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**Manufacturer: Kaba Mas LLC
Model: Cencon MDB 30N**

Manual

KABA®

INSTALLATION INSTRUCTIONS



PRELIMINARY

05/26/2016

CENCON **Motorized Dead Bolt** **ATM Security Lock**

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Document Number 2112.0315 Rev. A -**PRELIMINARY**

Please read all instructions carefully before you install and use your Cencon ATM Security Lock. This will help you avoid unnecessary costs and concerns resulting from improper installation.

The installation instructions are the basis for Security Agency Approvals. The lock installation must be done in accordance to these instructions in order to maintain the labeled approval level.

In order to maintain VdS Class 2/EN 1300 Class B lock approval levels in a container where multiple locks are required, special considerations must be observed. The lock must be the first one secured by the boltworks. Check the locked status of the container with the handle of the boltworks.

Notice: *The audit features, the software features associated with peripheral devices and systems, the optional USB interconnect box and its associated features, features involving the use of user keys, Bluetooth functionality and other additional features have not been evaluated by UL. The lock was also not evaluated by UL for 24V operation.*

FCC INFORMATION

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions:

- (1) This device may not cause harmful interference, and
- (2) This device must accept any interference received, including interference that may cause undesired operation.

Changes or modifications made by the user and not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment. NOTE: This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

IC INFORMATION

This device complies with Industry Canada license-exempt RSS standard(s). Operation is subject to the following two conditions: (1) this device may not cause interference, and (2) this device must accept any interference, including interference that may cause undesired operation of the device.

Le présent appareil est conforme aux CNR d'Industrie Canada applicables aux appareils radio exempts de licence. L'exploitation est autorisée aux deux conditions suivantes: (1) l'appareil ne doit pas produire de brouillage, et (2) l'utilisateur de l'appareil doit accepter tout brouillage radioélectrique subi, même si le brouillage est susceptible d'en compromettre le fonctionnement.

RF EXPOSURE

This equipment complies with radiation exposure limits set forth for an uncontrolled environment. This equipment should be installed and operated with minimum distance of 20 cm between the radiator and your body. This transmitter must not be co-located or operating in conjunction with any other antenna or transmitter.

“Cet équipement est conforme aux limites d'exposition aux radiations dans un environnement non contrôlé. Cet équipement doit être installé et utilisé à distance minimum de 20 cm entre le radiateur et votre corps. Cet émetteur ne doit pas être co-localisées ou opérant en conjonction avec une autre antenne ou transmetteur.

BASIC TOOLS AND MATERIALS NEEDED

- Medium Phillips head screwdriver (#2) (recommended magnetized tip)
- ESD wrist band

Recommended, but not required:

- Torque screwdriver (30 inch-pounds/3.4 Newton-Meters capacity)
- Loctite® 262 (Red) for use on lock case mounting screws

WARNING: *Kaba Mas locks are protected from 25,000 V Electrostatic Discharge (ESD) damage when correctly installed. Follow these precautions to avoid ESD damage when installing the lock:*

- *Handle the keypad assembly by the outer edge only.*
 - *Use an ESD wrist band grounded to the lock or container during installation.*
-

DESIGN PARAMETERS FOR MOTORIZED DEAD BOLT LOCKS

1. Bolt dimensions (nominal): .312 inches x 1.000 inches/8 x 25.4mm
2. Bolt movement (nominal): .465 inches/11.8mm
3. Bolt extension: .465 inches/11.8mm
4. Maximum load movable by the bolt: 6.7 lbs. (30N)

NOTE: *Motorized Dead Bolt locks may not open if more than 6.7 lbs. (30N) of force is applied to the end or side of the bolt.*

5. Maximum load against bolt when thrown (all directions): 224.8 lbs. (1kN)
6. The lock can be fitted to safes or vault doors of any material.

NOTE: *As is the case with all mechanical and electronic locking devices, the container and boltworks must be designed to protect the lock.*

PREPARE FOR NEW INSTALLATION OF THE LOCK

1. Using the lock parts along with the template provided, establish the exact location for the drilled and tapped holes. For the Motorized Dead Bolt, only 3 of the 4 mounting holes are required.

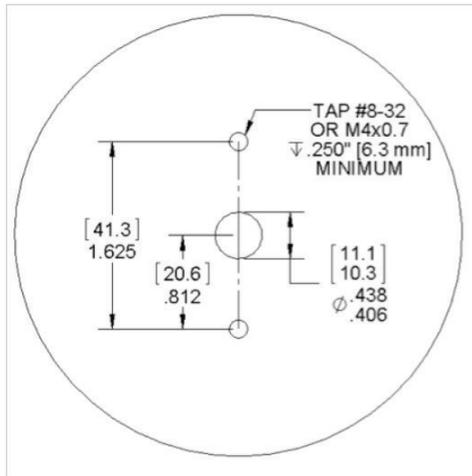
Caution: *The lock case must be mounted exactly according to the template if mounted over the cable routing hole. Otherwise, the lock case must be mounted so that no part of the case covers the cable routing hole.*

2. The cable hole diameter can be a minimum of .406" (10.3mm) to a maximum of .438" (11.1mm). The .406" (10.3mm) diameter is recommended. The cable hole must be deburred.
3. The dial assembly mounting screws require drilled and tapped holes to 3/8" (9.5mm) depth if possible (minimum 1/4" or 6.4mm depth required.) Drill either the two horizontal mounting holes or the two vertical holes.
4. When mounting the lock unit (i.e., integrating it into a boltwork), make sure the lock bolt has clearance to freely move to its end positions and the shifting force works only in the axial direction (direction of movement). Lateral forces should not be exerted on the lock.

PART I: INSTALL FRONT HOUSING ASSEMBLY

Install Instructions for Cencon Motorized Deadbolt Entry Assembly

1. Use the dimensions provided in Figure 2 to establish the exact locations (relative to the spindle hole) of the mounting holes for the Entry Device and the lock assembly. Be sure to consider the cable length from the entry device to the lock.
2. The spindle hole diameter can be a minimum of .406" (10.3mm) to a maximum of .438" (11.1mm). The .406" (10.3mm) diameter is recommended. Spindle hole must be deburred.
3. The Entry Device mounting screws require drilled and tapped holes to 3/8" (9.5mm) depth if possible (minimum 1/4" or 6.4mm depth required.)



(Figure 2 – Hole Locations. Not to scale)

4. Screw the two mounting studs into the stud mounting holes just drilled. Tighten to approximately 15-20 inch-pounds.
5. Open the safe door and keep it open.
6. Feed the assembly's two cables through the spindle hole one at a time. Note: maximum door thickness is 5 inches to allow for current cable length.
7. Place the entry assembly onto the front of the safe door. Place the two larger holes of the entry assembly over the two mounting studs as shown in Figure 2, and then apply downward pressure to pop the mounting studs onto the wall. Pull up slack in the cables from the inside of the safe door as you place the assembly so that the cables will not be damaged. The entry should now be held in place by the mounting studs.

NOTE: To remove the entry assembly, apply upward pressure to the entry unit until the entry studs are moved out of the way, and then rotate it laterally to the left to reveal the entry's reverse side.

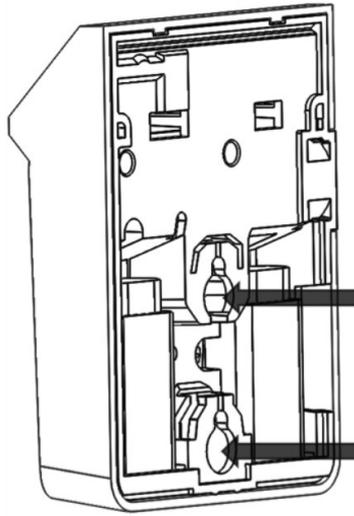


Figure 3 - Mounting Stud Alignment

PART II: INSTALL LOCK CASE ASSEMBLY

WARNING: Do not take the lock case assembly apart. This action will void the lock warranty.

1. Ensure the cables lay in the cable channel as you mount the lock case assembly to the inside of the container door using the three 1/4-20 (or M6-1) screws (Torque 25-30 lbs., 2.8-3.4 N-M), allowing 1/20" (1.27mm) clearance between the lock bolt and the container locking bar.
-

Note: The lock case assembly can be mounted in all orientations for all mounting locations. It is recommended that you use Loctite® 262 (Red) on the lock case mounting screws.



Figure 5

AFTER LOCK CASE INSTALLED

Warning: Do not insert batteries into input unit prior to having all connections into lock secured. Also, ensure no power is applied to the 24V terminal prior to all connections being completed.

1. Attach Power Cable to lock while not connected to power supply. Insert the red wire into +24 Volt terminal and tighten screw terminal with small flathead screwdriver. Insert the black wire into GND terminal and tighten screw terminal with small flathead screwdriver
-

Warning: The bolt works sensor must be used and attached for correct operation of the motorized dead bolt. Incomplete connections or faulty sensor operation could result in lock malfunctions. Ensure correct operation by following Bolt works sensor command (#75 as described later in document).

2. Attach bolt works sensor nominally open wire to indicated terminal (Figure 5). Tighten screw with flathead screwdriver.
3. Attach bolt works sensor common to GND terminal. Tighten screw with flathead screwdriver.
4. Attach 5-pin cable from the entry assembly into the 5-pin port on the lock (Figure 5).
5. Attach 6-pin cable from the entry assembly into the 6-pin port on the lock (Figure 5). (For Bluetooth operation only.)
6. Double check all cables are inserted into the correct slots on the lock.

PART III: INTERCONNECT BOX INSTALLATION (OPTIONAL)

NOTE: All connections made to the lock are keyed by plastic ribs on the side of the connectors. Strain relief should be applied to all cables as necessary.

1. Attach the 8 pin serial connector to the lock case and then to the Interconnect Box.
2. Attach 4-Pin cable to the 4-Pin port on the lock and the other end to the Interconnect Box (Figure 4).
3. Take the double sided taped provided and mount the Interconnect Box in a suitable location



Figure 4 - Interconnect Box Cables

4. Double check all cables are inserted into the correct slots on the lock and Interconnect Box (Figure 6).
5. Remove front entry assembly from container by gently pushing in and up on the unit until it slides off of the 2 bolts. Do not tug on the cables unnecessarily.
6. Place 2 new fresh alkaline 9 V batteries into the 2 slots, connecting the terminals to the provided connectors (Figure 7).
7. Replace entry assembly by pressing in and down over the 2 extruded bolts, taking care that the cables are not pinched.

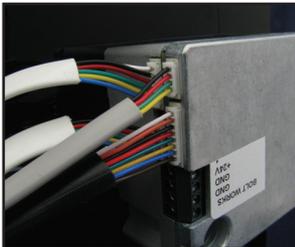


Figure 6

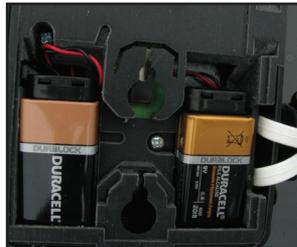


Figure 7

BASIC LOCK OPERATIONS

For the complete Cencon lock and software operating instructions in FLM, Route, and Bank modes, please see the Cencon Reference Manual on the documentation section at www.kaba-mas.com.

Opening Lock in Shelved Mode

Each lock is shipped from the factory in Shelved Mode. The “one time only” combination feature is not available when the lock is shelved. Instead, the Shelved Mode combination is used to open the lock. The default Factory Combination is set to 50-25-50. The default combination may be changed, in which case the new combination would be used to open the lock while in Shelved Mode. The correct opening procedure for a shelved lock is:

1. Press * Key → EC
Press * key until the letters EC (Enter Combination) appear in the display window.
2. EC → Enter Shelved Mode Combination → OPn
Enter the current Shelved Mode combination, whether it be the Factory Combination of 50-25-50 or a new Shelved Mode combination, by sequentially pressing those digits on the lock keypad. The lock will display the numbers as the combination is entered. When the combination has been correctly entered, the bolt will begin moving to open the lock and the lock will display “---” while the bolt is moving. The bolt will stop moving when it reaches the open position and the lock will display OPn. The lock will proceed from OPn to CLo steps automatically if the lock bolt works hasn't been retracted within the OPn timeout.
3. OPn → Retract Bolt
Rotate the container handle to to unlock the lock, and the lock display will be cleared.
4. Open Container Door
5. Close Container Door
6. Extend Bolt → CLo Rotate the container handle to extend the bolt. The lock will display “---” while the bolt is moving. The bolt will stop moving when it reaches the closed position and the lock will display CLo.

Change the Shelved Mode combination

You may change the default Factory Combination of 50-25-50 to a new combination to be used while the lock is still in Shelved Mode. Once you have changed the combination for the first time, you may want to change the combination again to a different Shelved Mode combination. You can even change it back to the Factory combination of 50-25-50 if you would like.

CAUTION: For security purposes, do not select a combination from personal data such as birth date, phone number, etc. You also should not share the combination. It is a secret.

REQUIRED ITEMS: CURRENT SHELVED MODE COMBINATION

NOTE: You can only change the Shelved Mode combination while operating in Shelved Mode. Once a lock is “activated” in any mode, the Shelved Mode combination returns to the Factory Default of 50-25-50.

To change the Shelved Mode combination:

1. Press * Key → EC
Press * key until the letters EC (Enter Combination) appear in the display window.
2. EC → Enter Shelved Mode Combination → OPn
Enter the current Shelved Mode combination (either 50-25-50 or a changed Shelved Mode combination) by sequentially pressing those digits on the lock keypad. The numbers will be displayed on the LCD as they are entered. When the combination has been correctly entered, the bolt will begin moving to open the lock and the lock will display “---” while the bolt is moving. The bolt will stop moving when it reaches the open position and the lock will display OPn.
3. OPn → Retract Bolt
Rotate the container handle to to unlock the lock, and the lock display will be cleared.
4. Open Container Door
5. Press * Key → CLb
Press * key until CLb is displayed.
6. CLb → Press #8 → EcF
Press the “#” button followed by the “8” button. EcF (Enter current Factory combination) will be displayed.
7. EcF → Enter Current Shelved Mode Combination → EnF
Enter the current shelved mode combination, “EnF” (Enter new Factory combination) will be displayed.
8. EnF → Enter New Combination → CnF
Select and enter the new combination. “CnF” (Confirm new Factory combination) will be displayed.

NOTE: The new Shelved Mode combination should be recorded and stored in a secure area.

9. CnF → Enter New Combination
Enter new combination again to confirm. EOP (End of Process) will be displayed.

10. Press * Key → CLb
Press * key until CLb is displayed.
11. Close Container Door
12. Extend Bolt → CLo Rotate the container handle to extend the bolt. The lock will display “---” while the bolt is moving. The bolt will stop moving when it reaches the closed position and the lock will display CLo.
13. Press * Key → EC
Press * key until the letters EC (Enter Combination) appear in the display window.
14. EC → Enter New Shelved Mode Combination → OPn
Enter the new shelved mode combination by pressing those digits on the lock’s keypad. The numbers will be displayed as they are entered. The lock will display “---” while the bolt is moving. The bolt will stop moving when it reaches the open position and the lock will display OPn.
15. OPn → Retract Bolt
Rotate the container handle to to unlock the lock, and the lock display will be cleared.
16. Open Container Door
17. Close Container Door
18. Extend Bolt → CLo Rotate the container handle to extend the bolt. The lock will display “---” while the bolt is moving. The bolt will stop moving when it reaches the closed position and the lock will display CLo.

Gen2 Lock Menu Command List

- # # Display Audit Count (opening count)
- # 0 Perform SA Key Operations (audit download, resync, clock set, bank user table download, etc.)
- # 1 Display Lock Level
- # 2 Display Lock’s Serial Number
- # 3 Display Lock’s Total Audit Count
- # 4 Display Last Close Seal
- # 8 Change shelved-mode or bank user’s combination
- # 50 Enable Remote Administration
- # 70 Display Active Modes and Activator Identification
- # 71 Display Internal UTC/GMT Date/Time
- # 72 Display Local Date/Time
- # 73 Display Key Type and Key Serial Number
- # 74 Display Door Contact Switch Status
- # 76 Display Activated Mode’s Software Level
- # 77 Display Personal Identifier Clock
- # 78 Display Last Opening, Local Date/Time
- # 79 Display Activation Event, Local Date/Time

Lock requires mode user key to be presented.

All the prompts that request that a user key (blue FLM, yellow Route, or green Bank) will do so by displaying the “IPI” after the command is entered. The difference to note is that #73 and #77 will be reading and displaying information unique to a particular key, whereas ##, #4, #72, #76, #78, and #79 are reading which particular mode this key is associated with (FLM, Route, or Bank) and then displaying information for that entire mode.

Previous to a lock being activated in any mode, the prompts ##, #4, and #70, 72, 76, 78 and 79 will display the error. #72 only applies to Gen2 locks activated with a USB Key Box.

After a particular mode is shelved, the ## and #4 prompts will still display "" to give information about a mode the last time it was active, though the remaining #7x prompts mentioned will start showing the error again.

Cencon Lock LCD Terminology

The first step in learning the operation of the Cencon Lock is understanding what is shown on the display.

Note: *The Cencon LCD uses a 7-segment font, displaying up to 3 characters at a time. Some displays will be a mixture of numbers and both capital and lower case letters.*

Lock Displays/Prompts Used on Swing Bolt Gen2

1. = **DL** Dial briskly in either direction to power the lock.
2. = **EC** Enter Combination
3. = **OPr** Turn bolt handle to open the container door.
4. = **CLb (Change Key Function Activated)**
5. = **Enter Current** combination (Shelved mode/Factory)
6. = **Enter New** combination (Shelved mode/Factory mode)
7. = **Confirm New** combination (Shelved mode/Factory mode)
8. = **Lightning Bolt (Error)**; usually wrong combination
9. = **LockOut** condition due to 5 lightning bolts
10. = **Insert Personal Identifier (key) 1**
11. = **Close Seal** number (where 0 is a number)
12. = **EOP (End Of Process)**
13. = **"?"** displayed when the command key (#) is pressed
14. = **(##) - Seal Count**** for an active mode by user key
15. = **(##) - Seal count**** for a Shelved mode by user key
16. = **(#1) - Lock firmware code Level**
17. = **(#1) - Hardware Level** of lock back cover
18. = **(#2) - Serial Number** of lock back cover
19. = **(#3) - Total (All modes) opening Count**
**Seal count, Opening Count, and Audit Count are terms used interchangeably throughout the documentation.
21. = Indicates **Gen2** lock during power-up
22. = **Remote Lock Out** signal; keypad entry is prevented
23. = **(#71) - UTC/GMT** date and time of lock
24. = **(#71) - Date**, starting with **Year**, then Month, then Day
25. = **(#71) - Time**, starting with **Hour**, then Minute, then Second
26. = **(#73) - Cencon iButton (key) Model Number**
27. = **(#73) - Cencon iButton (key) Serial Number**
28. = **(#74) - OPened Door**
29. = **(#74) - CLosed Door**
30. = **(#74) - No door Contact Connection**
31. = **(#77) - UTC/GMT** date and time on **Personal Identifier Key's Clock**

For a full listing of Lock LCD Terminology, including displays only shown while the lock is activated, refer to the Cencon 5 Software Reference Manual, Appendix C.

Query the Lock via Keypad

The Gen2 lock allows the user to gather information in the field simply by pressing keypad commands, sometimes presenting their user key, and then reading the LCD.

DISPLAY LOCK LEVEL (#1)

It is sometimes necessary to determine the code level of the Cencon Lock with which you are working. This can be done through the keypad with the level displayed on the LCD. Use the following procedure:

1. Press * Key → EC

Press * key until the letters EC (Enter Combination) appear in the display window. “ Enter the #1 keypad command.

2. All Gen2 locks will display “**LL-**”, “**G 2**”, followed by 4 sets of 3 numbers, followed by “**HL-**” with 2 number pairs. If the LCD instead shows the letters “**LL-**” followed by a string of number pairs then “**HL-**” followed by 2 number pairs, then this lock is a Gen1 lock.

DISPLAY SERIAL NUMBER (#2)

The Gen2 lock’s Serial Number is a 9-digit number. To display the Lock Serial Number, press “#” and then “2” when “**EC**” is displayed.

Until a time when the first 3 digits of the 9-digit serial number are non-zero, the lock will only display 6 digits. The Gen2 Cencon lock will display a series of two or three 3-digit numbers, depending on what the value of the first three numbers of the serial number are. When taken together, this series of numbers is the serial number of the lock.

Example 1: Gen 2 Serial Number (9 digits with first 3 digits “000”)

Serial number of the lock is “000023456”

The lock will display “**Sn-**” followed by a series of two 3-digit numbers: “**023**” “**456**”

Example 2: Gen 2 Serial Number (9 digits with first 3 digits non-zero)

Serial number of the lock is “001348729”

The lock will display “**Sn-**” followed by a series of three 3-digit numbers: “**001**” “**348**” “**729**”

DISPLAY TOTAL AUDIT COUNT (#3)

The lock always keeps track of how many times it has been opened (Total Audit Count) no matter in which mode the opening occurred, including Shelved Mode, FLM, Route, and Bank. To learn the Total Audit Count, press the pound symbol, “#,” followed by the “3” whenever “**EC**” is displayed on the LCD. The display will flash two sets of numbers alternately on the screen. When taken as one four-digit number, this represents the Total Audit Count. For instance, if the LCD flashes “**AC-**” then “00” followed by “07,” the lock has a Total Audit Count of “0007,” meaning the lock has been opened seven times in all modes combined. This display can be cancelled by pressing the asterisk (*) button. The Total Audit Count does not reset when the lock is shelved. Once the counter exceeds 9999 openings, the Gen2 lock begins displaying more digits.

DISPLAY INTERNAL GMT (UTC) DATE/TIME (#71)

The UTC/GMT date and time are initialized in a Gen2 lock at the time of manufacture at Kaba Mas. When #71 is pressed, the current lock date & time are displayed. This display can be canceled by pressing the asterisk (*) key, or it will automatically be canceled when the lock powers down.

For each of the commands that displays either current or historic Date and Time (#71, #72, #78, and #79), the format is the same: Starting from the largest time increment (4-digit Year) and moving down to the smallest (2-digit second). For readability, the date and the time are broken apart by the “**Hr-**” (hour) prompt in the middle. (For example, “**Utc**”, “**Yr-**”, “ 20”, “ 09”, “ 12”, “ 25”, “**Hr-**”, “ 22”, “ 30”, “ 59”)

DISPLAY DOOR CONTACT SWITCH STATUS (#74)

The Gen2 lock has a 4-pin signal input cable to optionally use Door Contact switches and for a Remote Disable function. After installing the door contact switches, the customer will want to determine the status of these sensor, often while the lock is still in factory mode, and later when the lock is activated.

(For example, “**OPd**” for “OPened door”, “**CLd**” for “closed door”, or “**nCC**” for “no door contact connection” accordingly.)

Note: *Check for Remote Disable Signal by entering 50-25-50 and looking for “**rLO**” on display before closing door.*

#75: Display bolt works sensor contact switch status

The Gen2 Swingbolt lock has a 6-pin alarm input cable to optionally use Door Contact switches, mandatory Bolt Works Contact Switches, and for a Remote Disable function. After installing the bolt works contact switches, the customer will want to determine the status of these sensor, often while the lock is still in factory mode, and later when the lock is activated (For example, “**bSE**” for “Bolt Works Sensor Extended”, “**bSr**” for “Bolt Works Sensor Retracted”, or “**nCC**” for “no bolt works sensor contact connection” accordingly).

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