

## 510 INDICATOR

Flexible weight indicator for advanced applications.

Technical Specification



*IP69K Stainless Steel Enclosure  
Graphic Display*  
**IP69K**

*IP66 Stainless Steel Enclosure  
Graphic Display*



ETHERNET



USB



SERIAL

## DESCRIPTION

This high performance, multi-function indicator provides the flexibility to adapt for your applications. A dot matrix 320 x 80 display can be used to create personalized messages such as user prompts, images and status annunciators. A large QWERTY keypad offers input flexibility where adding an external keyboard would be difficult, such as panel-mount applications.

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

## SPECIFICATIONS

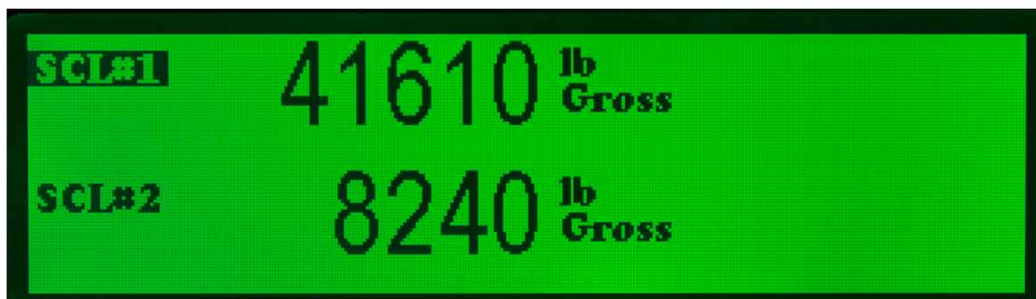
### GENERAL

<b>Unit of Measure</b>	Four active choices (Kilograms, Ounce, Gram, Pounds, Pound/Ounce, Ton, Tonne, 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>	67,108,864 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, WT Basic, GSE Macro

## USER INTERFACE

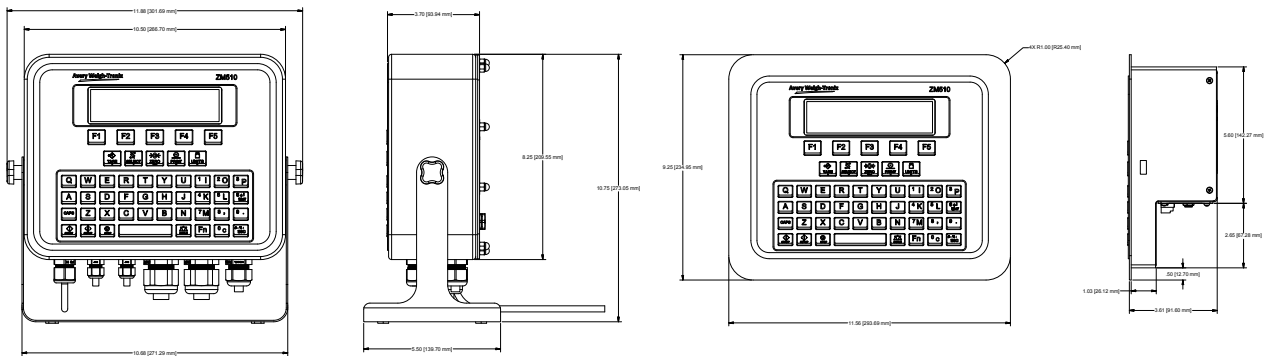
<b>Keypad</b>	ZM510 has a 48 key chemical resistant keypad with metal domed tactile feedback and audio confirmation when pressed
<b>Operational Keys</b>	Zero, Print, Units, Tare, Select, Setup, Scale, Start, Stop, 0-9, Individual Alpha, CAPS, Number Lock, Enter, Five Function Keys (F1-F5), Space Bar
<b>Status Annunciators</b>	Center of Zero, Motion, Battery status, Preset Tare, Active Ethernet Connection, Unit of Measure and more are shown on the dot matrix display
<b>Display</b>	Improved Super Twisted Nematic (ISTN) Graphic Display: the green illuminated with black background 320 x 80 pixel display provides wide viewing angles and high brightness. Pixels can be organized on the display to create personalized Human Machine Interface messages and images. A mode selection allows the image to be displayed in reverse image for applications that would benefit from dark characters with a clear/light contrasted background.
<b>Display Rate</b>	Selectable (1, 2, 5, 10, 20) times per second

### Dot Graphic Display Adapts to Meet the Solution



**PHYSICAL**

<b>Enclosure</b>	Stainless steel desktop: 304 brushed stainless steel (IP69K certified) with GORE® Vent ventilation and tilt stand with provisions for desk, wall and column mounting Stainless steel panel mount: Stainless steel with easy access to interface connections
<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 desktop: 12.4 lb (5.62 kg) Stainless steel panel mount: 11 lb (5 kg)
<b>Dimensions (L x W x H)</b>	Stainless steel desktop: 11.88" x 5.5" x 10.75" (301.69 mm x 139.70 mm x 273.05 mm) Stainless steel panel mount: 11.56" x 3.61" x 9.25" (293.69 mm x 91.60 mm x 234.95 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 (3)</b>	Three serial ports: - Comm 1 RS232 full duplex - Comm 2 RS232 full duplex - Comm 3 RS232 full duplex Or - Comm 1 RS232 Full duplex with handshaking - Comm 2 RS232 Not available - Comm 3 RS232 Full duplex with handshaking Manual and Autoprint function Supports SMA, ENQ and NCI command response protocols and broadcast Supports BSQ digital bench base
<b>USB Host (2)</b>	Two USB Host ports for: ▶ Printer ▶ USB flash memory ▶ Remote USB keyboard
<b>Ethernet</b>	The Ethernet port can be configured to support ten independent devices. It supports DHCP, UDP Sockets, TCP/IP (client or server), embedded web server, email, SMA, NCI, FTP, ENQ and Broadcast.
<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 300mA at 12VDC for one 350 ohm weight sensor and 650mA at 12VDC for fourteen 350 ohm weight sensors
<b>Excitation</b>	10 VDC (+/-5 VDC), short circuit protected Supports up to twenty four 350 ohm weight sensors (four 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 μV/V/divisions minimum 0.5 μV/V/divisions recommended
<b>Circuitry Protection</b>	RFI, EMI and ESD protection (10 V/m minimum RFI noise immunity)

## OPTIONS

<b>Option Kits (maximum four internal options)</b>	Analog output kit: 0-5 VDC, 0-10 VDC and 4-20 mA Current loop kit: Current loop and RS232/RS422 USB device kit: Provides USB interface to PC (virtual comm Port) Device Net™ Profibus® Wireless (Ethernet) internal kit: 802.11b/g wireless data communications kit with antenna Internal 120 VAC Relay module for IP69K model Scale Input 5 VDC excitation 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 3 inputs and/or 3 outputs, external G4 interface modules
<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>	NTEP (US) Class III/IIIL 10,000d (CC# 14-039) Measurement Canada class III/III HD (AM-5955C) UL/cUL IP69K



Measurement  
Canada Approved



# Avery Weigh-Tronix

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

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