

COUNTING SCALES

BENCH SCALES

FORKLIFT SCALES

CHECKWEIGHERS

CONVEYOR SCALES

**RAILROAD SCALES**

FLOOR SCALES

TRUCK SCALES

INDICATORS

SOFTWARE

JUNCTION BOXES

SIGNAL PROCESSING

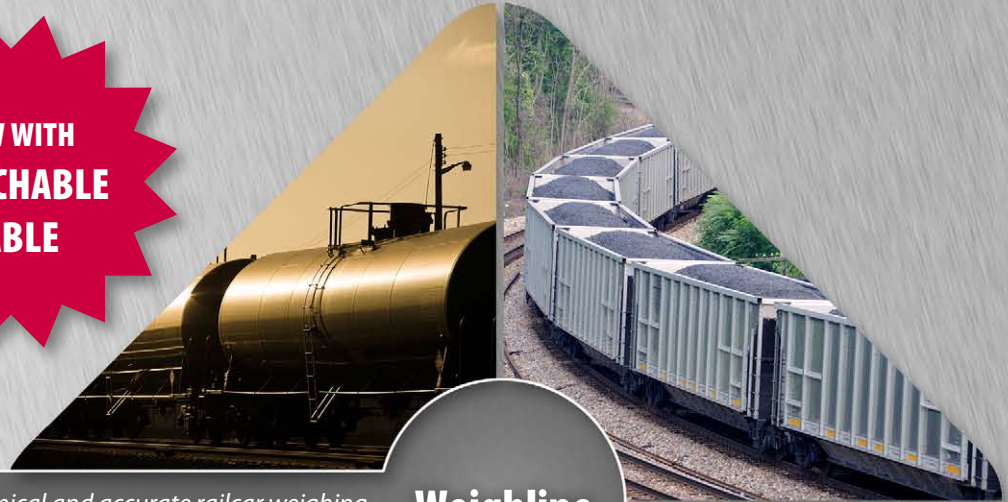
MONORAIL SCALES

PRINTERS

REMOTE DISPLAYS

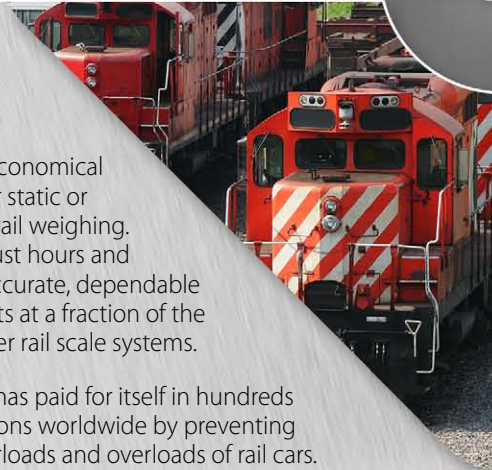
**Avery Weigh-Tronix**

**Avery Weigh-Tronix  
Railroad Scales**



*Simple, economical and accurate railcar weighing*

**Weighline**



A simple, economical solution for static or in-motion rail weighing. Installs in just hours and provides accurate, dependable weighments at a fraction of the cost of other rail scale systems.

Weighline has paid for itself in hundreds of installations worldwide by preventing both underloads and overloads of rail cars.



**Avery Weigh-Tronix**

# Avery Weigh-Tronix

*Installs in hours. Weighs static or in-motion, full or two draft. Accepts a variety of indicators, controllers and printers. Expect fast return on investment with Weighline.*

## The revolutionary, low-cost track scale that ensures proper rail car weights

### THE PROBLEM: RAIL CAR CAPACITY

Running balanced rail cars at or near capacity is essential: Underloaded cars mean lost dollars from underutilization and incorrect billing. Overloaded cars can result in rejection or fines by the servicing railroad — or worse, overloading could cause an accident.

### THE SOLUTION: WEIGHLINE RAIL SCALE

The Weighline Rail Scale is designed to ensure proper rail car weights; quickly, safely and affordably. It eliminates uncertainties associated with volumetric control methods and variable tare weights.

#### A New Breed of Track Scale

Weighline is a rugged and reliable railroad track scale that consists of a series of 5'10" rail sections specially prepared and instrumented with strain gauges. Each section of rail is designed to be a weighbridge for a single wheel. Most static applications use multiple Weighline sections so that there is a short weighbridge under each wheel of the car being weighed. Weighline is the only rail scale that can provide total car weights plus weight readings for individual trucks, axles and even wheels.

#### Accurate Weighing

Weighline is not currently certified as legal-for-trade, but provides more than adequate accuracy for check weighing, process monitoring, record keeping and general safety concerns. In the full draft, static weighing arrangement, accuracies of  $\pm 0.25\%$  or better are easily obtained. Two draft accuracy is typically  $\pm 0.4\%$  or better. A straight, stable track for one car length will produce the best results.

Standard Weighline scale capacity is 320,000 lbs (full draft) and 160,000 lbs (two draft). Custom Weighline scales with capacities of 20,000 lbs to 1,000,000 lbs are available.

#### Quick, Low-Cost Installation

Unlike conventional track scales, Weighline installs in a few hours by replacing sections of existing rail and ties. There is no concrete to pour or pits to excavate as in traditional track scales — the scale is mounted on existing ballast and ties. This results in a surprisingly low installed cost and only one day of track downtime.

Weighline sections are welded or bolted into existing track to form a stable weighbridge eliminating the impact associated with conventional scales. Trains not being weighed can move across the scale at normal line speed without damage to the scale.

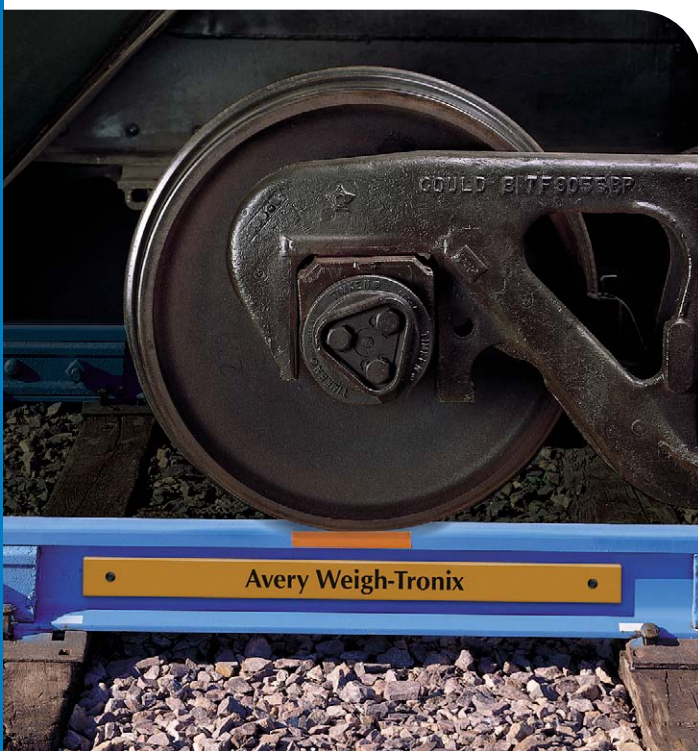
Weighline installs in almost any location that has straight and level track for one car length. Weighline is customarily built on 115 lb/yd rail. It may be connected to other sizes of existing rail by using standard four-hole compromise rail joint bars.

#### Fits Any Application

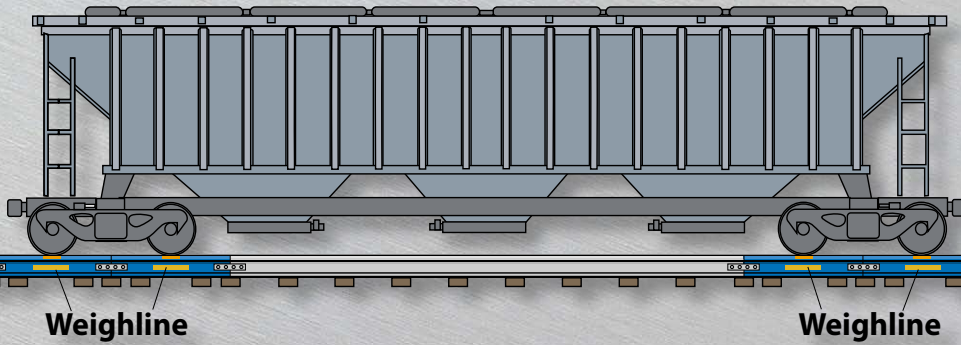
Weighline's inherent versatility makes it a popular choice in virtually any business environment where rail systems are frequently used: recycling/scrap yards, chemical plants, grain elevators, transfer yards, cement plants, hazardous waste facilities, coal mines, sugar processors, refineries, utilities, etc.

#### Reliability & Craftsmanship

Weighline is built by Avery Weigh-Tronix, well known in the scale industry for remarkably reliable and rugged products. The Weighline rail scale is no exception to this reputation.



## Avery Weigh-Tronix Railroad Scales



### FULL DRAFT OR TWO DRAFT WEIGHING

#### Full Draft

The full draft system pictured above uses eight Weighline rail sections. Each rail section supports one wheel of the car. However, only cars with essentially the same car truck spacing can be weighed full draft. This arrangement is generally recommended where most of the cars have the same or very similar truck centers because it is the quickest and most accurate method. Other sized cars must be weighed two draft.

#### Two Draft

The two draft system uses four Weighline sections. This system weighs the truck on one end of the car and then the other. The indicator adds the two weights together to a total car weight. The two draft system is slightly less accurate than a full draft system and does not allow monitoring of car loading. This is the lowest cost method and can be used as a check scale for all cars with standard trucks.

### VERSATILE INSTRUMENTATION

Weighline is available with a variety of instrumentation to suit any application.

#### Model E1310 Indicator

This programmable instrument can be configured to facilitate full draft or two draft weighing, static or in-motion. The Model E1310 will automatically store and display the car truck weights as required. It can handle multiple scale inputs for individual rail section weighing. The Model E1310 can even be used for in-motion weighing up to 1 mph. It is housed in a stainless steel, washdown enclosure that provides protection in outdoor applications. Its dot graphic display is easy to read under all lighting conditions. A comprehensive range of options is available to provide control inputs and outputs as necessary.



#### XR Series Remote Display

Allows clear accurate viewing of scale information from considerable distances via its super-bright LED display technology. Designed for indoor or outdoor use.



#### Model TSR-4000 In-Motion Control Center

Designed specifically for use with Avery Weigh-Tronix track scales. Facilitates in-motion, two draft weighing up to 10 mph. Total car weights plus individual trucks, axles and wheels are instantly available on the display or PC monitor. Detects direction of travel. Automatically handles rollbacks and differing truck spacings. Dimensions of the TSR-4000 are 7" high by 20.5" wide by 19.7" deep.



#### Model TM-U590 Printer

The TM-U590 is able to print a wide range of slips and documents. This highly versatile printer can handle slip printing up to 88 columns (using 7x9 fonts/half dots), print original slips and up to four copies - and do it all smoothly. The TM-U590 also comes standard with an extended table, so larger slips are inserted flat and fed straight into the printer.





## SPECIFICATIONS

### Standard Static Configuration

**Rail type:** 115 lb AREMA (consult factory for other sizes)

**Rail length:** 70" (1.78 m)

**Active weighing length per section:** 8" (20 cm)

**Mounting\*:** Direct to existing ties and ballast

**Type of weighing:** Two draft or full draft

**Number of Weighline sections:**

Two draft - four, Full draft - eight

**Maximum axle load:** 80,000 lb (40,000 kg)

**Maximum car weight:** 320,000 lb (160,000 kg)

**Scale division size:**

100 lb (50 kg), switchable to 20 lb (10 kg) for calibration

**Static accuracy\*\*:**

Full draft:  $\pm 0.25\%$  or  $\pm 200$  lb (100 kg), whichever is greater

Two draft:  $\pm 0.4\%$  or  $\pm 300$  lb (150 kg), whichever is greater

**Instrumentation:**

Avery Weigh-Tronix Model E1310 Indicator with Weighline program

**Operating temperature range:**

-20° F to 120° F (-28° C to 49° C)

**Temperature compensation:** Span and zero

**Weight:** 230 lb (105 kg) per rail assembly

\* NOTE: Avery Weigh-Tronix recommends track stability to main line standards (maximum deflection 1/4").

\*\* NOTE: Weighline is not currently approved for certified weighing and cannot be used for custody transfer. A straight, stable track for one car length will produce best results.

### In-Motion Low-Speed Systems

**Speed:** Maximum 1 mph (1.6 km/h)

**Accuracy\*\*:** 0.5% or  $\pm 400$  lb, whichever is greater

**Rail Sections:** Four

**Instrumentation:** Model E1310 Indicator/Controller up to 1 mph.

**Wheel Detectors:** Two, non-contacting proximity switches

### In-Motion Medium & High-Speed Systems

Multiple Weighline sections welded into position.

**Speeds:** Up to 35 mph (56 km/h)

**Instrumentation:**

TSR-4000 high speed, full feature, in-motion controller  
Consult factory for specific applications.

### Options

**Non-standard rail sizes:** 20 lb/yd - 175 lb/yd

**Weighline section capacities:** 5,000 lb to 125,000 lb

**Scale capacities:** 20,000 lb to 1,000,000 lb

**Multiple Weighline sections:**

Consult factory for specifications for different size and specialized rail cars

## Avery Weigh-Tronix

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