

SCALE MASTER® CLASSIC

DIGITAL PLAN MEASURE

Model 6020 v3.2

User's Guide

Guía del usuario



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GETTING STARTED

Key Definitions/Functions

[OFF/ON] – Power On/Off Switch

Turns power On or Off. Turning power Off does not clear scales, modes or units.

[RESET]+[SUBTRACT/COUNT] – Clear All

Clears all values, including memory. Resets all permanent settings, except clicker and beep settings.

[OFF/ON] to turn the device off, then

[MODE] + [OFF/ON] – Software Reset

Clears all values, including memory. Resets all permanent settings, including clicker and beep settings.

[LOCK] – Lock Switch

Locks the mode, scale and units so they cannot inadvertently be changed.

[SUBTRACT/COUNT] – Subtract/Count Key

Toggles measuring mode between positive and negative direction. Increases the Count value by one. Count function is active in the “COUNT” mode.

[RCL] – Recall Key

Used to recall stored values. When you press **[RCL] [RCL]**, the last value rolled is displayed, allowing roll to continue from this value.

[MODE] – Mode Selection

Used to toggle between the following scale modes (in sequence):

- 1) Architectural (**ARCH**)
- 2) Engineering I (**ENG I**)
- 3) Engineering II (**ENG II**)
- 4) Custom (**CUSTOM**)
- 5) Count (**COUNT**)

[SUBTRACT/COUNT]+[MODE] – Unit Selection

Holding **[SUBTRACT/COUNT]** and repeated presses of **[MODE]** will scroll through the available units. Values can be converted from U.S. units to Metric within the U.S. mode. However, values cannot be converted from Metric to U.S. when in Metric mode.

[SCALE] – Scale Selection

Used to toggle between various scales within each scale mode. See “Built-In Scales” section.

[M1 +] – Memory Add Key (Length)

Adds the displayed value to the M1+ memory. This key is used to store a length in order to calculate an area.

[M2x] – Memory Add Key (Width)

Adds the displayed value to the M2x memory. This key is used to store a width in order to calculate an area. When a length and width have been stored in **[M1 +]** and **[M2x]**, pressing **[RCL] [M2x]** displays the stored width, the next press of **[M2x]** displays the area calculated from the stored length and width, and the next press of **[M2x]** displays the calculated volume if a height has been stored. Please see page 12 for calculating an Area and Volume.

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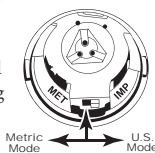
[RESET]

Used to clear the display. When pressed together with another key, clears the value of that key.

U.S. and Metric Modes

The *Scale Master Classic* is set up to use U.S. scales by default. The *Scale Master Classic* can be set up to use Metric scales by performing the following steps:

- 1) Remove the battery door on the back of the *Scale Master Classic* and remove batteries.
- 2) Flip the switch from IMP (U.S./Imperial mode) to MET (Metric mode).
- 3) Replace the batteries and battery door before using the *Scale Master Classic*.

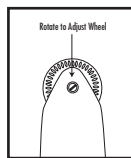


While in Metric mode, **MET** will remain lit in the display.

USING THE SCALE MASTER CLASSIC

Adjusting the Wheel

The Celcon® polymer wheel can be adjusted for each user's preference. To adjust the wheel, take a small, flat-head jeweler's screwdriver and slightly rotate the screw located near the wheel tip. Rotating the screw about 1/4 to 1/3 turn should be sufficient. Rotating the screw



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within those two values should adjust the wheel between free spinning (which is too loose) to skidding (which is too tight).

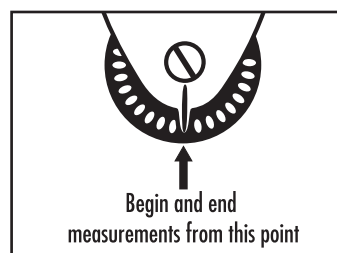
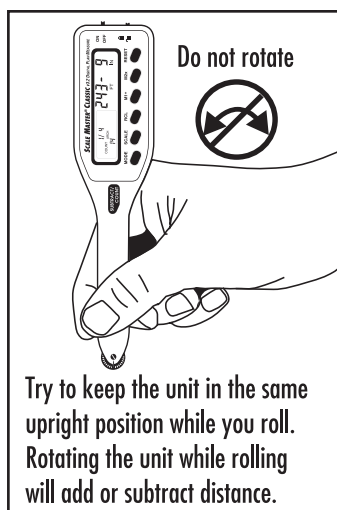
Rolling a Measurement

To take a measurement with the *Scale Master Classic*:

- 1) Switch the unit on. Press **[RESET]** to clear the display.
- 2) Select your type of scale by pressing the **[MODE]** key. Then press the **[SCALE]** key to select your scale.
- 3) Begin rolling. The display will register your measurements.
To ensure accurate measurements, be sure to hold the unit upright and start and stop the *SMC* at the exact points you are measuring.
- 4) Press the appropriate key if you want to store this measurement (ex. **[M1 +]** to store as length, **[M2x]** to store as width).
- 5) Press **[RESET]** to clear the display and begin a new measurement.

Note: *If the wheel is rolled anytime a value is displayed due to a recall or a calculation, you may notice a very slight delay before the current measurement appears on the display. It is important to note that this measurement includes the distance rolled during the delay. This slight delay is to minimize the accidental clearing of recalled and calculated values from the display due to very slight wheel movement.*

Operation



Built-In Scales

U.S./Imperial Scales

Architectural ARCH	Engineering I ENG I	Engineering II ENG II
1 foot=	1 inch=	1 inch=
1/4"	10.0'	300.0'
3/8"	20.0'	333.3'
1/2"	30.0'	400.0'
3/4"	40.0'	416.6'
1" (1/1)	50.0'	500.0'
1½" (3/2)	60.0'	583.3'
2" (2/1)	83.3'	600.0'
3" (3/1)	100.0'	625.0'
4" (4/1)	166.6'	666.6'
1/32"	200.0'	750.0'
1/16"	250.0'	1,000.0'
3/32"		1,200.0'
1/8"		2,000.0'
3/16"		3,000.0'

Metric Scales

Architectural ARCH	Engineering I ENG I	Engineering II ENG II
1:50	1:100	1:1,000
1:75	1:125	1:1,250
1:1	1:150	1:1,500
1:2	1:200	1:1,625
1:3	1:250	1:2,000
1:4	1:300	1:2,500
1:5	1:400	1:5,000
1:10	1:500	1:6,000
1:20		1:10k
1:25		1:12.5k
1:30		1:20k
1:40		1:25k
		1:50k

Locking Modes, Scales and Units

Your *Scale Master Classic* comes equipped with a lock switch that prevents inadvertently changing drawing scales. When the lock is activated, a lock symbol will be displayed in the LCD. While active, the Mode, Scale and Units cannot be revised.

Turning the Clicker & Beep On/Off

To toggle the rolling click off or on, press **[RESET] + [SCALE]**. This will also toggle the “COUNT” and error/notification beep off or on.

Using the Custom Scale/Ruler

The default value (after a Clear All/Software Reset) for Custom Scale is one-to-one (e.g., 1 inch equals 1 inch). This lets you use your *Scale Master Classic* as a rolling ruler, which is especially useful for measuring irregular shapes.

- 1) To reset your Custom Scale setting to a one-to-one ratio, press **[RESET] + [SUBTRACT/COUNT]** to perform a Clear All.
- 2) Then press the **[MODE]** key until the “CUSTOM” mode appears.
- 3) Begin rolling.

Memory Function Keystrokes

[RCL] [M1 +]

Displays the value stored in the M1+ memory register.

[RCL] [M2x]

Displays the value stored in the M2x memory register.

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[RESET] + [M1 +]

Clears the value stored in the **M1+** memory register.

[RESET] + [M2x]

Clears the value stored in the **M2x** memory register.

[RESET] + [RCL]

Clears values stored in memory **M1+** and **M2x**.

Converting Between Scales

The *Scale Master Classic* can automatically convert values between scales. For example, 20 feet rolled in 1/16" scale will be converted to 10 feet in 1/8" scale. You may want to roll a value in one scale and then add that exact value (unconverted) to a value rolled in another scale.

- 1) Roll a value and press **[M1 +]**. Press **[SCALE]** to change scales.
- 2) Roll another value and press **[M1 +]**.
- 3) Press **[RCL] [M1 +]** to recall the combined total.

Using the Counter

You can use the **[SUBTRACT/COUNT]** key to count items such as electrical outlets, drains, etc. Press **[MODE]** until you find the "COUNT" mode. Then press the **[SUBTRACT/COUNT]** key to count the items.

You can use the **[M1 +]** and **[M2x]** memory keys to store or accumulate the counts for two different items. After you have a count value, press **[M1 +]** or **[M2x]** to store it.

Programming Mode

The *Scale Master Classic* allows you to preset frequently used values, including:

- Custom Scales (3 U.S./3 Metric)
- Height value

The following keys are used in programming mode:

[M1 +] Increases the selected digit/units.

[SUBTRACT/COUNT] Decreases the selected digit/units.

[SCALE] Advances the cursor to the next place to the right. Exits and saves changes if pressed while right-most digit is selected.

[MODE] Moves the cursor back to the next place to the left.

[RESET] Exits without saving.

Setting Custom Scales

You can program and store six Custom Scales: three in U.S. mode and three in Metric mode. You can set a custom scale two ways: by “rolling in” a known distance or by entering the exact distance.

Rolling a Custom Scale

- 1) Press **[MODE]** until **# OPEN** (# being a number 1-3) appears in the scale box display.
- 2) Press **[SUBTRACT/COUNT] + [SCALE]**. “**ROLL**” will appear in the main display.
- 3) Roll desired distance. “**ROLLING**” now appears in the main display.

Note: For greater accuracy, roll the longest known distance you have on your plan.

- 4) Press **[SCALE]**. The annunciator will begin

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flashing "FT IN" for U.S. Mode or "M" for Metric Mode.

- 5) If you do not want to change the units, skip to step 6. If you want to change the units, press **[M1 +]** until you reach the desired units.
- 6) Press **[SCALE]** to begin setting the scale distance. The left-most digit will begin flashing. Press:
[M1 +] to increment the selected digit,
[SUBTRACT/COUNT] to decrement,
[SCALE] to advance to the next digit,
[MODE] to move back one digit.
- 7) Continue to press **[SCALE]** until all digits are set and the display returns to zero. The scale is now stored.

Entering a Custom Scale

- 1) Press **[MODE]** until **# OPEN** (# being a number 1-3) appears in the scale box display.
- 2) Press **[SUBTRACT/COUNT]+[SCALE]**. "ROLL" will appear in the main display.
- 3) Press **[SCALE]** again. The annunciator will begin flashing "FT IN" for U.S. Mode. The left-most digit flashes for Metric Mode.

Note: If in Metric Mode, skip to Step 5.

- 4) If you want to change the units, press **[M1 +]** until you reach the desired unit. Then press the **[SCALE]** key to begin setting the distance. The left-most digit will begin flashing.
- 5) In U.S. mode, the scale will be one inch equals the distance you entered. In Metric mode, entered scales are direct ratios.

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- 6) Press:
[M1 +] to increment the selected digit,
[SUBTRACT/COUNT] to decrement,
[SCALE] to advance to next digit,
[MODE] to move back one digit,
- 7) Continue to press [SCALE] until all digits are set and display returns to zero. The scale is now stored.

Press [RCL] [SCALE] while in custom mode to display the current custom scale.

Setting a Height

The height function is used to enter a height value for finding volume.

- 1) Press [SUBTRACT/COUNT] + [M2x]. The annunciator will begin flashing "FT IN" for U.S. mode or "M" for Metric mode.
- 2) If you do not want to change the units, go to step 3. To change the units, press [M1 +] until you reach the desired unit.
- 3) Press [SCALE] to begin setting the digits. The left-most digit will begin flashing.
Press:
[M1 +] to increment the selected digit,
[SUBTRACT/COUNT] to decrement,
[SCALE] to advance to next digit,
[MODE] to move back one digit.
- 4) Continue pressing [SCALE] until all digits are set and the display returns to zero. The height is now stored.

Note: Once you set your height, you do not need to enter it again unless you want to change it.

Finding Area and Volume

Finding Area

- 1) Roll the first side and press **[M1 +]**. A small “M” will appear in the scale box display and the main display will be cleared.
- 2) Roll the second side and press **[M2x]**. The main display will be cleared.
- 3) Press **[RCL] [M2x]**. This displays the linear value stored in this register. The second press of **[M2x]** will calculate and display the area, which is the value stored in **[M1 +]** multiplied by the value stored in **[M2x]**.

Finding Volume

- 1) Roll the first side and press **[M1 +]**.
- 2) Roll the second side and press **[M2x]**.
- 3) Set a Height value (see “Setting a Height”).
- 4) Press **[RCL] [M2x]**. This displays the linear value stored in this register. Press **[M2x]** a second time to calculate and display the area. Press the **[M2x]** key again to find volume. Press **[M2x]** a fourth time to display the stored height value.

APPENDIX

Error/Auto-Range Function

Error Message – Press **[RESET]** to clear.

Auto Range Function – When rolling or calculating large numbers, your answer will be displayed in the next largest measurement unit (ex: 10,000 M will display instead of 10,000,000 MM).

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Interference

Exposure to direct light or close proximity to cell phones and other electronic devices may cause interference with the *Scale Master Classic* device and result in erroneous measurements.

Automatic Shut-Off

To conserve battery power, the unit will shut itself off if it is not used for 4-6 minutes. Press the [RESET] key to restore power. All registers and settings remain intact, including all temporary registers.

Battery Replacement

To replace the batteries:

- (1) Remove battery door;
- (2) Remove batteries and replace with new batteries, positive side up.



Specifications

Power Source:

Two 3-Volt CR2032 lithium batteries.
Approximately 400 hours normal use.

Display Method:

LCD with commas, annunciators and zero suppression.

Display Capacity (Main Display):

9,999,999 (7 digits)

Resolution/Accuracy:

0.025 Inch/99.75%

Note: Based on start/stop point and scale magnitude, users typically experience $\pm 2\%$ - 3% rolling error.

Dimensions:

6.7" x 1.6" x 0.6" (170mm x 41mm x 15mm)

Repair and Return

Repair and Return Information

Return Guidelines:

1. Please read the *Warranty* in this User's Guide to determine if your Calculated Industries product remains under warranty **before** calling or returning any device for evaluation or repairs.
2. If your product won't turn on, check the batteries as outlined in the User's Guide.
3. If you need more assistance, please go to our website listed below
4. If you believe you need to return your product, please call a Calculated Industries representative between the hours of 7:00am to 4:30pm Pacific Time for additional information and a Return Merchandise Authorization (RMA).

Call Toll Free: 1-800-854-8075

Outside USA: 1-775-885-4900

www.calculated.com/warranty

Warranty

Warranty Repair Service — U.S.A.

Calculated Industries ("CI") warrants this product against defects in materials and workmanship for a period of one (1) year from the date of original consumer purchase in the U.S. If a defect exists during the warranty period, CI, at its discretion, will either repair (using new or remanufactured parts) or replace (with a new or remanufactured unit) the product at no charge.

THE WARRANTY WILL NOT APPLY TO THE PRODUCT IF IT HAS BEEN DAMAGED BY MISUSE, ALTERATION, ACCIDENT, IMPROPER HANDLING OR OPERATION, OR IF UNAUTHORIZED REPAIRS ARE ATTEMPTED OR MADE. SOME EXAMPLES OF DAMAGES NOT COVERED BY WARRANTY INCLUDE, BUT ARE NOT LIMITED TO, BATTERY LEAKAGE, BENDING, A "BLACK INK SPOT" OR VISIBLE CRACKING OF THE LCD, WHICH ARE PRESUMED TO BE DAMAGES RESULTING FROM MISUSE OR ABUSE.

To obtain warranty service in the U.S., please go to the website. A repaired or replacement product assumes the remaining warranty of the original product or 90 days, whichever is longer.

Non-warranty Repair Service — U.S.A.

Non-warranty repair covers service beyond the warranty period, or service requested due to damage resulting from misuse or abuse.

Contact Calculated Industries at the number listed on the previous page to obtain current product repair information and charges. Repairs are guaranteed for 90 days.

Repair Service — Outside the U.S.A.

To obtain warranty or non-warranty repair service for goods purchased outside the U.S., contact the dealer through which you initially purchased the product. If you cannot reasonably have the product repaired in your area, you may contact CI to obtain current product repair information and charges, including freight and duties.

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IN NO EVENT WILL CI BE LIABLE FOR DIRECT, INDIRECT, SPECIAL, INCIDENTAL, OR CONSEQUENTIAL DAMAGES RESULTING FROM ANY DEFECT IN THE PRODUCT OR ITS DOCUMENTATION.

The warranty, disclaimer, and remedies set forth above are exclusive and replace all others, oral or written, expressed or implied. No CI dealer, agent, or employee is authorized to make any modification, extension, or addition to this warranty.

Some states do not allow the exclusion or limitation of implied warranties or liability for incidental or consequential damages, so the above limitation or exclusion may not apply to you. This warranty gives you specific rights, and you may also have other rights, which vary from state to state.

FCC Class B

This equipment has been tested and found to comply with the limits for a Class B calculating device, pursuant to Part 15 of the FCC Rules.

Looking for New Ideas

Calculated Industries, a leading manufacturer of special-function calculators and digital measuring instruments, is always interested in new product ideas in these areas.

If you have a new product idea, please visit our "Bright Idea" page at www.calculated.com/brightidea.asp. For suggestions about improving this product or other products, please visit us at www.calculated.com under "Contact Us". Thank You.