

C100 Counting Scale

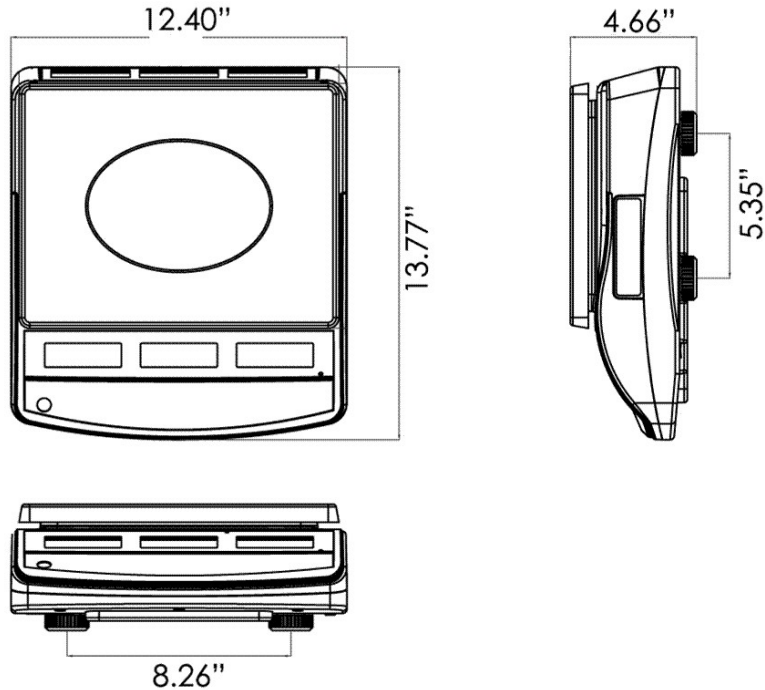
Technical Manual

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1. SPECIFICATIONS

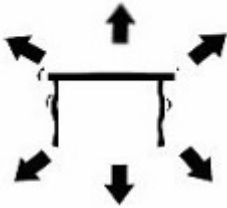
DIMENSIONS



Specification

MODEL	C100/6	C100/12	C100/30	C100/60
Part Number	899-300000	899-300001	899-300002	899-300003
Maximum Capacity	6 lb	12 lb	30 lb	60 lb
	3 kg	6 kg	15 kg	30 kg
Readability	.0001 lb	.0002 lb	.0005 lb	.001 lb
	.00005 kg	.0001 kg	.0002 kg	.0005 kg
Units of Measure	lb, kg			
Interface	Bi-directional RS-232 Interface			
Stabilization Time	2 Seconds			
Operating Temperature	(32°F - 104°F)			
Power supply	AC Adaptor 9 V/800 mA / Battery 6V4AH			
Calibration	Automatic external			
Display	3 x 6 digit LCD digital display with white LED back light			
Housing Indicator	ABS Plastic, Stainless Steel pan			
Platter size	8.9 x 11.8"			
Overall dimensions	12.6 x 13.4 x 4.9"			
Net weight	9.5 lb			
Internal Resolution	Up to 60000			

2. PRECAUTIONS



- Read this manual before operating or servicing this equipment.
- Follow these instructions carefully.
- Disconnect this equipment from a power source before cleaning or performing maintenance.
- Keep this manual for your future reference.
- Avoid extreme temperatures. Do not place in direct sunlight or near air conditioning vents.
- Avoid unsuitable tables. The table or floor must be rigid and not vibrate. Do not place near vibrating machinery.
- Avoid unstable power sources. Do not use near large users of electricity such as welding equipment or large motors.
- Avoid high humidity that might cause condensation. Avoid direct contact with water. Do not spray or immerse the scales in water.
- Avoid air movement such as from fans or opening doors. Do not place near open windows.
- Do not stack material on the scales when they are not in use.
- Keep the scale clean.

3. INSTALLATION

Unpacking

Carefully take the C100 out of its packaging, making sure it is not damaged and that all accessories are included.

If equipped, remove the shipping safety screw. Indicated by the red label on the bottom of the C100

Accessories,

1. C100
2. Power Adaptor
3. Stainless steel pan
4. 18' pre-made remote base cable
5. Product manual
6. Owners Manual

Keep the packaging material for future use.

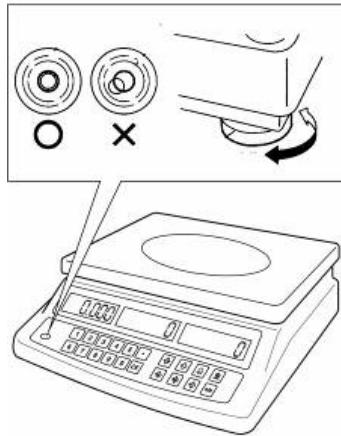


SETUP

Local Scale:


Note: Battery should be charged for 12 hours prior to first use.

- Place the scale on a table.
- Place the stainless platter into the locating holes on the top cover.
- Do not press with excessive force as this could damage the load cell inside.
- Check the water mark. If, bubble is not centered adjust the leveling feet until centered. Check the level when you change the location.



- Attach the power supply cable to the connector on the bottom right side of the scale base. Plug in the power supply.
- Turn on the Scale. The power switch is located at the right side of the scale base.
- The scale will show the model number in the “**Weight**” display and will start self test countdown.

Remote Scale:

- The C100 Series can be connected to a remote base through the Remote scale port on the left side of the scale case.
- Place the remote scale platform in the position where it is to be used. Level the scale by adjusting the four feet. Making sure it is level.
- Press  key to change between remote base and local base.

Remote Scale Connection

The cable from the remote base goes to a 9 pin male DB9 connector on the left side of the C100 with following connections.

Pin	Connection	Color on Premade cable
1 or 2	Excitation +5V	Red
4 or 5	Excitation-	Black
7	Signal-	Green
8	Signal+	White
3	Shield	Blue

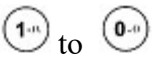











Note: The sense wires connections of a six wire load cell are not used, but can be connected to the respective Excitation pins.

The remote scale provides 5v excitation.

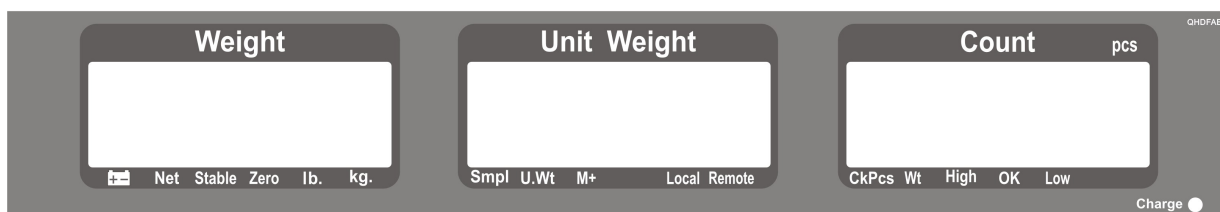
4. KEYS AND FUNCTION

Key Board



Keys	Press this key to
 to 	Numeric Keys. To enter either individual unit weights or preset tare
	Clear incorrect entries and error conditions
	Decimal Point.
	Returns the display to zero.
	To clear tare weights, Storing the current weight as tare value. Subtracting the tare value from the total weight and displays the result as a net weight.
	Manually enter the weight of sample, also changes the unit from lb to kg if they are enabled.
	To enter the numbers of items, used as the sample unit weight.
	Add the current count data aggregated. Also recall the memory if pressed when balance empty. Can add up to 99 values, or until it reaches the maximum displayable digits
	Enter to store and recall the PLU (piece look up)
	To set the upper limit of the number of items counted and back light setting.
	To select the local or remote scale.

Display



The arrow “▼” above the symbols

Weight Display

	Low Battery
Net	Net Weight Displayed
Stable	Stable Displayed
Zero	Zeroing Displayed
Lb / kg	Current Weighing Mode

Unit Weight Display

Smpl	# of sample is very low
U.Wt	Unit weight is below the minimum weight
M+	Data entered into the memory
Local / Remote	Active Scale in use

Count Display

CkPcs	Active in Counting Mode
Wt	Active in Weighing Mode
High	Check Result above the high limit
OK	Check Result with in the limit
Low	Check Result below the low limit
Charge	Status of the battery charging

5. OPERATION

Initial Start-up


Please allow 15 minutes of warm-up time to weight value to stabilize after switching on.

1. Power ON/OFF

Power switch is located below the bottom right side of the scale. Switch on the scale by pressing on/off. The display is switched on and the self test is started.

If you want to switch off press in the switch in the opposite direction.

2. Switch to Local / Remote Scale

- By pressing  the display changes from one scale to other scale.

In Local Scale

change

Local


In Remote Scale

change


remote



- The basic weighing functions are same for both the scales local or remote.
- The number of weighing divisions may be less on the remote scale dependant on the total capacity of the load cell/s used.

3. Zero

To zero the scale at any time press the  key

4. Tare

The weight of any container can be tared by pressing the  button so that with subsequent weighings the net weight of the object being weighed is always displayed.

- Load container to be tared on the pan.
- Press the  key. Zero is displayed, and tare is subtracted.
- Remove weight from the platform. Tared weight is displayed. Only one tare value can be set. It can be displayed with a minus value.
- Once tare is stored, Pressing the  key, will clear the tare weight and Zero the display.

Entering a tare value using by numeric keys.

This method allows you to enter a value for the tare weight from the keypad. This is useful if all containers are the same or if the container is already full but the net weight is required and the weight of the container is known.

- Ensure the display is zeroed.
- Enter the known tare weight by using numeric keypad.
- Press **Tare** to enter, weight will be stored as tare weight and displayed with minus sign and net indicator.
- Place the container on the platform, net weight will be displayed. The tare will be rounded up according to the readability of the balance. For example, if a tare value of 103g is entered into the 60Kg scale with 5g readability, then the display will be shown 105g.

5. Accumulation

The C100 can totalize weight values or count quantities.

Manual Accumulation

The values (weight and count) shown on display can be add to the memory by pressing **M+** key. Set the parameter **F1 off - print - au off**

- Place the goods to be weighed.

0 .5 00	0	0
---------	---	---

- Wait few seconds for display stability then press **M+**.
- The weight display will be show the total weight, the unit weight display will be show the number of items and count display will be show the total accumulated count. The values will be displayed 2 seconds.

0 .5 00	1	15
---------	---	----

- The scale must return to come zero or negative number before adding another samples.
- More products can be added by pressing **M+**. It can add up to 99 entries or until the capacity of the weight display is exceeded.

Display of Saved Data

To check the total value saved, press **M+** key when the display is in zero. Total weight will be displayed two seconds.

Delete Saved Data

To clear the memory, press **M+** the display will be shown saved data.

1 .5 00	- 3 -	0
---------	-------	---

Press **CE** during the display, delete all saved accumulation data.

0 00	- 0 -	0
------	-------	---

Automatic Accumulation

Weighing values automatically accumulate total, when the scale is unloaded and with out pressing a key

Set the parameter **F1 off - print - au on**

- Place the item to be weighed on the platform

1 .5 00	0	0
---------	---	---

- Wait few seconds for display stability and a control beep.
- Unload the item from the platform, the weighing value is added into the memory


1 .5 00	- 1-	0
---------	------	---

- The scale must return to come zero or negative number before adding another samples.
- 99 entries can be stored or until the capacity of the weight display is exceeded.

6. Parts Counting

In order to do parts counting, it is necessary to know the average weight of the items to be counted. This can be done either by weighing a known number of the items and letting the scale determine the average unit weight or by manually inputting a known unit weight using the keypad.


To count a greater number of parts the average weight per part has to be determined with a small quantity.

The average piece weight can be increased at any time during the counting process, by entering the displayed number of items and confirming by pressing .

Weighing a sample to determine the Unit Weight

- Reset the balance to zero or tare the empty container if necessary.
- Place the known quantity of items on the scale, wait few seconds for display stable.
- Enter the number of quantity by using numeric keys. Exp: 15

1 .5 00	15	0
---------	----	---


- Enter the  key to confirm. The scale determines the average parts weight.

1 .5 00	0 .15	10
---------	-------	----


- As more items are added to the scale, the weight and the count will increase.
- If the scale is not stable, the calculation will not be completed.
- If the weight is below zero, **“Count”** display will show negative count.

Enter a known Unit Weight

If an a known unit weight, it can enter by using the numeric keys.

- Enter the value of unit weight by numeric keys.
- Press  during the unit display flashing.
- If in the weight display as “kg” unit is active, the average piece weight will be displayed in “g”. If as “lb” is active, the average piece weight will be displayed in “lb”.

Automatic Update of Unit Weight

- The scale can automatically update the unit weight, when a sample less than the initial sample count are added.
- A beep will be heard when the value has updated.
- By pressing  key, can be blocked unit weight and auto update


Check Weighing or Count Pre-set

Check weighing is a procedure to cause an alarm to sound when the weight or piece quantity within the a limits. Limits can be set by using numeric keys.


Setting the Checking Limits

Press  key, the active mode will be shown


Pst	net
-----	-----


Press  key to select counting

Pst	cnt
-----	-----


Press  key, the active high count limit will be shown


Hi cmt	1 500
--------	-------

Use numeric key to enter desired and if necessary press  to clear.

Press  key, the active low count limit will be shown

lo cmt	500
--------	-----

Use numeric key to enter desired and if necessary press  to clear.

Press  key to return weighing mode.


- For check limits, just one limit value can set
- If both values are deleted, the check mode is deactivated.
- The beep sound will be worked as described in the beep parameter
f1 off , beep

PLU (Product Look Up)

PLU are used to store items. It can store up to 99 PLU numbers.

The data should be entered against a particular PLU before the weighing process starts, so that the desired PLU's can be recalled during the weighing process. The data can be stored and recalled manually.

Storing PLU

Press  key to ensure display zero.


Tare and unit weight to be stored can be either taken from a weighing in process or by enter manually.

- Press  display will be shown

P lu	- -	
------	-----	--


- Press numeric key exp. 27

P lu	27	
------	----	--

- Press 

Currently stored text will appear
The first digit is flashing, it can
Change by using numeric keys




P lu 27	Apple	
---------	-------	--

- If necessary, delete additional text
By pressing 

P lu 27	-	
---------	---	--

- Continue to enter text until description is complete (max: 12 characters)

P lu 27	abcdefa	hiijklmn
---------	---------	----------

- Use  key, number selection to left.
- Use  key, number selection to right.
- Press and hold two seconds  key, space to right.
- Tare values can be saved (default >2% of capacity)

Entering Description Manually

To set the description, press the numeric button and keep it pressed until the desired letter is displayed. The characters are according to key board.

1	- / \	
2	A B C	
3	D E F	
4	G H I	
5	J K L	
6	M N O	
7	P Q R S	
8	T U V	
9	W X Y Z	
0	_ []	_ (space)

Note that this method is only used where alpha-numeric data is permitted. This is used for the Description field and the User ID number, Scale ID number in the parameters section.

Recalling PLU

To recall the PLU values the user should first select either local or remote scale the tare value stored will be specific to the scale selected.

- Press  display will be shown

P l u	- -	
-------	-----	--

- Press numeric key exp 27

P l u	27	
-------	----	--

- Press 

P l u 27	Abcdefa	hiikllm
----------	---------	---------

6. PARAMETERS


To enter into the Parameter

- Turn on the scale, press  during that start up.

Display will be show

F1 off


Select the Menu Block

- Press  key, it can choose menu block one by one.


Enter the Selected Menu

- Press  key, to confirm what the displays shows.


Select the Sub- Menu

- Press  key, it can choose the sub-menu block one by one.

Return to Weighing Mode

- Press  key, to escape from the menu and exit to weighing mode.

Parameter Setting

Menu	Sub Menu		Description	
Fi off	Beep	Beep off	Beeper is turned off	
		Beep On in	Beeper is turned on, will be sounded when in check weighing limits	
		Beep On out	Beeper will be sounded above the check weighing limits	
	El	Lite aut	Backlight will be turn on automatically, when loaded or a key is pressed	
		Lite off	Backlight is turned off	
		Lite on	Back light is turned on	
	unit	Kg / lb	Weighing Unit kg and lb are enable	
		Kilo	Weighing Unit kg only	
		lb	Weighing Unit lb only	
	Off	0	Auto off function disable	
		3	Scale will turn off after 3 minutes	
		5	Scale will turn off after 5 minutes	
		15	Scale will turn off after 15 minutes	
		3 0	Scale will turn off after 30 minutes	
F2 prt	P mode	Print	Au on	Data out put / accumulation after unloading the balance
			Au off	Data out put / accumulation after by pressing 
		P cont		RS 232 data output continuously
		Ser re		RS 232 data output weight only
		P baud	B 600	
	B 1200			
	B 2400			
	B 4800			
	B 9600			
	parity	8 n 1		8 bits, no parity
		7 e 1		7 bits, even parity
		7 o 1		7 bits, no parity
	P type	Tpup		Standard printer setting
		Lp50		Label Printer
U id	U id abcdef		Shows the current User ID (max 6 characters)	
Sc id	Sc id abcdef		Shows the current Scale ID (max 6 characters)	
Tech	Technical parameter password protected			

7. RS-232 OUTPUT

The C100 Series of scales come standard with an RS-232 output.

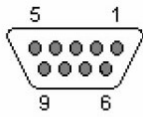
Specifications:

- RS-232 output of weighing data
- ASCII code
- 9600 Baud
- 8 data bits
- No Parity

Connector: 9 pin socket

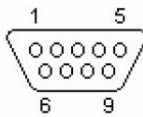
From C100

- Pin 2 Output
 - Pin 3 Input
 - Pin 5 Signal Ground
- DB-9 Female



To LP50

- Pin 2 Input
 - Pin 3 Output
 - Pin 5 Signal Ground
- DB-9 Male



Connection to the LP 50 printer

Set Parameter F2 to 9600 8n1 LP50

Set LP50 Dip SW 1,2, and 4 ON










Sample Print

```

LOCAL SCALE
ID: 123ABC
NAME:Text
12.456 kg NET
1.1234 g U.W.
11 PCS
TOTAL
-----
49.824 kg TW
44 TPC
4 No.
    
```

8. CALIBRATION

Note: Capacity and division size for local base can NOT be changed

- Turn on the scale and press  during the self test. Pi n
- Use the numeric key to enter the password
 Default password **0000** Pi n - - - -
 Press  to confirm
- Display will be show tech Local
 Select Local or Remote scale by pressing 
 Press  to confirm. remote
- Display will be show tech unit
 If necessary, press  to select the weighing unit **kg** or **lb**.
 Press  to confirm.
- Display will be show unload
 Ensure the platform is empty and wait for stable indicator.
 Press  to confirm.
- Display will be show sel 000000
 Set weight value will be required
 Enter the value by using numeric keys 000005
 Press  to confirm.
- Display will be show Load
 Place the calibration weight on the platform and wait few seconds for display to be stable.
 Press  to confirm.
- After the calibration the scale will start a self test, remove the weight during that time and display will return to weighing mode.
- If display shows any error message or incorrect measurement, repeat the calibration process again.

CALIBRATION linear

- Turn on the scale and press **Zero** during the self test. Pi n

- Use the numeric key to enter the password **9999**
 Press **Tare** to confirm Pi n - - - -

- Display will be show tech Local
 Select Local or Remote scale by pressing **Local Rem**
 Press **Tare** to confirm. remote

- Display will be show tech unit
 If necessary, press **U.M. Units** to select the weighing unit **kg** or **lb**.
 Press **Tare** to confirm.

- Display will be sho unload
 Ensure the platform is empty and wait for stable indicator.
 Press **Tare** to confirm.












- Display will be show Load x
 Apply the weight on the display (indicated in chart below) wait for stable indication. Then press **Tare** to confirm.

- Display will be show Load xx
 Apply the weight on the display (indicated in chart below) wait for stable indication. Then press **Tare** to confirm.


Model	Unload	Load x	Load xx
C100 / 6lb	0 lb	2 lb	6 lb
C100 / 12lb	0 lb	4 lb	12 lb
C100 / 30lb	0 lb	10 lb	30 lb
C100 / 60lb	0 lb	20 lb	60 lb

- After linear calibration is complete the scale will start a self test, remove the weight during that time and display will return to weighing mode.

9. TECHNICAL PARAMETERS

Enter into the parameter by pressing  during the self test	F1 off
Press  until tech is displayed	tech
Press  to confirm, display will be shown	Pi n
Enter the password. Default password is 0000 and press  to confirm	Pi n - - - -
Select the scale by pressing  , which should be configured and press  to confirm	Tech local remote
Use the  key to select the weighing unit kg / lb and press  to confirm	Tech unit cnt
Use the  key to scroll to select individual menu. Confirm selected menu by pressing  Press  key, escape from the menu and exit to weighing mode	

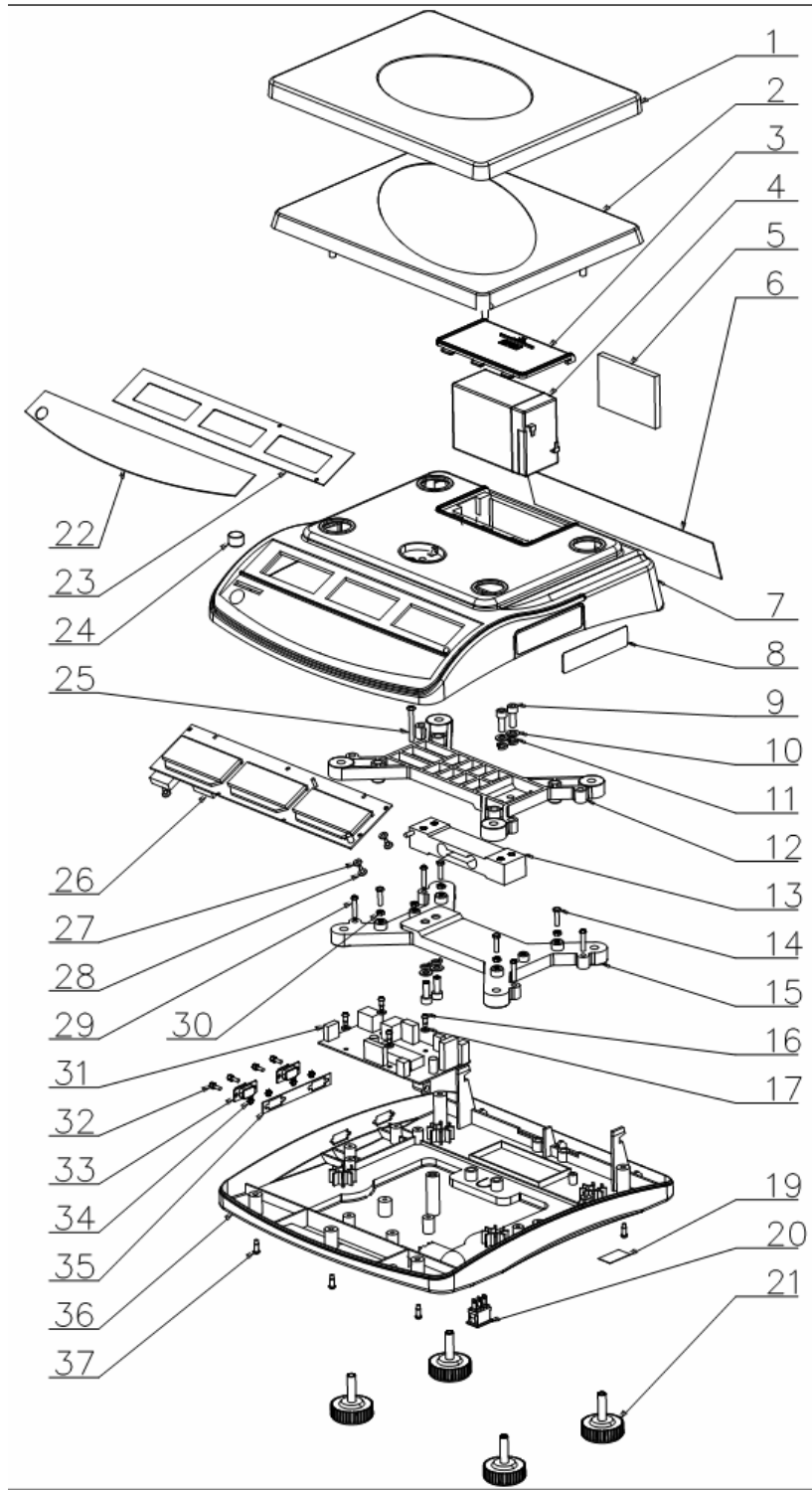
C100 Series Technical Manual

Technical Parameter	Sub Menu	Description	
Cnt		Internal counts	
Cap	Capacity (For Remote Scale Only)		
	desc	0	Set remote scale decimal point
		0.0	
		0.00	
		0.000	
	Se1	001000	Set remote scale capacity by using numeric keys
	I nc	1	Set remote scale division
		2	
5			
10			
20			
50			
Di v	I nc 5	Set division	
	I nc 10		
	I nc 20		
	I nc 50		
A 2t	Azn 0 .5d	Automatic zero tracking	
	Azn 1d		
	Azn 2d		
	Azn 4d		
0 Auto	0 auto 0	Zero setting range, after switching on the scales to zero	
	0 auto 2		
	0 auto 5		
	0 auto 10		
	0 auto 20		
0 man1	0 man1 0	Zero setting range, the display is set to zero by pressing 	
	0 man1 2		
	0 man1 4		
	0 man1 10		
	0 man1 50		
	0 man1 100		
Pi n	Pi n 1	Enter new password	
	Pi n 2	Re enter new password	
Gra	9. 673 00	Set local gravity	

10. ERROR CODES

Error Message	Description	Solution
-----	Maximum load exceeded	Unload or reduce weight
Err 4	Zero setting error	Zero setting range exceeded due to switching on.(4%max) Make sure platform empty.
Err 5	Key board error	Check the keys and connector.
Err 6	A/D value out of range	Make sure platform empty and check the pan is installed proper. Check the load cell connectors.
Err 9	Unstable Reading	Check any air variation, vibration, RF noise and touching some where. Check the load cell and connectors.
Err 17	Tare out of range	Remove the load and restart scale again.
--o1--	Over range	Remove the load. Re calibrate
Fai l h / fai l l	Calibration Error	Re calibrate
Err p	Printer error	Check the printer and settings
Ba lo / lo ba	Battery low	Re charge battery, check the voltages.

11. DRAWING



Parts List

No	Parts Name	Qty	Part number	Spec
1	SS Pan	1	899-300025	230mmx300mm
2	Plastic Pan	1	899-300026	230mmx300mm
3	Battery cover	1	899-300067	
4	Battery	1	899-300022	6V/4Ah
5	Foam	1		
6	Rear Overlay	1		
7	Top Cover	1		
8	Name Plate	1		
9	Internal Allen Screw	4		M6x16, 8.8
10	Washer (M6)	4		200-300HV
11	Spring Washer(M6)	4		HRC42-50
12	Load cell upper bracket	1		
13	Load cell 6 lb	1	899-300032	6 kg
	Load cell 12 lb	1	899-300033	10 kg
	Load cell 30 lb	1	899-300132	20 kg
	Load cell 60 lb	1	899-300034	40 kg
14	Star (+) Screw	4		M4x16
15	Load cell lower bracket	1		
16	Self thread Screw	4		4x10
17	Insulated Washer	4		8x3.1x1.2t
18	Power Socket	1		
19	Power Socket Spacer	1		
20	Power Switch	1	899-300077	
21	Foot	4	899-300043	
22	Key board	1	899-300075	
23	Front display overlay	1		
24	Level bubble	1		14.7mm
25	Screw	1		M4x35
26	Front Display PBC	1	899-300074	
27	Insulated Washer	5		8x3.1x1.2t
28	Star (+) Self thread screw	5		M3x20
29	Star (+) Self thread screw	5		M4x20
30	Hexagon Nut	4		Zn Coating
31	Main PBC	1	899-300073	
32	Screw for D connector	4		
33	D type connector	2		
34	Hexagon nut for D connector	4		
35	Overlay	1		
36	Bottom Cover	1		ABS
37	Self thread screw	5		4x12
	Dust Cover	1	899-300021	Clear ABS
	Power Supply	1	899-300042	12v 500 mA

12. SPECIFICATION

Specification for Remote Scale

Excitation voltage	5 VDC
Signal range	0-20 mV(allows 3 mV/V LC with 5mv zero offset)
Zero range	0-5 mV
Sensitivity	0.02 μ V/internal ADC count or better
Internal ADC counts	500,000 maximum at 10 mV input
Load	87 ohm minimum, 4 X 350 ohm load cells
Connection	4 wire connection to load cells plus shield
Maximum cable length	15 Feet
Termination	DB9 plug on scale Base

Specification for Local Scale Load Cell

Model No	C2X1
Rated Capacity	6~50 (kg)
Rated Out put	2.0 mV/V \pm 0.2 mV/V
Excitation Voltage	20 VDC
IP Level	IP64
Material	Aluminum Alloy
Cable	Φ 8.2 four core shield
Input Resistance	420 Ω \pm 30 Ω
Out put Resistance	350 Ω \pm 5 Ω
Temperature Range	-10 $^{\circ}$ C - 50 $^{\circ}$ C
Safe overload	150 %R.C
Ultimate overload	200 %R.C
Repeatability	0.02 %R.O
Creep	0.02 %R.O/ 20min
Zero Balance	\pm 0.1 mV/V

NOTES

C100 Series Technical Manual



B-TEK Scales
1510 Metric Avenue SW
Canton, OH 44706
Tel: (330) 471-8900
Fax: (330) 471-8909
www.B-TEK.com