**Avery Weigh-Tronix**

# QTLTSC
## CLASSIV
## FORKLIFT SCALE SYSTEM

*Technical Specification*

Customer Forks

Weigh Bar (4)

Summing/ Angle Box
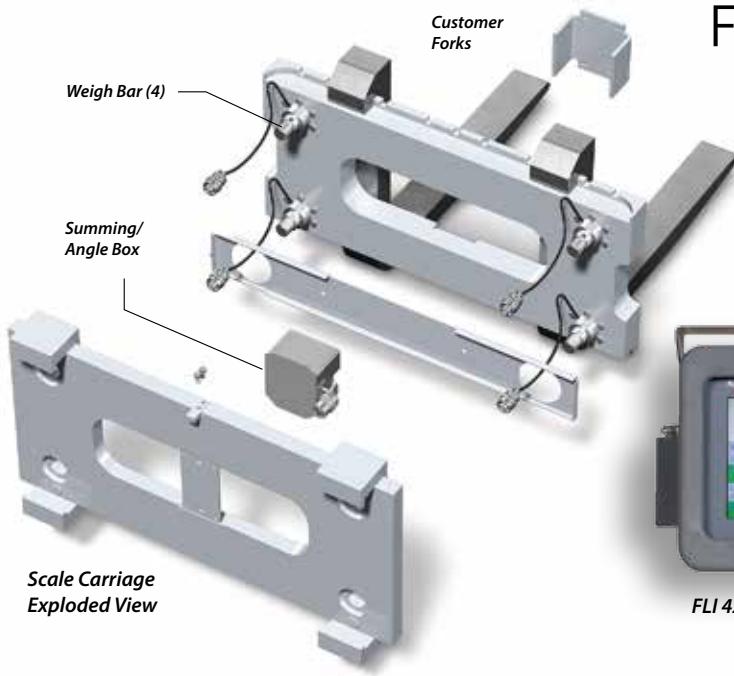
Scale Carriage Exploded View

**FLI 425**

**FLI 225**

## DESCRIPTION

### General

The Avery Weigh-Tronix QTLTSC Forklift Scale System is a, legal-for-trade weighing solution. The system includes a durable, front-mounted digital scale carriage with Weigh Bar® electronic weight sensors and viewing ports, as well as a choice of two in-cab instruments. The system allows operators to easily and quickly capture legal-for-trade weight data en route, without extra steps.

### Seamless Compatibility

Simply attach the QTLTSC scale carriage to an existing Class IV cleat-type forklift carriage and mount the FLI 225/425 instrument in a convenient driver location. This system allows seamless integration of weighing and data management into your operations without adding any extra steps or route changes.

### Robust Design

The forklift scale carriage is comprised of two metal plates coupled together by four high capacity Weigh Bars.
› Front loading safety factor of 40:1
› Normal load safety factor of 10:1
› Overload with no damage of 300%

The instrumentation is designed exclusively for the forklift vehicle. It incorporates design technologies to withstand the environmental and warehouse jolts common in forklift applications.

### Highly Accurate

The Avery Weigh-Tronix QTLTSC system monitors the orientation of the scale and maintains accurate weight readings even if the forklift is on unlevel ground, the mast is tilted, or the pallet load is off-center. The forklift drivers are not required to jockey the mast or the position of the load on the scale.

The accurate weighing performance of the QTLTSC has been validated by NCWM (National Conference on Weights and Measures) to weigh legal-for-trade even when tilted:
› 3 degrees side to side (5% grade)
› 8 degrees forward to back

This electronic scale design has no mechanical flexures or springs to influence the weighing performance.

### Data Management

The FLI 225 instrument provides a simple, no-nonsense solution through classic or enhanced operation for capturing weight and supplying it to a peripheral device.

The FLI 425 instrument simultaneously displays multiple fields of data, assisting the operator with a visual reference. Data can be stored on-board or instantly transmitted wirelessly to a local or global network.

# QTLTSC IV FORKLIFT SCALE *Technical Specification*

## SCALE CARRIAGE

| | |
|---|---|
| Front and Back Plates Yield Strength | 100,000 psi |
| Weigh Bar® Fasteners Yield Strength | 160,000 psi |
| Weigh Bar Tensioners Yield Strength | 130,000 psi |
| Mounting Hooks Yield Strength | 59,000 psi |
| Scale Centering Pin Yield Strength | 77,000 psi |
| Safety Factors | 40:1 front loading, 10:1 normal loading, 10,000 LB, 300% no damage overloading |
| Weight Sensors | Four Avery Weigh-Tronix 8100 LB Weigh Bars direct coupled, no flexures |
| Weight Summing | Assembly encapsulated |
| Cover Plates | Weigh Bar cabling protection |
| Wired Interface | Coiled cable extending to 20' |
| Finish | High grade powder paint |

## WEIGH BAR

| | |
|---|---|
| Type | LTT 8.1k weight sensors (4) NTEP CC# 95-093 |
| Metal Properties | AISI 4340 steel yield strength 140,000 psi |
| Zero Balance | $\pm$ 0.10 mv/v |
| Non-Linearity Maximum | 0.3% of rated output |
| Hysteresis Maximum | 0.03% of rated output |
| Temperature Effect on Output | $\pm$ 0.0025% $^\circ$ C of rated output (-10 to +40$^\circ$ C) |
| Temperature Effect on Zero Balance | $\pm$ 1.70 x 10-7 volts per volt 5$^\circ$C (-10 to +40$^\circ$ C) |
| Safe Overload Rating | 150% of capacity |

## WEIGHT SUMMING AND ANGLE DETECTION ASSEMBLY

| | |
|---|---|
| Enclosure | Metal enclosure, circuitry encapsulated |
| Environment | Legal 14$^\circ$ to 104$^\circ$ F (-10$^\circ$ to +40$^\circ$ C), industrial -40$^\circ$ to +65$^\circ$ C |
| Angle Sensors | 0.1 degree accuracy from 0-10 degrees |
| Angle Sensor Temperature Coefficient | 0.008$^\circ$/$^\circ$ C |

## SYSTEM

| | |
|---|---|
| Lifting Capacity | Reduced 12-14% |

## APPROVALS

NCWM Certficate of Conformance 95-126
Accuracy Class III, 10,000 x 10 LB; 16,000 x 20 LB
Compatible with ITA Class IV, 25" high cleat type carriage
FCC part 15B

## FLI 225 AND FLI 425 INSTRUMENTS

| | |
|---|---|
| Type | FLI 225 instrument NTEP CC# 07-091, category 3<br>FLI 425 instrument NTEP CC# 07-025, category 3 |
| Power Input | 9 to36 vdc, 3.5 Amp, Inactive stand by mode |
| Display | FLI 225 - High contrast backlit transflective LCD dot matrix. Custom designed font ¾"high digits. Classic and Expanded Operational Modes<br>FLI 425 - 7"backlit multi colored touch screen TFT LCD display, 800 x 480 resolution. 1" high custom font weight values, adjustable contrast |
| Operational Keys | FLI 225 - On/Off, Zero, Print, Select, Tare, F1-F4<br>FLI 425 - Hard keys On/Off, F1, Store, Zero, many touch activated keys |
| Operational Images | FLI 225 - Weight, LB/KG, Motion, Center of Zero, Weigh mode, Wireless carriage communication status, Operator status messages and Battery status of FLW 100<br>FLI 425 - Weight, LB/KG, Weigh mode, Motion, Center of Zero, Date/Time, Number of stored records, Pro Number, Actual Pieces, Accumulated Pieces, Employee ID, Accumulated Weight, Abort, Complete, Alpha Numeric entry screen, WiFi data radio link status, WiFi wireless carriage status, wireless scale carriage battery status, and multiple user messages including diagnostic management with predictive alerts |
| Angle Compensation | Detects and automatically compensates for out of level accurate weighing |
| Design Platform | FLI 425 - Windows CE.NET® |
| Communication Ports | FLI 225 - Two RS 232 serial ports<br>FLI 425 - RS 232 serial, USB, Ethernet, Compact flash memory, Compact flash WiFi |
| Operating Environment | Legal 14$^\circ$ to 104$^\circ$ F (-10$^\circ$ to +40$^\circ$ C), industrial -34$^\circ$ to +65$^\circ$ C |
| Audio | FLI 425 - Internal speaker |
| Enclosure | FLI 225 - Composite with tilt and swivel brackets, designed to IP65<br>FLI 425 - Cast aluminum with high grade powder paint. Soft surround wrap provides operator head protection. Tilt and swivel brackets, with vibration isolation |
| Dimension | FLI 225 - 8.14"W x 5.19"H x 4.03"D includes mounting bracket<br>FLI 425 - 10.75"W x 7.44"H x 4.5"D includes mounting bracket |
| Weight | FLI 225 - 4 LB / 1.8 KG<br>FLI 425 - 7 LB / 3.2 KG |
| Options | FLI 225 - FLP 100 power conditioner 24 to 72 vdc, FLW 100 wireless instrument to scale, FLR 100 remote display, barcode scanner, RM 200 WiFi data 802.11b/g, RM 100 Bluetooth®, Data management software<br>FLI 425 - FLP 100 power conditioner 24 to 72 vdc, FLW 100 wireless instrument to scale, FLR 100 remote display, barcode scanner, RM 200 WiFi data 802.11b/g, RM 100 Bluetooth, Compact flash WiFi 802.11b/g, Compact memory, Data management software |