318503

Operation Manual

Contents subject to change without notice

Version 1.0

Issue AA

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1. INTRODUCTION

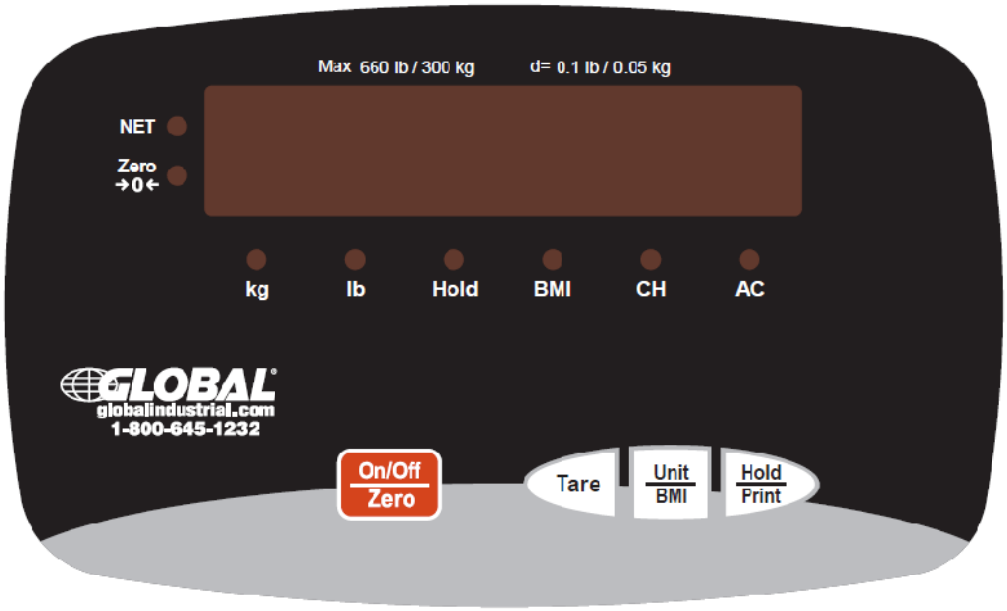
General and Safety Information

- Risk of Electrical Shock: Disconnect all power sources before making cable connections to the floor scale platform or indicator.
- For use in dry environments only.
- Read and understand all operating instructions before using this product. Keep this manual for future reference.
- Record the weight shortly after placing a load on the platform. After extended periods, the load cell's output signal may result in a less accurate reading.
- Avoid extended exposure to extreme heat or cold. Optimum operation is at normal room temperature. See operating temperature range in the specifications table. Allow the scale to acclimate to room temperature before using.
- Allow sufficient warm up time. Turn the scale on and allow up to 2 minutes for internal components to stabilize before weighing.
- Electronic scales are precision instruments. Do not operate near cell phones, radios, computers or other electronic devices that emit radio frequencies that may cause unstable readings.
- This equipment has been tested and found to comply with the limits for a 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. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with this 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.
- Avoid using in heavy vibration or heavy airflow conditions. This also applies when the floor scale is integrated into conveying systems.

2. TECHNICAL SPECIFICATIONS

Model	318503
Maximum capacity	300 kg / 660lb
Minimum capacity	2 kg / 4lb
Scale division	0.05Kg / 0.1lb
Height range	60 cm-212 cm
Division of measurement	0.5 cm
Display	LED display
Size of platform	375 X 275 mm
Environment for Use	Temperature: 5ºC-40ºC; Humidity: <85% RH
Power	12vAC 500mA adapter
Battery	Internal, lead-acid re-chargeable battery 6V 4Ah, 5 hours approx.
Calibration	External calibration through the keypad.
Communication port	Bi-directional RS232

3. DISPLAY AND KEY DESCRIPTIONS



KEYS	FUNCTIONS
On/Off Zero	To turn the scale on or off. To zero the scale if the display drifts from zero.
Tare	To tare the scale, if necessary.
Unit BMI	To toggle the weighing unit between Kg and Lb. Enter BMI mode
Hold Print	To print the weight details out to a PC or printer. To lock the reading even if the person to be weighed is moving.

DISPLAY	DESCRIPTIONS
Kg	Indicates when the scale is weighing in Kilograms.
Lb	Indicates when the scale is weighing in Pounds.
Hold	Indicates when the scale has held the weight reading shown on the display.
+ −	Indicates when the battery is low. Connect the adapter to recharge the battery.
CH	Indicates when the battery is recharging.
AC	Indicates when the scale is being used with the AC adapter.
ZERO	Indicates when the scale reaches zero.
NET	Indicates when the Net weight is displayed, Tare weight is at zero.

4. SETTING UP THE SCALE

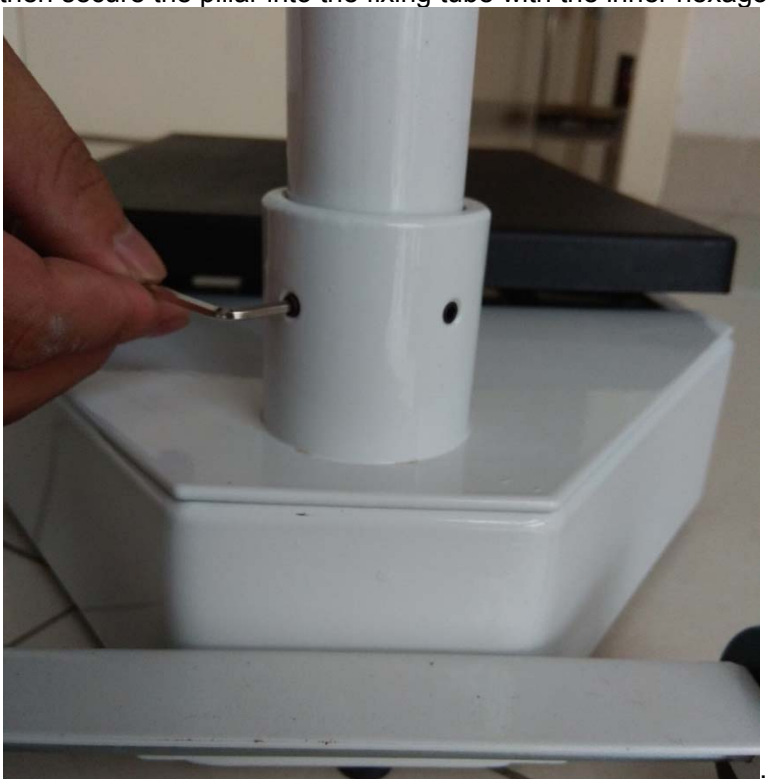
1. Take all the contents out of the box.

2. Place the cable from indicator through the pillar.

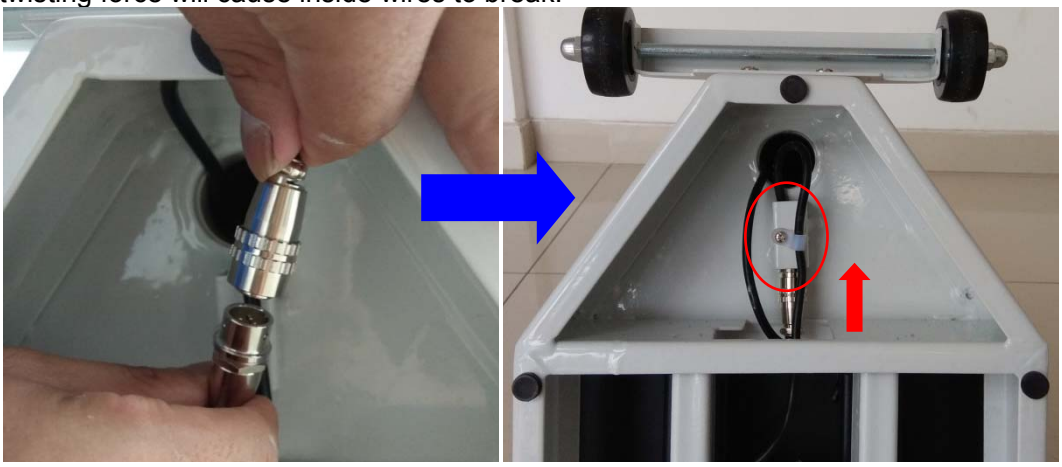
3. Remove the 4 screws on rear side of indicator, and insert them through the holes on the pillar bracket, secure the bracket to the indicator. Make sure the screws are securely tightened.

4. Place the cable into the tube support on the scale base.

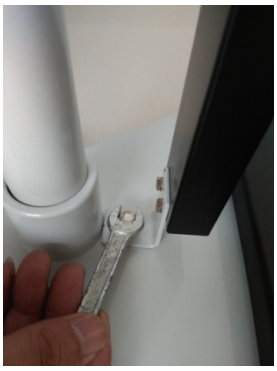
5. Insert the pillar into the tube support, rotate the pillar to position the indicator in the direction desired, then secure the pillar into the fixing tube with the inner hexagon spanner supplied with the scale.



6. Turn over the scale, plug the female connector from the indicator to male connector from the load cell, then insert the connector into the tube.
Note: the connector is a snap-in connector, do not screw the female one into the male one, a twisting force will cause inside wires to break.



7. Turn the scale back, locate the height rod onto the fixing points of the upper and lower brackets, tighten the bolt on the upper and lower brackets.



8. Now the scale is ready for using.

5. FUNCTION

5.1 WEIGHING

- Place the Physician Scale on an even floor and press the On/Off Zero key.

- The instrument performs a self-test after which it is On/Off Zero operation.
- Press the key and the machine switches off.

- The person to be weighed can step on to the platform once the scale shows 0.0 on the display. The weight will be display in Kg. or lb. depending on the units chosen by the user.

- If the weighing value is to be tared press the tare key to remove the weight value from the display.
- Briefly press the Unit BMI key for changing the weighing unit to kg or lb. The LED will indicate the chosen weighing unit.

- **Overload display**: When "FULL" appears on the display, it shows that the load on the platform is over the maximum capacity. Under these circumstances, it is necessary to reduce the load otherwise the sensor or the platform will be damaged.

- **Hold Function:** To lock the weighing result, press the Hold Print key. The LED will flash until a stable reading has been obtained and then it will light up constantly. To release the function, press the Hold Print key again.

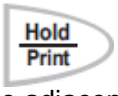
- **Print Function:** To send the weighing result to a printer or computer press the Hold Print key when the key has been set up in the parameter section to work as print function. (Print function is only applied for scale with RS232 interface)

5.2 MEASURING HEIGHT

- While measuring the height, it is necessary to pull up the measuring board at a right angle with the inside tube.
- When the tube is pulled out straight, it is sufficient to measure the height form 80-136cm. The number can be obtained upon the conjoint place where the upper part of middle tube screw meets with the inside tube scale.
- Further, if the middle tube is pulled out straight, it is possible to measure the height from 136-210cm. The reading can be obtained at the conjoint place where the upper part of outside tube screw meets with the middle tube scale.

5.3 MEASURING BODY MASS INDEX (BMI)

- Once the height has been determined it is possible to enter the height reading into the display ready for the scale to compute the BMI.
- Press and hold the 

key to enter the BMI mode. The display will show the last height value used, “Cm123” or “In123” depending on which weighing unit you are currently using.
- The height entry unit (Cm or In) will be flashing to show you which unit you are currently in, use the Up arrow key to change the height entry unit between Cm to In as required
- Enter your height, use the 

key to increase the flashing digit, use the 

key, to move the flashing digit to the adjacent digit.
- Press the 

key to confirm the value.
- The display will now show the BMI based on the current weight on the scale and the height entered.
- Press the 

key to exit the BMI mode and return to normal weighing.
- The Hold function will work as described above whilst in the BMI mode.

6. CALIBRATION

Before calibrating the scale, you should ensure that you have a known weight for calibration.

1. When in normal weighing mode with the scale at zero press and hold down Tare and On/Off Zero keys to enter the calibration mode.

2. If the calibration switch is in the off position on the main PCB inside the scale, the indicator will show 'CAL.OFF" and then exit this mode. If the indicator shows" CAL-?", the scale is ready for calibration, showing the calibration switch is in the on position. If the calibration switch is in the Off position open up the indicator and move the switch to the On position. See diagram on page 8.

3. When the indicator shows " CAL-?", press the Tare key to confirm and go to next step, or press the On/Off Zero key to exit the calibration mode.

4. When '**0.0**' is displayed the scale will begin to calibrate the scale's zero-point. Ensure that there is no load or weight on the scale's platform . Press the Tare key to confirm, or press the On/Off Zero key to exit this mode.

5. A few seconds after the Tare key has been pressed in step 4 the scale will show '**250.0kg**' or '**500.0lb**' depending on which unit you chosen, this is the default calibration weight from the factory. Press the Unit BMI key to select the calibration weight unit that you want to calibrate in. Press the On/Off Zero key to exit the calibration mode at this point or press the Hold Print key to choose a different calibration weight value (50kg, 100kg, 150kg, 200kg, 250kg or 100lb, 200lb, 300lb, 400lb, 500lb); Then put on the weight that you selected and press the Tare key to confirm the chosen standard weight that was selected earlier. The displayed data will flash on the display and if the scale accepts the calibration data it will calculate and store the information into the EEPROM. If an error has occurred, the scale will display "CAL. Er" and return back to step 4 for re-calibration. If the loaded weight is not within the range of 95% to 105% of the weight value you selected, the scale will not calibrate but display "CAL. Er" and return back to step 4 for re-calibration.)

6. Check the calibration by putting the weight that you calibrated at back on the scale, if it is off repeat the calibration process again.

7. USER PARAMETERS

This indicator has 4 parameter settings that can be selected.

1. When the scale is in normal weighing mode, press and hold the On/Off Zero key and Unit BMI key for 3 seconds until '**SEtUP**' is shown on the display.

2. When in the SETUP mode, press the Hold Print key to change the flashing digits, and Tare key to confirm the flashing digits and move to the next parameter setting.
   Press the On/Off Zero key to exit the set up mode.

3. Parameters setting summary:

Parameter	x/xy	Default Setting	Remark
A.o.t.	00-15	05	Auto-off time: No auto-off = 00. 01-15 minutes auto-off time.
P.H.	0,1,2	1	0 = Only Print Function 1 = Only Hold Function 2 = both HOLD and PRINT function (pressed down less 3s,this key works as Print function; pressed down more than 3s,this key works as HOLD function)
H.t	0-4	0	Hold work time: 0 = no time limit. 1 = 10 seconds 2 = 30 seconds 3 = 60 seconds 4 = 120 seconds
S.F.	0-3	3	0 = No RS232 Function. 1 = Continuously outputs display data. 2 = Output display data when PRINT pressed 3 = Bi-directional communication (the scale receives and executes commands from the HOST device)

8. RS232 COMMUNICATIONS

The Interface parameters are:	**Connection details are:**
RS-232 output of weighing data ASCII code 9600 Baud rate (fixed) 1 start bit, 8 data bits,1 stop bit No Parity	Connector: 9 pin d-subminiature socket Pin 3 Output Pin 2 Input Pin 5 Signal Ground

8.1 *RS-232 connection between the Scale and the Host**:***

Scale ----------Cable----------Host

(DB9 female)--------(DB9 male)----(DB9 female)--------(DB9 male)

TXD	2	2	2	2 RXD
RXD	3	3	3	3 TXD
GND	5	5	5	5 GND
NC	1	1	1	1
NC	4	4	4	4
NC	6	6	6	6
NC	7	7	7	7
NC	8	8	8	8
NC	9	9	9	9

Note: The indicator pin1,4,6,7,8 and 9 are not connected.

The RS232 function will only operate if P.H. has been set to 0 or 2.

8.2 ***When Parameter S.F. in section 7 is set to 0 :***

No RS232 function. It will not transmit or receive any data although the scale is equipped with RS232. The RS232 function can be only activated when scale is in normal weighing mode.

8.3 ***When Parameter S.F. in section 7 is set to 1 :***

Continuous output of the current displayed reading and unit, and it does not receive any data. The output format is as below:

<LF>< reading, minus, decimal point, weight unit>GR<CR><EXT>

Or <LF>< reading, minus, decimal point, weight unit>NT<CR><EXT>

8.4 ***When Parameter S.F. in section 7 is set to 2 :***

Manually outputs display data when PRINT is pressed. The output format is as below:

<LF>< reading, minus, decimal point, weight unit>GR<CR><EXT>

Or <LF>< reading, minus, decimal point, weight unit>NT<CR><EXT>

8.5 ***When Parameter S.F. in section 7 is set to 3 :***

The baud rate and data format are fixed with responses to serial commands being within 300 milliseconds. One second should be adequate for use as a time-out value by remote (controlling) device.

8.5.1 The length of the weight field will be 7 digit weight data, one for minus sign, one for decimal point, two for measure unit (e.g. “lb”, “kg”). Units of measure abbreviations are always lower case.

If the weight is overcapacity, the scale will return nine ‘^’ characters (the field of minus sign, decimal point, weight data is filled by ‘^’).

If the weight is under capacity, it will return nine ‘-’ characters (the field of minus sign, decimal point, and weight data is filled by ‘_’).

If the zero point has an error, it will return nine ‘-’ characters.

The character will be ‘-’ for negative weight or a space character for positive weight. Minus sign follows after the first digit.

Useless leading zero before digits are suppressed.

8.5.2 Key to symbols used

<LF> Line Feed character (hex 0AH)

<CR> Carriage Return character (hex 0DH)

<ETX> End of Text character (hex 03)

<SP> Space (hex 20H)

H1H2H3 Three status bytes. Refer to Table1 for definition.

<p> Polarity character including minus sign for negative weight and a space character for positive weight

W1-W7 weight data

<dp> decimal point

U1U2: measure units, kg, lb

8.5.3 Commands and response

(1) Command: W<CR> (57h 0dh)

Response:

①<LF>^^^^^^u1u2<CR><LF>H1H2H3<CR><ETX>---over capacity

②<LF>_____u1u2<CR><LF> H1H2H3 <CR><ETX>---under capacity

③<LF>--------u1u2<CR><LF> H1H2H3<CR><ETX>---zero-point error

④ < L F > < p > w 1 w 2 w 3 w 4 w 5 w 6 < d p > w 7 u 1 u 2 < C R > < L F > H 1 H 2 H 3 < C R > <ETX> ---Scale is stable, and the current weight unit is kg or lb. With or without decimal point and the position is as per the P9 setting and current unit.

(2) Command: S<CR> (53h 0dh)
Response: <LF> H1H2H3<CR><ETX>

(3) Command: Z<CR> (5ah 0dh)
Response: Zero function is activated and it returns to current scale status. just like pressing **ZERO/ON/OFF** button:
<LF> H1H2H3<CR><ETX>
If ZERO function cannot be activated, it will return to current scale status.

(4) Command: T<CR> (54h 0dh)
Response: TARE function is activated, and then returns scale status. just like pressing **TARE** button:
<LF> H1H2H3<CR><ETX>
If TARE function cannot be activated, it will return to current scale status.

(5) Command: U<CR> (55h 0dh)
Response: Changes units of measure and return scale status with new units, just like pressing **UNIT** button. The new measure unit should be allowed to use as per P11 setting.
<LF>u1u2<CR><LF> H1H2H3<CR><ETX>

(6) Command: X<CR> (58h 0dh)
Response: power off the scale, just like press down the **ON/OFF** key to turn off the scale.

(7) Command: all others
Response: Unrecognized command
<LF>?<CR><ETX>

Table1: The status bits definition:

Bit	Byte 1 (H_1)	Byte 2 (H_2)	Byte 3 (H_3)
0	0=stable	0= not under capacity	01=normal work mode 10= hold work mode 00=not define 11= not define
	1= not stable	1= under capacity	
1	0= not at zero point	0= not over capacity	
	1= at zero point	1= over capacity	
2	always 0	always 0	0= gross weight
			1= net weight
3	0= eeprom OK	always 0	always 0
	1= eeprom error		
4	always 1	always 1	always 1
5	always 1	always 1	always 1
6	always 0	always 1	always 0
7	parity	Parity	parity

9. ERROR MESSAGES

1. **0‾‾‾‾‾** zero point is over the setting range
2. **0**_ _ _ _ _ zero is below the setting range
3. **Ad‾‾‾‾** ADC is over max. range
4. **Ad** _ _ _ _ ADC is below min. range
5. **EEP.Er** there is an error in EEPROM
6. **CAL.Er** there is an error in calibration
7. **CAP.**-- the capacity will be displayed
8. **Lo.bAt** the voltage of batteries or input power is below 5.6V.
9. **FULL** the capacity has been exceeded by the person standing on the scale.

10. WARNING

- Do not dismantle the weighing machine without following the necessary instructions.
- Do not jump while standing on the platform. This may damage the sensor inside.
- Do not move the weighing machine violently and abruptly. It is recommended to move and put down the weighing machine gently.
- It is suggested to wipe the stains with soft cloth soaked with detergent and to wipe later with soft cloth too. Do not use organic solutions and boiled water to wipe the stains. Do not use water for cleaning.
- Keep the weighing machine in a dry and clean environment. Do not expose it outdoor or use it in locations near fire, under direct sunshine or with high temperature.
- When lifting the height meter, it is suggested to pull it straight along the pipe without using excessive force.

11 Harbor Park Drive Port Washington, NY 11050