



E1310

advanced
programmable
weight indicator and
process controller

Technical Specification



DESCRIPTION

General – hardware

- This specification describes the E1310 advanced programmable weight indicator and controller. The indicator is capable of stand alone operation or integration into a larger system via optional industrial network interface cards.
- It is a microprocessor-based high resolution industrial weighing system capable of running unique programs that precisely meet customer specific application requirements. Housed in a rugged desk top or wall mount Nema 4X stainless steel enclosure (panel mount option available) the indicator features a 1.5" high x 5" wide backlit dot graphic display capable of displaying up to 8 lines of data, each line 40 characters long.
- Other user interface features include 5 programmable soft keys that can be assigned text prompts to guide an operator through a sequence of operations controlled by the indicator.
- Up to 8 x analog weighing platforms of any type can be connected, via optional scale cards, to the indicator. For example, floor, bench, over-head track, tanks and hoppers. These can then be displayed either independently or simultaneously. Alternatively, up to 4 SensorComm™ intelligent digital junction boxes can be connected to provide noise-free lightning surge protection together with a host of self diagnostics.

- Applications are virtually limitless, the indicator being ideal for batching, filling, recipe formulation, parts counting, checkweighing, weighbridges, in-motion or combinations of the above.
- The indicator can control a weighing process via a comprehensive range of optional I/O modules as well as 4 onboard RS232 serial ports. Alternatively, a full range of optional industrial network interface cards are available for all popular Fieldbus protocols, as well as Ethernet 10/100, for connection to SCADA systems.
- Monitoring, data retrieval and e-mail error reporting via a web browser and internet is possible.

General – software tool

- Custom programming is made easy with SimPoser B, an optional pc based software tool. Included in the package is a program editor, configurator, print formatter, compiler and downloader.

Avery Weigh-Tronix

SPECIFICATIONS

User Interface

Display

Type

Dot graphic cold cathode fluorescent backlit, white characters on blue background. 1.5" high x 5" wide, 64 x 240 dot layout. Capable of displaying alpha-numeric characters as well as graphics, for example, pie/bar charts and tachometer. Typical display capabilities shown opposite.

Decimal point

Configurable to any of the 8 positions

Units of measure

kg, g, lb, oz, lb-oz plus 4 programmable custom units

Refresh rate

Programmable up to 10 times per second

Languages

Selectable operation prompts in English, French, German, Spanish and Italian

Keypad

24 Tactile/audio feedback corrosion resistant keys:

10 Alpha numeric entry

9 Dedicated function keys (Zero, Tare, Print, Units, Select, Enter, Escape, Clear and Decimal Point)

Note: These keys can also be assigned specific tasks.

5 Programmable and labelled soft keys (F keys)

Audio output

Audio tone for key press confirmation and operational alarms

Optional keyboard

A tactile 104 keyboard can be connected.

Load Cell Input

Analog

Number of cells

Can support/power up to 32 x 350Ω strain gauge load cells using 4 or 6 wire connection technology. Indicator to scale separation up to 2000 ft.

Excitation

10V DC or 10V AC square wave.

Number of scale inputs

1 analog scale input is standard, expandable to 8

Digital

Up to 3 digital Quartzell™ high resolution weight sensors can be connected.

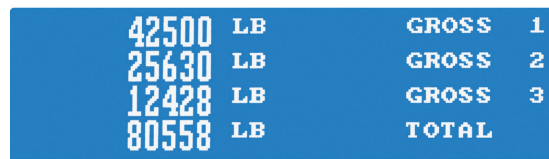
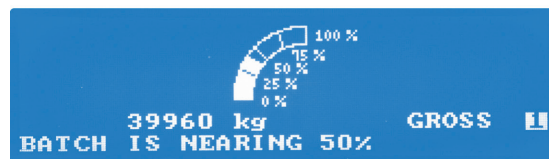
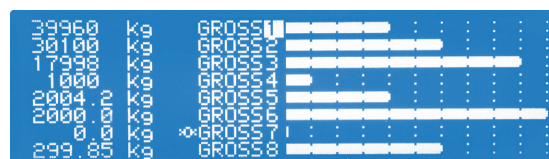
Analog to Digital Converter

Type: Delta Sigma

Rate: 60 updates per second

Resolution: 1,000,000 increments

Examples of display.



Zero

Setting

Keypad push button programmable to be effective between 1% and 100% maximum capacity

Zero band

Non-approved, +/- 100% of maximum capacity

Approved, +/- 2% of maximum capacity

Zero indication

The "0" symbol is turned on when the gross weight is within +/- 1/4 division of the zero scale interval.

Zero tracking

Programmable to track zero, in either net or gross mode, within the zero band

Under and over range indication

Display is “dashed” out and an operator warning is displayed.

Tares

Types

3 types, each type allowing multiple/cumulative tares and each 100% subtractive and allowing negative weight display

Tare button

Semi-automatic. Cumulative taring possible. “Net” symbol is turned on.

Manually entered tare value(s)

Keyboard entered tare. Multiple pre-set tares (PT's) possible. “Net” and “PT” symbols are turned on.

Recall stored tare value(s)

Recall any number of stored tares recorded under a PLU. “Net” and “PT” symbols are turned on.

Remote taring

Tare values can also be set via SMA serial protocol as well via the industrial network cards.

Linearization/Multiplier

Linearization

Full digital 10 point linearization

Increment multiplier

Sets or subsets of 1, 2, & 5 i.e. 0.001 to 50

Filters/Damping

Type

Harmonizer™ digital filtering is fully adjustable to damp out the effects of noise and vibration.

Stages

Frequency – 6 levels of adjustment

Amplitude – 8 levels of adjustment

Threshold – Band, outside of which frequency/amplitude filtering is disabled until new band is established around new nominal weight.

Real time clock

Battery backed real time clock for time and date stamping data

Memory/Program integrity

1 megabyte standard, expandable to 8 megabyte, battery backed RAM. Data and application program password protection is selectable within SimPoser B.

Communications

4 serial, split 3 bidirectional RS232/485/422 ports for connection to serial printers, PC's, PLC's, bar code scanners, Quartzell™ load cells, SensorComm™ intelligent junction boxes etc. and 1 bidirectional RS232/20mA current loop. Modbus ASCII also available via RS232.

Optional industrial network card and fieldbus cards are available

Electrical power input

Voltage/frequency

85 to 265V AC, 50/60Hz, single phase 75VA. Comes with 6 ft. of power cable and mains plug.

Tolerance

Voltage +10%, -15%

Frequency +/- 10%

Environmental

Dust and moisture ingress protection

Nema 4X /IP67

Corrosion protection

304 stainless steel enclosure
(7.2” high x 11” wide x 8.4” deep)

Electrical disturbance protection

Immune to electrical disturbance, including RFI as detailed in EN45501:1992

Storage temperature

-40° F to + 140° F

Operating temperature

14° F to + 104° F

Approvals

NTEP Class III/IIL to 10,000 divisions CC# 01-033 A1

EC approval No: UK 2678 type approval certificate to 6,000 divisions (single platform only). Meets and exceeds the requirements of EN45501:1992. European Accuracy class III machines.

UL/CUL listed

FCC class A

Part numbers

E1310 indicator



SimPoser B software

The SimPoser program development suite comes with an easy to use program editor, configurator, print formatter, compiler and downloader.
Part number AWT30-500013

SimPoser cable, PC to indicator, 4 ft.
Part number 47355-0010

Panel mount

Stainless steel panel mount kit
Part number 1310KT0000PM00

Analog scale inputs

Up to 2 additional scale analog input cards can be added (piggybacked inside E1310 enclosure) to provide a total of 7 additional scale inputs (a 3 scale card plus a 4 scale card). Available with or without stainless steel load cell summing junction box.

With junction box

Single scale card and junction box
Part number 52959-1018
Dual scale card and junction box
Part number 52959-1026
Three scale card and junction box
Part number 52959-1034
Four scale card and junction box
Part number 52959-1042
Five scale card and junction box
Part number 52959-1059
Six scale card and junction box
Part number 52959-1067
Seven scale card and junction box
Part number 52959-1075

Without junction box

Single scale card only
Part number 52959-2081
Dual scale card only
Part number 52959-2099
Three scale card only
Part number 52959-2107
Four scale card only
Part number 52959-2115

Digital scale inputs

Up to 3 Quartzell™ digital load cells or 4 SensorComm™ intelligent junction boxes can be connected to the onboard serial ports.

Quartzell™ digital load cells. See Quartzell™ specification sheet for more details.

Nema 4X SensorComm™ digital junction box, 4 analog load cell inputs, daisy chained RS485 connection (400ft separation), featuring rapid corner balancing, self diagnostics & unique “ghosting” cell failed feature
Part number 53550-0011

As above, but fiber optic output for ultimate lightning protection. 1000 ft. separation.
Part number 53583-0012

Fiber optic to RS485 converter card for mounting in E1310 enclosure
Part number 53810-0116

Analog output cards

Up to 2 analog output cards can be added (piggybacked inside E1310 enclosure) to provide a total of 8 independent analog outputs (2 x 4 analog output cards). Each channel fully isolated, 16 bit, 0-5V DC or 0-10V DC or +/- 5V DC or +/- 10V DC or 0-20mA or 0-24mA or 4-20mA.

Single channel analog output card
Part number 52959-1158
Dual channel analog output card
Part number 52959-1166
Three channel analog output card
Part number 52959-1174
Four channel analog output card
Part number 52959-1182

I/O modules

Up to 4 input or output modules can be housed in the E1310 enclosure or up to 64 via 8 external SSCU8 carrier cards (see below).

I/O configuration is achieved using SimPoser and is held in memory.

Input modules

G4IDC5D 2.5 to 28V DC module
Part number 48552-0019
G4IDC5B 4 to 16V DC module
Part number 48552-0027
G4IDC5 10 to 32V AC/DC module
Part number 48552-0035

Continued on reverse side of this page



Output modules continued

G4IDC5G 35 to 60V AC/DC module
Part number 48552-0043

G4IAC5A 90 to 140V AC/DC module
Part number 48552-0050

G4IAC5A 180 TO 280V AC/DC module
Part number 48552-0068

Output modules

G40DC 5 to 60V DC module
Part number 48552-0076

G4ODC5A 5 to 200V DC module
Part number 48552-0084

G4OAC5 12 to 140V AC module
Part number 48552-0092

G4OAC5A 24 to 280V AC module
Part number 48552-0100

G4OAC5A5(NC) 24 to 280V AC module
Part number 48552-0118

G4ODC5R 0.5 amp, SPST, NO relay
Part number 48552-0126

G4ODC5R5 0.5 amp, SPST, NC relay
Part number 48552-0134

SSCU8 I/O module carrier cards, enclosures and cables

SSCU8 external I/O module carrier card, open style
SSCU8 carrier card can hold up to 8 I/O modules. A total of 8 SSCU8 locally located (4 ft.) carrier cards can be supported by one E1310 indicator.

Part number 47183-0018

Mild steel enclosure for SSCU8

Rugged painted mild steel Nema 4X enclosure
Part number 47192-0017

Stainless steel enclosure for SSCU8

Stainless steel Nema 4X enclosure
Part number 47192-0025

Cables

Cable, E1310 to SSCU8. Length 4 ft.
Part number 47388-0011

Industrial network cards

Capabilities include monitoring and data collection via a web browser (HTTP), operational updates and error reporting via e-mail (SMTP) and raw data transmission via FTP. Two separate industrial networks can operate at the same time. They can operate independently or transfer data between the networks.

DeviceNet™ card
Part number 52959-1190

ProfiBus® card
Part number 52959-1232

Ethernet10/100 card [supports
Ethernet-ModBus TCP,
Ethernet TCP/IP (raw socket client),
Ethernet TCP/IP (raw socket server),
Ethernet IT, Ethernet/IP, HTTP, SMTP,
SSI and FTP]
Part number 52959-1257

Modbus ASCII (via RS232) included

Memory expansion

Up to 2 memory expansion cards can be added to give a total of 8 MB additional memory.

1 MB card
Part number 52961-1014

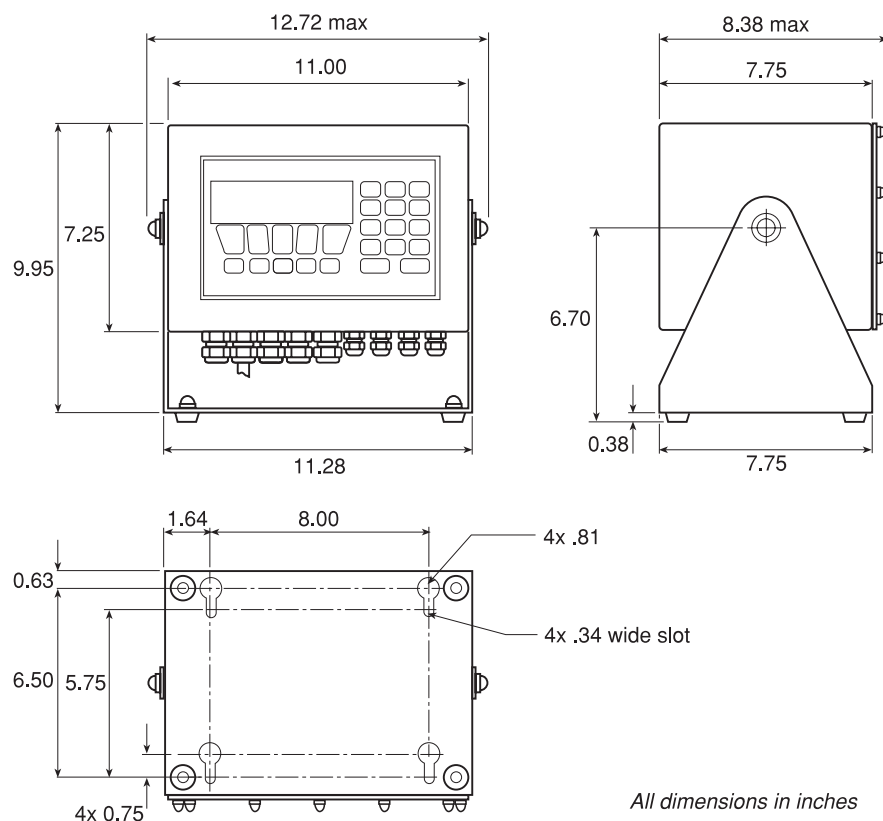
4 MB card
Part number 52961-1048

PHYSICAL SPECIFICATIONS

Technical Specification
E1310 Indicator



Dimensions



Weight

17 lbs.

Shipping

Net: 17 lbs.

Gross: 22 lbs.

Measurement: 15.7" x 13.8" x 13.0"

Harmonised Commodity Code: 842390 00 0

© Avery Weigh-Tronix 2003. All rights reserved. This publication is issued to provide outline information only which, unless agreed by Avery Weigh-Tronix in writing, may not be regarded as a representation relating to the products or services concerned. Avery Weigh-Tronix reserves the right to alter without notice the specification, design, price or conditions of supply of any product or service.

Avery Weigh-Tronix

www.averyweigh-tronix.com

Avery Weigh-Tronix is an ITW company



Avery Weigh-Tronix is a trademark of the Illinois Tool Works group of companies whose ultimate parent company is Illinois Tool Works Inc ("Illinois Tool Works"). Copyright © 2014 Illinois Tool Works. All rights reserved.
This publication is issued to provide outline information only and may not be regarded as a representation relating to the products or services concerned. This publication was correct at the time of going to print, however Avery Weigh-Tronix reserves the right to alter without notice the specification, design, price or conditions of supply of any product or service at any time.

4/2014 E1310_spec.indd
AWT35-500041