



Digitalarm 905

Issue 2

Electronics Design & Manufacturing
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USER & INSTALLER MANUAL

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Introduction

The Digitalarm 905 is a fully integrated, microprocessor controlled local alarm system, comprising 4 burglary zones, and a combined panic / 24 hour zone. Each zone has a built in entry timer which reverts to instant, unless entry is first made through the previous zone. The unit can be operated via key switch or digital codepad, and facilities are available for additional key switches and or codepads to be fitted.

The system features two modes of operation, AWAY and HOME. In the AWAY mode, all zones are monitored except for those which have been manually isolated via the optional codepad. When activated in the HOME mode the Digitalarm 905 automatically isolates any zone that was programmed for HOME mode during installation, regardless as to whether the zone is sealed or not. This provides a simple means of protecting sections of an occupied dwelling without the cumbersome task of manually isolating zones before turning the system ON.

System status information, such as A.C. mains failure, system voltage, and zone status are continually monitored and displayed. In addition, the Digitalarm 905 records the last 10 events, and provides a visual report when requested.

An on board regulated power supply feeds internal circuits, and outputs are provided to power external equipment as well as to recharge a sealed standby lead acid battery. Outputs are also provided to drive strobes, bells, reflex horn speakers, entry / exit warning devices, and remote status indicators. Provision has also been made for interfacing telephone dialers, direct line and radio control equipment.

The Digitalarm 905 can also be connected to a number of remote codepads which add greater flexibility and higher security to the alarm system. Each codepad provides comprehensive system control and visual monitoring of system status.

General Operation

The overall purpose of your alarm system is to deter any would be intruder from entering your premises.

Before leaving your home or office ensure that all of the windows and doors are closed. Use the key switch or enter your code followed by the enter key to arm the system.

Once armed the Digitalarm 905 will count down the preprogrammed 60 second exit time before arming all detection zones. This time should be used to exit all protected areas. Once the exit time has expired the system is ready to accept alarms.

Should any zone other than zone 1 be broken after this time, an instant alarm would occur and the following typical sequence of events would take place.

The Digitalarm will activate all audible sounding devices and strobe lights and trigger the optional telephone dialler if fitted. Once the siren timer has expired the sirens will shut off and remain in the ready for next event state. The strobe will continue to run until the system is reset.

If entry is made through zone 1 an alarm will not occur straight away. Instead the entry timer will start counting down its preprogrammed time, allowing you to disarm the system. You may enter through zone 1 to 2 to 3 to 4 in that order while the entry timer is still running, as the remaining entry time will be handed to the next sequential zone. The entry time should be set to allow you just enough time to disarm the system.

Any further alarms will cause a repeat of the above events. If the zone that was violated becomes resealed i.e. the door is closed; then after the siren shut down, and provided lockout has not been selected, this zone will now be ready to cause another alarm, (the zone is said to be re-armed).

When armed in HOME mode, all active zones have an entry delay period identical to that of zone 1. During this time the entry warning buzzer will sound on any fitted codepads. This helps to prevent false alarms by giving you the opportunity to deactivate the system if an active zone was accidentally tripped, for example if your child opens a window at night you have an opportunity to deactivate the alarm before the sirens sound.

Controls & Indicators

The Digitalarm 905 can be operated using a number of different items. For example you can operate and control your system from a key switch, a codepad or a radio key. All of these items provide a method of interfacing between you and your alarm system. To make the interface easier to understand a number of indicators have been added.

This section will describe the indicators.

The Control Panel Indicators

Indicator	Status	Definition
AWAY	OFF	Panel in disarmed state or HOME mode
AWAY	ON	Panel armed in AWAY mode
AWAY	SLOW FLASH	Panel in isolate mode
AWAY	RAPID FLASH	Panel in code change mode

Indicator	Status	Definition
HOME	OFF	Panel in disarmed state or AWAY mode
HOME	ON	Panel armed in HOME mode

Indicator	Status	Definition
A.C. NORMAL	OFF	240 volt mains power not connected
A.C. NORMAL	ON	240 volt mains power is connected and working

Indicator	Status	Definition
D.C. NORMAL	OFF	System voltage is not correct. Contact technician to rectify problem
D.C. NORMAL	ON	System voltage is normal

Indicator	Status	Definition
24 HOUR	OFF	Zone is sealed. Normal state
24 HOUR	ON	Zone is not sealed
24 HOUR	FLASHING	Zone is in alarm or PANIC triggered

Zone Indicators

Indicator	Status	Definition
ZONES 1 - 4	OFF	Zone is sealed. Normal state
ZONES 1 - 4	ON	Zone is not sealed
ZONES 1 - 4	SLOW FLASH	Zone is manually isolated
ZONES 1 - 4	RAPID FLASH	Zone is in alarm

Codepad and Key switch Indicators

Red Indicator	Green Indicator	Definition
OFF	OFF	Power fault to remote codepad
OFF	ON	System deactivated, all zones sealed
OFF	FLASHING	System deactivated, zone(s) not sealed
ON	OFF	System activated in away mode
FLASHING	OFF	System activated in away mode with previous alarm
ON	ON	System activated in home mode, all zones sealed
ON	FLASHING	System activated in home mode, zone(s) not sealed
FLASHING	ON	System activated in home mode, with previous alarm and all zones sealed
FLASHING	FLASHING	System activated in home mode, with previous alarm zone(s) not sealed

FAST ALTERNATE FLASHING	Code change mode
SLOW ALTERNATE FLASHING	Manual isolate mode

System Operation

This section will describe how to use and operate the many different alarm functions. Please see the appropriate section for the device that you are using. Example: Codepad or Key switch.

Turning the Digitalarm 905 ON and OFF

Codepad

To activate the alarm system in the AWAY mode, key in the 4 digit master code, or simply the digit "0" followed by the "#" key. The AWAY indicator will illuminate, and the exit timer will start. All unsealed zones will be ignored at the end of exit time, however, they will be armed as soon as they are resealed.

On remote codepads the "#" key is replaced by an "Enter" key.

To turn the system "ON" in the HOME mode, follow the above procedure, except instead of terminating your 4 digit master code with the "#" key, use the "*" key. The HOME indicator will illuminate, and the exit timer will start. On the remote codepad the "*" is replaced by an "Isol" key.

To turn the alarm system OFF, key in the 4 digit master code followed by "*" or "#". Both the AWAY and HOME indicators will then extinguish.

Key switch

The function of the key switch is to activate and deactivate the alarm system. As previously mentioned, the Digitalarm 905 supports two modes of operation, HOME and AWAY.

With the unit deactivated, operating the key switch once activates the unit in the AWAY mode, illuminating the AWAY indicator.

Operating the key switch again, provided that no more than 3 seconds has elapsed, will put the system into HOME mode and the indicator marked HOME will illuminate. If more than 3 seconds has elapsed then the activation of the key switch will disarm the system, extinguishing both the HOME and AWAY indicators.

To deactivate the unit when in HOME mode, simply turn the key switch once. The system will be disarmed and both the HOME and AWAY indicators will be extinguished.

Radio key

With the optional radio receiver installed, the system can be activated and deactivated remotely via a hand held radio key. Only the AWAY mode can be entered via the radio key.

To turn the system "ON", press the button on your hand held transmitter. Two beeps will be given through the sirens to indicate that the system has been turned ON. All unsealed zones will be ignored at time of turn ON, however, they will be armed as soon as they are resealed.

To disarm the system, repeat the above steps. Only 1 beep will be given to indicate that the system has been turned OFF.

Note:

When the system has been activated by the radio key there is no exit delay yet the programmed entry time still applies when entering the building.

**CREATING A NEW MASTER CODE
(Codepad units only)**

When first powered, the Digitalarm 905 responds to the default code **2580**. The following procedure is used to create a new unique code. This code replaces any previous code and will stay valid as long as the alarm system battery voltage is maintained.

- 1** To enter code change mode, first make sure that the alarm system is deactivated.
Enter the current master code, then re-enter the first digit after the fourth digit, then the "#" key ("Enter" on remote codepad). For example if the code is **2580** then you must key in **2580 + 2** then the "#" ("Enter") key. The AWAY indicator on the Digitalarm 905 will begin to flash rapidly to indicate successful entry to the code change mode.
- 2** You now have 30 seconds to begin entering the four digits required for your new master code followed by the "#" ("Enter") key. Each time a key is depressed, the timer is restarted. The system will automatically exit this mode upon timeout of the 30 seconds. If an error is made while entering the code, press the "#" ("Enter") key and restart from step (1).
- 3** To validate your new master code, the system must then be turned ON then OFF using this new code. You have 30 seconds to turn the system ON, then another 30 seconds to turn the system OFF. If these requirements are not met the system will throw away the new code and revert back to using the old master code.
- 4**

**MANUALLY ISOLATING BURGLARY ZONES
(Codepad units only)**

The procedure required to isolate zones can be divided into 5 steps. They are;

- 1** Make sure that the system is deactivated, i.e. both HOME and AWAY indicators are off.
- 2** Press the "*" ("Isol") key. The AWAY indicator will flash slowly to indicate entry to the isolate mode, and all previous manually isolated zones will be cleared.
- 3** Press the numerals that correspond to the zones you wish to isolate. As each zone is isolated, the indicator corresponding to that zone will begin to flash slowly.
- 4** Check that you have isolated the correct zones then press "#" ("Enter") to exit this mode.
- 5** The indicators corresponding to the isolated zones will continue to flash until the alarm system is next deactivated or the isolate mode is re-entered.

Note:

Once isolate mode is entered, a 30 second timer is started. Each time a key is depressed, the timer is extended. If no further keys are pressed, the system will automatically exit isolate mode upon timeout of the 30 seconds, clearing all previously isolated sectors.

**REPORT MODE
(Codepad units only)**

To help installers locate intermittently faulty peripherals, the Digitalarm 905 automatically logs the last 10 events, and displays them, via the zone and function indicators, in reverse chronological order.

For example, you arm the unit in the AWAY mode, and sometime later, while you were out, zone 3, and 4 cause an alarm in that order. You return home, switch off the alarm and find that the zones have been violated.

Enter the 4 digit code **9997** followed by the "#" ("Enter") key to request report of previous events. The panel will beep 4 times to indicate successful entry and all indicators, except voltage indicators will turn off. From then on, in intervals of 2.5 seconds, the Digitalarm 905 will repeat the last 10 events.

In the above example, the AWAY indicator will light up, indicating that the unit was last armed in the AWAY mode. The next interval will see zone 3 light up. The third interval will extinguish zone 3 and turn on zone 4. On the 4th interval, all indicators except for voltage indicators will switch off,

indicating that the unit was disarmed.

Press the "#("Enter") key to quit report mode while in mid-stream.

In order to make maximum use of the 10 event counters, each zone that goes into alarm will be logged, however, once logged, a zone will only be logged again if it was the first to generate the alarm.

PANIC ALARM

CODEPAD

Each codepad has the capability of allowing you panic alarm facilities should an emergency arise. This facility can be activated by pressing any two outside keys simultaneously. Once activated, the system goes straight into alarm, irrespective of which mode the system may be in. Once activated enter your master code to disable the system.

EMERGENCY SWITCHES

For added safety, additional emergency switches may be placed throughout the premises. This allows you to have the panic facility without having to have a complete remote codepad. These switches are simply wired into the 24hr / PANIC zone on the alarm system or if a remote keyplate is already installed it can be connected directly to it as shown in Fig 2 on page 12.

REMOTE CODEPAD

The remote codepad offers the user the same functions as the main codepad but at remote locations. All of the functions described in this section are therefore just as applicable to the remote codepad, however, the "# and "*" keys have been renamed "Enter" and "Isol" respectively.

When interpreting the codepad indicators remember that a flashing indicator is a warning condition which may require investigation.

Under normal alarm conditions and when the system is in away mode a GREEN indicator means off and a RED indicator means on.

WALK TEST

This mode will allow you to test the function of the detection devices connected to the Digitalarm 905. This can only be carried out on those units fitted with a codepad.

Isolate any zone that is not required to be walk tested as per instructions. To activate walk test mode, key in the code "9998" then the "# or "Enter" key. The buzzer will beep three times per second to indicate successful entry to the walk test mode. All connected sounding devices will now sound for 1 second every time a zone is sealed or violated. To exit the walk test mode, simply press the "# or "Enter" key.

Installation Information

The following section will describe the various terminals found on the Digitalarm 905. This information is a guide only and is not intended to be a comprehensive installation manual. Your new alarm system is a complex piece of electronic equipment and therefore should only be installed and maintained by a qualified alarm installer.

Zone 1 to Zone 4 are burglary zones

All zones are monitored circuits with 22k ohm end of line resistors. An open or short circuit will violate the zone.

24Hr zone is 24Hr and Panic zone

Any violation of zones 1 to 4 will cause an alarm only if the system is armed and the exit time (60 seconds) has elapsed. A violation of the 24hr / panic zone will cause an immediate alarm irrespective of whether the system is armed or not.

ACC +13.8 v D.C.

These terminals provide 13.8v D.C. (500 mA Max) for external equipment such as detectors. Please note the polarity. Fuse protected.

ACC 0V D.C.

STROBE

This terminal latches when in alarm and is generally used for driving strobe lights. This terminal is normally open circuit and switches to 0 volts when in alarm. The output is capable of sinking 500mA.

BELL

This terminal is normally held at 13.8 volts through a 3k3 pull up resistor and becomes 0 volts when the system is in alarm. This output is capable of sinking 1 amp and can also be switched to become a second horn speaker output. (See pg. 14)

SPKR

This terminal is capable of driving three 8 ohm horn speakers (with standby battery connected). Average current per speaker = 290 mA.

COM+

This terminal is the +13.8v return for the "BELL", "STROBE" and "SPEAKER" outputs only.

Remote Codepad

ENT	This terminal is normally open circuit and pulses low during entry time. This signal can be used to sound the buzzer in the codepad or to activate another indicating device. (200mA Max)
ST1	This output is used to drive the RED indicator on remote codepads and key switches. This output is activated when the system is in the AWAY mode.
ST2	This output is used to drive the GREEN indicator on remote codepads and key switches. This output is activated when the system is in the OFF or disarmed state.
SG	This input is the data line from remote codepads to the Digitalarm 905.
+ 13.8v D.C.	These two terminals are to provide power to remote codepads
0v D.C.	
RK	The Radio key input allows for optional arming and disarming of the system. Connecting the pins together momentarily, toggles the panels state, i.e. if ON, it will switch OFF etc.

Note:

When the system is armed by the radio key input then the exit time delay is removed. The entry time however still remains.

Dialler Interface

The following 7 outputs can be used to interface the Digitalarm 905 to an optional slave dialler.

+	+13.8v to power the dialler.
-	0v ground for the dialler.
PNC	Normally sits at 12V and switches to 0V when the 24 Hr sector is violated.

ALM	Normally sits at 12V and switches to 0V when in alarm.
ON	Normally sits at 12V and switches to 0V at the end of exit time.
LBT	Normally sits at 12V and switches to 0V under low system voltage condition.
ACF	Normally sits at 12V and switches to 0V on A.C fail condition.

Remote Key Switches

REM.K/SW	The remote key switch should be a normally open, momentary contact switch. Connect contacts of the remote key switch to points "A" and "B". On the contact linked to point "B", connect a 22K ohm resistor to system ground and move dip switch number 1 into the off position.
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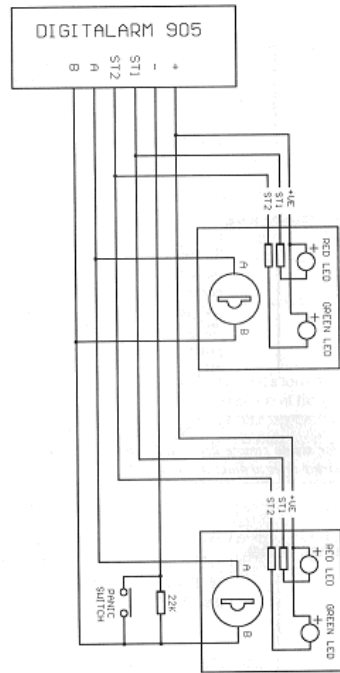
Note:

This is for single remote key switch application, for multiple key switch wiring refer to diagram on page N° 12.

Power Connections

A.C.	16-22 v A.C. from transformer. (Part No. TF006)
Battery	Flying leads for connection to standby lead acid battery (2.5 - 6 A.H. capacity). Fuse protected 3amp.

Multiple Remote Keyplate Wiring



Note : Final keyswitch must have its 'B' side connected to -ve via a 22k resistor.

Fig 1.

Digitalarm 905 Wiring Diagram

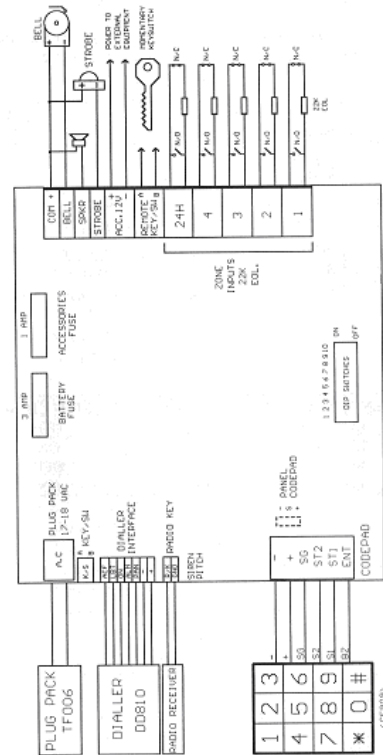


Fig 2.

Dip Switch Options

A number of system options can be changed simply and easily via the ten Dip switches. These switches should only be set by your installer.

SWITCH	ON POSITION	OFF POSITION
SW 1	No remote key switch fitted	Remote key switch has E.O.L.
SW 2	Change BELL to SPEAKER	Bell gives 0v on alarm
SW 3	Seal zone 1 in HOME mode	Zone 1 active in home mode
SW 4	Seal zone 2 in HOME mode	Zone 2 active in home mode
SW 5	Seal zone 3 in HOME mode	Zone 3 active in home mode
SW 6	Seal zone 4 in HOME mode	Zone 4 active in home mode
SW 7	Sound to siren for 10 minutes	Siren to sound for 3 minutes
SW 8	Conditional reset enabled	Zone lockout enabled

ENTRY TIME	SWITCH 9	SWITCH 10
10 seconds	OFF	OFF
25 seconds	OFF	ON
40 seconds	ON	OFF
55 seconds	ON	ON

Features

- * 4 Burglary Zones And One 24hr/panic Zone.
- * All Zone Inputs Are Monitored Circuit (22k E.O.L.)
- * All Zone Inputs Have Digital And Analogue Filters
- * Hand Over Delay For Zones 1,2,3 And 4
- * Adjustable Entry Time 10 To 55 Seconds
- * All Burglary Zones Can Be Isolated Via Any Codepad
- * Exit Delay Via All Burglary Zones 60 Seconds
- * Auto Lockout Or Conditional Reset
- * Fused Battery Input
- * Multiple Remote Key Switching (monitored)
- * Multiple Remote Codepad Facility
- * Power Requirements 16-22v A.C. 20 vA Minimum
- * Strong Industrial Grade Metal Construction
- * Tampered Cabinet
- * Weight 3kg

INDICATORS ARE PROVIDED TO SHOW:

- * Zone Isolated, Sealed, Violated, Memory
- * System Mode Home, Away, Off
- * A.C. Normal
- * D.C. Normal

PROGRAMMABLE FEATURES

- * Home And Away Zones
- * Zone Lockout Or Conditional Reset
- * Siren Reset Time (3 Or 10 Minutes)
- * Entry Time (10 To 55 Seconds)
- * Radio Key Input For Portable On/Off
- * Siren Pitch
- * Convert Bell To Additional Siren Output

OUTPUTS

- * 3 X 8 Ohm Reflex Horn Speakers
- * Bell 1 Amp 12v D.C. Max
- * Strobe 500ma 12v D.C. Max
- * Entry Warning 200ma 12v D.C. Max
- * Accessory 12v D.C. 500ma Max (fused)
- * Current Limited Charge For Battery Up To 6ah

DIALLER INTERFACE CONNECTIONS

- * A.C. Supply Normal
- * D.C. Supply Normal
- * Alarm (burglary)
- * Alarm (panic/holdup)
- * System On/off

Warranty Statement

Electronics Design And Manufacturing warrants this product to be free from defects in material and workmanship for a period of three years from the date of manufacture as indicated by the date stamp and / or the serial number on the product.

Defective units returned by the purchaser at their own expense during this period will be repaired or replaced at the option of the manufacturer.

The repair or replacement will be free of charge provided that the defects were not incurred during shipping or handling, or the damage was not due to causes beyond the control of Electronics Design And Manufacturing, such as lightning, excessive voltage, mechanical shock, or damage arising out of abuse, alteration or improper application of the equipment.

The manufacturer reserves the right to alter specifications without prior notice in the interest of ongoing product development.

Installation Notes

Installation Company _____

Technician _____

Phone Number _____

Installation Date _____

Warranty Expires _____

Description _____ Home Mode

Zone 1 _____

Zone 2 _____

Zone 3 _____

Zone 4 _____

24 Hour _____

Entry Time 10 25 40 55 Seconds

Exit Time Fixed at 60 seconds

Siren Time 3 10 Minutes