Avery Weigh-Tronix

Industrial Indicators
Terminal Mode Serial Communications

Loadstar – L215 & L225
Evolution – E1105, E1110, E1205 & E1210

English

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Table of contents

Title of Document:	Industrial Indicators – Terminal Mode Serial Communications. Loadstar – L215 & L225, Evolution – E1105, E1110, E1205 & E1210

Document distribution list

Name	Job Title or Role	Agreement	Information

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1. Scope

This document describes the serial commands of the terminal mode functionality which have been added to the Loadstar L215 & L225 and Evolution E1105, E1110, E1205 & E1210 indicators.

The commands allow the indicators to interface with the PC application.

2. Operation

The indicator is capable of providing support for one terminal channel although any of the communications channels can be used.

2.1 Entry into and exit from dumb terminal mode

Serial commands are provided to allow the indicator to enter into and exit from the terminal mode. This also includes a command to interrogate the terminal mode status.

2.2 Dumb terminal mode operation

In the dumb terminal mode the indicator functions as a ‘dumb terminal’ with commands to allow remote control of the display.

Screen formatting commands are provided to allow cursor positioning, clearing of the LCD display screen and the display of the following:

- Filling bars
- Check weighing bars
- Weight
- Count
- Tare
- Creating of soft key

It is the responsibility of the controlling remote device to ensure that any over lapping of text and graphics are handled correctly.

When the indicator is operating in terminal mode any keys pressed will be transmitted out on the serial port with the remote PC being responsible for handling ANY resulting actions.

2.3 Terminal control in normal weighing mode

In normal weighing mode the display formatting capabilities of the remote device will be limited to control of the indicator soft keys.

The remote device can suppress the standard soft keys and replace them with ‘dummy’ soft keys. These ‘dummy’ keys have no functionality other than to transmit the label of the pressed soft key down to the remote device.

3. Supported commands

All commands are prefixed by an STX and suffixed by an ETX. All data contained between the STX and ETX must be greater than 1F hex. Any data less than this must have 20 hex added to it and be prefixed by the SUB (1A Hex) character. Each serial command is identified by a unique two-byte identifier.

The terminal mode commands support the following activities:

- Entry and exit from terminal mode.
- Dumb terminal mode including screen formatting commands.
- Routing received text messages to specified serial ports.
- Uploading and downloading PLUs.
- Facility for uploading and downloading indicator function settings, such as counting.
- Suppression and assignment of soft keys in normal weighing mode.

3.1 Display and formatting commands

3.1.1 Enter Terminal Mode

Purpose: Clears the display and passes indicator control to the computer. All key presses are to be sent to the computer for action.

Command	<STX>GT<ETX>
Response	ACK indicator now in dumb terminal mode. NAK indicator was already in dumb terminal mode.
Mode	Normal weighing mode.
Indicators	All.

NOTE: *E11xx does not support terminal.*

3.1.2 Exit Terminal Mode

Purpose: Exits dumb terminal mode restoring control back to the indicator. The display is to be restored to normal.

Command	<STX>ET<ETX>
Response	ACK indicator now in normal weighing mode, displays restored. NAK indicator was not in dumb terminal mode.
Mode	Terminal mode.
Indicators	All.

3.1.3 Enquire Terminal Mode

Purpose: Allows the PC to determine the indicator's mode of operation.

Command	<STX>AT<ETX>
Response	"Terminal" indicator is in dumb terminal mode. "Normal" indicator is normal weighing mode.
Mode	Anytime.
Indicators	All.

3.1.4 Clear Display

Purpose: Clears the text and the graphics from the display. Also clears any dummy soft keys that have been created by a remote application.

Command	<STX>CS<ETX>
Response	ACK display cleared. NAK indicator in normal weighing mode.
Mode	Terminal mode.
Indicators	All.

3.1.5 Display Text Message

Purpose: Displays a text message on screen.

Command	<STX>DT data <ETX> 2 char x co-ord (1 to 40) 2 char y co-ord (1 to 64) + message
Response	ACK NAK
Mode	Any mode. ***NOTE:*** *If the comms channel is configured for use with the PAK KING © application then in normal weighing mode all text messages will be forced to the data entry line of the display.*
Indicators	All except E1105.

3.1.6 Upload and Download PLU

Purpose: Allows new PLUs to be created or transmits current PLU settings..

Command	<STX>PL “0” + ASCII value to Upload “1” to Download <ETX>
Response	ACK + data. NAK invalid PLU.
Mode	Any time.
Indicators	L2xx.

NOTE: *Refer to Appendix A for format of PLU data.*

3.1.7 Destroy Terminal Mode Soft Keys

Purpose: Enables soft keys 1 to 5 to be destroyed and clears the assigned a label. Sending the command with no additional parameters will cause all soft keys to be destroyed. However, if by appending an additional optional parameter (value ranging from ‘1’ to ‘5’) then a specified soft key can be destroyed.

Command	<STX>DK Optional soft key <ETX>
Response	ACK command processed. NAK invalid option specified.
Mode	Any time.
Indicators	All except E11xx.

3.1.8 Create Soft Key

Purpose: Enables soft keys 1 to 5 to be created and assigned a label. Soft keys can be assigned in dumb terminal mode and even in normal weighing mode as long as the standard soft keys have been suppressed. When using assigned soft keys in normal weighing mode pressing them causes no action to take place other than the soft key label being sent down to any serial channel configured for terminal emulation. In terminal mode the soft key number will be sent (binary 1 to 5).

Command	<STX>AK Six char label (upper case)<ETX>
Response	ACK command processed. NAK invalid either incorrect label position or attempting to assign a soft key in normal weighing mode without having suppressed the standard soft keys.
Mode	Any mode.
Indicators	All except E11xx.

3.1.9 Update the Weight

Purpose: Forces the indicator to update the weight display. This command was put in for balance compatibility.

Command	<STX>FW<ETX>
Response	ACK command processed. NAK the indicator is in terminal mode.
Mode	Terminal mode.
Indicators	All.

3.1.10 Display the Weight

Command	<STX>IW plus data <ETX> Char 1 '1'-show weight. Char 2 '8'-disable weight (leaving it showing). Char 2 '4'-permanent (freezes weight same as above). Optional char 3. '1' show weight in current active format. '2' show platform 1 weight in large format. '4' show platform 2 weight in large format. '8' show dual weight format. Optional char 4. '1' show platform 1 weight in medium format. '2' show platform 2 weight in medium format.
Response	ACK command processed. NAK the indicator isn't in terminal mode.
Mode	Terminal mode.
Indicators	All.

NOTE: *To clear the screen send "Freeze" and then "IW18"*

3.1.11 Line Draw Graphics

Purpose: Allows the remote device to plot lines on the indicator display. The display is 240 * 64, the bottom left of the display is assumed to be point 0,0 and the top right 239,63. Multiple line may be defined within a single line.

Command	<STX>DL data <ETX> Char 1 - Style '0' o clear line, 1 to draw line. Char 2 – 13 are co-ordinates (x, y) that specify the two line points. Up to 10 lines can be configured in a single command.
Response	ACK NAK
Mode	Any.
Indicators	All except E1105.

3.1.12 Data Entry Title

Command	<STX>WT'text' <ETX> 'text' – pre fixes the data entry text with a string
Response	ACK success 'text' is accepted NAK
Mode	Any.
Indicators	All except E11xx.

3.1.13 Password Text Entry

Purpose: When set keys typed in by the user are displayed as * while the key is still sent in its normal form.

Command	<STX>PA 'x'<ETX> Byte x … '0' normal text '1' display entered text as * 'text' – pre fixes the data entry text with a string
Response	ACK NAK
Mode	Terminal.
Indicators	E12xx.

3.2 Indicator control commands

3.2.1 Enable and Disable Data Entry

Purpose: Toggles the data entry permission in normal weighing mode. Initial data entry is enabled.

Command	<STX>DW<ETX> No data appended to command disables data entry. '1' appended to command enables data entry.
Response	ACK indicator is in normal weighing mode. NAK indicator is terminal mode.
Mode	Normal weighing mode.
Indicators	All.

3.2.2 Return to Top Level Soft Key

Purpose: Displays the top-level soft keys (function keys) when the indicator receives this command.

Command	<STX>JO<ETX>
Response	ACK indicator is in normal weighing mode. NAK indicator is terminal mode.
Mode	Normal weighing mode.
Indicators	All.

3.2.3 Restart Indicator

Purpose: Forces the indicator to perform a warm start (no memory test).

Command	<STX>RS<ETX>
Response	ACK
Mode	Anytime.
Indicators	All.

3.2.4 Remote Print Request

Purpose: Simulates the operator pressing the print key. The transmitted string will be that of the current functional mode (that is, check weighing string) and interlocks will be checked.

Command	<STX>PR<ETX>
Response	Formatted print string. If the print interlocks are not met then there will be no response. ***NOTE:*** *The indicator must not display an error message.*
Mode	Normal weighing mode.
Indicators	All.

3.2.5 Suppress Soft Keys

Purpose: To simplify the display and give greater remote control this command is to be added to allow a remote device to hide the standard soft keys. This command is intended for use with the 'AK' command, which allows dummy soft keys to be assigned. When the soft key is pressed the indicator takes no action except to send the keys label name to the remote device (channel that suppressed the soft keys in the first place).

Command	<STX>HS action <ETX> action '0' releases soft keys, '1' suppresses soft keys
Response	ACK command accepted. NAK invalid parameter received, command not processed.
Mode	Normal weighing mode.
Indicators	All.

3.2.6 Routing Data Streams

Purpose: Allows data to receive on one channel and transfer to another. The data to be routed must be prefixed by an STX and suffixed by an ETX and can be no more than 190 characters in length. All data contained between the STX and ETX must be greater than 1F hex, any data less than this must have 20 hex added to it and be prefixed by the SUB (1A Hex) character.

Command	<STX>DS plus data<ETX> char 1 ... '0' Internal printer. '1' Comm channel 1. '2' Comm channel 2 '3' Comm channel 3
Response	ACK command accepted. NAK invalid parameter received, command not processed.
Mode	Any mode.
Indicators	All.

3.2.7 Direct I/O Control

Purpose: Allows a remote device direct access to the indicators I/O. However, the command will function in both normal weighing and in terminal mode if the indicator is running trips then the outcome of trying to control the state of the outputs will be uncertain.

Command	<STX>IO action + optional data<ETX> Action = '0' Current IO status sent Action = '1' external device controls the trip outputs. Byte 1 – 'A' – 'P' Byte 2 – 'A' – 'P' Advanced only Byte 3 – 'A' – 'P' Byte 4 – 'A' – 'P'
Response	ACK command accepted. + optional data NAK Optional data – Byte 1 – 'A; - 'P' (Four bits) Byte 2 – 'A; - 'P' (Four bits) Advanced only Byte 3 – 'A; - 'P' (Four bits) Byte 4 – 'A; - 'P' (Four bits)
Mode	Any mode.
Indicators	All.

3.2.8 Enable and Disable Indicator Function

Purpose: Enables a remote device to control the indicator mode of operation without having to resort to keyboard emulation.

Command	<STX>OE data <ETX> Char 1 '0'disable or '1' enables. Name of option *
Response	ACK command accepted. NAK if indicator is in terminal mode or invalid data.
Mode	Normal weighing mode.
Indicators	All.

NOTE: *Refer to the Appendix for a list of functions.*

3.2.9 Set Time and Date

Purpose: Allows the real time clock to be set. This function operates under the principles of GIGO.

Command	<STX>TD time and date in ASCII. <ETX> Hour high, hour low, min high, min low, sec's high, sec's low, month high, month low, day high, day low, year high, year low For example: 11.39.24 19-10-98
Response	ACK command processed. NAK RTC wasn't updated.
Mode	Any mode.
Indicators	All.

3.2.10 Keyboard Enable and Disable

Purpose: Allows a keyboard to be enabled or disabled.

Command	<STX>KA data <ETX> Byte 1… '0' disable '1' enable keyboard
Response	ACK. NAK
Mode	Any mode.
Indicators	All.

3.3 Indicator weight and tare commands

3.3.1 Get Weight

Purpose: Causes the indicator to send the current weight (the string will be that formatted in the communications channel). Indicator interlocks are not checked.

Command	<STX>PP<ETX>
Response	Formatted weight string.
Mode	Anytime.
Indicators	All.

3.3.2 Zero Request

Purpose: Allows the remote device to re-zero the indicator. The indicator will acknowledge that it has received the command but this does not mean that the indicator has successfully processed the request. It is the responsibility of the remote device to check that the weight is actually zero.

Command	<STX>ZEdata<ETX> Char 1 - '0' platform 1 '1' platform 2
Response	ACK command accepted
Mode	Any.
Indicators	All.

3.3.3 Sat Tare Value

Purpose: Causes the current semi-auto tare value to be transmitted. With no additional parameters added to the command it is compatible with balance but due to the indicator have multiple platforms and dual grads additional parameters are required.

Command	<STX>CT +optional <ETX> Optional If there is no optional data then the SAT value sent is for the active scale and units. Byte 1 – Scale '0' '1' Byte 2 - Units '0' primary units '1' secondary units '2' custom

Response	ACK + formatted print string. NAK if parameters invalid.
Mode	Anytime.
Indicators	All.

3.3.4 Clear Current Semi Auto Tare

Purpose: Clears the semi-auto tare of the currently active platform.

Command	<STX>RT<ETX>
Response	ACK
Mode	Anytime.
Indicators	All.

3.3.5 Set Tare Value

Purpose: Causes the current semi-auto tare value to be transmitted. With no additional parameters added to the command it is compatible with balance but due to the indicator have multiple platforms and dual grads additional parameters are required.

Command	<STX>TT +optional <ETX> Optional If there is no optional data then indicator attempt to perform a SAT tare on the active scale. If there is data it tries to set a preset tare based on this value
Response	ACK did a tare NAK
Mode	Any time.
Indicators	All.

3.3.6 Set clear Preset Tare

Purpose: Allows the preset tare for the currently active platform to be set or cleared.

Command	<STX>PT<ETX> perform semi auto tare <STX>PT#<ETX> clear active tares <STX>PT ASCII tare value <ETX> perform preset tare.
Response	ACK command processed. NAK invalid parameter.
Mode	Any time.
Indicators	All.

3.4 Indicator application commands

3.4.1 Current Active Function

Purpose: Causes the name of the current active function to be sent.

Command	<STX>OO<ETX>
Response	ACK + formatted print string. NAK if indicator is in terminal mode.
Mode	Normal weighing mode.
Indicators	All.

NOTE: *Refer to the Appendix for a list of functions.*

3.4.2 Current Active PLU

Purpose: The indicator sends the current active PLU number.

Command	<STX>OP<ETX>
Response	ACK + current active PLU number in ASCII. NAK indicator in terminal mode or no PLU is active.
Mode	Normal weighing mode.
Indicators	All.

3.4.3 Activate PLU

Purpose: Activates a specified PLU. The PLU may be identified either by name or number.

NOTE: *The indicator is to behave in the same way as it would if the PLU was enabled from the keyboard.*

Command	<STX>APplu identifier<ETX>
Response	ACK command accepted NAK
Mode	Normal.
Indicators	All.

3.4.4 Check Weigh Low Value (use in Limits mode)

Purpose: Uploads and downloads the check weigh low target value of the specified platform.

Command	<STX>CL plus data<ETX> Data Byte 1 ... Get or Set '0' load new value. '1' sends current value. Byte 2 ... Scale ID '0' scale 1 '1' scale 2 Byte 3 ... Unit '0' primary '1' secondary. '2' custom ASCII weight
Response	ACK command processed, plus optional target value in ASCII. NAK invalid parameter received, command not processed.
Mode	Any mode.
Indicators	All.

3.4.5 Check Weigh High Value (use in Limits mode)

Purpose: Uploads and downloads the check weigh target value of the specified platform.

Command	<STX>CH plus data<ETX> Data Byte 1 ... Get or Set '0' load new value. '1' sends current value. Byte 2 ... Scale ID '0' scale 1 '1' scale 2 Byte 3 ... Unit '0' primary '1' secondary. '2' custom ASCII weight

Response	ACK command processed, plus optional target value in ASCII. NAK invalid parameter received, command not processed.
Mode	Any mode.
Indicators	All.

3.4.6 Check Weigh Target Accept (use in Tol mode)

Purpose: Uploads and downloads the check weigh target value of the specified platform.

Command	<STX>TA plus data<ETX> Data Byte 1 ... Get or Set '0' load new value. '1' sends current value. Byte 2 ... Scale ID '0' scale 1 '1' scale 2 Byte 3 ... Unit '0' primary '1' secondary. '2' custom ASCII weight
Response	ACK command processed, plus optional target value in ASCII. NAK invalid parameter received, command not processed.
Mode	Any mode.
Indicators	All.

3.4.7 Check Weigh Target Lo Tolerance (use in Tol mode)

Purpose: Uploads/downloads the check weigh target value of specified platform.

Command	<STX>TL plus data<ETX> Data Byte 1 ... Get or Set '0' load new value. '1' sends current value. Byte 2 ... Scale ID '0' scale 1 '1' scale 2 Byte 3 ... Unit '0' primary '1' secondary. '2' custom ASCII weight
Response	ACK command processed, plus optional target value in ASCII. NAK invalid parameter received, command not processed.
Mode	Any mode.
Indicators	All.

3.4.8 Check Weigh Target Hi Tolerance (use in Tol mode)

Purpose: Uploads and downloads the check weigh target value of the specified platform.

Command	<STX>CL plus data<ETX> Data Byte 1 ... Get or Set '0' load new value. '1' sends current value. Byte 2 ... Scale ID '0' scale 1 '1' scale 2 Byte 3 ... Unit '0' primary '1' secondary. '2' custom ASCII weight
Response	ACK command processed, plus optional target value in ASCII. NAK invalid parameter received, command not processed.
Mode	Any mode.
Indicators	All.

3.4.9 Count Piece Weight Value

Purpose: Uploads and downloads the piece weights to be used in counting.

Command	<STX>CP plus data<ETX> Data Byte 1 ... Get or Set '0' load new value. '1' sends current value. Byte 2 ... Scale ID '0' scale 1 '1' scale 2 Byte 3 ... Unit '0' primary '1' secondary. '2' custom ASCII weight
Response	ACK command processed, plus optional target value in ASCII. NAK invalid parameter received, command not processed.
Mode	Any mode.
Indicators	All.

3.4.10 Count Target Value

Purpose: Uploads and downloads the count target.

Command	<STX>TC plus data<ETX> Data Byte 1 ... Get or Set '0' load new value. '1' sends current value. Byte 2 ... Scale ID '0' scale 1 '1' scale 2 Byte 3 ... Unit '0' primary '1' secondary. '2' custom ASCII weight
Response	ACK command processed, plus optional target value in ASCII. NAK invalid parameter received, command not processed.
Mode	Any mode.
Indicators	All.

3.4.11 Recipe Weight Compensation Values

Command	<STX>TI plus data<ETX> Data Byte 1 ... Get or Set '0' load new value. '1' sends current value. Byte 2 ... Scale ID (Not used currently set to 0) '0' scale 1 '1' scale 2 Byte 3 ... Unit (Not used currently set to 0) '0' primary '1' secondary. '2' custom Byte 4 … Ingredient ID (weigh only) '1' to '8' or set bit 7 and 0 - 128 ASCII weight
Response	ACK command processed, plus optional target value in ASCII. NAK invalid parameter received, command not processed.
Mode	Any mode.
Indicators	All.

3.4.12 Recipe Target Weight Values

Command	<STX>ST plus data<ETX> Data Byte 1 ... Get or Set '0' load new value. '1' sends current value. Byte 2 ... Scale ID (Not used currently set to 0) '0' scale 1 '1' scale 2 Byte 3 ... Unit (Not used currently set to 0) '0' primary '1' secondary. '2' custom Byte 4 … Ingredient ID (weigh only) '1' to '8' or set bit 7 and 0 - 128 **NOTE:** This is not the alarm number but (unfortunately) but the nth weight based alarm ASCII weight
Response	ACK command processed, plus optional target value in ASCII. NAK invalid parameter received, command not processed.
Mode	Any mode.
Indicators	All.

3.4.13 Select Recipe

Command	<STX>SR plus data<ETX> Byte 1 ... Get or Send '0' Load new value. '1' Send current value. Byte 2 & 3 optional Recipe ID '0' – '9'
Response	ACK command processed + recipe number in ASCII on Send. NAK invalid parameter received, command not processed.
Mode	Any mode.
Indicators	E11xx and E12xx.

3.4.14 Recipe Active

Command	<STX> RA<ETX>
Response	ACK Recipe in progress. NAK Recipe not active.
Mode	Normal.
Indicators	E11xx and E12xx.

3.4.15 Recipe Control

Command	<STX>RC data<ETX> Data Byte 1 ... Recipe Action '1' ABORT '2' START '3' PAUSE '4' RESUME '5' RESET
Response	ACK command processed NAK invalid parameter received, command not processed.
Mode	Normal.
Indicators	E11xx and E12xx.

3.4.16 Recipe Info

Purpose: Formats a string containing recipe name and ingredient information

Command	<STX>RI data<ETX> Data %r recipe number %R recipe name %i ingredient number %I ingredient name ASCII chars - just copied as is into output string
Response	ACK + <STX>ASCII string<ETX> NAK invalid parameter received, command not processed.
Mode	Normal.
Indicators	E11xx and E12xx.

3.4.17 Alarm Target

Command	<STX>AW data<ETX> Data Byte 1 ... Get or Set '0' load new value. '1' sends current value. Byte 2 ... Scale ID (Not used currently set to 0) '0' scale 1 '1' scale 2 Byte 3 ... Unit (Not used currently set to 0) '0' primary '1' secondary. '2' custom Byte 4 … Alarm ID (weigh only) '1' to '8' or set bit 7 and 0 – 128 Note this is not the alarm number but (unfortunately) but the nth weight based alarm ASCII Weight
Response	ACK + <STX>ASCII Weight<ETX> (Send only) NAK invalid parameter received, command not processed.
Mode	Normal.
Indicators	E11xx and E12xx.

3.4.18 Conversion Factor Value

Purpose: Uploads and downloads a conversion factor.

Command	<STX>CF plus data<ETX> Byte 1 … Get or Set '0' load new value. '1' sends current value. conversion factor in ASCII
Response	ACK command processed, plus optional target value in ASCII. NAK invalid parameter received, command not processed.
Mode	Any mode.
Indicators	All except E1105.

3.4.19 Conversion Factor Units

Purpose: Uploads and downloads the conversion factor units.

Command	<STX>CU plus data<ETX> Byte 1 ... Get or Send '0' Load new value. '1' Send current value. Conversion factor units in ASCII ('1' to '8')
Response	ACK command processed, plus optional target value in ASCII. NAK invalid parameter received, command not processed.
Mode	Any mode.
Indicators	All except E1105.

3.4.20 Computer Link

Purpose: Allows terminal mode to support the computer link commands as defined in the service manual.

NOTE: *<SUB> characters will be needed.*

Command	<STX>XXterminal command<ETX>
Response	ACK command accepted. + computer link response NAK computer link command not found
Mode	Normal.
Indicators	All.

3.4.21 Pack Run Target

Command	<STX>PV data<ETX> Data Byte 1 ... Get or Set '0' load new value. '1' sends current value. Byte 2 ... Scale ID '0' scale 1 '1' scale 2 Byte 3 ... Unit '0' primary '1' secondary. '2' custom ASCII weight
Response	ACK command processed, plus optional target value in ASCII. NAK invalid parameter received, command not processed.
Mode	Normal.
Indicators	All.

3.4.22 Pack Run Minimum Weight

Command	<STX>PM data<ETX> Data Byte 1 ... Get or Set '0' load new value. '1' sends current value. Byte 2 ... Scale ID '0' scale 1 '1' scale 2 Byte 3 ... Unit '0' primary '1' secondary. '2' custom ASCII weight
Response	ACK command processed, plus optional target value in ASCII. NAK invalid parameter received, command not processed.
Mode	Normal
Indicators	All.

3.4.23 User Field Titles

Purpose: This command allows access to the user field title strings. There are 20 of these strings each 25 characters in length.

Command	<STX>UFdata<ETX> Char 1 ... '0' load new value. '1' sends current value. Char 2 & 3 … Title number in ASCII + ASCII string
Response	ACK command processed, plus optional string in ASCII. NAK invalid parameter received, command not processed.
Mode	Normal.
Indicators	All except E1105.

3.4.24 Query Transaction Log

Purpose: Interface for querying the indicator transaction log stored on the external memory casd.

Command	<STX>ODdata<ETX> data Byte 1… Sub Command ‘1’ get total number of transactions ‘2’ get first transaction ‘3’ get last transaction ‘4’ get number of transactions meeting this query ‘5’ get transaction meeting this query ‘6’ delete transaction records Sub Command 1 - 3 No additional data required Sub command 4 – 5 See record below. Sub Command 6 Byte 2 … define records to be deleted ‘1’ records older than 3 months ‘2’ records older than 6 months ‘3’ records older than 12 months
Response	Sub Command 1 - 4 ACK.<STX>ASCII<ETX> NAK Sub Command 2 - 3 ACK<STX>transaction record<ETX> NAK Sub Command 5 ACK<STX>record<ETX> OR <ETX> (multiple records) NAK Sub Command 6 ACK NAK.
Mode	Normal
Indicators	E11xx and E12xx Rev 2.

NOTE: The format of a transaction record shall be as shown below.

m	m	h	h	,	d	d	y	y	y	y	,	c	c	c	c	c	c	,	s	,	w	w	w	w	w	w	w	w	,

u	u	u	u	u	,	sat	sat	sat	sat	sat	sat	sat	sat	,	pt	pt	pt	pt	pt	pt	pt	pt	,	t	,	crc

m	minutes
h	hours (24 hour)
d	day
m	month
y	year (2 digit year)
c	consecutive number
s	scale id 1,2,3
w	weight (note always uses decimal point if present)
u	units
sat	semi Auto or Free tare
pt	keyboard entered or stored tare
t	tare 0 no tare 1 free tare, 2 stored tare or 3 stored and free tare
crc	checksum 0 valid 1 invalid

4. Appendix

4.1 Format of PLU data

NOTE: *Only applicable to L225 Upload and Download PLU data.*

char 1	PLU associated platform
char 3	PLU number
char 20	Part number field
char 20	PLU description field
char 20	Scribble field
char 8	PLU type (see 4.2)
char 6	PLU units
char 12	PLU sub-total
char 12	PLU grand total
char 6	PLU sub-total transaction counter
char 6	PLU grand total transaction counter
char 1	'1' or '0' Wipe sub-total
char 1	'1' or '0' Wipe grand total
char 2	Associated tare store
char 6	Tare value held in PLU
char 2	Conversion factor units (units go 1 to 10 as configured in supervisor mode)
char 6	Conversion factor
char 4	Packing run size
char 6	Packing run minimum weight
char 1	'0' or '1' product listing disable/enable
char 8	Date on which the PLU was created in a format of dd/mm/yy. Years less than '92 are assumed to be for the next century. ***NOTE:*** *Do not create PLUs with future dates.*

Eight blocks of seven characters as below:

Store No.	**Count**	**Checkweigher**	**Fill**	**Trips**
1	Pce wt	Low accept	Low display	Trip 1
2	Limit	High accept	Low OK	Trip 2
3	Samp size		Target	Trip 3
4			High OK	Trip 4
5				Comp 1
6				Comp 2
7				Comp 3
8				Comp 4

char 1	Automatic inflight compensation trip 1
char 2	Automatic inflight compensation trip 2
char 3	Automatic inflight compensation trip 3
char 4	Automatic inflight compensation trip 4

4.2 Option names

COUNT, FILL, CHECK, BRIDGE, BREAD, AV WT, PACK