JUNIOR TERMINAL INSTRUCTIONS

Instructions Index:

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For latest versions of this manual please refer to http://www.electronicweighing.co.uk

Section 1

SETTING UP INSTRUCTIONS

WARNING: ALWAYS ENSURE THAT THE POWER IS DISCONNECTED BEFORE REMOVING COVER.

a. SETTING UP: Load Cells.

The load cell connector is a seven way screw terminal connector:

SCN	Cable Screen
-SE	Negative Sense
+SE	Positive Sense
-EX	Negative Excitation
+EX	Positive Excitation
-IN	Negative Signal
+IN	Positive Signal

NOTE REGARDING SENSE TERMINATION
The sense inputs are for use with six wire load cells that have remote voltage sensing in order to compensate for resistive loss within the cable run. If a load cell is used without this feature then connect the positive excitation to positive sense and negative excitation to negative sense.

b. SETTING UP: Power

i. DC Applications:

N	Positive 6-26v d.c.
E	Ground

ii DC Applications: Battery Versions

B+	Battery Positive
B-	Battery Negative
V+	Adaptor DC (+12VDC)
V-	Adaptor Earth

Suitable Charging Adaptor: approx 12vdc@300mA minimum

Correct Procedure to charge unit:
1. With the adaptor **AND** Junior switched **OFF** plug the adaptor jack into the unit.
2. Switch on the Adaptor and allow approx 12 hours to fully charge (from a fully discharged state). You can use the unit whilst in charging mode.
3. Once the charge cycle is complete press and hold the ZERO key to switch off the Junior and **switch OFF the adaptor via the mains outlet.**
4. Disconnect the Adaptor jack from the Junior and use normally until the Battery Low indicator is indicated then complete cycle.

iii. AC Applications: (110-240VAC Auto Selection)

DANGER: WARNING LIVE TERMINALS EXPOSED WHEN REAR COVER REMOVED

L	Live 110-240VAC
N	Neutral
E	Earth

Please note: AC power supply automatically senses the mains supply voltage.

c. SETTING UP: SERIAL CONNECTIONS - Printer

GD	Signal Ground
OP	RS232C Output
IP	RS232C Input (Busy)

Serial Protocol
RS232C (+/- 10v)
8 Data Bits
1 Stop Bit
No Parity
Baud Rate: Selectable
ASCII

Printer Requirements:
40 column RS232C compatible.
Common Connections (typical example 25pin D Type – Epson LX300)
Pin 3 (RXD) to OP
Pin 7 (SG) to GD
Pin 20 (DTR/Busy) to IP
Please refer to the printer manual for relevant pin descriptions/terminations.

D1. SETTING UP: SERIAL CONNECTIONS - PC Output (type 1)

(For details of Hyper-terminal Mode please consult manual G8-WINDHT-120603)

02	**1**	**2**	**3**	**4**	**5**	**6**	**DP**	**K**	**G**	**0A**	**OD**

02 = Start
6 digits weight plus placed decimal point (data MSD to LSD)
Units i.e. kg, g, or te
0A = line feed
0D = Carriage return

D2. SETTING UP: SERIAL CONNECTIONS - PC Output (type 2)

02	**N/G**	**S/U**	**+/-**	**1**	**2**	**3**	**4**	**5**	**6**	**DP**	**K**	**G**	**0A**	**OD**	**03**

02 = Start Message
N/G = Nett or Gross
S=Stable **U**=Unstable
+ / - = polarity
6 digits weight plus placed decimal point (data MSD to LSD)
Units i.e. kg, g, or te
0A = line feed
0D = Carriage return
03 = End of message

e. SETTING UP: TIME AND DATE

Restore power whilst holding PRINT key pressed.
Release the POWER key.
Input 2 digits day/month/year/hour/minute each entry followed by MODE.
For Example: <M=Mode key> 12M06M03M11M30M = 12/06/03 11:30am.
Unit automatically returns to weighing mode.

Section 2

CALIBRATION.

Press and hold the ZERO key and then press the POWER key, when the display indicate “888888” release the ZERO key and the display will prompt ‘DP 0000’ and the last decimal point setting. To alter the decimal point setting press the PRINT key until the required position is indicated, once selected press MODE to accept.

The display will now prompt "DIV" and the last minor division increment will be indicated. To alter this value (possible selections are: 1, 2, 5, 10, 20 or 50) repeatedly press the PRINT key until the required value is shown, once selected press MODE to accept

The display will then briefly prompt “TOP” followed by the last top capacity stored. The far left digit will indicate “E” showing that the display is in keyboard mode. To clear existing data press the ZERO key. Press the PRINT key to increment the least significant digit and press the TARE key to shift the digit to the left i.e. to input a value of 4000 press the PRINT key 4 times and then press the TARE key 3 times. When you have input the required data press MODE to store the value.

The display will briefly prompt “LOAD” and then indicate ‘E00000’ awaiting the input of your test load value, at this point check that the platform is empty then enter your required test load value via the keyboard and press MODE to accept. The display will now auto null any dead load and raw un-calibrated weight will be indicated. Check that the display is zero and press the ZERO key if necessary then position the test load onto the platform, when the display is stable press the MODE key. The display will then indicate the existing function code for the unit, the MODE key will accept this code or refer to Menu settings if you wish to amend it. The unit is now calibrated and ready for use.

Post Trim Calibration

This mode is useful for Silo and large capacity applications.
Switch on the unit whilst holding the MODE key. The unit will work as a standard weighing machine with no functions. Press the TARE key to increase the displayed weight value or the PRINT key to decrease the displayed weight value. Once you have the correct weight displayed press the MODE key to return to normal weighing mode.

LOADCELL ERROR MESSAGE

If the display prompts “L-CELL” then the input voltage is outside the working range of the unit. Check all load cell connections are present and correct.

Section 3

MENU SETTINGS

The unit may be user configured for certain functions this is set via a code input.
To access the code hold the TARE key whilst restoring power, when the display shows 888888 release the TARE key. A 5 digit numeric code number will be displayed prefixed by an alpha character that records the build version for information purposes only. Refer to the code table for available functions. To change the settings press the ZERO key in order to clear the existing code and then input the new code followed by MODE key, note: the unit must have the necessary hardware options installed if printing or relay functions are selected.

Weigh Mode		**Print Mode**		**Baud Select**		**Line Feeds**		**Function**	
0	Standard	**0**	Nett Kg	**0**	1200	**0**	1	**0**	Standard N/Open
1	Count	**1**	Nett Gm	**1**	2400	**1**	2(*)	**1**	N/Open - Fast
2	Silo	**2**	Nett Tn	**2**	9600	**2**	3	**2**	N/Closed
3	Peak	**3**	G.N.T. Kg.	**3**	Reserved	**3**	4	**3**	N/Closed-Fast
4	Manual Batcher	**4**	G.N.T. Gm	**4**	A.E.O.	**4**	5	**4**	High/Low Limit
5	1 Trip Batcher	**5**	G.N.T. Tn	**5**	Reserved	**5**	6	**5**	H.L. Limit - Fast
6	2 Trip Batcher	**6**	P.C. Kg	**6**	Reserved	**6**	7	**6**	Reserved
7	Totalize	**7**	P.C. Gm	**7**	Reserved	**7**	8	**7**	Reserved
8	Freeze	**8**	P.C. Te	**8**	Reserved	**8**	9	**8**	Auto Switch off
9	Lbs \ kg	**9**	Reserved	**9**	Reserved	**9**	10	**9**	Reserved

* If PC output is enabled this selects type 2 data string (see page 3)

Section 4

USER INSTRUCTIONS

1. STANDARD WEIGH MODE
ZERO: references the display to zero
TARE: the first press of this key tares the display the second press clears the tare. A symbol in the far left of the display indicates if a tare is present.
MODE: allows access for preset tare input.
PRINT: initiates a printout if option fitted. The printout is selectable for nett or gross/nett/tare and for units and linefeeds. A time and date print will also occur if installed. Note the printout will only occur when the unit is steady and further printouts are inhibited until the load is removed.
POWER: used to switch on the unit, if this key is pressed when the unit is working the display will indicate the supply voltage, this is useful for battery operation.

2. WEIGH COUNT MODE
Ensure that the indicator displays zero
ZERO: clears any container weights.
Count 10 items onto the platform then press the MODE key. The display should now indicate a count of 10 and further components added will be counted. The ZERO or TARE may be used if required. To return to weigh mode press the MODE key.
PRINT: initiates a printout of weight or count depending on mode selection.
Note the sample quantity is default to 10 however if you wish too alter this value press the POWER key and input the desired quantity (1 to 100).

3. SILO MODE
This mode inhibits inadvertent zero selection. To zero the display press the ZERO and then MODE key together. Release the ZERO key and then the MODE key

4. PEAK HOLD
To select peak hold mode press the MODE key. Peak weight will then be displayed until the MODE key is pressed again, the unit will then return to normal weighing.
The PRINT key initiates a printout of weight or peak weight depending on the mode.
Press POWER to view supply voltage.

5. TOTALISING
Press the PRINT key to add an indicated weight value to the store. Further additions are inhibited until the display returns to zero. To view the total press the MODE key, press the PRINT key to clear the total or the MODE key to exit.
If a printer is connected then printout of running number, weights and total will occur. Press POWER to view supply voltage.

6. FREEZE MODE (Useful for Fork Lift and Animal Weighing Applications)
When a weight above 50 displayed divisions is indicated the unit will initiate a stabilise routine followed by a locking of the indicated weight value. The display will unlock below 50 indicated divisions. To initiate a re-weigh in lock mode press the TARE key and when the display shows zero re-press this key. Press the PRINT key to add an indicated weight value to the store. Further additions are inhibited until the display returns to zero. To view the total press the MODE key, press the PRINT key to clear the total or the MODE key to exit.

USER NOTE: BATTERY LOW INDICATOR
A small dot illuminates in the far left region of the display if the battery voltage is low.

USER NOTE: Display Indicates "DATA"
To return back to normal weighing mode press the "MODE" key (Version C software onwards).

Section 4 Continued...

7. RELAY FUNCTIONS

The unit may be user configured for several relay options.
Ensure that the necessary hardware options are installed i.e. 1 or 2 relays. The relays are solid state devices. These relays are rated at a maximum of 100mA at 24vdc. Connections to the relays are via terminal connections close to the devices designated 1 & 2 = relay 1 contacts 3 & 4 = relay 2 contacts. These relays are volt-free contacts unless specified
Three modes of relay control are selectable along with 3 patterns of operation as detailed.

a. Standard Batcher (MENU>WEIGHMODE<code 4: [4000x])

This allows a batching sequence utilising a single relay control.
Press the MODE key the display will briefly prompt TRIP1" and then the existing value will be shown. To clear existing data first press the ZERO key to clear the value, the far left digit will show "E" indicating that the display is in keyboard mode. Press the PRINT key to increment the least significant digit and press the TARE key to shift the digit to the left i.e. to input a value of 4000 press the PRINT key 4 times and then press the TARE key 3 times.
Repeat the above if Trip 2 is installed.
Ensure that the indicator shows zero by selecting the ZERO or TARE key.
Press the PRINT key to initiate the sequence.
The relay will close and remain closed until the target is reached. If a tare is selected this will be cancelled, further batching is inhibited until the display indicates zero. Use of the TARE key to zero the display is intended for silo batching operations from a loaded silo.

b. One trip batcher mode (MENU>WEIGHMODE<code 5 – AUTOMATIC: [5000x]).

This mode controls a single relay continuously.

c. Two trip batcher mode (MENU>WEIGHMODE<code 6 – AUTOMATIC: [6000x]).

This mode controls two relays continuously.

RELAY PATTERN SELECTION

Refer to the menu code table and menu setting instructions.
3 relay patterns are available and each may include fast or normal integrate speeds.
MENU>FUNCTION<code 0/1 will operate normally *open* contacts, the relays will *close* if equal too or greater than trip values.
MENU>FUNCTION<code 2/3 will operate normally *closed* then *open* if equal too or above the trip values.
MENU>FUNCTION<code 4/5 is intended for a low/high system. Relay 1 is normally *closed* below its trip value then *open* above its trip value and relay 2 is normally *open* below trip value and *closed* at the preset high level trip value.

8. A.E.O. (Analogue Expansion Option): Menu select [00400]

This menu setting relates to the Analogue Expansion Card that, when fitted, will transmit 4-20mA, 0-5vdc or 0-10vdc @ 16bits resolution. This output is an analogue value of the displayed weight. Refer to the data sheet supplied with the unit for more details.

Correct Procedure to charge unit:

1. With the adaptor **AND** Junior switched **OFF** plug the adaptor jack into the unit.
2. Switch on the Adaptor and allow approx 12 hours to fully charge (from a fully discharged state). You can use the unit whilst in charging mode.
3. Once the charge cycle is complete press and hold the ZERO key to switch off the Junior and **switch OFF the adaptor via the mains outlet.**
4. Disconnect the Adaptor jack from the Junior and use normally until the Battery Low indicator is indicated then complete cycle.

Section 5

SPECIFICATIONS

Display: 6 digits, 18mm high LCD or LED displays

Membrane: Polyester, tactile action.

Enclosure: Splash proof, 165mm x 110mm x 60mm High Grade Stainless Steel.

Operating Temperature: -10 to +40 degrees C

Load cell Capability: Up to 8 x 300R load cells

Conversion: 24bit Sigma Delta A-D.

Input Range: 0 – 150mV

Linearity: 0.0015% F.S.

Temperature Drift: 2 p.p.m per degree C

Update Speed: 7ips or 30ips – user selectable

Internal Resolution: 300,000 counts for 10mV input (2mV per volt load cell)

Calibration: Keyboard routine.

Power (Mains Option): Mains version: 75-250vac 50/60Hz Auto Selection.

Power (D.C. Option): 6-26vdc

Power Consumption: LCD version operating 10mA, LED version operating 130mA. (add 16mA per 300R load cell)

Section 7

EC Declaration of Conformity

E.M.C. STANDARD EN61326 CLASS A

We: *Electronic Weighing Services Limited*

Of: *Lytton Street, Stoke on Trent. Staffordshire. ST4 2AG*

Declare under our sole responsibility that the products:

JUNIOR DWT	EXCELSIOR DWT

To which this declaration relates is in conformity with the following transposing harmonized standards:

DIRECTIVE	DESCRIPTION
EN55022	Radiated Emissions
EN61000-4-4	Fast Burst Transient
EN61000-4-3	Radiated Immunity
EN61000-4-6	Conducted Immunity
EN61000-4-2	Electrostatic Discharge
2014/35/EU	Low Voltage Safety

R.O.H.S DIRECTIVE

The instruments listed conform to the R.O.H.S directive and is therefore compliant with the directive.

This declaration is made on the basis of certification and declarations provided to us from our component suppliers. Under our duty of due diligence these documents are stored for future audit purposes.

Signed

S.G. Keeling

(Managing Director)