

## 510 INDICATOR

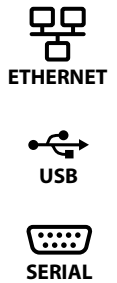
Flexible weight indicator for advanced applications.

Technical Specification



*IP69K Stainless Steel Enclosure  
Graphic Display  
IP69K*

*IP66 Stainless Steel Enclosure  
Graphic Display*



## 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

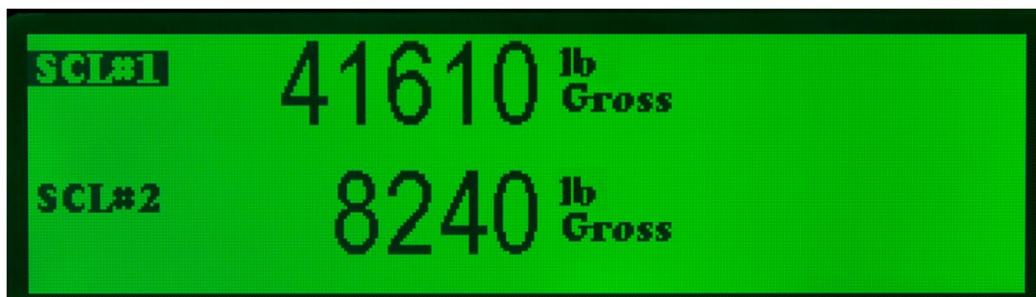
### GENERAL

|   |   |
|---|---|
| <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

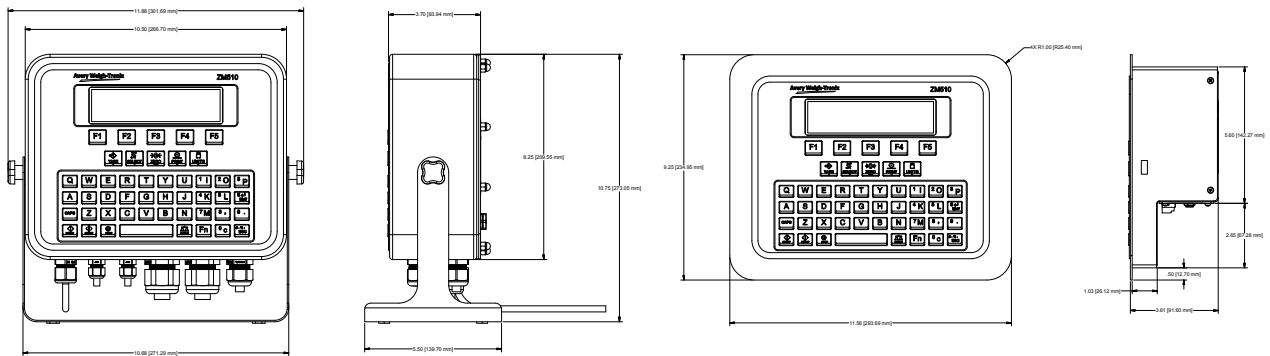
|                            |  |
|----------------------------|--|
| <b>Keypad</b>              | ZM510 has a 48 key chemical resistant keypad with metal domed tactile feedback and audio confirmation when pressed   |
| <b>Operational Keys</b>    | Zero, Print, Units, Tare, Select, Setup, Scale, Start, 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<br>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)<br>-4° F to 140° F / -20° C to 60° C (Industrial)<br>10 to 90% humidity non condensing  |
| <b>Shipping Weight</b>        | Stainless steel desktop: 12.4 lb (5.62 kg)<br>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)<br>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:<br>- Comm 1 RS232 full duplex<br>- Comm 2 RS232 full duplex<br>- Comm 3 RS232 full duplex<br>Or - Comm 1 RS232 Full duplex with handshaking<br>- Comm 2 RS232 Not available<br>- Comm 3 RS232 Full duplex with handshaking<br>Manual and Autoprint function<br>Supports SMA, ENQ and NCI command response protocols and broadcast<br>Supports BSQ digital bench base |
| <b>USB Host (2)</b>     | Two USB Host ports for:<br>▶ Printer<br>▶ USB flash memory<br>▶ 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<br>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<br>Supports up to twenty four 350 ohm weight sensors (four scales)<br>4 or 6 conductors with sense leads<br>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<br>0.5 μV/V/divisions recommended   |
| <b>Circuitry Protection</b>      | RFI, EMI and ESD protection (10 V/m minimum RFI noise immunity)  |

## OPTIONS

**Option Kits (maximum four internal options)**

✓ = choose up to two per option expansion RS232

✗ = one per option expansion

- 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)

**External Option**

- ZM OPTO
- Option Expansion - RS232
- USB watertight gland
- Ethernet watertight gland

## APPROVALS

**Patent**

US Patent 672,262

**Agencies**

NTEP (US) Class III/IIIL 10,000d (CC# 14-039)  
 Measurement Canada class III/III HD (AM-5955C)  
 UL/cUL  
 IP69K  
 EC (Europe) Class III and IIII UK 3042  
 OIML R76 Class III and IIII UK/0126/0197  
 MID R61/2006-GBI-16.03



Measurement  
Canada Approved



Ministry of Business,  
Innovation & Employment

# Avery Weigh-Tronix

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