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Operating Instructions

Ranger Analog Option

INTRODUCTION

The Ranger Count Analog Option permits the connection of an external analog load cell or scale base to the Ranger Count Scale by means of an Analog Input connector located at the rear of the Scale. Its main application is for dual scale counting or weighing systems. This manual is used in conjunction with the Ranger Count Scale Operating Instruction manual.

INSTALLATION

A DB9M connector is provided for the user to make proper connections to the remote load cell or scale base. Make the connections as shown per the following table:

4 Wire Load Cell Connection	DB9 Connector Pin Number 2 Jumpers Req'd	6 Wire Load Cell Connection	DB9 Connector Pin Number
+Excitation 1	1 	+Excitation	1
-Excitation	2 	+Sense	2
	3 	-Excitation	3
	4 	-Sense	4
Shield	5	Shield	5
+Signal	7	+Signal	7
-Signal	8	-Signal	8

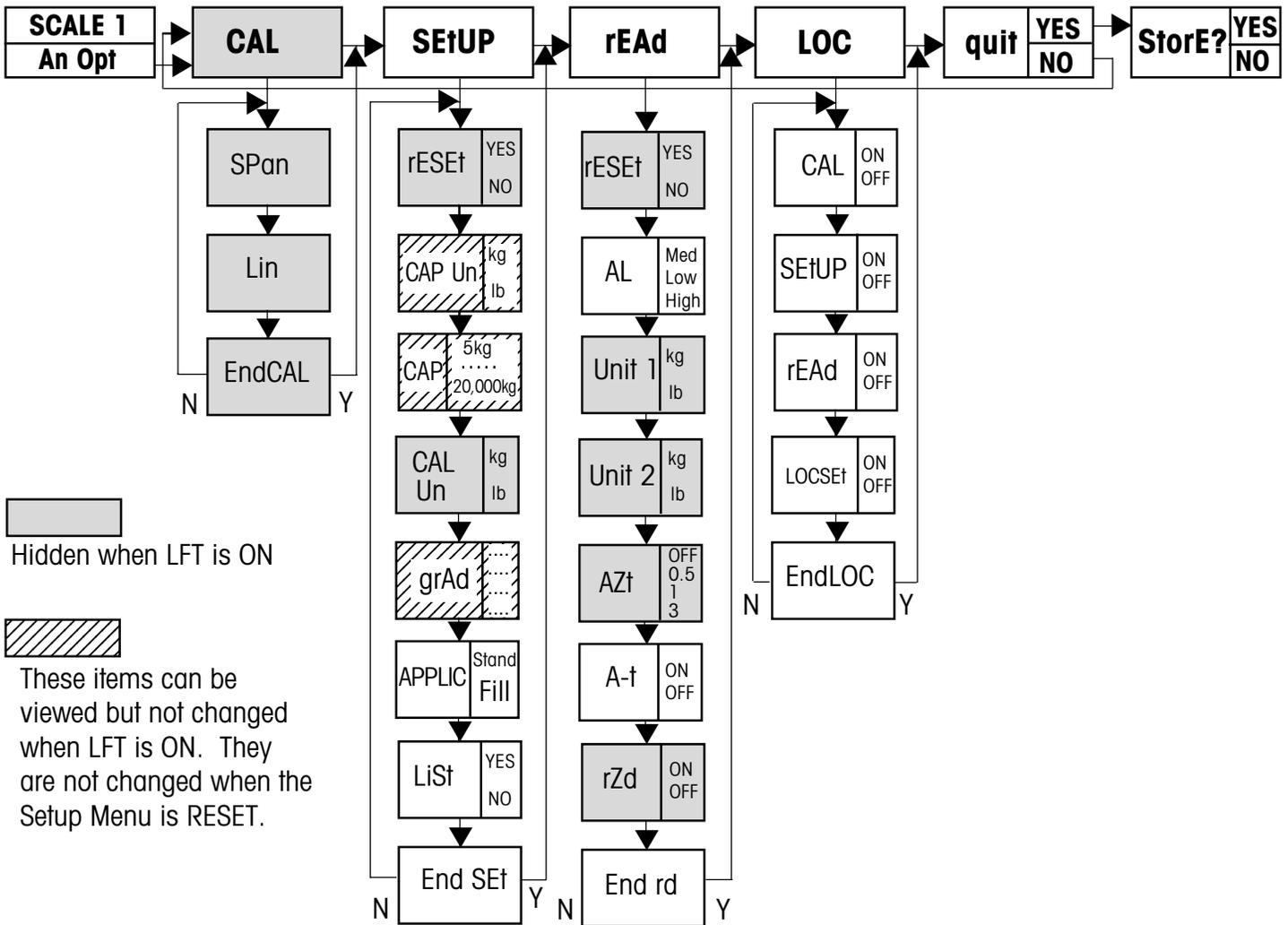
Thereafter, plug the load cell or scale base connector into the Ranger Count Analog Input connector located at the rear panel of the Ranger Count Scale.

ANALOG OPTION MENU STRUCTURE

The following diagram illustrates the Analog Option Menu available on the Ranger Count Scale equipped with the Analog Option. This menu allows the user to set up the remote load cell or scale base parameters for use with the Ranger Count Scale. Using the function switches in the front panel of the Ranger Count Scale, navigating in the Analog Option Menu is similar to the Ranger Count menu operations (refer to the Ranger Count Operating Instructions manual).

ANALOG OPTION MENU STRUCTURE (Cont.)

Ranger Analog Option Menu Structure



To enter the Analog Option Menu (with the Scale on), press and hold the G/N/T *MENU* button until SCALE 1 is displayed. Advance to the An Opt (Analog Option) menu with a short press of the PRINT *UNITS* button, then select this menu with a short press of the G/N/T *MENU* button. When the Analog Option Menu is selected, the Scale 2 symbol is displayed on the LCD. Selection of weighing units in the Analog Option Menu is limited to lb and kg only.

CONFIGURING REMOTE LOAD CELL OR SCALE BASE PARAMETERS

To set up the parameters of the remote load cell or scale base, step through the SEtUP, rEAd and LOC menus in the Analog Option Menu.

In the SEtUP menu, input the Capacity Unit (CAP Un), Capacity (CAP) and Graduation Settings (grAd) established from the load cell or scale base that will be connected to the Ranger Count Scale. Exit the menu and save SEtUP selections. Revise and save corresponding rEAd and LOC settings as necessary.

CONFIGURING REMOTE LOAD CELL OR SCALE BASE PARAMETERS (Cont.)

The Calibration Unit (CAL Un) can also be revised and saved from the SETUP menu (the default Calibration Unit will be the same as the selected Capacity Unit, but may be changed as necessary). The Calibration Unit can be set to either kg or lb. The available capacities and graduation settings are shown in the following table:

Ranger Analog Option Capacity & Readability

Capacity	Min Grad	Max Grad	Capacity	Min Grad	Max Grad
5	0.00005	0.005	300	0.002	0.2
10	0.0001	0.01	400	0.005	0.5
15	0.0002	0.02	500	0.005	0.5
20	0.0002	0.02	600	0.005	0.5
25	0.0002	0.02	750	0.01	1
30	0.0002	0.02	1000	0.01	1
40	0.0005	0.05	1200	0.01	1
50	0.0005	0.05	1500	0.02	2
60	0.0005	0.05	2000	0.02	2
75	0.001	0.1	2500	0.02	2
100	0.001	0.1	3000	0.02	2
120	0.001	0.1	5000	0.05	5
150	0.002	0.2	7500	0.1	10
200	0.002	0.2	10000	0.1	10
250	0.002	0.2	20000	0.2	20

CALIBRATION

After having entered and saved the necessary SETUP parameters, calibration can begin. Calibrating the Analog Option load cell or scale base is accomplished in a similar manner as the Ranger Count Scale (refer also to the Calibration section in the Ranger Count Operating Instructions).

Before beginning calibration, make sure masses are available. If you begin calibration and realize calibration masses are not available, abort the calibration with a short press of the ON/ZERO OFF button. The scale will retain previously stored Analog Option calibration data. Calibration should be performed as necessary to ensure accurate weighing.

The Ranger Count Scale with Analog Option also offers a choice of two calibration methods: Span Calibration and Linearity Calibration.

Span – Span calibration ensures that the base reads within specifications using two weight values: zero and a weight value close to 100% of the full capacity. As with the Ranger Count Span Calibration, the required span weight can be reduced to approximately 25% of full capacity by pressing the PRINT UNITS button.

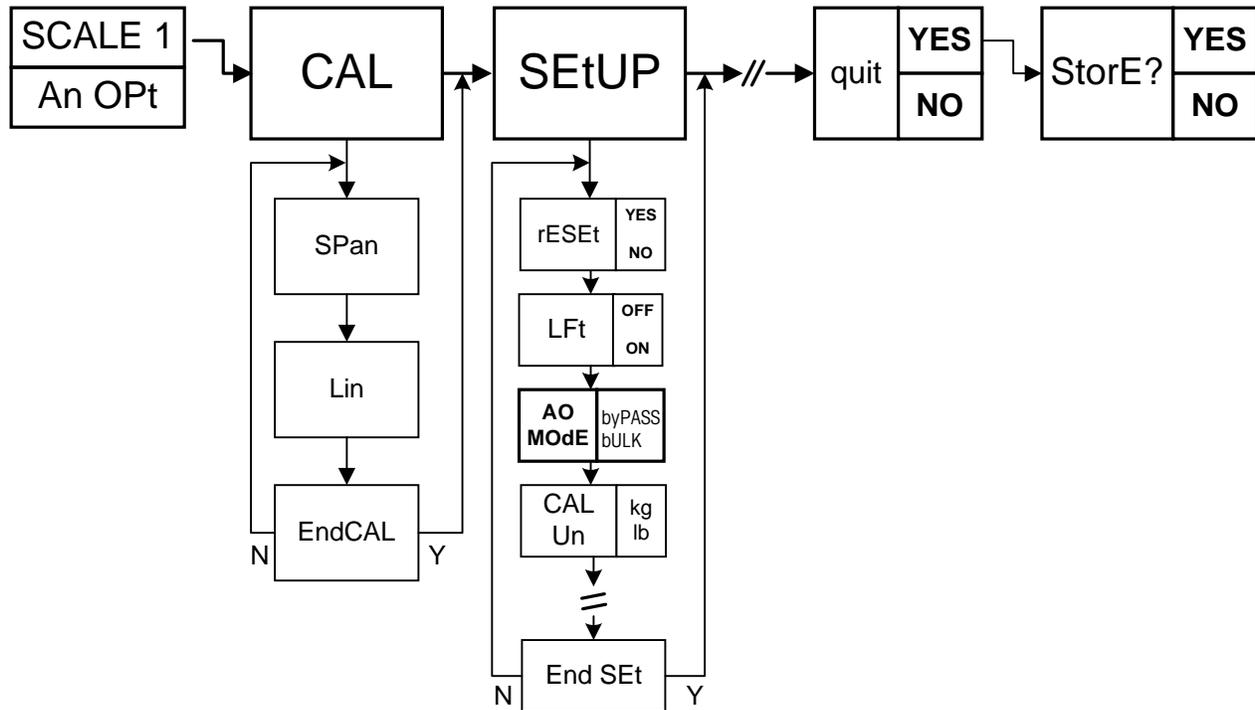
Linearity – Linearity calibration minimizes deviation between actual and displayed weights within the base's weighing range. Three weight values are used: zero, a weight value at midpoint of the base's weighing range, and a weight value at or near the specified capacity.

It is recommended that a span calibration be performed following a linearity calibration.

ACTIVATING DUAL SCALE COMMUNICATIONS

Once the Analog Option system is set up and calibrated, use of the remote load cell or scale base is enabled by selecting bULK in the AO MOdE (selecting the byPASS option enables the use of a scale-to-scale system connected through the RS2332 port). Access to this selection is through the SCALE 1 > SEtUP menu

Ranger Count with Analog Option Menu Structure



OPERATION

During operation, the connected load cell or scale base becomes the second (bulk) scale in a dual scale parts counting or weighing system. All switch functions described in the Ranger Count Operating Instructions that pertain to operation of a second scale also apply to the Analog Option (refer to the Ranger Count Operating Instructions for details about piece counting with two-scale systems). Use the Scale Select button to switch the display between Scale 1 (Ranger Count Scale) and Scale 2 (remote load cell or scale base). The Scale 1 or Scale 2 symbols will correspondingly appear on the LCD. The functions Zero, G/N/T and Tare will be executed on the scale that is currently on the host LCD.