-V) during alarm from the programmed zone

The A1 may be used to drive a low current Strobe Light (Xenon) that consumes up to 300 mA
Home Automation feature: Momentary activation of A1 output for three seconds, via any DTMF telephone command (address 074-2).
In case other features are selected for the same output, this feature is not applicable.

6. GROUNDING – Lightning Protection

Ground the control panel to earth for lightning and RFI/EMI interferences protection to work effectively. Connect the ground to a verified cold-water pipe using a minimum 16 AWG (or larger) wire. Run the wire via the shortest possible route.

> **System grounding is compulsory**
> **Connect the Grounding wire to main board and to metal box.**
> Note: Connect the Ground wire, to the ⏚ terminal. This is not a minus (-V).
> **Be careful of static discharge; before handling the main board touch a grounded metal.**

Before grounding the system, make sure to connect ground properly, check that ground does not transfer high voltages.

7. BACK-UP BATTERY

Make sure to connect the Battery in the correct polarity!
- The system's Red wire is the positive pole (+) and the Black wire is the negative pole (-).
- The battery will provide power back up in case of AC power failure.
- Connect back-up battery to ensure proper operation of the system.
- Recommended battery: 7 Amperes per Hour (AH), 12V (sealed lead acid) type.
- A 7.2 AH battery backs up the control panel and a single keypad for approximately 8 hours.
- AV-2004 and AV-2048 panels accommodate a battery of up to 12V – 7.2 AH (max.).
- An Electronic Fuse rated at 2.5A protects the battery.
- Add a power supply for installation with over three LCD keypad and/or if over ten high current sensors included. Refer to Av-Gad AV-21, AV-40 power supply and charger.

> **The 4AH–12V battery fits in the ABS box, but the door is too tight, why?**
> **Note the following:**
> **1. A small bulge on the box door supposing to hold the battery may displace the battery; place the battery near this bulge and <u>not</u> on it**
> **2. Make sure that the battery is not laying on the wiring**

8. TELEPHONE LINE WIRING and PROGRAMMING

It's recommended to connect the control panel to an independent telephone line, if a device is in parallel with the alarm panel, this may grab the call first (like a message answer/fax) during remote up and download. Don't connect fax or answering machine in parallel on the same telephone line.

Default dialing mode is DTMF. If Pulse dial is selected, the default is European Make/Break rate of 40/60 milliseconds (in Pulse dialing). Starting version 3.06 Fast Dialing feature included, enables fast dial upon delayed zone opened, to disable see 076-7.

Dialing mode is programmable (refer to programming sheet addresses 084).

Connect the telephone line to 'TEL-LINE' terminal, if handsets connected to same line connect them to 'PHONES', when system attempts to dial the 'PHONES' is disconnected.

Do not connect to ISDN or other digital telephone system. Most ISDN converters contain an Analog line; connect the Analog line of the ISDN to the panel TEL-LINE terminal. For DSL/ADSL connect a dedicated lien filter supplied by local Telecom Company.

For GSM back-up use the AVG-14, it dials via the GSM network and do not effects the system, none approved GSM module (or other RF device) cause various troubles.

9. BEFORE POWERING UP

- Place Control Panel in a well-ventilated location and as far as possible from any heat source.
- Do not place high power RF wireless transmitters near Control Panel.
- Check for proper grounding.
- Make sure detectors, keypads or any other devices are connected to the Control Panel in their correct polarities.
- Connect a momentary voltage to the siren; making sure a 'beep' is sounded. In case of no beep, check for a short circuit or improperly connected wires.
- Power-up through transformer, if system seems to operate properly connect the battery.
- Do not connect any sensors or other devices to the battery terminals.
- The AV-2004 and AV-2048 are compatible with 12V smoke detectors, common collector type or relay (-) output on alarm. For wiring refer to full manual.
- In the AV-2004/48, a momentary switch achieves smoke detector reset. The switch (or relay like AV-01) disconnects power to smoke detector following a smoke alarm, by holding down key"9".

10. AV-2004/48 STANDARD KEYPAD FUNCTIONS

> **Common Terms in this Manual**
> 'SHUNT' ⇔ 'BYPASS' are interchangeable terms
> Program Mode ⇔ Provides features programming, 'P' is displayed, alarm is disabled
> Use Mode ⇔ Normal operation mode
> AV-701 ⇔ AV-701T ⇔ AV-701TI ⇔ AV-702 are identical and interchangeable term

- Short press access standard Keypad functions. The numbered keys (1 to 0) are used for Arming/Disarming (ON/OFF), Zone Shunt (Bypass), and other operation and programming functions.
- Short beep confirms each key press.

A short press on the AV-701 keypad key accesses the following special functions:

[Chime **5**] Instant Arming. Press key '5' (requires programming at 071-2) to Arm.

[Shunt **0**] Zone Bypass, by pressing key '0,' followed by entering the Zone number.

[Shunt **0**] Zone Bypass via Code (requires programming, see address 071-5).

> Press key '0', while 4 LEDs are blinking, enter valid user code; When only 2 left-most LEDs are blinking, enter zone number(s) to be bypassed, 4 LEDs stop blinking, 'Shunt' LED remains on to confirm zone bypass, within 20 seconds enter your user code to Arm the system.

[Shunt **0**] then [Shunt **0**] **AV-2004:** Group Bypass, by two presses on key '0.' Group-Bypass is operative only if System is armed within 20 seconds after entry of this feature. Yellow LED will flash and 'h' (Home) will be displayed for 1 second in confirmation.

AV-2048 Arming with Group Bypass: 2nd Group Bypass added, (address 034) and the procedure enhanced; after selecting the Group Bypass, system is armed (without code entry). To bypass 1st group: Press "0" and hold-down "1", to bypass 2nd group press "0" and hold-down "2", to bypass both groups press "0" and hold-down "0". Yellow LED will flash; 'h' (Home) will be displayed for 1 second in confirmation, then the Armed LED lights-up in confirmation.

When Group Bypass is selected the Shunt LED stops blinking eight seconds after arming. This will prevent the LED light from disturbing sleepers near the keypad.

B. There is no exit/entry delay-warning buzzer at the keypad.

C. There are no 'beeps' at the keypad until an alarm occurs or Group Bypass is canceled.

D. When the keypad LED's are turned off after Arming (requires programming), touching the keypad will turn them on for 5 seconds.

For Group Bypass with code (requires programming); Press key '0', while four LEDs are blinking, enter valid user code. When only 2 left-most LEDs are blinking, press again '0' key, 'h' will be displayed and, 4 LEDs stop blinking. 'Shunt' LED is blinking to confirm Group Bypass, enter your user code to Arm system within 20 seconds (otherwise Group Bypass will be removed).

11. AV-2004/48 HOLD-DOWN FUNCTIONS (AV-701, AV-702 SERIES)

- To access the hold-down functions hold down the key for approximately 2 seconds.
- Holds down functions are confirmed by a prolonged beep.

Hold-Down Functions:

| Siren 1 | Key 1 ➔ **SIREN TEST**

| Shunt Display 2 | Key 2 ➔ **SHUNT DISPLAY**

Displays shunted zone(s).

| Status 3 | Key 3 ➔ **STATUS DISPLAY**

Displays troubled or malfunctioning zone(s).

| Delay Delete 4 | Key 4 ➔ **DELAY DELETE (INSTANT PROTECTION)**

Holding-down key 4 cancels Entry Delays in zones selected as 'Delayed' zones. All zones become instant.

'd' is displayed in confirmation. Instant Protection becomes effective only if System is armed within 20 seconds following hold-down of key 4.

| Chime 5 | Key 5 ➔ **DOOR CHIME**

Enable Chime mode. Door Chime operates on Chime-programmed zones.

Hold-down key 5 enables and disables the function; chime mode is not affected by Arm/Disarm.

Chime mode is confirmed by 'c' display on keypad.

| Telephone 6 | Key 6 ➔ **DIALER TEST & FOLLOW-ME PROGRAMMING**

Test is performed in 'Disarmed' mode.

Function	Via AV-707 Series Keypad	Via AV-701 Series Keypad
Displays Programmed Follow Me Telephone Numbers Without Dialing		Hold-down [6]
Follow Me telephone number programming		Hold-down [6] then hold-down [6] again
Programmed Telephone number Verification (Display and Dial 4 telephone numbers)		Hold-down [6] then hold-down [7]

To display the programmed telephone numbers without dialing hold down key 6; within a few seconds, 'c' will appear on the display, followed by the (programmed) 'Follow Me' telephone number.

When programming telephone numbers that requiring an inter-digit delay ('Pause') during dialing, Hold-Down key [0], a momentary 'P' will be displayed (Delay duration is 3 seconds).

The 'Follow-Me' number will be displayed, or displayed and dialed, followed by display-and-dial of up to three additional telephone numbers.

[Telephone 6] then [Siren 1] Address 092 enables 'Answer Now' feature (answers remote computer after 1 ring). The user attending the control panel can reduce the number of rings before answer to one ring. To cancel the Answer Now feature hold-down 6 than hold-down 0.

This feature is useful if the control panel was programmed not to answer incoming calls (programming of 21 rings or greater at address 091). For 'Answer Now' to be available, program 01 at address 092.

User should hold-down key 6 and then key 1, before the call is made to the control panel. The panel will acknowledge the command with two beeps and 'A.' is displayed. The feature remains active for 5 minutes after entered, enabling programmer (at remote computer) to enter the panel.

[Test 7] Key 7 ➔ **FAULT FIND**

- Fault Find enables testing of all detection devices.
- Fault Find mode can be entered only during the 15 seconds following system Disarm.
- 24H, Fire or Panic alarm will stop Fault Find mode.
- Hold down key 7, confirmed by 'F' on Keypad display.
- Open and close each zone to test. A one-second beep confirms detection of zone opening. Three beeps indicate zone closing.
- Quit Fault Find mode by arming the system.

[Program 8] Key 8 ➔ **PROGRAM**

   Key 8 accesses 'Program' mode and user code programming (changing).

[Reset 9] Key 9 ➔ **RESET**

   'Reset' performs the following functions:
1. Cancels last Keypad entry
2. Stops the communication test (triggered by hold-down key 6)
3. Resets Day Zone Alarm at Keypad
4. Exits Programming mode (features, telephone numbers, etc.), or type 9,9,9 to exit programming mode (active in LED and PRO panels).

Key '0' Hold-Down functions

1. [Shunt 0] Key 0 **Concise Alarm History**: Hold down key '0' to display the last alarm sequence. New alarm will create a new history instead of the old one.

2. [Shunt 0] and [Shunt 0] **Detailed Events History (requires programming):** Hold down key '0' and again hold down key '0' to display up to 36 events, including: System opening and closing by user number, opening or closing time, zone caused alarm, AC fail.

By holding-down key $\boxed{\text{Shunt } \mathbf{0}}$ twice, three LEDs start blinking to indicate a special operation mode. The events are being displayed from the most recent to the oldest event.

The event is displayed as following:

XX - Event number (from 01 to 36), then HH_MM (Hour and Minutes) Event Time, Event (alarm or opening/closing). More events are reported in the PC up and download log events.

Translate the display as following:

'u' (user number 1 to 8)
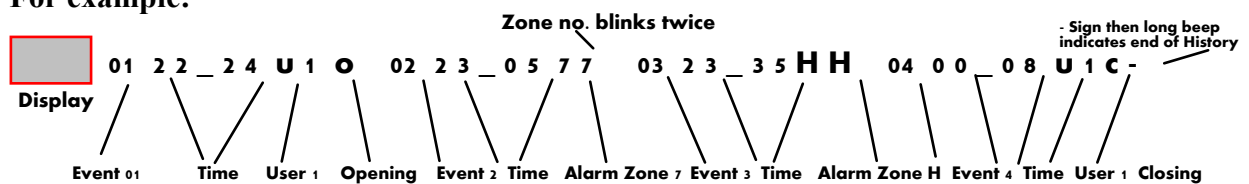
'o' or 'c' - opening or closing

Zone causing alarm-Will blink twice

t$\underline{X}$ - Tamper alarm form zone causing alarm (X)

H - Means Panic Alarm

Note: 3 lines ($\equiv$) indicates power fail. In history events AC fail is displayed.

For example:

During zone number display, keypad display blinks twice to indicate the zone number.

Browsing through Events History

Keys used for browsing:

$\boxed{\substack{\text{Shunt} \\ \text{Display } 2}}$ ➢ Skip forward to next event

$\boxed{\text{Chime } 5}$ ➢ Display again current event

$\boxed{\text{Program } 8}$ ➢ Skip backward to previous event

$\boxed{\text{Reset } 9}$ ➢ Cancel History Event Mode and exit

When last event is displayed and attempting to move forward (key 2) a blank sign '–' is displayed and a long warning beep indicating that it is the last event. Press key 8 to move backward, if no key is pressed Event History stops and system returns to Use mode.

When starting History Events mode the events are displayed from starting to the end without any break, until any browsing key had been pressed.

During History Event browsing, system will respond only to alarm or panic, Arming denied. Alarm or Panic during History Event mode will quit this mode and system will set to Use Mode (normal operation mode). To get detailed History events it's recommended to use the EasyLoad software

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3. $\boxed{\text{Shunt } \mathbf{0}}$ and $\boxed{\text{Status } \mathbf{3}}$ **Concise History of Tampered Zones:** Hold down key '0' and then hold down key '3' to display the Tampered zone alarm sequence.

New alarm will create a new history in place of old history.

4. $\boxed{\text{Shunt} \quad 0}$ and $\boxed{\text{Siren} \quad 1}$ **Display and Setting of System Time:** Hold down key '0' and then hold-down key '1', three LEDs are blinking, wait for the display of system time in 4-digit format. To set new time, hold down key '0' and then hold down key '1.' Do not wait for time display; enter the new time in 24-hour format.

The local clock time is not stored in system memory; clock must be adjusted after power-up. System time is reset to 00:00 after power-up, 'h' will be displayed to remind user to set time, 'h' will be removed after setting new time.

5. $\boxed{\text{Shunt} \quad 0}$ then $\boxed{\substack{\text{Shunt} \\ \text{Display} \quad 2}}$ **Display and Setting of System Date:** Hold down key '0' and then hold-down key '2', 3 LEDs are blinking, enter date; 'dd mm yy'. When history displayed at keypad, time is displayed. The up and download PC software synchronies time and date.

The local date is stored in system memory; date must be adjusted after long power-fail.

Years 78 through 99 translated as 1978 to 1999

Years 00 through 77 translated as 2000 to 2077

6. **Reset Events Memory:** In program mode press 200 then 04 to erase all events from memory.

7. $\boxed{\text{Shunt} \quad 0}$ then $\boxed{\text{Chime} \quad 5}$ **Display Last 2 Users:** Hold down key '0' and then hold down key 5 to display user number and System opening or closing time.

'o' is displayed for Opening (Disarming); 'c' is displayed for Closing (Arming).

8. $\boxed{\text{Shunt} \quad 0}$ (do not hold-down) and press $\boxed{\text{Reset} \quad 9}$ (do not hold-down), will display '-' to cancel all Bypassed Zones.

9. $\boxed{\qquad * \qquad}$ Keypad Panic $\boxed{\qquad \# \qquad}$ Keys ➔ **PANIC BUTTON**

Holding down * and # keys will trigger Panic alarm. H will be displayed (zone 'H'). For Silent (used with Panic button) Panic alarm, remove siren and buzzer activation by programming the Panic Zone so. Panic zone program as 24H zone type, N.O. Zone type and fast response type.

To quit zero hold-down functions, hold-down '9'
To cancel *Hold-Down* function accessed by keys [0], [6] and [7]; Hold-Down key 9 (Reset)

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12. SYSTEM CODES

Up to eight Arm/Disarm codes and one installer (dealer) code are available; each code contains one to six digits.

Do not use '0' as the first digit in a code.

Do not use '5' as first digit in a code number if *Instant Arming via key 5* was program.

The user(s) code must not start with the same numbers as the installer programming code (1994).

Do not use same codes or same first digit for few codes, for example; if code of user one is 1,2,3,4 avoid programming code of user two to be 1,2,5,6.

1. **Default Arming and Disarming Code '1 2 3 4'** (Code No. 1) - Use '1234' as Arming Code (also called Owner Code). Use code No. 1 to program a new user code.
   Upon setting new Arming & Disarming code, the default user code '1234' is automatically replaced.

For <u>setting system codes to default</u>, power up by applying AC and battery and immediately hold-down keys ⬚ * Keypad Panic ⬚ #, after 2nd beep release keys, in confirmation 'U' blinks 3 times.

2. **Code number 8 as Visitor Code** (requires programming) – Program the Arm/Disarm Code No. 8 as a 'one time code,' for employees and one-time visitors.
   This code is valid 30 seconds from Arming. After 30 seconds, the code is not valid. Entering code No. 8 will delete zone bypasses including auto-bypass.

3. **Code number 9, Programming Code (Installer Code)**. This code enables entering the programming mode (system features programming) at the Installer level.
   The factory default programming code is '1 9 9 4'.
   The programming code may be installer-programmed. Installer Code does not Arm or Disarm system.

4. **User Codes** - (Arming/Disarming code); each code is 1 to 6 digit. System provides eight users programmable codes.

13. Remote Key and Wireless Arming & Disarming

The AV-2004/48 enables Arming and Disarming by remote momentary or latch key-switch (as programmed in address 071-7), which is connected to JP1 'KEY' and '- Aux. Power (Refer to Wiring Diagram). Cable set for connecting to JP1 requires order separately.

When using remote key-switch, wire length should not exceed 10 meters.

A Momentary pulse (momentary trig) between 'KEY' terminals will Arm and Disarm the control panel (close the 'instant' and '24H' zones Prior to arming.)

System reverts to previous status with next momentary pulse. (Refer to Wiring Diagram.)

For Arming/Disarming via Wireless Radio Remote, connect receiver's relay to 'KE' terminals with special wire (with plug), item WSVM. Verify the receiver relay mode, momentary, or latch, and set system accordingly.

For fast Remote Key wiring, the AV-2004/48/M contains a fast-insert connection; a dedicated wired connector is available (not included in the standard AV-2004 and AV-2048).

In most cases the Key connector is applicable for emergency Disarming – Short the key terminal with screwdriver. For remote arming with wireless remote transmitter use the AVS-22.

Starting version 3.04: Zone 4 or 8 may function as auxiliary remote key input, programmable at address 050-3. The Aux. key Arms without Home (group) mode, sounds siren beep when Arming (if programmed), sounds siren beeps when Disarming (if programmed).

14. Remote Access via DTMF

<u>General Description</u>
Starting generation III alarm panels ("D" suffix) includes the added functions for remote control via DTMF phone. DTMF commands are possible when the panel call your phone, or by calling the panel. The DTMF remote control functions:
➔ Check the status of the control panel (Armed/Disarm, Alarm in progress)
➔ Arm or disarm the control panel
➔ Bypass zones or clear all bypassed zones

➔ Stop the dialer report during alarm

➔ Momentary activate A1 (alarm) output for three seconds

➔ First Alarm indication - by a number of beeps per zone, special tune for Panic alarm

The same options are available when a call is received from the control panel during an alarm condition.

To enable the DTMF control program address 074/6 "Enable remote access by telephone", and 074 - 2 "Enable A1 activation by telephone".

Keypad online conformation and DTMF functions history

When the control panel detects the first DTMF key, five short beeps sound at the keypads. The keypad activation shows the user at the remote site that a DTMF connection takes place (in case of mistaken connection or similar).

During the remote access the keypad display 'd' and all LEDs blink fast from time to time.

When the call ends, the three short beeps sound at the keypads. When the user code is in process, the keypad display shows a line for each code number entry (disclose the code), then each DTMF number pressed show the received number. History log: Each call, confirmed by a valid user code, is recorded in the events history. Each "Arming/Disarming" is recorded in the events history.

"Last users" history will display 'ut' for "**u**ser "**t**elephone, followed by the User number.

Notes: 1. The keypad buzzer or other loud sounds may jam your DTMF entries, in case the keypad is close to your DTMF telephone, during testing disable the buzzer.

2. When entering the DTMF commands wait for "quit" period, if entering commands during the system confirmation tunes, or other tunes the panel may miss the DTMF entries.

The panel calls the user during alarm

When the control panel calls the user during alarm, it will first generate the siren sound for about 30 seconds (to shorten this feature at address 085 "Tel. Message Time", to 30, as default is 50 seconds). The siren sound will stop ten (10) seconds before the end of the call and a greeting tune will be sounded, after the greeting tune enter your code followed by #. To stop the dialer enter 6#, to get panel status enter 7 than #, to disarm the panel enter 2#. To end the process press 9 than #.

The control panel will answer the call after the number of rings programmed at address 091 (or following the "bypass answering machine" procedure).

Commands

Each command must be followed by the '#' key (Enter) in the remote phone. The control panel waits 4 seconds between the keys typed. When this time expires, previous keys input will be discarded.

The key '*' cancels previous input. It's recommended to start with "learn" function [8X #] to identify the various confirmation tune.

The commands:

[0 X #] - **Bypass zone** (# is the Enter key)

X is Bypassed zone 1 to 8

To clear all bypassed zone: 0 9 #

The zone bypass command is valid only when the system is in Disarm position and not in Alarm position.

[1 #] - **Arm control panel**. The control panel will be armed <u>even with open</u> zones. After the arming, a confirmation tune followed by an "armed" tune will be sounded ("Armed" tune: Short beep followed by a long tone.).

The user can wait a few seconds to be sure that no alarm has been caused by open zones. In this case, an Alarm tune (siren sound) will be sounded.

[2 #] - **Disarm control panel**. The control panel will be disarmed. A confirmation tune followed by a "disarmed" tune will be sounded ("Disarmed" tune: Five short beeps).

[31 #] - **Activates A1** output for 3 seconds (enabled by programming 074-2)

[6 #] - **Stop dialer.** The dialer will stop calling the programmed telephone numbers. This will affect only the current dialing process. A new alarm will re-start the dialer.

Note that if the user answered a call from the panel or called the panel during a dialing period without Arming/Disarming/Stopping the dialer, the dialer will restart the cycle from the beginning.

[7 #] - **Check control panel status**. The control panel will answer with an Armed or Disarmed tune followed by an Alarm tune if it is in an alarm condition.

[7 and 7 #] - **First Alarm zone,** beeps count for the zone number. Report to user the <u>first</u> zone that caused alarm. Arming or Disarming clears the First alarm zone reported by DTMF.

[8X #] - **Learn function**. Using this command, the user can become familiar with the various sounds used by the control panel in the remote access procedure. Further details find in the dedicated paragraph. (X - The required sound).

[9 #] - **End call.** The control panel will sound a confirmation tune and will hang up.

15. USER CODE PROGRAMMING

Set New USER-CODE
1. Hold down key ⌷Program 8⌷
2. While 4 LEDs are blinking, enter code No. 1 (default 1, 2, 3, 4)
3. If code is valid, four LEDs will stop blinking, and 'u' will be displayed
4. The two left-most LEDs blink to indicate that the system is waiting for a new user code index (user 1 to 8) to be entered.
5. Enter the code index (1 for code No. 1; 2 for code No. 2, etc.)
6. The two right-most LEDs blink to indicate that the system is waiting for a new code (1 to 6 digits) to be entered. **Not entering a user code is, voids the code.**
7. Enter the new code; 'U' is displayed for confirmation.
8. To quit code setting hold-down key '9'.

Set new USER-CODE in Installer program mode
1. While system is in program mode, enter address 099, 'u' will be displayed
2. The two left-most LEDs blink to indicate that the system is waiting for a new user code index (user 1 to 8) to be entered.
3. The two right-most LEDs blink to indicate that the system is waiting for a new code (1 to 6 digits) to be entered. Enter the new code.
4. At Installer program mode, Installer Code (code no. 9) can be set. Installer Code index number is '9'.
5. Upon code setting completion, system reverts to Disarm mode.

Delete a USER-CODE

1. Hold down key [Program 8]

2. While four LEDs are blinking, enter code No. 1 (default 1, 2, 3, 4)

3. If code is valid, four LEDs will stop blinking, and 'u' will be displayed

4. The two left-most LEDs blink to indicate that the system is waiting for a new user code-index (user 1 to 8) to be entered.

5. Enter the code index you want to be delete (1 for code No. 1; 2 for code No. 2, etc.)

6. The two right-most LEDs blink to indicate that the system is waiting for a new code.

   If user code is not entered, the code is voided; short sounder beep confirms code has been deleted.

7. It is possible to enter a new code; 'U' is displayed for confirmation.

8. To quit code setting hold-down key '9', LCD keypad press 999 & #.

Auto Arming (version 2.09 and upper)

Programming the time for Automatic Arming:

- By Installer: Program (or display) hours and minutes at address 016.

- By User: Enter to user programming mode. Hold down '8' ('A' is displayed); type hour and minutes in 24 hours format. To display, hold down '8' and wait. To disable Automatic Arming program 0000.

After Automatic Arming is programmed, the system time can be set only via User Programming Mode: Enter User Programming Mode (hold-down 8 and 1234), hold down '1' ('t' is displayed) and type hour and minutes. Hold down '1' and wait for the time to be displayed. Holding down keys '0'+'1' to program the time is possible only if the Automatic Arming is disabled (otherwise an 'Error' warning is displayed).

16. CROSS ZONE FEATURE (AV-2004 only)

This feature removed starting version 3, not available with "d" panels.

17. AV-2004/48 Programming Sheet Version 3.08

Factory Default Program is as shown in table; Blank Square means no default program

① **TELEPHONES**

Tel. 1	Tel. 2	Tel. 3	Tel. 4
010	011	012	013

SIGNAL & AUTO ARMING TEST TIME

Time 014	Auto Arm Time 016
(00:01)	00:00

Tel. 1 is also 'Follow Me'. Maximum 16 digits + 4 pauses each
Tel. Number. Tel. 2 and 3 are communicator option.

Test signal to central station (014), enter time in 24 hour format.
Codes are defined at Addresses: 052, 073, 237, 255.

To insert * in the phone number; Program system to dial in DTMF, Hold-down keys # and * (as panic), 'A' will be displayed. For Pause during dialing, hold-down key '0'.

Zones 5-8 are applicable with AV-2048

② **ZONE FEATURES**

Feature	Address	1	2	3	4	5	6	7	8
Fire zones	019								
Zone In Use	020	1	2	3	4	5	6	7	8
Entry/Exit Delay 1	021	1							
Entry/Exit Delay 2	022								
Entry / Exit Follower	023		2						
24-Hours Zone	024								
Day Zone	025								
Green Zone (one shot alarm)	026	1	2	3	4	5	6	7	8
Swinger Shut-Down	027								
Chime	028	1							
NO-EOL Resistor **(not @ 2048)**	029	1	2	3	4				
Enable Zone Tamper **(not @ 2048)**	030								
Delayed Power-Up	031								
Fast or Very Slow Response **	032								
Group Bypass I	033								
Group Bypass II	034								
Manual Bypass	035	1	2	3	4	5	6	7	8
Siren Out	036	1	2	3	4	5	6	7	8
Alarm 1 (A1) Out	037	1	2	3	4	5	6	7	8
Reserved	038								
Reserved	039								
Dial on Alarm	040	1	2	3	4	5	6	7	8
Sounder on Alarm	041	1	2	3	4	5	6	7	8
N.O. (normally open) zone	042								
Panic Zone	045								

Values marked with ( ) are the factory default programming

Keypad Panic Alarm	050		Tamper Alarm	051
Siren on Panic	1		Tamper zone as 24H zone	1
Alarm 1 On Panic	2		A1 on Tamper	2
Zone 4 / 8 (2048) as aux. key	3		Tel. Line Test at Disarmed	3
Reserved	4		Reserved	4
Telephone Report	(5)		Tel. Line fail activates buzzer	5
Enable buzzer on Panic	6		Tel. Line fail activates siren	6
Enable buzzer on Panic	7		Dialer Report AC Power Fail	7

Add. 052, CS test day: 1 - Sun 2 – Mon, 3 – Tues, 4 – Wed., 5 – Thu., 6 – Fri., 7 – Sat., 8 - All week's days, 0 – Clear all

③ **TIME-OUTS**

AC fail report delay	Zone Response time	Entry Delay 1	Entry Delay 2 **	Exit Delay **	Siren Time	ON Siren Time	OFF Siren Time	A1 Time	Reserved	Chime Time	Abort Delay
Minutes	m. Sec	Sec's	Sec's x 4	Sec's x 4	Minutes	Sec's	Sec's	Sec's	-	Beeps	Sec's
058	059	060	061	062	063	064	065	066	067	068	069
1 0	0 5	1 2	0 0	0 8	0 4	1 5	0 4	3 0	0 0	0 3	0 4

Note: Address 059 adjusts the response time of zones selected as 'Fast Response'. If Slow Response selected, the value in address 059 is in minutes, also set address 075-4.

④ **SYSTEM FEATURES** – Values marked with ( ) are the factory default programming

Feature	070
Enable-Siren/Bell Test upon Arming	1
Enable-Keypad 3 Beeps upon Disarming	(2)
Enable-Buzzer upon Entry Delay	(3)
Enable-Keypad Tactile Beep	(4)
Disable-4 LEDs display during Armed	5
Enable-Battery Test upon Arming	(6)
Reserved	7
Enable-Keypad Panic	(8)

Feature	071
Enable-Erase F. Me number on Disarm	1
Enable-Instant Arming via Key 5	2
Enable-Buzzer during exit delay	3
Enable-Display Alarmed Zone during alarm	4
Enable-Manual Bypass via Code No .1	5
Enable-Lock in Armed after Tamper Alarm	6
Enable-Momentary Key-Switch	(7)
Enable-Code '8' as one time code	8

Feature	072
Enable-Bell mode	(1)
Enable-Detailed alarm history	(2)
Enable-Report Opening/Closing	(3)
Activate ON output for ADSL filter line-cut	4
Enable-Report bypassed zones at Arming	5
Enable-Exit delay when delayed zones clear	6
Enable -'ON' output as SVM trigger	7
Enable-codes reset to default by * & #	(8)

Feature	073
Enable-Display troubled zones at Disarmed	(1)
Enable-Test to central station each hour	2
Enable-Self contain Bell (0V at alarm) **	3
Reserved	4
Enable- Group Bypass when Arm with Key	5
Enable - 2 Siren Beeps at Key Disarming	6
Enable - A1 output time follows Siren time	(7)
Enable - Outputs (A1, ON) 0V at active	8

Feature	074
Enable - A1 output as Latching	1
Enable-Activate A1 via DTMF	2
Enable-Auto reset zone after alarm timeout	3
Reserved	4
Reserved	5
Enable – DTMF control (D type or Ver. 3)	(6)
Enable – Bypass Answer Machine	7
Enable-Echo Cancellation Tone (AUSTEL)	8

*

Feature	075
Enable – K. Pad & Sir sounds @ Home mod	1
Enable – 2048 New Zones Wiring Method	2
Reserved	
Enable – Zone at 032 "Very slow zone"	4
Reserved	
Reserved	
Reserved	
Reserved	8

- AV-2048DPRO only starting 075/4. ** Self-contained Bell is operative if Bell mode selected

Feature	076
Enable – PC Up and download via modem	1
Enable – Disarming via remote DTMF	2
Enable – Zone/s bypass via remote DTMF	3
Enable – Date/Time setting by remote PC	(4)
Reserved	5
Reserved	6
Enable – Instant dial by Delay zone/s	7
Reserved	8

Not in use	077

⑤ **DIAL PARAMETERS**

Pre-Dial Delay	Wait for Dial Tone	Anti-Jam Delay	Dial tone detection	Dial Mode	Tel. MSG Time	Inter-Call Delay	Re-Dial Cycles (max.)	Pulse MAKE	Pulse BREAK	Inter Digit Delay	Rings qut'y for modem	Instant modem answer	Ring Cycle Width
Sec's	Sec's	Sec's	00=No 01=Yes	0=Pulses 1=DTMF	Sec's	Sec's	XX Cycle	5 mS	5 mS	50 mS	Tel. Rings	00=No 01=Yes	100 mS (1-25)
080	081	082	083	084	085	086	087	088	089	090	091	092	093
0 3	0 4	1 0	0 1	0 1	5 0	2 0	0 3	0 8	1 2	2 0	1 0	0 1	2 0

Tel. Line Test Intervals	Min. Ring Length	Rings Time Out
Minutes (Max 99)	10 mS (Max 20)	Seconds (4 to 25)
094	095	096
0 0	1 5	0 6

Note address 091: The download is ENABLED by default. Setting 21 at address 091 disables modem (because 21 rings for modem not accepted by telephone net). To ENABLE enter 01 to 20 at address 091. For Instant Modem Answer (Answer Now): Enter 01 in address 092, hold-down key 6 then hold-down key 1, 'A' displayed in confirmation. For special application, address 093 set the ring detector pulse width.

⑥**SET USER CODES:** Address 099 provides setting of user codes 1 to 8.

⑦**SET FACTORY DEFAULT:** In address 200 enter 6 9, program will revert to factory default programming

⑧**COMMUNICATOR PARAMETERS**

TELE PHONE No. 2	Receiver Format 201	Reserved	Handshake Frequency 203	Data Format 205	Protocol Type 207	Sum Check (Parity) 209	Transmit Rounds 211	Inter MSG Time 213	Wait for Handshake 215
	0 0		0 2	0 0	0 0	0 0	0 0	3 0	2 0

TELE PHONE No. 3	Receiver Format 202	Reserved	Handshake Frequency 204	Data Format 206	Protocol Type 208	Sum Check (Parity) 210	Transmit Rounds 212	Inter MSG Time 214	Wait for Handshake 216
	0 0		0 2	0 0	0 0	0 0	0 0	3 0	2 0
↓			↓	↓	↓	↓	↓	↓	↓

00 - Dialer only (No Communicator)		00=1400 Hz	00=3 X 1	00=Standard	00=None	00=2 Rnd	00=0.1 Sec	XX=Sec's
01 - Ademco, Silent Knight Slow, Scantronic		01=2300 Hz	01=4 X 1	01=Extend	01=S.Check	01=1 Rnd	30=3 Sec	
02 - Radionics Fast								
03 - Sescoa, Vertex, DCI, Franklin		02=Hi/Lo Ademco H.S.	02=4 X 2				3 Sec's is Default	
04 - Silent Knight Fast								
05 - Radionics, DCI, Franklin Slow		SurGurd Rec. set 00 or 01	03=3 X 2					
06 - Universal High Speed								
07 - Contact ID or Ademco High Speed *								

00 - 'No Communicator,' is identical to 'Dialer' that generates sound upon alarm. * Contact ID and Ademco H.S. are available at panels version 2.06 or higher. 'Rnd' is shortening for ROUNDS. 'S. Check' is shorting for 'Sum Check'. 'Hz' is shorting for 'Hertz' (frequency unit). When Contact ID selected program only Group 1 Subscriber ID at address 360 and 364.

⑨ **REPORT SELECTION**

For communicator codes A to F, enter the following: A=10, B=11, C=12, D=13, E=14, F=15. Note: entering 0 0 , is same as a blank.

Group 1		**Group 2**

Report on Alarm 105							Report on Alarm 106					
1	2	3	4			◄ZONE	AC	LB	PA			
1	2	3	4			◄VALUE	1	2	3			

Zone Restore 107							Control Panel Restore 108					
1	2	3	4			◄ZONE	AC	LB	PA			
1	2	3	4			◄VALUE	1	2	3			

Report Bypassed Zones 109						
1	2	3	4			◄ZONE
1	2	3	4			◄VALUE

⑩ **ALARM, RESTORE, BYPASS ZONES, OPENING / CLOSING, SIGNAL TEST & FORCE OPENING CODES**

Group 1		**Group 2**

Alarm Codes - Single Codes							Alarm Codes - Single Codes					
1	2	3	4			◄**Z O N E S**	AC	LB	PA			
						(Alarm Code for Fire = 1)						
110	112	114	116				126	128	130			
3	3	3	3			◄**CODES**►	F	F	2			
111	113	115	117				127	129	131			
1	2	3	4			◄**CODES**►	9	8	1			
Alarm Codes - Extended or 2 Digits							Alarm Codes - Extended or 2 Digits					

Restore Codes - Single Codes									Restore Codes - Single Codes						
1	2	3	4					◄ Z O N E S	AC	LB	PA				
142	144	146	148					◄CODES►	158	160	162				
E	E	E	E						E	E	E				
143	145	147	149					◄CODES►	159	161	163				
1	2	3	4						9	B	A				
Restore Codes - Extended or 2 Digits									Restore Codes - Extended or 2 Digits						

Bypassed Zones Codes - Single Codes									Reserved						
1	2	3	4					◄ Z O N E S							
174	176	178	180					◄CODES►							
8	8	8	8												
175	177	179	181					◄CODES►							
1	2	3	4												
Bypassed Zones - Extended or 2 Digits															

Closing (Arming) Codes-Single Digit								Test	◄ USER ►	Opening (Disarming) Codes-Single Digit								Test	Single Digit Force Opening
1	2	3	4							1	2	3	4						
220	222	224	226					236	◄CODE►	238	240	242	244					254	256
C	C	C	C					A		B	B	B	B					D	
221	223	225	227					237	◄CODE►	239	241	243	245					255	257
1	2	3	4					9		1	2	3	4					9	
Closing Codes - Extended or 2 Digits										Opening Codes - Extended or 2 Digits									

In order to disable reporting Closing/Opening change program at address 072; remove value '3'.

When SIGNAL TEST is enabled, you can specify to report System Status (as default for Extended or 2 digits) by programming for example 'A' (Armed) at 236, and 'D' (Disarmed) at 254, '9' is the test signal code. For System Status report, select extended or two digits format.

For programming the End-User codes 1 to 8 (Arm/Disarm code) via installer programming mode, enter to address No. 099, then program new codes by first entering the code index (1,2,3..).

For Force Opening Code (Ambush) the user should enter the Disarming code in reverse order.

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①① **TEL. 2 - SUBSCRIBER ID NUMBER**

Note: For subscriber ID that contains a '0' (zero), enter 10 in place of 0. '0' will be displayed as 'A.' Do not enter 0 0.

Group 1	**Group 2**

Alarm / Restore ID				Alarm / Restore ID				Open. / Closing ID			
260	261	262	263	268	269	270	271	276	277	278	279

To easily program the subscriber ID number, as a sequence of 4 digits use the EASY Program.

Even if your code is 3 digits only you must enter 4 digits, the 4th digit can be any digit and the system will disregard the 4th digit.

EASY Program	EASY Program	EASY Program
Alarm / Restore ID	Alarm / Restore ID	Open. / Closing ID
360	368	376

TEL. 3 - SUBSCRIBER ID NUMBER

Group 1	Group 2

Alarm / Restore ID				Alarm / Restore ID				Open. / Closing ID			
264	265	266	267	272	273	274	275	280	281	282	283

EASY Program				EASY Program				EASY Program			
Alarm / Restore ID				Alarm / Restore ID				Open. / Closing ID			
364				372				380			

To easily program the subscriber ID number, as a sequence of 4 digits use the EASY Program.
Even if your code is 3 digits only you must enter 4 digits, the 4th digit can be any digit and the system will disregard the 4th digit.

Values beneath addresses are default programming.

[1] Auto Bypass is applicable to Instant (Non-Delayed or Non-Follower) zones only.

18. ENTERING INSTALLER (ENGINEER) PROGRAMMING MODE

Easy Tip: *You may program any address by entering the address then the value in sequence.*
Power up by connecting AC power with or without battery.
1. Hold down keypad key [Program 8] (hold-down function).
2. While the four LEDs are blinking, enter programming code ('1 9 9 4'):
[Siren 1] [Reset 9] [Reset 9] [Delay Delete 4] .
3. If the code is valid, 'P' will be displayed. The two left LED's (Red & Green) blink to indicate that system is waiting for a new programming address number.
4. Enter address to be programmed (see programming sheet). Current value of address will be displayed, and LEDs will blink.
Note: Blinking of 2 left most LEDs**,** means *system is waiting for new* **address** *to be entered;*
Enter a 3 or 2-digit address (according to address length.)
Note: 3 blinking LEDs means *system is waiting for new* **value** *to be entered;*
Enter a 2-digit value, or as required.

EXAMPLE 1:
'P' is displayed and two left-most LEDs are blinking.
1. Program zones 1 and 4 as 'Exit/Entry Delayed 1'(zone type).
2. Address 021 represents the 'Exit/Entry Delayed 1' zones.
3. Press [Shunt 0] [Shunt 0] [Shunt Display 2] [Siren 1]; current value of this address is '1' (default program.)
   Three LEDs will blink and a '1' will be displayed (default program).
4. To enter new required value press the address number [Shunt 0] [Shunt Display 2] [Siren 1] then the new required value ('1' and '4') by pressing [Siren 1] [Delay Delete 4] in uninterrupted sequence; 'U' confirms programming updating.
6. 'P' is displayed, two left-most LEDs are blinking.

EXAMPLE 2:

1. To program zone 4 as 24H zone (in default program, this is an Instant Zone).
2. Address 024 represents the 24H zones
3. Press [Shunt 0] [Shunt Display 2] [Delay Delete 4] ; current value of the address is '-' ('-' means blank - no 24H zone is programmed). Three LEDs will blink and an '-' will be displayed (default program).
4. To enter new required value press the address number [Shunt 0] [Shunt Display 2] [Delay Delete 4] then enter new value '8,' by pressing [Delay Delete 4] (zone 4).

    'U' confirms programming updating.
5. 'P' is displayed; two left-most LEDs are blinking.

Note: To delete a programmed feature, enter '0' at feature's address

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EXAMPLE 3:

1. To program zone 1 to 4 as "Fast Response Zone".
2. Address 032 represents "Fast Response Zone".
3. Press [Shunt 0] [Status 3] [Shunt Display 2] ; current value of the address is blank;

    Three LEDs will blink and '-' will be displayed (- means blank; no Fast Response Zone is default program).
4. To Enter new required value press the address number [Shunt 0] [Status 3] [Shunt Display 2] then enter new value 1 2 3 4 by pressing [Siren 1] [Shunt Display 2] [Status 3] [Delay Delete 4] .

    'U' confirms programming updating.
5. 'P' is displayed; two left-most LEDs are blinking.

19. RESET SYSTEM TO DEFAULT PROGRAMMING

Warning! This function erases all codes and system programming settings.

1. Enter program mode.

2. Go to address 200 and enter '6' and '9'. Display will show **E P R**, and system will revert to factory default program. Code No. 1 is 1 2 3 4; programming code will be 1 9 9 4.

Quitting and Updating new Programming via AV-701 Keypad

Upon programming completion, hold down key [Reset 9] .

Wait for a long beep, and then release the key.

When 'P' is no longer displayed, the system has reverted to Disarmed mode.

Note: The system disregards erroneous or conflicting programming features <u>upon quitting program mode.</u> For example: Programming the same zone as 24H type and delayed zone, considered as 24H zone.

Reset System to Default Codes

This feature is enabled by default, to disable remove the 8 in address 072.

By holding-down keys [*] Keypad Panic [#] during power-on (by applying AC and Battery), after 2nd beep release keys, 'U' will be display 3 times in confirmation.

User code No. 1 (1234) and programming code (1994) will reset to default.

20. ANSWERING MACHINE BYPASS

In case the alarm panel connected with fax or answering machine on the same telephone line (not recommended) enable the Answering Machine Bypass or Answer Now features (otherwise connection is impossible).

To enable the feature:

1. Program 7 at address 074

2. Program at least 24 seconds at address 096 (Ring Time Out)

Now dial to the control panel, count at least three rings and disconnect, dial again after 10 seconds - the panel will answer at first ring.

When Answering Machine Bypass enabled, the control panel will answer at first ring if:

- There was a pause of at least 10 seconds from last ring

- The panel already counted at least three rings before the pause

- Number of rings to answer (at address 091) is less than 20

Notice: The panel will answer (in a normal mode) if there is no pause and the rings counted exceed (or equal) the number programmed at 091.

21. TELEPHONE LINE TEST

Software Telephone Line Monitor (test), address 094: Time interval between telephone line tests - in hours.

Range between 00-24. When '00' programmed no test performed. Failure to get a dial tone when dialing will cause a "Phone Line Fault" event.

22. ID CODES FOR COMMUNICATOR - EASY PROGRAMMING

Refer to programming table, part 10; System is in program mode, enter ID address, 4 LEDs are blinking; enter the subscriber ID code in sequence.

Example: Your subscriber ID number is 2170 for Closing/Opening of telephone 1; refer to address number 376. Keypad in programming mode, 'P' is displayed, press 376, 4 LEDs are blinking, enter 2170.

> **Note: Even if your communicator receiver requires three digits for the subscriber ID, enter four digits. The system will ignore the fourth digit automatically**

If your central station that requires programming of letters as well as numbers, please refer to the HEX programming description. Use the regular programming method of entering each letter or number in each address, as explained in the programming table (HEX method).

Note: **EASY Programming is not included in the *EasyLoad* screen (programming via computer).**

23. CONTCAT ID FORMAT

For Central Station (CS) reporting two telephone numbers are available, Tel. 2 (address 011) is main central station Tel. Number and Tel. 3 (address 012) is backup, in case Tel. 2 fails.
Do not program different formats for each telephone.

Contact ID Format (known also as Ademco Express) is the fastest to program and easiest to use communicator format for central station, with communication speed achieved by the DTMF signaling.
When using Contact ID format, program only Central Station telephone numbers and the subscriber ID; all reports will be automatically transmitted, with no need to program anything else.
Step by step:

1. Address 011, 012 enter the central station (CS) telephone numbers
2. Address 201, 202 program 07
3. Address 203, 204 values depends on the CS receiver, ask the CS technical dep't
4. Address 360, 368, 376 program the subscriber number, the CS will provide this
5. Address 072 –3 determines the opening/closing report status

24. REMOTE UP AND DOWNLOAD

EasyLoad Introduction
The remote up and download feature enables fast and simple programming of EasyLoader panels. Programming tables, codes and other features may be up & downloaded from an on-site PC (DOS Mode) via telephone using Modem and 'EasyLoad' software, which is supplied separately on a diskette. The control panel contains a full-duplex modem that conforms to BELL 103 standard.

Installing EasyLoad on your Computer
Insert the EasyLoad diskette in floppy drive A (or B) and type 'A:' at the prompter 'A:>, type 'AVGAD'. The installation program will guide you, and will install EasyLoad automatically by making a new directory called AVGAD, or one of your choices. The README 1st file supplied with EasyLoad will help you operate the up and download program.
To start your EasyLoad: At the prompter 'C:\AVGAD' type 'ESAV'; you will be notified that some files are missing (the database). Answer 'Yes' to create them.
The main EasyLoad menu contains seven selectable fields, to enter main menus use the arrows (right part of computer keypad) or by entering the field number. Using a mouse is highly recommended.

Easy Tip

> **The control panel modem is set by default to answer the PC after 10 rings - see address 091, change address 091 to or higher (21 to 99 rings) in order to disable panel modem. Hold down key 6 then hold-down key 1 for 'Answer Now' mode.**

Configuring your Modem

Verify that your modem is Bell 103, hardware type. Check the modem manufacture data sheet.

Configure your modem port using the SET-UP entry from the main menu (field 7). Specify the COM PORT, on which your modem is installed, making sure your mouse is <u>not</u> on the same COM PORT. Do not use COM1 and COM3 or COM2 and COM4 simultaneously. If you cannot initialize modem, use the Auto Detect option. Av-Gad supplies the proper mode, and inverter for USB computers.

The PC keyboard can also be used, e.g. Move from field to field using arrows (when possible), the TAB key (forward), shift + TAB (backward), ALT key + highlighted letter. Confirm input in text fields by hitting the ENTER (return) key. In order to select the required field; hit the highlighted digit or letter.

Full instructions and latest features are enclosed in the EasyLoad software diskette.

Local Up and Download via PC (AV-232 required)

Generation III panels (marked as V3 or "D") provides local up and download via RS-232 and PC modem. When using the AV-232 interface (special RS-232 cable and interface connecting the PC to the panel) set the panel to programming mode, 'P' is displayed; type 77 at address 200 (i.e. type 20077) before attempting to establish connection. When using the AV-232 interface, the transfer rate is 8 times faster than through the modem. With local PC, use the same procedures as described below. Maximum AV-232 length is five meters. If your computer is using USB as serial interface contact us for dedicated adapter.

WIRING DIAGRAM

AV-2004 and AV-2048 Wiring Diagram

WARNING:
To prevent electrical shock, disengage the System and disconnect the telephone line before servicing this unit.
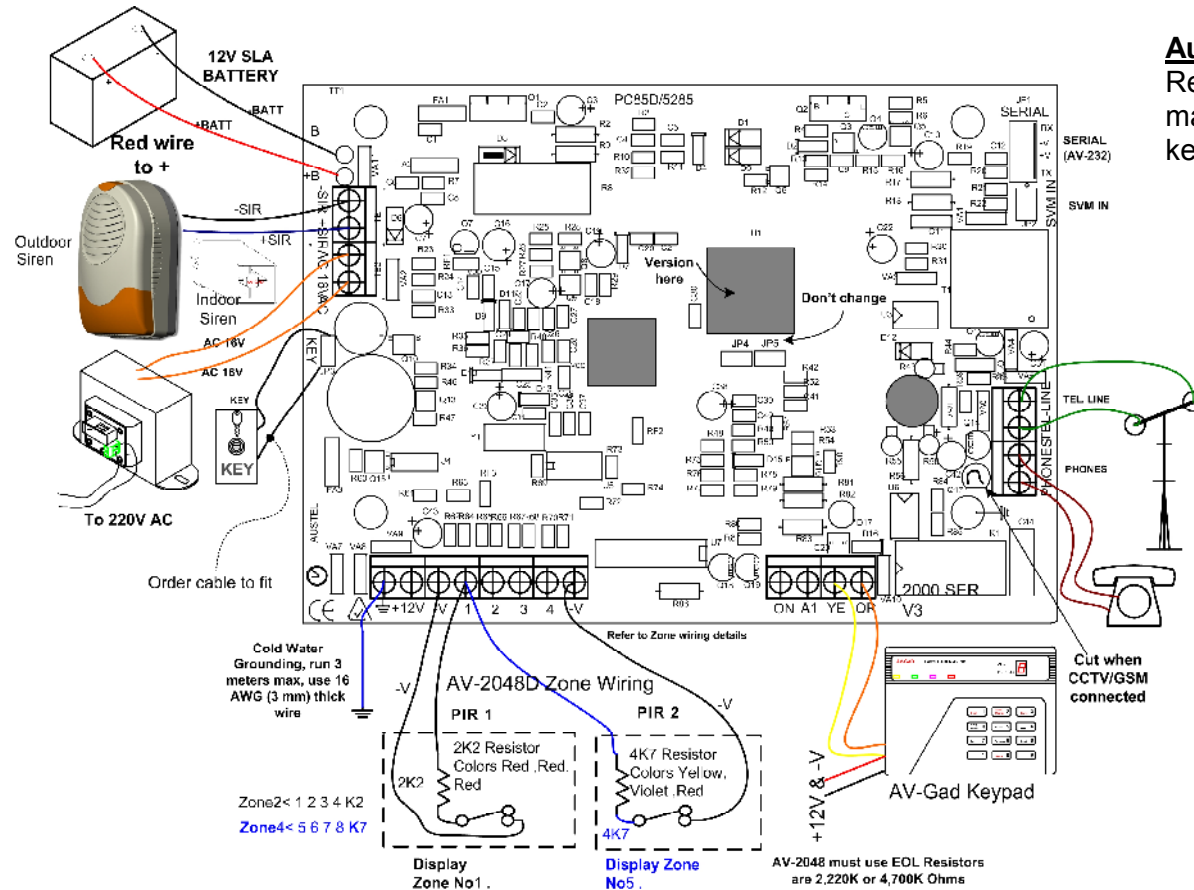
Auxiliary Power Output
Regulated 13.8V. Observe maximum current-0.8A, combined keypad and Aux.

1 • **Transformer**: Connect step-down transformer to a non-switched main outlet

Make sure main power is fused and not connected to an automatic switch

2 • **Grounding**: Connect Ground from the board to Cold Water pipe (ground),

using 2-2.5 m^2 wire, as short length as possible, and no longer than 4 meters.

3 • **Fuses**: Fuses are automatic type. When overloaded wait 2-3 min. w/o load

4 • **Battery**: Electronic Fuse protected. Recommended Battery: Sealed Lead Acid

type 12V – 7.2 AH

5 • **Keypad**: Connect maximum of two AV-701 or four AV-702 keypads

6 • **Sirens**: Connect horn-type siren (speaker). If using Bell adhere to maximum

ratings. For self contain bells program 3 in address 073

7• **Tel. Line**: Dialing is applicable for DTMF and Pulse telephone systems

8 • **EOL Resistors**: To disable E.O.L. resistors, refer to programming sheet

9 • **Remote Arming**: Use spring-return lock type; run wires of 20 meters

maximum, or use wireless remote device to Arm/Disarm System

Addendum: Technical Specifications AV-2004 and AV-2048

Operating Temperature	-10°C to 60°C
Relative Humidity	80% maximum
Input AC Power	16V AC Step-Down Transformer 1.2A
Dynamic Inner Memory	EEprom
Auxiliary Power Output	13.8 Volts +/- 5%, Regulated Short & Overload circuit protection
Siren Output	Siren or Bell Selectable Bell Mode: 13.6V DC - 0.5A Siren: 8 Ohms, 15W
Dialer: Programmable 3 telephone numbers & 1 Follow Me telephone number (4 phone numbers). Multi-format central-station communicator	Pulse Dialing parameters programmable DTMF: Touch Tone dialing ® Max. Telephone number length: 16 digits and 4 pauses.
Remote Indications on Wire Terminal	Open Collector type output 200mA Max. @ 12V DC
Zone Loop Voltage	12V VDC or 6V with EOL resistor
Zone Loop Current	5 mA with End-Of-Line Resistor
Zone Maximum Wire Length	200 meters with **0.5-mm^2** wires
EOL Zone Loop Resistor	2,200 Ohms, 0.25W, +/- 5% AV-2048: 2,200 and 4,700 Ohms
Auxiliary Power (Max.)	13.6V DC 0.5A Combined AUX Power and Keypad outputs.
Battery Charging Current (Max.)	550 mA, current limited
Battery Test: Indication at keypad or remote indication via communicator	Performed at 0.5A load for 1 second. Low Battery indication below 9.5V Tested upon Arming and every 60 minutes during Armed and Disarmed
Standby Power Consumption at Disarmed mode, and Keypad display is Off	90 mA, +/- 10 %
Maximum Remote Station (Keypads)	Three Keypads AV-701T or AV-701TI Five Keypads AV-702
Remote Station Current Consumption	AV-701T: 27mA. AV-701TI: 36mA
Housing Dimensions	(H) 30, (D) 9, (W) 23 cm
System Housing	Standard: ABS plastic box Option: Anodized, lockable metal box Epoxy anti-static powder painted
Gross Shipping Weight	0.9 kg (ABS box, without transformer). 6 PCs per master box
Fuses: Electronic Fuse	Auxiliary Power: 1.2A Sirens: 1.2A Backup Battery Fuse: 2.5A

This product is subject to continual enhancement and therefore specifications may be changed or altered without prior notice

AV-GAD LIMITED WARRANTY

Av-Gad Systems Ltd. (Av-Gad) warrants its products to be free from production defects in components, materials used and labor for twelve months following the date of production. Av-Gad will within the mentioned period, as its option, repair or replace any product failing to proper operation without charging the purchaser.

This warranty shall not apply to any equipment, or any part thereof, which has been repaired by others, installed not proper, used improper, abused, altered damaged or subjected to forces of nature or on which the serial and data code is altered or removed.

Av-Gad will not be responsible for any dismantling or reinstallation expenses. In order to exercise the warranty, the product must be returned by the purchaser, delivery and transportation costs will be prepaid and insured to Av-Gad.

After repair or replacement, Av-Gad assumes the cost of returning products under warranty.

There are no warranties, expressed or implied, which extend beyond the description of the face hereof.

There is no express or implied warranty of merchantability or a warranty of fitness for particular purpose. Additionally, this warranty is in lieu of all other obligations or liabilities on the part of Av-Gad.

Any action for breach of warranty, including but not limited to any implied warranty of merchantability, must be brought within three months following the end of the warranty period. In no case shall Av-Gad be liable to anyone for any consequential or incidental damages for breach of this or any other warranty, expressed or implied, even if the loss or damage is caused by the seller's own negligence or fault.

Av-Gad is not an insurer of either the property or safety of the user's employees, family, or 3rd part and limits its liability for any loss or damage including incidental or consequential damages to Av-Gad original selling price of the product regardless of the cause of such a loss or damage.

Av-Gad hereby declares that service, technical support and spare parts will be supplied for 60 months following the date of production. Price list for such services will be updated from time to time.