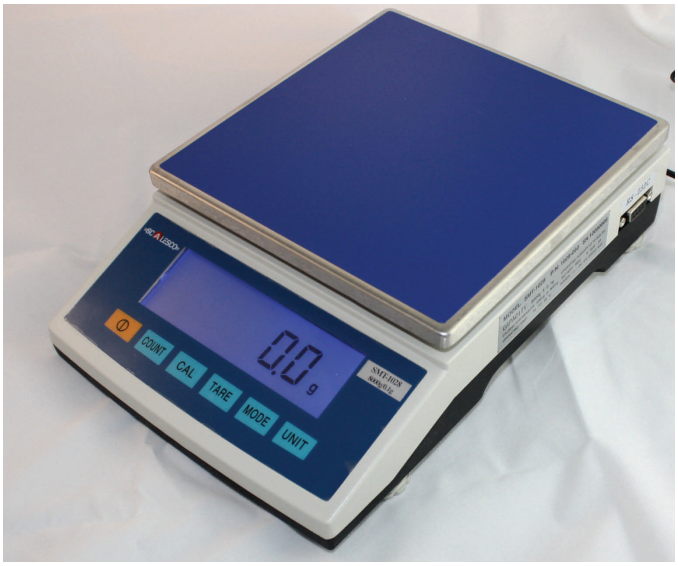
SMT-1028

Precision Balance

User Manual



Scalesco Measurement Technology Inc.

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UNITED STATES

This equipment has been tested and found to comply with the limits for Class A digital device, pursuant to Part 15 of the FCC rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. His equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.

CANADA

This digital apparatus does not exceed the Class A limits for radion noise emissions from digital apparatus set out in the Radio Interference Regulations of the Canadian Department of Communications.

Le present appareil numerique n'emet pas de bruits radioelectroniques depassant les limites applicable aux appareils numeriques de la Class A prescrites dans le Reglement sur le brouillage radioelectrique que edicte par le minister des Communications du Canada.

Risk of Electrical shock. Do not remove cover.

No user serviceable parts inside.

Refer servicing to qualified Scalesco service personnel.

Scalesco Measurement Technology reserves the right to change specifications at any time.

UNPACKING AND INSTALLING THE SCALE

Unpacking the scale

Check packaging for any obvious evidence of damage. Inspect the unit for shipping damage. Immediately report shipping damage to Scalesco at 1-866-587-9773.

Remove contents from packaging, your product should include:

1. AC adapter
2. Scale with Stainless Steel weight platter (do not remove blue protective film)

If you are missing an item please contact Scales-co for immediate replacement at no charge , shipped via UPS ground.

Installing the scale

1. Mount the scale on a stable, level surface that is free from air currents, rapid temperature changes and vibration. This may effect the weighing accuracy or the stability of the displayed weight.

2. Carefully install, do not force, the weight platter on top of the mounting posts. Make sure the weight platter does not touch any adjacent surfaces, make sure the power cords, remote display cables are not touching the live weighing surface.

3. Be sure all feet are in contact with the counter, use the leveling feet and level bubble, if applicable to your model, to make a firm contact.

4. Connect the AC adapter's power plug to the scale, then plug the AC adapter into a appropriate outlet, properly grounded.

5. Turn the unit on for **15 minutes**, to allow the electronics and load cell to warm up to room temperature.

6. Place a known weight on the scale to test the weighing accuracy. Your scale should display within the weighing tolerance shown within the Weighing Tolerances section of this manual.

Trouble Shooting Tip!

"If your scale is not weighing accurately upon installation, go to the calibration instructions found in this manual to perform a new calibration. Your scale may have become out of tolerance due to a large change in the altitude from initial factory calibration or a mechanical shift during the shipment of the product."

Battery Installation

Your model of Precision balance operates on eight (8) “AA” Batteries. The expected life of the batteries is 15 hours of use with the backlight turned off.

Remove the battery cover on the bottom of the scale, insert the batteries into the appropriate location, making sure you align the batteries into the correct positive (+) and negative (-) orientation.

It is recommended to remove the batteries if using AC power or storing the unit for future use.

Technical Specification

Model # **(Part #)**	**SMT-1028** **(1028-030)**	**SMT-1028** **(1028-060)**	**SMT-1028** **(1028-080)**
Capacity and Resolution	3000 x 0.1 g	6000 x 0.1 g	8000 x 0.1g
Linearity & Std Deviation	+/- 2 divisions (division = resolution setting)		
Operating Temp	10° - 40° C / 50° - 104° F		
Tare Range	Up to 100% of max. capacity, subtractive (subtract tare weight from max capacity = new max capacity)		
Overload	Maximum capacity + 9 divisions (division = resolution setting)		
Stabilization	Up-to 3 seconds to stable weight reading		

Features and Operator Keypad

The Model SMT-1028 Precision balance is an affordable solution for many applications. Perfect for use in manufacturing factories, mines, agriculture, water conservation, medicine, food analysis, gems and jewelry, and educational laboratories.

It provides an big backlite LCD display for great visibility when used indoors and outdoors. Design for use within stable environments where fluctuation of temperature, humidity and vibration are limited.

Features include a simple counting feature for weighing small components, % weighing for use to compare the weight of similar items or check weighing. Use the draft shield to reduce improve weighing accuracy due to wind currents.

⏻	Power on and Power Off the scale.
COUNT	Activates the counting function
CAL	Activates the calibration function.
TARE	1)Performs a Zero Function. 2)Tare removes the weight of a container from the display and returns the scale to zero weight. 3) Activates the percentage weighing function.
MODE	1)Turns LCD display backlight on and off 2) used in CAL and COUNT Functions
UNITS	Switches the displayed weight between **g**rams, **oz**,, ozt **lb**, **ct** (carat), and **dwt** (penny weight), **pcs** (piece count), **%** (percentage weighing).

Operating Instructions

Standard Weighing

1.Turn on the scale, using the power button. The scale perform a test sequence. If everything is OK, the display will show zero weight and the scale is ready for use.

2. Press the **TARE** key if display is not showing “0.000” weight.

3. Place your item on the weight platter, it may take up to 3 seconds for the weight to stabilize.

4. Press the **UNITS** key to change the units of measure from grams to oz, ozt, dwt, lb or ct, pcs.

5. If your are using a container to weigh objects and want to see the net weight, place the container on the scale, press the **TARE** key. The display should show “0.000” weight. Place your items in the container, to determine the net weight.

*Note: Upon completion of your tare weighing, after removing your container the display will show a negative weight. Press the **TARE** key to return the scale to zero weight.*

Percentage Weighing

Percentage weighing is to be used if you want to compare the weight of one item to others, also know as check weighing.

1. Press the **TARE** key if the scale is not showing “0.000 weight.

2. Place your sample weight item on the scale, press and hold the **TARE** key for 5 seconds until the “%” in displayed, release the **TARE** key.

3. Your sample item is know set at 100%. Place another item on the scale, the scale will show a number indicating the difference of weight, in %, compared to the original sample weight. Press the units to see the live weight.

4. When your % weighing is complete, with no weight on the scale and while in the % weighing mode, press and hold the **TARE** key until the % digits disappear. “Err 4” will briefly display to indicate the % weight has been removed.

Turning On and Off the back light

The SMT-1028 comes with LCD backlight display. With the backlight display “ON”, the display is more visible within in dark lighting conditions. Press the **MODE** key to turn the backlight on and off.

Operating Instructions

Counting Function

THE SMT-1028 provides a counting feature using pre-set sample sizes of 5, 10, 20, 30, 40 or 50 pieces. Make sure your sample count is accurate

Tlp: For best counting results, the single piece weight of the item you are counting should be greater than or equal to the resolution of your scale (see Technical specifications). The lighter the item you are counting, the higher the number of sample pieces should be used during the sampling process.

1.Press the **TARE** key to ensure the scale is at zero weight..

1a. If using a container to hold your sample pieces and counted items, place the container on the scale , press the **TARE** key.

2. Press the **COUNT** key, “CON” is displayed.

3. Press the **TARE** key “pc ADD 5” is displayed.

4. Press the **MODE** key to scroll between 5, 10, 20, 30, 40 or 50 pieces. This is your sample size.

5. Once you have determined your sample size, place the items on the scale, press the **TARE** key to activate counting function. Once the weight has stabilized the “pc” symbol is shown on the display.

6. Briefly wait for the display to change to the sample size number you selected.

7. Add your remaining item to see the total count.

Press the **UNIT** key if you want to scroll between the piece count (“pc”) and net weight(s).

If “PC Err” is displayed this indicates the sample size you choose was to small, remove items from the scale and repeat steps 2-5, choosing the next higher sample size available.

The piece weight will remain in memory, until your have powered on and off the scale or performed a new sample weighment. Upon power-up an invalid piece-weight is stored, always perform a new sample to provide accurate readings.

Note: Typically not all the items you are counting weigh the same , this could cause an error in your total count .

Configuration and set-up

AZT setting (Auto Zero Tracking)

The AZT setting allows you to configure how many displayed divisions or resolution the scale will pull in at **ZERO** weight. The default setting is 1 division, increase your setting to 2d, or 4d to increase the zero return performance of your scale.

1.With the scale powered off and no weight on scale, press the **Θ** key. Press and hold the **MODE** key during the countdown display test, “F1 AZT” is displayed.

2. Press the **TARE** key to accept, Press the **Mode** key to scroll between 0.5d, 1d, 2d and 4d. Press the **TARE** key to accept your setting.

3. Press the **Θ** key, to exit the set-up mode.

Weighing Tolerances & Calibration

Model # **(Part #)**	**SMT-1028** **(1028-030)**	**SMT-1028** **(1028-060)**	**SMT-1028** **(1028-080)**
Max Capacity	3000 grams	6000 grams	8000 grams
Resolution	0.1 grams	0.1 grams	0.1 grams
Weighing Tolerance	0.2 grams	0.2 grams	0.2 grams
Required Calibration Weights	1000 / 3000 g	2000 / 6000 g	4000 / 8000 g

Form time to time, all scales may require calibration to provide an accurate weighing. When calibrating your scale, you are teaching the scale a zero weight reading, and a known accurate weight(s).

The SMT-1028 provides two methods of calibration. The standard or “SCALE” method requires only one weight to perform calibration, while the Linear or “LINE” method requires two weights, shown above, to calibrate the scale.

Calibration

WARNING!

Calibrating your scale with inaccurate or the incorrect weights as defined in the Weighing Tolerances and Calibration Section will cause your scale to weigh incorrectly.

Standard "SCALE" Calibration

1.With no weight on the scale, press the **TARE** key to zero the scale.

2. Press the **CAL** key, "Scale" is displayed. Press the **TARE** key to accept.

3. The scale will display the default calibration weight value, press the **MODE** key to scroll to the calibration weight your have available.

4. Press the **TARE** key to accept. "0" will flash, indicating a zero calibration, then "XXX" (the calibration weight selected in step 3).

4. Place the correct gram calibration weight on the scale.

5. The calibration weight value will continue to flash indicating a busy condition, then display a stable weight value. Your scale is now calibrated

Linear Calibration

1.With no weight on the scale, press the **CAL** key, "Scale" is displayed.

2. Press the **MODE** key scroll "LINE" is displayed.

3. Press the **TARE** key to accept.

4. The scale will briefly display "0" then the default calibration weight value.

5. Place the correct calibration weight on the scale.

6. The display will then flash to the next calibration weight required, place correct weight on the scale.

7. The calibration weight value will continue to flash indicating a busy condition, then display a stable weight value. Your scale is now calibrated.

*Note: If the scale does not display zero weight upon removing the weight, press the **TARE** key to return the scale to zero. Repeat calibration steps if an error was made during the calibration process.*

Loadcell Diagnostics

Counts Mode

The Counts mode allows you to determine the proper operation of your load cell. If your load cell may have been damaged to due accidental overload or dropping of the scale, use the counts mode to determine if your load cell is providing active counts.

If your scale is weighing inaccurately, you should first perform calibration. Typically a damaged load cell will display "- - - - -" dashes or will not show alive weight.

1.With no weight on scale, press the **Θ** key. Press and hold the **MODE** key during the countdown display test, "F1 AZT" is displayed.

2. Press the **Mode** key, "F2 Cnt" is displayed. Press the **TARE key** to accept.

3. The display will show the raw counts of the scale, press the **TARE** key to zero the counts. Place your provided calibration weight on the scale to determine if the weight value changes.

4. Press the **Θ** key, to exit the set-up mode.

Weighing Tolerances & Calibration

Model # **(Part #)**	**SMT-1028** **(1028-030)**	**SMT-1028** **(1028-060)**	**SMT-1028** **(1028-080)**	
Full capacity counts	515550	975360	1279360	
Acceptable Tolerance	+ / - 500	+ / - 500	+ / - 500	
1 KG counts	171850	162560	159920	
Acceptable Tolerance	+ / - 500	+ / - 500	+ / - 500	

Communication and Specifications

The SMT-1028 Precision balance includes a 9-pin RS-232 port for transmitting the weight to your host device using a null modem cable (not supplied). Communication

Specification: **9600** Baud Rate, **8** Data Bits, **No** parity, **1** stop bit

ASC II Output Format: " +(-) XXX.XX UNIT<CR>

Your weight will transmit upon stable weight reading the format above.

Trouble Shooting Tip -

Use Windows HyperTerminal or similar program to test communication.

CABLE PIN-OUT SPECIFICATIONS

PIN	PC	BALANCE	PIN
1	EMPTY		1
2	RXD (In)	RXD (In)	2
3	TXD (Out)	TXD (Out)	3
4			4
5	Ground	Ground	5
6,7,8,9			6,7,8,9

Care and Maintenance

Cleaning—Use a damps cloth with mild detergent to clean your scale.

Calibration Schedule—In order to maintain the highest accuracy, you should implement a monthly, quarterly or yearly calibration schedule.

Handle with Care—Precision scales include sensitive load cells. Dropping the unit or placing weights on the scale that are heavier then the rated capacity of your scale may cause damage to the load cell.

Service Information

If you experience any difficulty, the Scalesco team is available to help you between the hours of 8:00 AM and 5:00 PM CST, M-F, toll free 1-866-587-9773 or 507-238-9773. For after hours support, e-mail us at sales@scales-co.com.

Trouble Shooting and Error Codes

Symptom	Possible Cause	Remedy
Cannot turn on	• No power to scale • Incorrectly installed battery	• Verify AC adapter connections and voltage • Replace batteries, check polarity
Poor weighing accuracy	• Improper calibration • Unstable environment • Debris touching pan • Scale was not zeroed prior to use	• Perform calibration • Move scale to stable location • Clean any debris near weight platter • Press the TARE key to zero the scale prior to use
Will not Calibrate	• Unstable environment • Incorrect calibration weight used	• Move scale to suitable location • Use correct calibration weight
Err O	• Mechanical condition	• Verify weight platter is installed correctly, power scale on then off
Err 1	• Overload condition	• Excess weight applied to scale, remove weight • Perform Calibration
Err 2	• Underload condition	• Verify weight platter is installed correctly, power off then on • Perform Calibration
Err 3	• Zero error—weight on scale during power on	• Remove weight, power off then on
Err 4	• Tare key not held for 5 seconds to activate % weighing • % weighing de-activated	• Repeat % weighing, hold Tare key for 5 seconds
F1 Azt, F2 Cnt	• Button was pressed upon power-up	• Turn balance off, then on
000000 %	• Unit was powered off while in “pcs” mode	• Press the units key once

Limited Warranty Policy

Scalesco Measurement Technology Inc (hereafter referred to as “SMTI”) products are warranted against defects in material and workmanship for a period of one (1) year from the date of shipment.

During the warranty period SMTI will repair, or at its option, replace at no charge any component(s) determined defective by a authorized SMTI representative, provided the equipment is returned freight prepaid, to Scalesco Measurement Technology Inc.

The warranty will not apply to products that:

1. Have had repairs or modifications not authorized by SMTI.
2. Have been subject to damage by accident, misuse, careless handling, inappropriate installation, fire, water submersion or act of God.
3. Have been exposed to corrosive material
4. Have foreign material penetrating or within the product.
5. Have been determined to weigh accurately after calibrating according instructions within the user manual.

SMTI’s liability is confined to the factory repair, product or parts replacement, and does not extend coverage to labor, material or service charges involved in removal of the equipment to return to the factory or from on-site repair.

SMTI is not responsible for any direct expenses or consequential damage due to errors in weighing or failure of a Scaleco brand product to perform properly.

SMTI reserves the right to incorporate changes in material, operation and design of the products without notice and is not obliged to incorporate the same changes in equipment previously or currently manufactured.

This warranty is limited exclusively to defective Scalesco brand products. The SMTI warranty is limited to initial the installing customer and is not intended to insure the benefit of a secondary owner in the event of resale after use. This warranty is in lieu of all other warranties, expressed or implied.

Return Policy

See our website for the up-to-date return policy at http://www.scales-co.com.

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