



CYPHER LOCK® INSTALLATION INSTRUCTIONS - MODEL S100

This literature covers typical installations of the CYPHER LOCK Model S100. For special applications please contact factory.

These instructions are divided into three parts, the first covering the preparation of the door so that it can be most easily controlled by the CYPHER LOCK. The second section describes the physical installation and the third part describes the control box wiring.

**NOTE:** IN ORDER TO SAVE YOU TIME AND SIMPLIFY THE INSTALLATION OF YOUR CYPHER LOCK, IT IS ADVISABLE TO CONNECT THE PUSHBUTTON PANEL AND THE ELECTRIC STRIKE TO THE CONTROL BOX BEFORE INSTALLING THESE COMPONENTS IN YOUR FACILITY. THIS WILL PROVIDE A SIMPLE PRELIMINARY WORKING SYSTEM WHICH REQUIRES JUST A FEW MINUTES OF YOUR TIME PRIOR TO PERMANENT INSTALLATION.



**1. DOOR PREPARATION**

**1.1 Lock Set**

The means of locking the door must permit the door to be locked from the outside while allowing exit from the inside in case of fire. A lockset for typical electric strike application should be used. The lockset must be the type with a fixed or rigid outside knob. The inside knob should turn freely to allow egress through the door. The type of lock with a turn or pushbutton to lock or unlock the outside knob is not usually recommended. A key cylinder on the outside may be included if desired. This type of lock is made by many manufacturers in several different quality levels. Consult your locksmith or architectural hardware consultant for assistance in selecting the proper lockset.

**1.2 The Electric Door Strike**

Any low voltage DC door opener or latch release may be used. It is not necessary to use a transformer since the CYPHER LOCK supplies the output voltage. The CYPHER LOCK Model S100 may be ordered with either 6, 12 or 24 volt DC output. The output voltage and maximum current draw is shown below:

6 Volt DC	2 AMPS	NOTE: The output circuit will deliver an initial booster surge of current to energize the Electric Door Strike.
12 Volt DC	1 AMP	
24 Volt DC	0.5 AMPS	

Optional outputs are available to operate other voltages. The electric strike should be mortised into the door frame to replace the standard strike. For double doors, the electric strike is mortised into the inactive leaf and a flexible connection or electric hinge is used to transfer power from the frame to the door. A surface mounted type of electric door strike is also available where recessing is impractical or simple installation is desired.

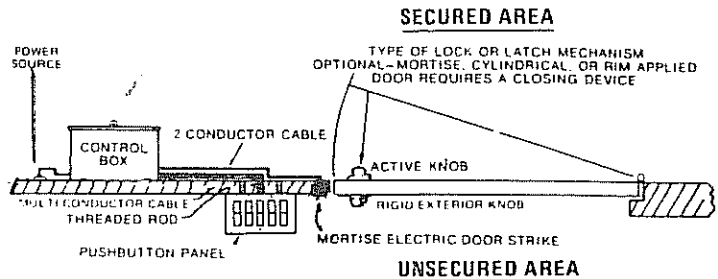
Electric strikes are manufactured in a wide range of styles to work with most locksets and a wide range of quality levels. A data sheet detailing several types of strikes is included with these instructions. Electric strikes are in stock and available from Continental Instruments Corporation for immediate delivery.

**1.3 Other Type of Installation**

While most common installations consist of a lock and electric strike, other applications are available. CYPHER LOCK can be used on doors equipped with many types of locking devices such as panic exit devices or electric solenoid deadbolts. CYPHER LOCK can also be used to control overhead door operators, gate operators, machinery, activate alarm systems and many others. Contact the factory or the local representative for assistance.

**2. CYPHER LOCK INSTALLATION**

Installation of the unit requires simply mounting the pushbutton panel to the exterior wall with the use of threaded rod supplied (see drawing). Then run the wires (supplied) to the various parts as per drawing. CYPHER's voltage output will operate an electric door strike (6, 12 or 24 Volt DC). Other input and output voltages are available upon request. Plug the power cord into a standard "U" ground outlet for 115 Volt AC, (unless ordered with 220 Volt input).



## 2.1 Locations

The pushbutton panel may be mounted on the exterior wall (outside the secured area) either to the right or left of the door about 4 feet above the floor. The control box may be mounted or placed anywhere in the secured area. If an electric strike is used, the control box may be mounted to the right or left of the door, but wiring will be simplified if both the pushbutton panel and the control box are on the same side of the door frame as the electric strike.

## 2.2 Mounting the Pushbutton Panel

Hold the pushbutton panel template against the wall where it will be mounted and mark the location of the cable hole (3/4" dia.) and the threaded attaching rods (1/4" dia.). Drill a 3/4" hole for the cable and 1/4" holes for the threaded attaching rods. Thread the rods into the pushbutton panel (not more than 6 turns!). Push the threaded rods and multiconductor cable through the appropriate holes in the wall so that the pushbutton panel sits flush to the wall. On the other side of the wall (protected area), slide the washers onto the threaded rods and screw on the hex nuts. Any excess rod may now be cut off. If desired, an excess of 1/8" thread may be left beyond the hex nuts in order to allow the acorn nut enough thread to be screwed on. ~~The assembly of the acorn nut supplied will~~ enhance the appearance of the installation.

Now run the cable to where the control box is to be mounted (preferably snaked inside the wall or through conduit). Conduit must be a minimum of 7/8" inside diameter.

## 2.3 Mounting the Control Box

Hold the control box template against the wall and mark the location of the four mounting holes. Drill holes and mount the control box with four screws. Molly bolts (maximum #10 screw size) may be required for some types of wall construction.

## 2.4 Wiring Instructions

Wiring the terminal strip after opening the hinged door of the control box: Shown in the following drawing is all the possible CYPHER LOCK Model S100 options and wiring combinations.

### WIRING THE TERMINAL STRIP

Terminals #1 through #4 are alarm bypass contacts. They will allow for bypassing a 2,3 or 4 wire alarm system for the duration of the "door open" time. Thus used, CYPHER LOCK can act as a local shunt lock in a perimeter system that automatically resets after entry. See the drawing shown on Page #3 for details.

Terminals #5, #6 and #7 are access indicating contacts. These form "C" dry contacts will change state for the duration of the "door open" time.

Terminals #8, #9 and #10 are not connected.

Terminals #11, #12 and #13 are error indicating contacts. These form "C" dry contacts will change state whenever the number of consecutive wrong codes entered in the pushbutton panel corresponds to the setting on the control panel.

Terminals #14, #15 and #16 are Holdup or Duress indicating contacts. These form "C" dry contacts will change state whenever the alternate duress code is entered.

Terminals #17 and #18 are not connected.

Terminals #19 and #20 are for activating the Option A6 Annunciator System. If this option was ordered at time of manufacture, shorting these two terminals together will cause the annunciator to sound. Two black wires from the pushbutton panel harness are connected to these terminals. See Paragraph 4.2 for details.

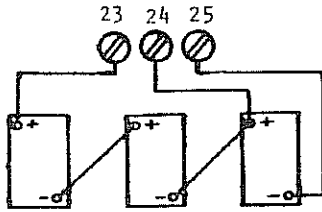
Terminals #21 and #22 are used for powering the annunciator buzzer (Option A6). If ordered with this option, the buzzer has been factory installed and wired (Terminal #21 is "+" and Terminal #22 is "-").

Terminals #23, #24 and #25 have been connected to the gel type batteries. A trickle charge automatically recharges these gel type batteries during normal primary AC operation. When AC power fails, Model S100 converts to battery power until AC power is restored. Unless otherwise specified at time of order, this unit has been wired for 24 Volt DC output (in both the AC and emergency battery standby mode). Do not attempt to change the battery wiring. Make sure the electric door strike is designed to operate at the same voltage as the output from the CYPHER LOCK Model S100.

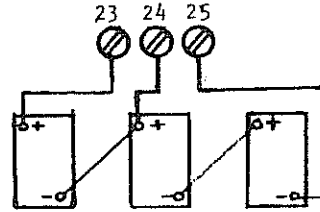
### 3. BATTERIES

NOTE: All batteries shown are rechargeable gel type with a rating of 1.2 Amp Hours (6VDC).

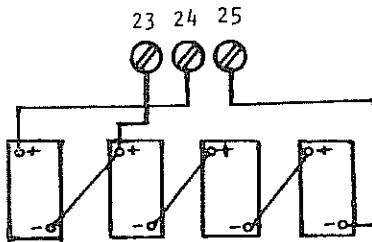
DETAILED WIRING INSTRUCTIONS FOR 6VDC EMERGENCY BATTERY STANDBY



DETAILED WIRING INSTRUCTIONS FOR 12VDC EMERGENCY BATTERY STANDBY



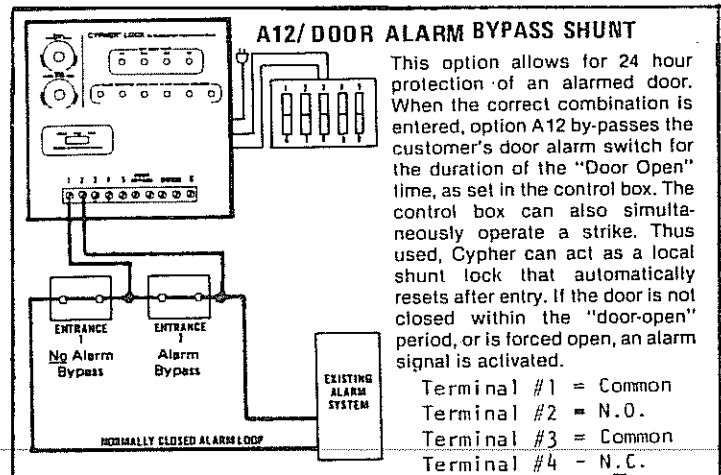
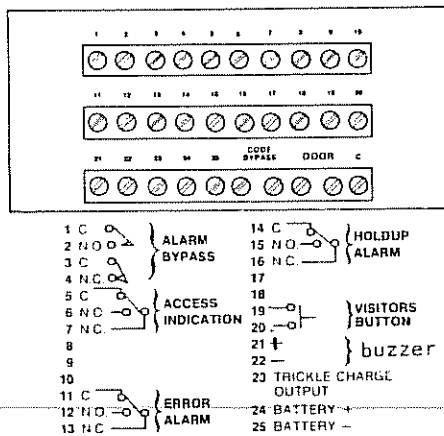
DETAILED WIRING INSTRUCTIONS FOR 24VDC EMERGENCY BATTERY STANDBY



CAUTION: CYPHER LOCK with emergency battery standby cannot be changed from the voltage set at the factory! Do not attempt to re-wire or change the battery wiring.

PRETEST: Black (and/or Red) wire from battery pack may be momentarily connected for pretest. Permanent connection should be made upon connection of unit to AC power to prevent undue drain or possible damage to batteries. Connect black wire to Terminal #25 (and Red wire to Terminal #24).

WIRING DIAGRAM FOR MODEL S100:



### 4. MULTI-CONDUCTOR CABLE (PUSHBUTTON PANEL HARNESS)

Slide the black rubber grommet on the multi-conductor cable into the slot in the lower right hand corner of the control box so that the plugs are facing into the control box.

- 4.1 Connect the white wire with the forked lead to the terminal marked "C." This is the ground or common lead.
- 4.2 If Option A6 (Annunciator System) has been ordered, find and connect the two black wires with the folk leads to Terminals #19 and #20.
- 4.3 "Code Bypass" enables personnel inside the secured area to release the electric door strike without entering the pushbutton code. Wire Terminals marked "Code Bypass" to a normally open switch (door bell type).
- 4.4 Code setting and changing. Four of the ten numbered plugs are selected to make up the access combination and are plugged into the upper row of sockets marked 1st, 2nd, 3rd and 4th. (Example: Plug #5 in the first socket, #4 in the second socket, #2 in the third socket and #1 in the fourth socket. The sequential combination is now 5-4-2-1.) The remaining six plugs are then plugged in the lower row of sockets marked "Penalty Buttons." By reading the plug numbers from left to right in the top row, one can see which combination has been set.

- 4.5 Setting the Duress of Holdup alarm. One of the sockets in the control box faceplate is red. The alternate last digit for the Holdup code is set here. By pressing the first combination (example: 5-4-2-1), the door unlocks and normal entry is made. If the #0 wire is inserted into the red socket (example: 5-4-2-0), the door will also unlock, but simultaneously the form "C" dry contacts will be activated. These dry contacts will change state when the alternate or duress code is entered. These contacts are tied into the variable door open time circuit and will only latch in (or hold) for the length of the "door open" time. Terminal contacts #14, #15 and #16 are Common, N.O. and N.C., respectively.

## 5. WIRING THE ELECTRIC DOOR STRIKE

Connect 18 gauge (or heavier) two conductor wire from the electric door strike to the two terminals marked "Door" on the terminal strip in the control box. Prior to energizing the electric door strike by entering the correct combination or using the Code Bypass feature, check to make sure that the CYPHER LOCK variable output voltage is correctly matched to the voltage requirements of the electric door strike.

- 5.1 Output Voltage. The CYPHER LOCK Model S100 output voltage was set for either 6, 12 or 24 Volts DC. MAKE SURE THAT THE VOLTAGE OUTPUT OF THE CYPHER LOCK MODEL S100 IS COMPATIBLE WITH THE ELECTRIC DOOR STRIKE YOU ARE USING.

## 6. ADJUSTING TIMING CONTROLS

- 6.1 Time Penalty. This knob control adjusts the length of time the control box will shut down whenever an incorrect number is entered into the pushbutton panel. The time penalty is adjustable from between 0 (turn counterclockwise) and 60 seconds (turn clockwise). This direction is marked in the control box with "S" (Shorter) and "L" (Longer).
- 6.2 Variable Door Open Time. The output voltage (from the two terminals marked "Door") is adjustable from 0 (turn counterclockwise) to 14 seconds (turn clockwise). For maximum security, this time should be set as short as possible.

## 7. SETTING THE ERROR ALARM

There is an error alarm switch on the faceplate of the control box which allows the setting of none, one error or two errors. Error indicating contacts are activated whenever the number of consecutive wrong codes entered at the pushbutton panel corresponds to the setting on the control panel (i.e., none, one or two). Terminal contacts #11, #12 and #13 are used for this purpose (Common, N.O. and N.C., respectively). Resetting of the error contacts can only be achieved by pressing the code bypass switch or entering the correct combination.

## 8. TROUBLE SHOOTING

- 8.1 Trouble shooting the pushbutton panel. Clip one lead of an ohmmeter or continuity checking instrument to the ground or common lead and the other lead to plug #1. Depress the #1 rocker switch on the pushbutton panel. There should be continuity between the common and plug #1. Repeat the procedure with the remaining 9 plugs. There should be continuity measured between common and all plugs from 0 to 9. Now, repeat the entire procedure, but do not depress the rocker switches. There should be no continuity between common and any of the plugs. If these procedures check out, the pushbutton panel is operating properly.

### 8.2 Trouble shooting the control box.

- 8.2.1 Input voltage. Are you sure there is 120 volt, 50/60 Hz input voltage at the wall receptable? Frequently in new construction the circuit breakers have not been turned on.
- 8.2.2 Code Bypass. Short the terminals marked "Code Bypass" together with a screwdriver. The electric door strike should open. If the electric door strike does not open, use a voltmeter on "Door" Terminals to determine if output voltage is present and compatible with electric strike when Terminals marked "Code Bypass" are shorted. If output voltage is present, check the electric strike for proper operation.

NOTE: Voltage read with a voltmeter with no load will be higher than the nominal 6V, 12V or 24V.

## 9. GUARANTEE

CYPHER LOCK is guaranteed for one year from date of shipment. Removing the rivets and opening the control box or pushbutton panel voids this guarantee. If you are experiencing any problems with the equipment, call the distributor or the factory. Do not attempt to open or repair either the control box or pushbutton panel.