

900 DIGITAL POST, MAIL AND SHIPPING SCALE

High performance
scale designed for
demanding shipping
environments.

Frequently Asked Questions

1. What is Quartzell™?

Quartzell or QDT stands for Quartz Digital Transducer. It uses true digital signals from quartz crystals that are precisely mounted on an intricately machined aluminum frame. The device converts the oscillating frequencies from two crystals into a digital signal which is representative of the load applied. When profiled the output signal provides extremely accurate measurement with a higher resolution than normal strain gauge technology.

2. What are the advantages of using Quartzell over Analog strain gauge load cells?

Unlike a strain gauge load cell, which produces an analog signal that has to be converted to digital, the Quartzell transducer uses two double-ended tuning-fork quartz crystal sensors to produce a true digital signal measured in frequency. This eliminates the need to convert an analog signal to digital and this significantly reduces errors while increasing speed and accuracy of the measured signal.

The digital signal allows a scale to weigh faster and with greater resolution. The Quartzell uses two quartz crystals, one in compression and other in tension. This helps reduce the impact of environmental influences such as changes in temperature and pressure.

3. Can I use Serial communication to connect to my current POS terminal?

Yes, the ZP900 comes as standard with two (RS232) Serial ports, allowing up to two POS terminals to be linked to a single ZP900 scale. Several compatible protocols are available to choose from, depending on the POS software that is being used.

4. What Serial protocols are supported in the ZP900?

The default settings for the RS232 Serial ports are as follows:

Port 1:

Set to SMA protocol, 9600, 8, none, 1.

This allows for connection of Serial port 1 to a PC application using SMA protocol or to the optional ZP900 remote display.

Port 2:

Specific to the USA is set to NCI protocol 9600, 7, even, 1 and ENQ=5

This allows for connection to a PC application using the long-standing legacy Serial protocol for shipping and mailing systems. This exactly matches the default protocol of the model NCI 7620 scales.

For PC applications configured for use with the NCI 78xx scales the only differences in the NCI protocols of the ZP900 vs 78xx are the number of display digits (7 vs 6) and number of status bytes (3 vs 2). If necessary, the ZP900 NCI protocol can be modified (by setting the attribute ENQ to 2) to exactly match the 78xx NCI protocol.

Port 2:

Specific to the UK, is set to D901 protocol 2400, 7, e, 1 to match the FX-141.

5. Can the PC USB port be used to communicate to the ZP900?

Yes, there are two ways that the PC USB port can communicate to the ZP900.

One method involves using a USB to Serial converter to create a Virtual Com Port (VCP) on the PC. The PC application will use this VCP exactly the same as the legacy 9P Serial Com Port that is no longer standard. Installing the USB to Serial typically requires installing a driver and proper assignment of the VCP to a Com port that is supported by the application. Then to connect the USB to Serial converter to the ZP900 will require a cable that is secured to the terminal block TB3 on the back of the ZP900. The Avery Weigh-Tronix part number 47355-0010MTS is a 3 ft. version. Other lengths are available from the ZP900 Price List in Distributor Fit Options list. Refer to the ZP900 manuals for wiring details for the two Serial Com Ports.

The second method is by connecting to the mini-USB HID port(s) on the ZP900. This method is described in more detail in other FAQs below.

6. Can the ZP900 Ethernet port be used for data communication?

The ZP900 has an Ethernet port that requires activation for it to function. This option can be activated on the unit when ordered, or purchased later and activated on-site by a qualified technician/service engineer. The Ethernet port can communicate as a server to a single PC or POS terminal, subject to the software being used by the remote device. Refer to the ZP900 Service manual for more detail on setting up an Ethernet port protocol.

7. How is the ZP900 used in a POS application?

As it relates to using a scale, POS or Point-of-Sale is a retail transaction to collect payment based on an item's weight. The scale would provide the weight to a PC or Cash Register. POS software would calculate the cost based on a price per unit of weight. The calculated amount could be either the selling price of the item, or the cost to ship the item. The ZP900 is equipped with communication protocols compatible with most POS software.

8. What is USB HID and how is this used on the ZP900?

USB HID means Universal Serial Bus, Human Interface Device. The HID standard was created to simplify the process of installing PC peripheral input devices such as a mouse, keyboard or game controllers.

Using the PC USB ports to communicate to the ZP900 HID port requires use of OPOS or UPOS shipping or POS software embedded with the Avery Weigh-Tronix HID scale driver. Then when the ZP900 scale is connected to the USB port, the PC will automatically recognize it is a scale and be able to communicate with it.

9. Is USB HID standard on all ZP900 scales?

The USB HID ports on the ZP900 require activation to function. This option can be activated when ordered, or purchased later and activated on-site by a qualified technician/service engineer.

10. What is OPOS?

OPOS stands for OLE for Point of Sale. This software standard was developed for Microsoft Windows based systems in 1996. The intent of this standard was to allow system integrators and software developers to communicate between POS hardware devices from multiple vendors in a common way, thus making the system integration easier.

Currently Avery Weigh-Tronix has support for both OPOS and UPOS for the ZP900, both RS232-Serial and USB-HID interfaces are available. The drivers for these standards are located on our corporate website. There you will find the drivers, test application, source code and documentation to aid in the integration of our product.

11. What is UPOS?

UPOS stands for Unified Point of Service and is the latest in POS operating systems. It is similar to OPOS except it utilizes the Microsoft POS for .Net class library. POS for .Net increases

productivity of developers of POS applications and service objects by providing all the benefits of .NET managed code and easy-to-use interfaces.

It is backward compatible with the most common OPOS device categories, maintaining your investment in legacy hardware and allowing you to utilize new device categories. To use the ZP900 with a UPOS system, it requires activation of the scale USB-HID port and use of shipping or POS software that includes the Avery Weigh-Tronix UPOS driver.

12. Will the scale support OPOS or UPOS through the USB HID ports?

The ZP900 can support both UPOS and OPOS. Activation of the USB ports and the PC software must be embedded with the Avery Weigh-Tronix drivers to recognize the ZP900. Currently Windows XP OS and prior are not supported when using the UPOS driver. The OPOS driver is compatible with Windows XP and newer. Older OPOS systems working on Pre-XP machines can still communicate with the ZP900 using one of the Serial communication ports.

13. How many POS terminals can be connected to the USB HID ports?

The ZP900 has two independent mini USB ports that when activated, allow up to 2 POS terminals to be linked up to a single ZP900 scale. The Mini USB Port cable part number is AWT25-501949.

14. What is the USB connector on the back of the BSQ?

This port can be used for a direct connection to a USB port on a PC. It requires the use of a USB type A to type B cable, part number AWT25-501988.

You will need to install the Avery Weigh-Tronix USB VCP driver software on the connected PC so that a Virtual Com Port is created when the cable is connected. This software is available to download from www.averyweigh-tronix.com

The USB port on the BSQ only supports SMA protocol. Documentation on SMA protocol is available in the ZP900 Service Manual, BSQ Installation Guide and Avery Weigh-Tronix control document SCP-15. The USB port on the rear of the base cannot be used when connected to the ZP900 indicator as only one device can be connected to the base. The BSQ base receives power from the PC when using the USB port.

15. Can I communicate to an OPOS terminal wirelessly?

The ZP900 is not available with a wireless option but if the Ethernet port is activated and configured properly it can be physically connected to a wireless router.

16. What is meant by Multi-Range?

A Multi-Range scale is defined as a weighing instrument having two or more weighing ranges with each range having a different weight interval (or division) size.

The interval size automatically adjusts when the weight enters a new weighing range, allowing lighter parcels to be weighed using smaller intervals and the heavier parcels using higher intervals.

The ZP900 offers up to three ranges of operation within in a single scale. Example: 0- 6 kg is 1 g interval, 6 -15 is 2 g

interval and 15 -35 kg is 5 g interval. As the weight is applied the first interval (1 g) would be operable but as the weight exceeds 6 kg, the display will switch to 2 g intervals. Above 15 kg it will switch to 5 g intervals. As the weight is removed, the scale will retain the interval from the highest weight range attained until the weight returns to zero and becomes stable.

17. What is meant by Multi-Interval?

A Multi-interval scale works the same as Multi-Range, except when the weight is removed the interval size will immediately change as the weight returns into the previous weight range. So when the weight drops from above 15 kg to less than 15 kg, the interval size will instantly change from 5 g interval to 2 g and so forth.

18. Why does the ZP900 use Multi-Range as the default setting?

Most postal scale applications normally weigh single items, and typically never weigh items as they are removed individually so the Multi-Range setting performs very effectively and allows for a quick return to zero when the item is removed.

19. What are the advantages of having the scale calibration and metrology stored in the scale base and not the indicator?

The calibration and metrology data (capacity, division size, units, filters, etc) are stored in the BSQ base. The advantage of storing the metrology in the base is that the indicator can easily be swapped out without effecting the scale's weighing accuracy. This speeds up installation time and reduces expensive recalibration costs.

20. What is meant by Weight Classifier?

The difference between a normal scale and a Weight Classifier scale is how the weight display is rounded.

With a scale configured for 50 lb x 0.1 lb, the following definitions can be made. When a weight falls in between two values, a typical scale will 'round up or down' to display the nearest display interval. On a typical scale, the breakpoint (the point at which the scale rounds up or down) would be located at the midpoint of the display intervals (0.5 of the division). e.g if an item weighs 2.06 lb, then the weight display would 'round up' and show as 2.1 lb, but if the weight was 2.04 lb, it would round down and display as 2.0 lb.



Fig 1: A typical scale breakpoint is midway (0.5) between the display intervals, so an item weighing 2.04 lb would round down and display as 2 lb.

In order to weigh "up to" a postal rate break on a postal Weight Classifier, the 'breakpoints' need to be set differently. Instead of being set at the mid-point of a division, the breakpoint is set for 0.1 divisions. E.g. an item weighing greater than 2.01 and less than 2.1 lb, will round up to 2.1 lb as the displayed value.

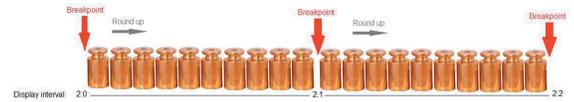


Fig 2: postal Weight Classifier breakpoint is set at the lower of the two display intervals, so an item weighing 2.04 lb would round up and display as 2.1 lb.

Weight Classifiers are mainly used within the USA. When using the ZP900 as a Weight Classifier, the scale has to be correctly labelled. If the unit of measure is in lb, kg, g or oz then the label "WEIGHT CLASSIFIER" must be placed on the ZP900 front panel. If the unit of measure is lb-oz then the label "POSTAL WEIGHT CLASSIFIER" must be placed on the ZP900 front panel.

21. Can the ZP900 be set-up to be a Weight Classifier?

Yes, the ZP900 can easily be set up to weigh using either Scale rounding or Classifier rounding. This setting is accessible in a configuration menu. Refer to the Service Manual for details or contact your scale supplier. The default setting for rounding in the ZP900 is Scale mode.

22. Can the ZP900 operate as a Postal Rate Classifier?

The ZP900 does not support Postal Rate Classifier bands. Postal Rate Classifiers are scales typically used for determining the postage due for mailing letters or packages. They have specially positioned weight bands that use different weight correction factors to adjust the displayed weight at the postage rate breakpoints.

Contact Avery Weigh-Tronix if Postal Rate Classifier operation is necessary. Customer specials are subject to volume.

23. Does the ZP900 support more than a single unit of measure?

Yes, you can configure up to two units of measure with choices of lb, kg, g, oz, lb-oz or a custom unit of measure. The F1 key will toggle between the configured units of measure.

24. Does the ZP900 support a Tare function?

The Tare function is not supported by the standard ZP900.

25. Does the ZP900 support a Print key for sending data out a communication port?

A Print key is not supported by the standard ZP900, but it does allow Broadcast (continuous) or ENQ (command/response) protocols to send a configurable print format.

26. How many Remote Displays can connect to a ZP900?

The ZP900 comes standard with an operator display (with keys) but can also support one additional remote customer display (without keys). The operator display has three styles to choose from: base, desk or pole mounted versions. The customer displays are available in desk or pole mounted versions.

27. Does the ZP900 have carrying handles available?

Yes, the ZP900 can be easily fitted with portable carrying handles. The handles are sold separately and can easily be fitted to each side of the base by the customer or Distributor, allowing the scale to easily be moved around. The handles

are designed for easy addition or removal from the base. This makes the handles an ideal service tool allowing service engineers to easily carry multiple scales at a time. The handles can be quickly unclipped and reused. Handles can be fitted without any tools. Simply squeeze the handle lugs into the side of the scale holes.

28. Does the ZP900 have a rechargeable battery option?

Yes, the ZP900 has a factory installed rechargeable NiMH (Nickel Metal Hydride) battery option. The batteries are mounted on the back of the BSQ base and are designed for approximately 20 hours of usage between recharges. Recharging is complete within 4 hours. To recharge, plug in to a scale and an AC outlet. It is recommended that the scale be connected to AC power whenever possible to keep the batteries fully charged at all times. If AC power is temporarily lost, the scale will remain in operation through the charged batteries.

NiMH batteries can lose their charge when not used for long periods of time, but they have excellent recharge capabilities. They can be recharged thousands of times, providing a long life of operation.

29. Can this battery option be field installed?

No. Due to the recharging circuitry, the battery is factory fitted only.

30. How do I lock down the scale base to the counter to stop someone from knocking it off?

The ZP900 has a number of securing options

Option 1: an optional Counter Clamp Down Plate Kit supplied by Avery Weigh-Tronix

Option 2: an off-the-shelf PC security cable can also be used to clamp to the side of the base eyelet.

31. Is the top pan securely fastened to the base

Yes, the top pan is securely attached to the base with 4 hex socket countersunk screws. A service tool is required to remove them if necessary.

32. What is a Ball Top Shroud and where is it used?

The Ball Top Shroud is a specially designed weigh platter that has 10 roller ball bearings mounted within the weigh platter. This allows heavy boxes to be easily rolled on and off the scale, allowing the scale to be used between conveyors or roller tables. The ball top offers a more streamlined design that can accept product from any direction and allows easy re-positioning to locate shipping labels or other content information that may be on the sides of the packaging.

33. Can the ZP900 be used around the world?

Yes, the ZP900 is a global product offering that will encompass a wide range of legal for trade certificates starting with NTEP, Measurement Canada, EC, OIML. Check with Avery Weigh-Tronix for country specific legal for trade questions.

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- › Technical specifications
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www.averyweigh-tronix.com/ZP900



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