

400 SERIES INDICATOR

Indicators that adapt to your application providing measurement and control for your operations.

Frequently Asked Questions

1. What is a main difference between the ZM401 and ZM405 indicator?

- › The ZM401 indicator is offered in both a stainless steel IP69K desktop and a panel mount model and it has less keys providing a simple to operate solution.
- › The ZM405 indicator is offered in both a stainless steel IP69K desktop and a panel mount model and it has keys that include alpha numeric entry and other specific functions.

2. What display technology does the ZM400 series utilize?

The ZM400 Series indicators use IBN display technology to provide tremendous contrast between its illuminated digits and surrounding background. This technology is used within the automotive industry to improve viewing in both bright and dimly lit environments.

3. The display has an active area to the right of the digits, what is this used for?

To the right of the digit area is a dot graphic array. This area is used for scale annunciations and for HMI (Human Machine Interface) messages for the scale operator.

4. What type of HMI information can be shown in the Graphic Array?

If the indicator is connected via an option to a second scale, it will identify the active scale 1 or 2.

5. Can messages be provided to the operator on the Graphic Array?

Yes, as an example if there is a mixing process that requires a hand additive, the application program can pause the process and note on the Graphic Array "Add Red Dye 3".

6. How many alpha numeric characters can be displayed on the Graphic Array?

There are three lines and each line will accommodate six characters.

7. Can different languages be shown on the Graphic Array?

Yes, English, Spanish, French, German and other languages can be displayed based on UTF-8 characters.

8. Does the Graphic Array also support graphic images?

Yes, there is an assortment of images that can be displayed.

9. What power source is required to operate these indicators?

The indicators can operate from a mains power of 90-264 VAC (110-240 VAC nominal), 50/60 Hz or 12 to 36 VDC.

10. For remote main power locations, the 12 to 36 VDC is interesting, what do you recommend as a power source?

A car battery can be utilized. Its hours of continuous operation will depend on the manufactured Amp Hours. Example: 12 Volt, 35 Amp hour Sealed Lead Acid Battery

- › Six 350Ω Sensors = 95hrs
- › Eight 350Ω Sensors = 81hrs
- › Twelve 350Ω Sensors = 65hrs

11. Will the ZM401 and ZM405 indicators support the connection of a USB keyboard?

Yes, a USB keyboard can be connected to these indicators to provide a convenient solution for alpha numeric entries.

12. The excitation voltage to the weight sensors is 10 VDC (+/- 5 VDC), how long can the cable length (home run cable) be from the scale to the indicator?

The length of cable is dependent on a number of influences including; the number of load cells, the quality and gauge of wire, the cable installation methods (conduit) and any external source of electrical noise. The ZM405 will support up to 16 (350 ohm) load cells. When using Avery Weigh-Tronix supplied load cell cable the maximum recommended length for this would be 557 feet (170 meters).

13. How many weight sensors will the ZM401 and ZM405 support?

These indicators support up to sixteen 350 ohm weight sensors with 10 VDC excitation.

14. How many scale inputs will the ZM401 and ZM405 support?

Up to two scales are supported by these indicators.

15. When the keys are pressed I hear an audible beep, is this normal?

In addition to the tactile feel when pressing a key, an audio beep is provided.

16. Can the audio beeper be used as an audio alarm or alert?

Yes, an application program can utilize this alarm multiple ways, including to identify when a truck drives onto a Truck Scale or when a batch pauses and the operator is to hand add an ingredient.

17. The keys on the front panel have a crisp snapping response, is this normal?

The indicator's durable front panel is chemical resistant and the keys' tactile feedback is maintained by high quality steel spring domes.

18. Is the IP69K 304 brushed stainless steel enclosure a standard feature?

The ZM401 and ZM405 stainless steel table top indicators have certified IP69K enclosures. The panel mount versions also have stainless steel enclosures.

19. What does IP69K mean?

IP69K is a worldwide recognized standard which defines the ingress protection of the enclosure. The ZM401 and ZM405 stainless steel table top models are third party IP69K (IEC 60529) certified by FALAB. Do not be misled by brands that state their products are designed or equal to IP69K without certification.

20. 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 includes a patented air pressure and temperature equalizing solution.

21. Is there an added protection solution for operators with oily fingers?

There is a vinyl cover option that fits over the IP69K models.

22. Does the stainless steel IP69K enclosure maintain the rounded enclosure corners and modern colored keys standard?

Yes, the ZM400 indicator series maintains the patented design language (US patent 672,262) for a common Avery Weigh-Tronix platform. The design language consists of colorful easy to read keys as well as industry leading, easy to clean rounded corners.

23. How many physical setpoints does the ZM401 and ZM405 support?

The ZM400 series has three input and three outputs and via option can connect to the SSU8 (E1310 8 I/O) or the 16 GSE I/O option for a maximum total of 22 physical setpoints.

24. If my system has a GSE design for I/O, is there a solution which will allow continued usage of the 16 Position I/O board (p/n 420819-31396)?

Yes, the ZM401/ZM405 indicator option p/n AWT05-508265 will connect to this I/O device. This will allow continued utilization of the existing wired relays and enhance the system with ZM401/ZM405 features.

25. If legacy system has a SSCU8 I/O option part number 47183-0018MTS, is there a solution which will allow the continued usage of this 8 I/O board?

Yes, the ZM401/ZM405 indicator option p/n AWT05-508265 will connect to the SSCU8 device. This will allow continued utilization of the existing wired relays and enhance the system with ZM401/ZM405 features.

26. Are there virtual setpoints that can be used within an application program?

There are 40 virtual setpoints that can be used within an application program. An example would be to activate the internal beeper when a batch is completed.

27. Do the indicators have a built in operating application?

The supplied indicator has a simple operating routine. This product has the feature of local application program development and insertion. This locally developed application program allows the indicator to be fine tuned specifically for the solution.

28. Can these indicators be locally programmed?

Yes, within Ztools version 2.0 is a programming development and validation tool for locally creating application programs and down loading them into the indicators.

29. Will my previous GSE460/465 Macro programs operate in the ZM401/ZM405 products?

Macro programs can be imported with the utilization of Ztools version 2.0.

30. When the ZM401 or ZM405 are used as a Remote Display, will the keys on the remote ZM400 function?

Yes, the keys on the remote ZM401 or ZM405 can function just like the keys on the master ZM401 or ZM405 indicator.

31. Can communication output strings be changed?

The out of box application includes a default print string and protocol, but this 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)

32. What are the PC requirements for Ztools software?

Minimum:

- › CPU: Intel i3
- › RAM: 2GB
- › Hard Drive: 500GB
- › Video Card: 512MB Integrated
- › Display: 15.6 inch display
- › Resolution: 1366x768
- › OS: Windows 7 Home Premium, Windows 8.0 Home, Windows 8.1 Home, Windows 10 Home
- › Communications: 100/1000 Ethernet
- › Optical Drive: CD/DVD

Recommended:

- › CPU: Intel i5
- › RAM: 4GB
- › Hard Drive: 500GB
- › Video Card: 512MB Integrated
- › Display: >15.6 inch display
- › Resolution: 1366x768
- › OS: Windows 7 Home Premium, Windows 8.0 Home, Windows 8.1 Home, Windows 10 Home
- › Communications: 100/1000 Ethernet
- › Optical Drive: CD/DVD
- › Two 21" monitors

Top of the line:

- › CPU: Intel i7
- › RAM: >4GB
- › Hard Drive: >500GB
- › Video Card: 1024MB Dedicated Video Card
- › Display: >15.6 inch display
- › Resolution: 1920 x 1080
- › OS: Windows 7 Pro, Windows 8.0 Pro, Windows 8.1 Pro, Windows 10 Pro
- › Communications: 100/1000 Ethernet
- › Optical Drive: CD/DVD
- › Three 27" IPS Monitors

33. The ZM400 series indicators have many communication ports, which one is used for downloading the Ztools configuration to the indicator?

The indicators include an Ethernet communication port for connecting to the PC and communicating Ztools configurations.

34. The standard Ethernet permits the product to be configured from the PC Utility Ztools. Can the Ethernet port also be used to transmit data to a PC?

The Ethernet port can be used for sending data to a PC using TCP/IP or FTP protocols and can be used for PLC communication using Modbus TCP or Ethernet IP protocols. Settings for each of these methods are described in the Service manual and additional information may be found in the On Demand Library Tech Guides located in the secure area of the Avery Weigh-Tronix website.

35. Many peripheral devices including printers have USB interfaces; do these indicators provide a solution to connect to these printers without using a serial to USB converter?

Yes, the ZM400 series provide a standard USB Host communication port which can be interfaced to supported USB printers.

36. The ZM400 series have a standard USB port. Can it be used for attaching a memory device to download data?

The USB port can be used for connection to a memory device (USB thumbdrive) to store transactions. When connected to a thumbdrive, transaction data can be transferred as individual files or in an appended file where all transactions are saved.

37. What printers and interface technologies have been tested with the ZM400 Series?

- › Avery Weigh-Tronix ZG110 Impact Printer (serial)
- › Avery Weigh-Tronix ZG310 Thermal Printer (serial)
- › HP Officejet Pro 8500A e-All-in-One Printer - A910a (USB, Wired and Wireless Ethernet)
- › HP Officejet Pro 8600 Plus e-All-in-One Printer (USB, Wired Ethernet)
- › HP LaserJet Pro CP1525nw (USB, Wired and Wireless Ethernet)
- › HP A799 (USB, serial)
- › Zebra LP2824 (USB, serial)
- › Zebra LP2844 (USB, serial)
- › Epson TM-u220b (serial, Ethernet, USB)
- › Epson TM-T88V M244A (USB, Wired Ethernet, serial)
- › Epson TM-T20 (USB)
- › LP-250 Brecknell Thermal Printer (serial)
- › LP-470 Brecknell Thermal Printer (serial)
- › Brecknell DT 2205 (serial, USB)

38. What if I have a printer that is not on this list?

As manufacturers change their designs, Avery Weigh-Tronix will continually review the list of printers. Printer manufacturers maintain levels of backward compatibility. For example, if you own an HP 8600 series printer, connecting it to the ZM401 or ZM405 USB port works by selecting the HP 8500 selection. The generic printer settings in the product also allow flexibility with new and legacy printers that are not listed.

39. When one printer model offers multiple interfaces, which interface is active?

Please review the printer specifications as some communication ports may require activation before data is accepted from the indicator.

40. Are any additional options available for the ZM400 Series?

Up to one additional option kit can be added inside the ZM401 or ZM405 indicator and the list of choices include:

- › Analog Output
- › Current Loop/RS485/RS422
- › USB Device
- › Internal (Ethernet) wireless 802.11b/g
- › Internal 120 VAC relay module for IP69K models
- › ZM-OPTO setpoint interface

- › Severe Transient Voltage Suppressor (STVS) Extreme Lightning protection
- › Scale Input 5 VDC excitation kit
- › Scale Input 10 VDC excitation with STVS kit
- › DC Output, 4 relays 3-60VDC at 2A Kit
- › DC Input, 4 Inputs 4-30VDC
- › External I/O Interface
- › AC Output, 4 relays 20-240VAC at 1A kit (IP69K models)
- › AC Input, 4 Inputs 120-240VAC kit (IP69K models)

41. The ZM400 series has built in standard lightning and transient voltage protection plus there is an option for protection against Severe Transient Voltage (STVS) and Extreme Lightning. On what installations would this option be recommended?

The additional Severe Transient Voltage (STVS) Extreme Lightning Protection option is recommended for scale installations areas that experience frequent weather conditions involving severe lightning storms and environments where radiating voltages could potentially be picked up by the incoming scale cable.

42. Are the ZM400 Series indicators approved as legal for trade?

The agency listings for these products include:

- › EC (Europe) Class III and IIII (UK 3002)
- › NTEP (US) Class III/IIIL 10,000 d (CC# 14-039)
- › OIML R76 Class III and IIII (R76/2006-GB1-15.07)
- › Measurement Canada (AM-5955C)
- › Australia (NMI)*
- › South Africa*
- › New Zealand*
- › India*
- › MID R61 (UK/0126/0177)
- › CE
- › UL/C-UL
- › IP69K (case)

* Pending

43. Is there a relay control option for the setpoint outputs?

The optional ZM-OPTO assembly provides a solution to activate devices used for setpoints and for inputs.

44. How does the ZM401 and ZM405 with its IP69K enclosure connect between the I/O option and the 16 I/O option?

Use the Rolled Cable option p/n AWT25-502056 as this will fit through the gland on the bottom of the enclosure. For panel mount models the standards ribbon cable is also a solution p/n AWT25-502054.

45. Does the new high resolution BSQ Bench Scale work with the ZM401 and ZM405?

Yes, the BSQ operates with the ZM400 Series indicators.

46. Would the BSQ Bench Scale be recognized as a scale input?

Yes, when the BSQ is connected it is one of the two scale inputs.

47. How does the BSQ connect to the ZM401/ZM405 indicator?

The BSQ Bench Scale is connected utilizing an RS232 port.

48. If an old mechanical scale has a linearity issue, does the ZM400 series provide a solution to address this performance?

The ZM400 series provides a ten point calibration feature.

49. Occasionally a system will require the indicator to change its division size as the weight increases, example a scale that performs truck and train weighments. Does the ZM400 series offer this multi-range and multi interval capability?

Yes, the ZM400 indicator can perform multi-range and multi interval weighing also known as Automatic Variable Resolution (AVR).

More online

- › Technical specifications
- › User manuals
- › News and information



www.averyweigh-tronix.com/ZM400

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