FX1+

LIVESTOCK WEIGHING SYSTEM
MANUAL

iconix

CONTENTS

1. SYSTEM CARE

The FX1+ weighing system has been designed to work reliably for long periods of time under adverse conditions. However like any equipment, common sense and care will assist in keeping it in good operating condition.

ESSENTIAL CARE

◆ Fit caps to cable ends and indicator sockets when not in use to protect from dirt and moisture. Hang the cable ends up, out of mud and dust.

◆ **Damage may occur if the capacity of the scale is exceeded.**

◆ Loadbar cables must be kept in good condition.

SITE PREPARATION

◆ The choice of weighing site is important for accurate weighing and ease of use.

◆ A well chosen site that is level will ensure the best conditions for accurate weighing.

◆ The loadbars must be bolted to the platform or crate and be firmly attached to the ground or concrete pad.

◆ Any rocking or twisting of the platform could result in weighing errors.

◆ Adequate clearance around the platform is essential. Any binding or rubbing with posts or gates will produce weighing errors.

◆ The race bracket is best mounted on a fence or post and not the crate.

◆ Mount the indicator in a well lit position for best readability.

◆ A well chosen site will help animals flow smoothly through the system.

◆ Mounting the indicator away from the crate will help to keep hands free of the crate when the weigh cycle is started.

GETTING STARTED

◆ Connect the two loadbar cables to the loadbar sockets marked on the rear of the indicator.

Either: Use the *Iconix* AC adaptor

or: Attach the battery cable to the FX1+ and clip onto a 12V DC battery (car, tractor battery etc.). ENSURE CORRECT POLARITY: red clip to **+**, black clip to **—**.

◆ Press the **ON** key. The FX1+ initially displays the firmware version number e.g. '*P 3.0 1*'.

Then the FX1+ shows the type of loadbars attached:

'*SCAL.1*' for standard loadbars or '*SCAL.3*' for heavy-duty loadbars.

◆ The scale will automatically return to zero. When complete, the ZERO pointer ▲ will show that the scale is at zero.

NOTE: If a large load (such as a partly filled wool bale in a wool press) remains on the scale from previous use, the last weight will be displayed. The operator can continue the weighing session from where last finished. Alternatively, press **ZERO** to return the scale to zero.

◆ If this is a new weighing session, the operator will probably want to start with cleared statistics, if Statistics are enabled in Set-Up (see *STATS KEY section* below).

◆ Check that the ZERO pointer ▲ is displayed. Load the animal onto the platform.

Press **WEIGH** - firmly press the centre of the cursor button.

The animal is accurately weighed and the result locked on the display (in HOLD mode). Statistics are updated, if enabled in Set-Up.

◆ Remove the animal from the weighing platform. The last animal's weight remains locked on the display. Check that the ZERO pointer ▲ is displayed between animal weighings. If the ZERO pointer does not appear, hold the next animal back, keep hands etc. clear of the crate and press **ZERO**. The scale will be returned to zero and the weighing session can proceed.

◆ At the end of the weighing session, switch the indicator **OFF**.

> **IF THE FX1+ IS DETACHED FROM THE LOADBARS, ENSURE THAT THE WEATHERPROOF CAPS ARE FIRMLY INSTALLED ON ALL CONNECTORS**

WEIGH KEY

To weigh an animal on the scale, press **WEIGH** - firmly press the centre of the cursor button.

The animal is accurately weighed and the result locked on the display (in HOLD mode). Statistics are updated (if enabled in Set-Up). For a complete description of the weighing process, see the GETTING STARTED section above.

DELETE KEY

If there has been a problem with the weighing, press **DELETE** to delete the last weighing from the statistics (if enabled). '*dELEt*' is displayed as confirmation. It is only possible to delete the last weighing immediately after the animal has been weighed. '*nonE*' is displayed if deletion is not possible.

STATS KEY

Basic statistics are available, if enabled in Set-Up. Normally statistics would be cleared at the start of a new weighing session. Alternatively, new weighings may be added to a previous weighing session.

Scroll through the statistics with the **STATS** key. Flashing digits indicate that statistics are being displayed. They are displayed in the following order:

no. -	number of animals weighed
AUG -	average weight

The following statistics are only available in FX2 Mode, a factory installed, extra cost option:

tot -	first half of total weight (5 digits)
tot -	second half of total weight (5 digits)

In FX2 mode, if the Draft Limit has been set, then draft numbers will also be shown:

HI -	number of animals higher in weight than (or equal to) the draft limit
Lo -	number of animals lower in weight than the draft limit

A final press of **STATS** returns the scale to the weighing mode.

Rather than scrolling through all statistics, you may exit at any point by pressing **WEIGH**.

CLEARING STATISTICS

All statistics are cleared by pressing **DELETE** while any of the statistics are flashing on the display. The operator is then prompted with the message '*dEL.?*'. Press **DELETE** again within 2 seconds to confirm. '*dELEt*' is displayed if statistics have been cleared.

BATTERY VOLTAGE

To display the voltage of the external battery, hold down **STATS** for 2 seconds until the voltage is shown, for example '*12.4 U*' for 12.4 volts. The normal operating range should be from 12.0 to 12.8V. Below 12.0V, the battery will soon need to be recharged.

BLUETOOTH CONNECTED

Bluetooth is only available in FX2 Mode, a factory installed, extra cost option.

You may check whether the FX1+ Bluetooth is currently connected to another Bluetooth device. Hold down **DELETE** for 2 seconds until the following is shown:

Conn.1	if connected
Conn.0	if not connected

NOTE:

Most FX1+ settings apply only to the currently connected scale e.g. standard loadbars on Scale 1. Changing these settings has no effect on the other two scales.

Some settings apply to all possible scales (1: standard loadbars, 2: vet or other scale base, 3: heavy-duty loadbars). Changing these settings on one scale, will change the other two scales.
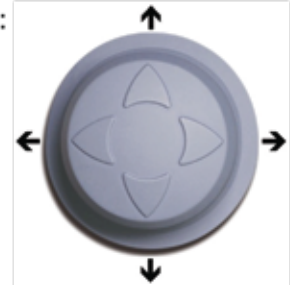
USING THE CURSOR BUTTON:

Changing the setting and stepping between settings is done with the cursor button:

To change the currently displayed setting, press ↑ or ↓.

To save the setting and step on to the next one, press ➜.

To save the setting and step back to the previous one, press ←.

To save the setting and exit Set-Up, press **SETUP**.

The user settings are as follows:

1. DRAFT LIMIT

The Draft Limit is only available in Woolpress and FX2 Modes. Both are factory installed, extra cost options.

A draft limit may be set to allow sorting of animals into high or low weight ranges. After weighing an animal, the display will show H (high) or L (low) alongside the weight. If drafting is not required, set the draft limit 'd 0.0'

The display briefly shows 'd r A F t', followed by the current draft limit, for example 'd 560'.

A single press of ↑ or ↓ will change the draft limit up or down by one step. Hold ↑ or ↓ down for rapid scrolling.

To return the draft limit to 'd 0.0', press **DELETE**.

2. MODE

HOLd	Hold mode (default)
rACE	In-Race mode
SPEEd	Speed mode
FrEE	Free mode

The operator can choose between FREE mode and three variations on HOLD mode, as indicated by the HOLD pointer ▲ on the display when in normal operation.

HOLD Mode: pressing **WEIGH** starts an averaging process, which then displays the accurate weight of the moving animal. Each weight is added to the statistics and locked on the display until the next key press.

RACE Mode: a version of the standard HOLD mode for weighing cattle in a race, where the weighing result may be affected by the animal leaning against the race. Wait until the animal has been clear of the race for about 1.5 seconds, then press **WEIGH**.

SPEED Mode: a fast version of the standard HOLD mode with a 1.3 second weigh time. Only for use with special crates that restrict animal movement, allowing faster weighing.

FREE Mode: the display is continuously updated with the weight currently on the scale. If **WEIGH** is used, the averaged weight is briefly displayed and added to the statistics. FREE mode is suitable for static load weighing, not for weighing animals.

3. BLUETOOTH

3. **BLUETOOTH**	(all scales)	`bLUE.0`	Off (default)
		`bLUE.1`	On

This setting is only present in FX2 Mode, a factory installed, extra cost option.

If the Bluetooth module has been enabled by the distributor/dealer, Bluetooth may be switched on or off. If it is not going to be used, it should be switched OFF.

4. BLUETOOTH MODE

4. **BLUETOOTH MODE**	`bt.Std`	Standard (default)
	`bt.Con`	Continuous

This setting is only present in FX2 Mode, a factory installed, extra cost option.

This setting is intended for technical personnel only. Standard or Continuous mode may be selected.

The standard setting is "on-demand" output, where the weight string is transmitted after a press of **WEIGH** or in response to receiving the 'Q' or 'L' control codes, providing Bluetooth is ON.

Alternatively, "continuous" output mode may be selected. The weight string is transmitted every time the weight on the FX1+ display is updated. DO NOT select this mode unless you have a good reason for doing so, such as continuously transmitting to a remote display.

5. STATISTICS

5. **STATISTICS**	`StAt.0`	Off (default)
	`StAt.1`	On

The standard factory setting is Statistics OFF. With Statistics ON, for every press of the **WEIGH** key, the new weighing is added to a running total of the number of animals weighed and their average weight. *See STATS KEY in Section 2 above.*

6. ZERO-TRACKING

6. **ZERO-TRACKING**	`2Er0.1`	On (default)
	`2Er0.0`	Off

Zero-tracking automatically restores the scale to zero, by "tracking out" small amounts of dung and dirt left on the scale. It should be ON for most weighing applications.

7. DISPLAY RELEASE

7. **DISPLAY RELEASE**	`rELS.0`	Off (default)
	`rELS.1`	On

The standard factory setting is Display Release OFF, which in HOLD mode keeps the last weighing locked on the display, until the next weighing.

With Display Release ON, when the weighed animal is removed from the scale, the weight will not remain locked on the display.

8. BUZZER

8. **BUZZER**	`bEEP.0`	Off (default)
	`bEEP.1`	On

This setting is only present in Woolpress Mode, a factory installed, extra cost option.

The standard factory setting is Buzzer OFF.

With Buzzer ON, the weight on the scale is compared with the limit set by Draft in Set-Up:

- when the weight is within 5% to 2.5% of the limit, the buzzer makes a short intermittent sound.
- when the weight is within 2.5% of the limit, the buzzer makes a long intermittent sound.
- when the weight reaches or exceeds the limit, the buzzer is on continuously.

9.   DISPLAY FLASH

$FLAS.0$ Off (default)
$FLAS.1$ On

This setting is only present in Woolpress Mode, a factory installed option, extra cost.

The standard factory setting is Display Flash OFF.

With Display Flash ON, when the weight reaches or exceeds the limit set by Draft in Set-Up, the weight on the display flashes to alert the operator.

To change the Display Flash setting, press ↑ or ↓ on the cursor button.

To save this setting and exit Set-Up, press → on the cursor button or press **SETUP**.

To save this setting and step back to the previous one, press ← on the cursor button.

On exit from Set-Up, '$SAVEd$' is displayed while the settings are being stored. The FX1+ then returns to the normal weighing mode.

4. SPECIFICATIONS

FX1+ Version 3.01 onwards ($P\ 3.01$ is shown at switch-on), 2019 onwards.

Supply Voltage:

Nominal   ....   12V DC
Maximum   ....   19V DC
Reverse polarity protection diode fitted.

Low Battery Indication: Below approximately 11.6V the LOW BAT pointer ▲ will be on.
The FX1+ switches off at approximately 10V.

Supply Current: Approximately 150 mA including loadbar set.

Temperature Range: -5ºC to +50ºC

Zero Tracking:

Small residual weights left on the scale between weighings (dirt build up) are automatically 'zero-tracked' out and the scale restored to zero. As this occurs the ZERO pointer ▲ will indicate that ZERO has been reached.

The zero-tracking amount is set to 0.5% of the weight displayed after the last press of **WEIGH**, with a 2.2kg maximum.

At switch-on the zero-tracking amount is initialised to 0.015% of capacity (0.3kg for 2000kg loadbar set).

Resolution: Autoranges in graduated steps from the zero point of the scale.

Scale 1:				
Standard Loadbars	*Metric Model*	Resolution	*Imperial Model*	Resolution
	0 - 20 kg	0.1 kg	0 - 40 lb	0.2 lb
	20 - 50 kg	0.2 kg	40 - 100 lb	0.5 lb
	50 - 200 kg	0.5 kg	100 - 400 lb	1 lb
	200 - 500 kg	1 kg	400 - 1000 lb	2 lb
	500 - 2000 kg	2 kg	1000 - 4000 lb	5 lb

Minimum Capacity: 20kg (The 0-20kg range is available but is not part of the EMC specification).

Scale 2:				
Vet Scale	0 - 100 kg	0.05 kg	0 - 200 lb	0.1 lb
	100 - 300 kg	0.1 kg	200 - 600 lb	0.2 lb

Scale 3:				
Heavy-Duty Loadbars	0 - 100 kg	0.5 kg	0 - 200 lb	1 lb
	100 - 200 kg	1 kg	200 - 400 lb	2 lb
	200 - 1000 kg	2 kg	400 - 2000 lb	5 lb
	1000 - 3000 kg	5 kg	2000 - 6000 lb	10 lb

Accuracy: ± 0.5% of Displayed Reading ± 1 Division (where 1 division is 0.1kg, 0.5kg etc. depending on weight range)
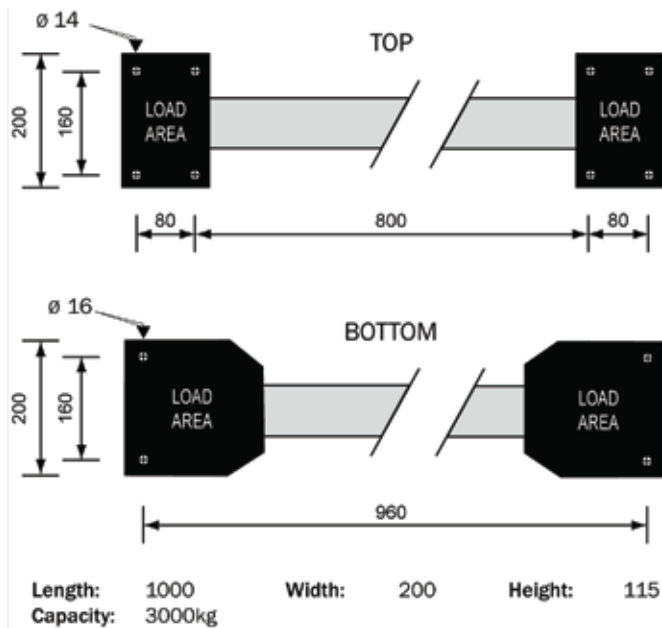
RF Immunity:

Maximum additional error in a 3V/m RF field in the range 27 - 500 MHz is:
± 2 divisions for 20   -   50kg
± 1 division for 50   -   200kg
± 0 division for 200   -   2000kg

EMC Approvals:

Meets or exceeds the following standards:
IEC801-2   Electrostatic discharge
EM50081-1   Free radiation measurements
EM50082-1   RF immunity

STEEL LOADBAR SET 2000kg

600mm

A:	570
B:	546
Length:	600
Width:	152
Height:	95
Capacity:	2000kg

1000mm

A:	970
B:	946
Length:	1000
Width:	152
Height:	95
Capacity:	2000kg
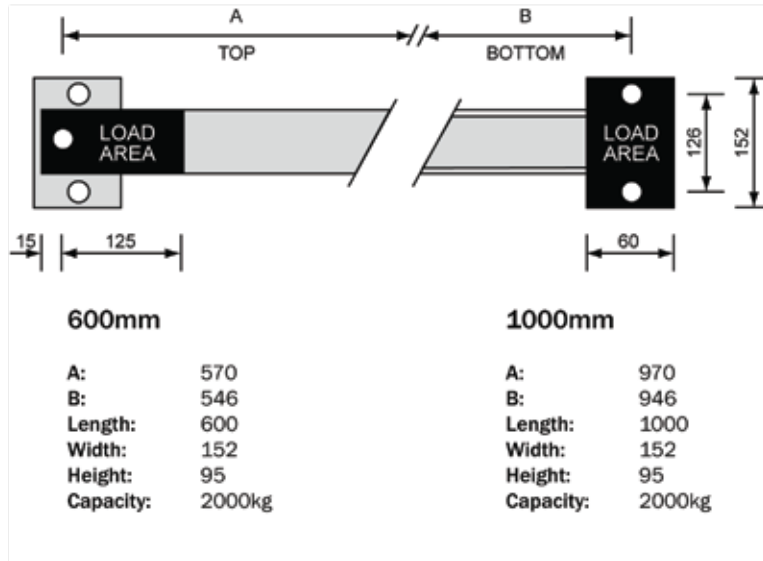
HEAVY DUTY LOADBAR SET 3000kg

Length:	1000	Width:	200	Height:	115
Capacity:	3000kg				

FX1+ CALIBRATION

Turn ON

SCAL2 will display

Wait for a number to appear then press SETUP then right across arrow and ensure the below are set. Use up arrow to change.

HOLD – up arrow to change to FREE

StAt.0

ZEr0.1 – this should be the only one that needs to be changed

rEL5.0

bEEP.1

Right arrow across until SAVED is displayed.

Wait for a number to appear then press ZERO

Add weight

Press SETUP

Wait for D to display (this indicates woolpress mode)

Press SETUP – ZERO – DELETE – WEIGH

EnGL will display (this indicates the language will be English, to change use the up arrow)

Press the right arrow twice to display CAL (calibration)

Press WEIGH

SURE will then display

Press WEIGH again

CAL will display then a weight

Use the up and down arrows to change the weight to reflect the weight added at the start

Press WEIGH when at the correct weight

SAVED will display and they are ready to use

Buzzer Weight Change

Press SETUP

Will display drAFE then

d   number

At this point use the up and down arrows to change the buzzer weight

Press WEIGH to save