

IP Series™ 100 Keypad Interface

Internal Installation Instructions

Congratulations on your purchase of the IP Series by Sargent & Greenleaf.

The IP Series offers two different mounting options—external and internal. If you choose to route cabling externally, please refer to the “External Installation Instructions.” If you want to install the cabling internally, follow these instructions.

Read all of the installation instruction document before beginning the installation itself.

WARNING: Be advised that when installing internally, you will need a minimum ¼ inch hole drilled through one of the safe’s sides or the back. This hole may affect the security or fire rating of the safe. Please check with your safe provider and/or insurance company before proceeding. Sargent and Greenleaf assumes no liability if the IP Series is installed in a manner that invalidates the rating of the safe.

Important Note: All cables included with the IP Series are certified and constructed with the proper connectors. With the exception of the unterminated end of the Category 5 cable, do not cut these cables or remove connectors, as this will void the warranty. Sargent & Greenleaf only warrants the IP Series product when installed using the cables and connectors provided by the manufacturer.



Sargent & Greenleaf, Inc.
A Wholly Owned Subsidiary of Stanley Security Solutions, Inc.
PO Box 930
Nicholasville, KY 40356
Phone: (800)-826-7652 Fax: (800)-634-4843
Phone: (859)-885-9411 Fax: (800)-887-2057

Sargent & Greenleaf S.A.
9, chemin du Croset
1024 Ecublens, Switzerland
Phone: +41-21 694 34 00
Fax: +41-21 694 34 09

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The Sargent & Greenleaf IP Series 100 Keypad is designed to work in combination with 6120, 6123, 6124, 6125, Z⁰², and Z⁰³ series electronic locks. An instruction for internal installation of the cabling is detailed in this booklet. Follow all of the instructions carefully to get the best possible performance from your system.

Installation Notes

Each Keypad installation kit should include the following parts:

- | | |
|----------------------------------|----------------------------------------------------|
| 1 Keypad Mounting Base | 4 US Mounting Base Screws |
| 1 Keypad Assembly | 4 Metric Mounting Base Screws |
| 1 Wire Tie | 1 Installation Instruction Document (this booklet) |
| 1 Tamper Keypad Screw (8-32) | 1 Operating Instruction Sheet |
| 1 Non-tamper Keypad Screw (8-32) | |

Each Power Supply/Connection Box should include the following parts:

- | | |
|----------------------------------------------|--------------------------------------------------------------|
| 1 Connection Box | 1 2-meter Category 5 Ethernet Cable with (1) RJ-45 Connector |
| 2 US Connection Box Mounting Screws (8-32) | 1 60-inch (1.5 meter) Flexible Metal Cable Sheathing |
| 2 Metric Connection Box Mounting Screws (M4) | 1 Molded Plastic Strain Relief (90°) |
| 1 Black Wire Tie Mount and Tie | 1 Battery Backup Cable |
| 4 White Wire Tie Mounts and Ties | 1 AC Power Supply/Cable* |
| 2 Nuts and Bolts for Mounting RJ-45 base | 2 Self-tapping Screws |
| 1 Ethernet Jack | 1 Ethernet Jack Base |
| 1 6-inch (15 cm) Ethernet Cable | 2 Black Plastic Bushings (for metal cable sheathing) |
| 2 Alcohol Wipes | |

*country dependent—order under separate part number

The following tools will be needed for installation:

- | | |
|---------------------|-------------------------------------------|
| •Drill with Bits | •Tap |
| •Screwdriver | •Wire Cutters |
| •Needle Nose Pliers | •Zip Tie Clips |
| | •High Speed Rotary Tool with Cutoff Wheel |

NOTE: Store the keypad management reset code (MRC) and lock MRC in a secure place, other than in the safe on which you are installing the IP Keypad.

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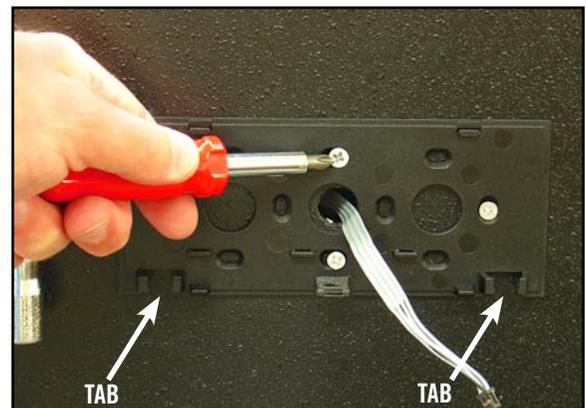
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The lock body should already be mounted to the safe, in compliance with the instructions packed with it.



Step 1:

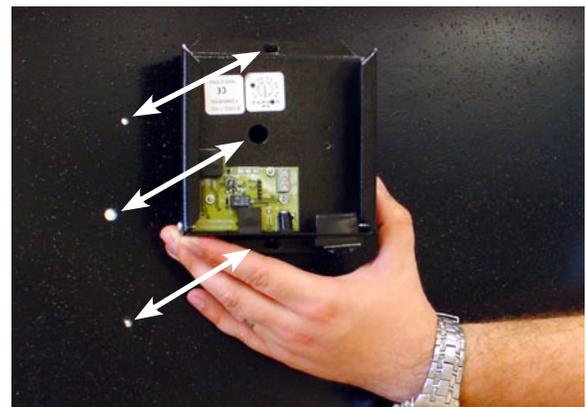
There are three ¾ inch (19 mm) holes in the keypad base. Any one of these can be used to route the Category 5 cable and lock cable through the front of the safe. Determine the best placement for the keypad on the safe, and select which of the cable holes in the keypad base plate best suits your application. Mount the plate with the four machine screws provided (8-32 or M4), using any four mounting holes which will provide a firm, solid attachment. In retrofit applications, you may need to drill and tap new mounting screw holes. Make sure the plate is oriented with its two tabs at the bottom.



Step 2:

The connection box is mounted on the back of the safe. Select a location that will allow you to drill (2) attaching screw holes and a ¼ inch hole for the Category 5 cable. Also keep in mind that the connection box should be located where it will be easy to run the Category 5 cable from the back of the safe door.

Use the appropriate holes in the connection box as a template. Mark, drill, and tap the (2) mounting screw locations (8-32 or M4). Mark and drill the ¼ inch (6.3 mm) Category 5 cable hole. Make sure the cable hole is not left with any sharp edges or burrs. Don't mount the box yet.



Step 3:

If your lock is mounted over the safe's spindle hole, temporarily loosen or remove the lock body, so that you can run the Category 5 cable (the end with the RJ-45 connector) through the door. You'll want approximately 6 inches (15 cm) of cable at the front of the safe. It's a good idea to mark this length on the cable, using a piece of tape. This will help you maintain the proper amount of cable as the lock is re-installed.



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Step 4:

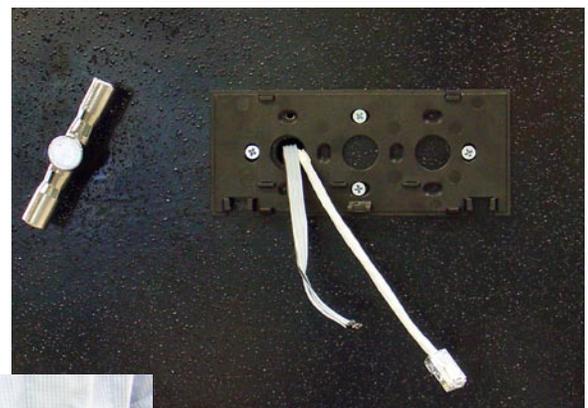
Once you've provided the 6 inches (15 cm) of cable at the front of the safe, make sure that both the lock cable and Category 5 cable are within different recessed channels on the underside of the lock body. There should be no folds, crimps, or kinks in the cables where they run under the lock body.

Re-install the lock mounting screws and tighten securely.



Step 5:

This is how the front of the safe should look after the Category 5 cable has been installed and the lock has been re-installed. All of the excess lock cable is pulled to the front of the safe, and 6 inches (15 cm) of the Category 5 cable is pulled to the front of the safe.



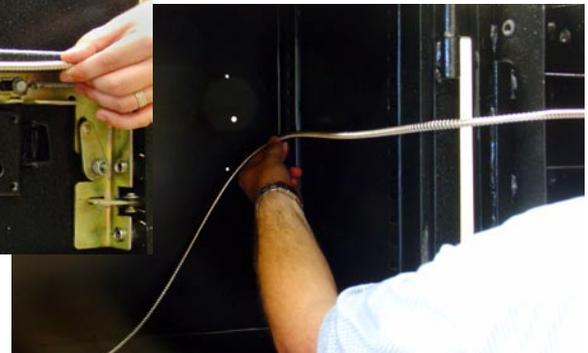
Step 6:

Flexible metal sheathing is provided to protect the Category 5 cable where it runs inside the safe body. As accurately as possible, gauge the required length of the sheathing from the lock body to the ¼ inch (6.3 mm) connection box hole you drilled in the safe body in step 2. Once you've determined the cable length, mark it.



Step 7:

Cut the metal sheathing at your mark. You will obtain the best results by wrapping the area to be cut with masking tape and using a cut-off abrasive wheel in a high-speed rotary tool. If you do not wrap the area to be cut, there is a high probability the cable will partially unravel. Remove the tape after cutting is complete.



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Step 8:

Place the plastic bushings over both ends of the metal sheathing, then run the Category 5 cable through the sheathing.



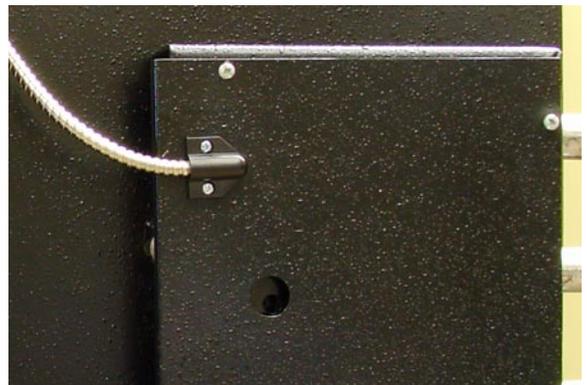
Step 9:

A plastic strain relief will be attached to the safe door back plate. This photo shows how the sheathing bushing fits into grooves in the strain relief.



Step 10:

Drill a $\frac{3}{8}$ inch (9.5 mm) hole through the safe door back plate, and run the sheathed Category 5 cable through it. Attach the strain relief (with cable installed) over the hole, using the self-tapping screws provided.



Step 11:

Use wire ties in the self-adhesive tie blocks to secure the cable inside the safe, running from the strain relief located near the lock body to the connection box hole you drilled in step 2. Use the included alcohol wipes to clean any surface to which you will apply a self-adhesive tie block.

Note that this cable installation includes a short run through grommet-protected holes drilled in the door's coin rack. Take advantage of any safe features to provide a stable, protected cable route.

Make sure there is no strain on the cable when the safe door is fully open, and that the cable isn't caught as the door is closed.



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Step 12:

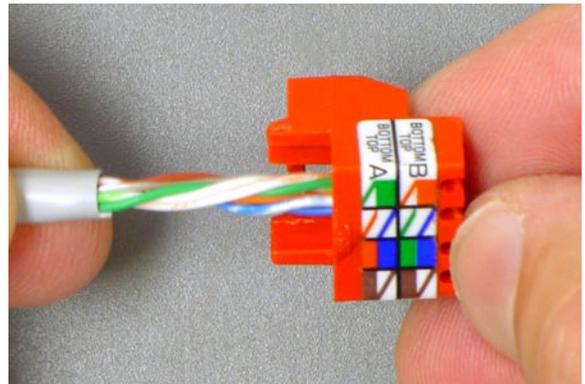
Here are the items you will assemble for the connection box. First, attach the beige connector block to the box, using the two machine screws and nuts provided (see small photo). Then, mount the box itself to the safe, making sure the cable hole is over the 1/4 inch cable hole you drilled through the safe body. Feed the Category 5 cable through the safe body and into the box. Pull all excess cable through the box. Note that the metal sheathing is not meant to come through the hole in the safe.



Step 13:

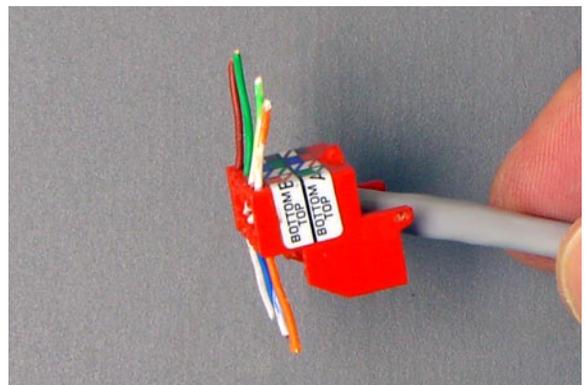
Carefully strip about 3/4 inch (19 mm) of insulation from the end of the Category 5 cable that has been pulled through into the connection box. Feed the stripped conductors through the orange connector as shown, until the insulated section meets a stop inside the connector.

Note the connector label. You will use the “B” row of color keys, inserting each individual conductor into the small slot called out in the color key. Conductors are either a solid color or white with a colored stripe. “Bottom” slots are the ones opposite the side with the color key label. “Top” slots are the ones on the same side as the color key label.



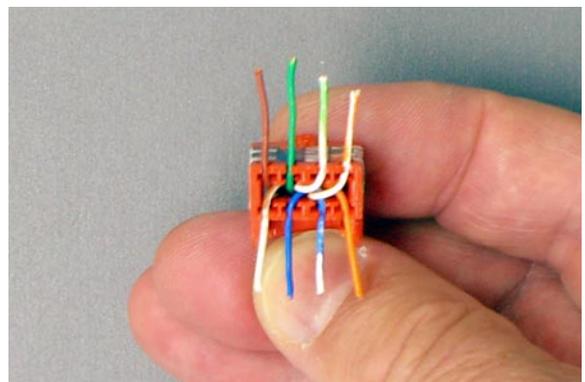
Step 14:

In this photo, the conductors have each been placed into the appropriate slot, as identified in the color key label. Double check to make sure the right conductor is in the correct slot. If you need a set of instructions with color photographs to help you wire the connector correctly, you can download one from S&G's website (www.sargentandgreenleaf.com), under the “Product Instructions” listing in the “Quick Clicks” column. Look for the item “IP Series Internal Installation.”



Step 15:

Here is a top view of the connector with the conductors placed in the correct slots.

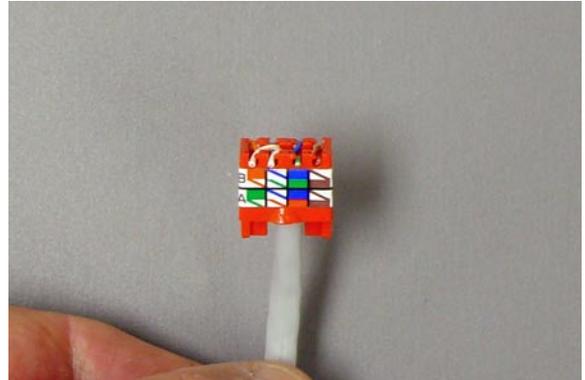


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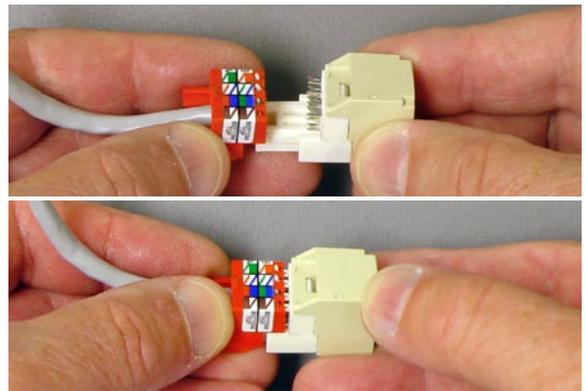
Step 16:

Closely trim the excess from each conductor at the edge of each connector slot.



Step 17:

Slide the orange connector onto the light beige receiver. Make sure it's pressed on completely to ensure good electrical connection.

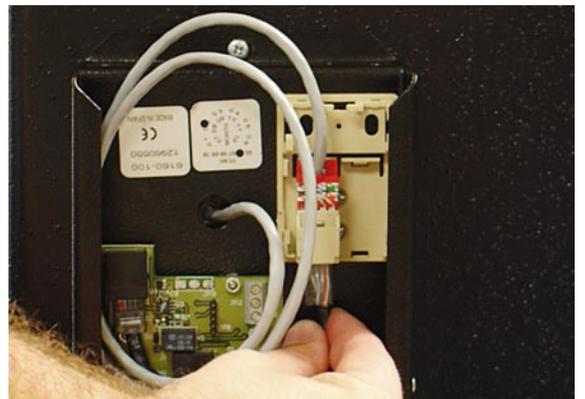


Step 18:

Snap the assembled connector into the beige connector block, oriented as shown. It has “click” connects at both ends, and you will likely feel and hear it click into place.

Locate the short cable with RJ-45 connectors on both ends. Plug one end into the connector assembly you just installed into the box. Plug the other end into the receptacle on the circuit board.

All excess Category 5 cable should be curled inside the confines of the box. You can now use the four small sheet metal screws provided to install the box cover.



Step 19:

At the front of the safe, plug the lock cable into its receptacle on the keypad circuit board. Then plug the RJ-45 connector into its receptacle on the circuit board. Place both cables carefully, so that they will not be crimped or crushed as the keypad is installed on its mounting base.



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Step 20:

Place the keypad on its base, and snap it into place. Again, make sure no cables are crushed or crimped during this process.



Step 21:

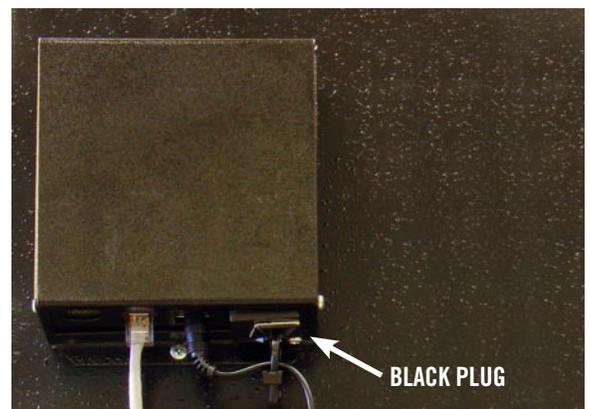
Install the keypad anti-tamper screw into the hole provided at the bottom of the keypad.



Step 22:

Secure the zip tie mount to the black plastic plug in the bottom of the box. Thread the zip tie into slots perpendicular to the connection box. Plug in the power connector, and secure the power cord to the zip tie mount as shown.

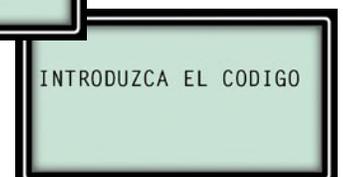
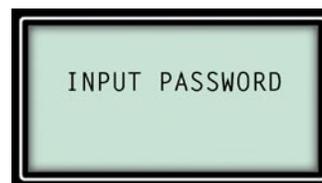
Plug the network cable (provided by the customer) into the receptacle provided in the connection box. The hardware installation is complete.



Step 23:

Plug power cord into connection box and wall outlet. Verify that the LCD screen now displays "Input Password," most likely in Spanish. If the keypad is not receiving power, re-check all connections.

To turn off the tamper indication, press 0 0 1 2 3 4 5 6 #.



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Step 23 (continued):

When the tamper has been turned off, the keypad's default (or main) screen will appear.



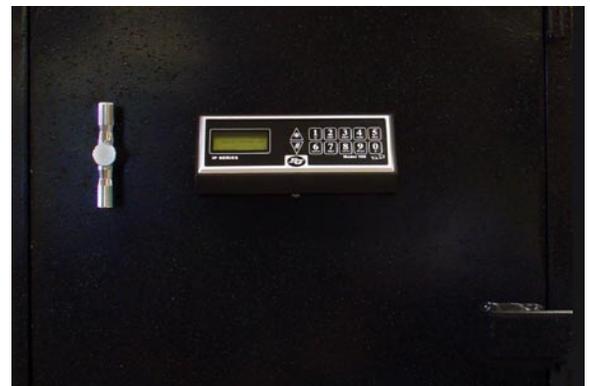
Step 24:

Here is how the external configuration should look as viewed from the front of the safe.

The installation is not complete. Before checking the lock operation, you must enter some important information at the keypad. The customer should have provided you with three important numbers:

1. an IP address
2. a subnet mask
3. a gateway address

You must have these three pieces of information to proceed. If you do not have them, stop and contact the customer. Do not leave the safe unless the door is blocked open, so that it cannot be accidentally closed.



Step 25:

The keypad will revert to the default (main) screen when no activity is taking place. Obviously, the date and time information will be different on your display.

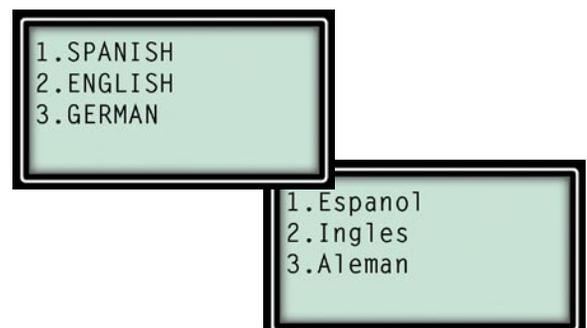
The first setup item is selecting the display language. From the default screen, press #. The language selection screen will then be displayed.



Step 26:

The languages available on your particular IP Series Keypad will be shown. Press the number that corresponds with the language you want the keypad to use. For instance, press the number "2" for English.

After your selection, the display will automatically revert to the default screen.

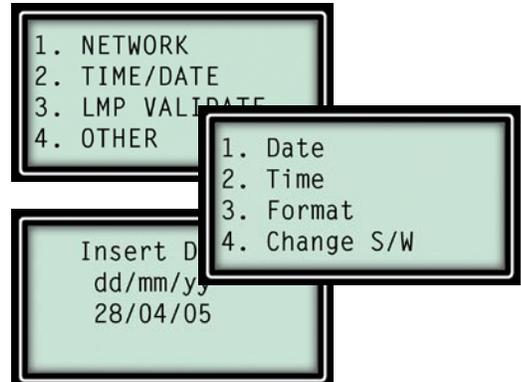


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Step 27:

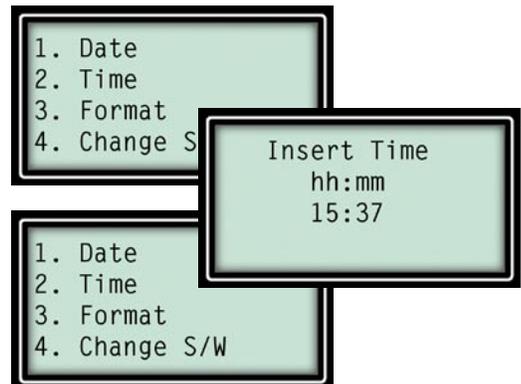
While the default (main) screen is displayed, press * to be prompted for the “password.” Enter 0 0 1 2 3 4 5 6 #. You will then see the menu screen shown at the top right. Press 2 to select the “Time/Date” option, then press 1 to set the current date. Use two digits for each element. Be sure you enter the date by day of the month first, then current month, followed by the current year, followed by #. After this is done, the display will revert to the “Time/Date” screen.



Step 28:

While the “Time/Date” screen is displayed, press 2 to set the time. Enter two digits for each element, and note that the input must be made in 24-hour format. First enter the current hour, followed by the current minute(s), followed by #.

The display will revert to the “Time/Date” screen. You can repeatedly press * to back up to the main screen, or simply wait until the lock does it automatically.



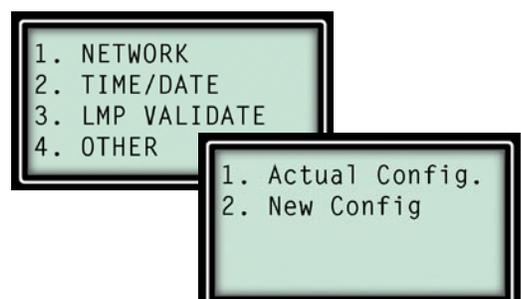
Step 29:

Make sure you have the IP address, subnet mask, and gateway address in front of you for this procedure. All of these will consist of digits separated by periods. To enter a period, you will press *. After the last digit in each of the three addresses, you will press #. From the default (main) screen press *. When the password prompt screen shown at the right appears, enter 0 0 1 2 3 4 5 6. Be sure to press # after the last digit.



Step 30:

Press 1 when the top menu screen appears, then press 2 for “New Config” to take you to the screen that will let you enter the network communication parameters.



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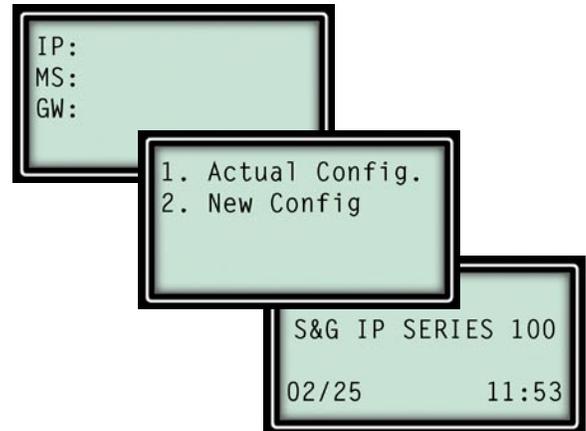
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Step 31:

Enter the IP address, followed by the subnet mask, followed by the gateway address. Remember, to enter a period, you will press *. After the last digit in each of the three addresses, you will press #. For reference, a typical entry will look something like:

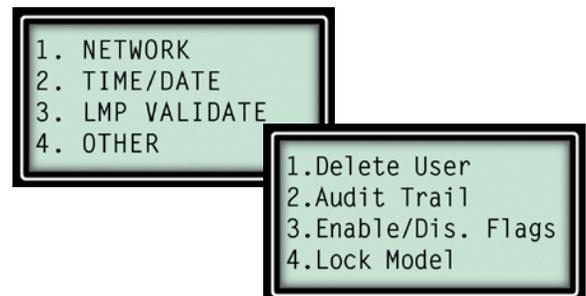
192.168.1.96

The display will revert to the previous screen. You can repeatedly press * to back up to the main screen, or simply wait until the lock does it automatically.



Step 32:

While the default (main) screen is displayed, press * to be prompted for the “password.” Enter 0 0 1 2 3 4 5 6 #. You will then see the menu screen shown at the top right. Press 4 for “OTHER.” In the subsequent menu, press 4 for “Lock Model.”



Step 33:

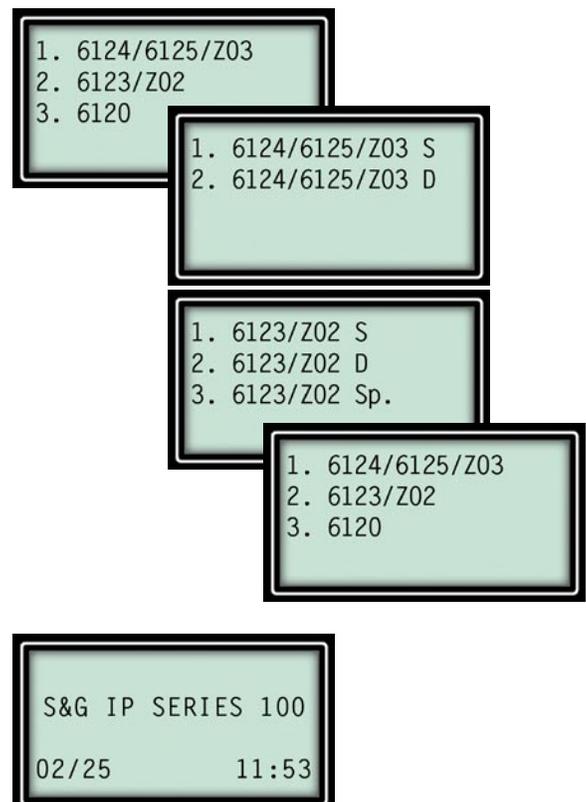
Press 1, 2, or 3, depending on the model of lock used in your installation. If your selection indicates a 6124, 6125, or Z⁰³, you will need to select whether the lock is configured for single control (multi-user) or dual control (dual user) mode. The lock would have been pre-configured at S&G’s factory.

If your selection indicates the lock is a 6123 or Z⁰², you will be prompted for the desired mode of operation—single control, dual control, or Supervisor/Employee mode.

Important: If you identified your lock as a model 6124, 6125, or Z⁰³, the lock’s default master code and the keypad’s default password are both 0 0 1 2 3 4 5 6 #. If you identified your lock as a 6123, Z⁰², or 6120, the lock’s default master code and the keypad’s default password are both 0 1 1 2 3 4 5 6 #.

Once the mode selection is made, or if your lock is a model 6120, the lock model selection screen will appear again. You can repeatedly press the * button to back up to the main screen, or simply wait until the lock does it automatically.

(continue to final step on next page)



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Step 34:

You can now check lock operation by entering the default master code when the default (main) screen is displayed. Entering this code should cause the lock bolt to retract or the solenoid to release, depending on your lock model. **Do NOT close the safe door until lock function has been thoroughly checked at least three times.**

This completes the installation.



Limited Warranty

Seller warrants that for two (2) years from the date of shipment from Seller's point of manufacture, the goods will be free from defects in material and workmanship, provided the goods are normally and properly used according to the Seller's written instructions.

THIS WARRANTY IS EXPRESSLY MADE IN LIEU OF ANY AND ALL OTHER WARRANTIES, EXPRESS OR IMPLIED. S&G DOES NOT WARRANT THAT THE GOODS ARE MERCHANTABILITY OR FIT FOR ANY PARTICULAR PURPOSE EXCEPT AS EXPRESSLY PROVIDED HEREIN.

Seller's entire liability and Buyer's exclusive remedy in the event that the goods do not conform to the foregoing warranty shall be Seller's repair or replacement of the goods (including payment of freight costs to and from point of manufacture). This warranty does not apply to batteries or damage from battery leakage.

SELLER SHALL HAVE NO LIABILITY FOR ANY CONSEQUENTIAL, INCIDENTAL, INDIRECT OR SPECIAL DAMAGES. SELLER DOES NOT WARRANT ITS LOCK PRODUCTS TO BE IMPERVIOUS TO FORCIBLE OR SURREPTITIOUS ENTRY, AND SELLER SHALL HAVE NO LIABILITY FOR DAMAGE TO OR LOSS OF PROPERTY SOUGHT TO BE PROTECTED BY ANY SUCH LOCK.

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