390/390-2 DEL
MAGNETIC LOCKING SYSTEM
INSTALLATION AND PROGRAMMING

SCHLAGE

390DEL
DELAYED EGRESS
MAGNETIC LOCKING SYSTEM

PLEASE READ ALL INSTRUCTIONS PRIOR TO INSTALLING THE ELECTROMAGNETIC LOCK.

**HANDLE THE EQUIPMENT CAREFULLY, DAMAGING THE MATING SURFACES OF THE
ELECTROMAGNET OR THE ARMATURE MAY REDUCE LOCKING EFFICIENCY.**

IMPORTANT! Manual is intended to be kept for programming, maintenance, and troubleshooting purposes. *Retain manual after installation.* Present manual to facility manager upon completing installation.

Customer Service	
1-877-671-7011	www.allegion.com/us

ALLEGION

GENERAL DESCRIPTION: The electromagnet mounts rigidly to the door frame header. The armature mounts to the door. The armature is designed to pivot about its center compensating for door misalignment. When the door is closed the energized magnet will bond with the armature, providing auxiliary locking force. If the opening is fire rated, the door must be secured positively with a mechanical latching device, in addition to the magnetic lock, in accordance with local authority having jurisdiction. Locknetics manufactures fire rated mechanical latching devices. The electronically controlled 390 DEL and 390-2 DEL series magnetic locks described in this manual share the same access control circuitry. With optional access control input devices (Locknetics keypads or iButton readers) the locks can hold up to 150 codes or iButtons standard for access, toggle, lockout, or special functions. Dry contact inputs allow for fire alarm tie in and remote release/reset capabilities. This manual covers the mechanical installation, wiring, and manual programming aspects of the locks. For computer programming, see information provided with the software package you will be using.

THIS MANUAL COVERS THE 390 DEL AND 390-2 DEL, DELAYED EGRESS MAGNETS:
Delayed egress is initiated by a "plunger" switch which is actuated by a spring-loaded armature plate. By setting dip-switches, an auxiliary switch, such as an exit device or pushbutton, can be used as well. (See dipswitch/terminal layout on page 9.) The nuisance delay can be set from 0-3 seconds in the standard unit (fixed at 1 second in the BOCA unit). The delay time is generally fixed at 15 seconds, but, with approval of the local authority having jurisdiction, can be set to 30 seconds in the standard unit.

DESCRIPTION OF OPTIONS:
DSM: Door Status Monitor will provide status of door with or without power applied.
MBS: Magnetic Bond Sensor will provide status of lock (locked or unlocked) with or without power applied.
SEC: Security Alarm will close alarm relay contacts if the door is forced open or after it is propped open for a selectable time period. (See page12). Anti tailgate is also in effect: the door will relock as soon as it closes, even if the relock time delay has not yet transpired.
BOCA: Some areas adhere to this life safety code for delayed egress. The nuisance delay is fixed at one second and the delayed egress time at 15 seconds. After delayed egress has been initiated and the door opened, the alarm will automatically reset after 30 seconds and the door will relock. If the door is opened within the 30 seconds the timer will begin again.
ATR: Audit Trail Retrieval uses computer programming and interrogation of the lock to store and retrieve the past 100 events such as access, alarm, and reset functions and the time that they occur.

TECHNICAL SPECIFICATIONS:
Dual Voltage: 12 or 24 volts AC or DC (Automatic Voltage Selection)

Max. Current: 0.8 Amps @ 12 Volts (DC) 1.5 Amps @ 12Volts (AC)
0.5 Amps @ 24 Volts (DC) 1.0 Amps @ 24Volts (AC)
Outputs:

Alarm:	**(standard)**	N.O.	1.0 Amp resistive load at 30V
DSM:	**(optional)**	SPDT	200 mA @ 12V, 100mA @ 24V
MBS:	**(optional)**	SPDT	1.0 Amp resistive load at 30V

Audible: 91 dB @ 2 feet
**Mechanical Holding Force:** 1650 pounds
1500 pounds

UL listings:
SA8954 Special Locking Arrangements
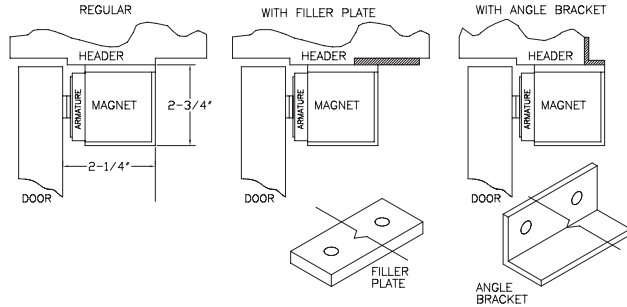R12092 Auxiliary Locks

PRE-INSTALLATION CONSIDERATIONS

The electromagnet should be mounted as near to the frame strike jamb as possible to provide maximum holding force. Visually check the mounting location to assure that the unit will mount without interference.

LHR

RHR

FRAME STRIKE JAM
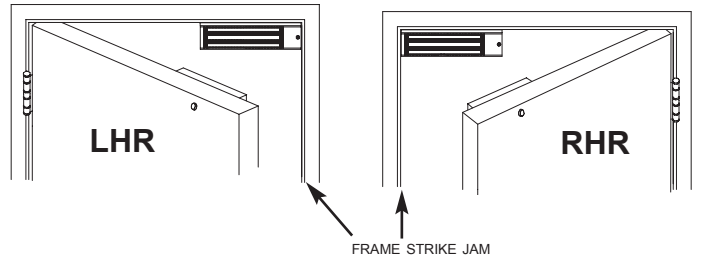
Frame conditions may require the use of filler plates and/or angle brackets. These items are available from Locknetics.

REGULAR   WITH FILLER PLATE   WITH ANGLE BRACKET

HEADER   HEADER   HEADER

ARMATURE   MAGNET   2-3/4"   ARMATURE   MAGNET   ARMATURE   MAGNET

2-1/4"

DOOR   DOOR   DOOR

FILLER PLATE

ANGLE BRACKET

When mounting two locks on one opening with or without a mullion, treat each installation separately. Use the template for each leaf. If the installation involves a 390-2 (master/slave magnet set) see important wiring information on pages 10 and 11.
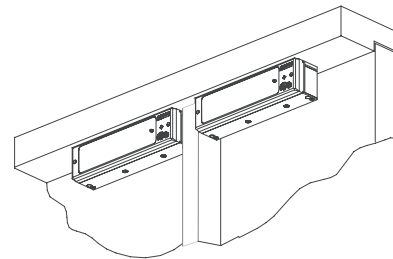
Wiring for the electromagnet must enter the top of the unit through the wire access hole drilled in the frame header (see template). Be certain provisions can be made to bring the wire through the header into the top of the unit.
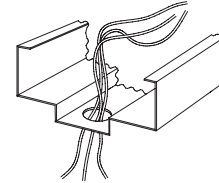
Use proper mounting screws for your door frame. For light-gauge metal door frames, self tapping screws may be used. If the door frame is heavy-gauge metal, machine screws may be necessary and the holes will have to be tapped.
Caution: It is very important to make sure that magnet is secured to the structure of the opening.

	PAN HEAD	FLAT HEAD
MACHINE SCREWS		
SELF-TAPPING SCREWS		

Armature mounting hardware is for door thickness of 1-3/4 inches. For doors thicker than 1-3/4" consult your Locknetics distributor for availability of sex nuts.

FOR SEX NUTS FOR USE ON DOORS OTHER THAN 1-3/4" CONSULT DISTRIBUTOR.
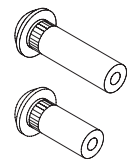
DELAYED EGRESS LOCKS: Local codes generally require the signage, provided with the product, to be posted on or near the door. Consult local authority having jurisdiction prior to any installation involving the use of delayed egress products to ensure life safety compliance.

INSTALLATION PROCEDURE

1. PREP DOOR AND FRAME:

The paper template is the preferable way to prepare the door and frame. If for any reason it is not available, use the dimensions shown below to mark the centerlines of the holes. *Note that the layout is not symmetrical with respect to the centerline of the armature.*
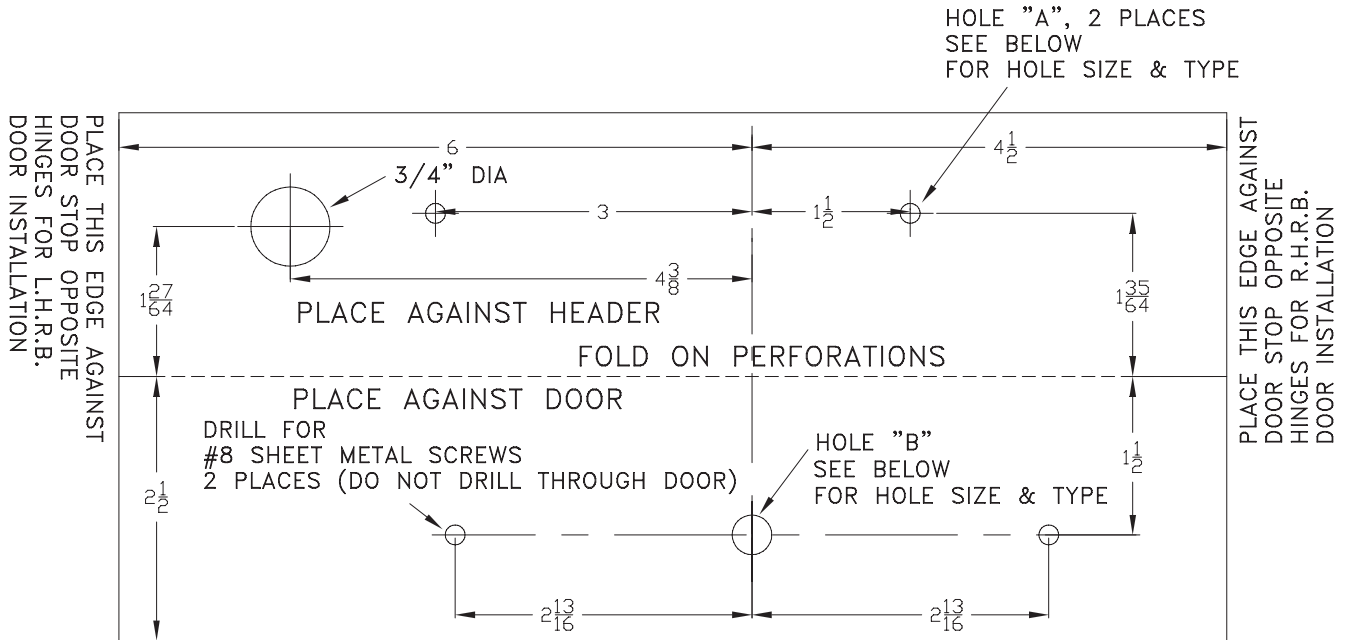
A. The door should be closed and latched. You should be at the "push" side. Locate the paper template and fold it along the perforated line with the printed sides facing each other. Place the template against the frame stop and the door. Tape template in place.

B. On the frame stop mark the location of holes "A" from the template. For heavy gauge or reinforced frames, drill and tap for #10-24 thread. For standard frames, drill 5/32" dia. for #10 self tapping screws. Locate and drill the 3/4" dia. wire hole. (The 3/4" dia. hole is oversized to the 5/8" dia. mounting plate hole to allow the full range of adjustability.)

C. On the doors, mark the locations of all holes. Drill (2) 1/4" dia. holes per template for armature holder mounting screws. Armature mounting hole "B" is determined by the door type (see below).
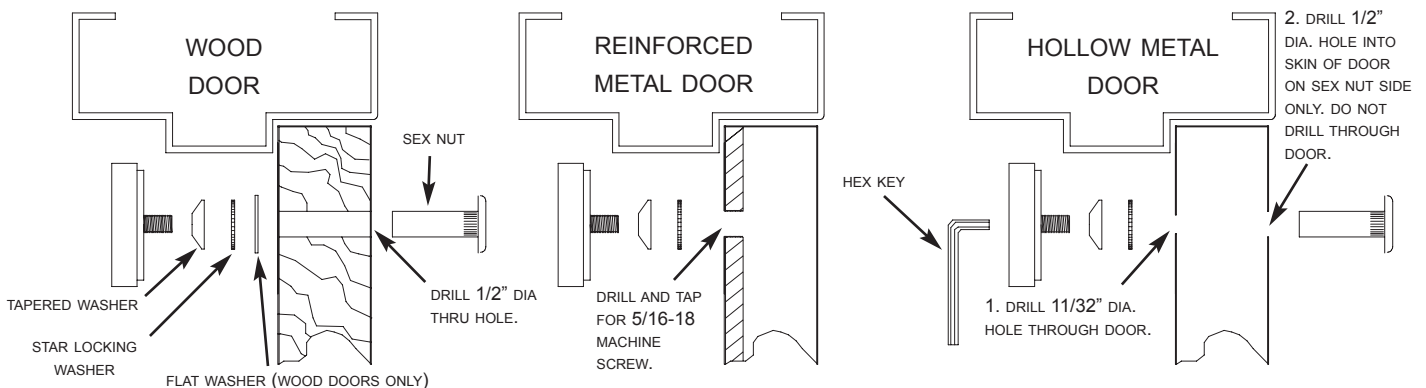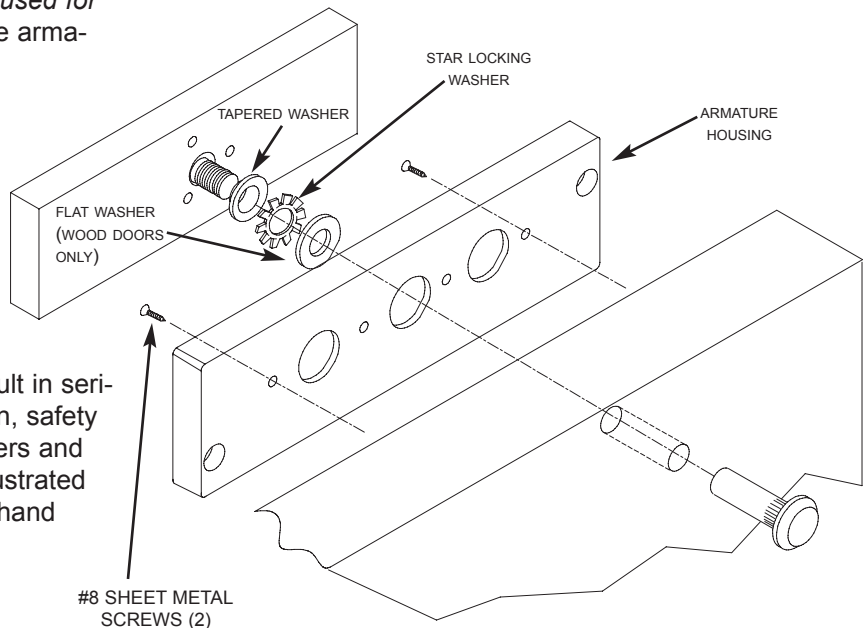
2. MOUNT ARMATURE TO DOOR

Assemble using hardware provided in the order shown. All hardware shown must be used except where noted. *Note that the* <u>tapered washer</u> *must be placed with the pointed side facing away from the door and toward the armature. It MUST be used for proper operation.* Use hex key to tighten the armature mounting bolt. For solid core and hollow metal doors, gently tap sex nut into position with a rubber mallet before mounting armature assembly. *Proper use of hardware will allow armature to pivot slightly after securely tightening the mounting screw. This is normal, and necessary to allow armature to mate properly with magnet.*

CAUTION:

Failure to secure armature to door may result in serious injury to door user. For proper operation, safety and security, sex nut / bolt assembly, washers and spacers must be assembled in the order illustrated and securely tightened 1/8 to 1/4 turn past hand tight.

STAR LOCKING WASHER

TAPERED WASHER

ARMATURE HOUSING

FLAT WASHER (WOOD DOORS ONLY)

#8 SHEET METAL SCREWS (2)

3. TEMPORARILY ATTACH MOUNTING PLATE TO HEADER

Slotted holes and counterbore should face downward. Mount to the frame using (2) #10-24 x ½" pan head machine screws, or (2) #10 x 3/4" pan head self-tapping screws, and #10 flat washers. Tighten screws just tight enough to allow shifting the plate during adjustment.

SCHLAGE
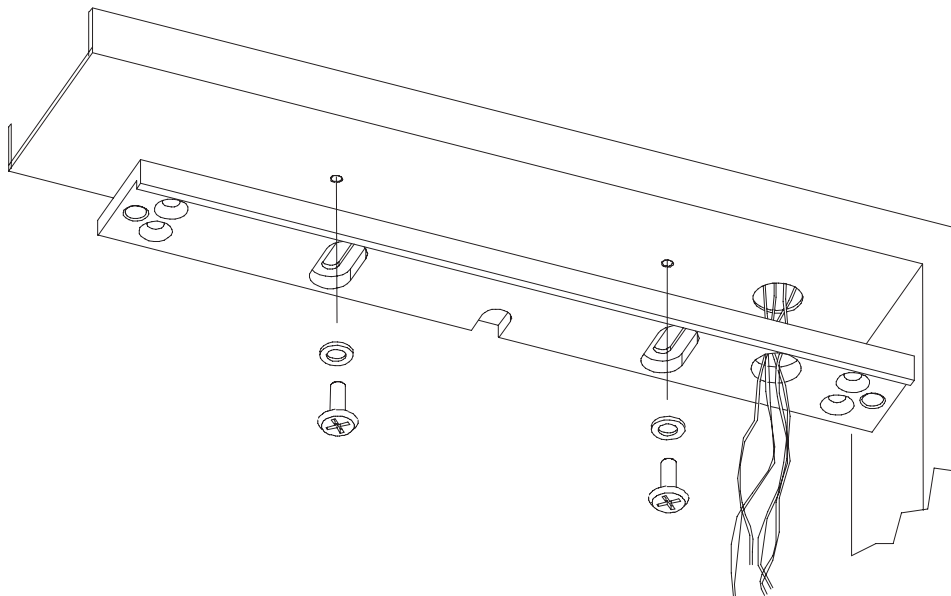
4. TEMPORARILY MOUNT TEMPLATE OR MAGNET TO MOUNTING PLATE

Using 1/4-20 flat head screws, temporarily secure the plastic or metal template to the mounting plate, carefully passing the wiring through the hole in the template.

Make sure that the hole in the template lines up with the socket cap screw in the armature.

3/16"
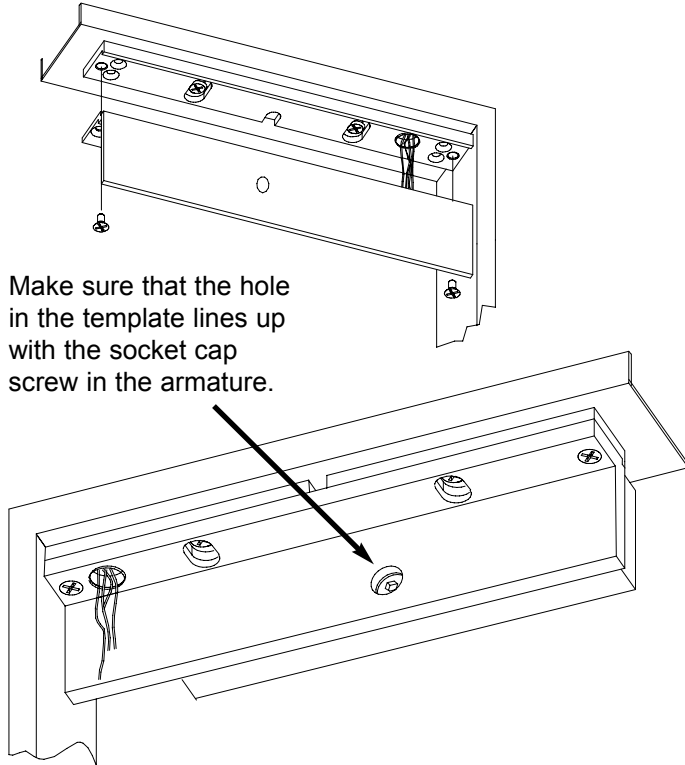
5. ALIGN MAGNET WITH ARMATURE

With door closed and latched push magnet assembly (or template) toward the armature by applying pressure on each end of the magnet until fully mated together, as shown below. Mark t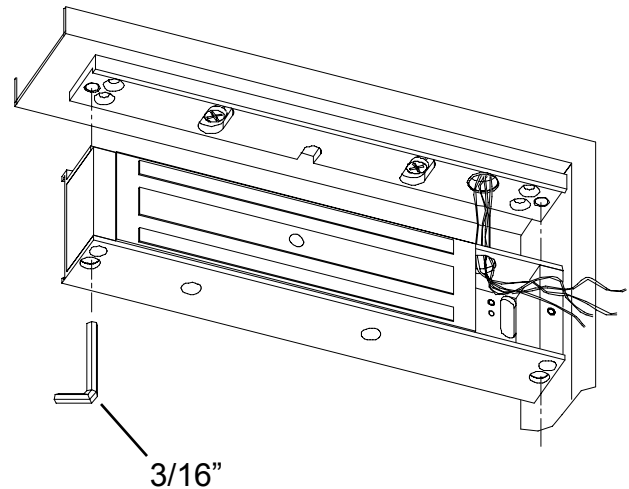he position of the mounting plate. Remove magnet from the mounting plate without moving the mounting plate. (If using template, tighten two pan head screws through holes in template before removing it.) Tighten the slotted hole screws without moving the mounting plate to assure proper alignment.

CAUTION: Do not press on the PC board while moving the magnet. This could cause damage.

NO   YES   PUSH HERE TO CLOSE GAP   GAP   NO GAP

NO   YES   PUSH HERE TO CLOSE GAP   GAP   NO GAP
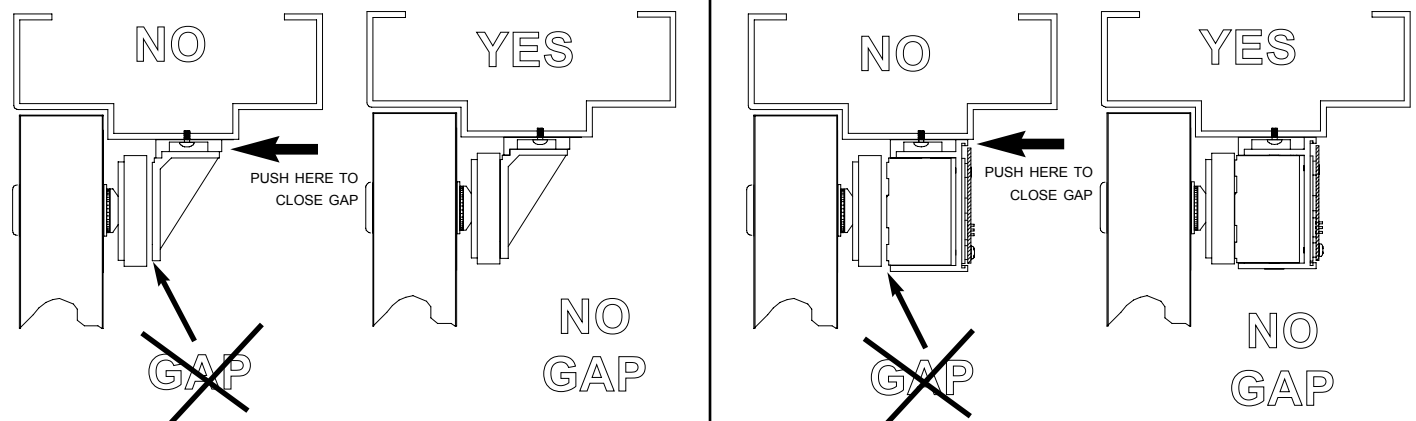
6. SECURE MOUNTING PLATE

Using the Mounting Plate as a template, drill the four remaining mounting holes.
Tighten two 10-24 self tapping pan head screws

If using #10 self-tapping, flat-head screws drill 5/32" dia. holes and drive four screws tight.

If using #10-24 flat head machine screws, drill and tap for #10-24 threads and tighten four screws.

CAUTION: It is critical that the screws used secure the mounting plate to the *structure* of the frame.
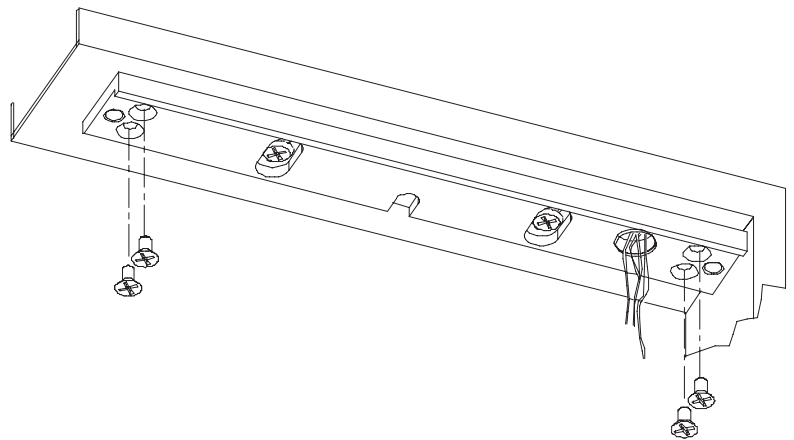
7. SECURE MAGNET TO MOUNTING PLATE

Install the electromagnet to the mounting plate by tightening the captured 1/4-20 x 2" socket head cap screws with a 3/16" hex key. Firmly tighten the screws. Pass wiring through hole in top of magnet and through access hole on circuit board side of magnet as shown below. If the unit has DSM and/or SEC and/or BOCA there will be up to two switch contacts with plug-in leads mounted on the access cover. Pass these leads through the access hole on circuit board side of magnet. Secure access cover. Drive in anti-tamper plugs using a rubber mallet.

NOTE: Double units with SEC2 or BOCA2: Do not switch covers between units. The wiring on each cover is different and doing so will cause improper operation.

ACCESS COVER

DSM/SEC/BOCA
SWITCH CONTACT
LEADS

WIRE ACCESS HOLES

CONTROL WIRING

ANTI-TAMPER PLUGS
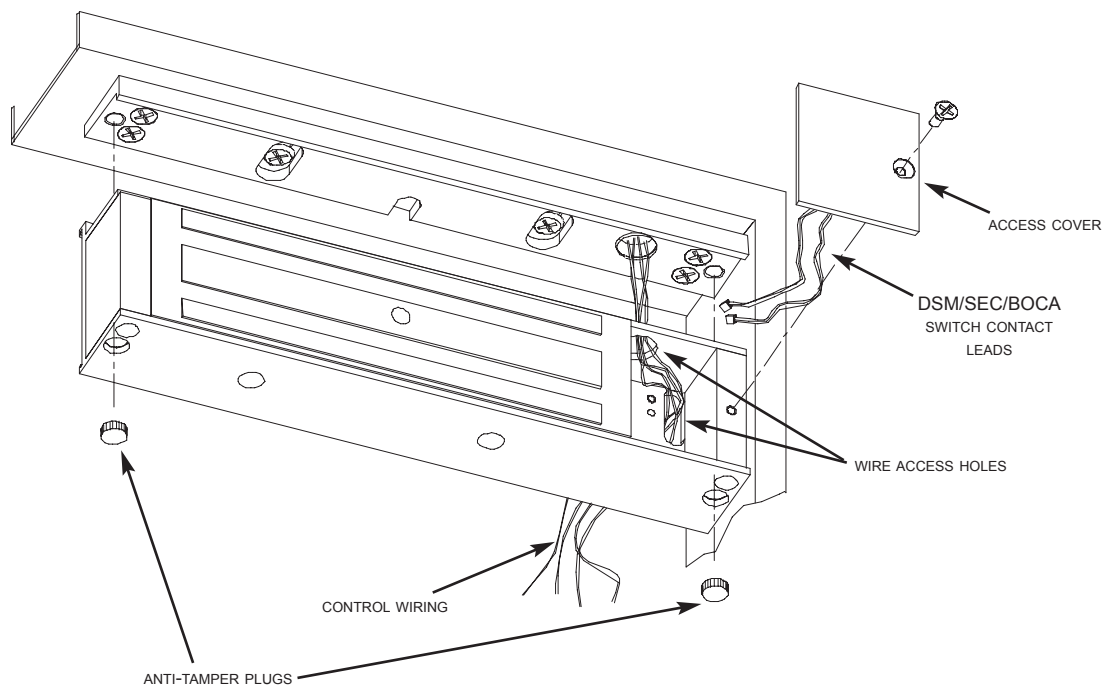
8. MAKE WIRING CONNECTIONS AND SET DIPSWITCHES

Connect wiring to main terminal strip. If furnished, connect DSM1 and DSM2 to board as shown. Note that if the unit has only the DSM option, connect the plug into the DSM1 jack. If the unit has only the SEC and/or BOCA option, connect the plug into the DSM2 jack. If the unit is to be used with a keypad (and the required 100CAB adapter cable) or a TR80 or TR81 see the programming information starting on page 10. After wiring, time delay setting, initialization and programming have been completed, secure the cover onto the lock, making sure to connect the iButton reader (DEL models). See illustration on page 15.

See next page (9)for terminal layouts and dipswitch settings. Not all terminals will be used in all cases. Note that to get the correct outputs, the correct options must have been ordered and the dipswitches set properly.

IMPORTANT: DO NOT APPLY POWER UNTIL ALL CONNECTIONS HAVE BEEN MADE AND DIPSWITCHES SET AND VERIFIED.

ATS
JUMPER SETTING SHOWN FOR SINGLE LOCK APPLICATIONS. FOR DOUBLE LOCK (DEL-2 OR ACC-2) SEE PAGE 10 FOR JUMPER SETTING.

ANTI TAMPER SWITCH

SW-3

ATR CHIP (OPTIONAL)

DELAYED EGRESS INPUT SWITCH (FACTORY ADJUSTED - DO NOT ATTEMPT TO ADJUST)

SW-2

DSM1 (DSM OPTION INPUT) NOTE THAT THE CONNECTOR WILL ONLY FIT ONE WAY.

HORN

LED

SW4 (DIP SWITCHES 1-8)

PLUG FOR IBUTTON READER ON COVER

KEYPAD/REMOTE IBUTTON READER INPUT TERMINAL (TB9)

DSM2 (SEC/BOCA OPTION INPUT) NOTE THAT THE CONNECTOR WILL ONLY FIT ONE WAY.

SCHLAGE

TERMINAL LAYOUT TB1:

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18

POWER INPUT	FIRE ALARM INPUT	AUXILIARY INPUT	C	NO	NO	C	NC	C	NC	NO	RELEASE INPUT	RESET INPUT
12/24 VOLTS AC OR DC (AUTOMATIC SELECTION) **DO NOT APPLY 120 VAC**	APPLY A NORMALLY CLOSED DRY CONTACT OR A JUMPER IF NOT CONNECTED TO FIRE ALARM	(SEE DIPSWITCH SETTINGS BELOW)	**ALARM OUTPUT** (STANDARD) CONTACTS CHANGE STATE DURING ALARM CONDITION		**DSM OUTPUT** (OPTIONAL) CONTACTS CHANGE STATE WHEN DOOR IS CLOSED.			**MBS OUTPUT** (OPTIONAL) CONTACTS CHANGE STATE WHEN MAGNET IS PROPERLY BONDED TO ITS ARMATURE. POOR BOND CAN BE CAUSED BY LOW VOLTAGE, MISALIGN-MENT OR DAMAGED MATING SURFACES.			DRY CONTACT CLOSURE WILL RELEASE LOCK FOR THE TIME DELAY PERIOD (SEE PAGE 14)	DRY CONTACT CLOSURE RESETS LOCK IN ALARM CONDITION.

DIPSWITCH SW-4 SETTINGS:

Set the dipswitches as required for your system.

SW-4

ON ⟶

1
2
3
4
5
6
7
8
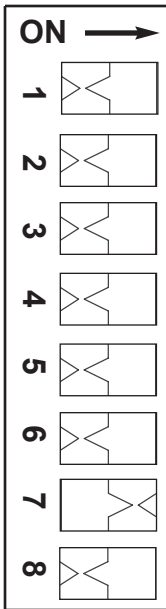
TERMINAL LAYOUT TB9:

IF YOUR SYSTEM USES A KEYPAD/READER WITH A **100CAB** ADAPTER CABLE OR A **TR80** OR **TR81,** CONNECT THE WIRES AS SHOWN. KEYPADS WILL NEED TO BE INITIALIZED. SEE KEYPAD OR iBUTTON PROGRAMMING FOR FURTHER INFORMATION.

WHITE   BLACK   RED
1   2   3

SW4-1: DELAYED EGRESS TIME:
15 SECONDS   30 SECONDS

DELAYED EGRESS INITIATION:

SW4-2:

SW4-3:

DELAYED EGRESS TRIGGERED BY PLUNGER SWITCH ONLY.	DELAYED EGRESS TRIGGERED BY PLUNGER SWITCH OR AUX. INPUT.	DELAYED EGRESS TRIGGERED BY PLUNGER SWITCH AND AUX. INPUT.	DELAYED EGRESS DIS-ABLED.

SW4-4: ANTI-TAILGATE (SEC REQUIRED)

DISABLED   ENABLED

DOOR WILL RELOCK AS SOON AS IT CLOSES - EVEN IF THE RELOCK TIME DELAY HAS NOT ENDED.

SW4-5: UNLOCK ALERT (HORN SOUNDS WHENEVER DOOR IS UNLOCKED)

DISABLED   ENABLED

POWER MUST STILL BE APPLIED TO TERMINALS 1&2. CODE/iButton, PIR, OR LEGAL RELEASE INPUT MUST BE TRIGGERED. AVAILABLE ON ALL MODELS.

SW4-6: DOOR FORCED/PROPPED ALARM (SEC REQUIRED)

DISABLED   ENABLED

FORCED: ALARM SOUNDS UNTIL RESET BY CODE/iButton OR RESET INPUT ON TERM. 17&18. **PROPPED:** AFTER PRE-SET TIME (SEE PG. 14) ALARM SOUNDS UNTIL DOOR CLOSES AGAIN.

SW4-7: AUTOMATIC RELOCK ON POWER-UP/FIRE ALARM RESET

DISABLED   ENABLED

WHEN ENABLED, LOCK WILL ENERGIZE UPON REGAINING POWER OR AFTER A FIRE ALARM CONDI-TION CLEARS. PIR MODELS WILL ALWAYS ENERGIZE.

SW4-8: NUISANCE ALERT

DISABLED   ENABLED

HORN SOUNDS DURING NUISANCE ALERT.

SCHLAGE

390-2 (DOUBLE UNIT) INSTALLATION AND WIRING INFORMATION

The electronic 390 series has the capability of operating two locks with the "brain" of one. The lock with the central processing unit is referred to as the "master" unit while the dependent one is referred to as the "slave" unit. The system can be run on 12 or 24 volts AC or DC. It does not matter which lock is on the left or right of an opening.

TO POWER SUPPLY/MONITORING STATION.

WIRING BETWEEN UNITS

DSM/SEC WIRE ACCESS COVERS

MASTER UNIT

SLAVE UNIT
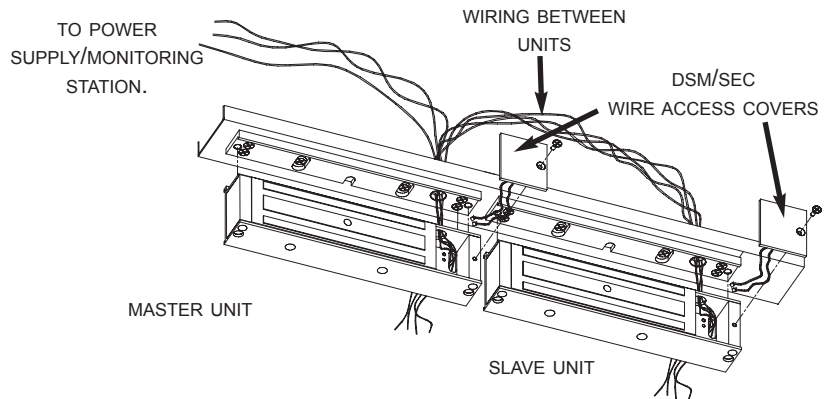
There are three, 36 inch cables furnished standard with a double unit and one which comes with the SEC or BOCA options which are intended to connect the locks, using plug-in connectors, to each other. They may be extended if necessary. If the units have SEC2 or BOCA2 options there will be a fourth cable which connects to the DSM2 cables as shown.

IBUTTON READER CONNECTION CABLE (PLUGS INTO COVERS)

NOTE: JUMPER MUST BE SET AS SHOWN FOR 390-2 MASTER UNITS.

STANDARD DOUBLE UNIT WIRING

J10 CONNECTOR (SLAVE MAGNET)

J11 CONNECTOR (SLAVE ATS/SEC)

J10 CONNECTOR (SLAVE MAGNET)

J11 CONNECTOR (SLAVE ATS/SEC)

RED & WHITE WIRES FROM DSM2 SWITCH ON COVER

RED & BLACK WIRES FROM DSM2 SWITCH ON COVER

BLACK WIRE FROM DSM2 SWITCH ON COVER

ADDITIONAL WIRING FOR SEC2/BOCA2 OPTION

WHITE WIRE FROM DSM2 SWITCH ON COVER

WHITE WIRE BETWEEN UNITS

MONITORING AND CONTROL SYSTEM WIRING INFORMATION AND EXAMPLES

Shown below are basic wiring examples for supplying power, monitoring lock, door and alarm status as well as fire alarm, auxiliary, release/reset and timer inputs. Note that most national codes require that magnetic locks become unlocked whenever a fire alarm condition exists. Consult authority having jurisdiction prior to installation to assure compliance with all local and national codes.

WIRING TRICK
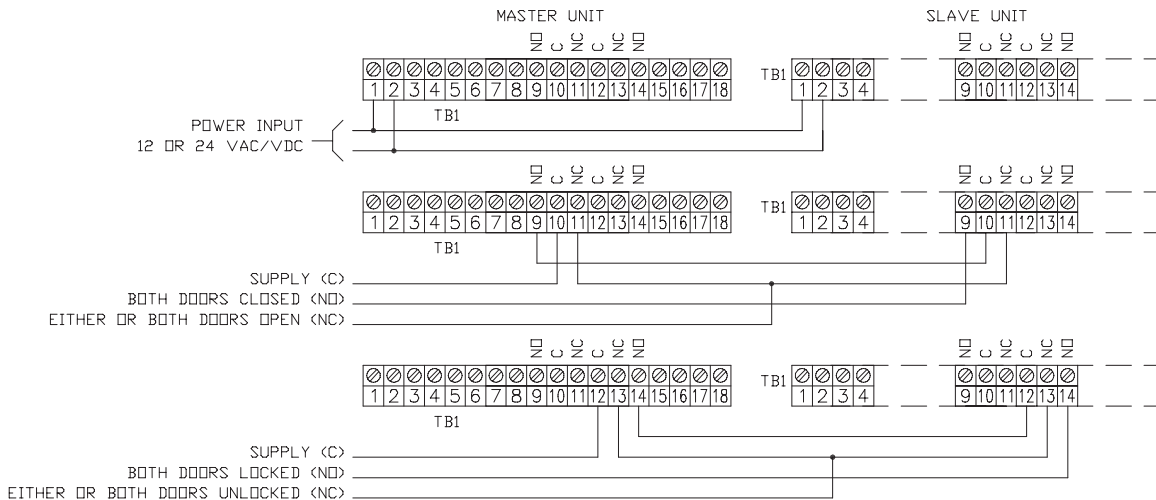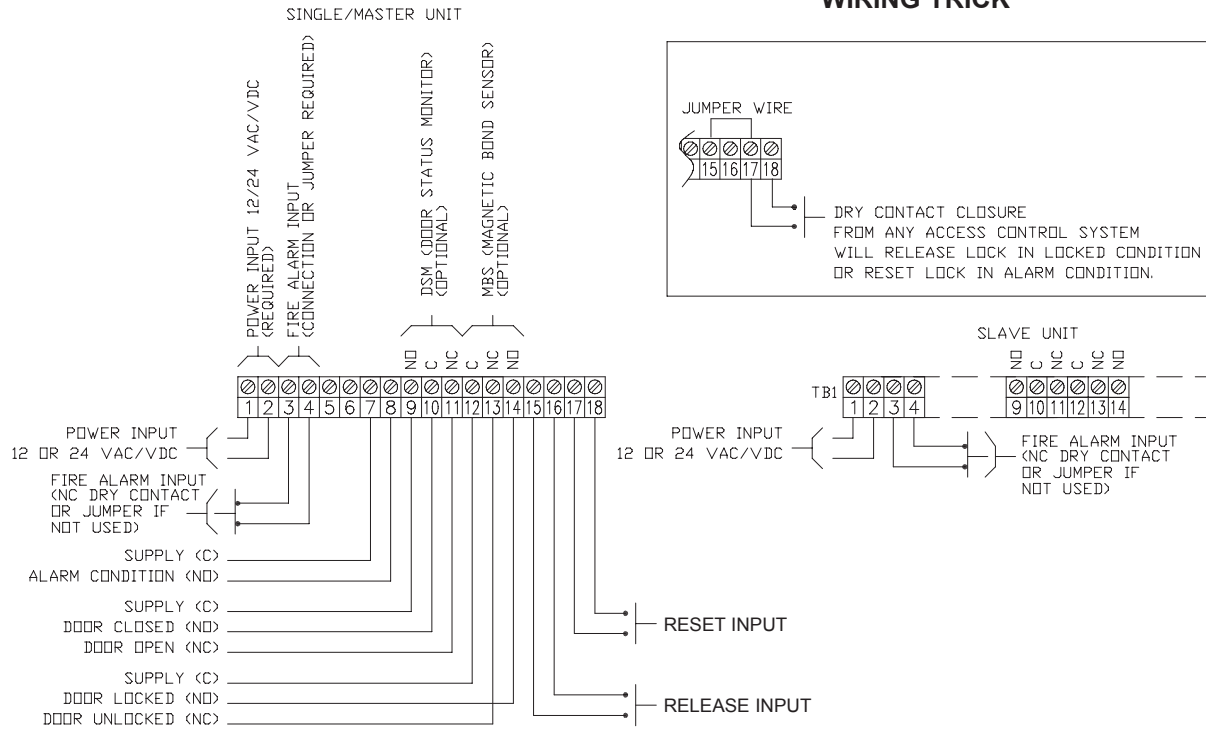
PROGRAMMING: GENERAL INFORMATION

Programming the electronic 390 model electromagnetic locking systems can be done either by computer programming or manually, using the keypad. The standard unit can have up to 150 codes and/or iButtons. Their functions can be chosen using software or by manually adding the code/iButton and function (see "DEFINITION OF CODE/IBUTTON FUNCTIONS AND FACTORY DEFAULTS" below). When manual programming, it is critical to keep a record of the people and codes/iButtons which are issued to them along with their functions and PIN numbers (for iButtons). This will enable the ability to manage the access system properly. The units come from the factory with pre-set factory default code (described below). When the lock is reset (memory erased) it will return to factory default codes and any keypad (using the 100CAB) will need to be initialized again. Initializing a master iButton, or changing the master code, or computer programming, will erase the factory default codes.

When programming with a computer, it is possible to enable or disable manual programming. If manual programming is enabled, and a code is entered manually, the Audit Trail Report will be corrupted. The time delay functions can be entered using computer programming or by buttons located on the PC board. The manual setting of time delays will still be possible even if manual programming of codes and/or iButtons is disabled via the computer.

Additional codes and iButtons can only be programmed in with a computer. They cannot be manually programmed in. The exception to this is "System 7" programming in which up to 7 iButtons can be added. With System 7 programming, the unit must have or be attached to an iButton reader, or a Locknetics keypad that has an iButton reader. The iButtons can be entered into the reader on the cover (See page 13).

DEFINITION OF CODE/TEK FUNCTIONS AND FACTORY DEFAULTS:

FACTORY DEFAULT	
MASTER 97531	Allows access to programming functions. Will not release lock.
NORMAL 13579 *ACCESS*	Unlocks lock for relock time delay. Will reset lock in alarm condition.

ONE-TIME ACCESS   No factory default. This type of code/TEK will allow access only once. It will then become deleted from memory.

SUPERVISED ACCESS   No factory default. This type of code/TEK allows access only when used with another Supervised Access Code/TEK. The second code/TEK must be entered within five seconds of the first one. The order that they are entered does not matter.

TO CREATE MASTER iButton (FOR USE WITH COMPUTER PROGRAMMING)

The master iButton is used to initialize programming (like a password to access programming mode).

    A. Set SW4 dipswitch #1 to ON (if it is off).
    B. Press and hold SW3 until two beeps are heard.
    C. Touch a iButton key to the reader within ten seconds. The lock will indicate acceptance with two beeps. This will be the Master iButton.
    D. Return SW4, #1 to its original position.

NOTES:
    1. Refer to instructions included with the programmer/software that you will use to program for more information regarding programming.
    2. The Master iButton is used for initiating programming. It will not unlock the door.

KEYPAD/100CAB INITIALIZATION (REQUIRED TO ENABLE KEYPAD TO FUNCTION)

It is necessary to initialize the keypad/100CAB any time that the memory is erased.

    A. Set SW4 dipswitch #1 to ON.
    B. Press and hold switch SW3 for two quick beeps of the audible..
    C. Push each button in order, starting with the 1-2 button, and including the *****.
          * *Wait for LEDs to stop flashing before pushing next button.*
          * *Waiting for longer than 7 seconds will terminate initialization.*
    D. After the last button is pressed, the audible will beep three times and the LEDs will flash indicating that programming has ended.
    E. Return SW4 dipswitch #1 to its original position.

"SYSTEM 7" PROGRAMMING:

This procedure will allow up to seven iButtons to be programmed into a lock equipped with an iButton reader or Locknetics keypad with an iButton reader. iButtons will be of the Normal Access type and will unlock the unit for the relock time delay. The iButtons will also reset the lock if it is in an alarm condition.

    A. Set SW4-1 to OFF (if it is on)
    B. Press and hold SW3 until you hear two beeps. Release SW3.
    C. Touch each of the iButtons to the reader. Two quick beeps will sound each time a key has been accepted.
    D. After entering up to seven iButtons wait 10 seconds for programming to end. One quick beep will indicate that programming has ended.
    E. Return SW4-1 to its original position, if required.

NOTE: Whenever new "System 7" iButtons are entered, the old ones are erased. Also, whenever computer programming is done, or memory is erased, all "System 7" iButtons are erased.

ERASE MEMORY

Memory may be erased to conveniently return to default time delay settings or if an error was made.

    A. Press and hold SW2 until a single beep is heard. Release SW2.
    B. Quickly press SW2 three times, three beeps will sound.
    C. Another 3 beeps will sound in about 10 seconds indicating the memory is erased.

NOTES:
    1. All programmed codes and iButtons will be erased. Factory default codes and time settings will be restored.
    2. Keypads w/100CAB will need to be initialized again.

SCHLAGE

SETTING TIME DELAYS MANUALLY:

AUTOMATIC RELOCK DELAY (factory default: 8 seconds)
The amount of time the lock is de-energized after release.
Programmable 1-30 seconds.

A. Set SW4 dipswitch #6 to OFF (if it is on).
B. Press and release SW2. The LED will begin flashing GREEN .
C. Thereafter, press SW3 once for each second of relock delay desired.
    (ex. 3 presses equals 3 seconds-15 presses equals 15 seconds-Up to 30 seconds)
    Each SW3 activation will cause the LED to flash RED and the horn to beep .
D. Press SW2 and the relock delay will be stored in non-volatile memory.
E. Return SW4 dipswitch #6 to its original position.

NOTES: 1. Not pressing SW3 between pressing SW2 will set the relock time delay to zero seconds. This
                   will cause the lock not to unlock with a momentary contact closure or valid code or iButton.
                2. Models with the SEC option include the anti-tailgate feature. If SW4-4 is on, the lock will
                   relock immediately when the door closes even if the time delay has not yet expired.

NUISANCE DELAY   (factory default: 1 second)
The amount of time the door must be pushed before triggering the *DELAYED EGRESS CYCLE*
Programmable 0 - 3 seconds. (BOCA Units are fixed at 1 second.)

A. Press and release SW3, the LED will begin flashing RED.
B. Thereafter, press SW2 once for each second of nuisance delay desired, up to
    3 seconds maximum.
    Each SW2 activation will cause the LED to flash GREEN and the horn to beep .
C. Press SW3 and the nuisance delay will be stored in non-volatile memory.

NOTES: 1. To program nuisance delay to zero, eliminate Step B.
                2. Setting nuisance delay to zero will allow the lock to go into delayed egress the instant that it is
                   pushed upon. This may prove inconvenient in some applications.

DOOR PROPPED DELAY (Units with SEC option only) (factory default: 60 second)
The amount of time the door must be propped open (after normal release time delay has ended) before triggering the
alarm. The alarm will clear as soon as the door closes again. Programmable 0 - 120 seconds.

A. Set SW4-6 to ON (if it is off).
B. Press and release SW2, the LED will begin flashing YELLOW.
C. Thereafter, press SW3 once for each second of propped delay desired, up to 120 seconds maximum.
    Each SW3 activation will cause the RED LED to flash and the horn to beep .
D. Press SW2 and the door prop delay will be stored in non-volatile memory.
E. Leave SW4-6 ON to enable door propped alarm.

NOTES: 1. To program door propped delay to zero, eliminate Step B.
                2. Setting the door propped delay to zero will cause the lock to go into alarm the instant that the
                   normal time delay has ended, if the door is still open.

ANTI TAMPER SWITCH - IMPORTANT NOTE:

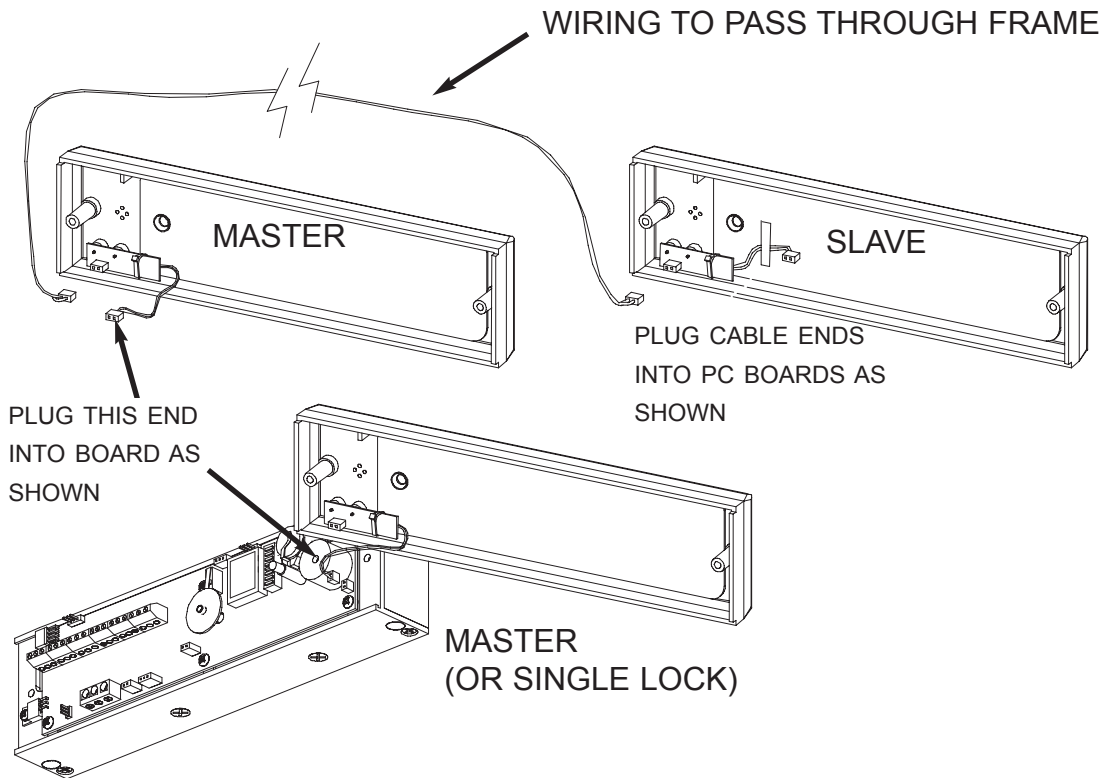The electronic 390 models come standard with the ATS (Anti Tamper Switch). When the cover is removed, the alarm will sound. It can be reset either by momentarily shorting terminals 17 and 18, which is the reset input, or by entering a valid keypad code or iButton. If power is applied while the cover is off, the alarm will not sound. Putting the cover on or depressing the ATS switch will arm it. If the ATS switch is not working properly, check the setting of the jumper (see pages 8 & 10).

ANTI TAMPER
SWITCH

TERMINALS
17&18

ATS
JUMPER
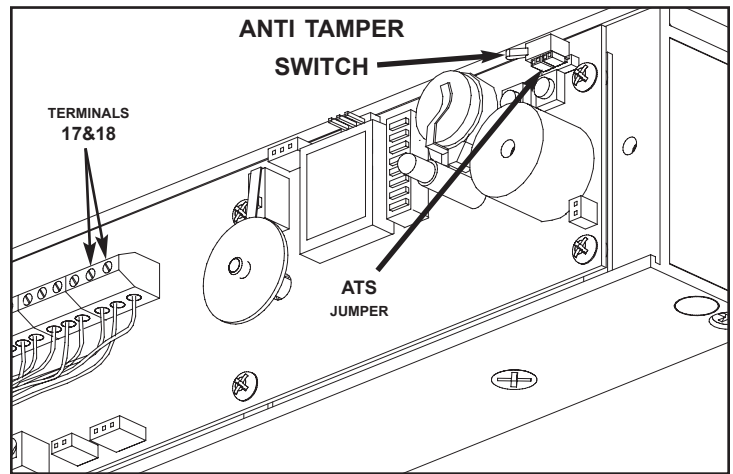
PLUGTOUCH READER INTO PC BOARD AND SECURE LOCK COVER

WIRING TO PASS THROUGH FRAME

MASTER

SLAVE

PLUG CABLE ENDS
INTO PC BOARDS AS
SHOWN

PLUG THIS END
INTO BOARD AS
SHOWN

MASTER
(OR SINGLE LOCK)

SCHLAGE

**MANUAL PROGRAMMING - KEYPAD**

When using a keypad to manually program a 390DEL, the keypad must first be initialized. It is a recommended that the factory default Master Code be changed. Doing so will delete all factory default codes and ensure the security of the system. After entering the Master code the LEDs on the keypad will flash. They will also flash each time that ***** is entered. Wait for the LED to stop flashing before entering the next sequence.

TO CHANGE MASTER CODE
Master Code *****...7 *****...New Master Code (5-8 digits)*****...New Master Code *****

TO ADD NORMAL ACCESS CODES - Will unlock door for relock time delay period. Will also reset lock after an alarm condition.

Master Code *****...3 *****...New Code (3-8 digits) *****...***** (to end)

UP TO 150 NEW CODES CAN BE
ADDED BY RETURNING HERE.
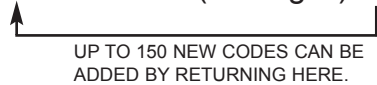
TO DELETE CODES
Master Code *****...5 *****...Old Code *****...***** (to end)

MORE CODES CAN BE DELETED
BY RETURNING HERE.

TO DELETE CODES WITH ALARM/ATR NOTICE: Codes will be not be allowed to function but will remain in memory. When the code is used, the lock will go into alarm, the alarm relay will close, the audible will sound and the LED will illuminate red. The door will not unlock. It will stay in alarm until a valid user code, iButton or reset input will silence the alarm. If the ATR option is present and the unit was programmed by computer, an access attempt will show in the audit trail.

Master Code *****...55 *****...Old Code *****...***** (to end)

MORE CODES CAN BE DELETED
BY RETURNING HERE.

TO ADD FUNCTION CODES (Note that a three digit function code sets the function of the user code)

UP TO 150 NEW CODES CAN BE ADDED BY RETURNING HERE.

Master Code   *...33*...111*...New *Access* Code   (3-8 digits)   * ...* (to end)

OR

191*...New *Toggle* Code

OR

115*...New *Lockout* Code

OR

113*...New *One-Time Access* Code

OR

117*...New *Supervised Access* Code

TO CHANGE FUNCTION/CODES

Master Code *...11*...Old Code *... X Y Z *...New(or same) Code (3-8 digits) *...* (to end)

New or Same
3-digit function
code.See above.

The table below is intended to provide all possible indications and states which can be encountered under normal operation. Note that some conditions or features are only available on certain models or when certain options are included.

DESCRIPTION OF INDICATORS			
CONDITION	LED INDICATOR	AUDIBLE	ALARM RELAY STATE (TERM.7&8)
STANDARD FEATURES			
LOCK SECURE	OFF	OFF	OPEN
LEGAL RELEASE INPUT	STEADY GREEN	OFF	OPEN
LOW INPUT VOLTAGE	OFF	SLOW BEEP	OPEN
DURING NUISANCE DELAY	STEADY YELLOW	OFF(DEFAULT) (SET BY SW4-8)	OPEN
DURING DELAYED EGRESS	FLASHING RED	BEEPING	CLOSED
AFTER DELAYED EGRESS	STEADY GREEN	STEADY TONE	CLOSED
ANTI-TAMPER ALARM IF LOCK COVER IS REMOVED	STEADY RED	STEADY TONE	CLOSED
SWITCH SELECTABLE FEATURES			
SW4-5 "ON" =UNLOCK ALARM WHENEVER LOCK IS UNLOCKED	STEADY GREEN	STEADY TONE	OPEN
SW4-8 "ON" = HORN WILL SOUND DURING NUISANCE ALERT	STEADY YELLOW	ON	OPEN
OPTIONAL SWITCH SELECTABLE FEATURES SEC (SECURITY ALARM OPTION) REQUIRED			
SW4-6 "ON" DOOR PROPPED OPEN ALARM DOOR IS HELD OPEN PAST RELOCK TIME	FLASHING GREEN	BEEPING	CLOSED
SW4-6 "ON" DOOR FORCED OPEN ALARM DOOR OPENED WITHOUT VALID RELEASE SIGNAL	FLASHING RED	BEEPING	CLOSED
PROGRAMMING INDICATIONS			
RELOCK DELAY PROGRAMMING ACTIVE	FLASHING GREEN	OFF	OPEN
DOOR PROPPED OPEN DELAY	FLASHING YELLOW	OFF	OPEN
WHILE PRESSING SW3 0R SW2 TO SET RELOCK AND DOOR PROPPED DELAYS	RED	CHIRP	OPEN
NUISANCE DELAY PROGRAMMING ACTIVE	FLASHING RED	OFF	OPEN
WHILE PRESSING SW2 TO SET NUISANCE DELAY	GREEN	CHIRP	OPEN

![SCHLAGE]

ERROR CODES:

If an error is made while manually programming a lock, an error code indication will be indicated at the iButton reader or keypad. The LED(s) will flash several times. Count the number of flashes and refer to the chart below for diagnosis.

ERROR CODES			
NUMBER OF FLASHES	ERROR	NUMBER OF FLASHES	ERROR
2	Code entered too long. Code length cannot exceed 8 digits.	6	Invalid command.
3	Memory full – too many codes/iButtons entered	7	Code does not exist. (For "Delete With Alarm/ATR" only)
4	Master code cannot be deleted, only changed.	8	Code too short. Minimum master code 5 digits. Minimum user code 3 digits.
5	Second entry of master code does not match first. Master code not changed.	9	Not a unique code/iButton.
		10	Manual Programming disabled.

TROUBLE SHOOTING:

Some common problems associated with the installation of the 390 series can be easily recognized and corrected:

Problem:	Possible Solution:
Lock has power but won't lock. LED (on lock) is Green.	Fire alarm not connected or open connection. SW4-7 not ON (set switch, remove and re-apply power).
Won't go into delayed egress.	Check dipswitch settings (p.9). Armature washers not installed properly (p.5) Magnet not properly aligned with armature. (p.6)
Goes into delayed egress upon powerup.	Armature washers not installed properly (p.5) Improper gap between magnet and armature (p.6)
Lock can be pushed open with minimal resistance.	Magnet/Armature/washers not installed properly (p.5-6).
Lock "hums" or vibrates noisily when energized.	Magnet/Armature/washers not installed properly (p.5-6).
Lock "beeps" every several seconds.	Low voltage alert. Check voltage at terminals 1&2. It must be 12.00 volts or 24.00 volts or slightly higher.
Won't accept iButtons. LED(s) flash once quickly.	iButton reader on cover not plugged in to board. (p.15) Relock delay set to 0 sec.(p.14)
Lock won't accept programmed codes/iButtons. LED(s) flash once quickly.	Relock time delay set to 0 sec. (p.14) Keypad not initialized (p.12).
MBS doesn't change state when locked.	Low voltage. Mechanical misalignment. Debris between lock and armature. Armature/magnet not installed properly (p.5-6).
DSM/SEC option not working properly.	Armature holder not aligned with DSM/SEC switch(s). Switch not plugged into correct jack (p.8)

MAINTENANCE

It is not recommended that the magnet be painted (unless ordered with an iridite primer). If the unit must be painted, it is important that the mating surfaces of the magnet and armature not be painted. The iButton reader and LED must not be painted either. The electromagnet and armature are plated for corrosion resistance and require little maintenance. For maximum performance the following service should be done to both the armature and electromagnet as required: Clean the mating surfaces of the electromagnet and armature with a non-abrasive cleaning pad, apply a light coating of silicon lubricant and wipe with a clean dry cloth.

SCHLAGE

10-1/2 "

2-1/2"

2-3/4"

LOCKNETICS