



Scale Carriage  
Exploded View

## FLSC 05 forklift scale system

Technical Specification



FLI 425



FLI 225

## DESCRIPTION

### General

The Avery Weigh-Tronix FLSC Forklift Scale System is a patented, legal-for-trade weighing solution. The system includes a durable, front-mounted digital scale carriage with Weigh Bar® electronic weight sensors and "clear-view" open center area, 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 FLSC 5000 lb scale carriage to an existing Class II 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 29.5:1
- Normal load safety factor of 7.5:1
- 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.

### Patented Accuracy

The patented Avery Weigh-Tronix FLSC 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 FLSC 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)
- 5 degrees back (8% grade)
- 7 degrees forward (12% grade)

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.



## SPECIFICATIONS

### Scale Carriage

**Front and back plates yield strength:** 43,500 psi  
**Weigh Bar® fasteners yield strength:** 160,000 psi  
**Weigh Bar tensioners yield strength:** 150,000 psi  
**Mounting hooks yield strength:** 43,500 psi  
**Scale spring loaded centering pin yield strength:** 89,000 psi  
**Safety factors:** 29.5:1 front loading, 7.5:1 normal loading, 300% no damage overloading  
**View port:** Continuous 6" x 20 3/4" nominal  
**Weight sensors:** Four Avery Weigh-Tronix 2500 LB Weigh Bars direct coupled, no flexures  
**Weight summing:** Digital assembly encapsulated  
**Cover plates:** Weigh Bar cabling protection  
**Wired interface:** Coiled cable extending to 20'  
**Wireless cable interface:** Optional  
**Finish:** High grade powder paint

### Avery Weigh-Tronix Weigh Bar

**Type:** LTT 2.5k weight sensors (4) NTEP CC# 95-093  
**Metal properties:** AISI 4340 steel yield strength 140,000 psi  
**Zero balance:** ± 0.10 mv/v  
**Non-linearity maximum:** 0.3% of rated output  
**Hysteresis maximum:** 0.03% of rated output  
**Temperature effect on output:** ± 0.0025% °C of rated output (-10 to +40° C)  
**Temperature effect on zero balance:** ± 1.70 x 10<sup>-7</sup> volts per volt 5°C (-10 to +40° C)  
**Safe overload rating:** 150% of capacity

### Digital Weight Summing and Angle Detection Assembly

**Type:** FLJ 100 digital junction box NTEP CC# 06-096  
**Enclosure:** Metal enclosure, circuitry encapsulated  
**Environment:** legal 14° to 104° F (-10° to +40° C), industrial -40° to +65° C  
**Angle sensors:** 0.1 degree accuracy from 0-10 degrees  
**Angle sensor temperature coefficient:** 0.008%/°C  
**Option:** FLW 100 wireless communications with scale carriage battery and instrument receiver, (battery life: continuously active 168 hours, active 8 hours/day 21 days before recharging, only eight hours for total recharge, external battery charger), legal 14° to 104° F (-10° to +40° C), industrial -20° to +65° C

### System

Lifting capacity reduced 12-14%

**Patents:** 4,421,186; 5,837,946; 6,002,090

**Listings:** NCWM Certificate of Conformance 07-028  
 Accuracy Class III, 5000 x 5 LB  
 Compatible with ITA Class II, 16" high cleat type carriage  
 FCC part 15B

### FLI 225 Instrument

**Type:** FLI 225 instrument NTEP CC# 07-091, category 3  
**Power input:** 9 to 36 vdc, 3.5 Amp, Inactive stand by mode  
**Display:** High contrast backlit transfective LCD dot matrix  
 Custom designed font 3/4" high digits  
 Classic and Expanded Operational Modes  
**Operational keys:** On/Off, Zero, Print, Select, Tare, F1-F4  
**Operational images:** Weight, LB/KG, Motion, Center of Zero, Weigh mode, Wireless carriage communication status, Operator status messages and Battery status of FLW 100  
**Angle compensation:** Detects and automatically compensates for out of level accurate weighing  
**Communication ports:** Two RS 232 serial ports  
**Operating environment:** Legal 14° to 104° F (-10° to +40° C), industrial -34° to +65° C  
**Enclosure:** Composite with tilt and swivel brackets, designed to IP65  
**Dimensions:** 8.14"W x 5.19"H x 4.03" D includes mounting bracket  
**Weight:** 4 LB / 1.8 KG  
**Options:** FLP 100 power conditioner 24 to 72 vdc, FLW 100 wireless instrument to scale, FLR 100 remote display, barcode scanner, RM 200 WiFi data 802.11g, RM 100 Bluetooth®, Data management software

### FLI 425 Instrument

**Type:** FLI 425 instrument NTEP CC# 07-025, category 3  
**Power input:** 9 to 36 vdc, 3.5 Amp, Inactive stand by mode  
**Display:** 7" backlit multi colored touch screen TFT LCD display, 800 x 480 resolution  
 1" high custom font weight values, adjustable contrast  
**Operational keys:** Hard keys On/Off, F1, Store, Zero, many touch activated keys  
**Operational:** Weight, LB/KG, Weigh mode, Motion, Center of Zero, Date/Time, Number of stored records, Pro Number, Actual Pieces, 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  
**Design platform:** Windows CE.NET®  
**Angle compensation:** Detects and automatically compensates for out of level accurate weighing  
**Communication ports:** RS 232 serial, USB, Ethernet, Compact flash memory, Compact flash WiFi  
**Audio:** Internal speaker  
**Operating environment:** Legal 14° to 104° F (-10° to +40° C), industrial -34° to +65° C  
**Enclosure:** Cast aluminum with high grade powder paint  
 Soft surround wrap provides operator head protection  
 Tilt and swivel brackets, with vibration isolation  
**Dimensions:** 10.75"W x 7.44" H x 4.5" D includes mounting bracket  
**Weight:** 7 LB / 3.2 KG  
**Options:** FLP 100 power conditioner 24 to 72 vdc, FLW 100 wireless instrument to scale, FLR 100 remote display, barcode scanner, RM 200 WiFi data 802.11g, RM 100 Bluetooth, Compact flash WiFi 802.11g, Compact memory, Data management software

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#### Avery Weigh-Tronix - USA

1000 Armstrong Drive,  
 Fairmont, MN 56031-1439 USA  
 usinfo@awtxglobal.com  
 Toll-Free: (800) 533-0456  
 Phone: (507) 238-4461

#### Avery Weigh-Tronix - UK

Foundry Lane, Smethwick,  
 West Midlands B66 2LP UK  
 info@awtxglobal.com  
 Phone: +44 (0) 8453 66 77 88  
 Fax: +44 (0) 121 224 8183

Please call us or visit [www.averyweigh-tronix.com](http://www.averyweigh-tronix.com)  
 for your nearest Avery Weigh-Tronix distributor

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