Virtual Measurements & Control

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Axle Weighing System
Scale Technology Corp.
Rev. 2.4

Hello Dick,

To access Time & Date and other Instrument Menus you must first terminate execution of the SMARTS Program. After changing the instrument settings cycle power and the system will come up running the SMARTS Program again.

To terminate execution of the SMARTS Program:

1 Press the 'F6' key
2 Within 5 seconds, enter the Password '2001' and press the 'ENTER' key.
3 Press the 'ENTER' key again ant the display will read " EXIT   MENU".
4 Follow the instructions in the Manual from then on.

Remember, when finished making changes cycle the power to restart the SMARTS Program.

Best regards,

Randall

Randall Green

Overview

This unit has been programmed to weigh and record individual axle weights and provide a total vehicle weight.

Hardware

1) Controller

   a) PC104 compliant controller with onboard A/D, serial communications and control interface.

2) Display

   a) Graphic/alphanumeric back lit LCD display divided into one large numeric weight display and three alphanumeric prompt displays.

3) Continuous output to an RF unit / remote display with traffic indicators.

4) Demand output to an RF unit / printer.

5) Keypad

   a) Six predefined 'F' control keys and 12 numeric data entry keys.

6) Power

   a) 90-280 VAC auto sensing

7) Battery Backup of configuration and in process values.

8) Enclosure:

   a) 8x10x4 stainless steel NEMA 12.

Setup

1) Set Up

   a) Control information will be entered via a numeric keypad with direct entry or menu driven methods.

i) Program print and display messages

(1) Press F3 on the numeric keypad

    (a) Within five seconds enter the password, then press 'ENTER' to accept.

    (b) The display will prompt '0=DEFAULT TEXT 1=PROGRAM TEXT'. To load the default messages enter a '0', to program custom messages enter a '1'.

        (i) Default Text:

            1. (Print Line 1) 'PRECISON LOADS

            2. (Print Line 2) '   800-340-6246'

            3. (Display) blank

        (ii) Programming Text.

            1. See the 'Alpha Entry' section of this manual below for instructions on entering alpha characters.

            2. Note that characters may only be entered at the end of the line. Use the clear key to remove characters back to the first one to be edited.

            3. There are two lines of printed text included in the printed header information and one line of text that may be displayed. Each message is programmed in two parts with a maximum of eleven characters making the total message twenty two characters long.

            4. The display will prompt 'PRINT LINE 1 1-11'. Enter the 1st eleven characters of print line one. For example if you are entering the default message this will be '   PRECISI'.

            5. The display will prompt 'PRINT LINE 1 12-22'. Enter the 2nd eleven characters of print line one. For example if you are entering the default message this will be 'ON LOADS'.

            6. The display will prompt 'PRINT LINE 2 1-11'. Enter the 1st eleven characters of the print line two. For example if you are entering the default message this will be '   800-3'.

            7. The display will prompt 'PRINT LINE 2 2-12'. Enter the 2nd eleven characters of print line two. For example if you are entering the default message this will be '40-6246'.

8. The display will prompt 'DISPLAY LINE 1-11'. Enter the 1st eleven characters of the display line.

9. The display will prompt 'DISPLAY LINE 2-22'. Enter the 2nd eleven characters of the display line.

ii) Setup operating parameters

(1) Press F9 on the numeric keypad.

Password is 2001

(a) Within five seconds enter the password, then press 'ENTER' to accept.

(b) Enter the total time out value. This is the time entered in 0.1 second intervals that the system will wait for another axle before totaling the recorded axles if a fifth axle is not detected.

(c) Enter the beginning consecutive ticket number. This will be the first ticket number printed. A value between 1 and 999 may be entered as a valid ticket number, entering '0' will disable printing of the ticket number. Note when the consecutive ticket number advances past 999 it will be reset to '1'.

(d) Enter the last axle to be processed. When this number of axles is reached it will trigger automatic axle totaling.

(e) Enter the scale mode: Enter a '1' if the scale is long and it is possible for two axles to load at once.

Operational Sequence Axle Mode

1) The display will prompt 'WAITING FOR AXLE   1' with the Go indicator illuminated.

2) The axle is pulled onto the weight platform . When the weight exceeds the minimum axle weight the stop indicator will illuminate.

3) The display will prompt 'WAITING FOR STABLE WEIGHT' until motion ceases.

4) The axle weight will be recorded and saved.

5) The display will prompt 'WAITING FOR AXLE X EXIT' where X is the current axle and the Go indicator will illuminate. If wide scale is selected the scale will switch to step (2) when a 3000 lb change is detected.

6) When the weight drops below the minimum axle weight the display will prompt 'WAITING FOR AXLE X OR TOTAL'.

a) If the last axle as been recorded

    i) The axle weights will be totaled and recorded.

b) If the total time out expires and another axle is not detected

    i) The axle weights will be totaled and recorded.

c) If another axle is detected on the weight platform the process will continue from step 3.

7) The total weight will be sent to the remote display and the stop and go indicators will flash alternately for 10 seconds. The total weight will be displayed on the VC505 weight display.

8) The consecutive ticket number will be incremented.

9) The process will continue from step 1 with axle 1.

Outputs

1) Continuos output is available on channel 2. Printer output is available on channel 1. See the VC505 manual for connections.

2) NOTE: The baud rate for printing and continuos output must be the same.

Alpha Entry

1) Input of alpha characters with the standard VC505 keypad by using a 'SHIFT' function with the alpha characters mapped in a 'Telephone' pattern coincident with the numeric characters.

Character Map

'1'	'-./'	'2'	'ABC'	'3'	'DEF'
'4'	'GHI'	'5'	'JKL'	'6'	'MNO'
'7'	'PQRS'	'8'	'TUV'	'9'	'WXYZ'
'0'	' ' (space)				

Press Shift

2) Press the desired alpha key. Each time the alpha key is pressed the alpha character will scroll to the next one assigned to the key. Press 'Enter' to accept the desired alpha character and continue to the next.

3) Pressing enter a second time will terminate the edit.

4) To return to the numeric entry mode press Shift a second time.

Example:

Keystrokes to enter '123ABC1'

1,2,3,SHIFT,2,ENTER,2,2,ENTER,2,2,2,ENTER,SHIFT,1,ENTER

Calibration

1) Press 'F1' on the numeric keypad.

2) Within five seconds enter the (password) 2001 then press 'ENTER' to accept.

3) The display will prompt '0=FullCal 1=CalSpan 2=CalZero'. To perform a full calibration, zero and span enter '0'. To use the existing zero and recalculate span enter '1'. To recalculate zero only enter '2'.

a) Full Calibration:

i) The display will prompt 'Remove Weight Press Enter'. Insure all weight is removed from the scale platform and press 'Enter'.

ii) The display will prompt 'Establishing Reference'. This will take approximately 15 seconds.

iii) The display will prompt 'Add Sample Weight'. Place the calibration weight to be used on the scale platform then press 'Enter'.

iv) The display will prompt 'Enter Sample Weight'. Enter the amount of calibration weight that has been placed on the scale and press 'Enter'.

v) The display will prompt 'Establishing Sample' This will take approximately 15 seconds.

vi) The display will prompt 'To Save Information Press Enter'. To save the calibration information press 'Enter'. If for some reason the calibration just performed should be rejected press 'Zero'.

b) Span Only Calibration:

i) The display will prompt 'Add Sample Weight'. Place the calibration weight to be used on the scale platform then press 'Enter'.

ii) The display will prompt 'Enter Sample Weight'. Enter the amount of calibration weight that has been placed on the scale and press 'Enter'.

iii) The display will prompt 'Establishing Sample' This will take approximately 15 seconds.

iv) The display will prompt 'To Save Information Press Enter'. To save the calibration information press 'Enter'. If for some reason the calibration just performed should be rejected press 'Zero'.

c) Zero Only Calibration:

i) The display will prompt 'Remove Weight Press Enter'. Insure all weight is removed from the scale platform and press 'Enter'.

ii) The display will prompt 'Establishing Reference'. This will take approximately 15 seconds.

iii) The display will prompt 'To Save Information Press Enter'. To save the calibration information press 'Enter'. If for some reason the calibration just performed should be rejected press 'Zero'.

Set Time/Date

1) Press 'F2'

2) Within five seconds enter the password, then press 'ENTER' to accept.

3) Enter the time and date as prompted.

Exiting SMARTS for System Configuration

1) Press F6 on the numeric keypad.

2) Within five seconds enter the password, then press 'ENTER' to accept.

3) Press 'Enter' until the axle weighing prompts disappear. Refer to the VC505 manual for low level system configuration directions.