EZ4600
Operators Manual
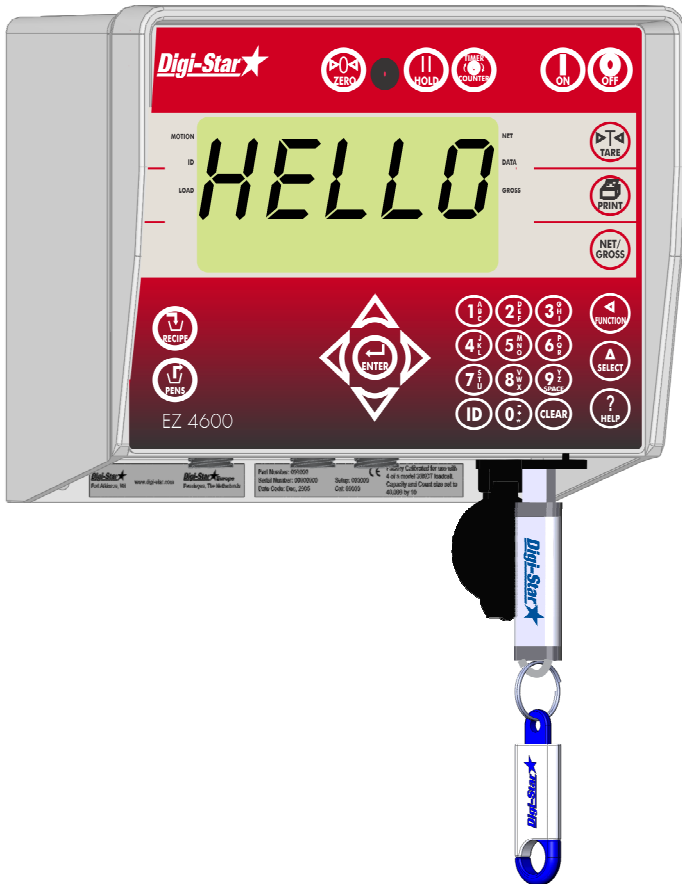
Digi-Star★
Ft. Atkinson, Wisconsin USA

Digi-Star★Europe
Panningen, The Netherlands
www.digi-star.com

TABLE OF CONTENTS

TECHNICAL SPECIFICATIONS

SIZE

10.25" long x 8.0" high x 4" wide
(260mm x 200mm x 100mm)

WEIGHT

4.0 lbs (1.8 Kg)

HELP MESSAGES

Context sensitive help messages in 10
languages
Long messages are scrolled

TRANSDUCER EXCITATION

8 volts D.C. Nominal
Capable of driving ten 350 Ohms transducers
Short circuit proof

ATC

Auto Temperature Compensation of the internal
circuitry for high accuracy weighing
measurements

TRANSDUCER SIGNAL

Compatible with transducers having full scale
indicator output of 0.25 mv/v to 3.0 mv/v

"AUTO RANGE"

(Selectable) To increase display counts
at weight values of 300 and 600 display counts.

CONNECTOR

AMP plastic weather resistant circular
connector. Gold contacts.

POWER REQUIREMENTS

10.5 to 16.0 V.D.C.
160 mA nominal with four 350Ω L.C.

SET UP AND CALIBRATION

Via front panel

GROSS RANGE

999,999 max.display

LOW BATTERY WARNING

Enabled at 10.5V nominal

POUND/KILOGRAM

Selectable

DISPLAY

STD EZ   6 Digit LCD 1.2" high
EZ VIEW   6 Digit LCD 1.7" high

DISPLAY RESOLUTION

.01, .02, .05, .1, .2, .5, 1, 2, 5, 10, 20, 50, 100

DISPLAY UPDATE RATE

Selectable: 1, 2, 3, 4 times/sec.

MAX. DISPLAY RESOLUTION

Adjustable to 40,000 counts max.

ZERO TRACKING

Selectable, On/Off

SPAN ACCURACY

±(.1% + .005%/ °F) or (.1% + 0.009% °C) full scale ± 1
output count

MOTION DETECTION

Selectable, On/Off

ZERO ACCURACY

(.005%/ °F.) or (0.009% °C) full scale ±1 output count
for 0.5 mv/v transducer

ENVIRONMENTAL ENCLOSURE

IP65, IEC 529

WEIGH ALGORITHM

Front panel selectable digital filters to optimize
performance
(General, Slow, Fast and Lock-on)

HOLD MODE

Used in mobile applications to stabilize displayed
weight while moving the scale

NON-VOLATILE MEMORY

EEPROM for balance

OPERATING TEMP

-29°C to 60°C   -20°F to 140°F

REMOTE INPUTS

Tare / Advance Recipe / Re-enter Preset

Digi-Star ★

SAFETY DURING USE

⚠ **Caution**

Cleaning

Do not use running water (high pressure cleaners, hoses) to clean the indicator.

Charging Battery and Welding

Disconnect all cables from the weighing indicator before charging the battery or welding on the machine. If cables are left connected, the weighing indicator and connected load cells could be damaged.

Scale Indicator

Remote Indicator
Optional

Disconnect all cords

J-Box
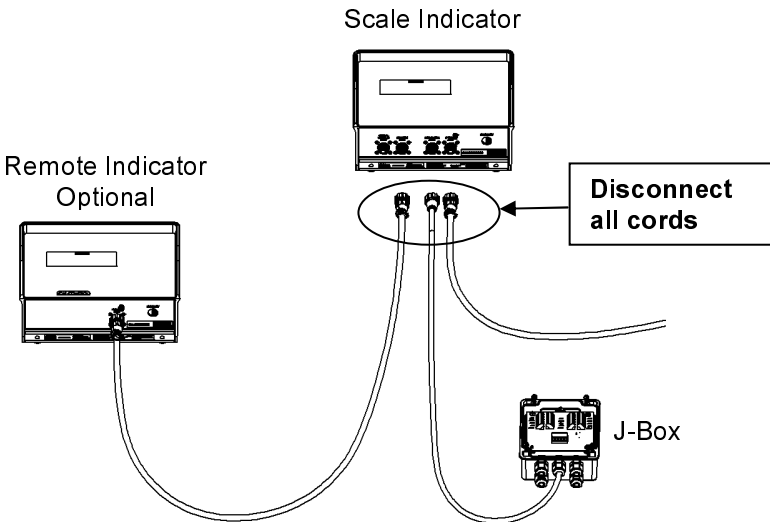
FEED MANAGEMENT SOFTWARE

TMR Tracker is a full-featured Windows based feed management system. TMR tracker also offers operators additional management tools including: Operator control, pen review, online feed data exchange with nutritionists, ingredient tracking and numerous reports. TMR Tracker is an indispensable management tool for forward thinking operations.

For additional information go to www.tmrtracker.com

INDICATOR OVERVIEW

Note: See page 41-43 for installation instructions
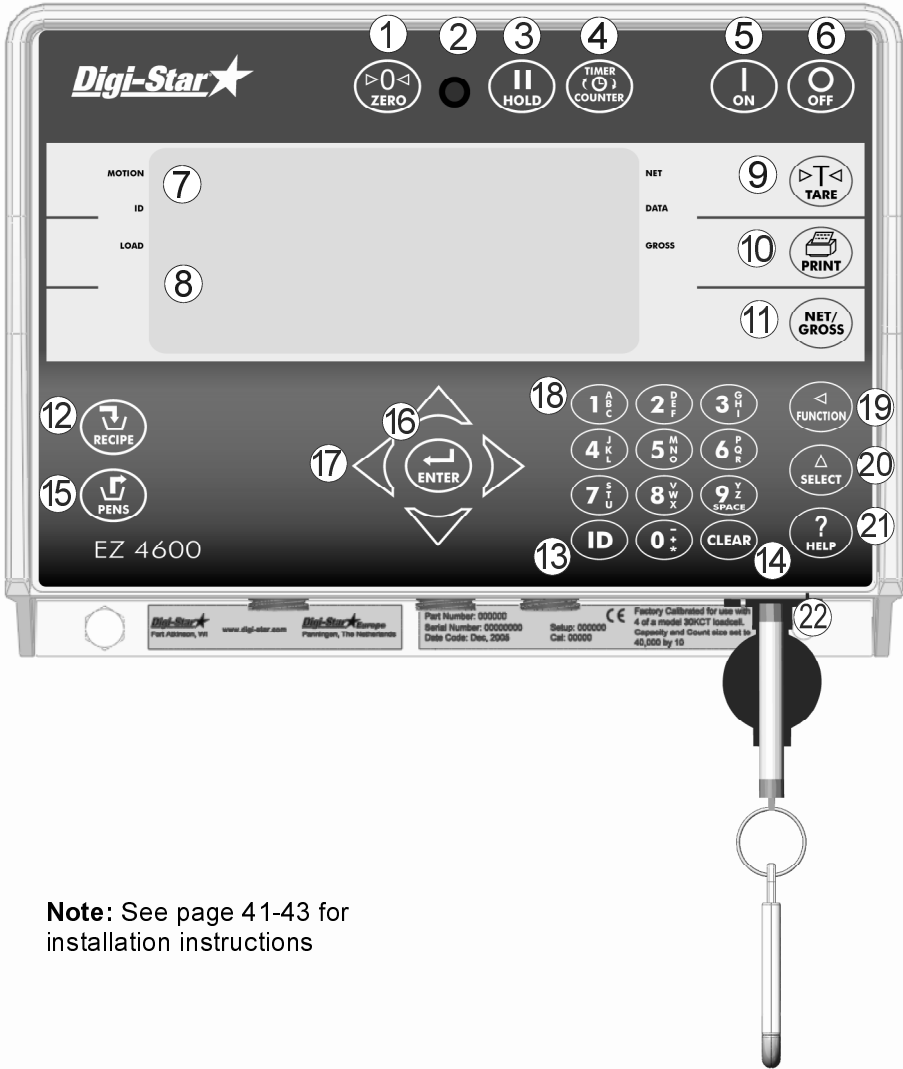
① (⊳0◁ ZERO) -press and hold for 3 seconds to zero balance indicator.

② Pre-Alarm Light – Flashes and alarm sounds when weight is within preset limit. See page 21.

③ (❚❚ HOLD) – holds displayed weight when moving machine.

④ (TIMER COUNTER) – selects timer or rotation counter feature.

⑤ (❘ ON) - turns indicator on.

⑥ (O OFF) - turns indicator off.

⑦　Upper Display Window – Displays current actions.

⑧　Lower Display Window – Lists 3 lines (i.e. ingredients, recipes, pens).

⑨　(TARE) - temporary zero (Net Mode).

⑩　(PRINT) - records to memory or prints displayed weight.

⑪　(NET/GROSS) - toggles between Net and Gross weights.

⑫　(RECIPE) - selects recipes in memory.

⑬　(ID) - enter user number and feeding number. Any number can be used for user until number assigned by feed management software.

⑭　(CLEAR) – Clear (backspace).

⑮　(PENS) – press in List Mode to begin pen unloading. See page 15.

⑯　(ENTER) – accepts change or proceeds to next item.

⑰　Directional Arrows - moves through list of information.

⑱　Keypad – inputs numbers or letters as required.

⑲　(FUNCTION) – performs the task displayed by select.

⑳　(SELECT) – displays additional tasks.

㉑　(HELP) – press for additional information.

㉒　USB Drive – Used for data transfer between computer and indicator.
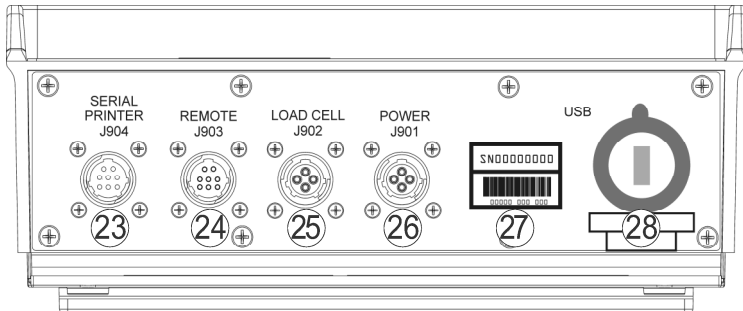
㉓　Serial/Printer Port – optional, to communicate with computer and other digital input/output devices.

㉔　Remote Port – optional, for remote display.

㉕　Load Cell Port– for J-Box cord.

㉖　Power Port – for power cord.

㉗　Serial Number Plate – Serial Number of indicator.

㉘　USB Drive Port– for USB Drive insertion. Insert USB Drive to upload/download data.

OPERATION

Turn on Indicator

1. Press (ON).
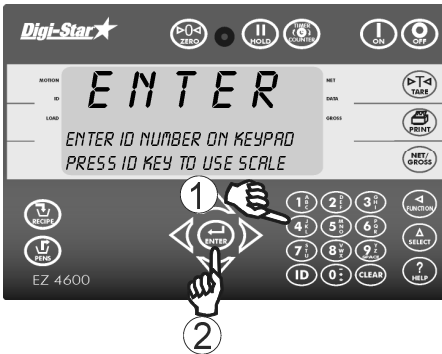
1. Enter ID Number if required.
2. Press (ENTER).

1. Enter Feeding Number (only required 1st time in loads mode).
2. Press (ENTER).

Zero Balance Indicator

1. Press and hold (ZERO) for 3 seconds to zero balance indicator.

2. Flashing arrow points to gross next to the display window, indicator ready to weigh.

Tare and Net/Gross

Tare is a temporary zero (Net Weight) to display total weight (Gross Weight) Press (NET/GROSS).

1. Weight displayed, press (TARE) sets zero weight.
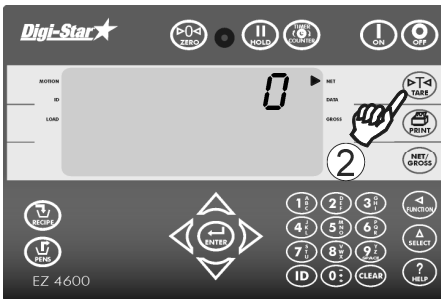
2. Display reads zero and flashing arrow on side of display points to NET.

3. Add more weight, display reads added weight value.

4. To show total of original weight of 4000 pounds plus added 300 pounds, press $\binom{NET/}{GROSS}$, flashing arrow points GROSS.
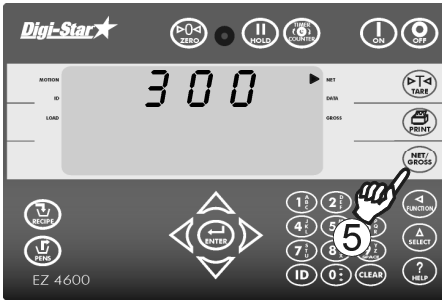
5. Press $\binom{NET/}{GROSS}$, 300 pounds is displayed and flashing arrow points NET.

Print Key

NOTE: Optional serial port must be installed for printing.

1. Press $\binom{}{PRINT}$. Indicator sends data to printer or PC.

Date in ddmmyy format   Time

```
10JA08     12:01P

4300 LB GR
```

Weight

Gross (GR) or Net (NET)
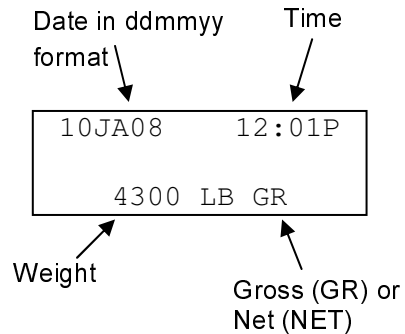
DATA TRANSFER

USB Drive Mode

To upload data:

1. Insert USB Drive.

2. Press (ENTER).

NOTE: If indicator displays uncompleted data in memory, press (ENTER) to overwrite uncompleted data.

Remove USB Drive when transfer complete.

To download data:

Insert USB Drive, indicator automatically sends data to USB Drive. Remove USB Drive.

RF DataLink Modes

Operation	Message
DataLink connects with indicator	←PC→
DataLink sends data to indicator	DL←IN
Indicator receives data	ALL FEED LINES RECIVED -PRESS RECIPE KEY TO CONTINUE
Data compete, indicator sends data to DataLink	←PC→
Data sending	DL→OUT
To send data to PC if operator does not complete all feeding at end of feeding schedule. Press (SELECT) until display shows message (right column), press (FUNCTION) to perform transfer.	EZ→PC
The indicator marks uncompleted data as completed and sends feeding data to DataLink.	

NOTE: After sending, uncompleted data is erased.

NOTE: Indicator may also be manually programmed, see page 26 for instructions.

Indicator Data Formats

Data sent to indicator in two formats:

Complete Loads Mode: Each load built by PC software. It assigns pens to a recipe and builds exact load for pens.

Recipe and Pen List Mode: PC software sends recipe data and pen data in two different fields. Operator selects recipe to build and pen deliveries.

LOADING AND FEEDING COMPLETE LOADS MODE

Starting a Recipe

1. Press [RECIPE].

1. Indicator scrolls feeding number, first recipe and pen number. Recipes listed below.

2. Press △ and ▽ to find desired recipe.

3. Desired recipe in upper display line, press [ENTER].

Resize Recipe Weight

Indicator gives option to resize pen load weight.

1. Enter new weight or keep original weight.
2. Press $\boxed{\text{ENTER}}$.

NOTE: *Press* $\boxed{\text{SELECT}}$ *to resize by number of head* in pen.

NOTE: *Press* $\boxed{\text{RECIPE}}$ *to accept pen values without resizing.*

NOTE: If indicator warns resized amount is over capacity, press $\boxed{\text{RECIPE}}$ to override.

Loading Recipe

1. First ingredient weight flashes in upper display. Load ingredient.

2. Weight approaches zero, alarm will flash and sound.

3. a. Manual Advance: Weight reached, press (ENTER) to accept. Press (ENTER) again to start next ingredient.

   or

3. b. Auto Advance: When preset weight reached, indicator advances to next ingredient.

Displayed when in load or unload mode.

Line 1:

feeding number: *FD-2*

number of rotations during pen delivery: *CTR-000* (RC option only)

pen name: *PEN-1*

Line 2:

zone number: *ZN-1*

name of recipe: *REC-PREFRE*

call weight of pen: *PRE-1200*

Line 3:

gross weight: *G-10000*

Instruction data: *USE ADVNCE TO LOG*

Unloading to Pens

NOTE: Do not press (⬆ PENS).

NOTE:

If different pen needed press △ *or* ▽ *to find desired pen.*

Press (ENTER) *for pen delivery.*
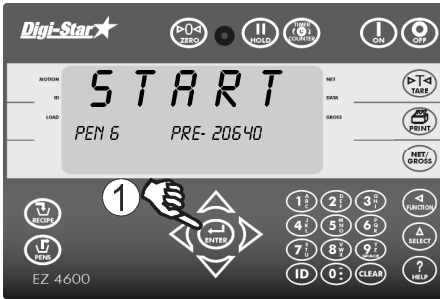
Ingredients loaded, indicator displays first pen to unload.

1. Manually Advance: press (ENTER) to go to pen. When weight reached press (ENTER) to accept. Press (ENTER) again to start next pen.

   or

1. b. Auto Advance: When preset weight reached, indicator advances to next pen.

   Last pen complete, indicator displays: "*RECIPE COMPLETE*"

RECIPE AND PEN LIST MODE

Starting a Recipe
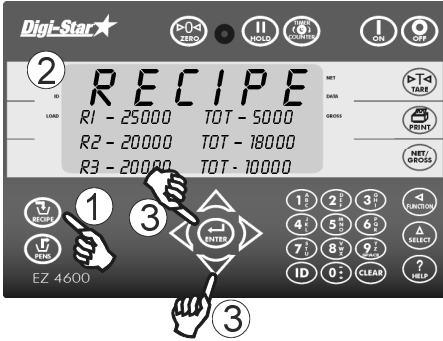
1. Press $\boxed{\text{RECIPE}}$.
2. Display reads:

   Example:

   Line 1: *RECIPE R1*

   Line 2: *R1 - 25000 TOT- 50000*

   Line 3: *R2 - 20000 TOT-18000*

   Line 4: *R3 - 20000 TOT- 10000*

3. Press ⌃ and ⌄ to select recipe, $\boxed{\text{ENTER}}$ to start.

Resize Recipe Weight
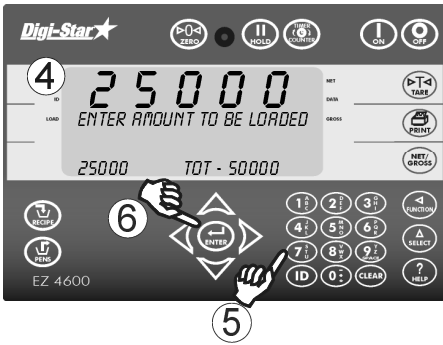
Indicator will display: *RESIZE*, then the resize weight.

4. Display reads:

   Example:

   Line 1: *25000*

   Line 2: *ENTER AMOUNT TO BE LOADED*

   Line 3: (No Data)

   Line 4: *R1 - 25000 TOT- 50000*

5. Enter the amount to build in this load.
6. Press $\boxed{\text{ENTER}}$.

Loading Recipe

1. First ingredient and weight flash in upper display. Begin loading ingredient.

2. Weight reached, alarm will flash and sound.

3. a. Manual Advance: Weight reached, press ⏎. Press ⏎ to start next ingredient.

   or

3. b. Auto Advance: When preset weight reached, indicator advances to next ingredient.

Unloading Pens
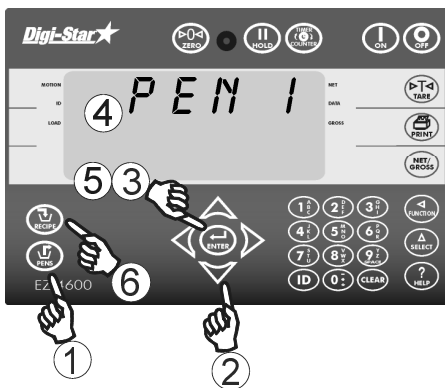
1. When ingredient loading complete, display reads "*RECIPE COMPLETE*". Press 🔘. Indicator displays unloading pens.

2. Press ⌃ or ⌄ to select desired pen.

3. Press ⏎.

4. Pen and weight displayed, begin unloading to pen.

5. a. Manual Advance: Weight reached, press ⏎ to accept. Press ⏎ again to start next pen.

   or

5. b. Auto Advance: When preset weight reached, indicator advances to next pen.

6. When unloading is complete press 🔘 to start next recipe.

ADVANCED COMMANDS

Unload Partial Pens
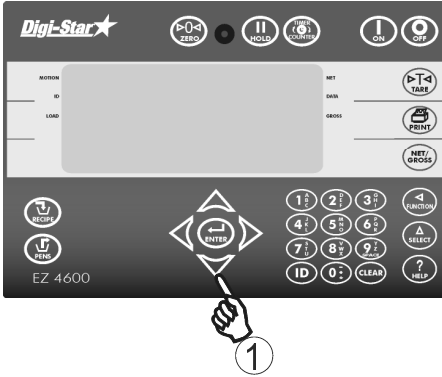
1. Press ∇ to advance to next pen without finishing current pen.

NOTE: If pen tolerance is set and feeding stopped before preset weight reached, alarm sounds, indicator displays:

PEN UNDERFED – PRESS PRINT TO REMOVE PEN FROM LIST-PRESS ON TO KEEP PEN

See page 22 for Pen Tolerance set-up.

Go Back to Skipped Ingredient
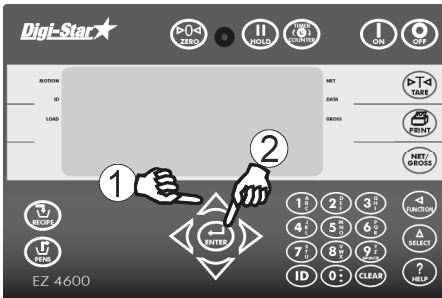
1. Press △ or ∇ to move back.
2. Press (ENTER).

NOTE: Ingredient weight changed more than 4 display counts cannot restart that ingredient.

Example: If minimum display change is 10 lbs/kgs, more than 40 lbs/kgs, cannot restart that ingredient.

Change Feeding Number
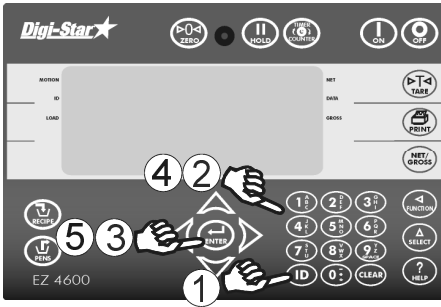
1. Press (ID).
2. Enter user number.
3. Press (ENTER).
4. Enter feeding number (1-9).
5. Press (ENTER).

Use Arrow Keys Recipe or Pens List

PRESS
ING-CLUHAY   PRE- 2850
ING-CORNSI   PRE- 9690
ING-3IIPEL   PRE- 3140
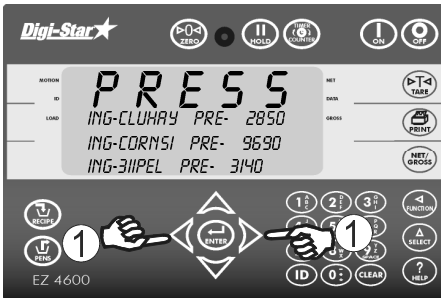
1. Press ◁ or ▷ to move list three lines at a time.

Clear Indicator Memory

ON=CLE
DIGI-STAR
FEED DELIVERY SYSTEM

1. Press (OFF).
2. Press and hold (CLEAR).
3. Press (ON) while holding (CLEAR) indicator reads:

   ON=CLEAR CLEAR=REUSE NET=EXIT.

   Release (CLEAR).

4. Press (ON) to erase feeding memory.

Re-Use Recipe/Pen Data

1. Indicator (OFF).

2. Press and hold CLEAR.

3. Press (ON) while holding CLEAR indicator scrolls:

   ON=CLEAR CLEAR=REUSE NET=EXIT.

   Release CLEAR.

4. Press CLEAR again to re-use recipe and pen data.

NOTE: *When re-using data stored in indicator, it takes recipe and pen information and removes completed weights loaded or unloaded and marks them undone. It will not accumulate data day to day. Download data to USB Drive before re-using recipe and pen data stored.*

NOTE: *For continuous re-use, set D.A.N. 466 to on. See page 39.*

Mix Timer

The mix timer allows the operator to set a timer to alert the operator when the mixing is completed. This can be manually entered or entered as part of the recipe using the TMR TRACKER or other software package.
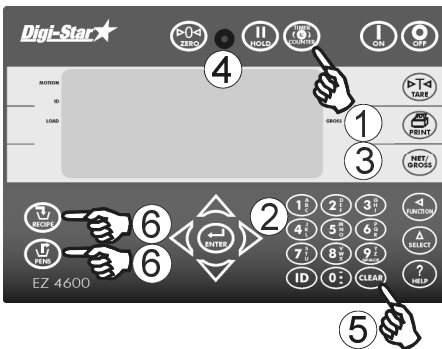
1. Press (TIMER COUNTER).

2. Use the numeric keypad to enter the amount of time.

3. Press (TIMER COUNTER).

4. The Mix Timer will begin to count down. When it reaches zero, the alarm light and buzzer will turn on.

5. Press CLEAR to enter the weighing mode.

6. Press the (RECIPE) or (PENS) key to re-enter the batching mode.

Rotation Counter

The rotational counter is used much like the timer. It allows the indicator to count the number of revolutions of a mixer shaft and notifies the operator when a set count is reached.
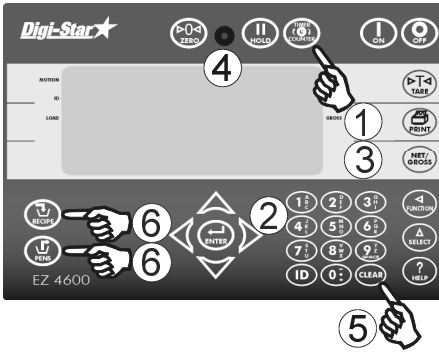
1. Press (TIMER COUNTER).

2. Use the numeric keypad to enter the number of rotations.

3. Press (TIMER COUNTER).

4. The Rotation Counter will begin to count down. when the counter has reached zero, the alarm light and buzzer will turn on.

5. Press (CLEAR) to turn off the alarm and enter the weighing mode.

6. Press the (RECIPE) or (PENS) key to re-enter the batching mode.

Drive Ratio

Drive ratio is number of turns seen by sensor divided by number of mixing rotations.

1. Enter **422** and press (SELECT) to enter drive ratio value.

2. Press (ON).

Add a Pen to Pen List

1. Enter pen name or number.
2. Press (PENS).
3. Press (ENTER).

1. Press ⌃ or ⌄ to find desired recipe.
2. Press (ENTER).

1. Enter amount to unload to pen.
2. Press (ENTER).

1. Enter number of animals / pen.
2. Press (ENTER).
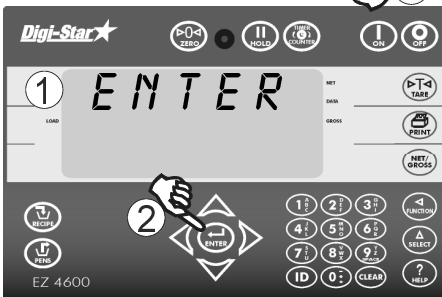
1. If zones are active display reads:

"ENTER ZONE 0-9"
2. Press (ENTER).

COMMONLY USED DIRECT ACCESS NUMBERS (D.A.N.)

Pre-Alarm

Select weight or percentage method, enter value to activate early warning indicator reaching preset.
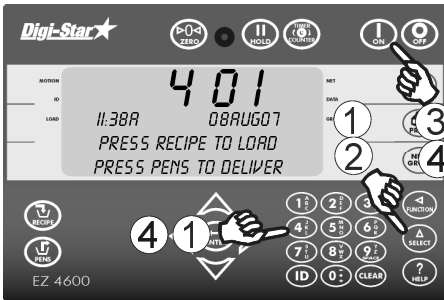
1. Enter **401** and press (SELECT).

2. Press (SELECT) again to change between WEIGHT and PERCENT.

3. Press (ON).

4. Enter Pre-Alarm value.
   Press (ON).

Auto Ingredient / Manual Pen Advance

Ingredients automatically advance, Pens manually advance.

1. Enter **461** and press (SELECT).

2. Press (SELECT), choose on/off.

3. Press (ON).

Auto Advance

Allows hands free operation of programmed recipes. When auto advance feature activated, indicator automatically advances to next ingredient once tolerance, and delay time requirements met.

Tolerance

Sets Auto Advance to trigger prior to reaching preset weight by weight or percentage.
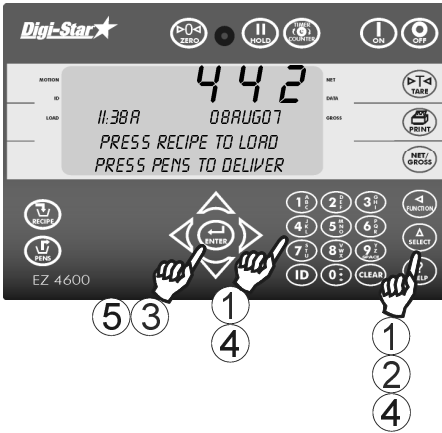
1. Enter **442** and press (SELECT).

2. Press (SELECT) to choose tolerance method.

3. Press (ENTER) to save.

4. To change percentage, press (SELECT) until desired value is shown. To change weight, enter value.

5. Press (ENTER) to save.

NOTE: OFF setting always advances after preset amount reached.

Example: Preset = 1000 lbs. If tolerance is set to 5%, Auto Advance will activate at 950 lbs or 95% of preset weight.

Pen Tolerance

Available in List Mode Only

1. Enter **462** and press (SELECT). Press (SELECT) again to choose weight or percent.

2. Press (ON), screen will display "*PENTOL*".

3. Enter weight or percentage desired.

4. Press (ON).

Delay Time

Changes time indicator waits before automatically advancing to next feedline.

1. Enter **443** and press ⬆SELECT. Enter delay time in seconds.

2. Press ENTER to save.

NOTE: Set to 0 prevents automatic advance.

Scale ID or Truck ID

Each indicator has scale ID.
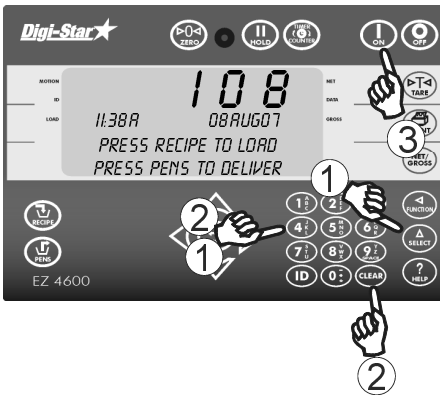
1. Enter **108** and press ⬆SELECT.

2. Press CLEAR to erase old ID, enter the new ID.

3. Press ON.

NOTE: TRM Tracker or Diet Manager, software ID must match.

Radio Number

Used with cab control option.
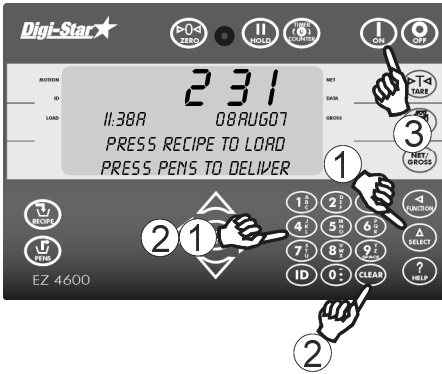
1. Enter **231** and press ⟨△SELECT⟩.

2. Press ⟨CLEAR⟩ to erase number, enter new number.

3. Press ⟨|ON⟩.

NOTE: Do not use same number for two different indicators.

Resize Option

Make weight changes to pens unload weight or recipe load size.
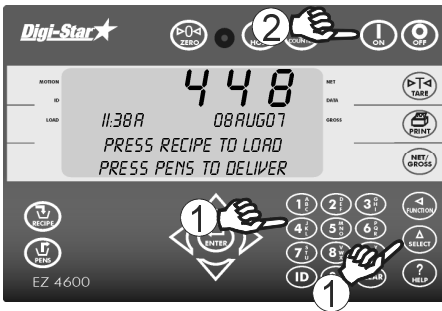
4. Enter **448** and press ⟨△SELECT⟩.
   Press ⟨△SELECT⟩ again, change On/Off.

5. Press ⟨|ON⟩.

Change Time

1. Enter **202** and press (SELECT).
2. Enter time.
3. Press (ENTER) to save.

Change Date
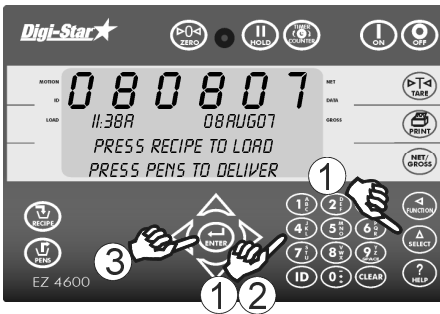
1. Enter **204** and press (SELECT).
2. Enter date in format: ddmmyy
3. Press (ENTER) to save.

MANUAL PROGRAMMING OF RECIPES

Three different entry methods for entering ingredients:

Amount Per Animal (this is the default setting)

Allows entry of ingredient amounts required for feeding one animal. Indicator calculates preset amounts required for each ingredient.

Percent (%) Per Load

Enter ingredient amounts in (%). Indicator calculates amounts for each ingredient. Total of all ingredients must equal 100% in this mode.

Amount Per Load

Allows entry of ingredient amounts required per load.

Switch to Manual Programming
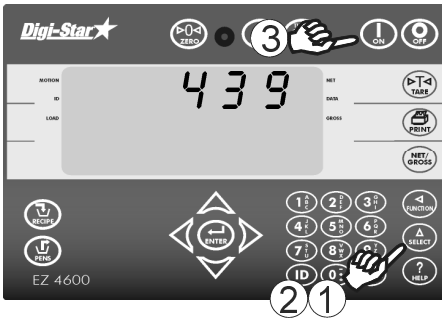
1. Enter **439** and press (SELECT).
2. Press (SELECT) again to switch from "PC" to "Scale".
3. Press (ON).

Change Entry Method

1. Enter **441** press (SELECT).
2. Repeatedly press (SELECT) scrolls following entry methods:

      1 = Amount per Animal
      2 = Percent (%) per Load
      3=Amount per Load

3. Press (ON) sets entry method.

Ingredient Re-Name

Ingredient names are listed in a standard table and can be changed using the following 9 steps.

1. Repeatedly press (SELECT) until *INGRNM* displays.

2. Press (FUNCTION)

3. Press (ON) shows ingredient.

4. Press (ON) again to edit name. Display briefly shows *EDIT* and flashing cursor displayed.
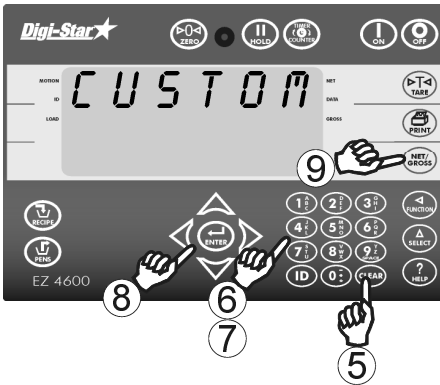
5. Repeatedly press (CLEAR) erases ingredient.

6. Press "1" key once enters 1, twice enters A, three times for B, other numbers on keypad work same.

7. Pause for one second after entering a number or letter and they shift to left so a new letter or number can be added.

8. Press (ENTER).

9. Press (NET/GROSS) to exit.

Print Ingredient Names

1. Press (ENTER) displays first ingredient.

2. Press (PRINT) prints total accumulations for this ingredient.

3. Press (PRINT) again prints accumulations for all ingredients currently used in all recipes.

4. Press (PRINT) again prints names for all ingredients. Ingredients not used by recipe, show unused.

Enter New Recipe
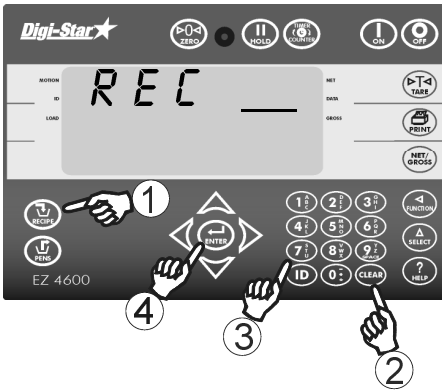
1. Press and hold (RECIPE) until indicator beeps and displays *PROGRM* then displays either first recipe programmed or *REC__*. This indicates recipe number can be entered.
2. Press (CLEAR).
3. Enter recipe number.
4. Press (ENTER) enters number.

5. Press (SELECT) scrolls available ingredients.
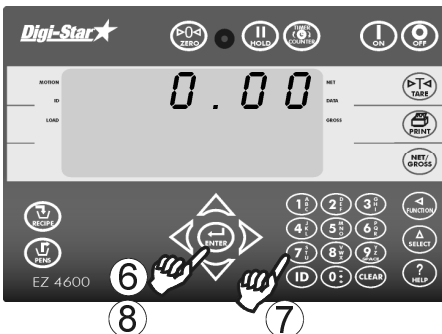
6. Press (ENTER) to select ingredient on screen.
7. Enter amount of ingredient required. (see note)
8. Press (ENTER) to store amount.

Repeat steps 5-8 for each ingredient required.

NOTE: In percent/load entry mode a 75% ingredient, for example, should be entered as 75.00 on display. 5.75% ingredient entered as 5.75.
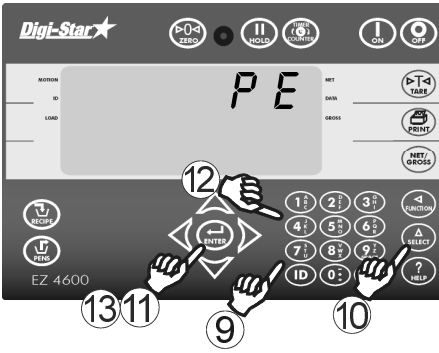
9. Press (**ID**) to change to pens.

10. Press (**SELECT**) to scroll available pens.

11. Press (**ENTER**) to select pen on screen.

12. Enter amount for pen.

13. Press (**ENTER**) to store amount.
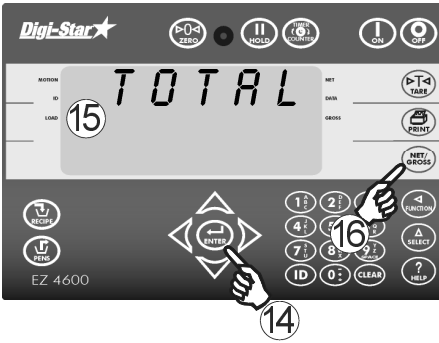
Repeat steps 10-13 for each pen required.

14. Press (**ENTER**) to complete recipe.

15. Indicator calculates and displays *TOTAL* amount of recipe.

Repeat steps 1 - 15 until all recipes programmed.

16. Press (**NET/GROSS**) to exit.

Edit Recipe
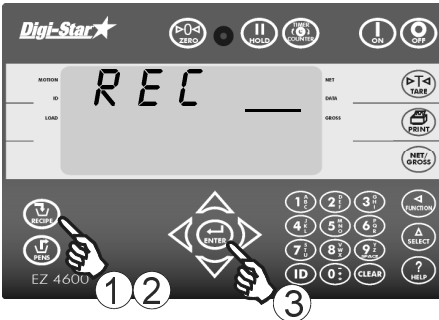
1. Press and hold (**RECIPE**) until indicator beeps and displays *PROGRM*.

2. Repeatedly press (**RECIPE**) until recipe number displayed.

3. Press (**ENTER**) edits this recipe.
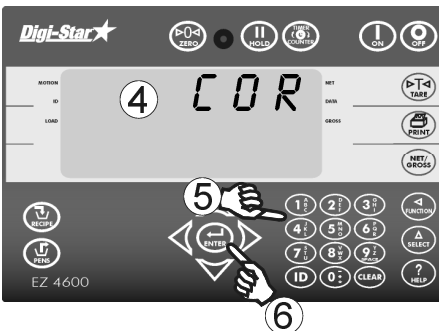
4. First ingredient name displayed followed by *AMOUNT*.

5. Enter new amount.

6. (**ENTER**) stores and advances to next ingredient.
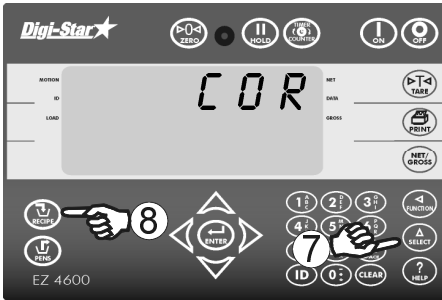
7. Press ⬆️SELECT to return to previous ingredient.

Repeat steps 5-6 for each feedline change.

8. Press and hold 🔄RECIPE to insert a new ingredient. This will insert just before the current ingredient on the screen.
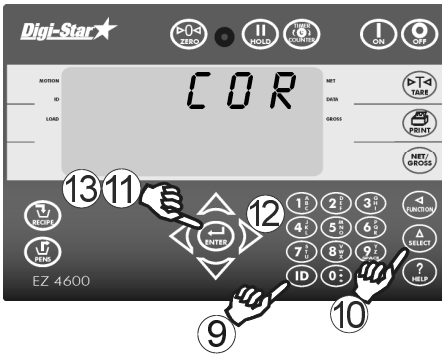
9. Press ID to switch between ingredients and pens.

10. Press ⬆️SELECT to scroll available ingredients or pens.

11. Press ENTER to select ingredient or pen.

12. Enter amount required.

13. Press ENTER to store amount.

14. Press and hold ▶0◀ZERO to erase an ingredient. Message *ZERO TO ERASE* scrolls.

15. Press ▶0◀ZERO to erase the current ingredient or pen displayed on the screen.

16. Press NET/GROSS to exit.

Erase a Recipe
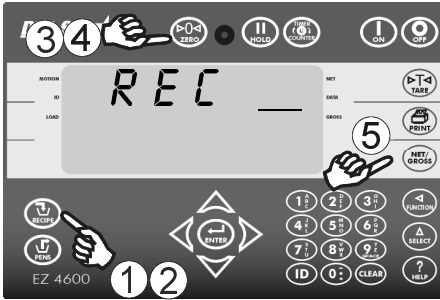
1. Press and hold (RECIPE) until indicator beeps and displays *PROGRAM* followed by first recipe number.

2. Repeatedly press (RECIPE) until desired recipe number displayed.

3. Press and hold (ZERO) message *PRESS ZERO TO ERASE RECIPE OR NET/GROSS TO EXIT* scrolls.

4. Press (ZERO) erases recipe.

5. Press (NET/GROSS) exits.

Review a Recipe

1. Repeatedly press (RECIPE) until recipe shown.

2. Press ▷ displays each feedline, weight or % and total for recipe.

3. Press (NET/GROSS) exits.

Printing Single Recipe

NOTE: Optional serial port must be installed for printing.

1. Press (RECIPE) displays first recipe. Repeatedly press (RECIPE) displays other recipes.
2. Press (PRINT) prints recipe.
3. Press (NET/GROSS).

Printing All Recipes

1. Press (RECIPE) displays first recipe.
2. Press (PRINT) prints recipe.
3. Press (PRINT) again prints all recipes in memory.
4. Press (NET/GROSS).

RUNNING A RECIPE

Using Amount Per Animal
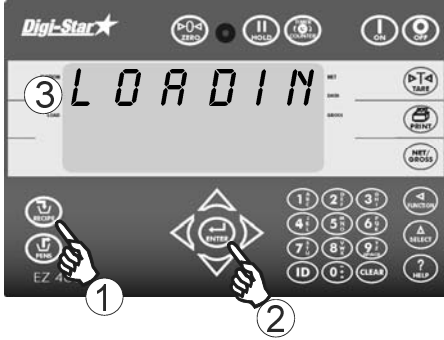
1. Repeatedly press 🔄(RECIPE) until recipe displayed.
2. Press 🔵(ENTER) to accept recipe.
3. Indicator displays *LOADING RECIPE*.
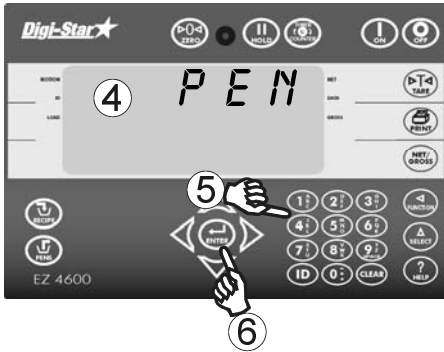
4. Indicator displays *RESIZE* followed by *PEN*.
5. Indicator displays flashing number. Change number to amount of animals to feed.

NOTE: If using percent/load, change number to weight amount for pen.

6. Press 🔵(ENTER).
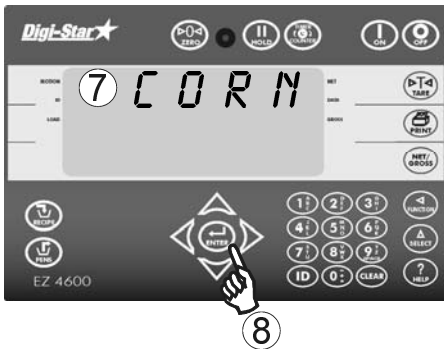
7. After resizing all pens, indicator displays ingredient to load and how much to load. As ingredient loaded indicator counts down to zero.
8. Press 🔵(ENTER) to advance to next ingredient.

(See page 21 for auto advance)
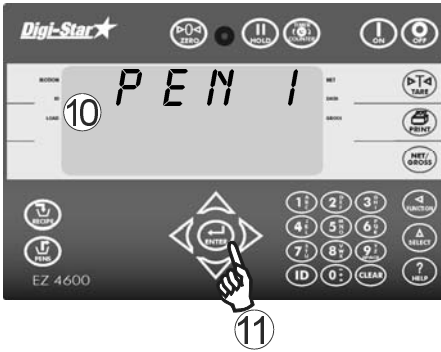
9. After last ingredient loaded, indicator displays *START DELIVERIES*.

10. Indicator displays pen to unload and how much to unload. As pen is unloaded indicator counts down to zero.

11. Press [ENTER] to advance to next pen.

12. After last pen unloaded, indicator displays *RECIPE COMPLETE TOTAL*.

OTHER FUNCTIONS

Hold

Hold mode prevents displayed
weight from changing while moving.

1. Press 〔**II** HOLD〕.
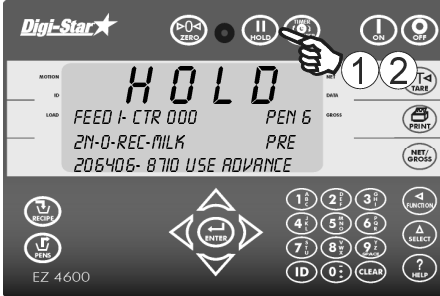
2. Press 〔**II** HOLD〕 returns indicator to normal.

If weight added in hold mode, press 〔**I** ON〕 to cancel hold.

NOTE: This feature is disabled on all legal for trade systems.

Using Dimmer Option

1. Repeatedly press 〔▲ SELECT〕 until *DIMMER* is displayed.

2. Press 〔◄ FUNCTION〕 dims backlight.

MENUS AND CALIBRATION

Enter D.A.N. and press (SELECT△) to display setting name. Press (SELECT△) again to change option value.

Press (I ON) to save setting.

SETTING [display]	D.A.N NO.	OPTIONS [displayed] BOLD=DEFAULT		DESCRIPTION
MENU 1. BASIC FEATURES IN MOST INDICATORS				
LANGUAGE *(LANGAG)*	101	**English** Dutch French German Italian Portuguese Spanish Danish Hungarian Spanish	*(ENGLSH)* *(NEDERL)* *(FRANCS)* *(DEUTSH)* *(ITAL)* *(PORT)* *(ESPAN)* *(DANSK)* *(MAGYAR)* *(VESTA)*	Select language to be displayed.
TR HOLD *(TR HLD)*	107	ON/**OFF**		Display gross weight if TR key is held for 3 seconds.
SCALE ID SETUP *(SCALID)*	108	NEW EZ		Identity of scale location (truck id or Mixer number).
MENU 2. CLOCK, PRINTER, COMMUNICATIONS & ESTIMATED WEIGHT FEATURES				
TIME FORMAT *(TIME F)*	201	24 HR **AM/PM**		Select time format - AM/PM or 24 hour
1 TIME *(TIME)*	202	XX:XX:XX		Select key changes time, function key chooses hh:mm:ss.
DATE FORMAT *(DATE F)*	203	1-mm-dd 2-mm/dd/yy 3-mm/dd/yyyy 4-dd-mm 5-dd/mm/yy 6-dd/mm/yyyy **7-ddmoyy** 8-ddmoyyyy.		Select date format
DATE *(DATE)*	204	Enter XXXXXX		Select key changes date - function key chooses mm/dd/yy.

SETTING [display]	D.A.N NO.	OPTIONS [displayed] BOLD=DEFAULT	DESCRIPTION
MEDIA *(MEDIA)*	217	**USB** DDL DATAKEY SER PC	Select media type for data storage.
SCALE NUMBER *(SCL NO)*	231		Select scale number for cab control communication
REMOTE DISPLAY *(RMDISP)*	234		Select type of remote display
MENU 3. SCALE CALIBRATION SETTINGS			
DISPLAY UNIT *(LB-KG)*	303	**LB**/KG	Display pounds -lb or kilograms -kg
MIMIC TYREL *(TC1300)*	321	**OFF**/ON	If ON -records preset weights like a TYREL TCX-1300 indicator. Indicator Tracks gross weight while batching.
MENU 4. PRESET. BATCHING & ROTATION COUNTER FEATURES			
PRE ALARM *(P MTHD) & (P-ALM)*	401	**WEIGHT** PERCNT	Select weight or percentage method, then enter a value to activate an early warning that indicator is reaching the preset.
BUZZER *(BUZZER)*	404	1-4, **ON**/OFF	ALARM BUZZER -allows user to turn off alarm horn.
TIMER/ COUNTER *(TMRCTR)*	421	**REV** TIME	Select time or mixer revolutions to decrement mix timer/counter.
DRIVE RATIO *(DRATIO)*	422	**0001.00**	Enter the number of input pulses that equal 1 mixer revolution.
MANUAL PROGRAMMING	439	**PC**/SCALE	PC: Requires a USB Drive with programming. Scale: Allows user to manually program indicator.
ENTRY METHOD *(E MTHD)*	441	**1**,2,3	Select batch 1- amount/animal 2-percent/load 3- amount/load
TOLERANCE	442	**OFF**,.5,1-5,7,10	Select tolerance weight

SETTING [display]	D.A.N NO.	OPTIONS [displayed] BOLD=DEFAULT	DESCRIPTION
(TOLER)			percentage to accept ingredient.
INGR. ADVANCE DELAY *(DELAY)*	443	**MANUAL**, 1-3,5,7, 10,20,30,60	Select seconds to delay before advancing to next ingredient.
FORCE USER ID *(USERID)*	446	ON/**OFF**	If ON -operator must enter user ID to use indicator.
RESIZE RECIPE *(RESIZE)*	448	**ON**/OFF	If ON -operator can change recipe size.
TOLER OVER LOCK *(OVERLK)*	453	ON/**OFF**	If ON -prevents auto-advancing if preset exceeds tolerance
FEED ZONE *(FDZONE)*	454	**ALL**, 1-9	Select feed zone for recipe deliveries.
UNDONE RECIPES *(UNDN 1)*	455	ON/**OFF**	If ON -displays all incomplete recipes or enable if indicator is stationary mixer/batch when using DataLink.
AUTO START PENS *(AUTPEN)*	458	ON/**OFF**	If ON -starts pens list after recipe is loaded in list mode format.
MANUAL PEN ADVANCE *(MANPEN)*	461	**ON**/OFF	If ON -overrides automatic advance for pens.
PEN TOL *(T MTHD) & (PENTOL)*	462	**WEIGHT** PERCNT	Select weight or percentage method, then enter pen tolerance.
PEN WEIGHT *(PEN WT)*	463	**LOAD** GROSS NET	Select method for displaying pen Weight - net, load, or gross.
DOUBLE KEY PRESS PREV *(DBKEY)*	465	ON/**OFF**	Select method ignores double pressing of keys when advancing ingr. While loading mixer.
RECIPE REMAIN ACTIVE *(RE-USE)*	466	**ON**/OFF	Select ON to reuse recipes.

SETTING [display]	D.A.N NO.	OPTIONS [displayed] BOLD=DEFAULT	DESCRIPTION
CALIBRATION			
SETUP NUMBER *[SETUP]*	871		Quick entry method selects weigh method 1-4lbs, 5-8 kg, gain 1-9, display counts 1-9 and capacity *1000
CALIBRATION NUMBER *[CAL]*	872		Weight displayed at 0.4mV/V for these load cells

RE-CALIBRATING YOUR SCALE

To re-calibrate your scale and make it even more accurate, document at least 3 to 6 loads of varying sizes and measure the actual weight of all loads on a certified scale.

Reading Too High

If the Indicator is reading higher than the certified scale, then the calibration number is high and should be decreased proportionally.

Reading Too Low

If the Indicator is reading lower than the certified scale, then the calibration number is low and should be increased proportionally.

Get your Calibration Number
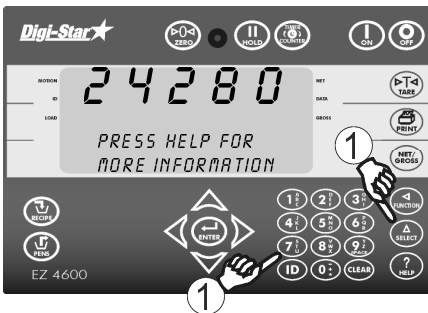
1. Enter **872** and press (SELECT). The calibration (**CAL**) number will display. Example **CAL = 24280.**

$$\frac{\text{TOTAL CERTIFIED WEIGHT}}{\text{TOTAL INDICATOR WEIGHT}} \text{ X CURRENT CAL NUMBER=NEW CAL NUMBER}$$

Using the previous example your results would be:

$$\frac{205030}{203400} \text{ X } 24280 = 24475$$

Enter New Calibration Number

1. Enter **872** and press (SELECT). Existing calibration number will display.

2. Use number pad to type new number and press (ENTER).

For best results, unload on level ground. Make sure no grain is lost in trucking the grain to a certified scale.

Change Setup and Calibration Numbers
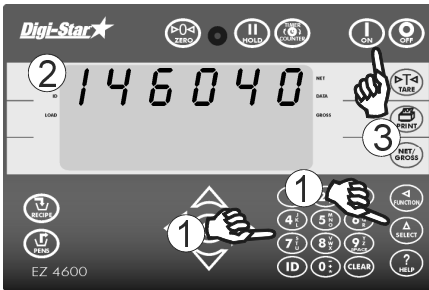
1. Enter **871** and press (SELECT).

2. Indicator shows SETUP briefly then show a 6 digit number. Enter new number.

3. Press (ON).

Follow same procedure changes calibration number except use **872**.

INSTALLATION

Indicator Mounting
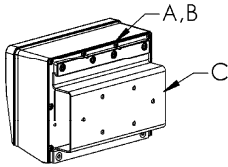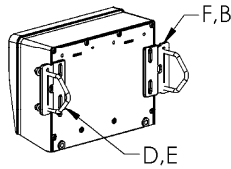
RAIL MOUNT   **WING MOUNT**   **WEDGE MOUNT**
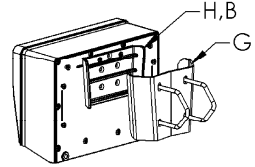
KEY	PART NUMBER	DESCRIPTION
A	404353	BRACKET-EZ3 PLASTIC RAIL *
B	403780	SCR-#10 X 5/8 FHSTS BLACK ZP
C	840459	SUPPORT-HAT BRACKET
D	405069	U-BOLT 1/4-20 X 3.25 ZP
E	405084	NUT-1/4-20 TOP LOCKING FLANGE
F	403770	BRACKET- WING MOUNT *
G	405124	PACK-WEDGE MOUNT BRACKET WITH U-BOLTS & FLANGE NUTS
H	405244	EZ3 WEDGE MOUNT
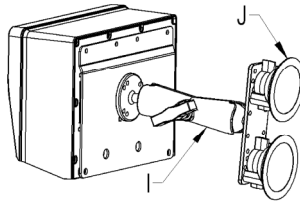
RAM MOUNT

KEY	PART NUMBER	DESCRIPTION
I	404799	RAM MOUNT FOR EZ III INDICATOR WITH HARDWARE
J	404230	RAM SUCTION CUP W/TWIST LOCK

Cable Connection

Scale Indicator

Power Cord

Remote Indicator (Optional)

Pin	To 12VDC Power Supply	
1	Red	+Terminal
2	Black	-Terminal
3	Orange	Alarm Out
4	Blue	Remote Input

See J-Box Connections
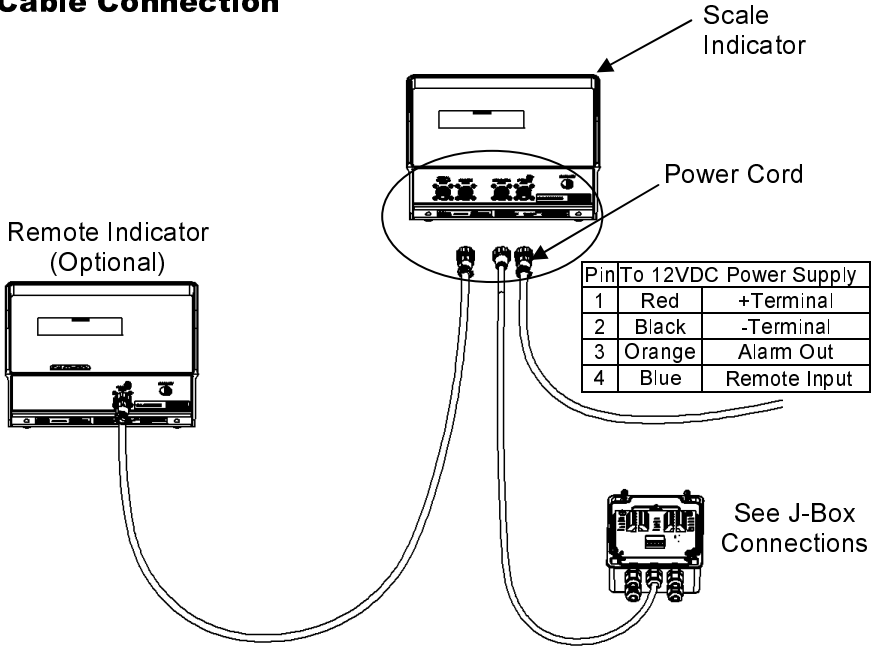
Indicator Connection Diagram

J-Box Connection

USB Insertion

SERIAL PRINTER J904

REMOTE J903

LOAD CELL J902

POWER J901

USB

SN00000000

Digital Input/ Output Connection

Remote Indicator Connection

Power Cord Connection
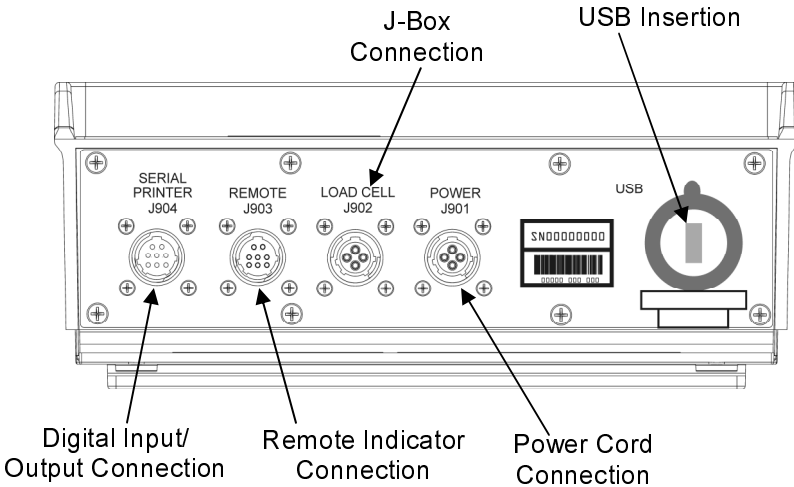
Bottom Panel Cable Connections

Connect Load Cells To J-Box

Connect load cell
wires to terminal
blocks.

Wire Color Key		
	Color	Description
1	White	Signal +
2	Green	Signal -
3	Red	Excitation +
4	Black	Excitation -
5	Shield	Shield

Tighten nuts

J-Box Cable

Load cell cable

Connect to Indicator
bottom panel.

J-Box Connections

Load Cell Direction

BENDING DIRECTION

DIRECTION DE FLEXION

BIEGERICHTUNG

141815
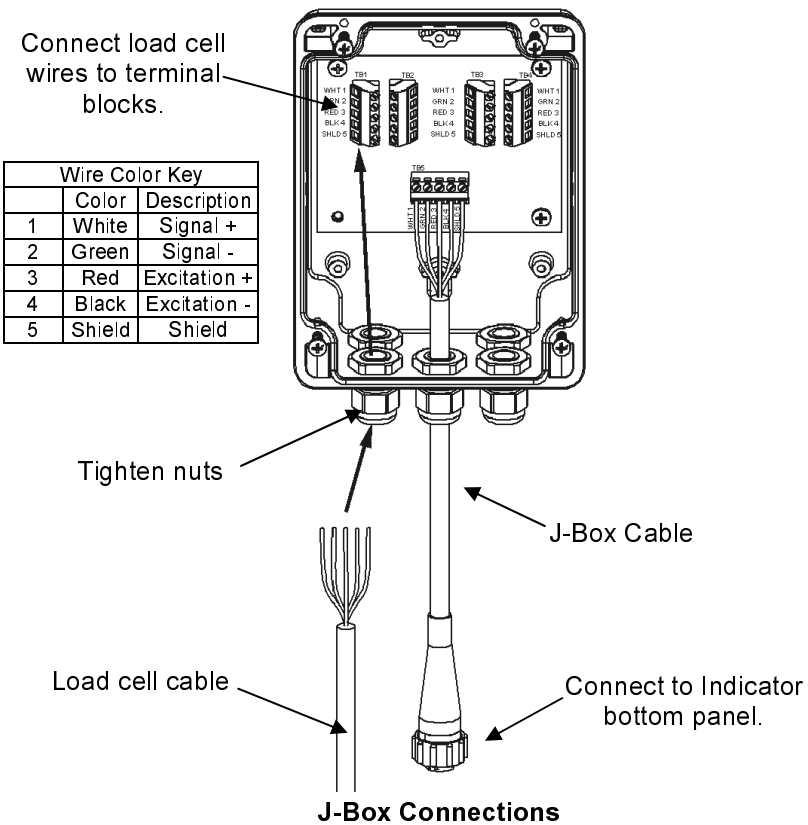
Observe direction of arrow on load cell when installing load cell.

OPTIONAL EQUIPMENT

Cab Control (Wireless)

Features

- Wireless remote with full key control of indicator on mixer
- Mount remote in easy view of loading
- Improves loading accuracy

Functions

- Communicates with multiple mixers
- Easily call-up recipes without leaving loader

Specification

- Internally mounted 2.4 GHz radios
- Up to 1000 foot range
- 24 channels
- 12 or 24 volt DC system

Rotation Counter Sensor
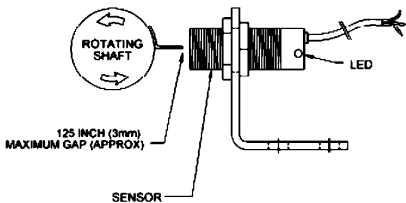
Use with EZ3600 or EZ4600 indicators equipped with rotation counter port. Sensor allows operator to program indicator to count auger or PTO rotations for accurate mix.

Transmitter/Receiver

Transmitter (shown) with factory installed receiver in indicator. Use to zero indicator from remote location. Operating range about 90 feet.

Remote Indicators

RD440 small remote display with 1" high numbers

RD2400V backlit remote display with 1.7" high numbers

RD4000 LED remote display with 4" high numbers

TROUBLESHOOTING

FLOW CHART

START

Does the indicator come on? — YES / NO

YES →

Is the reading on the Indicator stable? — NO

YES

Put your weight on each load cell. Does the indicator respond to your weight? — NO

YES

Are the readings all positive? If not Load Cell is upside down.

Does the scale weigh you approx. the same over all Load Cells? (Weight will not be accurate) — NO

YES

Your Indicator is probably not set-up and calibrated correctly. Check the decal on the bottom of Indicator. It shows what type of Load Cells the Indicator was calibrated to. By pressing the on key while the Indicator is already on, you will get the Indicator's "Set-up" and "Cal" numbers. See if they compare to the set-up and calibration numbers on the indicator. Contact Dealer for further information.

If your display is unstable, or flashes "±RANGE" disconnect the j-box cord from Indicator. Is display still unstable? — YES

Check all J-Box and Load Cell cables for cuts or pinched/flat spots.

Your Indicator is probably defective. Try another Indicator to verify. **Note:** Be aware of electrical interference that might affect Indicator, such as mobile phones, CB radios, radio towers, electrical motors, etc. Make sure Load Cell cables are not attached to hydraulic lines or reservoir.

NO →

Poor Connection: Take them apart and clean connections. (Rust or paint should be wire brushed.) Then reconnect and tighten securely.

Bad Battery: Replace battery (weak battery may test good if tested with no load on battery)

Bad Power Cord: Make sure red wire is connected to (+) positive side and black wire is connected to (-) negative side. When using a multimeter to check for voltage, measure between pin 1 (pos) and pin 2 (neg). Meter should read between 10.5 and 14.5 volts DC if using a tractor power cord, black wire is positive and white wire is negative.

Bad Indicator: Try another Indicator. (Even a different model or set-up should come on.)

Remove the cover from your J-Box

Is there moisture inside the box? — YES

Dry out your J-Box (use a hairdryer). Check cable strain reliefs for tightness. Cables have drip loops. Is lid gasket damaged?

NO

Look for loose connections. Watch your Indicator display while moving the wires and pressing on the circuit board inside the J-Box. You will see if there is a loose connection or bad solder joint.

Fix or replace the J-Box ← YES — Did the J-Box have a bad connection or loose wire?

NO

See next page

Digi-Star

FLOW CHART

Continued

1. Disconnect all the Load Cell wires from the terminal blocks inside the J-Box (leave the Indicator on while connecting and disconnecting the wires, it will not damage Load Cells or Indicator if wires are shorted during this step). Is reading on Indicator stable?

YES →

2. Zero balance the Indicator. (Press "NET/GROSS" then "ZERO"). Indicator should display "0".

NO

Replace J-Box (be aware of electrical interference that might affect your scale such as: mobile phones, CB radios, radio towers, electric motors, etc.).

Note: Hook up the Load Cells to the J-Box one at a time (only one Load Cell connected at a time). This will get a reading for each Load Cell. While performing this test, watch for any other symptoms such as erratic/unstable display. Indicator flashing "±RANGE", negative reading, etc. If the Indicator reading should ever appear abnormal with any Load Cell connected then it is probably bad.

3. Connect one Load Cell back into one of the terminals in the J-Box. (The reading you get for each Load Cell is dependent on the size and type of each Load Cell and how much weight is over each Load Cell. In general, the number should be positive and stable.)

4. Record the Indicator reading with the Load Cell connected.

5. Stand or hang your weight over the connected Load Cell. Record how much the weight increased with your weight over the Load Cell. (A scale with only one Load Cell will weigh heavy.)

Note: If the scale responded to your weight, that's verification on the J-Box is OK. If the scale did not respond, either that Load Cell is bad or the J-Box is bad. Try the other Load Cells. If the Indicator still shows no response, the J-Box is bad. (Replace J-Box)

7. Repeat step 6 for the remaining Load Cells. Remember to record your readings.

6. Disconnect the first Load Cell and reconnect a second one. Record the Indicator reading. Stand or hang your weight over the connected Load Cell. Record how much the weight increased.

Do not expect the Load Cells to give the same reading. It is common for Load Cells to have readings that vary by hundreds, even thousands. Especially when one is carrying more weight.

8. Bad Load Cells will have a reading that is either unstable, makes the indicator flash "±RANGE" or is more than three times greater or less than the average of the others. Also the readings of your weight over each Load Cell should be similar. (Probably 4 times your actual weight). Any differences could be an indication of a bad Load Cell or a structural problem.

LEGAL-FOR-TRADE CERTIFICATION

United States

In the US, the Legal-for-Trade certification is regulated by the National Type Evaluation Program (NTEP). The NTEP certificate number is 08-40.

Canada

Measurement Canada is the Canadian agency that regulates Legal-for–Trade scales. The approval number from Measurement Canada is AM-5678C.

Legal for Trade Features

Digi-Star Legal-for-Trade indicators are modified to comply with US and Canadian regulatory agencies. Some of these modifications are:

Load Cell Disconnect Sensor

Indicator displays *+RANGE* or *–RANGE* without flashing when load cells are disconnected.

Hold Function

The Hold function has been disabled. (EZ3400, EZ3600 and EZ4600)

Printing

Printing weight values is not allowed while in motion, during self-calibration, or if any error conditions such as *+RANGE, OVRCAP* or *OVRFLW.* are active.

Lock-On Weigh Method

Lock on weigh method (for animal weighing) cannot be enabled.

Tare

Cannot tare a negative weight.

Labeling

The capacity and division information is shown on the front of the indicator.

Sealed to Prevent Unauthorized Modifications

The scale indicator is sealed by a Category 1 Audit Trail. To access the audit trail in the normal weighing mode, press and hold the "ON" key. This will display the current parameter and calibration event count values. Pressing any key will return the indicator to the weighing mode. The audit trail system is always active and cannot be altered. Audit trails are stored in flash memory and do not require batteries to maintain the audit trail values.

Changing any of the following parameters will change the Calibration event count value or parameter audit event count value. This will void your Legal-for-Trade certification unless performed by properly trained personnel.

- Setup
- Calibration
- Capacity
- Display Count
- Display Units
- Weigh Method
- Motion
- WMA1-1 through WMA2-3
- LFT Option Setting

On Legal-For-Trade Units Only

Perform the following procedure on an empty and clean machine before the unit is to be "site-certified".

- Install the LFT indicator on the machine and connect all load cells.
- Zero/balance the scale with no load on the machine.
- Enter "871" and press $\binom{\triangle}{\text{SELECT}}$ Press $\binom{\text{I}}{\text{ON}}$ o accept.