

GBK Mplus / GFK Mplus Series



Easy Reference:

Model name of the scale:	
Serial number of the unit:	
Software revision number (Displayed when power is first turned on):	
Date of Purchase:	
Name of the supplier and place:	

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P.N. 3.05.6.6.15667, Rev A1, October 2020

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1.0 INTRODUCTION

- The **GBK/GFK-Mplus** scales provides an accurate, fast and versatile general purpose weighing scales with parts counting, percent weighing and check-weighing functions.
- The **GBK/GFK-Mplus** has colour changing LCD illumination to indicate when a weight is below the low limit, between the limits or above the high limit next to the display. These can work in conjunction with an audible alarm for check weighing.
- The **GBK/GFK-Mplus** scales are supplied with a RS-232 bi-directional interface and real time clock (RTC).
- The **GBK/GFK** has a sealed keypad with colour coded buttons and a large easy to read liquid crystal type display (LCD) supplied with a multicolour illumination.
- Includes automatic zero tracking, semi-automatic tare and accumulation facility that allows the weight to be stored and recalled as an accumulated total.
- **OIML Approved models, GBK/GFK-Mplus**, only allow “Kg” and “g” as units, have calibration controlled by jumpers or passcodes and other limitations as noted in the manual.

2.0 SPECIFICATIONS

GBK-Mplus Models

Model #	GBK 6Mplus	GBK 15Mplus	GBK 30Mplus	GBK 60Mplus	GBK 150Mplus
Maximum Capacity	6kg	5kg	30kg	60kg	150kg
Readability	2g	5g	10g	20g	50g
Repeatability (Std Dev)	4g	10g	20g	40g	100g
Linearity \pm	4g	10g	20g	40g	100g
Units of Measure	Kilograms, grams				
Stabilization Time	2 Seconds typical				
Operating Temperature	-10°C to +40°C / +14°F to +104°F				
Power Supply	110V - 240 VAC 50/60 Hz				
Calibration	External				
Display	6 digits LCD digital displays with capacity tracker and symbols for units				
Pan Size	300mm x 400mm x 50mm / 11.8" x 15.5" x 2"				
Overall Dimensions (w x d x h)	300mm x 520mm x 660mm / 11.8" x 20.5" x 26"				
Net Weight	7.4kg				
Features	Weighing, Check Weighing, Parts counting, Check Counting, Animal Weighing, Accumulating memory				
Interface	RS-232 bi-directional interface English, German, French, Spanish, Italian and Portuguese selectable text				

GFK-M Models



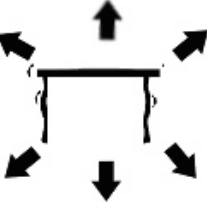

Model #	GFK 60Mplus	GFK 150Mplus	GFK 300Mplus
Maximum Capacity	60kg	150kg	300kg
Readability	20g	50g	100g
Repeatability (Std Dev)	40g	100g	200g
Linearity \pm	40g	100g	200g
Units of Measure	Kilograms, grams		
Stabilization Time	2 second typical		
Operating Temperature	-10°C to +40°C / +14°F to +104°F		
Power Supply	110V - 240 VAC 50/60 Hz		
Calibration	External		
Display	6 digits LCD digital displays with capacity tracker and symbols for units		
Pan Size	400mm x 500mm		
Overall Dimensions (w x d x h)	400 mm x 620 mm x 860 mm		
Net Weight	12.5kg		
Features	Weighing, Check Weighing, Parts counting, Check Counting, Animal Weighing, Accumulating memory		
Interface	RS-232 bi-directional interface English, German, French, Spanish, Italian and Portuguese selectable text		

3.0 INSTALLATION

3.1 UNPACKING

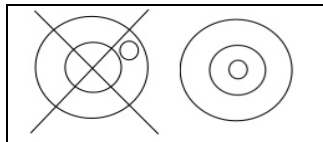
The **GBK/GFK-Mplus** scales have already been adjusted to work with a platform and have been configured for this application. The platform and indicator have been calibrated as a pair and must be used together.

3.2 LOCATING

	<ul style="list-style-type: none">• The scales should not be placed in a location that will reduce the accuracy.
	<ul style="list-style-type: none">• Avoid extremes of temperature. Do not place in direct sunlight or near air conditioning vents.• Avoid unsuitable tables. The table or floor must be rigid and not vibrate.
	<ul style="list-style-type: none">• Avoid unstable power sources. Do not use near large users of electricity such as welding equipment or large motors.• Do not place near vibrating machinery.
	<ul style="list-style-type: none">• Avoid high humidity that might cause condensation. Avoid direct contact with water. Do not spray or immerse the scales in water.• Avoid air movement such as from fans or opening doors. Do not place near open windows or air-conditioning vents.• Keep the scales clean. Do not stack material on the scales when they are not in use.

3.3 SETTING UP THE SCALES

- The pillar is attached to the base using a bracket that must be attached to the base frame first using the 4 bolts supplied. The pillar is secured to the bracket using 2 sets of screws. The cable from the base to the indicator module is run through the tube and taken out through the plastic support at the top. Excess cable can be stored within the tube.
- The **GBK/GFK-Mplus** series comes with a stainless steel platform packed separately. Place the platform in the base.
- Level the scale by adjusting the four feet. If the scale rocks re-adjust the feet.



- Attach the indicator module to the pillar by sliding it over the bracket with the flanges engaged in the grooves on the base. Attach the cable from the base to the connector on the rear of the indicator.
- Attach the power to the indicator. Press the **[On/Off]** key. The software revision number will be displayed followed by a self-test showing all digits before the zero is displayed along with the unit of weight that was selected last.
- If the scale is an approved version, **GBK/GFK-Mplus**, and the Calibration Counter has been enabled (see section 6) the current values will be displayed. These values should match the values marked on the scale at the time of verification, if it has been verified.

4.0 KEYPAD







KEYS	PRIMARY FUNCTION	SECONDARY FUNCTION
[Zero]	Sets the zero point for all subsequent weighing. The display shows zero.	Escape from any setting menus
[Tare]	It tares the scale and stores the current weight in memory as a tare value, subtracts the tare value from the weight and shows the results. This is the net weight.	Accept the set values
[Unit]	This is used to select the weighing units from a preset list of available units.	Allows the weight, unit weight, and count to be seen when parts counting or to change from weight to % in percent weighing
[Low Limit] & [High Limit]	It sets the limits for check weighing and allows setting of either the low limit or the high limit or both.	None

[Low Limit] & [High Limit]	It sets the limits for check weighing and allows setting of either the low limit or the high limit or both.	None
[→Lim]	It stores and recalls any of 10 preset limits	None
[Func]	This is used to select percent weighing, RS-232 parameters, Operation of the bar graph, RTC settings, User ID and Scale ID.	None
[Cnt]	Enter Parts Counting	None.
[Print]	It is used to print the results to a PC or printer using the RS-232 interface. It also adds the value to the accumulation memory if the accumulation function is not automatic.	None
[1] to [0] and [CE]	Allow entering numerical values where required, setting of limits, tare value, time and date for example.	

5.0 DISPLAY

5.1 SYMBOLS AND INDICATORS

The LCD has unique symbols to indicate the following:

	The display is at Zero
	The scale is Stable
Net	Net weight- The scale has been tared
kg / g	Symbols shown for the units
	Capacity Tracker- A bar graph indicating the proportion of the scale capacity being used by the weight on the platform
	Battery status
%	The scale is in Percent weighing mode
pcs	The scale is in Parts counting mode

When in Check Weighing mode, the LCD backlight colour will change to help identify when the weight is below, within or over the limits.

Weight	LCD colour
below the low limit	Amber
Within the limits	Green

6.0 CALIBRATION COUNTER FOR APPROVED SCALES

The approved (**GBK/GFK-Mplus** model) scales have the ability to control access to the calibration or metrology parameters using a passcode to limit access. The requirements for doing this stipulate the counters should be apparent and recorded in a suitable location on the scale.

In this way if the record of the Calibration or Parameter counters do not agree with recorded settings the responsible person inspecting the scale can take appropriate action.



The Counters are incremented any time the calibration section or the Factory parameters section have been modified.

At power on, the display will show the current software revision number followed by the message of the Calibration Count “[AL[nt” then a number i.e. “123”. The number from the counter memory. Then the Parameter Counter message of “[PAr[nt” and probably a different number, i.e. “234”. The counters cannot be reset to 0, they will increment until the display can no longer hold the values. (1 to 999999). It is expected we will never have more than 1 million calibrations in the life of the machine.

Each display is held for 1-2 seconds.

The indicator will then continue to do the display test and go to normal weighing.

7.0 BATTERY

- The scales can be operated from the rechargeable battery, if desired. The battery life is determined by the number and impedance of the load cells connected. With a single load cell and backlight disabled the life is approximately 70 hours before needing to be recharged.
- When the battery needs charging, the battery symbol will show as empty  and it will flash. If the battery symbol is flashing, the indicator will still operate for a period of time, after which, it will automatically switch off, to protect the battery.
- To charge the battery, simply plug in the mains power supply. The indicator does not need to be turned on.
- The battery symbol will scroll to indicate it is charging, it may take several hours to fully charge the battery from empty.
- When the battery is charged to full capacity, the battery symbol will stop scrolling and it will show as fully charged .

8.0 BACKLIGHT

- The backlight for the LCD can be set by the user to always off, always on or automatic (on only when the indicator is in use or a key is pressed). See setting of the parameter “**S2 bL**” in section 13.3.
- The default backlight colour can be defined to White, Green, Red, Amber and Blue. Once defined to one of these colours, the backlight will still change colours during Check Weighing, and Check Counting, on all other situations it will illuminate according to the user selection. See setting of the parameter “**S2 bL**” in section 13.3.
- The intensity of the backlight can also be defined, there are three settings to choose from, Low, Mid and High.

9.0 AUTO POWER OFF

The auto power off can be set by the user to disable the feature or to a pre-set time interval. See setting of the parameter “**S3 AoF**” in section 13.3.

10.0 OPERATION

10.1 ZEROING

- You can press the **[Zero]** key at any time to set the zero point from which all other weighing and counting is measured. This will usually be necessary when the platform is empty. When the zero point is obtained the display will show the zero indicator.



- The scale has an automatic re-zeroing function to account for minor drifting or accumulation of material on the platform. However, you may need to press **[Zero]** to re-zero the scale if small amount of weight is still shown when the platform is empty.

10.2 TARING

10.2.1 Manual tare

- Zero the scale by pressing **[Zero]**. The zero indicator will be on. Place a container on the platform and its weight will be displayed.
- Press **[Tare]** when the reading is stable. The weight that was displayed is stored as the tare value and it is subtracted from the display, leaving zero on the display. The stable and Net indicator will be on.



- As a product is added only the weight of the product will be shown. The scale could be tared a second time if another type of product was to be added to the first one. Again only the weight that is added after taring will be displayed.



NOTE:

When the container is removed a negative value will be shown. If the scale was tared just before removing the container, this value is the gross weight of the container plus all products which were removed. The zero indicator will also be on as the platform is back to the same condition it was when **[Zero]** was pressed last.

Press **[Tare]** or **[Zero]** to remove the tare value and display zero. The Net indicator will disappear.

10.3 WEIGHING

To determine the weight of a sample, first tare an empty container if used, then place the sample in the container. The display will show the weight and the unit of weight currently in use.



To change the weighing unit press the **[Unit]** key. The only alternative weighing unit is grams. This can be enabled by the user in the parameters section. See section 13.3.

10.4 PARTS COUNTING

The scale can be used to count parts based on the average weight of a sample weighed. When more parts are added the total number of parts are displayed.

- If a container is to be used, place this container on the platform before entering parts counting and press **[Tare]**.



- Press **[Cnt]** to enter the Parts Counting mode. The display will show the last sample size used. For example, “10 Pcs”.



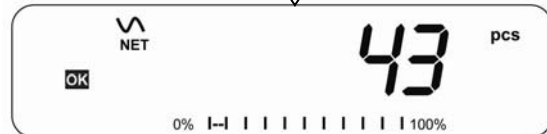
- Either place 10 parts on the platform for determining the average piece weight or use a different number of parts. For example, place 20 parts on the platform, press **[CE]** to clear the last values and then enter the value 20 using the numeric keypad.



- Press **[Cnt]** to weigh the samples and determine an average piece weight.
- If the parts are too light to measure accurately, the count may become inaccurate. It is suggested that the samples to be weighed should each weigh more than the resolution of the scale.
- After the sample has been weighed the scale will count any other parts added by applying the average piece weight to the weight of the parts to be counted.



- The **[Tare]** key works normally during this time, so it is possible to tare the display with a container on the platform
- During parts counting the display can be changed to show the net weight, unit weight and number of parts by each time pressing the **[Func]** key.



- To count a different sample quantity, press the **[Cnt]** key. The display will show the last used sample size. Either use this sample size with a different part or enter a new sample size as above.
- To return to weighing, press **[Unit]** when “XX pcs” is displayed.

10.5 CHECK-WEIGHING

Check-weighing is a procedure to display an indicator or sound an alarm when the weight on the platform meets or exceeds the values stored in the memory. The memory holds values for a high limit and a low limit. Either or both the limits can be set by the user.

NOTE:

1. The alarm can be set to OFF (See section 13.1). The LCD display will indicate whenever the weight is within or exceeds the limits by changing the LCD illumination to Amber, Green or Red.

Red	Mass on the platform is above the high limit
Green	Mass is between the limits
Amber	Mass is below the low limit

2. The limits can be locked by the manager. A Limit Password must be used to change the limits or recall other limits from memory.
3. If Limit Password is enabled then enter the password which will allow you to change the limits or the operation of the beeper.

10.5.1 SETTING UP WHILE WEIGHING

- Press the **[Low Limit]** key. It will show the current low limit. The “**LO**” symbol will appear on the display.
- Press the **[CE]** key to clear the old value and then enter the new low limit using the numeric keys. The decimal point is fixed at the position that is used for the current weighing unit. When the desired value is shown press **[Tare]** to accept the value. If you want to reset the value to zero, press **[CE]** to clear the value.
- The limits are displayed in the weighing unit in use.
- To set the high limit press **[High Limit]**, the display will show the high limit, the “**HI**” symbol will be on to the left side of the display. Set the high limit in the same way the low limit was set.
- Pressing the **[Tare]** key to enter the value will return the scale to weighing, with the Check-weighing function enabled.

10.5.2 SETTING UP WHILE PARTS COUNTING OR % WEIGHING

During parts counting and percent weighing the limits are set in the same way as above. The limits are displayed in pcs or %.

See Section 10.4 for the description of parts counting and Section 10.7 for percent weighing.


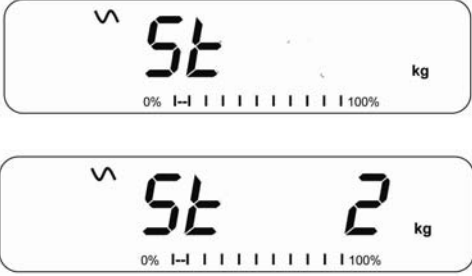
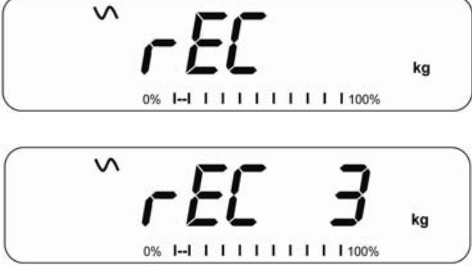
NOTE:

1. The weight must be greater than 20 scale divisions for the check-weighing to operate.
2. To disable the check weighing function, enter zero into both the limits as described above. When the current limits are shown, press **[CE]** to clear the settings, then press **[Tare]** to store the zero values.

10.6 LIMITS STORING AND RECALLING

The scale can store up to 10 sets of high and low limits in memory along with the weighing units in use (including **pcs** for parts counting and **%** for percent weighing) as well as settings for the beeper.

During Check weighing the current limits can be stored or previously stored units can be recalled.

	<p>Press the [→Lim] key. If you are already in the check weighing mode the display will ask if you wish to store the current limits by showing “StOrE” or recall another set of limits by showing “rECALL”. The [→Lim] key can be used to toggle between “StOrE” and “rECALL”.</p>
	<p>If you want to store the limits, when “StOrE” is displayed press the [Tare] key. The display shows “St”. Enter a number corresponding to the desired memory location (0 to 9). “St X” will be displayed for 2 seconds indicating the location X where the current limits, weighing units and settings for the beeper bar graph are stored. The scale will continue to work with the current settings as active.</p>
	<p>If you wish to recall any of the pre-stored limits, press [Tare] when “rECALL” is displayed. The display shows “rEC”. Enter the number corresponding to the desired memory location (0 to 9) to be recalled. “rEC X” will be displayed for 2 seconds indicating the values stored in the location “X” is being recalled. The scale will change to the recalled limits, weighing units and settings for the beeper bar graph.</p>

- **NOTE:**

- If the recalled limit is for parts counting, the display will show the last sample value used, ready for a new sample to be counted.
- If the recalled unit is a percent weighing limit, the display will show the last sample value used, ready for a new sample to be weighed.
- If the memory location was empty the scale will return to weighing.

10.7 PERCENT WEIGHING

The scale can be set to perform percent weighing. See Section 13.1.

The scale will use a mass on the platform as the 100% reference weight. If the platform is empty (or the scale is tared) then the user can input a reference weight using the keypad.

- If using a reference weight (or object) as your 100% reference, add the weight to the to the platform.
- Press **[Func]**. The first option is "FUnC 1", press the **[Func]** key 3 more times to display "FUnC 4".



- Press the **[Tare]** key. "P1 Pct" will be displayed.



- Press **[Tare]** again to enter percent weighing. The scale will set the sample mass on the platform as 100% reference weight.

NOTE: If there is no reference weight on the platform and percent weighing function is entered, pressing **[Tare]** again will return the indicator to normal weighing.



- Remove the sample weight. Then any other weight placed on the scale will be displayed as a percentage of the original sample. For example, if 3500g is placed on the scale and percent weighing is selected, the display will show 100.00%. Remove the 3500g weight and place a 3000g weight. The display will show 85.7% as 3000g is 85.7% of 3500g.



- The number of decimal points will depend on the weight used. A smaller weight will show only "100%" while a larger weight might show "100.00%".
- If the scale was showing zero weight before entering this function, then the user must manually enter the weight to be set as 100%. When "F4 PCT" is displayed, enter the weight to be used for the 100% reference, then press **[Tare]** to accept the reference weight. The display will show "0.00 %".
- If the scale shows "x x . x x %", which is the last weight used as a reference, press **[CE]** to clear and use the numeric keypad to enter a new value. Press **[Tare]** to accept the new reference weight.
- The weight entered must be greater than 50 scale divisions.
- Press **[Unit]** to return to normal weighing.

NOTE: The display may jump by large numbers unexpectedly if small weights are used to set as 100% reference. The scale checks if the weight is too small and will show Error 8.

10.8 ANIMAL (Dynamic) WEIGHING

The scale can be set to animal (dynamic) weighing for weighing any items that are unstable or may move. See Section 13.4.

The scale will use a special filter to minimise the effects of any movement on the platform.

- Press **[Func]**. The first option is "FUnC 1", press the **[Func]** key 3 more times to display "Func 4".



- Press the **[Tare]** key. "F4 Pct" will be displayed. Press the **[Func]** key to advance to the second function, "P2 Ani", Animal weighing.



- Press **[Tare]** to enter the animal weighing function.
- To use the Animal Weighing function it is necessary to set the amount of filtering required for the animals to be weighed. More active animals will require a higher level of filtering to give a stable result. The display will show "Filt x" where x is a value from 1 to 5. The higher the value the greater the amount of filter will be. To increment the value shown press the **[Func]** key then press the **[Tare]** key to accept it.
- The display will flash "Ani" 2 times then show the current weight, 0.00. The scale is now ready to weigh.

10.8.1 ANIMAL WEIGHING PROCEDURE

- With the platform empty the display will show zero weight. Place containers or blankets onto the platform and press the **[Tare]** key to zero the display. The scale may go into the animal weighing procedure when the items are placed on the scale but will return to showing zero when the **[Tare]** key is pressed.
- Place the animal to be weighed on the platform.
- When a stable reading is found, the display will show this value, and the display will be locked until the **[Unit]** key is pressed. The display will show the “Hold” symbol while the display is locked. Remove the animal, the display will hold the weight value.
- Press the **[Unit]** key to unlock the display. The display will flash “Ani” twice and be ready for the next animal.
- To weigh a second animal press the **[Tare]** key if necessary to zero the display, and place the next animal on the scale. It is also possible to simply place the next animal on the scale without clearing the last value first. The scale will detect the new weight and hold it as before.
- The scale will remain in the animal weighing mode until the **[Zero]** key is pressed. Then it will return to normal weighing.

10.9 ACCUMULATED TOTAL

The scale can be set to accumulate when a weight is added to the scale automatically or manually by pressing **[Print]**. See Section 13.2.

NOTE:

1. The accumulation function is available only during weighing. It is disabled during parts counting or percent weighing.
2. The accumulated weights will be stored in either kg or g, depending upon the weighing unit in use.
3. If at any time the weighing units are changed, the accumulated data will be lost.

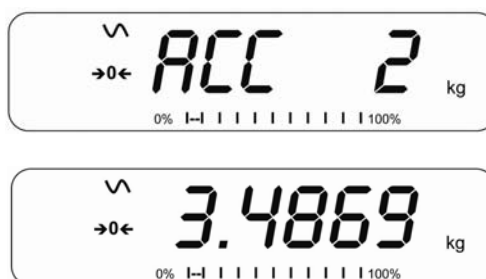
10.9.1 MANUAL ACCUMULATION

When the scale is set to manual accumulation, the weight displayed will be stored in the memory when the **[Print]** key is pressed and the weight is stable.

- Remove the weight and press **[Print]** when the scale is at zero. The display will show "ACC 1" and then the weight in memory for 2 seconds before returning to normal. The weight can be output to a printer or PC using the RS-232 interface.



- When the scale is at zero place a second weight on the platform. When stable press **[Print]** to accumulate the weight. The display will show "ACC 2" for 2 seconds and then show the new total.



- Continue until all weights have been added. This can continue for up to 99 entries until the capacity of display is exceeded.
- To view the total in memory press the **[Print]** key when the scale is at zero. The display will show the total number of accumulation "ACC xx" and the total weight before returning to zero.
- To print the total, press **[Print]** to recall and then immediately press **[Print]** the second time to print the results.
- To erase the memory, press **[Print]** to view the total and then immediately press **[CE]** to clear the memory.

10.9.2 AUTOMATIC ACCUMULATION

When the scale has been set to Automatic Accumulation the value is stored in memory automatically.

- Place a weight on the platform. The beeper will sound when the scale is stable indicating the value is accepted. Remove the weight.
- The display will show "**ACC 1**" and then the total in the memory before it returns to zero. Adding a 2nd weight will repeat the process.
- While the weight is on the platform, press the **[Print]** key to view the values- first the accumulation number "**ACC x**" and then the total will be shown.

NOTE:

1. The scale will not show the value when a weight is removed.
2. In all cases the display must return to zero or a negative number, before another sample can be added to the memory.
3. More products can be added and **[Print]** be pressed again for up to 99 entries until the capacity of display is exceeded.

11.0 RS-232 SPECIFICATION

The **GBK/GFK** indicator is supplied with bi-directional RS-232 interface as standard. The scale when connected to a printer or computer outputs the weight with the selected weighing unit through the RS-232 interface.

Default Specifications:

RS-232 output of weighing data

ASCII code

9600 Baud (user selectable)

8 data bits

No Parity

Connector:

9 pin d-sub miniature socket

Pin 3 Output

Pin 2 Input

Pin 5 Signal Ground

The scale can be set to print text in English, French, German, Spanish, Italian or Portuguese See the RS-232 parameters section for details.

Data Format-Normal Output:

Only weight value along with the weighing unit is printed. If Percent weighing is used then % is shown in place of weighing units.

```
<cr><lf>
<cr><lf>
Date          12/09/2006 <cr><lf>
Time          14:56:27  <cr><lf>
<cr><lf>
Scale ID      123456    <cr><lf>    If ID is zero, it is left blank
User ID      234567    <cr><lf>
<cr><lf>
Net Wt       1.234 kg  <cr><lf>    Net Wt. (or Gross Wt.)
<cr><lf>
<cr><lf>
<cr><lf>
<cr><lf>
```

Data Format-Parts Counting Output:

Weight, Unit weight and number of parts are printed.

```
<cr><lf>
<cr><lf>
Date          12/09/2006 <cr><lf>
Time          14:56:27  <cr><lf>
<cr><lf>
Scale ID      123456    <cr><lf>
User ID      234567    <cr><lf>
<cr><lf>
Net Wt.       1.234 kg  <cr><lf>    Net Wt. (or Gross Wt.)
Unit Wt.      123 g    <cr><lf>    g
PCS           10 pcs  <cr><lf>
<cr><lf>
<cr><lf>
```

Data Format- Memory Recall Output:

```
<cr><lf>
Date          12/09/2006 <cr><lf>
Time          14:56:27  <cr><lf>
<cr><lf>
Scale ID      123456      <cr><lf>
User ID       234567      <cr><lf>
<cr><lf>
-----<cr><lf>
TOTAL
No.           5           <cr><lf>
Wt.           1.234 kg    <cr><lf>
PCS           10 pcs      <cr><lf>
<cr><lf>
-----<cr><lf>
<cr><lf>
```

Data Format- Continuous Output- Normal weighing:

```
Net    1.234 kg <cr><lf>                Net Weight (or Gross wt.)
<cr><lf>
<cr><lf>
```

Data Format- Continuous Output- Parts Counting:

```
Net    1.234 kg <cr><lf>                Net Weight (or Gross wt.)
U.W.   123 g   <cr><lf>
PCS    10 pcs  <cr><lf>
<cr><lf>
<cr><lf>
```

NOTE:

1. The accumulated total will not be sent to the RS-232 when the continuous print is turned on.
2. The continuous print will only be for the current weight and the display data.
3. In other languages the format is the same but the text will be in the language selected.

Description	English	French	German	Spanish	Italian	Portuguese
Net weight	Net Wt.	Pds Net	Net-Gew	Pso Net	Pso Netto	Pso Liq
Weight per unit counted	Unit Wt.	Pds unit	Gew/Einh	Pso/Unid	Pso/Unità	Pso/Unid
Number of items counted	Pcs	Pcs	Stck.	Piezas	Pezzi	Pecas
Number of weighing added to subtotals	No.	Nb.	Anzhl	Num.	Num.	Num.
Total weight and count printed	Total	Total	Gesamt	Total	Total	Total
Print date	Date	Date	Datum	Fecha	Data	Data
Print time	Time	Heure	Zeit	Hora	Ora	Hora
Scale ID number	Scale ID	Bal ID	Waagen ID	Bal ID	ID Bil	ID Bal
User ID Number	User ID	Util ID	Nutzer ID	Usuario ID	ID Utiliz	ID Utiliz

11.1 INPUT COMMANDS FORMAT

The scale can be controlled with the following commands. Press the **[Enter]** key of the PC after each command.

T<cr><lf>	Tares the scale to display the net weight. This is the same as pressing [Tare] .
Z<cr><lf>	Sets the zero point for all subsequent weighing. The display shows zero.
P<cr><lf>	Prints the results to a PC or printer using the RS-232 interface. It also adds the value to the accumulation memory if the accumulation function is not set to automatic.

12.0 CALIBRATION

The GBK/GFK-Mplus approved bench scales models are sealed to prevent unauthorised calibration.

Contact Adam Equipment or your supplier for more details.

WARNING: CALIBRATION OF THE SCALES MAY MAKE IT ILLEGAL TO USE THE SCALES FOR SALES OF GOODS. CONTACT YOUR TRADING STANDARDS OFFICE FOR FURTHER ASSISTANCE.

13.0 PARAMETER SETTINGS

Pressing the **[Func]** key allows the user to access the parameters for customising the scale. The parameters are split into 4 groups:

1. Check weighing parameters,
 2. RS-232 parameters and
 3. Scale parameters
 4. Percent and Animal Weighing Functions
- When **[Func]** is pressed, display will first show "**Func 1**" for Check weighing parameters.
 - Enter **[2]** for RS-232 parameters or **[3]** for Scale parameters or **[4]** for percent weighing and animal weighing, or press the **[Func]** key to advance through the groups "**Func 1**", "**Func 2**", "**Func 3**" and "**Func 4**". Press **[Tare]** to enter the desired group of parameters.
 - Press **[Zero]** to return to the group "**Func 1**". If you press **[Zero]** again, the scale will exit the User Parameter section and return to normal weighing.

13.1 CHECK WEIGHING PARAMETERS

- Shortcut to enter this group is to press and hold the **[Unit]** key for 4 seconds. The display will go directly to "**Func 1**".
- Press **[Tare]** to enter the group.
- Press **[Func]** to scroll through the parameters and press **[Tare]** to enter a parameter setting.
- Press **[Func]** to view the options for setting.
- Press **[Tare]** to confirm the change and then advance to the next parameter by pressing the **[Func]** key.

This group of parameters-

- -enables or disables the percent weighing
- -sets the lock for re-setting the check weighing limits
- -enables or disables the check weighing alarm
- -sets the User Password for check weighing
- -enables or disables the negative check weighing

Parameter	Description	Options	Default setting
F1 LLk	This parameter prevents the normal user from changing the limits with the help of a Limit Lock.	With LLK set to Off (oFF), the user is allowed to change limits at any time. With LLK set to Preset (PSt), the user is allowed to use one of the preset limits only.	oFF
F2 bEP	This parameter sets the Beeper for the Keypad (Kp) and for the Check weighing (Ck). If "Ck" is set to on, the beeper can further be set to sound when the weighing result is within or outside the check-weighing limits.	Keypad beeper Kp - on Kp - oFF Check Weighing Beeper CK oFF - Off CK inL - Within limits CK otL - Outside limits	Kp on CK inL
F3 CPS	This parameter allows setting of a new Check weighing password, must be entered twice when asked. When complete, it will display " donE ".	To be entered manually.	0000
F4 nCK	This parameter enables negative check weighing function with ability to do negative tare.	on oFF	on

NOTE:

1. The Check weighing password is separate from the scale password, see section 13.3.
2. If the password is other than 0000, user must enter the password to gain access to "**F1 LLk**", "**F2 bEP**", "**F3 CPS**" and "**F4 nCK**".

13.2 RS-232 PARAMETERS

- Shortcut to enter this group is to press and hold the **[Print]** key for 4 seconds. The display will go directly to “**C1 on**”.
- Press **[Func]** to view the list of parameters.
- Press **[Tare]** to enter a parameter. Press **[Func]** to view the options for the parameter settings.
- Press **[Tare]** to confirm the change and then advance to the next parameter by pressing the **[Func]** key.
- Press **[Zero]** to return to the group “**Func 2**”. If you press **[Zero]** again, the scale will exit the User Parameter section and return to weighing.

This group of parameters can be set by the user for setting the language, baud rate, printing mode, etc. The user can also set a Scale ID number and a User ID number.

Parameter	Description	Options	Default Values or setting
C1 on	Enable or disable the RS-232 interface	Prt on Prt oFF	Prt on
C2 bd	Baud Rate	1200 2400 4800 9600 19200 38400 57600 115200	4800

C3 PrM	Printing Mode, Manual or Automatic, when Stable or Automatic Continuous	MA StA, Au StA, Au Con	MA StA
C4 Aon	Enable or disable the Accumulation	AC on AC oFF	AC on
C5 Ln	Select Language	EnGLi (English) FrEnCH (French) SPAn (Spanish) GErmAn (German) iTALi (Italian) PortuG (Portuguese)	EnGLi
C6 Uld	Set User ID	To be entered manually	000000
C7 Sid	Set Scale ID	To be entered manually	000000
C8 LAB	Label report	CoMP SiMP	CoMP
C9 CPY	Number of copies per print	CoPY 1 to CoPY 8	CoPY 1
C10 LF	Number of lines feed after each print	none to 9 LFCr	1 LFCr

13.3 SCALE PARAMETERS

- Shortcut to enter this group is to press and hold the **[Count]** Key for 4 seconds. The display will go directly to “**S1 Un**”.
- Press **[Func]** to view the list of parameters.
- Press **[Tare]** to enter a parameter. Press **[Func]** to view the options for the parameter settings.
- Press **[Tare]** to confirm the change and then advance to the next parameter by pressing the **[Func]** key.
- Press **[Zero]** to return to the group “**FUnC 3**”. If you press **[Zero]** again, the scale will exit the User Parameter section and return to normal weighing.

This group of parameters are used to control the operation of the scale.

Parameter	Description	Options	Default setting
S1 Un	Enable or disable weighing units. Only USA scales have imperial unit.	kg g	kg
S2 bL	Backlight set to always on, always off or automatic on whenever a weight is placed or a key is pressed	EL off EL on EL AU	EL AU
S3 AoF	Auto Off- Disable or set time interval to turn off the indicator automatically	SLP 0 SLP 1 SLP 5 SLP 10	SLP 0
S4 dt	Set Time and Date format and settings	Enter the time manually Enter the date manually	00:00:00 mm:dd:yy
S5 diS	Display all weights or only when stable	ALL StAb	ALL

S6 FL	Filter setting, the slower the filter, the longer the readings will be averaged, the more accurate the result	SLOWEst (1-6) SLOWEr (1-6) FASTEr (1-6) FASTEst (1-6)	SLOWEr 3
S7 SPS	Scale Password- If it is anything other than 0000 then the user must enter the password to gain access to any of the indicator parameter settings. Must be entered twice when asked. When complete, it will display "donE".	PI _ _ _ _	0000
S8 dot	Decimal place separator settings	Sets the separator for decimal places as dot "." or comma ","	dot
S9 AZ	Auto Zero settings.	off 0.25 0.5	0.5
S10 rE	Battery recharging status	Shows the battery charging voltage and current	-

13.4 PERCENT WEIGHING AND ANIMAL WEIGHING

See section 10.7 and 10.8 for details of these special weighing modes.

Parameter	Description	Options	Default setting
P1 Pct	This parameter allows the user to enter the Percent weighing Function. See Section 10.7.	None	Enabled always
P2 Ani	Enter the Animal Weighing mode of operation, See section 10.8	Set the filter value.	Enabled Always

14.0 ERROR MESSAGES

During the initial power-on testing or during operation, the scale may show an error message. The meaning of the error messages is described below.

If an error message is shown, repeat the step that caused the message. If the error message is still shown then contact your dealer for support.

ERROR CODE	DESCRIPTION	POSSIBLE CAUSES
Err 1	Time input Error	Invalid time entry such as "268970" for the time format "H-m-S".
Err 2	Date input Error	34 th day of a month is an invalid entry.
Err 3	Zero when power on and not stable.	Scale not placed on a stable surface
Err 4	Initial Zero is greater than allowed (4% of maximum capacity) when power is turned on or when the [Zero/Enter] key is pressed.	Weight on the pan when turning the scale on. Excessive weight on the pan when zeroing the scale. Platform is not installed. Improper calibration of the scale. Damaged load cell. Damaged Electronics.
Err 5	Press button to zero and zero when power on	Scale already zeroed with no mass on weighing pan
Err 6	Can't Tare for negative weight	Weight on weighing pan below zero
Err 7	Can't wait until stable	Scale not on stable surface Damaged load cell. Damaged Electronics.
Err 8	Percent input error	Percent function is entered with no reference mass on the pan.
Err 9	User calibrate zero but exceed factory calibration 10%	Improper calibration (should be within $\pm 10\%$ of the factory calibration). The old calibration data will be retained until the calibration process is complete.
Err 10	User calibration exceeds factory calibration 10%	Improper calibration (should be within $\pm 10\%$ of the factory calibration). The old calibration data will be retained until the calibration process is complete.
Err 17	Resolution error	The resolution has been set higher than 1/6000.
Err 18	Current weight is inconsistent with PLU unit, can't read PLU	Load cell is damaged. Electronics is damaged.
Err 19	Weight lower limit is larger than upper limit	High limit is set first, then the low limit is set higher than the high limit and low limit not equal to zero.

Err 20	PLU storage/ reading is more than 50	PLU number above max range of 50
Err ADC	Can't find ADC chip	Damaged or missing ADC chip Load cell is damaged. Electronics is damaged.
---OL---	Weight over range	Weight over scale range
undEr	Weight is lower than -25e	Weight below scale range

15.0 REPLACEMENT PARTS AND ACCESSORIES

If you need to order any spare parts and accessories, contact your supplier or Adam Equipment. A partial list of such items is as follows-

- **Main Power cord or adaptor for USA versions.**
- **Replacement Battery**

16.0 SERVICE INFORMATION

This manual covers the details of operation. If you have a problem with the scale that is not directly addressed by this manual then contact your supplier for assistance. In order to provide further assistance, the supplier will need the following information which should be kept ready:

A. Details of your company

- Name of your company:
- Contact person's name:
- Contact telephone, e-mail,
fax or any other methods:

B. Details of the unit purchased

(This part of information should always be available for any future correspondence. We suggest you to fill in this form as soon as the unit is received and keep a print-out in your record for ready reference.)

Model name of the scale:	_____
Serial number of the unit:	
Software revision number (Displayed when power is first turned on):	
Date of Purchase:	
Name of the supplier and place:	

C. Brief description of the problem

Include any recent history of the unit. For example:

- Has it been working since it's delivered
- Has it been in contact with water
- Damaged from a fire
- Electrical Storms in the area
- Dropped on the floor, etc.

17.0 WARRANTY INFORMATION

Adam Equipment offers Limited Warranty (Parts and Labour) for the components failed due to defects in materials or workmanship. Warranty starts from the date of delivery.

During the warranty period, should any repairs be necessary, the purchaser must inform its supplier or Adam Equipment Company. The company or its authorised Technician reserves the right to repair or replace the components at any of its workshops depending on the severity of the problems. However, any freight involved in sending the faulty units or parts to the service centre should be borne by the purchaser.

The warranty will cease to operate if the equipment is not returned in the original packaging and with correct documentation for a claim to be processed. All claims are at the sole discretion of Adam Equipment.

This warranty does not cover equipment where defects or poor performance is due to misuse, accidental damage, exposure to radioactive or corrosive materials, negligence, faulty installation, unauthorised modifications or attempted repair or failure to observe the requirements and recommendations as given in this User Manual. Additionally rechargeable batteries (where supplied) are not covered under warranty.

Repairs carried out under the warranty does not extend the warranty period. Components removed during the warranty repairs become the company property.

The statutory right of the purchaser is not affected by this warranty. The terms of this warranty is governed by the UK law. For complete details on Warranty Information, see the terms and conditions of sale available on our web-site.

18.0 APPENDIX

PARAMETER LAYOUT for GBK / GFK Mplus SCALES

Press the **[Func]** key to enter Functions mode.

Key functions while in this section

[Tare] enter a parameter or accept the changes

[Func] move to next parameter or option

Low Lim] move to previous parameter or option

[Zero] return to previous parameter or return to weighing

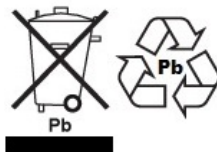
FUNC 1	
Check weighing parameters	
F1 LLk Limit Lock	oFF PSt (pre-set)
F2 bEP Keypad and Check Weighing Beeper Control	Kp on Kp oFF
F3 CPS Check weighing password	Enter using numeric method
F4 NCK Negative Check weighing	on oFF

FUNC 2	
RS-232 Parameters	
C1 on Enable RS-232	Prt on Prt oFF
C2 bd Baud Rate	1200 to 115200
C3 Prm Printing Mode	MA StA (Manual) Au StA (Automatic) Au Con (Continuous)
C4 Aon Enable Accumulation	on oFF
C5 Ln Language for printing	EnGLiS (English) FrEnCH (French) SPAn (Spanish) GErMAN (German) itALi (Italian) PortuG (Portuguese)
C6 Uid User ID	Enter using numeric keys
C7 Sid Scale ID	Enter using numeric keys
C8 LAB Label report	COMP (Complete) SIMP (Simple)
C9 CPY Number of Copies	CoPY (1 - 8)

FUNC 3	
Scale Parameters	
S1 Un Units enable	Kg, g
S2 bl Backlight	oFF, on, Auto
S3 AoF Set Auto off time (min.)	oFF, 1, 5, 10
S4 dt Set time and date	Set as described in manual
S5 dIS Display mode	All StAb (only display when stable)
S6 FL Set Filter	SLoWES (1-6) SLoWEr (1-6) FAStEr (1-6) FAStES (1-6)
S7 SPS Scale password	Enter using numeric keys
S8 dot Decimal point	dot CoMM
S9 AZ AutoZero Tracking	oFF, 0.25, 0.5
S10 rE	Battery recharge status

FUNC 4	
Scale Parameters	
P1 Pct Percent Weighing	Enter 100% reference weight
P2 Ani Animal weighing	FLt 1 Filter setting To FLt 5

WEEE 2012/19/EU



This device may not be disposed of in domestic waste. This also applies to countries outside the EU, per their specific requirements. Disposal of batteries (if fitted) must conform to local laws and restrictions.

Cet appareil ne peut être éliminé avec les déchets ménagers. L'élimination de la batterie doit être effectuée conformément aux lois et restrictions locales.

Dieses Gerät nicht mit dem Hausmüll entsorgt.

Dispositivo no puede ser desechado junto con los residuos domésticos

Dispositivo non può essere smaltito nei rifiuti domestici.

FCC / IC CLASS A DIGITAL DEVICE EMC VERIFICATION STATEMENT

NOTE: 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 and Canadian ICES-003/NMB-003 regulation. 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 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.

CALIFORNIA PROPOSITION 65 - MANDATORY STATEMENT

WARNING: This product includes a sealed lead-acid battery which contains chemicals known to the State of California to cause cancer and birth defects or other reproductive harm.



Adam Equipment products have been tested with, and are always supplied with mains power adaptors which meet all legal requirements for the intended country or region of operation, including electrical safety, interference and energy efficiency. As we often update adaptor products to meet changing legislation it is not possible to refer to the exact model in this manual. Please contact us if you need specifications or safety information for your particular item. Do not attempt to connect or use an adaptor not supplied by us.

ADAM EQUIPMENT is an ISO 9001:2015 certified global company with more than 40 years' experience in the production and sale of electronic weighing equipment.

Adam products are predominantly designed for the Laboratory, Educational, Health and Fitness, Retail and Industrial Segments. The product range can be described as follows:

- Analytical and Precision Laboratory Balances
- Compact and Portable Balances
- High Capacity Balances
- Moisture analysers / balances
- Mechanical Scales
- Counting Scales
- Digital Weighing/Check-weighing Scales
- High performance Platform Scales
- Crane scales
- Mechanical and Digital Electronic Health and Fitness Scales
- Retail Scales for Price computing

For a complete listing of all Adam products visit our website at

www.adamequipment.com

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