



## *Professional Weighing Equipment*

### **Digital Weight Indicator**



TR-1-NK (WD) (2013 Version)

# Operation Manual

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# Declaration of Conformity

Declaration of conformity for apparatus with CE mark


We hereby declare that the product to which this declaration refers conforms to the following standards.

Electronic scale: TR-1-NK Indicator

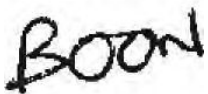
USA model

TR-1-NK

TR-1-NK (WD)

Mark applied	EU Directive	Standards
	2004/108/EC	EN 61326-1: 2006

Signature:



Boon Lim, R & D Manager

Date: 14. 11. 2012

LW Measurements LLC, 620 Carlson Court, Rohnert Park, CA 94928

# Customer Service

## **USA**

LW Measurements LLC  
620 Carlson Court  
Rohnert Park, CA 94928  
USA  
Tel: (707) 542-2185  
FAX: (707) 542-3285

<http://lwmeasurements.com>

## Introduction

What you should know about these Operating Instructions:

Tree® Professional Weighing Equipment products are simple to operate.

Nevertheless, you should read through these operating instructions in their entirety, so that you can make optimum use of the full potential and the diverse possibilities of the weighing scale in your daily work.

These operating instructions contain guidance in the form of pictograms and keyboard diagrams, which should help you in finding the required information:

For the labeling of potential hazards and advice, please see Safety below.

# Safety

## Representations and symbols

Important instructions, which involve safety, are highlighted with the appropriate mark:



## Safety recommendations

When using the weighing equipment in surroundings with increased safety requirements, the corresponding regulations must be observed.

The weighing scale may only be used with the power adapter supplied. Before connecting the power adapter to the scale, the user must ensure that the operating voltage stated on the power adapter is compliant with the mains voltage. If not, please contact Customer Service at the address above.

If the power adapter or its cable is damaged, the weighing scale must immediately be disconnected from the electricity supply (pull out the power adapter).

If there should be any reason to believe that it is no longer safe to operate the scale, it should be immediately unplugged from the electricity supply (pull out power adapter) and secured against inadvertent operation.

In carrying out maintenance work, it is essential to follow the recommendations set out in maintenance and servicing.

The weighing scale must not be operated in an area subject to explosion risks.

Care must be taken when weighing liquids to ensure that no liquid is spilled into the inside of the scale or into connections on the rear of the equipment or the power adapter. If liquid is spilled on the scale, it must immediately be unplugged from the main electricity supply (pull out power adapter).

The weighing scale may be operated after it has first been inspected by a service technician.

These operating instructions must be read by each user and should be easily accessible at the workplace at all times.

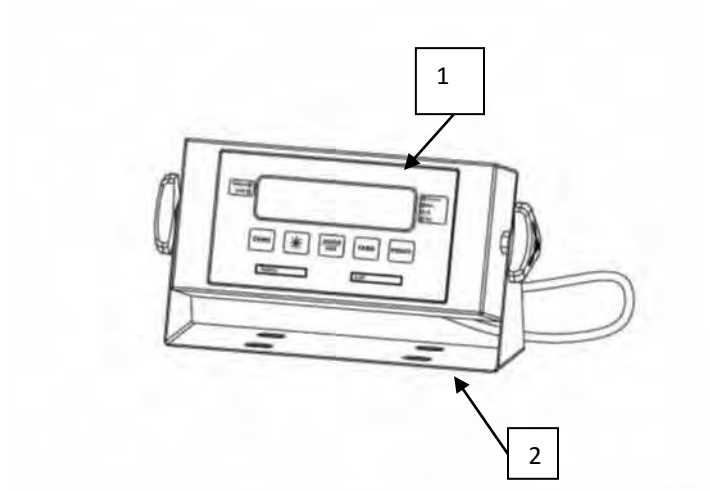
# Weight Indicator

## Construction & Functions

The indicator consists of the following parts;

- Display panel (1)
- Mounting Bracket (2)
- Operating manual

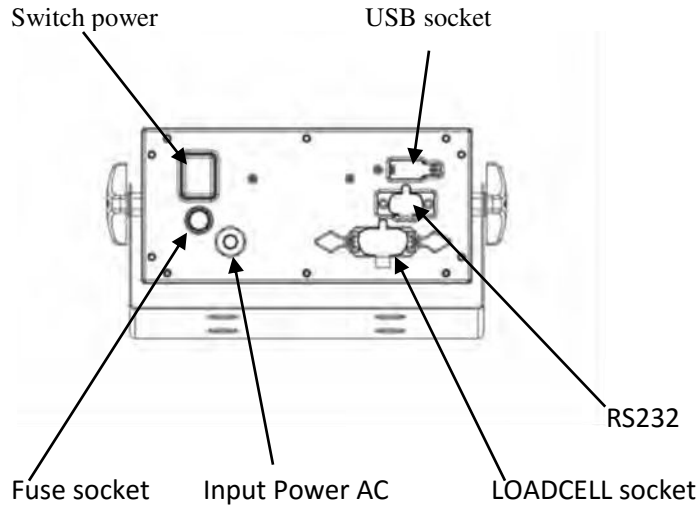
Figure: your scale



# Features

- Pounds to Kilogram conversion
- USB output
- Data interface
- Counting function that supports HID format (UPS World Ship Software)
- Operation Manual

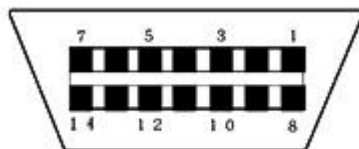
Figure Details of your indicator



**Back panel diagram for TR-1-NK**

LOADCELL Socket : DB14

PIN NO	WIRE NAME	Color
1, 8	+Excitation	RED
3, 10	- Excitation	BLACK
5, 12	+Signal	GREEN
7, 14	- Signal	WHITE



RS232 Transmission Agreement:

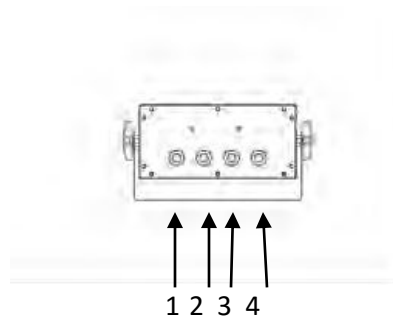
Mode: Simplex Asynchronous Serial  
 Baud rate: 9600  
 Data Bit: 8  
 Parity Bit: NONE  
 Stop Bit: 1  
 Data Format: ASCII

Transmission Information Format: 16 Byte , blank=20H

<STX><POL><7Data><kg/lb><blank ><G/N><M ><CR><LF>

**Note: The M character will only appear in continuous mode  
 As set by parameter #8**

**Back panel diagram for TR-1-NK WD**

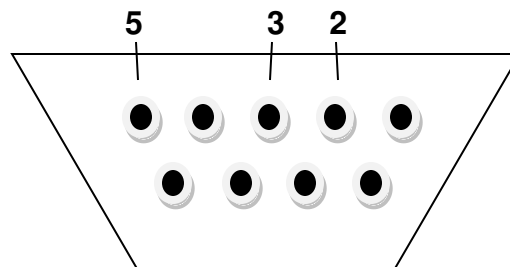


Socket:	
PIN No	Socket Name
1	AC
2	LOAD CELL
3	undefined
4	indefined

RS232 connection: J2 (mainboard)	
PIN No	Wire Name
1	GND
2	TXD
3	RXD

**RS232 Transmit Function**  
 RS232 interface: DB9

PIN No	Wire Name
2	TXD
3	N.C. RXD
5	GND





# Application & Conformity

The Following are instructions of how to correctly use the weight indicator:

In using the weighing indicator in combination with other devices as well as with devices produced by other manufacturers, the appropriate regulations for the safe use of the relevant attachments and their application in accordance with instructions must be observed.

The weighing indicator has been manufactured and tested in accordance with the standards and recommendations set out in the declaration of conformity.

The following applies to TR-1-NK

Power supply:

AC 120V±10% (AC Power cord)

Allowable ambient conditions

Temperature: 5°C - 40°C

Relative humidity: 25% - 85%, non-condensing

If you have any questions on the technical data or require detailed technical information on your balance, please contact your technical representative.

## Getting Started

The indicator is packaged in an environmentally-friendly carton, which provides optimum protection for the balance during transportation.

We suggest that you keep the original packaging in order to avoid damage if you are shipping or transporting the indicator to a different location. It is also the best way to keep it in the best conditions if it will not be used for an extended period of time.

In order to avoid damage, please follow the instructions provided below, when unpacking the scale:

- Unpack the indicator carefully.
- When outside temperatures are very low, the indicator should be stored for a couple hours and kept in its box in a dry room at normal temperature, so that no condensation settles on the unit when opening the box.
- Check the indicator immediately after unpacking for any external visual damage. If there is any damage on indicator, contact customer service immediately.
- If the indicator is not to be used immediately after purchase, it should be stored in a dry place where fluctuations in temperature are low. (Reference pg.18).
- Read through these operating instruction, before you work with the unit and pay attention to the Safety recommendations (reference Safety pg. 6).

## Delivery

Inspect delivery for completeness immediately on unpacking all components.

### **Checklist for complete delivery**

	<b>Component delivered present</b> yes / no
Weighing indicator	
Operating manual	

# Assembly & Installation

The weighing indicator is delivered in a partly dismantled condition. Assemble the individual components in the following sequence:

- Place your machine on a level, clean, and dry.
- Connect load cells or weighing platform (refer to p.8)
- Connect indicator to main power

The following Safety recommendations must be observed when connecting the indicator:



The indicator should only be connected to the mains voltage socket. Check before connecting to the mains socket, that the operating voltage complies with the local mains voltage.

If the operating voltage is not the same as the mains voltage, the indicator must not be connected to the mains socket and contact customer service.

## Placement of Indicator

The location in which the indicator is placed is very important in order for the indicator to work to its full potential. Certain conditions can affect the capabilities of the indicator, conditions like: variations in temperature, and direct sunlight. Please follow the recommendations given below in choosing a location to place your indicator.

- Place the indicator on a solid, firm and preferably vibration-proof, horizontal base
- Make sure that the weighing machine cannot be shaken or knocked over
- Protect from direct solar radiation
- Avoid drafts and excessive temperature fluctuations
- Avoid placing the scale near or on any magnetic surfaces.

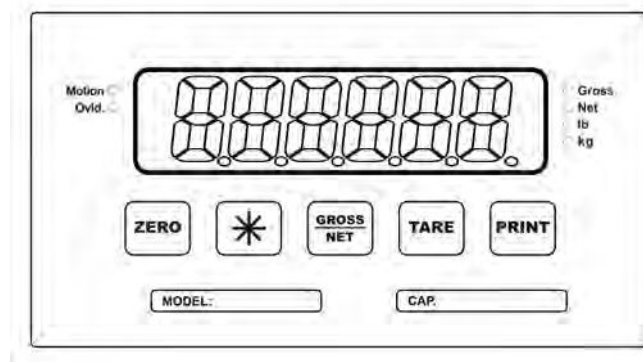
## Annunciator messages:

Motion: This light is on whenever the scale is in motion.  
OVLd: This light is on whenever the scale is over weight limit.  
GROSS: Indicates that the indicator is displaying gross weight.  
NET: Indicates that the indicator is displaying net weight.  
Lb: Indicates the “lb” unit of the displayed weight.  
Kg: Indicates the “kg” unit of the displayed weight.

## Key Functions:

- **ZERO:** “Zero” feature works if load is between 0 to 100% of full capacity. To bring the scale to a zero balance reading, press the zero button. The button will not activate if the MOTION lamp is on.
- **UNIT:** Push to switch between lb and kg. Each time the button is pushed, the tare weight will be automatically cleared.
- **GROSS/NET:** Press this key to switch between Gross or Net mode. The lamp will light to indicate which mode is being displayed.
- **TARE:** “Tare” feature works if load is between 0 to 100% of full capacity. Multiple tare can be used provided the total mass does not exceed the weighing capacity of the scale. When the weight is stable (no motion), press the TARE button, and hold for one display update. If the gross weight was not a negative value, the tare weight now equals the gross weight and the display will show a NET weight of zero.
- **PRINT:** Press this button to activate an optional printer.

## LED Display



## Weighing Options

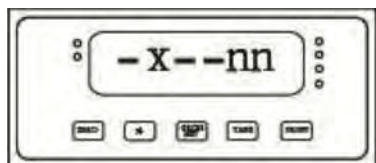
Please see our web-site at <http://lwmeasurements.com> for practical demonstrations of application usage.

### Weighing Procedures

Whenever possible, please allow the scale to warm up for several seconds after first turning the power on so that the scale will function properly and accurately.

- **Press (ON/OFF) to turn on the scale.** When the power is turned on, all display segments appear for a few seconds and then display the current weight. Press ZERO or zero scale if required.
- **Select the weighing unit with (star symbol).** Press (star symbol) to switch between kg/lb.
- **Start weighing: If you do not use a container for weighing:** Verify the reading is “0”, if not press ZERO to display “0”. Place the items to be weighed on the platform. **If you use a container for weighing:** Place an empty container on the platform. Wait for a stable reading to be displayed and press TARE. Place the objects to be weighed in the container.

## Parameter Settings



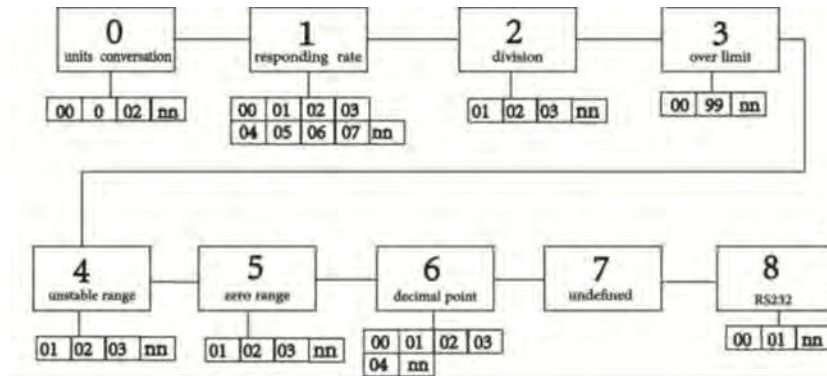
Open the rear cover, then press <CAL> key on the main board and it will show “-----”, then press <Gross/Net> to enter parameter menu. Format of parameter: - x - - nn (“x” means the parameter and the “nn” means the value that it is currently set to.

Operation: <Gross/Net>: change X parameter number in rotation.

<TARE>: Press to increase the parameter value by 1.

<PRINT>: Press to decrease the parameter value by 1.

## Setup Menu Chart:



## Setup Menu Description:

Code	Name	Description	Code/Value
0	LB/KG units	nn=00: Power-on unit is lb and units conversion is not available. nn=0: Power-on unit is lb and units conversion is available. nn=2: Power-on unit is kg and units conversion is available. nn= other value, same to nn=02.	<u>00</u> , 0, 02, nn
1	display sampling updated rate	nn=00: rate=6.25Hz (the slowest) nn=01: rate=7.5Hz nn=02: rate=12.5Hz nn=03: rate=15Hz nn=04: rate=25Hz nn=05: rate=30Hz nn=06: rate=50Hz nn=07: rate=60Hz (the fastest) nn= other value, same to nn=00	00, 01, 02, 03, 04, 05, 06, 07, nn
2	LB graduation	Example - set 2 for grad size of 2 (decimal point setting at param 6)	<u>01</u> , to 99
3 6 6	Overload limit	nn=00: fixed 10000 divisions nn=99: No limit Set to 100s of graduations Example: set to 50 for 5000 scale divisin	00, <u>30</u> , 99 .nn

4	Motion detection	Set to the number of scale division that is allowed as a no motion condition	<u>00</u> to ... 99
5	zero tracking range	Set to number of scale divisions off of zero that the unit will auto zero in one sample update.	<u>01</u> , 02, 03, 04, 05...
6	LB number of decimal	nn=00: no decimal place nn=01: one decimal places nn=02: two decimal places nn=03: three decimal places nn=04: four decimal places nn= others, same to nn=00	00, <u>01</u> , 02, 03, 04, nn
7	undefined		
8	RS232	Output option for serial communication port (9600, N, 8, 1) nn=00: PRINT button output nn=01: continuous output nn=others, same to nn=00 date format: STX, ' /-', 7 Date char, 'lb'/kg', ' ', 'G'/N', 'M'/', CR, LF	<u>00</u> , 01, nn

# Calibration

## Using a Calibration Weight

Calibration is required when the weighing scale is initially installed or if the balance is moved to a substantial distance from the original location.

**NOTE: All calibration needs to be done in pounds.**

NOTE: When setting up a new scale, do the parameter setting first.

## **Calibration Steps:**

Open the rear cover, then press <CAL> button on the main board to cause the display to show "-----", then press <TARE> to enter calibration.

- Please make sure that the scale is empty first, then press <ZERO>.
- Put the calibration weight on the scale. (Over 50% of capacity is ideal but not required).
- Press the "star symbol" button to enter the coarse adjust model.
- Press <TARE> key to decrease or <PRINT> to increase displayed value and stop at a number closest to the correct weight. (Note: it will not be correct yet).
- Step down to a finer adjustment by pressing the <GROSS/NET> key, then repeat step #4 and #5 as needed until the display shows the correct weight.
- When displayed value is correct, press <CAL> to exit the CAL mode and return to weighing mode.



## Maintenance & Service

The weighing scale is a precision instrument, it must be treated carefully and cleaned regularly

### **DANGER**

For maintenance-work, the balance must be disconnected from the power supply (remove power adapter plug from socket). Also ensure that the balance cannot be connected to the power supply during the work by a third party.

Make sure that no liquid spills into the scale while performing maintenance work. If liquid is spilled on the scale, it must be inspected by a service technician.

Regularly perform maintenance to the weighing pan and the weighing pan holder by removing any dirt or dust from under the weighing pan and on the weighing scale housing. Use a soft brush or a soft, lint-free cloth, moistened with a mild soap solution

### **CAUTION**

Never use solvents, acids, alkalis, paint thinners, scouring powders or other aggressive or corrosive chemicals for cleaning; these substances can cause damage to the surfaces of the scale housing.

## Transport & Storage

Your weighing machine is a precision instrument, treat it carefully. Avoid shaking, severe impacts and vibration during the transportation. Make sure that there are no marked temperature fluctuations during the transportation and that the weighing machine does not become damp (condensation).

If you would like to take the weighing machine out of service for an extended period, disconnect it from the electricity supply, clean it thoroughly (refer to Maintenance & Service) and store it in a place which meets the following conditions:

- No violent shaking, no vibrations
- Minimum temperature fluctuations
- No direct solar radiation
- Minimum moisture

## Warranty

LW Measurements products are under warranty against factory defects for a period of two (2) years from the date of shipment for Customers in the continental United States.

LW Measurements will pay for freight both ways within the first 30 days of purchase if technical support is required. (Determined by our certified Technical Support Team) In the event technical support is needed the customer is responsible for shipping the product back to us after the 30 day period has expired. Once the product is received, the technical support team will inspect and as necessary repair or replace the scale. LW Measurements will ship the product back to the customer at our expense.

Any new scales returned for warranty must be properly packaged in the original box. If they are not properly packed in the original box, the customer is responsible for the shipping cost. If we determine there is a factory defect, we will provide a replacement and accept responsibility for shipping back to customer. If we determine that it is not a factory defect, the customer will be responsible for shipping fees incurred.

For Customers outside the lower 48 States, including Mexico, Canada, Puerto Rico, Hawaii, Alaska and all other countries are responsible for all shipping fees incurred.

Our warranty does not cover misuse or neglect including but not limited to battery or water damage, overloading, and chewed or cut wires, keypad damage (punctures), scratched platforms, dented platforms unless caused by shipping (Must report/return within 30 days). If the product is found to have been misused or damaged by the customer, LW measurements is not responsible for the cost of return.

For warranty claims please call your customer service representative.