

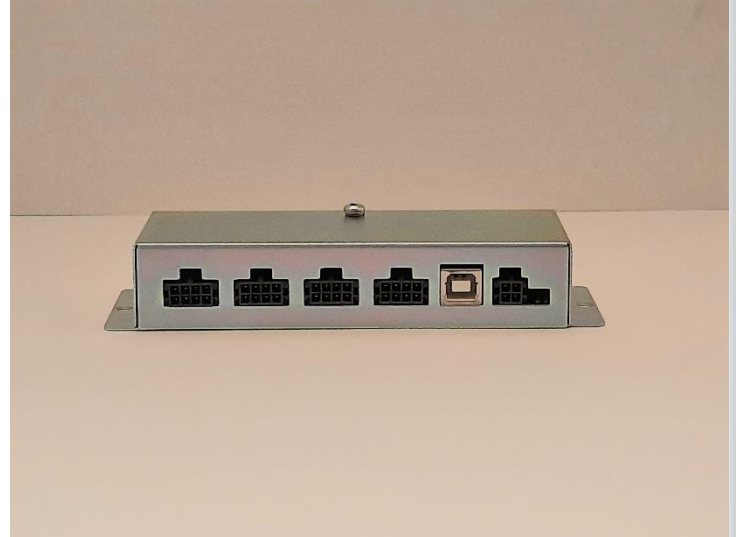
# Model 1X3-1945 Weight Transmitter

By **SCALE-TRON**

The model 1X3-1945 transmitter is a general purpose weight transmitter with USB output and inputs for up to four load cells.

The 1X3-1945 has been optimized for fastest settling together with high rejection of vibration frequencies; both parameters can be preset from the companion Windows calibration software. Board firmware can also be modified on a custom basis for different applications.

The 1X3-1945 transmitter has been designed to pair perfectly with all of Scale-Tron's line of weight sensors. This includes Mini-Mount and the well-known Scale-Bar products. Use of the latest analog to digital convertor and processor chips gives high accuracy at high speed with very low noise, which translates to minimal reading jitter. Use of the latest surface-mount techniques for all components gives a small package and low overall cost, considering its advanced performance. The Molex Micro-Fit locking connector has been chosen for load cell connections, based on its excellent specifications and reliability. The device is powered directly from the 5 volt connection in the standard USB cable; no external power is necessary. Connection to the board is by USB-B connector or 4-pin Micro-Fit.



## SPECIFICATIONS

Load cell excitation:	4.5 volts, up to four 350 ohm load cells or ten 1000 ohm load cells.
Load cell signal:	0.2 - 4.0 mV/V full scale
Load cell connector:	Each – Molex Micro-Fit 8 pin 43025-0800 with 7 pins 43030-0012.
Resolution:	50,000 displayed counts maximum.
Filtering:	Proprietary advanced 3-stage adjustable digital filter.
Output format:	Standard: USB with Silicon Labs driver. Optional: Virtual Comm Port – allows applications to access transmitter via USB as a serial RS232 port.
Output connector:	USB-“B” type or Molex Micro-Fit 4 pin connector 43025-0400.
Power:	5 V DC, directly from USB cable; 4.9 V DC min.
Physical:	Steel case 5.75” x 2” x 1” or bare board.

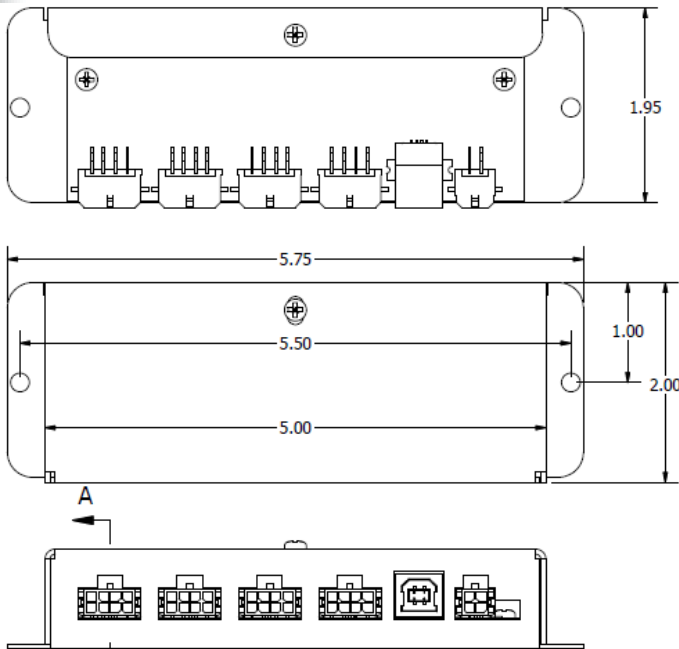
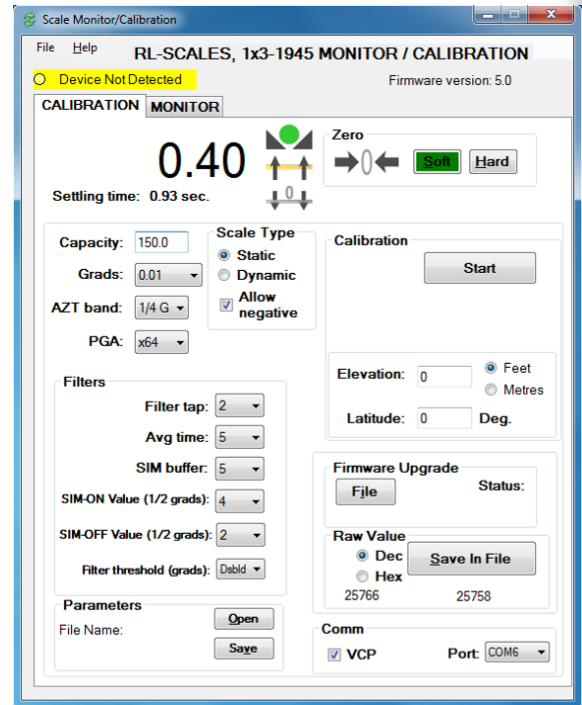
## Optional **Auto Cal** Feature

**Auto Cal** is a shunt-calibration system that, when used with suitable **Auto Cal** load cells can eliminate test weights after the initial calibration. Shunt calibration is a method of using a resistance in parallel with one arm of the load cell bridge to simulate a known load. Once the scale is calibrated, the resistance is switched in and the reading recorded, for use in subsequent accuracy checks and recalibration. When load cells are manufactured to tight tolerances, they can be interchanged without need for recalibration, contributing further to the **Auto Cal** system.

A convenient method of setting up and calibrating the transmitter and providing internal diagnostic information is included. This is a Windows application, supplied as an installable file. Calibration is accessible by field technicians and is easy to accomplish with minimal training. The transmitter is capable of accepting any value of digitally entered calibration weight etc. as shown at right. It also allows storage of setup files, recording of raw weight values for dynamic analysis and firmware upgrades without loss of calibration parameters.

A monitoring facility allows ASCII commands to be sent and the returned data to be read in both alphanumeric and hex format.

The calibration system includes the ability to compensate for the variation of gravity with latitude and altitude. A little known fact, the force of gravity decreases as the distance from the center of the earth increases. Because the earth is spinning, it flattens out towards the equator, which is 43 km wider in diameter than at the poles. This can cause up to 0.5% error in scales that are based on force rather than the balance beam principle - and almost all electronic scales are currently based on force, since the load cell is a force measurement device. Two corrections are provided in the system: the first is applied during calibration and the second is applied during use. This system allows scales to be calibrated at one latitude and altitude and used at any other after the new coordinates are entered. The correction is within 0.01% anywhere on the earth's surface.



## COMPLIANCE

Case dimensions are shown at left. The case is zinc plated steel with all components meeting RoHS requirements. Mounting centers are compatible with the older 1930/1932 series transmitters. LED indicators to right of 4-pin Molex USB/power connector indicate correct operation and diagnose faults by flashing code.

Complies with relevant sections of:  
 UL standard 1950, EDP equipment.  
 CSA standard C22.2.  
 CE

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