

DIGITAL WEIGHT COMPUTER MODEL TR-1-NK (2 TO 4 SCALE SYSTEM)  
WITH TOTAL WEIGHT and LB/KG CONVERSION  
TNKN-CRYS33-4IN-LED-LBKG  
TNKN-CRYS33-4IN-LCD-LBKG

STANDARD OPERATION FEATURES

This unit can interface with up to 4 individual scale platforms, or individual load cells, each with its own calibration and operational control. The display can be selected to show any of the 4 scales, or be set to the TOTAL mode that will display the total of all scales.

(NOTE: The decimal point of all scales must be the same)  
There is also an optional low limit alarm that will sound if the displayed scales gross weight is below this setting.

ZERO BUTTON: (Will not operate in TOTAL mode)

To bring the scale to a zero balance reading, select the scale, then press the ZERO button. The button will not activate if the MOTION lamp is on.

(SCALE SELECT) : Used to select which scale to display or to put the system in the scale TOTAL mode.

# : Used to view and set the LOW WEIGHT LIMIT ALARM and the optional time and date.

1. Set the display to the scale desired.
2. Press the # button.
3. The display shows the current low limit alarm setting for that scale.
4. To alter this value, use the PRINT button to increment the flashing digit and use the \* button to select which digit flashes.
5. When finished, press the TARE button.

( LB KG): Press to toggle between lb and kg weight displays.  
(Works if parameter #0 is set to 0)

PRINT(OPTION)

To activate an optional printer, press the PRINT button. The printer data output will become active when the weight is not in motion or in an overload condition.

(SCALE #)

Press to view the scale number that is being displayed

## MODEL TR-1-NK CALIBRATION INSTRUCTIONS

## Setting the number of Scales:

By setting the number of scales that are attached to the indicator, it will avoid viewing them in the scan mode or while selecting a scale.

1. Put the display in the TOTAL mode by pressing the SCALE SELECT button until the display shows all dashes.
2. Access the CAL button
3. Press the CAL button and the display will show the current number of scales.
4. Alter this value by pressing the PRINT button to increment the flashing digit, and the SCALE SELECT button to select which digit flashes.
5. When finished, press the SCALE # button.

## Parameter Entry:

1. First select the scale with the SCALE SELECT button.
2. Access the CAL button.
3. Press the CAL button until the display shows-----
4. Press and release the LB/KG button.
5. The display will show 01--nn (The 00 denotes parameter number 1 and the nn may be any 2 digit number representing the current value set for parameter number 1.
6. To change the value of this parameter, press the PRINT button until the digit you want to change is flashing.
7. Press the SCALE # button to increment the flashing digit.
8. To cycle to the next parameter, press the PRINT button until the parameter number is flashing, then increment by pressing the SCALE # button.
9. Continue steps 5 through 7 for all parameters desired.
10. When finished, press the CAL. button again to return to the weight display mode.

## Parameter List:

- # 0 = Printer Format and Lb/Kg conversion disable ;
  - 00 = enable conversion- single line print
  - 01 = disable conversion - single line print
  - 02 = disable conversion - with GR/TR/NT print
  
- # 1 = The sample/averaging rate. A setting of 1 is the fastest display rate update, and does not average. A setting of 3 (for example) will take 3 samples and average them before updating the displayed weight.
  
- # 2 = The displayed graduation size. Set at 10 if a graduation size of 10 is required.
  
- # 3 = The overload trip-point in hundreds of graduations +1%
  - If the scale is to be 2,500 by a graduation of 1, then a setting of 25 would cause the overload to activate at 2,525.
  - Set to 99 if no overload point is desired.
  - Set to 00 for a 10,000 graduation overload.
  
- # 4 = The motion detection window setting. Set this to the number of graduations that will be allowed as a no-motion condition.
  
- # 5 = Zero tracking amount. The 1s digit of this parameter is set to the number of graduations allowed to be auto-zeroed. A setting of n0 to n9 is available. The 10s digit of this parameter is used to set the number of samples that will be tested before auto-zero is done. For example, a setting of 52 in this parameter will track of + or- 2 graduations from zero, after the display has remained in a no-motion condition for 5 sample rates.
  
- # 6 = The decimal point position. ie, 02 will cause 0.00
  
- # 7 = The print size and Time/Date option
  - 00=small 01=medium 02=large all with no time/date print
  - 10=small 11=medium 12=large with time/date printed
  
- # 8 = Printer prespaces (indent) and print inverted
  - x0 = non inverted print    x2 = inverted print
  - 0x = no prespaces
  - 2x = 4 prespaces (double the digit entered)
  
- # 9 = Remote data enable / Printer type and baud rate
  - (OPTIONAL)
  - x0= 300 baud inverted data
  - x1= 300 baud print data
  - x2= 9600 baud PR-2 roll-tape printer
  - x3= 9600 baud PR-1 ticket printer (TM-295)
  - 0x= no remote output
  - 1x= continuous remote output enabled
  - 2x= optional on-demand remote output enabled  
(this option must be ordered at time of purchase)

### Test Weight Calibration:

This procedure is done to set the initial calibration.  
Afterwards, the "Minor" calibration routine can be used.

FIRST Select the scale to be calibrated with the SCALE SELECT button.

ASSURE THAT THE CALIBRATION IS DONE IN THE LB MODE

1. Access the CAL button.
2. Press the CAL button until the display shows. -----
3. Press and release the SCALE # button.
4. The display will show the raw un-calibrated value.
5. Assure that the scale is at a zero load condition.
6. Press the ZERO (balance) button to remove the dead-load.
7. Load the scale with a known weight value.
8. The display must now show a value larger than the test weight.  
If the display is not larger than the weight value, do one of the following.
  - A. Check the load cell size, it may need to be reduced.
  - B. Increase the graduation size.
9. When the weight is stable, press the LB/KG button and the display will come up with the last used calibration weight that was entered. If this is the weight that was placed on the scale, go to step #11.
10. Change the display to show the known calibration weight value.
  - A. Press the PRINT button to select the flashing digit.
  - B. Press the SCALE # button to increment the flashing digit.
11. Press the CAL button, and the display will return to the weight display mode, showing the calibrated weight.

### Minor Calibration Corrections.

This procedure is done to make minor adjustments to the calibration.

1. Access the CAL button.
2. Press the CAL button until the display shows. -----
3. Press and release the "PRINT" button.
4. The display will flash the current gross weight.
5. To increase the displayed weight, press the PRINT button.  
or  
To decrease the displayed weight, press the ZERO button.
6. When the weight is correct, press the CAL button again to return to the normal weigh mode.

5

LOAD CELL CONNECTION

LOAD CELL TERMINAL BLOCK INTERNAL

OPTIONAL

4 PIN AMP 1=+EX  
2=-SIG  
3=+SIG  
4=-EX

INTERNAL TERMINAL BLOCK

1 = SHIELD GROUND  
  
2 = PLUS EXCITATION TO ALL SCALES  
  
3 = MINUS EXCITATION TO ALL SCALES  
  
4 = PLUS SIGNAL FROM SCALE #2  
  
5 = MINUS SIGNAL FROM SCALE #2  
  
6 = PLUS SIGNAL FROM SCALE #3  
  
7 = MINUS SIGNAL FROM SCALE #3  
  
8 = PLUS SIGNAL FROM SCALE #1  
  
9 = MINUS SIGNAL FROM SCALE #1  
  
10 = PLUS SIGNAL FROM SCALE #4  
  
11 = MINUS SIGNAL FROM SCALE #4

Printer Data OPTIONAL: DB9P PIN 3=DATA PIN 5=GND  
Baud rate is 9600  
Data bits are 8 with 2 stop bits and no parity

Nominal single line print data string will be;

Polarity sign / 6 weight digits / LB or KG or TN / Time and  
Date if option is ordered / Carriage Return and Line Feed.

-----  
Remote or Continuous Data OPTIONAL:

Baud rate is 9600 fixed.  
Data bits are 8 with 2 stop bits and no parity

Data stream is as follows;

STX / Space or - / 6 weight digits / L / G for gross /  
if negative With lead zero K N for net  
suppression

Space or a / Carriage Return / Line Feed  
M if in motion or  
O if in overload

TERMINAL BLOCK 1=CONT. DATA 2=+20ma 3=PRINTER DATA 4=+20ma 5=GROUND