SEMACON Count on one.

S-1600 Series Currency Counter
Operating Manual

Models S-1600, S-1615 and S-1625 Including "V" Series

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SEMACON S-1600 SERIES CURRENCY COUNTERS

This Operating Manual serves as a general guide for operating your Semacon S-1600 Series Currency Counter. This machine is a heavy-duty, premium bank grade currency counter designed to save time and labor while counting banknotes in bulk. Before starting, please read the manual thoroughly to become familiar with the operation and functions of the machine. Please follow the operating instructions step by step and skip the functions that are not applicable to the model you purchased. If you have any questions or suggestions, please contact your authorized distributor or Semacon.

Model	Counting Mode	Adding Mode	Counting Speed (Notes/Min)	Value Mode	UV Counterfeit Detection	MG Counterfeit Detection
S-1600	√	√	1000/1200/1500/1800	-	-	-
S-1615	√	√	1000/1200/1500/1800	-	√	-
S-1625	√	√	1000/1200/1500/1800	-	√	√
S-1600V	√	√	1000/1200/1500/1800	√	-	-
S-1615V	√	√	1000/1200/1500/1800	√	√	-
S-1625V	√	√	1000/1200/1500/1800	√	√	√

WARNINGS:

● The machine should only be connected to a main AC socket with proper grounding and correct voltage.

● Please turn off the power switch and unplug the power cable before you open the back cover or when the machine will not be in use for an extended period of time.

S-1600 SERIES CURRENCY COUNTER
FRONT VIEW

1) Carrying Handle
2) Sliding Hopper Guides
3) Separation Mechanism
4) LCD Display
5) Left Side Cover
6) Stacker Rack
7) Feed Deck
8) Control Panel
9) Stacker Roller
10) Right Side Cover
11) Feed Tension Adjustment Knob

Figure 1

S-1600 SERIES CURRENCY COUNTER
REAR VIEW

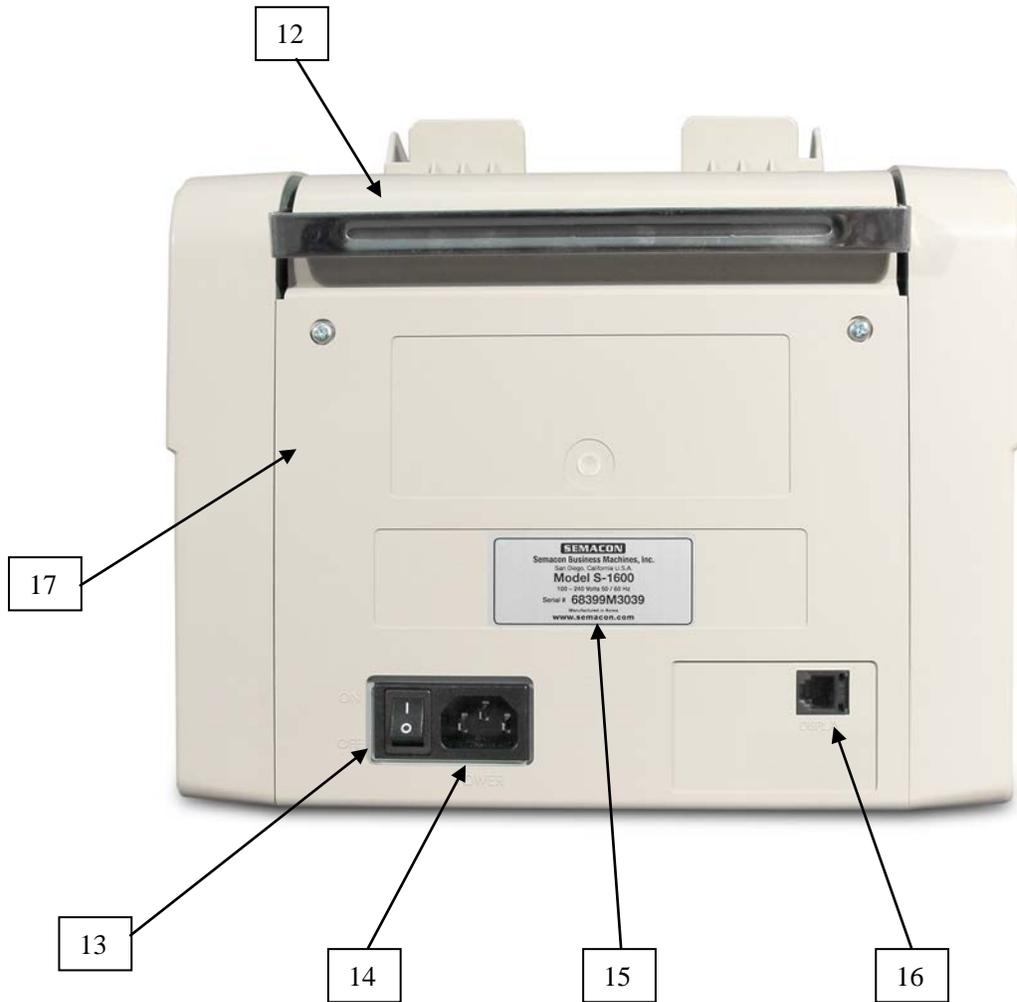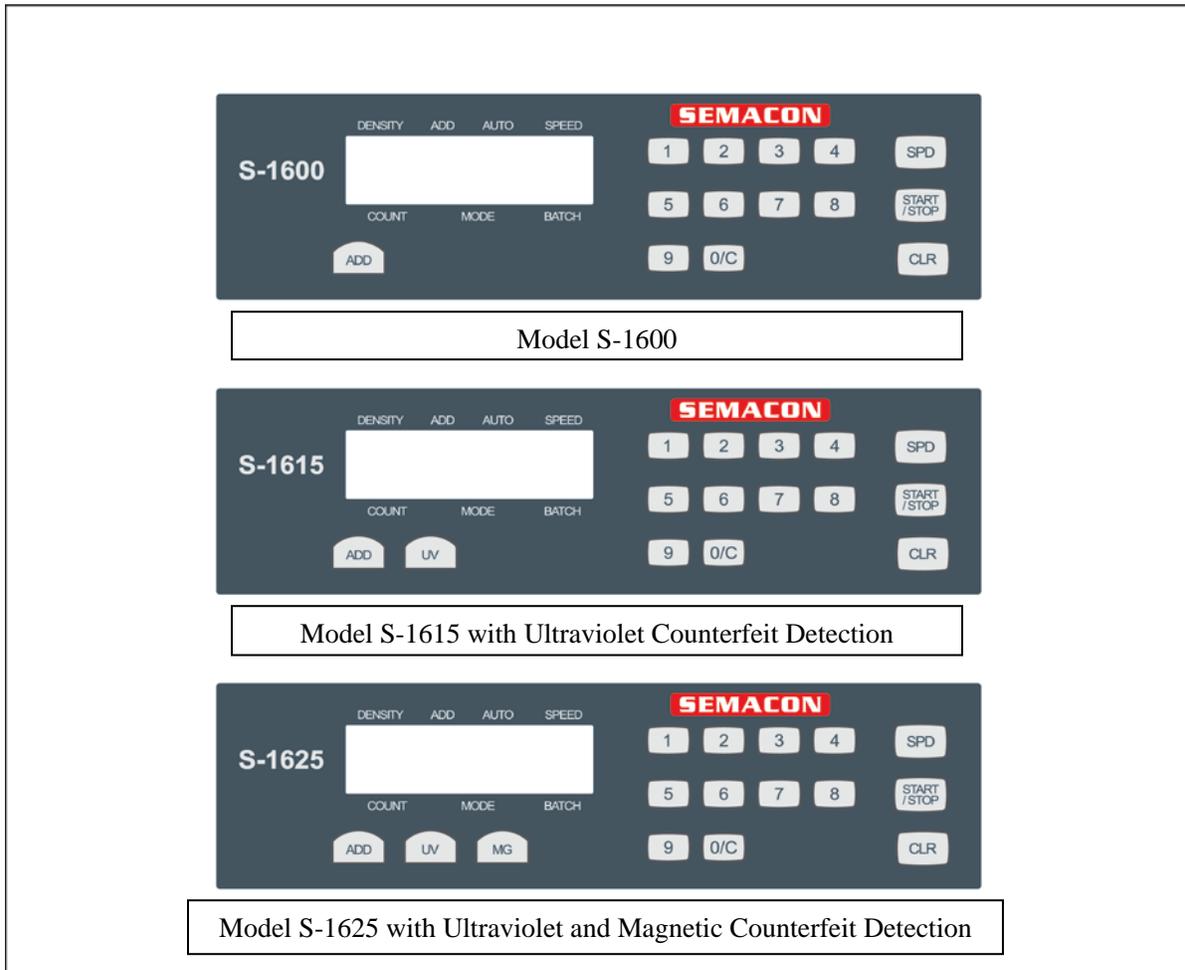| |
|---|
| 12) Upper Cover |
| 13) Power Switch |
| 14) Power Socket |
| 15) Serial Number Label |
| 16) External Display Connector |
| 17) Rear Cover |

Figure 2

CONTROL PANEL OVERVIEW

Model S-1600

Model S-1615 with Ultraviolet Counterfeit Detection

Model S-1625 with Ultraviolet and Magnetic Counterfeit Detection

KEY	FUNCTION
START/STOP	Starts, restarts or stops the counting process.
CLR	Clears the counting number display.
ADD	Switches between ADD mode and NORM (or NOM) mode.
SPD	Changes the counting speed.
1 - 9	Number buttons for selecting the batch stop setting.
0/C	Clears the batch stop setting or functions as 0 when selecting the batch stop setting.
UV	Turns on/off the UV counterfeit detection feature. (Models S-1615 and S-1625)
MG	Turns on/off the MG counterfeit detection feature. (Model S-1625 only)

CONTROL PANEL FUNCTIONS

START /STOP	The **START/STOP** button is used to restart the counting process after the machine stops during batch counting or after an error occurs.
0/C THRU 9	The number buttons are used for selecting the batch stop setting. In this mode, the counter will stop each time the batch stop setting is reached and the operator then removes the batch from the stacker. Batch stop settings between 1 and 999 bills can be entered. The batch stop setting will appear on the display above **BATCH** (see Figure 1). The selected batch number can be cleared by pressing the **0/C** button. This deactivates the batch stop mode.
CLR	The **CLR** button clears the quantity of banknotes counted, which appears on the screen of the display panel above **COUNT** (see Figure 1). The counting process is then reset to begin again at "0".
ADD	The **ADD** button switches between ADD mode and NORM (or NOM) mode. When the machine is in ADD mode, the machine will add the count for each stack of bills to the previous total. In NORM mode, the total is cleared each time a stack of bills is removed from the stacker.
UV	The **UV** button turns on/off the Ultraviolet Counterfeit Detection feature. When Ultraviolet Counterfeit Detection is activated, UV (or U) will appear above **MODE** on the display and the counter will scrutinize the paper of each banknote during the counting process to determine if there are any suspect counterfeit notes. If a suspect counterfeit banknote is detected, the counter will stop and alert the operator. If you are experiencing too many false UV suspects, the UV detection feature should be adjusted or deactivated. (This feature applies to models S-1615 and S-1625 only)
MG	The **MG** button turns on/off the Magnetic Counterfeit Detection feature. When Magnetic Counterfeit Detection is activated, MG (or M) will appear above **MODE** on the display and the counter will scrutinize the ink of each banknote during the counting process to determine if there are any suspect counterfeit notes. If a suspect counterfeit banknote is detected, the counter will stop and alert the operator. If you are experiencing too many false MG suspects, the MG detection feature should be adjusted or deactivated. (This feature applies to model S-1625 only)
SPD	The **SPD** button adjusts the counting speed of the machine. When this button is pressed, the number below **SPEED** on the display will switch between 1000, 1200, 1500, and 1800, with 1000 being the slowest counting speed and 1800 being the fastest. The recommended setting is 1500.

OPERATING INSTRUCTIONS OVERVIEW

Startup

1) Turn on the power switch located on the back of the counter near the power socket. The display will read, SELF TESTING..., indicating that the unit is completing a self-check process and checking each sensor.

2) SELF TEST PASSED will appear below SELF TESTING... to indicate that the counter has successfully completed its self-diagnostic process and is now in standby mode and ready to be used.

3) If the machine encounters a problem during the self-check startup process, an error message will appear on the display. For example:

> STACKER SENSOR
> SELF TEST FAILED

Please refer to the **Startup Malfunction Codes** to determine what the error code represents.

Basic Counting Process

1) Place the banknotes in the hopper and the counter will auto-start the counting process. It will count all the banknotes in the hopper and show the total count above **COUNT** on the display.

2) To continue counting, remove all of the counted banknotes from the stacker and place the next stack of banknotes in the hopper. The counter will begin counting from "0" again.

3) If the banknotes in the stacker are not removed before placing additional banknotes into the hopper, the counter will restart automatically but will add the additional banknotes to the previous total.

NOTE: Avoid placing damp or wet banknotes into the machine. Always be sure to remove any paper clips, rubber bands, staples or other items attached to the banknotes before counting. If the banknotes are curled, folded or bent, flatten them before running them through the machine.

Error Codes During The Counting Process

During the counting process, if a suspect counterfeit banknote is detected or a feeding error occurs (such as double note, chain note or half note), the counter will stop counting and the appropriate error code will be displayed. Please see the **Counting Error Code List** to interpret the meaning of any error codes.

MODES AND FUNCTIONS

Add Mode

Adding during count mode is performed by pressing the **ADD** button (NORM will switch to ADD beneath **ADD** on the display). With this mode turned on, the machine will add the count for each stack of bills to the previous total.

> **NOTE**: Add mode can also be used when batching if the operator selects a batch stop setting while the ADD mode is activated.

Auto and Manual Start Mode

Normally, the counter starts counting automatically when bills are placed in the hopper. This Auto Start Mode is indicated with an A on the display below **AUTO**. If you do not want the machine to start counting automatically, press and hold the number **1** key until M appears below on the display below **AUTO**. This will activate Manual Start Mode. In this mode, the machine won't start counting until the **START/STOP** button is pressed.

Batching

1) Select any number from 1-999 above **BATCH** on the display by pressing the numeric keys on the control panel. For example, to preset the batch number "50", press the **5** key and then press the **0/C** key.

2) Place banknotes in the hopper. The machine will start counting and will stop once the counted number reaches the preset batch stop setting.

3) To repeat batch counting, simply remove the banknotes from the stacker and the machine will count the next batch.

4) To clear the batch stop setting, press the **0/C** button until nothing appears above **BATCH** on the display.

VALUE MODE
("V" Models Only)

Models S-1600V, S-1615V and S-1625V offer the Value Mode feature. This feature enables the operator to select a denomination on the control panel so the counting results are displayed in dollars. On these models, a **VAL** button is included on the control panel to the left of the **ADD** button. To activate the value counting feature, press the **VAL** button. AUTO will change to $1 on the display screen below **DENOM**. Pressing the **VAL** button repeatedly will cycle through the denominations. When Value Mode is activated, the machine will count all the banknotes in the hopper as if they were the denomination displayed on the screen. The total count will be displayed in dollars above **COUNT** on the display screen. To exit Value Mode, press the **VAL** button until AUTO appears on the display screen below **DENOM**.

IMPORTANT! Value counting machines cannot detect the difference between denominations. While in Value Mode, the machine will accept and count all bills in the stack as the denomination that was selected by the operator. Any sorting errors or incorrect denomination entries will not be detected by the machine.

COUNTERFEIT DETECTION

Certain counter models contain a sophisticated counterfeit detection system (models S-1615 and S-1625). While the counterfeit detection features are designed to be as accurate as possible, they are specifically designed to pinpoint suspect banknotes that are believed to have a high probability of being counterfeit. An alert to a suspect counterfeit banknote does not assure or guarantee that the banknote is counterfeit. Additionally, while the counter is designed to detect potential counterfeit banknotes, there is always the possibility that an actual counterfeit banknote may pass through the screening process undetected.

The UV detection found in models S-1615 and S-1625 is designed to inspect and scrutinize the banknote paper for potential counterfeit properties while the MG detection found in model S-1625 is designed to inspect and scrutinize the banknote ink for potential counterfeit properties. The combination of UV and MG detection capabilities found in model S-1625 offers the greatest protection for US bills and has the highest probability of catching a suspect counterfeit banknote.

MAINTENANCE

⚠ **WARNING:** Never place your fingers inside the machine during operation.

Clearing A Jam

With the machine off and the power cord unplugged, reach in and remove any jammed banknotes if they are visible from either the top area of the machine near the feed rollers or the bottom area of the machine near the stacker. If the obstruction is not visible, the operator can cut a bill-sized piece from a file folder and use the feed rollers to manually roll it through the machine (with the power off) in order to push the obstruction to a point where it is visible and within reach. If this does not work, please contact your authorized Semacon service provider.

⚠ **WARNING:** Always switch off the power and unplug the power cord when cleaning the machine or before attempting to clear a jam.

Cleaning

In order to properly maintain your counter, it should be cleaned on a regular basis. We suggest regularly blowing any dust out of the counter with a can of compressed air which can be purchased at most office supply stores. We also recommend placing the dust cover over the machine when it is not in use and the power is off.

Depending on your usage level, your counter should be professionally cleaned and serviced periodically by your authorized Semacon distributor or it can be sent to the Semacon Service Center for a general preventative cleaning & maintenance service. Contact your distributor to determine the proper location for service.

⚠ **WARNING:** Do not use any wet cleaning cards in the machine.

Feed Tension Adjustment

You may need to occasionally adjust the feed tension to compensate for the normal wear that the rubber feed and separation rollers experience over time. The feed tension can be adjusted by turning the Feed Tension Adjustment Knob located on the top of the machine. The initial factory setting is 0. Turning the knob clockwise (so the dot on the knob is at +1 or +2, etc.) will loosen the feeding system, while turning the knob counterclockwise (so the dot on the knob is at -1 or -2, etc.) will tighten the feeding system.

Most machines function best with the dot on the knob centered at 0, but if the machine is experiencing frequent jam errors, the knob may need to be turned clockwise so that the dot is at +1 or +2. Alternately, if the machine is experiencing frequent double note, chain note or angle errors, the knob can be turned counterclockwise so that the dot is at -1 or -2.

> **IMPORTANT!** The dot on the knob should never be adjusted past -4 or +4. Contact your authorized Semacon service provider if your machine still receives error messages after the feed tension has been adjusted to either of these points.

STARTUP MALFUNCTION CODES

Malfunction Code	Cause	Solution
LEFT SENSOR SELF TEST FAILED	The left count sensor is covered with dust, out of alignment, or needs repair.	Clean the sensor with a can of compressed air and/or a cotton swab dipped in alcohol or windex. If this does not correct the problem, your counter should be sent to an authorized Semacon service center for repair.
RIGHT SENSOR SELF TEST FAILED	The right count sensor is covered with dust, out of alignment, or needs repair.	Clean the sensor with a can of compressed air and/or a cotton swab dipped in alcohol or windex. If this does not correct the problem, your counter should be sent to an authorized Semacon service center for repair.
HOPPER SENSOR SELF TEST FAILED	The hopper sensor is covered with dust or needs repair.	Clean the sensor with a can of compressed air and/or a cotton swab dipped in alcohol or windex. If this does not correct the problem, your counter should be sent to an authorized Semacon service center for repair.
STACKER SENSOR SELF TEST FAILED	The stacker sensors are covered with dust, out of alignment, or need repair.	Clean the sensors with a can of compressed air and/or cotton swab dipped in alcohol or windex. If this does not correct the problem, your counter should be sent to an authorized Semacon service center for repair.
ENCODER SENSOR SELF TEST FAILED	The encoder sensor needs repair.	Your counter should be sent to an authorized Semacon service center for repair.
UV SENSOR SELF TEST FAILED	The ultraviolet counterfeit detection sensor needs repair.	Your counter should be sent to an authorized Semacon service center for repair.
MG SENSOR SELF TEST FAILED	The magnetic counterfeit detection sensor needs repair.	Your counter should be sent to an authorized Semacon service center for repair.

COUNTING ERROR CODES

*Error Codes	Cause Of Error	Solution
CHAIN	Chain Note Detection Alert	Adjust Feed Tension Adjustment Knob counterclockwise by one number (ie: 0 to -1). Run a stack of bills through the counter. If machine still receives error messages, repeat this step until you reach -4.

If you reach -4 and your machine is still receiving error messages, reverse the process and run a stack of bills through the machine after you've turned the Feed Tension Adjustment Knob clockwise by one number (ie: -4 to -3). This step can be repeated until you reach +4.

If you reach +4 and your machine is still receiving errors, please contact your authorized Semacon service facility for further assistance. |
CHAIN FIRST	Chain Note Detection Alert (on the first bill in the stack)	
CHAIN STOP	Chain Note Detection Alert	
DOUBLE HIGH	Double Note Detection Alert	
DOUBLE LOW	Double Note Detection Alert (on the first bill in the stack)	
ANGLE LEFT	Feed Error Alert	
ANGLE RIGHT	Feed Error Alert	
HALF LEFT	Half Note Detection Alert	
HALF RIGHT	Half Note Detection Alert	
JAM LEFT	Jam Detection Alert	
JAM RIGHT	Jam Detection Alert	
JAM GAP	Jam Detection Alert	
STACKER FULL	Stacker Full Alert	Empty bills from stacker.
WIDTH HIGH	Different Denomination Alert	A different denomination has been detected. Check bill. **Not applicable for US or Canadian currency.**
WIDTH LOW	Different Denomination Alert	
UV SUSPECT (models S-1615 and S-1625 only)	Suspect Counterfeit Note - Ultraviolet Detection Alert	Inspect the top bill in the stacker for counterfeit features.
MG SUSPECT (model S-1625 only)	Suspect Counterfeit Note - Magnetic Detection Alert	
UV MG SUSPECT (model S-1625 only)	Suspect Counterfeit Note - Magnetic and Ultraviolet Detection Alert	

***If CS is included in the top line of the error code, the machine is indicating that a feed error occurred during the stop process for the original error.

IMPORTANT! Each error alert will include a second line that reads "ERROR" followed by two numbers. For example:　　　　　CHAIN
　　　　　　　　　　　ERROR　91　66
Please record the numbers provided in the second line of any error alerts you receive so your service technician may better assist you.

TECHNICAL SPECIFICATIONS

1) Ambient Temperature   32 - 104ºF
                                                0 - 40ºC

2) Ambient Humidity   30 – 90%

3) Banknote Feeding System   SmartFeed™ Friction Roller System

4) Counting Speed   1000/1200/1500/1800 Notes Per Minute

5) Note Size   100 x 50 mm to 193 x 100 mm

6) Hopper Capacity   250 – 400 Notes

7) Stacker Capacity   200 – 300 Notes

8) Display   Seven Digit (LCD)

9) Power Source   100 – 240VAC / 50 – 60Hz

10) Power Consumption   <60W

11) Stand-by Consumption   <20W

12) Dimensions   10.5"(W) x 11.5"(D) x 9.75"(H)
                                              270mm(W) x 290mm(D) x 250mm(H)

13) Weight   14 lbs (6.4 kg)

Specifications are subject to change without notice.

SEMACON Count on one.

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