

Indicators that adapt to your application and provide measurement and control to your operations.

### Technical Specification



**ZM401**  
IP69K Stainless Steel Enclosure  
IBN Display



**ZM405**  
IP69K Stainless Steel Enclosure  
IBN Display



## DESCRIPTION

These high performance, multi-function programmable indicators give you the flexibility to adapt them for your applications.

Suitable for the office, dusty, wet or high pressure and heavy washdown environments, the ZM400 series can display, analyze, store, and transmit data across a range of technology methods to meet your specific installation.

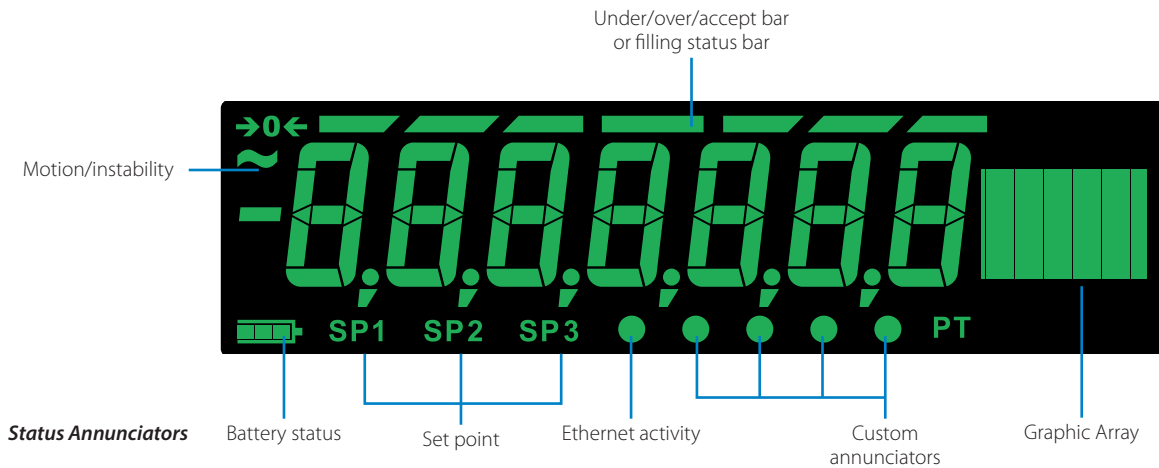
## SPECIFICATIONS

### GENERAL

<b>Operating Applications</b>	
<b>Unit of Measure</b>	Four active choices (Pounds, Kilograms, Ounce, Gram, Pound/Ounce, Custom)
<b>Capacity Selections</b>	9,999,999 with decimal located zero to five places
<b>Incremental Selections</b>	Multiples and sub-multiples of 1, 2, 5
<b>Multi Range/Multi Interval</b>	Up to three independent weight ranges and divisions
<b>Programmable Selections</b>	Zero range, motion detection, automatic zero tracking, eight point linearization
<b>Time and Date</b>	Battery backed up time/date/year (12 hour AM/PM or 24 hour format)
<b>Calibration</b>	Two to ten points
<b>Analog to Digital Measurement Rate</b>	100 Hz
<b>Internal Resolution</b>	53,687,100 counts per mV/V per second
<b>Digital Filtering</b>	Harmonizer filtering with adaptable constant and threshold
<b>Self Diagnostics</b>	Display, keys, inputs, outputs, serial port, scale A to D, USB port and option cards
<b>Dynamic Weighing</b>	Minimum nominal weigh time 100 milliseconds, recommended minimum three hundred milliseconds
<b>Programming Language</b>	Avery Weigh-Tronix LUA, GSE Macro

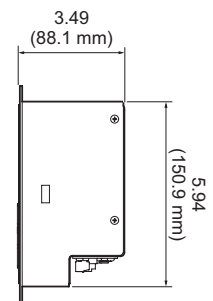
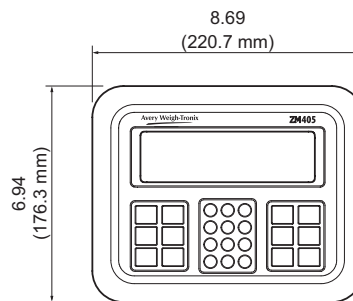
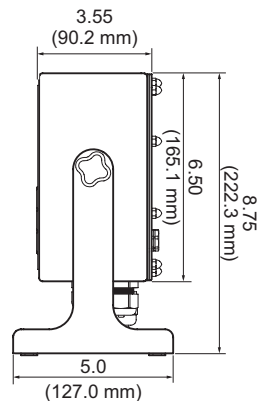
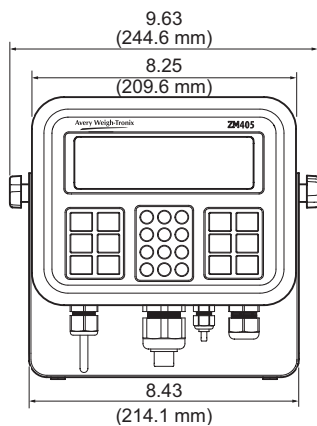
## USER INTERFACE

<b>Keypad</b>	ZM401 6 key and ZM405 24 key chemical resistant keypad with metal domed tactile feedback and audio confirmation when pressed
<b>Operational Keys</b>	ZM401: Zero, Print, Units, Tare, Select, and F1 ZM405: Zero, Print, Units, Tare, Sample, Setup, F1/ID, Scale, Target, Start, Stop, 0-9, Alpha, Decimal, Clear, and common symbols
<b>Status Annunciators</b>	Center of Zero, Motion, Battery status, Set point 1,2,3, Over/Under/Accept bar graph or fill bar graph, Preset Tare, Active Ethernet connection. Additional annunciators are shown in the dot matrix display area
<b>Display</b>	IBN illuminated: seven digit, nine segment display, green characters with black background 0.8" (20 mm) high digits and Graphic Array used for Annunciators, mode identification and HMI (Human Machine Interface). Sort bar/Checkweigher segments
<b>Display Rate</b>	Selectable (1, 2, 5, 10, 20) times per second



## PHYSICAL

<b>Enclosures</b>	<i>Stainless steel:</i> 304 brushed stainless steel (IP69K certified) with GORE® Vent ventilation and tilt stand with provisions for desk, wall and column mounting
<b>Operating Temperature</b>	14° F to 104° F / -10° C to 40° C (Compliance with legal for trade requirements) -4° F to 140° F / -20° C to 60° C (Industrial) 10 to 90% humidity non condensing
<b>Shipping Weight</b>	Stainless steel: 8.09 lb (4.05 kg)
<b>Dimensions (L X W X H)</b>	<i>Stainless steel:</i> 9.6" x 5" x 8.8" (243 mm x 127 mm x 223 mm) <i>Panel mount:</i> 8.7" x 3.4" x 6.9" (221 mm x 86 mm x 175 mm)



## INPUT/OUTPUT

<b>Remote Inputs</b>	Three TTL or voltage free logic level inputs can be received for basic key functions or application program events
<b>Standard Outputs</b>	Three outputs can be used for system variable setpoints or in combination with application program events
<b>Serial Ports</b>	Two serial ports: - Comm 1 RS232 full duplex - Comm 2 RS232 full duplex Manual and Autoprint function plus programmable Input Interpreter Supports SMA, ENQ and NCI command/response protocols Or - Comm 1 RS232 full duplex with handshaking - Comm 2 Not available
<b>USB Host</b>	Printer USB flash memory Remote USB keyboard
<b>Ethernet</b>	The Ethernet port can be configured to support five independent devices, it supports DHCP client/server and Ethernet sockets plus it supports all the serial protocols
<b>Fieldbus</b>	Ethernet IP and Modbus TCP

## ELECTRICAL

<b>Power Requirements</b>	Line voltage: 90-264 VAC (110-240 VAC nominal), frequency 50 or 60 Hz, 12 to 36 VDC Power consumption: estimated at 250mA at 12VDC for one 350 ohm weigh sensor and 600mA at 12VDC for fourteen 350 ohm weigh sensors.
<b>Excitation</b>	10 VDC(+/-5 VDC), short circuit protected Supports up to sixteen 350 ohm weight sensors (two scales) 4 or 6 conductors with sense leads Detachable plug connectors
<b>Analog Signal Input Range</b>	-1 mV/V to 5 mV/V
<b>Analog Signal Sensitivity</b>	0.1 $\mu$ V/V/divisions minimum 0.5 $\mu$ V/V/divisions recommended
<b>Circuitry Protection</b>	RFI, EMI and ESD protection (10 V/M minimum RFI noise immunity)

## OPTIONS

<b>Option Kits (choose one*)</b>	<i>Analog output kit: 0-5 VDC, 0-10 VDC and 4-20 mA*</i> <i>Current loop kit: Current loop and RS485/RS422*</i> <i>USB device kit: Provides USB interface to PC*</i> <i>Wireless (Ethernet) internal kit: 802.11b/g wireless data communications kit with antenna*</i> Internal 120 VAC Relay module for IP69K model* Scale Input 5 VDC excitation kit* Scale Input 10 VDC excitation with STVS kit* External I/O interface kit* DC Output, 4 relays 3-60VDC at 2A Kit* DC Input, 4 Inputs 4-30VDC kit* AC Output, 4 relays 20-240VAC at 1A kit* (IP69K models) AC Input, 4 Inputs 120-240VAC kit* (IP69K models) Severe Transient Voltage Suppressor (STVS)
<b>ZM-OPTO</b>	Provides setpoint interface
<b>USB Watertight Gland</b>	Rubberized and sealed
<b>Ethernet Watertight Gland</b>	Rubberized and sealed

## APPROVALS

<b>Patent</b>	US Patent 672,262
<b>Agencies</b>	EC UK* NTEP (US) Class III/IIIL 10,000 d (CC# 14-039) OIML R76 Class III and IIII* Measurement Canada (AM-5955C) Australia* South Africa* New Zealand* India* CE* UL/C-UL IP69K (case) *pending





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