ELECTRONIC WEIGHING SCALE

CCS - SERIES

OPERATING MANUAL

CONTECH

CONTENTS

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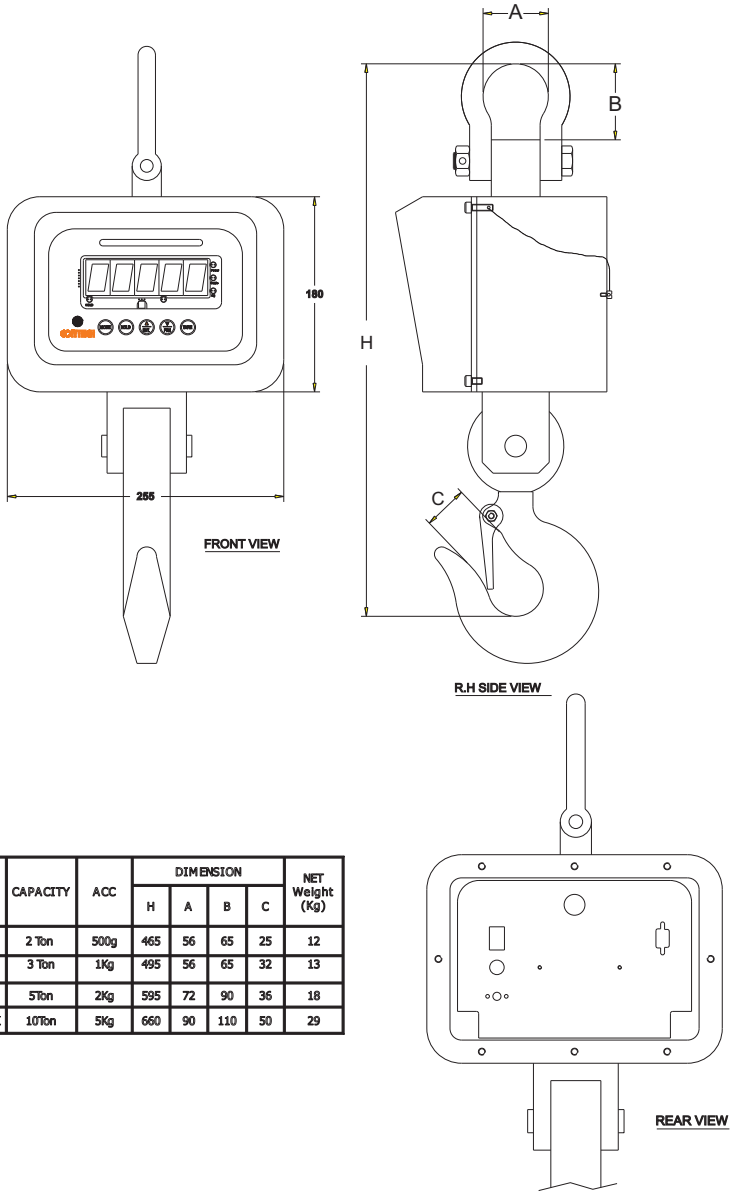
INTRODUCTION

We thank you for choosing **Contech**® **CCS** series weighing scale for your weighing needs. These scales use some of the latest and most advanced computing powers to give maximum flexibility and utility to the user.

Features:

- weighing unit gram / kilo gram.
- Feather touch membrane keyboard.
- Optional Battery backup facility.
- Piece counting facility, up to 25 different types.
- Storage of weights in memory and printing, up to 100 weights.
- Power saving mode.
- Bi-directional RS232 interface to interface with computers and printers.
- Selectable baud rate.
- Set point facility up to 3 limits.
- Auto Power off.
- Peak Hold facility.
- Date and time facility.
- Multiple Print options with Sr. no., Date, Time and weight in Horizontal /
- Vertical Mode.
- Automatic zero tracking.
- User selectable Tare/Zero mode option with Net/gross facility for minimum use.



MODELS	CAPACITY	ACC	DIMENSION				NET Weight (Kg)
			H	A	B	C	
CCS-2T500	2 Ton	500g	465	56	65	25	12
CCS--3T1K	3 Ton	1Kg	495	56	65	32	13
CCS-5T2K	5Ton	2Kg	595	72	90	36	18
CCS-10T/5K	10Ton	5Kg	660	90	110	50	29

CRANE SCALE SKETCH

INSTALLATION

1. **Unpacking:**
   Unpack the balance. Save the packing container for future use.
2. **Electrical Requirements:**
   The balance requires very stable power. It works on 230V AC supply with PROPER EARTHING. The power outlet used for the balance should not be shared with any other devices which draws current in inconsistent manner like Air Conditioner or Refrigerator etc.
3. **Environmental Requirements:**
   For best results, the balance should be placed on a level surface which is free from drafts. It should not be exposed to direct sunlight or radiated heat. Table used for balance should be sturdy and should not transmit vibration from other equipments and free from the movement of people. No vibration producing equipment should be operated on the same platform as balance.
4. **Start Up:**
   Power is supplied to the scale through a 3 core AC mains cord attached to the scale. Insert the 3 pin plug of the power supply onto a proper mains outlet. Switch on the balance using the switch on the scale.

Scale goes through self test and subsequently starts displaying weight.

Press (TARE) key to display zero weight.

NOW THE SCALE IS READY FOR WEIGHING.

NOTE: With battery backup option, there is a need to charge the battery regularly to prevent loss of backup time. The scale can be switched off using the switch provide on the scale. Do not switch off the main power to the scale even when the scale is not in use. Keeping the mains power on will charge the battery and will be ready to use when the input power fails.

OPERATION OF THE SCALE

1) FOR CHANGING WEIGHING UNITS.

Press **MODE** key, the scale will show SEt UP for some time and will display the current weighing unit, say grams -gr-

Use ▲ or ▼ keys to change the mode and

Press **ENTER** key to select or

Press **TARE** key to discard the changes.

Note that all weighing functions except the basic weighing unit need to be enabled using SEt UP functions.

Refer section on SEt UP for more details.

2) FOR CHANGING DATE, TIME AND SERIAL NO.

Press **SET UP** key, the scale will show SEt UP for some time and will display the current weighing unit, say grams -gr-

Press **SET UP** key once again, the scale will show,

FILL-1 (If Fill option is on)

Press SETUP key once again, the scale will show

FILL-2 (If fill option is on and limit is set to SET-2 or above)

Press SETUP key once again, the scale will show

FILL-3 (If fill option is on and limit is set to SET-3)

Press SET UP key once again, the scale will show

dt DD

where DD is the current date. Use ▲ and ▼ keys to change date and press ENTER key to store the date.

Press ZERO key to skip date entry.

The scale will display

mn MM

where MM is the current month. Use ▲ and ▼ keys to change month and press ENTER key to store the month.

Press ZERO key to skip month entry.

The scale will display

Yr YY

where YY is the current year. Use ▲ and ▼ keys to change year and press ENTER key to store the year.

Press ZERO key to skip year entry.

The scale will display

hh.mm.ss

where hh.mm.ss is the current time.

Press ENTER key to change the time or

Press TARE key to quit time entry.

Press ENTER key, the scale will show,

hh xx

where xx is the hour. Use ▲ and ▼ key to change hour.

Press ENTER key to save. Press ZERO key to skip hour entry.

Press ENTER key, the scale will display

mm xx

where xx is the minute. Use ▲ and ▼ key to change minute.

Press ENTER key to save. Press ZERO key to skip minute entry.

Press ENTER key, the scale will display

SS xx

where xx is the second. Use ▲ and ▼ key to change second.

Press ENTER key to save.

Press ZERO key to skip second entry.

Press ENTER key, the scale will display

Sr xxxx

where xxxx is the serial no. Use ▲ and ▼ key to change serial number.

Press ENTER key to save.

Press ZERO key to skip serial number entry.

PRINT OPTION

CT/CP series weighing scales can be attached to a serial printer for your printing needs. Print out can be programmed to suit most of the printing requirements.

Note that the printer should have a serial port and baud rate of the scale and printer should be same. 2 baud rates are available with the scale i.e. 2400 and 4800.

Printing option and patterns are controlled by **4 SETUP** parameters. They are

a) Print : There are 4 options

i) SinglE - Press **PRINT** key to start printing weight and other details programmed as per (b), (c) and (d) below.

ii) Stb - Printing is initiated when the weight kept on the pan becomes stable.

iii) ALL - All the displayed weights are printed along with other details programmed as per (b), (c) and (d) below.

iv) StorEd - To print weights stored in memory along with details programmed as per (b), (c) and (d) below.

b) Pr.fmt. : Printer format. Five printout formats are available.

i) PrF-1 - Only weight.

ii) PrF-2 - Serial no and weight.

iii) PrF-3 - Serial no, Date and weight.

iv) PrF-4 - Serial no., Time and weight.

v) PrF-5 - Serial no., Date, Time and weight.

PRINT OPTION

c) **P-TYPE:** Print type (Horizontal or Vertical)

i) P.tYPE 1 **– Horizontal**

Details will be printed horizontally.

Sr.No.	Date	Time	Weight
001	12.05.2002	13:25:00	4.545 kg
002	12.05.2002	13:27:05	4.234 kg

ii) P.tYPE 2 **– Vertical**

Details will be printed vertically in a slip form.

Sr.No. : 001 Date : 12.05.2002

Time : 13:25:00 Weight : 4.545 kg

d) **TITLE**: Title for printout.

i) TLE-YES - To enable title printing.

ii) TLE-no - To disable title printing.

Set the above parameters (a) to (d) to your requirements and effect printing. These parameters are available in SETUP functions. Refer SETUP functions in chapter.

BI-DIRECTIONAL RS232 INTERFACE

Bi-directional RS-232 interface is provided in these scales to communicate with devices like computer, printer etc. The interface is provided through a nine pin D-type connector provided in the side connector plate of the scale. Connections are as below.

Pin 2 – RXD – Receive Data
Pin 3 - TXD – Transmit Data
Pin 7 – Ground.

The Serial data transmitted and received are in standard ASCII mode (+/- 5V) - ASYNCHRONOUS , 8 BITS, NO PARITY, 1 STOP BIT.

Baud rate : 2400 OR 4800 SELECTABLE.

The data format for weight output is

<+/->WWWWWW.WWb <kg/lt> <CR><LF> (15 characters)

where WWWWWW.WW is the weight

b – blank space - 20 hex

CR- Carriage Return – 0D hex

LF – Line feed - 0A hex

for example, weight 85.12 will be sent as

+000085.12bkg<CR><LF>

where <CR> is carriage return (0D hex) & LF is line feed (0A hex), b=BLANK SPACE. The balance could be controlled by an external device like computer with the following commands.

Z - Tares the balance.

W# - Number of times, the weight data is to be transmitted through the serial port. # can be any number from 1-9.

STORAGE OF WEIGHTS IN MEMORY

Upto 100 weights can be stored in memory and recalled if required. The scale also computes the total weight of all the weights in memory. To use this option, set ACCU function to ON in SETUP functions. See relevant section.

a) Clear weights in memory.

Press SET UP key

Immediately Press ▲ key, the scale will display

StorE

Press ZERO key, the scale will display

CLEAr

Press ENTER key, the scale will display

---

and weights in memory and total weight will be cleared.

b) Storing weight in memory.

Immediately Press SET UP key

Keep the weight on the pan.

Press ▲ key, the scale will display

StorE

Press ENTER key. Displayed weight will be stored in memory and Total weight updated. Or

Press TARE key to quit storage.

STORAGE OF WEIGHTS IN MEMORY

c) Recalling weights from memory.

Press SET UP key

Immediately Press ▲ key, the scale will display

StorE

Press ▼ key, the scale will display

no 1

followed by the stored weight

WWWW.WW

i) Press ▲ or ▼ keys to see weights stored.

ii) Press TARE key to end weight view and display total weight.

iii) Press PRINT key to print the stored weights.

Refer Print option section for details.

AUTO POWER OFF

CCS series weighing scales have a built in auto power off facility, where in the displays will be switched off , if any keys are not operated for approx. 5 minutes. This will reduce power consumption and if the scale is being used with battery, it can enhance the discharge time of battery.

To come out of Auto Power Off mode, Press (TARE) key.

Ensure to enable this feature in the SEt UP mode.

POWER SAVING MODE:

Power saving mode feature will further enhance the battery backup time by making switching off the display whenever the weight displayed is zero. The scale will come out of Power saving mode when the displayed weight is not zero.

Ensure to enable this feature in the SEt UP mode.

PEAK HOLD MODE:

Peak hold feature will enable the scale to hold the display to the maximum weight (Peak weight) displayed. When used in this mode, the scale will be continuously displaying the maximum or peak weight measured by the scale, even after the weight is removed from the pan.

For using this mode, this function should be enabled in the SEt UP mode.

For putting the scale into PEAK HOLD mode,

Press [SET UP] and (TARE) keys simultaneously.

The scale will show,

-PEA-

Press (TARE) key to exit peak hold mode, the scale will display

-nOR-

PIECE COUNTING MODE

Contech CCS series scales can be used for piece counting purposes. Piece calibration of 25 items can be stored in memory. Accuracy of piece counting depends on the uniformity in weight of the items and the sample size used for piece calibration. Better the weight uniformity and more the sample size, better will be the accuracy.

Use SETUP function to select proper piece counting mode before using. There is an option to select 1, 10, 25 or none piece counting modes. See relevant section in SETUP functions for more details.

Selection of piece counting memory (item).

Press 

key, the scale will display,

SEt UP for some time

Then it display the current unit say grams

-gr-

Press  OR  key repeatedly till the scale displays

PArt-1

Press  key to select PArt-1 mode. Or

else Press  key.

The scale will display

PArt-2

Press  key to select PArt-2 and so on.

PIECE COUNTING MODE

Piece Calibration

Select proper piece counting memory as mentioned above.

Make the Weight read zero by pressing the TARE key. Weight of any container/bags used should also be made zero.

Keep known number of pieces on the pan.

Press ENTER key., the scale will display

PC xxxx

Use ▲ and ▼ keys to change the number of pieces and make it equal to the pieces kept on the pan.

Press ENTER key. The scale will display

Scale does piece calibration and displays the number of pieces on the pan, say

1 250

SET POINT FACILITY

This facility enables the user to set up to 3 weights for comparison with the current weights to activate different events. This feature is controlled by 3 SETUP functions.

1. Fill - Make it FL-on
2. SEt Pt. - Make it SET-1, SET-2
3. F-TYPE - Make it F-TYPE1 or F-TYPE2 for event swapping depending on the requirement.

For setting weights, Press **SET UP** key, the scale will show

SEt UP for some time

And will display the current weighing unit, say grams -gr-

Press **SET UP** key once again, the scale will show,

FILL-1 and followed by

XXXX.XX

Where XXXX.XX is the current set limit.

Use ▲ and ▼ keys to change the limit.

To discard changes, Press **ZERO** key OR

Press **TARE** key to make the count zero.

Press **ENTER** key to save.

SET POINT FACILITY

The scale will show

FILL-2 (If fill option is on and limit is set to SET-2 or above)

For some time and will display

XXXX.XX

Where XXXX.XX is the current set limit.

Use ▲ and ▼ keys to change the limit.

To discard changes, Press ZERO key.

Press ENTER key to save.

SET POINT FACILITY

Set Point 1:

User can set a weight any where in the range of the scale. Depending on the weight on the pan, the following events occur. Buzzer will work only in case of models where buzzer is provided. All outputs are TTL outputs provided additionally, if needed.

F-Type	Weight < Set Wt.	Weight = Set Wt.	Weight > Set wt.
Type 1	Buzzer ON O/p High	Buzzer OFF O/p Low	Buzzer ON O/p High
Type 2	Buzzer OFF O/p low	Buzzer ON O/p high	Buzzer OFF O/p Low.

Set Point 2:

User can set two weights any where in the range of the scale. Depending on the weight on the pan, the following events occur. Buzzer will work only in case of models where buzzer is provided. All outputs are TTL outputs provided additionally, if needed.

F-Type	Weight within Set Limit	Weight = lower or Upper limit.	Weight is beyond the limits.
Type 1	Buzzer ON	Buzzer OFF	Buzzer ON

O/p 1 high, if weight is more than first limit,

O/p 2 high, if weight is more than second limit.

O/p 1 low, if weight is less than or equal to first limit,

O/p 2 low, if weight is less than or equal to second limit.

SET POINT FACILITY

F-Type	Weight within Set Limit	Weight = lower or Upper limit.	Weight is beyond the limits.
Type 2	Buzzer OFF	Buzzer ON	Buzzer OFF

O/p 1 low, if weight is more than first limit.

O/p 2 low, if weight is more than second limit.

O/p 1 high, if weight is less than or equal to first limit,

O/p 2 high, if weight is less than or equal to second limit.

OPERATING IN TARE-ZERO MODE

In TARE-ZERO mode, scale can be operated in its simplest mode.

In this mode,
Press **TARE** to make the weight zero.

Press **ZERO** key to make weight zero.

Press **G/N** key to toggle between Gross and Net mode.

SETUP FUNCTIONS

SETUP functions control the basic operation of the balance. There more than 20 parameters, which can be set by the user to suit the requirements. The following are these parameters.

MENU NAME	FUNCTION	OPTIONS	DESCRIPTION
1. FACt	Factory setting	..	To select factory set parameters.
2. PArtS	Piece counting modes	PArt-1	To select single piece counting memory.
		PArt.10	To select 10 piece counting memory.
		PArt.25	To select 25 piece counting memory
		no.PArt	To disable piece counting.
3. BAUd	Baud rate setting	bd2400	To select 2400 baud rate
		bd4800	To select 4800 baud rate
4. Print	Print modes set	Single	Send stable weight through serial port when Prn key is pressed.
		Stb	Send weight through serial port Every time scale reading becomes stable.
		All	Send weight continuously.
		StorEd	Send stored weights through serial port.
5. AUto-0	Auto zero setting	A-0	Autozero disabled. (Ability of the scale to remain at zero, when there is no weight on the pan.)
		A-1	Autozero to half accuracy of scale.
		A-2	Autozero to full accuracy of scale.
		A-3	Autozero to twice the accuracy of scale.

SETUP FUNCTIONS

6. ACCU - Weight storage mode.
   AC-nO
   Weight storage disabled
   AC.YES
   Weight storage enabled

7. FILL - Fill mode option
   fL-Off
   Fill mode disabled
   fL.On
   Fill mode enabled

8. CArAt - Carat weighing
   Crt-Off
   Carat weighing disabled
   Crt.On
   Carat weighing enabled

9. LitrE-1 - Litre weighing
   Lt1-Off
   Litre mode disabled
   Lt1.On
   Litre mode enabled

10. APO - Auto Power Off.
    APO-Off
    Auto Power off disabled
    APO.On
    Auto Power off enabled

11. PSm - Power saving mode.
    PSm-Off
    Power saving mode disabled
    PSm.On
    Power saving mode enabled

12. P-HoLd - Peak hold mode.
    PHf-Off
    Peak hold mode disabled
    PHf.On
    Peak hold mode enabled

13. 3d-SEt - Third decimal mode.
    P3d-Off
    Third decimal mode disabled
    P3d.On
    Third decimal mode enabled

SETUP FUNCTIONS

14.	t.tLE	- Title printing.	TLE-Off TLE.On	Title printing disabled Title printing enabled
15.	P-tYPE	Select printing mode.	P.tYPE1 P.tYPE2	Horizontal Printing mode Vertical Printing mode
16.	Pr.Fmt	Select print formats.	Prf-1 Prf-2 Prf-3 Prf-4 Prf-5	Only weight Sr.no. Weight Sr.no., Date, Weight Sr.no., Time, Weight Sr.no., Date, Time, Weight
17.	rS 232	Select S type N type	S type N type	RS - 232 standard RS - 232 numeric
18.	SEt-Pt	Select set point mode	SEt-1 SEt-2 SEt-3	Single set point 2 set points. 3 set points
19.	F-tYPE	Select set point type	FTYPE-1 FTYPE-2	+ve Logic outputs for fill application -ve Logic outputs for fill application
20.	ConFig	Select tare/zero or Full function mode	T-Z A-f	Simple Tare and Zero mode. Full Function mode.

ADDITIONAL INSTRUCTIONS

ADDITIONAL INSTRUCTIONS:

CALIBRATION PROCEDURE FOR SCALES.

SOFTWARE CALIBRATION.

Keep a standard weight on the pan.(See below for std. Weights)

Press 

and 

key simultaneously and immediately press 

key.

Wait the scale to calibrate itself and it will display the weight equal to the weight kept on the pan. If the weight kept is not within +/- 0.1% then the scale will not calibrate.

Use only good calibrated standard mass for calibration.

Standard Weights for 10kg models 1kg, 2kg, 5kg & 10kg.

SETUP FUNCTIONS

ENTERING SETUP MODE

Switch Off the scale.
Switch on the machine keeping the SET UP key pressed. Do not release this key until the scale displays

SEt UP

And subsequently displays -FACt-

For changing between the menu mentioned above Press SET UP key.

For selecting the menu, Press ENTER key.

For changing the parameters, Press ▲ key or ▲ key and Press ENTER to save.

Press TARE to quit SETUP mode.

Default parameters.

PArtS	PArt-1	To select single piece counting memory.
BAUd	bd4800	To select 4800 baud rate
Print	Single	Send stable weight through serial port
Auto-O	A-1	Autozero to half accuracy of scale.
ACCU	AC-nO	Weight storage disabled
FiLL	fL-Off	Fill mode disabled
CArAt	Crt-Off	Carat weighing disabled
LitrE-1	Lt1-Off	Litre mode disabled
APO	APO-Off	Auto Power off disabled
Psm	PSm-Off	Power saving mode disabled
P-HoLd	PHf-Off	Peak hold mode disabled
3d-SEt	P3d-Off	Third decimal mode disabled
titLE	TLE-Off	Title printing disabled
P-tYPE	P.tYPE1	Horizontal Printing mode
Pr.fmt	Prf-1	Only weight
SEt Pt	SEt-1	Single set point
f-tYPE	FTYPE-1	+ve Logic outputs for fill application
Config	T-Z	Simple Tare and Zero mode.
RS 232	S Type	select S type

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