

Model 580R

Digital Weight Indicator

USER MANUAL



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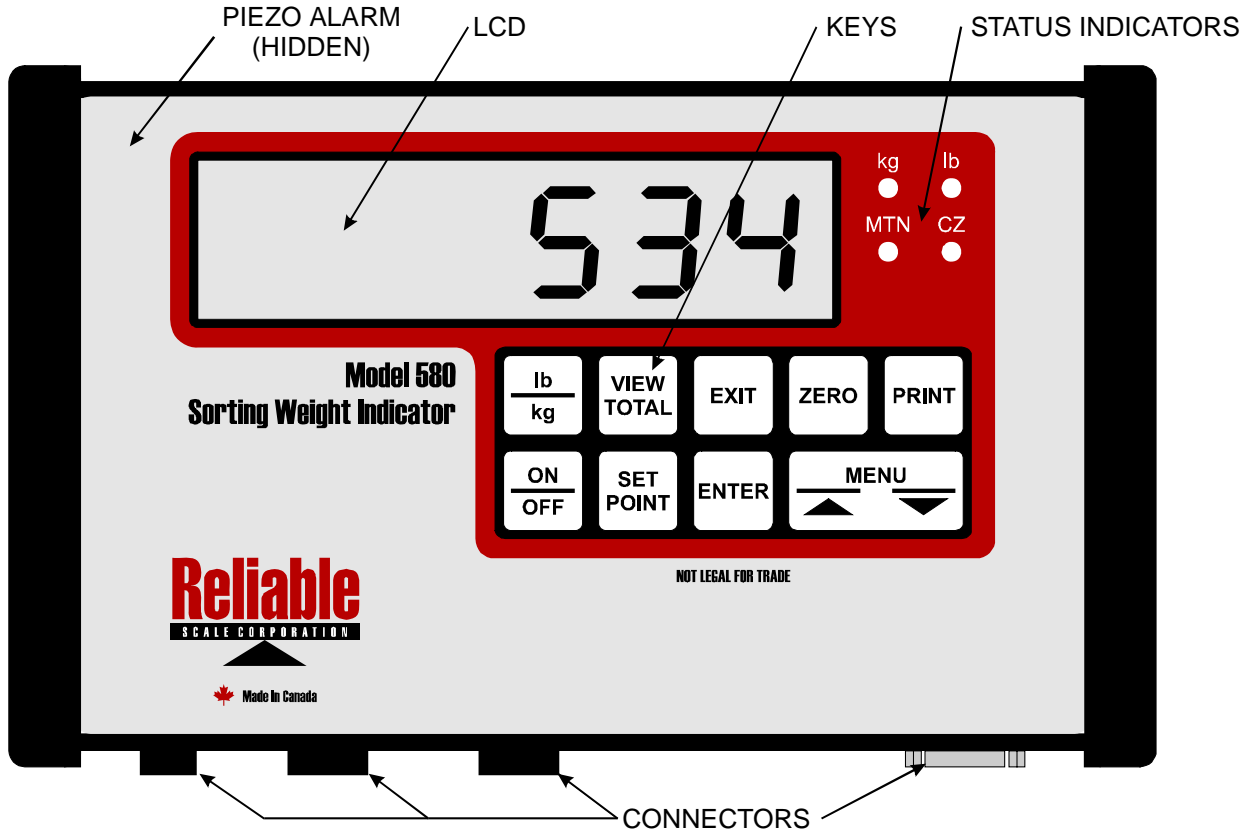
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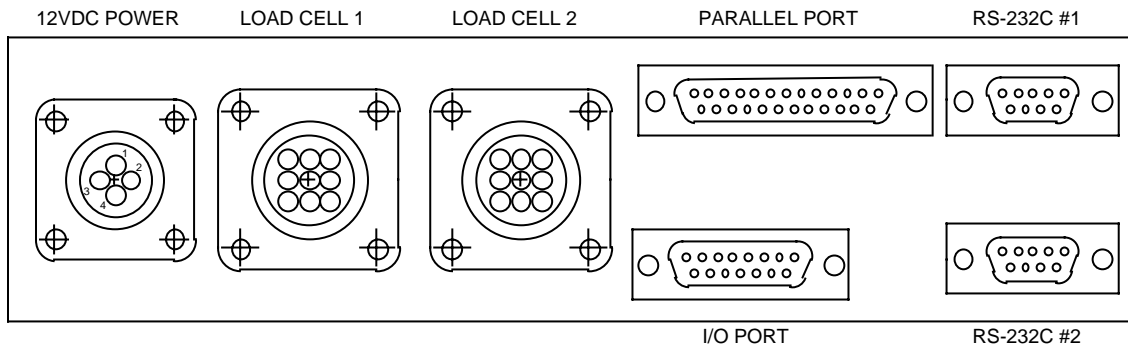
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2. General

2.1 Face of Indicator



2.2 Connector Details



Connector Purpose	Connector Type	Included as
12VDC Power Connector	AMP# 206061-1	standard
Load Cell Connectors	AMP# 206705-1	standard
Parallel Port Connector	D-sub 25 position female	standard
I/O Port Connector	D-sub 15 position female	standard
RS-232 Connector	D-sub 9 position male	1 standard, 1 optional

2.2.1 Power Connector

Pin #	Function
1	Power in 12-24 VDC
2	Ground
3	not used
4	not used

2.2.2 RS-232 Connector(s)

RS-232 connectors are standard 9 pin D-sub DTE configuration.

Pin #	Function
2	Receive (to 580R)
3	Transmit (from 580R)
5	Ground

2.2.3 Load Cell Connector(s)

Pin #	Function
1	+ Excitation A
2	- Excitation A
3	+ Signal
4	- Signal
5	+ Excitation B (optional)
6	- Excitation B (optional)
7	Calset
8	Calset
9	Shield

2.2.4 I/O Connector

Note: Electrical shock and voltage spikes from external sources such as solenoids and mechanical relays can damage Model 580R I/O ports. It is important to follow good design and assembly practice when laying out control circuits. The use of electric shock prods on animals in or near the scale system can result in damage to the circuits and will void factory warranty on the weighing components.

See Section 3.3.2 on page 9 for typical gate layout & operation.

Pin #	Function	Pin #	Function	Pin #	Function
1 TTL out	Gate 1	6 TTL out	Gate 6	11 TTL in	Photo-Eye
2 TTL out	Gate 2	7 TTL out	Inlet Gate	12 TTL in	Future
3 TTL out	Gate 3	8 TTL out	Inlet Close Confirmed	13 TTL in	Future
4 TTL out	Gate 4	9 TTL in	Gate Close	14 TTL in	Future
5 TTL out	Gate 5	10 TTL in	Inlet Closed	15 ground	I/O com

Pins 1 - 8 (outputs) are normally active high (logic level +5VDC). **I/O Reversal** can be used to set these pins to active low. See Section 4.1.12 on page 34.

Pins 9 - 14 (inputs) are active low with internal pull-ups. They require only an external contact closure to activate.

2.2.5 Parallel Port

The parallel port is an emulated PC printer port with standard 25-pin D-sub.

2.3 Status Indicators

kg Lighted when Model 580R is operating in kg.

lb Lighted when Model 580R is operating in lb.

3. Basic Operation

3.1 Turning the Indicator On

1. To turn the Indicator on, press **ON/OFF**.

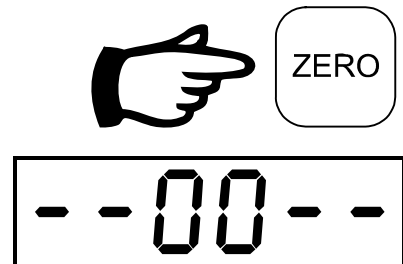
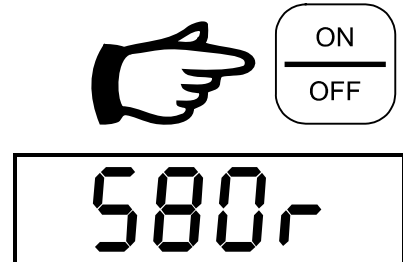
Display shows the model number, then the serial number and lastly, the software version. Display will rapidly go through a digit test procedure.

2. Allow the indicator to warm up and the display to stabilize for a few moments.
Note: At colder temperatures, more time should be allowed for warm up.

3. Press **ZERO**.

The key press is acknowledged.

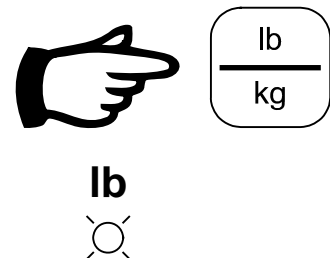
Display shows zero.



3.2 lb/kg Key

1. To change weighing units, press **lb/kg**.

Status indicator will indicate the new units.



3.3 Set Point Operation

Model 580R is designed as a sorter/controller for selecting animals automatically by weight into different groups. See Section 4.1.1 on page 2725 to activate the **Sort** feature.

3.3.1 General

Model 580R sorts the object on the scale platform by continuously reading the weight on the scale (50 times/second). If a pre-set number of consecutive weight readings (samples) are within a specified range of each other (deviation), the scale considers the weight to be stable and records it in memory. See Section 4.1.2 and 4.1.3 on page 28 to adjust these ranges. Model 580R will wait until the object is removed from the scale before re-starting the sorting process.

Model 580R is capable of sorting individual weights by **Lot** (pen) into **Groups**. If an electronic control circuit is connected to the I/O port, Model 580R will send signals to operate gates or other equipment automatically (equipment supplied by others). See Section 2.2.4 on page 6 for I/O port connector details. It will store the **Lot** and **Group** data in memory for retrieval via the LCD or via computer. Data is not lost when power is disconnected or when the indicator is turned **OFF**.

Lot data can be cleared from memory using the **Clear Lot** option in Section 3.3.6 on page 13.

Model 580R has sufficient memory to store the weight data of approximately 1200 animals. To check the memory available at any time, use the **Free** option as shown in Section 3.3.7 on page 14.

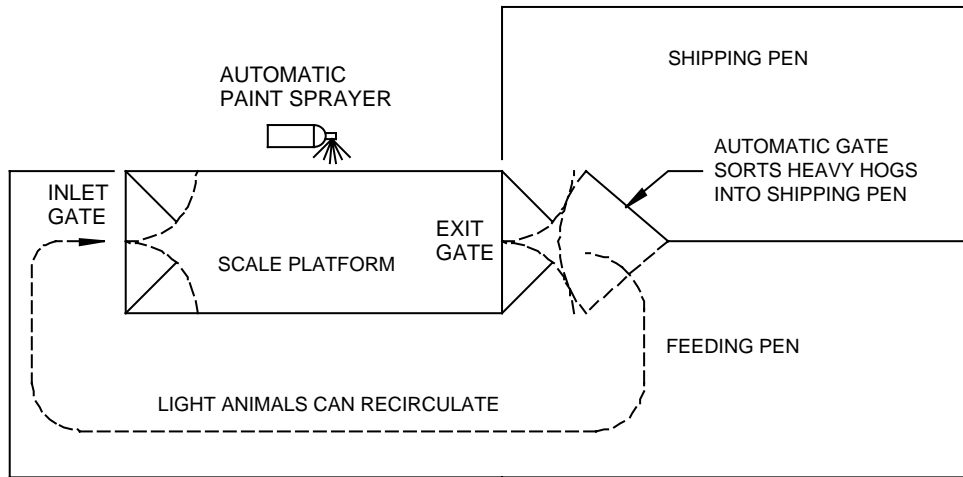
Data stored includes:

1. **Lot** Number - up to 20 lots See Section 3.3.4 on page 10 for Lot number input and data retrieval.
2. **Sort Group** number
3. Weight
4. Date (YYYY.MM.DD)

5. Time (HH:MM:SS)

3.3.2 Typical Gate & Pen Configuration

The diagram below is provided as an example only. Each user will build his system to his particular needs. Gate control signals can be used to operate other equipment such as automatic paint sprayers.



Sort Procedure:

1. An animal moves onto the scale platform.
2. If a Photo-Eye sensor is installed it will activate the Inlet Gate I/O signal, otherwise the Pre Sort process will be used to activate the signal.
3. If the Inlet Gate Closed feature is enabled, Model 580R will wait until the Inlet Closed I/O signal is activated before continuing to the Sort process.
4. Model 580R Sort process selects the appropriate Group or pen.
5. The gate signal for that pen activates. The gate signal is maintained until the animal leaves the scale.
6. If the **Gate Reset** parameter, Section 4.1.5 on page 29 has been set to **Auto**, Model 580R will wait for the animal to leave the scale platform. When the weight reaches a percentage of **Set Point 1** (determined by the **Gate Release** parameter), Model 580R concludes that the animal has exited the platform.
7. If the **Gate Reset** parameter has been set to **User**, Model 580R will wait for the **Gate Close** input signal from the operator.

8. The **Gate Reset** signal starts a timer, **Sort Timeout Out**. If the animal is still on the scale at the end of this time, a signal pulse called **Gate Bump** is sent to the exit gate to encourage the animal to move. This cycle is repeated up to 6 times. The **Gate Bump** signal is active for the time set in **Gate Delay** except for the 3rd and 6th bumps where it is active for three times the **Gate Delay**.
9. Another animal can now move onto the scale platform.

3.3.3 Lots, Groups and Set Points

There is provision for maintaining records in up to 20 separate **Lots** (pens), each with its own **Groups**. This allows the operator to move the scale from pen to pen and record data for each pen. The seven Group limits in each lot are governed by eight **Set Points**. The grouped weights are automatically saved in the Model 580R memory. The **Gate Trigger** value is used in the **Pre Sort** process to determine if the rear gate should be closed.

Set Point	Group Description
Set Point 8	Weights above this point are Ignored
Set Point 7	Group 7 is between Set Point 7 and Set Point 8
Set Point 6	Group 6 is between Set Point 6 and Set Point 7
Set Point 5	Group 5 is between Set Point 5 and Set Point 6
Set Point 4	Group 4 is between Set Point 4 and Set Point 5
Set Point 3	Group 3 is between Set Point 3 and Set Point 4
Set Point 2	Group 2 is between Set Point 2 and Set Point 3
Set Point 1	Group 1 is between Set Point 1 and Set Point 2
Gate Trigger	Used in place of Set Point 1 for Pre Sort process Weights below Set Point 1 are Ignored

Note: When working with fewer than 7 groups, start with **Set Point 1** and work up with the unused **Set Points** set to "0" to make them inactive.

3.3.4 Adjusting Lot Numbers, Set Points and Sorting Limits

Note: Lot numbers must be selected before adjusting the set points. If changes are made to any set point, the previous records for that lot will be erased. This procedure is necessary to avoid reclassifying previously sorted weights into newly defined groups.

1. Press **SET POINT**.



Display shows **Gate Trigger** option.



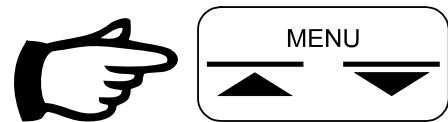
2. Press **ENTER**.



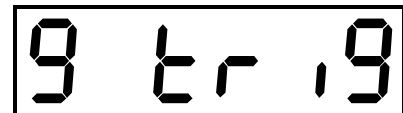
Display shows current value for **Gate Trigger**.



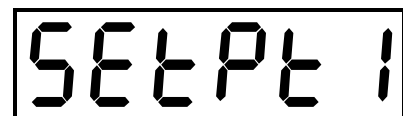
3. Use the **MENU** arrow keys to select the desired **Gate Trigger**.



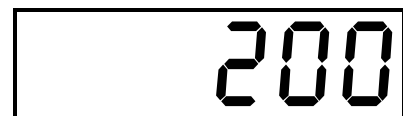
4. Press **ENTER** to save the new value.
Display returns to **Gate Trigger** option.



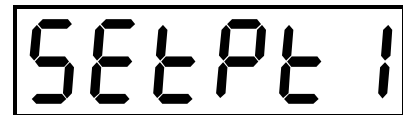
5. Use the **MENU** arrow keys to select the desired **Set Point**. Display shows **Set Point 1** option.



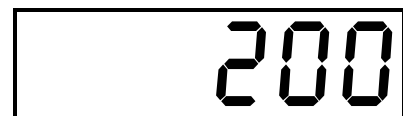
6. Press **ENTER**. Display shows current value for **Set Point 1**.



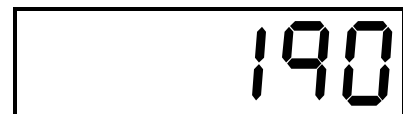
5. Use the **MENU** arrow keys to select the desired **Set Point**. Display shows **Set Point 1** option.



6. Press **ENTER**. Display shows current value for **Set Point 1**.



7. Use the **MENU** arrow keys to select the desired **Set Point** value.



8. Press **ENTER** to accept new value.
Display asks if you are **Sure?** that you wish to proceed. Accepting a new value will erase all previous data stored in this **Lot**.



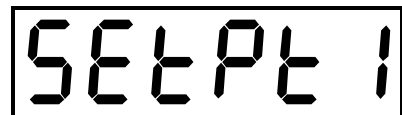
9. Press **ENTER** to clear the data.



10. Or, press **EXIT** to cancel and return to **Set Point** menu.



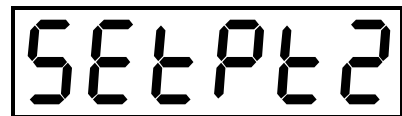
Display returns to **Set Point 1** option.



11. Press **EXIT** to return to normal weighing.



12. Or, use the **MENU** Arrow keys to proceed to the next Set Point and repeat as in Step 5.

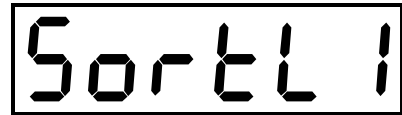


3.3.5 Sorting Limits & Lot Setting

Provision has been made to limit the number of animals that are sorted into each group. This feature is used when only a small number of animals are required.

For example; if a buyer wanted only 20 animals of a certain size to be selected from a pen of 500, he would set the **Sort Limit** for the desired group to 20. As soon as there are 20 animals of the desired weight sorted, the Model 580R will stop sorting. A **Sort Limit** of "0" disables this feature for the corresponding group.

1. From **Set Point** menu use the **MENU** keys to scroll to the **Sorting Limits**. Display shows **Sorting Limit 1**.

A rectangular digital display with a black border showing the text "SortL1" in a black, monospaced font.

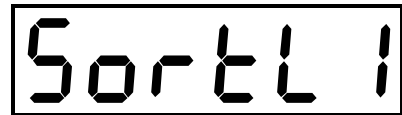
2. Press **ENTER**. Display shows the current **Sorting Limit 1** value. All status indicators flash.

A rectangular digital display with a black border showing the number "50" in a black, monospaced font.

3. Use the **MENU** Arrow keys to adjust the value as desired.

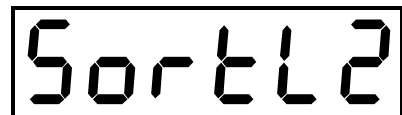
A rectangular digital display with a black border showing the number "20" in a black, monospaced font.

4. Press **ENTER**. Display returns to **Sorting Limit 1** menu item.

A rectangular digital display with a black border showing the text "SortL1" in a black, monospaced font.

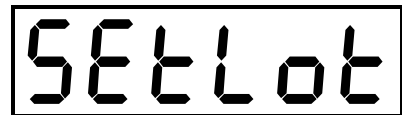
5. Press **EXIT** to return to normal weighing.

6. Or, use the **MENU** Arrow keys to proceed to the next **Sorting Limit**. Proceed as in Step 2 above.

A rectangular digital display with a black border showing the text "SortL2" in a black, monospaced font.

Set Points and **Sort Limits** for up to 20 **Lots** (or pens) can be configured.

1. From **Set Point** menu use the **MENU** keys to scroll to the **Set Lot** menu.

A rectangular digital display with a black border showing the text "SEtLot" in a black, monospaced font.

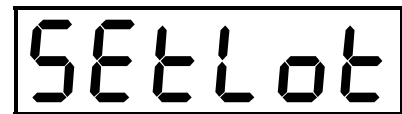
2. Press **ENTER**. Display shows **Lot Number** which is currently set to receive weight data.

A rectangular digital display with a black border showing the number "1" in a black, monospaced font.

3. Use the **MENU** arrow keys to select the desired **Lot Number**.

A rectangular digital display with a black border showing the number "2" in a black, monospaced font.

4. Press **ENTER**. Display returns to **Set Lot** option.

A rectangular digital display with a black border showing the text "SEtLot" in a black, monospaced font.

3.3.6 Clearing Lot Data

Data from individual lots can be cleared from memory by using the **Clear Lot** option.

1. From the **SET POINT** menu use the **MENU** keys to scroll to the **Clear Lot** option.
2. Press the **ENTER** key. Display shows **Lot?** momentarily.

Display shows the first **Lot** with data stored in memory. All status indicators flash.
3. Press the **ENTER** key. Display asks if you are **SURE?** that you want to clear all the data from the memory.
4. To proceed with Clearing the data press the **ENTER** key again. Display shows **-Busy-** while records are being cleared.

Display shows **-done-** momentarily.
5. To cancel the Clearing process use the **EXIT** key to return to **CLEAR** menu option. Display returns to **Lot?** menu option.

CLrLot

Lot?

1

SURE ?

-BUSY-

-done-

Lot?

3.3.7 Memory Free

Model 580R has sufficient memory to store weight data on approximately 1200 animals.

1. From the **SET POINT** menu use the **MENU** keys to scroll to the **Free** option.

FrEE

2. Press the **ENTER** key. Display shows the number of memory locations still available for weight and associated data.



3. Press the **ENTER** or **EXIT** key to return to **FREE** menu option.



3.3.8 Example: Hog Sorting

Automatic gate controls (pneumatic cylinders with solenoids) are normally used for hog sorting.

For this example, the producer wants:

- rate of gain information on his smaller hogs (180 to 220 lb)
- paint marker on hogs just under market weight (220 to 235 lb)
- market weight hogs (over 235 lb) will be sorted by automatic gate into the shipping pen.

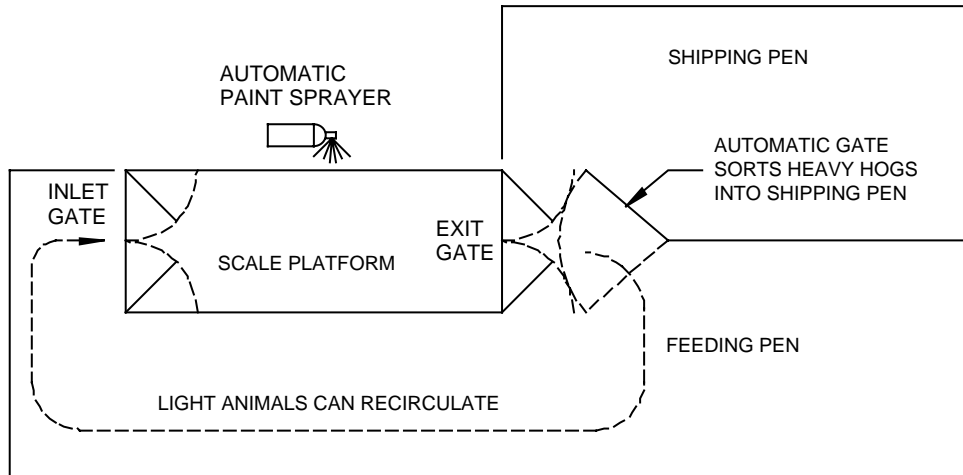
Parameters are set as follows:

Set Point	Set Point Value
Set Point 4	330 lb
Set Point 3	235 lb
Set Point 2	220 lb
Set Point 1	180 lb
Gate Trigger	200 lb

Set Points 5 through 8 are set to 0

With the above Sorting Parameter Settings, the Sorting Groups are:

Weight on Scale	Indicator Action
Above 330 lb	Ignored
235 to 330 lb	Recorded into Group 3 (market pen)
220 to 235 lb	Recorded into Group 2 (feeder pen), painted
180 to 220 lb	Recorded into Group 1 (feeder pen)
Below 180 lb	Ignored



1. A hog weighing 195 lb steps onto the scale platform. It will be registered in the **Group 1** because it is between the **Set Point 1** (180 lb) and **Set Point 2** (220 lb).

Sort

Grp 1

Display will flash **-SAVE-**, then the weight (195 lb) will be locked onto the LCD. The **Unit** indicator (lb) will flash until the hog steps off the scale.

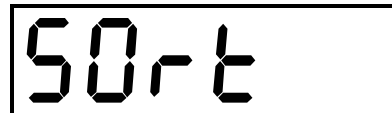
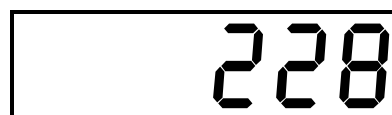
-SAVE-

195

2. Display will continue to indicate 195 lb until the entire weight is removed from the platform.

A rectangular digital display showing the number 195 in a seven-segment font.A rectangular digital display showing the number 0 in a seven-segment font.

3. When a single hog (228 lb) steps onto the platform, the sorting process is started again. The weight will register in **Group 2** because it is between the **Set Point 2** (220 lb) and **Set Point 3** (235 lb).

A rectangular digital display showing the word "Sort" in a seven-segment font.A rectangular digital display showing "Grp 2" in a seven-segment font.A rectangular digital display showing the number 228 in a seven-segment font.

3.4 View Total

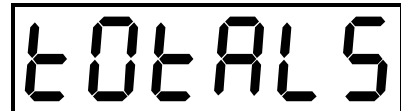
This key starts the visual reporting function. When the Model 580R enters its reporting format, it will cycle through the data for each **Lot**. The numbers are repeated to permit the operator to record the information and to double-check the groups and numbers. The display will remain in the **VIEW TOTAL** cycle until the **EXIT** key is held down.

Note: Weights may have been recorded using both lb and kg. The Model 580R will report all records in the units currently shown by the status indicator.

1. Press **VIEW TOTAL**.



Display shows **totals**, then asks briefly for the **Lot?**.



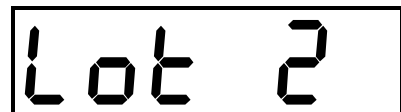
Display then shows the number of the first **Lot** with weight data. Status indicators all flash.



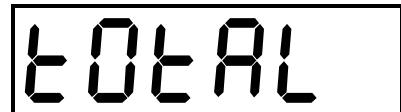
2. Use the **MENU** keys to select the lot which you wish to view.



3. Press **ENTER**. Display shows, in sequence, **Lot Number**.



Display shows **Total** for a second then continues its sequence below.



Total weight of the **Lot** is 74880 lb.



Display shows number of **Hits** or weight records in the **Lot**.

HITS

A total of 327 animal weights have been recorded in the **Lot**.

327

Display shows **Ave** (average) weight in the **Lot**.

Ave

Average weight of the 327 records is 229.1 lb.

229.1

Display returns to **Lot** number and begins the sequence again.

Lot 2

4. To view the totals for the **Groups** within the **Lot**, press **ENTER**.
Or, to return to normal weighing press **EXIT**.



Display shows **GRP 1** (Group 1) for a second then continues its sequence below.

GRP 1

Display shows **Total** momentarily then continues its sequence below.

TOTAL

Total weight of the **Group** is 21163 lb.

21163

Display shows number of **Hits** or weight records in the **Group**.

HITS

There are 103 weights in group 1.

103

Display shows **Ave** (average) weight in the **Group**.

Ave

Average weight of the 103 records is 205.5 lb.

205.5

Display returns to **Group** number and begins the sequence again.

GRP 1

- To view the totals for the next **Group** press **ENTER**.
Or, to return to **Lot** selection press **EXIT**.



3.5 Print

Model 580R has storage memory for up to 1200 weight readings. Data can be sent to a computer or printer connected to either the serial or parallel port. Information can be supplied in either basic or detailed formats. Make sure the ports are enabled before printing. See Section 6 on page 54 for port formats.

Totals for each **Lot** are also available in summary on the Model 580R display. To view individual Lot summaries without printing, go up to **VIEW TOTAL** Section 3.4 on page 18.

- Press the **PRINT** key. Display shows **Detailed Sort Report** menu option. Press **ENTER** to proceed;
Or, go to Step 3 for basic format.

DETA IL

- Press **ENTER** to send data to the computer or printer. Display shows -**Busy**- while data transfer is being made. See Examples 3.5.1 on pages 22 and 23.

-BUSY-

Display returns to Detail menu option.
Or, go to Step 3 for basic format.

DETA IL

- Use the **MENU** keys to select basic format. Display shows **Basic Sort Report** menu option.

BAS IC

4. Press **ENTER**. Display shows **Lot?** momentarily.

A rectangular digital display showing the text "Lot?" in a seven-segment font.

Display then shows the number of the first **Lot** with weight data. Status indicators all flash.

A rectangular digital display showing the number "1" in a seven-segment font.

5. Use the **MENU** keys to select the desired **Lot**.

A rectangular digital display showing the number "2" in a seven-segment font.

6. Press **ENTER**. Display shows **-Busy-** while data transfer is being made. See examples below.

A rectangular digital display showing the text "-BUSY-" in a seven-segment font.

Display shows **Basic Sort Report** menu option.

A rectangular digital display showing the text "BAS IC" in a seven-segment font.

3.5.1 Example: Basic Report To Printer

```
Sorted Weight Basic Report

Report Date:      2000-09-05
Report Time:      10:55:18

Lot 1

Group 1
  Total Weight:      21163 lb
    Hits:      103
Average Weight:      205.5 lb

Group 2
  Total Weight:      29258 lb
    Hits:      127
Average Weight:      230.4 lb

Group 3
  Total Weight:      24457 lb
    Hits:      97
Average Weight:      252.2 lb

All Groups
  Total Weight:      74878 lb
    Hits:      327
Average Weight:      229.1 lb

Setpoint  1:      180 lb
Setpoint  2:      220 lb
Setpoint  3:      235 lb
Setpoint  4:      330 lb

Report Finished
```

3.5.2 Example: Detailed Report to Printer

```

Sorted Weight Detailed Report

Report Date:      2000-09-05
Report Time:      10:55:18

Lot 1

Group 1
  Total Weight:      21163 lb
    Hits:      103
Average Weight:      205.5 lb

Group 2
  Total Weight:      29258 lb
    Hits:      127
Average Weight:      230.4 lb

Group 3
  Total Weight:      24457 lb
    Hits:      97
Average Weight:      252.2 lb

All Groups
  Total Weight:      74878 lb
    Hits:      327
Average Weight:      229.1 lb

Setpoint  1:      180 lb
Setpoint  2:      220 lb
Setpoint  3:      235 lb
Setpoint  4:      330 lb

Records To Process:  327

Record, Lot, Weight, Units, Date, Time
1, 1,      239, lb, 2000-09-05, 10:52:38
2, 1,      217, lb, 2000-09-05, 10:54:19
3, 1,      226, lb, 2000-09-05, 10:56:53

           etc. to last record

327, 1,      205, lb, 2000-09-05, 22:41:06

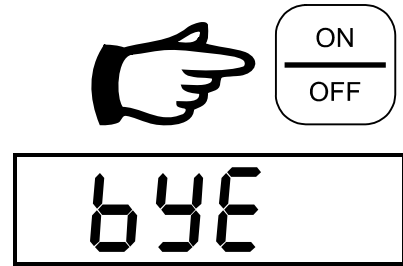
Records Processed:      327

Report Finished
    
```

3.6 Turning the Indicator Off

1. To turn the Indicator off, press **ON/OFF**.

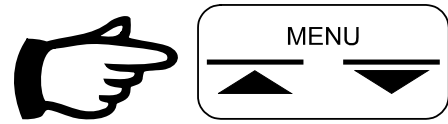
Display shows **BYE** and the indicator shuts off.



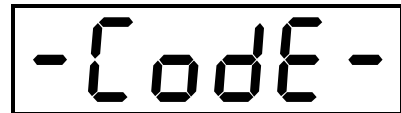
4. Menus

There are two **MENU** keys on the Model 580R face to be used for setting operating parameters.

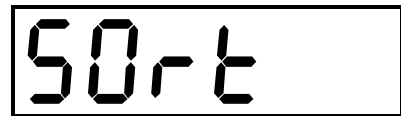
1. Press either **MENU** key. Use this key to scroll through the options.



A password is used to restrict access to the menus. If you require access to the menus, contact your dealer for the password.



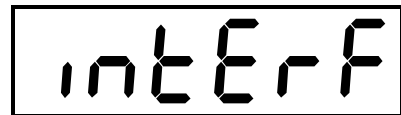
Sort - Controls the operating parameters of the sorting feature. See Section 4.1 on page 25.



Setup - Controls the operating parameters of the Model 580R. See Section 4.2 on page 3535.



Interface - Sets the operator interface parameters. See Section 4.3 on page 45.

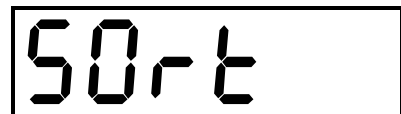


2. To return to normal weighing at any time use the **EXIT** key.

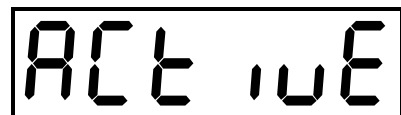


4.1 Sort Menu

To activate the **Sorting** feature use the **MENU** keys. Press either **MENU** key. Display shows the **Sort Menu** option.



Press **ENTER**. Display shows **Active**. See Section 4.1.1 on page 2727.



Use the **MENU** arrow keys to locate the desired sorting parameter. **Samples** is the number of consecutive readings (samples) required within the deviation window for an acceptable sort record. See Section 4.1.2 on page 2828.

SAPLS

Deviation sets the size of the sample deviation allowed for an acceptable sort record. See Section 4.1.3 on page 28.

dEv

Gate Delay sets the time for output signals to remain active. It is used to control the length of **Gate Bump** and **Gate Reset** signals. See Section 4.1.4 on page 29.

gdELAY

Gate sets the **Gate Reset** to either **Auto** or **User**. See Section 4.1.5 on page 29.

gATE

Gate Release sets the weight level for Model 580R to send out the **Gate Reset** signal and begin watching for the next animal to step onto the scale. See section 4.1.6 on page 30.

gATrEL

Pre-Sample monitors the scale for valid weights to be sorted. It is set as a percentage of **Samples** (section 4.1.2 on page 28). Model 580R uses **Pre-Sample** and **Deviation** (section 4.1.3 on page 28) to determine that an animal is on the scale and ready to be sorted.

PrESAP

Inlet Gate Closed activates Inlet Gate closure detection through the I/O port.

gCLoSE

Sort Timeout sets length of time before the scale determines it is impossible to perform a sort on the current animal.

Sort 1_E

Clear All Records is used to erase saved individual animal weights from memory.

CLRALL

Save Records tells Model 580R to save individual animal weights. **Total** and **Average** for each **Group** and Lot are always saved. See Section 4.1.11 on page 33.

SAVR EC

I/O REV allows the operator to reverse the output control lines from normally high to normally low. See Section 4.1.12 on page 34.

IO REV

Press **EXIT** to return to **Sort** menu option.

Sort

4.1.1 Sort Active

Display shows sorting feature is **Active**.

1. Press **ENTER**. Display shows **Sort** status menu. All status indicators flash.
2. Use the **MENU** keys to change status as required.
3. Press **ENTER** to accept the new status. Display returns to **Active** menu option.

ACT 1WE

OFF

ON

ACT 1WE

4.1.2 Sort Samples

This parameter is used together with **Sort Deviation** to create a “Sorting Window”. See example in Section 4.1.3 on page 28.

Setting the samples to a smaller number allows Model 580R to find a record more quickly but the record may not be as accurate as when a larger number is used.

Display shows **Samples** menu option.

1. Press **ENTER**. Display shows current **Samples** setting. All status indicators flash.

2. Use the **MENU** arrow keys to change to a new value.

3. Press **ENTER** to accept the new value. Display returns to **Samples** menu option. Status indicators stop flashing.

4.1.3 Sort Deviation

This parameter is used together with **Sort Samples** above to create a “Sorting Window”.

Example: The **Deviation** is set to 10 lb and the **Samples** is set to 50. When Model 580R has 50 consecutive readings within a 10 lb range, it takes an average of the 50 readings and calls it a “record”. This record is shown on the display and is stored in memory.

Setting the deviation to a larger number allows Model 580R to find a record more quickly but the record may not be as accurate as when a smaller number is used.

Display shows **Deviation** menu option.

1. Press **ENTER**. Display shows current deviation setting. All status indicators flash.
2. Use the **MENU** arrow keys to change to a new value.
3. Press **ENTER** to accept the new status. Display returns to **Deviation** menu option. Status indicators stop flashing.

4.1.4 Gate Delay

Gate Delay is a timer function used to set the length of time, in seconds, that the **Gate Reset** and **Gate Bump** signals are active.

This parameter also sets the time that the **Group Number** is shown on the display.

Display shows **Gate Delay** menu option.

1. Press **ENTER**. Display shows current **Gate Delay** setting. All status indicators flash.
2. Use the **MENU** arrow keys to change to a new value.
3. Press **ENTER** to accept the new value. Display returns to **Gate Delay** menu option. Status indicators stop flashing.

4.1.5 Gate Reset

If Model 580R is used to control gates as shown in Section 3.3.8 on page 15, there is an option to have the **Gate Reset** signal controlled by Model 580R or by the User. If **Auto** is selected, the **Gate Reset** signal

will be sent by Model 580R; if **User** is selected, the signal will be sent when Model 580R receives an input signal from the User.

Display shows **Gate** menu option.

1. Press **ENTER**. Display shows **Gate** status menu. All status indicators flash.

2. Use the **MENU** keys to change status as required.

3. Press **ENTER** to accept the new status. Display returns to **Gate** menu option. Status indicators stop flashing.

4.1.6 Gate Release

Gate Release sets the weight, as a percentage of the **Sort 1** weight value. When the weight on the platform drops to **Gate Release** value, Model 580R assumes the animal has left. It then prepares to accept a new animal.

Display shows **Gate Release** menu option.

1. Press **ENTER**. Display shows **Gate Release** value as a % of **Sort 1** value. All status indicators flash.

2. Use the **MENU** keys to change status as required.

3. Press **ENTER** to accept the new status. Display returns to **Gate Release** menu option. Status indicators stop flashing.

4.1.7 Pre-Sample

Model 580R uses **Pre-Sample** to check continuously for valid weights before it begins to do a Sort calculation. **Pre-Sample** uses the **Deviation** and a % of the **Sample** parameter to check if there is a valid weight on the scale.

Display shows **Pre-Sample** menu option.

1. Press **ENTER**. Display shows current value as a percentage of **Sample** parameter. All status indicators flash.
2. Use the **MENU** keys to change the percentage as required.
3. Press **ENTER** to accept the new value. Display returns to **Pre-Sample** menu option. Status indicators stop flashing.

4.1.8 Inlet Gate Closed

If the **Inlet Gate Closed** feature is enabled, after the Pre Sort process the Sort process will not begin until the Inlet Gate has fully closed. An external sensor is required to activate pin 10 on the I/O port to indicate the gate closure. If the gate does not close within the **Sort Timeout** period, the Model 580R will attempt to clear the scale platform.

Display shows **Inlet Gate Closed** menu option.

1. Press **ENTER**. Display shows **Inlet Gate Closed** status. All status indicators flash.
2. Use the **MENU** keys to change status as required.

3. Press **ENTER** to accept the new status.
Display returns to **Inlet Gale Closed** menu option.

A digital display showing the text "9CLoSE" in a seven-segment font, enclosed in a rectangular border.

4.1.9 Sort Timeout

If Model 580R is unable to obtain a stable Sort value because of excessive fluctuations within a specified time, it will release the animal.

If the weight on the scale is below the highest **Set Point**, **Gate Reset** is activated and all gates are allowed to return to normal position. This will allow the animal to exit via the Inlet Gate.

If the weight on the scale is above the highest **Set Point** (2 animals are on the scale), **Sort 1** gate is activated and the animals are allowed to leave. No records are kept in this case.

Display shows **Sort Timeout** menu option.

A digital display showing the text "Sort 1-E" in a seven-segment font, enclosed in a rectangular border.

1. Press **ENTER**. Display shows current value. All status indicators flash.
2. Use the **MENU** keys to change value as required.
3. Press **ENTER** to accept the new status.
Display returns to **Sort Timeout** menu option. Status indicators stop flashing.

A digital display showing the numerical value "10.000" in a seven-segment font, enclosed in a rectangular border.

A digital display showing the numerical value "12.000" in a seven-segment font, enclosed in a rectangular border.

A digital display showing the text "Sort 1-E" in a seven-segment font, enclosed in a rectangular border.

4.1.10 Clear All

To erase all weight data for all lots and groups use this menu option.

Display shows **Clear All** menu option.

A digital display showing the text "CLRALL" in a seven-segment font, enclosed in a rectangular border.

1. Press **ENTER**. Display asks if you are **Sure?** that you wish to clear all the data from memory.
2. If you do **NOT** wish to clear the memory press **EXIT**
3. To clear the memory, press the **ENTER** key again. Display shows **- busy -** momentarily, then returns to status menu. All status indicators flash.

Display returns to the **Clear All** menu option.



4.1.11 Save Records

Model 580R is capable of saving **Lot** totals with or without individual weights.

Display shows **Save Records** menu option.

1. Press **ENTER**. Display shows **Save Records** status. All status indicators flash.
2. Use the **MENU** keys to change status as required.
3. Press **ENTER** to accept the new status. Display returns to **Save Records** menu option.

4.1.12 I/O Reversal

Model 580R output control signals can be set to activate high (+5 VDC to activate gate) or activate low (0 VDC to activate gate). This **MENU** option allows the operator to select the level he wishes for his application. See Section 2.2.4 on page 6 for I/O connector details.

Display shows **I/O Reversal** menu option.

A rectangular digital display showing the text "IO rEU" in a monospaced font.

1. Press **ENTER**. Display shows current status (0 VDC to activate gate in this case). All status indicators flash.

A rectangular digital display showing the text "on" in a monospaced font.

2. Use the **MENU** keys to change status as required. (+5 VDC to activate gate in this case)

A rectangular digital display showing the text "off" in a monospaced font.

3. Press **ENTER** to accept the new status. Display returns to **I/O Reversal** menu option. Status indicators stop flashing.

A rectangular digital display showing the text "IO rEU" in a monospaced font.

4.2 Setup Menu

The indicator has several menus that are used to set the operating parameters. Menus for adjusting parameters are listed below. Most parameters are set at the factory and there should normally be no need for operator adjustments.

Note: Be sure to read and **fully understand** the directions before making **any modifications** to the indicator setup, failure to do so may render the indicator **inoperable**.

Using the **MENU** arrow keys select the **Setup** menu.

1. Indicator is in **Setup Mode**. Press **ENTER**.

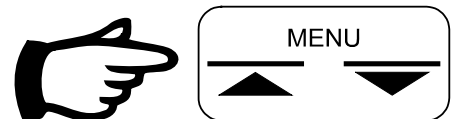
SETUP



Display shows **Calibration Adjustment** option. See section 4.2.1 on page 37.

CAL 16

2. Press either **MENU** key to scroll through the **Setup** parameters.



Sets **Display Update Rate**. See section 4.2.2 on page 38.

d RATE

Sets **Display Average**. See section 4.2.3 on page 39.

d AVE

Sets **Sort Average**. See section 4.2.4 on page 39.

Sort AVE

Sets **Factory Calibration**. See section 4.2.5 on page 40. **Note: For Factory Use Only.**

A rectangular LCD display showing the word "FACTrY" in a seven-segment font. The letters are white on a black background.

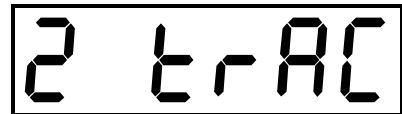
Sets **Offset Adjustment**. See section 4.2.6 on page 41.

A rectangular LCD display showing the word "oFFSEt" in a seven-segment font. The letters are white on a black background.

Sets **Amplifier Range**. See section 4.2.7 on page 41.

A rectangular LCD display showing the word "rAnGE" in a seven-segment font. The letters are white on a black background.

Sets the **Zero Tracking**. See section 4.2.8 on page 42.

A rectangular LCD display showing the text "2 tRAC" in a seven-segment font. The letters are white on a black background.

Sets **Over Range Rating** of the system. See section 4.2.9 on page 43.

A rectangular LCD display showing the text "ouEr r" in a seven-segment font. The letters are white on a black background.

Sets the maximum operating **Zero Key** operating range. See section 4.2.10 on page 44.

A rectangular LCD display showing the text "2ErO r" in a seven-segment font. The letters are white on a black background.

Activates **System Report** via Serial Port #1. See section 4.2.11 on page 44. **Note: For Factory use only.**

A rectangular LCD display showing the text "SYSrPt" in a seven-segment font. The letters are white on a black background.

4.2.1 Calibration Adjustment

All indicators are calibrated at the factory with a fixed input signal. This signal is assigned a calibration factor. It may be necessary to adjust this calibration factor in order to obtain a more accurate weight reading.

Example: If a scale reading is 1% lower than the actual weight on the scale, the calibration factor should be increased by 1%.

- Scale display: 10,000
- Actual weight: 10,100
- Old Calibration factor: 5,000
- New Calibration factor: 5,050

$$\frac{\text{OldCalibrationFactor}}{\text{ScaleDisplay}} = \frac{\text{NewCalibrationFactor}}{\text{ActualWeight}}$$

$$\frac{5,000}{10,000} = \frac{\text{NewCalibrationFactor}}{10,100}$$

$$\text{NewCalibrationFactor} = \frac{(5,000 \times 10,100)}{10,000}$$

$$\text{NewCalibrationFactor} = 5,050$$

$$\text{NewCalibrationFactor} = \frac{(\text{OldCalibrationFactor} \times \text{ActualWeight})}{\text{ScaleDisplay}}$$

Note: Care should be taken when using this function, contact the factory at 1-800-419-1189 for help.

1. From the **Calibration Adjustment** menu option, press the **ENTER** key.

Display shows the current **Calibration Factor**. All Status Indicators flash.

CAL 16

5000

- Use the **MENU** Arrow keys to adjust the value as desired.
- To accept the new setting, press the **ENTER** key.

The display briefly shows **Slope**, then a number, then shows **Pass**.

5050

9.88

SLOPE

-PASS-

- Press the **ENTER** key. The **Calibration Adjustment** menu option is displayed once again.

CAL 16

If Error Messages appear see section 5 on page 53.

Err 01

4.2.2 Display Update Rate

The length of time between changes on the **LCD** is called the **Display Update Rate**. This time is shown in seconds. Factory setting is normally 0.300 seconds.

- From the **Display Update Rate** menu option, press the **ENTER** key.

d RATE

Display shows the current **Display Update Rate** in seconds. All Status Indicators flash.

0.200

- Use the **MENU** Arrow keys to adjust the value as desired.

0.300

- To accept the new setting, press the **ENTER** key. Status Indicators stop flashing. Display shows the **Display Update Rate** menu option once again.

d RATE

4.2.3 Display Average

The number of readings that are averaged for each display update is called the **Display Average**. Factory default is 25.

1. From the **Display Average** menu option, press the **ENTER** key.

A digital display showing the text 'd AVE' in a seven-segment font.

Display shows the current **Display Average**. All Status Indicators flash.

A digital display showing the number '25' in a seven-segment font.

2. Use the **MENU** Arrow keys to adjust the value as desired.

A digital display showing the number '20' in a seven-segment font.

3. To accept the new setting, press the **ENTER** key. Status Indicators stop flashing. Display shows the **Display Average** menu option once again.

A digital display showing the text 'd AVE' in a seven-segment font.

4.2.4 Sort Average

The number of readings that are averaged for each Sort Sample is called the **Sort Average**. Factory default is 7.

1. From the **Sort Average** menu option, press the **ENTER** key.

A digital display showing the text 'Sort AVE' in a seven-segment font.

Display shows the current **Sort Average**. All Status Indicators flash.

A digital display showing the number '7' in a seven-segment font.

2. Use the **MENU** Arrow keys to adjust the value as desired.

A digital display showing the number '10' in a seven-segment font.

3. To accept the new setting, press the **ENTER** key. Status Indicators stop flashing. Display shows **Sort Average** menu option once again.

A digital display showing the text 'Sort AVE' in a seven-segment font.

4.2.5 Factory Calibration

For factory use only.

4.2.6 Offset Adjustment

The **Offset Adjustment** is used as a coarse zero adjustment to compensate for static loads such as scale platforms.

Note: This operation should not be performed without prior factory authorization as improper use can result in system failure.

1. From the **Offset Adjustment** menu option, press the **ENTER** key.

A digital display showing the word "OFFSET" in a seven-segment font.

Display shows a number on the display. This number will alternate with a “DAC Code”

A digital display showing the number "65536" in a seven-segment font.

The DAC Code will count upward from -31 until a stable value is reached. Procedure normally takes 30 to 45 seconds.

A digital display showing "05:-31" in a seven-segment font, where the colon is positioned between the 5 and the -31.

The **Offset Adjustment** menu option is displayed once again.

A digital display showing the word "OFFSET" in a seven-segment font.

4.2.7 Amplifier Range

Amplifier Range is usually set at the factory and there is normally no need to change it

Load cell signals are normally rated in mV/V at full load. Typical values are: 1mV/V, 2mV/V, 4mV/V, 8mV/V. When selecting range value, be sure that the value is equal to or larger than the load cell signal.

Example: for a load cell with 2.5 mV/V use the 4 mV/V setting
 for a load cell with 1.8 mV/V use the 2 mV/V setting.

It is very likely that other parameters in the **Setup** and **Interface** menus will need to be changed after this procedure is complete.

1. From the **Amplifier Range** menu option, press the **ENTER** key.

Display shows the current **Amplifier Range** setting.

2. Use the **MENU** Arrow keys to select the correct value.

3. To accept the new setting press **ENTER**. Display returns to **Amplifier Range** menu option.

4.2.8 Zero Tracking

In some applications, the scale platform may be subject to external material build-up due to such things as ice or mud. In these instances, the indicator can be set (**Zero Tracking On**) to ignore gradual changes and automatically zero itself. Factory setting is normally **On**.

Note: As the name implies, **Zero Tracking** only functions when the indicator is at or near a zero (0) reading.

1. From the **Zero Tracking** menu option, press the **ENTER** key.

Display shows the current **Zero Tracking** status. All Status Indicators flash.

2. To change the setting, press one of the **MENU** keys.

3. To accept the new setting, press the **ENTER** key. Display shows the **Zero Tracking** menu option once again. Status Indicators stop flashing.

4.2.9 Over Range

Over Range setting is used to warn the operator that the capacity of the scale system has been exceeded. Factory setting is normally 99999. When the weight exceeds the **Over Range** setting, the audio alarm sounds, all status indicators flash and the display flashes **Over**.

1. From the **Over Range** menu option, press the **ENTER** key.

Display shows the current **Over Range** setting. All Status Indicators flash.

2. Use the **MENU** Arrow keys to adjust the correct value.

3. To accept the new setting, press the **ENTER** key. Display shows **Over Range** menu option once again. Status Indicators stop flashing.

A rectangular digital display showing the text "over r" in a seven-segment font. The letters are black on a white background.

A rectangular digital display showing the number "6000" in a seven-segment font. The digits are black on a white background.

A rectangular digital display showing the number "10000" in a seven-segment font. The digits are black on a white background.

A rectangular digital display showing the text "over r" in a seven-segment font. The letters are black on a white background.

4.2.10 Zero Range

This parameter should be used in conjunction with the **Over Range** setting above. Normally the operator can use the **Zero** key to remove up to 100% of the scale capacity on the display. Occasionally, because of the nature of the operation, it is necessary to limit the amount of weight which the **Zero** key can remove.

Example: The **Over Range** setting is at 10,000kg. By setting the **Zero Range** to 5%, the **Zero** key will function only when the weight on the scale is below 500kg.

1. From the **Zero Range** menu option, press the **ENTER** key.

A digital display showing the text "Zero r" in a seven-segment font. The characters are white on a black background.

Display shows the current **Zero Range** setting (1 to 100%). All Status Indicators flash.

A digital display showing the number "100" in a seven-segment font. The digits are white on a black background.

2. Use the **MENU** Arrow keys to adjust the correct value.

A digital display showing the number "5" in a seven-segment font. The digit is white on a black background.

3. To accept the new setting, press the **ENTER** key. Display shows the **Zero Range** menu option once again. Status Indicators stop flashing.

A digital display showing the text "Zero r" in a seven-segment font. The characters are white on a black background.

4.2.11 System Report

For factory use only.

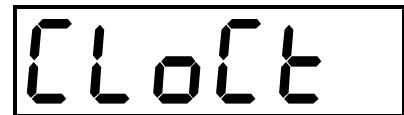
4.3 Interface Menu

Using the **MENU** arrow keys select the **Interface** menu.

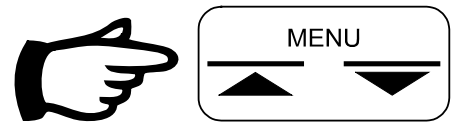
1. Indicator is in **Interface Mode**. Press **ENTER**.



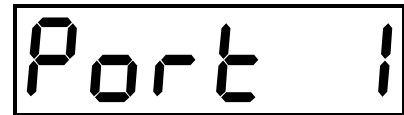
Display shows **Clock** adjustment option (time & date). See section 4.3.1 on page 46.



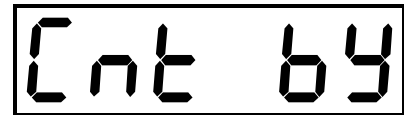
2. Press either **MENU** key to scroll through the **Interface** parameters.



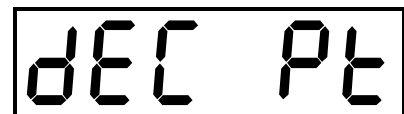
Sets operating parameters for the **Serial Ports**. See section 4.3.2 on page 48.



Sets the size of the **Display Count by** (1, 2, 5, 10 etc.) See section 4.3.3 on page 50.



Sets the location of the **Decimal Point** on the display. See section 4.3.4 on page 51.



Sets the operating parameters of the Model 580R for the printer **Printer**. See section 4.3.5 on page 51.



4.3.1 Clock Adjustment - Time & Date

The indicator has a Real Time Clock which operates internally at all times. The clock retains both time and date. The indicator is set at the factory to **North American Mountain Time**. Adjust the clock to your specific time zone. Menus for adjusting the time & date are listed below.

1. From **Interface** menu press the **ENTER** key.



Display shows **Clock** menu option.

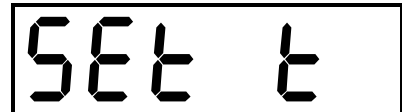


2. Press the **ENTER** to check or adjust the clock.

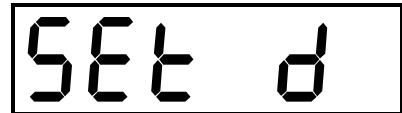
3. Use the **MENU** Arrow keys to scroll through the clock settings. **Current** shows the current time & date. The display alternates between “YY:MM:DD” and “HH:MM:SS”.



Set Time - Adjusts the time. See Section 4.3.1.1 on page 47.



Set Date - Adjusts the date. See Section 4.3.1.2 on page 47

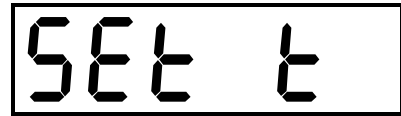


4. Use the **EXIT** key to return to **Clock** menu.



4.3.1.1 Set Time

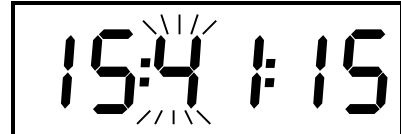
1. From **Set Time** menu press the **ENTER** key.



Display shows **Current** time. The left hand digit flashes. All Status Indicators flash.



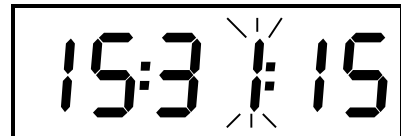
2. Use the **ENTER** key to scroll to the right until the digit to be changed begins to flash.



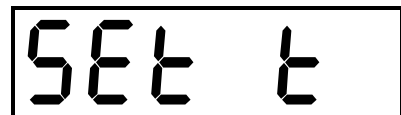
3. Use the **MENU** arrow keys to select the correct digit.



4. Press **ENTER** to accept the new digit. Display shows the new setting. The next digit to the right begins to flash. Proceed as in Step 3 until all digits have been adjusted.

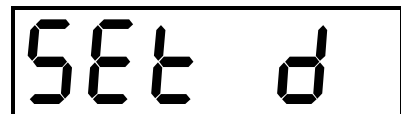


Set Time menu option is displayed. Status Indicators stop flashing.



4.3.1.2 Set Date

1. From **Set Date** menu press the **ENTER** key.



Display shows **Current** date. The left hand digit flashes. All Status Indicators flash.



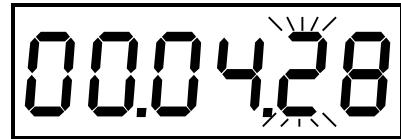
2. Use the **ENTER** key to scroll to the right until the digit to be changed begins to flash.



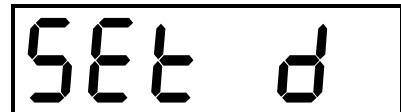
- Use the **MENU** arrow keys to select the correct number



- Press **ENTER** to accept the new digit. Display shows the new setting. The next digit to the right begins to flash. Proceed as in Step 3 until all digits have been adjusted.



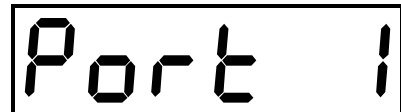
Set Date menu option is displayed once again. Status Indicators stop flashing.



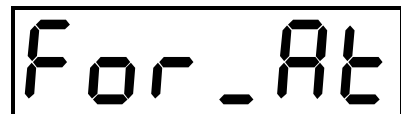
4.3.2 Serial Port

Series 500 (500, 580R, 580P, 565) RS-232 serial ports are configured for 8 data bits, no parity, 1 stop bit. Speed can be set to the following baud rates: 2400, 4800, 9600 (default), 19200, 38400, 76800. Characteristics can be set in the menus below.

- From the **Port 1** menu option, press the **ENTER** key.



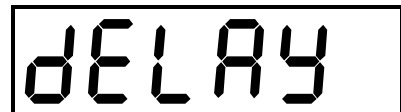
Display shows **Serial Port Format** menu option. See section 4.3.2.1 on page 48.



Adjusts the **Serial Port Baud Rate**. See Section 4.3.2.2 on page 49.

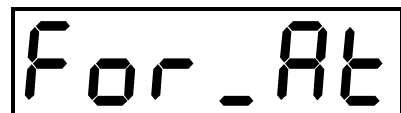


Sets a **Delay** between output strings at the serial port. See Section 4.3.2.3 on page 49.



4.3.2.1 Serial Port Format

- From the **Format** menu option, press the **ENTER** key.



Display shows the current setting. All Status Indicators flash.

The LCD display shows the word "off" in a seven-segment font. The first character is a large bracket-like symbol.

2. Use the **MENU** arrow keys to select the desired output format. See Section 6 on page 54 for options and details.

The LCD display shows the number "7" in a seven-segment font. The first character is a large bracket-like symbol.

3. To accept the new setting, press **ENTER** key. **Format** menu option is displayed once again. Status Indicators stop flashing.

The LCD display shows the text "For_AE" in a seven-segment font.

4.3.2.2 Serial Port Baud Rate

1. From the **Serial Port Baud Rate** menu option, press the **ENTER** key.

The LCD display shows the word "BAUD" in a seven-segment font.

Display shows the current setting. All Status Indicators flash.

The LCD display shows the number "9600" in a seven-segment font.

2. Use the **MENU** arrow keys to select the desired output rate.

The LCD display shows the number "76800" in a seven-segment font.

3. To accept the new setting, press **ENTER**. Display shows **Serial Port Baud Rate** menu option once again. Status Indicators stop flashing.

The LCD display shows the word "BAUD" in a seven-segment font.

4.3.2.3 Serial Port Delay

When interfacing to low speed RS-232 serial devices, a delay between characters can be implemented to prevent input buffer overflows. The **Serial Port Delay** setting controls the character delay length in milliseconds.

1. From the **Serial Port Delay** menu option, press the **ENTER** key.

The LCD display shows the word "DELAY" in a seven-segment font.

Display shows the current **Character Delay** setting. All Status Indicators flash.

A rectangular digital display showing the number 0.000 in a seven-segment font.

2. Use the **MENU** arrow keys to select the desired delay.

A rectangular digital display showing the number 0.200 in a seven-segment font.

3. To accept the new setting, press the **ENTER** key. Display shows **Serial Port Delay** menu option once again. Status Indicators stop flashing.

A rectangular digital display showing the word DELAY in a seven-segment font.

4.3.3 Count By

The Display Resolution of the Indicator can be set to several options called **Count By**.

1. From the **Count By** menu option, press **ENTER**.

A rectangular digital display showing the text Cnt by in a seven-segment font.

Display shows the current **Count By** setting. All Status Indicators flash.

A rectangular digital display showing the number 1 in a seven-segment font.

2. Use the **MENU** arrow keys to select the desired output format.

A rectangular digital display showing the number 5 in a seven-segment font.

3. To accept the new setting, press the **ENTER** key. Display shows the **Count By** menu option once again. Status Indicators stop flashing.

A rectangular digital display showing the text Cnt by in a seven-segment font.

4.3.4 Decimal Point

The Decimal point location can be set as required.

1. From the **Decimal Point** menu option, press the **ENTER** key.

Display shows the current **Decimal Point** setting. All Status Indicators flash.

2. Use the **MENU** arrow keys to select the desired decimal point location

3. To accept the new setting, press the **ENTER** key. Display shows the **Decimal Point** menu option once again. Status Indicators stop flashing.

4.3.5 Printer

Printer **MENU** option sets the configuration and timing of the data being sent to computer or printer.

4.3.5.1 Printer Format

See Section 6 on page 54 for output formats.

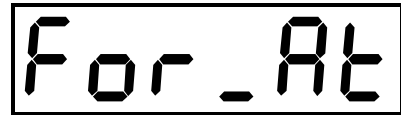
1. From the **Printer** menu option, press **ENTER**.

Display shows **Format** menu option.

Press **ENTER**. Display shows the current **Printer** output format. All status indicators flash.

2. Use the **MENU** arrow keys to select the desired printer output format.

3. Press **ENTER** key to accept the new format. Display returns to **Format** menu option.



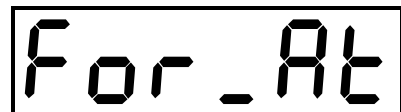
4.3.5.2 Printer Delay

Some printers do not have sufficient buffer space to receive all the data being sent by Model 580R. The output from the can be delayed to prevent overloading the printer buffer.

1. From the **Printer** menu option, press **ENTER**.



Display shows **Format** menu option.



Use the **MENU** keys to scroll to **Delay** menu option.



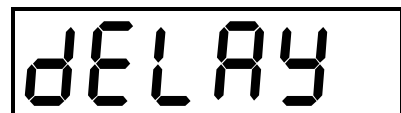
Press **ENTER**. Display shows the current **Printer Delay** setting. All status indicators flash.



2. Use the **MENU** arrow keys to select the desired delay.



3. Press **ENTER** key to accept the new value. Display returns to **Printer Delay** menu option.



5. Error Messages

If the **Factory Calibration** function fails, an error message will be displayed. **Error 01**, **Error 02**, **Error 03** and **Error 04** are defined as **Calibration** errors. These errors are generally caused by not following the calibration procedure correctly.

1. An error has occurred and a **Factory Calibration** error message is displayed.

The image shows a rectangular LCD display with a black border. The text 'Err 01' is displayed in a black, seven-segment font. 'Err' is on the left and '01' is on the right.

Display returns to **Factory Calibration** menu.

The image shows a rectangular LCD display with a black border. The text 'FACTRY' is displayed in a black, seven-segment font. The letters are spaced out across the width of the display.

Error Type	Description
01	Calibration - Full weight equal to "0"
02	Calibration - Load < No load (negative slope)
03	Calibration - Slope too steep
04	Calibration - Slope too shallow
05	Parallel printer busy
08	Zero Offset - Tare Offset out of range - Tried to set too high - Large negative input
09	Zero Offset - Tare Offset out of range - Tried to set too low - Large positive input
10	Menu error - Scroll List can't find a message to match the data.
11	A/D converter - Internal full scale calibration failed
12	A/D converter - Internal Zero calibration failed
13	Least significant digit has less than 4 A/D readings - (Warning only) Legal for trade applications only
14	Zero Offset - Push to Zero key out of range
15	Calibration - CALSET resistor mismatch
16	Parallel Printer - Out of Paper
17	Parallel Printer - Off Line
18	Parallel Printer - General Error

6. Communication Port Protocols

Refer to Section 4.3.2 on page 48 to activate ports.

C OFF: Port disabled. No reports will be transmitted out the port. Remote Communications and EID are still functional if applicable and enabled elsewhere.

C 1: Port enabled. Enables the serial port for **Basic** and **Detailed Sort Reports**.

C 5: Remote display data on **Display Update**. Characters displayed in <> are non-printable ASCII codes, actual '<' and '>' symbols are not transmitted. Items following <1D> represent LED indicators and can include LB, KG, MTN, CZ, NET, ALM.

Display update:

<1C> 104.5<1D>KG

C 11: Weight only on a **Sort** action.

Sort action:

104.5

C 12: Weight with units on a **Sort** action.

Sort action:

104.5 kg

C 13: Weight with units and date & time on a **Sort** action.

Sort action:

104.5 kg

2000-09-05 10:53:26

C 14: Weight with units, ID (if option installed) and date & time on a **Sort** action.

Sort action:

104.6 kg

1234567890

2000-09-05 10:53:26

C 16: Weight only on Display Update

Display update:

104.5

C 17: Weight with units on Display Update

Display update:

104.5 kg

7. Limited Warranty

This warranty applies to all new equipment manufactured by RELIABLE SCALE CORPORATION except when otherwise specified in the Terms of Sale. Warranty is subject to the following terms and conditions:

- All new products are warranted for a period of twelve (12) months from the date of final sale to the end user (maximum 24 months from date of manufacture).
- RELIABLE SCALE CORPORATION shall at its option, repair or replace or refund the purchase price, within a reasonable period of time, after being notified of the alleged defect and after acknowledging that a defect does in fact exist.
- Warranty claims must be submitted in writing by mail, fax or e-mail to RELIABLE SCALE CORPORATION within the warranty period.
- This warranty does not extend to any consequential damage of other equipment, loss of use, commercial or economic loss or inconvenience prior to or during the repair period.
- RELIABLE SCALE CORPORATION is not responsible for any damage or defects caused by misuse, negligence, neglect, modification, improper operation, improper maintenance, or repairs by any unauthorized persons.
- This is the sole warranty applicable to RELIABLE SCALE CORPORATION'S products, and no RELIABLE SCALE CORPORATION employee, agent or dealer has any authority to add to this warranty whatsoever.
- Products for warranty repair must be returned to the factory, freight prepaid by the customer. RELIABLE SCALE CORPORATION is not liable for any cost related to removal, replacement, or shipping of the products or any other associated equipment.
- Except as expressly set forth herein, RELIABLE SCALE CORPORATION makes no representations or warranties of any kind, either express or implied, as to the product, its merchantability or fitness for any intended use or purpose. This clause does not apply where prohibited by law.
- Batteries supplied in or with RELIABLE SCALE CORPORATION products are NOT covered by this warranty.