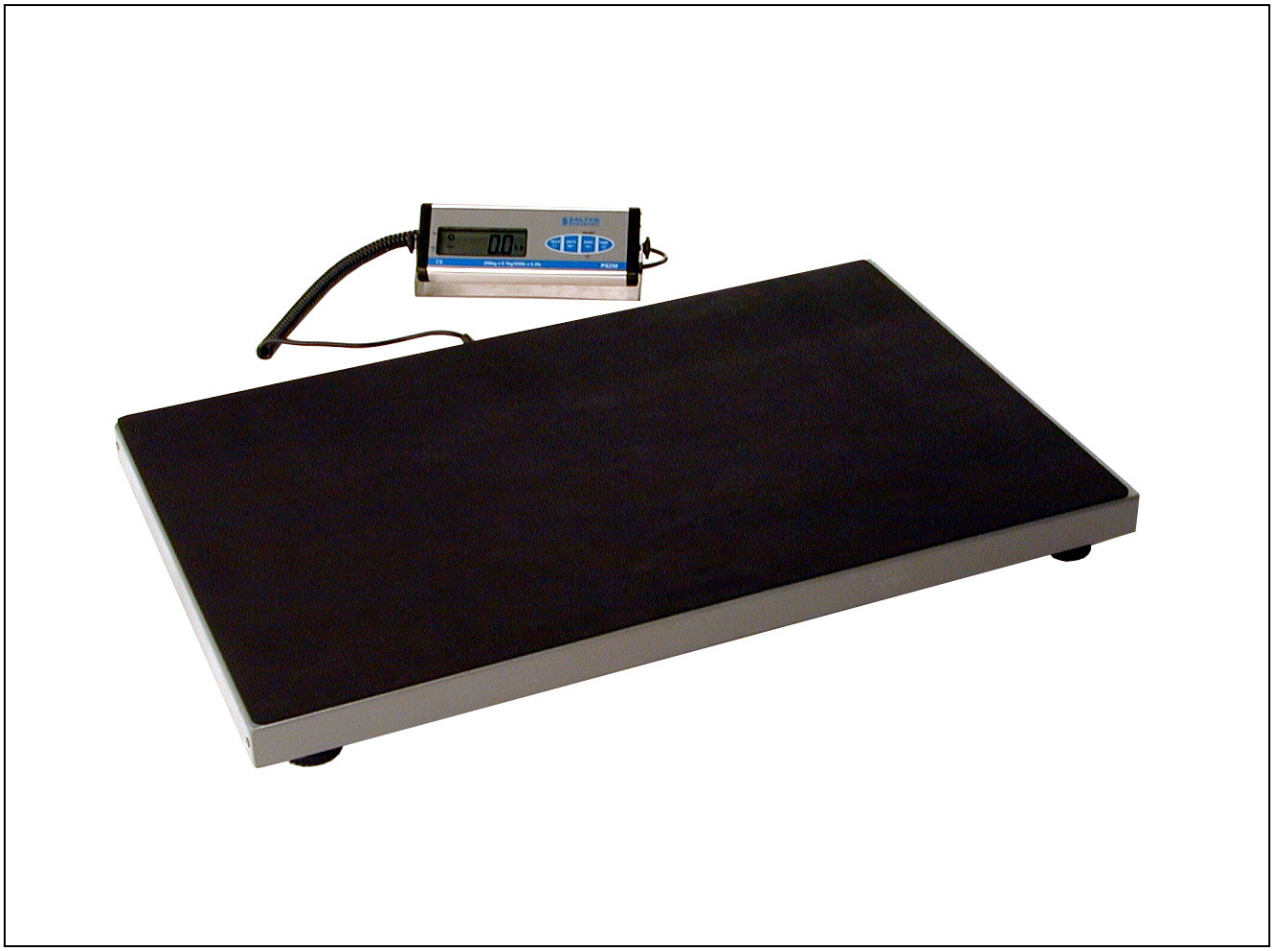
PS250



Service Manual

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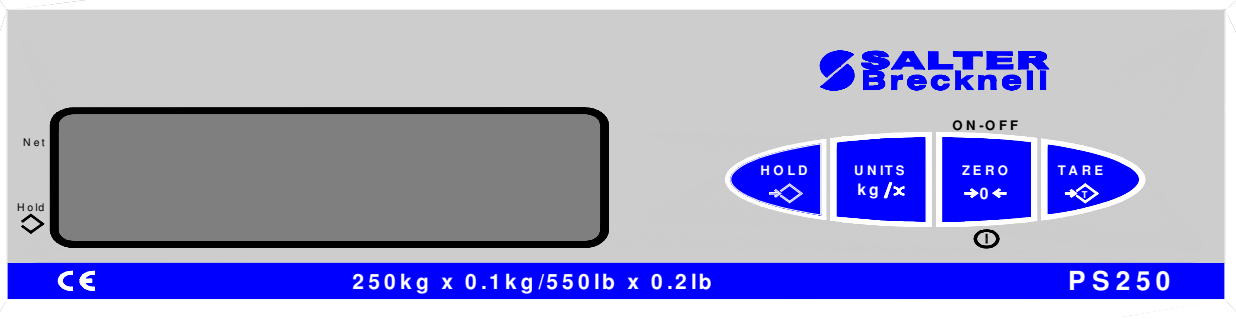
Scale Key layout



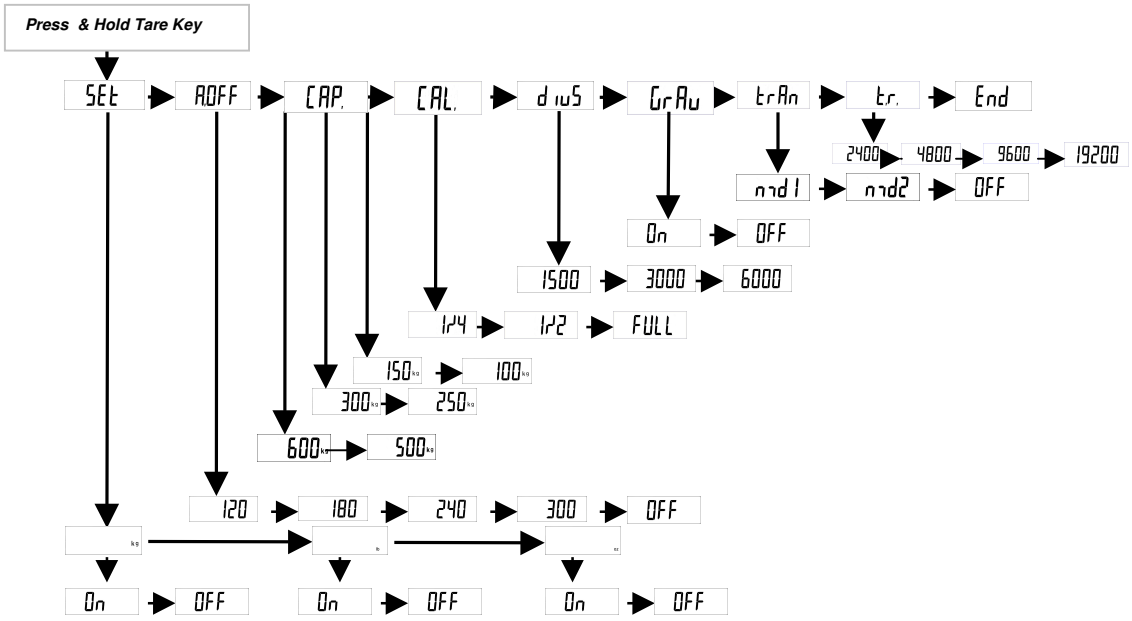
Tare Key	Used to tare off the weight of a animal cage / container that is placed on the scale.
On / Zero / Off key	Press once to turn on and Zero the scale. Press once when scale is on to re-zero the scales display. Press and Hold key will turn off scale
Units key	Toggles between the units of measure that the scale has been configured to.
Hold key	when pressed the scale will average out the weight Before holding this reading on the display. If linked to a printer of PC the Held weight will be automatically transmitted once the hold enunciator has been activated. Press a second time to release the hold function

Configuration settings

To get into the scales configuration menu first switches on the scale. Once the scale is on press and hold the tare key until the display shows Set and then **Unit.**

Unit key →	Moves display to the right
Hold key ↓	Moves the display up /down or accept a change.

To exit move through the Set up menu until you get to the **End**.
When the **End** is displayed press the **Hold** key to accept changes.
Scale will return back to weight mode



Set Unit **Unit Setting Function**
Allows you to turn off or on the following units of measure. kg, lb, oz
(Default kg on, lb on , oz on)

AOFF **Auto Off Function**
Enable Auto off the time delay to be changed. 120 sec, 240 sec, 300 sec and Off. *(Default 120)*
Off setting will turn off this auto off function allowing the scale to remain on until the off key has been pressed.

Cap **Capacity setting**
Enable the scale capacity to be change without the need for re-calibration. 250kg or 300kg. *(Default 250kg)*

CAL **Calibration Settings**
Enables the scale to be re-calibrated at full load ½ load or ¼ load.
(Default FULL)

Weighing units	Full load	½ load	¼ load
kg	200kg	100kg	50kg
lb	500lb	200lb	100lb

DivS **Division Setting**
Enable the scale division to be changed without the need of re-calibrating the scale: 1500 d, 3000d or 6000d *(Default 3000 d)*

GrAv **Gravity Compensation**
For scales that are used out side Europe the gravity compensation can be activated.
This will allow the operator to enter the pacific gravity of where the scale is to be used without the need for re-calibrating the scale: On or Off *(Default off)*

See Gravity Compensation on page

TrAn **RS232 data transmission**
Enable the PS250 to communicate to a basic printer of PC: d\n 1, d\n2 or off
(Default off)

d\n1 **RS232 data transmission on continuous output**
Will continually transmit the net weight of the scale

Data output string: *(+/-)( )( )( )(Net weight)( )( )( )(unit of measure)(Line Feed)(Carriage Return)(End of Text)*

d\n 2, **RS232 data transmission on demand**
Allows the displayed data to be sent to a PC / printer once the hold key has been pressed and the weight on the display has stabilised.

Data output string: *(+/-)( )( )( )(displayed weight) ( )( )( )(unit of measure) (Line Feed)(Carriage Return)(End of Text)*

Off Will deactivate the RS232 data output signal.

Tr **Board rate Transmission settings**
Enables the operator to easily change the scales board rates settings from 2400, 4800, 9600 19200. *(Default 2400)*

Fixed data transmission setting**:** Data Bits: 8, Parity: None, Stop Bits: 1

End By pressing the Hold key when the end is displayed will save all change and switch back to normal weigh mode.

RS232 Set up –This may not be available on your unit.

To connect the PS250 to a PC or basic printer first set up the PS250 to send the data continuously (**n\d1**) or on command (**n\d2**).

In set up mode select **TrAn** and then select whether you want to data to be transmitted continuously (**n\d1**) or on command (**n\d2**) and press hold to save.

Move to **Tr** and select the board rate you want the data to be transmitted at and then press hold to save.

Move to End and press hold to save setting and exit back to weight mode.

Plug in the RS232 data lead (EDA908) to the side of the PS250 Head and the back of the PC.

Testing data transmission
Open up HyperTerminal on the PC and set board rates as follows

Board rate (as selected) Data Bits: 8, Parity: None, Stop Bits: 1

Switch on scale, place a weight on the platform and press hold key, scale data should now be displayed on the PC screen.

102.2 kg
105.0 kg
98.0 kg
99.0 kg
- 24.1 kg
- 28.0 kg

RS232 lead connections

(PS250 end) *9 way D-type (plug) connector*	**EDA-908 Wiring**	**(PC end)** *9 way D-type (Socket) connector*
Pin 2 (TXD)	**White**	**Pin 2 (RXD)**
Pin 3 (RXD)	**Red**	**Pin 3 (TXD)**
Pin 5 (Ground)	**Yellow**	**Pin 5 (Ground)**

Fault finding

Scale not transmitting data.

- *Check PS250 configuration settings to make sure that the RS232 is switched on.*
- *Check PC and PS250 Board rate are the same.*
- *Check PC Port settings*
- *Check pin connections are correct.*
- *Test lead for brakes in cable*
- *Test scale data with HyperTerminal*
- *Check Ps250 RS232 wiring by removing left-hand end cap.*
- *If scale is still not transmitting data replace PS250 head unit and recalibrate*

Calibration procedure

In set up mode select CaL and then select whether you want to calibrate the scale to full load ½ load or ¼ load and save change.

Weighing units	Full load	½ load	¼ load
kg	200kg	100kg	50kg
lb	500lb	200lb	100lb

Switch off the scale.

Press and hold the on key, at the same time press the Units key 3 times before releasing the on key. *Scale will display the zero count value between 500 to 8000*

Press the Units key to select the unit of measure the scale is to be calibrated in.

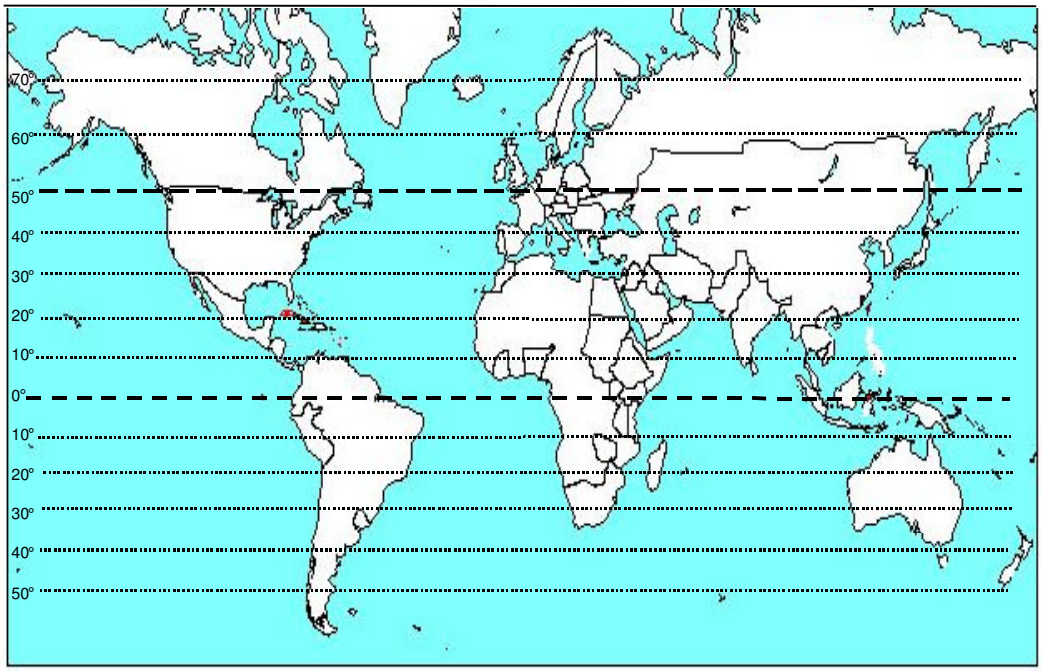
Press the Tare key to save the zero count value. *Scale will now display 0 kg.*

Place the required calibration weight on the platform and press Tare.
The scale will Display Cal for a few seconds before displaying the correct weight.

With 200kg on the platform the spanned counts should be between 8000 to 20000 counts. If outside this tolerance range the Resistance over R1, R2 on display PCB will have to change.

Gravity compensation

This will allow the operator to enter the pacific gravity of where the scale is to be used without the need for re-calibrating the scale.



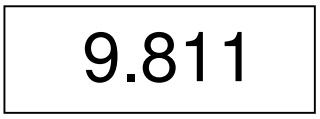
Latitude	General gravity zones based at sea level	Expected error at full load 250kg
70°	9.826	4 divisions
60°	9.819	2 divisions
50°	9.810	0 divisions
40°	9.801	-3 divisions
30°	9.793	-5 divisions
20°	9.786	-7 divisions
10°	9.781	-8 divisions
0°	9.780	-8 divisions

To activate this function enter the set up mode select GrAv, and then select on.

Switch off the scale.

Press and hold the on key, at the same time press the Units key 3 times before releasing the on key. *Scale will now display the gravity the scale was last calibrated in*

To adjust the gravity use the units key to increase the number and the hold key to move to the next Digit.



Press the Tare Key to accept the newly entered gravity setting and then turn off scale.

Scale will now switch on and operate to the newly entered gravity.

Main Error messages

Bat Low	Battery needs charging
Err	Overload
Errl	Below Zero
ErrE	EPROM error

General Fault finding

No display
Mainly due to loss of power
- Recharge scale with power adapter.
- Test or change power adapter
- Replace battery

Bat low enunciator not turning off
- Recharge scale with power adapter
- Test or change power adapter
- Replace battery.

Err
Normally indicates that the scale is over capacity or the load cell data is not getting to the Indicator head.
- Check that the indicator is correctly attached to the platform.
- Check for lose wires in the indicator plug.
- Check for lose wires the platform socket.
- Measure mV reading across load cell signal wires to determine if one of the load cell is faulty. If a big discrepancy is registered replace complete loadcell base and recalibrate.
- Display Head unit must be faulty, Replace with new Head unit and recalibrate scale.

Errl
Normally indicates that the zero counts have moved due to a faulty loadcell on the platform.
- Attempt to re-calibration
- Measure mV reading across load cell signal wires to determine if one of the load cell is faulty. If a big discrepancy is registered replace complete loadcell base and recalibrate.

Scale showing unstable reading

- Check that the platforms not catching on something.
- Check that vibration or air movement is not affecting the scale i.e: Ventilation fans, heaters open doors.
- Measure mV reading across load cell signal wires to determine if one of the load cell is faulty. If a big discrepancy is registered replace complete loadcell base and recalibrate.
- Display Head unit must be faulty, Replace with new Head unit and recalibrate scale.

Scale not returning to zero

- Check that the platforms not catching on a wall or that something is trapped underneath the scale.
- Measure mV reading across load cell signal wires to determine if one of the load cell is faulty. If a big discrepancy is registered replace complete loadcell base and recalibrate.
- Display Head unit must be faulty, Replace with new Head unit and recalibrate scale.

Hold function will not work

- Check to see it the stable enunciator comes on.
- Check to see if the hold enunciator comes on when pressed.
- Check that the animal being weighed is not to light (Hold will not operate under 4kg)
- Check hold feature works with a non-moving object
- Measure mV reading across load cell signal wires to determine if one of the load cell is faulty. If a big discrepancy is registered replace complete loadcell base and recalibrate.
- Display Head unit must be faulty, Replace with new Head unit and recalibrate scale.

Scale will not auto-switch off

- Check in the set up mode to insure that the Auto off is not set to off.
- Check that the scale is not left in set up mode.

Standard Repairs

Replacing Display head

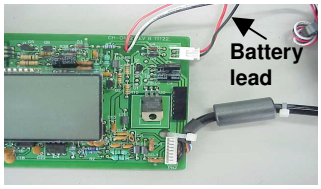
Unplug faulty display head from base and Reconnect with new one.

Recalibrate scale as shown in the calibration section of this manual.

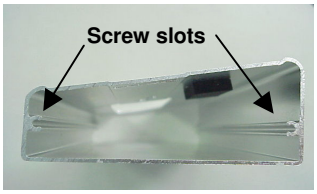
Battery replacement
Undo the two screws on the right hand side end cap of the display head.

Ease out the display PCB from the display housing by gently pulling on the loadcell cabling.

Unplug the old battery from the side on the display PCB and replace with new battery.



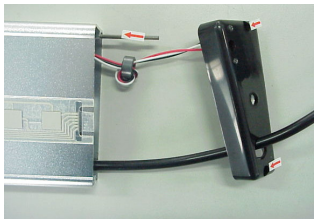
Slide display PCB back into the display housing insuring that the PCB is located within the two screw slot



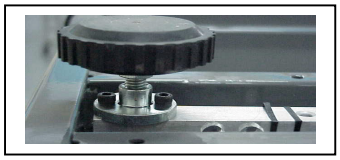
Replace the PCB location rod back into one of the screw slots and push PCB back in to position.

Push replacement battery back into the side of the display housing and replace end cap.

Recharge battery prior to using.



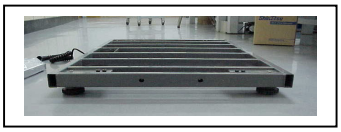
Load cell base replacement



Unplug faulty base from display head unit.

Remove the four-loadcell feet

Unscrew the four top cover screws found on the side of the platform.



Remove the faulty loadcell base frame from the top cover and replace with new one.

Replace the top cover screws and plug in the display head unit.

Recalibrate scale as shown in the calibration section of this manual.

Display head cable wiring

Display Head Plug		Wire colours
PIN 1	+ 5V	RED
PIN 2	+ Sig	GREEN
PIN 3	- Sig	WHITE
PIN 4	Ground	BLUE
PIN 5		

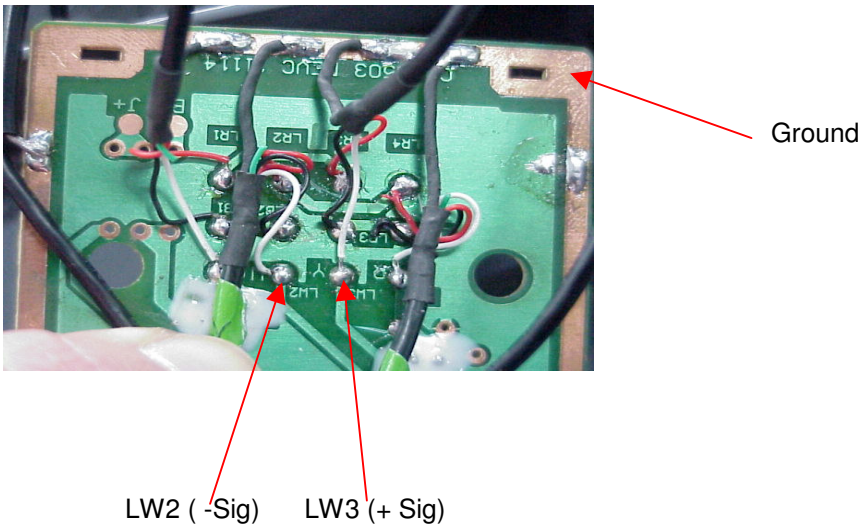
Testing Platform for faulty loadcell

Remove top cover by undoing side screws.

With the scale turned on measure Excitation mV reading across black and red wires, which come from the plug socket. This should read 5V

Then check the signal reading by measuring the mV reading across the LW2 (-Sig) and ground , The mV reading should increase evenly when weight applied

Then check the other signal reading by measuring the mV reading across the LW3 (+Sig) and ground , This mV reading should also increase evenly when weight applied



If for some reason the mV reading is seen to be erratic or remain at 0 mV would indicate that one of the loadcell have been damaged. To repair this replace loadcell base frame as mentioned in the Load cell base replacement section of this manual.

PS250 Parts list

Part number	Picture	Description
52739-0132		Replacement Display Head
52739-0512 – PS250-22S 52739-0520 - PS250-36 52739-0538 - PS250-36S 52739-0546 - PS250-42 52739-0553 - PS250-42S		Loadcell & Base frame
816965000890		Battery
52739-0587		One Foot
816965000906		120VAC, 9W, 15VDC, 300ma AC adapter (new style)
52739-0355		Power adapter (old style)