

# ZM223 Checkweigher System

Avery Weigh-Tronix

## FAQ Sheet

### 01 How is the new ZM223 BSG Checkweigher base now IP69K?

We have now upgraded the load cells used in the BSG torsion base to improve its water ingress protection. This new fully stainless steel load cell, along with a few other small changes to the BSG base design, now makes our lower cost BSG base fully IP69K wash down even with the weigh pan removed.

### 02 What is the new load cell now used in the BSG bases?

The new IP69K 3000d BSG torsion base design now uses a new, fully stainless steel Zemic MB6G load cell that when fitted within our BSG torsion base design make these bases fully IP69K. Ideal for regular cleaning using high-pressure steam water.

### 03 If both the BSG and BSF are now IP69K approved, what other differences are there between the two bases?

Apart from cost, the main difference between the BSG and BSF design is the resolution offered by both. The BSG base design is on 3000d NTEP approved where the more expensive BSF base design is 5000d NTEP approved.

### 04 Will this now allow you to offer IP69K washdown protection at a lower price point?

Yes, the new BSG base design can now provide all the IP69K advantages of the BSF base but at the lower BSG price.

### 05 What is IP69K?

The IP69K rating is used in applications where high pressure & high temperature wash-down is used to sanitize equipment.

- IP6xx refers to the product's ability to resist ingress of dust.
- IPx9K refers to the product's ability to resist ingress of high temperatures up to 176°F/ 80°C and high pressure steam / water at 1160-1450psi / 80-100 bar
- IP69K is a worldwide recognized standard which defines the ingress protection of the enclosure base and external options. The ZM223 stainless steel has been third party IP69K (IEC 60529) certified by TRAC Labs. Do not be misled by brands that state their products are designed or equal to IP69K without certification.

### 06 In addition to the ingress protection IP69K provides, is there a solution for internal condensation that may occur when a cold stainless steel enclosure is subjected to hot steamy water during a cleaning cycle?

Each stainless steel IP69K enclosure has been specially designed with a patented air pressure equalizing solution to keep water out while allowing the enclosure to neutralize air pressure changes. Without this, the enclosure could experience a capillary reaction that draws unwanted moisture inside.



## 07 Why are there now only two BSG base capacities & base sizes available?

The new load cell used in this BSG design provides ample resolution to cover all the old BSG base capacities with just two part numbers. This also allows us to hold more stock of the right BSG bases to better cover customer demands.

12 lb BSG 3000d base 8.75" x 8.75" (220 mm x 220 mm) can be used for the following capacities:

- 6 x 0.002 lb (3 x 0.001 kg) NTEP approved
- 12 x 0.005 lb (6 x 0.002 kg) NTEP approved
- 3 x 0.001 kg UK/EC approved
- 6 x 0.002 kg UK/EC approved

100 lb BSG 3000d base 12" x 14" (310 mm x 350 mm) can be used to cover the following capacities:

- 30 x 0.01 lb (15 x 0.005 kg) NTEP approved
- 60 x 0.02 lb (30 x 0.01 kg) NTEP approved
- 100 x 0.05 lb (50 x 0.02 kg) NTEP approved
- 15 x 0.005 kg UK/EC approved
- 30 x 0.01 kg UK/EC approved

## 08 What is NSF ANSI 3-A and why is it important for the food industry?

NSF stands for National Sanitation Foundation, ANSI stands for American National Standards Institute and 3-A stands for Sanitary Standards Committee which has its roots in the Dairy industry. These standards are used to monitor and control sanitation through cooperation with federal authorities, manufacturers and users.

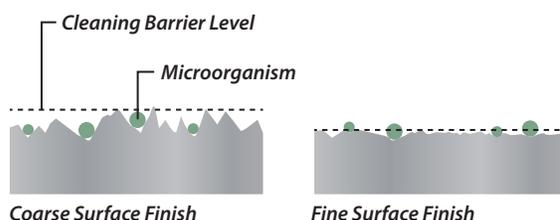
3-A criteria is used throughout North America and it is gaining worldwide recognition.

NSF/ANSI Standard 3-A 14159-1 -2010 specifically refers to hygiene requirements for the design of Meat and Poultry Processing Equipment.

## 09 What grade of stainless steel is used in the ZM223?

The ZM223 is manufactured using food grade AISI (American Iron and Steel Institute) 304 stainless steel and finished with a fine brushed surface finish that is under Ra 0.8  $\mu\text{m}$  as specified with in NSF/ANSI Standard 3-A 14159-1 -2010.

*Using a fine grain brush finish under Ra 0.8  $\mu\text{m}$  helps to stop microorganisms from taking hold and growing on the surface.*



## 10 What is pickle and electropolish finished and why do we use it on the checkweigher?

The main food contact areas where raw food comes in to contact with the stainless steel - such as the weight platter and column - are normally subjected to a pickled and electropolished finish. This helps to remove any impurities on the surface of the stainless steel, while smoothing and rounding the peaks found within the fine brush finish. This results in a finish that is much easier to clean and prevents bacterial microorganisms from growing on the surface of the scale.

An ideal surface finish is under Ra 0.8  $\mu\text{m}$ .



## 11 Why is the base flat with open corners?

The base structure has a flat bottom to stop unwanted food particles from bouncing up inside the scale base while being high pressure cleaned. Corners of the base are left open to allow any food particles that find their way into the base to be easily washed out during the cleaning process.

## 12 Why have we removed the rubber bumpers from under the weight pan?

The rubber bumpers have now been incorporated in the breakaway plate. This is intended to aid cleaning and prevent them from becoming loose and falling off.

## 13 Why have rounded corners on the column, indicator and top pan?

Rounded corners improve cleaning and reduce food trap areas while also adding strength and rigidity to the product.

## 14 How bright is the display in various lighting conditions?

The display on the ZM223 Checkweigher has excellent visibility with a wide viewing angle from its HTN display with its 1.5" high 14-segment large digits and color changing backlight to aid the user when checkweighing (Red is Under, Green is ACCEPT and Orange is Over).

This very readable display can easily be seen from a distance in all light conditions.

## 15 Can the display contrast be changed?

Yes, the ZM223 display contrast can easily be adjusted along with the backlight brightness.

---

## 16 What is meant by torsion base design and what advantages does it give over other bench bases?

The torsion base is a unique Avery Weigh-Tronix design, which protects the load cell from accidental damage, shock loads and overloading. This design protects the load cell better than any other bench base on the market today. Based on past data, the failure of the load cell when used in this base design has resulted in a failure rate of less 0.001% over the last 20 years.

---

## 17 What is the main difference between the BSF and BSG base designs?

The main difference between the two bases is the legal-for-trade load cell accuracy:

- The Model BSG base uses the same load cells as used on the current torsion bases, is NTEP approved to 3000d and uses a fully stainless steel load cell perfect for IP69K washdown applications.
  - The Model BSF base offers a high legal-for-trade accuracy of 5000d and is designed for high pressure cleaning to IP69K, making it ideal for food applications.
- 

## 18 What capacities and resolution are available with the ZM223?

The ZM223 indicator and base are fully NTEP approved and available in two legal-for-trade accuracies depending upon the base chosen. The ZM223 linked with the BSG torsion base offers an accuracy of 3000d. When linked to the BSF torsion base or BS diamond, the ZM223 offers a legal-for-trade accuracy of 5000d. For non legal-for-trade applications, higher resolution and accuracies can be configured.

---

## 19 How fast is the ZM223?

The ZM223 has been designed to be fast, accurate and reliable and in normal working environments will stabilize within 1/2 of a second. This makes the ZM223 the fastest static checkweigher within the AWTX product offering.

---

## 20 How many PLUs does the ZM223 have?

500 when operated in the advanced application.

---

## 21 What types of data can be stored under each PLU?

The PLU data can be stored in two ways:

- Target , Lower Tolerance , Upper Tolerance, Tare
  - Low Limit, High Limit, Tare
- 

## 22 How do you enter PLU data?

PLU 0 is a free PLU that cannot be stored and allows the operator to set and change target limits.

All PLUs from 1 to 500 are entered in the Supervisor mode, which is password protected. A more convenient method is to store the PLUs in a spreadsheet, export the data to a .CSV file and perform a PLU download to the indicator. This is accomplished using Ethernet FTP or through a thumb drive through the USB port via the Supervisor menu. The PLU database can be exported from the ZM223 in the same fashion.

---

## 23 What communication ports and options are available on the ZM223?

Standard:

- 2 x Serial Ports
- USB Host
- Ethernet
- Bluetooth

Options: (1 option at a time)

- USB Device Option
  - RS422/RS485
  - 802.11b/g Wireless Option
- 

## 24 Can the weight data be logged into a PC?

Yes we can connect to a PC via several different methods:

- RS232 Serial
  - Ethernet
  - USB Device (optional)
  - Wireless (optional)
- 

## 25 What distance does the ZM223 wireless connection cover?

Tests have shown an operational distance of 200 feet (60 m) but this will be subject to working environments

---

## 26 How resilient is the keyboard to operator misuse?

Designed for the food industry, the ZM223 has a flat easy-to-clean audible key pad and an extra thick outer layer to protect the keypad from occasional knife abuse. This overlay construction has been tested to over 1 million knife presses without any failures occurring.

---

## 27 Can an external light stack be used with the ZM223?

The ZM223 Checkweigher can be fitted with an external stack light, if required to run directly from the outputs inside the ZM223. However, due to the powerful four color backlight display it gives the operator good, clear visuals removing the need for expensive external stack lights.

---

## 28 How many waterproof quick connect glands can be fitted to the ZM223?

Only one USB or Ethernet waterproof quick connect gland can be used on the ZM223. If the customer requires both, one can be hard wired inside the indicator and they can also use one of the fixed glands provided on the base of the indicator.

However, for retrieving translation data stored within the ZM223 flash memory the simplest option is to use the free Bluetooth module app Remote Assist™ and retrieve this data remotely without stopping the operator

## 29 What battery is in the ZQ battery pack?

Designed for serviceability, the ZQ battery pack uses a standard off-the-shelf 6V lead acid battery.

This can be used with a ZM223 however, all charging of this battery has to be carried out away from the ZM223 Checkweigher.

## 30 What IP rating is the battery pack?

IP69K approved and designed for use within the food industry, the battery pack fits neatly within the rear of the column to allow easy removal for cleaning or recharging.

## 31 How long will the battery last in the ZM223, how is the battery charged and how long does it take to charge the battery?

It is designed to give up to 16 hours of use between recharges and can be recharged remotely in 8 hours.

It has mainly been designed for external recharging, allowing customers to have more than one battery per scale.

For applications where power outage is a regular occurrence, the battery can be wired to allow recharging to take place within the scale.

## 32 Is the IP69K rechargeable battery pack a serviceable item?

Designed to be fully serviceable, this IP69K rechargeable battery pack runs from a standard off-the-shelf lead acid 6V battery. The battery can easily be replaced by removing the service plate found on the underside of the battery.

## 33 What connectivity comes as standard?

Bluetooth, RS232, USB host and Ethernet are standard and can be hard wired through one of the glands on the bottom of the indicator. A removable wash-down USB or Ethernet gland can be retrofitted in place of the big gland on the bottom of the indicator, if required. Only one wash down gland can be installed due to space restraints.

## 34 What is USB host and USB VCP?

The ZM223 comes standard with USB host, allowing data to be simply and quickly transmitted to printers and data transfer to thumb drives. The addition of a USB VCP option converter module converts one of the RS232 ports to a USB virtual comms port to allow data to be sent back and forth from a PC or used to control the checkweigher remotely. This can also be done using the Ethernet port, which is standard on all ZM223 Checkweighers and its built-in web browser page

## 35 Can the checkweigher be controlled from an external database?

Yes. Using the SMA protocol, the ZM223 Checkweigher allows PLUs to be selected remotely. This feature allows lines to be set remotely from the supervisor's office. Using the built-in web browser page or using the Bluetooth Remote Assist™ Mobile / tablet app.

## 36 How do you configure the set up parameters for the indicator?

The indicator can be configured through a sequence of key presses on the front panel or through the use of the PC support software program Ztools.

## 37 Can communication output strings be changed?

The selected application suite includes a default print string and protocol, but these can be enhanced or modified through the front panel or by using Ztools. For ease of configuration we recommend the use of Ztools (PC software program).



More online

- Technical specifications
- User manuals
- News and information

# Avery Weigh-Tronix

[www.averyweigh-tronix.com](http://www.averyweigh-tronix.com)

*Avery Weigh-Tronix is an ITW company*