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INSTALLER'S INSTRUCTION MANUAL

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Aritech CS-200
Full Function Control Panel

With Remote Arming Stations and Optional Plug-In Modules

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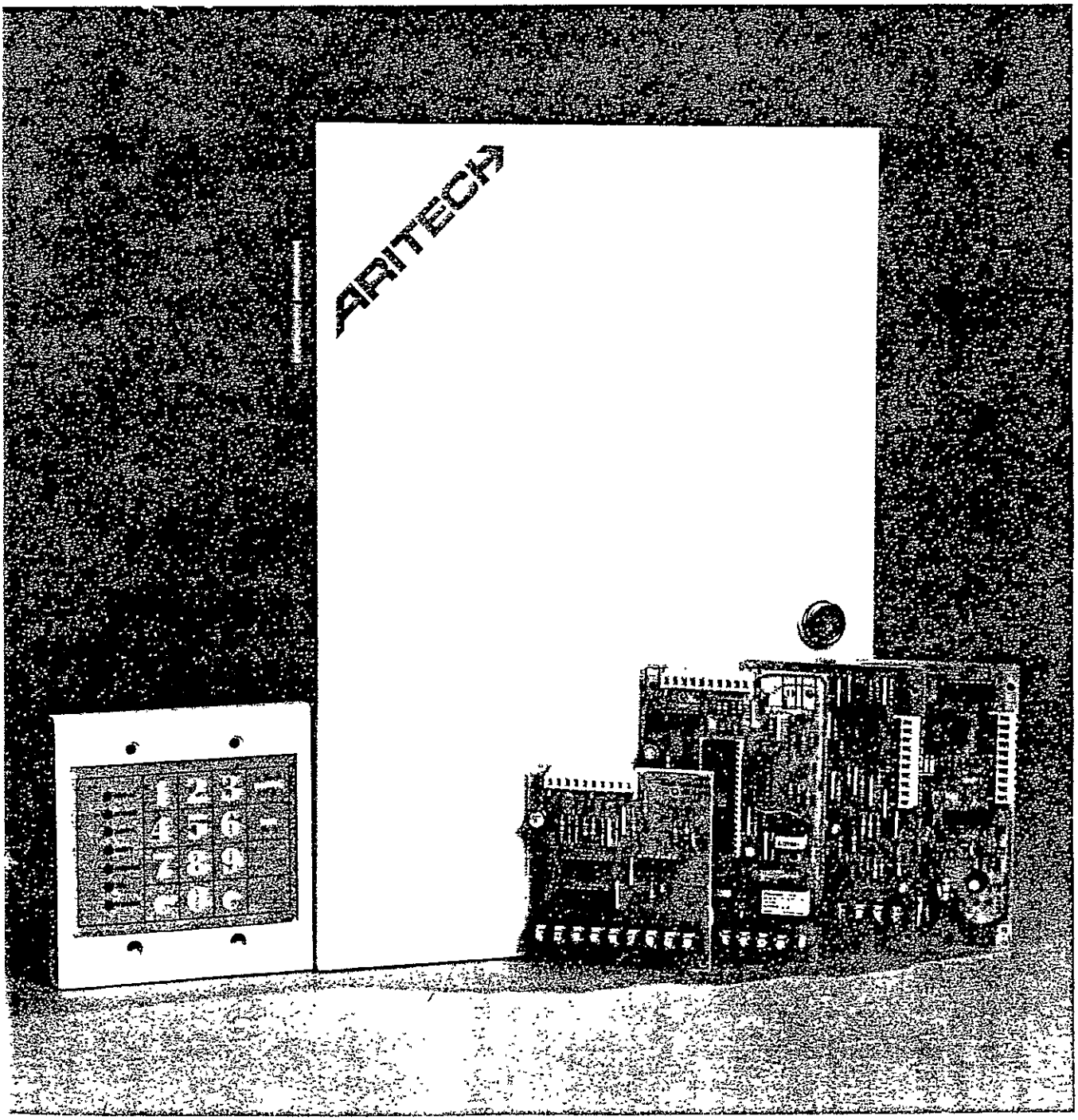


TABLE OF CONTENTS

section	description	page
1.0	INTRODUCTION	
1.1	General Information	4
1.2	System Components	5
2.0	THE BASIC CONTROL PANEL	
2.1	Main Components of the Control Panel	6
2.2	Installing the Control Panel	7
2.3	Wiring the Control Panel	7,8,9
2.4	Setting Control Panel Functions	10
2.5	Specifications	11
3.0	THE REMOTE ARMING STATIONS	
3.1	Functions of the Remote Arming Stations	12
3.2	Installing the Remote Arming Stations	13
3.3	Wiring the Remote Arming Stations	13
4.0	OPERATING THE CONTROL PANEL AND REMOTE ARMING STATIONS	
4.1	Remote Arming Station LED Indicators	14
4.2	Burglar Alarm Circuits	14,15
4.3	Fire Alarm Circuit	15
4.4	Panic and Medical Emergency Circuits	15
5.0	TESTING THE CONTROL PANEL AND REMOTE ARMING STATIONS	16
6.0	TROUBLESHOOTING THE CONTROL PANEL AND REMOTE ARMING STATIONS	
6.1	The Remote Arming Stations	16
6.2	The CS-200 Control Panel	16
6.3	Removing the CS-200 Printed Circuit Board	16
7.0	CS-230 MULTI-SENSOR INTERFACE MODULE	
7.1	Installing the CS-230	17
7.2	Wiring the CS-230	18
7.3	CS-231 Wiring Interface Assembly	18

section	description	page
8.0	CS-280 SUPERVISED WIRELESS RF RECEIVER MODULE	
8.1	Compatible Transmitters	19
8.2	Functions of the CS-280	20
8.3	Programming the Wireless System	20,21
8.4	Installing the CS-280	22
9.0	C-285 AND CS-286 POINT ANNUNCIATION MODULES	
9.1	Installing the Point Annunciation Modules	23
9.2	Operating the Point Annunciation Modules	23
9.3	Wiring Connections for the CS-286 Terminals to Trigger Dialer	24
10.0	CS-290 AUXILIARY OUTPUT MODULE	
10.1	Installing the CS-290	25
10.2	Wiring the CS-290	25
11.0	RD-412 DIGITAL COMMUNICATOR MODULE	
11.1	Specifications	26
11.2	Installing the RD-412	26
11.3	Wiring the RD-412	27
11.4	PROM Programming Instructions	28-31
12.0	TAMPER PROTECTION	
12.1	Tamper Protection Devices	32
12.2	Installing the Tamper Protection Devices	32,33
12.3	Wiring the Tamper Protection Devices	33
12.4	Operating the Tamper Module	33
13.0	USER TRAINING	34
14.0	WARRANTY	35

1.0 INTRODUCTION

1.1 General Information

The Aritech model CS-200 is a microprocessor-based combination burglar and fire alarm control panel. The functions of the basic control panel are expandable by adding optional plug-in modules.

The Basic Panel
The CS-200 contains three burglar alarm circuits, three 24 hour panic circuits, and a fully supervised fire alarm circuit. The following is a complete list of the input circuits:

1 perimeter burglar alarm circuit
1 interior burglar alarm circuit
1 entry/exit burglar alarm circuit
1 twenty-four hour audible panic circuit
2 twenty-four hour silent panic circuits (dedicated silent panic and medical emergency)
1 fully supervised fire alarm circuit

The CS-200 features a built-in test mode which permits easy testing of all alarm devices in each circuit, the local speakers (or bells), and all LED's (At least one CS-210 remote arming station must be used in order to access the test function). It has a built-in siren driver that emits a different tone for fire or burglar/panic alarm conditions. It features separate burglar alarm and fire alarm voltage outputs, and a continuous relay drive output that switches off when a burglar, panic, or silent panic alarm occurs. The control panel provides up to 500 mA output to power smoke detectors and auxiliary alarm devices such as motion detectors. Exit/entry delay time, speaker cut-off time recycle option, perimeter burglar alarm circuit response time, and bell or speaker alarm output option are jumper programmable at the control panel. The CS-200 operates on a 16 VAC, 40 VA transformer and has built-in charging circuitry for standby battery. Transformer and battery must be ordered separately. See Sections 2.0 and 4.0.

Remote Arming Stations
Two remote arming stations are available for operating the CS-200. The CS-210 is a full annunciation remote arming station containing seven LED indicators, partial, test, silent panic, and medical emergency buttons. The CS-215 arming station contains two LED indicators and partial button. The control panel requires at least one CS-210 remote to operate all features (maximum of five), but can be turned on and off using momentary key switches. See Sections 3.0 and 4.0.

Specially designed (optional) **plug-in modules** may be installed to expand system capabilities. BE CERTAIN THAT BOTH THE TRANSFORMER AND STANDBY BATTERY ARE DISCONNECTED BEFORE INSTALLING A MODULE.

Multi-Sensor 230 Interface Module
The CS-230 plug-in module gives the CS-200 the capability of interfacing with 230 System passive infrared and ultrasonic sensors; as well as sensors wired through a universal interface. The CS-230 module has two signal lines that can activate either the CS-200 interior burglar alarm circuit or the perimeter burglar alarm circuit. The two signal lines will accept a maximum of 15 sensors each, or a total of 30 sensors. The module accepts both standard and No Homerun Zoning (NHRZ) 230 System sensors. See Section 7.0.

Supervised RF Wireless Module
The CS-280 Module is a plug-in UHF radio receiver that adds 7 channel supervised wireless capability to the CS-200 control panel. Signals from compatible wireless transmitters are received by the module and processed by the CS-200 control. With the module installed, the CS-200 control responds in the same manner to signals received from wireless transmitters as from signals of sensors connected via hard wire. See Section 8.0.

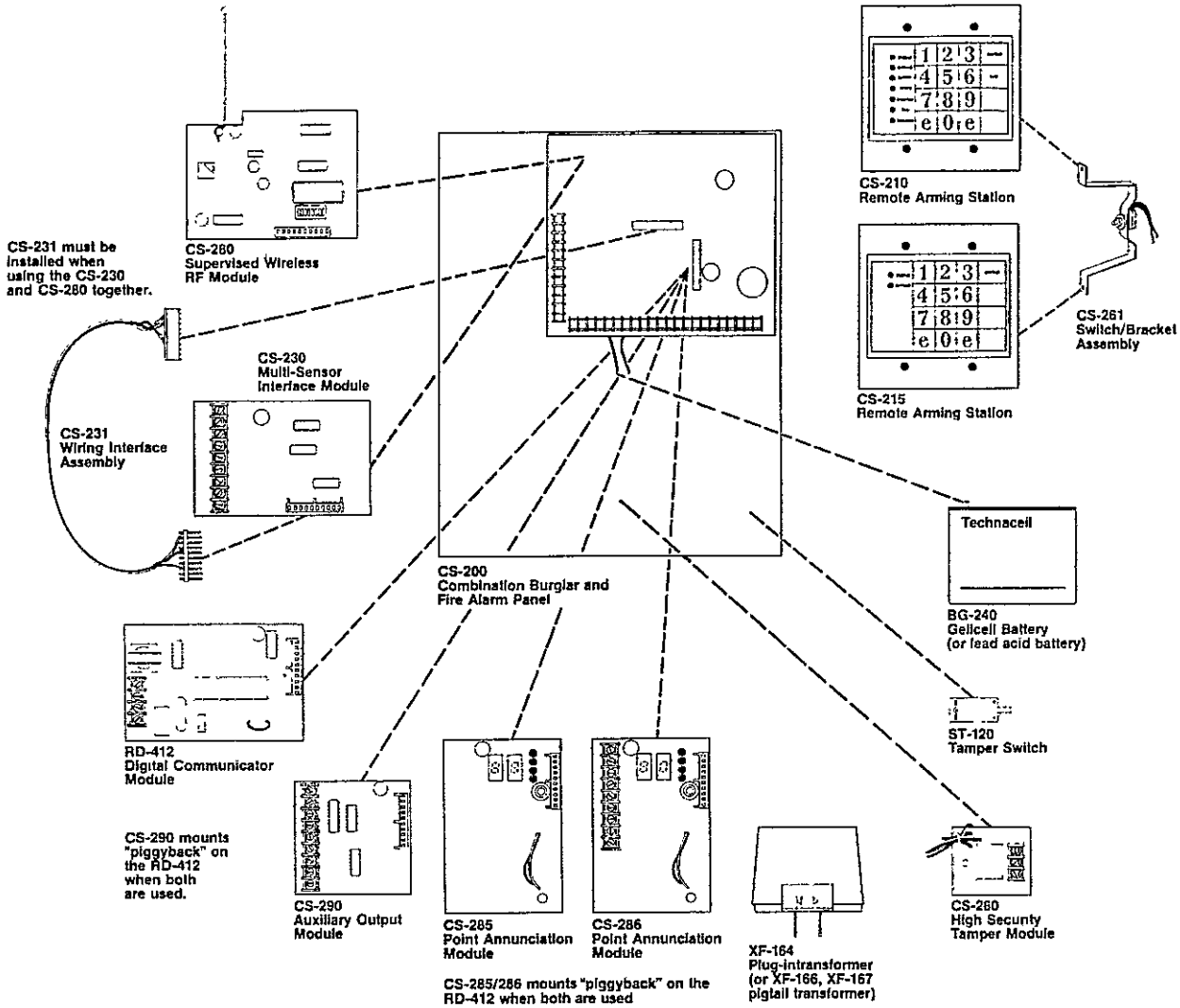
RF Point Annunciation Module
The CS-285 and CS-286 plug-in point annunciation modules visually identify the RF transmitter(s) that caused an alarm (burglar, panic or fire) or a trouble condition (transmitter tamper, absence of supervisory signal, or transmitter low battery) in the CS-200 wireless system. See Section 9.0.

CATV/Auxiliary Output Module
The CS-290 plug-in module provides the CS-200 control panel with a separate output for fire alarm, panic alarm, medical emergency, fire alarm trouble, burglar alarm, and openings and closings. These outputs can be used to trigger auxiliary equipment including digital dialers, CATV, and long range wireless equipment. See Section 10.0.

Digital Communicator Module
The RD-412 is an eight channel plug-in module which adds digital communication to the CS-200 panel. Each of the RD-412's eight channels is assigned to a specific alarm output on the CS-200 control. The RD-412 is equipped with a programmable PROM chip which allows the communicator's operating functions to be customized for each installation. See Section 11.0.

High Security Tamper Protection Module
The CS-260 high security tamper module provides tamper protection to the CS-200 control panel, and the CS-210 and CS-215 remote arming stations. It features a unique disarm disable circuit that prevents an intruder from disarming the system by shorting the terminals on the rear of the remote arming station. See Section 12.0.

1.2 SYSTEM COMPONENTS



REQUIRED DEVICES

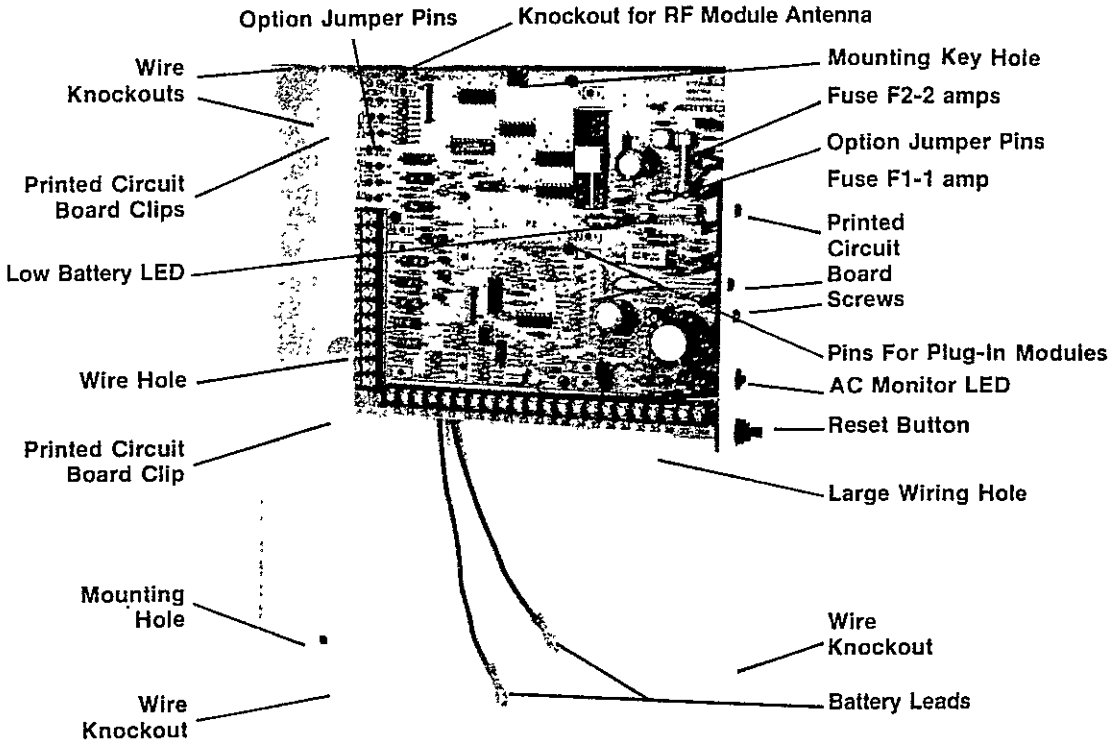
Description	Catalog Number
Basic Control Panel	CS-200
Remote Arming Station with full annunciation	CS-210
Remote Arming Station with two L.E.D's	CS-215
Standby Battery - gell type, 12.6 VDC, 4.0 AH	BG-240
Standby Battery - lead acid, 12.6 VDC, 5.0 AH (Use of a lead acid battery for standby for the CS-200 requires cutting the red jumper on the right side of the printed circuit board.)	BG-250
Plug-in transformer, 16 VAC, 40 VA	XF-164
Pigtail transformer, steel conduit fitting for mounting, 16 VAC, 40 VA	XF-166
Pigtail transformer, outlet box clamp for mounting, 16 VAC, 40 VA	XF-167

OPTIONAL DEVICES

Description	Catalog Number
Multi-sensor 230 System Module	CS-230
Wiring Assembly for Multi-Sensor and Wireless Module Interface	CS-231
Wireless Receiver Module	CS-280
Point Annunciation Module for RF System	CS-285
CATV/Point Annunciation Module for RF System	CS-286
CATV/Auxiliary Output Module	CS-290
Digital Communicator Module	RD-412
Replacement PROM for RD-412	RD-455
Tamper Module	CS-260
Tamper switch/bracket assembly for CS-210 and CS-215 remote arming stations.	CS-261
Plunger-type tamper switch for CS-200 control	ST-120
Round key switch lock, with nut and two keys, momentary contact. (KA-107 or KM-107)	CS-217
Slimline model RP-3 remote station "D" punched for switch lock, red and green LED indicators and tamper protection switch, 6 - 12 VDC. (KR-705)	CS-217

2.0 THE BASIC CONTROL PANEL

2.1 Main Components of the Control Panel



AC Monitor LED
AC LED lights to indicate that the control panel is receiving AC operating power. 16 VAC, 40 VA transformer (XF-164, XF-166, or XF-167) connects to terminals 33 and 34.

LED status:
on: Uninterrupted AC power from transformer to terminals 33 and 34
off: AC power is interrupted

Reset Button
Button interrupts power output from terminal 23 (smoke detector power) so that a fire alarm or fire trouble condition can be reset. See Section 4.3 for more information. Also resets the alarm memory. See Section 4.1.

Printed Circuit Board Screws
These screws hold the right side of the removeable printed circuit board in place. They must be taken out (unscrewed) in order to remove the printed circuit board. For complete instructions see Section 6.3.

Printed Circuit Board Clips
These clips hold the left side of the removeable printed circuit board in place. The printed circuit board is grooved to fit around these clips and seat the board firmly in the cabinet.

Pins For The Plug-In Modules
The control panel's capabilities can be expanded with plug-in modules that are specially designed for the CS-200. See Section 1.0. Disconnect all power to the control prior to installing any module.

Low Battery LED
When battery voltage drops to below 11.9 VDC the fire LED on the remote and this low battery LED both light steady.

Knockouts and Holes
There are five wiring knockouts plus a knockout for the RF antenna (when the panel is used with the CS-280 wireless module). A protective plastic bushing (included in the CS-280 package) insulates the antenna from the metal cabinet.

DO NOT RUN WIRE THROUGH THE RF ANTENNA KNOCKOUT. In addition to the knockouts, there are two wiring holes (one extra large), three mounting holes (one key-shaped), a small hole for the tamper switch, and four small holes for wiring tamper devices.

Option Jumpers
Installer-set jumper options determine the following control panel functions:

1. Speaker recycle enable/defeat
2. The length of the entry/exit delay (0 seconds, 15 seconds, 30 seconds, or 45 seconds).
3. Perimeter circuit response (4ms or 300 ms).
4. Speaker/bell cutoff time (5 minutes, 10 minutes, 20 minutes, 40 minutes).
5. Whether speaker(s) or bell(s) are used to deliver the on-premises audible signal.

See Section 3.4 for instructions on how to set the jumpers.

Fuse F1
Protects external devices (sensors, speakers, etc.,) from damage caused by reverse polarity connection of the standby battery and provides over-current protection to the smoke power output (terminal 23) and the auxiliary power output (terminal 27). Rated for 1 amp.

Fuse F2
Provides over-current protection to terminal siren driver. Rated for 2 amps.

2.2 Installing The Control Panel

The CS-200 control panel should be installed within the protected area where it will be accessible for wiring and service. It is recommended that the control panel be located within 50 feet of a 120 VAC, 24 hour outlet. Do not install the control panel in locations where the ambient temperature can be extremely low or high (32°F to 120°F, 0° to 49°C).

To Mount:

1. Open the cover to the control cabinet with the key supplied. The cover easily lifts off its hinges.
2. Remove appropriate knockouts so that wires can be brought into the control panel. Refer to photo on page 6.
3. Mark wire holes and mounting holes on wall. Note that the printed circuit board is notched in the top center so that a screw can be put through the top mounting hole without removing the board. If the printed circuit board must be removed, see Section 6.3. "The keyhole" shape of this hole enables the installer to put the first mounting screw in the wall and then slip the panel onto it, insuring accurate placement of the other mounting screws.
4. Bring wires into control through knockouts or holes and secure control to the mounting wall. Use toggles or anchors to fasten control to wall if necessary.

2.3 Wiring the Control Panel See page 8 for wiring diagram

POWER CONNECTIONS

Control Cabinet Ground (terminal 25)

Connect terminal 25 to a clean cold water pipe (earth ground) using 16 AWG wire or larger.

AC Power (terminals 33, 34)

Connect 16 VAC, 40 VA, 60 Hz transformer (XF-164, XF-166 or XF-167) to terminals 33 and 34. Use 18 AWG twisted cable or equivalent.

Standby Battery

Connect 12.6 volt, 4 ampere hour gell type battery (BG-240) to the flying leads on the printed circuit board. Connect black lead to negative (-) post. Connect red lead to positive (+) post. Reverse polarity connection will cause fuse F1 to blow.

To connect lead acid battery (BS-250), cut red jumper marked J1 on right side of printed circuit board, See wiring diagram on page 8.

INPUT CIRCUITS

Burglar Alarm Circuits

There are three burglar alarm circuits. Each is a "balanced bridge" that accepts normally open or normally closed alarm devices and requires a 3K end-of-line resistor. No burglar alarm circuit will cause an alarm unless the burglar alarm is armed. Connect one side of each burglar alarm circuit to the designated terminal on the terminal strip. Connect the other side to one of the ground terminals. If a circuit is not used, install the resistor between the appropriate terminal and a ground terminal.

24 Hour Circuits

There are three 24 hour circuits. Each is a normally open circuit (no end-of-line resistor is required) that will cause an instant alarm upon activation. One side of each 24 hour circuit connects to the designated terminal on the terminal strip. The other side connects to one of the ground terminals. If a circuit is not used, no connection is required.

Fire Alarm Circuit

This is a fully supervised, latching circuit that is active at all times. Connect normally open (N.O.) smoke, heat, and/or manually activated devices to this circuit. This circuit will activate a fire trouble condition if the wiring is cut. The circuit will activate a fire alarm condition upon closure of an alarm device. The circuit requires installation of a 3010 ohm E-O-L resistor (CR-849).

OUTPUTS

Siren Drive/Bell (terminals 31, 32)

Up to three 8 ohm speakers (15 watt minimum) can be connected in parallel. A burglar or audible panic alarm will activate a two-tone audible signal that repeats every second. The fire alarm activates a single tone pulsing audible signal. If a burglar alarm and fire alarm condition occur simultaneously, the fire alarm signal will take precedence. To use bells, install jumpers between E15 and E16, and between E17 and E18 and install a diode (no. IN4001 or equivalent) across the connections at the bell. The circuit is rated for 1 ampere (average current) when a bell load is connected. No more than one bell is to be connected. When bells are used, the bell output pulses for fire alarm and rings steady for burglar or panic alarm.

Relay Drive* (terminals 28, 26)

12 VDC through 100 ohms output in normal condition. This voltage drops out if a burglar, audible panic, or silent panic alarm occurs. Use 12 volt relay with coil resistance of at least 300 ohms.

BA Dialer (terminals 29, 26)

Provides 12 VDC through 1K ohms output to trip supplementary dialing equipment in a burglar alarm condition only.

FA Dialer*(terminals 30, 26)

Provides 12 VDC through 100 ohms output to trip supplementary dialing equipment in a fire alarm condition only.

Auxiliary Power* (terminals 27, 26)

The control panel supplies continuous 12 VDC output to auxiliary alarm devices that require DC power source.

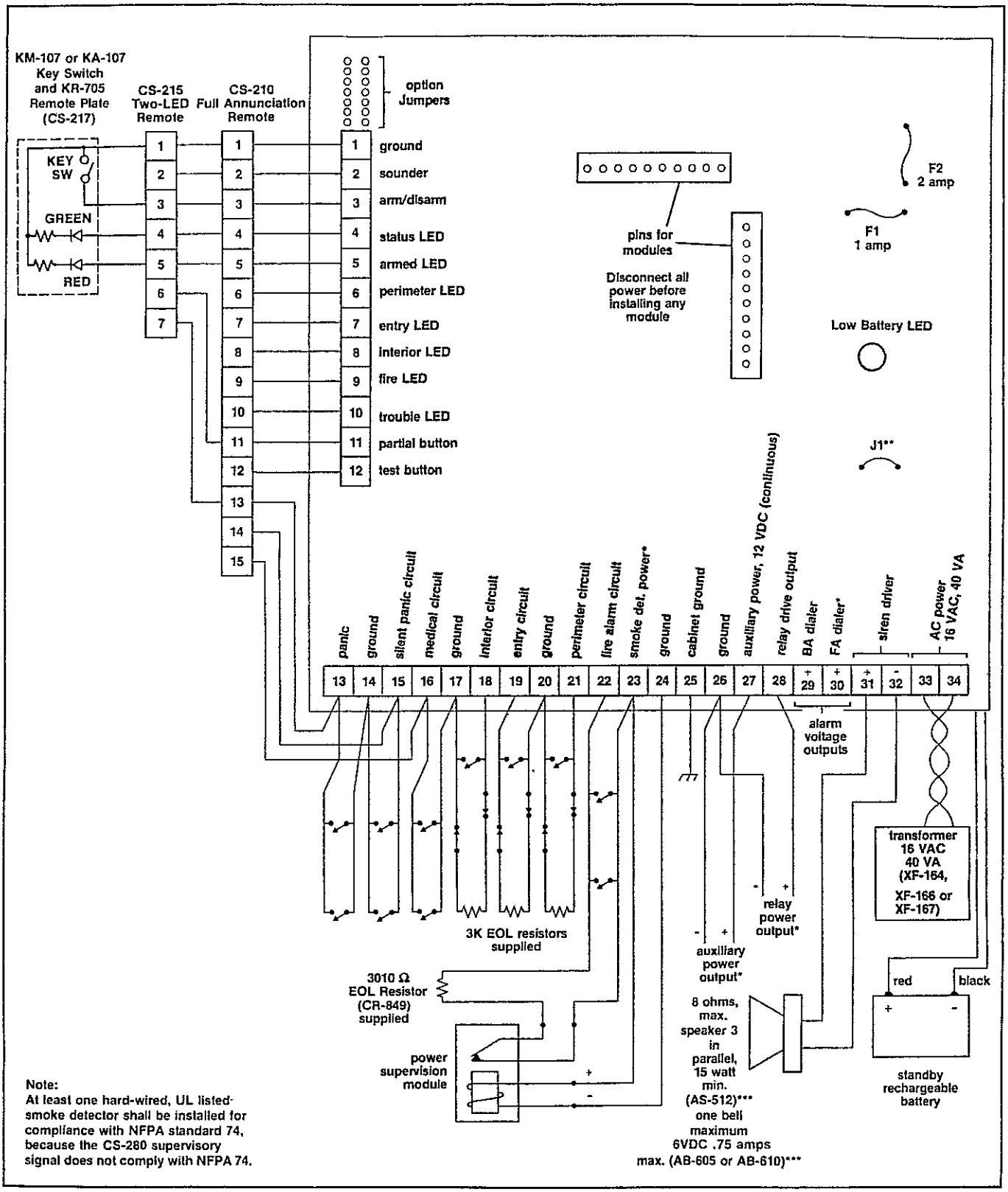
Smoke Detector Power* (terminals 23, 24)

Provides 12 VDC output for smoke detectors. Power is interrupted by pushing reset button on side of control cabinet.

*Note:

Maximum cumulative output current is 500 mA. This output is reduced when plug-in modules are added. To calculate available current, see Section 2.5.

Wiring The CS-200 (continued)



*To calculate available current, see section 2.5.
**This jumper must be cut if lead acid battery is used for standby power.
***At least one indoor audible alarm device is required.

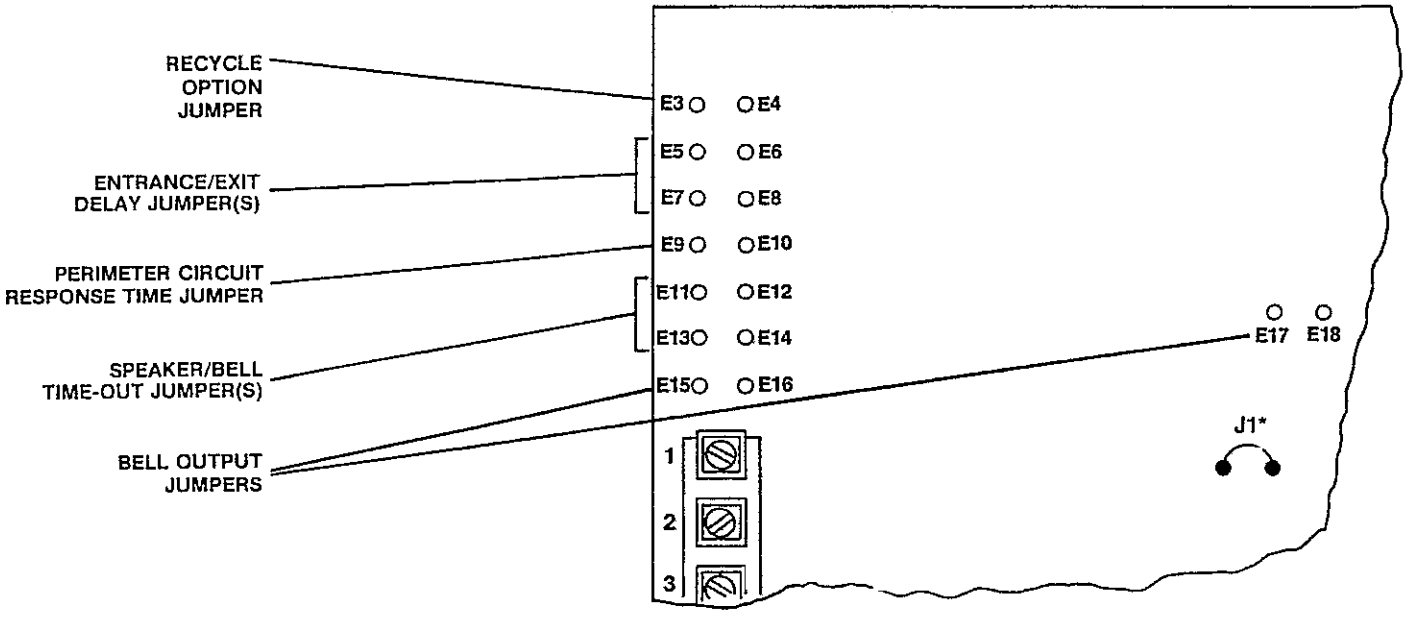
Wiring The CS-200 (continued)

	Terminal(s)	Function	Wiring Instructions, Information
REMOTE ARMING STATIONS	1	ground	Connect to terminal 1 on CS-210 and/or CS-215 remote arming station. 8 ohms maximum line resistance.
	2	sounder output	Connect to terminal 2 on CS-210 and/or CS-215 remote arming station. 8 ohms maximum line resistance.
	3	arm/disarm	Connect to terminal 3 on CS-210 and/or CS-215 remote arming station. 8 ohms maximum line resistance.
	4	status LED output	Connect to terminal 4 on CS-210 and/or CS-215 remote arming station 12 VDC, 50 mA maximum current drain. 8 ohms maximum line resistance.
	5	armed LED output	Connect to terminal 5 on CS-210 and/or CS-215 remote arming station. 12 VDC, 50 mA maximum current drain. 8 ohms maximum line resistance
	6	perimeter LED output	Connect to terminal 6 of CS-210 remote arming station. 12 VDC, 50 mA maximum current drain. 8 ohms maximum line resistance.
	7	entry LED output	Connect to terminal 7 of CS-210 remote arming station. 12 VDC, 50 mA maximum current drain. 8 ohms maximum line resistance.
	8	interior LED output	Connect to terminal 8 of CS-210 remote arming station. 12 VDC, 50 mA maximum current drain. 8 ohms maximum line resistance.
	9	fire LED output	Connect to terminal 9 of CS-210 remote arming station. 12 VDC, 50 mA maximum current drain. 8 ohms maximum line resistance.
	10	trouble LED output	Connect to terminal 10 of CS-210 remote arming station. 12 VDC, 50 mA maximum current drain. 8 ohms maximum line resistance.
	11	partial button	Connect to terminal 11 of CS-210 and/or terminal 6 of CS-215 remote arming stations. 8 ohms maximum line resistance.
	12	test button	Connect to terminal 12 of CS-210 remote arming station. 8 ohms maximum resistance.
INPUT CIRCUITS	13, 14	audible panic (normally open)	Connect normally open (N.O.) alarm devices, and/or connect terminal 13 to terminal 13 on the CS-210 and/or terminal 7 on the CS-215. This is a latching circuit. 1 k ohms maximum line resistance.
	14, 15	silent panic (normally open)	Connect normally open (N.O.) alarm devices, and/or connect terminal 15 to terminal 14 on the CS-210 remote arming station. This is a latching circuit. 1 k ohms maximum loop resistance.
	16, 17	medical emergency (normally open)	Connect normally open (N.O.) alarm devices, and/or connect terminal 16 to terminal 15 on the CS-210 remote arming station. This is a latching circuit. 1 k ohms maximum loop resistance.
	17, 18	interior circuit	Connect normally open (N.O.) and normally closed (N.C.) alarm devices. Requires 3K ohm end-of-line resistor (included). 1 k ohms maximum loop resistance.
	19, 20	entry circuit	Connect normally open (N.O.) and normally closed (N.C.) alarm devices. Requires 3K ohm end-of-line resistor (included). 1 k ohms maximum loop resistance.
	20, 21	perimeter circuit	Connect normally open (N.O.) and normally closed (N.C.) alarm devices. Requires 3K end-of-line resistor (included). 1 k ohms maximum loop resistance.
	22, 23	fire alarm circuit	Connect normally open (N.O.) fire alarm initiating devices. Requires 3010 ohm ±1%, ½ watt end-of-line resistor (included). Circuit is fully supervised. 50 ohms maximum loop resistance.
OUTPUTS	23(+), 24(-)	smoke detector power*	Provides 12 VDC output for smoke detectors, interrupted by reset button. 50 ohms maximum loop resistance.
	27(+), 26(-)	auxiliary power*	Provides continuous 12 VDC through 100 ohms output for auxiliary alarm devices. 6 ohms maximum loop resistance.
	28(+), 26(-)	relay drive output*	Provides 12 VDC output in normal (non alarm condition). Voltage switches off in burglar, audible panic, or silent panic alarm condition. 16 ohms maximum loop resistance.
	29(+), 26(-)	BA dialer output	Provides 12 VDC through 1 k ohms in burglar alarm condition. 16 ohms maximum loop resistance.
	30(+), 26(-)	FA dialer output	Provides 12 VDC through 100 ohms in fire alarm condition. 16 ohms maximum loop resistance.
	31(-), 32(-)	siren driver	Rated for maximum of three (3) 8 ohm speakers in parallel, 15 watt. 1 ohm maximum loop resistance.
POWER	33, 34	AC power input	Connect 16 VAC, 40 VA transformer (XF-164, 166 or 167). Be certain that transformer is plugged into 24-hour 120 VAC outlet.
	red (+) black (-) flying leads	standby rechargeable battery	Connect red lead to positive (+) terminal of standby battery and connect black lead to negative (-) terminal.

2.4 Setting Control Panel Functions

Introduction

The posts for these jumper-selectable options are indicated in the drawing below. The jumpers come in a bag with the control panel.



*Jumper J1 must be cut if lead acid type battery is used for standby power.

Violated Circuit Recycle Option

In standard operation, if an alarm condition occurs, the control panel will recycle (rearm) all violated (restored to normal) and nonviolated circuits at the conclusion of the speaker/bell time out period. Inserting a jumper between E3 and E4 will prevent a violated circuit from recycling even if it has restored to normal condition. **A violated circuit will not recycle if the jumper is inserted.**

If the RD-412 or CS-290 modules are used for off-premises communication, a restoral will be transmitted only when all violated loops have restored to normal. However, if the recycle option jumper is installed, these violated loops **cannot realarm** until the system is manually reset.

Entrance/Exit Delay Option

Delay Period Options	Insert Jumpers Between The Following Posts
0 seconds	Between E5 and E6; and between E7 and E8
15 seconds	Between E7 and E8 only
30 seconds	Insert no jumpers
45 seconds	Between E5 and E6 only

Perimeter Circuit Response Option

Normal alarm response time to an open or short in the perimeter circuit is 300 milliseconds. Inserting a jumper between E9 and E10 reduces the response time to 4 milliseconds to accomodate fast acting alarm devices such as vibration detectors.

Speaker/Bell Time Out Option

Time Out Period Options	Insert Jumpers Between The Following Posts
5 minutes	Between E11 and E12
10 minutes	Between E11 and E12; and E13 and E14
20 minutes	Insert no jumpers
40 minutes	Between E13 and E14 only

Note: Above times will be affected by amount of standby battery power available (4½ hours maximum) i.e. after 4 hours minimum of standby operation, a maximum of 30 minutes of alarm time is available.

Bell Output Options

If bells are required rather than speakers on an installation, insert jumper between E15 and E16; and between E17 and E18 (these last two posts are on the right side of the printed circuit board near the fuses.) Connect bell(s) to terminals 31(+) and 32(-), and install a diode (number IN4001 or equivalent) across the connections at the bell.

2.5 Specifications

Required power input:
16 VAC, 40 VA transformer (XF-164, 166 or 167.)

Standby battery:
12.6 VDC, 4.0 ampere hours (BG-240).
Gell type rechargeable.

Optional: 12.6 VDC, 5.0 ampere hours (BS-250) lead acid type - must cut jumper on printed circuit board (see section 3.2).

Charging circuit:
Voltage regulated float charger for gell type battery from red (+) and black (-) leads off printed circuit board: 13.6 volts charging output.

Optional: Charger output for lead acid battery when jumper is cut: 14.1 volts charging output (see section 2.3).

Auxiliary output:
500 mA regulated power at 13.6 VDC maximum.
Addition of plug-in modules will reduce available current. See chart below.

Remote arming panels: CS-210, CS-215
Maximum of 5.
LED drivers: 12 VDC through 100 ohms rated for 50 mA from each driver.

BA Dialer output:
12 VDC through 1K ohms.

FA Dialer output:
12 VDC through 100 ohms.

Relay drive output:
12 VDC through 100 ohms.

Siren driver circuit:
Three eight ohm speakers (15 watt) in parallel maximum (convertible to bell output with insertion of jumpers — see section 2.4).

Burglar alarm circuit characteristics:
End of line resistor type,
resistor value: nominal 3K ohms, ¼ watt
circuit tolerance: 1K ohms.

24 hour circuit characteristics:
Open circuit type: will alarm for resistance less than 3600 ohms.

Fire alarm circuit characteristics:
Fully supervised end of line resistor type,
resistor value: 3010 ohms, ½ watt (CR-849)
circuit tolerance: 500 ohms.

Exterior dimensions:
10" W x 14" H x 2 13/16" D.
(25.40 cm x 35.56 cm x 7.14 cm)

Temperature Limits:
32°F to 120°F
(0°C to 49°C)

To calculate the current available for smoke detector power, auxiliary power, the FA dialer output, and the relay drive output, it first must be determined how much current is consumed by optional modules and arming panels. Use the chart below to determine this.

Aritech model number	description	current draw per unit	number of units	calculate current draw
CS-210	Full annunciation remote arming panel	30 mA		
CS-215	Two LED remote arming panel	20 mA		
CS-260	Tamper module	30 mA	1	
RD-412	Digital communicator module	80 mA	1	
CS-280	RF module	10 mA	1	
CS-285 or CS-286	RF Point Annunciation Modules	25 mA	1	
CS-290	Auxiliary output/CATV module	25 mA	1	
CS-230	230 system module	15 mA	1	
Any 230 system sensor or ZIP connected to the CS-230.		15 mA		
			TOTAL	mA

Subtract the TOTAL from 500 mA (maximum current available) to get the available current.

The following grid details the current consumption of suggested alarm initiating devices.

Aritech model number	description	D.C. current draw	
		normal	alarm
Fire Detection Devices			
FS-501 or FS-506	Photoelectronic smoke detector	100 μA	30 mA
FS-604	Power supervision module	35 mA	35 mA
Intrusion Detection Devices			
DR-557 or DR-558	Passive infrared detector	35 mA	33 mA
DR-301, DR-311, DR-321	Passive infrared detector	20 mA	20 mA
DU-103 or DU-104	Ultrasonic detector	65 mA	65 mA

3.0 THE REMOTE ARMING STATIONS

3.1 Functions of the Remote Arming Stations

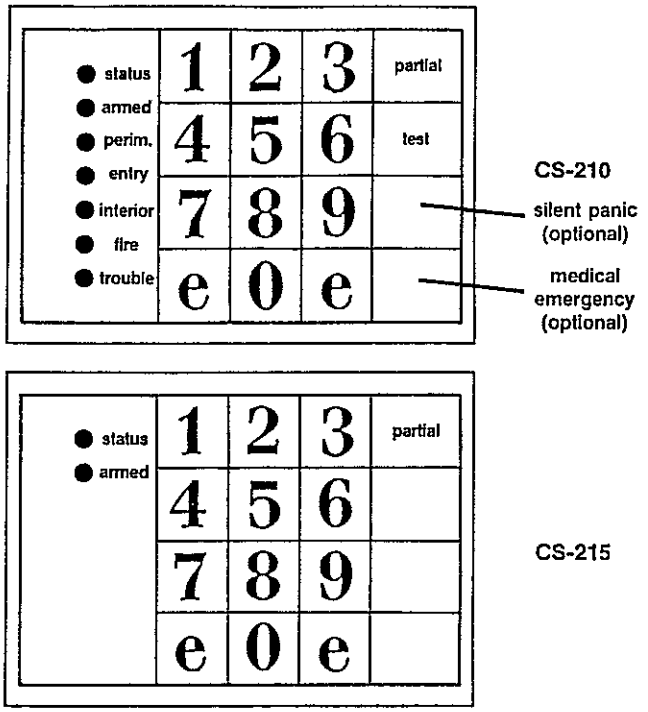
The custom-made remote arming stations were specifically designed for operating the CS-200 control panel. Each remote arming station can be programmed for a different four-digit code. The CS-200 control panel requires at least one remote arming station to operate all its features, but can be turned on and off with a momentary key switch.

The two remote arming stations offer different levels of control over the system functions. The following is a list of the functional capabilities of *both* the CS-210 and the CS-215 remote arming stations:

1. To arm and disarm the burglar alarm.
2. To initiate the partial burglar alarm mode—for arming the burglar alarm when the premises is occupied.
3. To activate the audible panic alarm—by pressing the two "e" buttons simultaneously.
4. Contains prealarm sounder.
5. Contains consolidated circuit status LED.
6. Contains armed LED.

The following is a list of the functional capabilities of *only* the CS-210 full annunciation remote arming station:

7. Contains LED indicators for the perimeter, entry, interior, and fire circuits.
8. Contains LED indicator that lights when a trouble condition occurs in the RF system (optional).
9. Includes test button to initiate test mode.
10. Includes silent panic button.
11. Includes medical emergency button.



3.2 Installing The Remote Arming Stations

Introduction

The arming stations have three sections: the LED indicators, the digital key, and the function buttons. The operation of the LED indicators is described in the grid on page 14. The digital key is utilized for entering the four digit code. The code is programmed using the wire plugs located on the rear of each arming station. (see programming instruction). The function buttons perform two functions: the PARTIAL and the TEST buttons change the operating mode of the control panel (these functions will be described in section 4.0), and the two unmarked buttons can be used to activate a silent panic or medical emergency alarm. The CS-215 two LED arming station does not contain the TEST button or the two unmarked silent panic buttons.

To Program

At the rear of both the CS-210 and CS-215 arming stations are the code socket assembly and ten color-coded plugs which are used to program the four-digit code. Choose a four-digit code. Take the color-coded plugs that refer to the numbers of the code (see Plug Color Code grid, upper right) and insert them in the appropriate socket—marked 1 for the first digit of the code, 2 for the second digit, etc. Insert the leftover plugs in the sockets marked "common" using holes at left and right; but, do not attempt to push wires into center holes. (See diagrams of two sample codes at right)

To repeat a number (like in example B, at right), install a wire jumper between the socket position (1,2,3 or 4) where the number is first used -- this socket will contain the appropriate color-coded plug -- and the socket position where the number is repeated.

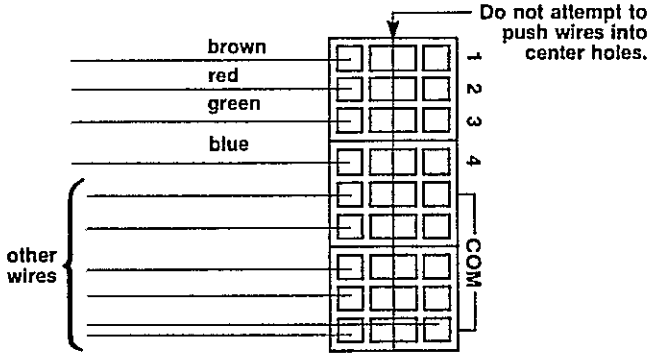
Due to the security risks of an easily guessed code we recommend that you do not use code 1,2,3,4.

Mounting

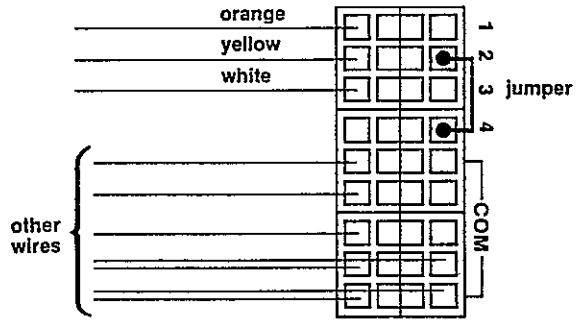
Mount remote arming station to a recessed double gang electrical box that is at least 2½ inches deep. Use screws that are supplied with each station to secure station to electrical box. The CS-200 will power a maximum of 5 remote arming stations. Use grid in Section 2.5 to calculate the current consumed by remote arming stations.

PLUG COLOR CODE			
color of wire plug	digital code number	color of wire plug	digital code number
brown	1	blue	6
red	2	violet	7
orange	3	grey	8
yellow	4	white	9
green	5	white/black	0

A. Example of Programming Code 1256

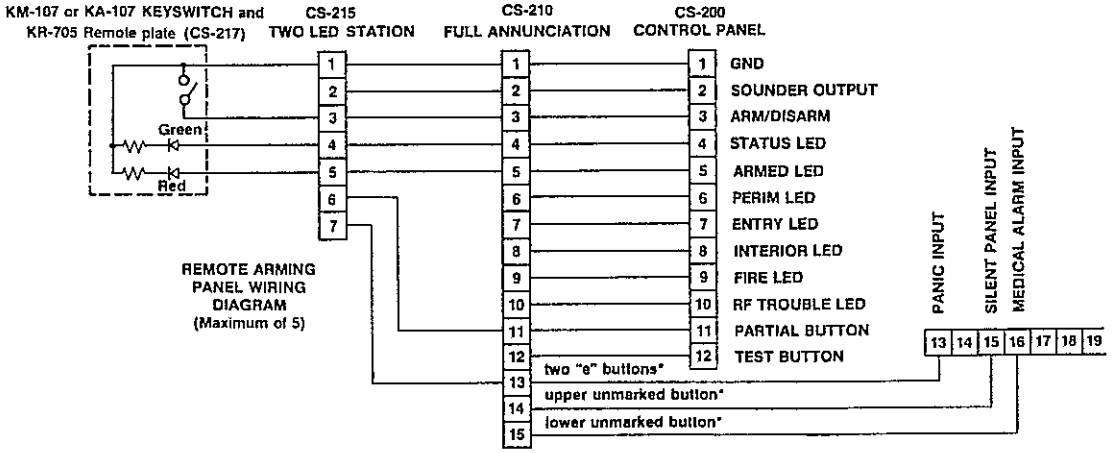


B. Example of Programming Code 3494



3.3 Wiring The Remote Arming Stations

The wiring diagram below illustrates how to connect the CS-210 and CS-215 remote arming stations and a typical momentary keyswitch to the CS-200 control panel. The remote arming stations can be parallel tapped off of each other or each can be home run to the control. It is recommended that no more than four wires be connected to any one terminal on the CS-200 terminal strip.



*These three wires can be connected to either terminal 13, 15 or 16 depending on the needs of the installation

4.0 OPERATING THE CONTROL PANEL AND REMOTE ARMING STATIONS

4.1 Remote Arming Station LED Indicators

LED indicators	LED STATUS		
	ON	OFF	FLASHING
status	Indicates that all alarm devices connected to all input circuits are in normal condition. This LED must be on in order to arm the complete burglar alarm.	Indicates that an alarm device—which could be connected to any of the burglar alarm input circuits—is violated. The complete burglar alarm can not be armed when this LED is off.	Indicates that partial burglar alarm mode is in effect which is initiated by pressing the partial button. This LED will flash one minute or until the partial burglar alarm is armed with the four-digit code.
armed	Indicates that burglar alarm is armed.	Indicates that burglar alarm is not armed.	Indicates that an alarm condition has been activated—the corresponding input curcuit LED will also flash.
perim, entry, interior* see note below	Indicates that the circuit is either open or shorted (i.e. violated).	Indicates that all alarm devices connected to the circuit are in normal condition.	Indicates that the circuit has alarmed. Could be from alarm condition or alarm memory—see note below.
fire	Indicates a fire trouble condition or low battery condition**	Indicates that the circuit is in normal condition.	Indicates a fire alarm condition.
trouble	Indicates supervisory trouble or a tamper violation in the RF system.	Indicates that the RF system is in normal condition.	Indicates a low battery condition at one of the RF transmitters.

*The interior LED flashes when the partial burglar alarm mode is initiated.

Note: The **alarm memory** feature of the CS-200 control panel makes it easy for installation and service personnel to identify a problem in the circuitry. If a circuit initiates an alarm condition, that circuit's LED indicator remains flashing after the system has been restored to normal. It is important that the user be made aware of this aspect of the system. Pressing the reset button at the CS-200 control or arming and disarming the system will erase the alarm memory and restore a flashing circuit LED.

**Check the low battery LED on the main pc card. If it is lit it indicates a low battery condition (10.5 to 11.9 VDC). If not it is a fire trouble indication.

4.2 Burglar Alarm Circuits

When the user is leaving the premises. Arming the complete burglar alarm.

1. Status LED must be on indicating that all alarm sensors connected to the burglar alarm circuits — perimeter, entry, and interior — are in normal condition. If status LED is not on, determine which of the burglar alarm circuits is not in normal condition by examining each circuit LED. Circuit LED is off when that circuit is in normal condition. Circuit LED is on when the circuit is open or shorted. Check each alarm sensor connected to any circuit that is not in normal condition. Fail safe arming prevents control from arming if a circuit is not in normal condition.
2. Enter the four-digit code into an arming station. Station sounder will emit a brief audible signal each time a digit is pushed.
3. Red armed LED will light. THE BURGLAR ALARM IS NOW ARMED. Arming station sounders will pulse once every second indicating that the exit delay has been initiated. These sounders will cease pulsing upon expiration of the exit delay.
4. Leave premises within selected exit/entry time. The entry circuit and the interior circuit are on the delay. DO NOT violate the perimeter circuit, an alarm will result.

TO DISARM THE COMPLETE BURGLAR ALARM

1. Enter premises through a door connected to the entry circuit. Arming station sounders will emit steady, prealarm warning indicating that the entry delay has been initiated. SPECIAL SEQUENTIAL ENTRY FEATURE PERMITS TRAVEL THROUGH interior CIRCUIT ALARM SENSORS DURING ENTRY PROVIDED THE entry CIRCUIT IS VIOLATED BEFORE THE INTERIOR CIRCUIT. IF NOT, VIOLATION OF THE interior CIRCUIT WILL CAUSE AN INSTANT ALARM.
2. Go directly to an arming station and enter the four-digit code. The prealarm warning will cease and the red armed LED will go out. THE BURGLAR ALARM IN NOW DISARMED.

When the user stays at the premises — the interior circuit is bypassed.

1. Press the partial button on an arming panel.
2. The status and interior LEDs will flash to indicate that the system can now be armed in the partial mode. This condition will last for 60 seconds (or until the burglar alarm is armed) — the following steps must be completed within the 60 seconds. If not, repeat procedure starting at step 1.
3. Be certain that perimeter and entry LEDs are off indicating that the alarm sensors connected to each are in normal condition. If LEDs are *not* off, check the alarm sensors connected to each circuit. Alarm will not arm if either LED is on.
4. Enter the four-digit code into an arming station. Station sounder will emit a brief audible signal each time a digit is pushed.
5. The status and interior LEDs will stop flashing and the red armed LED will light. THE BURGLAR ALARM IS NOW ARMED.

TO DISARM THE PARTIAL BURGLAR ALARM

1. Go to an arming station and enter the four-digit code. The red armed LED will go out. THE BURGLAR ALARM IS NOW DISARMED.

Note: The arming/disarming instructions in Section 4.2 are the same whether a hard-wire system or a wireless (RF) system (using the CS-280) is connected to the CS-200.

4.3 Fire Alarm Circuit

TROUBLE CONDITION

Cause

A fire alarm trouble condition is caused by an open in the fire alarm circuit. An open can be caused by a smoke detector power supervision relay that is series connected to the fire alarm circuit if a problem occurs in the smoke detector power circuit (terminal 23).

Symptom

When a trouble condition occurs, the fire LED on the CS-210 full-up arming station will light steadily and the arming station sounders will pulse rapidly at a high pitch. Activates optional plug-in digital communicator module (RD-412) and auxiliary output module (CS-290).

To silence sounders press reset button at control panel.

Fire LED will remain lit until trouble condition is cleared. When cleared, the LED will go out automatically.

Note: If fire LED is lit steady and the low battery LED on the main pc card is also lit steady, it indicates a low battery condition.

FIRE ALARM CONDITION

Cause

A fire alarm condition occurs when an alarm device connected to the fire circuit causes a short across this circuit (terminals 22 and 23).

Symptoms

When fire alarm condition occurs, the fire LED on the CS-210 full-up arming station will pulse, the armed LED on either arming station will pulse, and the external speaker (or bell) will blast every half second. Activates optional plug-in digital communicator module (RD-412), auxiliary output module (CS-290) and FA dialer output from terminal 30.

To silence the audible signal, press the reset button at the control panel. The armed LED will stop flashing and dialer triggers restore. This may reset the circuit. If not, the fire LED on the CS-210 arming station will continue to pulse. The LED on tripped smoke detector(s) will lock *on* to help identify which detector(s) caused the alarm. It may be necessary to repeat pressing the reset button until all detectors clear. When the circuit is returned to normal conditon, the fire LED will stop pulsing.

4.4 Panic and Medical Emergency Circuits

There are three 24 hour N.O. circuits. They are designated as follows:

1. Audible Panic
2. Silent Panic
3. Medical Emergency

AUDIBLE PANIC

Can be activated by pressing the two "e" buttons simultaneously* on the CS-210 and/or CS-215 remote arming stations, or by pressing N.O. buttons connected to terminals 13 and 14.

Causes siren driver output. Relay drive output also switches off. Activates optional plug-in digital communicator module (RD-412), auxiliary output module (CS-290), and BA dialer output from terminal 29.

To reset: Enter four-digit code.

SILENT PANIC

Can be activated by the upper unmarked button* on the CS-210 remote arming stations (see Section 3.0) and/or by N.O. buttons connected to terminals 14 and 15 of the CS-200 control panel.

Causes the relay drive output to switch off. Activates optional plug-in digital communicator module (RD-412), auxiliary output module (CS-290), and BA dialer output from terminal 29.

To reset: Enter four-digit code.

MEDICAL EMERGENCY

Can be activated by the lower unmarked button* on the CS-210 remote arming station (see Section 3.0) and/or by a N.O. button connected to terminals 16 and 17 of the CS-200 control panel.

Activates optional plug-in digital communicator module (RD-412), auxiliary output module (CS-290), — see Section 11.0 for more information.

To reset: Enter four-digit code.

*Note: The two "e" buttons, the upper unmarked button, and the lower unmarked button can actually be used to transmit any one of the three functions (audible panic, silent panic, or medical emergency) depending on the needs of the installation and the way the panel is wired. See wiring diagram and note in Section 3.3.

5.0 TESTING THE CONTROL PANEL AND REMOTE ARMING STATIONS

The unique test mode feature of the CS-200 control panel permits the installer and the end user to easily test every alarm sensor on every input circuit, including the fire alarm circuit. It also permits verification of the proper operation of all audible and visual signals. The test mode is very useful when walk testing electronic motion detectors.

SYSTEM TEST PROCEDURE

1. Press the test button on the CS-210 full-up arming station and, within 60 seconds, enter the four-digit code into an arming station. The internal sounders at the arming stations will pulse once every three seconds to indicate that the test mode has been initiated. Subsequent pressing of the test button will actuate burglar alarm siren driver output which will last as long as the button is pushed.
2. When a protected door or window is opened, or an interior sensor violated, the internal sounders on the arming stations will emit a steady tone — to indicate that a circuit has been violated — and the appropriate circuit LED will start flashing. When the sensor is restored to normal, the sounders will resume pulsing. (The circuit LED will remain flashing. To reset the LED, press the reset button at control panel). Follow this procedure to test every sensor.
3. FIRE ALARM TEST: Continue with the test described above to test each fire alarm sensor. Consult smoke detector instruction manual for instructions on how to test each individual detector. Press reset button at control panel to reset each smoke detector.
4. TO DISCONTINUE TEST MODE: Reenter the four-digit code into an arming station.

6.0 TROUBLESHOOTING THE CONTROL PANEL AND REMOTE ARMING STATIONS

6.1 The Remote Arming Station

Symptom:
Station(s) will not arm or disarm the system.

Actions:

1. Momentarily short terminals 3 and 1 at the CS-200 control panel. If panel arms and disarms, go to action 2. If not, refer to control panel trouble shooting instructions.
2. Press each digital key, built-in sounder should emit a short beep with each number. If none of the digital keys causes the sounder to beep, go to action 3. If some digital keys cause a beep and some do not, replace unit.
3. Check all wiring including the socket/plug assembly. If all are wired correctly, replace unit.

Symptom:
One or more of the 24-hour buttons will not operate.

Action:

1. If all buttons do not operate, check wiring at remotes and at control. If wiring is alright, replace unit.
2. If some of the buttons operate and others do not, replace unit.

Symptom:
Sounder does not emit entry/exit tone.

Action:

1. Apply 12 VDC to terminal 2 of the CS-200 control panel. If sounder still does not operate go to action 2.
2. Check wiring. If it is alright, replace unit.

6.2 The CS-200 Control Panel

Symptom:
No AC monitor LED

Action:
Check outlet where transformer is plugged in. If it is alright, check the transformer — there should be 16 VAC at the secondary terminals. If not, replace the transformer.

Symptom:
No auxiliary power output at terminal 27 or smoke detector output at terminal 23.

Action:

1. Check fuse F1. If alright go to action 2.
2. Check for 12 VDC from terminals 27 (+) and 26 (-); and from terminals 23 (+) and 24 (-). If alright, check wiring.If wiring is alright, replace printed circuit board (see section 6.3).

Symptom:
No siren driver output.

Action:

1. Check fuse F2. If alright, go to action 2.
2. Check for 12 VDC from terminals 31 and 32. If alright, check circuit wiring. If wiring is alright, contact your local Aritech distribution center for a replacement board.

6.3 Removing The CS-200 Printed Circuit Board

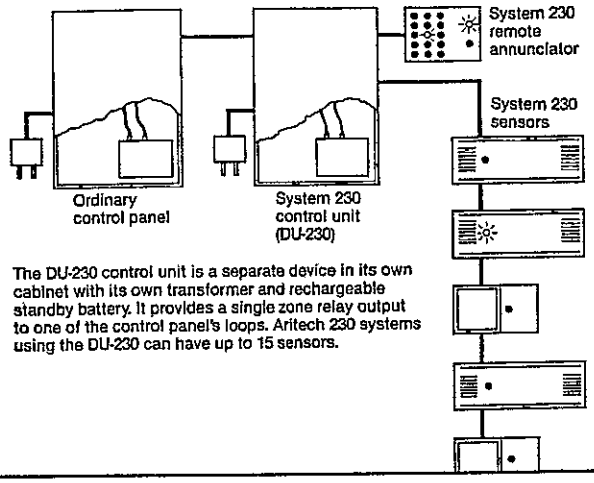
In the event that the CS-200 printed circuit board fails, follow the instructions below for easy removal:

1. Disconnect all wiring. Disconnect battery. Disconnect transformer.
2. Remove AC Monitor LED and Reset button from right side of cabinet.
3. Remove the three phillips screws that go through the right side of the cabinet into the heat sink.
4. Holding the heat sink, swing the right side of the printed circuit board out and slide away from the printed circuit board clips described in section 1.3.

7.0 CS-230 MULTI-SENSOR INTERFACE MODULE

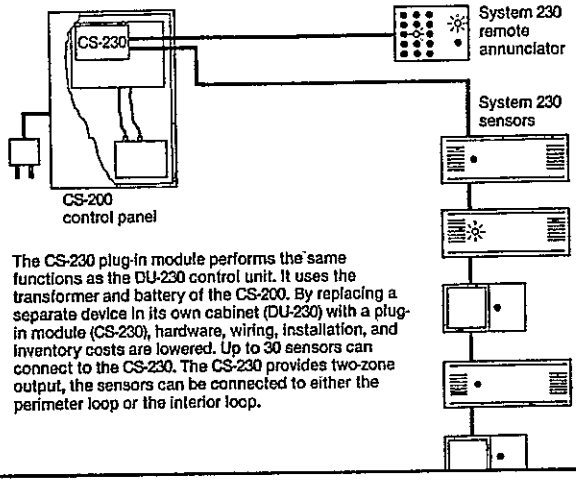
The CS-230 plug-in module allows the CS-200 to be connected directly to 230 System passive infrared and ultrasonic sensors; as well as sensors wired through a universal interace. This allows the 230 System to be installed without a DU-230 control unit. See diagrams below. The CS-230 module has two signal lines that can activate either the CS-200's interior or perimeter burglar alarm circuits. The two signal lines will accept a maximum of 15 sensors each (total of 30 sensors). The module also provides optional mode selection and zone annunciation. It accepts both standard and No Homerun Zoning (NHRZ) 230 System sensors. Consult the System 230 manual (bulletin #0500-IN) for installation instructions for System 230 sensors.

Aritech 230 multi-sensor intrusion detection system installed with an ordinary control panel.



The DU-230 control unit is a separate device in its own cabinet with its own transformer and rechargeable standby battery. It provides a single zone relay output to one of the control panel's loops. Aritech 230 systems using the DU-230 can have up to 15 sensors.

Aritech 230 multi-sensor intrusion detection system installed with CS-200 control panel.



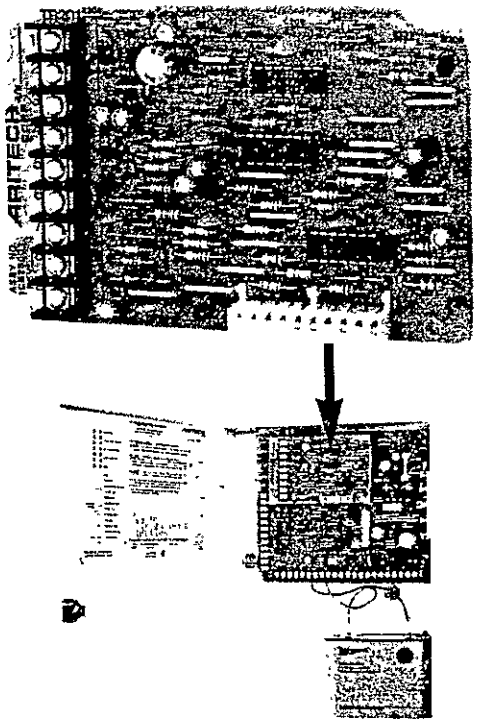
The CS-230 plug-in module performs the same functions as the DU-230 control unit. It uses the transformer and battery of the CS-200. By replacing a separate device in its own cabinet (DU-230) with a plug-in module (CS-230), hardware, wiring, installation, and inventory costs are lowered. Up to 30 sensors can connect to the CS-230. The CS-230 provides two-zone output, the sensors can be connected to either the perimeter loop or the interior loop.

7.1 Installing the CS-230

When using the CS-230 Multi-Sensor Interface with the CS-280 Wireless Module, the CS-231 Wiring Interface Assembly must be used. See Section 7.3.

NOTE: Be certain that both the transformer and standby battery are disconnected from the CS-200 before installing any module.

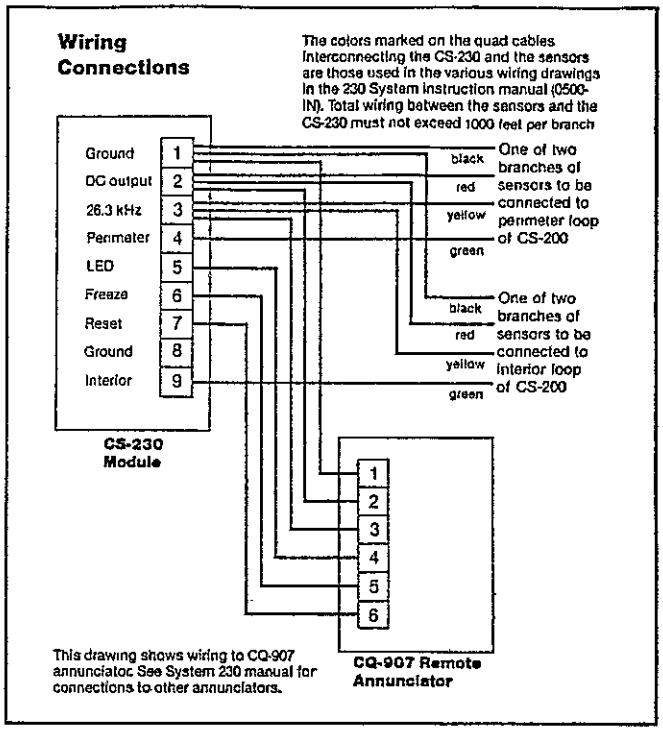
1. Plug the four (4) supplied plastic spacers into the CS-200 printed circuit board. Place one through each hole marked "230 QUAD".
2. Line up the CS-200's horizontal circuit board pins with the pin sockets on the CS-230 module. For correct insertion, be certain that the module terminal strip is on the left.
3. Carefully insert the pins through the pin sockets. Then, slowly rock the module into place until the ends of the spacers come through the four holes in the CS-230 module.
4. Continue to press module until spacers lock.



7.2 Wiring the CS-230

The wiring interconnections between the CS-230 and the Aritech 230 System sensors are similar to the connections that appear on pages 42 through 51 in the 230 System manual (0500-IN) depicting the interconnections between 230 sensors and the DU-230 multi sensor control, with the following exceptions:

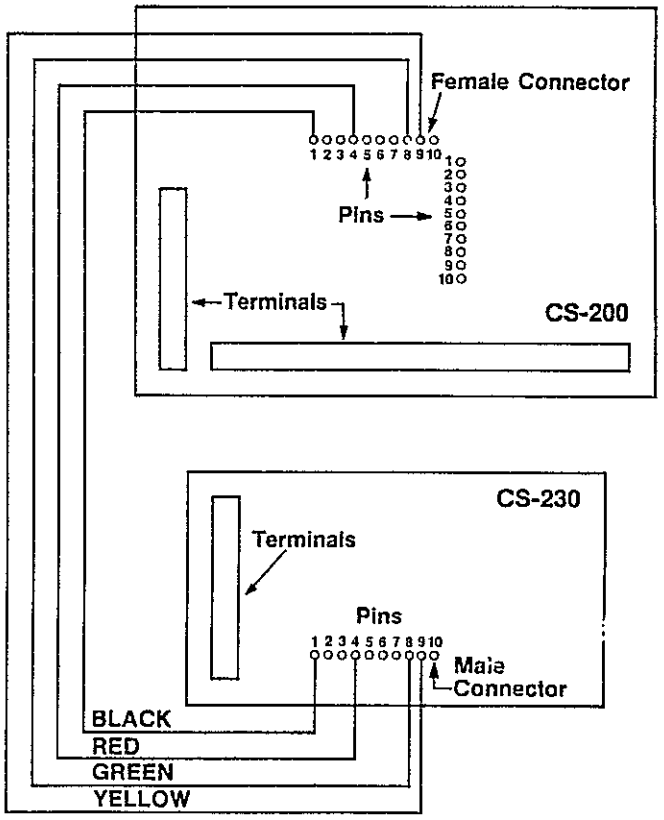
1. The CS-230 module uses a nine connection terminal strip. It does not require the sixteen connection terminal strip that appears in the DU-230.
2. Terminal 4 on the DU-230 control is the alarm signal line. For the CS-230 module, the alarm signal received from the sensors can connect to terminal 4 or terminal 9. Connect to terminal 4 in order to interface sensors with the CS-200 perimeter circuit, and connect to terminal 9 in order to interface sensors to the CS-200 interior circuit. See Section 2.3 of this manual for a description of the difference between these circuits. Each alarm signal line on the CS-230 module may have two (2) branches. TOTAL WIRING BETWEEN ALL SENSORS AND THE CS-230 MODULE MUST NOT EXCEED 1000 FEET.



7.3 CS-231 Wiring Interface Assembly

The CS-231 Wiring Interface Assembly must be installed when using the CS-230 Multi-Sensor Interface Module in conjunction with the CS-280 Wireless Module. The CS-231 consists of four twisted wires with female connectors at one end and male connectors at the other end.

1. Install the CS-280 module as explained in Section 8.4.
2. Insert the male connectors into the **top side** of the CS-230 card. Be sure that the black wire goes into pin #1. See diagram.
3. Insert the female connectors into the horizontal pins on the CS-200 printed circuit board. Be sure that the black wire goes into pin #1. See diagram.
4. Using double sided tape, attach the CS-230 module to the inside of the control panel cabinet (next to the battery) or on the inside front cover of the control panel cabinet.



8.0 CS-280 SUPERVISED WIRELESS RF RECEIVER MODULE

The CS-280 module is a plug-in UHF radio receiver that adds 7 channel supervised wireless capability to the CS-200 control panel. Signals from compatible wireless transmitters are received by the module and processed by the CS-200 control. With the module installed, the CS-200 control responds in the same manner to signals received from wireless transmitters as from signals of sensors connected via hard wire. Programming the eight position rocker dip switch on each transmitter and on the receiver module to the same "on/off" code establishes the communication between the wireless components. A second eight position rocker dip switch on each transmitter (some use a jumper configuration) determines which CS-200 channel (or circuit) each transmitter "connects" to.

The CS-280 receiver module analyzes a binary coded FSK signal that emanates from compatible transmitters. This signal consists of an RF carrier that is down modulated with bursts of 1/2 sine waves at frequencies of either 14 kHz or 23 kHz. Each burst is a bit of data for the receiver. A series of 20 data bits make up a complete "word" of information from the transmitter to the receiver. The receiver translates the "word" and the CS-200 control processes it and responds—if a response is required. Each "word" consists of the following data from a transmitter to the receiver module.

- receiver address
- which CS-200 circuit (there are 7) each transmitter reports to
- transmitter status — sensor violated or sensor restore
- transmitter supervisory ID number (applicable for 3 BA circuits and fire alarm circuit only)
- low battery condition (not all transmitters have circuitry to send this signal)
- tamper condition (not all transmitters have circuitry to send this signal).

The receiver address, CS-200 circuit, and supervisory ID number are installer programmed using the dip switches at the receiver module and the dip switches or a jumper configuration at the transmitter. Programming instructions are detailed in section 8.3.

8.1 Compatible Transmitters

Because the Aritech wireless system is supervised, it is imperative that compatible transmitters be used. The three burglar alarm circuits on the CS-200 control (perimeter, interior, entry) and the fire alarm circuit require that an hourly supervisory signal emanate from each transmitter.

The following list details the transmitters that are compatible with the CS-280 module. Take care to notice that some models will not report to the CS-200 circuits that require a supervisory signal.

Aritech catalog number	Manufacturer model number	description
		manufacturer: Transcience
RW-215	T-150	Universal (door/window) transmitter with screw terminals to connect NC or NO sensors. Will report to all CS-200 circuits. In order to report to the 3 BA circuits or the fire alarm circuit, must add M-590 (Aritech number RW-259) test module that provides the supervisory signal. Tampered. Warning: For correct operation, never cut jumpers J1 or J3.
RW-050	PT-1D	Hand-held transmitter. Will report to the CS-200 panic circuits only. Which panic circuit is determined by cutting jumpers in each unit. Do not use units with "A" for serial number. Serial number should be "A-1."
		manufacturer; Electro Signal Lab
FS-370	370	Supervised wireless photoelectronic smoke alarm with built-in wireless transmitter, built-in horn and test feature. Reports to CS-200 fire alarm circuit.
		manufacturer: Aritech
DR-201		Self contained wireless passive infrared intrusion detector with built-in supervised RF transmitter. Will report to all CS-200 circuits. Provides 25 foot curtain type field of view. Requires two BD-096 nine volt batteries (separately ordered).
DR-221		Self contained wireless passive infrared intrusion detector with built-in supervised RF transmitter. Will report to all CS-200 circuits. Provides multi field of view with curtain under middle field of view. Requires two BD-096 nine volt batteries (separately ordered).

Consult your local Aritech Distribution Center for more information on compatible transmitters for use with the CS-280 receiver module.

8.2 Functions of the CS-280

The receiver module interfaces wireless transmitters with the 7 CS-200 circuits (perimeter, interior, entry, fire alarm, audible panic, silent panic, medical emergency). The circuit each transmitter reports to is determined by programming rocker dip switches or manipulating a jumper configuration at each transmitter. See section 8.3 for programming instructions. Transmitters that report to the three burglar alarm circuits and the supervised fire alarm circuit must send a supervisory signal to the receiver module that includes a specific transmitter ID number so that the module can verify that all transmitters are operating properly and none have been removed from the premises without authorization. The Aritech supervised wireless system will not operate properly unless compatible transmitters are used—see section 8.1.

Note: The CS-280's supervisory signal does not comply with NFPA 74. Using one hardwired, UL listed smoke detector will meet the NFPA 74 standards.

The receiver stores each ID number in memory after the initial transmission at installation "introduces" each number to the receiver module. Each of the burglar alarm circuits and the fire alarm circuit can accept up to 8 ID numbers (these are numbered 0-7). Do not assign more than one transmitter to each ID number for proper supervision. The receiver stores in memory the ID numbers of all transmitters that introduce themselves within the first 24 hours after power-up*. After a 48 hour period,the receiver will "look" for a supervisory signal from each ID number at least once every 24 hours (RW-050 hand held transmitter does not send a supervisory signal). If a transmitter fails to send a supervisory signal for a 24 hour period, the CS-200 control will initiate an RF trouble condition. In an RF trouble condition, the sounders in the CS-210 and CS-215 remote arming stations will emit a high pitch beeping tone and the trouble LED on the CS-210 will light. The installing company should carefully instruct the user about this aspect of the system. To reset a RF trouble condition, go to the CS-200 control and press the reset button on the side of the cabinet.

*Therefore actual indication of a supervisory trouble may not be generated until 48 hours. The 24 hour start up period does not interfere with the transmission of alarm signals.

Note: Pressing the reset button erases the receiver's memory for transmitter ID numbers. The 48 hour period after pressing the reset button is the same as the 48 hours described for after initial installation, In effect, all the transmitters that report to these circuits must re-introduce themselves. Therefore, all transmitters must be re-tested to assure proper system operation. When removing a transmitter from one of the burglar alarm circuits or from the fire alarm circuit, be certain to press the reset button so that a trouble condition does not occur 24 hours after removal. This procedure is not necessary when transmitters are removed from any of the three 24 hour panic circuits because these do not require the supervisory signal.

Low Battery Condition
When the power of the battery(s) in certain transmitters drops below a specified level, that transmitter will send a low battery signal to the receiver module. This will cause an RF low battery condition in the CS-200 control. In an RF low battery condition, the sounders in the CS-210 and the CS-215 remote arming stations will emit a high pitch beeping tone and the trouble LED on CS-210 arming stations will flash. To reset an RF low battery condition, press the reset button on the side of the CS-200 control panel cabinet.

Note: The RW-050 hand held transmitter will only indicate low battery condition during operation or test, not automatically.

The battery(s) in each transmitter should be replaced yearly. It is the responsibility of the installing company to inform customers of this.

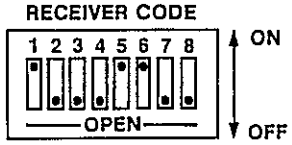
Tamper Condition
Some of the transmitters compatible with the CS-280 receiver module will transmit a tamper signal at any attempt to pry open a unit's cover. When the receiver module receives a tamper signal, the CS-200 control panel will initiate an RF tamper condition. If an RF tamper condition occurs; the sounders in the CS-210 and the CS-215 remote arming stations will emit a high pitch beeping tone and the trouble LED in the CS-210 will light. To reset an RF tamper condition, press the reset button on the side of the CS-200 control panel cabinet.

8.3 Programming the Wireless System

Programming the Receiver Address
The eight position rocker dip switch on the receiver module is for programming the receiver address. There are a total of 254 different receiver addresses.

To program, set the address switches on the receiver identical to the address switches (switches 1-8) on each transmitter. The switches are easily set with a pencil or a small screwdriver. WARNING: If the eight rocker dip switch positions on the transmitter are not identical to the switch positions on the receiver module, the system will not function correctly. Note that the open position on the module dip switch is equivalent to the off position on the transmitter. See diagram at right. Switches should not all be set in the same direction.

Example of Dipswitch Positions
(Must be identical to code set at Transmitter)



Programming Sensor Function — Interfacing with CS-200 Circuits

NOTE: The following instructions pertain to transmitters such as Aritech Series 200 wireless passive infrared intrusion detectors or the Transcience T-150 universal transmitter that utilize a second eight position rocker dip switch to program sensor fuction.

The above mentioned transmitters contain two sets of eight position rocker dip switches designated 1-8 and A-H. Switches 1-8 control the receiver address. Switches A-D control which of the 7 CS-200 input circuits the transmitter reports to.

The grid below details the switch positions that correspond to each CS-200 circuit. Cumulative value code numbers will be indicated digitally on the point annunciation module, if used. (See Section 9.0).

CS-200 circuit	switch position	SWITCH A	SWITCH B	SWITCH C	SWITCH D	assigned value
MEDICAL EMERGENCY	on					0
	off	•	•	•	•	
SILENT PANIC	on	•				1
	off		•	•	•	
AUDIBLE PANIC	on		•			2
	off	•		•	•	
FIRE ALARM	on	•	•			3
	off			•	•	
ENTRY	on			•		4
	off	•	•		•	
PERIMETER	on	•		•		5
	off		•		•	
INTERIOR	on		•	•		6
	off	•			•	

Note: Dipswitches D and H must always be in off position.

Several of the compatible transmitters do not have the second eight position dip switch to program the CS-200 circuit, but rather utilize a jumper configuration. The following instructions apply to the Transcience PT-1D (Aritech number RW-050) hand held panic transmitter which contains a blue and an orange jumper.

1. Cut orange jumper only to report to audible panic circuit (assigned value - 2).
2. Cut both jumpers to report to circuit dedicated for medical emergency (assigned value - 0).

Programming Sensor Function — The Supervisory ID Number

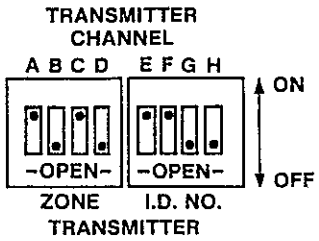
NOTE: Required for all transmitters reporting to the three burglar alarm circuits and the fire alarm circuit.

Sensor function switches E through H in the compatible transmitters mentioned at the beginning of this section control each transmitter's supervisory ID number. There are a total of 8 separate ID numbers (0-7) per circuit. It is recommended that no more than one transmitter be assigned to each ID number for optimum supervision. The grid to the right details the switch positions that correspond to each supervisory ID number.

Note: Dipswitches D and H must always be in off position.

ID number	switch position	SWITCH E	SWITCH F	SWITCH G	SWITCH H
0	on				
	off	•	•	•	•
1	on	•			
	off		•	•	•
2	on		•		
	off	•		•	•
3	on	•	•		
	off			•	•
4	on			•	
	off	•	•		•
5	on	•		•	
	off		•		•
6	on		•	•	
	off	•			•
7	on	•	•	•	
	off				•

Example of Switch Positions for Sensor I.D. #3 on perimeter circuit



8.4 Installing the CS-280

Radio Transmitter Considerations

Prior to mounting any transmitter, it is imperative that a location test be performed to verify that the transmitter's signal will reach the receiver module. The test requires that the CS-280 module be installed in the CS-200 control; the control be powered up in its exact final location (whether it is permanently attached to a wall or not is not important); and that a remote station or other annunciating device is connected to verify transmissions. Follow the steps below for each transmitter.

1. Hold each transmitter in place and initiate a transmission.
2. Verify that the signal is received. If received, continue to step 3. If not, move transmitter slightly to left or right and begin test again.
3. Rotate unit 45° and initiate another signal. Verify transmission.
4. Repeat this procedure until unit transmits from four positions (quadrants). If all transmissions were successful, the location is suitable. If not, move unit slightly to left or right and begin test again.

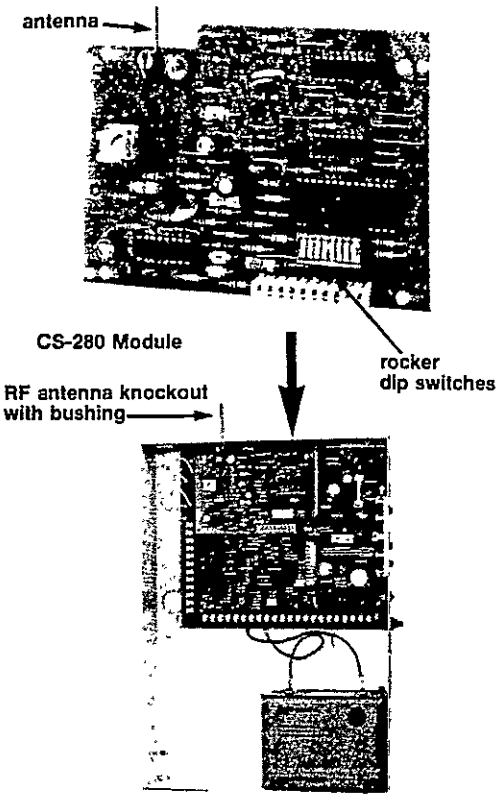
Structural items that may impede successful transmissions include foil wallpaper and wire lath walls. Also, large metal objects such as a refrigerator, may cause problems.

When wireless components are used in conjunction with a hard wired system, be certain to install the end-of-line resistor for the three burglar alarm circuits and the fire alarm circuit correctly. If any of these circuits do not have hard wire connections, install the resistor across the appropriate circuit terminals in the CS-200 control panel. (See Wiring Diagram on page 8.)

When using the CS-280 module with the CS-230 Multi-Sensor Interface Module, the CS-231 Wiring Interface Assembly must be used. (See Section 7.3.)

Installing the Module

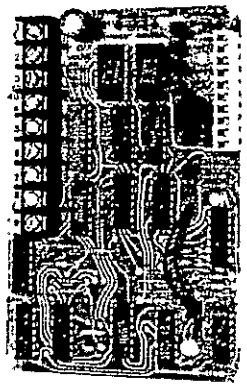
1. Be certain that all power to the CS-200 control panel is disconnected (battery and transformer).
2. Remove special RF antenna knock out located at the top left of the CS-200 control panel cabinet. There are two knock outs in this location. The one on the right is designated for the antenna. Never run wires through this knock out (see page 13.)
3. Insert the black plastic bushing (supplied) into the antenna knock out.
4. Snake bottom of the antenna down through the middle hole in the bushing and let hang.
5. Plug four plastic spacers (supplied) into the holes marked "RF" in the CS-200 printed circuit board.
6. Attach antenna to module:
   a. Loosen antenna screw located in upper right corner of module.
   b. Insert the end of the antenna through the small hole in the module printed circuit board marked "ANT".
   c. Rotate module so that antenna wraps around left side of antenna screw.
   d. Tighten screw securely around the antenna.
7. Position the module's pin-socket assembly over the horizontal pins on the CS-200 printed circuit board.
8. Carefully insert the pins through the sockets and rock the module into place so that the ends of the spacers lock onto the module.



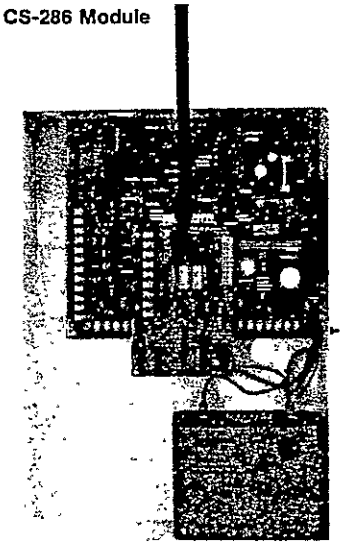
CS-200 Control Panel

9.0 CS-285 AND CS-286 POINT ANNUNCIATION MODULES

The CS-285 and CS-286 plug-in point annunciation modules visually identify the RF transmitter(s) that caused an alarm (burglar, panic, or fire) or a trouble condition (transmitter tamper, absence of the supervisory signal, or transmitter low battery) in the CS-200 wireless alarm system. The identification process divides each transmission into three separate characteristics: the CS-200 channel (circuit) the transmitter is programmed to report to, the transmitter's supervisory I.D. number, and the nature of the event that triggered the signal. The CS-286 module also features alarm outputs from a terminal strip (same as CS-290 auxiliary output module).



CS-286 Module



CS-200 Control Panel

9.1 Installing the Point Annunciation Modules

Note: Be certain that both the transformer and standby battery are disconnected from the CS-200 before installing any module.

1. Plug four (4) of the supplied plastic spacers into the CS-200 printed circuit board or the RD-412 communicator module, if used. There are eight spacers provided (four long, four short). Use the shorter spacers if you are installing a point annunciation module and a digital communicator module. Use the longer spacers if you are installing a point annunciation module alone. Place one through each hole marked "CATV".
2. Line up the vertical (lower) CS-200 printed circuit board pins with the pin sockets on the module. Be certain that the CS-286 terminal strip is on the left.
3. Carefully insert the pins through the pin sockets. Then slowly rock the module into place until the ends of the spacers come through the four holes in the module.
4. Continue to press the module until the spacers lock.

9.2 Operating the Point Annunciation Modules.

From the time that the control panel is armed, until it is reset, the point annunciation module records all events (transmissions of alarm condition, tamper, low battery or supervisory failure) that occur in the RF system, and holds the characteristics of each transmission in memory. (Memory capacity is 15 transmissions.) See next page for transmission characteristics.

To get the visual readout, open the cover on the CS-200 cabinet. If the display area is not already annunciating the characteristics of the transmission(s), press the black button on the right side of the module. This will activate the display area for between 35 and 135 seconds. The display will annunciate the characteristics of every alarm and/or trouble event* at one second intervals in the order in which they occurred. When all events have been annunciated, the display will shut off for approximately 3 seconds and then repeat the annunciation process. This will continue for the length of time that the display is activated. THE MAXIMUM NUMBER OF EVENTS THAT THE MODULES WILL DISPLAY IS 15. If a fire or panic transmission occurs while the display area is activated, its characteristics will be added at the end of the annunciation process.

To erase the memory of the module, arm and disarm the CS-200 control.

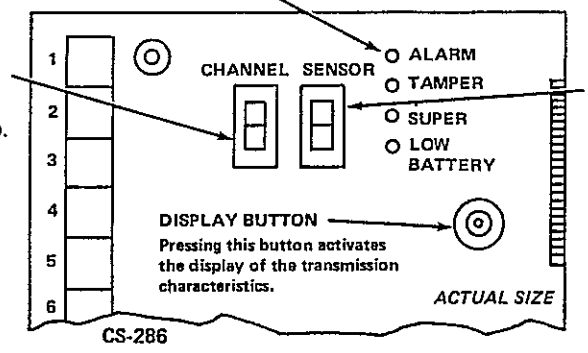
*Note: Because the point annunciation module begins recording all events as soon as the panel is armed, it will record every entry and exit that violates an RF-protected area, even during delay periods. Even though the control panel will not respond to these signals as alarms (during delay periods), they are held in memory by the point annunciation module, resulting in a complete sequence of events in the RF system from the moment the panel is armed until it is reset.

Display Features

The CS-200 Channel and the Sensor I.D. are installer programmed at each transmitter using a rocker dip switch assembly or a jumper configuration. See Section 8.3 for these instructions. Each unit comes with a label for recording transmitter location and channel and I.D.

EVENT INDICATORS
Appropriate LED indicator lights to identify the specific type of event that triggered a transmission.

CS-200 CHANNEL
Display indicates the CS-200 channel (circuit) that an RF transmitter is programmed to report an alarm or trouble signal to. These channels are numbered as follow: **0.** Medical Emergency; **1.** Silent Panic; **2.** Audible Panic; **3.** Fire Alarm; **4.** Entry/Exit Delay; **5.** Perimeter B.A.; **6.** Interior B.A.

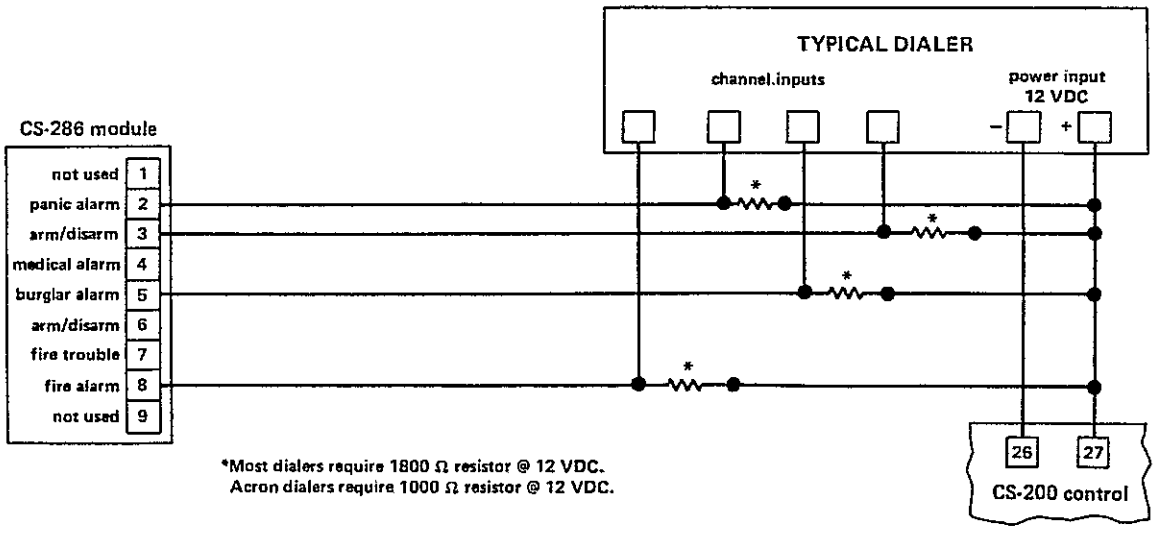


SENSOR I.D.
Each transmitter that is programmed to report to one of the three B.A. channels or the fire channel (channels 3-6) is also programmed with a supervisory I.D. number. These numbers range from 0-7 for each channel. The I.D. number permits identification of the specific transmitter that sent an alarm or trouble signal. The three panic channels do not utilize the supervisory I.D. The display will read "0" for these channels.

9.3 WIRING CONNECTIONS FOR CS-286 TERMINALS TO TRIGGER DIALER

The outputs of the module normally are at ground potential (except terminals 3 and 6 which are described below.) When a circuit goes into alarm condition, that circuit's output will go high (open collector output). Digital dialers must be wired with a pull up resistor in order to work correctly with the module. The diagram below illustrates the correct way to make these connections.

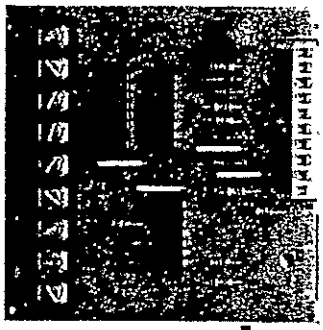
Terminals 3 and 6 indicate the armed/disarmed condition of the CS-200 control panel. The condition of terminals 3 and 6 is always opposite. Terminal 3 is high when the burglar alarm is armed and low when it is unarmed. Terminal 6 is low when the burglar alarm is armed and high when it is unarmed.



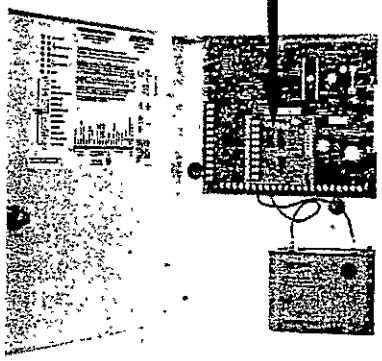
*Most dialers require 1800 Ω resistor @ 12 VDC.
Acron dialers require 1000 Ω resistor @ 12 VDC.

10.0 CS-290 AUXILIARY OUTPUT MODULE

The CS-290 auxiliary output module equips the CS-200 control panel with separate outputs for fire, panic, medical emergency, fire trouble, burglary and openings and closings. These outputs can be used to trigger auxiliary equipment such as digital dialers and CATV.



CS-290 Module



CS-200 Control Panel

10.1 Installing the CS-290

Note: Be certain that both the transformer and standby battery are disconnected from the CS-200 before installing any module.

1. Plug the four (4) supplied plastic spacers into the CS-200 printed circuit board by placing one through each hole marked "CATV".
2. Line up the vertical CS-200 printed circuit board pins with the pin sockets on the CS-290 module. For correct insertion be certain that the module's terminal strip is on the left.
3. Carefully insert the pins through the pin sockets. Then slowly rock the module into place until the ends of the spacers come through the four holes in the CS-290 module.
4. Continue to press the module until the spacers lock.

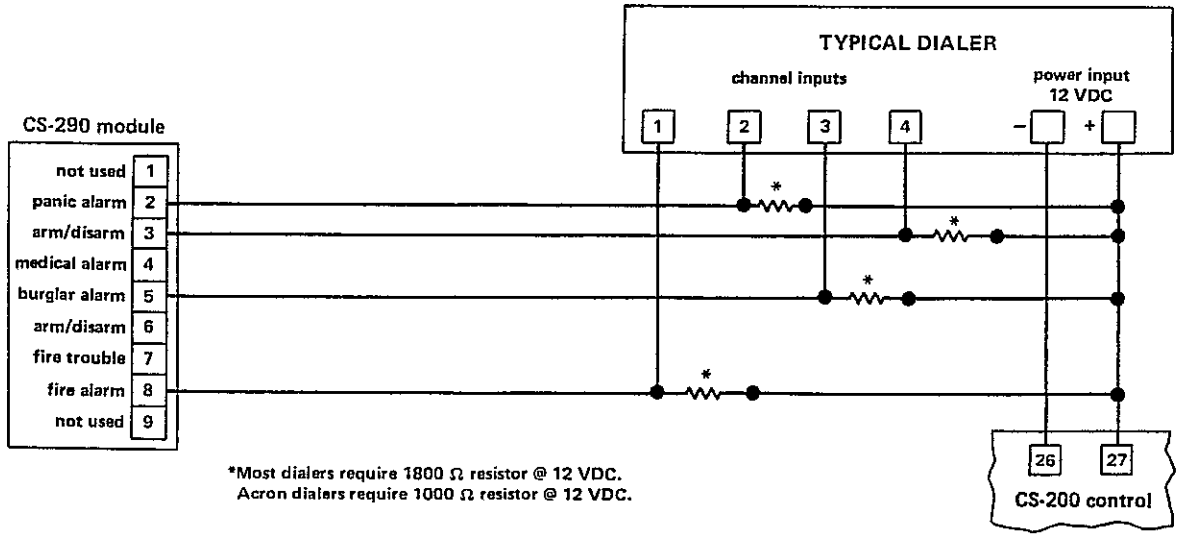
In order to install both the CS-290 and the RD-412 Digital Communicator Module, be sure to install the RD-412 module first. The CS-290 then connects "piggyback" to the RD-412. See Section 11.2 for installation instructions for the RD-412 module.

10.2 Wiring the CS-290

The outputs of the CS-290 module normally are at ground potential (except terminals 3 and 6 which are described below). When a circuit goes into alarm condition, that circuit's output will go high (open collector output). Digital dialers must be wired with a pull up resistor in order to work correctly with the CS-290 module. The diagram below illustrates the correct way to make these connections.

Terminals 3 and 6 indicate the armed/disarmed condition of the CS-200 control panel. The condition of terminals 3 and 6 is always opposite. Terminal 3 is high when the burglar alarm is armed and low when it is unarmed. Terminal 6 is low when the burglar alarm is armed and high when it is unarmed.

The wiring connections below depicts the interconnection between the CS-200 control/CS-290 module and a typical digital dialer.



*Most dialers require 1800 Ω resistor @ 12 VDC.
Acron dialers require 1000 Ω resistor @ 12 VDC.

11.0 RD-412 DIGITAL COMMUNICATOR MODULE

The RD-412 module provides the CS-200 with digital communicator capability. The module is equipped with a PROM chip that is programmed with the communicator's operating functions. Each of the RD-412's eight channels is assigned to a specific alarm output on the CS-200 control, as listed below.

CS-200 Output	RD-412 Channel Assignment
Fire Alarm	1
Panic Alarm	2
Burglar Alarm-Exit/Entry	3
Burglar Alarm-Perimeter	4
Burglar Alarm-Interior	5
Medical Emergency	6
System Trouble*	7
Openings and Closings	8

*System trouble indicates a fire trouble or a low battery condition. Check the low battery LED on the CS-200 pc card. If it is lit it indicates a low battery condition, otherwise it is a fire trouble condition.

11.1 Specifications

Dialed number capacity: Up to 16 digits and/or pauses for dial tone per receiver phone number used.

Line seizure: Built in; both sides of line.

Transmission delay: Programmable by channel: 0 to 75 seconds (5 second intervals).

Customer account number: Maximum of five digits per receiver.

Reporting priority: Starts with channel 1 (fire alarm) and descends in numerical order to channel 8.

PROM chip number: National Semiconductor Corp DM74S287

Telephone ringer equivalence: O.O B

FCC Registration Number: A799KS-11418-AL-E

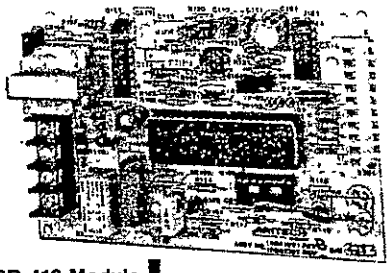
Power Consumption: 85 mA stand-by; 125 mA operating.

11.2 Installing the RD-412

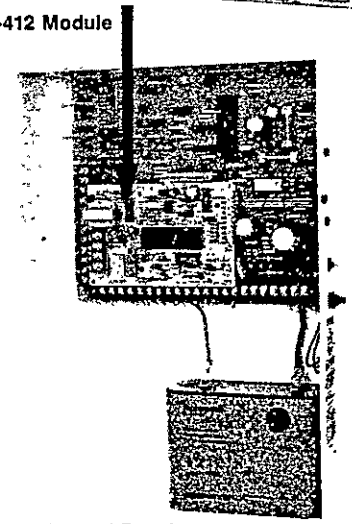
Note: Be certain that all power to the CS-200 control panel is disconnected -- this includes both the transformer and standby battery -- prior to installing any of the optional modules.

1. Plug the four (4) supplied plastic spacers into the CS-200 printed circuit board by placing one through each hole marked "DIAL".
2. Line up the 10 vertical connector pins on the control panel printed circuit board with the pin sockets on the module. For correct insertion be certain that the module's terminal strip is on the left.
3. Carefully insert pins through the pin sockets. Slowly rock the module into place until the ends of the plastic spacers come through the four holes in the RD-412 module.
4. Continue to press the module until the spacers lock.

In order to install both the CS-290 auxiliary output module and the RD-412 into a CS-200 control panel, be certain to install the RD-412 module first. The CS-290 then connects "piggy back" to the RD-412. See Section 10.0 for the installation instructions for the CS-290 module.



RD-412 Module



CS-200 Control Panel

11.3 Wiring the RD-412

Connect the four wires from the Aritech RD031 coupler cord, or equivalent, to the terminals as shown in the drawing below.

Telephone Line Connections

The telephone company must be notified before any equipment is connected to telephone lines. The following information must be supplied:

Equipment manufacturer	Aritech Corp
Model number	RD412
Ringer equivalence	O.O B
FCC Registration number	A799KS-11418-AL-E

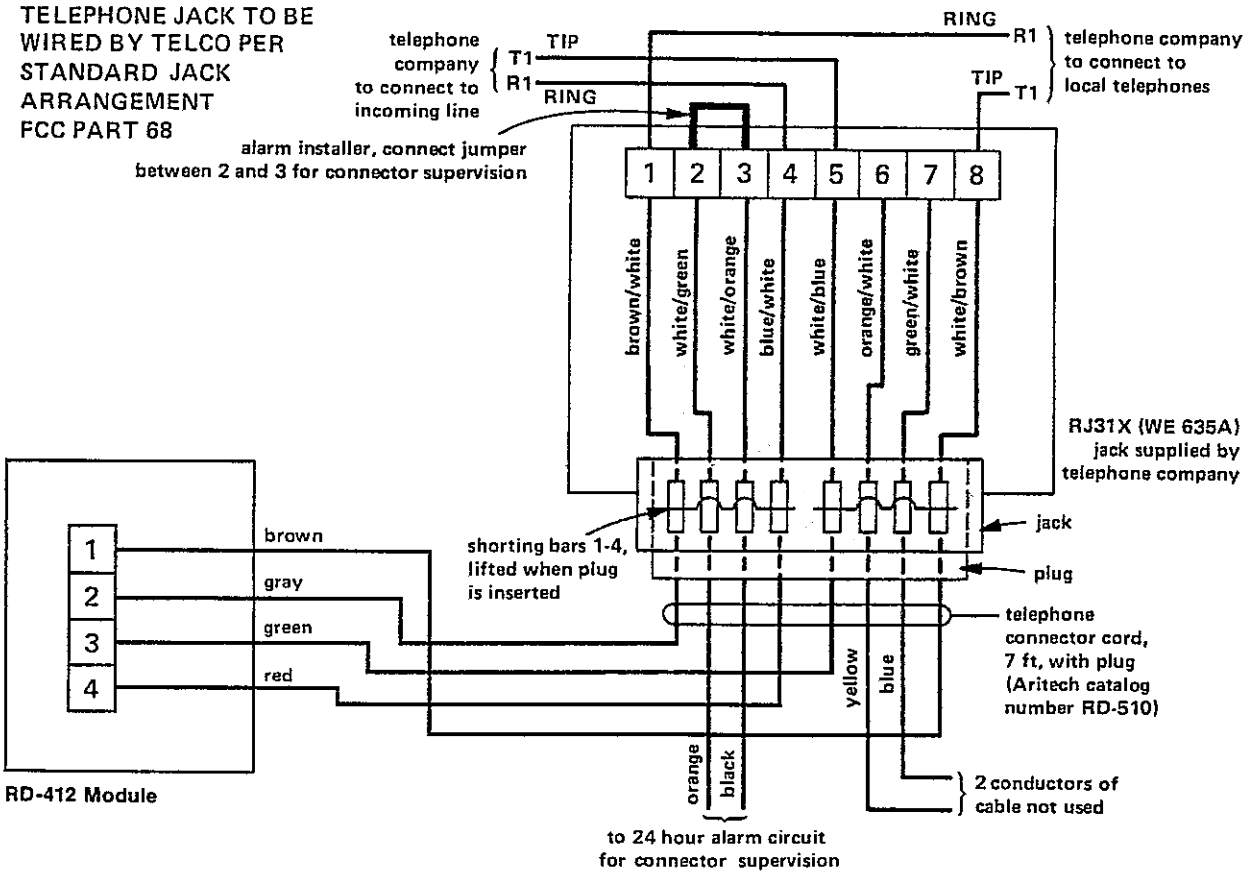
Request that an RJ-31X jack be installed at the subscriber's premises.

The telephone company must be notified when the communicator is permanently disconnected.

The digital communicator may not legally be connected to a coin operated or party line service.

The telephone company may, due to changeover in service or scheduled maintenance, disconnect or otherwise discontinue service for a predetermined amount of time. The telephone company must notify the customer in sufficient time for arrangements to be made to maintain service with the receiving station.

Due to the intricacy of the electronics within the communicator, and the fact that it is registered with the FCC, it is imperative that the communicator be returned to the factory for repair if any difficulties are encountered with its operation.



IMPORTANT

TEST COMMUNICATOR OPERATION AT THE CONCLUSION OF THE INSTALLATION. TRIGGER EACH CHANNEL SEPARATELY. VERIFY A SUCCESSFUL SIGNAL TRANSMISSION FOR EACH CHANNEL BY THE RECEIVER(S).

Due to the intricacy of the electronics within the communicator, and the fact that it is registered with the FCC, it is imperative that the communicator be returned to the factory for repair if any difficulties are encountered with its operation.

11.4 PROM Programming Instructions

The operating data for the RD 412 module is stored in a Programmable Read Only Memory (PROM) chip (RD-455). The PROM is programmed using an Aritech RD-450 or RD-191 programmer. Programming worksheets are available for both programmers. Consult your local Aritech Distribution Center.

Programming with the RD-450

The RD-450 is designed to program the PROM in four pages, each page having 64 addresses. Two pages are needed for data, leaving two spare pages for use if a new program is needed. A jumper on the RD-412 communicator module controls which pages of data the communicator will read. With the jumper uncut, the communicator will read pages 0 and 1. With the jumper cut, the communicator will read pages 2 and 3. It is necessary to program one page (64 addresses) at a time, as the following instructions indicate. Consult the RD-450 instruction manual (bulletin number 3602-IN) for detailed instructions on operating the RD-450 programmer.

The following instructions are for use when programming the first pages of a PROM (target pages 0 and 1) without master PROM.

1. Insert PROM to be programmed into TARGET PROM SOCKET (on right). MAKE SURE THE YELLOW MARK ON THE PROM IS ON THE RIGHT.
2. Switch PROM SOCKET POWER on. Observe that the digital displays illuminate.
3. Place TARGET PAGE SELECTOR switch to page 0.
4. Place AUTOMATIC UPDATE/FREEZE DATA switch in AUTOMATIC UPDATE position.
5. Use the programmer keypad to make an entry into each address (0 through 63). Press STEP ADVANCE after each entry to advance to the next address. If an address requires no entry, continue to press the STEP ADVANCE.
6. When the last address (63) of page 0 has been entered, move the AUTOMATIC UPDATE/FREEZE switch to the FREEZE position.
7. Depress the STEP ADVANCE switch through the program while watching the NEW DATA readout and the ADDRESS READOUT. The new data information should agree with the worksheet. If the new data needs correction, stop at the address which is incorrect, move the FREEZE DATA/UPDATE switch to the UPDATE position, enter the correct data, move the switch back to FREEZE and continue. Stop at address 0.
8. After being satisfied all data on page 0 are correct, enter the data into the PROM by depressing the PROGRAM switch. The programmer should automatically advance to ADDRESS "1".
9. Repeat this process until ADDRESS indicator shows 0. At this point all data on page 0 should be entered in the PROM.
10. Depress the VERIFY switch. The ADDRESS indicator should read 63 and the green LED by the keypad should illuminate, indicating that the program in the target PROM is identical to that in the RAM. If not, repeat steps 7 and 9, or program a new PROM.
11. Place TARGET PAGE SELECTOR to page 1. Place AUTOMATIC UPDATE/FREEZE switch in the AUTOMATIC UPDATE position, Proceed to program data into the second page as described in steps 5 through 10.
12. Insert the programmed PROM into the RD-412.

Programming with the RD-191

The RD-191 is designed to program the PROM in two pages (page 0 or page 1), each with 128 addresses. One page is needed for data, leaving one spare page for use if a new program is needed. A jumper on the module controls which page of data the communicator will read. With the jumper uncut, the communicator will read page 0. With the jumper cut, it will read page 1. Consult the RD-191 instruction manual for more information.

The instructions below are for programming page 0 of the PROM without a master PROM.

1. Set PAGE switch on programmer to 0.
2. Plug programmer into AC outlet and use cord switch to turn on programmer. POWER MUST BE ON BEFORE A PROM IS INSERTED INTO THE PROGRAMMER.
3. Press STOP.
4. Press ERASE MEMORY, then EXECUTE to erase the programmer's memory.
5. Insert blank PROM in SUB. PROM socket, matching the dot on the PROM to the dot on the socket.
6. Press SET (or AUTOSET) and enter the first address number (000). If you make a mistake just repeat the step.
7. Push the appropriate numbered key for the entry that belongs in the address. The entry will be shown in the MEMORY ENTRY display. If you make a mistake just repeat this step.
8. If you use AUTOSET the programmer will automatically advance to each successive address as you make each entry. Push NEXT to bypass an address. Push PRIOR to back up to a previous address.
9. Use SET (or AUTOSET) and NEXT and the numbered keys to advance through all lines of the programming worksheet.
10. Push PROGRAM, then EXECUTE to copy the programmer memory contents onto the PROM.
11. Push COMPARE, then EXECUTE to verify that the PROM matches the programmer memory.
12. Be sure to remove the PROM from the programmer before the power is turned off.
13. Insert the programmed PROM into the RD-412.

Programming the First Page

Address lines indicated for the first page are for use when programming the first target page of the PROM with the RD-191 Programmer,or the RD-450 programmer

Address 000: No Entry Required
Address 001: Restoral Transmission

When selected, the communicator will transmit a restoral code to the receiver(s) when all alarmed channels are reset. If restoral transmissions are required, enter a 7. If no entry is made, no restoral transmissions will be made.

Address 002: Limited/Unlimited Dial Attempts

If unlimited dial attempts (runaway) is desired, enter a 7. If no entry is made, a limited number of dial attempts will take place, as defined in address 006. If unlimited dial attempts is selected, skip address 006.

Address 003: 24-Hour Test Signal Transmission

If no entry is made, 24 hour test signals will not be sent, and skip addresses 004 and 025. When the test signal is required, enter a 7 in this address, and program the time interval in address 004 and the test code in address 025.

Address 004: Test Signal Timer

If no entry is made, a test signal will be sent at 24 hour intervals beginning 12 hours after initial start up, regardless of any other transmissions. To program for a test signal transmission 24 hours following the most recent transmission, regardless of type, enter a 7 in this address. If 24 hour test signal is not selected in address 003, skip this address.

Address 005: Openings/Closings Transmissions

If no entry is made, opening and closing transmissions will not be made. To program for opening and closing transmissions, enter a 7 in this address. Program the code for openings (disarming the burglar alarm) in address 023. Program the code for closing (arming the burglar alarm) in address 033.

Address 006: Total Dial Attempts

If no entry is made into this address, the total number of dial attempts will be 16. Alternative total dial attempt options range from 4 to 15. To program one of these, enter the appropriate number into this address. If unlimited dial attempts (runaway) is selected in address 002, skip this address.

Address 007: No Entry Required
Address 008: No Entry Required
Address 009 - 012: Receiver Selection (programmable by channel)

Each of the eight channels can be programmed to send a signal to receiver "A", receiver "B", or both. (Receiver formats are programmed in addresses 042 and 050.) To program: In the four sections shown in the next column, check the block adjacent to the channel if that channel must communicate to that receiver. Enter the sum of the values assigned to each channel in the indicated address.

RECEIVER "A"

CHANNELS	FIRE	= 8
	PANIC	= 4
	EXIT/ENTRY	= 2
	PERIMETER	= 1

TOTAL
(Enter this sum in addresses 009)

RECEIVER "A"

CHANNELS	INTERIOR	= 8
	MEDICAL	= 4
	SYSTEM TROUBLE	= 2
	OPEN/CLOSE	= 1

TOTAL
(Enter this sum in addresses 010)

RECEIVER "B"

CHANNELS	FIRE	= 8
	PANIC	= 4
	EXIT/ENTRY	= 2
	PERIMETER	= 1

TOTAL
(Enter this sum in addresses 011)

RECEIVER "B"

CHANNELS	INTERIOR	= 8
	MEDICAL	= 4
	SYSTEM TROUBLE	= 2
	OPEN/CLOSE	= 1

TOTAL
(Enter this sum in addresses 012)

Address 013: No Entry Required

Address 014: No Entry Required

Address 015-022: Delay between An Alarm and Communicator Activation

This delay period is programmable by channel. Each channel is assigned a separate address (015-022). If no entry is made, the communicator will activate with no delay. Delay options range from 5 to 75 seconds at 5 second intervals. To program, enter a 1 for a 5 second delay, enter 2 for a 10 second delay, enter 3 for a 15 second delay, etc. If the activating signal is reset before the delay time expires, no transmission will take place. Enter individual delay times for each of the addresses below.

Channel	Address
Fire Alarm	015
Panic Alarm	016
Burglar Alarm—Exit/Entry Circuit	017
Burglar Alarm—Perimeter Circuit	018
Burglar Alarm—Interior Circuit	019
Medical Emergency Alarm	020
System Trouble	021
Openings and Closings	022

Address 023: Opening Code

If openings/closings are not selected in address 005, skip this address. When openings/closings are required (selected in addess 005) this address programs the specific code the communicator will send for openings. If no entry is made, 9 will be the opening code. To program a code other than 9, enter the appropriate number (1 through 15).

NOTE: Alternative code options range from 1 to 15 (or 1 to 10, B to F where B=11, C=12, etc.)

Address 024: Restoral Code

If restoral transmissions are required (option programmed in address 001), this address programs the specific code the communicator will send. If no entry is made 9 will be the restoral code. Alternative code options range from 1 to 10, B to F. To program the code at a number other than 9, enter the appropriate number (1 through 15).

Address 025: Test Code

If test code transmissions are required (option programmed in address 003), this address programs the specific code the communicator will send. If no entry is made 9 will be the test code. Alternative code options range from 1 to 10, B to F. To program the code at a number other than 9, enter the appropriate number (1 through 15, excluding 9).

Address 026-032: Channel Codes (programmable by channel)

These addresses program the specific code the communicator will send for each channel when activated. If no entry is made into an address, that channel automatically gives the assigned code number as listed below. Alternative code options for each of the seven channels range from 1 to 10, B to F. To program the code at a number other than the assigned code, enter the number into the appropriate channel code address.

Channel	Address	Assigned Code When No Entry Is Made
Fire Alarm	026	1
Panic Alarm	027	2
Burglar Alarm—Exit/Entry Circuit	028	3
Burglar Alarm—Perimeter Circuit	029	4
Burglar Alarm—Interior Circuit	030	5
Medical Emergency Alarm	031	6
System Trouble	032	7

Address 033: Closing Code

If openings/closings are required (option programmed in address 005) this address programs the specific closing code the communicator will send. If no entry is made, 8 will be the closing code. Alternative code options range from 1 to 10, B to F. To program the code at a number other than 8, enter the appropriate number (1 through 15).

Address 034-041: No Entry Required

Address 042: Receiver "A"

Enter the code corresponding to the receiver format being used as listed below.

Format Type	Address Entry
20 PPS Franklin 20 PPS Radionics	None required
10 PPS Ademco, 10 PPS Silent Knight	1
20 PPS Sescoa	2
20 PPS Ademco, 20 PPS Silent Knight	3
10 PPS Franklin	4

Address 043: Hold Tone — Receiver "A"

If receiver "A" uses a hold tone, enter a 7. No entry is required if the hold tone feature is not used. Consult receiver manual or central station to determine if hold tone is being used.

Address 044: Delay Between Rounds — Receiver "A"

No entry is required in order to have a 3 second delay between transmission attempts. For a 5 second delay, enter a 7.

NOTE: Always program a 7 (5 second delay) when using the 10 PPS Ademco, 10 PPS Franklin or 10 PPS Silent Knight format.

Address 045-049: Customer I.D. Number — Receiver "A"

The communicator module can transmit a customer I.D. code of up to 5 digits. No entry is required in any address between 045 and 049 that is not needed as part of the customer I.D. number for receiver "A". When using an I.D. code with less than 5 digits, unused addresses can be at beginning or end.

Address 050: Receiver "B" Format

Enter the code corresponding to the receiver format being used as listed below. NOTE: Format type does not have to be the same as Receiver "A". If only one receiver is used, consider it to be Receiver "A".

Format Type	**Address Entry**
20 PPS Franklin, 20 PPS Radionics	None required
10 PPS Ademco, 10 PPS Silent Knight	1
20 PPS Sescoa	2
20 PPS Ademco, 20 PPS Silent Knight	3
10 PPS Franklin	4

Address 051: Hold Tone — Receiver "B"

If receiver "B" uses a hold tone, enter a 7. No entry is required if the hold tone feature is not used. Consult receiver manual or central station to determine if hold tone is being used.

Address 052: Delay Between Rounds — Receiver "B"

No entry is required in order to have a 3 second delay between transmission attempts. For a 5 second delay, enter a 7.

NOTE: Always program a 7 (5 second delay) when using the 10 PPS Ademco, 10 PPS Franklin or 10 PPS Silent Knight format.

Address 053 - 057: Customer I.D. Number — Receiver "B"

The communicator module can transmit a customer I.D. code up to 5 digits. No entry is required in any address between 053 and 057 that is not needed as part of the customer I.D. number for receiver"B". When using an I.D.code with less that 5 digits, unused addresses can be at beginning or end.

Address 058 - 063: No Entry Required

NOTE: When using the RD-450 programmer, address 63 is the last address on the first page. At this point refer to page 28 and follow the instructions for verifying the data inputed into the first page, and for proceeding to the second page. Set the target page selector from 0 to 1 and use address numbers 0 to 63 on the second target page.

Address 064: No Entry Required

Address 065: Dialing Mode

No entry is required to program for rotary dialing mode. To program Touchtone dialing mode, enter a 7 into this address.

Address 066: No Entry Required

Address 067: No Entry Required

Address 068 - 083: Telephone Number — Receiver "A"

The communicator module can dial a receiver telephone number of up to 16 digits and/or pauses. No entry is required in any address that is not required for a telephone number digit or delay. Unused addresses can be located at the beginning or the end. For a 1.0 second pause at any address enter an 11. For a 6 second pause at any address enter a 14. To program a zero into any address, enter a 10.

NOTE: In most instances, pauses are not necessary. In situations where a code is required to access an outside line (i.e. dialing 9 to access an outside line) or where a slow dialtone may be present (some rural areas) a 1 or 6 second pause should be used.

Address 084 - 099: Telephone Number — Receiver "B"

The communicator module can dial a receiver telephone number of up to 16 digits and/or pauses. No entry is required in any address that is not required for a telephone number digit or delay. Unused addresses can be located at the beginning or the end. For an 1.0 second pause at any address enter an 11. For a 6 second pause at any address enter a 14. To program a zero into any address, enter a 10.

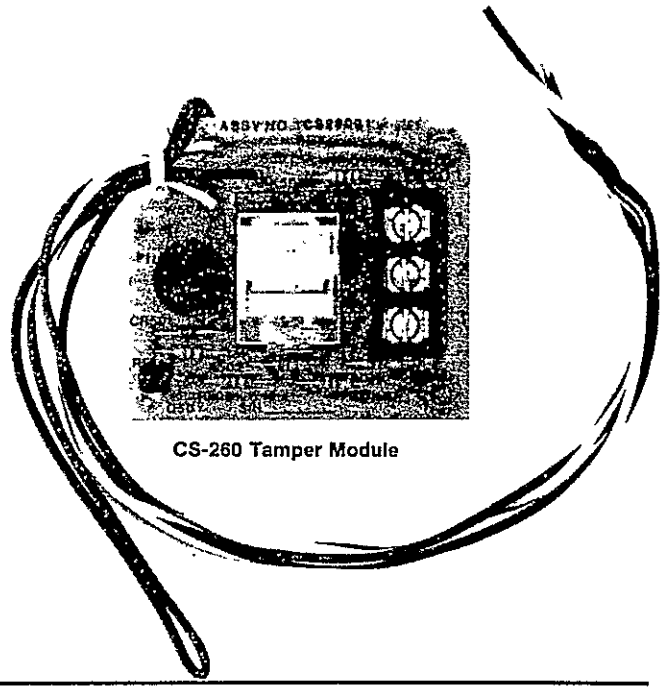
Address 100 - ~~128~~: No Entry Required 127

Remove PROM from the programmer and install it into the PROM socket on the RD-412. Be sure the yellow dot on the PROM is on the right when the RD-412 is installed in the CS-200.

Page 128

12.0 TAMPER PROTECTION

Different levels of tamper protection can be attained for the CS-200 by adding various tamper protection devices to the system. Tamper switches (CS-261 and ST-120) can be used independently for limited tamper protection. For maximum tamper protection the switches can be wired through the CS-260 tamper module, which provides a unique disarm disable circuit that prevents an intruder from disarming the security system by shorting the terminals on the rear of the remote arming station.



CS-260 Tamper Module

12.1 Tamper Protection Devices

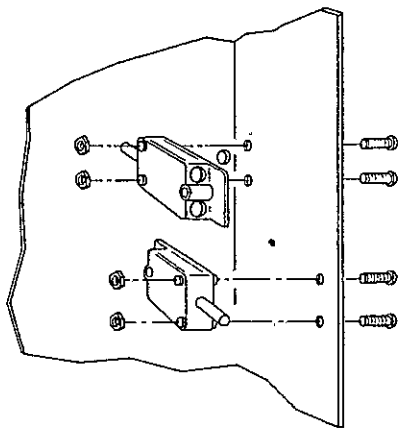
catalog number	description
CS-260	**TAMPER MODULE** Aritech high security tamper module for the CS-200 control panel, and the CS-210 and CS-215 remote arming stations.
CS-261	**TAMPER SWITCH/BRACKET ASSEMBLY** Aritech closed circuit tamper assembly for CS-210 and CS-215 remote arming stations.
ST-120	**TAMPER SWITCH** Aritech plunger-type closed circuit switch for the CS-200 control panel.

12.2 Installing the Tamper Protection Devices

Note: Before installing any module be certain that both the transformer and standby battery are disconnected from the CS-200.

The CS-260 module attaches to the rear of the CS-200 control panel cabinet using the double sided tape supplied with each module. Choose a location that will not interfere with the placement of the standby battery.

Two locations are provided for mounting the ST-120 tamper switches, one for the cabinet door tamper, one for the rear tamper. Special holes for these are located at the left side of the cabinet below the printed circuit board (see illustration). Connect circuit wiring to switches before mounting. Two nuts and two screws (not supplied) are needed for mounting. Be certain that the plunger part of the rear tamper extends through the hole provided in the rear of the cabinet.



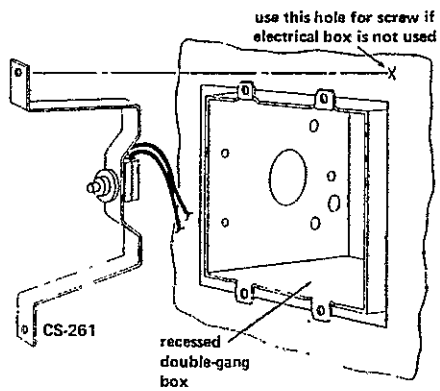
The CS-261 switch/bracket assembly is installed at the remote in either of the following ways.

If a double-gang box is used:

1. Insert the switch/bracket assembly into the electrical box and slide to the far left. Do not use the mounting tabs on the back box to attach the assembly.
2. Install the remote. The back of the unit's printed circuit board will push in the switch closing the contact. When installed correctly, the plunger switch on the bracket assembly will not come in contact with any of the components on the pc card.

If a double-gang box is not used:

1. After making the appropriate hole in the mounting wall for the remote, insert the switch/bracket assembly to the left side of the hole.
2. Insert screws through the two holes in the bracket and tighten to the wall (use anchors or toggles if the screws do not secure properly).
3. Install remote. When installed correctly, the plunger switch on the bracket assembly will not come in contact with any of the components on the pc card.



12.3 Wiring The Tamper Protection Devices

The instructions below explain how to wire CS-261 and ST-120 tamper switches through the CS-260 tamper module. When tamper switches are used without a CS-260 module, consult individual installation instructions provided with the tamper switches.

Operating Power
The CS-260 module requires 12 VDC for operation. Connect the black lead from the module to positive (+) 12 volts (terminal 27 of the CS-200 control panel). Connect the white/black lead to negative (-) (terminal 26 of the CS-200 control panel).

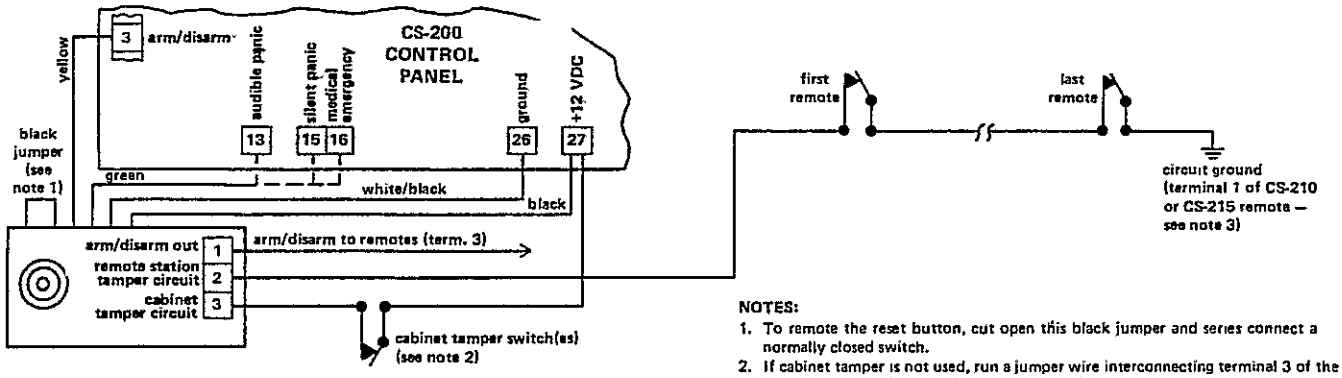
CS-200 Circuit Trip
Connect the green lead from the module to the alarm input terminal of the appropriate CS-200 panic circuit. The panic circuits are designated as follows: audible panic (terminal 13), silent panic (terminal 15), and medical emergency (terminal 16).

NOTE: When the CS-260 tamper module is connected to a loop, no other input can be connected to that loop.

Cabinet Tamper Circuit for CS-200 Control
Connect one side of the circuit to terminal 3 of the tamper module. Connect the other side to terminal 27 of the CS-200 control panel. If two switches are used—one to tamper the cabinet door, one to tamper the back of the cabinet—be certain to series connect the two switches. If it is not necessary to protect the control against tamper, install a jumper wire between terminal 3 of the tamper module and terminal 27 of the CS-200 control.

Tamper Circuit for the Remote Arming Stations
Connect one side of the circuit to terminal 2 of the CS-260 tamper module. Connect in series the closed circuit tamper switches, ending the circuit at ground (present at terminal 1 of each CS-210 and/or CS-215 remote arming station). If it is not necessary to tamper the remote arming stations, install a jumper wire between terminal 2 of the tamper module and terminal 26 of the CS-200 control.

Disarm Disable Circuit
Connect the yellow lead from the CS-260 tamper module to terminal 3 of the CS-200 control panel. Connect the arm/disarm line going out to the remote arming stations (which goes to terminal 3 on the CS-210 and/or CS-215 remote arming stations) to terminal 1 of the CS-260 tamper module.



NOTES:
1. To remote the reset button, cut open this black jumper and series connect a normally closed switch.
2. If cabinet tamper is not used, run a jumper wire interconnecting terminal 3 of the module with terminal 27 of the control panel.
3. If remote tampers are not used, run a jumper wire interconnecting terminal 2 of the module with a circuit ground terminal on the control panel.

12.4 Operating the Tamper Module

Tamper Alarm Condition
The CS-260 module becomes activiated when an open occurs in one of the two closed tamper circuits. Once activated, the module latches into the tamper condition. In a tamper condition, the module trips the appropriate CS-200 panic circuit (depending upon which CS-200 terminal the green lead off the module is connected to) and, if the tamper condition is caused by an open in the tamper circuit for the remote arming stations, disables the arm/disarm leg to the arming stations. If the tamper condition is caused by an open in the control cabinet circuit, the disarm leg will not be disabled. This will enable resetting of the tamper condition.

Resetting a Tamper Alarm Condition
If a tamper condition occurs, follow the steps below to reset the CS-260 module and the CS-200 control panel.

1. Restore the tampered component to its normal condition. If this is not possible (for example, due to excessive damage to the device), disconnect the appropriate tamper switch.
2. Open the CS-200 control cabinet and press the black reset button on the CS-200 tamper module (see note below).
3. Close the CS-200 cabinet and lock.
4. Go to a remote arming station, enter the four digit code. The alarm condition should reset. If not, repeat procedure.

NOTE: If a tamper alarm is caused by an open in the cabinet tamper circuit, it is not necessary to press the reset button in order to reset the system.

13.0 USER TRAINING

In order to avoid false alarms, the installer or some other agent of the alarm installing company must thoroughly instruct the user how to operate the alarm system. Included in the box with the CS-200 control panel is an easy-to-use owner's manual (bulletin 3211-IN). This manual contains step by step instructions that will help the user understand how to operate the system. It is recommended that the installers give this manual to the end user to read at the *beginning* of the installation, in order that the user may become familiar with the system prior to the operating instructions.

14.0 WARRANTY STATEMENT

ARITECH manufactured equipment and ADVISOR motion detection equipment are warranted to be free from defects in material and workmanship for a period of eighteen (18) months from the date of manufacture as indicated by the date stamp and/or serial number on the product. Defective units returned by the buyer at his own expense during this period will be repaired (or replaced at the option of the manufacturer with an equivalent piece of re-manufactured and tested equipment). The repaired or replaced equipment is then warranted for the balance of the initial warranty period or for ninety (90) days, whichever is longer. The repair or replacement will be without charge provided that the equipment has not been subjected to electrical or physical misuse or to unauthorized repair or modification. Repair or replacement that does not qualify for free warranty service will be charged at the service rates then in effect ($10.00 minimum). THE FOREGOING WARRANTY IS IN LIEU OF ALL OTHER WARRANTIES, EXPRESS OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, ANY IMPLIED WARRANTIES OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE. THE PURCHASER'S EXCLUSIVE REMEDY WITH RESPECT TO ANY AND ALL LOSSES OR DAMAGES RESULTING FROM ANY CAUSE WHATSOEVER, SHALL BE REPAIRED OR REPLACEMENT AS SPECIFIED ABOVE. MANUFACTURER SHALL IN NO EVENT BE LIABLE FOR ANY CONSEQUENTIAL OR INCIDENTAL DAMAGES, HOWEVER OCCASIONED, WHETHER BY NEGLIGENCE OR OTHERWISE. NO SUIT OR ACTION SHALL BE BROUGHT AGAINST MANUFACTURER MORE THAN ONE (1) YEAR AFTER THE ACCRUAL OF THE CAUSE OF ACTION THEREFOR.

If this sale is made for household or family purposes, your limited warranty is as follows:

"THE ABOVE WARRANTY IS IN LIEU OF ALL OTHER EXPRESS WARRANTIES. ANY IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE LIMITED IN DURATION TO A PERIOD OF EIGHTEEN (18) MONTHS FROM THE DATE OF MANUFACTURE. UNDER NO CIRCUMSTANCES SHALL THE MANUFACTURER BE LIABLE TO THE PURCHASER OR ANY OTHER PERSON FOR INCIDENTAL OR CONSEQUENTIAL DAMAGES OF ANY NATURE, INCLUDING WITHOUT LIMITATION DAMAGES FOR PERSONAL INJURY OR DAMAGES TO PROPERTY, AND HOWEVER OCCASIONED, WHETHER ALLEGED AS RESULTING FROM BREACH OF WARRANTY BY MANUFACTURER, THE NEGLIGENCE OF MANUFACTURER OR OTHERWISE. MANUFACTURER'S LIABILITY WILL IN NO EVENT EXCEED THE PURCHASE PRICE OF THE PRODUCT. SOME STATES DO NOT ALLOW LIMITATIONS ON HOW LONG AN IMPLIED WARRANTY LASTS, OR THE EXCLUSION OR LIMITATION OF INCIDENTAL OR CONSEQUENTIAL DAMAGES, SO THE ABOVE LIMITATIONS AND EXCLUSION MAY NOT APPLY TO YOU. UNLESS A LONGER PERIOD IS REQUIRED BY APPLICABLE LAW, ANY ACTION AGAINST MANUFACTURER IN CONNECTION WITH THIS EQUIPMENT MUST BE COMMENCED WITHIN ONE YEAR AFTER THE CAUSE OF ACTION HAS ACCRUED.

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