USER MANUAL

SERIES CM

Models:

CM-3
CM-6
CM-15
CM-30

REV. 1A11M06

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POWER SOURCE

Input: 100~240V 50/60hz
Output: 12V/1A DC 12W
Lead-acid rechargeable battery: 6V/4AH

POWER CONSUMPTION

Approx. 12mA

Approx. 36mA with backlight

Approx. 48mA with backlight and RS232 interface (optional)

BATTERY HOURS PER CHARGE

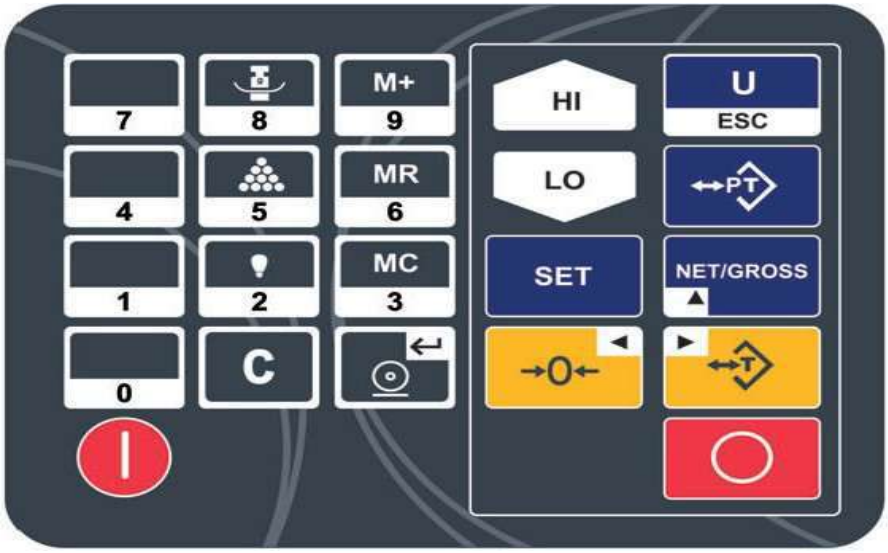
Approx. 320 hours (backlight off)

SCALE'S VERSION NUMBER DISPLAY

1. Turn on the scale.
2. Press and hold the ZERO key until the countdown sequence has completed.
3. The LCD display will show "1001". The shown number is the main-board version of the scale.
4. Release the ZERO key and the scale will start the functions setup.

DISPLAY DESCRIPTION

KEYBOARD DESCRIPTION



KEY FUNCTIONS DESCRIPTION

To turn off the scale, press and hold the OFF key and the display will show "Off" for 2 seconds.

Press the key to turn on the scale.

Function 1. To select desired weighing unit.
Function 2. To escape (exit) setting in setup mode.

Function 1. To reset the weight to 0, but the displayed weight value has to be less than ± 2% of maximum capacity.
Function 2. To move one space to the left or downward in setup mode

Function 1. To subtract the container weight.
Function 2. To move one space to the right or upward in setup mode.

Function 1. To see gross and net weight when the scale is on tare status. All other keys will be disabled when gross weight is activated

Function 2. To increase values upward in setup mode.

Function 1. To select internal backlight mode of the display.
Function 2. Works as numeric number 2 in setup mode.

Function 1. Manual transmitting data through RS-232 to computer or

printer at normal weighing mode (RS-232 must be set up keyboard transmission 232 3 or 232 6).

Function 2. Works as enter key in setup mode.

To preset Tare value

To preset High Weight value

To preset Low Weight value

To program check weighing parameters

Function 1. To accumulate weights
Function 2. Works as numeric number 9 in setup mode

Function 1. To display total accumulation count and total accumulated weight.
Function 2. Works as numeric number 6 in setup mode.

Function 1. To clear all accumulated weight data.
Function 3. Works as numeric number 3 in setup mode.

Function 1. To enter the samplefor piece counting
Function 2. Works as numeric number 8 in setup mode.

Function 1. To actívate counting mode
Function 2. Works as numeric number 5 in setup mode

To clear an entry.

PRESET TARA VALUE

1. Press the  key.
2. Use numeric keys from 0 to 9 to enter the required Tara value.
3. Press the  key to confirm, the indicators Net and PT will appear.
4. The scale will return to normal weighing mode automatically.

Clear a preset Tare value.

1. Press the  key.
2. Press the  key to clear the previously entered value.
3. Press the  key to continue.
4. The scale will return to normal weighing mode automatically.

PRESET THE HIGH WEIGHT VALUE

1. Press the  key.
2. Use the numeric keys from 0 to 9 to set the required HI weight value.
3. Press the  key to confirm.
4. The scale will return to normal weighing mode automatically.

PRESET THE LOW WEIGHT VALUE

1. Press the  key.
2. Use the numeric keys from 0 to 9 to set the required LO weight value
3. Press the  key to confirm.
4. The scale will return to normal weighing mode automatically.

CHECK-WEIGHING FUNCTION CONFIGURATION

o 0 0 0
A B C

A: Acoustic signal.
Option 0=stability is not required
Option 1= stability is required

B: LCD indicator and Relay activated
Option 0=stability is not required
Option 1= stability is required

C: Acoustic signal conditions
Option 0=acoustic signal deactivated
Option 1=OK
Option 2= LO and HI

1. Press the SET key.
2. Use the numeric keys 0, 1 and 2 to select the required function (A, B, C)
3. Press the  key to confirm.
4. The scale will return to normal weighing mode automatically.

WEIGHTS ACCUMULATION

1. Place the product onto the scale and press the M+ 9 key.
2. During 2 seconds the screen will display the number of weights carried out (1).
3. During 2 seconds the screen will display the total accumulated weight and the M+ symbol.
4. Place another product onto the scale and press the M+ 9 key.
5. During 2 seconds the screen will display the number of weights carried out (2).
6. During 2 seconds the screen will display the total accumulated weight and the M+ symbol.
7. Repeat the process as many times as it is necessary.

HOW TO DISPLAY TOTAL ACCUMULATED WEIGHT

1. Press the MR 6 key.
2. During 2 seconds the screen will display the number of total weights carried out.
3. During 2 seconds the screen will display the total accumulated weight.

HOW TO CLEAR WEIGHT ACCUMULATIONS

1. Press the 

key and all the weight accumulations which were carried out will be erased.

HOW TO ENTER THE SAMPLE FOR PIECE COUNTING

1. Press the 

key.
2. Use the numeric keys from 0 to 9 to enter desired sample quantity.
3. Place the same amount of pieces as sample pieces entered.
4. Press the  key.
5. The scale will be ready to count.
6. To exit counting mode, press the 

key.

- The screen will display the message U.-- when the sample unit weight is less than 0.2 d
- The screen will display the message S. -- when the sample weight is less than 20 d.
- The screen will display the message U.--S.-- if the unit weight and sample weigh are less than 0.2 and 20 d

PIECE COUNTING FUNCTION

1. Press the 

key to activate counting mode.
2. If the scale has no previous sample count saved, it will display U.– for 2 seconds and will activate counting functions. In this moment, please proceed to enter the sample as it is described in the previous chapter.

CM Indicator – Configuration Parameters

Access to configuration mode

Switch on the instrument using the  key and keep the 

key pressed continuously during the initial countdown.

- At the end of the startup countdown, 1001 will be displayed, followed immediately by LF1.
- LF1 – Calibration Menu
    - Press the  key to access the menu. The display will show CAL2 (zero calibration parameter); press  . The calibration load value can now be set

(reference weight used for calibration).

- Use the  key to move the cursor to the right.
- Use the  key to move the cursor to the left.
- Use the  key to increase the selected digit.

- Once the desired calibration weight value has been entered, place the reference weight on the weighing platform and press the  key.
- The value will flash continuously; press  again to confirm.
- Dashes (-------) will appear on the display, after which the instrument will be calibrated.

FUNCTIONS SETUP

In order to access functions setup, keep pressed the  and without release it, press the  key.

UF-1 Internal value

1. Press the  key to see the internal value.
2. To continue with other setups use the ► key.
3. To exit menu and return back to weighing mode, press the  key.

UF-2 Check weighing

1. Press the  key to start check weighing setup.
2. The display will show the message “0000.0L”
3. Use ◄, ►, ▲, 0 ~ 9 keys to set LO weight value.
4. Press the  key to confirm.
5. The display will show the message “0000.0H”
6. Use the ◄, ►, ▲, 0 ~ 9 keys to set HI weight value.
7. Press the  key to confirm.
8. The display will show the message “O 000”
9. Use the ◄, ►, ▲, 0 ~ 9 keys to set I/O SET value.
10. Press the  key to confirm.
11. To continue with other setups use the ► key.
12. To exit menu and return back to weighing mode, press the  key.

UF-3 Auto Power-off

Modes:

- AoFF 00 – Auto Power-off disable
- AoFF 01 – The scale turns off automatically in 1 minute when the scale is not in operation and weight at 0.

Auto power-off timer up to 99 minutes (AoFF01~AoFF99), the factory default is AoFF10 (10 minutes)

1. Press the  key to setup Auto Power-off.
2. Use ◄, ►, ▲, 0 ~ 9 keys to enter Auto Power-off time.
3. Press the  key to confirm.
4. To continue with other setups use the ► key.
5. To exit menu and return back to weighing mode, press the  key.

UF-4 Backlight

Modes:

- Lit Off: Backlight off
- Lit A: Auto light up
- Lit on: Backlight on

Factory default is: Lit A (automatical)

1. Press the  key to access the backlight setup.
2. Use the ▲ key to select the desired mode.
3. Press the  key to confirm.
4. To continue with other setups use the ► key.

5. To exit menu and return back to weighing mode, press the 

key.

UF-5 Function HOLD (keep displaying the weight on the screen during several seconds after having removed the weight from the scale)
Modes:

- HOLD 0 : HOLD Function off.
- HOLD 1 : Animal Hold function.
- PCtXXX: To set the range from 001~100 of the animal hold
- timEXX: To set 1 2 4 8 16 32 64 times within the hold range (for HOLD 1 only)

Factory default: HOLD 0

1. Press the  to setup the HOLD function.
2. Use the ▲ key to select the desired mode.
3. Press the  key to confirm.
4. To continue with other setups use the ► key.
5. To exit menu and return back to weighing mode, press the 

key.

UF-5 RS-232 Output

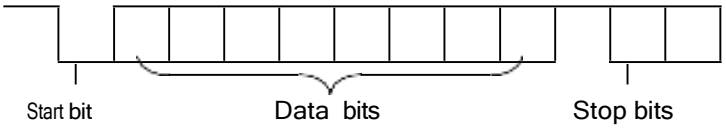
232	0	RS-232 disable
232	1	Stable Output – Format 1
232	2	Stream Output – Format 1
232	3	Manual Output – Format 1
232	4	Stable Output – Format 2
232	5	Stream Output – Format 2
232	6	Manual Output – Format 2

RS232 Baud rate:

b 1200	Baud rate 1200
b 2400	Baud rate 2400
b 4800	Baud rate 4800
b 9600	Baud rate 9600
b 19200	Baud rate 19200
b 38400	Baud rate 38400

Communication Protocol:
UART signal of EIA-RS232 C

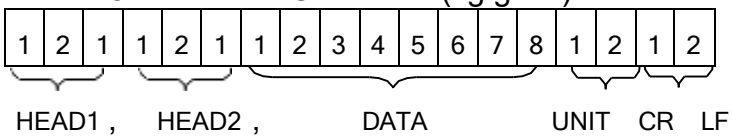
Format:
1. Serial output: 1200/2400/4800/9600/19200/38400 BPS
2. Data Bits: 8 bits
3. Parity Bits: None
4. Stop Bits: 1 bit



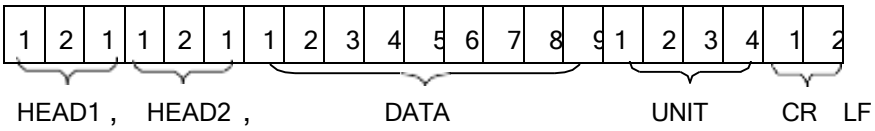
FORMAT 1 (232 1~3)

Head 1 (2 bytes)	Head 2 (2 bytes)
OL – Over Load	
ST – Stable	NT – Net Weight
US - Unstable	GS – Gross Weight

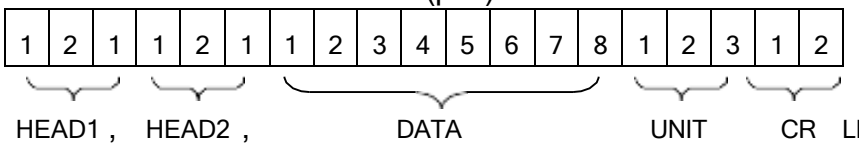
Fixed 18 BYTES ASCII (kg g t lb)



Fixed 21 BYTES ASCII (tl. T lboz)



Fixed 19 BYTES ASCII (pcs)



Output examples:

Example 1. +0.876 kg Stable net weight:

S	T	,	N	T	,	+	0	0	0	.	8	7	6	k	g	0D	0A

Example 2 -1.568 lb unstable gross weight:

U	S	,	G	S	,	-	0	0	1	.	5	6	8	l	b	0D	0A

Example 3 -20. 5.40 lb oz unstable gross weight:

S	T	,	G	S	,	-	1	0	•	0	5	•	4	0	l	b	o	z	0	0

Example 4 +1000 pcs stable net weight :

S	T	,	N	T	,	+	0	0	0	1	0	0	0	p	c	s	0D	0A

Format 2 (232 4 ~ 6) **:**

12 BYTES ASCII (kg g t lb)

1	2	3	4	5	6	7	8	1	2	1	2
Data								Unit		CR	LF

15 BYTES ASCII (tl.T lboz)

1	2	3	4	5	6	7	8	9	1	2	3	4	1	2
Datos									Unit				CR	LF

13 BYTES ASCII (pcs)

1	2	3	4	5	6	7	8	1	2	3	1	2
Datos								Unit			CR	LF

Output examples:

Example1. +0.876 kg stable net weight:

+	0	0	0	.	8	7	6	k	g	0D	0A

Example 2. -1.568 lb unstable gross weight:

-	0	0	1	.	5	6	8	l	b	0D	0A

Example 3. -20. 5.40 lb oz unstable gross weight:

-	1	0	•	0	5	•	4	0	l	b	o	z	0D	0A

Example 4. +1000 pcs : stable net weight:

+	0	0	0	1	0	0	0	p	c	s	0D	0A

UF-6 Transmission Format RS-232

1. Press the  key.
2. Use the ▲ key to select the desired mode and press the  key.
3. Use the ▲ key to select baud rate and the  key to confirm.
4. To continue with other setups use the ► key.
5. To exit menu and return back to weighing mode, press the  key.

UF-7 ADC Update Rate

SPEEd 1 Standard speed 15 hz
SPEEd 2 High Speed 30 hz
SPPEd 3 Low speed 7.5 hz

- This function is locked when the function HOLD is set as HOLD 1

Factory default: SPEEd 1

1. Press the  key to start setting up.
2. Use the ▲ to select the desired ADC speed.
3. To continue with other setups use the ► key.
4. To exit menu and return back to weighing mode, press the  key.

UF-8 Zero Weight Display Condition

ZP 0 Function Off
ZP 1 1 division not to display at zero
ZP 2 2 divisions not to display at zero
ZP 3 3 divisions not to display at zero
ZP 4 4 divisions not to display at zero
ZP 5 5 divisions not to display at zero

- This function is locked when the function HOLD is set as HOLD 1

Factory default: ZP 0

1. Press the  key to access the setting up.
2. Use the ▲ key to select the desired mode.
3. Press the  key to confirm.
4. To continue with other setups use the ► key.
5. To exit menu and return back to weighing mode, press the  key.

UF-9 Standard Gravitational Pre-calibration (G Value)

Even the scale allows doing the Standard Calibration, Gravitational Calibration can help to provide higher accuracy to the scale. This pre-calibration is allowed when the switch CAL is at ADJ position. Gravitational value will be saved at -00- and will be replaced each time a new value has been entered.

Sender G value: set it before Weight Calibration
Recipient G value: set if after Weight Calibration

The G value will be denied when the value is greater than 9.83217 (Polar G value) or less than 9.78031 (Equator G value)

Factory Default: 9.79423

1. Press the  key to setup.
2. Le display will show the last value for 1 second.
3. Use ◄, ► keys to see previous entered values. The display will stay at 00 if no value has been entered.
4. The display will show the last value for 1 second.
5. Use ◄, ► keys to see previous entered values. The display will stay at 00 if no value has been entered.
6. Press the  key.
7. Use ◄, ►, ▲, 0 ~ 9 keys to enter the desired value.
8. Press the  key.
9. Press the ► key to continue with other setups or the  key to exit and return back to normal weighing mode.

GUARANTEE

This scale is guaranteed for one year from the delivery date. Te guarantee covers any fabrication defect of the material.

During this period GRAM PRECISION, covers the manpower and the spare parts for the reparation of the scale.

This guarantee does not cover the failures caused by an inappropriate use or overcharge.

The guarantee does not cover the freight cost (transport) necessary to repair the scale.