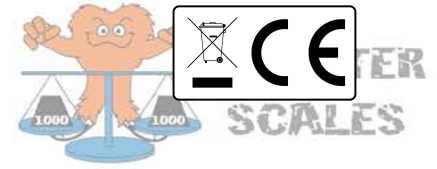


# T-Mech Pallet Scales

By Monster Scales



# Specification

## Product Description

The T-Mech Beam Scales are a perfect time saving device allowing for the quick and accurate weighing of bulk items. With an easy to use control display and a weighing capacity of up to 3000 Kg the T-Mech beam scales really are an essential for warehouses, farm environments and logistical environments alike.

Additionally, the beam scales allow for the compensation of tare weight and come with hundreds of changeable parameters to ensure easy use of the display.

## Monster Guarantee

On purchasing this product from our Monster Scales range you qualify for our 12 month electrical item guarantee.

## Item Contents

T-Mech 1200 mm long beam scale x 2  
Support Feet for Scales x 4  
Weighing Display  
Mounting Bracket Components  
Splitter cable for connecting both scales to the display  
13 amp 3 pin plug  
Spare cable plug

## Technical Parameters

Keyboard calibration and configuration  
Weighing up to 1:15,000 divisions  
Current voltage: DC 5V; Up to 4, 350  $\Omega$  load cells can be used  
Manual or automatic memory accumulation facility  
High Resolution ( $\times 10$ ) Display  
Selectable digital filtering  
Selectable automatic switch off  
6-bit Display: 0.8 inches LED  
Selectable display resolution:  
1/2/5/0.1/0.2/0.5/0.01/0.02/0.05/0.001/0.002/0.005/10/20/50/100/  
200/500/0.10/0.20/0.50/0.010/0.020/0.050  
RS-232C Interface, Optional RS-485 Interface 1200/2400/4800/9600  
Baud rate continuous ASCII data output  
External Power supply: 230V(115V) AC. Internal rechargeable 6V DC  
Battery  
Operating temperature: 0°C to 40°C.  
Storage temperature: -25°C to 55°C  
Relative humidity:  $\leq 85\%$  non-condensing  
Display Dimensions: 256mm wide  $\times$  165mm high  $\times$  130mm deep

# User Guide



## Functions and Display Status

Information on the keypad functions and the display status icons.

### Keypad Functions

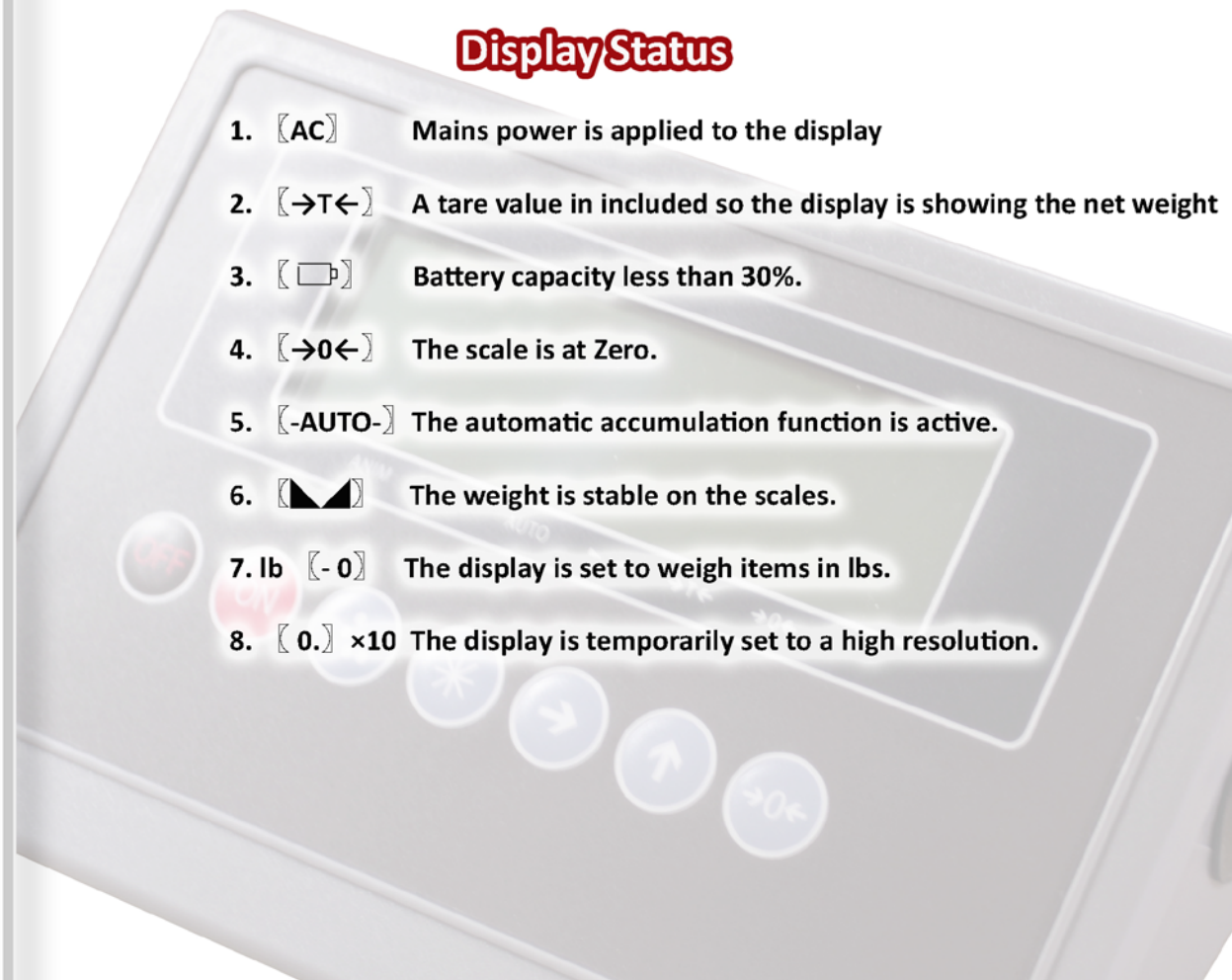


1. **[OFF]** This button turns the weighing display off.
2. **[ON]** This button turns the weighing display on.
3. **[∴]** This button operates the manual accumulation function.
4. **[\*]** This button switches between normal function and configuration mode.
5. **[→]** This button moves the adjustable (flashing) value on the display during configuration.
6. **[↑]** This button operates the following functions:
  - Temporarily adjusting the display screen to high resolution
  - Adjust the parameter value in configuration
  - Setting the preset tare value
7. **[→0←]** This button sets the display to zero, sets the zero point or allows the user to enter a tare value.



### Display Status

1. **[AC]** Mains power is applied to the display
2. **[→T←]** A tare value is included so the display is showing the net weight
3. **[🔋]** Battery capacity less than 30%.
4. **[→0←]** The scale is at Zero.
5. **[-AUTO-]** The automatic accumulation function is active.
6. **[▲▼]** The weight is stable on the scales.
7. **lb [-0]** The display is set to weigh items in lbs.
8. **[0.] ×10** The display is temporarily set to a high resolution.

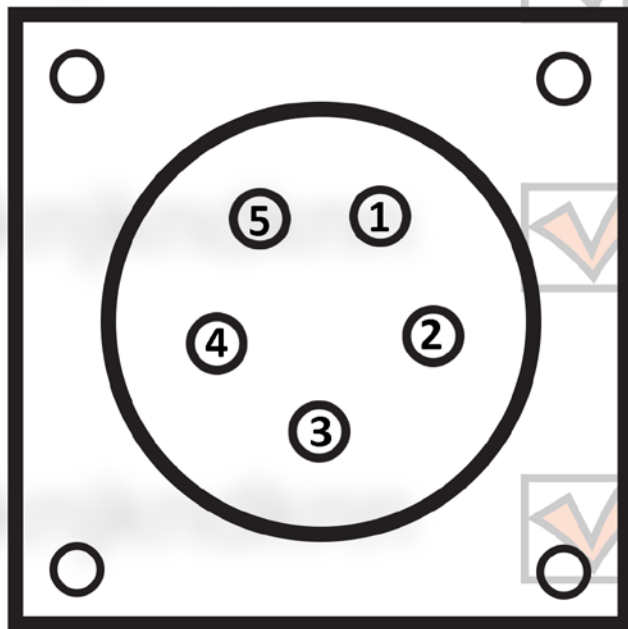


# User Guide

## Connection Wiring Diagram

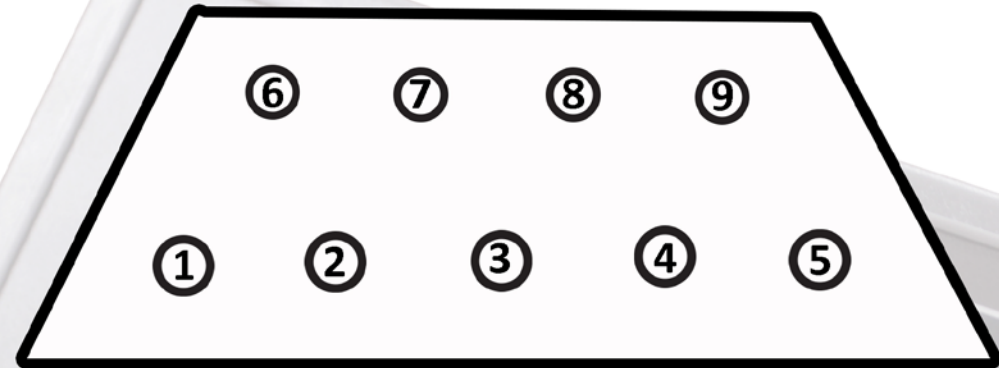
The instructions below inform on how to wire the scales correctly to either a 5 pin plug or a 9 pin DB-9 Serial connection. The cable provided will already be wired, however should the cable need rewiring please consult this page.

### 5 Pin Plug



- |                    |                    |
|--------------------|--------------------|
| 1 Positive Current | 4 Negative Current |
| 2 Positive Signal  | 5 Ground/Earth     |
| 3 Negative Signal  |                    |

### DB-9 Serial Connection



- |                    |                   |
|--------------------|-------------------|
| 1 Positive Current | 7 Positive Signal |
| 3 Ground/Earth     | 8 Negative Signal |
| 5 Negative Current |                   |

Continuous ASCII RS-232 data output format: Automatic Output

Address: Adr = 00: The ASCII data format is “=,X1,X2, X3,X4,X5,X6” <stx> =, X1 , X2, X3 , X4, X5, X6  
<cr> X1, X2, X3, X4, X5, X6 is weight data. If the weight is [100.00] kg, the continuous output is =  
00.001 = 00.001=

Address: Adr = 99 The ASCII data format is “=,X6,X5,X4,X3,X2,X1” <stx> =, X6 , X5, X4 , X3, X2, X1  
<cr>X6, X5, X4, X3, X2, X1 is weight data. If the weight is [100.00] kg, the continuous output is =  
100.00 = 100.00=

Manual and Automatic Printing Output: Address: Adr = 01—98

# User Guide



## Configuration menu

Step	Key Controls	Display message	Function
1	Press and hold [-0-] [ON]	Self test from [UER 7.9] to [0] - [9]	Press and hold the [-0-] button and press the [ON] button until the display has finished processing through the self test mode.
2	Press [*] Press [*]	[CAL SP] [-SET-]	Enter the calibration menu Enter the parameter configuration menu
	Press [→] Press [↑] to cycle through the options	[D 1] [D 2]	Set the divisions that the scales will measure at. 0.001-0.002-0.005-10-20-50-100-200-500-0.10-0.20-0.50-0.010-0.020-0.050-1-2-5-0.1-0.2-0.5-0.01-0.02-0.05 For example : d = 0.1
3	Press [*] Press [→] to cycle through the adjustable value Press [↑] to cycle through the options	[6000] [000000] [001000] [002000] [003000]	Sets the scale maximum capacity (MC)  For example: 3000 MC
4	Press [*] Press [→] to cycle through the options	[Flt 10] [Flt 00]	Sets the digital filter parameters: 00-99 The display will update faster and filter faster as the parameter is changed from: 99-00
5	Press [*] Press [→] Press [→]	[AutP00] [AutP00] [AutP01]	Sets Automatic Power Off function AutP=00 Automatic power off function switched off AutP=01 Automatic power off function switched on The digits express the choice of zero trace range (1-9): 1:0.4 d 2:0.8 d 3:1.2 d 4:1.6 d 5:2d 6:2.4 d 7:2.8 d 8:3.2 d 9:3.6 d Decimal digit express the choice of the zero setting Decimal digit =0 no zero set at start operation Decimal digit ≥1 zero set at start of operation is 20% of the FS For example : AutP=10 (AutP=10 is the factory setting)
6	Press [*]	[Adr 00]	Continuous Output: Adr=00
7	Press [*] Press [↑] to cycle through the options	[b2400] [b4800]	Baud rate range : 1200→2400→4800→9600 For example : b=4800
8	Press [*]	[001000]	Set the Low point threshold. If the weight is less than the low point threshold the display will show LO. ( E.G. under 1000)
9	Press [*]	[002000]	Set the High point threshold. If the weight is higher than the high point threshold the display will show HI. (E.G. Over 2000)
10	Press [*]	[000000]	Confirm changes and exit the configuration menu.

## Parameter Configuration

The information below provides details of how to set each individual parameter that can be adjusted on the display scales.

## Calibration menu

Ensure that all configuration values have been set before calibrating the scales.

Step	Key controls	Display Message	Function
1	Press [*] Press [→]	[CAL SP] [CAL 00]	Enters the calibration menu Zero the scale
2	Press [*]	[-----] [3000]	Starts zero calibration and waits for calibration to complete
3	Load the standard weight for MC and press [*]	[-----] [3000]	Starts zero calibration and waits for calibration to complete

By pressing the [\*] button three times when selecting either the configuration or calibration menu the display will show [-A-D-]. To view the A/D counts press the [→] key and press the [\*] to return to the weighing mode.

Zero mode - When the weight is stable, press the [-0-] key for two seconds to set the zero point and to zero the display. The display will then show [-0-] when this is turned on.

Tare mode

Digital tare - Press the [→] key. Set the tare value using the [→] and [↑] keys and press the [-0-] key to confirm. The input data will show the tare value and the tare status LED will show on the screen.

Acquire tare - When the tare status LED is not showing on the screen and the weight is stable, press the [-0-] key to acquire the tare and switch to net mode. The tare status LED will then show on the screen.

Remove tare - When the tare status LED is on, press the [-0-] key to switch to gross mode and remove the tare. The tare status LED will not show on the screen.

# User Guide



## Parameter Configuration

The information below provides details of how to set each of the accumulation functions on the scales.

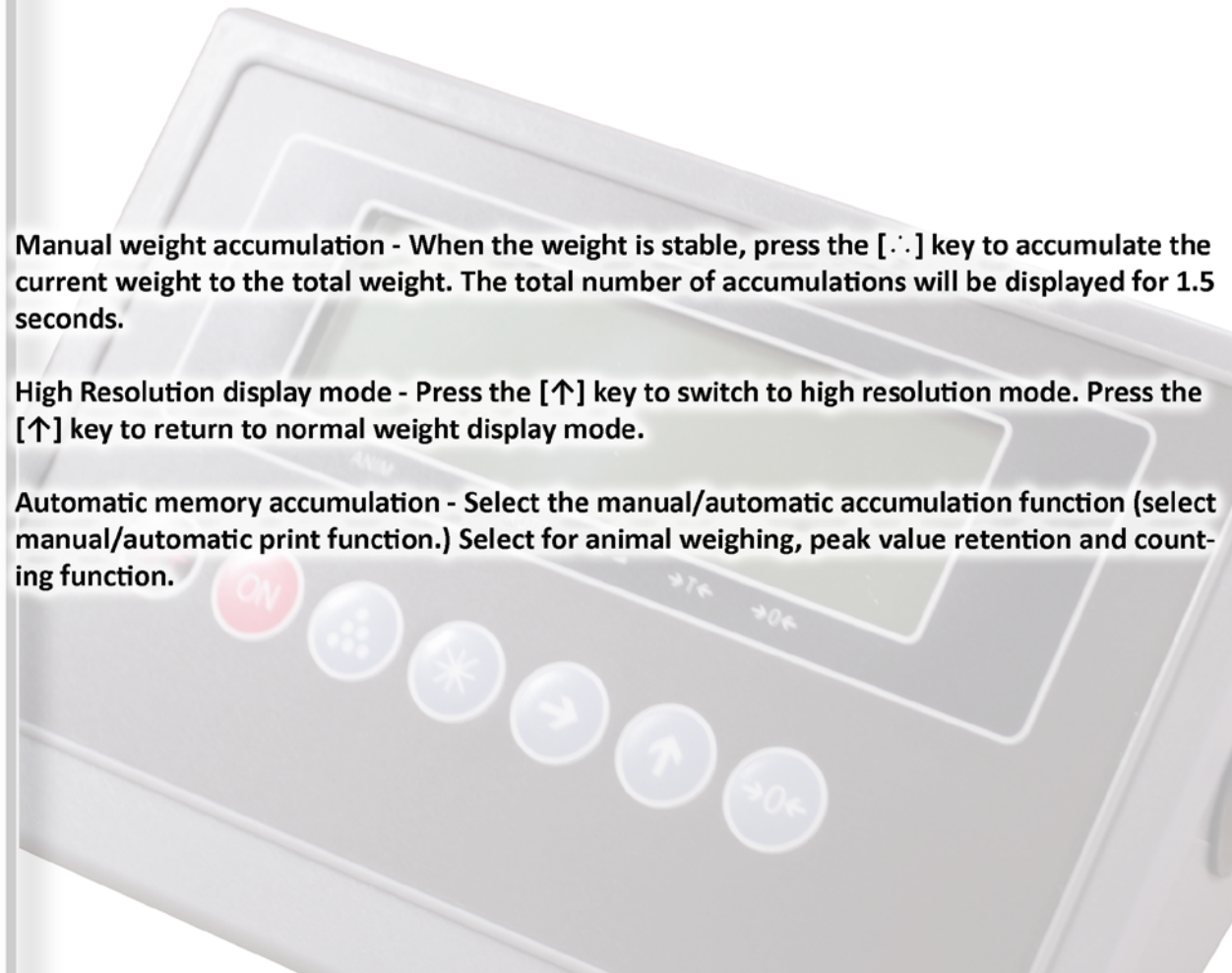
### Accumulation menu

Step	Key Control	Display Message	Function
1	Press [*]	[n 12]	This will show the amount of times the weight can be accumulated.
2	Press [*]	[AUt 0]	Manual/Automatic Accumulation menu AUt=0 – Manual Accumulation AUt=1 – Automatic Accumulation and print when weight is added. [AUTO] will show on the display. AUt=2 – Automatically memorize the displayed value when weight is added. Accumulates and prints when reading is stable and drops below 20d. AUt=3 – Dynamic weighing Method. When weighing >20d the alarm will sound and the display will lock for 6 secnds. When new data is entered the lock will activate again for 6 seconds. The lock is then released for weighing <20d and the weight will automatically accumulate and print. The recommended filter for this function is [FLT>30]. [AUTO] will show on the display when accumulating. AUt=4 – Peak value fixed weighing method. When the weight is >20d the alarm sounds and the lock is displayed. When the weight is <20d the fixed data display will flash and the automatic accumulation and print will activate. The lock can be released by pressing any key. [AUTO] will show on the display when accumulating. AUt=5 – Dynamic weighing method. Manual accumulation and print. AUt=6 – Peak Value fixed weighing method. Manual accumulation and print. AUt=7 – Counting Function
3	Press [↑]	[AUt 0]	The display digit will flash.
4	Press [↑] Press [↑] Press [↑] Press [↑]	[AUt 0] [AUt 1] [AUt 2] [AUt 3]	Sets the max. capacity value. Moves the adjustable value to the right e.g. [AUt 3] = Dynamic weighing method
5	Press [↑]	[ 0]	Return to normal weighing status.

Manual weight accumulation - When the weight is stable, press the [.] key to accumulate the current weight to the total weight. The total number of accumulations will be displayed for 1.5 seconds.

High Resolution display mode - Press the [↑] key to switch to high resolution mode. Press the [↑] key to return to normal weight display mode.

Automatic memory accumulation - Select the manual/automatic accumulation function (select manual/automatic print function.) Select for animal weighing, peak value retention and counting function.



# User Guide



The information below provides details of how to set each of the accumulation functions on the scales.

## Parameter Configuration

### Quantity Accumulation Menu

1.

Step	Key Control	Display Message	Function
1	Place item on scales		In this example the item weighs 27 Kg and there is a quantity of 30. Place the item on the scales.
2	Press [→] Press [→]	[cnt000] [cnt000]	Ready to input quantity Moves the adjustable digit.
3	Press [↑] Press [↑] Press [↑]	[cnt010] [cnt020] [cnt030]	Quantity of 10 Quantity of 20 Quantity of 30 (max. 200)
4	Press [*]	[ 27]	Press [*] to confirm the quantity. This will show the item weight on the display again.
5	Press [↑]	[C 30]	Press [↑] to switch between quantity and weight.

2.

Step	Key Control	Display Message	Function
1	Place object	[230]	Item weight = 230
2	Press [↑]	[C 255]	Item Quantity = 255
3	Press [∴]	[n 4] [C 255]	Number of accumulations (display after 1.5 seconds)

3.

Step	Key Control	Display Message	Function
1	Press [*]	[C 1203]	Display the total quantity of the item = 1203
2	Press [↑]	[H 0]	Display accumulated weight 4 digits higher
3	Press [↑]	[L 1085]	Display accumulated weight 4 digits lower = 1085
4	Press [↑]	[C 1203]	Back to counting status
5	Press [-0-]	[C 0]	Delete accumulated quantity

1. Quantity input: If you have a number of items that are the same weight then you can calculate the weight by weighing one of the products and inputting the quantity. When the net weight on the scale is set to zero (tare can be removed by pressing the tare key if the net weight is not zero) the item that requires weighing can be placed on the scale (please note the total quantity of items cannot exceed 200). Press the [→] key to enter the quantity input and press the [↑] key to change the value (e.g. 30 - display will show [CNT030]). Press the [\*] key to confirm the amount and the weight will display the total for 30 items. Quantity amounts will be memorized after the control unit is switched off.

2. Counting operation: Place an item on the scale so that the weight is displayed on the screen. Press the [↑] key to switch from the item weight to the item quantity and [C255] will show on the display. When the display is stable, press the [∴] key to accumulate the weight and quantity. Accumulation can only be done in the counting mode.

3. Accumulate enquiries and delete - Both at weighing mode and counting mode.



# User Guide

## Functions and Printer Connection

The information below provides details of further functions that can be set on the weighing display and instructions for connecting a printer.

### Functions

- 1. Clear Memory** - Press the [-0-] key to clear the memory. If the memory has previously been cleared the display will show [n 0] followed by zero weight when the [\*] key is pressed.
- 2. Set the data** - When adjusting parameters press the [→] key to move the adjustable digit and press the [↑] key to change the value.
- 3. Battery Capacity** - When the display is powered on/of the battery capacity will be displayed for 1.5 seconds [PBt 100].
  - When the battery capacity runs down to less than 20% the display will start to flash. Switch the indicator off to avoid discharging the battery and connect to the external DC power supply.
  - When the battery capacity runs down to less than 10% the display will automatically switch off to ensure the battery is not fully discharged.
  - When the automatic power off function is enabled, if the weight is stable and there is no key operation for more than 3 minutes, the display will go into standby and show [-] on the screen to conserve battery.
  - When the automatic power off function is enabled, if the weight is stable and there is no key operation for more than 3 minutes the display will power down
  - The battery has a life of 30 hours from fully charged.
- 4. Weighing unit** - The display will weigh in kg as standard however can be set to weigh in lbs. To switch between kg and lbs hold the [\*] button for two seconds.

### Printer Connection

If you require a print out from a mini printer or receipt printer please follow the instructions below.

- 1. Connect the display to the mini printer via a serial cable.** (Before connecting to the printer ensure that the communication address is set as Adr=01 and baud rate is set as b=2400 (see configuration)).
- 2. Print the current weight** - Ensure that the weighing data is less than 20d and the display is stable. Press the [··] key and the reading will be printed.
- 3. Accumulated print** - When the display is in weighing mode press the [\*] key, then press the [··] key to print out the accumulated figure.
- 4. Automatic Accumulation print** - When the display is set to automatically accumulate it will also automatically print the readings when the weight is stable and less than 20d. The second print will automatically begin when the weighing data is back to 20d and more weight is loaded.

Here is an example of a print reading:

Normal print	Accumulation print
NO:1 (serial No.)	NO: 9 (number of accumulation)
Gross: 3940kg (gross weight)	W: 8225kg (accumulated weight)
Tare: 2000kg (tare weight)	
Net: 1940kg (net weight)	



# Safety Advice



Do not operate or store the display near heat sources or in hot places.

Do not use the scales in dusty areas as this could lead to damage in the display unit.

Do not overload the scales. This can cause damage to the equipment/display.

The operating temperature for the scales is -10C - 50C with a maximum humidity of 85%. Operating the scales outside of these temperatures may lead to damage.

## Safe Working Practice

Please read through the safe working practice to ensure prevention of injury or damage to the beam scales.

Ensure that the display is kept away from water sources and ensure that no liquids are spilled on the display.

Both the scales and the display should be fully sealed when in use. Do not attempt to remove or adjust any part of the display/scales without expert attention.

Ensure that the battery is charged before the capacity reaches 0. This may damage the battery and prevent it from being re-charged.

Ensure that the display and wires are kept clear from heavy objects. This can cause damage and prevent the display or wires from working.

# Contact Us

Our contact details for both our sales and support departments are provided below.

## Sales Department

For information regarding our consumables range and other products from our Monster Scales division please use the following details below.

**Tel: 01347 878888**

**Email: [sales@monstergroupuk.co.uk](mailto:sales@monstergroupuk.co.uk)**

## Support Department

For customer care queries, returns, reporting faults or for enquiries regarding warranty repairs please use the following details below.

**Tel: 01347 878887**

**Email: [support@monstergroupuk.co.uk](mailto:support@monstergroupuk.co.uk)**

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## Website

To view our consumables and product range and receive fantastic low price offers from our Monster Scales division please feel free to visit our website.

**[www.monsterscales.co.uk](http://www.monsterscales.co.uk)**

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## Address

To visit our brand new offices 'Monster House' and view our product range, send postal correspondence or to return items our address is provided below.

**Monster House, Alan Farnaby Way, Sheriff Hutton Industrial Estate, Sheriff Hutton, York, YO60 6PG**